

APPENDICES

LABOUR PRODUCTIVITY, WAGES AND ULC, 1978-2002

YEAR	REAL LABOUR PRODUCTIVITY (RM '000)	REAL WAGE/EMPLOYEE	UNIT LABOUR COST (PER RM 1K OF SALES)
1978	89,845	6729	74.9
1979	96,495	6857	71.07
1980	106,553	7304	68.55
1981	117,588	8391	71.36
1982	121,022	9353	77.29
1983	109,610	8520	77.73
1984	105,779	8498	80.34
1985	111,710	9833	88.02
1986	153,302	12,104	78.95
1987	148,920	10,666	71.62
1988	133,040	8302	62.41
1989	144,012	8778	60.95
1990	159,161	9512	59.77
1991	157,591	9376	59.49
1992	158,952	10,408	65.48
1993	175,031	11,652	66.57
1994	176,629	11,126	62.99
1995	171,020	10,507	61.42
1996	149,892	9,647	64.36
1997	144,079	9,455	65.63
1998	171,503	10,765	62.77
1999	167,644	9,863	58.83
2000	168,790	8,844	52.4
2001	175,696	10,228	58.21
2002	172,072	10,253	59.59

Source : Economic Planning Unit And Department Of Statistics, Malaysia

* Value in the form of proxies from 1978 to 1987

RESULTS OF ESTIMATION

LS // Dependent Variable is LP

Date: 01/05/03 Time: 16:14

Sample: 1978 2002

Included observations: 25

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	143818.1	5890.492	24.41530	0.0000
RW	14.34456	0.384106	37.34533	0.0000
ULC	-2028.161	61.64927	-32.89838	0.0000

R-squared	0.992348	Mean dependent var	143438.6
Adjusted R-squared	0.991652	S.D. dependent var	28048.54
S.E. of regression	2562.709	Akaike info criterion	15.80981
Sum squared resid	1.44E+08	Schwartz criterion	15.95607
Log likelihood	-230.0960	F-statistic	1426.484
Durbin-Watson stat	1.076947	Prob(F-statistic)	0.000000

Table 1. Principal Statistics of Malaysian Manufacturing Industries,
1986-1999

Year	Annual Rate of Growth (%)				
	Gross Value of Output	Value Added	Employment	Wages & Salaries	Value of Fixed Assets
1986	-6.9	0.3	0.6	0.3	-0.01
1987	19.5	9.6	8.1	6.6	7.7
1988	28.6	22.1	15.6	14.3	7.5
1989	23.9	26.7	16.6	20.7	12.4
1990	18.6	19.1	21.0	25.0	27.5
1991	25.6	26.9	15.7	26.0	29.6
1992	11.5	12.7	5.8	16.9	22.8
1993	16.8	19.4	11.3	18.9	19.6
1994	25.7	18.1	6.5	16.4	19.8
1995	25.4	20.4	13.4	21.0	22.3
1996	10.7	20.0	4.3	16.4	14.3
1997*	8.7	10.7	-2.6	6.9	13.3
1999	21.6	10.9	-3.8	5.0	12.5
Average: 1986-90	16.7	15.6	12.4	13.4	11.0
Average: 1991-95	21.0	19.5	10.5	19.8	18.4
Average: 1996-99	13.6	13.9	-0.7	9.4	13.4

Note: * No survey was conducted for 1998

Source: 1986 - 93: Tham, 1998b;

1994 - 99: Department of Statistics, Annual Survey of Manufacturing Industries, 2000

Table 2. Employment by Category of Workers in the Manufacturing Sector,
1990-2000

Category	1990	%	1995	%	2000	%	Average Annual Growth Rate (%): 1991-1995	Average Annual Growth Rate (%): 1996-2000
Managerial & Professional	50,281	3.8	88,219	4.3	12,797	4.7	11.9	7.1
Technical & Supervisory	114,592	8.6	88,219	9.0	268,622	10.5	10.0	8.0
Clerical	88,840	6.7	184,644	6.3	156,056	6.1	7.8	4.1
General Workers	53,620	4.0	129,250	3.1	74,191	2.9	3.5	3.5
Skilled	351,763	26.4	63,600	26.0	677,950	26.5	8.7	5.2
Semi-skilled	209,698	15.7	533,416	17.5	460,494	18.0	11.4	5.4
Unskilled	464,034	34.8	359,030	33.8	798,190	31.2	8.4	3.1
Total	1,332,829	100.0	2,051,600	100.0	2,538,300	100.0	9.0	4.8

Source: 1990, 1995 is extracted from Malaysia, 1996;

2000 is extracted from Malaysia, 2001

Table 3. Rate of Growth in Labour Productivity
Malaysian Manufacturing, 1986-99

Year	Value Added Per Labour (Nominal, RM'000)	Rate of Growth (%)	CPI	Value Added Per Labour (Real, RM'000)	Rate of Growth (%)
1985	25.44		90.8	28.02	
1986	25.38	-0.24	91.4	27.77	-0.89
1987	25.72	1.35	92.1	27.93	0.58
1988	27.16	5.61	94.4	28.77	3.03
1989	29.50	8.60	97.0	30.41	5.69
1990	29.04	-1.56	100.0	29.04	-4.51
1991	31.88	9.77	104.4	30.53	5.14
1992	33.94	6.49	109.3	31.05	1.71
1993	36.43	7.32	113.2	32.18	3.52
1994	40.42	10.97	117.4	34.43	7.00
1995	42.91	6.16	121.4	35.35	2.67
1996	49.38	15.06	125.6	39.31	11.22
1997	56.09	13.60	129.0	43.48	10.61
1999	64.64	15.23	139.6	46.30	6.48

Source: Department of Statistics, Annual Surveys of the Manufacturing Industries

Table 4. Nominal Productivity of Labour at the Sub-Sectoral Level, 1991-96

Industry	Nominal Value Added per Worker (RM '000)					
	1991	1992	1993	1994	1995	1996
Electrical & Electronic Products	28.24	32.19	34.01	39.33	43.19	50.97
Textiles & Clothings	16.71	17.68	19.58	23.55	23.94	28.13
Chemicals & Chemical Products	67.05	66.55	68.86	64.69	67.91	76.14
Machinery, Appliances & Parts	37.44	40.85	45.68	50.74	48.42	49.33
Wood Products	17.32	16.80	22.41	22.60	22.91	26.04
Manufactures of Metal	29.58	35.23	39.10	41.95	34.38	42.19
Transport Equipment	56.34	48.10	50.73	53.68	59.75	80.09
Optical & Scientific Equipment	23.73	22.27	24.42	27.46	29.74	27.43
Food	29.07	34.02	35.47	36.31	37.50	41.19
Non-Metallic Mineral Products	43.45	47.76	46.57	63.11	64.20	62.33
Iron & Steel Products	57.19	59.67	69.42	49.93	38.81	74.19
Rubber Products	25.37	27.15	28.59	29.65	34.72	38.40
Paper & Pulp Products	30.61	34.07	34.02	42.11	46.71	50.22
Beverages & Tobacco	80.64	76.14	90.43	96.21	54.85	73.21
Petroleum Products	105.18	115.10	137.40	199.12	153.02	224.91
Other Manufactures	26.06	30.24	30.50	32.54	36.16	38.98

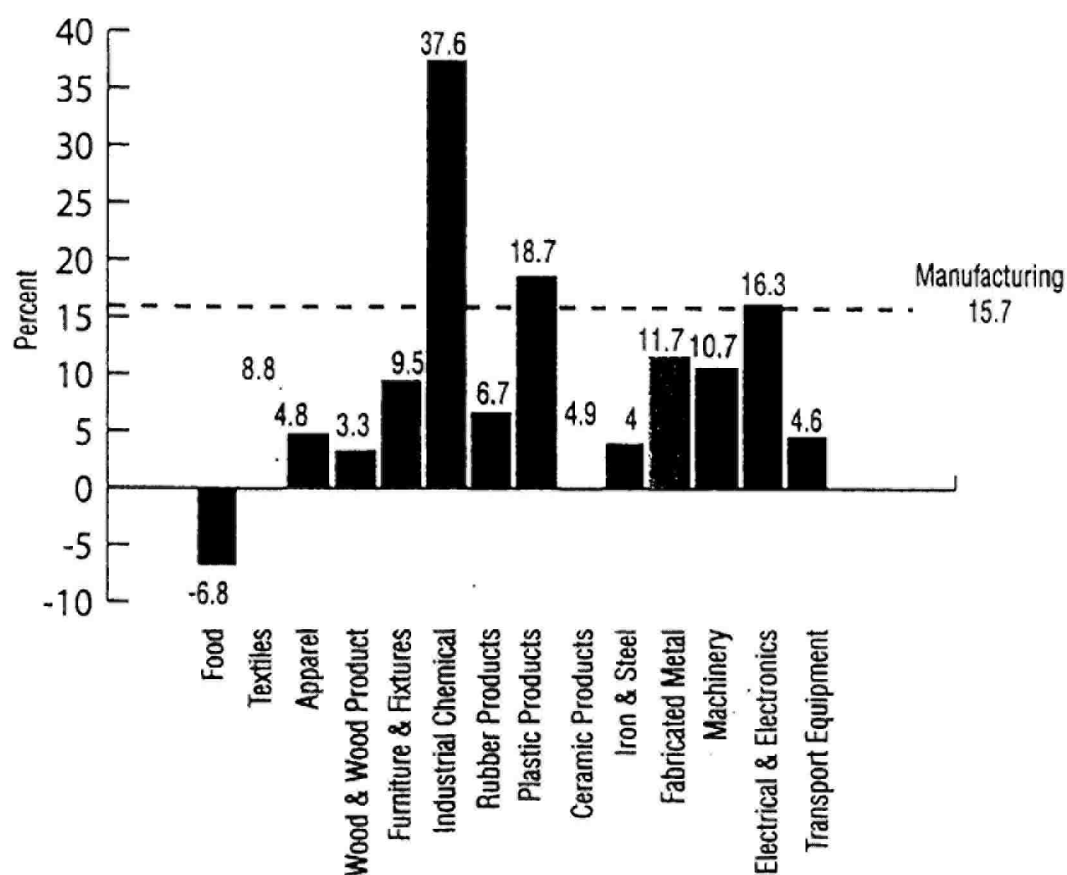
Source: Department of Statistics

Table 5. Rate of Growth in Wages and Salaries in
Malaysian Manufacturing, 1986-99

Year	Wages & Salaries (Nominal, RM '000)	Rate of Growth (%)	CPI	Wages & Salaries (Real, RM'000)	Rate of Growth (%)
1985	3622434		90.8	39894.65	
1986	3632008	0.26	91.4	39737.51	-0.39
1987	3872170	6.61	92.1	42043.11	5.80
1988	4425962	14.30	94.4	46885.19	11.52
1989	5339928	20.65	97.0	55050.80	17.42
1990	6674161	24.99	100.0	66741.61	21.24
1991	8411091	26.02	104.4	80566.01	20.71
1992	9829963	16.87	109.3	89935.62	11.63
1993	11687812	18.90	113.2	103249.22	14.80
1994	13603352	16.39	117.4	115871.82	12.23
1995	16465837	21.04	121.4	135632.92	17.05
1996	19171186	16.43	125.6	152636.83	12.54
1997	20500249	6.93	129.0	158916.66	4.11
1999	21442613	4.60	139.6	153600.38	-3.35

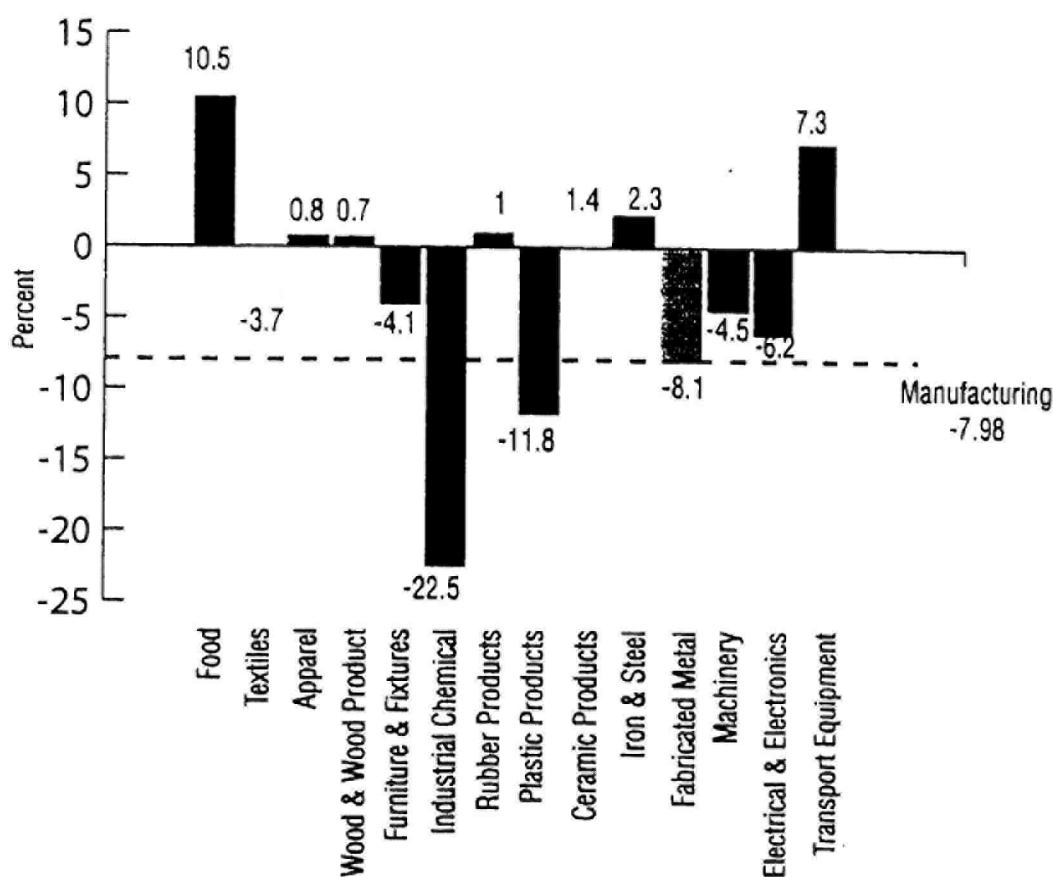
Source: Department of Statistics

Figure 5.137: Total Output Per Employee (%)
For Selected Manufacturing Sub-Sectors (2000)



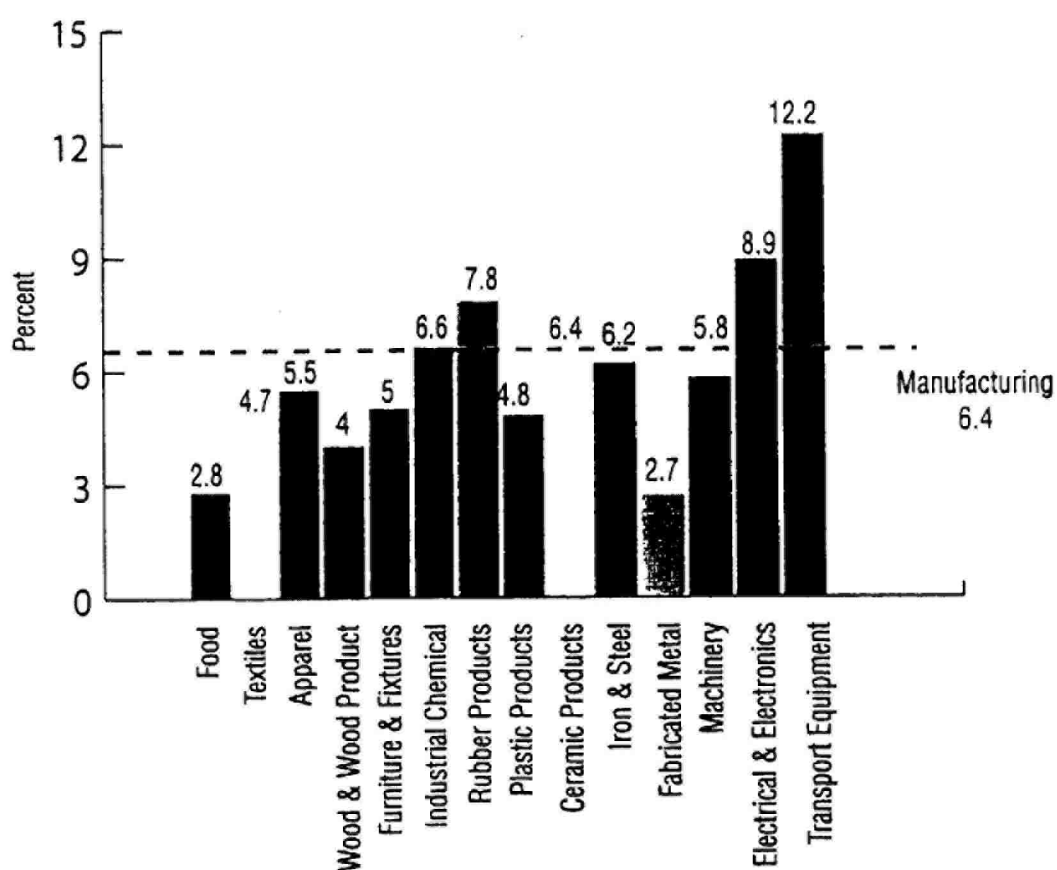
Source: National Productivity Corporation, Malaysia
Computed from:
Annual Survey of Manufacturing Industries,
Department of Statistics, Malaysia, various issues
e = estimates

Figure 5.143: Unit Labour Cost (%)
For Selected Manufacturing Sub-Sectors (2000)

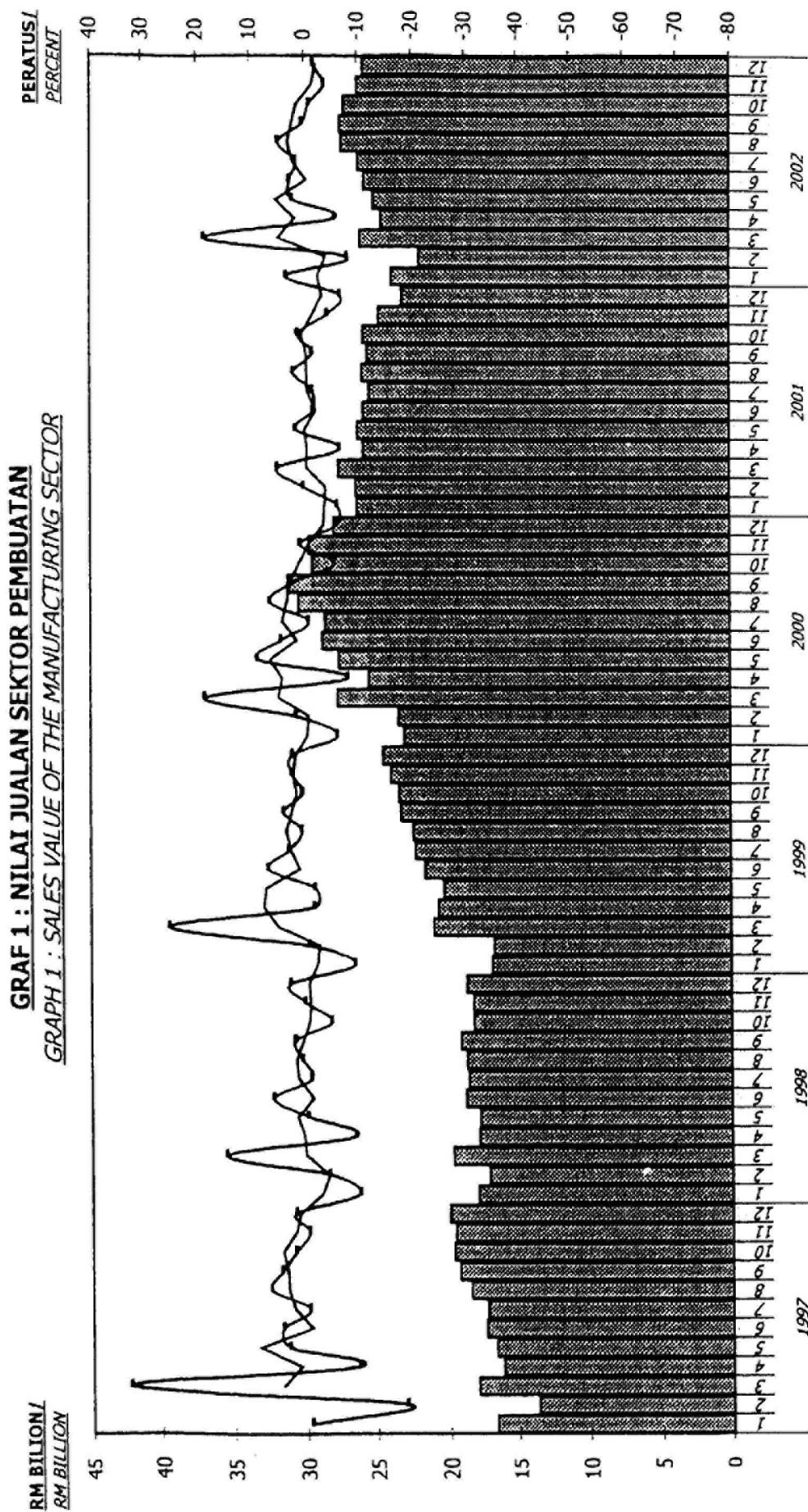


Source: National Productivity Corporation, Malaysia
Computed from:
Annual Survey of Manufacturing Industries,
Department of Statistics, Malaysia, various issues
e = estimates

Figure 5.144: Labour Cost Per Employee (%)
For Selected Manufacturing Sub-Sectors (2000)

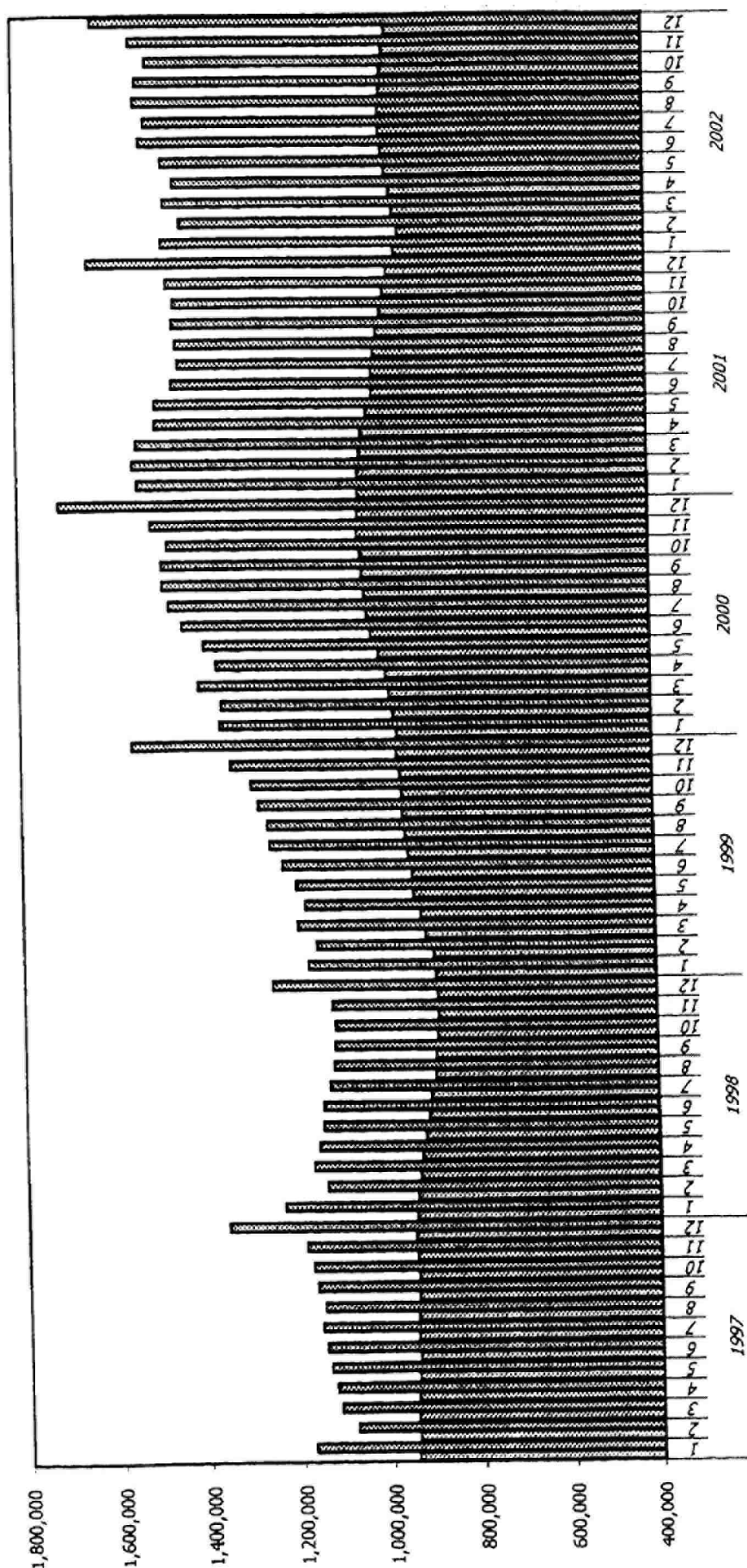


Source: National Productivity Corporation, Malaysia
Computed from:
Annual Survey of Manufacturing Industries,
Department of Statistics, Malaysia, various issues
e = estimates



GRAF 2 : BILANGAN PEKERJA BERGAJI DAN GAJI & UPAH DI SEKTOR PEMBUATAN
GRAPH 2 : NUMBER OF EMPLOYEES AND SALARY & WAGES IN THE MANUFACTURING SECTOR

BILANGAN UNTUK BILANGAN PEKERJA BERGAJI DAN RM
 '000 UNTUK GAJI & UPAH
 NUMBER FOR NUMBER OF EMPLOYEES AND
 RM '000 FOR SALARY & WAGES



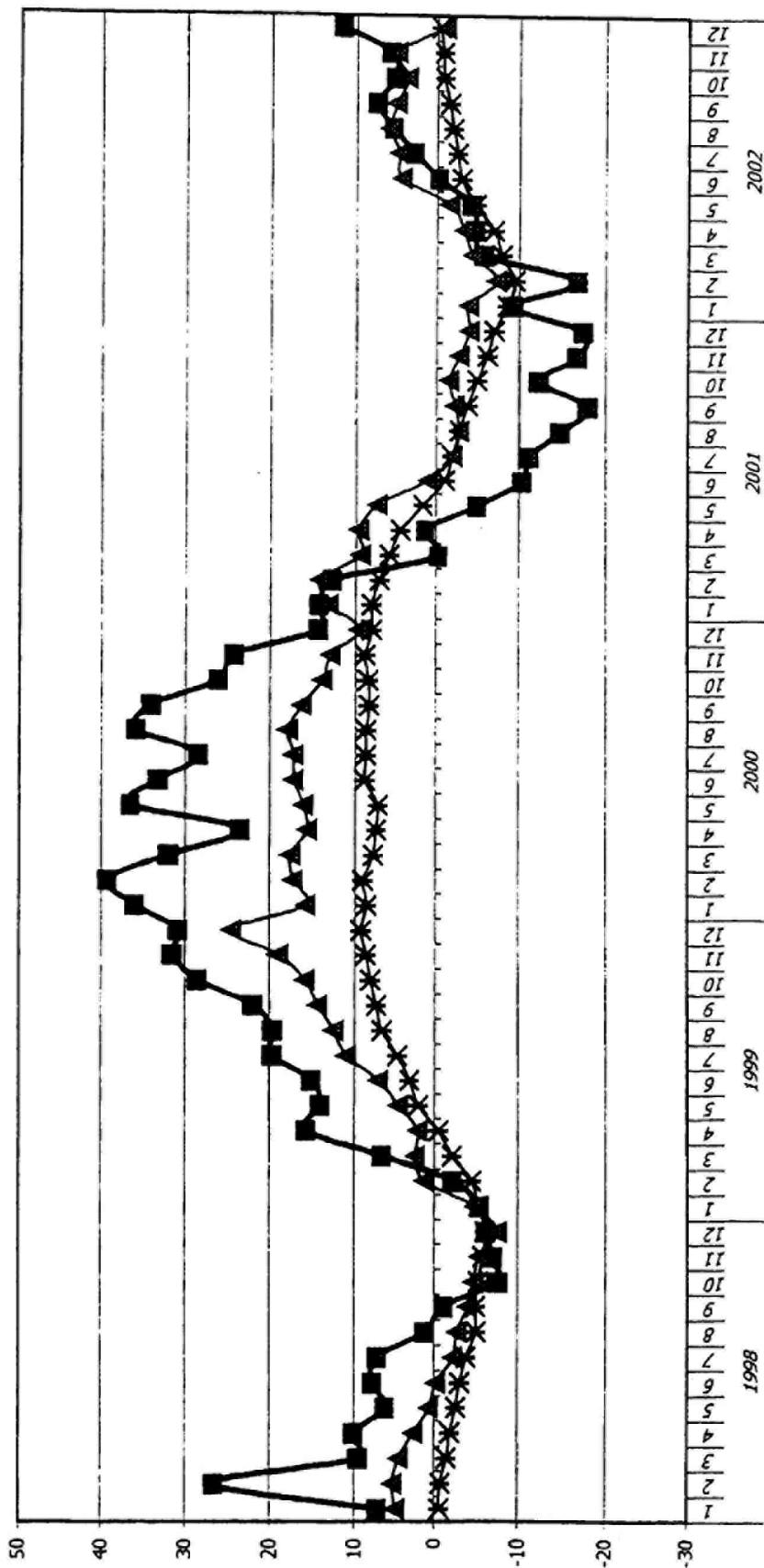
GAJI & UPAH/ SALARY & WAGES

BIL. PEKERJA BERGAJI/NUMBER OF EMPLOYEES

GRAF 6 : SEKTOR PEMBUATAN - PERATUS PERUBAHAN NILAI JUALAN, BIL. PEKERJA BERGAJI DAN GAJI & UPAH (TAHUN ATAS TAHUN)

GRAPH 6 : MANUFACTURING SECTOR - PERCENTAGE CHANGE OF SALES VALUE, NUMBER OF EMPLOYEES AND SALARIES & WAGES (YEAR-ON-YEAR)

PERATUS/PERCENT



NILAI JUALAN / SALES VALUE

 BIL. PEKERJA BERGAJI / NUMBER OF EMPLOYEES

 GAJI & UPAH / SALARY & WAGES

LIPUTAN BAGI PENYIASATAN PEMBUATAN BULANAN
COVERAGE OF MONTHLY MANUFACTURING SURVEY

BIL. NO.	KOD INDUSTRI CODE	KETERANGAN INDUSTRI INDUSTRY DESCRIPTION	UKURAN GUNA TENAGA EMPLOYMENT CUT-OFF
1	31129	Membuat produk tenusu lain <i>Manufacture of other dairy products</i>	Lengkap <i>Complete</i>
2	31131	Mengetin nanas <i>Pineapple canning</i>	Lengkap <i>Complete</i>
3	31140	Mengetin, mengawet & memproses ikan, krustasia & makanan seumpamanya <i>Canning, preserving & processing of fish, crustacea & similar foods</i>	50 dan lebih <i>50 and more</i>
4	31151	Membuat minyak kelapa <i>Manufacture of coconut oil</i>	10 dan lebih <i>10 and more</i>
5	31159	Membuat minyak dan lemak sayur dan binatang lain <i>Manufacture of other vegetable and animal oils and fats</i>	20 dan lebih <i>20 and more</i>
6	31162	Kilang beras besar <i>Large rice mills</i>	30 dan lebih <i>30 and more</i>
7	31163	Kilang tepung <i>Flour mills</i>	50 dan lebih <i>50 and more</i>
8	31171	Kilang biskut <i>Biscuit factories</i>	30 dan lebih <i>30 and more</i>
9	31180	Kilang gula dan penapis gula <i>Sugar factories and refineries</i>	Lengkap <i>Complete</i>
10	31190	Membuat koko, coklat dan manis-manisan <i>Manufacture of cocoa, chocolate and sugar confectionery</i>	30 dan lebih <i>30 and more</i>
11	31219	Membuat produk makanan lain, tidak terkelas di tempat lain <i>Manufacture of other food products, not elsewhere classified</i>	30 dan lebih <i>30 and more</i>
12	31220	Membuat makanan binatang tersedia <i>Manufacture of prepared animal feeds</i>	30 dan lebih <i>30 and more</i>
13	31340	Industri minuman ringan dan air berkarbonat <i>Soft drinks and carbonated water industries</i>	100 dan lebih <i>100 and more</i>
14	31400	Keluaran tembakau <i>Tobacco manufactures</i>	100 dan lebih <i>100 and more</i>
15	32111	Kilang memintal dan menenun serabut asli <i>Natural fibre spinning and weaving mills</i>	100 dan lebih <i>100 and more</i>
16	32112	Mencelup, memutih, mengecap & menyiapkan benang & kain kecuali batik <i>Dyeing, bleaching, printing and finishing of yarns and fabric except batik</i>	100 dan lebih <i>100 and more</i>
17	32115	Kilang tekstil tiruan <i>Synthetic textile mills</i>	100 dan lebih <i>100 and more</i>
18	32130	Kilang mengait <i>Knitting mills</i>	20 dan lebih <i>20 and more</i>

LIPUTAN BAGI PENYIASATAN PEMBUATAN BULANAN
COVERAGE OF MONTHLY MANUFACTURING SURVEY

BIL. NO.	KOD INDUSTRI INDUSTRY CODE	KETERANGAN INDUSTRI INDUSTRY DESCRIPTION	UKURAN GUNA TENAGA EMPLOYMENT ULT-OFF
19	32201	Kilang pakaian <i>Clothing factories</i>	50 dan lebih <i>50 and more</i>
20	32310	Kilang menyamak dan menyiapkan kulit <i>Tanneries and leather finishing</i>	Lengkap <i>Complete</i>
21	32330	Membuat produk kulit dan pengganti kulit kecuali kasut dan pakaian <i>Manufacture of products of leather and leather substitutes, except footwear and apparel</i>	30 dan lebih <i>30 and more</i>
22	32400	Membuat kasut kecuali kasut vulkan atau beracuan getah atau kasut plastik <i>Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear</i>	20 dan lebih <i>20 and more</i>
23	33112	Kilang papan lapis, papan gentian keras dan papan serbuk <i>Plywood, hardboard and particle board mills</i>	100 dan lebih <i>100 and more</i>
24	33113	Kilang mengeram papan, membuat tingkap & pintu dan kerja kayu <i>Planing mills, window and door mills and joinery works</i>	30 dan lebih <i>30 and more</i>
25	33200	Membuat perabot dan kelengkapan kecuali yang berasaskan besi <i>Manufacture of furniture and fixtures except primarily of metal</i>	30 dan lebih <i>30 and more</i>
26	34110	Membuat pulpa, kertas dan kertas tebal <i>Manufacture of pulp, paper and paperboard</i>	30 dan lebih <i>30 and more</i>
27	34120	Membuat bekas penyimpanan dan kotak daripada kertas dan kertas tebal <i>Manufacture of containers and boxes of paper and paperboard</i>	50 dan lebih <i>50 and more</i>
28	34190	Membuat keluaran pulpa, kertas & kertas tebal, tidak terkelas di tempat lain <i>Manufacture of pulp, paper & paperboard articles, not elsewhere classified</i>	50 dan lebih <i>50 and more</i>
29	34200	Percetakan, penerbitan dan industri berkaitan <i>Printing, publishing and allied industries</i>	50 dan lebih <i>50 and more</i>
30	35111	Membuat gas perindustrian <i>Manufacture of industrial gases</i>	Lengkap <i>Complete</i>
31	35119	Membuat bahan kimia industri asas lain, kecuali baja <i>Manufacture of other basic industrial chemicals except fertilizers</i>	20 dan lebih <i>20 and more</i>
32	35120	Membuat baja dan racun serangga perosak tanaman <i>Manufacture of fertilizers and pesticides</i>	30 dan lebih <i>30 and more</i>
33	35130	Membuat resin tiruan, bahan plastik & serabut buatan manusia kecuali kaca <i>Manufacture of synthetic resins, plastic materials & man-made fibres except glass</i>	50 dan lebih <i>50 and more</i>
34	35210	Membuat cat, varnis dan lakuer <i>Manufacture of paints, varnishes and lacquers</i>	30 dan lebih <i>30 and more</i>
35	35220	Membuat ubat-ubatan <i>Manufacture of drugs and medicines</i>	20 dan lebih <i>20 and more</i>
36	35231	Membuat sabun dan sediaan mencuci <i>Manufacture of soap and cleaning preparations</i>	20 dan lebih <i>20 and more</i>

LIPUTAN BAGI PENYIASATAN PEMBUATAN BULANAN
COVERAGE OF MONTHLY MANUFACTURING SURVEY

BIL. NO.	KOD INDUSTRI INDUSTRY CODE	KETERANGAN INDUSTRI INDUSTRY DESCRIPTION	UKURAN GUNA TENAGA EMPLOYMENT CLT - OFF
37	35290	Membuat produk kimia, tidak terkelas di tempat lain <i>Manufacture of chemical products, not elsewhere classified</i>	30 dan lebih <i>30 and more</i>
38	35300	Kilang penapis minyak mentah <i>Crude oil refineries</i>	Lengkap <i>Complete</i>
39	35400	Membuat pelbagai produk petroleum dan arang batu <i>Manufacture of miscellaneous products of petroleum and coal</i>	10 dan lebih <i>10 and more</i>
40	35510	Industri tayar dan tiub <i>Tyre and tube industries</i>	50 dan lebih <i>50 and more</i>
41	35591	Menggilang semula getah dan memproses susu getah <i>Rubber remilling and rubber latex processing</i>	50 dan lebih <i>50 and more</i>
42	35593	Membuat kasut getah <i>Manufacture of rubber footwear</i>	30 dan lebih <i>30 and more</i>
43	35599	Membuat produk getah lain, tidak terkelas di tempat lain <i>Manufacture of other rubber products, not elsewhere classified</i>	30 dan lebih <i>30 and more</i>
44	35600	Membuat produk plastik, tidak terkelas di tempat lain <i>Manufacture of plastic products, not elsewhere classified</i>	50 dan lebih <i>50 and more</i>
45	36100	Membuat tembikar dan barang daripada tanah liat <i>Manufacture of pottery, china and earthenware</i>	50 dan lebih <i>50 and more</i>
46	36200	Membuat kaca dan produk kaca <i>Manufacture of glass and glass products</i>	30 dan lebih <i>30 and more</i>
47	36910	Membuat produk tanah liat struktur <i>Manufacture of structural clay products</i>	30 dan lebih <i>30 and more</i>
48	36921	Membuat simen hidrolik <i>Manufacture of hydraulic cement</i>	Lengkap <i>Complete</i>
49	36991	Membuat produk simen dan konkrit <i>Manufacture of cement and concrete products</i>	30 dan lebih <i>30 and more</i>
50	37101	Industri besi dan keluli utama <i>Primary iron and steel industries</i>	20 dan lebih <i>20 and more</i>
51	37109	Industri asas besi dan keluli lain <i>Other iron and steel basic industries</i>	50 dan lebih <i>50 and more</i>
52	37201	Melebur timah <i>Tin smelting</i>	Lengkap <i>Complete</i>
53	37209	Industri asas logam bukan ferum lain <i>Other non-ferrous metal basic industries</i>	30 dan lebih <i>30 and more</i>
54	38130	Membuat produk logam struktur <i>Manufacture of structural metal products</i>	20 dan lebih <i>20 and more</i>

LIPUTAN BAGI PENYIASATAN PEMBUATAN BULANAN
COVERAGE OF MONTHLY MANUFACTURING SURVEY

BIL. NO.	KOD INDUSTRI CODE	KETERANGAN INDUSTRI INDUSTRY DESCRIPTION	UKURAN GUNA TENAGA EMPLOYMENT CUT-OFF
55	38191	Membuat tin timah dan kotak logam <i>Manufacture of tin cans and metal boxes</i>	50 dan lebih <i>50 and more</i>
56	38192	Membuat dawai dan produk dawai <i>Manufacture of wire and wire products</i>	30 dan lebih <i>30 and more</i>
57	38193	Membuat produk tembaga kuning, tembaga merah, pinter dan aluminium <i>Manufacture of brass, copper, pewter and aluminium products</i>	30 dan lebih <i>30 and more</i>
58	38199	Membuat produk logam lain yang direka, tidak terkelas di tempat lain <i>Manufacture of other fabricated metal products, not elsewhere classified</i>	20 dan lebih <i>20 and more</i>
59	38250	Membuat mesin pejabat, pengiraan dan perakaunan <i>Manufacture of office, computing and accounting machinery</i>	Lengkap <i>Complete</i>
60	38291	Membuat jentera penyejuk, penyerap kotoran, pembersih & penyaman udara <i>Manufacture of refrigerating, exhaust, ventilating & air-conditioning machinery</i>	50 dan lebih <i>50 and more</i>
61	38321	Ser radio dan televisyen, perkakas pengeluar dan perakam bunyi <i>Radio and television sets, sound reproducing and recording equipment</i>	100 dan lebih <i>100 and more</i>
62	38329	Separa konduktor & komponen elektronik dan alat & radas perhubungan lain <i>Semi-conductors & other electronic components and communication equipment & apparatus</i>	100 dan lebih <i>100 and more</i>
63	38391	Membuat kabel dan dawai <i>Manufacture of cables and wires</i>	100 dan lebih <i>100 and more</i>
64	38432	Membuat dan memasang kenderaan bermotor <i>Manufacture and assembly of motor vehicles</i>	Lengkap <i>Complete</i>
65	38439	Membuat alat ganti dan aksesori kenderaan bermotor <i>Manufacture of motor vehicle parts and accessories</i>	30 dan lebih <i>30 and more</i>
66	38441	Membuat dan memasang motosikal dan skuter <i>Manufacture and assembly of motorcycles and scooters</i>	30 dan lebih <i>30 and more</i>
67	38510	Membuat alat profesional & saintifik & ukuran & kawalan, t.t.t.l. <i>Manufacture of professional & scientific & measuring & controlling equipment, n.e.c.</i>	30 dan lebih <i>30 and more</i>
68	38520	Membuat alat fotografi dan optik <i>Manufacture of photographic and optical goods</i>	30 dan lebih <i>30 and more</i>
69	38530	Membuat jam dan jam tangan <i>Manufacture of watches and clocks</i>	Lengkap <i>Complete</i>
70	39010	Membuat barang kemas dan barang berkaitan <i>Manufacture of jewellery and related articles</i>	20 dan lebih <i>20 and more</i>
71	39030	Membuat alat sukan dan olahraga <i>Manufacture of sporting and athletic goods</i>	100 dan lebih <i>100 and more</i>
72	39092	Membuat pen, pensil, keperluan pejabat dan pelukis <i>Manufacture of pens, pencil, office and artists' supplies</i>	50 dan lebih <i>50 and more</i>
73	39093	Membuat barang mainan <i>Manufacture of toys</i>	100 dan lebih <i>100 and more</i>