

Do Floating Ceilings Solve the Usury Rate Problem?

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MOST states set maximum limits on interest rates which lenders may charge on residential mortgage loans. These usury laws are intended to protect borrowers from "exorbitant" interest rates which lenders might charge in the absence of such legal controls. Advocates of usury ceilings often express concern for borrowers who have little knowledge of prevailing interest rates or few alternative sources of credit.¹

In most states, usury ceilings on conventional residential mortgage loans are set at *fixed* levels by state laws. When market interest rates rise above the usury ceilings, many individuals cannot find lenders who will finance their home purchases. Also, during such periods residential construction declines relative to that in states not subject to such restrictive usury ceilings.

In recent years several states have raised their usury ceilings, eliminated usury ceilings entirely, or adopted floating ceilings which change periodically as other interest rates change. Floating usury ceilings are intended to protect individual borrowers from unusually high interest rates, while avoiding disruptions in the credit flow to home buyers and reductions in residential construction which can result when market interest rates approach or exceed usury ceilings. This paper evaluates whether floating usury rate formulas recently adopted by various states will avoid impeding the flow of credit to home buyers.

¹For a discussion of arguments in favor of usury ceilings, see Norman N. Bowsher, "Usury Laws: Harmful When Effective," *this Review* (August 1974), pp. 16-23, and Harold C. Nathan, "Economic Analysis of Usury Laws: A Survey," Working Paper 78-7, Federal Deposit Insurance Corporation.

EFFECTS OF USURY CEILINGS: THEORY AND EVIDENCE

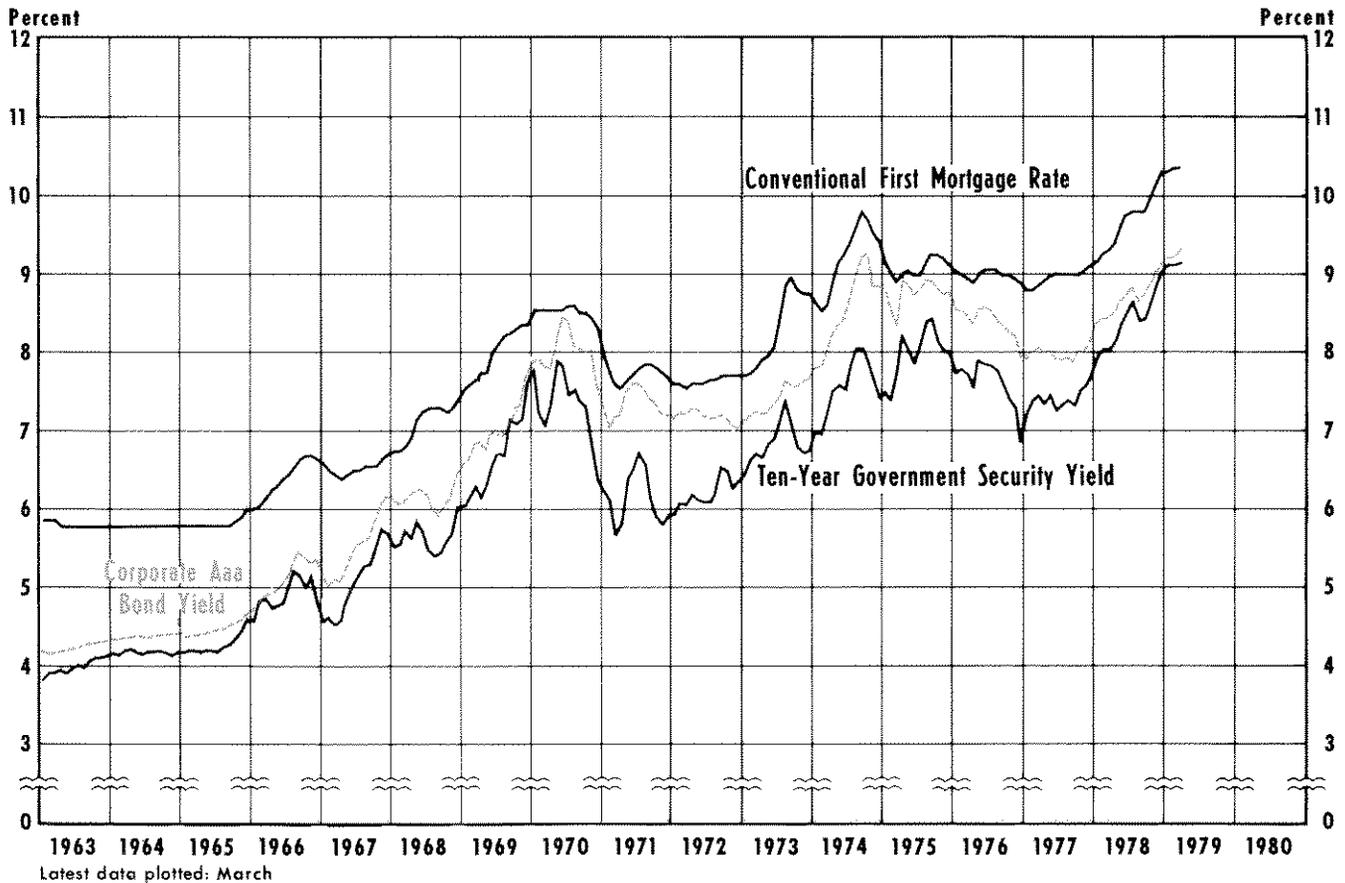
The Residential Mortgage Market: The Theory

Lenders typically make investments which, they hope, will maximize their profits. Consequently, they shift their assets among various investments in response to changes in relative rates of return. For instance, if yields on long-term U.S. Treasury bonds rise relative to yields on residential mortgages, lenders will reduce their mortgage investments and increase their holdings of government bonds. In so doing, they bring relative rates of return back in line.

In addition, lenders can choose to invest in residential mortgages on properties in different parts of the country. In the absence of usury ceilings, mortgage interest rates in any section of the country cannot deviate too much from the national average rate for long. Lenders will make more credit available in areas with relatively high interest rates.

Lenders usually are willing to make more risky mortgage loans if borrowers adequately compensate them for those risks by paying higher interest rates. This trade-off between risk and interest rates can be illustrated for the ratio of mortgage loan to house price, one aspect of risk. Since lenders assume ownership of mortgaged property if borrowers default on mortgage payments, the ratio of the loan to the market value of the house is an important consideration in evaluating risk. Lenders will make loans which are larger relative to the prices of homes being purchased if borrowers will pay sufficiently higher

Chart I
Long-Term Interest Rates



interest rates to compensate for the greater risks. Thus, lenders do not treat mortgage loans as a homogeneous type of asset; they attach various degrees of risk to individual loans, depending upon borrowers' personal circumstances, credit histories, and preference for loan terms. The nature of the properties to be mortgaged also affects risk, differing with the prospects for depreciation in market value.

These mortgage market characteristics indicate that in the absence of government-imposed interest rate ceilings:

- (1) The average level of interest rates on new residential mortgages will fluctuate with changes in other long-term interest rates,
- (2) Interest rates on new residential mortgages will tend to be similar in different parts of the country, when adjusted for differences in the riskiness of loans, and
- (3) Interest rates on new residential mortgages will vary in a given area, depending upon risk characteristics.

The Residential Mortgage Market: Some Evidence

As Chart I indicates, yields on conventional residential mortgages *do* change over time as changes in other long-term interest rates occur. The somewhat fixed differentials between these interest rates reflect the investors' perceptions of differential risks and transactions costs on these types of investments.²

A recent study reports that the range of mortgage interest rates among metropolitan areas averages about 75 basis points. However, the study also re-

²For evidence that lenders shift assets between residential mortgage loans and other long-term investments when relative interest rates change, see William L. Silber, *Portfolio Behavior of Financial Institutions* (New York: Holt, Rinehart and Winston, Inc., 1970, pp. 18-56). Silber found evidence of such behavior for mutual savings banks, pension plans, life insurance companies, and property and casualty insurance companies. He did not find evidence of such substitution among assets by commercial banks and savings and loan associations.

ports that about half of the variation in mortgage interest rates can be explained by loan terms and usury ceilings. After adjusting for these factors, the range of unexplained variation in interest rates is only about 25 basis points.³ Chart II indicates that average mortgage interest rates in individual metropolitan areas remain close to national average interest rates over time, when interest rates in those areas are not constrained by usury ceilings.

Several studies find that, during a given period of time, the interest rates charged by mortgage lenders depend upon the risks and costs associated with individual loans. In general, mortgage interest rates tend to be higher on loans which are a larger percentage of the purchase price of the house, and lower on loans with longer maturities and for homes of higher dollar value.⁴ One study also found that characteristics of the property influenced the mortgage interest rate, with a higher interest rate for a property in poorer physical condition or in a neighborhood with greater risk of depreciation in value.⁵

³Mark Meador, "Interregional Mortgage Rate Differentials," *Federal Home Loan Bank Board Journal* (September 1978), pp. 2-6.

⁴In one study, a researcher applied for mortgage loans at a sample of savings and loan associations (S&Ls) and commercial banks in the Chicago area, providing each lender with the same personal information and description of the house to be purchased. The study was conducted in 1960 and repeated in 1965. In both years he found variation in interest rates among lenders when proposing the same down payment. He also found that individual lenders offered to lend at lower interest rates if he wished to make a larger down payment. See Allen F. Jung, "Terms on Conventional Mortgage Loans—1965 vs. 1960," *National Banking Review* (March 1966), pp. 379-84. Another study was based on a survey of individual mortgage loans made by a sample of S&Ls and commercial banks in the Chicago area from April 1960 through July 1963. Mortgage interest rates were found to be higher on loans with higher ratios of loan to purchase price, lower on loans with longer maturities, and lower on loans for homes of higher dollar value. Mortgage interest rates also were found to be lower at lenders with greater total assets, and varied systematically by location of lenders within the Chicago area. See Alfred N. Page, "The Variation of Mortgage Interest Rates," *Journal of Business* (July 1964), pp. 286-94. For additional evidence on interest rate differentials on residential mortgages, see Jack M. Guttentag, "Changes in the Structure of the Residential Mortgage Market: Analysis and Proposals," Appendix A, in Irwin Friend, ed., *Study of the Savings and Loan Industry*, Vol. IV (Federal Home Loan Bank Board, July 1969), pp. 1545-56. Loan commitment data reported by the Federal Home Loan Bank Board show that interest rates on mortgage loans with loan-to-price ratios of 95 percent are 40 to 50 basis points above rates on loans with loan-to-price ratios of 75 percent. See Stephen T. Zabrenski, "New Measures of Mortgage Rates and Lending Policies," *Federal Home Loan Bank Board Journal* (June 1978), pp. 14-19.

⁵This study used data on about 550 residential mortgage loans made by one large S&L in California from 1967 through 1971. The interest rate on each mortgage was measured as the difference between the effective interest rate on the loan and the average interest rate that the S&L was charging at the time the loan was made. That measure of the interest rate was used

Studies of delinquencies and defaults on residential mortgages indicate that lenders have a sound statistical basis for assigning different risks to mortgage loans, based upon characteristics of borrowers and loan terms. One study found the following factors positively related to incidence of delinquency (loans 90 days or more in arrears) in mortgage payments:

- (1) Ratio of the loan to the purchase price of the house
- (2) Occupation of borrower, with delinquency lower for professionals, executives, and managers, and higher for salespersons
- (3) Number of dependents.⁶

Another study on defaults on FHA-insured home mortgages finds that the incidence of default is positively related to both maturity of loans and loan-to-value ratios, and negatively related to borrowers' income.⁷

A recent study by the U.S. League of Savings Associations indicates that the relatively young with moderate to low incomes are primarily the borrowers who buy their first homes with low percentage down payment loans (see Table I). As indicated in the studies cited above, these are the borrowers most likely to become delinquent or default on their mortgage loans, and, consequently, they are charged higher mortgage interest rates.

Effects of Usury Ceilings on the Market for Residential Mortgages

As mortgage interest rates in a state rise closer to a fixed usury ceiling, two general effects occur.

as the dependent variable in regression analysis. The authors found that mortgage interest rates were positively related to the ratio of the amount of the loan to the appraisal value of the home to be purchased, and negatively related to maturity and dollar amount of the loan. The authors also found that characteristics of the property to be mortgaged influence the mortgage interest rate. Dummy variables for properties in neighborhoods with poorer prospects for appreciation in value and for properties in poorer physical condition had positive regression coefficients which were statistically significant. See Richard L. Sander and Howard E. Sosin, "The Determinants of Mortgage Risk Premiums: A Case Study of the Portfolio of a Savings and Loan Association," *Journal of Business* (January 1975), pp. 27-38.

⁶John P. Herzog and James P. Earley, *Home Mortgage Delinquency and Foreclose* (New York: National Bureau of Economic Research, 1970).

⁷George M. Von Furstenberg, "Default Risk on FHA-Insured Home Mortgages as a Function of the Terms of Financing: A Quantitative Analysis," *Journal of Finance* (June 1969), pp. 459-77, and "Risk Structure and the Distribution of Benefits Within the FHA Home Mortgage Insurance Program," *Journal of Money, Credit and Banking* (August 1970), pp. 303-22.

Table 1
Distribution of First-Time Home Buyers by Age, Income,
and Percentage Down Payment on Mortgage Loans¹

Age of first-time home buyers	Down payment as a percentage of home purchase price				Percentage of first-time home buyers in age group
	5.0%	5.1% to 10.0%	10.1% to 19.9%	Total less than 20%	
18 to 29	5.5%	26.2%	20.0%	51.7%	62.9%
30 to 39	5.9	19.6	17.0	42.5	26.2
40 to 49	4.3	16.8	13.0	34.1	7.0
50 and over	0.8	11.0	10.2	22.0	3.9

Annual income of first-time home buyers	Down payment as a percentage of home purchase price				Percentage of first-time home buyers in income group
	5.0%	5.1% to 10.0%	10.1% to 19.9%	Total less than 20%	
Less than \$15,000	5.6%	23.2%	15.9%	44.7%	22.0%
\$15,000-\$24,999	6.4	27.4	20.7	54.1	49.3
\$25,000-\$34,999	4.6	18.8	54.1	40.7	18.3
\$35,000 or more	2.9	11.6	49.3	29.3	10.4

¹Based upon a national survey of 8,500 purchasers of single-family homes who obtained conventional mortgages at savings and loan associations during 1977.

SOURCE: *Homeownership: Affording the Single-Family Home*, U.S. League of Savings Associations, Economics Department.

First, some borrowers are rationed out of the market because lenders are not permitted to charge above-average interest rates to compensate themselves for additional risk. Only lower-risk borrowers, such as those who have accumulated sufficient savings to make higher percentage down payments, or those buying houses in neighborhoods with less risk of depreciation in market value, receive credit.

Second, as interest rates on alternative long-term investments rise relative to the state's usury ceiling (and as average mortgage interest rates in other states rise above the local ceiling rate), residential mortgage lending will decline relative to that in states not subject to such restrictive limits on interest rates. Since mortgage financing is essential for most home buyers, home building activity in states subject to relatively low usury ceilings will decline relative to that in other states.

One recent study confirms the first effect of usury ceilings on loan terms.⁸ When market interest rates rise above usury ceilings, lenders in states with re-

⁸James R. Ostar, "Effects of Usury Ceilings in the Mortgage Market," *Journal of Finance* (June 1976), pp. 821-34.

strictive usury ceilings indirectly charge higher effective interest rates through higher closing costs. This indicates that lenders circumvent usury ceilings to some extent by charging higher loan fees when contract interest rates are restricted by usury ceilings. However, other results of this study indicate that lenders do not fully circumvent usury ceilings by charging higher fees, since usury ceilings influence other loan terms. In particular, lenders require larger percentage down payments when market interest rates rise near or above usury ceilings. Borrowers unable to meet the higher percentage down payments are rationed out of the market.⁹

The second predicted effect of usury ceilings — a decline in mortgage lending in a state with a relatively low usury ceiling when market interest rates in other states rise above the usury ceiling — is substantiated by studies of mortgage lending in Georgia, New York, and Pennsylvania.¹⁰ Other studies report that usury ceilings affect residential construction activity. Housing starts or permits

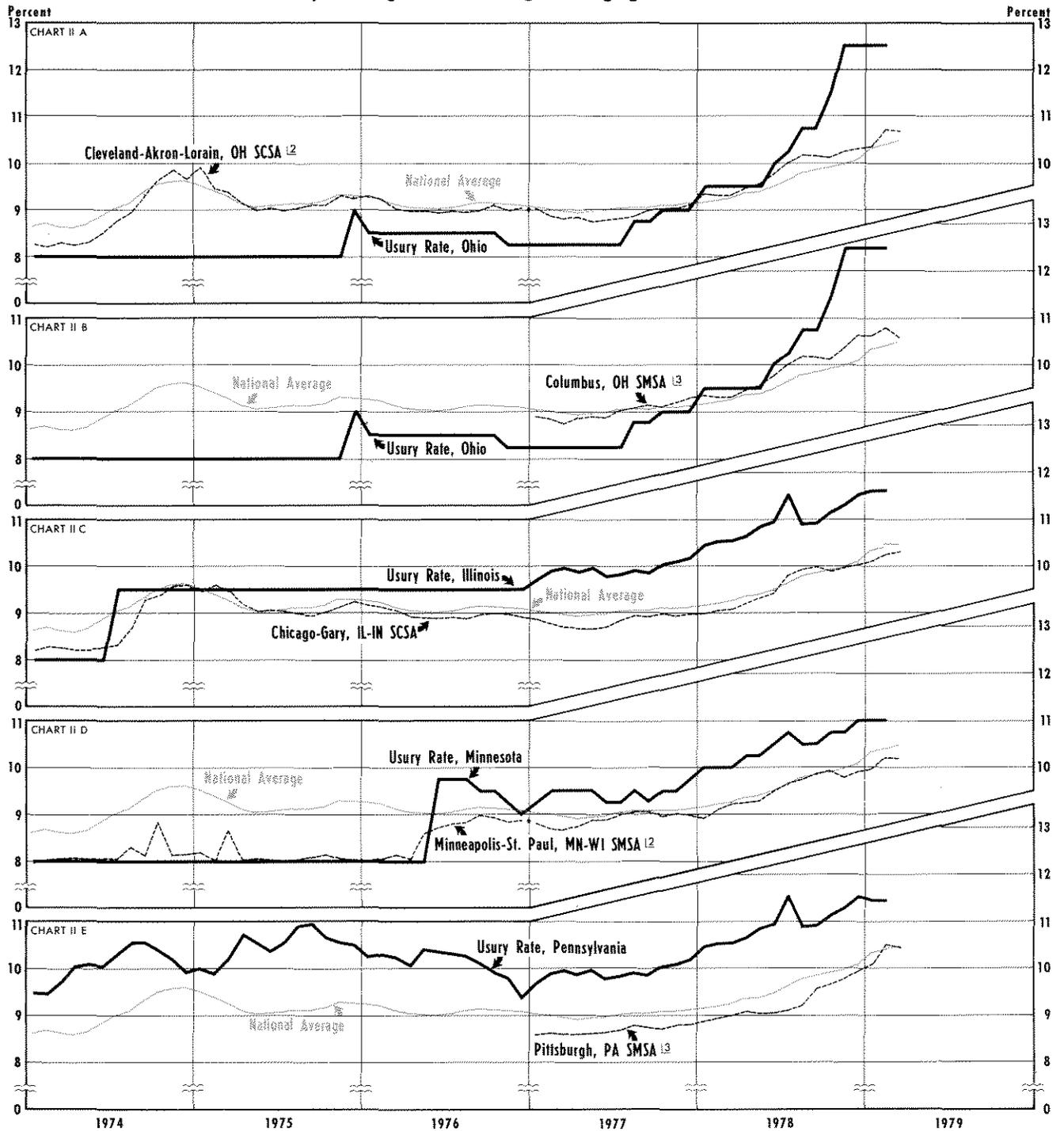
in states with relatively low usury rates decline between 11 and 20 percent for each 100 basis point rise in market interest rates relative to usury ceilings.¹¹

⁹Such rationing occurred in Canada during 1963-67, when maximum rates on government-insured mortgages were set administratively, generally below interest rates on conventional mortgages. During this period, only about 13 percent of mortgages insured by the Canadian government were made to individuals in the bottom third of the income distribution, compared to 30 percent during 1971-75 when the ceiling was removed entirely. Lawrence B. Smith, "An Analysis of the Effects of the Removal of the Yield Ceiling on Federally Insured Mortgages in Canada," *Journal of Finance* (March 1977), pp. 195-201.

¹⁰Charles L. France, "Pennsylvania's Floating Usury Ceiling: An Economic Evaluation," Working Paper #1, Federal Home Loan Bank of Pittsburgh, August 1975; Ernest Kohn, Carmen J. Carlo, and Bernard Kaye, "The Impact of New York's Usury Ceiling on Local Mortgage Lending Activity," New York State Banking Department, January 1976, and James E. McNulty, "A Reexamination of the Problem of State Usury Ceilings: The Impact in the Mortgage Market," Working Paper #21, Federal Home Loan Bank Board, March 1979.

¹¹Ostar, "Effects of Usury Ceilings"; Philip K. Robins, "The Effects of State Usury Ceilings on Single Family Homebuilding," *Journal of Finance* (March 1974), pp. 227-35; and Kenneth Rosen, "The Impact of State Usury Laws on the Housing Finance System and on New Residential Construction," Princeton University, 1978.

Usury Ceilings and Average Mortgage Interest Rates ¹



¹ Average mortgage interest rates are effective rates for the purchase of previously-occupied homes.

² Effective January 1977, data are based on expanded geographic areas.

³ Data not available prior to 1977.

Latest data plotted: Usury Rate-February; Others-March preliminary

Source: Federal Home Loan Bank Board News

FLOATING USURY RATES: A NEW TYPE OF CEILING

In recent years several states have established usury ceilings which are automatically adjusted at frequent intervals to changes in other interest rates (see Table II). Floating ceilings are intended to avoid the harmful effects of fixed ceilings on home financing and residential construction, while still protecting borrowers from possible "exorbitant" interest rates. These floating usury ceilings are tied to various interest rates, the most common being yields on long-term U.S. Government bonds and the Federal Reserve discount rate.

Do Lenders Always Charge the Floating Usury Rate?

One issue that concerns advocates of usury ceilings is whether lenders would always charge the maximum interest rate permissible on residential mortgages. Finance companies which make small loans to individuals often charge the maximum interest rates allowed by states and raise their loan rates whenever the usury limits are raised. Do lenders in the residential mortgage market respond similarly when floating usury ceilings rise?

Chart II provides evidence on this issue. Usury ceilings and average mortgage interest rates are plotted for five metropolitan areas in states which have had floating usury ceilings for several years.¹²

The chart for the Cleveland, Ohio, area requires special explanation, since average mortgage interest rates were above the usury ceiling during 1974-77. Savings and loan associations are exempt from the Ohio usury law, and, therefore, can make mortgage loans at interest rates above the usury ceiling. The same explanation applies to mortgage interest rates for Columbus, Ohio, in 1977, when the survey of mortgage interest rates began for that area. Since the second half of 1977, the usury ceiling has been above average mortgage interest rates, which indicates that the rates lenders charge are not determined by the

floating usury ceiling. Average mortgage interest rates in Cleveland and in Columbus were approximately the same as the national average, both when mortgage rates in those two cities were above the usury ceiling and when they were below.

In the Chicago area, mortgage interest rates apparently were constrained lower than national average mortgage rates in the first half of 1974 by the 8 percent usury ceiling. Contract interest rates were equal to or below the usury ceiling, but effective interest rates were slightly higher due to initial fees. Since early 1975, average mortgage interest rates in the Chicago area have been below the state usury ceiling, following closely the national average mortgage interest rate.

Mortgage rates in Minneapolis were substantially below national average interest rates until early 1976, when the state usury rate was allowed to float at 2 percentage points above the yield on ten-year U.S. Treasury bills.¹³ Since then, average mortgage interest rates in the Minneapolis area have been below the usury ceiling and have followed the national average mortgage interest rate. The same pattern holds for Pittsburgh, with average mortgage interest rates in that area remaining substantially below the floating usury ceiling for Pennsylvania since 1977.

Are the Floating Usury Rates Set High Enough?

Use of a *floating* usury ceiling will avoid problems in mortgage financing which occasionally result with *fixed* ceilings only if the floating rate remains above the mortgage interest rates that would prevail in the absence of usury ceilings. Relationships among interest rates vary over time, and, therefore, a floating usury rate which is currently above mortgage interest rates may be below in the future. Also, a floating ceiling which remains above national *average* mortgage rates may not be high enough to enable relatively high-risk borrowers to obtain funds.

The prospects for the various floating usury ceilings to remain above mortgage interest rates in the future can be assessed by examining past relationships between interest rates on conventional residential mort-

¹²The mortgage interest rates are those on existing homes, which tend to be higher than mortgage rates on newly-built homes. Using the higher of these average interest rates is appropriate in determining whether lenders always charge interest rates equal to the legal maximums, because it intentionally biases the observations in the direction of finding such a pattern. Average mortgage interest rates for the Philadelphia area are based upon a high percentage of mortgage loans made by lenders outside of Pennsylvania. Therefore, observations are not presented for the Philadelphia area.

¹³For a few months in 1974 and 1975, average contract interest rates on conventional residential mortgages on existing homes in the Minneapolis-St. Paul area were above 8 percent. This is probably due to an exemption from the usury laws for loans of \$100,000 or more, and loans by some national banks at 1 percentage point above the Federal Reserve discount rate, a permissible interest rate for national banks. The discount rate was above 7 percent during that period.

Table II

Floating State Usury Ceilings

State	Usury Ceiling on Residential Mortgages	Exemptions	Effective Date	Prior Ceiling	Number of months since January 1963 when the implied usury ceilings were equal to or below: ¹		
					National average interest rate on conventional residential mortgages for newly-built homes	National average mortgage interest rate plus 25 basis points	National average mortgage interest rate plus 50 basis points
Alaska	5 percentage points above discount rate of 12th Federal Reserve District	loans over \$100,000	June 1976	4 percentage points above discount rate of 12th Federal Reserve District	0	0	0
Delaware	4 percentage points above Federal Reserve discount rate	FHA, VA, and loans over \$100,000	August 1974	9%	0	4	17
Georgia	2½ percentage points above monthly index of long-term U.S. Government bond yields, rounded to the nearest 25 basis points	FHA, VA, and loans over \$100,000	March 1979	9%	0	0	8
Illinois	2½ percentage points above monthly index of long-term U.S. Government bond yields	FHA and VA loans	January 1977	9½%	0	0	1
Iowa	2 percentage points above index of 10-year constant maturity U.S. Government notes and bonds, with ceiling changed quarterly	FHA and VA loans	July 1978	9%	6	41	113
Minnesota	2 percentage points above monthly index of long-term U.S. Government bond yields, rounded to the nearest 25 basis points	FHA, VA, and loans over \$100,000	May 1976	8%	6	49	125
Montana	greater of 10% or 4 percentage points above discount rate of 9th Federal Reserve District on conventional mortgage and VA loans up to \$150,000 greater of 10% or 5 percentage points above discount rate of 9th Federal Reserve District on conventional mortgage and VA loans between \$150,000 and \$300,000	FHA loans; conventional and VA loans over \$300,000	April 1975	10%	0	0	0

Nevada	12% or 3½ percentage points above the lowest daily prime rate at the 3 largest U.S. banks, if this rate is 9% or more	FHA and VA loans	June 1975	12%	0	0	0
New York	2 percentage points above index of 10-year constant maturity notes and bonds, with ceiling set quarterly and increased by no more than 25 basis points from one quarter to the next ²	FHA, VA, and loans over \$250,000 except those secured by 1- to 2-family residential property	May 1979	9½%	19	70	152
North Dakota	greater of 7% or 3 percentage points above the rate on 30-month certificates of deposit ³	FHA and VA loans	March 1969	7%	31	40	48
Ohio	3 percentage points above discount rate of 4th Federal Reserve District	FHA, VA loans, loans over \$100,000, and loans by savings and loan associations	November 1975	8%	50	69	89
Pennsylvania	2½ percentage points above the monthly index of long-term U.S. Government bond yields	FHA and VA loans; conventional mortgage loans over \$50,000; loans secured by real estate, 3 or more units	January 1974	8%	0	0	1
Vermont	1¼ percentage points above the average of the yield of 3- to 5-year U.S. Government securities and the yield on seasoned corporate bonds ⁴	FHA and VA loans	March 1979	Same as current ceiling, but subject to maximum rate of 9¾%	112	160	179
West Virginia	1½ percentage points above monthly index of long-term U.S. Government bond yields	FHA and VA loans	June 1978	8%	193	193	193

NOTE: Effective May 1, 1979, Tennessee adopted a floating ceiling on residential mortgages set monthly at 2 percentage points above the Federal National Mortgage Association (FNMA) auction rate on conventional mortgages. The implied floating ceiling for Tennessee is above the conventional mortgage rate plus 50 basis points since 1972, when the FNMA series began.

¹The floating usury ceilings in each month for Alaska, Delaware, Montana, Nevada, and Ohio are based upon the Federal Reserve discount rate or prime rates of large commercial banks for the same month. The floating usury rates in each month for Georgia, Illinois, Minnesota, Pennsylvania, Vermont, and West Virginia are based on specified interest rates in effect two months earlier. The floating rate for Iowa is set quarterly. For each month in a calendar quarter, Iowa's floating rate is based on the specified interest rate in effect two months prior to the beginning month of the quarter. The rate for New York is calculated similarly, except that increases are limited to a maximum of 25 basis points, and that the first quarter of each year begins in February to correspond to the timing of the New York floating rate law.

²The usury ceiling on residential mortgages in New York state was increased in January 1979 from 8½% to 9½%, with the floating usury rate taking effect in the quarter beginning May 1979.

³Applies to institutions other than savings and loan associations (S&Ls). Conventional mortgage loans made by S&Ls are subject to a ceiling of 12%.

⁴Applies to mortgage loans on 1- to 2-family residential property.

gages and interest rates to which the floating rates are tied. Most floating ceilings have been adopted only since 1974. Suppose, however, they had been in effect since 1963. Would the implied usury ceilings calculated from the floating rate formulas have been higher than the average interest rates on conventional residential mortgages since 1963?¹⁴

Results of comparisons of implied usury ceilings to mortgage interest rates are presented in the last three columns of Table II. The first of these columns gives the number of months since January 1963 when the implied floating usury ceilings are equal to or *below* the national average interest rate on conventional mortgages for newly-built homes. This table indicates that some states have set their floating usury ceilings too low to avoid disruptions in the flow of credit to home buyers. These observations are especially pertinent for Vermont and West Virginia, which have set their floating rate formulas so low that the implied usury ceilings are below the national average interest rates on conventional mortgages for most months since 1963.¹⁵

Restrictions on the speed with which floating usury rates are allowed to adjust to changes in market interest rates also create potential problems in home financing. Iowa restricts the speed of adjustment in its floating rate by setting its usury ceiling quarterly, at 2 percentage points above the yield on ten-year U.S. Treasury bonds. The implied usury rates calculated for Iowa are below the conventional mortgage interest rate for six months since 1963. If the floating ceiling rate for Iowa were set monthly instead of quarterly, the implied usury rate would have been below the national average mortgage rate for only one month since January 1963.

The floating usury rate formula recently adopted by New York state restricts the speed of adjustment

to other interest rates even more than that of Iowa.¹⁶ Under the New York law, the usury rate will be set quarterly at 2 percentage points above the yield on ten-year U.S. Treasury bonds, but increases in the usury rate from one quarter to the next may be no greater than 25 basis points. The implied usury rates based upon the New York specification are equal to or less than mortgage interest rates for nineteen months over the period since 1963, more than three times as often as for Iowa which does not limit the quarterly changes in its usury rate.

Minnesota has another type of restriction on the speed of adjustment of its usury ceiling. The floating ceiling is adjusted *monthly* to a level 2 percentage points above the yield on ten-year U.S. Treasury bonds, but rounded to the nearest 25 basis points. If, for instance, the yield on ten-year U.S. Treasury bonds is 8.12 percent, the usury ceiling in Minnesota is 10 percent; with a ten-year bond yield of 8.13 percent, the usury ceiling is 10.25 percent. Rounding to the nearest 25 basis points tends to delay the rise in the usury ceiling when long-term interest rates are rising, and to delay the decline in the usury ceiling when long-term rates are declining. Since January 1963, the implied usury ceiling for Minnesota is less than the national average mortgage interest rate for six months, whereas it would have been below for only one month without rounding to the nearest 25 basis points.

To some extent these restrictions on the speed of adjustment defeat the purpose for having a floating usury rate. The restrictions occasionally cause the implied floating usury rates for Iowa, Minnesota, and New York to be below mortgage interest rates when long-term interest rates are rising rapidly.

The relatively low usury ceiling in Ohio during 1976-77 illustrates the problem with tying a usury ceiling to the Federal Reserve discount rate. When Ohio initially adopted the floating usury ceiling in November 1975, the usury rate was increased 100 basis points to only 25 basis points below the national average mortgage interest rate. However, the gap between the usury rate and the national average mortgage rate began to widen almost immediately, as the Federal Reserve twice lowered the discount rate during 1976. Two major problems with tying usury ceilings on residential mortgage interest rates to the discount rate are these: 1) the Federal Reserve generally adjusts the discount rate to changes in *short-term* market interest rates, whereas mortgages are

¹⁴These comparisons may understate the effects of usury ceilings on the flow of credit to home buyers, since some of the mortgage interest rates incorporated in the national average rate were at times constrained by usury ceilings. One study reports that when interest rates are relatively low, the average mortgage interest rates in areas with relatively high usury ceilings are approximately equal to the national average rate, but when interest rates are high, increases in the national average rate lag behind the increases in areas with relatively high usury ceilings. See McNulty, "A Reexamination of the Problem of State Usury Ceilings," pp. 5-9.

¹⁵Two other states with implied floating usury ceilings which were below mortgage interest rates for a substantial number of months are North Dakota and Ohio. However, those states make exceptions for S&Ls. In North Dakota, S&Ls are subject to a 12 percent usury ceiling, and in Ohio, S&Ls are exempt from the usury ceiling. Therefore, the major effect of usury ceilings on residential mortgages in these states is to determine which financial institutions make mortgage loans during certain periods.

¹⁶The New York usury ceiling on residential mortgages was recently raised to 9.50 percent, and beginning May 1, 1979, will be set quarterly according to a floating rate formula.

long-term investments, and there often are large gaps between short-term and long-term interest rates, and 2) at times, the discount rate, being set by administrative action and not by market forces, is allowed to remain out of line with other interest rates.

The potential for the floating usury rates to create mortgage financing problems for relatively high-risk borrowers can be assessed by adding 25 to 50 basis points to the average conventional mortgage rate on newly-built homes, and comparing that interest rate to the implied floating ceilings for each month since 1963. Two recent studies indicate that a state's usury ceiling must be at least 50 basis points above the national average mortgage interest rate in order to avoid impeding the flow of credit to relatively high-risk borrowers.¹⁷

For several states, the floating usury rates are almost always above the average mortgage rate, but are *below* the average mortgage rate plus 25 basis points for a substantial number of months. Of course, the differences are even greater with 50 basis points added. The frequency with which implied usury ceilings are below the average mortgage interest rate plus 50 basis points is especially great for states with restrictions on the speed of adjustment of their floating rates. For instance, the average mortgage interest rate plus 50 basis points is above the implied usury rate for New York about 80 percent of the time since 1963, and above the implied usury ceiling in Minnesota about 65 percent of the time. Thus, floating usury ceilings in several states are likely to ration relatively high-risk borrowers out of the mortgage market much of the time. This is substantiated by a study of Minnesota's floating usury ceiling which reports that conventional mortgage loans in that state continue to have relatively high percentage down payments since the floating ceiling was adopted.¹⁸

In contrast, states with usury ceilings 2.50 percentage points above yields on long-term U.S. Government bonds, or 5 percentage points above the Federal Reserve discount rate, and no restrictions on the speed of response of usury ceilings to changes in

the interest rates to which they are tied, are almost always above the national average mortgage interest rate. This result holds even with additional basis points added to the average mortgage rate to allow for a risk premium for loans with higher-risk characteristics.¹⁹ These appear to be the minimum differentials above the yields on ten-year U.S. Treasury bonds and the Federal Reserve discount rate which are necessary to avoid impeding the flow of credit to home buyers.

CONCLUSIONS

Since fixed usury ceilings on residential mortgage interest rates, at times, have had adverse effects on home financing and residential construction, several states recently have adopted floating usury rates in an attempt to avoid these adverse effects when mortgage interest rates rise. These floating usury rates are increased or decreased in specified relationships to various other interest rates, the most common being yields on ten-year U.S. Treasury bonds and the Federal Reserve discount rate.

Two issues are raised concerning the effects of the floating usury rates. The first is whether mortgage interest rates equal the floating usury ceilings. In general, average mortgage interest rates charged by lenders in areas subject to floating usury ceilings remain approximately equal to *national* average mortgage interest rates, not the floating usury ceilings.

The other issue is whether the floating usury rates adopted by various states have been set high enough to remain above national average interest rates on residential mortgages over time. Based upon past relationships between mortgage interest rates and the other interest rates to which the floating usury ceilings are tied, floating usury rates for a few states were below national average mortgage interest rates for substantial periods of time. Floating usury ceilings in several additional states are set so close to average mortgage interest rates that relatively high-risk borrowers will frequently be rationed out of the market for conventional residential mortgages. In contrast, states with usury rates set 2.50 percentage points above yields on ten-year U.S. Treasury bonds or 5 percentage points above the Federal Reserve discount rate appear to have set their usury ceilings high enough to avoid impeding the flow of credit to home buyers.

¹⁷One study finds that Georgia's usury ceiling begins to affect mortgage loan originations by savings and loan associations in Georgia when the market interest rate on mortgages rises to within 50 basis points of the usury ceiling. McNulty, "A Reexamination of the Problem of State Usury Ceilings." A survey of interest rates on loan commitments finds that interest rates on loans with loan-to-price ratios of 95 percent are 40 to 50 basis points above those on loans with loan-to-price ratios of 75 percent. Zabrenski, "New Measures of Mortgage Rates and Lending Policies."

¹⁸David S. Dahl, Stanley L. Graham, and Arthur J. Rolnick, "Minnesota's Usury Law: A Reevaluation," *Ninth District Quarterly*, Federal Reserve Bank of Minneapolis (Spring 1977), pp. 1-6.

¹⁹The result also holds for Tennessee's recently adopted floating ceiling (effective May 1, 1979) set at 2 percentage points above the Federal National Mortgage Association (FNMA) auction rate on conventional mortgages. The implied floating ceiling for Tennessee is above the conventional mortgage rate plus 50 basis points since 1972, when the FNMA series began.