

This PDF is a selection from an out-of-print volume from the
National Bureau of Economic Research

Volume Title: Measuring Business Cycles

Volume Author/Editor: Arthur F. Burns and Wesley C. Mitchell

Volume Publisher: NBER

Volume ISBN: 0-870-14085-X

Volume URL: <http://www.nber.org/books/burn46-1>

Publication Date: 1946

Chapter Title: Appendix B: Some Supporting Data

Chapter Author: Arthur F. Burns, Wesley C. Mitchell

Chapter URL: <http://www.nber.org/chapters/c2993>

Chapter pages in book: (p. 517 - 539)

APPENDIX B

Some Supporting Data

THIS APPENDIX is restricted to the barest essentials. If we attempted to present in full detail the cyclical measures of all series considered in the text, this volume would grow to unmanageable proportions.

Tables B1–B4 present cycle-by-cycle measures of the seven series analyzed in Chapters 9–12. Several of these series are analyzed also in Chapters 5–8. Tables B5–B9 show in detail the classifications of cycles carried through in Chapters 11 and 12.

The arrangement and content of Tables B1–B4 are governed, in the main, by the analysis of Chapters 11 and 12. In Tables B1 and B3 the cycles are treated on a positive basis, in Tables B2 and B4 on an inverted basis. Since the inverted analysis is restricted to the outer boundaries of the positive analysis, some inverted cycles are sacrificed. Our results, however, would not be altered appreciably by lifting this restriction.

TABLE B 1
Measures of Successive Specific Cycles Treated on Positive Plan
Seven American Series

Cycle no. (1)	Dates of specific cycles (2) Trough - Peak - Trough	Duration of specific cycles in months			Ratio of expansion to full cycle (6)	Amplitude in specific-cycle relatives			Ratio of rise to total rise & fall (10)	Average in specific-cycle relatives at stage*										Terminal trough (19)
		Expansion (3)	Contraction (4)	Full cycle (5)		Rise (7)	Fall & (8)	Rise & fall (9)		Expansion		Peak	Contraction							
										First third (12)	Middle third (13)		Last third (14)	First third (16)	Middle third (17)	Last third (18)				
Deflated clearings																				
1	Mar.78-June 81-Jan. 82	39	7	46	.85	59.5	10.2	69.7	.85	72.2	78.2	97.3	109.2	131.7 ^a	126.9	130.2	124.6	121.5		
2	Jan. 82-June 83-Nov. 84	17	17	34	.50	6.3	11.9	18.2	.35	98.0	97.0	100.9	101.3	104.3	103.2	103.5	93.5	92.4		
3	Nov. 84-June 87-Mar. 88	31	9	40	.78	36.6	6.5	43.1	.85	80.4	84.2	96.0	108.1	117.0	114.6	113.1	110.4	110.5		
4	Mar. 88-Sep. 90-Mar. 91	30	6	36	.83	28.5	8.0	36.5	.78	85.5	90.6	96.4	107.4	114.0	112.7	105.2	106.4	106.0		
5	Mar. 91-Feb. 93-Aug. 93	23	6	29	.79	16.9	26.0	42.9	.39	91.5	95.5	99.1	105.6	108.4	105.9	107.4	93.0	82.4		
6	Aug. 93-Oct. 95-Aug. 96	26	10	36	.72	22.0	9.7	31.7	.69	87.9	91.6	98.5	104.5	109.9	108.0	102.3	103.8	100.2		
7	Aug. 96-Sep. 99-Sep. 00	37	12	49	.76	35.6	6.2	41.8	.85	81.2	82.8	95.5	109.9	116.8	113.3	110.4	111.4	110.6		
8	Sep. 00-July 03-May 04	34	10	44	.77	21.2	5.9	27.1	.78	83.5	95.3	100.4	102.7	106.4	104.3	100.3	101.7	100.5		
9	May 04-Oct. 07-Dec. 07	41	2	43	.95	26.8	25.0	51.8	.52	85.2	91.7	101.2	108.0	110.3 ^a	(96.8)	90.0	(88.4)	85.3 ^b		
10	Dec. 07-Mar. 10-Oct. 10	27	7	34	.79	31.0	3.3	34.3	.90	79.0 ^b	89.4	98.3	106.8	110.0	107.4	107.9	106.5	106.7		
11	Oct. 10-Feb. 13-Nov. 14	28	21	49	.57	11.1	11.9	23.0	.48	93.8	95.3	97.9	102.6	104.9	102.8	103.9	99.3	93.0		
12	Nov. 14-Aug. 18-Dec. 18	45	4	49	.92	39.7	4.9	44.6	.89	77.3	86.2	101.2	108.9	117.0	113.4	116.8	112.3	112.1		
13	Dec. 18-Jan. 20-May 21	13	16	29	.45	11.9	10.9	22.8	.52	93.3	93.9	102.7	104.1	105.2	102.0	101.4	96.1	94.3		
14	May 21-May 23-Sep. 23	24	4	28	.86	19.2	5.7	24.9	.77	90.6	92.9	98.3	105.2	109.8	110.0	104.4	105.6	104.1		
15	Sep. 23-Nov. 29-Mar. 33	74	40	114	.65	36.6	54.7	91.3	.40	86.5	92.4	103.8	116.2	123.1	108.0	93.9	74.8	68.4		
Fig. iron production																				
1	Jan. 79-Feb. 83-Jan. 85	49	23	72	.68	64.0	24.6	88.6	.72	55.7	78.3	97.6	111.9	119.7	117.4	104.3	106.4	95.1		
2	Jan. 85-Oct. 87-Mar. 88	33	5	38	.87	64.3	25.5	90.3	.72	67.0	74.5	104.2	113.1	131.8	130.0	120.8	105.2	106.3		
3	Mar. 88-May 90-Apr. 91	26	11	37	.70	50.2	47.4	97.6	.51	74.0	83.5	95.2	109.9	124.2	122.6	117.3	87.2	76.8		
4	Apr. 91-Feb. 92-Oct. 93	10	20	30	.33	45.4	63.7	109.1	.42	67.5	92.3	111.9	112.1	112.9	106.0	101.8	89.1	49.2		
5	Oct. 93-Nov. 95-Oct. 96	25	11	36	.69	87.2	60.8	148.0	.59	51.5	65.0	98.6	116.4	138.7	131.1	120.1	94.9	77.9		

Pig iron production - Continued

6	Oct. 96-Dec. 99-Oct. 00	38	10	48	.79	76.0	30.5	106.5	.71	52.3	74.5	97.7	112.5	128.3	127.4	125.1	109.1	97.8
7	Oct. 00-June 03-Dec. 03	32	6	38	.84	49.0	50.0	99.0	.49	69.0	87.8	101.2	109.6	118.0	114.8	116.8	89.2	68.0
8	Dec. 03-July 07-Jan. 08	43	6	49	.88	73.6	62.7	136.3	.54	51.1	76.4	106.5	126.3	124.7	122.2	122.0	83.7	62.0
9	Jan. 08-Jan. 10-Dec. 10	24	11	35	.69	78.6	41.7	120.3	.65	59.8	64.0	89.8	120.4	138.4	132.2	118.0	104.3	96.7
10	Dec. 10-Jan. 13-Dec. 14	25	23	48	.52	45.0	56.8	101.8	.44	82.7	86.0	95.7	114.5	127.7	120.3	99.5	83.9	70.9
11	Dec. 14-Sep. 18-May 19	45	8	53	.85	61.9	40.3	102.2	.61	52.5	87.4	107.3	105.1	114.4	112.6	109.6	90.2	74.1
12	May 19-Sep. 20-July 21	16	10	26	.62	40.7	91.1	131.8	.31	90.2	95.6	115.9	122.4	130.9	119.2	80.6	46.9	39.8
13	July 21-May 23-July 24	22	14	36	.61	108.3	58.6	166.9	.65	38.9	54.6	84.9	124.7	147.2	137.9	113.5	105.5	88.6
14	July 24-July 26-Nov. 27	24	16	40	.60	36.5	18.7	55.2	.66	73.5	88.8	101.5	103.8	110.0	109.4	102.6	99.5	91.3
15	Nov. 27-July 29-Mar. 33	20	44	64	.31	50.0	148.9	198.9	.25	123.3	129.2	147.6	154.7	173.3	136.6	71.1	31.0	24.4

Freight car orders

1	4Q 70-4Q 71-4Q 73	12	24	36	.33	385.8	396.8	782.6	.49	14.8	30.2	57.1	30.2	400.6	54.1	107.1	121.4	3.8
2	4Q 73-4Q 74-4Q 77	12	36	48	.25	269.7	218.3	488.0	.55	3.2	40.2	37.4	11.7	272.9	123.1	94.6	108.1	54.6
3	4Q 77-2Q 81-4Q 84	42	42	84	.50	268.0	263.3	531.3	.50	10.4	54.5	104.2	158.0	278.4	125.0	80.5	58.7	15.1
4	4Q 84-1Q 88-1Q 89	39	12	51	.76	141.6	67.4	209.0	.68	12.2	49.7	91.1	128.8	153.8	141.0	146.9	130.8	86.4
5	1Q 89-1Q 90-1Q 91	12	12	24	.50	106.2	122.4	228.6	.46	57.8	86.5	128.4	104.8	164.0	131.8	91.9	42.9	41.6
6	1Q 91-1Q 92-4Q 94	12	33	45	.27	117.3	166.4	283.7	.41	75.2	79.9	149.1	172.9	192.5	130.1	83.0	44.3	26.1
7	4Q 94-2Q 95-4Q 96	6	18	24	.25	121.6	101.4	223.0	.55	19.4	(71.4)	97.4	(111.9)	141.0	120.5	131.4	79.9	39.6
8	4Q 96-3Q 99-1Q 00	33	6	39	.85	179.5	115.5	295.0	.61	22.9	44.0	97.2	142.5	202.4	(130.4)	94.4	(91.9)	86.9
9	1Q 00-2Q 02-4Q 03	27	18	45	.60	121.5	169.3	290.8	.42	62.2	94.2	91.0	116.4	183.7	115.1	109.3	62.4	14.4
10	4Q 03-3Q 05-1Q 08	21	30	51	.41	200.6	202.0	402.6	.50	11.6	46.2	81.9	120.6	212.2	143.9	136.6	46.0	10.2
11	1Q 08-3Q 09-3Q 10	18	12	30	.60	175.8	158.7	334.5	.53	17.1	54.8	47.0	69.1	192.9	180.2	185.6	120.8	34.2
12	3Q 10-4Q 12-4Q 14	27	24	51	.53	177.3	191.9	369.2	.48	33.0	51.9	101.4	123.0	210.3	122.4	115.7	72.3	18.4
13	4Q 14-4Q 16-1Q 18	24	15	39	.62	259.8	280.6	540.4	.48	25.5	109.0	121.5	123.0	202.4	51.8	46.8	25.7	4.7
14	1Q 18-2Q 18-3Q 19	9	15	18	.17	584.9	591.0	1175.9	.50	6.1	(132.3)	(298.6)	(444.8)	591.0	0.0	3.0	0.0	0.0
15	3Q 19-2Q 20-2Q 21	3	12	21	.43	238.0	214.8	452.8	.53	0.0	(24.0)	90.6	(166.7)	238.0	141.2	80.1	47.8	23.2
16	2Q 21-2Q 22-2Q 23	12	12	24	.50	173.0	148.9	321.9	.54	7.0	19.3	48.5	100.0	180.0	133.3	133.9	166.0	31.1
17	2Q 23-1Q 24-2Q 25*	9	15	24	.38	136.1	136.2	272.3	.50	42.5	(51.6)	62.0	(88.7)	178.6	100.0	152.4	50.0	42.4
18	1Q 25-4Q 25-1Q 28	9	9	36	.25	139.4	133.9	273.3	.51	48.4	(91.8)	106.4	(124.9)	187.8	95.2	84.4	98.0	53.9
19	1Q 28-4Q 29-1Q 33	21	29	60	.55	250.1	341.3	591.4	.42	91.3	109.0	174.6	261.6	341.4	100.5	25.9	4.2	0.1

T A B L E B 1 - Continued
Measures of Successive Specific Cycles Treated on Positive Plan
Seven American Series

Cycle no. (1)	Dates of specific cycles (2)	Duration of specific cycles in months			Ratio of expansion to full cycle (6)	Amplitude in specific-cycle relatives			Ratio of rise to total rise & fall (10)	Average in specific-cycle relatives at stage*										
		Expansion (3)	Contraction (4)	Full cycle (5)		Rise (7)	Fall (8)	Rise & fall (9)		I Initial trough (11)	Expansion (12-14)			Peak (15)			Contraction (16-18)			IX Terminal trough (19)
											II First third (12)	III Middle third (13)	IV Last third (14)	V First third (15)	VI Middle third (16)	VII Last third (17)	VIII First third (18)			
1	Oct. 57-Mar. 58-May 59	5	14	19	.26	17.9	13.0	30.9	.58	89.3	92.1	97.3	107.8	107.2	103.1	100.6	98.4	94.2		
2	May 59-Sep. 60-May 61	16	8	24	.67	23.8	21.9	45.7	.52	91.6	92.9	94.2	106.7	115.4	107.4	101.0	102.3	93.5		
3	May 61-Apr. 64-Apr. 65	35	12	47	.74	84.7	33.0	117.7	.72	57.5	60.6	85.9	122.0	142.2	140.4	129.4	120.9	109.2		
4	Apr. 65-Apr. 72-June 77	84	62	146	.58	42.0	54.9	96.9	.43	78.4	84.2	99.5	109.8	120.4	114.4	105.1	89.7	65.5		
5	June 77-June 81-June 85	48	48	96	.50	78.0	44.2	122.2	.64	56.1	65.1	82.8	115.2	134.1	124.4	116.9	95.1	89.9		
6	June 85-May 87-Apr. 89	23	23	46	.50	28.4	16.6	45.0	.63	83.0	93.4	100.5	108.3	111.4	103.5	97.4	97.0	94.8		
7	Apr. 89-May 90-Dec. 90	13	7	20	.65	8.1	15.1	23.2	.35	96.7	98.3	101.6	101.3	104.8	105.1	101.0	92.4	89.7		
8	Dec. 90-Mar. 92-Mar. 95	15	36	51	.29	17.8	30.2	48.0	.37	97.3	100.6	103.2	112.7	115.1	112.3	91.9	88.1	84.9		
9	Mar. 95-Sep. 95-Aug. 96	6	11	17	.35	13.2	18.1	31.3	.42	94.4	99.2	104.1	106.7	107.6	102.5	98.0	95.5	89.5		
10	Aug. 96-Apr. 00-Sep. 00	44	5	49	.90	45.4	5.1	50.5	.90	75.6	81.9	95.1	117.6	121.0	118.5	115.2	116.0	115.9		
11	Sep. 00-Sep. 02-Oct. 03	24	13	37	.65	46.5	30.1	76.6	.61	70.3	86.4	101.3	109.7	116.8	111.2	104.5	90.8	86.7		
12	Oct. 03-Sep. 06-Nov. 07	35	14	49	.71	44.3	37.7	82.0	.54	75.5	79.1	103.7	113.4	119.8	118.3	100.1	91.6	82.1		
13	Nov. 07-Aug. 09-July 10	21	11	32	.66	37.8	15.2	53.0	.71	76.5	81.9	95.6	107.2	114.3	113.7	111.0	105.8	99.1		
14	July 10-Aug. 12-Feb. 15	25	30	55	.45	6.5	26.9	33.4	.19	101.9	104.5	105.4	105.7	108.4	102.4	92.9	86.0	81.5		
15	Feb. 15-Oct. 16-Dec. 17	20	14	34	.59	14.7	29.6	44.3	.33	93.9	96.3	105.1	105.8	108.6	105.0	97.5	87.5	79.0		
16	Dec. 17-June 19-June 21	18	24	42	.43	14.5	23.1	37.6	.39	97.5	99.8	106.3	106.8	112.0	101.0	94.4	94.6	88.9		
17	June 21-Sep. 22-Oct. 23	15	13	28	.54	26.4	15.2	41.6	.63	86.6	88.9	93.0	105.6	113.0	107.5	106.6	98.8	97.8		
18	Oct. 23-Sep. 29-June 32	71	33	104	.68	90.3	141.8	232.1	.39	67.5	78.2	103.9	132.2	157.8	132.4	94.7	41.8	16.0		

Railroad stock prices

Shares traded

1	Feb. 78-May81-Apr. 85	39	47	86	.45	103.2	61.6	164.8	.63	31.8	51.4	87.7	118.3	135.0	120.4	110.4	103.6	73.4
2	Apr. 85-Nov. 85-Feb. 88	7	27	34	.21	62.0	83.0	145.0	.43	73.8	67.1	120.5	110.2	135.8	103.5	114.5	84.1	52.8
3	Feb. 88-June 89-Mar. 91	16	21	37	.43	51.1	37.8	88.9	.57	69.3	103.0	101.7	98.0	120.4	105.1	99.6	94.6	82.6
4	Mar. 91-Feb. 92-Jan. 95	11	35	46	.24	94.5	115.4	209.9	.45	79.9	95.6	110.6	121.3	174.4	112.4	105.0	67.4	59.0
5	Jan. 95-May 95-May 97	4	24	28	.14	61.5	67.8	129.3	.48	72.3	68.6	99.9	103.9	133.8	120.0	97.1	83.6	66.0*
6	May 97-Jan. 99-Aug. 00	20	19	39	.51	129.4	107.8	237.2	.55	29.4*	80.6	82.0	89.1	158.8	138.4	109.0	98.9	51.0
7	Aug. 00-May 01-May 04	9	36	45	.20	182.5	176.1	358.6	.51	35.2	76.3	145.6	181.9	217.7	100.3	91.9	78.7	41.6
8	May 04-Jan. 06-Nov. 07	20	22	42	.48	112.6	84.8	197.4	.57	32.4	93.6	113.0	98.6	145.0	114.7	106.9	71.6	60.2
9	Nov. 07-June 09-Apr. 11	19	22	41	.46	44.7	78.6	123.3	.36	81.5	92.5	109.3	107.9	126.2	124.8	100.3	64.2	47.6
10	Apr. 11-Sep. 11-Dec. 14	5	39	44	.11	71.0	110.2	181.2	.39	80.0	112.7	109.8	150.5	151.0	121.5	88.9	71.7*	40.8*
11	Dec. 14-Sep. 16-Apr. 18	21	19	40	.52	129.2	83.8	213.0	.61	23.3*	71.9	117.1	89.4	152.5	142.3	101.7	80.0	68.7
12	Apr. 18-July 19-Oct. 21	15	27	42	.36	143.9	134.7	278.6	.52	57.2	62.6	70.8	134.0	201.1	138.7	84.3	78.6	66.4
13	Oct. 21-Feb. 23-Oct. 23	16	8	24	.67	63.1	45.5	108.6	.58	62.0	86.8	120.4	101.2	125.1	101.8	97.9	77.8	79.6
14	Oct. 23-Nov. 25-May 26	25	6	31	.81	101.6	57.8	159.4	.64	51.8	61.3	104.5	117.1	153.4	133.7	117.2	112.0	95.6
15	May 26-Oct. 29-Mar. 33	41	41	82	.50	120.6	141.1	261.7	.46	50.7	71.9	104.9	163.3	171.3	118.4	80.9	57.9	30.2*

Call money rates

1	Oct. 58-Sep. 60-Oct. 62	23 ¹	25	48	.48	51.3	31.9	83.2	.62	68.1	81.6	108.0	102.6	119.4	107.9	105.6	93.3	87.5
2	Oct. 62-Aug. 64-Oct. 66	22	26	48	.46	44.2	47.6	91.8	.48	79.9	94.0	107.5	107.8	124.1	104.6	99.2	87.6	76.5
3	Oct. 66-June 69-Mar. 71	32	21	53	.60	136.6	141.6	278.2	.49	64.5	79.7	92.5	121.5	201.1	122.8	72.2	81.2	59.5
4	Mar. 71-Sep. 73-Jan. 75	30	16	46	.65	315.8	337.3	653.1	.48	53.8	74.0	95.1	124.7	369.6	90.3	46.1	36.9	32.3
5	Jan. 75-Jan. 76-Sep. 76	12	8	20	.60	48.3	51.9	100.2	.48	78.6	92.3	106.4	97.7	126.9	104.9	107.0	87.4	75.0
6	Sep. 76-Jan. 78-Sep. 78	16	8	24	.67	86.8	66.5	153.3	.57	63.2	90.1	70.4	124.9	150.0	115.5	111.6	69.4	83.5
7	Sep. 78-Aug. 79-Oct. 80	11	14	25	.44	86.4	80.4	166.8	.52	67.0	75.4	68.5	94.1	153.4	148.9	104.8	76.6	73.0
8	Oct. 80-Feb. 81-May 82	4	15	19	.21	98.0	89.4	187.4	.52	64.8	91.8	154.5	73.0	162.8	87.4	100.3	77.2	73.4
9	May 82-Sep. 82-Jan. 85	4	28	32	.12	60.1	130.7	190.8	.31	105.5	132.3	123.8	153.4	165.6	128.1	61.4	90.4	34.9
10	Jan. 85-June 87-Aug. 88	29	14	43	.67	173.5	155.7	329.2	.53	38.6	43.2	89.2	152.4	212.1	140.7	103.4	64.3	56.4
11	Aug. 88-Aug. 90-May 92	24	21	45	.53	142.1	142.8	284.9	.50	46.8	71.0	111.0	141.8	188.9	103.4	87.3	64.3	46.1
12	May 92-June 93-Nov. 94	13	17	30	.43	159.6	192.0	351.6	.45	62.5	80.4	147.9	162.1	222.1	138.9	39.2	34.9	30.1
13	Nov. 94-Oct. 96-July 97	23	34	32	.72	199.1	170.7	369.8	.54	54.8	65.8	99.6	130.7	203.5	103.6	71.7	60.2	62.8
14	July 97-Oct. 99-Sep. 00	27	11	38	.71	151.0	129.1	280.1	.54	52.8	67.6	69.3	142.4	203.8	163.3	98.4	66.2	74.7
15	Sep. 00-Sep. 02-July 04	24	22	46	.52	149.0	173.0	322.0	.46	60.0	97.0	108.0	118.7	209.0	121.6	81.1	51.7	36.0

Railroad bond yields—Continued

11	July 92-Aug. 93-Aug. 95	13	24	37	.35	8.1	15.7	23.8	.34	100.4	101.2	101.4	104.2	108.5	102.1	97.6	95.8	92.8
12	Aug. 95-Aug. 96-June 99	12	34	46	.26	6.0	15.9	21.9	.27	102.0	102.4	104.4	104.0	108.0	102.2	98.6	95.0	92.1
13	June 99-Sep. 03-Feb. 05	51	17	68	.75	14.9	3.8	18.7	.80	93.0	95.8	96.1	101.6	107.9	107.0	106.5	105.0	104.1
14	Feb. 05-Nov. 07-Feb. 09	33	15	48	.69	14.5	9.9	24.4	.59	94.7	95.2	97.7	102.1	109.2	105.7	103.2	100.5	99.3
15	Feb. 09-Dec. 13-June 14	58	6	64	.91	12.8	2.4	15.2	.84	93.4	96.4	99.3	103.0	106.2	104.1	103.8	103.7	103.8
16	June 14-Sep. 15-Jan. 17	15	16	31	.48	5.7	7.0	12.7	.45	97.9	98.5 ^e	102.0	102.3	103.6	99.2	98.8	98.2	96.6
17	Jan. 17-Sep. 18-Nov. 18	20	2	22	.91	18.6	8.2	26.8	.69	88.2	92.6	101.3	105.1	106.8 ^e	(105.4)	104.7	(102.7)	98.6 ^a
18	Nov. 18-May 20-Sep. 22	18	28	46	.39	20.0	23.1	43.1	.46	91.7 ^a	94.7	98.3	103.9	111.7	106.2	104.0	91.4	88.6
19	Sep. 22-Oct. 23-Dec. 27	13	50	63	.21	7.6	12.9	20.5	.37	97.2	100.2	103.5	104.1	104.8	102.5	99.9	95.7	91.9
20	Dec. 27-Sep. 29-May 31	21	20	41	.51	11.5	11.8	23.3	.49	94.4	96.7	101.3	104.7	105.9	102.8	98.6	95.9	94.1

* Entries in parentheses are interpolated.

^a Average of two months.

^b One month.

^c Based on the first segment of the series (see Ch. 9, note 2), which we use through cycle 17.

^d Based on the second segment (see preceding note).

^e Omits Aug.-Nov. 1914 No data (N. Y. Stock Exchange closed).

Pig iron production - Continued

6	Dec. 99 - Oct. 00	42	.76	22.4	51.0	73.4	.69	94.4	93.8	92.1	80.3	72.0	91.6	105.6	114.3	123.0
7	June 03 - Dec. 03	49	.88	38.8	76.0	114.8	.66	91.7	89.2	90.8	69.3	52.9	79.0	110.2	120.2	128.9
8	July 07 - Jan. 08	30	.80	64.6	84.1	148.7	.57	128.6	126.1	125.9	86.4	64.0	68.4	96.1	128.8	148.1
9	Jan. 10 - Dec. 10	36	.69	35.7	45.1	80.8	.56	118.8	113.5	101.3	89.5	83.1	86.3	96.1	115.0	128.2
10	Jan. 13 - Dec. 14	68	.66	46.1	67.9	114.0	.60	103.8	97.8	80.9	68.2	57.7	96.0	117.8	115.3	125.6
11	Sep. 18 - May 19	24	.67	42.4	35.0	77.4	.45	120.2	118.3	115.1	94.7	77.8	82.5	99.9	105.5	112.8
12	Sep. 20 - July 21	32	.69	103.6	126.1	229.7	.55	149.0	135.6	91.7	53.3	45.4	63.6	98.9	145.3	171.5
13	May 23 - July 24	38	.63	49.8	37.4	87.2	.43	124.9	117.0	96.3	89.5	75.1	90.8	103.7	106.1	112.5
14	July 26 - Nov. 27	36	.56	17.8	35.1	52.9	.66	104.4	103.8	97.4	94.4	86.6	90.7	103.6	108.6	121.7

Freight car orders

1	4Q 71 - 4Q 73	36	.33	413.4	342.4	755.8	.45	417.4	56.4	111.6	126.5	4.0	51.0	47.5	14.9	346.4
2	4Q 74 - 4Q 77	78	.54	60.7	392.3	453.0	.87	75.9	34.2	26.3	30.1	15.2	79.8	152.5	231.3	407.5
3	2Q 81 - 4Q 84	81	.48	261.0	174.0	435.0	.40	276.0	123.9	79.8	58.2	15.0	61.0	112.0	158.2	189.0
4	1Q 88 - 1Q 89	24	.50	45.6	107.3	152.9	.70	104.1	95.4	99.4	88.5	58.5	87.5	129.8	105.9	165.8
5	1Q 90 - 1Q 91	24	.50	147.0	78.0	225.0	.35	197.0	158.3	110.4	51.6	50.0	53.1	99.1	115.0	128.0
6	1Q 92 - 4Q 94	39	.15	179.7	176.9	356.6	.50	207.9	140.5	89.6	47.8	28.2	(103.9)	141.7	(162.8)	205.1
7	2Q 95 - 4Q 96	51	.65	70.0	214.9	284.9	.75	97.4	83.3	90.8	55.2	27.4	52.7	116.3	170.6	242.3
8	3Q 99 - 1Q 00	33	.82	82.0	120.8	202.8	.60	143.7	(92.6)	67.0	(65.2)	61.7	93.5	90.4	115.6	182.5
9	2Q 02 - 4Q 03	39	.54	166.9	245.1	412.0	.59	181.1	113.5	107.8	61.5	14.2	56.5	100.1	147.4	259.3
10	3Q 05 - 1Q 08	48	.38	243.2	126.1	369.3	.34	255.5	173.2	164.5	55.4	12.3	39.3	33.7	49.6	138.4
11	3Q 09 - 3Q 10	49	.69	139.3	161.5	300.8	.54	169.3	158.1	163.0	106.0	30.0	47.2	92.4	112.0	191.5
12	4Q 12 - 4Q 14	38	.50	196.7	192.1	388.8	.49	215.6	125.5	118.6	74.1	18.9	80.6	89.9	91.0	211.0
13	4Q 16 - 1Q 18	18	.17	306.5	498.9	805.4	.62	311.7	56.6	51.1	28.1	5.2	(129.9)	(254.6)	(379.4)	504.1
14	2Q 18 - 3Q 19	24	.38	1017.2	223.0	1240.2	.18	1017.2	0.0	5.1	0.0	0.0	(22.5)	84.8	(156.1)	223.0
15	2Q 20 - 2Q 21	24	.50	135.2	363.3	498.5	.73	149.8	88.9	50.4	30.1	14.6	40.5	101.8	209.8	377.9
16	2Q 22 - 2Q 23	21	.43	146.9	98.0	244.9	.40	177.5	131.4	132.0	163.6	30.6	(37.2)	44.7	(63.8)	128.6
17	1Q 24 - 2Q 25	24	.38	122.4	110.5	232.9	.47	160.5	89.9	136.9	44.9	38.1	(69.7)	99.3	(126.9)	148.6
18	4Q 25 - 1Q 28	48	.44	130.5	143.9	274.4	.52	183.1	92.8	82.4	95.6	52.6	62.8	100.5	150.6	196.5

TABLE B2—Continued
Measures of Successive Specific Cycles Treated on Inverted Plan
Seven American Series

Cycle no. (1)	Dates of specific cycles Peak - Trough - Peak (2)	Duration of specific cycles		Amplitude in specific-cycle relatives			Ratio of rise to total fall & rise (8)	Average in specific-cycle relatives at stage*										
		Full cycle (mos.) (3)	Ratio of expansion to full cycle (4)	Fall (5)	Rise (6)			Fall & rise (7)	I	Contraction			Through			Expansion		
					Initial peak (9)	First third (10)	Middle third (11)			Last third (12)	First third (13)	Middle third (14)	Last third (15)	First third (16)	Middle third (15)	Last third (16)		
Railroad stock prices																		
1	Mar. 58 - May 59 - Sep. 60	30	.53	12.8	24.3	37.1	.65	106.1	102.1	99.6	97.4	93.3	94.7	96.0	108.8	117.6		
2	Sep. 60 - May 61 - Apr. 64	43	.81	15.8	99.8	115.6	.86	83.6	77.8	73.1	74.1	67.8	71.4	101.3	143.8	167.6		
3	Apr. 64 - Apr. 65 - Apr. 72	96	.88	24.3	43.2	67.5	.64	104.9	103.6	95.5	89.2	80.6	86.6	102.3	112.9	123.8		
4	Apr. 72 - June 77 - June 81	110	.44	53.4	88.5	141.9	.62	117.1	111.3	102.2	87.2	63.7	73.9	94.0	130.8	152.2		
5	June 81 - June 85 - May 87	71	.32	39.7	27.7	67.4	.41	120.7	112.0	105.2	85.7	81.0	91.1	98.1	105.7	108.7		
6	May 87 - Apr. 89 - May 90	36	.36	16.7	8.0	24.7	.32	112.4	104.5	98.3	97.9	95.7	97.3	100.5	100.3	103.7		
7	May 90 - Dec. 90 - Mar. 92	22	.68	15.4	16.7	32.1	.52	107.0	107.3	103.1	94.3	91.6	94.7	97.1	106.1	108.3		
8	Mar. 92 - Mar. 95 - Sep. 95	42	.14	31.1	12.3	43.4	.28	118.8	115.8	94.8	90.9	87.7	92.2	96.7	99.1	100.0		
9	Sep. 95 - Aug. 96 - Apr. 00	55	.80	16.1	47.8	63.9	.75	95.5	91.0	87.0	84.8	79.4	86.1	99.9	123.6	127.2		
10	Apr. 00 - Sep. 00 - Sep. 02	29	.83	3.3	49.4	52.7	.94	78.1	76.5	74.4	74.9	74.8	92.0	107.7	116.7	124.2		
11	Sep. 02 - Oct. 03 - Sep. 06	48	.73	27.2	46.1	73.3	.63	105.7	100.7	94.6	82.2	78.5	82.3	107.8	117.9	124.6		
12	Sep. 06 - Nov. 07 - Aug. 09	35	.60	36.9	39.7	76.6	.52	117.2	115.7	97.9	89.6	80.3	86.0	100.3	112.5	120.0		
13	Aug. 09 - July 10 - Aug. 12	36	.69	14.4	6.0	20.4	.29	109.2	108.7	106.2	101.1	94.8	97.2	98.0	98.3	100.8		
14	Aug. 12 - Feb. 15 - Oct. 16	50	.40	29.1	13.9	43.0	.32	117.3	110.9	100.5	93.1 ^a	88.2	90.4	98.7	99.4	101.2		
15	Oct. 16 - Dec. 17 - June 19	32	.56	33.0	13.1	46.1	.28	121.1	117.0	108.7	97.5	88.1	90.2	96.1	96.5	102.1		
16	June 19 - June 21 - Sep. 22	39	.38	23.7	27.8	51.5	.54	114.8	103.5	96.7	96.9	91.1	93.5	97.8	111.1	118.9		
17	Sep. 22 - Oct. 23 - Sep. 29	84	.85	10.4	90.5	100.9	.90	78.1	74.4	73.7	68.3	67.7	78.4	104.1	132.4	158.2		
Shares traded																		
1	May 81 - Apr. 85 - Nov. 85	54	.13	56.0	56.2	112.2	.50	122.7	109.4	100.3	94.1	66.7	60.7	109.0	99.7	122.9		
2	Nov. 85 - Feb. 88 - June 89	43	.37	90.9	42.7	133.6	.32	148.8	113.4	125.4	92.1	57.9	86.0	85.0	81.9	100.6		
3	June 89 - Mar. 91 - Feb. 92	32	.34	36.0	93.1	129.1	.72	114.6	100.0	94.7	90.0	78.6	94.1	108.8	119.4	171.7		
4	Feb. 92 - Jan. 95 - May 95	39	.10	122.2	53.1	175.3	.30	184.6	118.9	111.1	71.4	62.4	59.3	86.3	89.8	115.5		
5	May 95 - May 97 - Jan. 99	44	.45	47.8	204.8	252.6	.81	94.3	84.6	68.5	59.0	46.5 ^a	127.5	129.8	140.9	251.3		

Shares traded - Continued

6	Jan. 99 - Aug. 00	28	.32	76.8	187.9	264.7	.71	113.1	98.6	77.6	70.4	36.3	78.6	149.9	187.3	224.2
7	May 01 - May 04	56	.36	166.6	136.9	303.5	.45	205.9	94.8	86.9	74.4	39.3	113.7	137.3	119.8	176.2
8	Jan. 06 - Nov. 07	41	.46	96.2	37.5	133.7	.28	164.4	130.0	121.3	81.2	68.2	77.5	91.5	90.3	105.7
9	June 09 - Apr. 11	27	.19	85.4	45.9	131.3	.35	137.1	135.6	109.0	69.7	51.7	72.8	71.0	97.3	97.6
10	Sep. 11 - Dec. 14	60	.35	90.8	186.8	277.6	.67	124.5	100.2	73.3	59.1*	33.7*	103.9	169.3	129.2	220.5
11	Sep. 16 - Apr. 18	34	.44	75.8	156.2	232.0	.67	138.0	128.7	92.0	72.4	62.2	68.0	76.9	145.4	218.4
12	July 19 - Oct. 21	43	.37	127.4	64.0	151.4	.33	190.2	131.1	79.7	74.3	62.8	88.0	122.0	102.6	126.8
13	Feb. 23 - Oct. 23	33	.76	34.1	117.1	191.2	.77	93.8	76.4	73.4	58.4	59.7	70.7	120.5	135.0	176.8
14	Nov. 25 - May 26	47	.87	28.6	112.5	141.1	.80	75.8	66.1	57.9	55.3	47.2	67.1	97.8	152.3	159.7

Call money rates

1	Sep. 60 - Oct. 62	47	.47	29.7	45.2	74.9	.60	111.3	100.6	98.5	87.0	81.6	96.1	109.8	110.2	126.8
2	Aug. 64 - Oct. 66	58	.55	43.4	147.5	190.9	.77	113.0	95.3	90.3	79.8	69.6	86.1	100.0	131.1	217.1
3	June 69 - Mar. 71	51	.59	126.5	312.5	439.0	.71	179.7	109.7	64.6	72.6	53.2	73.2	94.1	123.4	365.7
4	Sep. 73 - Jan. 75	28	.43	526.0	31.0	557.0	.06	576.3	140.8	71.9	57.5	50.3	59.1	68.2	62.6	81.3
5	Jan. 76 - Sep. 76	24	.67	46.8	93.0	139.8	.67	114.4	94.5	96.4	78.8	67.6	96.4	75.3	133.6	160.6
6	Jan. 78 - Sep. 78	19	.58	63.3	102.3	165.6	.62	142.7	109.8	106.1	66.0	79.4	89.3	81.1	111.4	181.7
7	Aug. 79 - Oct. 80	18	.22	68.1	93.4	161.5	.58	129.8	125.9	88.6	64.8	61.7	87.4	147.3	69.6	155.1
8	Feb. 81 - May 82	19	.21	94.5	44.2	138.7	.32	172.1	92.4	106.1	81.7	77.6	97.2	91.0	112.8	121.8
9	Sep. 82 - Jan. 85	57	.51	144.3	172.6	316.9	.54	182.7	141.3	67.7	99.7	38.4	43.0	88.8	151.6	211.0
10	June 87 - Aug. 88	38	.63	126.5	139.1	265.6	.52	172.3	114.3	84.0	52.2	45.8	69.6	108.6	138.9	184.9
11	Aug. 90 - May 92	34	.38	154.6	127.4	282.0	.45	204.5	111.9	94.6	69.7	49.9	64.2	118.0	129.3	177.3
12	June 93 - Nov. 94	40	.58	230.6	209.4	440.0	.48	266.7	166.7	47.1	41.8	36.1	69.2	104.7	137.4	245.5
13	Oct. 96 - July 97	36	.75	157.3	165.5	322.8	.51	215.2	95.5	66.1	55.5	57.9	74.1	75.9	156.2	223.4
14	Oct. 99 - Sep. 00	35	.69	99.8	243.5	243.3	.59	157.6	126.3	76.1	51.2	57.8	93.4	104.1	114.4	201.3
15	Sep. 02 - July 04	61	.64	158.5	120.0	378.9	.58	191.5	111.4	74.3	47.4	33.0	58.3	139.6	126.1	253.4
16	Oct. 07 - Nov. 08	31	.58	297.3	76.6	373.9	.20	342.0	185.9	60.8	47.2	44.7	64.5	97.3	105.1	121.3
17	May 10 - Nov. 11	31	.42	57.3	84.8	142.1	.60	129.1	92.8	82.0	97.4	71.8	78.3	104.0	146.5	156.6
18	Dec. 12 - Nov. 15	68	.49	96.7	138.0	234.7	.78	147.0	97.9	109.1	65.3	50.3	75.6	98.6	149.3	188.3
19	Aug. 18 - Dec. 18	15	.73	19.4	67.2	86.6	.59	102.9	96.2	91.9	83.5	83.5	89.0	102.8	109.5	150.7
20	Nov. 19 - June 22	45	.31	83.3	23.4	106.7	.22	147.7	135.7	113.2	80.7	64.4	71.3	78.6	83.2	87.8
21	Aug. 23 - Sep. 24	30	.57	81.8	71.0	152.8	.46	135.5	122.8	111.1	63.0	53.7	77.9	105.6	120.5	124.7
22	Feb. 26 - Sep. 27	37	.49	22.1	101.2	123.3	.82	94.8	85.3	89.7	82.8	72.7	82.4	119.8	140.6	173.9

TABLE B 2—Continued
Measures of Successive Specific Cycles Treated on Inverted Plan
Seven American Series

Cycle no.	Dates of specific cycles Peak - Trough - Peak (2)	Duration of specific cycles		Amplitude in specific-cycle relatives		Ratio of rise to total fall & rise	Average in specific-cycle relatives at stage*									IX Terminal peak (17)
		Full cycle (most.) (3)	Ratio of expansion to full cycle (4)	Fall (5)	Rise & rise (6)		Fall (7)	Rise (8)	I Initial peak (9)	Contraction			V Trough (13)	Expansion		
						First third (10)				Middle third (11)	Last third (12)	First third (14)		Middle third (15)	Last third (16)	
Railroad bond yields																
1	Oct. 61 - Feb. 63 - Jan. 64	27	.41	36.8	10.7	47.5	.23	122.6	117.5	106.3	94.3	85.8	88.5	92.0	93.8	96.5
2	Jan. 64 - July 64 - Mar. 66	26	.77	11.0	38.0	49.0	.78	91.5	90.2	85.4	84.5	80.5	89.7	107.6	114.9	118.5
3	Mar. 66 - Nov. 66 - Dec. 67	21	.62	5.7	2.7	8.4	.32	103.8	102.7	100.0	98.2	98.1	99.5	100.3	99.7	100.8
4	Dec. 67 - July 68 - Dec. 69	24	.71	3.1	7.9	11.0	.72	99.8	98.3	97.6	96.9	96.7	98.8	101.1	102.8	104.6
5	Dec. 69 - July 72 - Nov. 73	47	.34	8.9	4.9	13.8	.36	106.2	101.8	101.1	99.3	97.3	98.8	98.2	98.2	102.2
6	Nov. 73 - Aug. 76 - Apr. 77	41	.20	23.7	2.2	25.9	.08	116.6	108.3	100.6	95.1	92.9	93.8	93.5	94.5	95.1
7	Apr. 77 - June 81 - Sep. 83	77	.35	25.9	4.1	30.0	.14	114.7	112.6	105.6	95.5	88.8	91.0	91.7	92.3	92.9
8	Sep. 83 - July 86 - Oct. 87	49	.31	15.2	4.8	20.0	.24	108.2	106.3	104.1	96.5	93.0	94.2	94.7	95.7	97.8
9	Oct. 87 - June 89 - Aug. 91	46	.57	9.4	10.9	20.3	.54	104.5	102.3	99.8	97.2	95.1	96.7	98.9	104.1	106.0
10	Aug. 91 - July 92 - Aug. 93	24	.54	5.6	8.0	13.6	.59	103.4	102.3	99.6	98.3	97.8	98.7	98.9	101.6	105.8
11	Aug. 93 - Aug. 95 - Aug. 96	36	.33	16.1	5.6	21.7	.26	111.6	105.0	100.4	98.5	95.5	95.8	97.8	97.3	101.1
12	Aug. 96 - June 99 - Sep. 03	85	.60	16.3	15.1	31.4	.48	110.6	104.7	100.9	97.2	94.3	97.2	97.5	103.0	109.4
13	Sep. 03 - Feb. 05 - Nov. 07	50	.66	3.5	14.8	18.3	.81	100.3	99.4	98.9	97.6	96.8	97.3	99.9	104.4	111.6
14	Nov. 07 - Feb. 09 - Dec. 13	73	.79	9.4	12.9	22.3	.58	103.7	100.4	98.0	95.5	94.3	97.3	100.2	104.0	107.2
15	Dec. 13 - June 14 - Sep. 15	21	.71	2.3	5.7	8.0	.71	99.7	97.8	97.4	97.3	97.4	98.0 ^e	101.5	101.9	103.1
16	Sep. 15 - Jan. 17 - Sep. 18	36	.56	6.7	19.5	26.2	.74	99.1	94.9	94.5	93.9	92.4	95.0	106.1	110.1	111.9 ^a
17	Sep. 18 - Nov. 18 - May 20	20	.90	7.7	20.2	27.9	.72	100.4 ^a	(99.1)	98.4	(96.5)	92.7 ^b	97.0	99.4	105.0	112.9
18	May 20 - Sep. 22 - Oct. 23	41	.32	23.5	7.0	30.5	.23	113.7	108.0	105.8	93.0	90.2	92.9	96.0	96.6	97.2
19	Oct. 23 - Dec. 27 - Sep. 29	71	.30	13.0	11.3	24.3	.47	105.8	103.6	100.9	96.7	92.8	95.0	99.6	102.9	104.1

* Entries in parentheses are interpolated.
^a Average of two months.
^b One month.
^c Based on the first segment of the series (see Ch. 9, note 2), which we use through cycle 17.
^d Based on the second segment (see preceding note).
^e Omits Aug.-Nov. 1914. No data (N.Y. Stock Exchange closed).

TABLE B3
Measures of Successive Reference Cycles Treated on Positive Plan
Seven American Series

Cycle no. (1)	Dates of reference cycles (2) Trough - Peak - Trough	No. of months lead (-) or lag (+) of corresponding specific-cycle turn at reference		Average in reference-cycle relatives at stage*										Average change per month in reference-cycle relatives during stages ^b matched with reference	
		Peak (3)	Trough ^a (4)	I Initial trough (5)	Expansion		V Peak (9)	VI		VII		IX Ter-minal trough (13)	Expansion (14)	Contraction (15)	
					First third (6)	Middle third (7)		Last third (8)	First third (10)	Middle third (11)	Last third (12)				
		Deflated clearings													
1	Mar. 79 - Mar. 82 - May 85	+15	-12	71.1	82.5	91.6	107.4	103.3	107.1	109.8	101.2	102.8	+0.79	-0.07	
2	May 85 - Mar. 87 - Apr. 88	+3	-6	81.0	87.3	93.6	101.2	110.2	113.0	110.5	106.3	107.9	+1.07	-0.37	
3	Apr. 88 - July 90 - May 91	+2	-2	85.8	90.5	95.2	104.6	111.5	113.2	106.8	105.2	105.5	+0.92	-0.79	
4	May 91 - Jan. 93 - June 94	+1	-10	94.9	100.0	103.0	108.9	112.4	109.0	87.0	90.8	91.6	+0.81	-1.54	
5	June 94 - Dec. 95 - June 97	-2	-10	92.4	96.7	99.4	106.7	105.6	100.5	97.7	97.8	102.1	+0.67	-0.54	
6	June 97 - June 99 - Dec. 00	+3	-3	80.3	89.5	90.8	103.9	108.2	109.2	104.8	105.8	110.7	+1.14	-0.17	
7	Dec. 00 - Sep. 02 - Aug. 04	+10	-3	89.1	96.8	97.7	100.8	102.3	100.9	103.0	99.9	104.1	+0.70	-0.13	
8	Aug. 04 - May 07 - June 08	+5	-6	87.2	93.4	101.2	105.8	108.9	108.6	96.0	93.7	97.1	+0.68	-1.45	
9	June 08 - Jan. 10 - Jan. 12	+2	-15	85.9	89.9	95.8	101.9	103.4	102.9	102.3	104.6	106.5	+0.95	+0.06	
10	Jan. 12 - Jan. 13 - Dec. 14	+1	-1	96.7	98.9	98.9	101.6	103.8	101.5	102.4	95.8	92.6	+0.54	-0.42	
11	Dec. 14 - Aug. 18 - Apr. 19	0	-4	77.1	85.6	100.2	107.6	115.5	113.6	110.6	110.6	112.2	+0.74	-0.75	
12	Apr. 19 - Jan. 20 - Sep. 21	0	-4	94.3	101.9	104.5	103.4	104.9	102.0	99.2	94.2	97.2	+1.13	-0.65	
13	Sep. 21 - May 23 - July 24	0	-10	91.2	92.3	96.6	103.9	106.9	102.8	102.9	103.7	103.6	+0.79	-0.28	
14	July 24 - Oct. 26 - Dec. 27	87.6	92.9	97.9	101.2	99.5	102.5	106.3	107.4	108.1	+0.40	+0.69	
15	Dec. 27 - June 29 - Mar. 33	+5	0	107.6	112.4	109.6	118.4	115.5	113.7	95.3	75.5	67.5	+0.41	-1.08	
Fig iron production															
1	Mar. 79 - Mar. 82 - May 85	+11	-2	55.5	77.9	94.3	102.5	111.0	114.0	108.7	102.7	100.2	+1.54	-0.28	
2	May 85 - Mar. 87 - Apr. 88	+7	-4	68.9	73.9	97.3	109.4	116.2	101.5	123.5	108.7	106.1	+2.15	-0.78	
3	Apr. 88 - July 90 - May 91	-2	-1	76.4	87.0	95.1	114.8	122.5	120.2	108.8	77.7	87.4	+1.71	-3.51	
4	May 91 - Jan. 93 - June 94	-11	-8	82.9	117.1	118.9	108.1	111.0	115.8	66.3	72.5	62.3	+1.40	-2.86	
5	June 94 - Dec. 95 - June 97	-1	-8	55.8	89.7	93.5	119.2	123.7	113.8	81.6	97.8	104.1	+3.88	-1.20	

TABLE B 3—Continued
Measures of Successive Reference Cycles Treated on Positive Plan
Seven American Series

Cycle no. (1)	Dates of reference cycles (2) Trough - Peak - Trough	No. of months lead (-) or lag (+) of corresponding specific-cycle turn at reference		Average in reference-cycle relatives at stage*												Average change per month in reference-cycle relatives during stages matched with reference								
		Peak (3)	Trough* (4)	I	II			III			IV			V			VI	VII		VIII	IX	Ter- mi- nal trough (13)	Expansion (14)	Contraction (15)
					Initial trough (5)	First third (6)	Middle third (7)	Last third (8)	Peak (9)	First third (10)	Middle third (11)	Last third (12)	Contraction (11)	Contraction (12)										
Fig iron production—Continued																								
6	June 97 - June 99 - Dec. 00	+6	-2	71.3	85.5	91.7	96.7	106.1	117.5	119.1	101.5	99.8	+1.45	-0.35										
7	Dec. 00 - Sep. 02 - Aug. 04	+9	-8	74.9	91.0	99.2	104.6	107.9	109.1	103.7	93.5	90.5	+1.57	-0.76										
8	Aug. 04 - May 07 - June 08	+2	-5	66.9	91.3	108.4	114.0	120.0	121.9	85.6	61.5	62.7	+1.61	-4.41										
9	June 08 - Jan. 10 - Jan. 12	0	-13	58.2	73.7	91.1	120.4	131.3	115.7	96.7	96.6	106.1	+3.85	-1.05										
10	Jan. 12 - Jan. 13 - Dec. 14	0	0	91.4	100.0	106.6	112.6	122.1	115.0	95.1	80.2	67.8	+2.56	-2.36										
11	Dec. 14 - Aug. 18 - Apr. 19	+1	+1	52.3	85.7	106.7	103.9	114.6	113.9	111.4	101.3	82.4	+1.42	-4.02										
12	Apr. 19 - Jan. 20 - Sep. 21	+8	-2	105.6	94.2	113.9	96.6	122.7	128.5	119.7	48.4	45.7	+1.90	-3.85										
13	Sep. 21 - May 23 - July 24	0	0	41.1	61.5	85.1	123.9	142.0	133.0	109.5	101.8	85.5	+5.04	-4.04										
14	July 24 - Oct. 26 - Dec. 27	-3	-1	73.7	89.8	102.0	107.3	110.8	104.9	103.4	95.7	92.1	+1.37	-1.34										
15	Dec. 27 - June 29 - Mar. 33	+1	0	124.6	132.2	148.4	153.1	169.3	139.8	73.2	32.1	24.5	+2.48	-3.22										
Freight car orders*																								
1	4Q 70 - 3Q 73 - 1Q 79	-23	-16	10.1	26.7	108.5	90.5	26.6	71.9	84.7	173.0	350.5	+2.14	+1.38										
2	1Q 79 - 1Q 82 - 2Q 85	-10	-6	76.7	105.5	143.3	162.2	157.6	90.5	64.8	38.9	53.0	+3.07	-3.16										
3	2Q 85 - 2Q 87 - 1Q 88	+11	+10	44.7	60.8	79.0	130.2	146.3	117.8	117.8	(129.0)	153.8	+3.61	-0.11										
4	1Q 88 - 3Q 90 - 2Q 91	-5	-3	111.2	100.9	98.2	144.2	99.3	(55.2)	45.6	(45.4)	47.7	+1.92	-7.90										
5	2Q 91 - 1Q 93 - 2Q 94	-11	+5	70.9	142.9	164.2	94.3	140.8	70.1	41.8	49.7	35.2	+1.42	-2.70										
6	2Q 94 - 4Q 95 - 2Q 97	-7	-7	37.4	29.9	123.9	174.0	137.8	154.9	60.6	52.0	74.8	+7.34	-6.78										
7	2Q 97 - 3Q 99 - 4Q 00	+2	-10	29.6	74.6	89.8	124.3	176.5	82.3	77.4	125.4	140.2	+4.07	+0.06										
8	4Q 00 - 4Q 02 - 3Q 04	-4	-9	121.5	96.2	123.1	170.7	96.1	91.6	39.7	60.6	112.4	+2.76	-5.24										
9	3Q 04 - 2Q 07 - 2Q 08	-21	-4	81.9	101.7	153.8	130.5	73.4	47.2	11.2	9.7	11.2	+2.74	-8.05										
10	2Q 08 - 1Q 10 - 4Q 11	-5	-17	21.2	73.5	74.2	200.3	199.3	83.2	56.7	71.4	143.1	+9.33	-6.14										

Freight car orders—Continued

11	4Q 11-1Q 13-4Q 14	111.0	105.7	106.6	181.6	162.4	102.9	71.5	62.4	15.9	+7.65	-6.11
12	4Q 14-3Q 18-2Q 19	26.0	118.6	148.4	119.2	0.0	(0.0)	2.4	(3.9)	0.0	+0.42	-7.44
13	2Q 19-1Q 20-3Q 21	0.0	(0.0)	17.4	(59.8)	184.4	229.5	96.9	43.0	77.8	+6.52	-1.05
14 ^a	3Q 21-2Q 23-3Q 24	20.0	76.9	162.3	155.3	32.2	40.4	94.3	75.7	128.0	+6.87	-4.82
15	3Q 24-3Q 26-4Q 27	292.4	95.7	116.7	79.1	91.4	78.0	81.3	80.0	84.0	+0.36	+0.05
16	4Q 27-2Q 29-1Q 33	160.8	104.2	97.0	172.4	232.8	185.6	45.5	5.3	0.1	+1.18	-4.13

Railroad stock prices

1	Dec. 58-Oct. 60-June 61	-14	98.7	94.6	108.0	112.1	99.0	106.0	95.6	93.6	+0.41	-1.18
2	June 61-Apr. 65-Dec. 67	-32	52.8	60.1	99.3	122.4	101.2	110.8	111.2	116.6	+1.74	-0.32
3	Dec. 67-June 69-Dec. 70	...	87.6	92.6	100.7	106.6	102.4	103.1	105.1	103.9	+0.86	+0.24
4	Dec. 70-Oct. 73-Mar. 79	-21	108.2	112.7	118.4	117.9	100.9	91.6	77.5	87.6	+0.27	-0.67
5	Mar. 79-Mar. 82-May 85	+1	67.7	83.5	102.1	117.2	108.7	103.8	83.9	81.4	+1.41	-0.88
6	May 85-Mar. 87-Apr. 88	+2	81.9	90.3	98.7	106.1	107.7	101.2	98.6	96.1	+0.88	-0.52
7	Apr. 88-July 90-May 91	-5	100.2	100.6	99.8	103.9	105.6	91.0	93.9	94.8	+0.04	-0.77
8	May 91-Jan. 93-June 94	-10	98.2	102.4	111.0	109.0	107.5	86.1	87.2	84.4	+0.63	-1.25
9	June 94-Dec. 95-June 97	-3	99.6	100.5	98.7	109.1	101.7	94.2	95.7	98.0	+0.36	-0.74
10	June 97-June 99-Dec. 00	+10	75.4	84.2	87.0	103.3	107.8	111.8	109.9	125.6	+1.29	+0.35
11	Dec. 00-Sep. 02-Aug. 04	0	81.9	95.4	102.6	111.2	117.5	91.2	90.2	96.9	+1.93	-0.91
12	Aug. 04-May 07-June 08	-8	81.5	97.9	110.1	109.9	94.4	80.9	85.5	92.7	+1.10	-1.48
13	June 08-Jan. 10-Jan. 12	-5	85.5	92.0	102.4	109.5	107.0	98.7	98.5	97.4	+1.71	-0.48
14	Jan. 12-Jan. 13-Dec. 14	+2	105.7	107.6	109.2	109.4	105.2	93.6	89.4 ^f	82.6 ^f	+0.18	-0.93
15	Dec. 14-Aug. 18-Apr. 19	-22	98.9 ^f	105.3	110.0	89.5	88.6	92.4	90.1	92.4	-0.43	+0.04
16	Apr. 19-Jan. 20-Sep. 21	-7	111.3	115.4	106.7	103.1	97.9	100.5	91.8	94.0	-0.64	-0.61
17	Apr. 21-May 23-July 24	-8	87.6	90.6	106.4	105.3	102.6	97.7	100.5	107.3	+0.98	-0.32
18	July 24-Oct. 26-Dec. 27	...	76.9	83.8	90.9	98.8	104.8	118.3	125.4	126.1	+1.09	+1.61
19	Dec. 27-June 29-Nfr. 33	+3	129.4	131.4	133.4	143.8	153.0	83.7	27.8	27.3	+0.89	-2.86

Shares traded

1	Mar. 79-Mar. 82-May 85	-13	53.3	80.9	107.8	110.9	107.8	101.8	89.9	59.5	+1.61	-0.55
2	May 85-Mar. 87-Apr. 88	-16	65.3	114.6	104.5	111.2	106.4	96.2	54.9	88.1	+0.51	-3.88
3	Apr. 88-July 90-May 91	-13	114.2	97.7	105.3	106.4	83.3	110.4	82.3	98.5	+1.44	-1.85
4	May 91-Jan. 93-June 94	+7	89.8	94.4	126.0	95.4	120.6	84.8	65.2	60.1	+1.10	-1.73
5	June 94-Dec. 95-June 97	-1	81.2	85.9	102.7	125.6	92.7	108.7	76.0	133.0	+2.14	-2.76

TABLE B3—Continued
Measures of Successive Reference Cycles Treated on Positive Plan
Seven American Series

Cycle no. (1)	Dates of reference cycles (2) Trough - Peak - Trough	No. of months lead (-) or lag (+) of corresponding specific-cycle turn at reference		Average in reference-cycle relatives at stage*										Average change per month in reference-cycle relatives during stages ^b matched with reference					
		Peak (3)	Trough* (4)	I Initial trough (5)	II		III		IV		V		VI		VII		VIII		IX Ter- minal trough (13)
					First third (6)	Middle third (7)	First third (8)	Last third (9)	First third (10)	Middle third (11)	Last third (12)	Contraction (14)	Expansion (15)						
Shares traded—Continued																			
6	June 97 - June 99 - Dec. 00	-5	-4	56.0	79.6	84.3	131.6	122.2	107.3	102.2	84.9	194.6	+4.33	-2.46					
7	Dec. 00 - Sep. 02 - Aug. 04	-16	-3	137.9	178.5	86.9	96.9	114.6	84.7	88.1	58.4	99.1	+1.80	-1.67					
8	Aug. 04 - May 07 - June 08	-16	-7	78.3	117.3	114.2	111.0	75.0	67.0	63.7	72.0	80.6	+2.09	-2.36					
9	June 08 - Jan. 10 - Jan. 12	-7	-9	111.2	124.7	116.7	127.4	129.4	97.7	63.8	80.3	61.8	+1.56	-2.05					
10	Jan. 12 - Jan. 13 - Dec. 14	-16	0	107.8	151.1	103.0	131.8	113.5	88.9	79.7	76.3 ^f	44.0 ^f	-0.58	-2.58					
11	Dec. 14 - Aug. 18 - Apr. 19	-23	-12	24.0 ^f	96.2	121.5	89.5	61.9	81.6	80.4	116.4	163.6	+1.18	+1.92					
12	Apr. 19 - Jan. 20 - Sep. 21	-6	+1	117.2	180.1	127.9	124.3	113.8	95.6	77.9	69.8	58.5	+4.81	-2.95					
13	Sep. 21 - May 23 - July 24	-3	-9	62.9	83.0	119.6	108.9	99.4	89.0	105.5	77.3	130.0	+1.70	-2.11					
14	July 24 - Oct. 26 - Dec. 27	-11	-19	64.2	78.0	103.2	96.7	87.9	96.9	115.6	133.0	146.5	+2.39	+2.20					
15	Dec. 27 - June 29 - Mar. 33	+4	0	93.6	106.3	139.6	141.9	150.6	133.3	78.9	55.9	45.3	+3.35	-2.12					
Call money rates																			
1	Dec. 58 - Oct. 60 - June 61	-1	-2	64.9	92.2	103.4	101.6	114.6	112.0	95.6	106.2	109.3	+2.26	-0.66					
2	June 61 - Apr. 65 - Dec. 67	-8	-14	104.9	92.2	100.9	111.1	103.6	101.3	89.1	105.0	97.5	-0.03	-0.19					
3	Dec. 67 - June 69 - Dec. 70	0	+3	74.6	86.8	97.5	115.6	186.1	120.3	69.4	79.8	87.3	+5.49	-5.49					
4	Dec. 70 - Oct. 73 - Mar. 79	-1	-6	119.7	91.5	133.3	268.5	524.9	64.8	57.8	70.6	63.1	+11.92	-7.10					
5	Mar. 79 - Mar. 82 - May 85	-13	-4	80.0	135.6	125.2	110.5	89.7	115.7	60.6	62.3	32.6	+0.27	-1.50					
6	May 85 - Mar. 87 - Apr. 88	+3	+4	38.2	45.3	78.3	128.3	143.5	184.9	107.5	91.9	68.2	+4.79	-5.79					
7	Apr. 88 - July 90 - May 91	+1	+12	60.8	53.4	87.0	137.5	186.9	165.6	104.2	79.8	99.7	+4.67	-8.72					
8	May 91 - Jan. 93 - June 94	+5	+5	130.7	101.8	66.1	111.7	124.4	174.7	113.4	36.6	40.1	-0.32	-4.96					
9	June 94 - Dec. 95 - June 97	+10	+1	53.3	40.0	78.4	61.4	137.3	152.7	212.3	70.4	64.1	+4.67	-4.07					
10	June 97 - June 99 - Dec. 00	+4	-3	50.6	62.9	80.7	97.1	147.9	195.2	103.3	80.0	99.2	+4.05	-2.71					

Call money rates - Continued

11	Dec. 00 - Sep. 02 - Aug. 04	78.6	116.4	94.9	121.1	209.1	121.6	81.1	45.0	36.9	+6.21	-7.49
12	Aug. 04 - May 07 - June 08	29.8	52.3	123.1	118.2	65.0	98.3	209.9	41.1	39.4	+1.07	-1.97
13	June 08 - Jan. 10 - Jan. 12	73.5	56.8	84.0	136.2	136.2	123.1	95.4	103.9	86.8	+3.30	-2.06
14	Jan. 12 - Jan. 13 - Dec. 14	66.9	84.2	88.7	146.8	119.2	92.6	79.3	123.0	94.9	+4.36	-1.06
15	Dec. 14 - Aug. 18 - Apr. 19	93.9	56.6	78.7	133.5	174.9	159.9	141.9	151.0	157.2	+1.84	-2.21
16	Apr. 19 - Jan. 20 - Sep. 21	75.4	85.7	82.0	122.8	124.6	112.2	101.5	88.5	76.7	+5.47	-2.40
17	Sep. 21 - May 23 - July 24	123.5	106.3	92.4	106.6	110.9	115.5	100.9	78.6	47.5	-0.63	-4.53
18	July 24 - Oct. 26 - Dec. 27	52.8	75.9	108.5	111.9	116.3	112.3	107.3	92.0	100.4	+2.35	-1.14
19	Dec. 27 - June 29 - Mar. 33	100.6	130.0	167.3	211.1	215.5	119.3	43.8	48.9	47.6	+6.38	-3.73

Railroad bond yields

1	Dec. 58 - Oct. 60 - June 61	+20	99.4	100.7	101.6	96.5	96.8	102.5	100.1	102.9	+0.06	-0.22
2	June 61 - Apr. 65 - Dec. 67	+12	112.5	104.8	84.4	87.6	103.9	109.8	111.2	111.0	+0.89	0.00
3	Dec. 67 - June 69 - Dec. 70	+6	99.6	97.4	97.8	101.0	100.7	103.0	100.8	99.6	+0.42	-0.20
4	Dec. 70 - Oct. 73 - Mar. 79	+1	113.4	111.7	109.0	108.6	112.4	102.6	92.0	89.8	-0.23	-0.35
5	Mar. 79 - Mar. 82 - May 85	+18	112.8	109.5	102.0	96.6	98.2	97.8	97.5	96.7	-0.17	-0.28
6	May 85 - Mar. 87 - Apr. 88	+7	106.3	103.6	98.1	98.2	98.8	98.9	101.4	99.5	+0.06	-0.22
7	Apr. 88 - July 90 - May 91	+13	102.3	100.4	96.7	98.7	100.3	101.8	104.0	104.0	+0.33	+0.03
8	May 91 - Jan. 93 - June 94	+7	102.3	102.8	98.9	98.6	98.8	99.5	103.2	96.9	+0.05	-0.24
9	June 94 - Dec. 95 - June 97	+8	103.6	102.1	101.6	98.0	99.4	99.6	102.7	96.9	-0.16	-0.19
10	June 97 - June 99 - Dec. 00	...	103.1	102.1	102.9	98.1	96.0	98.3	98.9	99.6	-0.30	+0.07
11	Dec. 00 - Sep. 02 - Aug. 04	+12	94.6	94.5	95.9	96.4	98.5	101.0	105.6	105.7	+0.35	+0.10
12	Aug. 04 - May 07 - June 08	+6	96.6	95.9	96.8	99.8	102.7	104.7	109.0	105.5	+0.42	-0.22
13	June 08 - Jan. 10 - Jan. 12	...	100.3	98.2	96.4	98.1	99.3	101.4	101.8	102.4	+0.36	+0.08
14	Jan. 12 - Jan. 13 - Dec. 14	+11	96.4	96.6	97.5	98.3	98.4	101.7	101.8	100.8 ^f	+0.42	0.00
15	Dec. 14 - Aug. 18 - Apr. 19	+1	97.3 ^f	96.3	93.9	106.1	111.1	110.5	103.5	106.6	+0.71	+0.19
16	Apr. 19 - Jan. 20 - Sep. 21	+4	92.4	92.4	96.7	96.6	99.0	105.4	100.5	101.7	+1.09	-0.72
17	Sep. 21 - May 23 - July 24	+5	109.8	102.2	95.6	99.4	101.3	101.3	101.9	98.0	+0.46	-0.12
18	July 24 - Oct. 26 - Dec. 27	...	102.7	102.8	102.5	99.9	99.5	98.4	96.7	95.0	-0.26	+0.07
19	Dec. 27 - June 29 - Mar. 33	+3	93.1	94.7	99.5	101.9	103.8	100.5	95.0	105.8	+0.06	-0.31

* Entries in parentheses are interpolated.
 ** The entries relate to the terminal trough shown on the same line in col. (2).
 a The stages matched with reference expansion are as follows:
 Deflated clearings (VIII-V)
 Railroad stock prices (VIII-IV)
 Shares traded (VIII-IV)
 Freight car orders (VIII-IV)
 Call money rates (I-V)
 Railroad bond yields (III-VI)
 Col. (3)-(4) for this series compare the timing of specific cycles with the monthly reference dates, not with the quarterly reference dates given here.
 d Based on the first segment of the series (see Ch. 9, note 2), which we use through cycle 14.
 e Based on the second segment; the corresponding entry for the first segment is +10. See the preceding note.
 f Omits Aug.-Nov. 1914. No data (N.Y. Stock Exchange closed).

TABLE B4
Patterns of Successive Reference Cycles Treated on Inverted Plan
Seven American Series

Cycle no.	Dates of reference cycles Peak - Trough - Peak	Average in reference-cycle relatives at stage*								
		I Initial peak (3)	II	III	IV	V Trough (7)	VI	VII	VIII	IX Terminal peak (11)
			Contraction				Expansion			
			First third (4)	Middle third (5)	Last third (6)		First third (8)	Middle third (9)	Last third (10)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

Deflated clearings

1	Mar.82-May 85-Mar.87	93.1	96.6	99.0	91.2	92.7	99.9	107.1	115.8	126.2
2	Mar.87-Apr. 88-July 90	93.4	95.7	93.6	90.1	91.4	96.4	101.4	111.5	118.9
3	July 90-May 91-Jan. 93	98.6	100.0	94.5	93.0	93.3	98.3	101.3	107.0	110.4
4	Jan. 93-June 94-Dec. 95	114.9	111.4	88.9	92.8	93.7	98.1	100.8	108.1	107.1
5	Dec. 95-June 97-June 99	94.8	90.2	87.7	87.8	91.6	102.2	103.6	118.6	123.5
6	June 99-Dec. 00-Sep. 02	94.0	94.8	91.0	91.9	96.2	104.5	105.5	108.8	110.5
7	Sep. 02-Aug. 04-May 07	91.2	90.0	91.9	89.1	92.8	99.5	107.8	112.7	116.0
8	May 07-June 08-Jan. 10	103.9	103.6	91.5	89.4	92.6	97.0	103.4	110.0	111.6
9	Jan. 10-Jan. 12-Jan. 13	97.9	97.5	96.9	99.0	100.8	103.2	103.1	106.0	108.2
10	Jan. 13-Dec. 14-Aug. 18	93.1	91.0	91.9	85.9	83.0	92.2	107.9	115.9	124.4
11	Aug. 18-Apr. 19-Jan. 20	98.4	96.8	94.3	94.2	95.6	103.2	105.9	104.8	106.3
12	Jan. 20-Sep. 21-May 23	103.4	100.6	97.8	92.9	95.8	96.9	101.5	109.2	112.3
13	May 23-July 24-Oct. 26	96.3	92.6	92.7	93.4	93.3	99.0	104.3	107.8	106.0
14	Oct. 26-Dec. 27-June 29	90.3	93.0	96.5	97.5	98.1	102.4	99.9	107.9	105.3

Pig iron production

1	Mar.82-May 85-Mar.87	93.7	96.3	91.8	86.7	84.6	90.7	119.4	134.3	142.6
2	Mar.87-Apr. 88-July 90	90.1	78.7	95.8	84.3	81.9	93.6	102.3	123.5	131.8
3	July 90-May 91-Jan. 93	107.3	105.3	95.3	68.1	76.5	108.1	109.8	99.8	102.5
4	Jan. 93-June 94-Dec. 95	113.1	117.9	67.5	73.9	63.4	101.9	106.2	135.4	142.8
5	Dec. 95-June 97-June 99	105.8	95.8	68.7	82.4	87.6	105.2	112.8	119.0	130.5
6	June 99-Dec. 00-Sep. 02	87.1	96.4	97.8	83.3	81.9	99.6	108.5	114.4	118.1
7	Sep. 02-Aug. 04-May 07	86.5	87.4	83.0	74.9	72.5	98.9	117.5	123.5	130.1
8	May 07-June 08-Jan. 10	123.4	125.3	88.0	63.2	64.5	81.7	101.0	133.5	145.5
9	Jan. 10-Jan. 12-Jan. 13	118.8	104.7	87.5	87.4	96.0	105.0	111.9	118.3	128.2
10	Jan. 13-Dec. 14-Aug. 18	104.2	98.2	81.2	68.4	57.9	94.9	118.2	115.0	126.9
11	Aug. 18-Apr. 19-Jan. 20	123.5	122.8	120.0	109.2	88.8	79.2	95.8	81.2	103.2
12	Jan. 20-Sep. 21-May 23	123.2	129.0	120.2	48.6	45.8	68.6	94.9	138.2	158.4
13	May 23-July 24-Oct. 26	123.6	115.8	95.4	88.7	74.4	90.8	103.0	108.4	112.0
14	Oct. 26-Dec. 27-June 29	106.1	100.5	99.0	91.6	88.2	93.5	105.0	108.4	119.8

Freight car orders

1	3Q 73-1Q 79-1Q 82	9.2	24.7	29.1	59.5	120.5	165.8	225.1	254.8	247.6
2	1Q 82-2Q 85-2Q 87	191.3	109.9	78.7	47.2	64.3	87.5	113.8	187.6	210.7
3	2Q 87-1Q 88-3Q 90	97.2	(77.9)	78.2	(85.8)	102.2	92.8	90.3	132.6	91.3
4	3Q 90-2Q 91-1Q 93	127.8	(71.0)	58.8	(58.4)	61.4	123.9	142.3	81.8	122.1
5	1Q 93-2Q 94-4Q 95	177.4	88.3	52.6	62.6	44.3	35.4	146.6	206.0	163.0
6	4Q 95-2Q 97-3Q 99	73.8	82.9	32.4	27.9	40.0	100.9	121.4	168.1	238.8
7	3Q 99-4Q 00-4Q 02	135.9	63.4	59.6	96.6	108.0	85.4	109.3	151.7	85.4
8	4Q 02-3Q 04-2Q 07	72.3	68.9	29.8	45.6	84.5	104.8	158.6	134.6	75.7
9	2Q 07-2Q 08-1Q 10	150.1	96.6	22.9	19.9	23.0	79.6	80.5	217.1	216.1
10	1Q 10-4Q 11-1Q 13	169.0	70.6	48.0	60.6	121.3	115.5	116.5	198.6	177.6
11	1Q 13-4Q 14-3Q 18	215.0	136.2	94.7	82.7	21.0	96.1	120.2	96.6	0.0
12	3Q 18-2Q 19-1Q 20	0.0	(0.0)	28.2	(47.1)	0.0	(0.0)	74.6	(255.8)	788.7
13	1Q 20-3Q 21-2Q 23	60.7	75.6	31.9	14.2	25.6	98.6	208.2	199.2	41.3
14*	2Q 23-3Q 24-3Q 26	43.3	54.4	127.0	101.9	172.3	94.6	89.5	114.6	16.9
15	3Q 26-4Q 27-2Q 29	118.2	100.8	105.1	103.4	108.6	70.4	65.6	116.4	157.3

TABLE B4 - Continued
 Patterns of Successive Reference Cycles Treated on Inverted Plan
 Seven American Series

Cycle no.	Dates of reference cycles Peak - Trough - Peak (2)	Average in reference-cycle relatives at stage*								
		I Initial peak (3)	II	III	IV	V Trough (7)	VI	VII	VIII	IX Ter- minal peak (11)
			Contraction				Expansion			
			First third (4)	Middle third (5)	Last third (6)		First third (8)	Middle third (9)	Last third (10)	

Railroad stock prices

1	Oct. 60-June 61-Apr. 65	71.6	63.2	67.8	61.1	59.8	68.2	112.7	138.9	114.8
2	Apr. 65-Dec. 67-June 69	87.2	91.1	95.4	95.7	100.4	106.2	109.7	115.5	122.2
3	June 69-Dec. 70-Oct. 73	98.1	94.2	94.8	96.7	95.6	99.6	104.6	104.2	89.2
4	Oct. 73-Mar. 79-Mar. 82	95.8	100.5	87.0	73.5	83.2	102.6	125.4	143.9	133.5
5	Mar. 82-May 85-Mar. 87	110.0	112.1	105.0	85.0	82.4	90.8	99.3	106.7	108.4
6	Mar. 87-Apr. 88-July 90	108.5	110.5	101.9	99.4	96.9	97.2	96.5	100.4	102.1
7	July 90-May 91-Jan. 93	104.5	99.6	90.1	92.9	93.8	97.8	106.0	104.0	102.7
8	Jan. 93-June 94-Dec. 95	120.6	112.5	96.5	97.8	94.7	95.6	93.9	103.8	96.7
9	Dec. 95-June 97-June 99	92.7	91.7	85.9	87.2	89.3	99.8	103.1	122.4	127.7
10	June 99-Dec. 00-Sep. 02	79.1	81.3	82.0	80.6	92.1	107.4	115.4	125.1	132.2
11	Sep. 02-Aug. 04-May 07	103.3	96.5	80.2	79.4	85.2	102.3	115.1	114.9	98.6
12	May 07-June 08-Jan. 10	94.2	91.4	80.7	85.3	92.6	99.6	110.7	118.6	115.8
13	Jan. 10-Jan. 12-Jan. 13	107.6	100.5	99.2	99.1	97.9	99.7	101.2	101.3	97.5
14	Jan. 13-Dec. 14-Aug. 18	119.8	111.9	106.6	101.7 ^b	94.1 ^b	100.2	104.6	85.1	84.3
15	Aug. 18-Apr. 19-Jan. 20	97.9	101.1	102.1	99.5	102.1	105.8	97.9	94.6	89.8
16	Jan. 20-Sep. 21-May 23	95.8	93.8	98.4	89.9	92.0	95.0	111.6	110.5	107.6
17	May 23-July 24-Oct. 26	87.2	82.9	83.0	85.5	91.3	99.5	107.9	117.3	124.5
18	Oct. 26-Dec. 27-June 29	83.1	85.3	93.9	99.4	100.0	101.5	103.1	111.1	118.2

Shares traded

1	Mar. 82-May 85-Mar. 87	126.5	107.9	101.9	90.0	59.6	104.6	95.4	101.5	97.1
2	Mar. 87-Apr. 88-July 90	131.2	122.7	118.6	67.7	108.6	92.9	100.1	101.1	79.2
3	July 90-May 91-Jan. 93	76.3	81.2	101.1	75.3	90.2	94.7	126.5	95.7	161.6
4	Jan. 93-June 94-Dec. 95	190.6	142.8	100.4	77.2	71.2	75.3	90.0	110.1	99.7
5	Dec. 95-June 97-June 99	64.9	52.9	62.0	43.4	75.9	107.9	114.2	178.3	165.5
6	June 99-Dec. 00-Sep. 02	87.2	76.6	73.0	60.6	139.0	179.9	87.6	97.7	115.5
7	Sep. 02-Aug. 04-May 07	98.3	72.7	75.6	50.1	85.0	127.3	123.9	120.5	81.4
8	May 07-June 08-Jan. 10	93.7	83.6	79.6	90.0	100.7	112.9	105.6	115.3	117.2
9	Jan. 10-Jan. 12-Jan. 13	162.7	122.8	80.2	100.9	77.7	109.0	74.2	95.0	81.8
10	Jan. 13-Dec. 14-Aug. 18	73.7	57.7	51.8	49.5 ^b	28.6 ^b	114.3	144.4	106.3	73.6
11	Aug. 18-Apr. 19-Jan. 20	41.6	54.8	54.0	78.2	109.9	168.9	119.9	116.6	106.7
12	Jan. 20-Sep. 21-May 23	128.2	107.7	87.8	78.7	65.9	87.0	125.4	114.1	104.2
13	May 23-July 24-Oct. 26	64.1	57.4	68.0	49.8	83.8	101.9	134.8	126.3	114.8
14	Oct. 26-Dec. 27-June 29	54.1	59.6	71.1	81.8	90.1	102.4	134.4	136.7	145.0

Call money rates

1	Oct. 60-June 61-Apr. 65	108.8	106.4	90.8	100.9	103.8	91.2	99.8	109.9	102.5
2	Apr. 65-Dec. 67-June 69	92.0	90.0	79.2	93.3	86.7	100.9	113.3	134.3	216.2
3	June 69-Dec. 70-Oct. 73	166.6	107.8	62.1	59.8	78.2	59.8	87.1	175.4	342.9
4	Oct. 73-Mar. 79-Mar. 82	683.9	84.4	75.3	92.0	82.2	139.5	128.7	113.6	92.3
5	Mar. 82-May 85-Mar. 87	117.8	151.8	79.5	81.8	42.9	50.8	87.9	143.9	161.0
6	Mar. 87-Apr. 88-July 90	128.4	165.5	96.2	82.3	61.0	53.6	87.3	138.0	187.5
7	July 90-May 91-Jan. 93	214.2	189.9	119.4	91.5	114.3	89.0	57.8	97.7	108.8
8	Jan. 93-June 94-Dec. 95	164.7	231.3	150.1	48.4	53.1	39.8	78.1	61.2	136.8
9	Dec. 95-June 97-June 99	116.6	129.7	180.3	59.8	54.4	67.7	86.8	104.5	159.3
10	June 99-Dec. 00-Sep. 02	108.3	142.9	75.7	58.6	72.6	107.6	87.7	111.9	193.3

TABLE B4—Continued
Patterns of Successive Reference Cycles Treated on Inverted Plan
Seven American Series

Cycle no. (1)	Dates of reference cycles Peak—Trough—Peak (2)	Average in reference-cycle relatives at stage*								
		I Initial peak (3)	II	III	IV	V Trough (7)	VI	VII	VIII	IX Terminal peak (11)
			Contraction				Expansion			
			First third (4)	Middle third (5)	Last third (6)		First third (8)	Middle third (9)	Last third (10)	

Call money rates—Continued

11	Sep. 02—Aug. 04—May 07	198.9	115.7	77.1	42.8	35.1	61.7	145.2	139.3	76.6
12	May 07—June 08—Jan. 10	88.1	133.3	284.7	55.8	53.5	41.4	61.2	88.7	99.2
13	Jan. 10—Jan. 12—Jan. 13	115.5	104.3	80.8	88.0	73.6	92.5	97.5	160.8	131.0
14	Jan. 13—Dec. 14—Aug. 18	127.7	99.2	85.0	131.8	101.7	61.3	85.3	144.5	189.4
15	Aug. 18—Apr. 19—Jan. 20	96.7	88.4	78.4	83.5	86.9	98.9	94.5	141.6	143.7
16	Jan. 20—Sep. 21—May 23	152.0	136.9	123.8	107.9	93.5	80.5	69.9	80.7	84.0
17	May 23—July 24—Oct. 26	121.6	126.6	110.7	86.2	52.1	75.0	107.2	110.5	114.9
18	Oct. 26—Dec. 27—June 29	83.1	80.3	76.6	65.8	71.7	92.6	119.2	150.5	153.6

Railroad bond yields

1	Oct. 60—June 61—Apr. 65	109.9	116.3	113.6	116.8	118.3	110.2	88.7	92.0	109.2
2	Apr. 65—Dec. 67—June 69	93.8	99.1	100.4	100.2	101.0	98.8	99.2	102.4	102.1
3	June 69—Dec. 70—Oct. 73	102.0	104.3	102.0	100.8	101.9	100.4	97.9	97.6	101.0
4	Oct. 73—Mar. 79—Mar. 82	126.7	115.6	103.7	101.2	96.1	93.3	86.9	82.3	83.7
5	Mar. 82—May 85—Mar. 87	104.6	104.2	103.9	103.1	99.4	96.9	91.7	91.8	92.4
6	Mar. 87—Apr. 88—July 90	101.9	102.0	104.6	102.7	102.0	100.2	96.5	98.5	100.0
7	July 90—May 91—Jan. 93	96.9	98.4	100.5	100.6	102.3	102.9	99.0	98.6	98.8
8	Jan. 93—June 94—Dec. 95	102.4	103.3	107.1	100.5	99.4	98.0	97.5	94.0	95.4
9	Dec. 95—June 97—June 99	103.9	104.2	107.4	101.4	99.2	98.1	99.0	94.3	92.3
10	June 99—Dec. 00—Sep. 02	96.7	99.0	99.6	100.3	99.4	99.2	100.7	101.2	103.5
11	Sep. 02—Aug. 04—May 07	94.0	96.4	100.7	100.8	99.5	98.8	99.7	102.7	105.8
12	May 07—June 08—Jan. 10	99.2	101.1	105.3	101.9	100.8	98.8	97.0	98.7	99.8
13	Jan. 10—Jan. 12—Jan. 13	97.0	99.1	99.4	100.1	99.9	100.1	101.0	101.9	102.0
14	Jan. 13—Dec. 14—Aug. 18	93.6	96.6	96.8	95.7 ^b	100.0 ^b	99.0	96.4	109.0	114.2
15	Aug. 18—Apr. 19—Jan. 20	102.1	101.5	95.1	98.0	98.8	98.8	103.5	103.3	105.9
16	Jan. 20—Sep. 21—May 23	103.3	110.0	104.9	106.1	103.3	96.1	89.9	93.5	95.3
17	May 23—July 24—Oct. 26	102.6	102.7	103.2	101.9	99.7	99.8	99.5	97.0	96.6
18	Oct. 26—Dec. 27—June 29	101.6	100.5	98.7	97.0	95.3	97.0	101.9	104.3	106.3

* Entries in parentheses are interpolated.

^a Based on the first segment of the series (see Ch. 9, note 2), which we use through cycle 14.^b Omits Aug.—Nov. 1914. No data (N. Y. Stock Exchange closed).

TABLE B5
List of Cycles Included in Table 164 and Chart 60

The entries for the seven series refer to the cycle numbers in Table B1. The entries for business cycles refer to the line numbers in Table 16 for the United States; that is, to cycles whose peaks are shown on these lines.

Series and phase of long cycles in building	Expansion (Col. 2 & 6 of Table 164)	Contraction (Col. 3 & 7 of Table 164)	Full cycle (Col. 4-5 & 8-9 of Table 164, and Chart 60)
DEFLATED CLEARINGS			
Upswings	1-4,8-10,13-14	1-3,8-9,13-14	1-3,8-9,13-14
Downswings	5-7,11-12	4-7,10-12,15	5-7,11-12
PIG IRON PRODUCTION			
Upswings	1-3,7-9,12-14	1-2,7-8,12-13	1-2,7-8,12-13
Downswings	4-6,10-11,15	3-6,9-11,14-15	4-6,10-11,15
FREIGHT CAR ORDERS			
Upswings	1,3-5,9-11,15-18	3-4,9-10,15-17	3-4,9-10,15-17
Downswings	2,6-8,12-14,19	1-2,5-8,11-14,18-19	2, 6-8, 12-14, 19
RAILROAD STOCK PRICES			
Upswings	3-7,11-13,16-17	3,5-6,11-12,16-17	3,5-6,11-12,16-17
Downswings	1-2,8-10,14-15	1-2,4,7-10,13-15,18	1-2,8-10,14-15
SHARES TRADED			
Upswings	1-3,7-9,12-14	1-2,7-8,12-13	1-2,7-8,12-13
Downswings	4-6,10-11,15	3-6,9-11,14-15	4-6,10-11,15
CALL MONEY RATES			
Upswings	2-4,7-11,15-17,20-22	2-3,7-10,15-16,20-21	2-3,7-10,15-16,20-21
Downswings	1,5-6,12-14,18-19,23	1,4-6,11-14,17-19,22-23	1,5-6,12-14,18-19,23
RAILROAD BOND YIELDS			
Upswings	2-6,8-10,13-14,18-19	2-5,8-9,13-14,18	2-5,8-9,13-14,18
Downswings	1,7,11-12,15-17,20	1,6,10-12,15-17,20	1,11-12,15-17,20
BUSINESS CYCLES			
Upswings	9-14,18-20,23-25	9-10,12-13,18-19,23-24	9-10,12-13,18-19,23-24
Downswings	7-8,15-17,21-22,26	7-8,11,14-17,20-22,25-26	7-8,15-17,21-22,26

TABLE B6
List of Cycles Included in Table 166 and Chart 63

The entries in the last column refer to the cycle numbers in Table B2; the entries in the preceding columns refer to the cycle numbers in Table B1.

Series and phase of long waves in prices	Expansion (Col. 2 & 7 of Table 166)	Contraction (Col. 3 & 8 of Table 166)	Full cycle, positive (Col. 4-5 & 9-10 of Table 166, and Chart 63)	Full cycle, inverted (Col. 6 & 11 of Table 166)
DEFLATED CLEARINGS				
Upswings.....	7-13	7-12	7-12	7-12
Downswings.....	1-6, 14-15	1-6, 13-15	1-6, 14-15	1-5, 13-14
PIG IRON PRODUCTION				
Upswings.....	6-12	6-11	6-11	6-11
Downswings.....	1-5, 13-15	1-5, 12-15	1-5, 13-15	1-4, 12-14
FREIGHT CAR ORDERS				
Upswings.....	8-15	8-14	8-14	8-14
Downswings.....	1-7, 16-19	1-7, 15-19	1-7, 16-19	1-6, 15-18
RAILROAD STOCK PRICES				
Upswings.....	1-3, 10-16	1-2, 10-15	1-2, 10-15	1-2, 10-15
Downswings.....	4-9, 17-18	3-9, 16-18	4-9, 17-18	3-8, 16-17
SHARES TRADED				
Upswings.....	6-12	6-11	6-11	6-11
Downswings.....	1-5, 13-15	1-5, 12-15	1-5, 13-15	1-4, 12-14
CALL MONEY RATES				
Upswings.....	1-2, 14-20	1, 14-19	1, 14-19	1, 14-19
Downswings.....	3-13, 21-23	2-13, 20-23	3-13, 21-23	2-12, 20-22
RAILROAD BOND YIELDS				
Upswings.....	1-2, 13-18	1-2, 12-17	1-2, 13-17	1, 12-17
Downswings.....	3-12, 19-20	3-11, 18-20	3-11, 19-20	3-11, 18-19

TABLE B7
List of Cycles Included in Table 167

The entries refer to the line numbers in Table 16 in the sense explained at the head of Table B5; except that in the last column, number x is the cycle running from the peak on line x to the peak on line $x+1$.

Country and phase of long waves in prices	Expansion (Col. 2 & 7 of Table 167)	Contraction (Col. 3 & 8 of Table 167)	Full cycle, positive (Col. 4-5 & 9-10 of Table 167)	Full cycle, inverted (Col. 6 & 11 of Table 167)
UNITED STATES				
Upswings...	4*6*, 7-9, 17-23	4*6*, 7-8, 17-22	4*6*, 7-8, 17-22	4*6*, 7-8, 17-22
Downswings...	2*3*, 10-16, 24-26	2*3*, 9-16, 23-26	2*3*, 10-16, 24-26	2*, 9-15, 23-25
GREAT BRITAIN				
Upswings...	2*6*, 14*, 15-18, 21-26	2*5*, 14*, 15-17, 21-25	2*5*, 14*, 15-17, 21-25	2*5*, 14*, 15-17, 21-25
Downswings...	7*13*, 19-20, 27-29	6*13*, 18-20, 26-29	7*13*, 19-20, 27-29	6*12*, 18-19, 26-28
GERMANY				
Upswings...	2*3*, 6-11	2*, 6-11	2*, 6-11	2*, 6-10
Downswings...	4-5, 12-13	3*, 4-5, 12-13	4-5, 12-13	3*, 4, 12
FRANCE				
Upswings...	3*5*, 6-8, 12-19	3*5*, 6-7, 12-18	3*5*, 6-7, 12-18	3*5*, 6-7, 12-18
Downswings...	2*, 9-11, 20	2*, 8-11, 19-20	2*, 9-11, 20	8-10, 19

* Included in the analysis based on annual reference dates, but not in the analysis based on monthly reference dates.

TABLE B8
List of Cycles Included in Tables 170, 172, 173 and 175,
and Charts 67, 69 and 71

The entries for the seven series in columns (a) and (c) refer to the cycle numbers in Table B1; the entries in columns (b) and (d) to the cycle numbers in Table B2. The entries for business cycles in the United States and Great Britain refer to the line numbers in Table 16 in the sense explained at the head of Table B5; except that in columns (b) and (d), number x is the cycle running from the peak on line x to the peak on line $x+1$.

Series and place of cycles	Table 170 and Chart 67 (a)	Table 172 and Chart 69 (b)	Col. 2-5 of Tables 173 and 175, and Chart 71 (c)	Col. 6 of Tables 173 and 175 (d)
DEFLATED CLEARINGS				
First.....	1,3,6,9,12,14	2,5,7,9,11	1,6,10,14	5,9,13
Middle.....			2-4,7-8,11-12	1-3,6-7,10-11
Last.....	2,5,8,11,13,15	4,6,8,10,12	5,9,13,15	4,8,12,14
PIG IRON PRODUCTION				
First.....	2,5,8,11,13	1,4,6,8,10	1,5,9,13	4,8,12
Middle.....			2-3,6-7,10-11,14	1-2,5-6,9-10,13
Last.....	4,7,10,12,15	3,5,7,9,11	4,8,12,15	3,7,11,14
FREIGHT CAR ORDERS				
First.....	4,7,10,13,16	3,6,9,10,12	3,7,11,16	2,6,10,15
Middle.....			4-5,8-9,12-14,17-18	3-4,7-8,11-13,16-17
Last.....	2,6,9,12,15,19	5,7,9,11,14*	6,10,15,19	5,9,14,18
RAILROAD STOCK PRICES				
First.....	1,6,9,12,15,17	5,8,10,12,14	5,9,13,17	4,8,12,16
Middle.....			6-7,10-11,14-15	5-6,9-10,13-14
Last.....	3,8,11,14,16,18	7,9,11,13,15	8,12,16,18	7,11,15,17
SHARES TRADED				
First.....	2,5,8,11,13	1,4,6,8,10	1,5,9,13	4,8,12
Middle.....			2-3,6-7,10-11,14	1-2,5-6,9-10,13
Last.....	4,7,10,12,15	3,5,7,9,11	4,8,12,15	3,7,11,14
CALL MONEY RATES				
First.....	1,3,6,10,13,16,19,21	9,12,14,16,18	7,13,17,21	4,12,16,20
Middle.....			8-11,14-15,18-19,22	5-10,13-14,17-18,21
Last.....	2,5,9,12,15,18,20,23	11,13,15,17,19	12,16,20,23	11,15,19,22
RAILROAD BOND YIELDS				
First.....	4,7,9,12,14,16,19		7,12,15,19	6,11,14,18
Middle.....			8-10,13,16-17	7-9,12,15-16
Last.....	3,6,8,11,13,15,18,20		11,14,18,20	10,13,17,19
BUSINESS CYCLES, U.S.				
First.....	8,10,13,16,19,22,24	12,15,17,19,21	12,16,20,24	11,15,19,23
Middle.....			13-14,17-18,21-22,25	12-13,16-17,20-21,24
Last.....	7,9,11,15,18,21,23,26	14,16,18,20,22	15,19,23,26	14,18,22,25
BUSINESS CYCLES, G.B.				
First.....			19,21,24,27	18,20,23,26
Middle.....			22,25,28	21,24,27
Last.....			20,23,26,29	19,22,25,28

*Omitted in Chart 69.

TABLE B9
List of Specific Cycles Included in Table 180
(The entries refer to the cycle numbers in Table B1)

Series	1879-1897	1897-1914	1914-1933
Deflated clearings.....	1-6	7-11	12-15
Pig iron production.....	1-5	6-10	11-15
Freight car orders.....	3-7	8-12	13-19
Railroad stock prices.....	5-9	10-14	15-18
Shares traded.....	1-5	6-10	11-15
Call money rates.....	7-13	14-18	19-23
Railroad bond yields.....	8-12	13-15	16-20