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CHAPTER 9

Incorporations and Business Cycles

Fluctuations in the number of incorporations have frequently been regarded as an index of business conditions. For example, the Secretary of the Commonwealth of Massachusetts, reporting to the Legislature in 1864 on the great increase in the number of corporate charters issued in 1863, wrote: "It is gratifying to observe this large increase in the number of corporations established under general law, *indicating, as it does, prosperity in manufacturing and mining interests*, and an appreciation by capitalists of the facilities afforded by standing laws for the establishment of corporate bodies without the delay involved in obtaining special charters, and the expense for the Commonwealth of legislative time and public money."¹ To be sure, more space is devoted to the effect of general incorporation laws, but the reference to prosperity comes first. There were many later statements. In 1902, for example, the chief of the Maryland Bureau of Industrial Statistics stated that the increase in 1901 over 1900 in both the number and the capitalization of new corporations reflected the "energy and enterprise in the State". Moreover, the large amount of capital stock for the numerous companies chartered in the counties evoked the comment: "This certainly is an indication of thrift and energy in the counties that ought to be gratifying to all our citizens."²

More recent comments of state officials can be cited. In the press releases dealing with incorporations put out by the Office of the Secretary of State of New York, increases in the number of incorporations are almost always said to indicate 'better business'. From the many statements that could be quoted the following have been selected:

These figures are given as showing the vast strides that are being made this year in the number of companies incorporating in New York state, and which must be regarded as reflecting an optimism toward the future and the belief that business conditions are not only fundamentally strong at the present time, but present a most excellent future.

Press Release, June 1925

There is evidence of a coming real estate boom, judging from the large number of companies that are incorporating these days, mainly from New York city and from Nassau and Westchester counties.

Press Release, May 1926

The 343 stock companies that incorporated last month outside of the metropolis were distributed over 35 counties, a good feature, and showing business and industrial activity as being general over the state, rather than confined to any particular locality or to the larger cities.

Press Release, Feb. 1927

More stock companies were incorporated in New York State during the month of January than during any one month since last May. This indicates a confidence in the business future and is in sharp contrast to the slump that followed the stock market crash of last October and November, when the number of companies incorporating dropped to a low figure.

Press Release, Feb. 1930

Commenting on the increase [in the number of incorporations], Secretary Walsh said, "The rise for the year was very gratifying to me. I believe that the yearly totals of the stock company incorporations might well be regarded as a fair sort of business barometer. An upswing in the number of charterings, I think, indicated better business conditions throughout the state."

Press Release, Jan. 1940

"The substantial numerical rise in stock company formations in the past six months," Secretary Curran said, "may well indicate that the 1942 total will be equaled and in all probability exceeded when the final count for the 1943 twelve month period is completed . . . If the chartering of stock companies is a fair barometer of business conditions—and I believe it is—it would appear there has been a marked improvement in the state within the past six months."

Press Release, Dec. 1943

Most of such comments upon the relation between incorporations and business cycles refer either to the upturn or the continued rise in the number of incorporations as a favorable business sign or to incorporations as a general barometer of business. It should be noted, for future reference, that they suggest that a rise in incorporations precedes a business revival. Among the few comments in which a decline in incorporations is associated with a recession in business is a press release by the Secretary of State of New York, dated September 1927:

There is probably no better criterion of general business conditions in New York state than the corporation bureau located in the Department of State, and which is the largest in the world today. A let up in business is almost immediately reflected in the number of companies incorporating through the bureau, while confidence in the future is easy to recognize in the influx of companies incorporating and with heavy capitalization.

According to Alfred Marshall, on the contrary, "most promotions of new companies, and reorganizations of old companies, are made in the years just before an inflation of credit and prices reaches its bursting point."³

³ *Industry and Trade* (Macmillan, London, 1919), p. 334.

¹ *Abstract of the Attested Returns of Corporations organized during 1863, under General Statutes of Massachusetts* (*Massachusetts Public Documents*, 1863, no. 13) (Boston, 1864), p. 3 (italics mine).

² *Tenth Annual Report of the Bureau of Industrial Statistics of Maryland* (Baltimore, 1902), p. 195.

Marshall's statement is not supported by factual data, though perhaps an examination of the British material of that and prior periods would substantiate it. Each of the other quotations seems to be tied primarily to a particular situation. All serve to indicate the prevalence of the opinion that business incorporations have had a definite relation to cyclical movements in general business. Efforts to define the relation have not been lacking. The indexes of incorporation referred to in Chapter 4—the *New York Journal of Commerce* indexes and the Corporation Trust Company index—are perhaps evidence of efforts to establish the bases for a careful examination. The Harvard University Committee on Economic Research tried to use the *Journal's* indexes in its studies of business cycles but concluded that the data were collected in such a manner that the compilations were of questionable value.⁴

D. H. Macgregor showed that in general in Great Britain from 1865 to 1910 turning points in new joint-stock registrations preceded turning points in employment, which in turn preceded those in prices. It is unfortunate that his data were not monthly, but on the basis of annual figures he concludes "that enterprisers have got themselves out of depression[s], rather than that they have been led out of them by actual price policies."⁵ Marshall's statement concerning peaks in incorporation seems to be substantiated and is, in fact, referred to by Macgregor.

The remaining sections of this chapter are devoted to some results of explorations concerning the relation between incorporations and business cycles. These explorations are a beginning in the treatment of a subject that deserves full investigation. It is hoped that the new evidence presented in this monograph will stimulate further research.

Initial Investigations

Before cyclical movements in business incorporations were studied, seasonal movements were calculated. A casual examination substantiated the observation of others that seasonal movements were pronounced. The Secretary of State of New York on several occasions called attention to a seasonal decline in incorporations during the midsummer months.⁶ And a quarterly index of seasonal variation constructed by the Harvard University Committee on Economic Research from one of the incorporation indexes of the *New York Journal of Commerce* also indicated a midsummer slump in the granting of new charters.⁷

⁴ *Review of Economic Statistics*, Preliminary Volume 1 (1919), pp. 148-9.

⁵ *Op. cit.*, pp. 62-94, particularly pp. 81-6.

⁶ See, for example, his press releases on incorporations for August 1925 and August 1927.

⁷ *Review of Economic Statistics*, Preliminary Volume 1 (1919), pp. 172-3.

To confirm or refute first impressions derived from an examination of the series compiled for this study, six indexes of seasonal variation were calculated for Maine, Ohio, and Texas for the 1880's and for a later decade. For Maine and Ohio, the later seasonal index covered the 1920's, but for Texas 1910-19 had to be used since data for the 'twenties were not available. Each index was based upon ratios of the monthly data to the corresponding twelve-month moving averages.⁸ The ten ratios for each month were averaged separately by taking an arithmetic mean of the six central items. The representative monthly figures thus procured were adjusted by dividing each by the average of the twelve (Table 35).

TABLE 35
Indexes of Seasonal Variation in Business Incorporations
Maine, Ohio, and Texas

	MAINE		OHIO		TEXAS	
	1880-89	1920-29	1880-89	1920-29	1880-89	1910-19
Jan.	83.2	119.9	120.5	114.3	101.8	109.5
Feb.	83.6	111.1	117.4	106.7	104.9	116.2
Mar.	111.4	112.4	132.4	124.6	124.5	121.1
Apr.	131.8	110.0	107.6	111.5	125.2	107.2
May	116.5	114.6	100.1	104.4	114.2	124.2
June	107.4	94.3	91.4	96.7	119.4	107.8
July	93.0	81.2	88.4	90.3	97.9	104.8
Aug.	92.7	92.6	77.3	89.9	84.6	92.0
Sept.	89.2	80.9	81.5	88.0	93.1	86.6
Oct.	92.6	89.3	86.1	91.2	81.9	81.4
Nov.	99.6	93.3	88.4	82.5	67.1	72.4
Dec.	99.0	100.4	109.2	100.0	85.4	76.8

Calculated as described in the text from the basic data given in Appendix 3.

While the seasonal movement in the charters granted by Maine has changed somewhat, in both Ohio and Texas it has remained very much the same. If any change is common to all three states, it is the decrease in the amplitude of the variation. Moreover, the seasonal patterns of the three states are more or less similar. Finally, it is clear that the seasonal variation in chartering is so large that account must be taken of it.

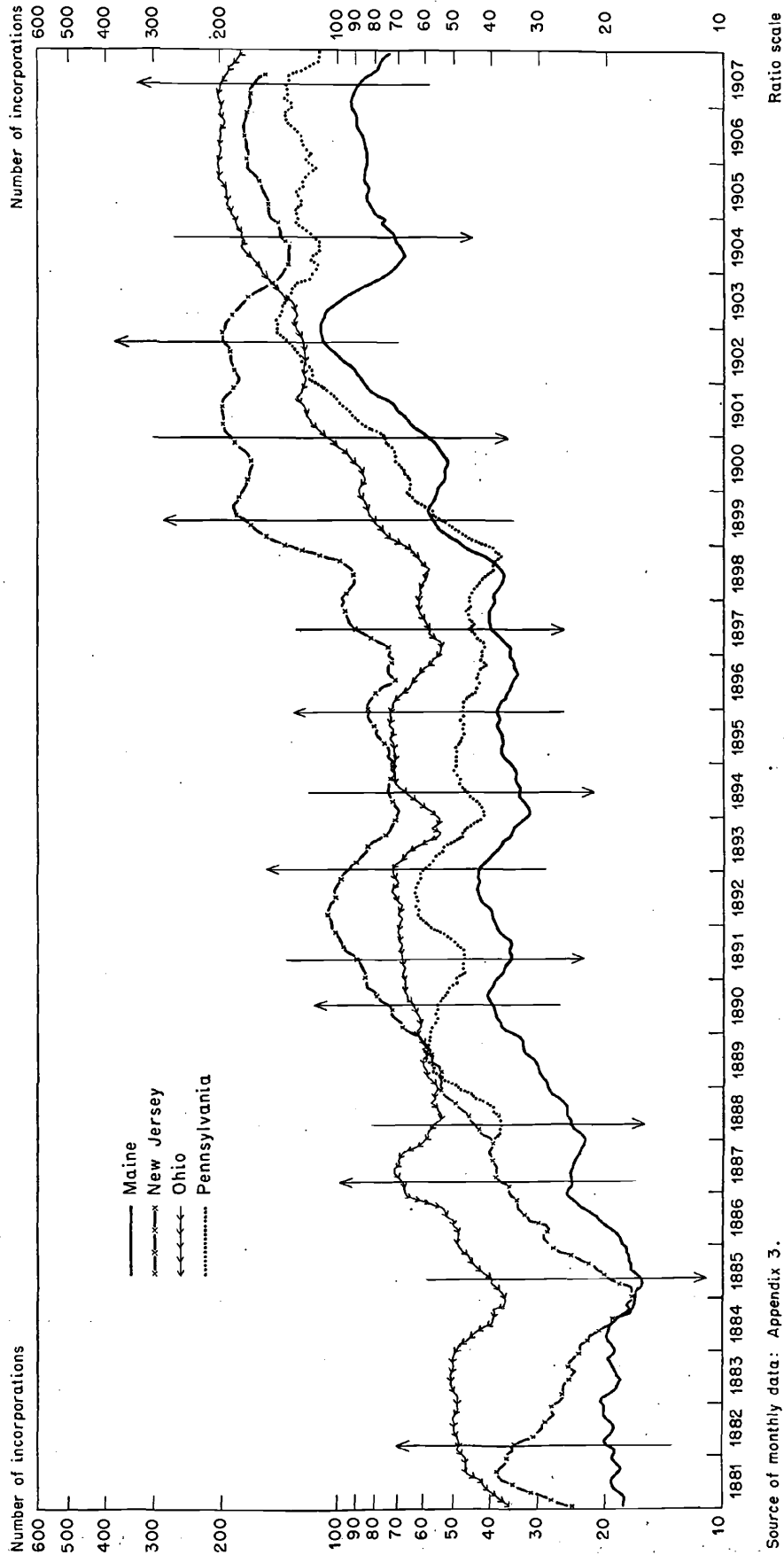
To facilitate study of the relation between incorporations and business cycles, twelve-item moving averages, entered at the seventh item, were calculated for the monthly series of incorporations of sixteen states. This procedure eliminated seasonal variation crudely and made it possible to compare the peaks and troughs in each state incorporation series with the turning points of business.⁹ A more refined procedure for eliminating seasonal variation was not used because there were so many series to be treated.

The movements of the Maine series, one of the four important series plotted on Chart 22, clearly suggest

⁸ The 12-month moving averages were entered at the seventh month.

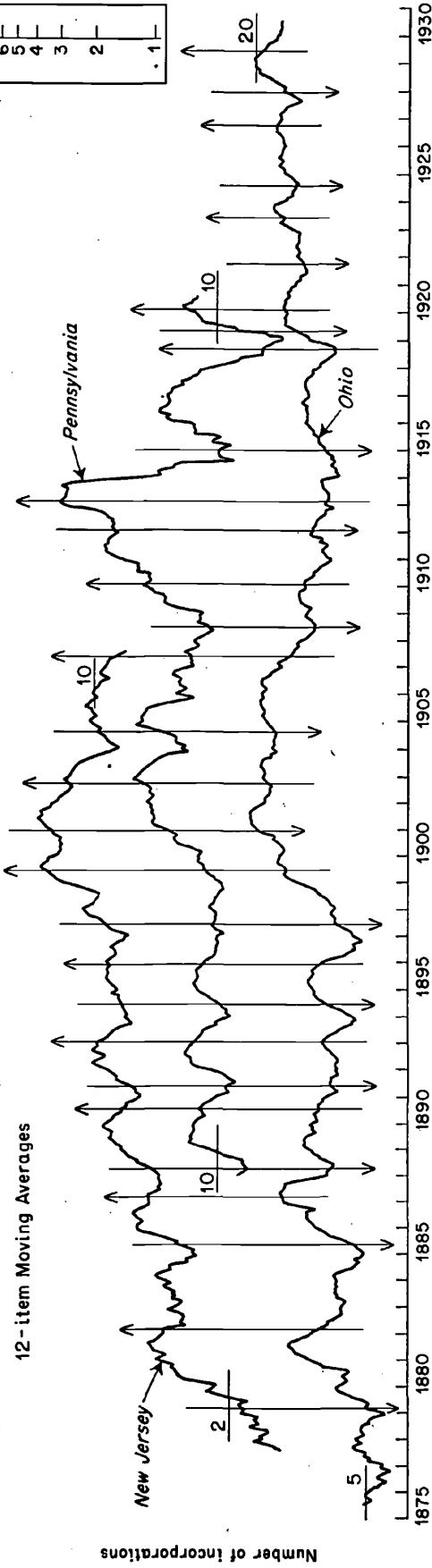
⁹ For the turning points of business, see Burns and Mitchell, p. 78.

CHART 22
Business Incorporations, Four States, 1881-1907
12-item Moving Averages



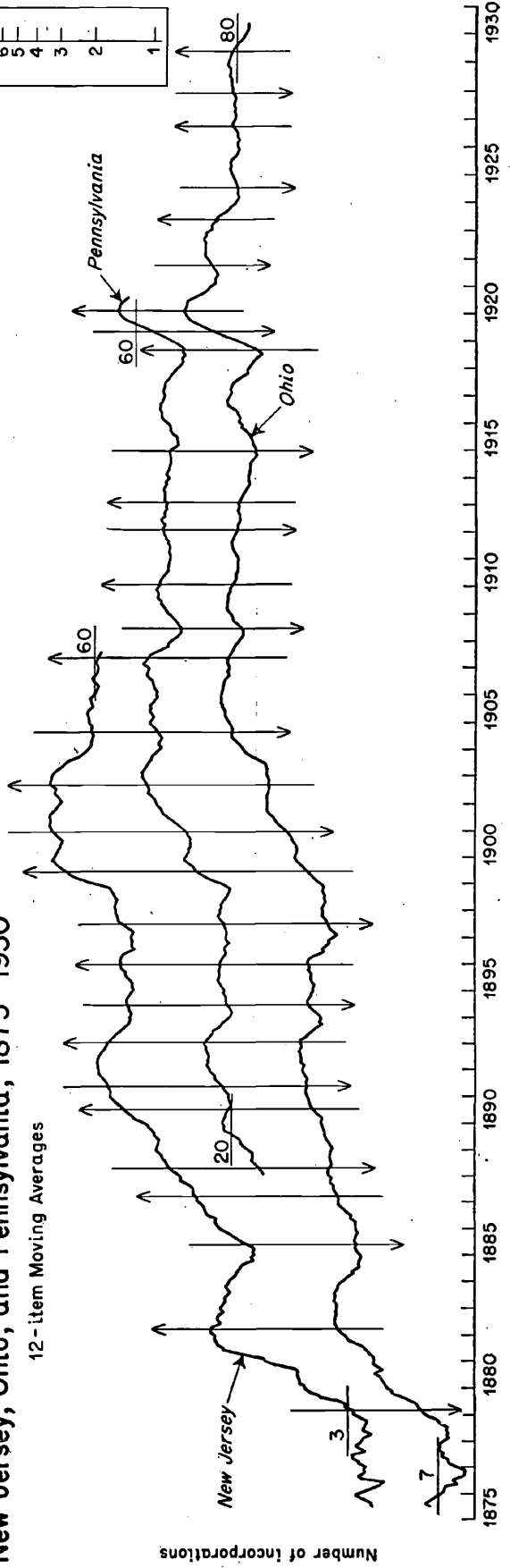
Source of monthly data: Appendix 3.

CHART 23
Public Utility Incorporations
New Jersey, Ohio, and Pennsylvania, 1875-1930



Source of monthly data: Appendix 4.

CHART 24
Manufacturing Incorporations
New Jersey, Ohio, and Pennsylvania, 1875-1930



Source of monthly data: Appendix 4.

that a trough in incorporations usually precedes a trough in business. The same is true of the three other series. At peaks the relation is less uniform. Study of the moving averages of all sixteen states—which cannot advantageously be reproduced on a single chart—gave rise to a firm conviction that incorporations usually turned upward some months before business began to revive.

When the peaks and troughs of the twelve-month moving averages for incorporations in the major industrial categories were compared with the turning points in business, several relations were observed. First, the various New Jersey series seemed to show a very pronounced tendency to turn up before business reached a trough. All except one of the Ohio incorporation series—that for mining—also showed this tendency, but less regularly. Several Pennsylvania series seemed to lag behind business troughs about as often as they led them. That troughs in the various incorporation series of New Jersey usually preceded business troughs was not unexpected in view of the 'liberal' character of its laws. The weaker tendency in the other two states suggests the hypothesis that, as long as state laws for the organization of corporations differ substantially and as long as states are the chief agencies for granting charters, the incorporation series of 'liberal' states are likely to be better indicators of general business activity. But there seems to be no plausible reason why Ohio incorporations reached *crests* before business more regularly than the parallel series of the other two states.

When attention was directed to industries, it was found that changes in the number of charters granted manufacturing and public utility companies were closely correlated with turning points in business. In both these industrial fields there has been a strong tendency for an *upturn* in incorporations to precede a *trough* in business. To facilitate observation of the relation, incorporations of public utilities in three states are brought together in Chart 23, and incorporations of manufacturing enterprises in Chart 24. The tendency of incorporations in public utilities to reach a trough before business seems reasonable in view of the importance of capital in this field and of the low interest rates that are likely to prevail as a recession spends itself. The same argument applies to manufacturing concerns, but with less force. With the exception of manufacturing incorporations in New Jersey, the series plotted on Charts 23 and 24 seem to attain *peaks* before business. They are not as regular in this respect, however, as they are in turning upward before business reaches a trough.

Monthly Aggregate and Median Indexes of Incorporations

To bring the study of the relation between incorporations and business cycles within more manageable proportions and be in a position to describe any ob-

served relation more precisely, incorporation data for a number of states—the figures for no one of which are available for the entire eighty-three years covered—were combined and attention was focused upon the composite picture. Two monthly indexes of incorporations covering the period 1860–1943 were constructed.¹⁰ That based on simple aggregates was designed specifically for studying the relation between the number of incorporations and business cycles. The other, computed as a simple median of relatives, was developed as a general purpose index and is less elaborate in construction. It provides, however, a good check on the results obtained from the aggregate index.

a) *Monthly aggregate index*

In computing the monthly aggregate index care was taken to see that the data of no state were allowed to enter or leave the index near a peak or trough, and thereby affect the timing of the turning points. Con-

TABLE 36
States in the Monthly Aggregate Index of Incorporations with the Periods of Their Inclusion

SEC.	PERIOD OF INCLUSION	CONN.	DEL.	FLA.	ILL.	LA.	ME.	MD.	MASS.	N. J.	N. Y.	OHIO	PA.	TEXAS	VA.
1	1860–1869	x													
2	1870–1871						x	x	x	x		x			
3	1872–1880						x	x	x	x		x		x	
4	1881–1887	x					x	x	x	x		x		x	
5	1888–1896	x					x	x	x	x		x	x	x	
6	1897–1903	x			x		x	x	x	x		x	x	x	
7	1904–1917	x		x	x		x	x	x	x		x	x	x	
8	1918–6/1919	x	x	x			x	x	x			x	x	x	x
9	7/1919–1925	x	x				x	x				x	x	x	x
10	1924	x	x				x	x			x	x		x	
11	1925–1932	x	x		x		x	x			x	x		x	
12	1933–1936				x		x	x			x	x		x	
13	1937–1939				x		x	x			x			x	
14	1940–1941		x		x	x	x				x			x	

Arizona data, available for 1912–24, and Colorado data, available for 1891–1908, were not used.

The following additional data were not used: for Florida, 1901–03 and 1920–21; for New Jersey, 1918; for Massachusetts, 1920–21; for Pennsylvania, 1920–21; and for Louisiana, 1937–39.

sequently, some portions of the incorporation series set forth in Appendix 3 could not be used, and the data for Colorado (available for 1891–1908) and Arizona (avail-

¹⁰ Had an index been constructed from total capital stock figures, the data of Chapter 5 indicate that the results would have been much the same with respect to timing, but such an index would have fluctuated more violently than an index based on total incorporations. Moreover, total capital stock is more erratic than the number of incorporations because of the effect a few very large companies may produce. The adjusted capital stock series (that is, the total figures less the capital of the companies with authorized stock of \$1,000,000 or more) would have produced results very similar to a total number index, but any capital stock series would have been inferior to the total number series because the coverage of states could not have been as large—there are not as many data on stock as on number.

TABLE 37
Seasonal Indexes used in Computing the Monthly Aggregate Index of Incorporations

MONTH	PERIODS USED IN CALCULATIONS									
	1863-69	1871-79	1873-79	1880-95	1897-04	1905-16	1920-25	1924-28	1929-32	1934-38
January	125	103	104	111	119	114	114	116	111	118
February	123	108	103	109	108	109	104	102	101	97
March	150	120	129	125	125	124	118	117	112	112
April	131	115	124	113	111	111	111	107	109	105
May	117	121	118	108	111	107	107	105	106	103
June	98	102	104	99	100	100	99	101	103	100
July	71	91	91	92	89	93	90	90	94	95
August	80	94	90	82	82	86	89	87	94	92
September	62	80	76	80	80	86	86	83	90	86
October	77	85	80	88	89	88	91	94	96	96
November	71	83	80	88	86	86	87	91	88	94
December	94	99	100	103	100	97	104	108	96	103
Periods to which indexes were applied	1860-70	1871	1872-79	1880-96	1897-04	1905-18	1919-24	1924-28	1929-32	1933-41

Computed as described in the text from the basic data in Appendix 3 as totaled in Appendix 6.

TABLE 38
Monthly Aggregate Index of Incorporations, 1860-1941
(1925:100.0)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1860	1.41	1.41	.85	.28	.99	.85	.56	1.41	1.55	1.13	.99	1.69
1861	.99	.42	1.27	.71	.71	.71	.00	.56	.42	.56	.85	.14
1862	1.13	.56	.85	.71	.85	.71	1.55	.56	1.13	.71	1.98	.56
1863	1.13	1.13	1.55	1.41	1.27	1.84	1.55	1.13	.71	2.97	2.40	3.25
1864	3.25	1.84	4.66	4.80	4.38	3.95	5.51	4.52	4.94	3.67	3.39	5.65
1865	7.48	10.45	7.48	5.65	5.65	6.78	6.21	6.35	9.32	5.51	6.92	6.07
1866	6.78	7.34	4.10	6.50	6.64	6.35	4.52	5.93	7.91	6.21	7.91	6.07
1867	5.51	4.66	4.38	4.24	5.08	5.08	6.78	6.50	4.94	6.07	5.93	5.37
1868	6.35	6.35	4.80	4.94	5.79	4.80	4.52	7.06	5.51	5.93	5.79	4.80
1869	4.24	4.38	5.93	6.50	6.21	5.51	5.79	5.65	6.21	5.37	5.37	5.79
1870	4.77	4.65	5.11	4.43	4.65	4.65	6.13	4.99	6.92	3.86	9.42	6.47
1871	6.92	5.45	5.79	5.33	6.81	5.33	5.79	5.79	4.99	8.17	6.01	6.24
1872	5.09	8.70	5.62	6.36	6.26	6.47	7.43	6.47	6.58	5.52	7.64	4.77
1873	6.47	7.11	7.21	5.94	5.94	6.36	6.05	7.64	5.83	4.46	4.24	5.30
1874	4.77	5.09	5.83	5.09	5.52	5.62	5.20	7.00	7.21	7.53	5.52	5.52
1875	6.26	6.68	7.21	6.90	5.94	6.90	6.58	6.38	9.12	6.79	6.15	6.36
1876	5.41	5.52	6.36	7.74	5.52	5.73	4.88	3.92	5.30	3.08	4.46	4.03
1877	4.24	4.56	4.46	3.71	5.62	4.67	5.62	4.67	4.77	6.58	5.52	5.30
1878	5.73	4.77	4.24	4.67	4.46	4.03	4.67	4.56	3.08	5.73	6.15	5.30
1879	5.73	4.99	3.61	4.35	5.20	5.20	5.52	4.88	4.77	5.20	7.53	8.49
1880	9.7	11.7	9.7	12.0	8.8	8.0	8.8	8.7	10.5	9.4	10.6	9.8
1881	9.5	10.9	14.8	11.9	14.2	13.2	14.7	14.9	15.2	17.6	16.7	15.7
1882	13.0	12.7	13.3	13.0	13.8	16.2	13.1	15.8	13.6	15.0	15.2	13.6
1883	12.6	14.2	13.2	13.8	15.0	16.7	14.0	16.2	14.3	15.8	13.9	14.7
1884	14.2	15.1	13.9	14.6	12.8	13.1	13.1	11.2	11.3	10.6	8.2	11.4
1885	12.3	11.3	10.8	9.7	10.3	20.8	12.5	12.5	13.2	13.4	11.4	13.7
1886	14.0	15.2	13.2	14.1	13.2	14.7	16.1	12.2	14.2	15.6	20.0	18.2
1887	18.1	16.8	19.4	23.7	21.7	20.2	16.3	19.5	19.3	21.1	19.9	16.3
1888	20.1	17.9	18.3	17.4	19.7	18.1	17.2	19.7	20.7	18.1	18.5	21.3
1889	21.9	20.7	22.0	21.4	23.0	20.1	27.8	24.9	27.0	20.3	26.8	22.2
1890	22.7	24.5	24.1	25.3	26.0	27.0	30.5	24.9	27.5	27.6	26.6	26.6
1891	26.4	26.7	24.1	24.5	24.4	29.6	27.9	25.1	29.0	28.9	27.4	33.5
1892	28.8	30.3	30.6	29.2	28.1	29.5	27.6	35.0	26.7	27.1	28.3	32.5
1893	31.9	27.8	26.1	29.3	30.7	24.5	23.6	20.9	18.9	17.8	20.3	21.9
1894	23.7	21.3	26.2	22.2	25.4	23.2	23.2	26.3	25.1	27.4	26.1	24.3
1895	25.3	21.7	24.7	26.6	23.7	24.8	28.9	29.1	28.3	30.4	29.6	27.9
1896	25.9	26.6	26.4	25.6	24.7	24.2	26.1	20.8	17.6	20.6	19.1	25.2
1897	24.6	24.2	25.9	24.8	23.2	24.2	24.9	27.6	31.7	28.2	30.0	29.7
1898	29.7	27.9	28.6	25.3	21.7	25.7	22.0	23.5	23.8	25.2	28.6	25.7
1899	31.6	31.8	36.4	36.0	36.3	40.0	41.5	40.6	38.1	37.9	39.5	36.6
1900	36.4	35.3	35.3	36.7	38.6	36.6	37.1	35.6	39.4	38.9	41.6	43.5
1901	40.8	43.9	47.1	57.1	60.7	52.9	52.9	54.5	45.7	48.1	49.4	50.3
1902	49.1	50.3	48.5	50.7	54.7	50.7	58.5	54.5	55.3	60.3	54.1	55.2
1903	59.0	59.9	55.2	57.6	53.6	55.1	55.5	50.3	57.5	55.5	51.6	59.0

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1904	51.1	53.9	51.0	49.2	54.0	54.7	58.0	62.4	58.1	57.3	57.8	64.0
1905	65.0	58.9	61.1	58.5	67.2	62.2	60.6	65.1	65.0	66.6	69.8	65.2
1906	72.2	67.6	71.1	65.2	73.1	72.1	61.1	72.7	67.3	74.4	74.8	75.1
1907	78.2	73.2	72.7	73.9	72.8	73.7	76.6	67.3	62.5	64.6	51.2	48.7
1908	51.2	53.3	52.8	57.2	53.8	57.9	60.1	59.7	62.6	62.3	61.2	67.6
1909	66.3	74.0	73.6	70.4	68.2	70.6	74.9	67.7	75.4	66.6	75.9	74.7
1910	65.7	71.0	62.5	69.0	66.7	66.8	58.1	66.4	62.6	61.7	70.9	65.6
1911	68.2	66.3	69.4	65.0	63.8	68.5	63.4	69.8	68.2	67.1	69.5	66.9
1912	68.8	69.8	67.9	67.8	67.8	67.0	77.3	73.2	71.9	76.1	71.9	71.8
1913	74.4	74.0	70.2	75.5	73.2	65.7	68.8	67.8	71.0	72.5	61.2	72.6
1914	63.6	64.2	69.2	66.6	65.1	64.6	68.6	56.4	57.7	58.1	56.0	54.7
1915	60.7	58.5	62.6	66.1	65.7	64.7	69.4	72.8	67.9	70.4	76.1	83.0
1916	69.5	75.1	76.2	74.8	77.8	78.2	73.7	73.2	83.2	81.9	84.5	85.1
1917	87.5	79.2	83.7	76.8	77.7	76.0	78.8	75.1	69.3	80.4	76.5	58.5
1918	55.9	56.1	54.7	57.7	60.5	51.5	58.7	53.6	44.9	41.6	41.6	53.8
1919	68.2	75.7	76.5	89.6	92.6	102.4	120.2	115.5	116.8	119.6	121.2	129.2
1920	128.0	124.2	122.8	121.1	112.7	115.4	110.2	106.6	107.4	107.0	101.8	88.4
1921	86.5	89.3	94.6	93.6	90.3	90.5	88.5	96.9	93.9	87.5	95.3	88.2
1922	89.6	93.9	94.8	94.4	110.0	105.0	100.6	99.5	104.7	106.0	101.2	105.7
1923	104.5	102.8	103.5	108.9	98.7	98.5	100.4	100.3	83.0	88.6	100.1	97.2
1924	93.4	93.5	89.3	88.5	85.0	84.5	86.2	81.5	94.0	95.9	84.7	100.5
1925	98.0	98.5	93.6	94.4	98.1	101.1	108.6	106.8	102.7	103.0	98.6	100.6
1924*	86.4	87.8	83.2	85.6	81.3	73.5	77.8	75.3	82.8	79.1	80.8	94.7
1925*	89.4	91.5	93.3	94.6	97.0	99.1	103.9	109.9	109.4	110.8	102.8	104.6
1926	104.4	99.0	98.7	98.2	98.1	105.8	104.3	96.5	100.4	100.7	99.8	96.8
1927	99.7	98.8	106.0	104.2	99.7	103.5	99.6	103.3	105.4	100.3	107.4	104.6
1928	104.7	112.2	106.5	105.6	116.6	114.0	108.2	109.6	102.0	115.3	116.8	107.9
1929	119.0	116.6	116.4	116.4	118.2	105.6	110.8	112.3	106.7	108.2	105.3	99.0
1930	99.2	102.0	99.0	99.6	104.5	97.9	100.5	90.6	101.6	100.8	97.9	100.8
1931	94.4	96.1	101.0	99.7	96.9	100.8	101.4	95.8	92.2	98.4	102.4	103.4
1932	98.8	96.7	95.2	93.9	90.1	100.3	91.2	103.1	98.3	90.0	91.6	91.1
1933	93.7	96.9	78.7	85.7	107.9	98.0	85.7	88.3	83.0	79.3	82.8	80.2
1934	79.7	72.8	76.2	76.2	75.8	72.3	71.6	73.1	69.8	74.4	72.7	66.2
1935	72.6	75.3	69.9	74.3	75.1	72.1	75.4	75.0	77.9	79.6	73.0	74.6
1936	76.3	77.3	74.5	73.1	73.6	77.2	76.7	70.4	77.5	74.6	73.0	80.1
1937	74.7	76.9	77.4	77.3	69.7	72.4	68.7	67.0	66.0	63.6	65.8	64.9
1938	61.6	61.4	62.8	60.8	62.9	62.8	63.2	66.3	63.2	60.3	63.6	62.6
1939	62.4	62.8	66.4	60.7	71.4	58.5	60.8	62.8	57.6	62.9	65.6	61.8
1940	67.1	67.2	59.7	72.3	68.7	54.5	60.8	59.3	60.3	57.4	53.4	57.7
1941	59.0	59.8	56.2	57.6	56.7	50.9	57.1	48.8	52.1	49.2	44.0	45.6

* See text.

able for 1912-24) had to be discarded. Fourteen overlapping sections including different groups of states were set up (Table 36). Next, the monthly aggregates within each section were adjusted by seasonal indexes calculated by the ratios-to-moving-average method (Table 37). The seasonally adjusted data of the first nine sections were then spliced and converted to an index based upon the monthly average of the original data for 1925. The last five sections of the adjusted data were similarly spliced to form the second part of the index.¹¹ The index was built in two overlapping parts—

¹¹ The splicing ratios were computed from annual totals of the original data except in one instance, when a six-month total of the original data was used.

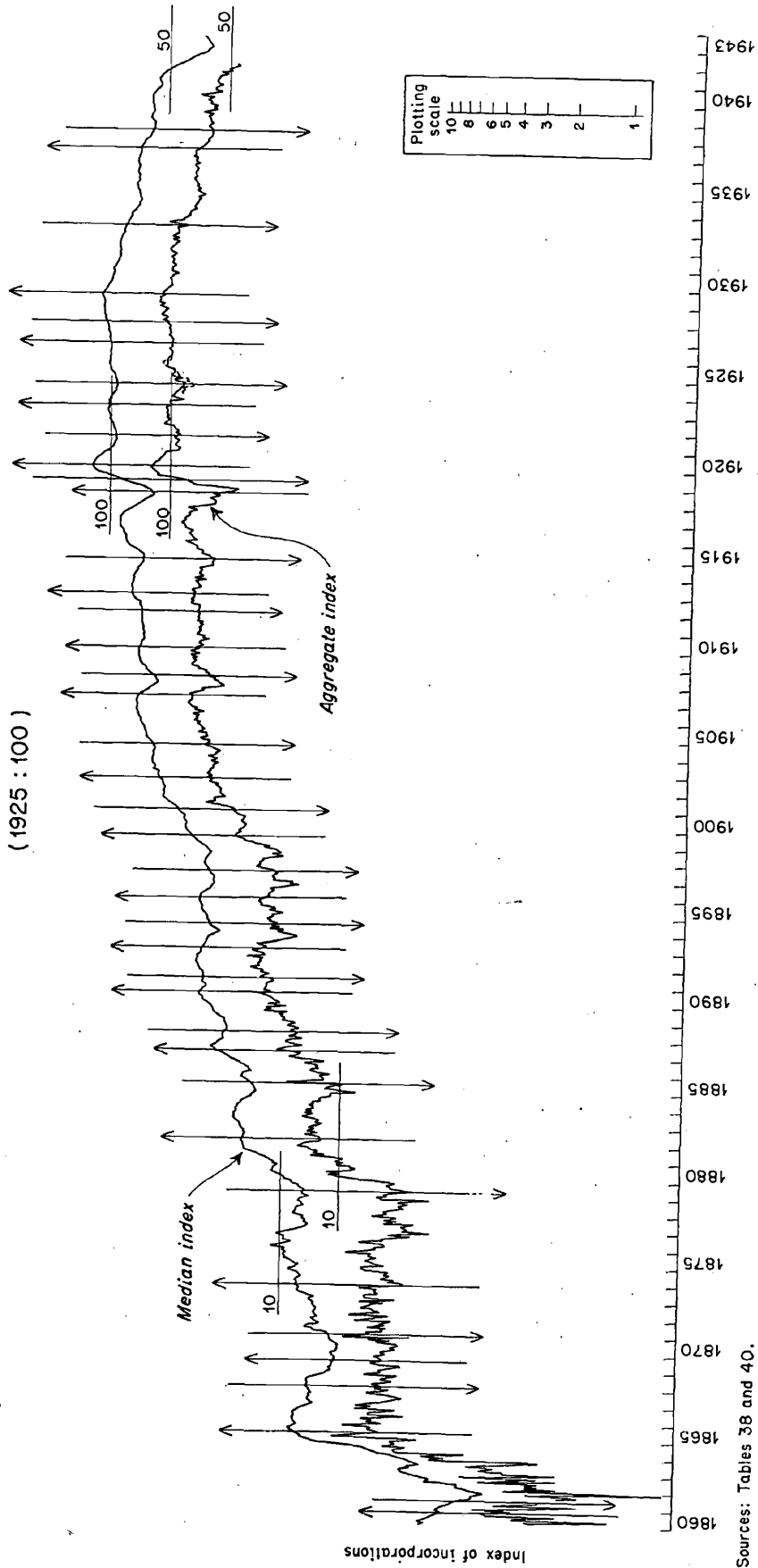
Sections spliced	Period used to obtain splicing ratio	Splicing ratio
2/1	1870	1.2444444
3/2	1872	1.0697329
4/3	1881	1.0540369
5/4	1888	1.2122830
6/5	1897	1.3061761
7/6	1904	1.0674811
8/7	July-Dec. 1917	.9591558
9/8	1919	.6409781

(Continued on page 84)

TABLE 39
States in the Monthly Median Index of Incorporations with the Periods of Their Inclusion

SEC.	PERIOD OF INCLUSION	ARIZ.	COLO.	CONN.	DELA.	FLA.	ILL.	I.A.	ME.	MD.	MASS.	N. J.	N. Y.	OHIO	PA.	TEXAS	VA.
1	1/60-7/70			X							X	X		X			
2	7/70-7/72								X	X	X	X		X			
3	7/72-7/81								X	X	X	X		X		X	
4	7/81-7/88			X					X	X	X	X		X		X	
5	7/88-7/91			X					X	X	X	X		X	X	X	
6	7/91-7/97	X		X					X	X	X	X		X	X	X	
7	7/97-7/01	X	X	X			X		X	X	X	X		X	X	X	
8	7/01-7/04	X	X	X			X		X	X	X	X		X	X	X	
9	7/04-7/07	X	X	X			X	X	X	X	X	X		X	X	X	X
10	7/07-7/13			X			X	X	X	X	X	X		X	X	X	X
11	7/13-7/16	X		X			X	X	X	X	X	X		X	X	X	X
12	7/16-7/17	X		X	X	X	X		X	X	X	X		X	X	X	X
13	7/17-7/18	X		X	X	X	X		X	X	X	X		X	X	X	X
14	7/18-7/19	X		X	X	X	X		X	X	X	X		X	X	X	X
15	7/19-7/20	X		X	X	X	X		X	X	X	X		X	X	X	X
16	7/20-7/21	X		X	X	X	X		X	X	X	X		X	X	X	X
17	7/21-7/23	X		X	X	X	X		X	X	X	X		X	X	X	X
18	7/23-7/24	X		X	X	X	X		X	X	X	X		X	X	X	X
19	7/24-7/25	X		X	X	X	X		X	X	X	X		X	X	X	X
20	7/25-7/32			X	X		X		X	X	X	X		X	X	X	X
21	7/32-7/36			X	X		X		X	X	X	X		X	X	X	X
22	7/36-7/37			X	X		X		X	X	X	X		X	X	X	X
23	7/37-7/39			X	X		X	X	X	X	X	X		X	X	X	X
24	7/39-7/41			X	X		X	X	X	X	X	X		X	X	X	X
25	7/41-7/43			X	X		X	X	X	X	X	X		X	X	X	X

CHART 25
Monthly Aggregate and Median Indexes of Business Incorporations
1860 - 1943
(1925 : 100)



Sources: Tables 38 and 40.

TABLE 40
Monthly Median Index of Incorporations, 1860-1943
(1925:100.0)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1860	1.56	1.46	1.59	1.53	1.42	1.37	1.34	1.26	1.14	1.20	1.28	1.24
1861	1.21	1.14	1.09	1.06	1.00	.99	.81	.78	.81	.68	.67	.77
1862	.82	.93	.96	.97	.94	1.28	1.46	1.36	1.41	1.63	1.70	1.84
1863	1.98	1.95	2.05	1.77	1.87	1.54	1.62	1.71	1.81	1.93	2.10	2.20
1864	2.32	2.67	2.86	3.06	3.26	3.35	3.66	4.29	5.38	6.29	6.76	7.15
1865	7.49	7.43	7.61	8.03	8.26	8.60	8.67	8.65	8.32	7.83	7.95	8.11
1866	8.20	8.22	8.31	8.17	8.14	8.21	8.20	8.04	7.56	7.44	6.93	6.65
1867	6.33	6.62	6.84	6.79	6.78	6.55	6.68	6.39	6.67	6.68	6.86	7.01
1868	7.00	6.83	6.90	6.97	6.93	6.89	6.64	5.95	5.38	5.34	5.09	5.05
1869	5.29	5.10	5.02	5.10	4.96	4.97	4.81	4.78	5.04	5.06	5.22	5.07
1870	4.67	4.80	4.62	4.67	4.57	4.75	5.11	5.30	5.21	5.18	5.21	5.35
1871	5.35	5.66	6.47	6.47	7.23	7.02	6.60	5.89	6.20	6.44	6.68	6.07
1872	6.24	6.37	6.44	6.37	6.21	6.21	6.21	6.50	6.53	6.40	6.72	6.92
1873	6.83	6.39	6.87	7.46	7.83	7.96	8.10	7.86	7.71	8.27	7.88	8.02
1874	8.01	8.17	8.05	7.60	7.80	7.88	8.20	8.75	9.12	8.17	8.24	7.78
1875	8.51	8.73	8.86	9.62	9.48	9.75	9.51	9.24	9.61	10.01	9.39	11.37
1876	11.33	10.56	8.78	8.74	9.83	9.60	9.68	9.49	10.64	10.08	8.70	8.28
1877	7.67	7.27	7.17	6.99	7.39	7.25	7.62	7.59	7.35	8.01	8.61	8.63
1878	8.25	8.40	8.29	7.95	7.42	7.76	7.79	8.14	8.11	7.53	6.90	7.41
1879	7.64	7.41	7.37	7.49	7.63	8.10	8.04	8.29	8.85	8.89	9.75	9.70
1880	9.9	10.2	10.5	11.3	11.5	11.1	11.2	10.6	10.6	11.3	11.0	11.8
1881	12.2	12.4	13.4	13.5	14.3	15.2	16.1	16.4	16.5	16.6	16.7	16.7
1882	16.9	16.7	16.7	16.3	16.4	16.5	15.9	16.5	16.3	17.0	16.9	17.3
1883	17.3	17.5	17.9	18.4	18.8	18.8	18.6	19.0	17.7	18.1	18.6	18.4
1884	17.6	17.6	16.9	17.0	16.6	15.9	15.5	15.1	15.2	14.7	14.1	14.0
1885	14.1	14.3	14.6	15.3	15.1	15.8	16.4	16.9	17.3	17.1	16.5	17.1
1886	15.0	15.7	15.4	16.2	16.3	17.4	17.6	18.1	19.1	19.8	20.5	21.0
1887	21.7	22.4	24.2	24.1	25.8	25.5	24.3	23.6	23.6	22.6	21.5	22.1
1888	22.1	22.1	22.1	21.7	20.8	20.6	21.1	21.1	21.4	21.5	21.5	21.7
1889	21.4	22.6	23.1	24.1	24.7	25.3	25.3	25.3	25.4	25.7	26.5	27.2
1890	27.9	28.6	28.4	28.6	29.9	29.9	30.1	29.8	29.3	28.4	27.5	27.3
1891	27.9	29.1	28.6	28.4	28.1	28.2	28.4	28.7	29.1	30.2	30.5	30.3
1892	31.0	30.2	31.6	31.5	31.1	31.4	30.2	31.6	30.2	29.3	29.3	29.8
1893	29.6	29.4	28.2	27.8	27.3	27.3	27.1	26.8	26.8	25.2	24.8	23.4
1894	23.2	24.1	24.8	25.6	26.6	27.1	26.4	26.9	27.8	27.0	27.7	27.5
1895	28.3	29.1	29.5	29.6	29.1	29.4	29.7	29.6	30.4	30.2	29.8	30.0
1896	29.8	29.6	28.8	27.9	26.9	26.4	26.3	26.1	25.7	24.9	25.8	25.6
1897	25.5	25.1	25.4	26.4	26.8	27.5	27.5	27.9	28.3	28.6	28.4	28.4
1898	28.5	28.0	27.5	26.8	26.5	26.2	26.2	27.1	27.4	27.9	28.6	29.3
1899	30.2	31.2	31.7	32.6	33.5	33.2	34.4	34.4	35.2	36.3	36.0	36.6
1900	37.0	36.8	36.2	36.3	36.8	37.1	37.6	36.8	38.1	38.8	40.2	40.4
1901	40.9	41.5	43.5	44.8	45.5	46.6	47.9	48.5	48.7	48.9	48.5	48.1
1902	48.4	48.5	48.1	48.1	48.7	49.3	48.7	50.3	52.5	52.1	52.0	51.8
1903	52.5	51.4	56.8	55.8	54.8	54.2	56.0	56.8	56.6	56.6	56.2	56.2
1904	55.8	55.4	56.8	56.6	54.7	55.0	55.0	56.3	56.6	57.4	58.3	60.3
1905	61.2	61.7	61.0	61.1	61.9	63.4	63.5	64.7	65.9	66.7	67.0	66.2
1906	66.7	68.0	68.3	67.9	68.8	69.4	69.7	69.8	69.8	69.3	69.2	69.7
1907	69.9	69.6	68.7	69.2	68.2	65.8	64.5	62.0	61.1	58.5	58.5	56.6
1908	54.6	53.8	53.5	54.7	55.4	55.6	57.6	59.7	62.0	63.4	61.1	63.6
1909	65.4	67.7	67.8	67.7	67.5	68.3	68.7	68.6	68.6	67.8	67.9	68.2
1910	68.5	66.7	66.5	66.3	66.0	65.2	64.0	64.4	64.3	64.3	64.2	64.7
1911	65.4	64.9	65.1	65.5	66.0	65.6	66.2	65.7	65.9	65.9	66.0	65.9
1912	66.4	67.0	65.8	66.6	67.4	68.4	66.6	70.2	71.5	74.1	74.8	75.2
1913	75.8	74.9	74.5	74.6	75.4	75.9	76.2	74.5	73.9	72.4	72.8	73.4
1914	73.9	73.4	72.4	71.0	69.5	69.4	67.9	66.7	65.9	65.5	65.4	66.0
1915	64.8	64.5	65.7	67.7	69.1	71.3	75.1	77.7	78.6	80.9	81.2	81.1
1916	82.2	81.6	81.5	83.2	84.9	85.2	84.9	87.1	88.3	89.2	88.4	88.3
1917	87.5	88.8	87.7	87.4	85.4	84.9	82.3	79.8	76.8	74.0	71.7	70.0
1918	67.7	65.6	64.4	61.0	59.5	57.1	57.2	58.2	59.1	62.6	64.7	68.8
1919	73.3	76.8	82.3	87.2	93.1	98.5	106.4	112.0	117.4	121.0	123.1	124.6
1920	125.0	124.9	123.6	121.9	120.4	119.2	115.0	111.3	107.6	104.4	101.6	100.0
1921	98.1	95.0	94.9	94.3	93.4	92.5	92.2	93.1	94.1	94.1	93.2	95.7
1922	95.1	98.0	97.9	97.3	98.7	99.0	101.1	102.1	98.5	100.0	101.5	103.4
1923	102.2	102.3	102.6	101.8	100.0	100.3	100.6	101.1	101.3	100.2	100.1	98.1
1924	96.0	94.8	93.5	93.7	93.4	92.6	92.1	92.4	92.4	92.4	93.9	95.1
1925	94.8	96.6	98.1	100.1	100.1	100.6	101.8	102.2	101.5	101.4	101.3	101.5
1926	101.1	100.8	100.1	100.1	99.8	100.0	99.3	99.2	99.3	100.2	101.0	101.1

TABLE 40 (concl.)

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1927	102.0	101.0	101.5	102.0	103.4	103.3	103.0	103.0	103.3	103.7	104.6	106.7
1928	107.0	106.7	108.0	107.2	109.0	109.2	109.8	110.4	110.0	109.6	109.5	109.6
1929	109.1	109.2	111.4	112.3	112.9	112.6	109.4	107.5	106.3	105.3	104.9	102.8
1930	102.3	101.4	99.0	98.1	98.1	97.4	97.8	97.8	96.7	97.2	97.8	96.6
1931	95.0	93.5	92.6	91.1	90.3	89.8	89.5	89.4	89.9	89.7	89.4	89.3
1932	90.7	90.5	90.7	90.7	90.5	89.5	87.4	87.6	87.3	85.2	84.9	85.8
1933	85.3	84.9	83.8	83.3	82.3	81.2	80.4	78.5	77.6	79.3	77.4	76.2
1934	74.6	73.4	71.9	70.7	71.1	70.5	69.2	69.8	71.2	71.0	71.4	71.7
1935	71.3	73.3	73.4	73.0	73.4	74.7	73.1	70.3	71.1	72.3	71.8	71.6
1936	72.9	73.2	73.0	71.9	71.2	70.5	72.1	72.2	72.1	72.3	72.3	72.2
1937	71.9	71.4	71.4	70.9	70.4	70.0	69.1	67.6	66.3	67.1	65.4	63.1
1938	62.2	62.6	62.1	60.4	60.2	59.5	59.4	59.0	59.9	59.1	60.2	61.6
1939	62.7	62.5	61.0	61.4	60.3	60.3	60.7	60.0	61.0	60.9	62.2	61.4
1940	61.1	61.0	60.8	61.0	60.0	58.6	58.1	57.4	55.9	55.6	55.0	56.0
1941	56.3	56.6	56.0	55.1	54.6	53.9	52.5	50.3	49.2	47.3	46.2	44.3
1942	42.5	40.5	39.1	37.8	37.0	34.8	33.1	32.1	31.0	30.8	29.9	29.3
1943	29.6	30.0	30.4	31.1	31.5	32.1	32.7					

the one ending with December 1925, the other beginning with January 1924 (Table 38 and Chart 25)—because the inclusion of New York data not only swelled the aggregates to a very much higher level but seemed to make some difference in the cyclical behavior of the figures.¹²

Inasmuch as the monthly aggregate index was designed to be a means of exploring the relation between

Sections spliced	Period used to obtain splicing ratio	Splicing ratio
Sections 9 and 10 were not spliced		
11/10	1925	1.1507252
11/12	1932	1.0272145
12/13	1936	1.1003406
13/14	1939	1.0074579

In general, of two overlapping sections the one containing the larger number of incorporations was used in the index as far as it was available. When the 1916-19 and 1918-25 sections were spliced on the basis of the 1919 ratio, the first section, being the more comprehensive, should have been used through 1919 and the second from January 1920 on. Had the general rule been adhered to, however, January 1920 would have become the peak of the cycle in the spliced index, whereas December 1919 is the peak of the actual numbers (seasonally adjusted) in the 1918-25 section. Since this is the only section from which the peak can be dated precisely (December 1919 is the highest point reached by the 1916-19 section, but since the section ends at that date the peak cannot actually be dated from that section), it is desirable to make the spliced index consistent with it. Comparison of the annual splicing ratio for 1919 with ratios for the individual months in 1919 indicated that the annual ratio represents the relation between the two sections adequately, and that a ratio based on December 1919 alone (which, of course, would effect the required adjustment and make December 1919 the peak) would not be representative. Hence the less comprehensive (1918-25) section was used back to July 1919 for the purposes of the spliced index.

¹² The monthly average of the original data for 1925, on which the first part of the index is based, is 1,033; the comparable figure for the second part is 3,557.

incorporations and business cycles, the reader should note that the cyclical turning points in it are the same as those dated from the more comprehensive of the overlapping sections in actual incorporations—with one exception. February 1900 is a trough in total incorporations, while in the index February and March are identical lows; under the rules used in cyclical work by the National Bureau of Economic Research, March was chosen as the trough for the index.

b) *Monthly median index*

Like the aggregate index, the median index consists of overlapping sections representing the number of incorporations in varying groups of states (Table 39). The overlap here, however, was only one month. To reduce the labor of calculation no state was taken into or dropped from the index except at the beginning or end of a calendar year. This meant that the series were spliced at July, because the index was constructed from twelve-month moving averages of monthly figures, entered at the seventh month. These moving averages were developed in connection with the exploratory investigations. Since the index begins with January 1860 and is built upon these moving averages, the basic incorporation data for the last half of 1859 were used in calculating the moving averages from which the index for the early months of 1860 was made. The moving averages for each state were put into relatives based in turn on the first month of each section. The simple median of the relatives of each month was determined, and the sections were chained together on January 1860 as base. The base was then shifted to the arithmetic mean of the figures for 1925 (Table 40 and Chart 25).

Cyclical Analysis

The first step in the study of the relation between cyclical movements in business incorporations and

turning points in business was to select the peaks and troughs in total incorporations.¹³ Since choice is a matter of judgment, the results may easily be questioned. It is believed, however, that in general the dates selected as peaks and troughs are satisfactory (Table 41). The leads and lags of the peaks and troughs in

TABLE 41
Timing of Cycles in Total Incorporations

	DATES OF SPECIFIC CYCLES			LEAD (-) OR LAG (+) AT REFERENCE			
	Trough	Peak	Trough	Peak		Trough	
				No. of months	Reference date	No. of months	Reference date
1	7/1861	2/1865	7/1861 5/1870	-2	4/1865	+1 -7*	6/1861 12/1870
2	4/1870	2/1872	4/1870 11/1873			-8	12/1870
3	11/1873	9/1875	10/1876 9/1878				
4	10/1876	10/1877	9/1878			-6*	3/1879
5	9/1878	6/1883	11/1884	+15	3/1882	-6	3/1879
6	11/1884	4/1887	12/1887	+1	3/1887	-4*	4/1888
7	12/1887	7/1890	12/1887 3/1891	0	7/1890	-4 -2	4/1888 5/1891
8	3/1891	8/1892	10/1893	-5	1/1893	-8	6/1894
9	10/1893	10/1895	9/1896	-2	12/1895	-9*	6/1897
10	9/1896	9/1897	9/1896 5/1898			-9	6/1897
11	5/1898	7/1899	2/1900	+1	6/1899	-10	12/1900
12	2/1900	5/1901	9/1901				
13	9/1901	2/1903	4/1904	+5	9/1902	-4*	8/1904
14	4/1904	1/1907	4/1904 12/1907	-4	5/1907	-4 -6	8/1904 6/1908
15	12/1907	11/1909	7/1910	-2	1/1910	-18	1/1912
16	7/1910	7/1912	12/1914	-6	1/1913	0	12/1914
17	12/1914	1/1917	11/1918	-19	8/1918	-5	4/1919
18	9/1918	12/1919	9/1918 1/1921	-1	1/1920	-7* -8	4/1919 9/1921
19	1/1921	4/1923	8/1924	-1	5/1923	+1*	7/1924
20	6/1924	10/1925	6/1924 12/1926	-12	10/1926	-1	7/1924 12/1927
21	12/1926	1/1929	12/1934	-5	6/1929	+21*	3/1933
22	12/1934	12/1936	12/1934 9/1939	-5	5/1937	+21 +16	3/1933 5/1938
Average, 22 cycles, 1861-1939				-2.5		-3.6	
Average deviation				4.6		6.0	

* Excluded from the averages.
No peaks or troughs of incorporations were selected for comparison with the following reference dates: 10/1860(peak), 12/1867(trough), 6/1869(peak), and 10/1873(peak).

incorporations were determined with respect to the National Bureau's turning points in business, called

¹³ Total incorporations (App. 6) were used here instead of the aggregate index derived from them. As they were spliced only when a cycle had to be completed, dates overlap in Table 41, and in the analysis there are 9 sections (separated by spaces in Table 41) instead of the original 14.

'reference dates'.¹⁴ Twenty-two cycles in total incorporations were marked out for 1861-1939. On the average, as shown in Table 41, a peak in them leads a peak in business by 2.5 months (average deviation, 4.6 months), and their trough leads a trough in business by 3.6 months (average deviation, 6.0 months). Moreover, in relatively few instances does a turn in incorporations lag behind a turn in business, and exceptions occur at peaks more frequently than at troughs.¹⁵

TABLE 42
Timing of Cycles in the Monthly Median Index of Incorporations

	DATES OF SPECIFIC CYCLES			LEAD (-) OR LAG (+) AT REFERENCE			
	Trough	Peak	Trough	Peak		Trough	
				No. of months	Reference date	No. of months	Reference date
1			11/1861			+5	6/1861
2	11/1861	3/1863	6/1863				
3	6/1863	7/1865	1/1867	+3	4/1865	-11	12/1867
4	1/1867	12/1867	5/1870	-18	6/1869	-7	12/1870
5	5/1870	5/1871	8/1871				
6	8/1871	12/1875	4/1877	+26	10/1873		
7	4/1877	12/1877	11/1878			-4	3/1879
8	11/1878	1/1882	7/1882	-2	3/1882		
9	7/1882	8/1883	12/1884			-5	5/1885
10	12/1884	5/1887	6/1888	+2	3/1887	+2	4/1888
11	6/1888	7/1890	12/1890	0	7/1890	-5	5/1891
12	12/1890	3/1892	1/1894	-10	1/1893	-5	6/1894
13	1/1894	9/1895	2/1897	-3	12/1895	-4	6/1897
14	2/1897	10/1897	7/1898				
15	7/1898	8/1903	5/1904	+11	9/1902	-3	8/1904
16	5/1904	1/1907	3/1908	-4	5/1907	-3	6/1908
17	3/1908	7/1909	7/1910	-6	1/1910	-18	1/1912
18	7/1910	7/1913	2/1915	+6	1/1913	+2	12/1914
19	2/1915	10/1916	6/1918	-22	8/1918	-10	4/1919
20	6/1918	1/1920	7/1921	0	1/1920	-2	9/1921
21	7/1921	12/1922	7/1924	-5	5/1923	0	7/1924
22	7/1924	8/1925	8/1926	-14	10/1926	-16	12/1927
23	8/1926	5/1929	12/1931	-1	6/1929		
24	12/1931	4/1932	7/1934			+16	3/1933
Average, 24 cycles, 1861-1938				-3.3		-3.4	
Average deviation				8.4		5.3	

No peaks or troughs of incorporations were selected for comparison with the following reference dates: 10/1860(peak), 6/1899(peak), and 12/1900(trough).

The monthly median index was similarly analyzed although it was believed to be inferior to the number of actual incorporations for the purpose of relating turning points in incorporations and in business (Table 42). After the middle 'seventies, the two measurements of cyclical movements resemble each other closely.

The pattern of the cycles of a series (cycles that

¹⁴ Burns and Mitchell, p. 78.

¹⁵ In studying the relation between incorporations and business cycles, some investigators may deem it desirable to eliminate from consideration the August 1918 peak in business and the April 1919 trough because wartime controls vitiated the normal relation.

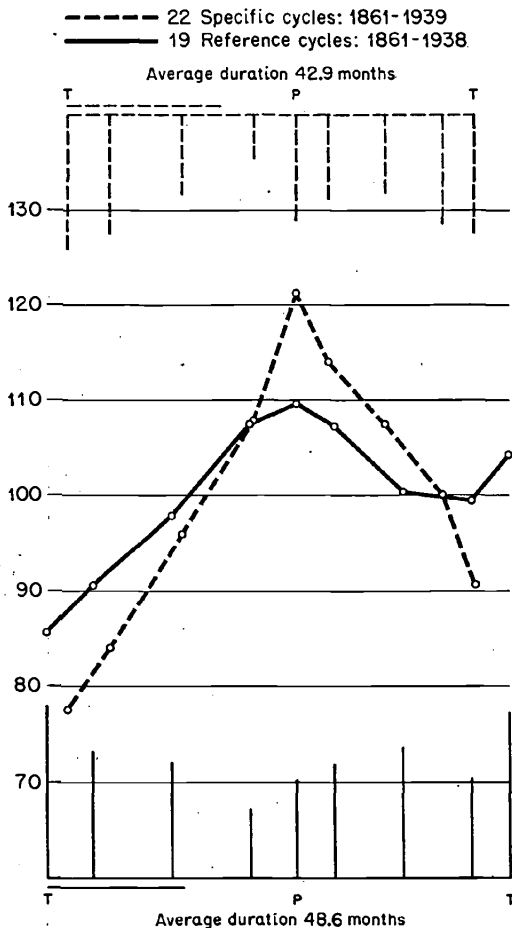
TABLE 43
Specific-Cycle Patterns in Total Incorporations

	DATES OF SPECIFIC CYCLES			AVERAGES OF SPECIFIC-CYCLE RELATIVES AT NINE STAGES OF THE CYCLES									
				I	II	III	IV	V	VI	VII	VIII	IX	
	Trough	Peak	Trough	Three months centered on initial trough	Expansion			Three months centered on peak	Contraction			Three months centered on terminal trough	
					First third	Middle third	Last third		First third	Middle third	Last third		
1	7/1861	2/1865	5/1870	9.7	17.3	33.1	99.9	193.3	147.9	123.4	125.3	106.3	
2	4/1870	2/1872	11/1873	77.2	94.5	97.7	98.2	105.4	105.1	105.1	98.2	76.0	
3	11/1873	9/1875	10/1876	77.6	88.4	105.1	110.6	123.5	102.7	104.5	82.5	71.1	
4	10/1876	10/1877	9/1878	90.8	91.7	97.5	104.6	119.3	117.0	96.2	93.8	94.5	
5	9/1878	6/1883	11/1884	39.0	57.8	102.5	123.8	133.0	129.6	124.1	103.4	87.6	
6	11/1884	4/1887	12/1887	64.9	80.1	87.9	108.3	139.7	135.7	118.9	132.8	120.2	
7	12/1887	7/1890	3/1891	82.1	81.9	96.9	107.6	120.1	114.6	117.8	116.2	109.8	
8	3/1891	8/1892	10/1893	90.6	94.9	107.0	104.8	107.6	103.5	105.3	79.3	68.6	
9	10/1893	10/1895	9/1896	96.0	92.1	101.4	103.9	117.7	111.2	103.1	94.7	78.6	
10	9/1896	9/1897	5/1898	76.5	86.8	96.9	97.0	113.3	113.1	113.1	104.7	94.1	
11	5/1898	7/1899	2/1900	74.1	72.7	87.6	113.9	124.7	120.6	118.5	111.7	109.2	
12	2/1900	5/1901	9/1901	81.3	84.0	88.6	105.9	129.6	120.5	120.7	124.1	112.6	
13	9/1901	2/1903	4/1904	92.1	92.1	98.6	105.8	108.1	103.1	100.8	100.7	96.0	
14	4/1904	1/1907	12/1907	78.1	90.0	99.2	107.1	114.8	111.4	110.4	90.3	76.6	
15	12/1907	11/1909	7/1910	77.6	85.0	101.5	108.6	111.5	108.1	103.9	102.8	98.2	
16	7/1910	7/1912	12/1914	94.5	98.3	98.6	101.0	107.4	108.5	100.8	92.5	84.6	
17	12/1914	1/1917	11/1918	82.5	94.0	107.0	115.1	121.3	112.9	93.1	76.0	66.0	
18	9/1918	12/1919	1/1921	45.4	56.4	90.7	120.0	127.6	125.4	112.5	102.3	85.0	
19	1/1921	4/1923	8/1924	92.2	96.0	101.0	108.1	108.6	100.8	99.0	90.8	91.4	
20	6/1924	10/1925	12/1926	80.5	82.2	96.3	107.9	111.8	106.7	105.0	103.2	102.6	
21	12/1926	1/1929	12/1934	101.3	104.5	108.5	114.2	117.4	107.5	99.3	83.6	72.3	
22	12/1934	12/1936	9/1939	102.8	106.4	109.2	107.5	109.9	101.8	90.5	90.4	87.7	
	9/1939	4/1940		93.2*	98.1*	98.4*	96.9*	102.1*					
Average, 22 cycles, 1861-1939				77.6	84.0	96.0	107.9	121.2	114.0	107.5	100.0	90.6	
Average deviation				14.2	12.6	8.4	4.7	11.2	9.0	8.3	11.6	12.6	

* Computed on the base of the inverted cycle December 1936-April 1940. Excluded from the averages.

in National Bureau terminology are called 'specific cycles') can be determined neatly by a technique developed by Arthur F. Burns and Wesley C. Mitchell.¹⁶ First, an average monthly value, called the cycle base

CHART 26
Average Cyclical Patterns
of Monthly Aggregate Incorporations



Data from Tables 43 and 44.
For method of construction, see Burns and Mitchell, *op. cit.*, pp. 170 ff.

number, for each cycle measured from trough to trough is computed. Each cycle is then divided into nine segments, and the average value for each segment is calculated and expressed as a relative of the average value for the whole cycle.¹⁷ Finally, to procure a composite

¹⁶ *Op. cit.*, pp. 144 ff.

¹⁷ Three of the nine segments—those centering on the initial trough, the peak, and the terminal trough—are indicated with sufficient clarity in Table 43. For those unfamiliar with the Burns-Mitchell technique, it should be added that the expansion phase of a cycle begins with the month after the initial trough and ends with the month before the cyclical peak. This phase is subdivided into three parts as nearly equal as may be without using fractions of a month. The contraction phase of

specific-cycle pattern, an average standing of the relatives for each of the nine segments is calculated. This technique was applied to aggregate incorporations (Table 43 and Chart 26). The typical cycle of incorporations is simple: it rises steadily to a peak, then recedes rather steadily for a shorter period.

The reference-cycle pattern, likewise traced on Chart 26, is derived similarly. The essential difference is that the dates for the troughs and the peaks as well as periods of intervening expansions and contractions are determined by the reference dates instead of by the turning points of the specific cycles. Table 44 gives for each phase of each cycle the relative standing of aggregate incorporations. It gives also average standings for the nineteen reference cycles as a whole, as well as average standings for the reference cycles in three component periods: 1861-88, 1888-1912, 1912-38. The calculations for these three component periods suggest that the peak of incorporations has shifted somewhat. In the average pattern for 1861-88 it occurred during the first third of the contraction phase of the reference cycle. In 1888-1912 it coincided with the reference-cycle peak. By 1912-38 it had shifted back to the middle third of the reference-cycle expansion. The evidence that the trough has shifted is less strong. In the earliest of the three periods the trough in incorporations occurs in the last third of the reference-cycle contraction. In the last two periods it occurs in the middle third of the reference-cycle contraction.

Chart 26 suggests that the reference-cycle analysis yields results somewhat at variance with Table 41. The former shows no lead at the peak, whereas the latter shows a lead of two and a half months. The explanation is found in the coarse time unit employed in the reference-cycle pattern. Since the average duration of a third of an expansion phase is 8.3 months, a lead of merely two and a half months can easily be obliterated in the reference-cycle pattern. This is what happens at the peak of the pattern. At the trough no such difficulty arises.

The Burns-Mitchell measures of conformity indicate also that, when the tendency of incorporations to lead turns in business is allowed for, total incorporations move preponderantly in the same direction as business cycles.¹⁸ The indexes of conformity, which have a theoretical range from -100 to +100, are: to reference expansions, +68; to reference contractions, +60; to full business cycles, +84.

The evidence, in summary and in detail, indicates a

the cycle—the interval beginning with the month after the peak and ending with the month before the terminal trough—is similarly divided into thirds. Thus, each specific cycle is divided into nine segments.

¹⁸ *Op. cit.*, pp. 176 ff.

high degree of correlation between movements in incorporations and business generally. Since incorporations belong to the preparatory stage of enterprise, troughs in incorporations on the average lead troughs in business. Peaks in incorporations also lead peaks in

organizers would be ready to float securities and begin operations if the downturn in business proved temporary. One might almost have been led to predict that peaks in incorporations would follow peaks in business. Promoters, however, seem to sense the approach of a

TABLE 44
Reference-Cycle Patterns in Total Incorporations

DATES OF REFERENCE CYCLES			CYCLE BASE NUMBER	AVERAGES OF REFERENCE-CYCLE RELATIVES AT NINE STAGES OF THE CYCLES									
Trough	Peak	Trough		I	II	III	IV	V	VI	VII	VIII	IX	
				Three months centered on initial trough	Expansion			Three months centered on peak	Contraction			Three months centered on terminal trough	
				First third	Middle third	Last third		First third	Middle third	Last third			
1	6/1861	10/1860	6/1861	15.9 ^a	12.0	17.9	39.9	41.4 ^b	54.6 ^b	59.9 ^b	39.9 ^b	31.5 ^b	21.0 ^b
2	12/1867	4/1865	12/1867	27.9	106.5	99.7	104.3	96.7	105.7	170.0	156.2	136.3	149.5
		6/1869	12/1870	39.1						103.1	86.4	106.5	141.5
3	12/1870	10/1873	3/1879	54.1	132.5	105.2	112.1	112.4	84.4	104.5	94.5	87.3	75.2
4	3/1879	3/1882	5/1885	118	36.4	57.5	81.5	122.2	109.1	118.5	124.2	94.9	114.2
5	5/1885	3/1887	4/1888	165	81.8	83.8	86.4	99.1	120.2	123.4	120.3	110.5	113.2
6	4/1888	7/1890	5/1891	282	78.9	83.0	99.7	103.8	117.1	113.7	113.2	107.1	111.7
7	5/1891	1/1893	6/1894	323	97.7	104.4	112.0	110.3	114.6	103.3	76.8	88.7	89.3
8	6/1894	12/1895	6/1897	302	95.4	101.2	97.3	113.7	110.8	101.8	83.0	98.7	96.5
9	6/1897	6/1899	12/1900	514	73.8	87.9	74.6	96.4	120.3	119.6	111.6	117.0	128.5
10	12/1900	9/1902	8/1904	837	78.9	95.4	93.1	98.8	106.5	107.7	102.9	100.1	111.2
11	8/1904	5/1907	6/1908	1093	91.4	93.7	104.7	111.2	112.9	107.6	82.9	83.4	88.0
12	6/1908	1/1910	1/1912	1128	85.2	92.7	105.0	108.0	104.9	97.4	99.3	100.0	102.0
13	1/1912	1/1913	12/1914	1143	100.7	100.4	106.6	107.2	107.9	104.0	99.4	89.6	84.0
14	12/1914	8/1918	4/1919	1161	82.6	99.5	115.1	94.0	75.8	62.6	78.9	110.1	124.9
15	4/1919	1/1920	9/1921	1098	80.0	98.8	109.2	116.0	119.5	110.7	92.3	86.9	87.3
16	9/1921	5/1923	7/1924	998	96.0	94.7	106.4	108.0	105.5	98.8	97.8	89.8	87.0
17	7/1924	10/1926	12/1927	3506	76.6	88.1	106.2	102.1	101.8	100.2	104.1	105.6	107.1
18	12/1927	6/1929	3/1933	3644	103.0	107.3	107.8	113.0	108.9	100.1	96.1	93.4	85.1
19	3/1933	5/1937	5/1938	2355	116.6	109.9	98.8	101.1	97.7	91.6	86.5	82.4	83.1
Average, 19 cycles, 1861-1938					85.6	90.6	97.9	107.5	109.6	107.3	100.3	99.4	104.2
Average deviation					17.9	13.2	12.1	7.2	10.3	11.9	13.7	10.4	17.3
Average, 5 cycles, 1861-1888					73.8	72.8	84.8	111.8	115.7	123.9	116.3	107.1	118.7
Average deviation					39.7	28.1	19.3	11.1	19.1	18.4	20.7	13.0	21.4
Average, 7 cycles, 1888-1912					85.9	94.0	98.1	106.0	112.4	107.3	95.7	99.3	103.9
Average deviation					7.7	5.4	8.3	5.5	4.3	5.5	12.7	7.7	11.4
Average, 7 cycles, 1912-1938					93.6	99.8	107.2	105.9	102.4	95.4	93.6	94.0	94.1
Average deviation					11.9	5.2	3.0	5.9	9.2	10.5	6.6	7.9	12.5

^a Inverted cycle 1860-1865.

^b Computed on the base of the inverted cycle 1860-1865. Excluded from the averages.

business, but by a smaller average interval and less regularly, perhaps because, even in the face of slackening business conditions, many promoting groups whose organizational work is at an advanced stage will complete the legal procedures and incorporate their enterprises. Their only additional costs would probably be state incorporation fees. Once they had charters, the

recession, or at least grow wary, and curtail incorporating activities while prosperity still has a high degree of momentum. Their bearishness doubtless contributes toward bringing on a recession. On the other hand, their preparations for a revival precede an upturn and most certainly contribute to the spirit of optimism that characterizes expansions.