

The Maturity of Loans at New York City Banks*

The business of commercial banking has traditionally been viewed as one in which the banker accepts deposits and places these funds in short-term liquid assets—primarily Government securities and short-term business loans. It is now recognized that the banker fulfills a much broader financial function; in particular, he is looked upon as a source of finance for a wide range of business activity. As a result, banks have increasingly engaged in medium- and long-term lending. Such lending has, however, raised questions regarding bank liquidity and solvency. This article seeks to provide some of the information needed to explore these questions by reviewing the maturity structure of loans at large banks in New York City.¹ The review has been confined to city banks, owing to the limited availability of nationwide data.

The average effective time to maturity of the total loan portfolio of the city banks has lengthened by about one quarter of a year (to about 1½ years) since 1961. However, this lengthening does not reflect longer maturities in individual loan categories, since the maturity of individual loans within each broad classification appears to have remained about unchanged. Instead, the composition of the loan portfolio has shifted. The volume of long- and medium-term loans has risen faster than short-term loans, resulting in a lengthening in the average maturity of the loan portfolio taken as a whole. This increase in the volume of medium- and long-term lending appears to be attributable primarily to the mounting demand for medium-term credit by business in the mid-1960's, reflecting the rapidly growing capital expenditures of corporations. The sharp rise in time deposits may also have been a factor affecting maturity considerations, inducing some of these banks to enter the long-term residential mortgage market on a limited scale.

* George Budzeika, Economist, Statistics Department, had primary responsibility for the preparation of this article.

¹ A review of loan maturity and turnover developments in the 1950's was presented in "Turnover of Business Loans at New York City Banks", this *Review* (January 1962), pages 10-15.

THE MATURITY STRUCTURE OF LOANS AT NEW YORK CITY BANKS IN 1966

Term loans to business, the largest single loan category at New York City banks, account for more than one third of total loans (see table). Ordinary term loans make up about five sixths of the term loan total, and revolving credits account for the balance.² Real estate loans, which constitute about one tenth of total loans, represent another significant type of predominantly medium-term lending by city banks. All other loans are primarily short term, with an original term of less than one year (or, in the case of consumer loans, of somewhere around two years).

ORDINARY TERM LOANS. Commercial and industrial loans with an original term of more than one year, and repayable in a lump sum or in periodic instalments, are defined as ordinary term loans. (The *original term* of a loan is the length of time from the date the loan was made to the date of the final repayment scheduled in the loan agreement.) At New York City banks these loans are made for periods of up to ten years, but most of them are found in the five- to eight-year range. While the average original term indicates the time period over which a bank is willing to commit funds to borrowers, it does not provide much information about the average maturity or liquidity of the bank's loan portfolio. For this purpose, a more useful concept is the *average effective time to maturity*, which measures the average remaining life of the loans in a bank's portfolio as of a given point in time, taking into account the due date of each individual loan instalment.³

The average effective time to maturity of the ordinary

² Term loan statistics currently released by this Bank include both ordinary term loans and revolving credits. These statistics were described in "Term Lending by New York City Banks", this *Review* (February 1961), pages 27-31. The city banks classify term loans in their internal reports in the same manner.

³ The *average effective time to maturity* for a loan portfolio is calculated by multiplying (i.e., weighting) each scheduled loan instalment by the length of time to its due date, summing the results, and dividing the total by the outstanding loan volume.

**LOANS OUTSTANDING AT WEEKLY REPORTING MEMBER BANKS
IN NEW YORK CITY**

September 1961 and 1966

Averages of Wednesday figures

Loan category	Loans outstanding (billions of dollars)		Percentage distribution		Compound annual rate of growth (per cent)
	1961	1966	1961	1966	
Long- and medium-term loans:					
Commercial and industrial loans with an original term of more than one year ^a	5.70	11.97	31.2	35.0	16.0
Real estate loans†					
Secured by residential property.....	.52	2.11	2.9	6.2	32.3
Secured by nonresidential property.....	.26	1.13	1.4	3.3	34.2
Subtotal.....	6.48	15.22	35.5	44.5	18.6
Other loans:					
Commercial and industrial loans with an original term of one year or less.....	4.74	7.57	25.9	22.1	9.8
Loans for purchasing or carrying securities.....	1.98	2.74	10.8	8.0	6.7
Loans to foreign banks.....	.27	.84	1.5	2.4	25.5
Loans in domestic banks.....	.36	.91	2.0	2.6	20.4
Loans to nonbank finan- cial institutions.....	1.47	3.07	8.0	9.0	15.9
Agricultural loans.....	‡	.01	‡	‡	21.1
All other loans 	2.97	3.90	16.3	11.4	5.6
Total.....	18.27	34.25	100.0	100.0	13.4

^a The breakdown of commercial and industrial loans into those with an original term of more than one year and those with one year or less was estimated for 2 per cent of the total on the basis of the breakdown available for 98 per cent of the total.

† The breakdown of real estate loans into those secured by residential and nonresidential property was estimated on the basis of Report of Condition data for June 1961 and June 1966.

‡ Less than \$5 million.

§ Less than 0.5 per cent.

|| The "all other loans" category for September 1966 is subdivided as follows (in billions of dollars): consumer instalment loans \$1.28; loans to foreign governments \$0.75; all other loans \$1.87.

Source: Weekly reports of New York City banks.

term loan portfolio at New York City banks was estimated in 1966 at about three years.⁴ This is substantially lower than the average original term because, at any given point in time, the remaining life of most loans has shortened somewhat due to the passage of time. In addition, the instalment repayment feature, which characterizes the bulk of ordinary term loans at city banks, further reduces the

⁴ The maturity figures given in this article were derived from bank examination reports and from reports by city banks to this Bank's Statistics Department. Figures on loans outstanding were obtained from weekly reports of New York City banks published in the *Federal Reserve Bulletin*.

effective time to maturity: at the time an instalment loan is put on the books, it will have an average effective time to maturity about one half its original term. On the other hand, the three-year estimate for the average effective time to maturity is somewhat longer than would be true for a loan portfolio consisting exclusively of instalment loans.⁵ This reflects the inclusion in term loan portfolios of so-called "balloon" notes—loan arrangements in which the last repayment of an instalment loan is substantially larger than the others. It is estimated that balloon notes account for about 10 to 20 per cent of the amount outstanding of ordinary term loans at city banks.⁶

REVOLVING CREDITS. Although loans extended under revolving credit agreements are of short-term maturity—usually ninety days—the agreement underlying such loans permits the borrower to renew the note at maturity for the next ninety-day period, and so on, with the credit remaining on the books for as long as two or more years. Since revolving credit agreements are legally binding commitments of banks and since the borrower typically enjoys relatively long-term use of bank credit, such loans are usually classified as term loans.⁷ The original term of a revolving credit is measured from the date the loan agreement was signed to its expiration date, at which time the revolving credit is assumed to be repaid in a lump sum or converted into an ordinary term loan. (The original term of these agreements was estimated somewhere between two and three years in 1966.) The effective time to matu-

⁵ The average effective time to maturity approximates one third of the original term if the term loan portfolio of a bank consists of loans which have an identical original term and are paid off in equal instalments and if the bank has been extending term credit for several years.

⁶ Another maturity concept that is frequently used is *final term*. This concept measures the length of time from a given point in time to the due date of the loan. However, the due date is not the repayment of each individual loan instalment, as is the case in the measurement of the effective time to maturity, but the due date of the last instalment. The final term concept is less useful analytically than the effective time to maturity, since it does not take into account the instalment repayment feature of loans. Nevertheless, it is used frequently, probably because of the ease with which it can be employed in statistical surveys. It was employed in the 1955 and 1957 Commercial Loan Surveys and the 1966 Agricultural Loan Survey conducted by the Federal Reserve System. The average final term of ordinary term loans at New York City banks is estimated roughly in the range of 4½ to 5½ years.

⁷ Informal line-of-credit arrangements are not classified as term loans even though they resemble the formal revolving credit in some respects. For one thing, they are not legally binding on the bank. Moreover, informal line-of-credit arrangements are usually reviewed once a year, placing them in a category of agreements with an original term of one year or less.

rity of revolving credits at New York City banks was calculated in 1966 at about one and one-half years.

THE CASH FLOW OF THE TERM LOAN PORTFOLIO. Cash flow—which measures repayments of outstanding loans over a period of time—is another loan maturity measure. It may be expressed either as the percentage of the dollar volume of outstanding loans that is expected to be repaid or, alternatively, as the percentage that has been repaid during a one-year period. The cash flow figures for New York City banks are currently available only on the basis of the scheduled repayments flow for the entire term loan portfolio and thus combine into one figure the expected flow originating in the ordinary term loan and the revolving credit portfolios. In 1966, the cash flow on term loans, so defined, was estimated at about 25 per cent to 30 per cent of the total amount of such loans outstanding. A cash flow of that size implies repayments during 1966 of about \$3 billion to \$3.5 billion out of the \$11.6 billion average of term loans outstanding during the year.

This cash flow appears to be relatively large in light of the widely held notion that term loans are "long-term" loans which "freeze" bank funds for prolonged periods of time. As noted above, the relatively large size of cash flows at city banks reflects the instalment repayment feature built into virtually all term loans, which, in turn, stems from the principle of tailoring the maturities of term loans to the projected flow of earnings of the borrower, provided such terms meet the broad maturity requirements of banks. Generally, the city banks now require that all term loans be put on an amortization schedule and that this schedule be firmly adhered to by the borrower.

TERM LOAN MATURITIES BY INDUSTRY. The most striking feature of the maturity distribution of term loans by industry is a lack of any really large variability in the maturity of ordinary term loans. However, some differences in maturities by industry arise from the greater use of revolving credit by some borrowers.

The longest effective time to maturity was recorded in loans to petroleum extracting and refining businesses. This was due in part to the longer maturity of ordinary term loans (by about half a year) but primarily reflected the limited use of revolving credit facilities. The shortest effective time to maturity was evident in loans to manufacturers of transportation equipment: these borrowers are heavy users of revolving credit facilities with about three quarters of their term loans outstanding in such form. Term loans to public utilities also were of shorter maturity than the overall average due to the shorter effective time to maturity of their ordinary term loans (by about half a year).

REAL ESTATE LOANS. About two thirds of total real estate loans at New York City banks were classified in June 1966 as residential mortgage loans. The original term of many of these loans ranges up to twenty-five years or more but, since practically all of them are repayable in frequent instalments, the effective time to maturity is considerably less. Furthermore, a significant proportion of the residential mortgage loans held by city banks are in the "warehouse" for only six to twelve months as institutional investors "store" them temporarily with commercial banks under repurchase agreements.

The remaining one third of real estate loans at city banks is accounted for by loans secured by nonresidential properties. A significant portion of these loans consists of construction loans, the effective time to maturity of which is relatively short, probably somewhere around one year. Another significant portion of nonresidential real estate loans is made to business, and is akin to ordinary term loans in respect to both purpose and maturity. The average effective time to maturity of the entire real estate loan portfolio at New York City banks appears to be somewhat longer than the effective time to maturity of the ordinary term loan portfolio.

OTHER LOANS. The original term of short-term commercial and industrial loans was generally reported in 1966 at about ninety days or less. Many of these loans, however, remain on the books for longer than the original term since they are frequently renewed when they come to maturity. Some of these nominally short-term loans are thus, in effect, continuous loans. It was estimated in 1961, for instance, that the existence of continuous loans in the short-term business loan category had lengthened the average duration of short-term loans to some six months or more.^a

No specific estimate is available regarding the average maturity of loans to nonbank financial institutions—a category which includes loans to sales and commercial finance companies, mortgage firms, and other business finance companies—but the information that is available suggests that they fall in the short-term area, with an original term well below one year. Loans for purchasing and carrying securities are of very short maturity. The average original term of consumer instalment loans at city banks appears to be somewhere around two years, and their effective time to maturity less than one year.

^a See "Turnover of Business Loans at New York City Banks", this Review (January 1962), page 13.

ALL LOANS. Although specific estimates of the effective time to maturity are not available for several loan categories, enough is known about their order of magnitude to estimate the maturity of the total loan portfolio of New York City banks. (The missing figures refer to short-term loans, where the range of the possible error is small in relation to the maturity of term loans.) Thus, it appears that the average effective time to maturity of the entire loan portfolio of large New York City banks in 1966 was in the range of $1\frac{3}{8}$ to $1\frac{1}{2}$ years.

MATURITY CHANGES, 1961-66

While average maturities in individual loan categories have apparently shown very little net change over the past five years, the average effective time to maturity of the total loan portfolio is estimated to have risen by about one quarter of a year. This increase resulted mainly from changes in the composition of the loan portfolio, with long- and medium-term loans growing faster than short-term loans.

TERM LOAN PORTFOLIO. The average effective time to maturity of the term loan portfolio at large New York City banks, combining both ordinary term loans and revolving credits, was estimated in the range of $2\frac{3}{4}$ to $2\frac{3}{4}$ years in 1961-62 and at about $2\frac{3}{4}$ years in 1966.⁹ Because of the large element of uncertainty involved in obtaining these figures, the slight difference between these averages is probably not significant. There were, however, some significant changes in average maturities in the intervening years. In the early 1960's the maturities of term loans lengthened, with the effective time to maturity rising to about three years by 1965. However, in late 1965 and during 1966 the upward trend was reversed, and the average dropped by about one quarter of a year to return to the level prevailing five years ago.

A combination of factors accounted for the maturity rise in the early part of the 1961-66 period. One of these factors was the lengthening of the original term of new loans. Faced with a relatively plentiful supply of funds in the early 1960's, New York City banks were willing to allow somewhat longer maturities on new loans than in the preceding years. Beginning in 1962, another factor contributing to the rise in the average maturity was the

acceleration of the rate of growth of the portfolio itself. The average effective time to maturity (given the original term) is longer for a growing loan portfolio than a stationary one, since a growing portfolio is more heavily weighted with recently made loans which, for this reason alone, have a relatively longer time to maturity. The term loan portfolio of New York City banks grew slowly between late 1957 and late 1961—3 per cent a year on the average. After 1961, however, term loans of city banks grew at a rate of about 9 per cent a year, and accelerated to a rate of almost 30 per cent during 1965 and early 1966. The transition from the slow-growing to the rapidly expanding portfolio could have added about one tenth of a year to the average effective time to maturity of the entire term loan portfolio over the period from 1961 to 1965.

Still another factor contributing to the rise of the average maturity was the decline in the proportion of revolving credits—which generally carry shorter maturities than ordinary term loans—in the term loan total. In 1962, revolving credits constituted about 20 per cent of the term loan total at city banks, but by 1965 the proportion had declined to an estimated 15 per cent and remained at this level in 1966.

The reversal of the upward trend in the average effective time to maturity in 1966 was brought about by the shortening of the original term of new loans in the latter part of 1965 and 1966 in response to tighter credit conditions. The maximum maturity the city banks were willing to allow on newly made term loans declined to an average of six years in 1966 from an average of nine years in 1964.

Information on maturity changes in other loan categories is scanty, but suggests that average maturities in individual loan categories remained about unchanged between 1961 and 1966.

TOTAL LOAN PORTFOLIO. The maturity of the total loan portfolio of city banks has risen in the past five years, with the average effective time to maturity in 1966 estimated about three months longer than in 1961. This lengthening was brought about primarily by changes in the composition of the portfolio, with long- and medium-term loans rising faster than short-term loans. Long- and medium-term loans as a proportion of total loans advanced from 35 per cent in September 1961 to 44 per cent in September 1966.

The most significant factor contributing to the increase in the share of long- and medium-term loans was the rise in the proportion of term loans—from 31 per cent to 35 per cent. The share of real estate loans also has risen—from 3

⁹ The average for ordinary term loans was estimated at about three years in both 1961-62 and 1966, but the average for revolving credits appears to have lengthened slightly over the period as a whole.

per cent to 6 per cent for residential mortgage loans and from 1 per cent to 3 per cent for nonresidential real estate loans. The increase in the proportion of residential mortgage loans reflected primarily the decision of several city banks to enter the long-term residential mortgage market in the early 1960's.¹⁰ This decision appears to have been influenced by the sharp rise in time deposits and the need to earn a higher return—real estate loans usually carry higher interest rates than other loans—in order to pay higher interest on time deposits after the change in Regulation Q in 1962.

FACTORS AFFECTING MATURITY OF TERM LOANS

The sharp increase in the proportion of term loans at city banks was brought about mainly by the surging demand for medium-term credit by business in the mid-1960's. The large banks in New York City are oriented mainly toward lending to business. Such lending (both short- and medium-term) accounts for nearly three fifths of the city banks' outstanding loans, compared with about one third at banks outside New York and Chicago. By virtue of their long-time preoccupation with business lending, the city banks have acquired great skill and experience in this type of activity and have developed close customer relationships with corporate borrowers throughout the country. Many of these customers, moreover, maintain sizable deposit balances with city banks. Thus, whenever the demand for funds on the part of these customers rises, the city banks are under strong competitive pressure to satisfy their needs. The mid-1960's was such a period. The rapid growth of business investment in 1963 and the following years generated a heavy demand for medium-

and long-term funds by business. This was particularly true in 1965 and the first half of 1966, when corporate capital expenditures (including inventories) exceeded internal cash flows (retained earnings and depreciation allowances) by nearly \$3 billion and by \$9 billion (annual rate), respectively.¹¹ It was in this period that term loans were expanding at New York City banks at an unprecedented rate of nearly 30 per cent a year. Consequently, the proportion of term loans in the city banks' business loan total rose to 62 per cent by mid-1966, from an average 58 per cent in 1964 and an average 55½ per cent in 1961.¹²

While the heavy business demand for medium-term funds from the city banks has brought about a sharp rise in the proportion of term loans and thus has contributed to the lengthening of the average maturity of the entire loan portfolio of these banks, the maturity of the term loan portfolio itself, as emphasized in the preceding paragraphs, has remained about unchanged between 1961 and 1966. In general, the city banks in the 1960's followed policies similar to those in previous cyclical swings: they lengthened maturities of new loans in the easy money conditions of the early 1960's but shortened them with the tightening of credit in the mid-1960's. Apparently, there was no dearth of demand in the mid-1960's for bank credit in the medium-term area, which is traditionally preferred by city banks, so that there was no real pressure on city banks to lengthen, as a matter of policy, the maturities on individual term loans.

¹⁰ Prior to the 1960's, the city banks generally did not purchase residential mortgages for permanent holding. The residential mortgages that were reported in their portfolios at that time were primarily of the "warehousing" type acquired for brief periods from institutional investors under repurchase agreements.

¹¹ The figures are from the flow-of-funds statistics of the Board of Governors of the Federal Reserve System.

¹² The responsiveness of New York City banks to financial needs of corporations engaging in capital expenditures was also illustrated by the developments in the mid-1950's. At that time, as in the mid-1960's, a sharp increase in capital expenditures by business was accompanied by a rapid acceleration of term lending by city banks—between October 1955 and October 1957, term loans advanced at a 23 per cent annual rate and the share of term loans in the business loan total increased from 47 per cent to 51 per cent.