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The Timing Problem

A mortgage instrument is created over a period of time, through a sequence of steps. This may give rise to a recording lag, the length of which depends on the precise point in the process when the loan characteristics are recorded. The recording lag should be distinguished from the behavioral lags discussed in Chapters 3 and 4. In this chapter, we examine the precise meaning of "transaction date" on a mortgage; consider whether loan attrition affects the timing of authorization series; compare the loan authorization date with the date of approval of the mortgagor's loan application; show how the timing and amplitude of yield series based on date of authorization differs from that of series based on date of disbursement; and analyze the length of residual recording lag in authorization series.

Meaning of Transaction Date

It is useful to view the transaction date as one of a sequence of steps involved in creating the mortgage, as follows¹:

- 1a. *Direct Loans*: On tract developments, submission to the lender of preliminary plans for land acquisition, subdivision, etc.
- 1b. *Correspondent Loans*: Submission of application to correspondent by builder or mortgagor.
- 2a. *Direct Loans*: Lender approval of preliminary plans for tract development.
- 2b. *Correspondent Loans*: Correspondent extends commitment to builder or mortgagor.
3. Submission of application to life insurance company by correspondent, builder or mortgagor.
4. Approval of application by an authorized officer of the life insurance company—"conditional transaction date."

¹This list is far from exhaustive and is designed for the sole purpose of illuminating the timing problem. Steps that could be germane to other purposes but do not affect timing have been left out.

5. Notification of approval by company.
6. Meeting of finance committee—"authorization date."
7. Approval of application of mortgagor if prior application was by a builder or by a correspondent dealing with a builder—"mortgagor approval date."
8. Loan closed, funds disbursed—"closing or disbursement date."

In general the transaction date on any instrument is that date when the terms of the transaction are established on a binding basis. In the case of residential mortgage loans by life insurance companies, with some exceptions that will be explained later, this is the date when an authorized officer of the lending institution approves the application of a correspondent, builder or ultimate borrower (mortgagor)—step 4 in the above list. Such approval represents a commitment to make a loan under specified conditions within some stipulated period (the "commitment period"). If the mortgage is not delivered within the period, the commitment ordinarily lapses unless the lender decides to extend it.

The transaction date hinges on a binding commitment by the lender; the party of the second part is also committed but not quite in the same way. A correspondent obtaining a commitment from a permanent lender, for example, is expected to deliver the mortgage, irrespective of his relationship to the company, whether one of independence or not, but it is understood that delivery may be prevented by circumstances beyond his control. (More correspondents find reasons why they cannot deliver when prices are rising than when they are falling.) On direct loans, it generally is inconvenient for the mortgagor to back out, since it ordinarily means repeating the paperwork involved in originating the instrument and may involve some direct financial loss. Commitments to builders often involve a commitment fee that is forfeited if the builder doesn't deliver. Nevertheless, typically more than 10 per cent of commitments on direct loans never go to closing.

Implications of Commitments Not Taken Down

A question arises as to whether loan commitments not taken down during the commitment period, or commitments taken down with modifications of the original terms, introduce any timing bias in authorization series.

1. It is clear that if a loan disappears forever, as when a builder or mortgagor doesn't carry through the transaction, it can cause no analytical mischief.

2. Lending officers typically will have authority to make minor changes in loan provisions without resubmission to the finance committee. Such cases would not appear again on the finance committee records, and therefore introduce no problem.

3. In some cases, a commitment leads not to a closing but to another commitment. This happens when a builder or correspondent wants a major modification of terms; some commitments to builders, indeed, include provisions for renegotiation of terms in the event that market conditions change during the commitment period. Or a builder or correspondent whose commitment lapses because he cannot deliver within the commitment period may apply for a new commitment.² In such cases, a new commitment must be negotiated and appears again on the finance committee records. Renegotiation does not, of course, invalidate the original commitment which would reflect the market at the time it was made. The second observation, however, could be biased if the terms of the old commitment influenced those of the new one.

As far as we could determine, this happens only occasionally; in general, the new commitment is viewed by the participants as a new transaction at the current market price.³

Thus, the fact that "authorizations" data include transactions that do not materialize into actual loans at the terms stipulated in the authorization does not affect the timing validity of authorization series.

Significance of the Date of Approval of the Mortgagor's Loan Application

In the case of loans secured by existing houses and loans to owner-builders that will be used to construct a home, approval of the loan application by an authorized officer of the company implies approval of the mortgagor. The transaction date is also the "mortgagor approval

² In some cases, the company may extend a lapsed commitment rather than write a new one.

³ We nevertheless considered it desirable to omit such loans if possible. It turned out to be possible at two of the four companies which identified them separately on the finance committee record as "reapprovals." At the other two companies, they were not identified.

date." When the commitment is to a builder or to a correspondent dealing with a builder, however, the mortgagor is not present at the transaction date. Thus, approval of the mortgagor's loan application occurs some time after the transaction date and before the closing date, shown as step 7 in the list above. The lender's commitment defining the transaction date in such cases means that *when* a buyer-mortgagor is found, the company will make a loan to him at the terms specified, assuming the buyer meets the company's standards. (The lender is honor-bound not to change these standards between the time of the commitment and the time when the buyer arrives on the scene.)

In the series compiled by the Federal Reserve Bank of Chicago and the FHLBB, which only cover direct loans, the transaction date is defined as the date of approval of the borrower's loan application. This means that some of the loans in these surveys are recorded well after the transaction date. In the Chicago survey, this was rectified by throwing out all loans on which the lender reported that a commitment had been outstanding more than thirty days prior to the date of approval of the borrower's loan application. The FHLBB survey does not have such a correction. It should be emphasized that this problem pertains only to the FHLBB series covering the purchase of new homes.

Timing of Authorization and Disbursement Series

Since disbursement is the last step in the process of creating a mortgage instrument, the disbursement date may lag the transaction date by a considerable period. Commitment data compiled by the Life Insurance Association of America covering all residential (including multi-family) loans show that life insurance companies typically expect that less than 10 per cent of their outstanding commitments on a given date will be taken down within one month, less than 20 per cent will be taken down within two months, and about 50 per cent will be taken down within six months.

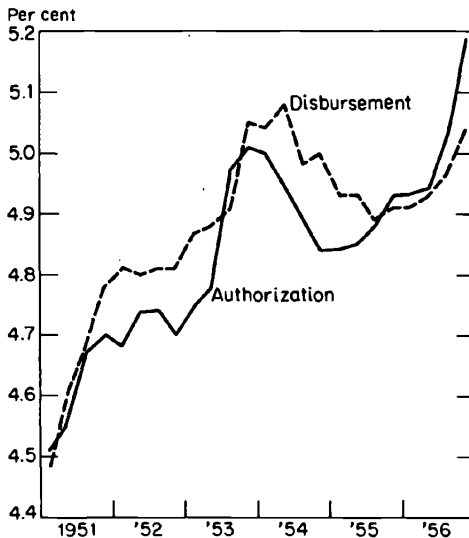
Some data collected by Klamann covering one large life insurance company show that about half of the loans authorized in a given month were not yet disbursed five months later, and about one-third were not disbursed eight months later (*The Postwar Residential Mortgage Market*, p. 290). As noted earlier, some of these undisbursed loans never go to closing at all; in Klamann's sample attrition amounted to about 14 per cent.

No mechanical adjustment to loan-disbursement data can take account of the authorization-disbursement lag, since the disbursement pattern is not fixed. It is affected, for example, by changes in the mix between mortgages on new and existing properties, and by the direction of interest rate change; when interest rates are falling, for example, the attrition rate rises.

One illustration of how the date of record affects the timing of mortgage rate series is given in Chart 7-1, which compares the quarterly contract rate series on conventional loans compiled by Klamman with our net rate series. Both series apply to four large life insurance companies, but the new series is on an authorization basis and the Klamman series is on a disbursement basis. At each of two clearly defined turning points during the period covered by both series, the authorization series leads the disbursement series by two quarters.

A more definitive and precise comparison of authorization and disbursement series is possible with a unique body of data provided by one of the four companies contributing to our survey. Beginning in 1954, this company began to compile series, with a breakdown by FHA, VA, and conventional loans, on both bases, so that (except

CHART 7-1
CONTRACT RATE ON CONVENTIONAL LOANS BY LIFE
INSURANCE COMPANIES, QUARTERLY, 1951-63



for attrition) the two series cover identical transactions. Charts 7-2, 7-3, and 7-4 show that the closing series lag the authorization series at every turning point. As summarized in Table 7-1, the lags range from one to six months.

We would expect, on a priori grounds that closing series would also have smaller amplitude than authorization series. This is because the rate recorded on loans disbursed in a given month is actually an average of rates authorized over a span of previous months. Thus, the month in which rates reach a cyclical peak in a disbursement series would include cases authorized in earlier months when rates were lower, and similarly at the trough. We would also expect the difference in amplitude between disbursement and authorization series to be smaller when turning points are flat than when they are sharp, because periods of constant rate levels give the disbursement series a chance to "catch up."

CHART 7-2
NET YIELD ON FHA CORRESPONDENT LOANS BY ONE
COMPANY, 1954-64: AUTHORIZATION VERSUS
DISBURSEMENT BASIS

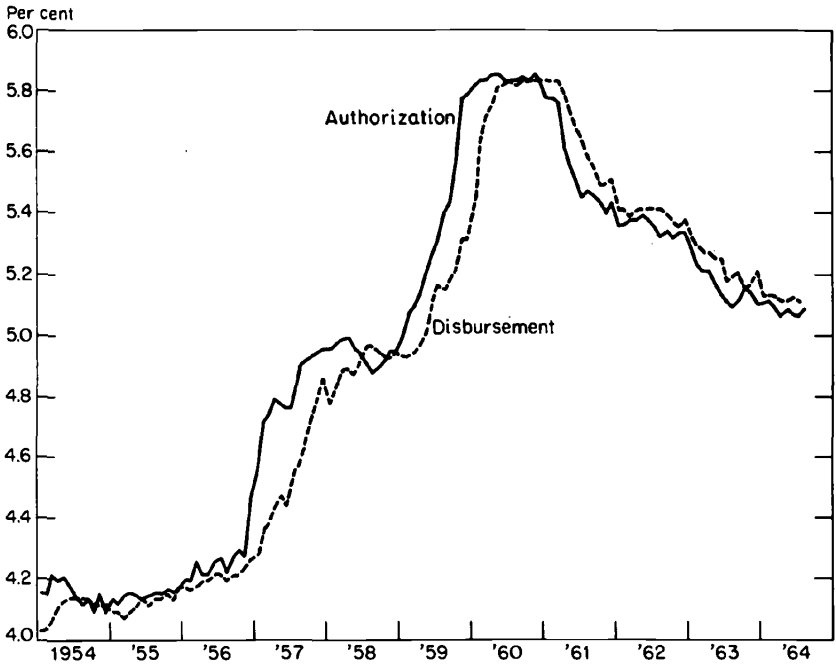
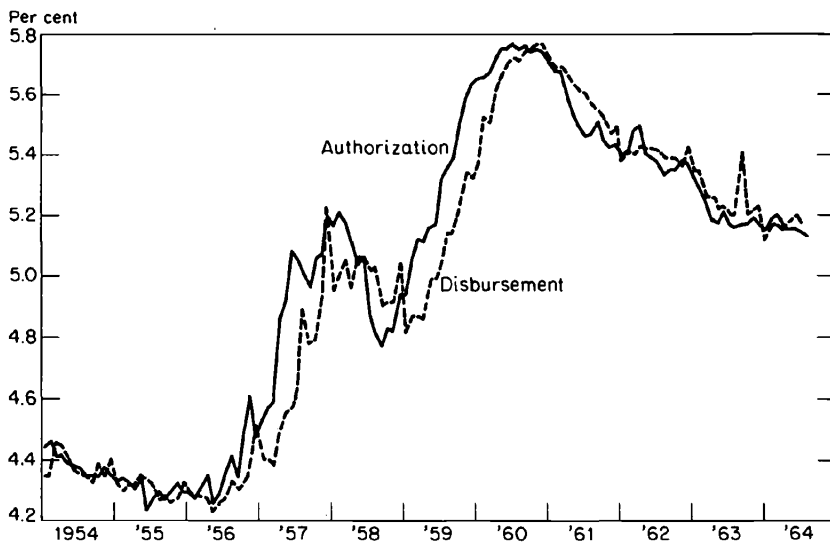


CHART 7-3
 NET YIELD ON CONVENTIONAL CORRESPONDENT LOANS
 BY ONE COMPANY, 1954-64:
 AUTHORIZATION VERSUS DISBURSEMENT BASIS

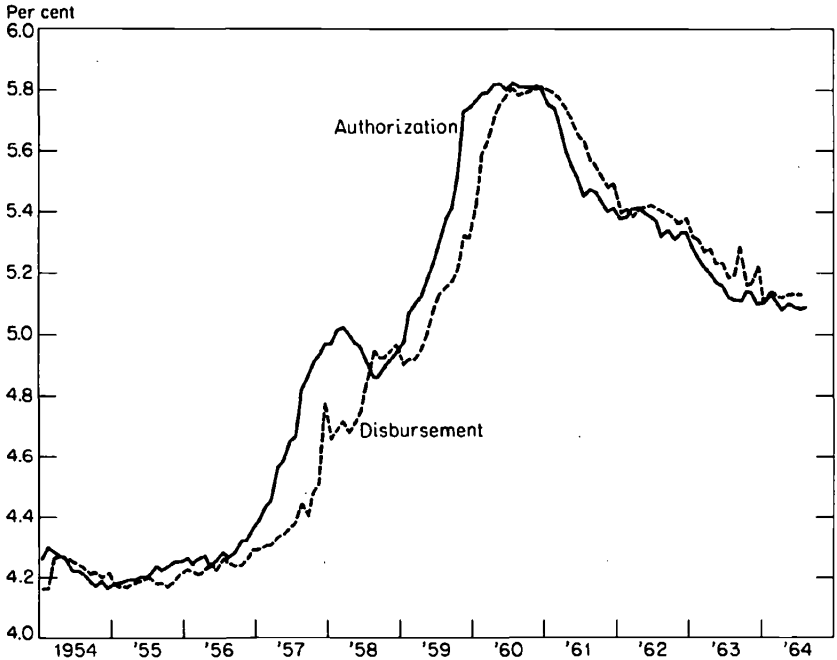


The series shown in Charts 7-2, 7-3,^a and 7-4 are consistent with these suppositions. The 1954-55 trough and the 1960-61 peak are both flat, so that differences in amplitude between authorizations and disbursement series in the three cyclical movements that include these turning points are quite small (see Table 7-2). The short and sharply reversed cyclical decline in 1958-59, however, has a much greater amplitude in the authorization series.

Residual Lag in Authorization Series

Two types of residual lag in authorization series may be distinguished. First, as already noted, the transaction date as we have defined it—the date of approval by the company of a loan application—precedes the date of record of authorization series, which is the date of finance committee meetings. Second, under some circumstances, the true transaction date must be viewed as preceding the date of approval of the loan application. These problems will be considered in turn.

CHART 7-4
 NET YIELD ON ALL RESIDENTIAL CORRESPONDENT
 LOANS BY ONE COMPANY, 1954-64:
 AUTHORIZATION VERSUS DISBURSEMENT BASIS



1. The extent of residual recording lag in authorization series arising from the lag between approval of the loan application and the authorization date, depends mainly on the frequency of finance committee meetings. These were held weekly at two of the companies in our survey and twice monthly at the other two.⁴ The lag is affected slightly by the speed of communications between the field office where loan approval occurs and the home office where the finance committee meets.

Discussions with company officers and sample studies at each company based on individual loan files indicate that the lag between the loan approval date and the finance committee meeting date is generally less than a month, and the average lag is on the order of half a month.

⁴ The frequency of committee meetings did not change at any of the four companies during the 1951-63 period.

TABLE 7-1

Turning Points in Effective Yield:
Authorization and Disbursement Series of One Company

Peak or Trough	Authorization	Disbursement	Authorization Lead (months)
All residential			
T	Jan. 1955	Feb. 1955	1
P	March 1958	Sept. 1958	6
T	Sept. 1958	March 1959	6
P	Nov. 1960	Dec. 1960	1
Conventional			
T	May 1956	June 1956	1
P	Jan. 1958	June 1958	5
T	Sept. 1958	Feb. 1959	5
P	Aug. 1960	Nov. 1960	3
FHA			
T	Jan. 1955	March 1955	2
P	April 1958	Aug. 1958	4
T	Sept. 1958	Feb. 1959	5
P	Nov. 1960	Feb. 1961	3

The results of the sample studies, two for each of the four companies, are summarized in Table 7-3. At two companies, data were available on the date of loan approval (center of the table). The median lag between approval date and the finance committee meeting date was twenty days for both of the samples from Company 1, and twelve and fifteen days for the samples from Company 6. None of the individual loans in these samples lagged more than twenty-eight days. At Company 4, data were available on the date of application and the date a letter of approval was sent to the home office from the field; these dates bracket the date of loan approval, but the notification date ordinarily would be closer. For Company 2, only the date of application was available. These data indicate lags of the same general order of magnitude.

2. Under some circumstances, the true transaction date precedes the date of approval of the loan application, generating a longer lag.

On direct loans, this can happen when a large tract development is involved. Builders planning a large tract typically want some sort of assurance regarding credit availability even before they acquire land

TABLE 7-2

Cyclical Amplitude of Effective Yield
in Authorization and Disbursement Series of One Company
(per cent change)

	Rise 1955-58	Decline 1958-59	Rise 1959-60	Decline 1960-64
All				
Authorization	20.1	2.7	19.2	12.5
Disbursement	18.3	0.1	17.9	11.7
Conventionals				
Authorization	20.8	7.4	19.9	10.7
Disbursement	18.6	3.9	18.9	10.3
FHA				
Authorization	20.9	1.5	19.3	13.3
Disbursement	21.4	0.5	18.2	12.3

Note: Per cent changes are calculated from three-month averages centered at peaks and troughs of each series. Terminal date of 1960 - 64 decline is July 1964 in all series.

or prepare a subdivision. In such cases, it is common to submit tentative plans, and the lender's approval of these plans, which includes a statement of the terms at which credit will be made available if the plans go ahead as stated, constitutes a sort of moral commitment. This is later ratified by the submission and approval of the formal loan application, but the terms in the application hark back to the earlier statement of approval.

Fortunately, data are available for part of the period (1953-61) on the volume of direct loans authorized on large-scale tract developments by the companies in our survey. Such loans constituted less than one-fifth of total authorizations in every year except 1954, when they comprised about two-fifths of the total. From all indications, the figure was less than one-fifth in 1951, 1952, 1962, and 1963. No breakdown is available by type of loan, but company officers indicate that

TABLE 7-3

Distributions of Loans in Samples Drawn from Participating Companies by Number of Days Between Finance Committee Meeting Date and Earlier Stages of the Loan Transaction

Number of Days From Finance Committee Meeting Date	Submission of Application ^a						Loan Approval ^b				Notification of Approval ^c	
	Company 2		Company 4		Company 6		Company 1		Company 4		Company 4	
	1952-53	1962	1953	1962	1951-52	1962	1953	1962	1953	1962	1953	1962
Less than 5	4		3								22	
5-10	5	8	19				17				18	
11-15	13	11	8	1	4	3	23	3			1	13
16-20	0	6	4	11	28	24	8	24			3	8
21-25	0		7	6	20	20		2			4	3
26-30	2		3	6	2						0	9
31-35			0	17							1	17
36-40			2	2								1
41-45			2	4								
46-50			1	2								
51-55	1		1									
Number of loans in sample	25	25	50	49	54	47	50	50	50	50	50	50
Median "lag" (days)	11	12	12	31	20	20	12	15	15	15	5	26

^aBased on date of submission of application to company by correspondent.

^bBased on date when lending officer approved loan to correspondent or other borrower.

^cBased on date when letter of approval was sent to home office from field office.

the proportion of tract loans was much higher on FHA and VA loans, which are used more extensively in tract operations, than on conventional loans.

These facts suggest several tests to assess the effect of moral commitments on the timing of direct loan series. First, since the proportion of moral commitments is considerably higher on FHA than on conventional loans, it can be inferred that if moral commitments affect the timing of series, direct FHA yields should be more sluggish than direct conventional yields. This is not in fact the case. At each of six turning points during 1951-63, FHA and conventional loans turned within one month of each other. Table 3-6 (columns 4 and 5) shows that at four of the five turning points in government bond yields, FHA yields were slightly *less* sluggish than conventional yields on direct loans, while at the fifth (October 1957) turning point, there was no appreciable difference. It may be noted that on correspondent loans also there were no significant differences in the timing of conventional and FHA yields.

A second test is to compare the sluggishness of FHA yields at the 1954 trough, when the volume of tract developments was abnormally large, with the 1958 trough. If moral commitments affected the behavior of the series, the rise in yields that began in late 1954 should have been restrained to a greater degree than the rise from the 1958 trough. Table 3-6 indicates that this was not the case either. Mortgage yields were substantially more sluggish at the 1958 trough, both in absolute terms and relative to other market rates.

Neither of these tests is conclusive, since other factors may affect relative timing of FHA and conventional yields, and of mortgage yields versus bond yields. Yet, it does seem safe to conclude that whatever effect moral commitments had on the timing of the direct loan series was quite small.

On correspondent loans, the true transaction date may precede the date of approval of the loan application when the correspondent commits himself to a builder or mortgagor before obtaining a commitment from the company, *and* the correspondent's commitment is binding on the transaction between the correspondent and the company (see the discussion in Chapter 6). In such case, the date of the correspondent's commitment, step 2b in the listing above, is the true transaction date.

Discussions with company officers and correspondents indicate that on precommitted loans by correspondents, the lag between the corre-

spondent's commitment and the company's commitment may run from a week to several months. The impact on the timing of aggregate correspondent loan series, however, depends not only on this lag but on the relative importance of precommitments by correspondents that are binding on the company, *and* on the relative frequency with which the company changes its buying rate. The last factor is relevant because so long as the buying rate is constant, the correspondent's commitment exercises no constraining influence on the company's commitment.

On the other hand, if the company refrains from raising its buying rate under conditions where it would otherwise do so, in order not to burden correspondents who had committed at a lower rate, the correspondent's commitment is *de facto* binding on the company. It can be argued that in this case, just as in the case where the company raises its rate on new offerings but makes an exception for loans already committed by correspondents, the true transaction date is the date of the correspondent's commitment. As noted in Chapter 4, a relatively stable buying rate may be an alternative to a flexible rate conjoined with precommitment authority granted to correspondents. Alternatively, stable buying rates can be viewed as a behavioral phenomena rather than as a cause of recording lag. In any case, the evidence in Chapter 4 is that correspondent loans do lag direct loans.

