Mortgage Rates and Regulation Q

by

Thomas Mayer and **Harold Nathan**

This material is excerpted from a study of the distributional effects of regulation Q written for the Office of the Comptroller of the Currency. Copies of the longer paper are available upon request.

COMMENTS REQUESTED.

Working Paper Series
No. 171

July 1981

Department of Economics
University of California
Davis, California

Mortgage Rates and Regulation Q*

Thomas Mayer

University of California, Davis

and

Harold Nathan

Continental Illinois Bank

A major issue in the debate about phasing out Regulation Q ceilings is the effect of rising deposit rates on mortgage rates[1]. The most widely accepted view is probably that the elimination of the ceilings will raise mortgage rates because thrift institutions set their mortgage rates by adding a more or less fixed mark-up to their deposit rate. The popularity of this view is not surprising given the strong evidence for mark-up pricing in the industrial sector [9] and the official dedication of thrift institutions to servicing the mortgage market. Hence studies of the impact of Regulation Q on the income distribution have simply assumed that it forces savers to subsidize mortgage borrowers. [See 2,5.]

However, there is little empirical evidence for mark-up pricing by thrift institutions. Myron Slovin and Marie Shushka [10] in their study of deposit setting by thrift institutions tested a profit (or surplus) maximizing model against a deposit maximizing model. While mark-up on average cost is consistent with deposit maximizing it is not consistent with profit maximizing. Since Slovin and Shushka found that the profit maximizing hypothesis performs much better than the deposit maximizing hypothesis, their test appears to reject mark-up pricing by thrift institutions. However, their test is not conclusive evidence against assigning a significant role to deposit

maximizing since they did not consider a third possibility, a mixture of profit maximizing and deposit maximizing. Additional evidence against the mark-up hypothesis is provided by Taggard's detailed study of the behavior of Massachusetts savings banks. He concluded that "it does not appear that savings banks pass on part of their ceiling-induced rents to borrowers in the form of lower loan rates." [11, p. 150]

On the other hand, in a recent study Dwight Jaffee and Kenneth Rosen [3] reject profit maximizing in favor of mark-up pricing. But, as Thomas King [6] has shown, their results are not robust; they change radically if the model is corrected for some misspecifications.[2]

This paper presents some additional tests of the mark-up on average cost hypothesis and shows that this hypothesis is rejected by the data. It then shows that under the rival hypotheses that depository institutions either set mortgage rates as a mark-up on marginal costs or else set them to maximize profits, the elimination of Regulation Q may well reduce rather than raise mortgage rates.

I

Our first test of the mark-up on average cost hypothesis is the simplest one of just comparing deposit rates and the mortgage rates. Unfortunately, the available deposit rate data refer only to the average rate paid, and hence do not allow a test of the hypothesis that thrifts add a fixed mark-up to the rate they pay on <u>new</u> deposits, i.e., to their marginal cost of funds.[3]

But with respect to the hypothesis that thrifts set mortgage rates by adding a fixed mark-up to their <u>average</u> cost of funds, Figures 1 and 2 give an unequivocal answer. The mortgage rate charged by savings and loan associations as shown in Figure

1 is hard to explain by the behavior of the deposit rate. While the deposit rate rises smoothly and steadily, the mortgage rate has substantial fluctuations. For example, the mortgage rate fell sharply in 1970-72, even though the deposit rate continued to rise. Although both rates then rose again until late 1974, the mortgage rate rose much faster. In late 1973 it then fell again while the deposit rate kept on rising. All in all, there is little relation between the two series except for a common upward trend, and even this trend is considerably more pronounced for the mortgage rate than for the deposit rate. A similar story is told by Figure 2 for the deposit and mortgage rates of mutual savings banks.

For a more formal test, the mark-up on average costs hypothesis should be contrasted with the profit maximizing hypothesis. But since no direct data on the profit-maximizing level of mortgage rates are available, proxies have to be used. One proxy is the government bond rate on the assumption that the government bond rate and the rate that maximizes profits for the thrifts are closely correlated.[4] Another possibility is to make the plausible assumption that commercial banks and mortgage companies set their mortgage rates at the profit-maximizing level, and that the mortgage rate that maximizes profits for thrift institutions is highly correlated with this rate. The government bond rate has the advantage that, since this rate is set by the market, there is no doubt that it is the market-clearing equilibrium rate, while it is certainly possible that banks and mortgage companies use mark-up pricing and do not maximize profits. On the other hand, the mortgage rates charged by commercial banks and by mortgage companies have an offsetting advantage; they are set in markets that are more closely tied to the mortgage market of thrift institutions than is the government securities rate.

Tables 1 and 2 show the results of regressing the mortgage rate of savings and loans on their own deposit rate, on the mortgage rates of commercial banks and of mortgage companies, and on the 10-year government bond rate both for new homes and for previously owned homes.[5] The first group of regressions consist of simple regressions, while the second group are multiple regressions that use both the deposit rate and another interest rate. The data are semiannual and cover the period 1966 to the first half of 1979. The results are clearly not favorable for the mark-up hypothesis. In the simple regressions, all three proxies for the profit-maximizing rate perform better than the deposit rate does, though for the government bond rate the difference is, in the case of hew homes, not large.

These results are confirmed by multiple regressions that include both the deposit rate and the other interest rates. When the commercial bank mortgage rate is included along with the savings and loan deposit rate, the latter variable is never positive and significant (one tailed test). Of the seven deposit rate coefficients that exceed their standard errors, five have the wrong sign! By contrast, the coefficient of the bank mortgage rate in the current period is always highly significant and positive. When the mortgage rate charged by mortgage companies is used in place of the bank mortgage rate, then the current period's savings and loan deposit rate is significant with the right sign except in the regressions for new homes using two lags. And this is also true when the government bond rate is substituted for the mortgage company rate. But the coefficients of the mortgage rate of mortgage companies and the government bond rate have substantially higher t values.

Table 3 shows the results for mutual savings banks. The data here are annual and cover only 1965-77 so that the sample is quite small. And since for previously

occupied houses even fewer observations are available, no regressions were run for them. Because of the limited degrees of freedom, current and lagged interest rates were not entered jointly, but used only in separate regressions.

The regression for mutual savings banks giving the best fit is that for the current year's commerical bank mortgage rate, and the second best is the current government bond rate, and the third best is the current mortgage company rate. The fit of the deposit rate regression is inferior to all three of these, though the difference is not very great. The deposit rate coefficients have the further problem of being too large, the point estimates implying that a 1 percent rise in the deposit rate raises the mortgage rate by about 2 percent.

In the multiple regression tests, the deposit rate becomes insignificant in the presence of the commercial bank mortgage rate, and in the current year regression also in the presence of the mortgage rate of mortgage companies. In the regression using the lagged deposit and mortgage rates both variables are insignificant (two tailed test). This regression is probably a mispecification since its fit is not as good as that of the unlagged regression. In the multiple regressions using the government bond rate the bond rate is significant in the current period regression and the deposit rate is significant in the lagged regression.[6] Since the unlagged regression has the better fit, there is some presumption that it is the more reliable one, though this presumption is not strong, particularly given the small size of the sample. [See 7]

On the whole, these regressions suggest that savings and loan associations and mutal savings banks set their deposit rates either to approximate the profit maximizing rate or as a mark-up on the <u>marginal</u> costs of funds and not primarily by adding a mark-up to their average cost of funds.[7] Indeed, if one uses the mortgage rate of commercial banks as the proxy for the profit-maximizing mortgage rate of thrift

institutions, then there is no evidence in these regressions that the average deposit rate plays any role at all in determining the mortgage rate of thrift institutions. These regressions, therefore, reinforce what Figures 1-3 have shown, as well as the findings of Slovin and Shushka and Taggard.

However, they do not suffice to confirm the profit maximizing theory since they do not reject the possibility that mutuals set their deposit rate as a mark-up on their marginal costs of funds. This is so because the marginal cost of those funds which thrift institutions raise in the open market is presumably closely correlated with the government bond rate, and also with the mortgage rates charged by banks and by mortgage companies. Hence, the above evidence can be read as supporting both the profit-maximizing and the mark-up on marginal cost of funds hypotheses. In the absence of data on the marginal cost of funds, one cannot test which of these two is right. The effect of Regulation Q on mortgage rates will therefore have to be considered under both of these hypotheses in a qualitative rather than in a quantitative way.

II

Consider first what happens if Regulation Q covers all the funds obtained by depository institutions. Then Regulation Q obviously reduces the mortgage rates if the institutions set mortgage rates by adding a fixed mark-up to the marginal cost of funds. But this case of institutions using only deposit funds and a fixed mark-up over marginal costs cannot be the dominant one. In this situation under Regulation Q the marginal cost of funds corresponds to the average cost of funds, i.e. the deposit rate. Hence, if institutions set the mortgage rate equal to marginal costs then in the above

regressions the deposit rate should have provided a much better than it actually did.

If, on the other hand, institutions set mortage rates to maximize profit, then Regulation Q raises mortgage rates. Price control over an essential input, by lowering the supply of this input--and thus lowering output--raises the price. This is shown in Figure 3.[8] Initially the marginal cost curve of the firm is MC_0 and the price is P_0. Price control over an essential input lowers the left segment of the marginal cost curve, but at the point where the firm is purchasing all it can obtain of this input, the marginal cost curve MC_1 becomes vertical (or more correctly it becomes discontinuous). Hence, output falls to Q_1 and the price rises to P_1.[9]

Now consider a situation in which depository institutions obtain some of their funds on the open market, that is in ways that are not effectively covered by Regulation Q, such as issuing large CD's or money market certificates. Distinguish between two types of institutions. The first one borrows on the open market only because Regulation Q has reduced its deposit volume. Assuming that even in the absence of Regulation Q the marginal cost of deposits is less than the marginal cost of open market funds, Regulation Q raises the marginal cost for this type of institution, so that the marginal cost curve intersects the marginal revenue curve at a point corresponding to a higher price. Hence, Regulation Q raises the mortgage rate for this type of institution regardless of whether it sets this rate as a mark-up on marginal costs or to maximize profits.

Then there are those institutions that would borrow in the open market even in the absence of Regulation Q. For them Regulation Q has no direct effect on marginal costs since, on our assumption that deposits are always cheaper than open market funds, the marginal cost of funds is the open market rate. But Regulation Q has an indirect effect since it affects the open market rate in several ways. One is that by

inducing disintermediation it lowers investment in housing and thus lowers the effective demand for funds.[10] Second, a lower deposit rate may change the supply of funds by changing the saving rate, with the direction of this effect depending upon the relative strength of the income effect and the substitution effect.

These results can be summarized in the following matrix where "+" signifies that Regulation Q raises mortgage rates, "-" that it lowers mortgage rates and a "?" that this depends on how it affects open market rates.[11]

The institution:	Deposit rates set: as mark-up on marginal costs	Deposit rates set: to maximize profits
obtains all its funds from deposits covered by Regulation Q	-[a.]	+
borrows on the open market even in the absence of Regulation Q	?	?
borrows on the open market only because Regulation Q lowers its deposits	+	+

a. this case is inconsistent with the results shown by the previous regressions.

The matrix shows that except in one, empirically doubtful case, the direction of the effect does not depend on whether institutions maximize profits or set mortgage rates as a mark-up on marginal costs. This is hardly surprising since if marginal costs rise both firms that maximize profits and firms that set price as a markup on marginal costs raise their prices.

If one treats the effect of Regulation Q on open market rates as a second order effect that can be ignored, then the matrix shows that Regulation Q leaves the

mortgage rates unaffected in two cases, raises it in two other cases and lowers it in one case.[12] But this last case cannot be the dominant one since it implies that the mortgage rate closely correlated with the average cost of funds, an hypothesis rejected by the above regressions.

This does not necessarily deny that the phasing out of Regulation Q will raise mortgage rates. First, although the regressions showed that the mortgage rates of thrift institutions are explained much better by open market rates than by their own deposit rates, these regressions do not imply tht the average deposit rate has no effect at all on the mortgage rate. In fact, in some regressions the average deposit rate had a significant coefficient with the right sign. Second, if the phasing out of Regulation Q leads to widespread failures of thrift institutions the resulting disruption of the mortgage market may raise mortgage rates temporarily. Third, mortgage rates will also rise to the extent that the failure of some thrift institutions reduces competition in the mortgage market. But it is far from clear that these effects will be strong enough to offset those factors (shown by pluses in the matrix) that will cause mortgage rates to decline as Regulation Q is phased out. It could therefore easily well be the case that the elimination of Regulation Q will lower mortgage rates. Those who advocate the retention of Regulation Q on the argument that it is needed to hold mortgage rates down are therefore on weak ground.

Footnotes

1. We use the term "Regulation Q" as shorthand for the interest rate ceiling on time and savings deposits. Actually, Regulation Q also includes the prohibition of interest payments on demand deposits.

2. In a subsequent paper, Rosen and Jaffee discuss the effect on mortgage rates of an innovation that represents a partial removal of Regulation Q, the introduction of money market certificates. They conclude that there was little net effect since the net effect on mortgage rates "is the result of two offsetting forces: downward pressure created by augmented deposit flows and upward pressure created by increased costs of funds for thrift institutions." [4, p. 370] But this result is not robust since the reported standard error of their mortgage flow coefficient is large. And this reported standard error is understated because their regression included the lagged dependent variable. Moreover, their finding that deposit rates play a significant role in determining mortgage rates should not be interpreted, as it is by Jaffee and Rosen, as evidence for mark-up pricing. Prices that are set to maximize profits also rise when marginal costs rise. In addition, as Benjamin Friedman [1] pointed out Jaffee and Rosen should have distinguished between long run and short run effects, and mark-up pricing of deposits is less likely in the long run that in the short run.

3. More precisely, for savings and loans what we use was not actually the deposit rate, but the average cost of funds as given in the FHLBB Journal. For mutual savings banks a corresponding rate is not available, and hence we use the deposit rate. We for simplicity refer to both of these rates as "the deposit rate."

4. Fortunately there is a little danger that the government bond rate measures the average cost of new deposits to the thrifts, because Regulation Q was binding during much of the period covered.

5. These regressions include lagged maturity and loan/price variables and a dummy variable to take care of a discontinuity in the data. The regressions used are not the fruits of a fishing expedition. They are the only ones that were run, apart from some regressions inadvertently run with the wrong variables, with wrong lags, or containing other errors.

6. To maintain comparability, all of the above regressions were run with a Cochrane-Orcutt adjustment for serial correlation, even if they had a low autocorrelation coefficient. To check on the possibility that this resulted in errors, regressions with low autocorrelation coefficients were rerun in unadjusted form. The results, shown in Appendix tables available upon request, confirm the ones discussed above.

7. To be sure, causation may go both ways; banks may match the mortgage rate charged by savings and loan associations. But one would hardly expect that the government bond rate is determined by the mortgage rate charged by savings and loans.

8. For a somewhat different diagram, but one with the same implications, see King [6, pp. 1-6.]

9. King [6, p. 7] suggests that instead of raising mortgage rates lenders might decrease maturities and loan-to-value ratios. But such quality deterioration can be treated as equivalent to an increase in the mortgage rate. For simplicity Figure 3 ignores the fact that Regulation Q, by lowering output shifts the demand curve facing each firm outward.

10. With respect to open market rates Regulation Q operates like a credit allocation system.

11. In principle, one could add another case, one in which Regulation Q, by inducing a decline in open market rates, induces institutions that previously did not borrow in the open market to do so now. But it is very unlikely that open market rates would fall enough to make open market funds cheaper than deposits.

12. It is doubtful that Regulation Q has a strong effect on open market rates. In fact, if Meltzer [8] is correct and disintermediation has no strong effect on residential construction, then Regulation Q has no significant effect on open market rates unless it changes the savings rate or the income level. Moreover, even if disintermediation does have a significant effect on residential construction, its effect on mortgage rates is probably minor. For example, assume that it reduces residential construction by 5 percent. For the period 1977-79 this corresponds to a 1.5 percent drop in total investment plus the government deficit. If as an outside estimate one assumes that the interest elasticity of the real interest rate with respect to investment is 10 (which corresponds to an interest elasticity of investment of 0.1), then the 10 percent drop in residential construction results in a 15 percent rise in the real interest rate. If one takes the real interest rate as 3 percent one obtains an outside estimate of the rise in the marginal costs of funds of one half of one percent. (This, of course, makes no allowance for the effect of changing deposit and open market rates on the savings rate.)

References

1. Friedman, Benjamin, "Comments and Discussion," in Brookings Papers on Economic Activity, 1979: 2, pp

2. Hendershott, Patric and Kevin Villani, Regulation and Reform of the Housing Finance System, Washington D.C., American Enterprise Institute for Policy Research, 1977.

3. Jaffee, Dwight and Kenneth Rosen, "A Monthly Forecasting Model of Deposits, Mortgage Advances and Housing," unpublished manuscript, 1978.

4. _____, "Mortgage Credit Availability and Residential Construction," Brookings Papers on Economic Activity, 1979: 2.

5. Kane, Edward, "Short-Changing the Small Saver: Federal Government Discrimination Against Small Savers," Journal of Money, Credit and Banking, vol. 2, November 1970, pp 513-22.

6. King, Thomas, "The Deposit Rate and Mortgage Rate: Does Regulation Q Promote Home Ownership?" Office of Economic Research, Federal Home Loan Bank Board, Research Workingpaper #85, 1979.

7. Mayer, Thomas, "Selecting Economic Hypotheses by Goodness of Fit," Economic Journal, vol. 85, December 1975, pp 877-83.

8. Meltzer, Allan, "Credit Availability and Economic Decisions," in Karl Brunner (ed.), Government Credit Allocation, San Francisco Institute for Contemporary Studies, 1975, pp 123-150.

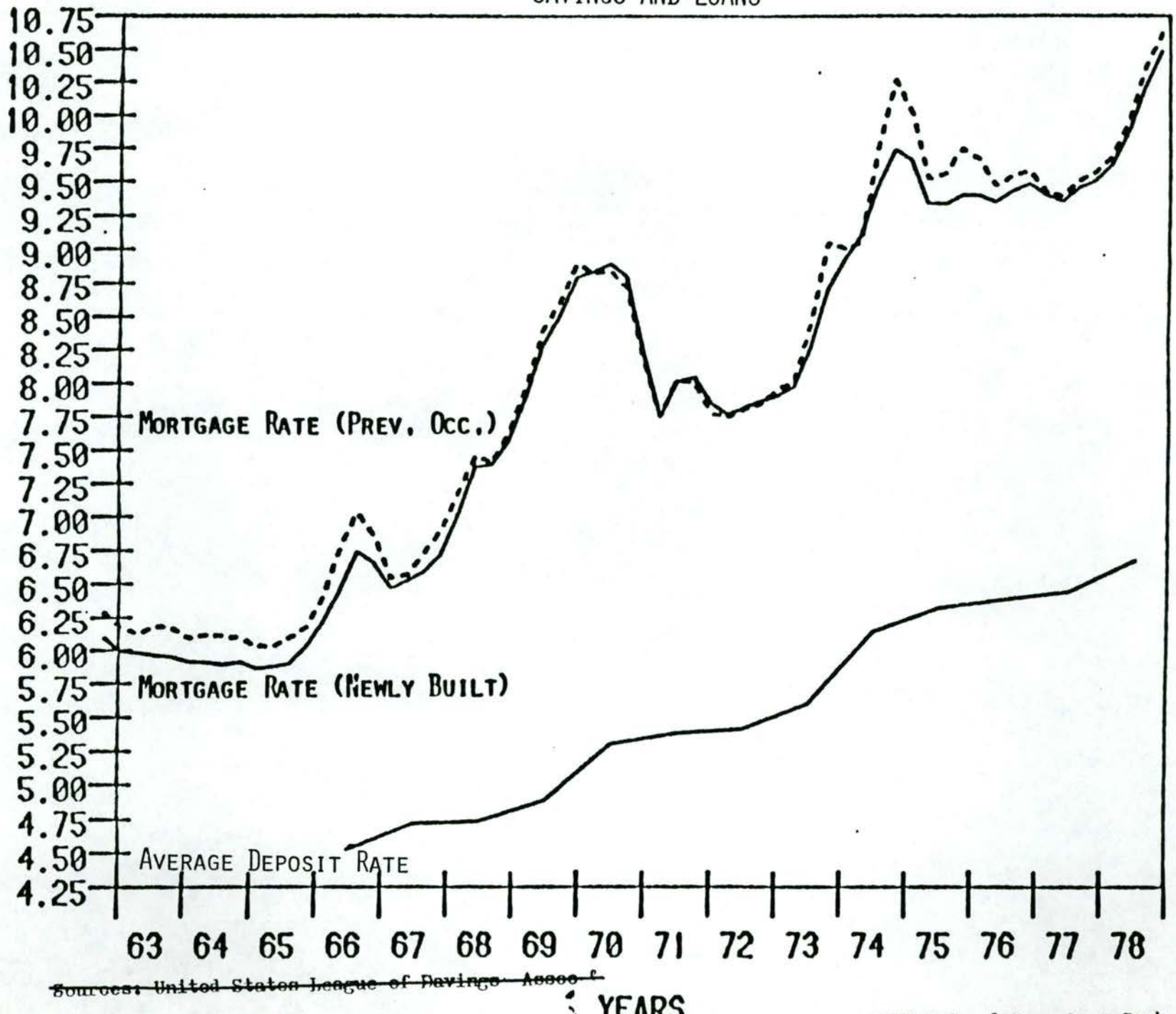
9. Nordhaus, William, "Recent Developments in Price Dynamics," in Board of Governors Federal Reserve System, The Econometrics of Price Determination Conference, Washington D.C., 1972, pp 16-49.

10. Slovin, Myron and Marie Shushka, Interest Rates and Savings Deposits, Lexington, Mass., Lexington Books, 1975.

11. Taggard, Robert, "Effect of Deposit Rate Ceilings: The Evidence from Massachusetts Savings Banks, Journal of Money, Credit and Banking, vol. 10, May 1978, pp 134-57.

MORTGAGE RATES AND DEPOSIT RATES
SAVINGS AND LOANS

FIGURE 1

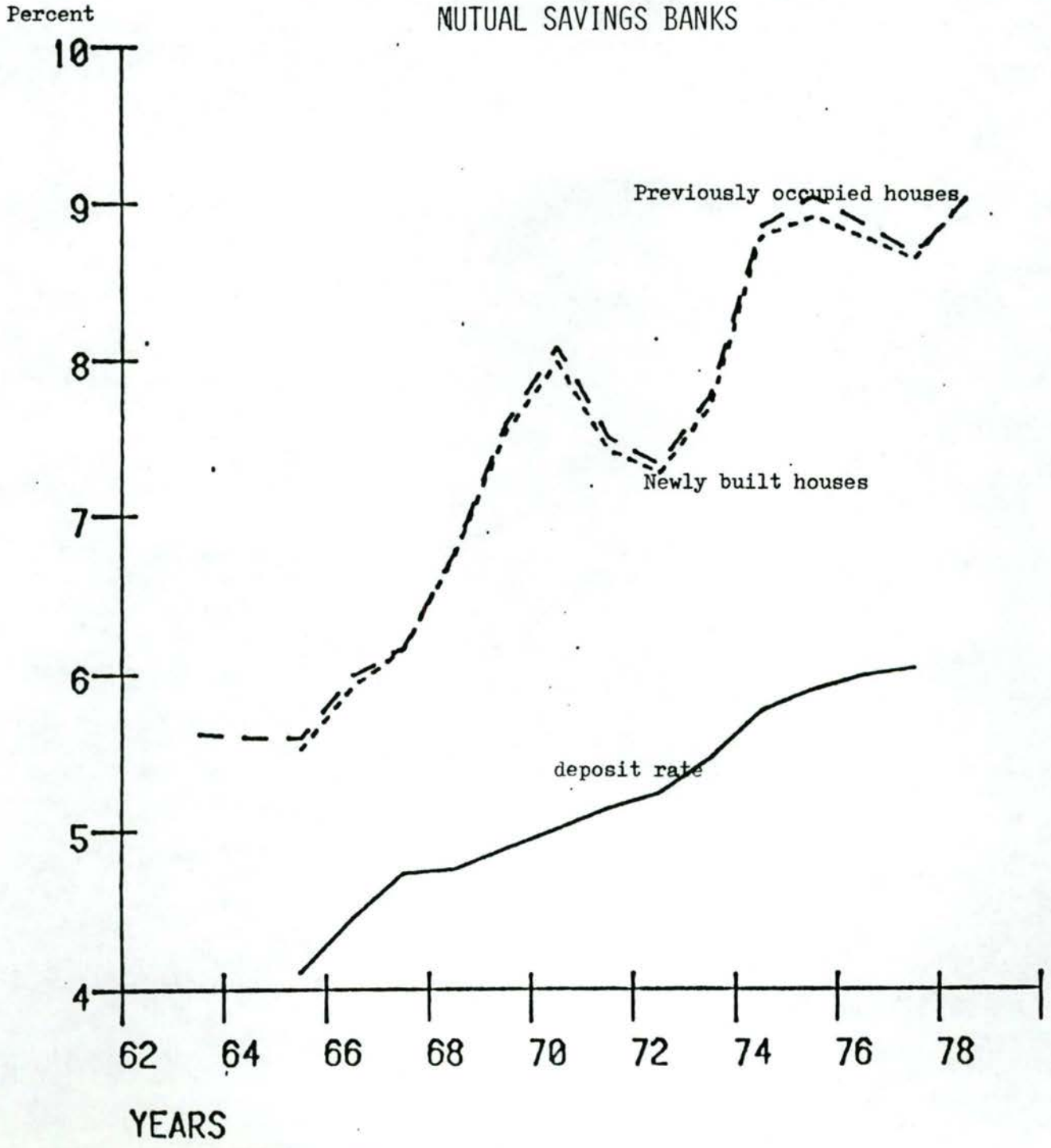


~~Sources: United States League of Savings Assoc f~~

Sources : United States League of Savings Associations, Fact Book , 1972, 1979, Federal Home Loan Bank Board, "Mortgage Interest Rate Survey."

FIGURE 2

MORTGAGE INTEREST RATES AND DEPOSIT RATES
MUTUAL SAVINGS BANKS



Sources: Same as Fig. 1.

FIGURE 3

EFFECT OF INPUT PRICE CONTROL ON OUTPUT PRICE

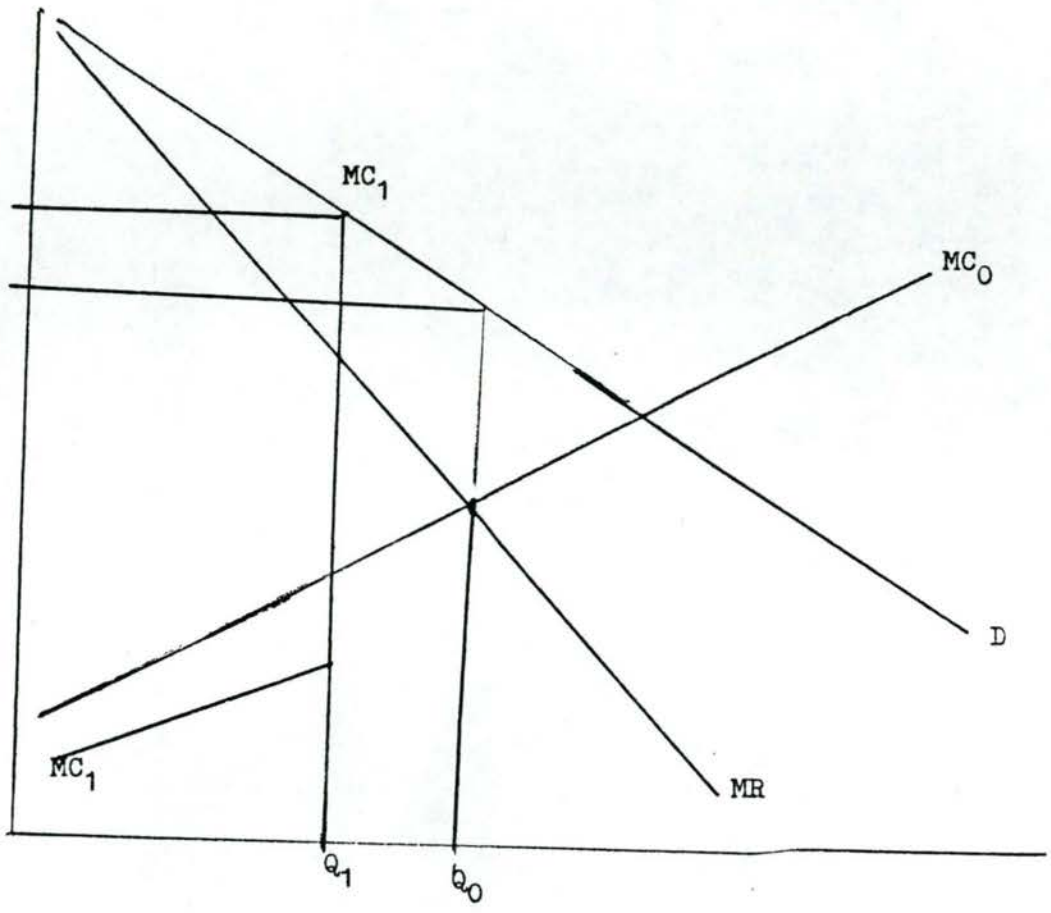


Table 1

MORTGAGE RATE REGRESSIONS - SAVINGS&LOAN ASSOCIATIONS

NEW HOMES

S&L Deposit Rate			Comm. Bank Mortg. Rate			Mortg. Co. Mortg. Rate			10 Year Govt. Bond Rate			R^2/SE	D-W	RHO
Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.			
1.025												.970	2.2	.789
(3.2)												.219		(6.8)
1.336	-.501											.966	2.3	.779
(2.3)	(-.7)											.224		(6.5)
1.326	-.065	-.915										.965	2.3	.837
(2.3)	(-.1)	(-1.6)										.222		(7.8)
			.971									.997	1.5	.606
			(29.0)									.070		(5.0)
			.951	.014								.997	1.5	.661
			(17.9)	(.2)								.071		(4.6)
			.996	-.025	-009							.997	1.6	.706
			(20.8)	(-.4)	(-.2)							.063		(6.5)
						.859						.992	1.5	.974
						(11.2)						.115		(22.9)
						.807	.194					.993	1.7	.974
						(11.7)	(2.9)					.100		(22.2)
						.899	.197	.181				.993	1.8	.706
						(12.9)	(2.6)	(2.0)				.100		(6.5)
									.690			.979	1.9	.194
									(8.5)			.182		(1.0)
									.482	.312		.987	2.0	.013
									(6.3)	(4.4)		.138		(0.1)
									.511	.197	.105	.987	2.0	.006
									(6.4)	(1.8)	(1.3)	.139		(0)
-.042			.989									.997	1.6	.694
(-.4)			(16.4)									.071		(5.1)
.089	-.422		.925	.048								.997	1.6	.921
(.4)	(-1.9)		(14.4)	(.7)								.070		(12.3)
.170	-.439	.153	.972	-002	.024							.998	1.4	.837
(.8)	(-1.8)	(.8)	(15.0)	(0)	(.4)							.062		(7.8)
.541						.804						.996	1.8	.687
(5.3)						(13.2)						.006		(5.0)
.479	-.045					.780	.125					.996	2.0	.737
(2.0)	(-.2)					(11.1)	(1.9)					.085		(5.7)
.414	-.149	.128				.810	.140	.051				.995	2.0	.785
(1.6)	(-.4)	(.5)				(10.3)	(1.8)	(.6)				.090		(6.5)
.806									.602			.987	2.0	.240
(3.7)									(8.6)			.146		(1.3)
.559	-097								.496	.236		.990	1.9	.072
(1.8)	(-.3)								(6.6)	(3.1)		.128		(.4)
.570	-.045	-.376							.501	.143	.101	.990	1.9	.078
(1.6)	(-.1)	(-.9)							(6.4)	(1.3)	(1.1)	.130		(.4)

Note: t values in parentheses.

Table 2

MORTGAGE RATE REGRESSIONS - SAIVINGS&LOAN ASSOCIATIONS
PREVIOUSLY OCCUPIED HOMES a/

S&L Deposit Rate			Comm. Bank Mort. Rate			Mortg. Co. Mortg. Rate			10 Year Govt. Bond Rate			R^2/SE	D-W	RHO
Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.	Current	Lagged 1/2 Yr.	Lagged 1 Yr.			
1.040												.962	2.1	.553
(2.5)												.246		3.5
1.547	-1.111											.962	2.1	.464
(2.6)	(-1.4)											.244		(2.7)
1.381	-1.016	-.233										.957	1.9	.457
(2.0)	(-1.0)	(-.3)										.254		(2.6)
			1.034									.995	1.8	.267
			(31.3)									.094		(1.5)
			1.090	-.055								.994	1.9	.237
			(14.7)	(-.8)								.096		(1.3)
			1.086	-.028	-.027							.993	1.7	.250
			(13.9)	(-.2)	(-.3)							.101		(1.3)
						.846						.994	2.0	.455
						(13.5)						.116		(2.4)
						.836	.255					.995	1.9	.762
						(10.8)	(3.2)					.106		(5.3)
						.768	.202	-.056				.995	2.0	-.031
						(9.6)	(1.8)	(-.5)				.110		(-.1)
									.555			.984	1.9	.011
									(7.5)			.160		(.1)
									.424	.205		.987	1.8	-.145
									(5.4)	(2.9)		.143		(-.8)
									.415	.219	-.007	.986	1.9	-.108
									(4.6)	(1.8)	(-.1)	.146		(-.6)
-.160			1.107									.995	1.8	.250
(-1.3)			(16.8)									.092		(1.4)
.343	-.463		1.028	.041								.995	1.8	.207
(1.1)	(-1.8)		(11.9)	(.5)								.092		(1.1)
.520	-.978	.220	1.017	-.027	-.128							.995	1.7	.243
(1.5)	(-2.1)	(.8)	(11.5)	(-.2)	(1.1)							.093		(1.3)
.376						.775						.995	1.7	.442
(2.0)						(11.4)						.100		(2.3)
.649	-.660					.729	.151					.996	2.1	.487
(2.2)	(-1.9)					(9.8)	(2.1)					.098		(2.5)
1.159	-1.342	.107				.679	.170	.086				.998	2.5	.027
(4.1)	(-2.6)	(.4)				(9.9)	(2.4)	(1.1)				.072		(.1)
.772									.559			.990	2.1	-.235
(3.8)									(10.5)			.130		(-1.3)
.763	-.240								.461	.143		.991	2.0	-.302
(2.8)	(-.7)								(5.5)	(2.1)		.124		(-1.7)
.755	-.226	-.089							.468	.112	.030	.990	2.0	-.298
(2.1)	(-.3)	(-.2)							(4.7)	(.9)	(.3)	.134		(-1.6)

a/ Cochrone-Orcutt Adjustments.

Note: t values in parentheses.

Table 3

MORTGAGE RATE REGRESSIONS - NEW HOMES MUTUAL SAVINGS BANKS[a/]

MSB Deposit Rate		Comm. Bank Mortg. Rate		Mortgage Co. Mortg. Rate		10 Year Govt. Bond Rate		R^2/SE	D-W	RHO
Current	1 Year lag	Current	1 Year lag	Current	1 Year lag	Current	1 Year lag			
1.993								.961	1.7	.213
(5.9)								.284		(.8)
	2.211							.979	2.0	-.528
	(13.1)							.200		(-2.2)
		1.050						.999	1.9	.363
		(52.8)						.054		(1.5)
			.611					.917	1.5	.451
			(3.2)					.402		(1.8)
				.851				.983	1.6	.358
				(9.5)				.189		(1.4)
					.594			.933	1.5	.652
					(2.9)			.360		(3.1)
						.819		.987	2.3	-.170
						(14.6)		.168		(-.6)
							.562	.939	2.2	.186
							(3.7)	.344		(.7)
-.125		1.092						.999	2.1	-.495
(-1.1)		(27.2)						.053		(-2.1)
	-.200		.677					.917	1.5	.467
	(-.2)		(1.4)					.429		(1.9)
.545				.719				.986	1.6	.377
(1.2)				(5.1)				.184		(1.5)
	1.472				.271			.954	1.3	.591
	(1.8)				(1.0)			.319		(2.6)
.606						.628		.990	2.3	.082
(1.9)						(4.9)		.153		(.31)
	2.534						-.106	.980	1.9	-.749
	(5.6)						(-.7)	.209		(-4.1)

a/ Cochrane-Orcutt Adjustments

Note: t values in parentheses.