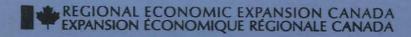
WORKING PAPER

A PRELIMINARY RANKING OF INDUSTRY
PERFORMANCE IN THE MANUFACTURING
SECTOR IN CANADA

OET OF REGION

ECONOMIC ANALYSIS BRANCH
PLANNING DIVISION





A PRELIMINARY RANKING OF INDUSTRY PERFORMANCE IN THE MANUFACTURING SECTOR IN CANADA

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Planning Division Economic Analysis Branch

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OPENING SUMMARY

This study selects those industries in Canada that have exhibited relatively high growth in employment subject to a condition of economic viability. To meet the objectives of the study, a decision rule for industry selection is developed. Of the 139 industries at the 3-digit level in the manufacturing sector, 27 are able to satisfy the requirements of the decision rule and are as follows:

Overall Rank	Industry	SIC
1 2	Plastic fabricators, n.e.s. Office and store machinery mfrs.	385 318
3 4	Misc. vehicle mfrs. Distilleries	329 143
5 6	Misc. textile industries Aluminum rolling, casting &	229
_	extruding, n.e.s.	296
7	Metal stamping, pressing & coating	304
8	Motor vehicle parts & accessories mfrs.	
9	Carpet, mat and rug industry	216
10	Feed manufacturers	123
11	Metal rolling, casting & extruding, n.e.s.	298
12	Commercial refrigeration & air	
• -	conditioning equipment	316
13	Boiler and plate works	301
14	Scientific & professional equipment mfrs.	381
15	Boatbuilding and repair	328
16	Mfrs. of household radio and television receivers	334
17	Explosives and ammunition mfrs.	371
18	Mfrs. of industrial chemicals	378
19	Misc. machinery and equipment mfrs.	315
20	Mfrs. of pharamaceuticals & medicines	374
21		274
22	Truck body and trailer mfrs.	324
23	Communications equipment mfrs.	335
24	Machine shops	308
25	Mfrs. of electrical industrial	500
		336
26	Mfrs. of misc. electrical products	339
27	Signs and displays industry	397
	-	

INTRODUCTION

The purpose of this study is to identify those industries in the manufacturing sector in Canada that have exhibited relatively high growth in employment and output in the last decade and to develop an objective basis for evaluating industry performance, with a major concern for economic viability.

The identification of these industries will afford the Department the opportunity to examine the potential these industries have in contributing to the expansion of less developed regional economies. However, the industries selected at the national level are not necessarily deemed desirable or applicable to the regional level. Further examination of such criteria as location quotients, regional shares, regional trade, firm and plant concentration ratios and commodity performance may result in a number of these industries being rejected. Further studies are planned to examine the above factors in order to select those industries that are the most desirable to promote regional development. Industries whose national performance appears to be relatively low could, through expanded criteria for selection, be deemed appropriate for the development of regional economies.

The results of this report represent the study objectives of the Planning Division, Economic Analysis Branch of DREE. However, the data acquisition, development and analysis and problem analysis discussions were done on a co-operative basis with the Industry Development Branch of DREE and the Economic Development Division, Department of Finance.

Methodology

The procedure of industry selection is very much determined by both the objectives of the study and the choice of criteria designed to test the performance of different variables. In this study the choice of criteria was largely determined by an important Departmental objective of maximizing employment opportunities in the manufacturing industries for the less developed regional economies of Canada conditional to long term viability. The objectives suggest that the developed framework of analysis could be simply stated, and presumably solved, as a conventional mathematical optimization problem. There are a number of factors which mitigate against such an ideal as will become apparent later in the report.

There are 139 industries at the 3-digit level under the Standard Industrial Classification of Statistics Canada. The time period chosen was 1961-1969 which reflects both availability and consistency of data on the selected variables reported in various publications of Statistics Canada. For each variable over the time series, the best fitted curve was selected from seven available curve forms (these are described in Appendix C). In most instances, a second degree polynomial was selected to exhibit the trend of the values of each variable under study. Therefore, the interpretation of the performance of the manufacturing industries, and the national economy in general, is largely dependent on the activity of the time period 1961-69. Consequently there is the implicit assumption that those manufacturing industries which exhibited strong performance over the time period will continue to do so in the future.

In addition, the first and second derivatives of the best fitted curve for 1969 were determined. These give the rate of change and direction (increasing or decreasing) respectively of the value of each variable's best fitted curve. Further, the signs (+ or -) of the first and second derivative were noted and may be viewed as non-quantitative expressions to be utilized in the selection process.

There remained a problem with regard to expressing the value changes of the variables as absolute or relative, i.e., in terms of actual magnitude or in percentage change. The choice was entirely judgemental.

All variables were subsequently ranked in descending order by the magnitude of their 1969 values and are found in Appendix B.

Choice of Variables

The choice of variables was determined by the objectives, availability and reliability of data.

The utilization of the variables in the selection procedure was a reflection of their contribution to explaining industry performance and their data reliability.

Given the objective of maximizing employment opportunities, the problem was one of defining and evaluating viability. Viability implies some notion of profitability which is a

function of productivity and demand. The variables chosen may be viewed as proxies for these and are as follows:

Variable Expressed as Time Period 1. Real Domestic Product Relative 1961-1969 (Index)

This is a measure of real output valued in 1961 dollars. It is expressed as an index with 1961 equal to 100.0.

- 2. Real Domestic Product Absolute 1961-1969

 per Worker (1961 dollars)

 This is a measure of real output per worker and is expressed in 1961 dollars per employee. Employees include both production and all other workers.
- 3. Surplus/Output Relative 1961-1969 (ratio)
 Surplus is census value added minus wages and salaries

on a total activity basis. Output refers to the value of production on the same basis. This variable is used as a proxy for profit which is only available on a corporate basis. Surplus is roughly equivalent to gross operating profit.

4. Total Value Added per Absolute 1961-1968
Worker, Canada/United (ratio)
States

This variable is total value added per production worker by industry and is expressed as a ratio of Canada to the United States. It is a relative measure of competitive advantage. 5. <u>Domestic Disappearance</u> Absolute (current dollars)

1964-1969

This is simply shipments plus imports minus exports and may be viewed as a measure of domestic demand.

6. Exports

Absolute (current

dollars)

1964-1969

Self-explanatory.

7. Domestic Share of

Absolute (ratio)

1964-1969

Domestic Disappearnace (ratio)

This is a measure of that portion of domestic demand that is met by domestic supply. It is calculated by dividing shipments minus exports (domestic supply) by domestic disappearance.

Variables 1-4 may be viewed as proxies for productivity while variables 5-7 are proxies for demand. Detail on these variables, as well as the policy variable of employment, is found in Appendix B.

In addition to the quantitative expressions for these variables, a qualitative expression utilizing the first and second derivatives of the fitted time series curve was developed to indicate the rate of change and direction of each variable at 1969. The signs of the derivatives were combined to yield the following performance classes for each variable.

	Performance Class	First <u>Derivative</u>	Second <u>Derivative</u>
1.	Increasing at an increasing rate.	+	+
2.	Increasing at a decreasing rate.	+	-
3.	Decreasing at a decreasing rate.	· -	+
4.	Decreasing at an increasing rate.	_	-

For real domestic product per worker, domestic disappearance, and exports, this qualitative measure was the sole expression for these variables that was utilized in the selection procedure. Given the objectives of the study, there is little need to quantify these variables. Also, this qualitative measure supplemented the quantitative measure(s) on employment, surplus/output and domestic share of domestic disappearance. The rationale for choosing this measure is that the performance classes of rate of change and direction are sufficient for those variables that are proxies for demand. The magnitude of these variables in quantity terms was felt to be relatively unimportant. Further, exports and domestic share of domestic disappearance are, in effect, components of real domestic product.

Therefore, it only remained to arrange the chosen variables in such a manner to establish the criteria of industry selection.

The Decision Rule for Industry Selection

The essential feature of the decision rule is that only "Yes" or "No" alternatives are involved. All variables are ranked in numeric order and/or assigned to performance classes. This combination of ranking and sign tests to select industries is a non-parametric technique. A non-parametric is a parameter that is incapable of being quantified. While the variables used in the selection were quantified, the expression of these can be done by ranking and sign testing. These qualitative expressions were selected in lieu of a mathematical model as this was considered to be impracticable at this time. Further, no explicit weights were assigned to each variable.

The general rule of selection was "pass" all industries through a "barrier" which consisted of a number of variables which are found below. The first pass was through a barrier which consisted of all six variables and was the most difficult for an industry to clear. With each subsequent pass, the last variable was dropped, i.e., variables 6, 5, 4 and 3. Therefore, it became easier for those industries that were rejected by the previous barrier to be selected. Consequently, a ranking of the selected industries was achieved by the number of passes it took to be selected, i.e., the more passes the lower the ranking. In this manner, it was felt a systematic and consistent decision rule of industry selection might be established.

The complex of variables that make up the decision rule is as follows:

Policy Variable

Employment > mean first derivative, i.e., equal or greater than the avarage first derivative or "annual increment" in employment in 1969.

Viability Variables

- 2. Index of Real Domestic Product mean value of the index - 1969, i.e., equal or greater than the average index value.
- 3. Real Domestic Product/Employee Performance Classes 1 and 2 1969.
- 4. Surplus/Output Performance Classes 1 and 2 1969.
- 5. Surplus/Output Rank 1 50. 1969.
- 6. Domestic Disappearance, Exports, Domestic Share Performance Classes 1 and 2 1969.

It should be noted that the policy or objective variable of employment rejected 89 industries alone. The remaining 50 industries were, therefore, tested by those variables in the decision rule which have been described as proxies for viability. It took five passes through these variables to yield the final selection and ranking of 27 industries. It should also be noted that the ratio of total value added per employee in Canada and the United States was not used in the decision rule as that measure was somewhat inconsistent with the performance indicators on trade.

The Results

The 27 industries that were selected are shown below in five groups and represent the effect of dropping one variable after each pass.

Overall Rank	Industry	SIC
1.	Plastic fabricators, n.e.s.	385
2	Office and store machinery mfrs.	318
3	Misc. vehicle mfrs.	329
4	Distilleries	143
5	Misc. textile industries	229
· 6	Aluminum rolling, casting & extruding, n.e.s.	296
7	Metal stamping, pressing & coat- ing	304
8	Motor vehicle parts & accessories mfrs.	325
9	Carpet, mat and rug industry	216
10	Feed manufacturers	123
11	Metal rolling, casting & extruding n.e.s.	
1.2	Commercial refrigeration & air	316
1.3	conditioning equipment Boiler and plate works	301
14	Scientific & professional equip-	201
	ment mfrs.	381
15	Boatbuilding and repair	328
16	Mfrs. of household radio and	224
1.7	television receivers	334
18	Explosives and ammunition mfrs.	371 378
19	Mfrs. of industrial chemicals Misc. machinery and equipment mfrs.	
20	Mfrs. of pharamaceuticals & medi-	. J.J
20	cines	374
21	Other paper converters	274

22	Truck body and trailer mfrs.	324
23	Communications equipment mfrs.	335
24	Machine shops	30,8
25	Mfrs. of electrical industrial equipment	336
26	Mfrs. of miscellaneous electrical products	339
27	Signs and displays industry	397

Note: For a summary of detail on all 139 industries, see Appendix A.

Conclusions

This study has attempted to select those industries in Canada that have exhibited relatively high growth in employment subject to a condition of economic viability. To meet the objectives of the study a decision rule of industry selection was developed. Of the 139 industries at the 3-digit level in the manufacturing sector, 27 were able to satisfy the requirements of the decision rule.

The selection of these 27 industries will afford the Department the opportunity to examine the potential these industries have in contributing to the expansion. Further studies are planned with a view to selecting those industries that appear desirable in promoting regional development.

APPENDIX A

See Table in Envelope - Inside Rear Cover

SUMMARY OF DETAIL ON ALL INDUSTRIES

EXPLANATION OF THE PERFORMANCE INDICATORS FOR THE MANUFACTURING INDUSTRIES

The display of information on the performance of the manufacturing industries found on the following table has been arranged in the following manner:

- 1. The 139 industries at the 3-digit level in the manufacturing sector have been stratified into three major groups on the basis of the value of the annual increment of employment in 1969 being:
 - (a) equal or greater than the mean value of the manufacturing sector;
 - (b) less than the mean value but greater than zero;
 - (c) less than zero.
- 2. Within each of the three groups, the industries have been ordered in sequence of their S.I.C. numbers. This is done primarily to facilitate location of industries in the table.

It now remains only to identify the column headings under the three broad divisions of employment, productivity and trade.

Employment 1961-1969

i) Annual increment - 1969 - This is the rate of change in total employment as measured by the first derivative

- of the best fitted employment curve for each industry in 1969.
- (ii) Ranks This is the ordering (by decreasing value) of the magnitude of the annual increment in employment in 1969.
- (iii) Class This refers to the rate of change and direction of employment in 1969. For an explanation of the classes, see page 6.
- (iv) Size Rank This is the ordering of the magnitude of employment by industry in 1969.
- (v) Growth Rank This is the ordering of the index value of 1969 employment, with 1961 as the base year, as estimated by the fitted curve.

Productivity

- (i) Order of R.D.P. Rank 1969 This is the ordering of the index value of real domestic product in 1969.
- (ii) RDP/N Class 1969 The performance of real domestic product per employee (production and non-production workers) in 1969.
- (iii) Surplus/Output Ratio Rank and Class 1969 This is both an ordering of the ratio and its performance in 1969. For a complete definition, see page 5.
- (iv) TVA/N, Canada/U.S. Rank 1968 Total value added per production employee as a ratio of Canada to the United States. This ratio is ordered in descending values for 1968.

Trade

- (i) Domestic Disappearance Class 1969 The performance of shipments minus exports plus imports in 1969.
- (ii) Exports Class 1969 The performance of exports in 1969.
- (iii) Domestic Share of Domestic Disappearance Rank and Class 1969 The domestic share (shipments minus exports) of domestic disappearance is expressed as a ratio and is ordered in descending values for 1969.

APPENDIX B

DETAILS ON THE VARIABLES

- 1. Employment
- 2. Real Domestic Product 1969
- 3. Surplus/Output 1969
- 4. Total Value Added/Production Worker - 1968 Canada/United States
- 5. Domestic Share of Domestic Disappearance.

There are a number of measures available on the time series (1961-69) data for each variable. They are found on a separate computer print-out and are as follows:

- (i) Absolute increase at last fitted point.
- (ii) Absolute increase at first projected
 value (1975)
- (iii) Absolute increase at second projected value (1980)
- (iv) Index value at last fitted point
- (v) Index value at first projected value (1975)
- (vi) Index value at second projected value (1980)
- (vii) Index value over last fitted interval
- (viii) First derivative at last fitted point
- (ix) Second derivative at last fitted point
- (x) Value of last fitted and projections to 1975 and 1980
- (xi) Curve form, a,b,c coefficients, and coefficient of determination.

EMPLOYMENT - 1969
First Derivative At Last Fitted Point

S.I.C. INDUSTRY	RANK	FIRST DERIVATIVE
385 Plastics fabricators, n.e	.s. 1	4696.3
335 Communications equipment		4165.0
325 Motor vehicle parts & acc		2296.3
321 Aircraft and parts manufa		1818.6
324 Truck body and trailer ma		1572.0
329 Miscellaneous vehicle man		1567.1
315 Miscellaneous machinery &	·	
manufacturers	7	1502.3
318 Office and store machiner		1315.5
Pulp and paper mills	9	1214.1
286 Commercial printing	10	1078.3
244 Women's clothing factorie		1015.1
274 Other paper converters	12	996.9
Ill Fish products industry	13	846.8
301 Boiler and plate works	14	765.2
295 Smelting and refining	15	759 . 6
381 Scientific & professional	equipment manu-	•
facturers	16	705.8
254 Sash, door & other millwo	rk plants 17	685.1
229 Miscellaneous textiles in		674.7
273 Paper and plastic bag man		665.0
371 Explosives & ammunition m		656.0
139 Miscellaneous food manufa	cturers 21	626.1
231 Hosiery mills	22	617.3
308 Machine shops	23	595.3
216 Carpet, mat and rug indus	try 24	537.9
339 Manufacturers of miscella		
products	25	534.8
336 Manufacturers of electric	al industry equipment 26	522.1
374 Manufacturers of pharmace		510.2
378 Manufacturers of industri		476.1
288 Publishing only	29	453.6

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S.I.C.	INDUSTRY	R AN K	FIRST
			DERIVATIVE
296	Aluminum rolling, casting & extruding	30	450.9
103	Poultry processors	31	401.2
356	Glass and glass products manufacturers	32	368.2
143	Distilleries	33	359.1
261	Household furniture industry	34	345.4
399	Miscellaneous manufacturing industries, n.e.s.	35	327.2
123	Feed manufacturers	36	321.2
141	Soft drink manufacturers	37	318.3
393	Sporting goods industry	38	316.2
298	Metal rolling, casting & extruding, n.e.s.	39	315.1
334	Manufacturers of household radio and tele-	3 ,	313.1
	vision receivers	40	304.7
304	Metal stamping, pressing & coating industry	41	293.7
287	Plate making, typesetting & trade bindery		
	plants	42	266.6
289	Publishing and printing	43	266.2
397	Signs and displays industry	44	253.4
379	Other chemical industries	45	250.2
328	Boatbuilding and repair	46 .	215.5
382	Jewellery and silverware manufacturers	47	194.9
316	Commercial refrigeration & air conditioning		_, _,
	equipment manufacturers	48	178.7
377	Manufacturers of toilet preparations	49	177.0
128	Biscuit manufacturers	50 .	171.7
107	Process cheese manufacturers	51	152.9
256	Wooden box factories	52	145.9
239	Other knitting mills	53	144.6
264	Office furniture industry	54	134.7
246	Fur goods industry	55	128.0
331	Manufacturers of small electrical appliances	56	122.5
218	Textile dyeing and finishing plants	57	122.4
3 7 5	Paint and varnish manufacturers	58	114.2

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S.I.C.	INDUSTRY	RANK	FIRST DERIVATIVE
			DERIVATIVE
337	Battery manufacturers	59	103.4
352	Refractories manufacturers	60	81.4
365	Petroleum refineries	61	79.4
292	Steel pipe and tube mills	62	72.2
345	Gypsum products manufacturers	63	69.9
266	Other furniture industries	64	69.7
125	Breakfast cereal manufacturers	65	49.6
163	Rubber tire and tube manufacturers	66	46.8
338	Manufacturers of electric wire & cable	67	46.5
147	Wineries	68	45.1
251	Sawmills and planing mills	69	43.0
326	Railroad rolling stock industry	70	23.1
348	Ready-mix concrete manufacturers	71	21.8
211	Fibre preparing mills	72	19.3
268	Electric lamp and shadeindustry	73	18.0
212	Thread mills	74	17.1
354	Mineral wool manufacturers	75	12.3
135	Vegetable oil mills	76	6.4
359	Other non-metallic mineral products industries	77	4.7
373	Manufacturers of plastics and synthetic resins	78	1.9
215	Pressed and punched felt mills	79	0.5
145	Breweries	80	-1.3
384	Venetian blind manufacturers	81	-5.2
376	Manufacturers of soap & cleaning compounds	82	-5.2
221	Canvas products industry	83	-10.7
131	Confectionery manufacturers	84	-12.3
305	Wire & wire products manufacturers	85	-22.3
343	Lime manufacturers	86	-22.3
214	Narrow fabric mills	87	-23.1
297	Copper and alloy rolling, casting and extruding		-26.9
355	Asbestos products manufacturers	89	-28.5
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	S.I.C.	INDUSTRY	RANK	FIRST DERIVATIVE
				DERIVATIVE
	175	Leather glove factories	90	-34.2
	341	Cement manufacturers	91	-38.3
	369	Other petroleum & coal products industries	92	-41.7
	223	Cotton and jute bag industry	93	-42.1
	174	Shoe factories	94	-47.6
	258	Coffin and casket industry	95	-53.9
,	395	Fur dressing and dyeing industry	96	-55.0
	133	Sugar refineries	97	- 56 . 1
	201	Synthetic textile mills	98	-60.9
	309	Miscellaneous metal fabricating industries	99	-69.2
	357	Abrasives manufacturers	100	-73.0
	272	Asphalt roofing manufacturers	101	-84.5
	172	Leather tanneries	102	-86.3
	151	Leaf tobacco processing	103	-93.9
	248	Foundation garment industry	104	-98.0
	219	Linoleum and coated fabrics industry	105	-98.2
	153	Tobacco products manufacturers	106	-122.8
	353	Stone products manufacturers	107	-133.1
	213	Cordage and twine industry	108	-143.4
	351	Clay products manufacturers	109	-147.4
	101	Slaughtering and meat processors	110	-159.9
	259	Miscellaneous wood industries	111	-161.7
	179	Miscellaneous leather products manufacturers	112	-165.4
	383	Broom, brush and mop industry	113	-188.9
	249	Miscellaneous clothing industry, n.e.s.	114	-207.1
	302	Fabricated structural metal industry	115	-210.8
	372	Manufacturers of mixed fertilizers	116	-222.2
	193	Wool yarn mills	117	-266.9
	247	Hat and cap industry	118	-279.7
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S.I.C.	INDUSTRY	RANK	FIRST DERIVATIV
			DERIVATIVI
306	Hardware, tool and cutlery manufacturers	119	-280.7
245	Children's clothing factories	120	-301.8
243	Men's clothing factories	121	-318.1
307	Heating equipment manufacturers	122	-332.3
294	Iron foundries	123	-341.5
197	Wool cloth mills	124	-351.5
112	Fruit and vegetable canners & preservers	125	-356.8
124	Flour mills	126	-375.1
169	Other rubber industries	127	-480.0
347	Concrete products manufacturers	128	-541.4
129	Bakeries	129	-582.0
303	Ornamental and architectural metal industry	130	- 616.5
252	Veneer and plywood mills	131	- 657 . 0
332	Manufacturers of major appliances (electric and non-electric)	132	-740.6
161	Rubber footwear manufacturers	133	- 751 . 5
105	Dairy factories	134	-828.5
311	Agricultural implement industry	135	-1039.0
291	Iron and steel mills	136	-1269.0
183	Cotton yarn and cloth mills	137	-1469.8
323	Motor vehicle manufacturers	138	-1527.2
327	Shipbuilding and repair	139	-1843.2

EMPLOYMENT SIZE - 1969

S.I.C.	INDUSTRY	RANK	EMPLOYMENT
271	Pulp and paper mills	1	75427
315	Miscellaneous machinery and equipment manu-		
	facturers	2	52585
251	Sawmills and planing mills	3	51526
335	Communications equipment manufacturers	4	48935
291	Iron and steel mills	5	42954
323	Motor vehicle manufacturers	6	41916
325	Motor vehicle parts and accessories manu-		
	facturers	7	41541
243	Men's clothing factories	8	40875
244	Women's clothing factories	9	38881
286	Commercial printing	10	38723
321	Aircraft and parts manufacturers	11	34174
289	Publishing and printing	12	33651
295	Smelting and refining	13	33376
129	Bakeries	14	31534
105	Dairy factories	15	31230
304	Metal stamping, pressing and coating industry	16	30463
101	Slaughtering and meat processors	17	29231
336	Manufacturers of electrical industrial		•
	equipment	18	25425
261	Household furniture industry	19	24711
273	Paper and plastic bag manufacturers	20	23452
201	Synthetic textile mills	21	21749
309	Miscellaneous metal fabricating industries	22	20895
3 7 8	Manufacturers of industrial chemicals	23	20744
381	Scientific and professional equipment		
	manufacturers	24	20310
385	Plastics fabricators, n.e.s.	25	20089
174	Shoe factories	26	19825
112	Fruit and vegetable canners and preservers	27	19348
111	Fish products industry	. 28	1 9 159
302	Fabricated structural metal industry	29	18203

Note: Employment is on a total activity basis.

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S.I.C.	INDUSTRY	RANK	EMPLOYMENT
305	Wire and wire products manufacturers	30	17014
239	Other knitting mills	31	16518
254	Sash, door and other millwork plants	32	16371
139	Miscellaneous food manufacturers	33	16243
274	Other paper converters	34	15560
327	Shipbuilding and repair	35	15183
141	Soft drink manufacturers	36	14818
308	Machine shops	37	14517
339	Manufacturers of miscellaneous electrical		
•	products	38	14494
306	Hardware, tool and cutlery manufacturers	39	14401
183	Cotton varn and cloth mills	40	14048
318	Cotton yarn and cloth mills Office and store machinery manufacturers	41	14005
252	Veneer and plywood mills	42	13586
399	Miscellaneous manufacturing industries, n.e.s.		13338
266	Other furniture industries	44	13081
229	Miscellaneous textiles industry, n.e.s.	45	13030
303	Ornamental and architectural metal/industry	46	12784
374	Manufacturers of pharmaceuticals and medicines		12645
311	Agricultural implement industry	48	12063
356	Glass and glass products manufacturers	49	12031
332	Manufacturers of major appliances (electric	17	12031
332	and non-electric)	50	11971
294	Iron foundries	51	11582
131	Confectionery manufacturers	52	10795
324	Truck body and trailer manufacturers	53	10129
169	Other rubber industries	54	10123
347	Concrete products manufacturers	55	10009
379	Other chemical industries	56	9714
123	Feed Manufacturers	57	9468
163	Rubber tire and tube manufacturers	58	9412
393	Sporting goods industry	59	9270
3,3	phot ctud doors turnsctly	J))
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			/3

S.I.C.	INDUSTRY	RANK	EMPLOYMENT	
145	Breweries	60	9255	
365	Petroleum refineries	61	9203	
338	Manufacturers of electric wire and cable	62	8572	
153	Tobacco products manufacturers	63	8456	
231	Hosiery mills	64	8186	
375	Paint and varnish manufacturers	65	8170	
334	Manufacturers of household radio and			
	television receivers	66	8087	
245	Children's clothing factories	67	7681	
348	Ready-mix concrete manufacturers	68	750 9	
301	Boiler and plate works	69	7494	
103	Poultry processors	70	7225	
128	Biscuit manufacturers	71	6929	
179	Miscellaneous leather products manufacturers	72	6749	
287	Plate making, typesetting and trade bindery	73	6624	
197	plants Wool cloth mills	73 74	6221	
326		7 4 75	6128	
296	Railroad rolling stock industry Aluminum rolling, casting and extruding	75 76	6028	
331	Manufacturers of small electrical appliances	77	5997	
329	Miscellaneous vehicle manufacturers	7 <i>7</i>	5988	
143	Distilleries	78 79	5901	
376	Manufacturers of soap and cleaning compounds	80	5827	
382	Jewellery and silverware manufacturers	81	5725	
288	Publishing only	82	565 6	
371	Explosives and ammunition manufacturers	83	5593	
371 397	Signs and displays industry	.84	5515	
259	Miscellaneous wood industries	85	5491	
		86	5383	
351 248	Clay products manufacturers	87	5228	
248 377	Foundation garment industry	88	5222	
	Manufacturers of toilet preparations	89	5146	
292	Steel pipe and tube mills	09	2140	

S.I.C.	INDUSTRY	RANK	EMPLOYMENT
307	Heating equipment manufacturers	90	5059
264	Office furniture industry	91	5022
216	Carpet, mat and rug industry	92	4938
298	Metal rolling, casting and extruding, n.e.s.	93	4856
373	Manufacturers of plastics and synthetic		
	resins	94	4052
297	Copper and alloy rolling, casting and		
	extruding	95	3922
341	Cement manufacturers	96	3778
124	Flour mills	97	3510
256	Wooden box factories	98	3426
161	Rubber footwear manufacturers	99	3292
172	Leather tanneries	100	3037
218	Textile dyeing and finishing plants	101	2993
133	Sugar refineries	102	2978
316	Commercial refrigeration and air conditioning		
	equipment manufacturers	103	2864
246	Fur goods industry	104	2831
337	Battery manufacturers	10 5	2716
357	Abrasives manufacturers	106	2697
328	Boatbuilding and repair	107	2696
214	Narrow fabric mills	108	2600
355	Asbestos products manufacturers	109	2596
383	Broom, brush and mop industry	110	2341
247	Hat and cap industry	111	2151
221	Canvas products industry	112	2058
219	Linoleum and coated fabrics industry	113	1956
272	Asphalt roofing manufacturers	114	1754
151	Leaf tobacco processing	115	1593
175	Leather glove factories	116	1581
345	Gypsum products manufacturers	117	1555
372	Manufacturers of mixed fertilizers	118	1506
125	Breakfast cereal manufacturers	119	1450
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S.I.C.	INDUSTRY	RANK	EMPLOYMENT
249	Miscellaneous clothing industry, n.e.s.	120	1444
2 6 8	Electric lamp and shade industry	121	1434
193	Wool yarn mills	122	1432
258	Coffin and casket industry	123	1298
352	Refractories manufacturers	124	1132
354	Mineral wool manufacturers	125	1074
212	Thread mills	126	1020
223	Cotton and jute bag industry	12 7	972
213	Cordage and twine industry	128	932
211	Fibre preparing mills	12 9	924
147	Wineries	130	892
359	Other non-metallic mineral products		
	industries	131	744
343	Lime manufacturers	132	707
395	Fur dressing and dyeing industry	133	704
353	Stone products manufacturers	134	673
135	Vegetable oil mills	135	662
369	Other petroleum and coal products industries	136	532
215	Pressed and punched felt mills	137	478
384	Venetian blind manufacturers	138	163
107	Process cheese manufacturers	139	0

SOURCE: Statistics Canada Cat. 31-203 annual.

Manufacturing Industries of Canada - Various Issues.

EMPLOYMENT - 1961-1969 Index Value At Last Fitted Point

s.i.c.	INDUSTRY	RANK	INDEX (1961= 100.0)
329	Miscellaneous vehicle manufacturers	1	687.9
216	Carpet, mat and rug industry	2	314.2
385	Plastic fabricators	3	273.1
324	Truck body and trailer manufacturers	4	270.0
324 325	Motor vehicle parts	5	206.1
308	Machine shops	6	197.2
316	Commercial refrigeration and air conditioning	O	197.2
210	equipment manufacturers	7	195.8
335	Communication equipment manufacturers	8	195.8
328	Boatbuilding and repair	9	193.7
298	Metal rolling, casting and extruding, n.e.s.	10	187.6
348	Read-mix concrete manufacturers	11	181.8
318	Office and store machinery manufacturers	12	177.8
301	Boiler and plate works	13	173.9
315	Miscellaneous machinery & equipment	± J .	2:3.5
212	manufacturers	14	173.6
323	Motor vehicle manufacturers	15	172.6
229	Miscellaneous textile industry, n.e.s.	16	171.6
274	Other paper converters	17	164.2
264	Office furniture industry	18	161.8
326	Railroad rolling stock industry	19	161.7
352	Refractories manufacturers	20	160.7
292	Steel pipe and tube mills	21	160.3
306	Hardware, tool and cutlery manufacturers	22	159.8
331	Manufacturers of small electrical appliances	23	157.4
377	Manufacturers of toilet preparations	24	156.9
294	Iron foundries	25	153.5
336	Manufacturers of electrical industrial		
330	equipment	26	152.0
266	Other furniture industries	27	150.4
218	Textile dyeing and finishing plants	28	150.3
339	Manufacturers of miscellaneous electrical		-
7 47	products	29	150.3
381	Scientific and professional equipment		
- -	manufacturers	30	149.0

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S.I.C.	INDUSTRY	RANK	FIRST DERIVATIVE
			
296	Aluminum rolling, casting & extruding	30	450.9
103	Poultry processors	31	401.2
356	Glass and glass products manufacturers	32	368.2
143	Distilleries	33	359.1
261	Household furniture industry	34	345.4
399	Miscellaneous manufacturing industries, n.e.s.	35	327.2
123	Feed manufacturers	36	321.2
141	Soft drink manufacturers	37	318.3
393	Sporting goods industry	38	316.2
298	Metal rolling, casting & extruding, n.e.s.	39	315.1
334	Manufacturers of household radio and tele-		
	vision receivers	40	304.7
304	Metal stamping, pressing & coating industry	41	293.7
287	Plate making, typesetting & trade bindery		
	plants	42	266.6
289	Publishing and printing	43	266.2
397	Signs and displays industry	44	253.4
379	Other chemical industries	45	250.2
328	Boatbuilding and repair	46	215.5
382	Jewellery and silverware manufacturers	47	194.9
316	Commercial refrigeration & air conditioning		·
	equipment manufacturers	48	178.7
377	Manufacturers of toilet preparations	49	177.0
128	Biscuit manufacturers	50	171.7
107	Process cheese manufacturers	51	152.9
256	Wooden box factories	52	145.9
239	Other knitting mills	53	144.6
264	Office furniture industry	54	134:7
246	Fur goods industry	55	128.0
331	Manufacturers of small electrical appliances	56	122.5
218	Textile dyeing and finishing plants	57	122.4
375	Paint and varnish manufacturers	58	114.2

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	S.I.C.	INDUSTRY	RANK	INDEX (1961= 100.0)
				100.07
	286	Commercial printing	64	122.3
	259	Miscellaneous wood industries	65	121.8
	295	Smelting and refining	66	121.5
	16 3	Rubber tire and tube manufacturers	67	121.1
	252	Veneer and plywood mills	68	121.1
	135	Vegetable oil mills	69	120.6
	271	Pulp and paper mills	70	120.5
	221	Canvas products industry	71	120.4
	399	Miscellaneous manufacturing industries, n.e.s.	7 2	120.1
	239	Other knitting mills	73	119.1
	3 47	Concrete products manufacturers	.74	119.1
	244	Women's clothing factories	75	119.1
	287	Plate making, typesetting and trade	•	
		bindery plants	76	118.9
	382	Jewellery and silverware manufacturers	77	117.8
	30 3	Ornamental and architectural metal industry	78	117.7
	141	Soft drink manufacturers	79	116.8
	123	Feed manufacturers	80	116.6
•	297	Copper and alloy rolling, casting & extruding,		
		n.e.s.	81	116.5
	214	Narrow fabric mills	82	116.2
	373	Manufacturers of plastics & synthetic resins	83	116.1
	296	Aluminum rolling, casting & extruding	84	114.1
	112	Fruit & vegetable canners & preservers	85	113.3
	268	Electric lamp and shade industry	86	113.2
	179	Miscellaneous leather products manufacturers	87	112.8
	243	Men's clothing factories	88	112.7
	375	Paint and varnish manufacturers	89	111.0
1	35 7	Abrasives manufacturers	90	110.9
	211	Fibre preparing mills	91	110.7
	131	Confectionery manufacturers	92	109.8
1	332	Manufacturers of major appliances (electric	- -	
		and non-electric)	93	109.4
	215	Pressed and punched felt mills	94	108.6

s.i.c.	INDUSTRY	RANK	INDEX (1961= 100.0)
341	Cement manufacturers	95	108.4
289	Publishing and printing	96	107.8
272	Asphalt roofing manufacturers	97	107.6
101	Slaughtering and meat processors	98	106.9
355	Asbestos products manufacturers	99	106.4
251	Sawmills and planing mills	100	106.0
128	Biscuit manufacturers	101	104.3
212	Thread mills	102	103.7
351	Clay products manufacturers	103	102.5
334	Manufacturers of household radio and	•	
	television receivers	104	102.1
345	Gypsum products manufacturers	105	101.8
129	Bakeries	106	101.8
383	Broom, brush and mop industry	107	101.5
327	Shipbuilding and repair	108	099.0
145	Breweries	109	098.9
376	Manufacturers of soap and cleaning compounds	110	098.7
223	Cotton and jute bag industry	111	096.6
133	Sugar refineries	112	096.2
125	Breakfast cereal manufacturers	113	095.9
153	Tobacco products manufacturers	114	095.4
105	Dairy factories	115	094.7
307	Heating equipment manufacturers	116	094.7
231	Hosiery mills	117	093.2
175	Leather glove factories	118	092.4
258	Coffin and casket industry	119	092.1
213	Cordage and twine industry	120	091.8
197	Wool cloth mills	121	091.2
174	Shoe factories	122	091.1
245	Children's clothing factories	123	090.6
3 65	Petroleum refineries	124	085.5
172	Leather tanneries	125	084.4
3 69	Other petroleum & coal products industries	126	082.6

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S.I.	c. INDUST	RY	RAI	ЯK	INDEX	(1961=
		<u>. </u>	·			100.0
219	Linoleu	um and coated fabrics ind	ustry 12	7	081.6	
124	Flour n		12:	8	081.0	i
151	Leaf to	obacco processing	12:	9	0.080	
183	Cotton	yarn and cloth mills	130	3	079.9	
246	Fur god	ods industry	13:	1	076.4	
343		anufacturers	13:	2	073.8	
161	Rubber	footwear manufacturers	· 13:	3	072.4	
2 49	Foundat	tion garment industry	13		070.5	
193	• Wool ya	arn mills	13!	5	066.5	
395	Fur dre	essing and dyeing industr	y 130	6	062.9	
353	Stone p	products manufacturers	13	7	053.8	•
384	Venetia	an blind manufacturers	13	8	051.8	
247	Hat and	d cap industry	13:	9 .	050.3	

INDEX OF REAL DOMESTIC PRODUCT - 1969

S.I.C.	INDUSTRY	RANK	R.D.P. (1961 - 100.0)
329	Miscellaneous vehicles manufacturers	. 1	1603.6
216	Carpet, mat and rug industry	2	516.1
323	Motor vehicle manufacturers	3	385.6
385	Plastics fabricators, n.e.s.	.4	351.0
324	Truck body and trailer manufacturers	5	338.9
328	Boatbuilding and repair	6	293.8
325	Motor vehicle parts and accessories manu-		
	facturers	7	289.3
354	Mineral wool manufacturers	8.	268.5
316	Commercial refrigeration and air conditioning		
	equipment manufacturers	9	267.0
215	Pressed and punched felt mills	10	264.3
335	Communications equipment manufacturers	11 .	252.8
229	Miscellaneous textiles industry, n.e.s.	12	250.6
318	Office and store machinery manufacturers	13	224.3
308	Machine shops	14	223.4
331	Manufacturers of small electrical appliances	15	220.3
297	Copper and alloy rolling, casting and		
	extruding	16	218.5
296	Aluminum rolling, casting and extruding	17	216.9
334	Manufacturers of household radio and tele-	*	•
	vision receivers	18	215.8
336	Manufacturers of electrical industrial		
	equipment	19	212.8
373	Manufacturers of plastics and synthetic		
	resins	2 0	212.1
163	Rubber tire and tube manufacturers	21	211.9
371	Explosives and ammunition manufacturers	22	211.5
378	Manufacturers of industrial chemicals	23	207.9
301	Boiler and plate works	24	206.9
348	Ready-mix concrete manufacturers	25	200.4
311	Agricultural implement industry	26	200.0
315	Miscellaneous machinery and equipment manufacture	ers ²⁷	199.9
143	Distilleries	28	198.2
374	Manufacturers of pharmaceuticals and medicines	29	196.1
107	Process cheese manufacturers	30	195.5

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S.I.C.	INDUSTRY	RANK	R.D.P.
266	Other furniture industries	31	191.3
201	Synthetic textile mills	32	190.2
302	Fabricated structural metal industry	33	188.6
123	Feed manufacturers	34	187.3
298	Metal rolling, casting and extruding, n.e.s.	35	187.3
326	Railroad rolling stock industry	36	187.0
381	Scientific and professional equipment		
	manufacturers	37	185.6
147	Wineries	38	185.4
274	Other paper converters	39	185.0
169	Other rubber industries	40	184.8
304 339	Metal stamping, pressing and coating industry Manufacturers of miscellaneous electrical	41	184.7
	products	42	184.6
306	Hardware, tool and cutlery manufacturers	43	183.5
264	Office furniture industry	44	182.5
214	Narrow fabric mills	45	180.7
292	Steel pipe and tube mills	46	179.6
397	Signs and displays industry	47	178.4
305	Wire and wire products manufacturers	48	175.4
303	Ornamental and architectural metal industry	49	175.2
239	Other knitting mills	50	173.2
256	Wooden box factories	51	171.8
332	Manufacturers of major appliances (electric		
٠	and non-electric)	52	170.8
103	Poultry processors	53	168.1
379	Other chemical industries	54	168.1
359	Other non-metallic mineral products industries	55	167.3
261	Household furniture industry	56	166.8
338	Manufacturers of electric wire and cable	57	166.5
356	Glass and glass products manufacturers	58	166.4
211	Fibre preparing mills	59	164.7
352	Refractories manufacturers	60	164.1
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S.I.C.	INDUSTRY	RANK	R.D.P.
294	Iron foundries	61	162.5
309	Miscellaneous metal fabricating industries	62	162.3
139	Miscellaneous food manufacturers	63	161.7
377 ·	Manufacturers of toilet preparations	64	161.7
27 2	Asphalt roofing manufacturers	65	159.2
91	Iron and steel mills	66	156.9
86	Commercial printing	67	154.6
347	Concrete products manufacturers	68	153.4
399	Miscellaneous manufacturing industries, n.e.s.	69	151.1
345	Gypsum products manufacturers	70	150.8
12	Fruit and vegetable canners and preservers	71	148.7
51	Sawmills and planing mills	72	147.5
35	Vegetable oil mills	73	146.8
52	Veneer and plywood mills	74	146.4
95	Smelting and refining	75	146.2
27	Shipbuilding and repair	76	144.5
37	Battery manufacturers	77	144.4
01	Slaughtering and meat processors	78	144.2
48	Foundation garment industry	7 9	142.5
82	Jewellery and silverware manufacturers	80	142.2
44	Women's clothing factories	81	142.1
31	Confectionery manufacturers	82 .	141.4
38	Publishing only	83	141.4
268	Electric lamp and shade industry	84	141.2
375	Paint and varnish manufacturers	85	140.9
321	Aircraft and parts manufacturers	86	140.1
65	Petroleum refineries	87	139.9
79	Miscellaneous leather products manufacturers	88	138.4
83	Broom, brush and mop industry	89	137.8
76	Manufacturers of soap and cleaning compounds	90	137.2

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S.I.C.	INDUSTRY	RANK	R.D.P.
218	Textile dyeing and finishing plants	91	137.0
145	Breweries	92	136.5
243	Men's clothing factories	93	136.3
351	Clay products manufacturers	94	133.9
197	Wool cloth mills	95	133.4
307	Heating equipment manufacturers	96	132.0
2 59	Miscellaneous wood industries	97	130.9
105	Dairy factories	98	130.8
271	Pulp and paper mills	99	129.9
393	Sporting goods industry	100	129.6
355	Asbestos products manufacturers	101	128.8
357	Abrasives manufacturers	102	126.7
273	Paper and plastic bag manufacturers	103	126.6
141	Soft drink manufacturers	104	126.5
133	Sugar refineries	105	125.0
 153	Tobacco products manufacturers	106	124.2
258	Coffin and casket industry	107	124.1
111	Fish products industry	108	122.8
287	Plate making, typesetting and trade	•	
	bindery plants	109	121.4
223	Cotton and jute bag industry	110	121.1
128	Biscuit manufacturers	111	120.8
129	Bakeries	112	120.7
231	Hosiery mills	113	120.3
341	Cement manufacturers	114	115.7
2 54	Sash, door and other millwork plants	115	112.4
183	Cotton yarn and cloth mills	116	112.0
175	Leather glove factories	117	111.1
289	Publishing and printing	118	109.7
213	Cordage and twine industry	119	109.4
221	Canvas products industry	120	108.9

S.I.C.	INDUSTRY	RANK	R.D.P.
245	Children's clothing factories	121	106.9
369	Other petroleum and coal products industries	122	104.9
193	Wool yarn mills	123	102.8
343	Lime manufacturers	124	102.0
125	Breakfast cerial manufacturers	125	101.7
212	Thread mills	126	101.5
249	Miscellaneous clothing industry, n.e.s.	127	97.9
161	Rubber footwear manufacturers	128	97.8
372	Manufacturers of mixed fertilizers	129	90.9
174	Shoe factories	130	86.9
246	Fur goods industry	131	76.0
353	Stone products manufacturers	132	73.8
124	Flour mills	133	73.6
219	Linoleum and coated fabrics industry	134	72.3
395	Fur dressing and dyeing industry	135	69.7
151	Leaf tobacco processing	136	69.3
172	Leather tanneries	137	66.2
247	Hat and cap industry	138	64.6
384	Venetian blind manufacturers	139	6 0. 0

Source: Statistics Canada, Cat. 61-510 Occasional Indexes of Real Domestic Product by Industry.

% SURPLUS/OUTPUT - 1969

S.I.C.	INDUSTRIES	RANK		<u>s/o</u>
143 341	Distilleries	1	·	55.22
145	Cement manufacturers Breweries	2 3 4 5 6 7		51.67 48.67
318		3 1		43.32
354	Office and store machinery manufacturers Mineral wool manufacturers	4 5		41.87
377	Manufacturers of toilet preparations	5		41.83
125	Breakfast cerial manufacturers	7		41.32
345	Gypsum products manufacturers	8		40.00
374	Manufacturers of pharmaceuticals and medicines	9		39.60
376	Manufacturers of soap and cleaning compounds	10		35.15
289	Publishing and printing	11		33.75
147	Wineries	12		33.59
153	Tobacco products manufacturers	13		32.70
343	Lime Manufacturers	14		32.65
288	Publishing only	15		32.10
174	Shoe factories	16		31.28
397	Signs and displays industry	17		31.06
351	Clay products manufacturers	18		30.59
352	Refractories manufacturers	19		30.34
329	Miscellaneous vehicle manufacturers	20		29. 98
378	Manufacturers of industrial chemicals	21		29.71
371	Explosives and ammunition manufacturers	22		29.57
359	Other non-metallic mineral products industries	23		29.10
347	Concrete products manufacturers	24		28.85
369	Other petroleum and coal products industries	25	4	28.66
3 5 3	Stone products manufacturers	26		28.48
141	Soft drink manufacturers	27		28.43
139	Miscellaneous food manufacturers	28		28.09
169	Other rubber industries	29		28.00

Note: Surplus/Out is calculated by the following formula:

T.V.A W & S	Surolus	Where - T.V.A.	= Total Value Added
S + \DI	Output	W <i>+</i> S	Wages & Salaries - Total Activity
5 , 22	Out-par	S	- Shipment
•			The state of the s

AI - Net Annual Change in Inventory

S.I.C.	INDUSTRIES	RANK	<u>s/o</u>
399	Miscellaneous manufacturing industries, n.e.s.	30	27.58
163	Rubber tire and tube manufacturers	31	27.34
306	Hardware, tool and cutlery manufacturers	32	27.20
385	Plastics fabricators, n.e.s.	33	26.94
356	Glass and glass products manufacturers	34	26.52
291	Iron and steel mills	35	26.37
383	Broom, brush and mop industry	36	26.12
131	Confectionery manufacturers	37	26.03
375	Paint and varnish manufacturers	38	26.01
128	Biscuit manufacturers	39	25.74
331	Manufacturers of small electrical appliances	40	25.22
272	Asphalt roofing manufacturers	41	25.06
179	Miscellaneous leather products manufacturers	42	24.61
264	Office furniture industry	43	24.29
393	Sporting goods industry	44	24.28
373	Manufacturers of plastics and synthetic resins	45	24.20
339	Manufacturers of miscellaneous electrical		21120
	products	46	24.15
337	Battery manufacturers	47	24.10
287	Plate making, typesetting and trade bindery		
_ • •	plants	4 8·	23.82
384	Venetian blind manufacturers	49	23.77
379	Other chemical industries	50	23.70
308	Machine shops	51	23.58
355	Asbestos products manufacturers	52	23.52
133	Sugar refineries	53	23.16
271	Pulp and paper mills	54	23.14
197	Wool cloth mills	55	23.12
216	Carpet, mat and rug industry	56	22.99
259	Miscellaneous wood industries	57	22.59
381	Scientific and professional equipment manufac-	3,	22133
301	turers	58	22.59
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•	S.I.C.	INDUSTRIES	RANK	<u>s/o</u>
	286	Commercial printing	59	22.53
	315	Miscellaneous machinery and equipment		22.00
		manufacturers	60	22.11
	268	Electric lamp and shade industry	61	21.99
	302	Fabricated structural metal industry	62	21.77
	348	Ready-mix concrete manufacturers	63	21.74
	325	Motor vehicle parts and accessories		
		manufacturers	64	21.55
	215	Pressed and punched felt mills	65	21.44
	274	Other paper converters	.66	21.42
	112	Fruit and vegetable canners and preservers	67	21.41
	307	Heating equipment manufacturers	68	21.37
	309	Miscellaneous metal fabricating industries	69	21.13
	261	Household furniture industry	70	21.09
	201	Synthetic textile mills	71	21.02
	2.73	Paper and plastic bag manufacturers	72	20.89
	294	Iron foundries	73	20.88
	229	Miscellaneous textiles industry, n.e.s.	74	20.87
	256	Wooden box factories	75	20.70
	30.4	Metal stamping, pressing and coating industry	76	20.70
	305	Wire and wire products manufacturers	7 7	20.43
	214	Narrow fabric mills	78	20.26
	161	Rubber footwear manufacturers	79	20.25
	212	Thread mills	80	20.10
	295	Smelting and refining	81	19.96
	218	Textile dyeing and finishing plants	82	19.95
	248	Foundation garment industry	83	19.90
	301	Boiler and plate works	84	19.85
	211	Fibre preparing mills	85	19.81
	193	Wool yarn mills	86	19.76
	251	Sawmills and planing mills	87	19.48
	129	Bakeries	88	19.47
	303	Ornamental and architectural metal industry	89	19.36
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S.I.C.	INDUSTRIES	RANK	<u>s/o</u>
266	Other furniture industries	90	19.29
357	Abrasives manufacturers	91	19.24
334	Manufacturers of household radio and tele-		
	vision receivers	92	18.73
372	Manufacturers of mixed fertilizers	93	18.70
336	Manufacturers of electrical industrial		
	equipment	94	18.57
382	Jewellery and silverware manufacturers	95	18.52
395	Fur dressing and dyeing industry	96	18.47
239	Other knitting mills	97	18.28
328	Boatbuilding and repair	98	18.27
221	Canvas products industry	99	18.26
332	Manufacturers of major appliances (electric		
200	and non-electric)	100	18.17
338	Manufacturers of electric wire and cable	101	18.06
231	Hosiery mills	102	17.97
246	Fur goods industry	103	17.76
244	Women's clothing factories	104	17.54
252	Veneer and plywood mills	105	17.41
219	Linoleum and coated fabrics industry	106	17.40
247	Hat and cap industry	107	17.40
249	Miscellaneous clothing industry, n.e.s.	108	17.29
111	Fish products industry	109	17.00
326	Railroad rolling stock industry	110	17.00
324	Truck body and trailer manufacturers	111	16.92
254	Sash, door and other millwork plants	112	16.68
296	Aluminum rolling, casting and extruding	113	16.58
316	Commercial refrigeration and air conditioning equipment manufacturers	114	16.51
335	Communications equipment manufacturers	114	16.50
258	Coffin and casket industry	115	16.36
323	Motor vehicle manufacturers	117	15.95
343	MOTOL AGUITOLE MUUNTUCENTEL2	TT /	10.95

S.I.C.	INDUSTRIES	RANK	<u>s/o</u>
243	Men's clothing factories	118	15.43
245	Children's clothing factories	119	15.16
298	Metal rolling, casting and extruding, n.e.s.	120	15.07
183	Cotton yarn and cloth mills	121	14.98
292	Steel pipe and tube mills	122	14.08
311	Agricultural implement industry	123	13.83
327	Shipbuilding and repair	124	13.54
213	Cordage and twine industry	125	13.17
321	Aircraft and parts manufacturers	126	12.92
365	Petroleum refineries	127	12.77
123	Feed manufacturers	128	12.58
105	Dairy factories	129	12.37
124	Flour mills	130	11.96
172	Leather tanneries	131	11.41
151	Leaf tobacco processing	132	10.81
223	Cotton and jute bag industry	133	10.61
297	Copper and alloy rolling, casting and		
	extruding	134	10.42
135	Vegetable oil mills	135	9.82
103	Poultry processors	136	8.67
101	Salughtering and meat processors	137	7.57
175	Leather glove factories	138	2.35
107	Process cheese manufacturers	13 9	0.0

Note: Surplus/Out is calculated by the following formula:

T.V.A.		W	&	S	Surplus
s+ ∧	I				Output

Where - T.V.A. = Total Value Added
W + S = Wages & Salaries Total ACtivity

S = Shipment

△I - Net Annual Change in Inventory.

RATIO OF TOTAL VALUE ADDED/PRODUCTION WORKER FOR CANADA/UNITED STATES - 1968

S.I.C.	INDUSTRY	RANK	RATIO
318	Office and store machinery manufacturers	1	2.8688
352	Refractories manufacturers	2	1.3559
143	Distilleries	3	1.3350
145	Breweries	4	1.2849
341	Cement manufacturers	5	1.2079
212	Thread mills	6	1.2024
334	Manufacturers of household radio and tele-	U	1.2024
	vision receivers	7	1.1951
329	Miscellaneous vehicle manufacturers	8	1.1754
354	Mineral wool manufacturers	9	1.1639
353	Stone products manufacturers		1.1474
223	Cotton and jute bag industry	10	
169	Other rubber industries	11	1.1276
251		12	1.1096
327	Sawmills and planing mills	13	1.0839
	Shipbuilding and repair	14	1.0834
302	Fabricated structural metal industry	15	1.0777
151	Leaf tobacco processing	16	1.0694
359	Other non-metallic mineral products industries	17	1.0628
103	Poultry processors	18	1.0518
183	Cotton yarn and cloth mills	19	1.0491
272	Asphalt roofing manufacturers	20	1.0458

S.I.C.	INDUSTRY	RANK	RATIO
397	Signs and displays industry	21	1.0428
175	Leather glove factories	22	1.0337
268	Electric lamp and shade industry	23	1.0115
372	Manufacturers of mixed fertilizers	24	1.0113
355	Asbestos products manufacturers	25	1.0083
351	Clay products manufacturers	26	0.9940
256	Wooden box factories	27	0.9888
323	Motor vehicle manufacturers	28	0.9843
231	Hosiery mills	29	0.9736
337	Battery manufacturers	30	0.9661
287	Plate making, typesetting and trade		
	bindery plants	31	0.9585
161	Rubber footwear manufacturers	32	0.9472
383	Broom, brush and mop industry	33	0.9449
214	Narrow fabric mills	34	0.9439
259	Miscellaneous wood industries	35	0.9207
291	Iron and steel mills	36	0.9206
296	Aluminum rolling, casting and extruding	37	0.9198
249	Miscellaneous clothing industry, n.e.s.	38	0.9153
375 ·	Paint and varnish manufacturers	39	0.9104
297	Copper and alloy rolling, casting and		
	extruding	40	0.9052
304	Metal stamping, pressing and coating		
	industry	41	0.9018

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<u>S.I.C.</u>	INDUSTRY	RANK	RATIO
369	Other petroleum and coal products industries	42	0.8967
331	Manufacturers of small electrical appliances	43	0.8909
303	Ornamental and architectural metal industry	44	0.8893
247	Hat and cap industry	45	0.8851
348	Ready-mix concrete manufacturers	46	0.8799
315	Miscellaneous machinery and equipment		
	manufacturers	47	0.8789
328	Boatbuilding and repair	48	0.8757
133	Sugar refineries	49	0.8754
292	Steel pipe and tube mills	50	0.8728
373	Manufacturers of plastics and synthetic resins	51	0.8715
305	Wire and wire products manufacturers	52	0.8681
343	Lime manufacturers	53	0.8642
301,	Boiler and plate works	54	0.8641
112	Fruit and vegetable canners and preservers	55	0.8639
345	Gypsum products manufacturers	56	0.8609
211	Fibre preparing mills	5 7	0.8576
326	Railroad rolling stock industry	58	0.8519
261	Household furniture industry	59	0.8513
347	Concrete products manufacturers	60	0.8472
307	Heating equipment manufacturers	61	0.8468
336	Manufacturers of electrical industrial		
	equipment	62	0.8437
163	Rubber tire and tube manufacturers	63	0.8416
338	Manufacturers of electric wire and cable	64	0.8367
221	Canvas products industry	65	0.8339
286	Commercial printing	66	0.8250
254	Sash, door and other millwork plants	67 .	0.8248
213	Cordage and twine industry	68	0.8202
385	Plastics fabricators, n.e.s.	- 69	0.8184
393	Sporting goods industry	70	0.8173
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73 Paper and plastic bag manufacturers 72 0.8140 82 Jewellery and silverware manufacturers 73 0.8132 41 Soft drink manufacturers 74 0.8105 45 Children's clothing factories 75 0.8061 16 Commercial refrigeration and air conditioning equipment manufacturers 77 0.8020 74 Other paper converters 77 0.8020 79 Miscellaneous leather products manufacturers 78 0.7941 35 Vegetable oil mills 79 0.7949 36 Other knitting mills 80 0.7916 37 Wool cloth mills 81 0.7900 39 Other knitting mills 80 0.7916 47 Wineries 82 0.7888 48 Hardware, tool and cutlery manufacturers 83 0.7879 49 Petroleum refineries 84 0.7875 41 Truck body and trailer manufacturers 85 0.7829 43 Men's clothing factories 85 <th>S.I.C.</th> <th>INDUSTRY</th> <th>RANK</th> <th>RATIO</th>	S.I.C.	INDUSTRY	RANK	RATIO
Jewellery and silverware manufacturers	218	Textile dyeing and finishing plants	71	0.8147
### Soft drink manufacturers	73		72	0.8140
Children's clothing factories Commercial refrigeration and air conditioning equipment manufacturers Cother paper converters Cother chemical industries Co			73	0.8132
Commercial refrigeration and air conditioning equipment manufacturers 76 0.8023				0.8105
equipment manufacturers 76 0.8023 Other paper converters 77 0.8020 Miscellaneous leather products manufacturers 78 0.7981 September 79 0.7949 Other knitting mills 79 0.7949 Other knitting mills 80 0.7916 Wool cloth mills 81 0.7900 Wineries 82 0.7888 Hardware, tool and cutlery manufacturers 83 0.7879 Everoleum refineries 84 0.7875 Fetroleum refineries 85 0.7829 Men's clothing factories 86 0.7818 Manufacturers of soap and cleaning compounds 87 0.7778 Manufacturers of major appliances (electric and non-electric) 88 0.7766 Machine shops 89 0.7724 Slaughtering and meat processors 90 0.7712 Other chemical industries 91 0.7709 Shoe factories 92 0.7680 Scientific and professional equipment manufacturers 93 0.7644 Wool yarn mills 94 0.7613 Carpet, mat and rug industry 95 0.7589 Miscellaneous metal fabricating industries 96 0.7572 Glass and glass products manufacturers 97 0.7571 Venetian blind manufacturers 98 0.7766 Pulp and paper mills 99 0.7476 Iron foundries 100 0.7449	45		75	0.8061
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Wool cloth mills				
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S.I.C.	INDUSTRY	RANK	RATIO
201	Synthetic textile mills	101	0.7426
252	Veneer and plywood mills	102	0.7418
244	Women's clothing factories	103	0.7370
266	Other furniture industries	104	0.7329
288	Publishing only	105	0.7256
131	Confectionery manufacturers	106	0.7137
298	Metal rolling, casting and extruding, n.e.s.	107	0.7057
105	Dairy factories	108	0.7048
246	Fur goods industry	109	0.6975
378	Manufacturers of industrial chemicals	110	0.6955
339	Manufacturers of miscellaneous electrical		
	products	111	0.6940
335	Communications equipment manufacturers	112	0.6929
311	Agricultural implement industry	113	0.6926
172	Leather tanneries	114	0.6849
264	Office furniture industry	115	0.6813
153	Tobacco products manufacturers	116	0.6697
123	Feed manufacturers	117	0.6590
248	Foundation garment industry	118	0.6560
129	Bakeries	119	0.6534
258	Coffin and casket industry	120	0.6483
219	Linoleum and coated fabrics industry	121	0.6462
374	Manufacturers of pharmaceuticals and medicines	122	0.6419
321	Aircraft and parts manufacturers	123	0.6360
357	Abrasives manufacturers	1 24	0.6201
229	Miscellaneous textiles industry, n.e.s.	125	0 . 5 943
111	Fish products industry	126	0.5791
125	Breakfast cereal manufacturers	127	0.5741
124	Flour mills	128	0.5674
295	Smelting and refining	129	0.5536

S.I.C.	INDUSTRY	RANK	RATIO
128	Biscuit manufacturers	130	0.5528
395	Fur dressing and dyeing industry	131	0.5194
377	Manufacturers of toilet preparations	132	0.4557
215	Pressed and punched felt mills	133	0.4107
107	Process cheese manufacturers	134	0.0
139	Miscellaneous food manufacturers	135	0.0
289	Publishing and printing	136	0.0
325	Motor vehicle parts and accessories		
	manufacturers	137	0.0
371	Explosives and ammunition manufacturers	138	0.0
399	Miscellaneous manufacturing industries, n.e.s.	139	0.0

Source: Financial Post, Survey of Markets, Various issues.

RATIO OF DOMESTIC SHARE TO DOMESTIC DISAPPEARANCE - 1969

S.I.C.	INDUSTRY	RANK	RATIO
347	Conrete products manufacturers	1	0.9992
145	Breweries	2	0.9957
223	Cotton and jute bag industry	3	0.9947
141	Soft drink manufacturers	4	0.9936
129	Bakeries	5	0.9924
125	Breakfast cereal manufacturers	6	0.9922
354	Mineral wool manufacturers	7	0.9921
103	Poultry processors	8	0.9904
123	Feed manufacturers	9	0.9891
345	Gypsum products manufacturers	10	0.9884
105	Dairy factories	11	0.9868
371	Explosives and ammunition manufacturers	12	0.9857
303	Ornamental and architectural metal industry	13	0.9843
153	Tobacco products manufacturers	14	0.9841
124	Flour mills	15	0.9834
341	Cement manufacturers	16	0.9832
359	Other non-metallic mineral products industries	17	0.9831
258	Coffin and casket industry	18	0.9820
254	Sash, door and other millwork plants	19	0.9783
248	Foundation garment industry	20	0.9746
376	Manufacturers of soap and cleaning compounds	21	0.9739
133	Sugar refineries	22	0.9731
273	Paper and plastic bag manufacturers	23	0.9696
221	Canvas products industry	24	0.9692
	Fur goods industry	25	0.9664
304	Metal stamping, pressing and coating industry	26	0.9595
266	Other furniture industries	27	0.9592
128	Biscuit manufacturers	28	0.9538

Note: Domestic Share of Domestic Disappearance = $\frac{S + X}{S - X - M}$

Where S - Shipments

X = Exports

M = Imports

S.I.C.	INDUSTRY	RANK	RATIO
343	Lime manufacturers	29	0.9508
338	Manufacturers of electric wire and cable	30	0.9483
377	Manufacturers of toilet preparations	31	0.9447
375	Paint and varnish manufacturers	32	0.9446
151	Leaf tobacco processing	33	0.9439
271	Pulp and paper mills	34	0.9410
307	Heating equipment manufacturers	35	0.9405
32 9	Miscellaneous vehicle manufacturers	36	0.9399
264	Office furniture industry	37	0.9396
231	Hosiery mills	38	0.9358
261	Houshold furniture industry	39	0.9357
327	Shipbuilding and repair	40	0.9325
301	Boiler and plate works	41	0.9295
272	Asphalt roofing manufacturers	42	0.9292
101	Slaughtering and meat processing	43	0.9258
383	Broom, brush and mop industry	44	0.9170
251	Sawmills and planing mills	45	0.9168
243	Men's clothing factories	46	0.9138
139	Miscellaneous food manufacturers	47	0.9081
212	Thread mills	48	0.9053
274	Other paper converters	49	0.9030
365	Petroleum refineries	50	0.8995
256	Wooden box factories	51	0.8975
111	Fish products industry	52	0.8970
384	Venetian blind manufacturers	53	0.8881
131	Confectionery manufacturers	54	0.8855
372	Manufacturers of mixed fertilizers	55	0.8848
215	Pressed and punched felt mills	56	0.8837
326	Railroad rolling stock industry	57	0.8813
259	Miscellaneous wood industries	58	0.8773

	S.I.C.	INDUSTRY	RANK	RATIO
	7.60			
	163	Rubber tire and tube manufacturers	59	0.8762
	324	Truck body and trailer manufacturers	60	0.8754
	297	Copper and alloy rolling, casting & extruding	61	0.8725
	247	Hat and cap industry	62	0.8629
	286	Commercial printing	63	0.8613
	216	Carpet, mat and rug industry	64	0.8595
	374	Manufacturers of pharmaceuticals & medicines	65	0.8510
	395	Fur dressing and dyeing industry	66	0.8490
	298	Metal rolling, casting and extruding, n.e.s.	67	0.8449
	174	Shoe factories	68	0.8438
	239	Other knitting mills	69	0.8418
	328	Boatbuilding and repair	70	0.8348
	252	Veneer and plywood mills	71	0.8321
	332	Manufacturers of major appliances (electric		
		and non-electric)	72	0.8317
	355	Asbestos products manufacturers	73	0.8229
	143	Distilleries	74	0.8176
	337	Battery manufacturers	7 5	0.8153
	309	Miscellaneous metal fabricating industries	76	0.8146
	179	Miscellaneous leather products manufacturers	77	0.8123
	175	Leather glove factories	78	0.8022
	193	Wool yarn mills	79	0.7960
	112	Fruit and vegetable canners and preservers	80	0.7906
	292	Steel pipe and tube mills	81	0.7883
	229	Miscellaneous textiles industry, n.e.s.	82	0.7850
	183	Cotton yarn and cloth mills	83	0.7846
·	305	Wire and wire products manufacturers	84	0.7818
	318	Office and store machinery manufacturers	85	0.7811
	353	Stone products manufacturers	86	0.7716
	335	Communications equipment manufacturers	87	0.7713
	201	Synthetic textile mills	88	0.7709
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s.I.C.	INDUSTRY	RANK	RATIO
291	Iron and steel mills	89	0.7684
169	Other rubber industries	90	0.7598
249	Miscellaneous clothing industry, n.e.s.	91	0.7482
294	Iron foundries	92	0.7455
197	Wool cloth mills	93	0.7370
379	Other chemical industries	94	0.7350
331	Manufacturers of small electrical appliances	95	0.7193
334	Manufacturers of household radio and tele-		•
	vision receivers	96	0.7192
356	Glass and glass products manufacturers	97	0.7179
161	Rubber footwear manufacturers	98	0.7119
3 78	Manufacturers of industrial chemicals	99	0.7097
214 .	Narrow fabric mills	100	0.7070
336	Manufacturers of electrical industrial		•
	equipment	101	0.6856
295	Smelting and refining	102	0.6719
351	Clay products manufacturers	103	0.6668
382	Jewellery and silverware manufacturers	104	0.6636
172	Leather tanneries	105	0.6626
385	Plastic fabricators, n.e.s.	106	0.6560
323	Motor vehicle manufacturers	107	0.6287
316	Commercial refrigeration and air conditioning		
	equipment manufacturers	108	0.6186
135	Vegetable oil mills	109	0.6162
357	Abrasives manufacturers	110	0.5866
219	Linoleum and coated fabrics industries	111	0.5813
147	Wineries	112	0.5797
306	Hardware, tool and cutlery manufacturers	113	0.5744

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S.I.C.	INDUSTRY	RANK	RATIO
			
213	Cordage and twine industry	114	0.5717
296	Aluminum rolling, casting and extruding	115	0.5663
352	Refractories manufacturers	116	0.5372
339	Manufacturers of miscellaneous electrical		
	products	117	0.5062
268	Electric lamp and shade industry	118	0.4914
373	Manufacturers of plastics and synthetic resins	119	0.4795
381	Scientific and professional equipment	<u>.</u>	00 1755
J U Z	manufacturers	120	0.4768
321	Aircraft and parts manufacturers	121	0.4696
315	Miscellaneous machinery & equipment manuf-	aller diete unter	0.1000
2 1 2	acturers	122	0.4084
211	Fibre preparing mills	123	0.3910
311	Agricultural implement industry	124	0.3836
393	Sporting goods industry	125	0.3811
369	Other petroleum & coal products industries	126	0.3502
399	Miscellaneous manufacturing industries, n.e.s.	127	0.3496
325	Motor vehicle parts and accessories manu-		0.3150
	facturers	128	0.1344
107	Process cheese manufacturers	129	0.0
218	Textile dyeing and finishing plants	130	0.0
244	Women's clothing factories	131	0.0
245	Children's clothing factories	132	0.0
287	Plate making, typesetting and trade bindery		
	plants	133	0.0
288	Publishing only	134	0.0
289	Publishing and printing	135	0.0
302	Fabricated structural metal industry	136	0.0
308	Machine shops	137	0.0
348	Ready-mix concrete manufacturers	138	0.0
397	Signs and displays industry	139	0.0

Source: Department of Industry, Trade and Commerce.

APPENDIX C

CURVE FORMS FOR TIME SERIES DATA

CURVE FORMS FOR TIME SERIES DATA

1. y - A + BX - linear

2. y = A BX - exponential - increasing exponent

3. $y = Ax^B$ - exponential

4. $y = A + \frac{B}{X}$ - hyperbola

5. $y = \frac{1}{\lambda + DV}$ - hyperbola

6. $y = \frac{X}{\lambda + BX}$ - hyperbola

7. $y = a + bx + cx^2 - polynomial$

HD 2807 A2 Author/Auteur	Canada. Dept. of Regional E. Planning Division.		Expansion.							
1972 Title/ <i>Titre</i>	A preliminary raking of industry performance in the manufacturing sector									
	in Canada; working paper. 1972									
Date	Borrower Emprunteur	Room Pièce	Telephone Téléphone							
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PERFORMANCE INDICATORS FOR THE MANUFACTURING INDUSTRIES

			Emplo	yment				Prod	uctivity				Trade		
Industries with an annual increment of employment greater than the average (mean)	SIC	Annual Increment			Size	Crowth Rank	Index of RDP-1969 Rank	RDP/N-1969 Class	Surplus, Ratio		TVA/N Canada/US 1968 Rank	Domestic Disappearance 1969 Class	Exports 1969 Class	Domestic Share of Domestic Disappear 1969 Rank	rance ————————————————————————————————————
POULTRY PROCESSORS FISH PRODUCTS INDUSTRY FEED MANUFACTURERS BISCUIT MANUFACTURERS MISCELLANEOUS FOOD INDUSTRIES SOFT DRINK MANUFACTURERS DISTILLERIES CARPET, MAT AND RUG INDUSTRY MISCELLANEOUS TEXTILE INDUSTRIES HOSIERY MILLS WOMEN'S CLOTHING INDUSTRY SASH AND DOOR AND OTHER MILLWORK	103 111 123 128 139 141 143 216 229 231	401.2 846.9 321.2 171.7 626.1 318.3 359.1 537.9 674.7 617.3	31 13 36 50 21 37 33 24 18 22	1 1 1 1 1 1 1 1 1	70 28 57 71 33 36 79 92 45 64	33 46 80 101 60 79 51 2 16 117	53 108 34 111 63 104 28 2 12 113	2 4 2 2 1 1 2 2 1 2 2	136 109 128 39 28 27 1 56 74 102	1 1 2 4 2 4 2 2 1 4	18 126 117 130 135 74 3 95 125 29	1 1 2 1 1 1 2 1 1 1	4 1 4 1 2 2 2 1 1 1	8 52 9 28 47 4 74 64 82 38	2 1 4 2 4 1 4 2 1 4
HOUSEHOLD FURNITURE INDUSTRY PULP AND PAPER MILLS PAPER BOX AND BAG MANUFACTURERS OTHER PAPER CONVERTERS COMMERCIAL PRINTING PLATEMAKING, TYPESETTING AND BINDERY PLANTS PUBLISHING ONLY PRINTING AND PUBLISHING SMELTING AND REFINING ALUMINUM ROLLING, CASTING AND EXTRUDING	261 271 273 274 286 287 288 289	345.4 1214.2 665.0 996.9 1078.4 266.6 453.6 266.2	34 9 19 12 10 42 29 43	2 2 1 1 1 1 2 2 2	19 1 20 34 10 73 82 12	50 70 58 17 64 76 53 96	56 99 103 39 67 109 83 118	1 1 4 2 2 4 2 1	70 54 72 66 . 59 48 15 11	3 4 1 4 4 4 4	59 99 72 77 66 31 105 136	2 1 1 2 2 2 2 2 2 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	39 34 23 49 63 133 134 135	4 4 4 4 4 4 4 1
METAL ROLLING, CASTING AND EXTRUDING, N.E.S. BOILER AND PLATE WORKS METAL STAMPING, PRESSING AND COATING MACHINE SHOPS MISCELLANEOUS MACHINERY & EQUIPMENT MANUFACTURERS COMMERCIAL REFRIGERATION & AIR CONDITIONING EQUIPMENT MANUFACTURERS OFFICE AND STORE MACHINERY MANUFACTURERS AIRCRAFT AND PARTS MANUFACTURERS	296 298 301 304 308 315 316 318 321	450.9 315.1 765.2 293.7 595.3 1502.4 178.7 1315.5 1818.7	30 39 14 41 23 7 48 8	1 1 2 2 2 2 1 1	76 93 69 16 .37 2 103 42 11	84 10 13 32 6 14 7 12 44	17 35 24 41 14 27 9 13 86	1 2 1 1 4 2	113 120 84 76 51 60 114 4 126	1 2 4 1 2 3	37 107 54 41 89 47 76 1	1 2 2 2 2 1 1	4 1 4 3 1 4	115 67 41 26 137 60 108 85 121	4 4 3 4 1 1 2 1 4
TRUCK BODY AND TRAILER MANUFACTURERS MOTOR VEHICLE PARTS AND ACCESSORIES MANUFACTURERS BOAT BUILDING AND REPAIR MISCELLANEOUS VEHICLE MANUFACTURERS MANUFACTURERS OF HOUSEHOLD RADIO & TELEVISION RECEIVERS COMMUNICATIONS EQUIPMENT MANUFACTURERS MANUFACTURERS OF ELECTRICAL INDUSTRIAL EQUIPMENT MANUFACTURERS OF MISCELLANEOUS ELECTRICAL PRODUCTS GLASS AND GLASS PRODUCTS MANUFACTURERS EXPLOSIVES AND AMMUNITION MANUFACTURERS MANUFACTURERS OF PHARMACEUTICALS & MEDICINES MANUFACTURERS OF TOILET PREPARATIONS MANUFACTURERS OF INDUSTRIAL CHEMICALS	324 325 328 329 334 335 336 371 374 377 378	1572.1 2296.4 215.5 1567.2 304.7 4165.1 522.1 534.8 368.2 656.0 510.2 177.1 476.1	5 3 46 6 40 2 26 25 32 20 27 49 28	1 2 1 1 1 2 2 1 1	53 77 107 78 66 4 18 38 49 83 47 88 23	104 8 26 261 35 48 24	5 7 6 1 18 11 19 42 58 22 29 64	2 2 2 4 4 4 1 2	111 64 98 20 92 115 94 46 34 22	4 2 4 2 4 4 4 4 4 1 4	85 137 48 8 7 112 62 111 97 138	1 1 1 1 1 2 2 2 1 1	1 1 1 4 1 1 1 1 2 1	60 128 70 36 96 87 101 117 97 12 65 31	1 3 3 1 4 1 3 3 1 1
OTHER CHEMICAL INDUSTRIES SCIENTIFIC AND PROFESSIONAL EQUIPMENT MANUFACTURES JEWELLERY AND SILVERWARE MANUFACTURERS PLASTIC FABRICATORS, N.E.S. SPORTING GOODS AND TOY INDUSTRY SIGNS AND DISPLAYS INDUSTRY MISCELLANEOUS MANUFACTURING INDUSTRIES, N.E.S. Industries with an annual increment of employment greater than zero but less than the average (mean)	379 381 382 385 393 397 399	250.2 705.8 194.9 4696.4 316.2 253.4 327.2	45 16 47 1 38 44 35	2 2 1 1 1 1 1 1	25 24 81 25 59 84 43	54 30 77 3 55 43 72	23 54 37 80 4 100 47 69	2 1 2 1 2 4 4	21 50 58 95 33 44 17 30	4 4 1 1 2 4 3	110 91 93 73 69 70 21 139	1 2 2 2 1 1 1 2	1 1 2 1 1 1 1	99 94 120 104 106 125 139 127	4 1 3 2 1 4 4 4 1
PROCESS CHEESE BREAKFAST CEREAL MANUFACTURERS VEGETABLE MILLS WINERIES RUBBER TIRE AND TUBE MANUFACTURERS FIBRE PREPARING MILLS THREAD MILLS PRESSED AND PUNCHED FELT MILLS TEXTILE DYEING AND FINISHING PLANTS OTHER KNITTING MILLS FUR GOODS INDUSTRY	107 125 135 147 163 211 212 215 218 239	152.9 49.6 6.4 45.1 46.8 19.3 17.1 .05 122.4 144.5	51 65 76 68 66 72 74 79 57	1 1 2 1 2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	139 119 135 130 58 129 126 137 101 31	41 113 69 36 67 91 102 94 28 73	30 125 73 38 21 59 126 10 91	4 4 1 1 4 4 2	139 7 135 12 31 85 80 65 82 97	1 4 1 1 1 4 1 4	134 127 79 82 63 57 6 133 71 80	2 1 2 1 1 1 1 1	1 4 3 2 4 - - 4 1 4	129 6 109 112 59 123 48 56 130 69	1 4 1 3 4 1 1 4 1 3
SAWMILLS AND PLANING MILLS WOODEN BOX FACTORIES OFFICE FURNITURE INDUSTRY OTHER FURNITURE INDUSTRIES ELECTRIC LAMP AND SHADE INDUSTRY STEEL PIPE AND TUBE MILLS RAILROAD ROLLING STOCK INDUSTRY MANUFACTURERS OF SMALL ELECTRICAL APPLIANCES BATTERY MANUFACTURERS MANUFACTURERS OF ELECTRIC WIRE AND CABLE	251 256 264 266 268 292 326 331 337	128.0 43.0 145.9 134.7 69.7 18.0 72.2 23.1 122.5 103.4	55 69 54 67 67 59 67	2 2 2 2 2 1	104 3 98 91 44 121 89 75 77 105	131 100 47 18 27 86 21 19 23 49	131 72 51 44 31 84 46 36 15 77	4 4 4 1 2 3 1 2 4	103 87 75 43 90 61 122 110 40 47	1 2 2 4 1 2 3 1 4	109 13 27 115 104 23 59 58 43 39	4 1 2 2 2 1 2 2 2 1	1 1 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	25 45 51 37 27 118 81 57 95	4 1 1 4 3 1 2 4 4
GYPSUM PRODUCTS MANUFACTURERS READY CONCRETE MANUFACTURERS REFRACTORIES MANUFACTURERS MINERAL WOOL MANUFACTURERS OTHER NON-METALLIC MINERAL PRODUCTS INDUSTRIES PETROLEUM REFINERIES MANUFACTURERS OF PLASTICS AND SYNTHETIC RESINS PAINT AND VARNISH MANUFACTURERS Industries with an annual increment of employment less than zero	345 348 352 354 359 365 373 375	40.5 69.9 21.8 81.4 12.3 4.7 79.4 1.9 114.2	67 63 71 60 75 77 61 78 58	1 2 1 2 2 1 2 1	62 117 68 124 125 131 61 94 65	37 105 11 20 59 31 124 83 89	57 70 25 60 8 55 87 20 85	3 2 1 4 2 2 1 4 2	101 8 63 19 5 23 127 45 38	3 2 4 2 2 1 4 3	64 56 46 2 17 84 51 39	2 1 1 1 1 1	1 2 4 1 1 1 4	30 138 116 7 17 50 119	4 1 1 4 1 3 1 4
SLAUGHTERING AND MEAT PROCESSORS DAIRY FACTORIES FRUIT AND VEGETABLE CANNERS AND PRESERVERS FLOUR MILL BAKERIES CONFECTIONARY MANUFACTURERS SUGAR REFINERIES BREWERIES LEAF TOBACCO PROCESSING TOBACCO PRODUCTS MANUFACTURERS	101 105 112 124 129 131 133 145 151	159.9 828.5 356.8 375.1 582.0 12.3 56.1 1.3 93.9 122.8	110 134 125 126 129 84 97 80 103	4 4 4 4 4 3 4	17 15 27 97 14 52 102 60 115	98 115 85 128 106 97 112 109 129 114	78 97 71 133 112 82 105 92 136 106	4 1 4 3 3 2 1 3 3	137 129 67 130 88 37 53 3 132	4 1 4 3 3 2 1 3 3	30 108 55 128 119 106 49 4 16	2 1 2 3 1 1 1 1 4 2	2 1 2 3 1 1 3 1 1	43 11 80 15 5 5 54 22 2 33	4 4 1 4 2 1 4 4 4
RUBBER FOOTWEAR MANUFACTURERS OTHER RUBBER INDUSTRIES LEATHER TANNERIES SHOE FACTORIES LEATHER GLOVE FACTORIES LUGGAGE, HANDBAG & SMALL LEATHER GOODS MANUFACTURERS COTTON YARN AND CLOTH MILLS WOOL YARN MILLS WOOL CLOTH MILLS SYNTHETIC TEXTILE MILLS	161 169 172 174 175	751.5 480.0 86.3 47.6 34.2 165.4 1469.9 266.9 351.5 67.9	133 127 102 94 90 113 137 117 124	4 4 4 3 4 4 4 4 4	99 54 100 26 116 72 40 122 74 21	133 38 125 122 118 87 130 135 121	128 40 137 130 117 88 116 123 95 32	2 1 4 1 4 1 1 1 3	79 29 131 16 138 42 121 86 55 71	2 1 4 1 4 1 1 3	32 12 114 92 22 78 19 94 81	4 2 2 1 1 2 4 3 2	1 1 1 1 1 2 4 1	98 90 105 68 78 77 83 79 93	4 4 4 4 1 2 4
CORDAGE AND TWINE NARROW FABRIC MILLS LINOLEUM AND COATED FABRICS INDUSTRY CANVAS PRODUCTS INDUSTRY COTTON AND JUTE BAG INDUSTRY MEN'S CLOTHING INDUSTRY CHILDREN'S CLOTHING INDUSTRY HAT AND CAP INDUSTRY FOUNDATION GARMENT INDUSTRY OTHER CLOTHING INDUSTRIES VENEER AND PLYWOOD MILLS	213 214 219 221 223 243 245 247 248 249	143.4 23.1 98.2 10.7 42.1 318.2 301.8 279.7 98.0 207.1	108 87 105 83 93 121 120 118 104 114	4 4 4 4 4 4 4	128 108 113 112 127 8 67 111 87 120	120 82 127 71 111 88 123 139 62 134	119 45 134 120 110 . 93 121 138 79 127	4 4 3 1 3 4 2 1 4 2	125 78 106 99 133 118 119 107 83	4 4 3 1 3 4 2 1 4 2	68 34 121 65 11 86 75 45 118 38	3 2 1 1 2 1 1 3 4	4 1 1 - 2 1 1 1 4	114 100 111 24 3 46 132 62 20 91	1 4 4 3 1 4 4 4 4 4 2
COFFIN AND CASKET INDUSTRY MISCELLANEOUS WOOD INDUSTRIES MANUFACTURERS OF MIXED FERTILIZERS IRON AND STEEL MILLS IRON FOUNDRIES COPPER AND ALLOY ROLLING, CASTING & EXTRUDING FABRICATED STRUCTURAL METAL INDUSTRY ORNAMENTAL AND ARCHITECTURAL METAL INDUSTRY WIRE AND WIRE PRODUCTS MANUFACTURERS HARDWARE, TOOL & CUTLERY MANUFACTURERS	252 258 259 272 291 294 297 302 303 305	657.0 53.9 161.7 84.5 1269.0 341.5 26.9 210.8 616.5 22.3	131 95 111 101 136 123 88 115 130 85	4 4 4 4 4 4 4	42 123 85 114 5 51 95 29 46 30	68 119 65 97 52 25 81 39 78 40	74 107 97 65 66 61 16 33 49	2 1 4 4 1 4 2 3 2	105 116 57 41 35 73 134 62 89 77	2 1 1 4 4 1 4 2 3 2	102 120 35 20 36 100 40 15 44 52	1 2 3 1 2 2 2 2 2 2 1	1 2 2 2 1	71 18 58 42 89 92 61 136 13	4 4 3 4 4 3 1 4 4 4
HEATING EQUIPMENT MISCELLANEOUS METAL FABRICATING INDUSTRIES AGRICULTURAL IMPLEMENTS MOTOR VEHICLE MANUFACTURERS SHIPBUILDING AND REPAIR MANUFACTURERS OF MAJOR APPLIANCES (ELECTRIC & NON-ELECTRIC) CEMENT MANUFACTURERS LIME MANUFACTURERS CONCRETE PRODUCTS MANUFACTURERS	307 309 311 323 327 332 341 343 347	280.7 332.3 69.2 1039.0 1527.3 1843.3 740.6 38.3 22.3 541.4	119 122 99 135 138 139 132 91 86 128	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	39 90 22 48 6 35 50 96 132	22 116 34 45 15 108 93 95 132 74	43 96 62 26 3 76 52 114 125	1 1 4 4 4 4 4 4 4	32 68 69 123 117 124 100 2 14	1 4 4 4 4 4 4 4	83 61 96 113 28 14 88 5 53 60	2 1 2 4 2 4 1 2 1 2	1 1 2 1 1 1 2 1	113 35 76 124 107 40 72 16 29	4 1 4 2 3 1 4 3 4 4
CLAY PRODUCTS MANUFACTURERS STONE PRODUCTS MANUFACTURERS ASBESTOS PRODUCTS MANUFACTURERS ABRASIVE MANUFACTURERS OTHER PETROLEUM & COAL PRODUCTS INDUSTRIES MANUFACTURERS OF MIXED FERTILIZERS MANUFACTURERS OF SOAP AND CLEANING COMPOUNDS BROOM, BRUSH AND MOP INDUSTRY VENETIAN BLIND MANUFACTURERS FUR DRESSING AND DYEING	351 353 355 357 369 372 376 383 384 395	147.4 133.1 28.5 73.1 41.7 222.2 5.2 188.9 5.2 55.0	109 107 89 100 92 116 82 113 81 96	4 4 4 4 4 3 4 3		103 137 99 90 126 63 110 107 138 136	94 132 101 102 122 129 90 89 139 135	4 1 4 4 1 1 1 1 1	18 26 52 91 25 93 19 36 49	4 1 4 4 4 1 1 1 4 1	26 10 25 124 42 24 87 33 98 131	2 3 2 2 2 4 2 2 2 2 2		103 86 73 110 126 55 21 44 53 66	4 4 4 4 3 2 4 4 1 2



