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ECONOMIC EFFICIENCY OF TEXAS COUNTRY BANKS



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This study shows that most Texas country banks with less than \$300,000 to \$400,000 in earning assets have comparatively low earnings, pay very little interest to depositors, and charge comparatively high rates on loans. Also, the figures indicate that such banks are much more subject to failure or voluntary liquidation during periods of depression than are the larger banks.

The net earnings (before losses) for 62 banks with less than \$400,000 in earning assets averaged 9.08 per cent on the bank investment as compared with 11.26 per cent for 56 banks with \$400,000 to \$1,000,000 and 13.65 per cent for 26 banks with \$1,000,000 to \$4,000,000 in earning assets. The poor showing of the smaller banks is due largely to high expenses per unit of business and a low ratio of earning assets to the bank investment. Total expenses, exclusive of interest on deposits and borrowed money and taxes, averaged 4.23 cents per dollar of earning assets for banks with less than \$400,000 in earning assets as compared with 2.96 cents for banks with \$400,000 to \$1,000,000 and 2.64 cents for banks with \$1,000,000 to \$4,000,000 in earning assets. The average ratios of earning assets to the bank investment for these three groups of banks were 3.49, 4.43, and 5.96, respectively. Banks with less than \$400,000 in earning assets paid an amount equivalent to an average of 0.78 per cent on all deposits as compared with 1.43 per cent paid by banks with \$400,000 to \$1,000,000 and 1.87 for banks with \$1,000,000 to \$4,000,000 in earning assets. The group of banks with less than \$400,000 in earning assets charged an average of 9.36 per cent on loans as compared with an average of 8.61 per cent for the banks with \$400,000 to \$1,000,000 and 8.13 per cent for banks with \$1,000,000 to \$4,000,000.

Analysis of the 151 banks which were discontinued in Texas during 1929 and 1930 indicates that the rate of liquidations and absorptions was three times as great among banks with less than \$300,000 deposits as among banks with more than \$300,000. More than 17 per cent of all the banks in the State with less than \$300,000 deposits in January, 1929, were discontinued before January, 1931, as compared with 5 per cent of the banks with more than \$300,000.

This analysis indicates that Texas country banks have higher expenses, pay less on deposits, and charge more for loans than do banks of the same size in the Chicago and Philadelphia Reserve Districts. Expenses among Texas banks ranged from 6.64 cents (small banks) to 4.92 cents (large banks) per dollar of loans and investments, as compared with a range of 5.65 to 4.79 among member country banks of the Chicago District and 4.48 to 4.08 in the Philadelphia District. The average amount paid on deposits per dollar of loans and investments among Texas banks ranged from 0.64 to 2.07 cents, as compared with a range of 1.89 to 2.42 in the Chicago District and 1.76 to 2.14 in the Philadelphia District. The average rate charged on loans among Texas banks ranged from 9.51 to 6.81 per cent, as compared with a range of 7.36 to 6.05 per cent in the Chicago District.

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ECONOMIC EFFICIENCY OF TEXAS COUNTRY BANKS*

By

VIRGIL P. LEE

Thousands of country banks throughout the United States have operated under a severe strain since 1920, even during the comparatively prosperous years, 1925 to 1929. The total number of commercial banks in the country has declined more than 25 per cent during the last eleven years. Many were closed by government supervising bodies, many were liquidated voluntarily because of the inability to earn dividends, and many were absorbed by larger and stronger banks. More than one thousand country banks were closed by the federal and state supervisors in 1930, and a considerably larger number in 1931.

The unprecedented difficulties of country banks since 1920 may be ascribed to three rather distinct groups of factors: 1) low prices of farm products and declining real estate and security values, resulting in bank losses; 2) high operating expenses and declining gross earnings, resulting in low earnings *before* losses; and 3) too many banks—preventing the increase in volume of business which is necessary if bankers are to operate on the narrower margin of earnings.

Losses are inevitable during periods of poor economic conditions, and it is the business of bankers and bank supervisors to develop banks strong enough to absorb them. Bankers have three lines of attack in developing a strong financial position: 1) they can reduce expenses through internal operating economies and through increased volume of business, 2) they can increase gross earnings per unit of business by better distribution of earning assets, and 3) they can increase the ratio of earning assets to the bank investment by increasing the volume of business. Most country banks have been lamentably weak on all these points since 1920. Bank expenses have been very high and gross earnings have been low, resulting in a very narrow margin of earnings. Also, the extremely liberal policy of bank supervisors in granting new charters from 1900 to 1920 has created such an over-banked condition in agricultural communities that the banks have been unable to secure the necessary volume of business. Narrow operating margins and the distribution of the business among too many units have resulted in a debilitated condition which makes many banks extremely susceptible to collapse under the pressure of poor general economic conditions.

That an increase in banking expenses and a decline in gross earnings per unit of earning assets have occurred since pre-war days is indicated by the operating figures for all country national banks during the period 1914-1916 as compared with the period 1926-1928. For all country national banks in the United States average expenses per dollar of loans and in-

*In cooperation with the College of Agriculture, A. and M. College of Texas.

vestments increased from 4.52 to 4.99 cents; for Texas country national banks, 5.60 to 6.77 cents. Average gross earnings per dollar of loans and investments for the country decreased from 7.44 to 6.93 cents; for Texas from 10.49 to 8.46 cents. The average margin of earnings (before losses) for the country decreased from 2.92 to 1.94 cents per dollar of loans and investments, a decline of about 33 per cent, while in Texas the margin declined from 4.89 to 2.69 cents, or about 45 per cent.

But as a result of a more rapid increase in the volume of loans and investments than in the bank investment, the average net earnings to capital for all country national banks was approximately the same in 1926-1928 as it was in 1914-1916, while Texas bank earnings were about 33 per cent less than in the pre-war period. The average ratio of loans and investments to capital, surplus, and undivided profits for all country national banks increased from 3.53 in 1914-1916 to 5.77 in 1926-1928, while the ratio for Texas banks increased from 2.36 to 4.12. To put it another way, for all country national banks a net-earnings margin of 1.38 cents per dollar of loans and investments was sufficient to yield 8 per cent on the bank investment in 1926-1928 as compared with a requirement of 2.27 cents in 1914-1916; for Texas banks the figures are 1.95 and 3.40 cents, respectively.

Thus, for all country national banks combined the increase in the ratio of loans and investments to the bank investment approximately counteracted the narrowed margin of earnings, while for Texas banks the volume increase was insufficient to counteract a 45 per cent decline in the earnings margin, leaving average earnings to capital only about two-thirds of the pre-war figure. Hundreds of individual banks, however, have not fared so well. They have been unable to obtain the indispensable volume of business which is required under conditions which have prevailed since 1920. This study indicates that a large share of the current poor earnings, voluntary liquidations, and failures have occurred among the banks which have not been able to keep step with the inevitable trend toward a larger absolute volume of business and a larger ratio of volume to the bank investment.

The purpose of this study is to show the relation between volume of business and the economic efficiency of Texas country banks. Economic efficiency is based on service to the community, as well as to bank stockholders, and it is revealed largely in 1) the rate of earnings to the bank investment, 2) the rate charged on loans, 3) the amount paid on deposits, 4) the frequency of voluntary liquidations, and 5) the frequency of failure.

The relation of the size of banks to the rate of liquidation and absorption is revealed in a study of the capital and deposits of 151 state and national banks which were discontinued during the trying years 1929 and 1930. The relative efficiency of banks of various sizes as indicated by earnings, the rate charged on loans, and the amount paid to depositors is shown in a detailed study of the operating statements and statements of condition of 154 national banks.

Information on banks liquidated and absorbed during 1929 and 1930 was secured from the Texas Bank Directory published by the Union National Bank of Houston. Data on bank failures were compiled from the records of the State Department of Banking and the Annual Reports of the

Comptroller of the Currency. Earnings, expenses, losses, and various operating ratios were compiled from detailed statements supplied directly by 154 national banks.

CLASSIFICATION OF TEXAS BANKS

Most Texas banks are "country banks" according to the definition of the term in the National Banking Act as banks located outside central reserve cities and reserve cities. The State has no central reserve cities. Dallas, El Paso, Fort Worth, Galveston, Houston, San Antonio, and Waco are reserve cities. They had 40 of the 626 national banks in the State in January, 1929, and 10 of the 660 state banks. For the purpose of this study, banks in Beaumont, Austin, Wichita Falls, and a few other smaller cities might be considered city banks. There are probably 100 banks of a total of nearly 1,300 which are really city banks. Although no clear line of distinction can be made, practically all banks used in this study with less than \$5,000,000 deposits are country banks in the sense that a very large portion of their business is derived from farmers and ranchmen. This is the sense in which the term is used in this study. Many of the tables include the larger city banks for purposes of comparison.

As a background for the later discussion of voluntary liquidations and failures, all state and national banks are classified below according to volume of deposits, the amount of capital stock, and the ratios of deposits to capital and surplus as of January, 1929. Also, all Texas towns are classified according to the number and size of banks.

Volume of Deposits

In January, 1929, there were 660 state and 626 national banks operating in Texas. All state banks and 605 of the national banks had less than \$10,000,000 deposits. Approximately 19 per cent of the 641 state banks reporting their deposits and 3 per cent of the 605 national banks had less than \$100,000 deposits; 50 per cent of the state banks had less than \$200,000, while 18 per cent of the national banks had less than \$200,000 deposits. Only 17 per cent of the state banks and 45 per cent of the national banks had deposits of \$500,000 or more. When it is considered that in January, 1929, the country was at the height of a period of general prosperity, the volume of business of a majority of the Texas country banks was surprisingly small (Table 1 and Figure 1).

In addition to the necessity of a reasonable volume of business, the successful operation of small country banks is dependent upon a satisfactory ratio of the volume of business to the money invested by the owners of the bank. Many banks with a small volume of business also have a very low ratio of volume to the bank investment. This makes it doubly hard to earn a fair dividend.

The volume of deposits of a small country bank is a fairly accurate indicator of its volume of earning assets. Loans and investments can be made 1) from funds left by depositors, 2) from funds borrowed from other

banks, and 3) from capital, surplus, and undivided profits of the bank itself. But since bankers usually borrow from other banks only in emergencies and since a large portion of the bank's own funds are invested in the bank building, deposits are the chief source of lending power. Analysis

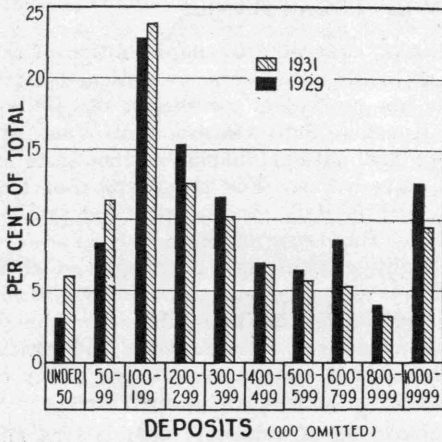


Figure 1. Distribution of Texas banks according to volume of deposits in January, 1929, and the same time in 1931. This chart shows the concentration of country banks in size groups from \$50,000 to \$400,000 deposits and the decline in deposits during 1929 and 1930.

of the statements of 12 representative banks with less than \$200,000 deposits on June 29, 1929, indicates that the average bank in this size group has total earning assets about 25 per cent greater than its total deposits. Variation from this depends largely upon the amount of capital, surplus, and undivided profits of the bank and upon the size of the investment in the bank building. Among banks with more than \$200,000 the tendency is for deposits to be more

nearly equal to total earning assets. In many cases banks with \$800,000 to \$2,000,000 deposits have less earning assets than their total deposits. So, in connection with the present discussion it should be remembered that among the smaller banks the deposits figure is commonly equivalent to 75 to 85 per cent of total earning assets, and that among larger country banks deposits approach and often exceed total earning assets.

Ratio of Deposits to Capital and Surplus

The 38 Texas banks which had less than \$50,000 deposits in January, 1929, had an average ratio of deposits to capital and surplus of only 2.23 (Table 2). Since their earning assets were somewhat greater than their deposits and since undivided profits are not included here, the indications are that these banks had an average of about \$2.50 in earning assets for each dollar of the bank investment. Putting it in another way, these banks would have to earn a net of four cents on each dollar of their earning assets in order to be able to pay a 10 per cent dividend on the bank investment. With an average return of 8 per cent on their loans and investments, losses and expenses of operation must be restricted to half of the gross earnings, or four cents per dollar of earning assets. The difficulties involved in doing this are obvious when it is considered that the average earning assets were probably slightly less than \$50,000. At \$50,000, total gross earnings would be only \$4,000, and losses and expenses must be restricted to \$2,000 in order to pay 10 per cent on the bank investment. If losses and expenses

Table 1. Distribution of Texas Banks According to Volume of Deposits, January, 1929

Deposits	Total Number of Banks	Per Cent of Total	Number of State Banks	Per Cent of Total	Number of National Banks	Per Cent of Total
Under \$50,000	38	3.05	36	5.62	2	0.33
50,000- 99,999	103	8.27	86	13.42	17	2.81
100,000- 199,999	283	22.71	196	30.57	87	14.38
200,000- 299,999	192	15.41	97	15.13	95	15.70
300,000- 399,999	145	11.64	68	10.61	77	12.73
400,000- 499,999	92	7.38	46	7.18	46	7.60
500,000- 599,999	80	6.42	34	5.30	46	7.60
600,000- 799,999	108	8.67	35	5.46	73	12.07
800,000- 999,999	49	3.93	13	2.81	31	5.12
1,000,000-9,999,999	156	12.52	25	3.90	131	21.66
TOTAL	1,246	100.00	641*	100.00	605†	100.00

*Nineteen small state banks among the total of 660 banks did not report their deposits.
 †Twenty-one large city banks with \$10,000,000 or more are omitted here.

should reach \$3,000, the return on the investment would be cut to 5 per cent. With total losses and expenses restricted to \$4,000 in order to come out even, a raise in the salary of the manager from \$1,500 a year to \$2,000, or the loss of \$1,000 would be a serious set back to the normal operations of the bank.

Table 2 also shows that in practically all cases state banks have a considerably larger ratio of deposits to capital and surplus than do national banks. The lower ratio for national banks is due in part to the fact that the minimum capital requirement is greater for national banks. National banks may not be organized with less than \$25,000 capital, while state banks in towns of less than 800 population may organize with \$17,500, and prior to the last decade many state banks were established with only

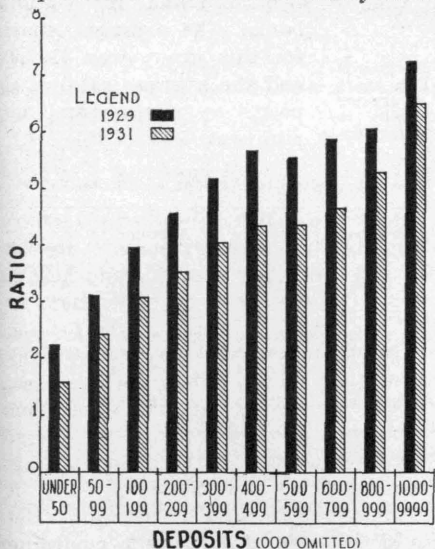


Figure 2. Average ratio of deposits to capital and surplus in the various size groups for January, 1929, and January, 1931.

\$10,000 capital. Many of these banks with very small capital are still operating. Paradoxically, the higher minimum requirement of the national banks seems to put many of them at a disadvantage in competing with state banks. Of course it was presumed that the higher minimum of the National Banking Act would tend to prevent the organization and operation of ruinously small banking units. Yet many national banks do not get the anticipated volume of business, or they lose business to competitors and are left with a low ratio of deposits to the bank investment (Figures 2 and 3).

Table 2. Ratio of Deposits to Capital and Surplus, 1929

Deposits	Number of All Banks	Ratio of Deposits to Capital and Surplus, All Banks	Ratio of Deposits to Capital and Surplus, State and National Banks	
			State	National
Under \$50,000	38	2.23	2.30	1.42
50,000- 99,999	103	3.12	3.28	2.52
100,000- 199,999	283	3.99	4.55	3.16
200,000- 299,999	192	4.58	5.40	3.98
300,000- 399,999	145	5.19	5.96	4.67
400,000- 499,999	92	5.67	6.49	5.05
500,000- 599,999	80	5.56	7.72	4.62
600,000- 799,999	108	5.88	7.00	5.47
800,000- 999,999	49	6.05	8.17	5.27
1,000,000-9,999,999	156	7.23	8.81	7.09
TOTAL	1,246			

Volume of Capital

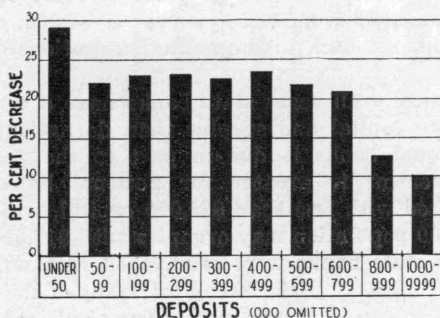


Figure 3. Percentage decrease in ratio of deposits to capital and surplus, 1929 to 1931. This chart indicates that the smaller banks suffer a greater percentage decrease in the ratio of deposits to capital and surplus in a period of declining deposits.

In January, 1929, 158 banks, or about one-eighth of all banks in the State, had less than \$20,000 capital. Most of these had \$10,000 to \$12,500 capital, and the average capital for the 158 banks was only \$13,508. All these were state banks, since \$25,000 is the minimum for national banks. The average deposits for this group was \$102,968 and the average ratio of deposits to capital and surplus was 5.02 (Table 3).

Table 3. Distribution of All Texas Banks According to Amount of Capital, 1929

Capital	Number of Banks	Per Cent of Total	Average Capital per Bank	Average Combined Capital and Surplus	Average Deposits per Bank	Average Ratio of Deposits to Capital and Surplus
\$10,000-19,999	158	12.49	\$ 13,508	\$ 20,528	\$ 102,968	5.02
20,000-29,999	386	30.51	24,075	36,653	212,454	5.80
30,000-49,999	143	11.31	34,091	52,974	284,525	5.37
50,000-99,999	338	26.72	54,414	87,351	507,009	5.80
100,000 and over	240*	18.97	164,396	280,479	1,778,538	6.34
TOTAL	1,265	100.00				

*Twenty-one large city banks with more than \$10,000,000 deposits are not included here.

In contrast with the rapid increase of the ratio of deposits to capital and surplus shown in Table 2 from banks with smallest deposits to the larger banks, there is not a very wide difference between the small and large banks

here. This means that many banks with very small capital have a high ratio of deposits to the bank investment, whereas many of the banks with very small deposits have a relatively large bank investment. This would indicate that so far as the ratio of volume of business to the bank investment is an indicator of the efficiency of the bank, volume of deposits is a better indicator than volume of capital and surplus.

Size and Number of Banks per Town

The large percentage of very small banks in the State is due 1) to the limited amount of business in towns with only one bank and 2) to the over-banked condition of towns with more than one bank. In January, 1929, there were 512 towns and villages that had only one bank. Of the 424 banks with less than \$200,000 deposits in 1929, 322 were in these one-bank towns (Table 4). In these cases the only alternatives to operating what seems definitely to be an uneconomic banking unit are for the banker to increase his business within the community, to broaden his territory, or for the bank to liquidate. Of the 322 Texas villages and towns which had one bank with less than \$200,000 deposits in 1929, 56, or more than one-sixth, were without banks in January, 1931. Undoubtedly the figures for January, 1932, will show a further large decrease in the number of such banks which were in operation in 1929 (Table 4).

Table 4. Distribution of Texas Banks According to Size and the Number of Banks per Town, 1929

Deposits	Number of Banks in One-Bank Towns	Number of Banks in Two-Bank Towns	Number of Banks in Three-Bank Towns	Number of Banks in Four-Bank Towns	Number of Banks in Towns with Five Banks or more
Under \$50,000	38	---	---	---	---
50,000- 99,999	86	16	1	---	---
100,000-199,999	198	67	16	---	2
200,000-299,999	85	80	25	2	---
300,000-399,999	49	67	23	2	4
400,000-499,999	23	51	16	---	2
500,000 and over	33	154	114*	36	56†
TOTAL	512	435‡	195	40	64‡

*Two city banks with \$10,000,000 or more deposits are not included.

†Nineteen large city banks with \$10,000,000 or more deposits are not included.

‡Private banks are included in arriving at the number of banks in a town, but only state and national banks are listed here.

A large number of the very small banks in towns with two or more banks were liquidated or absorbed during 1929 and 1930. Of the 102 such banks with less than \$200,000 deposits in January, 1929, 83 were in two-bank towns, 17 were in three-bank towns, and 2 were in cities with 5 or more banks. By January, 1931, 19, or about 23 per cent, of 83 such banks in two-bank towns had ceased to operate; 7, or 41 per cent, of such banks in three-bank towns had ceased to operate.

The responsibility for the over-banked situation seems to be about equally

divided between state and national banks, although 45 national banks in two-bank towns had less than \$200,000 deposits as compared with 38 state banks. There were 69 two-bank towns with one or both of its banks falling under the \$200,000 mark. In 33 of these, a national bank was organized more recently, while in 32 a state bank was organized more recently.

Fifteen of the 69 towns had their second bank organized from 1900 to 1909, 22 got their second bank from 1910 to 1919, and 32 got their second bank from 1920 to 1928. Of course this does not indicate that government supervisors have been more lax in permitting the organization of new banks since 1920. Many such mistakes prior to 1920 have probably been corrected through liquidation or absorption of one of the banks. But it is a rather serious state of affairs when 32 of the 220 two-bank towns in the state are loaded down with a second bank within a period of nine years, 1920-1928, and one or both of the banks has less than \$200,000.

TEXAS BANKS LIQUIDATED AND ABSORBED FROM JANUARY 1929 TO JANUARY 1931

At the beginning of 1929 there were 1,286 ordinary commercial banks operating in Texas—626 national banks and 660 state banks. During 1929 and 1930, 151 of these were liquidated or absorbed—72 national banks and 79 state banks—and were not replaced by newly chartered banks. Nineteen state banks were closed and liquidated by the State Banking Department and about an equal number of national banks were closed and liquidated by the Comptroller of the Currency. A large percentage of the remainder voluntarily liquidated and ceased to operate, while the others were bought and absorbed by other banks in the same or in neighboring towns. The assumption is made that a very large percentage of banks liquidated were in a very serious condition, although there were probably a few strong banks in the list which gave up their names and were absorbed by other banks.

Capital Stock of Liquidated and Absorbed Banks

Analysis of the banks which ceased to operate during this two-year period reveals some interesting facts about the sort of bank which passes out of the picture during such strenuous times. In the first place, the heaviest casualties were among the banks with \$25,000 or less capital stock. Approximately 50 per cent of the banks that ceased to operate during this period had capital of \$25,000 or less, while only about 40 per cent of the total number of banks operating in January, 1929, were in this class. Casualties were also proportionately heavy among banks with \$30,000 to \$50,000 capital—13.61 per cent of the total liquidated banks fell in this class, while 11.31 per cent of the total banks operating in January, 1929, were in this class (Table 5).

It is interesting to note also that the banks liquidated (and absorbed) had a smaller ratio of deposits to capital and of deposits to capital and surplus than did all the banks operating in January, 1929. All banks with \$10,000 to \$20,000 capital had an average ratio of 7.63 of deposits to capi-

tal, while the banks that were liquidated during the period had an average ratio of only 4.67. The ratios of deposits to capital and surplus were 5.02 and 3.93 respectively (Table 6).

Table 5. Capital Stock of Banks Liquidated and Absorbed from January, 1929, to January, 1931*

Capital Stock	Number Operating January 1929	Per Cent of Total	Number Liquidated 1929-1931	Per Cent of Total Liquidated	Cumulative Per Cent of All Banks	Cumulative Per Cent of Liquidated Banks	Per Cent of Banks Liquidated 1929-1931
\$10,000-19,999	158	12.49	30	20.41	12.49	20.41	18.99
20,000-29,999	386	30.51	48	32.65	43.00	53.06	12.44
30,000-49,999	143	11.31	20	13.61	54.31	66.67	13.99
50,000-99,999	338	26.72	27	18.36	81.03	85.03	7.99
100,000 and over	240†	18.97	22	14.97	100.00	100.00	9.17
TOTAL	1,265	100.00	147‡	100.00			

*January, 1929, figures used for banks that were liquidated as well as for all other banks.
†Twenty-one big city national banks with more than \$10,000,000 each in deposits are not included here.

‡Four banks did not report their capital.

Table 6. Ratio of Deposits to Capital and to Capital and Surplus for All Banks and for Liquidated and Absorbed Banks

Capital	\$10,000 to 19,999	\$20,000 to 29,999	\$30,000 to 49,999	\$50,000 to 99,999	\$100,000 and over
Average capital, all banks	\$ 13,508	\$ 24,075	\$ 34,091	\$ 54,414	\$ 164,396
Average capital, liquidated banks	12,917	24,219	33,875	55,000	206,818
Average surplus, all banks	7,020	12,578	18,883	32,937	116,083
Average surplus, liquidated banks	2,437	6,666	11,292	14,869	103,898
Average deposits, all banks	102,968	212,454	284,525	607,009	1,778,538
Average deposits, liquidated banks	60,341	136,742	212,112	283,847	1,960,666
Ratio of deposits to capital, all banks	7.63	8.82	8.35	9.32	10.82
Ratio of deposits to capital, liquidated banks	4.67	5.65	6.26	5.16	9.48
Ratio of deposits to capital and surplus, all banks	5.02	5.80	5.37	5.80	6.34
Ratio of deposits to capital and surplus, liquidated banks	3.93	4.43	4.70	4.06	6.31

Liquidations and absorptions were almost as extensive among national banks as among state banks. Of a total of 605* national banks, 68, or 11.24 per cent, ceased to operate, and of the 660 state banks, 79, or 11.97 per cent, ceased to operate. Heaviest liquidation among national banks occurred among banks with \$30,000 to \$50,000 capital, with 22.22 per cent discontinued, while the greatest percentage liquidation of state banks was among those with capital of less than \$20,000, 18.99 per cent of these having been discontinued (Table 7).

Legal Minimum Capital Requirements

From the above figures it is clear that liquidations are more common among banks with less than \$50,000 capital stock than among banks with more than \$50,000. State bank supervisors seem to have realized the weakness of small banks and during the past ten years many state govern-

*Twenty-one of the 626 national banks were city banks with \$10,000,000 or more in deposits and are not included here.

ments have raised the minimum capital requirements. In fact, there seems to be a definite tendency to place the minimum for state banks at \$25,000, which is the requirement for national banks. Early in 1930, 29 states required a minimum of \$25,000, 4 required \$10,000, 6 required \$15,000, 1 required \$20,000, 4 required \$50,000, and in the other two states (Rhode Island and Vermont) no minimum is specified. In 1909, 20 states permitted banks to operate with \$10,000 or less.

Table 7. Liquidations and Absorptions of State and National Banks

Capital Stock	State Banks			National Banks			Percentage Distribution of State Banks		Percentage Distribution of National Banks	
	Num- ber Janu- ary 1929	Num- ber Liqui- dated	Per Cent Liqui- dated	Num- ber Janu- ary 1929	Num- ber Liqui- dated	Per Cent Liqui- dated	Per Cent of Total	Per Cent of Those Liqui- dated	Per Cent of Total	Per Cent of Those Liqui- dated
\$10,000-19,999	158	30	18.99	---	---	23.94	37.98	---	---	
20,000-29,999	246	28	11.38	140	20	14.29	37.28	35.44	23.13	29.41
30,000-49,999	89	8	8.99	54	12	22.22	13.48	10.13	8.93	17.65
50,000-99,999	126	9	7.14	212	18	8.49	19.09	11.39	35.04	26.47
100,000 and over	41	4	9.76	199	18	9.05	6.21	5.06	32.90	26.47
TOTAL	660	79	11.97	605	68†	11.24	100.00	100.00	100.00	100.00

*Legal minimum capital for national banks is \$25,000.

†Four banks had more than \$10,000,000 in deposits and are not included.

Presumably legislative bodies and their advisers have assumed that an increase in the minimum capital requirements would force the banking business into larger and more economic units so that bankers would have a better chance to earn fair dividends and assure the community continuous and efficient banking service. In the main, these objects were attained prior to 1920, but the current situation among the country banks seems to indicate that minimum capital requirements are a poor guarantee of adequate-sized banking units.

National and state banking laws have emphasized minimum capital and surplus requirements and have neglected requirements as to volume of business. The result is that frequently banks have an adequate volume of business to sustain a \$20,000 investment, but they are forced by law to maintain capital and surplus of \$30,000. On the other hand, many banks hold to the minimum of \$20,000 and build up a business of \$400,000 or \$500,000, leaving little protection for depositors.

During the past decade, however, the government regulatory bodies have been placing more emphasis upon the ability of the banks to acquire an adequate volume of business. Applicants for bank charters have been called upon to show that they would be able to get a reasonable amount of business. It is probable that more and more emphasis will be placed on the prospective business of the bank and less emphasis on the amount of capital. That is, first, an adequate volume of deposits must be assured and, second, the capital requirement will be set at an amount which is a

reasonable safeguard for depositors. As to this ratio of deposits to capital, some few states are now requiring a maximum ratio of 5 or 6 to 1 for country banks. That is, when the business grows to a certain point the banker is required to increase his capital.

Analysis of the banks liquidated and absorbed in Texas from January, 1929, to January, 1931, shows a remarkable correlation between liquidations and small volume of deposits. It indicates that volume of deposits and the ratio of deposits to capital are much better measures of the strength of a bank than is the amount of capital.

Deposits of Liquidated and Absorbed Banks

Approximately 50 per cent of the total number of banks in the State in January, 1929, had less than \$300,000 deposits, while 75 per cent of the banks liquidated and absorbed during 1929 and 1930 were in this class. That is, the average rate of liquidation was just three times as great for the smaller banks (Table 8).

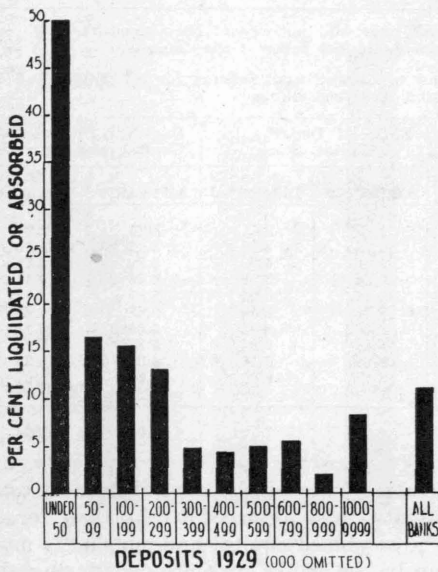


Figure 4. Percentage of liquidations and absorptions, 1929-1931, in each size class.

Ratio of Deposits to Capital and Surplus

Banks with a very small volume of deposits are under a severe handicap in two distinct ways: 1) they must carry a heavy overhead expense per dollar of earning assets and 2) they almost invariably have a low ratio of earning assets to the bank investment. If we take total deposits as a rough measure of earning assets, the average ratio of earning assets to capital and surplus among the banks with less than \$50,000 deposits in 1929 was 2.23 as compared with 5.19 for banks with \$300,000 to \$399,999 deposits. The ratio is still greater for larger banks (Table 9).

It will be observed that surplus is a much larger item in the ratios among the larger banks. Among the 141 banks with less than \$100,000 deposits the total surplus was only 28 per cent of the total capital as compared with 50 per cent for banks with \$300,000 to \$399,999 deposits. Ordinarily, even if earnings were ample, there would be little inducement to accumulate surplus in a bank which already has a large investment in relation to its deposits. There is a notable tendency among banks with a small volume of

deposits to restrict their surplus, and also their capital, where possible, to the bare legal minimum.

Table 8. Percentage of All Texas Banks Liquidated and Absorbed January, 1929, to January, 1931

Deposits	Number in 1929	Number Liquidated	Per Cent Liquidated	Cumulative Per Cent of All Banks	Cumulative Per Cent of Banks Liquidated
Under \$ 50,000	38	19	50.00	3.05	13.57
50,000- 99,999	103	17	16.51	11.32	25.71
100,000- 199,999	283	44	15.55	34.03	57.14
200,000- 299,999	192	25	13.02	49.44	75.00
300,000- 399,999	145	7	4.83	61.08	80.00
400,000- 499,999	92	4	4.35	68.46	82.56
500,000- 599,999	80	4	5.00	74.88	85.72
600,000- 799,999	108	6	5.56	83.55	90.00
800,000- 999,999	49	1	2.04	87.48	90.71
1,000,000-9,999,999	156	13	8.33	100.00	100.00
TOTAL	1,246*	140†	11.24		

*Nineteen of the 1,265 banks, chiefly small ones, did not report their deposits.

†Eleven small banks among the 151 liquidated did not report their deposits.

Table 9. Ratio of Deposits to Capital and to Capital and Surplus for all Banks and for Liquidated and Absorbed Banks

Deposits	Ratio of Deposits to Capital Stock		Ratio of Deposits to Capital and Surplus	
	All in 1929	For Banks Liquidated	All in 1929	For Banks Liquidated
Under \$50,000	2.67	2.51	2.23	2.21
50,000- 99,999	4.06	3.92	3.12	3.30
100,000- 199,999	5.46	4.59	3.99	3.68
200,000- 299,999	6.76	5.76	4.58	4.57
300,000- 399,999	7.76	6.04	5.19	4.74
400,000- 499,999	8.78	9.88	5.67	6.83
500,000- 599,999	9.64	8.82	5.56	6.11
600,000- 799,999	9.69	6.84	5.88	5.26
800,000- 999,999	9.69	5.46	6.05	5.32
1,000,000-9,999,999	13.18	10.66	7.23	6.67
TOTAL	9.95	7.79	6.05	5.54

It should be noted also that the ratio of deposits to capital in most cases is considerably lower for the liquidated and absorbed banks than for all banks, while the ratio of deposits to combined capital and surplus is much nearer that for all banks. Obviously the banks discontinued during this period either had never accumulated much surplus or they had used much of it to cover losses or to pay dividends. At least, these banks maintained a ratio of deposits to combined capital and surplus approximately the same as that for all banks, and the ratio was maintained by reducing surplus.

On first thought it might be assumed that only banks with very small capital stock have less than \$300,000, but as a matter of fact 403, or about 65 per cent, of the 616 banks in this class had \$25,000 or more capital. These figures indicate that a \$25,000 minimum capital falls far short of assurance of an adequate volume of business. That is, at the end of the

comparatively prosperous year of 1928, a very large percentage of Texas country banks had what is generally assumed to be the desirable minimum capital of \$25,000 and still many of these had an inadequate volume of business for economic operation. Not only are there many banks with what is generally considered adequate capital found among the banks with a slender volume of deposits, but also these banks on the whole had a greater percentage of liquidations than did the banks with smaller capital. More than one-sixth of the banks with \$25,000 to \$49,999 capital and less than \$300,000 deposits were liquidated as compared with one-eighth of those with less than \$25,000 capital (Table 10).

Bank Liquidations According to the Number of Banks per Town

More than 40 per cent of the total liquidations and absorptions occurred in towns which had only one bank. But since approximately 40 per cent of the total number of banks in the State in 1929 were in one-bank towns,

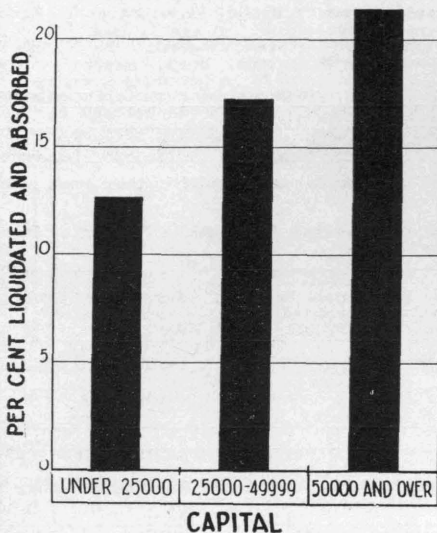


Figure 5. Percentage of liquidations among 616 banks with less than \$300,000 deposits with various amounts of capital stock.

the percentage of liquidations was about the same as for all banks. In fact the highest percentage of liquidations and absorptions occurred in towns with three banks and the next highest in towns with five banks (Table 12), although it is probable that a larger percentage of the banks in the large towns were absorbed by other banks and that actual liquidations were heavier in the smaller towns (Figure 6).

In the smaller towns bank liquidations and absorptions were restricted largely to banks with very low volume of deposits and with comparatively low ratios of deposits to the bank investment. Thus the average deposits of 370 state banks in one-bank towns in January, 1929, was \$169,689, while the average for the 42 banks that reported deposits and were discontinued during 1929 and 1930 was only \$79,398. The average deposits for all national banks in one-bank towns was \$281,345, as compared with \$132,444 for banks that were discontinued. Similarly the discontinued banks in two-bank and three-bank towns had an average of about half as large deposits as the average for all banks in these towns. But in towns with

four or five banks many liquidations and absorptions occurred among the larger banks (Tables 14 and 15).

Table 10. Capital Stock of all Banks and of Liquidated or Absorbed Banks with Various Amounts of Deposits

Capital Stock	Banks with less than \$100,000 Deposits			Banks with Deposits of \$100,000 to \$199,999			Banks with Deposits of \$200,000 to \$299,999		
	All Banks	Number Liquidated	Per Cent Liquidated	All Banks	Number Liquidated	Per Cent Liquidated	All Banks	Number Liquidated	Per Cent Liquidated
Less than \$25,000	100	25	25.00	98	7	7.14	15	---	---
25,000-49,999	40	11	27.50	162	30	18.52	117	14	11.97
50,000 and over	1	---	---	23	7	30.43	60	11	18.33
TOTAL	141	36	25.71	283	44	15.55	192	25	13.02

Table 11. Ratio of Deposits to Capital Stock of Liquidated and Absorbed Banks with Less than \$300,000 Deposits*

Capital Stock	Banks with less than \$100,000 Deposits			Banks with Deposits of \$100,000 to \$199,999			Banks with Deposits of \$200,000 to \$299,999		
	Average Capital Stock	Average Deposits	Ratio of Deposits to Capital	Average Capital Stock	Average Deposits	Ratio of Deposits to Capital	Average Capital Stock	Average Deposits	Ratio of Deposits to Capital
Under \$25,000	\$13,600	\$50,355	3.70	\$17,857	\$121,857	6.82	---	---	---
25,000-49,999	26,136	71,342	2.73	27,233	137,515	5.05	\$28,607	\$233,781	8.17
50,000 and over	---	---	---	53,571	151,887	2.84	54,545	239,474	4.39

*The difficulties of the banks with relatively large capital are revealed in their small ratios of deposits to capital.

Table 12. Percentage of Banks Liquidated and Absorbed According to Number of Banks per Town

Number of Banks Per Town	Total Number of Banks, 1929	Number of Banks Liquidated, 1929-1931	Per Cent of Banks Liquidated
1	530	64	12.08
2	436	42	9.63
3	195	29	14.87
4	40	3	7.50
5	64	9	14.06
Total	1,265	147	

Table 13. Percentage of State and National Banks Liquidated and Absorbed According to Number of Banks per Town*

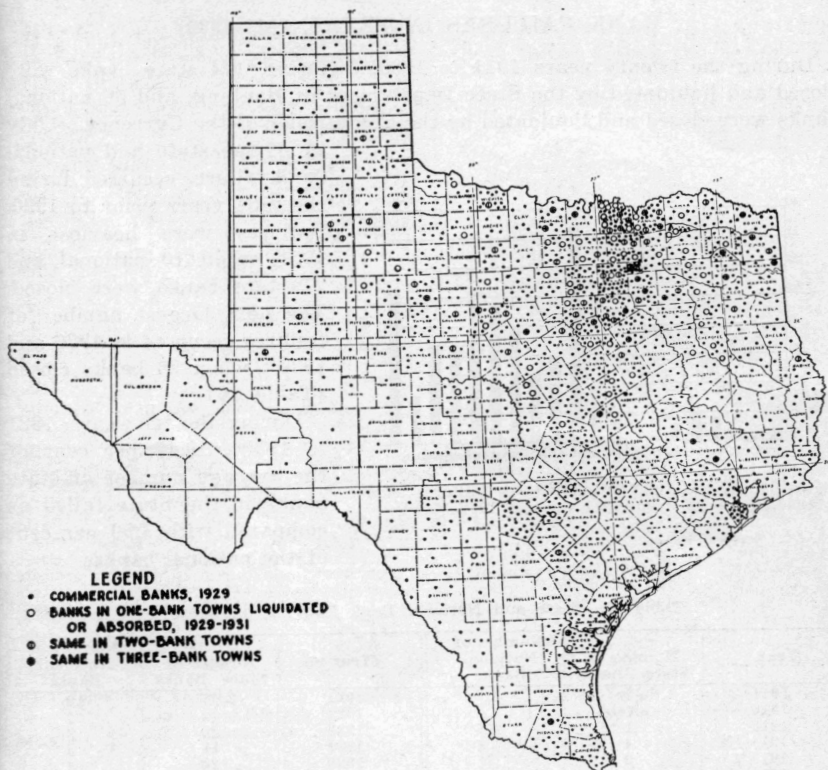
Number of Banks per Town	Total Number Banks, 1929		Number of Banks Liquidated, 1929-1931		Per Cent of Banks Liquidated	
	State	National	State	National	State	National
1	389	141	48	16	12.34	11.35
2	177	259	14	28	7.91	10.81
3	62	133**	13	16	20.97	12.03
4	11	29	1	2	9.09	6.90
5	21	43†	3	6‡	14.29	13.96
TOTAL	660	605	79	68		

*State and national banks fared about the same in towns with the same number of banks, except that state bank liquidations were higher in three-bank towns.

**Two banks with more than \$10,000,000 deposits not included.

†Nineteen banks with more than \$10,000,000 deposits not included.

‡Four large city banks not included.



LEGEND

- COMMERCIAL BANKS, 1929
- BANKS IN ONE-BANK TOWNS LIQUIDATED OR ABSORBED, 1929-1931
- ◐ SAME IN TWO-BANK TOWNS
- ◑ SAME IN THREE-BANK TOWNS

Figure 6. Number of commercial banks located in the various counties in January, 1929. The map indicates the counties with banks that were liquidated and absorbed during 1929 and 1930. Also, the map shows the number of banks per town where liquidations or absorptions occurred.

Table 14. Comparison of Liquidated and Absorbed State Banks with All State Banks in 1929

Banks per Town	Average Deposits per Bank		Ratio Deposits to Capital Stock		Ratio Deposits to Capital and Surplus	
	All Banks	Liquidated Banks	All Banks	Liquidated Banks	All Banks	Liquidated Banks
1	\$ 169,689	\$ 79,398	7.66	4.56	5.25	3.88
2	418,493	206,323	9.85	5.92	6.74	4.54
3	476,961	282,697	8.78	6.15	6.15	5.18
4	732,748	819,000	8.96	5.46	6.15	5.32
5	1,166,342	2,735,664	11.13	13.13	8.09	8.10

Table 15. Comparison of Liquidated and Absorbed National Banks and All National Banks in 1929

Banks per Town	Average Deposits per Bank		Ratio Deposits to Capital Stock		Ratio Deposits to Capital and Surplus	
	All Banks	Liquidated Banks	All Banks	Liquidated Banks	All Banks	Liquidated Banks
1	\$ 281,345	\$ 132,444	7.66	4.94	4.92	3.80
2	537,457	283,056	9.09	5.78	5.41	4.52
3	1,125,333	766,157	10.34	7.73	5.90	4.98
4	1,750,219	710,084	10.80	9.47	5.49	5.42
5	9,851,380	3,362,103	14.16	9.84	8.18	6.73

BANK FAILURES IN TEXAS, 1911-1930

During the twenty years 1911 to 1930, inclusive, 174 state banks were closed and liquidated by the State Department of Banking, and 56 national banks were closed and liquidated by the Comptroller of the Currency. Only

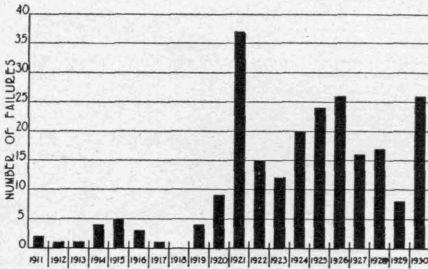


Figure 7. State and national bank failures combined, by years, from 1911 through 1930.

21 of the state and national bank failures occurred during the nine years prior to 1920. Failures were heaviest in 1921, when 10 national and 27 state banks were closed. The next largest number of failures occurred in 1926 and 1930*, when 26 banks closed (Table 16).

During the ten years, 1921 to 1930*, 19.47 per cent of the average number of state banks in the State failed as compared with 8.50 per cent of the national banks.

Table 16. State and National Bank Failures, 1911-1930

Year	Number of State Banks	Number of National Banks	Year	Number of State Banks	Number of National Banks
1911	2	--	1921	27	10
1912	1	--	1922	14	1
1913	1	--	1923	10	2
1914	4	--	1924	15	5
1915	2	3	1925	20	4
1916	2	1	1926	22	4
1917	1	--	1927	10	6
1918	--	--	1928	12	5
1919	4	--	1929	6	1
1920	8	1	1930	13	13*

*National bank figures not available for last two months of 1930.

State Bank Failures

Of the 174 state bank failures from 1911 to 1930, 62, or about 36 per cent, were in operation five years or less. Approximately 10 per cent were operated one year or less (Table 17). Three banks that were organized in 1920 failed in 1921; three that were organized in 1925 failed in 1926; four banks organized in 1927 failed in 1928; and two that were organized in 1928 failed in 1929. Of the 25 banks that lasted only two to three years, nine were organized at the height of the post-war boom in 1919; two in 1918; and five in 1927. Dates of organization of the other nine banks were well scattered through the period.

Thirty-seven of the 211 state banks organized in the prosperous period 1918 to 1920 were doomed to failure before the end of 1930; 12 were closed before the end of 1921, and 25 were closed before the end of 1925. Twelve

*National bank figures are not available for the last two months of 1930.

of the 82 state banks organized in the prosperous years of 1927 and 1928 failed before the end of 1930; eight of these failed before the depression started in 1929.

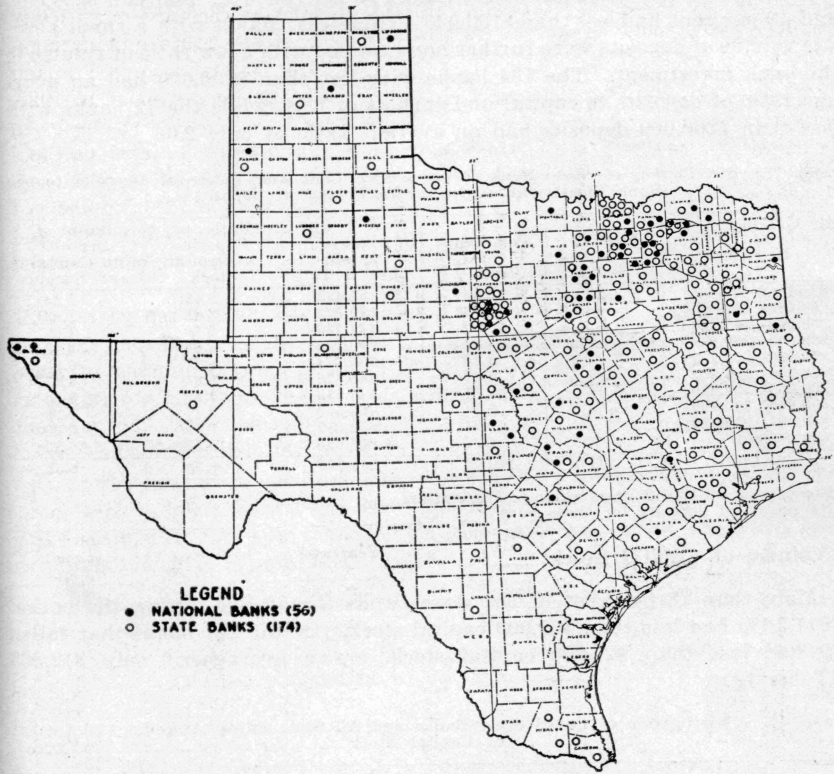


Figure 8. This map shows the number of state and national bank failures by counties from 1911 through 1930.

Table 17. Period of Operation of Failed State Banks

Number of Years Operated	Number of Banks	Per Cent of Total
1 or less	15	8.61
2- 3	25	14.40
4- 5	22	12.65
6- 7	18	10.35
8- 9	19	10.92
10-11	19	10.92
12-13	15	8.61
14-15	11	6.31
16-17	16	9.19
18-19	5	2.88
20-21	8	4.59
22	1	0.57
TOTAL	174	100.00

Volume of Deposits

Approximately 78 per cent of the banks that failed during the period 1911-1930 had less than \$300,000 deposits, 65 per cent had less than \$200,000, and 42 per cent had less than \$100,000 (Table 18). Banks with a small absolute volume of deposits were further handicapped with a low ratio of volume to the bank investment. The 134 banks with less than \$300,000 had an average ratio of deposits to capital and surplus of 3.41, while the 72 banks with less than \$200,000 deposits had an average ratio of only 2.66.

Table 18. Distribution of State Bank Failures, 1911-1930, and Ratios of Deposits to the Bank Investment, According to Volume of Deposits*

Deposits	Number of Banks	Per Cent of Total	Average Deposits Per Bank	Ratio of Deposits to Capital Stock	Ratio of Deposits to Capital and Surplus
Under \$ 50,000	28	16.36	\$ 34,425	2.46	2.24
50,000- 99,999	44	25.74	70,315	3.23	2.93
100,000- 199,999	39	22.82	141,733	4.89	4.37
200,000- 299,999	23	13.44	243,136	4.63	4.13
300,000- 399,999	7	4.10	336,724	8.27	6.83
400,000- 499,999	8	4.67	448,526	5.61	5.47
500,000- 599,999	6	3.51	543,856	9.89	8.44
600,000- 799,999	4	2.34	723,565	8.27	5.95
800,000- 999,999	3	1.75	870,812	6.15	5.25
1,000,000 and over	9	5.27	1,606,996	13.52	10.23
TOTAL	171†	100.00	259,389	6.53	5.62

*Deposits as of 1 to 2 years prior to liquidation.

†No record of deposits for three banks.

Volume of Capital Stock

More than 58 per cent of the state banks that failed during the period 1911-1930 had less than \$30,000 capital stock. Of the 174 banks that failed 49 had less than \$20,000 capital stock, or an average of only \$12,367 (Table 19).

Table 19. Classification of Failed State Banks and All State Banks According to Amount of Capital Stock

Capital Stock	Number of Failed Banks	Per Cent of Total	Average Capital Stock per Bank at Date of Suspension
\$10,000-19,999	49	28.16	\$ 12,367
20,000-29,999	52	29.90	23,654
30,000-49,999	20	11.50	33,125
50,000-99,999	31	17.82	55,323
100,000 and over	22	12.62	119,091
TOTAL	174	100.00	

National Bank Failures

Most of the national banks that failed from 1911 to 1930 had been in operation much longer than the state banks. Only 10 national banks failed within five years of their date of organization. This is about 18 per cent of the total number of failures as compared with 36 per cent for state banks. Twenty-eight, or 50 per cent of the 56 national banks, had been in operation more than 20 years, and 42 had been in operation more than 10 years (Table 20).

Only 4 of the failed national banks were organized during the prosperous years of 1918, 1919, and 1920, in contrast with 37 of the failed state banks. Also, only 6 of the national banks were organized after 1920, as compared with 31 state banks. That is, about 10 per cent of the failed national banks were organized after 1920 as compared with 18 per cent of state banks.

Table 20. Period of Operation of Failed National Banks

Number of Years Operated	Number of Banks	Per Cent of Total
1 or less	2	3.57
2-3	5	8.93
4-5	3	5.36
6-10	4	7.14
11-20	14	25.00
21-30	17	30.36
31-40	5	8.93
41-50	6	10.71
TOTAL	56	100.00

Volume of Deposits

As in the case of the state banks, the heaviest failures were among the banks with a small volume of deposits. About two-thirds of the national banks suspended had less than \$300,000 deposits and about one-third had less than \$200,000 (Table 21).

Table 21. Deposits of National Banks which Failed, 1911 to 1930*

Deposits	Number of Banks	Per Cent of Total
Under \$ 50,000	1	2.38
50,000-99,999	13	30.96
100,000-199,999	9	21.42
200,000-299,999	5	11.91
300,000-399,999	0
400,000-499,999	5	11.91
500,000-599,999	2	4.76
600,000-799,999	3	7.14
800,000-999,999	2	4.76
1,000,000 and over	2	4.76
TOTAL	42†	100.00

*Deposits at date of suspension.

†No report on deposits of 14 banks.

Table 22. Capital Stock of National Banks which Failed from 1911 to 1930

Capital Stock	Number of Banks	Per Cent of Total
\$ 25,000-29,999	14	25.00
30,000-49,999	10	17.86
50,000-99,999	15	26.78
100,000 and over	17	30.36
TOTAL	56	100.00

Volume of Capital Stock

Approximately 43 per cent of the national banks that failed during this 20-year period had less than \$50,000 capital stock, and 25 per cent of the banks had less than \$30,000 (Table 22).

ANALYSIS OF THE OPERATIONS OF 154 TEXAS NATIONAL BANKS

The comparative economic efficiency of banks of various sizes is indicated in a study of the operations of 154 national banks. This is approximately one-fourth of all national banks in the State and the banks are sufficiently scattered to be representative. Each of these banks supplied an itemized statement of its resources and liabilities. Also, gross earnings, expenses, and losses for the previous year were reported in detail.

Analysis of these statements reveals 1) the rate of earnings on the bank investment, 2) the rate charged on loans, and 3) the amount paid on deposits. That is, it shows the economy of banks of various sizes from the standpoint of the banker, the borrower, and the depositor. Size here is determined by the volume of earning assets, a more accurate measure than volume of deposits. Earning assets include interest-bearing deposits in

Table 23. Average Gross Earnings, Expenses, and Net Earnings (before losses)* of 154 National Banks by Size Groups

Earning Assets† (000 omitted)	Number of Banks	Gross Earnings Per Dollar of Earning Assets (in Cents)	Expenses Per Dollar of Earning Assets (in Cents)	Net Earnings Per Dollar of Earning Assets (in Cents)	Ratio of Earning Assets to Bank Investment‡	Net Earnings Per Dollar of Bank Investment‡ (in Cents)
Less than \$200	23	8.31	6.02	2.29	3.10	7.10
200- 399	39	7.99	5.14	2.85	3.88	11.07
400- 599	30	7.22	4.54	2.68	4.18	11.20
600- 999	26	7.20	4.78	2.42	4.69	11.32
1,000-3,999	26	7.14	4.85	2.29	5.96	13.65
4,000 and over	10	6.29	4.32	1.97	7.52	14.81

*Losses are not deducted in this phase of the study because of the irregularity of the banks in writing off losses. That is, the figures cover only one year of the bank's operation and in the case of some banks extremely heavy losses are deducted, while in other cases many doubtful notes are carried over with hopes of collection during the next year.

†Average of June 30 and December 31 reports.

‡Includes capital, surplus, and undivided profits.

other banks and real estate that is earning money for the bank, as well as all loans and security investments. The "total earning assets" figure used is an average of the June 30 and December 31 reports, as are the figures on deposits and other liabilities.

The study shows that there is a fairly steady increase in the net returns on bank capital from small banks with less than \$200,000 in earning assets to the large banks with \$4,000,000 or more.* The average net return on the bank investment (capital, surplus, and undivided profits) for the 23 small

*Of the 154 banks, 43 reported for the year ending June 30, 1923; 19 reported for the year ending June, 1929; and 92 reported for the year ending June, 1930. Although there was some change in general business conditions during these three years, the figures for banks reporting in all three of the years do not indicate vital changes in expenses and gross earnings.

banks was 7.10 per cent as compared with 14.81 per cent for the 10 banks with more than \$4,000,000 in earning assets. Gross earnings per dollar

of earning assets, however, decline from 8.31 cents in the smallest banks to 6.29 in the largest banks. Expenses per dollar of earning assets are only about two-thirds as much in the largest banks as in the smallest banks. In Table 23 the 154 banks are divided into groups according to the amount of their earning assets, or their volume of business, and the gross earnings, net earnings, and the ratio of earning assets to capital are given for each group (Figure 9).

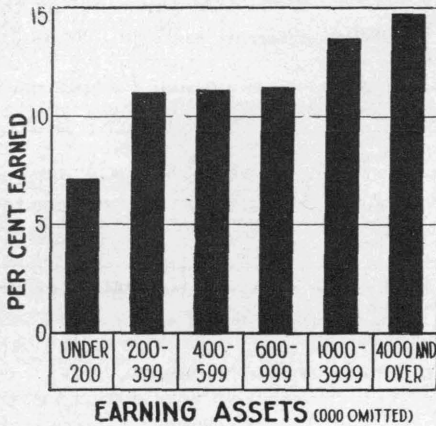


Figure 9. Average earnings on the bank investment (capital, surplus, and undivided profits) for groups of banks of various sizes.

Gross Earnings

That gross earnings per dollar of earning assets are larger for the small banks seems to be due largely to 1) the fact that the smaller banks have a larger percentage of their assets in the form of local loans, which bear a higher rate than do bonds, acceptances, or deposits in other banks (Table 24 and Fig. 10), and 2) higher rates on loans because of ineffective competition in the smaller towns.

The percentage of total income of the smaller banks which is derived from loans is of course greater than the figures in Table 24 would indicate, since loans yield a larger return than do investments or deposits. Thus, banks in the first group had an average of 72 per cent of their earning assets in loans, while 84 per cent of their total income was derived from loans. Table 25 shows the percentage of gross earnings derived from the various sources. The averages are for the 111 banks

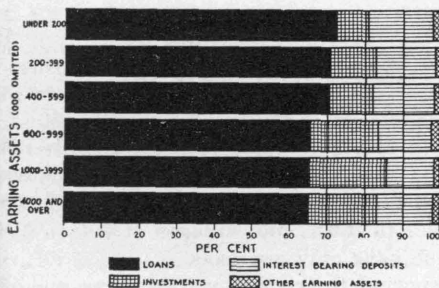


Figure 10. Percentage distribution of earning assets among groups of banks with various amounts of earning assets. It will be noted that there is little variation in the per cent of total earning assets which is in loans and investments combined.

which reported sources of earnings in detail, and they were calculated by dividing the total income in the various classifications by the number of banks.

Table 24. Percentage Distribution of Earning Assets

Earning Assets (000 omitted)	Loans and Discounts	Bonds*, Stocks, and Mortgages	Interest-Bearing Deposits in Other Banks	Other Earning Assets†
Less than \$200	72.05	8.63	17.34	1.98
200- 399	70.47	12.30	15.85	1.38
400- 599	70.45	11.70	16.25	1.60
600- 999	65.42	18.06	14.02	2.50
1,000-3,999	65.12	20.61	12.53	1.74
4,000 and over	64.78	18.23	14.94	2.05

*Bonds to secure circulation are not included, since the return on these bonds is very small after deducting taxes and expenses of note issue.

†Includes real estate other than the bank building which is yielding a return and a calculated portion of the bank building which is rented.

Table 25. Percentage Distribution of Gross Earnings

Earning Assets (000 omitted)	Number of Banks Re- port- ing	Interest on Loans	Interest on Invest- ments*	Interest on De- posits	Rent on Bank Build- ing	Rent on Other Real Estate	Domes- tic Exchan- ge and Collect- ions	Other Earn- ings	Total
Less than \$200	18	84.31	2.86	5.51	0.46	1.35	4.04	1.47	100.00
200- 399	30	81.10	6.50	4.34	1.60	0.27	4.11	2.08	100.00
400- 599	18	80.40	9.24	4.02	1.48	0.25	2.79	1.82	100.00
600- 999	18	73.34	14.89	4.06	1.51	0.99	2.57	2.64	100.00
1,000-3,999	18	68.45	15.82	3.84	2.22	0.86	3.60	5.21	100.00
4,000 and over	9	70.04	17.20	3.33	3.81†	0.42	1.93	3.27	100.00

*Includes acceptances and commercial paper.

†More than half in one bank.

Gross earnings declined from the first through the third group in almost the same proportion that the percentage of loans to total earning assets declined. The definitely lower level of gross earnings in the banks of the last group is probably due chiefly to the lower interest rates on loans in the larger towns and cities. Most of these banks are located in cities of 50,000 population or more, where the prevailing rates are 6 to 8 per cent as compared with rates of 8 to 10 per cent in the smaller towns. Most of the banks in the fifth group are in towns of 5,000 to 30,000, while most of those of the fourth group are in towns of 2,000 to 7,500, and most of those in the third group are in towns of 1,500 to 3,500. Those in the first and second groups are in most cases in towns and villages of 300 to 2,000 population, about one-third of which have only one bank.

Ninety-two of the 154 banks reported their earnings on loans and discounts as distinct from bonds, acceptances, or other securities. The average rate of returns on loans and discounts varies from 9.37 per cent in the first group to 6.90 per cent in the last group. It will be observed in Table 26 that the decline is fairly regular from the second to the fifth group and abrupt from the fifth to the sixth group. The banks in the first four groups

are in smaller towns and may be considered purely country banks, while those of the last two groups, particularly the last group, have many of the characteristics of large city banks. Rates among the latter two groups are set under different competitive conditions and there is probably better diversification of loans and less risk.

Table 26. Average Interest on Loans and Discounts for 92 Banks Which Reported This Item Separately

Earning Assets (000 omitted)	Number of Banks	Average Interest on Loans and Discounts*
Less than \$200	15	9.37
200- 399	26	9.36
400- 599	14	8.77
600- 999	14	8.45
1,000-3,999	15	8.13
4,000 and over	8	6.90

*Average of percentages.

Expenses

Analysis of the operating expenses of the 154 banks reveals a wide variation between the smallest and the largest banks. The five groups of larger banks operate with 70 to 85 per cent of the expenses per unit of business that the smallest banks have. To put it in another way, if the banks with less than \$200,000 in earning assets did not charge higher rates on loans or in some way maintain higher gross earnings per unit of business than the largest banks do, their average return on capital would be almost nothing. The average expense of the smallest banks is 6.02 cents per dollar of earning assets while the gross earnings of the largest banks amount to only 6.29.

The average expense ranges from 6.02 cents for the smallest banks to 4.32 for the largest banks. From the standpoint of the community the difference in efficiency is greater than these figures would indicate, since the small banks charge more for loans and pay less for deposits. If the interest which is paid out to depositors is deducted from total expenses, the range is from 5.51 cents in the smallest banks to 2.50 in the largest banks (Table 27 and Fig. 11). The difference is approximately two cents between the first and fourth groups.

Table 27. Total Expenses and Interest on Deposits, in Cents Per Dollar of Earning Assets

Earning Assets (000 omitted)	Total Expenses*	Interest on Deposits	Total Expenses Less Interest to Depositors
Less than \$200	6.02	0.51	5.51
200- 399	5.14	0.64	4.50
400- 599	4.54	0.80	3.74
600- 999	4.78	1.24	3.54
1,000-3,999	4.85	1.61	3.24
4,000 and over	4.32	1.82	2.50

*Losses not included.

Table 28. Interest Payments on Deposits

Earning Assets (000 omitted)	Number of Banks Reporting	Per Cent of Banks Having Time Deposits (June 30)	Per Cent of Time Deposits to Total Deposits* (June 30)	Average Interest per Dollar of Total Deposits* (in Cents)
Less than \$200	18	44.4	5.0	0.70
200- 399	30	70.0	9.6	0.86
400- 599	18	61.1	11.7	1.24
600- 999	18	77.7	18.5	1.62
1,000-3,999	18	83.3	31.9	1.87
4,000 and over	9	100.00	31.1	2.08

*Does not include money due to other banks.

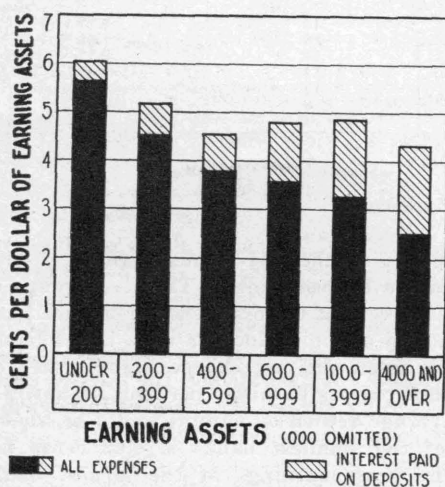


Figure 11. Variation in total expenses per unit of business among groups of banks of various sizes. This chart indicates, also, the wide variation in payments to depositors and in total expenses exclusive of payments to depositors.

Of the 18 banks in the first group which classified their deposits, 10 did not carry time deposits in any form. Of 30 banks in the second group which reported types of deposits, 9 carried no time deposits. Table 28 shows the extent to which the 111 banks which classified their deposits pay interest to depositors. It should be noted that the largest banks pay approximately three times as much per dollar of total deposits as do the smallest banks and that among the purely country banks depositors receive more than twice as much from banks of the fourth group as from those of the first group.

There were 33 among the 111 banks which did not carry time deposits. It might be expected that this was due to the absence of competitor banks, but 15 of these banks were in two-bank towns, and 7 were in three-bank towns. It was observed in some of the towns with two or more banks that none of the banks carried time deposits.

Another interesting comparison is that of the total paid for salaries and "other expenses" among the different classes of banks. These items are by far the greatest burdens to the small bank, although of course salaries are usually not very high per employee. The "other expenses" item includes such items as light, heat, stationery, stamps, telephone, janitor's supplies, insurance, surety bonds, and in case the bank does not own the building it includes rent. These items and salaries amount to 4.68 cents per dollar of earning assets for the smallest banks, 2.92 for banks in the fourth group, and 1.85 cents for the largest banks (Table 29).

Table 29. Expenses Other Than Taxes and Interest

Earning Assets (000 omitted)	Salaries and Wages	"Other Expenses"	Combined
Less than \$200	3.18	1.50	4.68
200- 399	2.53	1.25	3.78
400- 599	2.06	0.94	3.00
600- 999	1.99	0.93	2.92
1,000-3,999	1.75	0.89	2.64
4,000 and over	1.17	0.68	1.85

While the salaries-and-wages item in the first group amounts to more than half the total expenses, the average total salary-and-wage bill for these banks was only \$4,560 per bank. This item was almost half of the total expenses for the banks in the second group, yet the average amount paid in wages and salaries per bank was only \$6,788.

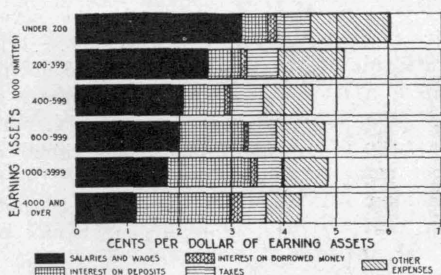


Figure 12. Distribution of expenses for groups of banks of various sizes.

Table 30 and Fig. 12 show the various items of expenses reduced to cents per dollar of earning assets and Table 31 shows the percentage distribution of expenses among the various items. The latter table emphasizes the decline of ordinary operating expenses among the larger banks and the increase in payments to depositors.

Table 30. Itemized Expenses Per Dollar of Earning Assets, in Cents

Earning Assets (000 omitted)	Total Expenses	Salaries and Wages	Interest on Deposits	Interest on Borrowed Money	Taxes	Other Expenses
Less than \$200	6.02	3.18	0.51	0.16	0.67	1.50
200- 399	5.14	2.53	0.64	0.12	0.60	1.25
400- 599	4.54	2.06	0.80	0.11	0.63	0.94
600- 999	4.78	1.99	1.24	0.08	0.54	0.93
1,000-3,999	4.85	1.75	1.61	0.12	0.48	0.89
4,000 and over	4.32	1.17	1.82	0.21	0.44	0.68

The figures on gross earnings and expenses indicate that on the average the smaller banks charge more for loans and pay much less for deposits. In many cases these banks are located in one-bank towns and the communities might be content to carry the burden of an inefficient banking unit in order to have banking facilities nearby. But unfortunately many of them are located in towns with two or more banks. The total banking business is barely adequate for one bank, yet two or three uneconomic banking units are eking out an existence at the expense of the community.

Of the 62 banks with less than \$400,000 in earning assets, for instance, 22 are in one-bank towns, 34 are in two-bank towns, and 6 are in three-bank towns. Of the 34 two-bank towns, 11 have a population of 1,000 or

less, 14 have between 1,000 and 2,000, and 8 of the remaining 9 towns have between 2,000 and 3,000. One of the three-bank towns has a population of less than 1,000 and another has 1,500. The combined population of the 6 three-bank towns is 15,693, or an average of 2,615.

Figures presented by the banks show some of the disadvantages of too

Table 31. Percentage Distribution of Expenses

Earning Assets (000 omitted)	Salaries and Wages	Interest on Deposits	Interest on Borrowed Money	Taxes	Other Expenses	Total
Less than \$200	52.94	8.40	2.64	11.13	24.89	100.00
200- 399	49.23	12.42	2.26	11.81	24.28	100.00
400- 599	45.28	17.51	2.49	13.94	20.78	100.00
600- 999	41.69	25.78	1.70	11.37	19.46	100.00
1,000-3,999	36.00	33.20	2.39	9.99	18.42	100.00
4,000 and over	27.10	42.32	4.77	10.08	15.73	100.00

many banks. Seventeen communities, six with one bank and eleven with two banks, were selected to illustrate this point. All towns have less than 2,500 population and all are located in similar agricultural areas. The total bank deposits per town range from \$225,000 to \$850,000. The banks in the one-bank towns paid an average of 1.1 per cent on total deposits and charged an average of 7.4 per cent on loans, while the figures for one bank in each of the 11 two-bank towns show an average of 0.7 per cent paid on deposits and 9.8 per cent charged on loans. Average net earnings (before losses) to the bank investment were approximately 9.1 per cent for each of the groups.

Net Earnings to Earning Assets

If the 62 banks in the first two groups had exceptionally heavy burdens in paying salaries and other ordinary running expenses, they recouped 1) by paying very little on deposits, 2) by having a larger percentage of their funds in local loans (although such investments probably carry greater risks than do bonds, acceptances, etc.), and 3) by charging higher rates on loans. The average net returns for each dollar of earning assets is about the same as that of the larger banks, except those with earning assets of more than \$4,000,000 (Table 23).

Ratio of Earning Assets to Bank Investment*

The struggles of the small banks do not end, however, with their fair showing in net returns per dollar of earning assets. If they did, the chief inadequacies of the small banking units would consist in the higher rates charged customers for loans and the smaller amounts paid to customers for deposits. But most of the smaller banks find themselves with a low ratio of earning assets to capital invested by the bank itself, which makes it very difficult to earn an adequate return for the stockholders. One illustration should make this point clear. The 23 banks in the first group had an

*Consists of capital, surplus, and undivided profits.

average of only 3.10 times as much earning assets as they had in capital, surplus, and undivided profits. The net returns for each dollar of earning assets was 2.29 cents, which when multiplied by the ratio of earning assets to bank investment gives a return of only 7.10 per cent on the investment (Table 23). In contrast, the 26 banks in the fifth group had a net return of 13.65 per cent to the investment, although they had exactly the same net earnings per dollar of earning assets. The difference lies in the fact that these banks had an average of 5.96 times as much earning assets as they had capital invested in the business.

In this connection it might be noted that there has been a pronounced trend among country banks since pre-war years toward higher ratios of earning assets to bank investment. Banking expenses have increased very noticeably without a similar increase in the interest rate on loans. The result is that most banks which have been able to maintain reasonable dividends have done it largely by increasing the volume of business in relation to the bank investment. Thus, with a smaller net return per dollar of earning assets they have been able to maintain fair dividends to capital.

All the country national banks in the United States had an average ratio of loans and investments† to capital (including surplus and undivided profits) of 3.53 during the years 1914-1916 as compared to 5.77 during the years 1926-1928‡. That is, for instance, an average net return of 2.27 cents per dollar of loans and investments was required to pay 8 per cent on the investment in the pre-war years, while 1.38 cents would pay 8 per cent during 1926-1928. The figures for Texas country national banks are similar to those for the country as a whole, except that the ratio was lower in Texas. The Texas banks had an average ratio of 2.36 in 1914-1916 and 4.09 in 1926-1928. That is, in order to earn 8 per cent on the investment the average country national bank had to earn a net of 3.40 cents per dollar of loans and investments in the pre-war years, while a net of 1.95 cents would suffice in 1926-1928.

The figures in Table 23 indicate that the first two groups of banks used in the present study have an average ratio of earning assets to investment considerably below the 1926-1928 average for the State. But the ratios in Table 23 should be reduced still lower to be comparable with the above ratios because in this study interest-bearing deposits and miscellaneous earning assets are included, whereas in the averages above only loans and investments were included. Table 32 shows the average ratios of total

Table 32. Ratio of Total Earning Assets and Loans and Investments to Bank Investment

Earning Assets (000 omitted)	Ratio of Total Earning Assets to Bank Investment	Ratio of Loans and Investments to Bank Investment
Less than \$200	3.10	2.51
200- 399	3.88	3.22
400- 599	4.18	3.44
600- 999	4.69	3.91
1,000-3,999	5.96	5.12
4,000 and over	7.52	6.24

†Interest-bearing deposits and miscellaneous earning assets are not included here.

‡Compiled from reports of the Comptroller of the Currency.

earning assets to bank investment and the ratios of loans and investments to bank investment for the 154 banks used in this study. Ratios for the first four groups are below the average for the State.

That capital funds are depended upon much more in the smaller banks is shown also by comparison of the relation of bank investment to deposits. Since bankers' funds and deposits are the chief sources of lending power of the bank, a comparison of these should give some indication of the extent to which the various groups of banks depend upon their own funds. The bank investment is equivalent to an average of 38 per cent of total deposits in the first group of banks and the percentage decreases steadily to 23 per cent in the fourth group and 14 per cent in the last group (Table 33). It is obvious that the net return on the investment will be affected by the extent to which a bank depends upon its capital as a source of loans and investments. Thus, if capital were the sole source of loans and investments in the first group of banks the net return to capital would be only 2.29 per cent—gross earnings of 8.31 per cent less expenses of 6.02 per cent (Table 23).

Table 33. Percentage of Bank Investment to Deposits and of Deposits to Earning Assets, 111 Banks

Earning Assets (000 omitted)	Number of Banks	Percentage of Bank Investment to Total Deposits	Percentage of Deposits to Earning Assets
Less than \$200	18	38.47	84.48
200- 399	30	27.82	91.04
400- 599	18	26.69	92.27
600- 999	18	23.21	91.38
1,000-3,999	18	17.05	96.64
4,000 and over	9	14.33	92.28

COMPARISON OF TEXAS BANK RATIOS WITH THOSE OF OTHER REGIONS

The various ratios for Texas banks differ widely from those of banks of similar size in other sections of the country. Comparable figures have been compiled by the Federal Reserve Banks of Chicago and Philadelphia for their member banks. The "Banking Analysis Committee" of the Iowa Bankers' Association has compiled similar ratios for all incorporated banks

Table 34. Comparison of Gross Earnings in Various Regions

Volume of Loans and Investments (in Thousands of Dollars)	Gross Earnings per Dollar of Loans and Investments							
	Texas		Chicago District*		Phila. District		Iowa	
	Number of Banks	Earn- ings (in Cents)	Number of Banks	Earn- ings (in Cents)	Number of Banks	Earn- ings (in Cents)	Number of Banks	Earn- ings (in Cents)
Less than 250	39	9.82	134	7.15	37	6.11	567	7.56
250- 500	23	8.82	271	6.85	81	6.39	393	7.09
500- 750	18	7.70	176	6.62	85	6.44	160	7.23
750- 1,000	8	8.82	124	6.47	70	6.43	66	6.51
1,000- 3,000	11	8.16	294	6.52	259	6.23	***	***
3,000-15,000	12†	7.18	133	6.49	87‡	6.17	***	***

*Chicago banks are excluded.

†One bank had more than \$15,000,000 in loans and investments.

‡These banks had loans and investments of \$3,000,000 to \$10,000,000.

***Not given according to this classification.

in Iowa. Banks are classified according to volume of loans and investments, disregarding interest-bearing deposits in other banks and miscellaneous earning assets. Table 34 gives a comparison of the gross earnings per dollar of loans and investments in the four regions.

Figures for banks of the Chicago District are for 1928, those for the Philadelphia District are for 1927, and those for Iowa banks are for 1927. About half of the reports for Texas banks are for the year ending June 30, 1930, and about one-fourth are for the year ending June 30, 1929, and the other one-fourth for the year ending June 30, 1928.

Table 35. Average Returns on Loans and Discounts for Texas Banks and Members of the Chicago Reserve District

Volume of Loans and Investments (in Thousands of Dollars)	Texas		Chicago District	
	Number of Banks Reporting	Interest Per Dollar of Loans and Discounts (in Cents)	Number of Banks Reporting	Interest Per Dollar of Loans and Discounts (in Cents)
Less than 250	34	9.51	134	7.36
250- 500	19	8.78	271	7.21
500- 750	12	8.19	176	7.08
750- 1,000	8	8.66	124	6.78
1,000- 3,000	9	8.18	294	6.77
3,000-15,000	10*	6.81	152	6.05

*One bank had more than \$15,000,000 in loans and investments.

With the exception of banks of the Philadelphia District, gross earnings per unit of business were decidedly higher among the smaller banks. It will be observed also that gross earnings among the smaller Texas banks were 25 to 50 per cent higher than in the banks of the other regions, and they were 10 to 15 per cent higher in the largest banks. The difference in gross earnings is due largely to the different rates charged on loans. Thus, the average income on loans and discounts for the group of smallest banks was 9.51 per cent for Texas banks and 7.36 for member banks of the Chicago Reserve District, excluding the City of Chicago (Table 35).

Table 36. Comparison of Expenses in Various Regions

Volume of Loans and Investments (in Thousands of Dollars)	Expenses Per Dollar of Loans and Investments							
	Texas		Chicago District		Phila. District		Iowa	
	Expenses (in Cents)	Per Cent of Texas Bank Expenses	Expenses (in Cents)	Per Cent of Texas Bank Expenses	Expenses (in Cents)	Per Cent of Texas Bank Expenses	Expenses (in Cents)	Per Cent of Texas Bank Expenses
Less than 250	6.64	100	5.65	85	4.48	67	6.49	98
250- 500	5.63	100	5.26	93	4.39	78	5.90	105
500- 750	5.20	100	5.02	97	4.25	82	5.89	113
750- 1,000	6.44	100	4.94	77	4.23	66	5.22	81
1,000- 3,000	5.58	100	4.83	87	4.14	74	*	*
3,000-15,000	4.92	100	4.79	97	4.08	83	*	*

*Not given according to this classification.

Expenses of bank operation in these four regions varied in about the same proportions as gross earnings. In general, expenses were highest among the Texas banks, next highest among Iowa banks, and lowest among Philadelphia member banks. There seems to be a causal relation between high gross earnings and high expenses. Whether expenses are high among country banks because they have been able to maintain high rates on their

loans or whether they have been compelled to charge high rates because of unavoidably high expenses is a question. The indications are that custom has fixed the higher rates on loans and that bankers have permitted expenses to pile up accordingly. Table 36 gives comparisons of banking expenses in the different regions.

The comparison of bank expenses in the various regions is far more significant when distinction is made between payments to depositors and the ordinary operating expenses of the banks. Payments on deposits are much less in the smaller Texas banks than in those of the other sections, and ordinary operating expenses are much more. Texas banks with \$250,000 or less in loans and investments paid depositors an average of only 0.64 cents per dollar of loans and investments, while Chicago member banks paid 1.89, Philadelphia 1.76, and Iowa 2.96. On the other hand, salaries and other operating expenses in the Texas banks averaged 6.00 cents per dollar of business, while those of Chicago members were 3.76, Philadelphia 2.72, and Iowa 3.63. Thus, so far as that portion of the bank expenses which does not represent payments to the community is concerned, the small Texas banks have an expense almost double that of banks in the other sections. Such expenses are also considerably higher in the larger Texas banks than in banks of similar size in the other regions (Table 37).

Table 37. Comparison of Interest Paid on Deposits and All Other Expenses in Various Regions

Volume of Loans and Investments (in Thousands of Dollars)	Expenses Per Dollar of Loans and Investments (in Cents)							
	Texas		Chicago District		Phila. District		Iowa	
	Interest on Deposits	All Other Expenses	Interest on Deposits	All Other Expenses	Interest on Deposits	All Other Expenses	Interest on Deposits	All Other Expenses
Less than 250	0.64	6.00	1.89	3.76	1.76	2.72	2.86	3.63
250- 500	1.06	4.57	2.26	3.00	2.04	2.35	2.96	2.94
500- 750	1.17	4.03	2.35	2.67	1.98	2.27	3.33	2.56
750- 1,000	2.06	4.38	2.42	2.52	2.06	2.17	3.06	2.16
1,000- 3,000	1.53	4.05	2.27	2.56	2.14	2.00	*	*
3,000-15,000	2.07	2.85	2.17	2.62	2.01	2.07	*	*

*Not given according to this classification.

Net earnings (before depreciation and losses) per dollar of loans and investments among the smaller banks were about three times as great in the Texas banks as in the Iowa banks, about twice as great as the Chicago member banks, and 50 per cent greater than the Philadelphia member banks. The smaller Texas banks, however, have a much smaller ratio of loans and investments to the bank investment. The net result is that the Texas banks got just a slightly higher return on their investment than did the Chicago and Philadelphia banks and about 50 per cent more than the Iowa banks. Table 38 shows these comparisons. It will be observed that the net return to loans and investments among Texas banks declines rather sharply from the smallest to the largest banks, while the net return increases slightly in all of the other regions. This is attributable in large part to the fact that interest payments on deposits almost vanish among the small Texas banks. Also, it should be noted that there is a more extreme variation in

the ratio of loans and investments to the bank investment among the Texas banks. The ratio more than doubles from the smallest to the largest Texas banks.

The general average net return to bank investment after deducting net losses and depreciation was highest among Philadelphia banks, followed by Texas, Chicago, and Iowa banks, respectively. Invariably the smallest banks made the poorest showing in net returns to the investment. Texas banks and Chicago member banks with less than \$250,000 in loans and investments had a net return to bank investment considerably less than half as much as banks with \$1,000,000 to \$3,000,000 in loans and investments. Table 39 shows net losses and net addition to profits per dollar of business and net addition to profits per dollar of bank investment. Here again the influence of a large ratio of loans and investments to bank investment shows up in the return to the latter. Thus, the first group of Texas banks had an average net return to loans and investments of 1.30 and a return of 3.89 to the bank investment, while the Philadelphia member banks of the same class had a net return of 5.48 on their investment with a margin of only 1.24 on loans and investments.

In the above comparisons it will be noted that economic efficiency increases with volume of business in other regions as it does among Texas banks, although the variation is not as great. That is, the main conclusions reached in the study of 154 Texas banks as to variation in gross earnings, expenses, net earnings, and ratios of volume of business to the bank investment seem to be applicable to country member banks of the Chicago and Philadelphia Districts and to Iowa banks. Small banks pay less on deposits, charge more on loans, and earn less on capital.

These comparisons by regions, however, are made primarily to show contrasts in efficiency of banks of similar size. The figures presented show wide differences in payments on deposits, charges on loans, and returns to bank investment. A full explanation of the cause for these differences is impossible because of lack of information. Are the differences in efficiency between Texas banks with \$500,000 in earning assets and country banks of similar size in the other regions attributable to the banks themselves, or are they due to prevailing differences in economic conditions which are beyond the control of the banking system? An answer to this question is basic to the solution of the problem. If the deficiencies of the Texas banks are due primarily to the banks themselves, a solution must be reached through improved banking practices of individual banks and the development of a more efficient banking system through legislation and governmental supervision. On the other hand, if the deficiencies are based largely upon prevailing economic conditions beyond the control of bankers and bank supervisors, other solutions must be sought.

As compared with banks of similar size in the other regions, Texas banks have: 1) heavy expenditures for salaries and other ordinary operating expenses; 2) heavy losses; and 3) low ratios of loans and investments to the bank investment. To what extent is each of these conditions beyond control of the banking system?

Table 38. Comparison of Net Earnings (before losses) in Various Regions

Volume of Loans and Investments (in Thousands of Dollars)	Net Earnings (in Cents)											
	Texas			Chicago District			Philadelphia District			Iowa		
	Net to Loans and Investments	Ratio of Loans and Investments to Bank Investment*	Net to Bank Investment*	Net to Loans and Investments	Ratio of Loans and Investments to Bank Investment*	Net to Bank Investment*	Net to Loans and Investments	Ratio of Loans and Investments to Bank Investment*	Net to Bank Investment*	Net to Loans and Investments	Ratio of Loans and Investments to Bank Investment*	Net to Bank Investment*
Less than 250	3.18	2.98	9.48	1.50	4.30	6.43	1.63	4.40	7.17	1.06	4.96	5.28
250- 500	3.19	3.57	11.39	1.58	5.71	9.05	2.00	5.22	10.44	1.18	6.25	7.40
500- 750	2.50	4.06	10.15	1.60	6.22	9.96	2.19	5.04	11.04	1.34	7.15	9.58
750- 1,000	2.38	4.60	10.95	1.53	6.72	10.28	2.20	5.10	11.22	1.29	8.02	10.35
1,000- 3,000	2.37	5.43	12.87	1.68	6.99	11.76	2.10	5.19	10.90	**	**	**
3,000-15,000	2.26	6.64	15.01	1.69	7.12	12.05	2.09	5.00	10.45	**	**	**

*Includes capital, surplus, and undivided profits.

**Not given according to this classification.

Table 39. Comparison of Net Profits* in Various Regions

Volume of Loans and Investments (in Thousands of Dollars)	Net Losses and Profits (in Cents)											
	Texas** (1928-1930)			Chicago (1928)			Philadelphia (1927)			Iowa (1927)		
	Net Losses per Dollar of Loans and Investments	Net Profits per Dollar of Loans and Investments	Net Profits per Dollar of Bank Investment	Net Losses per Dollar of Loans and Investments	Net Profits per Dollar of Loans and Investments	Net Profits per Dollar of Bank Investment	Net Losses per Dollar of Loans and Investments	Net Profits per Dollar of Loans and Investments	Net Profits per Dollar of Bank Investment	Net Losses per Dollar of Loans and Investments	Net Profits per Dollar of Loans and Investments	Net Profits per Dollar of Bank Investment
Less than 250	1.88	1.30	3.89	1.42	0.08	0.32	0.39	1.24	5.48	2.06	-1.00	-4.91
250- 500	2.07	1.12	3.98	1.16	0.42	2.42	0.27	1.73	9.00	1.44	-0.25	-1.59
500- 750	0.96	1.47	6.25	0.83	0.78	4.82	0.34	1.85	9.34	1.12	0.22	1.57
750- 1,000	1.18	1.20	5.51	0.70	0.82	5.54	0.55	1.65	8.41	1.17	0.12	1.00
1,000- 3,000	0.67	1.70	9.23	0.70	0.99	6.92	0.27	1.82	9.49	***	***	***
3,000-15,000	0.79	1.47	9.74	0.54	1.15	8.19	0.31	1.78	8.89	***	***	***

*After deducting all expenses, depreciation, and losses.

**Since many of the Texas banks reported for the year ending June 30, 1930, which was a year of depression, losses among these banks are undoubtedly higher than they would have been in 1927 or 1928 when the banks of the other sections reported. It should be noted also that losses were disproportionately high in the second and fourth groups because of extremely heavy charge-offs of one bank in each group. If these two banks were taken out, the figures would show a rather regular decline in losses per unit of business and a steady increase from about 4 per cent to 10 per cent on capital.

***Not given according to this classification.

Since interest payments on deposits are extremely low among the small Texas banks and since the difference in expenditures for taxes and interest on borrowed money is not significant, the bulk of the difference in expenses consists in salaries and outlay for supplies, light, heat, insurance, and other ordinary operating expenses. Do Texas country banks pay higher individual salaries? Possibly employees themselves are less efficient, or the work may be so organized that the labor of the bank is done less efficiently. Texas banks may have more to do in handling a certain volume of business on account of smaller deposit accounts, smaller checks, or smaller loans. Finally, it is possible that the prices of supplies and various services are higher for Texas banks.

Although positive facts are not available, it is very doubtful that the ordinary employees in Texas banks receive higher wages than do similar employees in the other regions discussed. But there is some indication that in a number of banks the cashier and other officers who own considerable stock are paid liberal salaries in lieu of more liberal dividends. The indications are, however, that this practice is not generally prevalent.

It might be maintained that the higher expenses of Texas banks is due in part to a wider variation in the volume of loans through the year. That is, the average of loans and investments for the two reports*, June 30 and December 31, used here may be higher than the monthly average through the year on account of the predominance of a one-crop system of farming. It is doubtful whether there is any significance to this point, since the June 30 report is made at the height of the production season for most of the State and December 31 is at the end of the liquidating season for the cotton crop.

Some information is available on the comparative losses of country national banks in Texas, Iowa, and Illinois. Data covering the period 1914 to 1926, with the exception of 1920, indicate that the average losses for all Texas country national banks were 0.63 cents higher per dollar of loans and investments than were losses among Iowa country national banks.† Texas bank losses were 0.89 cents higher than Illinois bank losses. These figures indicate an average difference in losses of approximately three-fourths of one cent per dollar of loans and investments for Texas banks and the country banks of the Chicago District. Higher expenses and lower ratios of earning assets to bank capital seem to be much more significant factors than the excess losses of the Texas banks. Also, in accounting for higher rates on loans and lower payments on deposits on the basis of heavier losses, it must be remembered that responsibility for losses rests in part with the bank management. While some of the excess losses in Texas may be due to the greater uncertainties of agricultural production and to a one-crop farming system, they may be due in part to poor methods of credit analysis preliminary to loan extensions.

Responsibility for the low ratios of loans and investments to bank capital among Texas banks seems to lie wholly with the banks and the supervisors

*Loans and investments in the other regions are averages of the figures given in the regular reports of condition, i.e., two to five reports.

†Compiled from **Annual Reports** of the Comptroller of the Currency.

of the banking system. All of the Texas banks considered here and practically all of the members of the Philadelphia and Chicago Reserve Banks are national banks, under the same general supervision. Legal minimum capital and surplus requirements are uniform. It is possible that the Comptroller of the Currency and the Federal Reserve Bank serving Texas discourage higher ratios. That the average ratio for all Texas country national banks increased from 2.41 in 1914 to 4.31 in 1928 indicates, however, that Texas banks may ultimately have similar ratios to those in the North and East.

SUMMARY AND CONCLUSIONS

First: The figures on bank failures, voluntary liquidations, and consolidations, and on banks that are in normal operation indicate a definite relation between volume of business and efficiency. In general, the smaller the bank the higher are its expenses per dollar of earning assets, the less it pays on deposits, the more it charges for loans, and the less it earns on its investment. There are rather abrupt declines in efficiency from banks with \$10,000,000 to \$15,000,000 in earning assets to banks with \$1,000,000 to \$4,000,000; another abrupt break comes when the volume falls noticeably below \$1,000,000; another comes when the volume falls below \$300,000 to \$400,000; and, finally, the greatest break of all comes when the volume falls below the \$100,000 mark.

Stockholders in the smaller banking units earn a lower average return on their investment, and the risk of failure is greater. Borrowers pay a higher rate on loans. The average rate on loans for country banks with \$1,000,000 to \$4,000,000 in earning assets was 8.13 per cent, as compared with 9.37 per cent for banks with less than \$400,000. Banks with \$600,000 to \$1,000,000 earning assets charged an average of 8.45 per cent as compared with 9.36 per cent for banks with \$200,000 to \$400,000. Less interest is paid on deposits among the smaller banks. Banks with less than \$200,000 in earning assets paid an average of only 51 cents per hundred dollars of earning assets as compared with \$1.61 for banks with \$1,000,000 to \$4,000,000 in earning assets. The data on failures and voluntary liquidations indicate that depositors in the smaller banks take greater risks than do depositors in larger banks, in spite of the fact that the latter have much higher ratios of deposits to the bank investment.

Second: Larger banks as a general rule are more efficient from the standpoint of stockholders and the community because 1) they have sufficient business to justify the greater expense necessary in getting more efficient management, fewer losses through greater skill in placing loans, better distribution of earning assets, and greater efficiency in clerical work, because 2) their volume enables them to reduce fixed or overhead expenses per unit of business to a minimum, and because 3) they can safely maintain a higher ratio of earning assets to the bank investment.

Third: The existence of a large number of banks in Texas which are definitely too small to operate with a high degree of economic efficiency is due 1) to the actual lack of business in many small, one-bank communities on

account of the physical size of the community, on account of its low productivity, or on account of loss of business to larger towns which can be reached easily by automobile, and 2) to the slack methods on the part of government supervising agencies in granting charters for banks in towns which already have one or more banks, or unforeseen declines in the banking business in communities that were thriving when the second, third, or fourth bank was chartered.

Fourth: Texas country banks seem to be less efficient than are country banks of similar size in the Chicago and Philadelphia Reserve Districts. At least, they have greater losses and greater expenses per dollar of business, and they charge higher rates on loans and pay less on deposits. The years for which figures were taken indicate losses per dollar of loans and investments for Texas banks ranging from 1.88 cents among banks with less than \$250,000 in loans and investments to 1.18 cents among banks with \$750,000 to \$1,000,000, while similar figures for Chicago member banks range from 1.42 to .70 and for Philadelphia member banks, .39 to .55. Some of this disparity in losses, however, is undoubtedly due to economic conditions beyond the control of bankers, such as poor diversification of farm production in Texas. Expenses of operation among Texas banks ranged from 6.64 to 4.92 cents per dollar of loans and investments, as compared with 5.65 to 4.79 in the Chicago District and 4.48 to 4.08 in the Philadelphia District. The average rate charged on loans among Texas banks ranged from 9.51 to 6.81 per cent as compared with 7.36 to 6.05 per cent in the Chicago District. The average amount paid on deposits among Texas banks ranged from .64 to 2.07 cents per dollar of loans and investments as compared with 1.89 to 2.42 cents in the Chicago District, 1.76 to 2.14 cents in the Philadelphia District, and 2.86 to more than 3 cents among Iowa banks.

Texas banks had a higher average net return to the bank investment than did the member banks of the Chicago District—from 3.89 to 9.74 per cent as compared with .32 to 8.19 per cent. This is attributable only to higher charges on loans and smaller payments on deposits by Texas banks. Net earnings to the bank investment among Philadelphia member banks ranged from 5.48 to 9.49 per cent.

Fifth: In view of the foregoing, the following adjustments seem to be desirable: 1) voluntary liquidation or absorption of a large number of the smaller banking units operating in towns with two or more banks and, in some cases, such banks in very small, one-bank towns which are near larger trading centers; 2) prevention by government supervising bodies of the establishment of new banks in communities which cannot adequately support them; and 3) provisions in state and national banking laws establishing more adequate protection to depositors, borrowers, and to the stockholders themselves.