geographical or economic factors, account for these regional differences in the variability of discount rates.

An Index of Regional Differences

The degree of regional difference in discount rates is not a fixed quantity, but varies from time to time with changing business conditions. In order that these changes might be followed an index of regional differences in discount rates has been constructed by the National Bureau of Economic Research, in connection with a study of regional differences in comodity prices. The measure of regional difference for a given date is the *mean deviation,* expressed as a percentage of the mean rate for all cities at that date. Deviations are measured from the mean. The movements of this index between July, 1918 and May, 1927, are shown graphically on Page 3. The average of the rates in the various cities is plotted on the same chart. The number of cities represented in this average ranges from 26 to 32 in 1918 and 1919, and from 32 to 35 in subsequent years.

It is clear from this graph that the degree of regional difference in discount rates varies considerably from time to time. The regional discrepancies were at a minimum during the period of high average rates in 1920 and 1921, and reached maximum values following the general decline of rates in 1921-22, and in 1924. The general relationship between movements of the average rate and changes in degree of regional difference is an inverse one. With every sustained rise in the average rate there has been a decline in the degree of regional difference, and with every sustained fall in the average rate there has been an increase in these differences. High rates bring an approach to uniformity. A low average rate means a wide range between the charges in individual cities. This is due, presumably, to the fact that in some cities the fairly high rate which is set by custom or by regulation tends to prevail at all seasons. A decline in the average rate brings wider regional differences because the downward movement is generally much more marked in some cities than in others.

The general course of the index of regional differences shows three relatively short periods of increase and three much longer periods of decline. The first increase came in late 1918 and early 1919, the second in 1921-22, the third in 1924. Each was followed by a considerably longer period of decline.

Some interest attaches to a comparison of the average of these rates with the market rate on 60-90 day paper in New York. (This latter figure, it should be noted, is the market rate as quoted in financial papers. It is not the 'customers' rate', upon which the general averages are based.) This series is plotted on the same chart. As might be expected, the average rate for the country at large fluctuates over a much narrower range than does the New York rate, and moves in general on a distinctly higher level. Only during the period of violent disturbance between February, 1920, and May, 1921, was the average rate below the market rate in New York.

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To Find Facts Divested of Propaganda

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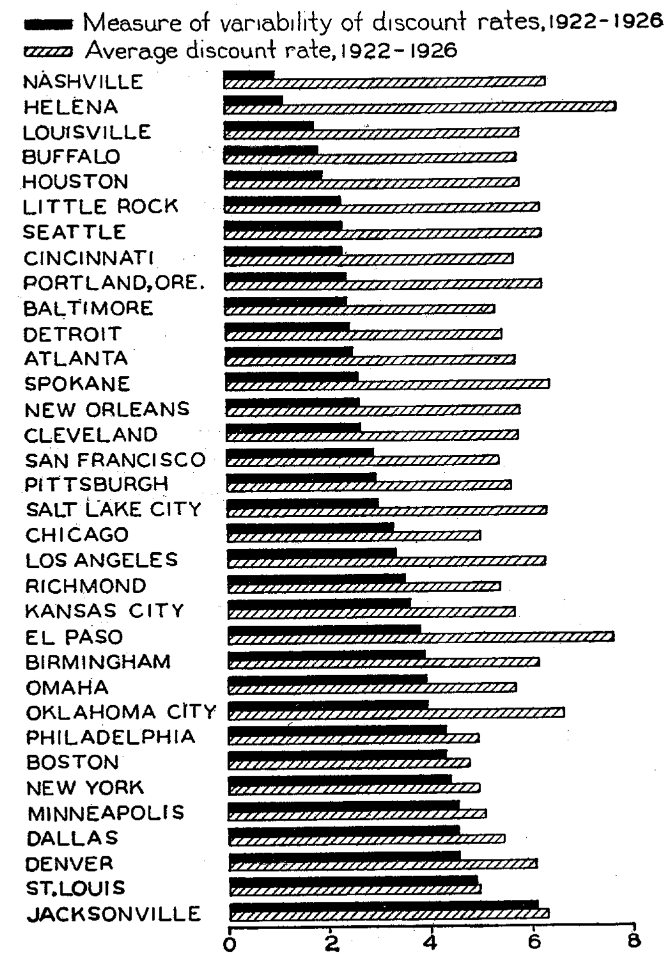
Variability of Bank Discount Rates Measured

DISCOUNT RATES IN AMERICAN CITIES
CUSTOMERS' RATES AND MEASURES OF VARIABILITY OF CUSTOMERS' RATES IN 34 CITIES



AVERAGES OF MONTHLY MEASURES DURING THE PERIOD 1922-1926
(Cities ranked in order of magnitude of the measures of variability)

Cost of Money in 34 Representative Cities Over Five Year Period Analyzed

Boston Has Lowest Average Rate; Jacksonville the Widest Swings

WIDE regional differences in the rates of discount prevailing in American cities at any given date, and equally striking differences in the monthly variability of these discount rates, are shown in a survey just completed by Dr. Frederick C. Mills, of the National Bureau of Economic Research.

In addition to computing the averages of the discount rates in each city and measuring their variability, Dr. Mills has also constructed what is believed to be the first index of regional differences in discount rates. In general, this index shows that when average rates are rising, differences between rates prevailing in different parts of the country tend to become less noticeable. In periods of falling rates, regional differences become more pronounced.

Boston was the cheapest market for borrowers with an average discount rate during the last five years of 4.77 per cent. Helena was the dearest with an average rate of 7.73 per cent.

Jacksonville had the most variable rate, the degree of fluctuation being six times as great as that in Nashville, where rates were most stable.

Philadelphia with an average discount rate of 4.95 per cent was second to Boston in cheapness of money, St. Louis with an average rate of 4.96 was third, and New York with an average rate of 5.01 was fourth.

Of the 34 cities listed, only 5 exceeded New York in the variability of their discount rates.

(continued on page 2)

"BUSINESS CYCLES" COMES OFF THE PRESS

THE first copies of Dr. Wesley C. Mitchell's long awaited treatise on BUSINESS CYCLES: THE PROBLEM AND ITS SETTING have just come off the press and are being distributed to the National Bureau's contributing subscribers.

This volume of more than 500 pages gives the latest and most authoritative information available today on the subject of business cycles. It is the first book on business cycles by Dr. Mitchell since the publication of his pioneer work in 1913.

In this new book, Dr. Mitchell explains the numerous processes involved in business cycles; shows how our present economic organization was evolved; describes how to use statistics in the study of business cycles and how to use business annals; and finally combines the insights derived from business annals, theoretical explanations and statistical researches into a working concept of business cycles.

The large cities of the northeast have the lowest rates in general, while the higher rates are found in cities of the west and south. Although there is no sharp geographical division, the following grouping reveals certain broad differences between regions:

Group	Average Rate on Customers' Loans, 1922-1926
Cities of the Middle Atlantic and Northeast (Boston, Philadelphia, New York, Buffalo)	5.12
Cities of the Upper Mississippi (St. Louis, Chicago, Minneapolis, Detroit, Pittsburgh, Cincinnati, Cleveland)	5.40
Cities of the South (Baltimore, Richmond, Atlanta, New Orleans, Louisville, Birmingham, Jacksonville, Nashville)	5.86
Cities of the Pacific Coast (San Francisco, Portland, Seattle, Los Angeles, Spokane)	6.12
Cities of the Western Plains and Rocky Mountains (Kansas City, Omaha, Denver, Salt Lake City, Helena)	6.32
Cities of the Southwest (Dallas, Houston, Little Rock, Oklahoma City, El Paso)	6.35

Comparison of Cities

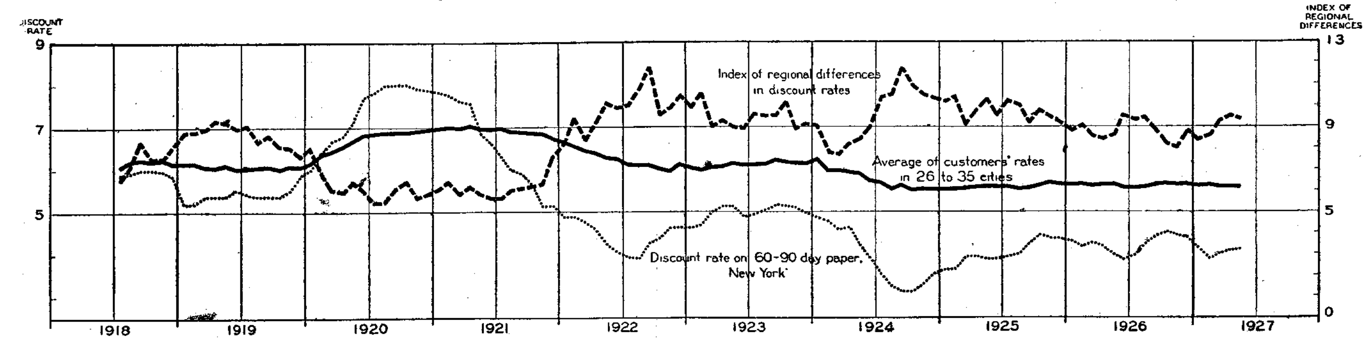
The magnitude of the regional differences is indicated by the following table, in which is shown the average rate in each of 34 cities during the five year period 1922-1926.

Table 1

Discount Rates on Customers' Loans
Average Rates in 34 American Cities, 1922 - 1926.

(1) Rank	(2) City	(3) Average Rate
1	Boston	4.77
2	Philadelphia	4.95
3	St. Louis	4.96
4	New York	5.01
5	Chicago	5.02
6	Minneapolis	5.18
7	Baltimore	5.36
8	San Francisco	5.40
9	Richmond	5.41
10	Dallas	5.44
11	Detroit	5.49
12	Pittsburgh	5.65
13	Kansas City	5.70
14	Omaha	5.71
15	Atlanta	5.71
16	Cincinnati	5.72
17	Buffalo	5.76
18	Cleveland	5.79
19	Louisville	5.81
20	New Orleans	5.82
21	Houston	5.82
22	Denver	6.12
23	Birmingham	6.14
24	Little Rock	6.21
25	Portland, Ore.	6.26
26	Seattle	6.27
27	Jacksonville	6.29
28	Los Angeles	6.29
29	Salt Lake City	6.33
30	Nashville	6.35
31	Spokane	6.40
32	Oklahoma City	6.67
33	El Paso	7.63
34	Helena	7.73

AVERAGE RATES ON CUSTOMERS' LOANS IN 26 TO 35 CITIES, INDEX OF REGIONAL DIFFERENCES IN CUSTOMERS' RATES, AND RATE ON 60-90 DAY PAPER IN NEW YORK



The differences between cities and between the various groups of cities distinguished on Page 2 represent variations in the degree of commercial development and business stability, differences in the amount of available credit and differences in the intensity of the demand for capital and credit, as well as variations in local business conditions and banking habits.

The data utilized in computing these averages and in preparing the other measures described below are the records compiled by the Federal Reserve Board and published monthly in the *Federal Reserve Bulletin*. They relate to customers' prime commercial loans. The original rates, as quoted for individual cities, are not averages, but are the rates at which the bulk of the loans of this class are made by reporting banks. Where the reported rates are given in terms of the range from low to high, an average of these limits has been taken. The Federal Reserve Board's reports show that some changes have been made from time to time in the method of reporting rates, but it does not appear that these have seriously affected the comparability of the rates for different periods. The comparison of cities, however, in respect to discount rates must be made with some reservations, because of the difficulty of securing fully comparable returns. Significance should not be attached, therefore, to minor differences between the averages in Table 1. The larger differences represent true regional variations of considerable economic importance.

Variability of Discount Rates

Not only do discount rates differ materially from city to city in absolute magnitude, but they differ as well in respect to variability (that is, in the degree to which they fluctuate from month to month). Variation within each calendar year has been measured by the *mean deviation* of the monthly rates, expressed as a percentage of the annual average. These measures, averaged for each city for the five years 1922 to 1926, are shown in Table 2.

Table 2

Measures of Variability of Discount Rates on Customers' Loans in 34 American Cities, 1922 - 1926.

(1) Rank	(2) City	(3) Measure of Variability
1	Nashville	.99
2	Helena	1.16
3	Louisville	1.79
4	Buffalo	1.87
5	Houston	1.97
6	Little Rock	2.31
7	Seattle	2.33
8	Cincinnati	2.34
9	Portland, Ore.	2.38
10	Baltimore	2.42
11	Detroit	2.46
12	Atlanta	2.52
13	Spokane	2.60
14	New Orleans	2.64
15	Cleveland	2.65
16	San Francisco	2.93
17	Pittsburgh	2.99
18	Salt Lake City	2.99
19	Chicago	3.28
20	Los Angeles	3.36
21	Richmond	3.51
22	Kansas City	3.61
23	El Paso	3.83
24	Birmingham	3.88
25	Omaha	3.92
26	Oklahoma City	3.97
27	Philadelphia	4.30
28	Boston	4.31
29	New York	4.41
30	Minneapolis	4.54
31	Dallas	4.54
32	Denver	4.56
33	St. Louis	4.93
34	Jacksonville	6.11

These figures are presented graphically in the bar diagram on Page 1 of this Bulletin.

Differences between cities in respect to the stability of discount rates are much greater than are the differences in the average rates. The range from the lowest to the highest value extends from .99 to 6.11. Rates were most rigid in Nashville, Helena, Louisville, Buffalo, Houston, and Little Rock, while they were most flexible in Philadelphia, Boston, New York, Minneapolis, Dallas, Denver, St. Louis and Jacksonville. In each of the last named cities, except Jacksonville, the rate of discount was approximately four times more variable than the rate in Nashville and Helena. The rate in Jacksonville was six times as variable as the rate in Nashville.

Although the big eastern cities, Philadelphia, Boston, and New York, stand near the lower end of the scale with relatively variable rates, there is no clear division in the matter of variability between the smaller centers and the larger, nor between the east, on the one hand, and the south and west on the other. In some centers a standard rate prevails with little change from month to month or from year to year, while in others rates are flexible and variable. In so far as may be judged from the present figures local conditions and customs, rather than broad