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SEASONAL VARIATIONS IN EMPLOYMENT

By

CHRISTOPHER SAUNDERS

*Economics Research Section
University of Manchester*

With Introduction by

G. W. DANIELS, M.A., M.Com.

*Dean of the Faculty of Commerce and Administration
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INTRODUCTION

IN the post-war years the general problem of unemployment has been so much with us that it is, perhaps, not surprising that, during these years, little systematic attention has been given in this country to the aspect of unemployment with which this book is concerned. Doubtless, too, this neglect is also due to the fact that, although the existence of seasonal unemployment was well recognized in pre-war days, writers on the subject were then inclined to emphasize the social hardship which it involved, but to minimize its importance as a factor in the general problem of unemployment. Regarded as having the characteristics of a natural phenomenon which comes and goes, seasonal unemployment was spoken of as essentially a surface movement. When we bear in mind that, owing to seasonal unemployment alone, there might be continuously a large army of unemployed, the need for detailed inquiry as to the actual facts of the situation in this country becomes obvious.

Here an acknowledgment is due of the work done on the subject in the United States in recent years notably by Professor Simon Kuznets and others. It was, indeed, partly this work which suggested to the Economics Research Section in the University of Manchester the advisability of the present piece of research being undertaken. Other influences were that the members of the Section wanted, for this country, answers to the sort of questions set out in the first chapter of the book, and that they realized that, in the British unemployment insurance returns, a most

valuable source of information had become available. From a scrutiny of these returns, supplemented by an investigation of the position in a few selected industries, they hoped that, even if the questions could not be fully answered, fresh light might be thrown on the British problem of seasonal unemployment.

How far Mr. Saunders has been successful in these aims it is not for the present writer to estimate. That must be left to the judgment of those of his readers who were not closely in touch with him during the progress of his work. It may, however, be permissible to suggest that, in the method of investigation which he has adopted, and in his elucidation of the problem as it relates to classified industries and trades, he has broken the ground for many particular inquiries which, if undertaken, could hardly fail to yield valuable results.

In his selection of particular industries for investigation he was influenced by a desire to discover whether such industries as had become of larger importance in the changing structure of British industry were likely to increase or decrease seasonal unemployment as a factor in the general problem of unemployment. On the whole his conclusions on this matter incline to the favourable side. But, here, the practical significance of his investigation lies in the indications he gives of methods whereby the dimensions of seasonal unemployment might be lessened. While it may be true that much could be accomplished if the appropriate co-operation of private individuals and of public and semi-public authorities were assured, it is hard to resist the view that the more promising centre of attack is with those responsible for the internal organization of industries and trades. Hence the need for detailed inquiries into the conditions especially of such industries

Introduction

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and trades as are notoriously seasonal, to the end that, in the light of the fullest information attainable, remedial lines of policy may be more precisely formulated.

G. W. DANIELS.

University of Manchester.

ACKNOWLEDGMENT

THIS book was written while I was a member of the Economics Research Section of Manchester University and whatever merits it may possess are due in large part to the advantages which I have had as a member of the Section. For guidance in the pursuit of elusive facts, for the suggestion of many profitable ideas and the rejection of many bad ones, for regular and constructive criticism of the form and content of the work, I owe a great debt to my colleagues and friends of the Research Section, and, in particular, to Professor G.W. Daniels and to Mr. John Jewkes, the Director of the Section. For the greater part of the lengthy and elaborate statistical calculations, I am indebted to Mrs. John Jewkes, Miss B. Morris and Miss E. Howarth. To the Rockefeller Foundation, and the University, without whose financial assistance the work of the Research Section could not go on, I give my thanks.

In addition, I wish to acknowledge the help which I have received from officials of the Ministry of Labour at the North Western Divisional Office, the Trade Boards Division and the Employment Exchanges. Their profound knowledge and experience is always of the greatest value to the inquirer. I have received, too, a great deal of information from numerous persons engaged in the industries investigated here, and thank them for their interest and readiness to help.

I am grateful to the Editor of the *Economic Journal* for permission to reprint material published therein.

Manchester.

C.T.S.

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APPENDIX I
GENERAL STATISTICS RELATING TO SEASONAL INDUSTRIES

(1)	(2) (3) (4) (5) Amplitude of Seasonal Variation.				(6) Seasonal Labour Reserve (Em- ployed at Peak less average em- ployed as % Insured)	(7) (8) (9) Average Seasonal Unemployment as % Insured	(10) Average Total Unem- ployment as % Insured	(11) (12) (13) Average numbers Employed (000's)							
	Range of Seasonal Variation as % of Insured		Mean of Percentage Monthly Deviations Average 1924-32	Order of Industries acc. to Mean per- centage Deviations.				Average 1924-32	1924	1928	1932	1924-32	1924	1929	1932
	Average 1924-32	Average 1930-32													
CONSTRUCTION AND RAW MATERIALS															
<i>(a) Extractive.</i>															
Coalmining	12.7	16.3	2.7	5	6.3	3.9	6.5	7.3	20.3	1187	903	688			
Coke Ovens & By-products	12.8	12.3	1.6	17	6.1	7.9	4.3	2.1	18.8	12	10	8			
Lead, Tin & Copper Mining	12.1	19.8	1.9	13	4.3	0.8	2.6	2.7	30.6	4	4	1			
Clay, Sand, Gravel & Chalk Pits	6.5	8.0	0.9	38	2.4	1.6	0.8	1.3	10.6	13	15	12			
Mining & Quarrying n.s.s. ¹ ...	8.1	8.7	0.8	39	3.0	3.8	2.4	0.6	13.0	21	15	11			
<i>(b) Metals.</i>															
Hand Tools & Cutlery ...	7.2	9.4	1.3	25	3.8	5.2	1.9	3.2	21.4	27	29	22			
Brass & Allied Metal Wares	5.2	6.4	0.6	52	2.7	2.5	0.8	1.6	14.7	25	26	21			
Metal Industries, n.s.s. ¹ ...	6.5	4.7	0.6	53	2.3	0.9	1.9	2.8	12.9	156	176	165			
<i>(c) Engineering.</i>															
Motor Vehicles, Cycles & Aircraft	6.0	7.8	1.2	28	3.0	1.0	1.4	1.4	11.3	186	227	201			
Railway Carriages, etc. ...	6.3	9.7	0.7	45	2.2	1.0	0.5	2.1	12.8	49	49	36			
Carriages, Carts, etc. ...	5.5	6.4	1.1	32	2.7	1.9	3.6	2.2	13.3	22	17	14			
Electrical Engineering ...	4.1	2.1	0.4	59	1.8	1.9	2.1	0.3	7.9	67	81	78			
Shipbuilding & Repairing ...	12.0	15.3	1.4	20	5.3	2.4	8.1	2.5	36.9	178	155	67			

¹ N.S.S. = not separately specified.

GENERAL STATISTICS RELATING TO SEASONAL INDUSTRIES (CONTINUED)

(1)	(2) Amplitude of Seasonal Variation.		(4) Mean of Percentage Monthly Deviations Average 1924-32		(5) Order of Industries acc. to Mean percentage Deviations.	(6) Seasonal Labour Reserve (Employed at Peak less average employed as % Insured)	(7) (8) (9) Average Seasonal Unemployment as % Insured			(10) Average Total Unemployment as % Insured	(11) (12) (13) Average numbers Employed (000's)		
	Range of Seasonal Variation as % of Insured	Average 1930-32	Average 1924-32	Average 1924-32			1924	1928	1932		1924	1928	1932
	Average 1924-32	Average 1930-32	Average 1924-32	Average 1924-32	Average 1924-32	1924	1928	1932	1924-32	1924	1928	1932	
<i>(d) Building and Associated Industries.</i>													
Building	9.3	8.7	2.7	4	3.4	1.9	3.1	2.8	15.4	648	716	610	
Stone Quarrying	9.1	8.3	1.7	15	3.1	1.6	2.2	4.2	12.3	34	38	34	
Cement, Lime Kilns	8.1	9.8	1.1	30	3.1	1.1	1.2	2.0	11.6	15	18	12	
Artificial Stone & Concrete... ..	8.4	3.3	1.4	22	3.1	2.2	2.6	1.7	17.8	10	15	16	
Brick, Pipe, Tile, etc., making	7.2	4.5	1.3	26	2.6	1.9	1.4	1.6	12.3	65	73	68	
Sawmilling and Machined													
Woodwork	3.7	4.4	0.7	46	1.6	0.4	0.1	1.8	12.5	52	52	46	
Heating & Ventilating Apps.	7.6	3.9	0.8	40	3.7	10.2	3.0	0.9	8.9	6	8	8	
Wallpaper	6.7	7.6	2.4	7	3.2	3.6	3.2	3.5	7.0	5	6	5	
Woodworking, n.s.s. ¹	3.7	4.4	0.7	42	1.7	1.4	1.8	1.9	13.5	23	21	18	
Electric Wiring & Contractg.	8.0	9.3	0.9	35	4.5	2.9	3.5	4.9	9.9	12	16	20	
Public Works Contracting...	10.8	14.0	1.9	14	4.7	1.5	2.2	4.4	23.2	112	132	174	
<i>(e) Others.</i>													
Wood Boxes & Packg. Cases	4.7	4.0	0.8	41	2.2	3.7	0.9	1.4	16.5	11	11	9	
Hemp, Rope, Cord, Twine making	7.0	10.5	1.4	21	3.4	1.5	3.8	5.0	16.6	17	17	14	
2. TRANSPORT AND DISTRIBUTION.													
Shipping Service	6.1	6.0	1.6	16	2.4	2.5	1.2	2.5	22.4	97	117	105	
Dock, Harbour, River & Canal Service	6.0	6.0	1.0	34	3.5	0.4	1.0	2.8	31.5	145	118	109	
Railway Service ²	4.9	5.8	0.7	43	2.0	2.1	1.5	2.1	8.5	165	131	112	
Tram and Bus Service	4.7	3.7	0.4	58	2.0	1.5	1.4	1.3	3.9	115	149	169	
Road Transport n.s.s. ¹	4.2	3.3	0.7	44	1.6	0.3	0.7	1.6	15.1	128	161	162	
Distributive Trades	4.4	3.5	0.5	57	2.0	1.2	0.4	0.9	7.8	1265	1576	1705	

¹ N.S.S. = not separately specified.

² Non-permanent staff only.

GENERAL STATISTICS RELATING TO SEASONAL INDUSTRIES (CONTINUED)

286

(1)	(2) (3) (4) (5)			(6)	(7)	(8)	(9)	(10)	(11) (12) (13)							
	Amplitude of Seasonal Variation.								Seasonal Labour Reserve (Employed at Peak less average employed as % Insured)	Average Seasonal Unemployment as % Insured			Average Total Unemployment as % Insured	Average numbers Employed (000's)		
	Range of Seasonal Variation as % of Insured	Mean of Percentage Monthly Deviations	Order of Industries acc. to Mean percentage Deviations.							Average 1924-32	1924	1928		1932	1924-32	1924
3. CONSUMPTION INDUSTRIES.																
<i>(a) Textiles.</i>																
Cotton	11.9	19.4	3.1	3	6.4	7.4	1.5	6.1	20.2	487	483	368				
Woolen & Worsted	9.7	13.1	2.1	11	4.9	3.0	5.1	5.9	16.2	244	206	185				
Linen	17.6	25.5	3.2	2	8.9	1.1	13.2	8.7	21.4	75	69	56				
Lace	7.5	10.2	1.2	29	3.8	3.1	2.6	5.6	14.4	17	15	14				
<i>(b) Clothing.</i>																
Tailoring	10.8	10.8	3.4	1	5.4	4.6	5.6	5.3	10.7	172	183	179				
Dressmaking & Millinery	6.4	6.7	1.6	18	2.8	3.2	2.7	3.6	6.8	99	98	93				
Shirts, Underclothing, etc.,	4.9	4.9	0.2	63	1.9	1.6	1.6	2.3	8.9	67	76	77				
Hats and Caps	9.7	12.7	2.1	10	3.7	4.4	2.9	4.1	9.7	30	33	30				
Hosiery	6.8	9.5	1.3	24	3.8	1.7	1.1	4.2	9.9	87	99	100				
Boots & Shoes, etc.	8.8	10.8	0.9	36	3.6	1.4	8.5	3.8	13.9	130	117	110				
<i>(c) Food, Drink & Tobacco.</i>																
Fishing	9.2	9.1	2.2	8	3.8	2.6	3.3	3.6	14.2	22	25	24				
Bread, Biscuits, Cake	3.0	3.0	0.5	56	1.4	0.4	0.6	1.4	9.3	132	135	140				
Cocoa, Choc. Confectionery	6.7	5.5	1.3	23	2.9	4.2	1.0	3.2	11.5	65	66	62				
Food Industries n.s.s. ¹	5.8	4.5	1.2	27	2.5	3.6	1.5	2.7	12.1	95	101	100				
Drink Industries	2.6	2.3	0.3	62	1.2	1.0	0.2	1.4	8.7	101	101	93				
Tobacco, etc.	3.9	2.9	0.7	49	1.8	1.3	2.5	1.6	6.9	40	44	43				
<i>(d) Printing and Paper.</i>																
Cardboard Boxes, Statnry.	3.4	3.8	0.5	55	1.8	0.5	1.7	2.4	6.8	51	55	56				
Printing, Publishing & Book-binding	2.8	2.0	0.4	61	1.2	0.9	1.0	0.8	6.4	223	250	254				

¹ N.S.S. = "not separately specified."

Seasonal Variations in Employment

GENERAL STATISTICS RELATING TO SEASONAL INDUSTRIES (CONTINUED)

(1)	(2) (3) (4) (5) Amplitude of Seasonal Variation.				(6) Seasonal Labour Reserve (Em- ployed at Peak less average em- ployed as % Insured)	(7) (8) (9) Average Seasonal Unemployment as % Insured			(10) Average Total Unem- ployment as % Insured	(11) (12) (13) Average numbers Employed (000's)				
	Range of Seasonal Variation as % of Insured		Mean of Percentage Monthly Deviations Average 1924-32	Order of Industries acc. to Mean per- centage Deviations.		Average 1924-32	1924	1928		1932	1924-32	1924	1929	1932
	Average 1924-32	Average 1930-32												
<i>(e) Other Manufactures.</i>														
Pottery	11.0	14.2	2.7	6	3.8	1.1	2.7	3.3	20.6	64	63	51		
Electric Cables & Apparatus ...	6.5	5.9	0.6	54	3.7	4.0	3.7	4.1	8.2	70	89	102		
Musical Instruments	9.2	9.0	2.2	9	5.4	5.0	5.7	4.7	11.2	18	26	19		
Watches, Clocks, Jewellery	4.5	6.3	1.5	19	2.4	1.0	0.4	4.9	12.3	42	39	33		
Rubber	5.8	7.9	0.6	50	2.0	0.5	1.2	1.4	12.3	52	60	52		
Tanning, Currying and Dressing of Leather	4.7	5.7	0.6	51	2.0	2.0	0.4	3.5	11.9	38	37	35		
Leather Goods	5.2	8.5	1.0	33	2.5	0.1	0.6	4.7	11.7	25	24	21		
Furniture & Upholstery	4.9	3.2	0.7	47	2.1	0.8	1.9	1.9	9.7	90	113	106		
Brushes & Brooms	6.6	9.0	1.1	31	3.0	2.2	0.3	2.2	13.9	9	9	10		
Toys, Games & Sports Apparatus	5.1	4.1	0.7	48	2.2	0.6	1.1	2.1	9.9	10	12	12		
<i>(f) Services.</i>														
Entertainments & Sports Hotel, Public House, Res- taurant, Boarding-house, Club, etc., Service	5.6	6.7	0.9	37	2.6	2.9	1.6	2.1	14.0	57	65	78		
Laundries, Dyeing, etc.	6.9	6.4	2.0	12	3.3	4.5	2.0	3.1	12.0	253	303	317		
	3.1	2.2	0.4	60	1.3	1.2	0.4	0.8	6.3	106	129	135		

Appendix I (continued)

APPENDIX II(a)

AVERAGE CHANGE (+ or -) FROM PRECEDING MONTH IN UNEMPLOYMENT PERCENTAGES IN CHIEF SEASONAL INDUSTRIES. 1924-32

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coalmining ...	—	+0.1	+0.6	+0.6	+1.6	+2.2	+1.3	-0.6	-1.2	-0.6	-1.3	-2.5
Brick, Pipe, Tile ...	+1.4	-0.7	-1.2	-0.8	-0.6	-0.5	-0.4	+0.7	+0.4	+1.0	+0.8	-0.1
Motor Vehicles ...	—	-0.2	-0.9	-0.5	+0.2	+1.0	+1.2	+1.3	-0.4	-1.1	-0.6	-0.6
Shipbuilding ...	-0.3	-0.3	-0.3	-0.8	+0.5	+0.1	-0.1	+0.8	+0.3	+0.8	—	-0.4
Electric Cables, etc. ...	+1.7	+0.5	+0.1	+0.2	-0.3	-0.1	-0.3	-0.9	-0.5	-0.2	+0.1	—
Cotton ...	+0.4	+0.1	+0.1	+1.4	+0.5	+0.2	+1.6	+1.0	-1.4	-2.3	-0.7	-1.1
Wool ...	+2.0	-1.1	-1.1	-0.1	+1.1	+1.9	+1.2	-0.2	-1.3	-1.2	-0.5	-0.3
Linen ...	-1.2	-0.9	-0.3	+1.3	+1.6	+1.2	+2.4	-1.0	-0.8	-0.8	-0.3	-0.9
Tailoring ...	+2.0	-3.4	-4.2	-2.2	-0.7	+1.0	+2.6	+3.2	+1.1	-1.6	+1.1	-1.1
Dressmaking & Millinery ...	+2.0	-2.0	-2.5	-1.2	-0.6	+0.3	+1.1	+1.5	-0.5	-0.4	+2.3	—
Hats & Caps ...	-3.4	-2.0	-1.0	-1.3	-0.5	+1.2	+1.0	+0.6	+0.2	+1.9	+4.3	-1.3
Boots & Shoes ...	-0.1	-1.1	-0.2	+0.1	+0.1	-0.1	+1.7	—	-1.0	-1.1	-0.1	+1.5
Bread, Biscuits ...	+1.3	-0.1	-0.4	-0.5	-0.3	-0.5	-0.5	+0.1	+0.6	+0.6	+0.1	-0.6
Food, n.s.s. ¹ ...	+0.5	-0.2	-0.9	-0.8	-0.2	-1.5	-0.5	+1.0	+1.8	-1.6	+0.9	+1.5
Drink ...	+1.1	+0.2	-0.4	-0.3	-0.1	-0.1	-0.2	+0.4	+0.1	+0.2	+0.1	-0.7
Furniture ...	+2.6	+0.2	-0.8	-0.4	-0.5	-0.7	+0.6	+0.3	-0.5	-0.3	-0.1	+0.1
Printing & Publishing ...	+1.2	-0.3	-0.3	-0.1	-0.2	-0.2	-0.2	+0.2	—	+0.1	-0.2	-0.3
Building ...	+2.2	-2.0	-3.3	-1.8	-1.2	-0.1	+0.4	+0.1	+1.1	+1.4	+1.6	+1.2
Railway Service ...	+0.8	-0.3	-0.4	-0.6	-0.3	-0.4	-0.2	+0.1	+0.2	+0.8	+0.5	-0.5
Tram and Bus ...	+0.3	-0.1	-0.3	-0.4	-0.3	-0.3	-0.2	+0.1	+0.2	+0.5	+0.3	-0.3
Road Transport n.s.s. ¹ ...	+1.1	-0.3	-0.9	-0.5	+0.3	-0.7	—	+0.4	+0.3	+0.7	+0.3	-0.5
Shipping ...	+0.2	-1.2	-0.8	-0.4	-0.6	-0.9	+0.8	-0.4	+0.2	+2.5	-0.7	+0.1
Dock & Harbour... ..	+1.1	+1.1	+0.5	—	+0.9	-1.4	-0.4	+0.2	-0.1	-0.5	+0.3	-1.4
Distributive ...	+1.1	+0.3	-0.4	-0.4	-0.3	-0.4	—	+0.2	+0.2	+0.2	—	-0.8
Hotel etc. Service ...	+0.2	-0.5	-0.9	-1.3	-0.7	-1.1	-0.5	+0.1	+1.4	+2.9	+1.0	-1.1
Laundries ...	+0.2	-0.1	-0.4	-0.3	-0.1	-0.3	+0.2	+0.5	+0.3	+0.2	+0.4	-0.4

¹ N.S.S. = Not separately specified.

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APPENDIX II (b)

AVERAGE CHANGE (+ or -) FROM PRECEDING MONTH IN NUMBERS UNEMPLOYED IN CHIEF SEASONAL INDUSTRIES. 1924-32

	Insured July, 1924	Jan.	Feb.	March	April	May	June
Coalmining	981,520	—	+ 980	+ 5,890	+ 5,890	+ 15,700	+ 21,590
Brick, Pipe, Tile	95,610	+ 1,340	— 6,690	— 1,150	— 760	— 670	— 480
Motor Vehicles	271,530	—	— 540	— 2,440	— 1,360	+ 540	+ 2,720
Shipbuilding	158,790	— 480	— 480	— 480	— 1,270	+ 790	+ 160
Electric Cables, etc. ...	133,280	+ 2,270	+ 670	+ 130	+ 270	— 400	— 130
Cotton	467,440	+ 1,870	+ 470	+ 470	+ 6,540	+ 2,340	+ 930
Wool	229,590	+ 4,590	— 2,530	— 2,530	— 230	+ 2,530	+ 4,360
Linen	74,630	— 900	— 670	— 220	+ 970	+ 1,190	+ 900
Tailoring	208,900	+ 4,180	— 7,100	— 8,770	— 4,600	— 1,460	+ 2,090
Dressmaking & Millinery	102,790	+ 2,060	— 2,060	— 2,570	— 1,230	— 620	+ 310
Hats & Caps	34,650	— 1,180	— 690	— 350	— 450	— 170	+ 420
Boots & Shoes	139,390	— 140	— 1,530	— 280	+ 140	+ 140	— 140
Bread, Biscuits, Cakes, etc.	166,980	+ 2,170	— 170	— 670	— 830	— 500	— 830
Food Industries, n.s.s. ...	127,500	+ 640	— 260	— 1,150	— 1,020	— 260	— 1,910
Drink Industries	110,200	+ 1,210	+ 220	— 440	— 330	— 110	— 110
Furniture Making, etc. ...	135,960	+ 3,540	+ 270	— 1,090	— 540	— 680	— 950
Printing & Publishing ...	279,730	+ 3,360	— 840	— 840	— 280	— 560	— 560
Building	928,250	+ 20,420	— 18,570	— 30,630	— 16,710	— 11,140	— 930
Railway Service	134,020	+ 1,070	— 400	— 540	— 800	— 400	— 540
Tram & Bus	182,600	+ 550	— 180	— 550	— 730	— 550	— 550
Road Transport, n.s.s. ...	213,830	+ 2,350	— 640	— 1,920	— 1,070	+ 640	— 1,500
Shipping Service	150,420	+ 300	— 1,810	— 1,200	— 600	— 900	— 1,350
Dock & Harbour Service ...	164,540	+ 1,810	+ 1,810	+ 820	—	+ 1,480	— 2,300
Distribution... ..	2,005,340	+ 22,060	+ 6,020	— 8,020	— 8,020	— 6,020	— 8,020
Hotel, etc. Service	410,040	+ 820	— 2,050	— 3,690	— 5,330	— 2,870	— 4,510
Laundries	152,890	+ 310	— 150	— 610	— 460	— 150	— 460

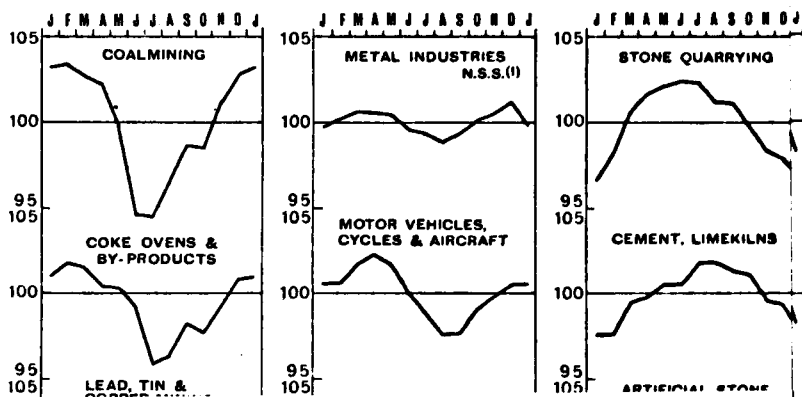
Appendix II (b)

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APPENDIX II (b) (continued)

	Insured July, 1924	July	August	September	October	November	December
Coalmining	981,520	+ 12,760	+ 5,890	- 11,780	- 5,890	- 12,760	- 24,540
Brick, Pipe, Tile	95,610	- 380	+ 670	+ 380	+ 960	+ 760	- 100
Motor Vehicles	271,530	+ 3,260	+ 3,530	- 1,090	- 2,990	- 1,630	- 1,630
Shipbuilding	158,790	- 160	+ 1,270	+ 480	+ 1,270	-	- 640
Electric Cables, etc.	133,280	- 400	- 1,200	- 670	- 270	+ 130	-
Cotton	467,440	+ 7,480	+ 4,670	- 6,540	- 10,750	- 3,270	- 5,140
Wool	229,590	+ 2,760	- 460	- 2,980	- 2,760	- 1,150	- 690
Linen	74,630	+ 1,790	+ 750	- 600	- 600	- 220	- 670
Tailoring	208,900	+ 5,430	+ 6,680	+ 230	- 3,340	+ 2,300	- 2,300
Dressmaking & Millinery	102,790	+ 1,130	+ 1,540	- 510	- 410	+ 2,360	-
Hats & Caps	34,650	+ 350	+ 210	+ 70	+ 660	+ 1,490	- 4,500
Boots & Shoes	139,390	+ 2,370	-	- 1,390	- 1,530	+ 140	+ 2,090
Bread, Biscuits, Cakes, etc.	166,980	- 830	+ 170	+ 1,200	+ 1,000	+ 170	- 1,000
Food Industries, n.s.s.	127,500	- 640	+ 1,280	+ 2,300	- 2,040	+ 1,150	+ 1,910
Drink Industries	110,200	- 220	+ 441	+ 110	+ 220	+ 110	- 770
Furniture Making, etc.	135,960	+ 820	+ 410	- 680	- 410	- 140	+ 140
Printing & Publishing	279,730	+ 560	+ 560	-	+ 280	- 560	- 840
Building	928,250	+ 3,710	+ 930	+ 10,210	+ 13,000	+ 14,850	+ 11,140
Railway Service	134,020	- 270	+ 130	+ 270	+ 1,070	+ 670	- 670
Tram & Bus	182,600	- 370	+ 130	+ 370	+ 910	+ 550	- 550
Road Transport, n.s.s.	213,830	-	+ 860	+ 640	+ 1,500	+ 640	- 1,070
Shipping Service	150,420	+ 1,200	+ 600	+ 300	+ 3,760	+ 1,050	+ 150
Dock & Harbour Service	164,540	- 660	+ 330	- 160	- 820	+ 490	- 2,300
Distribution... ..	2,005,340	-	+ 4,010	+ 4,010	+ 4,010	-	- 16,040
Hotel, etc. Service	410,040	- 2,050	+ 410	+ 5,740	+ 11,890	+ 4,100	- 4,510
Laundries	152,890	+ 310	+ 760	+ 460	+ 310	+ 610	- 610

Seasonal Variations in Em



APPENDIX IV

NOTES ON THE DEGREE OF SEASONAL VARIATION IN EMPLOYMENT FOUND IN EACH INDUSTRY.¹

I. CONSTRUCTION AND RAW MATERIAL INDUSTRIES

(a) *Extractive Industries.*

Most of the industries in this group are seasonal ; in some the busiest time comes in winter, in others in the summer, according to the use made of the product.

Coalmining (S) is the third most seasonal of all industries but there are considerable differences from year to year in the intensity of fluctuations. These differences are accounted for mainly by variations of a cyclical or permanent character in the extent and distribution of coal exports, and in the demand from British industry. The busy season is in the winter, the peak being from January to March, while July is generally the slackest month in the year.

Coke Ovens and By-Products (S) are even more seasonal than coalmining, coming second among all industries in amplitude of fluctuation, and show a peak in the winter. The seasonal fluctuation varies a good deal from year to year.

Lead, Tin and Copper Mining (S) are rather irregularly seasonal, the busy time being the summer. On average, the seasonal fluctuation is the fourth greatest of all industries.

Clay, Sand, Gravel and Chalk Pits (S) are moderately seasonal, the busy season being in summer and the products of the industry being used mainly for building and roads.

*Mining and Quarrying, n.s.s.*² (S), including oil shale mines, salt mines and salt works, are moderately and not regularly seasonal, with a busy season in summer.

Iron Ore and Ironstone Mining (IS) does not show any regular seasonal movement, but there is generally an increase of employment in the summer.

¹ Industries showing regular seasonal fluctuation are marked S ; irregularly seasonal industries are marked IS ; industries showing no seasonal fluctuation at all are marked NS. (See pp. 10-11 for the meaning of these definitions.)

² N.S.S. = Not separately specified.

(b) Metals.

In this group only three industries are regularly seasonal—with winter and spring peaks—but four others show some trace of a seasonal rhythm. Considerable fluctuations of an irregular or casual character are especially noticeable.

Pig Iron (Blast Furnaces) (IS) shows very wide, but not regularly seasonal fluctuations. There is however some tendency for a peak in the second quarter of the year, often carried on to the third.

Steel Melting and Iron Puddling; Iron and Steel Rolling and Forging (IS). Till 1931 there was some tendency for the first half of the year to be busier than the second.

Brass, Copper, Zinc, Tin, Lead, etc. (NS). No trace of seasonal movement.

Tin Plates (NS). No trace of seasonal movement but very wide casual fluctuations.

Iron and Steel Tubes (IS). There is generally an upward swing in the second or third quarter.

Wire, Wire Netting, Wire Ropes (IS). The first quarter is generally the busiest.

Hand Tools, Cutlery, Saws, Files (S) shows a seasonal fluctuation of moderate amplitude, though rather irregular, with a peak in winter and spring.

Bolts, Nuts, Screws, Rivets, Nails, etc. (NS). No trace of seasonal movement.

Brass and Allied Metal Wares (S) shows a moderate and rather uncertain seasonal swing, with a winter to spring peak.

Metal Industries n.s.s. (S) cover a variety of metal goods, including sheet metal working, cycle and motor accessories, locks, keys, safes, pins, needles, etc. There is a slight seasonal movement with a winter to spring peak.

(c) Engineering.

The whole group is moderately but irregularly seasonal in operation, the spring and summer being the busiest time of year (except in *Electrical Engineering*).

General Engineering; Engineers' Iron and Steel Founding (IS). The middle of the year is generally better than the first or fourth quarters, but there is no well-defined seasonal movement.

Electrical Engineering (S) shows a very slight seasonal curve, with

a gradual slope up to a December peak. The movement is more strongly developed in 1931 and 1932.

Marine Engineering (IS) shows no regular seasonal movement but the second and third quarters are generally the busiest.

Constructional Engineering (IS). There is practically no trace of a seasonal curve until 1931, but in that year and in 1932 a distinct seasonal movement is evident.

Railway Carriage and Wagons and Trams (S) shows a moderate but irregular curve, the first half of the year being the busiest.

Carriages, Carts, etc. (S) shows a fairly regular seasonal curve, the first half of the year being the best.

Shipbuilding and Ship Repairing (S) is very seasonal but the amplitude of fluctuation varies considerably from year to year. The peak comes in April and the trough in October.

(d) *Other Industries* :

Explosives (NS). No seasonal movement.

Chemicals (NS) shows no seasonal curve and only very slight casual irregularities. The absence of irregularities may perhaps be associated with the high degree of concentration in the organization of the industry.

Wood Boxes and Packing Cases (S) shows a moderate seasonal curve, sloping upwards from the beginning to the end of the year.

Jute (IS) until 1931 showed no regular seasonal movement but in almost every year July was a slack month. In 1931 and 1932 a well-marked curve appears, of the same pattern in both years.

Hemp, Rope, Cord, Twine (S) shows a moderate seasonal curve, the winter being busiest.

II. BUILDING AND ASSOCIATED INDUSTRIES

Almost the whole group is to some extent seasonal in operation and may be divided into two classes. The first, and largest group contains building and the production of building materials, where the summer is the busy season; the second group covers the production of certain housing accessories and is at its busiest in winter.

Building (S) is one of the most seasonal of leading industries in Great Britain and most other countries. The peak season is April-May with a secondary peak in August, and the seasonal curve is very regular. See the more detailed description in Chapter VII.

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Stone Quarrying and Mining (S) shows a fairly regular seasonal curve with a peak in June.

Slate Quarrying and Mining (NS) shows no trace of seasonal fluctuations.

Cement, Limekilns and Whiting (S) show a peak in the late summer. The increasing seasonality from 1929 to 1932 is noticeable.

Artificial Stone and Concrete (S) shows a regular and moderate seasonal curve, with its peak in June.

Brick, Tile, Pipe, etc. Making (S) has a seasonal pattern very similar to *Building* but with narrower limits.

Paint, Varnish, Red and White Lead (IS). There is no regular seasonal curve evident, but there is a tendency for employment to increase slightly in spring and early summer.

Sawmilling and Machined Woodwork (S) shows a regular slight seasonal curve with a July peak.

Heating and Ventilating Apparatus (S) is moderately seasonal, the busy time coming at the end of the year, from August to December.

Stove, Grate, Pipe, etc., and General Iron Founding (IS) shows as a rule an autumn peak and a slack period in late summer.

Wallpaper (S) showed little regular seasonal fluctuation until 1930 but in 1930, 1931 and 1932, a seasonal pattern, with a peak in December, is very marked.

Woodworking n.s.s. (S) is slightly but regularly seasonal with peaks in both the spring and December.

Electrical Wiring and Contracting (S) is another trade with a busy season in winter, the peak being in December.

Glass (not Bottle or Scientific Glass) (NS). No seasonal fluctuation.

Public Works Contracting (S) shows a considerable seasonal curve, varying substantially in amplitude from year to year, with a peak in June and a trough in January.

III. TRANSPORT AND DISTRIBUTION

This group is rather heterogeneous. *Shipping* and *Docks, etc., Service* are connected with the fluctuations in foreign trade. Internal transport and distribution are busiest in the summer but are active too at Christmas.

Shipping Service (S). March to October is the busy season for seamen, and the moderate seasonal fluctuation is regular from year to year. The curve does not coincide with that of foreign trade, for

the value of exports, imports and re-exports is highest in the autumn and is low throughout the summer. Correlation is not, however, to be expected because British ships do a considerable amount of carrying trade between countries outside Great Britain, because the busiest season for employment of seamen will differ from the busiest time at the port according to the length of the voyages made, and because the value of the goods carried has no relation to the employment involved in their transport.

Dock, Harbour, River and Canal Service (S). The seasonal fluctuation is somewhat irregular, and is of moderate amplitude. The end and beginning of the year, from November to January, is the busiest season; at this period, too, comes the maximum pressure both of imports and of exports.

Railway Service (S). The Ministry of Labour figures refer only to the non-permanent staff of the railways. The figures therefore cover all the casual labour engaged on the railways, and this class of railway workers is naturally much more subject to seasonal and other changes in activity than railway workers as a whole. The figures show a moderate but regular seasonal curve, with peaks in the summer and at Christmas. These peaks coincide with the busy seasons for passenger traffic, but the peaks of activity in goods traffic come in spring and autumn.

Tram and Bus Service (S) shows a slight but regular seasonal curve, with a summer peak, and a slight secondary peak in December. In the summer not only is there much purely seasonal work in the driving of coaches for special excursions but also the regular bus services are supplemented and extra labour engaged.

Road Transport, n.s.s. (S) covers goods traffic on the roads. The curve also shows a regular though slight summer increase.

Transport Communication and Storage, n.s.s. (NS) covers employment in warehouses, etc. No seasonal fluctuation is discernible.

Distributive Trades (S). There is a very slight but quite regular seasonal fluctuation, with two peaks, in July-August and December.

IV. DIRECT CONSUMPTION INDUSTRIES

(a) *Textiles.*

Most industries in this group show some seasonal fluctuation. Except in *Silk and Art-silk* (which are busiest in summer) the heaviest trade comes in the autumn and winter.

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Cotton (S). The seasonal curve is very marked but rather irregular from year to year, depending as it does on such factors as the geographical distribution of exports. The busy season is in winter, with peaks in March and December, while summer holidays are responsible for the low level of employment in August.

Woollen and Worsted (S) is very seasonal, with November and spring peaks and slack periods in January and July. The slack season in late summer is most pronounced in the worsted section of the trade.

Silk and Art-silk (IS) shows no regular seasonal curve but there is generally a peak in the summer and slack periods at the beginning and towards the end of the year.

Linen (S) is very seasonal with spring and winter peaks. The amplitude of the seasonal swing is indeed greater than in any other industry (17.6% of the insured).

Hosiery (S) shows a rather irregular seasonal curve, with busy periods in spring and autumn. After 1930 the seasonal curve becomes much more marked.

Lace (S) shows two moderate peaks, in spring and autumn.

Carpets (NS) shows no seasonal fluctuations.

Textiles n.s.s. (NS) shows no seasonal fluctuation.

Textile Bleaching, Printing, Dyeing, etc. (IS) shows no regular seasonal curve, but employment is generally good in the second quarter of the year and poor at the end of summer.

(b) *Clothing.*

The whole of this group is very seasonal ; a principal peak in the spring and a secondary peak in the autumn is the usual rule. The whole group (except *Boots and Shoes*) is dealt with in detail in Chapters V and VI.

Tailoring (S) is the most seasonal of the group and shows very regular spring and autumn peaks of considerable amplitude, the former being the most pronounced.

Dressmaking and Millinery (S) shows moderate and regular seasonality, with spring and autumn peaks.

Shirts, Collars, Underclothing, etc. (S) is moderately seasonal, with spring and autumn peaks.

Hats and Caps (including Straw Plait) (S) is very seasonal with a very regular peak in spring and a lesser peak in September.

Dress Industries n.s.s. (IS), including the manufacture of corsets,

gloves, umbrellas, walking sticks, etc., shows no regular seasonal curve, owing to the heterogeneity of its composition. But in most years there is a peak in spring or early summer and a fairly good period at the end of the year.

Boots, Shoes, Slippers and Clogs (S) show moderate peaks in spring and autumn, but the seasonal curve is rather less regular than in most of the other clothing trades.

(c) *Food, Drink and Tobacco.*

The industries composing this group mostly show regular but slight seasonal curves. In most cases the peaks occur in mid or late summer and in December, being affected by the summer and Christmas holidays.

Bread, Biscuits, Cakes, etc. (S) has very regular though slight seasonal increases in activity in summer and in December.

Grain-milling (IS) shows no regular seasonal curve, but the third quarter of the year is generally slightly better than the rest.

Cocoa, Chocolate and Sugar Confectionery (S) has a fairly regular and moderate seasonal curve, with a peak in September.

Food Industries, n.s.s. (S) covering jam making, fish curing, the manufacture of milk products, etc., show regular and moderate summer and autumn peaks.

Drink Industries (S) show a very slight but regular seasonal curve, with peaks in July and December. The seasonal swing is less than in any other seasonal industry (2.6% of the insured).

Tobacco, Cigars, Cigarettes, Snuff (S) has a slight but regular curve, with a peak in November-December.

(d) *Printing and Paper.*

The whole of this group is slightly seasonal, with a busy season at the end of the year.

Cardboard Boxes, Paper Bags and Stationery (S) are slightly but regularly seasonal with a peak in November-December.

Printing, Publishing and Bookbinding (S) has a very slight seasonal movement with two peaks, one in July, the other in December.

Paper and Paper Board (IS) is not regularly seasonal but as a rule the late summer is slack and December busy.

Stationery and Typewriting Requisites (not paper) (IS) is not regularly seasonal but the spring is generally slack and October to December busy.

(e) Other Manufactures.

This covers a group of light industries all except two of which are to some extent seasonal. The usual pattern is a double cycle, with two seasons, in spring and autumn. In some cases a busy Christmas season is substituted for the autumn peak.

Fishing (S) is very seasonal, the busy period being from May to November. The curve is very regular from year to year. (See Chapter VIII.)

Pottery, Earthenware, etc. (S) is very seasonal with two peaks in March and October.

Motor Vehicles, Cycles and Aircraft (S) shows a regular seasonal curve of moderate amplitude, with a principal peak in the spring and a secondary peak in autumn. (See Chapter IV.)

Electric Cables, Apparatus, Lamps, etc. (S), including radio sets, telephone apparatus, electric batteries, etc., is regularly and moderately seasonal, with a busy period from November to December. (See p. 263).

Musical Instruments (S) shows a very marked and regular seasonal curve, with a peak in November–December. It may be observed that the manufacture of radio apparatus which is an important section of the Electric Cable, etc., group is often associated with gramophone manufacture, a constituent of the Musical Instruments group. The seasonal curve of employment in both shows a similar trend.

Watches, Clocks, Plate, Jewellery, etc. (S) is regularly but slightly seasonal with a peak at the end of the year and a secondary peak in spring in most years.

Rubber (S) shows a moderate seasonal curve advancing up to June–July, and then receding. The industry is not homogeneous, including as it does both rubber sports goods, for which there is a summer demand, and tyres, for which the main demand is in spring.

Tanning, Currying and Dressing of Leather (S) shows busy seasons in spring and autumn with peaks in March and October. The curve, though of less amplitude, is similar to that in the *Boot and Shoe* industry, with a slight time lag.

Leather Goods (S) like *Tanning, etc.*, shows slight spring and autumn seasons. As in the case of *Boots and Shoes*, the curve lags about a month behind that for *Tanning, etc.*

Furniture Making, Upholstering, etc. (S) show busy seasons of moderate intensity in spring and autumn.

Glass Bottles (IS) is not regularly seasonal, but employment is generally better in the middle and at the end of the year than at other times.

Oil, Glue, Soap, Ink, Matches, etc. (IS) show no regular seasonal movement but there is a tendency for increases in employment in spring and at the end of the year.

Oilcloth, Linoleum, etc., (NS) shows no seasonal fluctuation.

Brushes and Brooms (S) shows a rather irregular and moderate seasonal curve with peaks in March and December.

Scientific and Photographic Instruments (NS). There is no trace of seasonal fluctuation in the industry as a whole, but the manufacture of photographic apparatus is subject to a marked seasonal variation of demand, with a summer peak.

Toys, Games and Sports Requisites (S) shows a moderate seasonal curve with periods of good employment in spring and summer and also in December.

(f) *Services.*

This is a rather miscellaneous group, but the first three industries are all considerably affected by the summer and Christmas holidays.

Entertainments and Sports (S) is moderately and regularly seasonal, with a period of good trade from March to October (with a peak in August) and a secondary peak in December. Holidays are obviously responsible for the pattern of the curve. It should be observed, however, that a certain number of workers in this industry, e.g., professional footballers, have a busy season in winter and are slack during the summer.

Hotel, Public House, Restaurant, Boarding House, Club, etc., Service (S) shows a very regular seasonal curve of moderate amplitude. As in the *Entertainment* industry, which is affected by the same causes, the busy season is from March to October, and there is a secondary peak in December. (See Chapter VIII.)

Laundries, Dyeing and Dry Cleaning (S) are slightly but regularly seasonal, the busy season coming in summer (with a peak in July and in December).

Gas, Water and Electricity Supply (IS). There is no regular seasonal curve in this group, but the summer is usually rather busier than the rest of the year.

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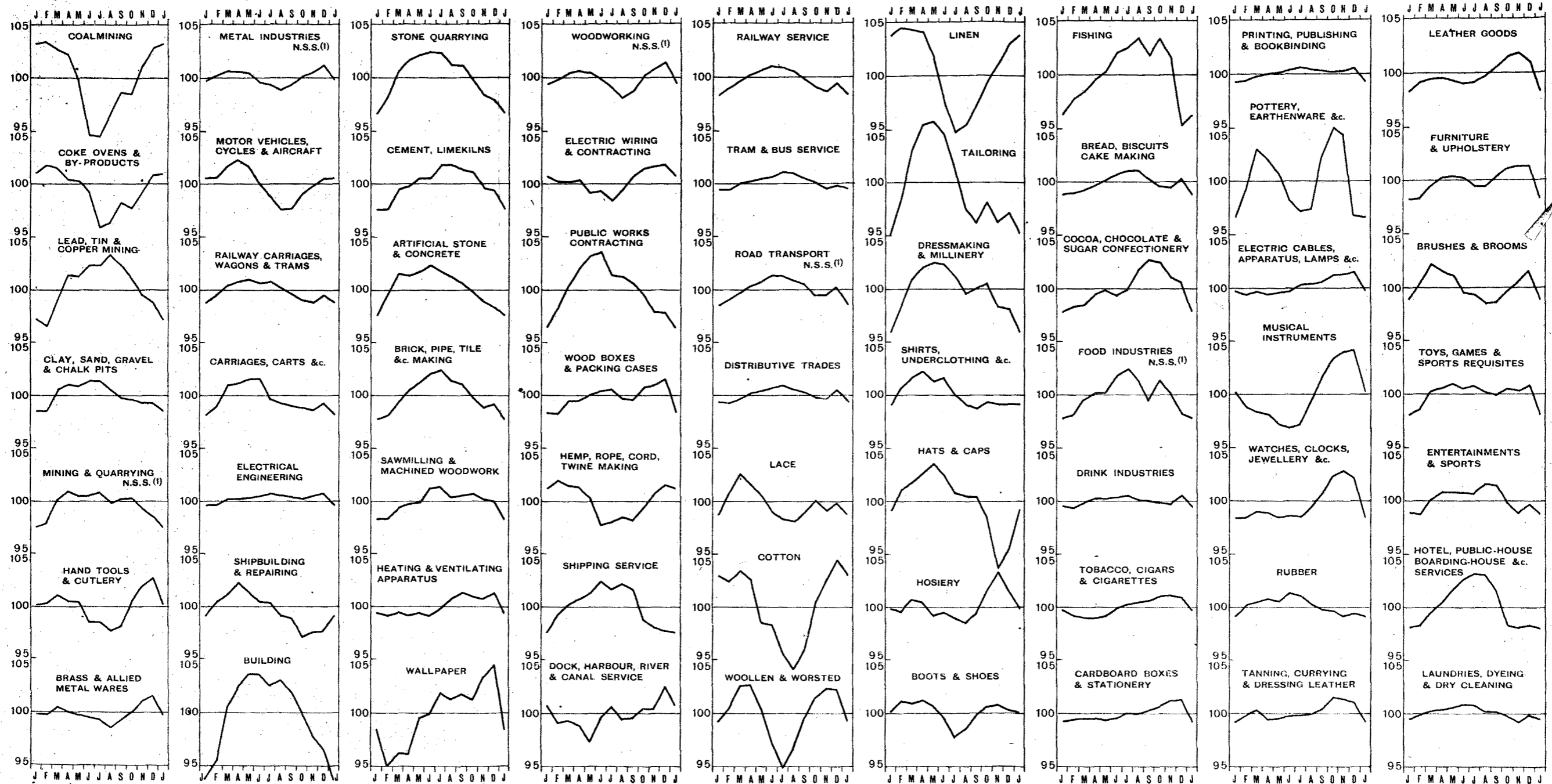
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APPENDIX III.

Seasonal Variations in Employment in all Seasonal Industries. (Average of Percentage Deviations from Moving Average, 1924-32.*)



* For Method of Calculation see p. 10