

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Agricultural Experiment Station Circulars

SDSU Agricultural Experiment Station

8-1938

Business Activity in South Dakota, 1915 - 1938

T. Hillard Cox
South Dakota State University

Follow this and additional works at: http://openprairie.sdstate.edu/agexperimentsta_circ

Recommended Citation

Cox, T. Hillard, "Business Activity in South Dakota, 1915 - 1938" (1938). *Agricultural Experiment Station Circulars*. Paper 23.
http://openprairie.sdstate.edu/agexperimentsta_circ/23

This Circular is brought to you for free and open access by the SDSU Agricultural Experiment Station at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Agricultural Experiment Station Circulars by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

BUSINESS ACTIVITY

in

South Dakota

1915-1938

By

T. HILLARD COX

AGRICULTURAL ECONOMICS DEPARTMENT
AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE COLLEGE
of Agriculture and Mechanic Arts
BROOKINGS, SOUTH DAKOTA



Business Activity in South Dakota

1915-1938

The index of business activity shown in the accompanying charts and table represents a preliminary study of the fluctuations and growth of industry and trade in South Dakota. It is anticipated that the study will be continued and expanded until it includes as adequate a statistical presentation of the cyclical changes in the economic situation in the State as is now available for the United States as a whole.

A majority will probably agree that there is a necessity for a broad statistical analysis which will show the immediate as well as the long-time trend in the general business situation. Every farmer, banker, merchant or other type of business man must adapt his business policies to fit the ever-changing trend in shifting markets, price movements, production cycles, and the relative development of different industries and regions. It is for the purpose of providing the required information upon such general conditions by organizing historical data into a concise picture which may be used as a basis for interpreting immediate future trends that statistical services such as the present study have been developed.

There are several factors which must be considered in analyzing original data that the farmer and business man has neither the time nor technical training required to interpret when analyzing present conditions; for example in the case of all series of monthly data relative to production and trade an irregularity is introduced caused by the varying lengths of the calendar months. Production in March will not be comparable with that in February. Also some months will have five Sundays and a greater number of holidays may appear in succeeding months.

Another procedure which adds to the significance of a series of data is deflation or correction for price changes. A large proportion of the available series of data is expressed in price terms and, therefore, are not accurate indexes of changes in the physical volume which they represent; for example, a dollar deposited in a bank in 1928 would represent in purchasing power hardly one-half of what it would in 1913. Thus, because of the instability of the purchasing power of the dollar, data used to represent debits to individual accounts in 1928 would not be comparable to those used to represent similar data in 1913.

Another problem which must be considered in analyzing time series is the treatment of seasonal variations. By seasonal variations is meant the differences which appear regularly at certain times of the year. Business failures, for example, are much more numerous in December and January than in any other month of the year, probably because of the preparation of new statements which reveal weaknesses hitherto concealed from view. Building operations fall off in the winter, stock speculation declines in the summer. Railway traffic is much heavier in the fall than in any other season, and retail trade has its seasonal peak at Christmas time. Therefore, in interpreting any series of data, this seasonal variation must be considered and eliminated before month-to-month comparisons can be made. The interpretation of business data is complicated by the presence of these seasonal changes. When we wish to answer the question "How is business?" it is necessary to measure and eliminate the seasonal variation.

Over a considerable period of time, many social and economic phenomena show a tendency to grow or decline; for example, population in the Uni-

ted States increases decade by decade. With the increase in business activity, the volume of credit transactions moves steadily upward. The movement may be checked over shorter periods of time or even reverse itself, but the general trend is upward or downward. As thus used, it is called the secular trend. By secular trend is meant the persistent underlying tendency for the items in a statistical series to increase or decrease in magnitude over a period of years. The presence of secular trend in business data complicates the problem of interpreting data and makes it necessary to measure and eliminate the trend before accurate measurements can be made. In business it is a common practice to compare the facts of the current month with the corresponding data for the preceding month and for the same month of the preceding year. Such comparisons take into account the seasonal changes but do not make allowances for the long-time trend which progresses from year to year; for example, if the volume of production of pig iron has been increasing at the average rate of 5 per cent annually over a period of years, then the present month production should be 5 per cent greater than that for the corresponding month a year ago in order to indicate normal conditions. Newspaper comparisons frequently fall into the fallacy of comparing the current month with the corresponding month of the preceding year, not allowing for the growth factor, which results in an inaccurate conclusion.

All of these problems mentioned above are eliminated in the process of time series analysis which allows a convenient and quick method of interpreting the immediate trend in the general business activity situation. It is for this purpose that studies of this nature are made, and it is hoped that this presentation of business activity in South Dakota as shown in the accompanying charts and table will aid in interpreting the general movement of trade and industry in the State.

The upper chart and table show the trend in general business activity in the State from 1915 to 1938. This index represents a composite of the eight individual series shown in the lower chart. Each series is adjusted for seasonal variations, for secular trend or growth and, where necessary, for price changes before being combined with other series to form the composite index. Both the individual and the composite indexes are expressed in percentages of pre-depression normal. The period 1923-30 was chosen as the basis for calculating the seasonal changes and trend, because insufficient data were available to allow for a longer period and because the years during this time are considered to be fairly normal in the growth of the State. This period, also, more nearly fits the long-time or secular trend of developments in the State and Nation as a whole.

Weights used, or the relative importance ascribed to each of the several series in combining them into the composite index of business activity in South Dakota from 1915 to 1938, are as follows:

BANK DEBITS (check transactions), *35 per cent*. This series is based upon reports published by the Federal Reserve Bank of Minneapolis for the following South Dakota cities: Aberdeen, Brookings, Deadwood, Huron, Lead, Madison, Milbank, Mitchell, Mobridge, Pierre, Rapid City, Sioux Falls, Watertown, and Yankton.

Perhaps the most generally used measure of fluctuations in the volume of business is bank debits. Since it has been estimated that approximately 85 per cent of all transactions are made by check, the debits figures are very comprehensive, covering all fields of activity. However, the cycles of bank debits may be unduly exaggerated during a period of depression because of the numerous failures which occur at this time. In the event of a bank clo-

sure, the depositors are deprived of banking facilities for a time. During this period, transactions which normally would have been reflected in debits are taken care of by other means, thus causing business activity, as represented by this series, to appear less favorable than is justified by actual conditions. At times entire communities have been left without banking facilities.

Again, as a result of these failures, great numbers of depositors lose confidence and withdraw large sums from their savings and checking accounts. This results in cash transactions, and as a result millions of dollars are spent which do not pass through the bank. These factors cause an exaggeration of the downward movement in the cycles of bank debits and naturally reflect somewhat in the composite index; nevertheless, this series is considered to be one of the best indicators of the trend in business activity.

CATTLE SALES, 11 per cent. Since approximately 75 to 80 per cent of the farm income in South Dakota is derived from the income of livestock and livestock products, this series is of importance in indicating the trend of activity. This index represents dollar volume of cattle received at stock yards and packing plants in South Dakota, and was derived from the prices of beef cattle, furnished by the Bureau of Agricultural Economics, United States Department of Agriculture, and the number of cattle sold as reported by E.V. Jones, Agricultural Statistician of South Dakota. The figures do not represent total shipments out of the state. They include only market receipts from South Dakota.

The cycles of cattle sales have been exaggerated during the past several years because of the severe drought which the State has been experiencing. Farmers have been forced to sell their livestock off the farm because of lack of feed, and since it takes some time to build up breeder herds, a fairly long period of time elapses during which no income is derived from this source. However, this series reflects fairly well the conditions existing among livestock farmers, and this in turn reflects to some extent the trend in the general business activity curve.

NEW CAR SALES, 11 per cent. The statistics representing the number of new cars sold in South Dakota are derived from the State records of licenses issued for new passenger automobiles. These figures are compiled from records of the State Department by the South Dakota Motor Trades Association. This series is generally recognized as a comparable indicator of business conditions because of the enormous extent of its market. Recent State statistics show that approximately one out of every three or four persons within the State is affected by this market.

INSURANCE SALES, 10 per cent. This series represents the sales of new ordinary life policies in South Dakota (excluding group insurance) by months from 1923 to date. The data are expressed as the total face value of such policies, and are based upon the reports of 81 companies. These figures were furnished through the courtesy of the Life Insurance Sales Research Bureau of Hartford, Connecticut.

This series should be a comparable indicator of business activity in general, but as it is limited to ordinary life policies, activity in this field may be underestimated. The factor of investment insurance is of very great importance in periods of dullness. This has been especially true during the past few years where the investment has been practically at a standstill. The representatives of the New York Mutual and the Penn Mutual Life Insurance Companies report that their companies are stressing the importance of investment policies today to a greater extent than in years before the depres-

sion. These reports indicate an important movement in this direction on the part of investors. The significance of this factor would indicate an appreciable limitation of this series as used in this study. However, taking into account these limitations, this series is considered a valuable index and should be a fairly comparable indicator.

FARM PRICES, 10 per cent. The figures for this series are furnished by the Agricultural Economics Department of South Dakota State College. These data are in monthly figures representing the fluctuations in prices of farm products throughout the State. Prices received by farmers in general are not an important indicator of general farm conditions, because the farmer may be able to obtain high prices for his products and at the same time not have anything to market. This has been illustrated clearly during the past several years when the South Dakota farmer had very little to sell because of the drought, while prices were higher than they have been in several years past.

HOG SALES, 10 per cent. This series represents dollar volume of hogs received at stock yards and packing plants in South Dakota, and the index was constructed from prices furnished by the Bureau of Agricultural Economics, United States Department of Agriculture, and hog sales furnished by Mr. E.V. Jones, Agricultural Statistician for South Dakota. These figures do not represent total shipments out of the state as no data are available on direct shipments to other states. It is felt that this series is a fairly good indicator of business conditions since a large part of the farmers in eastern South Dakota derive their income from this source. Like the cattle sales series, these figures have exaggerated the cycle during the depression, because of the necessity of depleting the herd during drought years. Nevertheless, this series reflects in general the conditions of South Dakota farmers.

BUILDING CONTRACTS AWARDED, 3 per cent. Figures on this series have been collected generally throughout the State by the F.W. Dodge Corporation of New York. These data show the value in dollars of contracts awarded throughout the State and are considered to be a valuable business indicator which registers industrial activity very promptly. However, the weight given the series in this study is small because it is not an important factor in making up the total business of the State.

SHEEP SALES, 5 per cent. It is felt that these figures should be included in the index of business activity because the sheep industry in this State makes up a considerable portion of the income from livestock and livestock products. This series represents dollar volume of sheep received at stock yards and packing plants in South Dakota, and the index was constructed from prices received by the Bureau of Agricultural Economics, United States Department of Agriculture, and sheep sales furnished through the courtesy of Mr. E.V. Jones, Agricultural Statistician for South Dakota. These figures do not include direct shipments out of the state. They represent only market receipts from South Dakota.

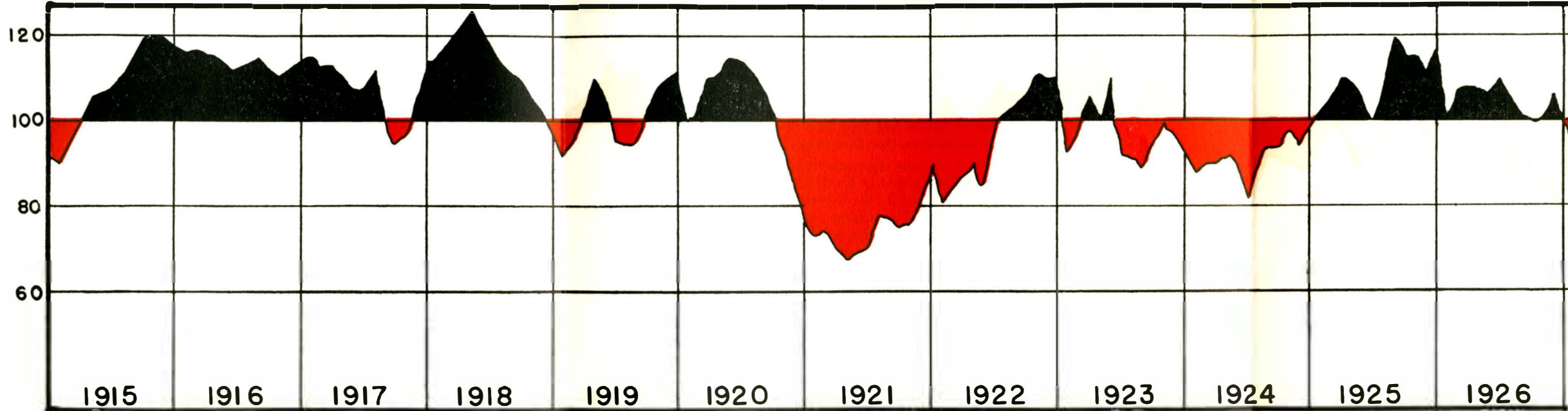
ELECTRIC POWER PRODUCTION, 5 per cent. This series is not an important factor in determining the general business curve in the State; it should be included because it reflects to some extent the consumption of electricity by manufacturers and home users. These data are expressed in kilowatt hours and were furnished through the courtesy of the Federal Power Commission.

It is expected that the business activity index for South Dakota will be kept up-to-date, and those who desire current monthly figures can obtain them by writing to the Agricultural Economics Department or Agricultural Experiment Station, South Dakota State College, Brookings, South Dakota.

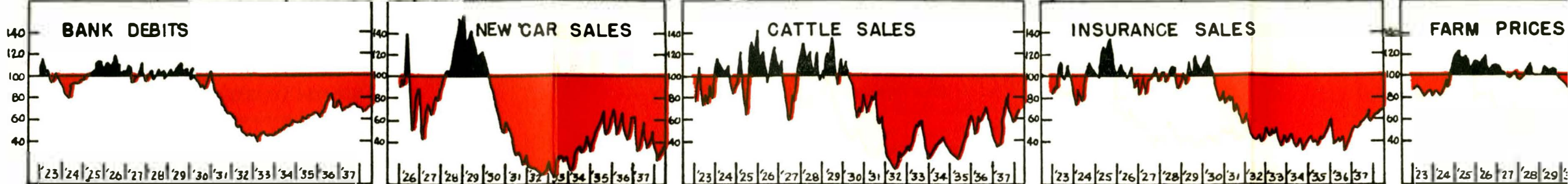
INDEX OF BUSINESS ACTIVITY

IN PER CENT OF PRE-

PER
CENT



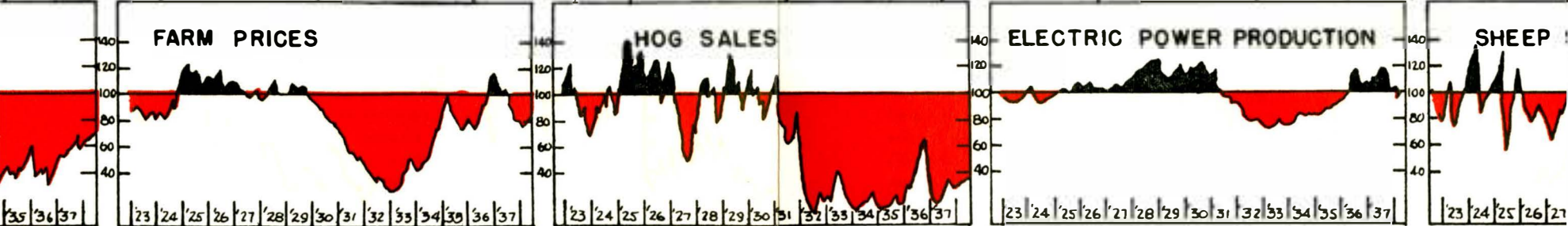
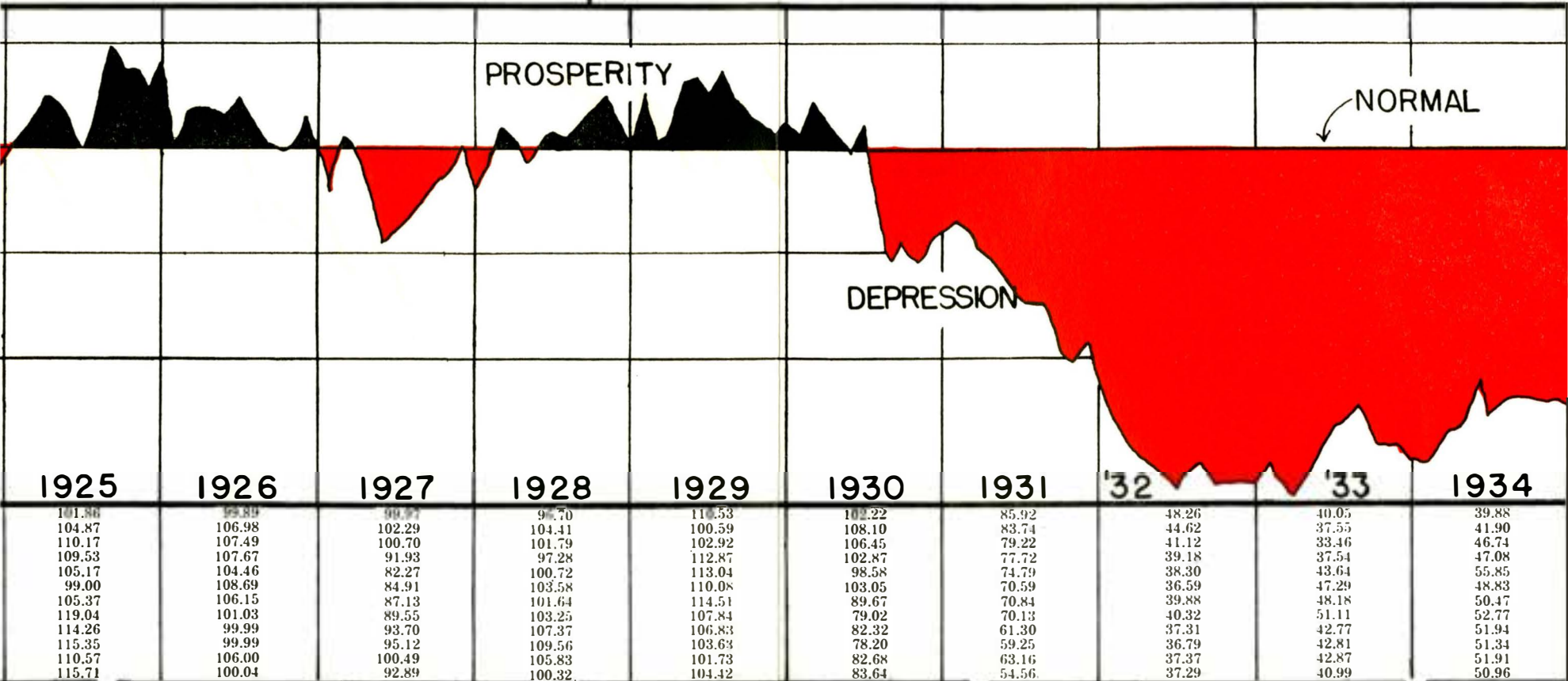
	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926
JAN.	90.10	115.89	114.92	114.80	92.01	100.02	73.40	80.13	92.46	84.10	101.86	94.80
FEB.	95.01	116.60	112.10	118.20	95.00	102.46	75.00	83.16	96.00	88.53	104.87	106.98
MAR.	100.03	115.09	112.52	121.56	102.50	110.05	69.12	87.22	105.82	91.02	110.17	107.49
APRIL	105.00	114.51	110.00	125.09	108.22	110.10	67.60	91.16	100.89	92.53	109.53	107.67
MAY	106.42	112.36	107.47	119.49	105.02	115.00	69.30	85.62	109.97	91.75	105.17	104.46
JUNE	108.51	112.39	107.50	115.41	95.01	113.10	70.02	99.62	91.95	82.23	99.00	108.69
JULY	110.00	113.01	111.62	113.06	94.99	111.20	78.10	102.20	90.95	90.89	105.37	106.15
AUG.	115.21	114.17	100.70	111.02	94.70	108.50	77.30	105.16	89.06	94.08	119.04	101.03
SEPT.	119.56	111.30	95.00	110.06	102.00	100.92	75.16	107.42	94.89	94.10	114.26	99.99
OCT.	120.01	110.79	97.50	105.16	108.91	90.00	76.12	111.16	100.33	98.13	115.35	99.99
NOV.	119.46	112.41	105.00	102.50	110.00	83.96	83.10	109.10	97.30	94.30	110.57	106.00
DEC.	117.70	114.00	113.05	96.72	110.42	75.00	90.05	109.11	92.20	99.92	115.71	100.04



Prepared by T. HILLARD COX, I
Agricultural Experiment Station,

ESS ACTIVITY IN SOUTH DAKOTA, 1915-1938

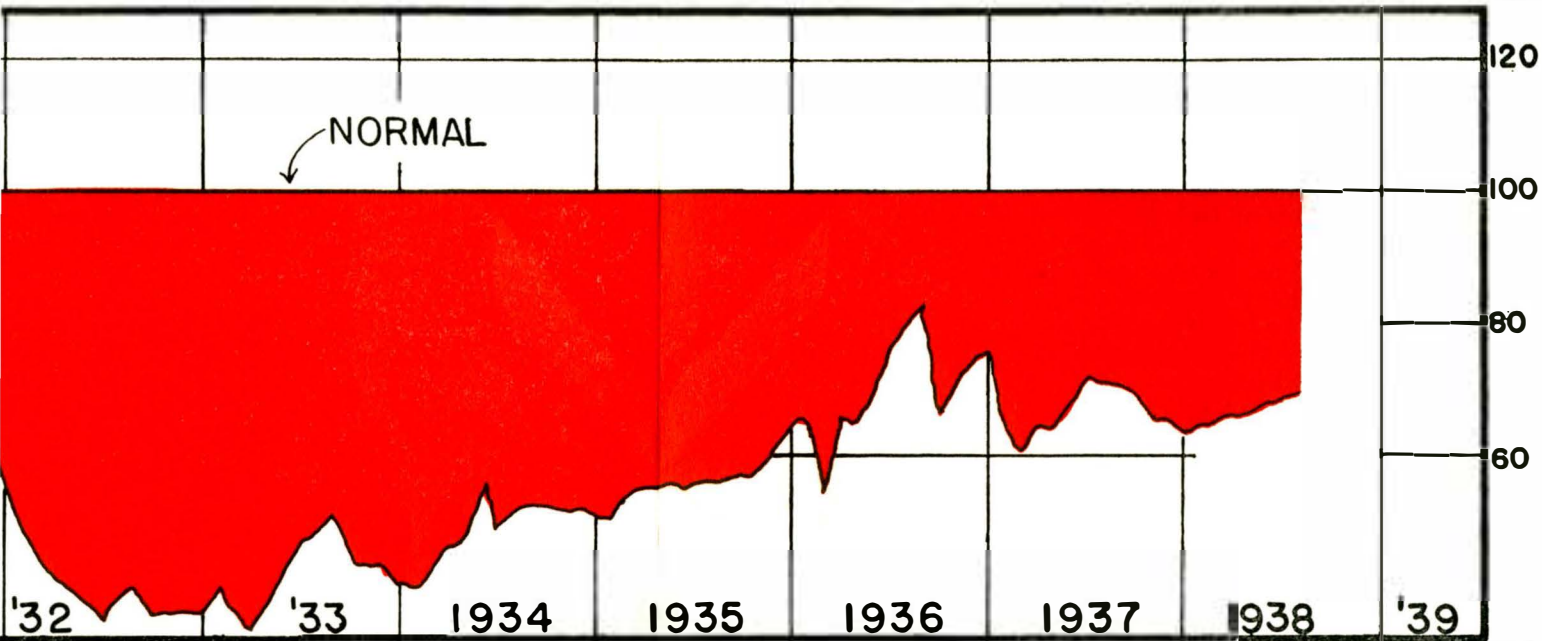
IN PER CENT OF PRE-DEPRESSION NORMALS, 1923-1930



Prepared by T. HILLARD COX, Department of Agricultural Economics, and Agricultural Experiment Station, South Dakota State College, Brookings.

5-1938

PER
CENT



Year	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
'32	48.26	44.62	41.12	39.18	38.30	36.59	39.88	40.32	37.31	36.79	37.37	37.29
'33	40.05	37.55	33.46	37.54	43.64	47.29	48.18	51.11	42.77	42.81	42.87	40.99
1934	39.88	41.90	46.74	47.08	55.85	48.83	50.47	52.77	51.94	51.34	51.91	50.96
1935	50.47	54.40	55.76	55.17	55.99	55.21	56.12	56.32	57.10	56.73	62.75	66.24
1936	65.80	53.91	66.14	64.96	68.24	76.07	79.57	82.75	66.94	70.52	74.16	75.76
1937	64.83	60.34	64.70	63.61	67.99	72.00	71.78	71.07	69.35	65.60	65.59	62.95
1938	63.49	64.50	65.45	66.32	67.40	68.36	69.15					

