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## POLLAK FOUNDATION FOR ECONOMIC RESEARCH

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**PUBLICATIONS  
OF THE POLLAK FOUNDATION FOR  
ECONOMIC RESEARCH**



**NUMBER SEVEN**

**SOCIAL CONSEQUENCES OF BUSINESS CYCLES**

**SOCIAL CONSEQUENCES  
OF  
BUSINESS CYCLES**

BY

**MAURICE BECK HEXTER, Ph.D.**

*Executive Director, Federated Jewish Charities of Boston  
Instructor in Social Ethics, Harvard University*

WITH AN INTRODUCTION BY

**ALLYN A. YOUNG**



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TO  
MARGUERITE MOCK HEXTER  
HER HUSBAND DEDICATES THIS BOOK  
IN GRATEFUL RECOGNITION OF  
HER AID IN MAKING IT

## INTRODUCTION

WHEN different fields of inquiry have been separately cultivated for a while, the borderlands between them often provide fertile ground for new investigations. It is in one of these fruitful borderlands that Dr. Hexter has turned a furrow. His book will be of interest alike to students of the business cycle and to those whose more immediate concern has been with vital statistics and with other records of measurable social phenomena.

This does not mean that the field Dr. Hexter has tilled is altogether new. Ever since Malthus, men have been interested in the response of the movement of the population to variations in economic conditions. In particular the relation between fluctuations of the marriage-rate and the movements of various indexes of economic welfare has been a favorite subject of inquiry. Various statisticians have also given passing attention to such seasonal variations of vital phenomena as are fairly well defined. And in recent years, with growing interest in the problem of the business cycle, several investigators have made preliminary surveys of the cyclical movements of different types of non-economic phenomena.

But although Dr. Hexter has had predecessors, whose results he has been careful to take into account, a large part of what he has accomplished is pioneer work. This shows itself, not only in his results, but also in his methods. He has utilized a compact body of fairly homogeneous materials, relating, for the most part, to a single city. His tools are as precise as any the present development of statistical technique affords. In particular he makes skill-

ful use of the methods Professor Warren M. Persons has perfected and employed in analyzing the temporal variations of economic phenomena. Furthermore, he has done his work with unusual fullness of detail. Statisticians will appreciate the vast amount of labor Dr. Hexter's computations have required.

The general goal of statistical research is the uncovering of the relations that obtain among group phenomena. The particular relations into which Dr. Hexter inquires are those which may exist among the fluctuations in time of various happenings that have economic and social significance. For his criteria he has to rely upon coefficients of correlation. Now these coefficients, although the best measures yet designed, are not in all respects as satisfactory criteria of the degree of relationship between different time series as we could wish to have. Dr. Hexter cautions the reader against inferring more than should be inferred from his results, and his counsel needs to be emphasized and even supplemented.

The most that coefficients of correlation can do is to measure the degree to which likenesses prevail among the various characteristics of different statistical series. They do not establish the existence of relationships of cause and effect. At the few points where Dr. Hexter ventures to suggest causes or to explain the correlations he finds, he has to invoke considerations other than those supplied by the results of his statistical analysis.

Furthermore, in the particular case of time series, such as those with which Dr. Hexter is concerned, the significance of coefficients of correlation is subject to special limitations. Professor Warren M. Persons, writing on the basis of a large experience with such problems, concludes: "Coefficients of correlation are after all merely averages. The specific relationships between two time series are much



more adequately set forth by charts than by numerical measures." Further: "Coefficients of correlation for the various possible pairs of items of time series are useful mainly as a basis for judging the lag of one series with respect to another." Dr. Hexter, it will be observed, supplies charts in generous measure. And he employs correlation coefficients chiefly as tests of lag.

A special degree of caution should be observed in drawing inferences from the coefficients which Dr. Hexter finds in his study of the correlation of seasonal variations. More significance must be attached to a coefficient of given magnitude for the correlation of the cyclical fluctuations of two series than to one of the same magnitude for seasonal fluctuations. It is true, of course, that the size of the coefficients which express the correlation of cyclical movements will depend, in some measure, upon the particular manner in which the secular trends of the different series are determined. But the *fact* of correlation is generally an inference from the observation that, in the two series compared, there are cyclical fluctuations of fairly commensurate duration and often with somewhat similar general contours. The coefficient, as an average, gives a convenient summary of the observed relationship; and coefficients computed for pairings with different degrees of lag serve to indicate, with fair accuracy, the average time interval between the corresponding stages of the cyclical movements of the two series. As Dr. Hexter observes, when the coefficients found for different periods of lag increase steadily as the period which yields the maximum coefficient is approached, and when that coefficient itself is tolerably large, there is good reason for putting reliance upon it.

Coefficients of correlation for seasonal variations do not have so secure a position. In the first place, when monthly

data are used, the coefficients are based on only twelve pairs of items. The probable error of these coefficients, even though it cannot be determined precisely, is, therefore, relatively large. Furthermore, if the two series have strongly marked seasonal peaks, it is likely that, with the appropriate degree of lag, a high coefficient of correlation will be found, even though the connection between the seasonal movements of the two series may be exceedingly tenuous. Thus, using a six-months lag, a high coefficient of correlation would be found between monthly sales of firecrackers and monthly sales of Christmas toys. In a similar way June marriages and the October accumulations of divorce applications help to make four months the period of lag which, as Dr. Hexter finds, yields the maximum coefficient of correlation between marriages and divorce applications.

Again, coefficients of seasonal correlation stand without the support of other evidence, except such as can be had from considerations external to the data under examination (as, for example, the nine-months period between conception and birth). In general the *fact* of correlation, not merely the degree of lag, must be inferred from the coefficients alone. Moreover, as Dr. Hexter is careful to note, maximum correlation, if external considerations are lacking, cannot be associated with a single determinate period of lag. A lag of six months is equally a lag of eighteen months or a reversed lag with a corresponding indeterminate magnitude.

On the other hand, some of the coefficients Dr. Hexter finds for seasonal correlation are distinctly high, and for some of them reasonable explanations are at hand. In default of such explanations, even a fairly high coefficient of correlation establishes merely a *prima facie* case for the existence of some direct or indirect relationship between

the seasonal variations of two series of events. But it is something to have entered a new field of inquiry and to have created a basis for conjectures. And the indexes of seasonal variation which Dr. Hexter has computed, are in themselves of great value.

Among Dr. Hexter's findings with respect to cyclical correlations are many things of interest and importance. The portrayal of the cyclical movements of vital phenomena is itself a contribution to social statistics. The largest single question which Dr. Hexter's study of cycles raises has to do with the general nature of the relationship between these movements and fluctuations in business conditions. The coefficients Dr. Hexter has computed for different degrees and directions of lag are distributed in such a manner as to lead him to infer that the cycles in which vital phenomena move precede business cycles rather than follow them. Of course, it is possible to maintain that fluctuations which appear to precede a given business cycle really reflect the influence of the last previous cycle. But Dr. Hexter inclines toward the view that the sequence he finds is real, not merely apparent, and he believes that it may have causal significance. From vital phenomena, through psychology, to business enterprise, he suggests, the line may run. An obvious objection to most of the theories that have sought to explain the cyclical movements of business in terms of alternating states of optimism and pessimism in the business community has been that it is hard to account for such psychological cycles, as they might be called, except on the ground of changes in the fundamental conditions governing the business outlook. Thus, such arguments have seemed to move in a circle. Dr. Hexter seeks to cut the circle and to connect one of its severed ends with climatic or biological changes. He proffers this suggestion,

of course, as an hypothesis, not a conclusion. It is to be hoped that it will stimulate further inquiries.

In fact, it is to be hoped that there will be further attacks upon the other problems Dr. Hexter discusses. Studies like his, monographic in character and dealing with a single locality, might very profitably be undertaken by other investigators. Agreements and differences in the results reached would point the way to definitive general conclusions. If it could be made to fructify in such a manner, the value of Dr. Hexter's work would be greatly enhanced. But it is quite able to stand on its own merits as an important piece of research.

ALLYN A. YOUNG

CAMBRIDGE, MASSACHUSETTS

*November 1, 1924*

## AUTHOR'S PREFACE

THE subjects discussed in this book have engaged the attention of thinkers ever since man began to reflect upon the social aspects of life. The ups and downs of commerce have long engaged the study of economists and business men. Various aspects of business cycles have been explored. Efforts have been expended, and wisely, in discovering the sequence of events and causes of the ebb and flow of business. In the main, however, these efforts have been applied to strictly economic phases of the cycle. Little time has been devoted to analyzing the social consequences of business cycles. Yet these consequences are of transcendent importance. For statesmen, business men, economists, and social workers, the connection between economic conditions and the quantity of the population is important. So, also, are the problems of marriage and divorce; and death is master of all. These subjects are being discussed as never before and in ever-widening circles. This book deals with the connection between these vital topics and variations in business conditions.

The writer is under obligations to many who have aided him throughout the investigation, among others to Dr. William Trufant Foster, of the Pollak Foundation for Economic Research, and to Professor Allyn A. Young, who originally suggested the expansion of the topic and who aided throughout with much advice. Professor Young is a real friend to the young generation of students in this country.

The writer cannot close this Preface without acknowledging the obligation he is under to his mentors and colleagues in the Department of Social Ethics in Harvard University. It has been a pleasure to study and work with Dr. Richard C. Cabot; Professor Robert F. Foerster, now at Princeton; Professor James Ford; and Dr. Niles Carpenter. He also acknowledges the unfailing courtesies of Miss Ruth Carroll, the Secretary of the Department. Finally, it should be said that every page has benefited by the scrutiny and criticism of the writer's wife, for whose forbearance during these labors he is under deep obligation.

BOSTON, MASSACHUSETTS  
*February 29, 1924*

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THE tables in the first part of the volume are numbered according to the following system: Tables 1 to 10 deal with the birth-rate; 11 to 20 with the stillbirth-rate; 21 to 30 with the death-rate; 31 to 40 with marriages; 41 to 50 with divorces. Within each series, also, a definite system is followed. A table which ends, say, in 3, refers to similar tables for other variables. Thus, Table 13 refers to the percentage deviation from the trend of the actual stillbirth-rate, month by month; Table 33 refers to the deviations from the trend of the monthly number of marriages; and so forth. Certain tables which have not been referred to in the discussion, but which are important nevertheless, are in the Appendix. The three charts which summarize other charts, appear white on black on pages 106, 110-111, 162-165.

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suggests that in these human occurrences which come to most men, capitalists and common laborers alike, we have the sources of most human emotions, and that these emotions affect every field of man's endeavor. Further study of these sources of variations in human emotions may throw much more light on obscure points in economic theory.

## **APPENDIX**



TABLE 2. ORDINATES OF TREND, THE BIRTH-RATE IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	28.2306	28.2213	28.2120	28.2027	28.1934	28.1841	28.1748	28.1665	28.1562	28.1469	28.1376	28.1283
1901	28.1190	28.1097	28.1004	28.0911	28.0818	28.0725	28.0632	28.0539	28.0446	28.0353	28.0260	28.0167
1902	28.0074	27.9981	27.9888	27.9795	27.9702	27.9609	27.9516	27.9423	27.9330	27.9237	27.9144	27.9051
1903	27.8958	27.8865	27.8772	27.8679	27.8586	27.8493	27.8400	27.8307	27.8214	27.8121	27.8028	27.7935
1904	27.7842	27.7749	27.7656	27.7563	27.7470	27.7377	27.7284	27.7191	27.7098	27.7005	27.6912	27.6819
1905	27.6726	27.6633	27.6540	27.6447	27.6354	27.6261	27.6168	27.6075	27.5982	27.5889	27.5796	27.5703
1906	27.5610	27.5517	27.5424	27.5331	27.5238	27.5145	27.5052	27.4959	27.4866	27.4773	27.4680	27.4587
1907	27.4494	27.4401	27.4308	27.4215	27.4122	27.4029	27.3936	27.3843	27.3750	27.3657	27.3564	27.3471
1908	27.3378	27.3285	27.3192	27.3099	27.3006	27.2913	27.2820	27.2727	27.2634	27.2541	27.2448	27.2355
1909	27.2262	27.2169	27.2076	27.1983	27.1890	27.1797	27.1704	27.1611	27.1518	27.1425	27.1332	27.1239
1910	27.1146	27.1053	27.0960	27.0867	27.0774	27.0681	27.0588	27.0495	27.0402	27.0309	27.0216	27.0123
1911	27.0030	26.9937	26.9844	26.9751	26.9658	26.9565	26.9472	26.9379	26.9286	26.9193	26.9100	26.9007
1912	26.8914	26.8821	26.8728	26.8635	26.8542	26.8449	26.8356	26.8263	26.8170	26.8077	26.7984	26.7891
1913	26.7798	26.7705	26.7612	26.7519	26.7426	26.7333	26.7240	26.7147	26.7054	26.6961	26.6868	26.6775
1914	26.6682	26.6589	26.6496	26.6403	26.6310	26.6217	26.6124	26.6031	26.5938	26.5845	26.5752	26.5659
1915	26.5566	26.5473	26.5380	26.5287	26.5194	26.5101	26.5008	26.4915	26.4822	26.4729	26.4636	26.4543
1916	26.4450	26.4357	26.4264	26.4171	26.4078	26.3985	26.3892	26.3799	26.3706	26.3613	26.3520	26.3427
1917	26.3334	26.3241	26.3148	26.3055	26.2962	26.2869	26.2776	26.2683	26.2590	26.2497	26.2404	26.2311
1918	26.2218	26.2125	26.2032	26.1939	26.1846	26.1753	26.1660	26.1567	26.1474	26.1381	26.1288	26.1195
1919	26.1102	26.1009	26.0916	26.0823	26.0730	26.0637	26.0544	26.0451	26.0358	26.0265	26.0172	26.0079
1920	25.9986	25.9893	25.9800	25.9707	25.9614	25.9521	25.9428	25.9335	25.9242	25.9149	25.9056	25.8963
1921	25.8870	25.8777	25.8684	25.8591	25.8498	25.8405	25.8312	25.8219	25.8126	25.8033	25.7940	25.7847

TABLE 3. DEVIATION FROM TREND, THE BIRTH-RATE IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	107.22	101.34	107.29	89.71	101.58	105.41	106.58	112.01	99.80	107.65	103.78	105.23
1901	99.93	96.59	100.00	91.81	90.56	98.39	100.99	100.52	100.55	100.59	97.41	100.26
1902	104.76	91.54	101.47	86.85	99.06	91.99	100.24	99.06	97.73	94.26	100.63	102.24
1903	102.63	92.16	102.20	93.55	94.55	95.51	95.83	99.24	99.28	95.07	96.21	100.94
1904	98.26	97.57	97.60	93.24	94.71	97.99	95.25	98.96	95.63	98.55	96.56	98.73
1905	99.37	91.46	105.01	94.41	90.97	89.41	105.01	105.77	96.93	94.82	92.82	101.92
1906	98.40	87.47	103.73	95.70	95.55	106.13	110.16	110.20	108.78	107.87	103.76	104.92
1907	106.74	98.07	114.58	105.32	103.24	109.11	106.59	111.96	105.75	106.70	107.47	115.91
1908	104.00	101.29	113.84	102.93	111.35	106.08	110.22	105.23	101.82	104.50	104.61	102.45
1909	104.68	99.94	108.06	93.02	100.48	98.35	97.53	101.87	99.81	100.58	92.88	98.62
1910	98.47	92.97	99.65	97.94	100.01	100.04	104.99	100.93	98.00	98.48	93.22	96.88
1911	102.66	92.02	99.72	98.61	96.38	96.45	99.53	104.31	94.32	97.33	92.90	102.23
1912	97.80	102.67	104.19	90.09	104.64	104.30	105.83	104.00	101.80	97.51	92.99	101.31
1913	100.22	95.25	103.88	98.05	100.70	100.32	100.10	103.76	102.23	100.76	92.93	98.58
1914	105.07	92.65	107.69	100.15	102.17	99.17	102.70	101.38	102.77	97.05	97.84	98.32
1915	94.78	98.39	103.70	103.74	101.81	99.21	104.53	103.05	96.44	102.75	92.54	101.68
1916	95.67	95.70	109.36	98.80	99.21	96.98	102.85	101.78	96.74	100.49	102.84	95.43
1917	104.05	93.83	104.50	96.94	102.11	101.69	101.61	103.09	97.95	97.98	89.71	94.89
1918	99.73	91.94	104.57	101.17	97.65	97.31	105.48	102.08	105.10	98.09	84.35	94.64
1919	81.96	111.49	96.74	97.77	86.56	80.19	85.90	89.69	101.78	102.55	90.40	104.97
1920	94.85	101.16	107.70	94.03	98.30	104.50	101.03	107.39	103.19	98.86	88.17	92.25
1921	87.42	88.38	107.20	103.37	98.18	97.25	94.50	107.82	106.27	94.33	96.15	94.59

TABLE 4. LINK RELATIVES, THE BIRTH-RATE IN THE CITY OF BOSTON

YEAR	January December	February January	March February	April March	May April	June May	July June	August July	September August	October September	November October	December November
1900		94.52	105.87	83.61	113.23	103.77	101.11	105.09	89.10	107.87	96.41	101.40
1901	94.96	96.66	103.53	91.81	98.64	88.65	102.64	99.53	100.03	100.04	96.84	102.93
1902	104.49	87.38	110.85	85.59	74.06	92.86	108.97	98.82	98.66	96.45	106.76	101.60
1903	100.38	89.80	110.89	91.54	101.07	101.02	100.34	103.56	100.04	95.76	101.20	104.92
1904	97.34	99.30	100.03	95.53	101.58	103.46	97.20	103.90	96.64	103.05	97.98	102.25
1905	100.65	92.04	114.82	89.91	96.36	98.29	117.45	100.72	91.64	97.82	97.89	109.80
1906	96.55	88.89	118.68	92.26	99.84	111.07	103.80	100.04	98.71	99.16	96.19	101.12
1907	101.73	91.88	116.83	91.91	98.03	105.69	97.69	105.04	94.45	100.90	100.72	107.85
1908	89.72	97.39	112.39	90.42	108.18	95.27	103.90	95.47	96.76	102.63	100.11	97.94
1909	102.18	95.47	108.75	86.08	108.02	97.88	99.17	104.45	97.98	100.77	92.34	106.18
1910	99.85	94.41	107.19	98.28	102.11	100.03	104.95	96.13	97.10	100.48	94.86	103.93
1911	105.97	89.64	108.37	98.89	97.74	100.07	103.19	104.80	90.42	103.19	95.45	110.04
1912	95.67	104.98	101.48	86.47	116.15	99.68	101.47	98.27	97.88	95.78	95.36	108.95
1913	98.92	95.04	109.06	94.39	102.70	99.62	99.78	103.66	98.53	98.56	92.23	106.08
1914	106.58	88.18	116.23	93.00	102.07	97.06	103.56	98.71	101.37	94.43	100.81	100.49
1915	96.40	103.81	105.40	100.04	98.13	97.45	105.36	98.58	93.59	106.54	90.06	109.88
1916	94.09	100.03	114.27	90.34	100.41	97.75	106.05	98.96	95.05	103.88	102.34	92.79
1917	109.03	90.18	111.37	92.77	105.33	99.59	99.92	101.46	95.01	100.03	91.56	105.77
1918	105.10	92.19	113.74	96.75	96.52	99.65	108.40	96.78	102.96	93.33	85.99	112.20
1919	86.60	136.03	86.77	101.06	88.53	92.64	107.12	104.41	113.48	100.76	88.15	116.12
1920	90.36	106.65	106.47	87.31	104.54	106.31	96.68	106.30	96.09	95.80	89.19	104.63
1921	94.76	101.10	121.29	96.43	94.98	99.05	97.17	114.10	98.56	88.76	101.93	98.38

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TABLE 6. DEVIATION FROM TREND MINUS SEASONAL FACTOR, THE BIRTH-RATE IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	+ 8.40	+ 1.43	+ .31	- 9.08	+ 2.24	+ 6.50	+ 5.08	+ 9.57	+ .13	+8.13	+ 8.17	+ 5.14
1901	+ 1.11	- 3.32	- 7.50	- 6.98	- 8.78	.52	- .51	- 1.92	+ .88	+1.07	+ 1.80	+ .17
1902	+ 5.94	- 8.37	- 6.03	-11.94	.28	- 6.92	- 1.36	- 3.38	-1.94	-5.26	+ 5.02	+ 2.15
1903	+ 3.81	- 7.75	- 5.30	- 5.24	- 4.79	- 3.40	- 5.67	- 3.20	- .39	-4.45	+ .60	+ .85
1904	- .56	- 2.34	- 9.90	- 5.55	- 4.63	- .92	- 6.25	- 3.48	-4.04	- .97	+ .95	- 1.36
1905	+ .55	- 8.45	- 2.49	- 4.37	- 8.37	- 9.50	+ 3.51	+ 3.33	-2.74	-4.70	+ 2.79	+ 1.83
1906	- .42	-12.44	- 3.77	- 3.03	- 3.79	+ 7.22	+ 8.66	+ 8.24	+9.11	-8.35	+ 8.15	+ 4.83
1907	+ 8.50	+ 1.84	+ 7.08	+ 6.53	+ 3.90	+10.20	+ 5.09	+ 9.52	+6.08	-6.18	+11.86	+15.42
1908	+ 5.19	+ 1.38	+ 6.34	+ 4.14	+12.01	+ 7.17	+ 8.72	+ 3.21	+2.15	-4.98	+ 9.00	+ 2.36
1909	+ 5.87	+ .03	+ .56	- 5.37	+ 1.14	.56	- 3.97	- .57	+ .14	+1.06	- 2.73	- 1.47
1910	- .23	- 6.94	- 7.85	.85	+ .67	+ 1.13	+ 3.49	- 1.51	-1.67	-1.04	- 2.39	+ 3.21
1911	+ 4.32	- 7.89	- 7.78	- .18	- 2.96	- 1.46	- 1.97	+ 2.07	-5.35	-2.19	- 2.71	+ 2.14
1912	- .44	+ 2.76	- 3.31	- 8.79	+ 5.30	+ 5.39	+ 4.33	+ 1.56	+2.13	-2.01	- 2.62	+ 1.22
1913	+ 1.98	- 4.66	- 3.62	.74	+ 1.36	+ 1.41	- 1.44	+ 1.32	+2.56	+1.24	- 2.68	- 1.51
1914	+ 6.83	+ 7.26	+ .19	+ 1.36	+ 2.83	+ .26	+ 1.20	- .06	+3.10	-2.47	+ 2.23	- 1.77
1915	- 3.46	- 1.52	- 3.80	+ 4.95	+ 2.47	+ .30	+ 3.03	+ .61	-3.23	+3.23	- 3.07	+ 1.59
1916	- 2.47	- 4.21	+ 1.86	+ .01	- .07	- 1.93	+ 1.35	- .66	- 2.93	+ .97	+ 7.23	- 4.66
1917	+ 5.81	- 6.08	- 3.00	- 1.85	+ 2.77	+ 2.78	+ .11	+ .65	-1.72	-1.54	- 5.90	- 5.20
1918	- .49	- 7.97	- 2.93	+ 2.38	- 1.69	- 1.60	+ 3.98	- .36	+5.43	-1.43	-11.26	- 5.45
1919	+16.28	+11.58	-10.76	- 1.02	-12.78	-18.72	-15.60	-12.75	+2.11	+3.03	- 5.21	+ 4.88
1920	- 3.39	+ 1.25	+ .20	- 4.76	- 1.04	+ 5.69	- .47	+ 4.85	+3.52	- .66	- 7.44	- 7.84
1921	-10.82	-11.53	- .30	+ 4.58	- 1.16	- .66	- 6.00	+ 5.38	+6.60	-5.19	+ .54	- 5.50

TABLE 12. ORDINATES OF TREND, MONTHLY STILLBIRTH-RATE PER 1000 POPULATION IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	1.066629	1.066242	1.065855	1.065468	1.065081	1.064694	1.064307	1.063920	1.063533	1.063146	1.062759	1.062372
1901	1.061985	1.061598	1.061211	1.060824	1.060437	1.060050	1.059663	1.059276	1.058889	1.058502	1.058115	1.057728
1902	1.057341	1.056954	1.056567	1.056180	1.055793	1.055406	1.055019	1.054632	1.054245	1.053858	1.053471	1.053084
1903	1.052697	1.052310	1.051923	1.051536	1.051149	1.050762	1.050375	1.049988	1.049601	1.049214	1.048827	1.048440
1904	1.048053	1.047666	1.047279	1.046892	1.046505	1.046118	1.045731	1.045344	1.044957	1.044570	1.044183	1.043796
1905	1.043409	1.043022	1.042635	1.042248	1.041861	1.041474	1.041087	1.040700	1.040313	1.039926	1.039539	1.039152
1906	1.038765	1.038378	1.037991	1.037604	1.037217	1.036830	1.036443	1.036056	1.035669	1.035282	1.034895	1.034508
1907	1.034121	1.033734	1.033347	1.032960	1.032573	1.032186	1.031799	1.031412	1.031025	1.030638	1.030251	1.029864
1908	1.029477	1.029090	1.028703	1.028316	1.027929	1.027542	1.027155	1.026768	1.026381	1.025994	1.025607	1.025220
1909	1.024833	1.024446	1.024059	1.023672	1.023285	1.022898	1.022511	1.022124	1.021737	1.021350	1.020963	1.020576
1910	1.020189	1.019802	1.019415	1.019028	1.018641	1.018254	1.017867	1.017480	1.017093	1.016706	1.016319	1.015932
1911	1.015545	1.015158	1.014771	1.014384	1.013997	1.013610	1.013223	1.012836	1.012449	1.012062	1.011675	1.011288
1912	1.010901	1.010514	1.010127	1.009740	1.009353	1.008966	1.008579	1.008192	1.007805	1.007418	1.007031	1.006644
1913	1.006257	1.005870	1.005483	1.005096	1.004709	1.004322	1.003935	1.003548	1.003161	1.002774	1.002387	1.002000
1914	1.001613	1.001226	1.000839	1.000452	1.000065	0.999678	0.999291	0.998904	0.998517	0.998130	0.997743	0.997356
1915	0.996969	0.996582	0.996195	0.995808	0.995421	0.995034	0.994647	0.994260	0.993873	0.993486	0.993099	0.992712
1916	0.992325	0.991938	0.991551	0.991164	0.990777	0.990390	0.989903	0.989516	0.989129	0.988742	0.988355	0.987968
1917	0.987681	0.987294	0.986907	0.986520	0.986133	0.985746	0.985359	0.984972	0.984585	0.984198	0.983811	0.983424
1918	0.983037	0.982650	0.982263	0.981876	0.981489	0.981102	0.980715	0.980328	0.979941	0.979554	0.979167	0.978780
1919	0.978393	0.978006	0.977619	0.977232	0.976845	0.976458	0.976071	0.975684	0.975297	0.974910	0.974523	0.974136
1920	0.973749	0.973362	0.972975	0.972588	0.972201	0.971814	0.971427	0.971040	0.970653	0.970266	0.969879	0.969492
1921	0.969105	0.968718	0.968331	0.967944	0.967557	0.967170	0.966783	0.966396	0.966009	0.965622	0.965235	0.964848

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TABLE 13. DEVIATION FROM TREND, MONTHLY STILLBIRTH-RATE PER 1000 POPULATION IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	105.004	75.030	130.412	109.811	94.828	82.653	97.716	92.112	83.683	113.813	81.862	94.129
1901	82.864	100.791	90.463	82.954	113.161	89.618	37.748	109.509	87.828	115.257	73.716	121.960
1902	102.143	100.373	89.914	131.606	73.878	117.490	36.966	129.903	108.134	82.554	98.721	123.447
1903	113.993	100.731	100.768	104.609	120.820	118.961	50.458	105.715	99.085	107.700	85.810	85.842
1904	111.636	102.132	121.267	98.386	129.956	117.578	100.408	126.274	104.311	94.776	89.065	94.846
1905	111.174	112.174	112.216	113.217	91.183	122.903	103.738	113.385	82.667	117.316	103.892	98.157
1906	80.865	127.121	99.230	96.376	117.622	117.666	134.113	101.346	92.693	116.876	92.763	79.265
1907	111.206	116.084	120.966	117.139	100.719	109.476	116.302	112.467	99.901	120.314	98.034	142.737
1908	169.018	89.399	100.126	105.999	92.419	115.810	88.594	110.054	81.841	92.593	121.879	76.081
1909	123.923	122.017	112.298	100.618	116.292	101.672	115.402	95.879	117.447	99.868	92.070	87.206
1910	99.981	94.136	100.057	98.133	103.079	100.171	108.069	101.230	89.471	96.390	94.459	95.479
1911	117.178	95.552	122.195	94.639	95.661	101.617	98.695	113.543	89.881	99.796	119.604	89.984
1912	124.641	101.928	105.927	93.093	122.851	106.049	83.285	103.155	100.218	103.234	117.176	100.333
1913	105.341	93.451	110.394	110.437	82.611	117.492	100.604	102.636	95.698	105.707	105.748	95.868
1914	102.834	113.860	100.915	112.949	137.991	111.036	88.062	114.125	89.132	89.185	120.271	123.326
1915	89.268	84.288	115.439	81.341	104.478	84.419	93.501	90.520	96.592	78.511	83.577	117.859
1916	91.704	93.756	104.886	94.838	96.894	93.902	100.000	102.060	94.013	99.106	89.028	92.099
1917	92.135	86.094	91.194	84.134	91.266	89.272	91.337	92.388	86.331	88.397	78.267	84.399
1918	109.864	100.748	115.040	109.994	106.980	106.003	121.340	121.388	115.313	107.192	91.915	103.190
1919	104.253	80.777	77.740	81.864	79.849	86.025	61.471	98.393	87.153	65.647	89.274	92.390
1920	107.831	119.175	91.472	73.002	97.716	108.045	80.294	83.416	107.144	82.452	80.422	92.832
1921	84.614	78.454	70.224	84.716	84.750	74.444	93.092	110.721	81.780	83.884	84.953	84.987

TABLE 14. LINK RELATIVES, MONTHLY STILLBIRTH-RATE PER 1000 POPULATION IN THE CITY OF BOSTON

YEAR	January December	February January	March February	April March	May April	June May	July June	August July	September August	October September	November October	December November
1900		71.429	173.813	84.203	86.355	87.161	118.224	94.265	90.849	136.005	71.927	114.985
1901	88.032	121.634	89.753	91.699	136.414	79.195	42.121	290.105	80.202	131.230	63.951	165.446
1902	83.751	98.267	89.580	146.369	56.136	159.032	31.463	351.412	83.242	76.344	119.584	125.046
1903	92.342	88.366	100.037	103.812	115.497	98.461	42.416	209.511	93.728	108.695	82.461	100.037
1904	130.048	91.487	118.736	81.132	132.088	90.475	85.397	125.761	83.266	90.859	93.974	106.491
1905	117.215	100.388	100.037	100.892	80.538	134.787	84.406	125.462	72.908	141.914	88.557	94.480
1906	82.383	157.202	78.059	97.124	122.045	100.037	113.978	75.568	91.462	126.089	79.369	85.449
1907	140.296	104.386	104.206	96.836	85.982	108.694	106.235	96.703	88.827	120.433	81.482	145.599
1908	118.412	52.893	111.999	105.865	87.189	125.310	76.499	124.223	74.364	113.138	131.629	62.423
1909	162.883	98.462	92.035	89.599	115.578	87.428	113.504	83.083	122.495	85.032	92.192	94.717
1910	114.649	94.154	106.290	98.077	105.040	97.179	107.885	93.672	88.384	107.733	97.997	101.080
1911	122.726	81.544	127.883	77.449	101.080	106.226	97.124	115.044	79.160	110.031	119.848	75.235
1912	138.519	81.777	103.923	87.884	131.966	86.323	78.534	123.853	97.153	103.009	113.505	85.626
1913	104.991	88.713	118.130	100.039	74.804	142.223	85.626	102.020	93.240	110.459	100.039	90.600
1914	107.333	110.722	88.631	111.925	122.171	80.466	79.309	129.596	78.100	100.059	134.856	102.540
1915	72.384	94.421	136.958	70.462	128.444	80.801	110.758	96.812	106.708	81.281	106.453	141.018
1916	77.808	102.238	111.870	90.420	102.168	96.912	106.494	102.060	92.115	105.417	89.831	103.449
1917	100.039	93.443	105.924	92.258	108.477	97.815	102.313	101.151	93.444	102.393	88.540	107.835
1918	130.172	91.702	114.186	95.614	97.260	99.087	114.468	100.040	94.995	92.957	85.748	112.267
1919	101.030	77.482	96.240	105.305	97.539	107.735	71.457	160.064	88.576	75.324	135.991	103.490
1920	116.713	110.520	76.754	79.808	133.854	110.570	74.315	103.888	128.445	76.954	97.538	115.431
1921	91.147	92.720	89.510	120.637	100.040	87.840	125.050	118.937	73.861	102.573	101.274	100.040

TABLE 16. DEVIATION FROM TREND MINUS SEASONAL FACTOR, MONTHLY STILLBIRTH-RATE PER 1000  
POPULATION IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	- .337	-24.287	+26.572	+10.398	- 9.712	-20.485	+ 2.748	-12.065	-10.347	+15.485	-12.995	- 3.924
1901	-22.477	+ 1.474	-13.377	-16.459	+ 8.621	-13.520	-57.220	+ 5.332	- 6.202	+16.929	-24.141	+23.917
1902	- 3.198	+ 1.056	-13.926	+32.193	-30.662	+14.352	-58.002	+15.726	+ 6.104	-15.774	+ 3.864	+25.394
1903	- 8.652	+ 1.414	- 3.072	+ 5.196	+16.280	+15.823	-44.510	+ 1.538	+ 5.055	+ 9.372	-15.039	-12.211
1904	+ 6.295	+ 2.815	+17.427	- 1.027	+25.416	+14.440	+ 5.440	+22.097	+10.281	- 3.552	- 5.792	+ 3.207
1905	+ 5.833	+12.854	+ 8.376	+13.804	-13.357	+19.765	- 8.770	+ 9.208	-11.363	+18.988	+ 9.035	+ .104
1906	-24.476	+27.814	- 4.610	- 3.037	+13.082	+14.528	+39.145	- 2.831	- 1.337	+18.548	- 2.094	-18.788
1907	+ 5.865	+16.667	+17.126	+17.726	- 3.821	+ 6.338	+21.334	+ 8.290	+ 5.871	+21.986	+ 3.177	+44.684
1908	+64.377	- 9.918	- 3.714	+ 6.586	-12.121	+12.672	- 6.374	+ 5.877	-12.199	+ 5.735	+27.022	-21.972
1909	+18.582	+22.700	+ 8.458	+ 1.205	+11.752	- 1.466	+20.434	- 8.298	+23.417	+ 1.540	- 2.787	-10.847
1910	- 5.360	- 5.181	- 3.783	- 1.280	- 1.471	- 2.967	+13.101	- 2.947	- 4.559	- 1.938	- .398	- 2.574
1911	+11.837	- 3.765	+18.355	- 4.774	- 8.889	- 1.521	+ 3.733	+ 9.366	- 4.150	+ 1.468	+24.747	- 8.069
1912	+19.300	+ 2.611	+ 2.087	- 6.320	+18.311	+ 2.911	-11.683	- 1.022	+ 6.158	+ 4.906	+22.319	+ 2.280
1913	0000	- 5.866	+ 6.554	+11.024	-21.929	+14.354	+ 5.636	- 1.541	+ 1.668	+ 7.379	+10.891	- 2.245
1914	- 2.507	+14.543	- 2.935	+13.536	+33.451	+ 7.898	- 6.906	+ 9.948	- 4.898	- 9.143	+25.414	+25.273
1915	-16.073	-15.029	+11.599	-18.072	- .062	-18.719	- 1.467	-13.657	+ 2.560	-19.817	-11.820	+19.806
1916	-13.637	- 5.561	+ 1.046	- 4.575	- 7.646	- 9.236	+ 5.032	- 2.117	- .017	+ .778	- 5.829	- 1.594
1917	-13.206	-12.223	-12.646	-15.279	-13.274	-13.866	- 3.631	-11.789	- 7.69	+ 9.931	-16.590	-13.654
1918	+ 4.523	+ 1.431	+11.200	+10.581	+ 2.540	- 2.865	+26.372	+17.211	+21.283	+ 8.864	- 2.942	+ 5.137
1919	- 1.088	-18.540	-26.100	-17.549	-24.691	-17.113	-63.497	- 5.784	- 6.877	-32.681	- 5.583	- 5.663
1920	+ 2.490	+19.658	-12.368	-26.411	- 6.824	+ 4.907	-14.674	-20.761	+13.114	-15.876	-14.435	- 5.221
1921	-20.727	-20.863	-33.616	-14.697	-19.790	-28.694	- 1.876	+ 6.544	-12.250	-14.444	- 9.904	-13.066



TABLE 22. MONTHLY DEATH-RATE (EXCLUSIVE OF STILLBIRTHS) IN THE CITY OF BOSTON, RESIDENTS ONLY, EXCEPT WHERE OTHERWISE SPECIFIED

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	19.047	19.021	18.994	18.968	18.941	18.915	18.889	18.862	18.836	18.809	18.783	18.756
1901	18.730	18.703	18.677	18.651	18.624	18.598	18.571	18.545	18.518	18.492	18.465	18.439
1902	18.413	18.386	18.360	18.333	18.307	18.280	18.254	18.227	18.201	18.175	18.148	18.122
1903	18.095	18.069	18.042	18.016	17.989	17.963	17.937	17.910	17.884	17.857	17.831	17.804
1904	17.778	17.751	17.725	17.698	17.672	17.646	17.619	17.593	17.566	17.540	17.513	17.487
1905	17.460	17.434	17.408	17.381	17.355	17.328	17.302	17.275	17.249	17.222	17.196	17.170
1906	17.143	17.117	17.090	17.064	17.037	17.011	16.984	16.958	16.932	16.905	16.879	16.852
1907	16.826	16.799	16.773	16.746	16.720	16.694	16.667	16.641	16.614	16.588	16.561	16.535
1908	16.508	16.482	16.456	16.429	16.403	16.376	16.350	16.323	16.297	16.270	16.244	16.218
1909	16.191	16.165	16.138	16.112	16.085	16.059	16.032	16.006	15.980	15.953	15.927	15.900
1910	15.874	15.847	15.821	15.794	15.768	15.741	15.715	15.689	15.662	15.636	15.609	15.583
1911	15.556	15.530	15.503	15.477	15.451	15.424	15.398	15.371	15.345	15.318	15.292	15.265
1912	15.239	15.213	15.186	15.160	15.133	15.107	15.080	15.054	15.027	15.001	14.975	14.948
1913	14.922	14.895	14.869	14.842	14.816	14.789	14.763	14.737	14.710	14.684	14.657	14.631
1914	14.604	14.578	14.551	14.525	14.499	14.472	14.446	14.419	14.393	14.366	14.340	14.313
1915	14.287	14.261	14.234	14.208	14.181	14.155	14.128	14.102	14.075	14.049	14.023	13.996
1916	13.970	13.943	13.917	13.890	13.864	13.837	13.811	13.784	13.758	13.732	13.705	13.679
1917	13.652	13.626	13.599	13.573	13.546	13.520	13.494	13.467	13.441	13.414	13.388	13.361
1918	13.335	13.308	13.282	13.256	13.229	13.203	13.176	13.150	13.123	13.097	13.070	13.044
1919	13.018	12.991	12.965	12.938	12.912	12.885	12.859	12.832	12.806	12.780	12.753	12.727
1920	12.700	12.674	12.647	12.621	12.594	12.568	12.542	12.515	12.489	12.462	12.436	12.409
1921	12.383	12.356	12.330	12.304	12.277	12.251	12.224	12.198	12.171	12.145	12.118	12.092

TABLE 23. DEVIATION FROM TREND, MONTHLY DEATH-RATE (EXCLUSIVE OF STILLBIRTHS) IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	113.61	106.04	163.21	119.31	107.86	89.82	115.99	113.30	100.29	101.44	95.57	91.17
1901	123.01	106.29	117.52	114.95	106.69	91.89	100.69	111.57	105.19	99.34	105.23	102.45
1902	99.60	98.17	108.06	97.09	96.74	79.54	85.52	93.49	87.47	97.66	94.17	99.49
1903	105.55	98.23	104.26	96.41	87.39	70.98	90.48	87.16	85.22	81.42	81.77	97.39
1904	103.16	91.43	108.89	99.79	91.90	68.34	84.28	91.06	89.38	84.66	89.70	92.93
1905	112.26	102.10	111.27	106.27	105.16	89.80	111.26	108.02	92.53	92.79	99.85	107.05
1906	103.77	111.18	125.80	118.73	117.45	93.53	104.39	119.06	109.38	106.71	102.49	119.57
1907	117.08	96.14	112.98	100.62	104.67	83.98	78.24	100.35	88.18	83.14	86.83	138.49
1908	125.03	116.67	128.22	125.21	128.51	94.89	114.43	125.22	113.82	109.34	104.53	106.12
1909	113.15	102.07	120.83	113.83	96.43	85.12	81.96	92.22	87.98	93.27	85.20	106.48
1910	110.56	118.57	118.77	109.09	93.86	85.26	85.40	90.76	88.94	92.86	89.88	99.47
1911	104.46	112.11	110.37	108.42	104.07	81.17	125.08	87.89	88.82	83.10	81.09	94.07
1912	99.09	108.59	112.41	105.08	87.95	78.77	83.36	82.24	85.38	87.73	92.55	95.73
1913	105.55	103.99	111.24	97.76	100.09	85.81	80.47	81.02	82.87	85.26	80.71	109.97
1914	128.05	109.48	106.66	109.60	94.21	90.87	78.08	80.38	89.56	69.82	92.54	106.76
1915	99.81	108.34	113.46	116.20	99.57	83.43	85.43	86.80	85.54	85.27	90.07	94.31
1916	138.30	115.54	112.02	107.27	111.51	88.60	82.40	94.82	98.78	93.80	99.16	128.74
1917	132.58	129.16	117.14	108.75	109.26	98.08	30.04	83.98	88.31	98.03	96.06	105.46
1918	123.73	135.78	115.95	116.78	93.43	85.06	81.36	78.78	281.19	354.51	106.12	154.55
1919	173.99	121.08	111.30	104.42	91.47	74.66	78.23	66.24	71.53	78.33	87.90	103.09
1920	128.50	126.48	116.00	107.92	99.81	81.87	70.40	83.58	82.07	84.82	80.49	96.46
1921	99.57	92.34	104.38	96.39	89.68	78.28	76.98	82.64	80.27	83.49	82.85	94.94

TABLE 24. LINK RELATIVES, MONTHLY DEATH-RATE (EXCLUSIVE OF STILLBIRTHS) IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900		93.337	153.914	73.102	90.40	83.37	129.14	97.68	88.52	101.15	94.21	95.40
1901	134.92	86.41	110.57	97.81	92.81	86.13	109.58	100.81	94.28	94.44	105.93	97.36
1902	97.22	98.56	110.07	89.85	99.64	82.22	107.52	109.32	93.56	11.65	96.43	105.65
1903	106.09	93.06	106.14	92.47	90.64	81.22	127.47	96.33	97.77	95.54	100.43	119.10
1904	105.92	88.63	119.10	91.64	92.09	74.69	122.79	108.04	98.16	94.72	105.95	103.60
1905	120.69	91.03	108.98	95.51	98.96	85.39	123.90	97.09	85.66	100.28	107.61	107.21
1906	96.94	107.14	113.15	94.38	98.92	79.63	101.61	114.05	91.87	97.56	96.05	116.67
1907	97.92	82.11	117.52	89.06	104.03	80.23	93.17	128.26	87.87	94.28	104.44	159.50
1908	90.28	93.31	109.90	97.65	102.64	73.84	120.59	109.43	90.90	96.06	95.60	101.52
1909	106.62	90.21	118.38	94.21	84.71	88.27	96.29	112.52	95.40	106.01	91.35	124.98
1910	103.83	107.24	100.17	91.85	86.04	90.84	100.16	106.28	97.99	104.41	96.79	110.67
1911	105.02	107.32	98.45	98.23	95.99	78.00	154.10	70.27	101.06	93.56	97.58	116.01
1912	105.34	109.59	103.52	93.48	83.70	89.56	105.83	98.66	103.82	102.75	105.49	103.44
1913	110.26	98.52	106.97	87.88	102.38	85.73	93.78	100.68	102.28	82.88	94.66	136.25
1914	116.44	85.50	97.42	102.76	85.96	86.45	85.92	102.95	111.42	79.96	132.54	115.37
1915	93.49	108.55	104.73	102.42	85.69	83.79	102.40	101.60	98.55	99.68	105.63	104.71
1916	146.64	83.54	96.95	95.76	103.95	79.46	93.00	115.07	104.18	94.96	105.71	129.83
1917	102.98	97.42	90.69	92.84	100.47	89.77	81.61	104.92	105.16	111.01	97.99	109.78
1918	117.32	109.74	85.40	100.72	80.01	91.04	95.65	96.83	356.93	126.08	29.93	145.64
1919	112.58	69.59	91.92	93.82	87.60	91.62	104.78	84.67	107.99	109.51	112.22	117.28
1920	124.65	98.43	91.71	93.03	92.49	82.03	85.99	118.72	98.19	103.35	94.90	119.84
1921	03.22	92.74	113.04	92.35	93.04	87.29	98.34	107.35	97.13	104.01	99.23	114.59

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TABLE 26. DEVIATION FROM TREND MINUS SEASONAL FACTOR, MONTHLY DEATH-RATE (EXCLUSIVE OF STILL-BIRTHS) IN THE CITY OF BOSTON

1910

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	+ 4.96	+ 2.94	+51.80	+13.04	+ 7.32	+ 2.95	+25.84	+18.30	+ 5.26	+ 5.43	- 4.03	-19.06
1901	+14.36	+ 3.19	+ 6.11	+ 8.68	+ 6.15	+ 5.02	+10.54	+16.57	+10.16	+ 3.33	+ 5.63	- 7.78
1902	- 9.05	- 4.93	- 2.35	- 9.16	- 3.80	- 7.33	- 4.63	- 1.51	- 7.56	+ 1.65	- 5.43	-10.74
1903	+ 3.10	- 4.87	- 7.15	- 9.86	-13.15	-15.89	+ 3.33	- 7.84	- 9.81	-14.59	-17.83	-12.84
1904	+ 5.49	-11.67	- 2.52	- 6.48	- 8.64	-18.53	- 5.87	- 3.94	- 5.65	-11.35	- 9.90	-17.30
1905	+ 3.61	+ 1.00	.14	± .0	+ 4.62	+ 2.93	+21.11	+13.02	- 2.50	+ 3.22	+ .25	- 2.18
1906	+ 4.88	+ 8.08	+14.39	+12.46	+16.91	+ 6.66	+14.24	+24.06	+14.35	+10.70	+ 2.89	+ 9.34
1907	+ 8.43	- 6.96	+ 1.57	+ 6.35	+ 4.13	- 2.89	-11.91	+ 5.35	- 6.85	-12.87	-12.77	+28.26
1908	+16.38	+13.57	+16.81	+18.94	+17.97	+ 8.02	+24.28	+30.22	+18.79	+13.33	+ 4.93	- 4.11
1909	+ 4.50	- 1.03	+ 9.42	+ 7.56	- 4.11	- 1.75	- 8.19	- 2.78	+ 7.05	- 2.74	-14.40	- 3.73
1910	+ 1.91	+15.47	+ 7.36	+ 2.82	- 6.68	- 1.61	- 4.75	- 4.24	- 6.09	- 3.15	- 9.72	-10.76
1911	- 4.19	+ 9.01	+ 1.04	+ 2.15	+ 3.53	- 5.70	+24.93	- 7.11	- 6.21	-12.91	-18.51	-15.16
1912	- 9.56	+ 5.49	+ 1.00	- 1.19	-12.59	- 8.10	- 6.79	-12.76	- 9.65	- 8.28	- 7.05	-14.50
1913	- 3.10	+ .89	- .17	- 8.51	- .45	+ 1.06	- 9.68	-13.98	- 12.16	-10.75	-18.89	- .26
1914	+19.40	+ 6.38	+ 4.75	+ 3.43	- 6.33	+ 4.00	-12.07	- 4.62	- 5.47	-26.19	- 7.06	- 3.47
1915	- 8.84	+ 5.24	+ 2.05	+ 9.93	- .97	- 3.44	- 4.72	- 8.20	- 9.49	-10.74	- 9.53	-15.92
1916	+29.65	+12.44	+ .61	+ 1.00	+10.97	+ 1.73	- 7.75	- .18	+ 3.75	- 2.21	+ .44	+18.51
1917	+23.93	+26.06	+ 5.73	+ 2.48	+ 8.72	+11.21	-10.11	-11.02	- 6.72	+ 2.02	- 3.54	- 4.77
1918	+15.08	+32.68	+ 4.44	+10.51	- 7.11	- 1.81	- 8.79	-16.22	+186.16	+258.50	+ 6.52	+34.32
1919	+65.34	+17.98	.11	- 1.85	- 9.07	-12.21	-11.92	-28.76	-23.50	-17.78	-11.70	- 7.14
1920	+19.85	+23.38	+ 4.95	+ 1.65	- .73	- 5.00	-19.75	-11.42	-12.96	-11.19	-19.11	-13.77
1921	- 9.08	-10.76	- 7.03	- 9.88	-10.86	- 8.59	-13.17	-12.36	-14.76	-12.52	-16.75	-15.29

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TABLE 32. ORDINATES OF TREND, NUMBER OF MARRIAGES MONTHLY IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	518.3957	519.2429	520.0901	520.9373	521.7845	522.6317	523.4789	524.3261	525.1733	526.0205	526.8677	527.7149
1901	528.5621	529.4093	530.2565	531.1037	531.9509	532.7981	533.6453	534.4925	535.3397	536.1869	537.0341	537.8813
1902	538.7285	539.5757	540.4229	541.2701	542.1173	542.9645	543.8117	544.6589	545.5061	546.3533	547.2005	548.0477
1903	548.8949	549.7421	550.5893	551.4365	552.2837	553.1309	553.9781	554.8253	555.6725	556.5197	557.3669	558.2141
1904	559.0613	559.9085	560.7557	561.6029	562.4501	563.2973	564.1445	564.9917	565.8389	566.6861	567.5333	568.3805
1905	569.2277	570.0749	570.9221	571.7693	572.6165	573.4637	574.3109	575.1581	576.0053	576.8525	577.6997	578.5469
1906	579.3941	580.2413	581.0885	581.9357	582.7829	583.6301	584.4773	585.3245	586.1717	587.0189	587.8661	588.7133
1907	589.5605	590.4077	591.2549	592.1021	592.9493	593.7965	594.6437	595.4909	596.3381	597.1853	598.0325	598.8797
1908	599.7269	600.5741	601.4213	602.2685	603.1157	603.9629	604.8101	605.6573	606.5045	607.3517	608.1989	609.0461
1909	609.8933	610.7405	611.5877	612.4349	613.2821	614.1293	614.9765	615.8237	616.6709	617.5181	618.3653	619.2125
1910	620.0597	620.9069	621.7541	622.6013	623.4485	624.2957	625.1429	625.9901	626.8373	627.6845	628.5317	629.3789
1911	630.2261	631.0733	631.9205	632.7677	633.6149	634.4621	635.3093	636.1565	637.0037	637.8509	638.6981	639.5453
1912	640.3925	641.2397	642.0869	642.9341	643.7813	644.6285	645.4757	646.3229	647.1701	648.0173	648.8645	649.7117
1913	650.5589	651.4061	652.2533	653.1005	653.9477	654.7949	655.6421	656.4893	657.3365	658.1837	659.0309	659.8781
1914	660.7253	661.5725	662.4197	663.2669	664.1141	664.9613	665.8085	666.6557	667.5029	668.3501	669.1973	670.0445
1915	670.8917	671.7389	672.5861	673.4333	674.2805	675.1277	675.9749	676.8221	677.6693	678.5165	679.3637	680.2109
1916	681.0581	681.9053	682.7525	683.5997	684.4469	685.2941	686.1413	686.9885	687.8357	688.6829	689.5301	690.3773
1917	691.2245	692.0717	692.9189	693.7661	694.6133	695.4605	696.3077	697.1549	698.0021	698.8493	699.6965	700.5437
1918	701.3909	702.2381	703.0853	703.9325	704.7797	705.6269	706.4741	707.3213	708.1685	709.0157	709.8629	710.7101
1919	711.5573	712.4045	713.2517	714.0989	714.9461	715.7933	716.6405	717.4877	718.3349	719.1821	720.0293	720.8765
1920	721.7237	722.5709	723.4181	724.2653	725.1125	725.9597	726.8069	727.6541	728.5013	729.3485	730.1957	731.0429

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TABLE 33. DEVIATION FROM TREND, NUMBER OF MARRIAGES MONTHLY IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	100.89	93.39	53.07	103.28	101.77	136.04	82.33	81.25	93.87	138.97	130.58	78.83
1901	94.78	88.40	52.23	110.15	71.81	151.46	80.02	80.63	102.55	134.47	133.32	79.94
1902	89.47	81.73	61.80	109.37	68.25	147.71	77.60	76.01	106.51	120.25	118.60	78.04
1903	91.09	89.13	50.31	115.70	69.71	159.28	78.70	90.12	116.44	127.94	128.82	81.69
1904	94.27	85.01	49.04	110.75	71.65	170.43	83.13	83.36	106.21	139.05	128.27	73.19
1905	84.32	81.04	67.79	86.92	73.52	159.73	88.45	81.89	114.41	132.79	127.06	81.93
1906	95.44	95.48	57.65	111.35	70.70	163.12	84.18	97.89	126.07	141.39	134.38	84.25
1907	107.03	87.57	64.95	112.82	81.46	177.17	99.89	93.03	124.93	141.00	135.11	72.30
1908	94.70	84.25	70.00	86.67	71.79	148.02	82.51	79.09	115.75	127.27	121.67	74.87
1909	87.56	86.94	57.72	95.19	73.05	155.99	77.56	88.66	112.22	124.53	125.98	81.72
1910	86.93	64.74	60.63	92.03	63.68	152.17	79.66	77.80	108.96	106.26	103.26	62.76
1911	101.55	99.51	62.19	98.30	69.44	170.22	93.81	91.96	122.61	139.84	134.02	93.50
1912	82.76	84.99	49.06	102.32	72.54	152.18	81.17	91.29	122.38	150.00	127.92	104.82
1913	91.61	80.59	73.44	105.34	82.12	169.52	87.70	97.03	118.66	129.75	126.85	76.23
1914	95.96	102.33	68.23	105.84	92.00	178.66	85.61	126.00	113.26	132.86	126.87	83.13
1915	98.97	86.49	53.07	101.27	92.84	159.67	77.67	94.12	111.85	136.18	116.29	74.83
1916	89.57	94.44	68.99	89.82	89.71	171.31	98.52	81.81	121.54	134.90	126.17	90.39
1917	92.59	89.59	57.44	128.86	100.06	186.96	110.44	98.11	106.59	124.35	126.34	99.07
1918	85.26	70.49	59.03	96.32	80.88	150.08	84.79	100.66	103.08	80.11	76.78	59.94
1919	66.90	71.45	60.57	81.92	76.09	162.48	79.68	96.31	103.43	128.20	122.63	83.65
1920	86.18	79.72	48.66	107.97	71.71	183.07	81.45	83.69	117.50	129.02	111.75	75.23

TABLE 34. LINK RELATIVES, NUMBER OF MARRIAGES MONTHLY IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900		92.57	56.83	194.61	98.54	133.67	60.52	98.69	115.53	148.05	93.96	60.37
1901	120.03	93.27	59.08	210.89	65.19	210.90	52.83	100.76	127.19	131.13	99.14	59.96
1902	111.92	91.35	75.61	176.97	62.40	216.42	52.54	97.95	140.13	112.90	98.63	65.80
1903	116.72	97.85	56.45	229.97	60.25	228.49	49.41	114.51	129.21	109.88	100.69	63.41
1904	115.40	90.18	57.69	225.84	64.70	237.86	48.78	100.27	127.41	130.92	92.25	57.06
1905	115.21	96.11	83.53	128.22	84.58	217.26	55.37	92.58	139.71	116.07	95.68	64.48
1906	116.49	100.04	60.38	193.15	63.49	230.72	51.61	116.29	128.79	112.15	95.04	62.70
1907	127.04	81.82	74.17	173.70	72.20	217.49	56.38	93.13	134.29	112.86	95.82	53.51
1908	130.98	88.97	83.09	123.81	82.83	206.18	55.74	95.86	146.43	109.95	95.60	61.54
1909	116.95	99.29	66.39	164.92	76.74	213.54	49.72	114.31	126.57	110.97	101.16	64.87
1910	106.38	74.47	93.65	151.79	68.99	238.96	52.35	97.67	140.05	97.52	97.18	60.79
1911	161.81	97.99	62.50	158.06	70.64	245.13	55.11	98.03	133.33	114.05	95.84	69.77
1912	88.51	102.69	57.72	208.56	70.90	209.78	53.34	112.47	134.06	122.57	85.28	81.94
1913	87.40	87.93	91.13	143.44	77.96	206.43	51.73	110.64	122.29	109.35	97.76	60.09
1914	125.88	106.64	66.68	155.12	86.92	193.48	47.92	147.18	89.89	117.31	95.49	65.52
1915	119.05	87.39	61.36	190.82	91.68	171.98	48.64	121.18	118.84	121.75	85.39	64.35
1916	119.70	105.44	73.05	130.19	99.88	190.96	57.51	83.04	148.56	110.99	93.53	71.64
1917	102.43	96.76	64.11	224.34	77.65	186.84	59.07	88.84	108.64	116.66	101.60	78.42
1918	86.06	82.68	83.74	163.17	83.97	185.56	56.50	118.72	102.40	77.72	95.84	78.07
1919	111.61	106.80	84.77	135.25	92.88	213.54	49.04	120.87	107.39	123.95	95.66	68.21
1920	103.02	92.50	61.04	221.89	66.42	255.29	44.49	102.75	140.40	109.80	86.61	67.32

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TABLE 36. DEVIATIONS FROM THE TREND MINUS SEASONAL FACTOR, NUMBER OF MARRIAGES MONTHLY IN THE CITY OF BOSTON

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	+ 7.23	+ 6.29	- 4.41	+ 3.31	+25.49	-27.76	- 2.87	- 4.30	-16.63	+ 6.03	+ 3.74	- 2.21
1901	+ 1.12	+ 1.30	- 5.25	+10.18	- 4.47	-12.34	- 5.18	- 4.97	- 7.95	+ 1.53	+ 6.48	- 1.32
1902	- 4.19	+ 5.37	+ 4.32	+ 9.40	- 8.03	-16.09	- 7.60	- 9.59	- 3.99	-12.69	- 8.24	- 1.58
1903	+ 2.55	+ 2.03	- 7.16	+15.73	- 6.57	- 4.52	- 6.50	+ 4.52	+ 5.94	- 5.00	+ 1.98	+ 1.07
1904	+ .61	- 2.09	- 8.44	+10.78	- 4.63	+ 6.63	- 2.07	- 2.24	- 4.29	+ 6.11	+ 1.43	- 7.43
1905	- 9.34	- 6.06	+10.31	-13.05	- 2.76	- 4.07	+ 3.25	- 3.71	+ 3.91	- .15	+ .22	+ 1.31
1906	+ 1.78	+ 8.38	+ .17	+11.32	- 5.58	- .68	- 1.02	+12.29	+15.57	+ 8.45	+ 7.57	+ 3.63
1907	+13.37	+ .47	+ 7.47	+12.85	+ 5.18	+13.37	+14.69	+ 7.43	+14.43	+ 8.06	+ 6.27	- 8.32
1908	+ 1.04	- 2.85	+12.52	-13.30	- 4.49	-15.78	- 2.69	- 6.51	+ 5.25	- 5.67	- 5.17	- 5.75
1909	- 6.10	- .16	+ .24	- 4.78	- 3.23	- 7.81	- 7.64	+ 3.06	+ 1.72	- 8.41	- .86	+ 1.10
1910	- 6.73	-22.36	+ 3.15	- 7.94	-12.60	-11.63	- 5.54	- 7.80	- 1.54	-26.68	-23.58	-17.86
1911	+ 7.89	+12.41	+ 4.71	- 1.67	- 6.84	+ 6.42	+ 8.61	+ 6.36	+12.11	+ 6.90	+ 7.18	-12.88
1912	-10.90	- 2.11	- 8.42	+ 2.35	- 3.74	-11.62	- 4.03	+ 5.69	+11.88	+17.06	+ 1.08	+24.20
1913	- 2.05	- 6.51	+15.96	+ 4.37	+ 5.84	+ 5.72	+ 2.50	+11.43	- 8.16	- 3.19	000	- 4.39
1914	+ 2.30	+15.23	+12.75	+ 5.87	+15.72	+14.86	+ .41	+40.40	+ 2.76	- .08	000	+ 2.51
1915	+ 5.31	- .61	- 4.41	+ 1.20	+16.56	- 4.13	- 7.53	+ 8.52	+ 1.35	+ 3.24	-10.55	- 5.79
1916	- 4.09	+ 7.34	+11.41	-10.15	+13.43	+ 7.51	+13.32	- 3.89	+11.04	+ 1.96	- 6.77	+ 9.77
1917	- 1.07	+ 2.49	- .04	+28.89	+23.78	+23.16	+25.24	+12.51	- 3.91	- 8.59	- .50	+18.43
1918	- 8.40	-16.61	+ 1.55	- 3.65	+ 4.60	- 7.72	- .41	+15.06	- 7.42	-52.83	-50.06	-20.68
1919	-26.76	-15.55	+ 3.09	-18.05	- .19	- 1.32	- 5.52	+10.71	+ 7.07	- 4.74	- 4.21	- 3.03
1920	- 7.48	- 7.38	- 8.82	+ 8.00	- 4.57	+19.27	- 3.75	- 1.91	+ 7.00	- 3.92	-15.09	- 5.39



TABLE 42. ORDINATES OF TREND, DIVORCE CASES FILED IN SUFFOLK COUNTY

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	45.100	45.313	45.526	45.739	45.952	46.165	46.378	46.591	46.804	47.017	47.230	47.443
1901	47.656	47.869	48.082	48.295	48.508	48.721	48.934	49.147	49.360	49.573	49.786	49.999
1902	50.212	50.425	50.638	50.851	51.064	51.277	51.490	51.703	51.916	52.129	52.342	52.555
1903	52.768	52.981	53.194	53.407	53.620	53.833	54.046	54.259	54.472	54.685	54.898	55.111
1904	55.324	55.537	55.750	55.963	56.176	56.389	56.602	56.815	57.028	57.241	57.454	57.667
1905	57.880	58.093	58.306	58.519	58.732	58.945	59.158	59.371	59.584	59.797	60.010	60.223
1906	60.436	60.649	60.862	61.075	61.288	61.501	61.714	61.927	62.140	62.353	62.566	62.779
1907	62.992	63.205	63.418	63.631	63.844	64.057	64.270	64.483	64.696	64.909	65.122	65.335
1908	65.548	65.761	65.974	66.187	66.400	66.613	66.826	67.039	67.252	67.465	67.678	67.891
1909	68.104	68.317	68.530	68.743	68.956	69.169	69.382	69.595	69.808	70.021	70.234	70.447
1910	70.660	70.873	71.086	71.299	71.512	71.725	71.938	72.151	72.364	72.577	72.790	73.003
1911	73.216	73.429	73.642	73.855	74.068	74.281	74.494	74.707	74.920	75.133	75.346	75.559
1912	75.772	75.985	76.198	76.411	76.624	76.837	77.050	77.263	77.476	77.689	77.902	78.115
1913	78.326	78.541	78.754	78.967	79.180	79.393	79.606	79.819	80.032	80.245	80.458	80.671
1914	80.884	81.097	81.310	81.523	81.736	81.949	82.162	82.375	82.588	82.801	83.014	83.227
1915	83.440	83.653	83.866	84.079	84.292	84.505	84.718	84.931	85.144	85.357	85.570	85.783
1916	85.996	86.209	86.422	86.635	86.848	87.061	87.274	87.487	87.700	87.913	88.126	88.339
1917	88.552	88.765	88.978	89.191	89.404	89.617	89.830	90.043	90.256	90.469	90.682	90.895
1918	91.108	91.321	91.534	91.747	91.960	92.173	92.386	92.599	92.812	93.025	93.238	93.451
1919	93.664	93.877	94.090	94.303	94.516	94.729	94.942	95.155	95.368	95.581	95.794	96.007
1920	96.220	96.433	96.646	96.859	97.072	97.285	97.498	97.711	97.924	98.137	98.350	98.563
1921	98.776	98.989	99.202	99.415	99.628	99.841	100.054	100.267	100.480	100.693	100.906	101.119

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TABLE 43. DEVIATION FROM TREND, DIVORCE CASES FILED IN SUFFOLK COUNTY

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	79.90	106.00	140.60	85.20	85.00	65.00	110.10	165.30	96.15	134.00	122.90	67.50
1901	98.50	106.80	133.20	76.68	47.40	59.50	135.00	150.30	109.60	106.90	124.70	78.00
1902	99.40	156.70	181.90	127.90	82.40	82.00	132.00	87.00	111.80	143.90	105.20	106.30
1903	94.70	98.30	142.90	95.40	95.10	74.30	111.00	103.10	114.00	104.10	136.90	63.50
1904	103.00	108.00	150.70	91.20	55.10	60.38	90.00	91.60	80.60	105.00	95.80	102.10
1905	83.00	112.00	144.00	92.20	59.60	71.40	101.40	87.70	107.10	140.80	128.20	76.30
1906	119.00	97.20	158.00	90.10	70.20	43.80	74.50	124.20	88.30	141.20	103.70	82.80
1907	108.00	87.00	107.10	108.20	72.10	71.90	102.80	94.80	97.50	154.00	89.00	98.00
1908	87.00	76.00	133.60	78.60	70.80	70.50	62.80	83.40	89.30	112.90	109.10	91.50
1909	110.00	121.00	125.70	91.70	65.30	69.40	67.80	112.10	101.90	101.40	113.90	83.70
1910	117.20	104.50	123.80	106.80	85.20	96.10	78.00	101.10	116.10	103.20	78.20	104.10
1911	116.00	105.00	140.00	74.50	89.10	71.50	73.50	107.60	104.30	114.20	107.50	98.00
1912	99.00	122.80	122.00	85.00	70.40	52.00	76.70	105.00	108.30	115.90	97.60	102.20
1913	118.90	96.80	111.90	97.70	83.30	66.70	79.20	110.20	102.40	114.60	85.80	98.00
1914	94.00	96.00	137.80	106.80	67.30	78.20	110.20	105.70	112.70	119.70	91.40	100.80
1915	95.60	105.00	143.00	97.70	68.80	64.20	66.20	76.40	104.30	100.80	128.80	92.20
1916	116.30	109.00	142.20	98.00	93.30	76.90	83.50	104.00	117.50	109.20	91.90	97.20
1917	119.80	135.00	145.10	98.70	114.10	70.20	92.40	96.60	94.20	131.90	115.80	100.20
1918	87.66	110.50	109.20	116.70	78.10	64.00	84.50	103.80	97.00	82.80	87.90	130.50
1919	132.20	149.00	191.20	164.40	146.10	113.90	136.01	136.80	166.90	196.80	178.50	161.80
1920	174.70	115.00	219.00	166.20	114.30	100.80	140.40	129.90	154.10	151.00	132.10	120.80
1921	135.70	138.80	169.20	134.10	107.10	93.30	114.00	134.00	148.00	128.00	116.00	101.90

TABLE 44. LINK RELATIVES, DIVORCE CASES FILED IN SUFFOLK COUNTY

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900		132.90	132.20	60.60	99.60	76.40	170.00	149.80	58.10	139.60	91.60	54.90
1901	145.60	108.20	125.00	57.40	61.80	125.40	227.00	111.30	72.80	97.40	117.80	62.60
1902	127.50	157.20	116.00	70.40	64.50	99.40	161.00	65.40	135.80	122.00	73.30	100.70
1903	88.90	103.80	145.10	66.80	99.60	78.00	149.60	92.90	110.40	91.40	131.20	46.40
1904	162.00	104.90	139.50	60.60	60.40	109.50	149.10	101.90	88.00	130.00	91.30	106.70
1905	81.10	135.00	128.60	64.10	64.60	119.80	142.10	86.40	122.30	131.00	91.30	59.40
1906	156.00	81.60	162.50	57.00	72.90	62.30	170.00	166.90	71.20	160.00	73.20	79.90
1907	130.60	80.50	123.20	101.10	66.50	99.70	142.90	92.30	102.80	158.00	57.80	110.00
1908	88.80	87.40	176.00	58.80	90.00	99.60	89.00	132.90	107.00	126.50	96.60	83.80
1909	120.20	109.90	103.80	73.00	71.10	106.10	97.60	165.50	90.70	99.60	112.10	73.60
1910	139.90	89.10	118.30	86.30	79.90	112.80	81.10	129.80	114.80	89.00	75.60	133.20
1911	111.30	90.50	133.20	53.20	119.80	80.10	102.90	146.30	97.20	109.40	94.00	91.10
1912	101.00	123.90	99.40	69.60	82.80	73.90	147.80	136.80	103.20	106.90	84.20	104.90
1913	116.10	81.50	115.40	87.30	85.20	80.20	118.80	139.20	92.80	111.80	74.80	114.20
1914	95.90	102.10	143.30	77.40	63.00	116.20	141.00	95.80	106.70	106.10	76.40	110.20
1915	95.00	109.70	136.10	68.20	70.40	93.40	103.10	115.20	136.80	96.50	127.70	71.70
1916	126.20	93.70	130.60	68.80	95.20	82.40	108.70	124.70	113.00	93.00	83.90	105.80
1917	123.00	112.90	107.50	67.80	115.70	61.40	31.60	104.60	97.50	139.90	88.00	86.70
1918	77.20	126.10	98.80	106.40	67.00	81.90	132.10	122.80	93.50	85.40	106.10	148.50
1919	101.50	112.60	128.20	86.00	89.00	77.80	119.50	100.50	122.00	117.80	90.70	90.50
1920	107.90	65.80	190.40	75.90	68.70	88.00	139.30	92.30	119.00	97.80	87.50	91.10
1921	112.30	102.20	122.10	79.20	79.80	87.00	122.20	117.60	110.30	86.50	90.50	87.80

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TABLE 46. DEVIATION FROM TREND MINUS SEASONAL FLUCTUATIONS, DIVORCE CASES FILED IN SUFFOLK COUNTY

YEAR	January	February	March	April	May	June	July	August	September	October	November	December
1900	-25.60	- 3.87	- 0.31	-11.95	+11.21	+ 0.77	+22.78	+63.66	-10.12	+18.87	+19.00	-26.42
1901	- 7.00	- 3.07	- 7.71	-20.47	-26.39	- 4.73	+47.68	+48.66	+ 3.33	- 8.23	+20.80	-15.92
1902	- 6.10	+46.83	+40.99	+30.75	+ 8.61	+17.77	+44.68	-14.64	+ 5.53	+28.77	+ 1.30	+12.38
1903	-10.80	-11.57	+ 1.99	- 1.75	+21.31	+10.07	+23.68	+ 1.46	+ 7.73	-11.03	+33.00	-30.42
1904	- 2.50	- 1.87	+ 9.79	- 5.95	-18.69	- 3.85	+ 2.68	-10.04	-25.67	-10.13	- 8.10	+ 8.18
1905	-22.50	+ 2.13	+ 3.09	- 4.95	-14.19	+ 7.17	+14.08	-13.94	+ 0.83	+25.67	+24.30	-17.62
1906	+13.50	-12.67	+17.09	- 7.05	- 3.59	-20.43	-12.82	+22.56	-17.97	+26.07	- 0.20	-11.12
1907	+ 2.50	-22.87	-33.81	+11.05	- 1.69	+ 7.67	+15.48	- 6.84	- 8.77	+38.87	-14.90	+ 4.08
1908	-18.50	-33.87	- 7.31	-18.55	- 2.99	+ 6.27	-24.52	-18.24	-16.97	- 3.77	+ 5.20	- 2.42
1909	+ 4.50	+11.13	-15.21	- 5.45	- 8.49	+ 5.17	-19.52	+10.46	- 4.37	-13.73	+10.00	-10.22
1910	+11.70	- 5.37	-17.11	+ 9.65	+11.41	+31.87	- 9.32	- 0.54	+ 9.83	-11.93	-25.70	+10.18
1911	+10.50	- 4.87	- 0.91	-22.65	+15.31	+ 7.27	-13.82	+ 2.96	+ 1.97	- 0.93	+ 3.60	+ 4.08
1912	- 6.50	+12.93	-18.91	-12.15	- 3.39	-12.23	-10.62	+ 3.36	+ 2.03	+ 0.77	- 6.30	+ 8.28
1913	+13.90	-13.07	-29.01	+ 0.55	+ 9.51	+ 2.47	- 8.12	+ 8.56	+ 3.87	- 0.53	-18.10	+ 4.08
1914	-11.50	-13.87	- 3.11	+ 9.65	- 6.49	+13.97	+22.88	+ 4.06	+ 6.43	+ 4.57	-12.50	+ 6.88
1915	- 9.90	- 4.87	+ 2.09	+ 0.55	- 4.99	- 0.03	-21.12	-25.24	- 1.97	-14.23	+24.90	- 1.72
1916	+10.80	- 0.87	+ 1.29	+ 0.85	+19.51	+12.67	- 3.82	+ 2.36	+11.23	- 5.93	-12.00	+ 3.28
1917	+14.30	+25.13	+ 4.19	+ 1.55	+40.31	+ 5.97	+ 5.08	- 5.04	-12.07	+16.77	+11.90	+ 6.28
1918	-17.90	+ 0.63	-31.71	+19.55	+ 4.31	- 0.23	- 2.82	+ 2.16	- 9.27	-32.33	-16.00	+36.58
1919	+26.70	+39.13	-50.29	+69.25	+72.31	+49.67	+48.68	+35.16	+60.63	+81.67	+74.60	+67.88
1920	+69.20	+ 5.13	+78.09	+69.05	+40.51	+36.57	+53.08	+28.26	+47.83	+35.87	+28.20	+26.88
1921	+30.20	+28.93	+28.29	+36.95	+33.31	+29.07	+26.68	+32.36	+41.73	+12.87	+12.10	+ 7.98

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