

# CONTENTS

Performance of the Manufacturing Sector, 2006 .....	1
Performance by Cluster, 2006 .....	3
List of Tables .....	7
Technical Note .....	31

## **PERFORMANCE OF THE MANUFACTURING SECTOR 2006**

This analysis summarizes the results of the Census of the Manufacturing Activities 2006. Significant findings are highlighted below:

- Total output in the manufacturing sector amounted to S\$237.9 billion, a 9.6% increase from 2005. This was attributed to the expansion in the following clusters: transport engineering (30.1%), biomedical manufacturing (29.1%), chemicals (16.4%), precision engineering (13.8%), and general manufacturing industries (5.3%). The electronics cluster, however, registered a drop of 5.1%.
- Value-added of the manufacturing sector rose by 10.4% to S\$54.1 billion, whilst employment grew by 3.3% to 381,909 workers. This brought an increase in labour productivity, indicated by the 6.8% increase in value-added per worker to S\$141,727. The electronics cluster remained the largest contributor to total manufacturing value-added, accounting for 31.9% of total value-added in 2006, while the biomedical manufacturing, chemicals, precision engineering, transport engineering clusters and general manufacturing industries contributed 23.6%, 12.6%, 12.5%, 10.8% and 8.6% respectively in the same year.
- Remuneration for workers in the manufacturing sector increased 6.7% in 2006 to reach S\$15.3 billion. Combined with the 3.3% growth in employment, this brought about an increase of 3.2% in remuneration per worker to \$39,944.
- Net operating surplus (NOS) for the manufacturing sector increased by 13.4%. Although chemicals saw a dip in its NOS of 31%, NOS for the overall manufacturing sector was boosted by growth in the biomedical manufacturing (42.2%), precision engineering (10.7%), transport engineering (15.2%) clusters, general manufacturing industries (10.4%) and the electronics cluster (7.4%). Total NOS amounted to S\$30.5 billion in 2006.
- Gross fixed assets amounted to S\$112.8 billion as at end 2006, which was 3.1% higher than that of 2005. Net fixed assets also slightly increased by 1.0% to reach S\$47.5 billion in 2006.

## Key Indicators of the Manufacturing Sector<sup>1</sup>

Key Indicator		2005	2006	% change
Establishments	(No.)	8,037	7,892	-1.8
Employment	(No.)	369,610	381,909	3.3
Total Output	(S\$m)	217,086	237,880	9.6
Value-added	(S\$m)	49,042	54,127	10.4
Remuneration	(S\$m)	14,301	15,254	6.7
Net Operating Surplus	(S\$m)	26,885	30,479	13.4
Net Fixed Assets	(S\$m)	47,061	47,528	1.0
Gross Fixed Assets	(S\$m)	109,490	112,848	3.1
Value-added per Worker	(S\$000)	132.7	141.7	6.8
Share of Direct Exports	(%)	65.0	62.2	-4.2

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<sup>1</sup> All values are at current market prices unless otherwise stated.

## PERFORMANCE BY CLUSTER, 2006

- **Chemicals Cluster**

Total output the chemicals cluster grew by 16.4% to hit S\$79.2 billion; whilst its value-added decreased by 5.8% to reach S\$6.8 billion. At the same time, employment decreased by 1.1% to reach 22,205. This brought about a decrease of 4.7% in value-added per worker to S\$308,258. Net operating surplus contracted by 31.0% to S\$2.9 billion, mainly due to the decreased profitability of petrochemicals.

The growth of the chemical cluster was largely due to the increased output in the petrochemicals and petroleum segments, by 24.0% and 14.4% to S\$25.9 billion and S\$46.1 billion respectively. Higher output from petrochemicals arose from the increased capacities in downstream petrochemical plants and higher regional demand. Petroleum refineries increased crude oil production, although refining plants were having maintenance shutdowns in some months. The increase in local and regional demand for specialty chemicals like epoxy moulding compound, industrial gases, industrial acids, food additives, chemical catalysts, paints and varnishes also caused the output of the specialty chemicals segment to rise by 6.7% to S\$5.5 billion.

- **Electronics Cluster**

The electronics cluster saw a contraction of 5.1% in its total output to S\$75.1 billion in 2006. Value-added increased by 3.4% to S\$17.3 billion. Combined with a 1.9% decrease in employment to 93,851, this brought value-added per worker to rise by 5.5% to reach S\$183,954. Net operating surplus increased by 7.4% to S\$9.1 billion.

Contraction in the electronics cluster was a result of declines in the outputs in data storage, computer peripherals and infocomms & consumer electronics segments, which offset the growth in the semiconductor segment. Output of the data storage segment decreased the most by 30.2%. This was mainly due to the lower demand for disk drives and relocation of production to regional plants. The output of infocomms & consumer electronics decreased by 9.5%, due to the lower production of consumer electronics and mobile products. Output in the computer peripherals segment contracted by 9.4% largely due to production relocation. On the other hand, the increase of 12.0% in the semiconductor segment was spurred on by the stronger demand for DRAMs, NAND flash and chips used in broadband, mobile, consumer electronics and wireless applications.

- **Biomedical Manufacturing Cluster**

The biomedical manufacturing cluster saw a significant expansion of 29.1% in its output to reach S\$23.8 billion in 2006. Value-added of the biomedical manufacturing cluster surged 38.4% to reach S\$12.8 billion; whilst employment slightly increased by 4.0% to reach 10,581 in 2006. This resulted in an increase of 33.1% in value-added per worker to S\$1,207,130. Meanwhile, net operating surplus increased by 42.2% to S\$12.0 billion, largely due to the high margins of pharmaceuticals.

The output growth in the biomedical manufacturing sector was propelled by the growth of the pharmaceuticals segment by 32.6% to reach S\$21.5 billion, mainly due to the production of a wider and different range of active pharmaceutical ingredients. The medical technology segment saw an increase of 3.9% to S\$2.4 billion as the output of medical devices rose to meet the increased export orders for the EU and US markets in the 2<sup>nd</sup> half of the year.

- **Precision Engineering Cluster**

Total output of the precision engineering cluster expanded by 13.8% to S\$23.5 billion, while value-added rose by 8.0% to reach S\$6.7 billion. In addition, the number of workers employed grew by 3.9% to reach 96,419, resulting in an increase of 3.9% in value-added per worker to S\$69,872. Net operating surplus grew by 10.7% to S\$2.4 billion.

The growth of the precision engineering cluster was mainly due to the increased output in the machinery & systems segment by 18.1% to S\$9.7 billion with higher production of industrial process equipment, semiconductor equipment, refrigerating machinery, transformers, lifting and handling machinery, general and special purpose machinery. Furthermore, the output of the precision modules & components segment grew by 10.9% to reach S\$13.8 billion with higher production of lead frames, die castings, metal and plastic precision components, metal stampings, springs and wires. Both segments were driven by export orders.

- **Transport Engineering Cluster**

Total output of the transport engineering cluster increased significantly by 30.1% to reach S\$20.2 billion whilst value-added grew by 14.2% to achieve S\$5.8 billion. Employment increased by 14.4% to reach 76,840. This resulted in a slight dip of 0.2% in value-added per worker to S\$75,863. Net operating surplus grew by 15.2% to S\$2.7 billion.

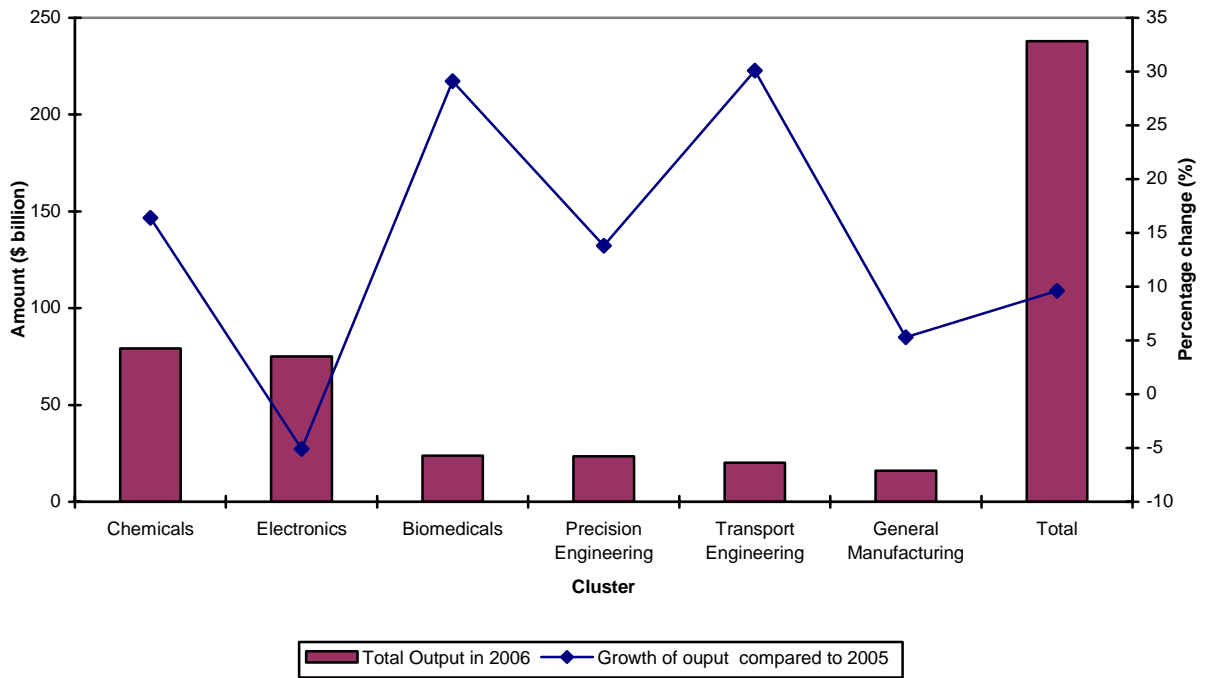
The growth of the transport engineering cluster was largely due to increased output in the marine & offshore engineering segment, by 40.7% to reach S\$12.4 billion. The marine & offshore engineering segment grew as shipyards completed more projects on ship building, ship repairs and conversion. The fabrication of oil rigs also increased substantially to meet project deadlines. Production of oil field equipment increased to meet higher demand from US, China, Asia Pacific and Middle East. The aerospace and land transport segments grew 18.2% and 9.3% to attain S\$6.2 billion and S\$1.6 billion worth of output respectively. Output in the aerospace segment was boosted by the demand for aircraft repairs and servicing of airlines as a result of increased air traffic in the US and Asia Pacific region. Meanwhile, production in the land transport segment also increased in response to increased overseas orders.

- **General Manufacturing Industries**

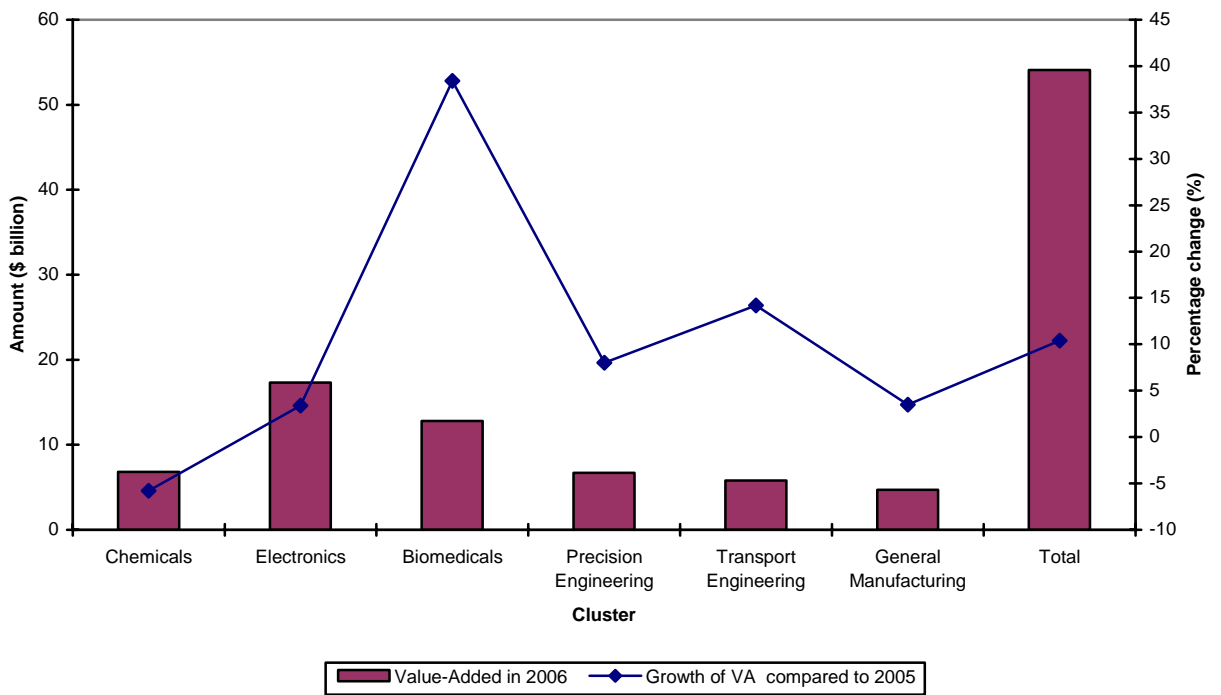
The general manufacturing industries grew by 5.3% to achieve a total output of S\$16.0 billion in 2006. Similarly, value-added increased by 3.5% to reach S\$4.7 billion in the same year. Employment increased by 0.8% to reach 82,013. This brought about a rise of 2.7% in value-added per worker to S\$57,047. Moreover, net operating surplus increased by 10.4% to S\$1.5 billion.

The output of the food, beverages & tobacco segment increased by 4.0% to reach S\$5.2 billion, to meet the seasonal demands, whilst output in the printing industry increased by 4.9% to reach S\$2.9 billion, with higher production of newspapers, commercial print products and silk screen printing. The output of miscellaneous industries increased by 6.4% to reach S\$7.9 billion.

**Total Output of manufacturing sector, 2006**



**Total VA of manufacturing sector, 2006**



**LIST OF TABLES**  
**2006 ANNUAL CENSUS OF MANUFACTURING ACTIVITIES**

**ALL MANUFACTURING ACTIVITIES**

<b>Table</b>		<b>Page</b>
1	Principal Statistics of Manufacturing, 1997-2006	8
2	Percentage Change of Principal Statistics, 1998-2006	9
3	Principal Statistics of Manufacturing by Number of Workers, 2006	10
4	Principal Statistics of Manufacturing by Value of Output, 2006	11
5	Principal Statistics of Manufacturing by Net Value of Fixed Assets, 2006	12
6	Principal Statistics of Manufacturing by Legal Organisation, 2006	13
7	Principal Statistics of Manufacturing by Capital Structure, 2006	14
8	Principal Statistics of Manufacturing by Country of Capital Source, 2006	15
9	Selected Ratios of Principal Statistics, 1997-2006	16
10	Investment in Terms of Gross Fixed Assets by Country, 1997-2006	17

**INDUSTRY DIVISION**

11	Principal Statistics by Industry, 2006	18
12	Selected Ratios of Principal Statistics by Industry, 2006	20
13	Percentage Distribution and Ranking of Principal Statistics by Industry, 2006	22
14	Details of Operating Cost by Industry, 2006	24
15	Details of Capital Expenditure and Net Value of Fixed Assets by Industry, 2006	26
16	Details of Floor Area of Premises Used by Industry, 2006	29

Notations used in Tables -  
n.e.c. Not elsewhere classified

**TABLE 1 PRINCIPAL STATISTICS OF MANUFACTURING, 1997 - 2006**

YEAR	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS	GROSS FIXED ASSETS
	NUMBER		THOUSAND DOLLARS										
1997	4,108	366,696	126,530,937	129,483,550	79,603,273	11,926,027	20,552,172	29,328,105	12,017,456	125,819,461	76,449,681	37,033,203	67,503,406
1998	4,004	352,289	121,433,066	124,657,561	74,426,814	11,768,083	22,124,928	28,105,819	10,338,939	121,766,403	75,529,897	37,246,403	70,409,803
1999	3,928	338,885	133,577,347	136,936,967	80,625,254	11,219,307	25,956,492	30,355,222	13,030,723	134,342,924	85,359,764	38,603,252	75,132,470
2000	4,044	344,610	158,745,688	163,720,816	93,606,606	12,453,059	31,084,660	39,029,550	20,333,246	156,353,693	93,860,936	42,362,718	81,880,882
2001	4,041	345,141	132,990,723	138,323,027	76,724,003	12,665,091	29,581,334	32,017,691	11,266,179	134,958,198	84,208,576	48,129,560	92,078,327
2001 <sup>a</sup>	8,758	360,542	134,582,116	139,932,360	77,448,515	12,968,233	30,032,211	32,451,634	11,341,023	136,549,397	84,255,148	48,510,323	92,738,546
2002 <sup>b</sup>	8,609	357,247	141,430,733	147,295,612	81,266,450	12,964,554	29,570,218	36,458,945	15,486,200	140,039,621	88,384,219	47,912,021	96,360,477
2003	8,597	351,109	150,779,280	158,696,758	86,035,786	12,961,293	35,531,274	37,129,698	16,596,765	150,975,135	98,725,467	45,764,367	98,283,833
2004	8,725	357,836	182,578,826	191,636,214	107,159,867	13,476,029	38,082,334	46,394,013	25,062,389	176,975,463	116,750,357	47,758,810	103,382,501
2005	8,037	369,610	208,651,512	217,086,056	125,257,340	14,300,914	42,786,176	49,042,540	26,884,819	207,262,035	134,647,133	47,061,194	109,490,373
2006	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436	112,848,129

Note : Rubber processing and granite quarrying are excluded.

The values of fixed assets are at end of year.

a Data refers to consolidated results of the Census of Manufacturing Activities 2001, which covered manufacturing establishments with 10 or more workers and Extended Census of Manufacturing Activities which covered manufacturing establishments with less than 10 workers

b With effect from CMA 2002, the coverage has expanded to gather data on all manufacturing establishments. In this publication, data related to 2001 and before were based on manufacturing establishments employing 10 or more workers unless otherwise stated

**TABLE 2 PERCENTAGE CHANGE OF PRINCIPAL STATISTICS, 1998 - 2006**

YEAR	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	PER CENT	
												NET FIXED ASSETS	GROSS FIXED ASSETS
1998	- 2.5	- 3.9	- 4.0	- 3.7	- 6.5	- 1.3	7.7	- 4.2	- 14.0	- 3.2	- 1.2	0.6	4.3
1999	- 1.9	- 3.8	10.0	9.9	8.3	- 4.7	17.3	8.0	26.0	10.3	13.0	3.6	6.7
2000	3.0	1.7	18.8	19.6	16.1	11.0	19.8	28.6	56.0	16.4	10.0	9.7	9.0
2001	- 0.1	0.2	- 16.2	- 15.5	- 18.0	1.7	- 4.8	- 18.0	- 44.6	- 13.7	- 10.3	13.6	12.5
2002 <sup>a</sup>	- 1.7	- 0.9	5.1	5.3	4.9	0.0	- 1.5	12.3	36.6	2.6	4.9	- 1.2	3.9
2003	- 0.1	- 1.7	6.6	7.7	5.9	0.0	20.2	1.8	7.2	7.8	11.7	- 4.5	2.0
2004	1.5	1.9	21.1	20.8	24.6	4.0	7.2	25.0	51.0	17.2	18.3	4.4	5.2
2005	- 7.9	3.3	14.3	13.3	16.9	6.1	12.4	5.7	7.3	17.1	15.3	- 1.5	5.9
2006	- 1.8	3.3	10.0	9.6	9.0	6.7	10.3	10.4	13.4	9.4	4.8	1.0	3.1

Note : Rubber processing and granite quarrying are excluded.

The values of fixed assets are at end of year.

a The growth rates in 2002 are percentage changes vis-a-vis Census of Manufacturing Activities 2001, which covered manufacturing establishments with 10 or more workers and Extended Census of Manufacturing Activities 2001, which covered manufacturing establishments with less than 10 worker.

**TABLE 3 PRINCIPAL STATISTICS OF MANUFACTURING BY NUMBER OF WORKERS, 2006**

NUMBER OF WORKERS	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
0 - 9	4,414	17,081	9,057,689	9,424,692	3,929,681	463,173	1,857,804	3,637,207	3,067,751	9,045,017	5,074,367	1,218,145
10 - 19	1,070	14,345	2,237,242	2,315,748	1,308,968	427,725	388,070	618,710	94,402	2,240,877	555,749	654,454
20 - 29	499	12,036	2,078,534	2,178,680	1,130,267	391,484	383,362	665,050	188,045	2,061,190	802,923	480,129
30 - 39	319	10,854	2,066,631	2,167,725	1,216,897	349,543	355,930	594,898	146,497	2,052,561	807,332	527,239
40 - 49	251	11,080	2,481,166	2,625,731	1,550,396	363,148	402,431	672,904	222,972	2,459,510	1,188,000	606,716
50 - 69	339	19,675	5,552,858	5,927,732	3,168,012	713,358	1,269,136	1,490,584	542,560	5,521,856	2,924,826	1,466,440
70 - 99	278	23,259	6,494,886	6,862,456	3,934,555	834,695	1,168,388	1,759,513	647,427	6,434,238	3,170,088	2,144,739
100 - 149	255	30,788	14,573,482	15,467,892	8,762,666	1,173,465	2,947,614	3,757,612	2,175,092	14,253,880	8,802,928	3,445,070
150 - 199	125	21,460	11,763,710	12,207,352	3,692,389	825,500	4,923,359	3,591,604	2,621,641	11,739,795	8,681,242	1,503,807
200 - 299	127	30,591	14,661,050	15,086,277	8,400,451	1,212,204	3,584,228	3,101,598	1,511,128	15,357,948	11,019,281	3,321,844
300 - 499	93	36,057	29,723,275	30,385,740	21,687,416	1,526,604	4,525,908	4,172,416	1,190,608	29,588,624	16,965,328	6,813,500
500 - 999	76	51,273	57,587,157	58,732,015	34,886,267	2,238,560	9,334,865	14,510,883	10,878,207	55,819,604	38,429,466	7,274,013
1,000 And Over	46	103,410	71,262,961	74,498,054	42,874,271	4,735,408	16,070,063	15,553,720	7,193,050	70,180,421	42,643,937	18,072,341
TOTAL	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year

**TABLE 4 PRINCIPAL STATISTICS OF MANUFACTURING BY VALUE OF OUTPUT, 2006**

VALUE OF OUTPUT THOUSAND DOLLARS	ESTAB- LISH- MENTS	WORKERS	MANUFAC- TURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNE- RATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
Less Than 1,000	4,668	26,707	1,712,587	1,873,587	652,594	537,731	482,289	738,704	85,213	1,714,940	119,145	589,770
1,000 - 1,999	777	14,674	1,123,738	1,218,054	460,965	372,104	292,545	464,543	9,201	1,125,572	120,304	391,558
2,000 - 2,999	465	12,476	1,119,943	1,189,186	466,440	345,079	292,695	430,050	6,537	1,118,772	172,216	392,776
3,000 - 4,999	486	19,911	1,880,428	2,041,142	835,847	549,476	445,793	759,502	81,805	1,875,648	399,071	685,112
5,000 - 9,999	477	31,022	3,387,198	3,735,336	1,602,317	904,511	761,912	1,371,107	265,000	3,379,694	1,060,971	1,050,350
10,000 - 19,999	341	35,305	4,899,048	5,342,103	2,367,812	1,122,657	1,163,002	1,811,289	412,188	4,890,751	1,861,763	1,737,995
20,000 - 29,999	153	19,508	3,705,119	3,970,006	1,902,670	700,616	846,988	1,220,348	357,643	3,683,938	1,761,413	976,582
30,000 - 49,999	151	23,385	5,829,463	6,532,827	3,143,217	1,005,343	1,392,969	1,996,641	767,427	5,830,899	3,447,859	1,675,756
50,000 - 99,999	143	33,010	9,970,605	10,760,948	5,815,865	1,297,029	1,989,286	2,955,797	1,341,079	9,885,029	6,113,462	2,604,932
100,000 And Over	231	165,911	195,912,510	201,216,904	119,294,508	8,420,322	39,543,678	42,378,717	27,153,286	193,250,279	126,009,263	37,423,605
Total	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year.

**TABLE 5 PRINCIPAL STATISTICS OF MANUFACTURING BY NET VALUE OF FIXED ASSETS, 2006**

NET VALUE OF FIXED ASSETS THOUSAND DOLLARS	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
Less Than 50	3,682	26,780	12,255,726	12,601,686	5,883,719	602,560	2,730,107	3,987,861	3,308,950	12,241,952	8,502,700	45,591
50 - 99	731	9,938	991,832	1,022,173	516,057	243,791	205,739	300,377	26,625	992,051	261,715	50,619
100 - 199	572	12,295	1,096,797	1,172,488	517,234	294,067	269,381	385,874	42,745	1,094,757	327,481	83,457
200 - 299	271	8,183	939,621	1,043,886	471,721	217,707	232,069	340,097	91,994	935,568	323,832	67,404
300 - 499	444	10,691	1,378,778	1,433,896	611,112	307,342	339,868	482,915	109,454	1,381,730	530,080	171,704
500 - 999	590	19,283	2,925,927	3,033,856	1,693,146	543,767	521,892	818,818	173,132	2,926,582	1,160,384	427,513
1,000 - 1,999	400	20,956	3,423,576	3,693,949	1,828,773	717,571	699,202	1,165,974	332,659	3,419,056	1,515,541	575,632
2,000 - 4,999	532	43,738	10,254,975	10,835,385	6,080,579	1,558,715	1,896,124	2,858,683	1,044,474	10,226,920	5,435,851	1,684,961
5,000 - 7,999	195	21,932	11,034,180	11,470,724	3,304,039	836,537	4,907,015	3,259,670	2,238,892	10,999,191	7,715,105	1,223,054
8,000 - 11,999	147	28,071	8,595,403	9,128,711	5,324,193	1,098,642	1,413,876	2,390,642	1,007,442	8,550,606	5,294,443	1,433,978
12,000 - 29,999	162	43,686	18,983,773	20,083,195	11,163,646	1,839,316	3,298,268	5,621,281	3,464,379	18,923,670	14,127,775	3,020,877
30,000 And Over	166	136,356	157,660,053	162,360,144	99,148,018	6,994,852	30,697,616	32,514,509	18,638,633	155,063,440	95,870,560	38,743,648
Total	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year.

**TABLE 6 PRINCIPAL STATISTICS OF MANUFACTURING BY LEGAL ORGANISATION, 2006**

LEGAL ORGANISATION	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
Sole Proprietorship	2,400	16,963	10,701,060	10,966,016	8,911,658	446,628	1,343,936	710,423	-700,932	10,702,521	4,692,156	3,726,781
Partnership	1,128	8,925	810,540	819,431	362,239	187,645	182,939	274,252	48,745	810,837	156,454	209,445
Private Limited Company	4,248	293,736	187,836,294	194,632,254	114,632,543	11,633,869	39,550,759	40,448,953	22,985,575	185,119,081	115,357,090	32,367,357
Public Limited Company	92	47,791	13,490,893	14,439,449	5,845,161	2,422,787	3,761,994	4,832,293	1,555,035	13,475,799	8,338,448	6,119,769
Others	24	14,494	16,701,853	17,022,943	6,790,635	563,940	2,371,529	7,860,779	6,590,956	16,647,283	12,521,319	5,105,083
Total	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year.

**TABLE 7 PRINCIPAL STATISTICS OF MANUFACTURING BY CAPITAL STRUCTURE, 2006**

CAPITAL STRUCTURE	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
Wholly Local	6,907	188,005	33,996,166	35,736,013	17,741,287	5,784,944	8,387,578	9,607,149	2,858,720	33,960,871	15,121,687	6,958,726
More Than Half Local	199	32,091	19,453,030	19,876,799	12,596,107	1,671,095	2,517,811	4,762,881	1,943,293	19,409,984	10,735,851	6,443,819
Less Than Half Local	139	13,782	5,814,048	5,946,874	2,603,998	625,670	1,471,895	1,870,981	744,866	5,584,992	3,067,389	1,969,904
Wholly Foreign	647	148,031	170,277,396	176,320,407	103,600,844	7,173,159	34,833,874	37,885,688	24,932,500	167,799,675	112,140,541	32,155,987
Total	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year.

**TABLE 8 PRINCIPAL STATISTICS OF MANUFACTURING BY COUNTRY OF CAPITAL SOURCE, 2006  
(50% EQUITY AS CUT-OFF)**

COUNTRY OF CAPITAL SOURCE	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS
	NUMBER		THOUSAND DOLLARS									
Singapore	7,106	220,096	53,449,196	55,612,812	30,337,394	7,456,039	10,905,389	14,370,030	4,802,013	53,370,855	25,857,537	13,402,546
Foreign	786	161,813	176,091,444	182,267,280	106,204,842	7,798,829	36,305,768	39,756,670	25,677,366	173,384,667	115,207,930	34,125,890
USA	209	64,703	93,850,178	96,474,818	59,149,989	3,188,420	17,712,238	19,612,591	14,047,436	94,075,978	68,377,057	14,350,462
Japan	233	39,149	21,350,547	22,229,135	14,359,329	1,695,882	3,120,383	4,749,423	1,910,171	21,169,675	12,512,832	5,981,029
Europe	212	42,140	55,129,692	57,692,243	30,147,863	2,229,554	14,260,967	13,283,413	9,111,775	52,632,889	31,499,467	9,987,719
European Union Countries (EU)	168	38,019	53,122,130	55,467,380	29,099,252	1,965,099	13,658,996	12,709,132	8,866,461	50,641,950	29,930,875	9,534,540
United Kingdom	28	3,324	12,758,241	13,062,124	1,185,853	243,077	4,965,045	6,911,226	6,561,606	10,808,502	10,448,204	1,060,129
Netherlands	43	13,145	24,421,963	25,489,022	19,763,115	706,270	3,852,111	1,873,796	406,474	24,151,649	5,629,397	4,510,872
Germany	43	9,294	5,756,653	6,499,382	3,102,058	466,497	1,657,200	1,740,124	1,036,629	5,750,669	4,365,106	1,084,068
France	15	1,454	1,984,301	2,110,563	903,402	91,848	791,037	416,125	330,344	1,826,716	1,562,661	227,625
Other EU Countries	39	10,802	8,200,972	8,306,288	4,144,824	457,407	2,393,603	1,767,861	531,408	8,104,414	7,925,508	2,651,845
Switzerland	31	3,119	1,692,615	1,880,264	841,343	212,954	551,714	487,207	216,935	1,679,371	1,364,957	398,728
Other European Countries	13	1,002	314,947	344,599	207,268	51,501	50,256	87,075	28,378	311,568	203,635	54,451
Others	132	15,821	5,761,027	5,871,085	2,547,662	684,972	1,212,180	2,111,243	607,983	5,506,124	2,818,573	3,806,679
Total	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436

Note : The values of fixed assets are at end of year.

**TABLE 9 SELECTED RATIOS OF PRINCIPAL STATISTICS, 1997 - 2006**

YEAR	MANUFAC- TURING OUTPUT PER WORKER	VALUE ADDED PER WORKER	NET FIXED ASSETS PER WORKER	REMUNE- RATION PER WORKER	MATERIAL TO MANUFAC- TURING OUTPUT	VALUE ADDED TO TOTAL OUTPUT	NET OPERATING SURPLUS TO TOTAL OUTPUT	DIRECT EXPORTS TO SALES
	DOLLARS				PER CENT			
1997	345,057	79,979	100,992	32,523	62.9	22.7	9.3	60.8
1998	344,697	79,781	105,727	33,405	61.3	22.5	8.3	62.0
1999	394,167	89,574	113,913	33,107	60.4	22.2	9.5	63.5
2000	460,653	113,257	122,929	36,137	59.0	23.8	12.4	60.0
2001	385,323	92,767	139,449	36,695	57.7	23.1	8.1	62.4
2001 <sup>a</sup>	373,277	90,008	134,548	35,969	57.5	23.2	8.1	61.7
2002 <sup>b</sup>	395,891	102,055	134,115	36,290	57.5	24.8	10.5	63.1
2003	429,437	105,750	130,342	36,915	57.1	23.4	10.5	65.4
2004	510,230	129,652	133,466	37,660	58.7	24.2	13.1	66.0
2005	564,518	132,687	127,327	38,692	60.0	22.6	12.4	65.0
2006	601,035	141,727	124,450	39,944	59.5	22.8	12.8	62.2

Note : Rubber processing and granite quarrying are excluded

The values of fixed assets are at end of year.

a Data refers to consolidated results of the Census of Manufacturing Activities 2001, which covered manufacturing establishments with 10 or more workers and Extended Census of Manufacturing Activities which covered manufacturing establishments with less than 10 workers

b With effect from CMA 2002, the coverage has expanded to gather data on all manufacturing establishments. In this publication, data related to 2001 and before were based on manufacturing establishments employing 10 or more workers unless otherwise stated

**TABLE 10 INVESTMENT IN TERMS OF GROSS FIXED ASSETS BY COUNTRY, 1997 - 2006  
(PROPORTIONATE INVESTMENT)**

THOUSAND DOLLARS

COUNTRY OF CAPITAL SOURCE	1997	1998	1999	2000	2001	2002 <sup>a</sup>	2003	2004	2005	2006
Singapore	19,578,337	21,078,814	22,541,449	25,491,740	27,420,213	29,129,008	28,096,367	28,936,085	30,443,838	31,248,241
Foreign	47,925,070	49,330,989	52,591,021	56,389,142	64,658,114	67,231,469	70,187,465	74,446,417	79,046,535	81,599,888
USA	19,335,082	20,144,110	20,764,673	21,421,326	25,824,529	25,990,676	27,800,395	28,772,870	31,554,442	32,830,304
Japan	14,747,016	15,511,982	16,626,880	17,571,607	18,315,309	18,680,791	18,915,112	18,837,397	19,057,042	18,921,766
Europe	11,592,820	11,632,718	13,119,396	15,095,020	17,273,822	19,188,885	21,051,323	22,772,448	23,529,163	24,496,809
European Union Countries (EU)	10,956,764	11,019,900	12,352,476	14,285,075	16,438,208	18,345,336	20,097,788	21,882,666	22,528,291	23,529,359
United Kingdom	3,341,661	3,318,316	4,263,385	4,578,720	4,682,187	5,092,933	5,086,483	4,714,844	4,997,497	5,282,660
Netherlands	5,074,002	4,957,419	4,852,669	5,213,553	6,330,793	7,640,175	8,002,543	8,313,775	8,414,259	8,704,323
Germany	1,317,483	1,482,960	1,815,054	2,361,984	2,894,793	2,704,270	2,667,940	3,000,893	3,006,431	3,318,104
France	680,275	704,400	895,846	1,336,884	1,559,095	1,786,849	2,412,581	3,143,673	3,176,638	3,248,892
Other EU Countries	543,343	556,806	525,522	793,934	971,341	1,121,110	1,928,242	2,709,481	2,933,467	2,975,380
Switzerland & Liechtenstein	475,203	479,064	628,514	668,022	716,828	737,349	807,245	754,581	860,139	811,581
Other European Countries	160,852	133,755	138,406	141,923	118,786	106,200	146,290	135,201	140,732	155,869
Others	2,250,152	2,042,179	2,080,072	2,301,189	3,244,454	3,371,118	2,420,635	4,063,701	4,905,888	5,351,009
Total	67,503,406	70,409,803	75,132,470	81,880,882	92,078,327	96,360,477	98,283,833	103,382,501	109,490,373	112,848,129

Note : Rubber processing and granite quarrying are excluded.

The values of fixed assets are at end of year.

a Prior 2002, the Census of Manufacturing Activities (CMA) published data collected from the industrial sector with establishments employing 10 or more workers.

With effect from 2002, the coverage of CMA has expanded to gather data on all manufacturing establishments.

**TABLE 11 PRINCIPAL STATISTICS BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS	GROSS FIXED ASSETS
	NUMBER		THOUSAND DOLLARS										
15) Food, Beverage & Tobacco 16) 17)	698	20,251	4,733,671	5,160,804	2,898,318	584,359	1,026,807	1,235,679	461,451	4,729,818	2,328,218	1,527,960	3,465,081
18 Textiles & Textile Manufactures	91	959	136,559	139,311	76,247	30,223	29,638	33,426	-4,011	136,369	54,743	44,522	160,238
19 Wearing Apparel Except Footwear	471	7,043	517,369	607,560	269,073	138,343	146,471	192,017	38,049	524,151	389,543	137,018	266,864
20 Leather, Leather Products & Footwear	45	1,125	235,411	238,953	157,063	32,997	27,395	54,496	18,077	227,033	170,363	26,142	60,942
21 Wood & Wood Products Except Furniture	99	1,606	253,836	273,690	169,148	41,090	48,142	56,400	2,420	256,575	84,283	79,088	173,593
22 Paper & Paper Products	121	4,423	955,964	986,378	607,084	151,713	125,074	254,221	57,055	956,130	466,007	279,819	763,436
23 Printing & Reproduction Of Recorded Media	827	17,651	2,888,196	2,938,778	1,050,501	717,413	564,049	1,324,228	387,443	2,885,571	727,525	1,184,524	2,736,505
24 Refined Petroleum Products	18	3,166	45,739,927	46,112,107	41,473,838	378,732	2,014,479	2,623,791	1,760,913	45,600,352	17,323,757	3,316,026	9,719,577
25 Chemicals & Chemical Products	262	15,746	31,100,944	32,256,144	24,332,363	1,106,446	3,978,492	3,945,290	1,111,461	30,961,508	15,193,008	10,873,306	22,164,039
251 Petrochemicals & Petrochemical Products	50	4,358	25,488,139	25,895,231	21,155,760	384,892	2,710,449	2,029,022	240,650	25,355,956	11,398,057	8,371,195	16,136,020
252 Other Chemicals & Chemical Products	212	11,388	5,612,806	6,360,913	3,176,603	721,554	1,268,043	1,916,268	870,812	5,605,552	3,794,952	2,502,111	6,028,019

Note : The values of fixed assets are at end of year.

**TABLE 11 PRINCIPAL STATISTICS BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	WORKERS	MANUFACTURING OUTPUT	TOTAL OUTPUT	MATERIALS	REMUNERATION	OPERATING COST	VALUE ADDED	NET OPERATING SURPLUS	SALES	DIRECT EXPORTS	NET FIXED ASSETS	GROSS FIXED ASSETS
	NUMBER		THOUSAND DOLLARS										
26 Pharmaceutical Products	42	3,956	21,096,532	21,487,850	2,850,400	272,490	7,102,339	11,535,112	11,046,549	19,827,867	18,403,762	3,609,440	5,058,406
27 Rubber & Plastic Products	327	17,148	2,689,189	2,935,638	1,394,187	554,946	586,799	954,652	269,894	2,680,942	1,329,798	859,081	1,976,713
28 Non-Metallic Mineral Products	137	5,176	1,410,498	1,457,542	726,889	167,657	361,749	368,905	46,022	1,409,708	357,049	493,109	1,367,117
29 Basic Metal	20	2,040	1,188,630	1,209,645	730,391	95,523	137,222	342,032	227,285	1,183,496	446,177	152,922	270,317
30 Fabricated Metal Products Except Machinery & Equipment	1,165	39,264	8,159,894	8,477,744	4,848,819	1,241,943	1,442,625	2,186,300	631,370	8,147,944	3,468,630	1,756,688	4,231,112
31 Machinery & Equipment	1,540	50,728	13,806,321	14,326,416	7,269,225	2,065,120	2,994,292	4,062,900	1,752,090	13,761,082	9,365,401	1,778,164	4,682,195
32 Electrical Machinery & Apparatus	231	11,294	3,466,078	3,836,036	2,190,504	414,421	627,646	1,017,885	468,479	3,422,871	2,211,768	516,241	1,626,672
33 Electronic Products & Components	186	93,851	71,990,812	75,086,011	37,256,581	4,108,645	20,565,157	17,264,273	9,070,526	70,917,538	56,220,201	17,568,487	46,392,640
34 Medical, Precision & Optical Instruments, Watches & Clocks	137	12,708	4,154,258	4,452,555	1,837,023	549,536	890,930	1,724,602	1,038,785	4,153,103	3,651,001	858,013	1,940,633
35 Transport Equipment	592	64,814	13,801,101	14,558,810	5,644,725	2,380,266	4,268,760	4,645,324	2,060,021	13,754,792	8,364,010	2,218,794	5,220,869
36 Other Manufacturing Industries	883	8,960	1,215,448	1,338,118	759,859	223,004	273,093	305,166	35,498	1,218,673	510,223	249,095	571,182
Total Manufacturing	7,892	381,909	229,540,640	237,880,093	136,542,236	15,254,868	47,211,157	54,126,699	30,479,379	226,755,522	141,065,467	47,528,436	112,848,129

Note : The values of fixed assets are at end of year.

**TABLE 12 SELECTED RATIOS OF PRINCIPAL STATISTICS BY INDUSTRY, 2006**

INDUSTRY		MANUFAC- TURING OUTPUT PER WORKER	VALUE ADDED PER WORKER	NET FIXED ASSETS PER WORKER	REMUNE- RATION PER WORKER	MATERIAL TO MANUFAC- TURING OUTPUT	VALUE ADDED TO TOTAL OUTPUT	NET OPERATING SURPLUS TO TOTAL OUTPUT	DIRECT EXPORTS TO SALES
		DOLLARS				PER CENT			
15)	Food, Beverage & Tobacco	233,750	61,018	75,451	28,856	61.2	23.9	8.9	49.2
16)									
17)									
18	Textiles & Textile Manufactures	142,398	34,856	46,426	31,515	55.8	24.0	-2.9	40.1
19	Wearing Apparel Except Footwear	73,459	27,264	19,454	19,643	52.0	31.6	6.3	74.3
20	Leather, Leather Products & Footwear	209,255	48,441	23,237	29,331	66.7	22.8	7.6	75.0
21	Wood & Wood Products Except Furniture	158,055	35,118	49,245	25,585	66.6	20.6	0.9	32.8
22	Paper & Paper Products	216,135	57,477	63,264	34,301	63.5	25.8	5.8	48.7
23	Printing & Reproduction Of Recorded Media	163,628	75,023	67,108	40,644	36.4	45.1	13.2	25.2
24	Refined Petroleum Products	14,447,229	828,740	1,047,386	119,625	90.7	5.7	3.8	38.0
25	Chemicals & Chemical Products	1,975,165	250,558	690,544	70,268	78.2	12.2	3.4	49.1
251	Petrochemicals & Petrochemical Products	5,848,586	465,586	1,920,880	88,318	83.0	7.8	0.9	45.0
252	Other Chemicals & Chemical Products	492,870	168,271	219,715	63,361	56.6	30.1	13.7	67.7

Note : The values of fixed assets are at end of year.

**TABLE 12 SELECTED RATIOS OF PRINCIPAL STATISTICS BY INDUSTRY, 2006**

INDUSTRY	MANUFACTURING OUTPUT PER WORKER	VALUE ADDED PER WORKER	NET FIXED ASSETS PER WORKER	REMUNE- RATION PER WORKER	MATERIAL TO MANUFAC- TURING OUTPUT	VALUE ADDED TO TOTAL OUTPUT	NET OPERATING SURPLUS TO TOTAL OUTPUT	DIRECT EXPORTS TO SALES
	DOLLARS				PER CENT			
26 Pharmaceutical Products	5,332,794	2,915,852	912,396	68,880	13.5	53.7	51.4	92.8
27 Rubber & Plastic Products	156,822	55,671	50,098	32,362	51.8	32.5	9.2	49.6
28 Non-Metallic Mineral Products	272,507	71,272	95,268	32,391	51.5	25.3	3.2	25.3
29 Basic Metal	582,662	167,663	74,962	46,825	61.4	28.3	18.8	37.7
30 Fabricated Metal Products Except Machinery & Equipment	207,821	55,682	44,740	31,631	59.4	25.8	7.4	42.6
31 Machinery & Equipment	272,164	80,092	35,053	40,710	52.7	28.4	12.2	68.1
32 Electrical Machinery & Apparatus	306,896	90,126	45,709	36,694	63.2	26.5	12.2	64.6
33 Electronic Products & Components	767,076	183,954	187,196	43,778	51.8	23.0	12.1	79.3
34 Medical, Precision & Optical Instruments, Watches & Clocks	326,901	135,710	67,518	43,243	44.2	38.7	23.3	87.9
35 Transport Equipment	212,934	71,672	34,233	36,725	40.9	31.9	14.1	60.8
36 Other Manufacturing Industries	135,653	34,059	27,801	24,889	62.5	22.8	2.7	41.9
Total Manufacturing	601,035	141,727	124,450	39,944	59.5	22.8	12.8	62.2

Note : The values of fixed assets are at end of year.

**TABLE 13 PERCENTAGE DISTRIBUTION AND RANKING OF PRINCIPAL STATISTICS BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS		WORKERS		MANUFACTURING OUTPUT		TOTAL OUTPUT		MATERIALS		REMUNERATION		OPERATING COST		VALUE ADDED		NET OPERATING SURPLUS		SALES		DIRECT EXPORTS		NET FIXED ASSETS	
	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK	%	RANK
15) Food, Beverage & Tobacco 16) 17)	8.8	(5)	5.3	(5)	2.1	(8)	2.2	(8)	2.1	(7)	3.8	(7)	2.2	(8)	2.3	(10)	1.5	(10)	2.1	(8)	1.7	(9)	3.2	(8)
18 Textiles & Textile Manufactures	1.2	(16)	0.3	(20)	0.1	(20)	0.1	(20)	0.1	(20)	0.2	(20)	0.1	(19)	0.1	(20)	0.0	(20)	0.1	(20)	0.0	(20)	0.1	(19)
19 Wearing Apparel Except Footwear	6.0	(7)	1.8	(12)	0.2	(17)	0.3	(17)	0.2	(17)	0.9	(16)	0.3	(15)	0.4	(17)	0.1	(16)	0.2	(17)	0.3	(16)	0.3	(17)
20 Leather, Leather Products & Footwear	0.6	(17)	0.3	(19)	0.1	(19)	0.1	(19)	0.1	(19)	0.2	(19)	0.1	(20)	0.1	(19)	0.1	(18)	0.1	(19)	0.1	(18)	0.1	(20)
21 Wood & Wood Products Except Furniture	1.3	(15)	0.4	(18)	0.1	(18)	0.1	(18)	0.1	(18)	0.3	(18)	0.1	(18)	0.1	(18)	0.0	(19)	0.1	(18)	0.1	(19)	0.2	(18)
22 Paper & Paper Products	1.5	(14)	1.2	(14)	0.4	(16)	0.4	(16)	0.4	(16)	1.0	(15)	0.3	(17)	0.5	(16)	0.2	(14)	0.4	(16)	0.3	(14)	0.6	(14)
23 Printing & Reproduction Of Recorded Media	10.5	(4)	4.6	(6)	1.3	(11)	1.2	(11)	0.8	(12)	4.7	(6)	1.2	(12)	2.4	(9)	1.3	(11)	1.3	(11)	0.5	(12)	2.5	(9)
24 Refined Petroleum Products	0.2	(20)	0.8	(16)	19.9	(2)	19.4	(2)	30.4	(1)	2.5	(11)	4.3	(6)	4.8	(6)	5.8	(4)	20.1	(2)	12.3	(3)	7.0	(4)
25 Chemicals & Chemical Products	3.3	(9)	4.1	(8)	13.5	(3)	13.6	(3)	17.8	(3)	7.3	(5)	8.4	(4)	7.3	(5)	3.6	(6)	13.7	(3)	10.8	(4)	22.9	(2)
26 Pharmaceutical Products	0.5	(18)	1.0	(15)	9.2	(4)	9.0	(4)	2.1	(8)	1.8	(12)	15.0	(2)	21.3	(2)	36.2	(1)	8.7	(4)	13.0	(2)	7.6	(3)



**TABLE 14 DETAILS OF OPERATING COST BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	TOTAL	REPAIR AND SERVICING	UTILITIES	TRANSPORTATION CHARGES	RENT FOR PREMISES, MACHINERY & TRANSPORT EQUIPMENT	PROFESSIONAL SERVICES	ADVERTISING AND PROMOTION	TELECOMMUNICATION FEES AND OFFICE SUPPLIES	OTHERS
	NUMBER	THOUSAND DOLLARS								
15) Food, Beverage & Tobacco 16) 17)	698	1,026,807	77,054	92,535	32,617	91,269	41,853	238,161	18,905	434,413
18 Textiles & Textile Manufactures	91	29,638	2,765	4,227	2,124	3,056	805	1,879	684	14,098
19 Wearing Apparel Except Footwear	471	146,471	6,513	8,011	6,800	15,520	2,158	3,745	4,157	99,567
20 Leather, Leather Products & Footwear	45	27,395	1,818	2,074	3,065	3,057	1,811	1,366	827	13,377
21 Wood & Wood Products Except Furniture	99	48,142	4,438	2,913	6,388	5,433	1,530	1,276	1,378	24,786
22 Paper & Paper Products	121	125,074	26,691	14,070	4,540	14,284	10,638	3,845	3,270	47,736
23 Printing & Reproduction Of Recorded Media	827	564,049	52,992	50,952	11,376	82,851	28,780	19,949	16,959	300,190
24 Refined Petroleum Products	18	2,014,479	203,329	349,936	21,364	16,992	319,369	28,027	9,140	1,066,322
25 Chemicals & Chemical Products	262	3,978,492	289,809	722,221	96,041	97,993	244,337	51,454	39,730	2,436,907
251 Petrochemicals & Petrochemical Products	50	2,710,449	181,945	486,597	21,325	66,722	149,676	5,523	8,516	1,790,145
252 Other Chemicals & Chemical Products	212	1,268,043	107,863	235,624	74,716	31,271	94,661	45,932	31,214	646,762

**TABLE 14 DETAILS OF OPERATING COST BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	TOTAL	REPAIR AND SERVICING	UTILITIES	TRANSPORTATION CHARGES	RENT FOR PREMISES, MACHINERY & TRANSPORT EQUIPMENT	PROFESSIONAL SERVICES	ADVERTISING AND PROMOTION	TELECOMMUNICATION FEES AND OFFICE SUPPLIES	OTHERS
	NUMBER	THOUSAND DOLLARS								
26 Pharmaceutical Products	42	7,102,339	49,200	56,003	3,217	16,989	300,939	8,839	3,283	6,663,869
27 Rubber & Plastic Products	327	586,799	40,824	78,858	12,399	45,865	29,668	13,989	12,818	352,378
28 Non-Metallic Mineral Products	137	361,749	31,663	35,787	8,724	22,754	8,162	3,193	4,284	247,182
29 Basic Metal	20	137,222	13,823	65,618	3,046	1,984	4,447	2,274	1,558	44,472
30 Fabricated Metal Products Except Machinery & Equipment	1,165	1,442,625	95,021	114,979	30,354	72,965	56,185	27,594	26,992	1,018,535
31 Machinery & Equipment	1,540	2,994,292	129,979	138,241	61,629	110,762	123,601	47,450	47,645	2,334,985
32 Electrical Machinery & Apparatus	231	627,646	41,158	35,334	18,610	23,274	50,417	13,021	10,884	434,948
33 Electronic Products & Components	186	20,565,157	957,916	701,058	300,310	222,456	217,509	184,386	56,603	17,924,919
34 Medical, Precision & Optical Instruments, Watches & Clocks	137	890,930	43,970	44,912	31,293	23,009	40,025	26,134	19,135	662,452
35 Transport Equipment	592	4,268,760	210,065	112,526	45,253	145,837	165,537	44,991	38,129	3,506,422
36 Other Manufacturing Industries	883	273,093	14,934	12,651	6,939	28,240	5,882	13,270	7,481	183,696
Total Manufacturing	7,892	47,211,157	2,293,961	2,642,906	706,089	1,044,593	1,653,652	734,842	323,863	37,811,251

**TABLE 15 DETAILS OF CAPITAL EXPENDITURE AND NET VALUE OF FIXED ASSETS BY INDUSTRY, 2006**

INDUSTRY	CAPITAL EXPENDITURE			NET VALUE OF FIXED ASSETS AT END OF YEAR		
	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS
	THOUSAND DOLLARS					
15) Food, Beverage & Tobacco 16) 17)	162,057	31,958	130,099	1,527,960	918,844	609,116
18 Textiles & Textile Manufactures	2,035	24	2,011	44,522	21,727	22,795
19 Wearing Apparel Except Footwear	11,392	6,262	5,130	137,018	103,423	33,595
20 Leather, Leather Products & Footwear	4,291	999	3,291	26,142	18,264	7,878
21 Wood & Wood Products Except Furniture	12,423	371	12,053	79,088	46,172	32,916
22 Paper & Paper Products	18,586	839	17,747	279,819	145,721	134,098
23 Printing & Reproduction Of Recorded Media	135,204	5,882	129,322	1,184,524	327,820	856,703
24 Refined Petroleum Products	542,880	347,085	195,795	3,316,026	808,243	2,507,783
25 Chemicals & Chemical Products	2,242,496	145,912	2,096,585	10,873,306	2,577,091	8,296,215

**TABLE 15 DETAILS OF CAPITAL EXPENDITURE AND NET VALUE OF FIXED ASSETS BY INDUSTRY, 2006**

INDUSTRY	CAPITAL EXPENDITURE			NET VALUE OF FIXED ASSETS AT END OF YEAR		
	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS
	THOUSAND DOLLARS					
251 Petrochemicals & Petrochemical Products	1,991,701	96,302	1,895,400	8,371,195	1,706,743	6,664,452
252 Other Chemicals & Chemical Products	250,795	49,610	201,185	2,502,111	870,348	1,631,763
26 Pharmaceutical Products	349,257	25,333	323,924	3,609,440	1,301,948	2,307,492
27 Rubber & Plastic Products	139,862	21,719	118,143	859,081	470,885	388,196
28 Non-Metallic Mineral Products	148,646	14,260	134,386	493,109	154,902	338,206
29 Basic Metal	117,988	38,691	79,297	152,922	64,202	88,721
30 Fabricated Metal Products Except Machinery & Equipment	371,061	76,713	294,348	1,756,688	941,911	814,777
31 Machinery & Equipment	497,251	121,094	376,157	1,778,164	773,951	1,004,212
32 Electrical Machinery & Apparatus	137,317	20,749	116,568	516,241	208,808	307,433

**TABLE 15 DETAILS OF CAPITAL EXPENDITURE AND NET VALUE OF FIXED ASSETS BY INDUSTRY, 2006**

INDUSTRY	CAPITAL EXPENDITURE			NET VALUE OF FIXED ASSETS AT END OF YEAR		
	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS	TOTAL	LAND, BUILDING AND STRUCTURE	MACHINERY, TRANSPORT, OFFICE EQUIPMENT & OTHERS
	THOUSAND DOLLARS					
33 Electronic Products & Components	6,344,000	731,744	5,612,256	17,568,487	4,133,684	13,434,803
34 Medical, Precision & Optical Instruments, Watches & Clocks	183,948	25,246	158,702	858,013	383,952	474,061
35 Transport Equipment	504,555	123,204	381,352	2,218,794	1,123,814	1,094,980
36 Other Manufacturing Industries	19,953	6,669	13,284	249,095	177,786	71,309
Total Manufacturing	11,945,201	1,744,752	10,200,449	47,528,436	14,703,147	32,825,289

**TABLE 16 DETAILS OF FLOOR AREA OF PREMISES USED BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	TOTAL	FOR PRODUCTION		AS OFFICE	FOR STORAGE		OTHERS
			COVERED	OPEN		COVERED	OPEN	
	NUMBER	SQUARE METRES						
15) Food, Beverage & Tobacco 16) 17)	698	1,224,134	649,864	45,449	123,181	258,796	18,073	128,771
18 Textiles & Textile Manufactures	91	79,864	45,949	18,030	4,157	9,148	0	2,580
19 Wearing Apparel Except Footwear	471	154,492	103,242	150	20,464	20,093	28	10,515
20 Leather, Leather Products & Footwear	45	47,726	35,176	2,594	4,331	4,014	0	1,611
21 Wood & Wood Products Except Furniture	99	259,862	124,914	3,321	18,639	55,634	39,872	17,482
22 Paper & Paper Products	121	407,869	210,757	2,662	31,474	93,094	3,025	66,857
23 Printing & Reproduction Of Recorded Media	827	744,681	498,100	2,728	104,627	97,094	326	41,806
24 Refined Petroleum Products	18	4,953,439	122,413	836,234	54,306	65,502	2,458,700	1,416,284
25 Chemicals & Chemical Products	262	4,746,328	827,963	2,243,817	199,247	444,320	439,070	591,911
251 Petrochemicals & Petrochemical Products	50	3,204,100	285,051	1,914,056	75,311	209,018	344,826	375,838
252 Other Chemicals & Chemical Products	212	1,542,228	542,912	329,761	123,936	235,302	94,244	216,073

**TABLE 16 DETAILS OF FLOOR AREA OF PREMISES USED BY INDUSTRY, 2006**

INDUSTRY	ESTABLISHMENTS	TOTAL	FOR PRODUCTION		AS OFFICE	FOR STORAGE		OTHERS
			COVERED	OPEN		COVERED	OPEN	
	NUMBER	SQUARE METRES						
26 Pharmaceutical Products	42	491,393	238,323	8,919	60,156	63,999	7,711	112,285
27 Rubber & Plastic Products	327	811,982	443,812	19,622	77,730	139,914	14,967	115,937
28 Non-Metallic Mineral Products	137	714,919	301,817	170,413	37,039	71,608	54,676	79,366
29 Basic Metal	20	498,602	364,144	84,600	17,353	8,622	13,504	10,379
30 Fabricated Metal Products Except Machinery & Equipment	1,165	2,419,733	1,390,271	279,619	241,002	227,474	119,247	162,120
31 Machinery & Equipment	1,540	2,983,555	1,415,992	685,509	366,228	181,900	130,748	203,178
32 Electrical Machinery & Apparatus	231	531,089	274,832	49,028	65,230	75,953	18,116	47,930
33 Electronic Products & Components	186	3,334,900	2,041,304	13,007	596,748	208,493	3,175	472,173
34 Medical, Precision & Optical Instruments, Watches & Clocks	137	478,003	235,470	4,771	76,308	42,726	8,977	109,751
35 Transport Equipment	592	4,277,002	1,276,715	1,888,648	500,734	177,022	117,442	316,441
36 Other Manufacturing Industries	883	447,636	327,162	5,925	40,288	43,174	11,794	19,293
Total Manufacturing	7,892	29,607,209	10,928,220	6,365,046	2,639,242	2,288,580	3,459,451	3,926,670

## **1. SCOPE OF COVERAGE**

The Census of Manufacturing Activities gathered comprehensive data on the entire industrial sector with establishments engaging in activities of manufacturing and industrial servicing. These activities were classified as Section C of the latest Singapore Standard Industrial Classification (SSIC) 2005 edition.

## **2. PUBLICATION FORMAT**

The results of the census were tabulated by industrial activity and presented at two levels of aggregation in this report.

The first level relates to data of the manufacturing sector as a whole. Principal statistics by employment size, output value range, net value of fixed assets, legal organisation, capital structure and country of capital source are published at overall manufacturing level. The second level consists of tables at major industry group of two-digit SSIC level.

## **3. DATA COLLECTION PROCESS**

The census was conducted by mail inquiry and via the Internet, using two types of questionnaires (Form ST and SI). Form ST covered the large and medium companies with detailed information collected, while Form SI covered small local establishments.

Respondents were given one month to complete and submit their returns. Establishments that failed to respond to the requisition in time were reminded by post and telephone. Returns were scrutinised by office staff and went through stringent online validation. Queries encountered were clarified by means of telephone, interviews or correspondence. Tabulation of results was carried out with the assistance of the Chief Information Officers Office (CIOO).

## **4. SAMPLING METHODOLOGY**

The sampling frame was based on live establishments covered in 2005 census. New firms were mainly obtained from the Commercial Establishment Information System (CEIS) maintained by the Department of Statistics (DOS); whilst information in the CEIS is extracted from the Accounting and Corporate Regulatory Authority (ACRA). Besides CEIS, new firms were also sourced from newspapers, business and telephone directories.

The sampling method was based on stratified random sampling. Establishments contributing significantly to employment, value-added or output were selected with certainty. The rest of the establishments were ranked within each industry into strata based on number of workers. The selection of sample companies within each stratum was further carried out by simple random sampling. Appropriate estimation methods were then applied to obtain population estimates.

## **5. RESPONSE RATE**

The 2006 census was carried out with a mailing list of 4,900 establishments. Of these, 4,150 responded. For final tabulation and analysis, data from 3,786 establishments were used. The rest of the establishments were excluded from the final tabulation due to various reasons, e.g. they were engaged in non-manufacturing activities, had not commenced operations, had ceased operations and had untraceable addresses.

## **6. DEFINITIONS AND CONCEPTS**

The definitions and concepts used in the industrial census are generally in accordance with the United Nations' recommendations for basic industrial statistics but with certain modifications to suit local requirements and conditions.

### Statistical Unit

The statistical unit used in the census is the establishment, being formally defined as a manufacturing unit engaged in one industrial activity generally in a single location. Where an enterprise is engaged in one industrial activity but operates manufacturing units in two or more different locations in Singapore, these separate units are treated as one establishment if most records are centrally kept. Such an enterprise submits a consolidated return covering all the units.

### Period of Reference

The period of reference is the calendar year. However, establishments whose accounting records are based on a financial year time frame are allowed to report according to the financial year nearest to the reference calendar year.

### Legal Organisation

This refers to the legal status of the enterprise rather than the establishment. The legal status of the enterprise can be classified into sole-proprietorship, partnership, public limited company, private limited company and others.

### Capital Structure

This refers to the nationality of the paid-up capital and investment capital as at end of the year. For limited companies, paid-up capital refers to the par value of the paid-up amount. For sole-proprietorship and partnership establishments, it refers to the capital contributed by proprietors or partners.

### Employment

This refers to all persons engaged by the establishment as at end of June, including both employees and self-employed.

### Total Output

Total output refers to the total value of goods and services derived from a production process or ancillary activities such as management or marketing. As such, it includes manufacturing output and other operating income.

### Manufacturing Output

The manufacturing output of industries refers to the total value of all commodities produced (including by-products) and industrial services rendered during the year. The valuation of commodities produced is at ex-factory price, excluding outward transport charges and excise duties, if any. The value of manufacturing output is computed from the value of goods manufactured and changes in stocks during the year.

### Materials

Materials cover raw or basic materials, chemicals and packing materials consumed in the production. They refer to the actual consumption during the year. Where information on materials consumed is not directly available, it is derived from total purchases of materials and changes in stocks. Valuation is at cost, including delivery charges, commissions and duties.

### Remuneration

Remuneration refers to the total cost resulting from the employment of all the workers in the establishment, except indirect taxes, foreign workers levy and skill development levy. Remuneration comprises wages and salaries (which include bonuses), contributions to the Central Provident Fund and pension paid by employers, and the value of other benefits provided such as food, lodging and medical care.

### Operating Costs

Operating costs incurred by the establishment include work-given out, utilities, fuel, inward transportation charges, rental paid for premises, machinery and transport equipment, repair and servicing of building, machinery, and transport equipment, insurance premium on building, machinery and transport equipment, bank service charge, travelling expenses including own vehicles, telecommunication fees (eg. postage, printing), share of related company's expenses, preliminary/ pre-operating expenses, staff training expenses, recruitment expenses, quality control expenses, guarantee/ warranty cost, sundry operating expenses, factory requisite (eg. tools & consumables), uniforms, cargo handling, delivery

and container service, harbor charges, wharfage and dockage, festivals and annual functions for staff, laundry services, professional service charges, advertising, promotional and entertainment expenses, commission and agency fees, third party logistics, royalties, research and development expenditure, other non-deductible GST paid and other operating expenditure for non-manufacturing activities.

### Other income

Other income include rental income from building and premises, transport equipment, and machinery & equipment, income from sales of metal scrap and scrap & waste, commission on sales of goods, installation of structure, royalties received, business commission, technical services & news editorial fees, administration & management fees, profit from resale of materials and other operating income, etc.

### Value-Added (At Market Prices)

Value-added can be explained as the return to factors of production. It is also used to measure the extent of how each economic sector such as manufacturing or financial services affects the country's GDP. It is the difference between total output and the total operating cost incurred in the production of goods and services or ancillary activities, where total operating cost refers to the sum of total materials and operating cost.

### Net Operating Surplus (At Market Prices)

Net operating surplus is obtained by deducting remuneration, depreciation of fixed assets, indirect taxes from value-added.

### Sales and Direct Exports

Goods manufactured are sold locally or directly exported to other countries. Resale of goods not manufactured by the establishments is excluded.

### Gross and Net Value of Fixed Assets

Gross value of fixed assets is the accumulated cost of acquiring the fixed assets. The net value of fixed assets refers to the gross value net of accumulated depreciation.

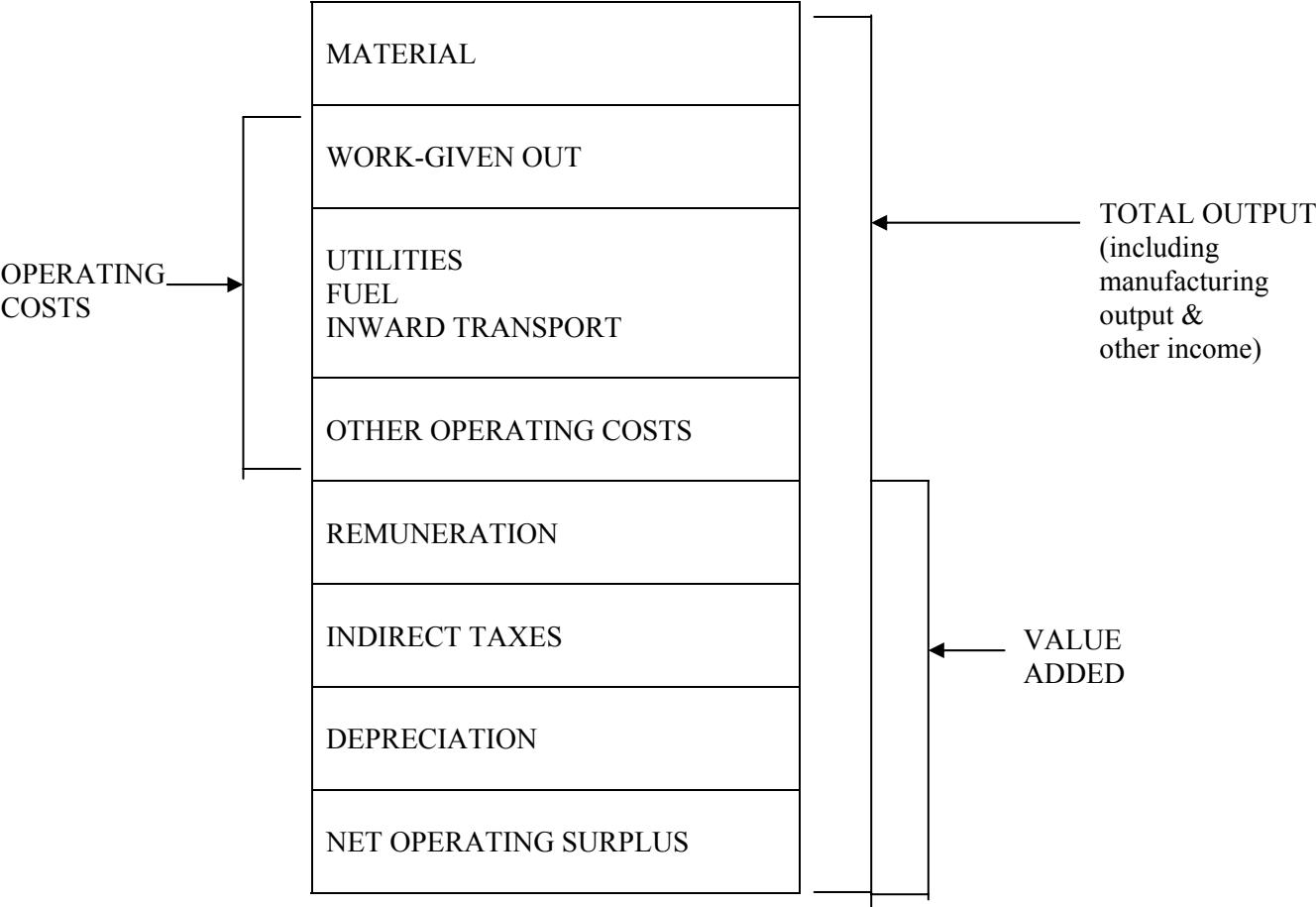
### Capital Expenditure

Capital expenditure covers all expenditure on capital assets, which are classified into two major categories for publication, namely land/building/structure and transport equipment/machinery/office equipment.

### Floor Area of Premises

This covers floor areas of premises used for production, storage or as office. Floor area used for residential purpose is excluded.

**A SCHEMATIC REPRESENTATION OF KEY DEFINITIONS**



*Statistical Details*

If you require further statistical information on our publication, you are welcomed to :

- ◆ Fax to us at **Tel: (65) 6832-6493**
- ◆ Call us at **Tel: (65) 6832-6298**
- ◆ E-mail us at [rsu@edb.gov.sg](mailto:rsu@edb.gov.sg)