RESEARCH PROGRAM IN FINANCE

WORKING PAPER NO. 57

INTEREST RATE CEILINGS AND NET WORTH LOSSES BY SAVERS

by

David H. Pyle

February 1977

David H. Pyle is Associate Professor, School of Business Administration, University of California, Berkeley. Funds for this research were provided by a grant from the Dean Witter Foundation, and computer time was provided by the UC Computer Center. This assistance is gratefully acknowledged. This study has been improved by discussions with colleagues and, in particular, by suggestions made by Robert A. Meyer. Research assistance was provided by David Uyeda.
I. INTRODUCTION

In the literature on grants economics (e.g., Boulding, 1973), an essential characteristic of a grant is the redistribution of net worth from one person or group to another. In the Interest Rate Adjustment Act of 1966, Congress established maximum deposit interest rate regulations for all the major savings institutions in the United States. The act also established a positive spread between the maximum rates payable by savings and loan associations (and savings banks) and the maximum rates payable by commercial banks.¹ This interest rate regulation resulted from concern regarding the solvency of savings and loan associations and savings banks in a period of rapidly rising short-term interest rates and concern that weakness in these savings institutions might adversely affect the supply of funds to housing finance.²

As a result of the regulation of the maximum interest rates payable by such institutions, savers who held interest-bearing accounts at all three types of savings institutions received less interest income than they would otherwise have received. This study, as was the case for an earlier study on the same theme (Pyle, 1974), considers the implicit grant resulting from the joint regulation of maximum deposit interest rates payable by commercial banks, mutual savings banks, and savings and loan associations.³ The implicit grant estimated here is an estimate of the net worth loss imposed by the Interest Rate Adjustment Act of 1966 on savers who did not find suitable alternative ways of saving during the period 1968–1975. As shown in table 1, thrift deposits at the major
<table>
<thead>
<tr>
<th>Year</th>
<th>Thrift Deposits at Commercial Banks</th>
<th>Thrift Deposits at Savings and Loan Associations</th>
<th>Thrift Deposits at Savings Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>171.2</td>
<td>128.1</td>
<td>62.5</td>
</tr>
<tr>
<td>1969</td>
<td>183.4</td>
<td>133.6</td>
<td>66.0</td>
</tr>
<tr>
<td>1970</td>
<td>191.5</td>
<td>141.0</td>
<td>68.9</td>
</tr>
<tr>
<td>1971</td>
<td>224.5</td>
<td>160.4</td>
<td>76.5</td>
</tr>
<tr>
<td>1972</td>
<td>255.9</td>
<td>190.5</td>
<td>86.5</td>
</tr>
<tr>
<td>1973</td>
<td>285.8</td>
<td>216.9</td>
<td>94.1</td>
</tr>
<tr>
<td>1974</td>
<td>317.7</td>
<td>235.0</td>
<td>97.6</td>
</tr>
<tr>
<td>1975</td>
<td>351.3</td>
<td>264.5</td>
<td>104.3</td>
</tr>
</tbody>
</table>

savings institutions grew in every year of the period under study. Why didn’t thrift deposit savers find suitable alternatives when other savers did find alternatives to deposits subject to rate ceilings (e.g., the holders of large certificates of deposit at commercial banks, whose balances in this instrument fell by 53 percent in 1969)? Presumably, this was because many thrift deposit savers did not know of or could not avail themselves of alternatives offering higher rates. Transaction costs, minimum transaction quantities, information costs, and inconvenience prevented many savers from buying short-term market securities. Most importantly, in terms of the net worth losses reported here, interest rate ceilings precluded interest rate competition among savings institutions that had previously provided low transaction cost, low minimum balance, well-known, convenient alternatives for thrift deposit savers.

II. PREDICTING DEPOSIT INTEREST RATES
IN THE ABSENCE OF CEILINGS

To estimate the size of the net worth losses to savers as a result of the Interest Rate Adjustment Act of 1968, an estimate is needed of the interest rates that would have been paid on thrift deposits in the absence of this law. Note that the emphasis here is not on the effects of maximum deposit rates per se, since commercial banks were subject to ceiling rates under Regulation Q prior to the passage of the Interest Rate Adjustment Act. Rather, the emphasis is on the particular effects of the joint regulation of maximum rates at all major savings institutions.
The evidence from the growth rate of thrift deposits and from simple regressions of the average interest rates paid on deposits on market interest rates suggests that the rates paid by savings institutions in 1967 were not significantly affected by the 1966 legislation. Consequently, this observation was used in obtaining the prediction equations.  

To obtain a set of prediction equations for the annual average rates paid by the three major types of savings institutions, the following simultaneous, rate-adjustment model was estimated for the period 1952-1967, using two-stage least squares:  

\[
\begin{align*}
(1) \quad i_{SL}(t) &= i_{SL}(t-1) + a_1[i_G(t) - i_{SL}(t-1) + k_{SL}] \\
&\quad + a_2[i_{CB}(t) - i_{SL}(t-1) + k_{SL}] + u_{SL}(t) \\
(2) \quad i_{CB}(t) &= i_{CB}(t-1) + b_1[i_G(t) - i_{CB}(t-1) + k_{CB}] \\
&\quad + b_2[i_{SL}(t) - i_{CB}(t-1) + k_{CB}] + b_3d(t) + u_{CB}(t) \\
(3) \quad i_{MS}(t) &= i_{MS}(t-1) + c_1[i_G(t) - i_{MS}(t-1) + k_{MS}] \\
&\quad + c_2[i_{CB}(t) - i_{MS}(t-1) + k_{MS}] + u_{MS}(t),
\end{align*}
\]

where \(i_{SL}, i_{CB},\) and \(i_{MS}\) are annual average rates of interest paid on thrift deposits by savings and loan associations, commercial banks, and mutual savings banks, respectively; \(i_G\) is the annual average yield to maturity on five-year U.S. government bonds;
\( d \) is a dummy variable which is 0 before 1962 and 1 thereafter; \( k \) and \( \lambda \) are constants in the various rate adjustment functions; and

\( u \) is the error term.

The logic of this adjustment model is that the current average rate paid by a savings institution is its most recent average rate adjusted by the difference between the most recent rate and the current rate on a primary security and by the difference between the most recent rate and the current rate on a competitive secondary security. The constants in these adjustment functions may be interpreted as normal or steady-state spreads between the various rates. The dummy variable in the commercial bank equation is intended to capture the effect of changing competitive attitudes by commercial banks with respect to savings and time deposits. The introduction of negotiable CDs in 1961 is an objective indicator of this shift in bank behavior.

The results of the experiment with this model suggested that the average rate paid on the competitive secondary security \((i_{GB})\) was not a significant determinant of the average rate paid by savings and loan associations \((\hat{a}_2 = 0.034, \text{ with a } t\text{-statistic of } 0.169)\), and that the average yield on the primary security \((i_C)\) was not a significant determinant of the average rate paid by mutual savings banks \((\hat{a}_1 = 0.0089, \text{ with a } t\text{-statistic of } 0.166)\).\(^8\) Elimination of these variables reduced the rate-adjustment equations to a recursive system, which was then reestimated using ordinary least squares.
In the earlier paper (Pyle, 1974), this recursive system was estimated by unconstrained, ordinary, least squares. Over the five-year forecast period considered there, the resulting predictions appeared reasonable. In particular, it was shown that the forecasts for 1971 and 1972 (when the behavior of savings and loan associations and mutual savings banks was presumably unconstrained by interest-rate ceilings) were close to the actual rates paid by those institutions (on average). However, experiments with the unconstrained, least squares forecasts for the longer period of this study suggested that forecast errors which appeared to be reasonable in shorter-term forecasts accumulate and lead to unreasonable forecasts in later years. As a result of this concern over the longer-run properties of the prediction equations, the original specification was subjected to two tests.

First, the three unconstrained equations were tested to see if the sum of the coefficients of the independent variables in each equation is significantly different from one, the constraint implied by the rate-adjustment model. The results of the t-test for each equation are:

- savings and loan rate equation:  \( t(13) = -0.69 \)
- commercial bank rate equation:  \( t(11) = 2.10 \)
- mutual savings bank rate equation:  \( t(13) = -2.69 \)

It appears that one can reject the exact rate-adjustment specification for the mutual savings bank rate equation and that many investigators would not reject the exact rate-adjustment specification for the savings and loan rate equation. The commercial bank equation does not fall so
clearly into either of these categories. It is conservative with re-
spect to the net worth losses by savers to accept the hypothesis that
the exact rate-adjustment specification holds for the rates paid by com-
mercial banks. Therefore, the predicting equations for savings and loan
rates and for commercial bank rates was estimated by constrained least
squares, while the mutual saving bank rate equation was estimated by un-
constrained least squares.

The second question about model specification concerns the poten-
tial autocorrelation of the disturbances in each of the equations. Since
there are lagged dependent variables in the equations, a test discussed
in Durbin (1970) was used to check for autocorrelation. Durbin's test
is asymptotically valid for large samples, and its properties for small
samples are not known. The test statistic, h, is a standard normal de-
viate (in large samples). The results obtained in this application of
the test are:

constrained savings and loan rate equation: \( h = -1.23 \)

constrained commercial bank rate equation: \( h = 0.53 \)

unconstrained mutual savings bank rate equation: \( h = 0.09 \)

To the extent that the test has validity for \( n = 16 \), only the savings
and loan equation appears to show significant autocorrelation in the re-
siduals. The probability of getting a value of \( h \) less than \(-1.23\) for
zero autocorrelation and \( h \) normal is about 10 percent.\(^{12}\) The conserva-
tive specification here is to accept the hypothesis of negatively auto-
correlated residuals for the constrained savings and loan rate equation
but not for the other two equations. Therefore, the savings and loan rate predictions are based on a constrained, generalized, least squares estimate using the Cochrane-Orcutt (1949) method.

Given these considerations regarding equation specification, the prediction equations for the recursive system of rate equations are:

\[(1') \quad i_{SL}(t) - i_{SL}(t-1) = 0.12 - 0.30 (i_{SL}(t-1) - i_{SL}(t-2)) \]
\[\quad (8.77)(-1.27)\]
\[\quad + 0.12 (i_G(t) - i_{SL}(t-1) + 0.3(i_G(t-1) - i_{SL}(t-2)) \]
\[\quad (3.82)\]

Standard error of regression = 0.072; Durbin-Watson statistic = 2.17

\[(2') \quad i_{CB}(t) - i_{CB}(t-1) = -0.57 + 0.35 d(t) + 0.18 (i_G(t) - i_{CB}(t-1)) \]
\[\quad (-2.38) \quad (3.33) \quad (2.84)\]
\[\quad + 0.31 (i_{SL}(t) - i_{CB}(t-1)). \]
\[\quad (2.20)\]

Standard error of regression = 0.10; Durbin-Watson statistic = 1.74

\[(3') \quad i_{MS}(t) = 0.94 + 0.39 i_{MS}(t-1) + 0.47 i_{CB}(t) \]
\[\quad (3.79) \quad (2.22) \quad (3.56)\]

Standard error of regression = 0.074; Durbin-Watson statistic = 1.97

The coefficients of these regressions have the expected signs, including the constant terms which are consistent in all cases with the logic of the model and historical rate spreads. The negative autocorrelation in the savings and loan rate equation suggests an error adjustment by savings and loan associations which is not captured in the basic rate-adjustment model, but which is a reasonable adjustment process.

Using equations \((1')\), \((2')\), and \((3')\), there are two methods of predicting deposit rates for subsequent years. First, predictions of
each interest rate in a given year can be made on the basis of the actual values of the independent variables in that and previous years. This provides a measure of the reduction in the deposit interest rate resulting from the interest rate ceilings in that year alone. Alternatively, predictions of each deposit rate in a given year can be based on the predicted values of the independent variables in that and previous years. This provides a measure of the dynamic as well as the static consequences of the ceilings and is the basis for the calculation of the net worth losses to savers reported in the next section of this study.

The interest rate predictions using both of these methods are given in Table 2. A comparison of the predicted rates with the actual rates paid reveals some striking differences among the three types of savings institutions. In 1971 and 1972, the fall in market interest rates allowed savings and loan associations and mutual savings banks more freedom in setting deposit interest rates. If we compare the predictions based on actual values of the independent variables ($\tilde{i}_j$) with the actual interest rates paid ($i'_j$) in those two years, we find that the difference in rates ($\tilde{i}_j - i'_j$) for savings and loan associations was -2 basis points in 1971 and +8 basis points in 1972 (the forecast standard error was 8 basis points for each year). A similar comparison for mutual savings banks gives a difference of -2 basis points in 1971 and -6 basis points in 1972 (forecast standard errors of 10 and 11 basis points, respectively). In contrast, commercial banks were less free to determine their own deposit interest rates because of the lower ceilings imposed on commercial
TABLE 2
PREDICTED AND ACTUAL AVERAGE DEPOSIT INTEREST RATES (IN PERCENT) AT THRIFT INSTITUTIONS

<table>
<thead>
<tr>
<th>Year</th>
<th>$\hat{i}_{SL}$</th>
<th>$\bar{i}_{SL}$</th>
<th>$\bar{i}_{SL}$</th>
<th>$\hat{i}_{CB}$</th>
<th>$\bar{i}_{CB}$</th>
<th>$\bar{i}_{CB}$</th>
<th>$\hat{i}_{MS}$</th>
<th>$\bar{i}_{MS}$</th>
<th>$\bar{i}_{MS}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>4.85</td>
<td>4.85</td>
<td>4.68</td>
<td>4.41</td>
<td>4.35</td>
<td>4.25</td>
<td>4.86</td>
<td>4.79</td>
<td>4.76</td>
</tr>
<tr>
<td>1969</td>
<td>5.18</td>
<td>5.08</td>
<td>4.80</td>
<td>4.85</td>
<td>4.65</td>
<td>4.34</td>
<td>5.11</td>
<td>4.85</td>
<td>4.89</td>
</tr>
<tr>
<td>1970</td>
<td>5.54</td>
<td>5.28</td>
<td>5.06</td>
<td>5.31</td>
<td>4.90</td>
<td>4.72</td>
<td>5.43</td>
<td>5.07</td>
<td>5.01</td>
</tr>
<tr>
<td>1971</td>
<td>5.69</td>
<td>5.31</td>
<td>5.33</td>
<td>5.32</td>
<td>4.91</td>
<td>4.74</td>
<td>5.56</td>
<td>5.12</td>
<td>5.14</td>
</tr>
<tr>
<td>1972</td>
<td>5.80</td>
<td>5.47</td>
<td>5.39</td>
<td>5.35</td>
<td>4.93</td>
<td>4.74</td>
<td>5.62</td>
<td>5.17</td>
<td>5.23</td>
</tr>
<tr>
<td>1973</td>
<td>6.01</td>
<td>5.68</td>
<td>5.55</td>
<td>5.59</td>
<td>5.13</td>
<td>5.02</td>
<td>5.76</td>
<td>5.34</td>
<td>5.45</td>
</tr>
<tr>
<td>1974</td>
<td>6.31</td>
<td>5.94</td>
<td>5.98</td>
<td>5.98</td>
<td>5.59</td>
<td>5.39</td>
<td>6.00</td>
<td>5.60</td>
<td>5.76</td>
</tr>
<tr>
<td>1975</td>
<td>6.58</td>
<td>6.26</td>
<td>6.22</td>
<td>6.25</td>
<td>5.85</td>
<td>5.50</td>
<td>6.22</td>
<td>5.77</td>
<td>5.89</td>
</tr>
</tbody>
</table>

$\hat{i}_j$ = predicted rate using predicted values of independent variables for thrift institution $j$.

$\bar{i}_j$ = predicted rate using actual values of independent variables for thrift institution $j$.

$i_j$ = actual rate paid by thrift institution $j$. 
bank interest rates by the *Interest Rate Adjustment Act of 1968*. In fact, it can be demonstrated that the average rate payable by commercial banks under the act was lower than the predicted interest rates for commercial banks in both 1971 and 1972. The result was that the commercial bank shortfall from predicted interest rates was 17 basis points in 1971 and 19 basis points in 1972 (with a forecast standard error of 12 basis points in both years).

The implied behavior after 1972 is also worth noting. The differences between the predicted interest rate based on actual values of independent variables and the actual rate paid for savings and loan associations in 1973-1975 are:

$$
\overline{i}_{SL}(73) - \underline{i}_{SL}(73) = 0.13 (0.09)
$$

$$
\overline{i}_{SL}(74) - \underline{i}_{SL}(74) = -0.05 (0.11)
$$

$$
\overline{i}_{SL}(75) - \underline{i}_{SL}(75) = 0.04 (0.10)
$$

where the numbers in parenthesis are forecast standard errors for $\overline{i}_{SL}$. These results suggest that, since 1970, savings and loan associations have not been paying rates significantly lower than one might have predicted based on actual market interest rates and actual interest rates paid by the savings and loan associations in previous years. There are net worth losses to savers at savings and loan associations in these five years because of the dynamic consequences of the effects of ceilings during 1968-1970.
For mutual savings banks, the differences between \( \bar{I}_{MS} \) and \( i_{MS} \) are:

\[
\begin{align*}
\bar{I}_{MS}(73) - i_{MS}(73) &= -0.11 \ (0.11) \\
\bar{I}_{MS}(74) - i_{MS}(74) &= -0.16 \ (0.11) \\
\bar{I}_{MS}(75) - i_{MS}(75) &= -0.12 \ (0.12)
\end{align*}
\]

These results suggest that mutual savings banks may have become more aggressive in interest rate competition since 1972. Special accounts at mutual savings banks provide a mechanism for this to occur, since such accounts can pay higher interest rates to longer-term deposits and to deposits above certain minimum sizes. However, it is also possible that the conservative assumptions used in the model specification have biased the mutual savings bank interest rate predictions downward. The fact that all of the differences between the predicted interest rate and the actual rate paid by mutual savings banks have been negative since 1970 lends some credence to this suggestion of a bias. Whether there is a downward bias or not, it appears that net worth losses at mutual savings banks during 1971–1975 are also chiefly attributable to the dynamic consequences of the 1968–1970 losses.

For commercial banks, a picture quite different from that implied by the predictions for the other two savings institutions emerges. The differences between \( \bar{I}_{CB} \) and \( i_{CB} \) are:
\[ \bar{i}_{\text{CB}}(73) - i_{\text{CB}}(73) = 0.11 \ (0.13) \]
\[ \bar{i}_{\text{CB}}(74) - i_{\text{CB}}(74) = 0.20 \ (0.16) \]
\[ \bar{i}_{\text{CB}}(75) - i_{\text{CB}}(75) = 0.35 \ (0.14) \]

These results suggest that commercial banks have consistently paid less in the period 1973-1975 than would have been anticipated, even when we do not consider the dynamic consequences of prior suppression of the interest rates paid because of the rate ceilings. The shortfall in 1975 is particularly striking. \(^{15}\)

III. THE NEGATIVE GRANTS IMPOSED ON SAVERS

From the viewpoint of this study, the negative grants imposed on savers by the Interest Rate Adjustment Act of 1966 include the dynamic consequences of that act. Therefore, the estimate of net worth losses to those who held thrift deposits will be measured by the product of the difference between the predicted rates (using predicted values of those independent variables which are thrift deposit interest rates and actual values of the market interest rate variable) and actual rates paid times the appropriate average stock of thrift deposits (taken from table 1). These net worth losses for each year and in total are given in table 3. This table also provides estimates of net worth losses in which the interest loss for savers at each institution for each year has been compounded at the predicted deposit interest rate for that institution in subsequent years. The latter estimates put each year's loss into 1975
<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal Valuesa</th>
<th>1975 Valuesb</th>
<th>Nominal Values</th>
<th>1975 Values</th>
<th>Nominal Values</th>
<th>1975 Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1968</td>
<td>0.22</td>
<td>0.33</td>
<td>0.27</td>
<td>0.40</td>
<td>0.06</td>
<td>0.09</td>
</tr>
<tr>
<td>1969</td>
<td>0.51</td>
<td>0.72</td>
<td>0.94</td>
<td>1.30</td>
<td>0.15</td>
<td>0.20</td>
</tr>
<tr>
<td>1970</td>
<td>0.68</td>
<td>0.91</td>
<td>1.13</td>
<td>1.49</td>
<td>0.29</td>
<td>0.38</td>
</tr>
<tr>
<td>1971</td>
<td>0.58</td>
<td>0.73</td>
<td>1.30</td>
<td>1.63</td>
<td>0.32</td>
<td>0.40</td>
</tr>
<tr>
<td>1972</td>
<td>0.78</td>
<td>0.94</td>
<td>1.56</td>
<td>1.86</td>
<td>0.34</td>
<td>0.41</td>
</tr>
<tr>
<td>1973</td>
<td>1.00</td>
<td>1.13</td>
<td>1.63</td>
<td>1.83</td>
<td>0.29</td>
<td>0.33</td>
</tr>
<tr>
<td>1974</td>
<td>0.78</td>
<td>0.83</td>
<td>1.87</td>
<td>1.99</td>
<td>0.23</td>
<td>0.25</td>
</tr>
<tr>
<td>1975</td>
<td>0.95</td>
<td>0.95</td>
<td>2.64</td>
<td>2.64</td>
<td>0.34</td>
<td>0.34</td>
</tr>
</tbody>
</table>

Total 5.50  6.54  11.34  13.14  2.02  2.40

aNominal values for year t are $i_j(t) - i_j(t)$ times average thrift deposits at institution j during time t.

b1975 values for year t are nominal values times \( \prod_{t=t+1}^{1975} (1+i_j(t)) \).
values on a basis which places a value on the time between the date of loss and the terminal date of this study.

Using the annual losses in 1975 values, the estimate of the total net worth loss to savers as a result of the ceilings in interest rates is about $22 billion. This estimated loss is an important fraction of the total interest income reported on individual tax returns. On a year-by-year basis, the net worth losses reported here average approximately 10 percent of the total interest income reported in each year and approximately 20 percent of total interest income reported by those taxpayers with adjusted gross incomes of less than $15,000.

A relevant question at this point is whether there are tangible gains accruing to the savers which might offset some of the estimated losses. As suggested earlier, the evidence regarding the costs of housing finance or other loans at the savings institutions does not support the existence of a significant, offsetting grant to borrowers. Even if such a positive grant exists as a result of the interest rate ceilings, it does not follow that it accrues to the savers who incurred the net worth losses on their thrift deposits. The effects of the ceilings in preventing insolvency from being realized at some institutions is also of dubious value to thrift savers who are likely to be fully protected by deposit insurance. This benefit accrues to the owners of the institutions and perhaps to the general taxpayer through its effect in limiting the liability of the federal agencies that provide deposit insurance.

Another less tangible source of benefits to savers could result from an increase in services received in lieu of interest. In the case
of savings and loans, where the information is most readily available, advertising expenses (which include premiums and gifts) have increased as a percentage of total operating expenses over the period under study, particularly in years when market interest rates were high. However, even if the entire excess over trend is taken as an added benefit to savers, the effect is to offset less than $0.1 billion of the estimated $6.5 billion in net worth losses at savings and loan associations.

Perhaps a more important source of intangible benefit has resulted from increases in transaction services provided to savers and from increases in convenience for savers. The data on savings and loan associations suggest that there may be some intangible yields of this sort. For example, the average number of employees per 1,000 accounts has increased from 2.17 in 1966 to 2.44 in 1974 (the last year for which data are currently available). Since deposit growth over the period has involved a shift to less labor-intensive certificate accounts, the resulting increase in transaction services may be even greater than is implied by the approximately 1.5 percent annual average growth rate in the number of employees per account. Also, there is evidence of an increase in the number of savings and loan offices. The population per savings and loan office (main and branch) for the United States fell from 21,200 in 1966 to 13,900 in 1975. It is not clear what value savers place on these increases in services and convenience.
IV. CONCLUSION

The evidence presented here suggests that a conservative estimate of the net worth losses incurred by savers who used thrift deposits in the period 1968-1975 is $22 billion (1975 values). At least in the case of commercial bank depositors where evidence is available, these losses are felt most heavily by the savers who use passbook accounts. Although the major justification of this negative grant imposed by the Interest Rate Adjustment Act of 1966 has been the need to protect the solvency of savings and loan associations and savings banks, the major beneficiaries of the legislation have been the owners of commercial banks. This is true not only because of the large share of total thrift deposits which are held by commercial banks, but also because the rates paid by commercial banks after passage of the act have shown a greater shortfall from what they would have been expected to pay without the ceilings. As further evidence of the latter point, it can be noted that the spread between the average rate paid by savings and loan associations and the average rate paid by commercial banks was 51 basis points in 1967 and 72 basis points in 1975.
FOOTNOTES

1 Ceilings on the deposit interest rates payable by commercial banks under Regulation Q existed before 1966. However, there is reason to believe that those ceilings were not particularly effective in constraining the rates paid prior to 1966. For example, between 1960 and 1966, the spread between the average rate paid by savings and loan associations and the average rate paid by commercial banks narrowed from 130 basis points to 51 basis points. See Pye and Young (1972) for a discussion of the macroeconomic effects of interest ceilings and Kane (1970) for a discussion of the policy implications of these ceilings.

2 There appears to be little doubt that some savings institutions with large portfolios of mortgages would have been forced to recognize their economic insolvency in the absence of deposit rate ceilings. However, it is not clear that the savers at such institutions should incur negative grants to insure the solvency (or rather the continued operation—solvent or not) of such institutions. Furthermore, there is considerable doubt that interest rate ceilings provide an effective means of subsidizing home builders and buyers (see Jaffee, 1971, and Meltzer, 1974).

3 The effects of large certificates of deposit (CDs) at commercial banks have not been included in the loss estimates. Basically, this is a judgment that these larger deposits could have been transferred to market securities, had the owners so wished. See Pyle (1974, pp. 614–615) for further discussion of the reasons for this exclusion.

4 Thrift deposits is the generic term used for savings and time deposits (other than large CDs) at commercial banks, regular and special savings accounts at savings banks, and all types of savings at savings and loan associations.

5 On February 25, 1970, the minimum noncompetitive bid for treasury bills was increased from a bid for $1,000 in bills to a bid for $10,000 in bills. See Mullineaux (1973) for evidence regarding the resulting reduction in disintermediation.

6 The predictions are not significantly altered if this observation is dropped.

7 The data on average savings deposit rates are from the 1973 Savings and Loan Fact Book (Chicago: United States Savings and Loan League), p. 17, except for the commercial bank rates after 1964. Due
to significant interest payments on negotiable CDs after 1964, the data in the Fact Book are unsatisfactory for the purpose of this research. In 1965 and 1966, the rate on savings deposits at commercial banks was calculated by deducting interest payments on business deposits from total interest and dividing by non-CD average deposits. From 1967 on, a weighted average of the most common interest rates paid on savings deposits and time deposits of less than $100,000 taken for Federal Reserve surveys was used.

The data on the average amounts of thrift deposits outstanding are taken from "Revisions of Money Stock Series," Federal Reserve Bulletin (various issues) for commercial bank thrift deposits, and from the Savings and Loan Fact Book (1976) for savings and loan association and mutual savings bank thrift deposits.

In the two-stage regressions, equations (1)-(3) were estimated without the coefficient constraints implied by the rate-adjustment specification. As indicated later, these coefficient constraints appear to be an acceptable specification for equations (1) and (2). If imposed here, they would improve the efficiency of the coefficient estimation. However, given the reported t-statistics for the dropped variables, it seems unlikely that this would change the decision to treat the equation system as recursive.

The forecasts for 1971 and 1972 were based on actual (rather than forecast) values of the independent variables. As noted later, there were still net worth losses to savers in these years associated with the dynamic consequences of the earlier suppression of the interest rates paid by the savings institutions.

In particular, the predicting equations used in the 1974 study lead to a forecast that the average rate paid by commercial banks on thrift deposits should exceed the average rate paid by savings and loan associations in 1975.

See Johnston (1972, p. 155) for a description of this test.

The test is for first-order autocorrelation. Another test can be obtained by estimating equations of the form:

\[ y(t) = X(t)\beta + \rho u(t-1) + e(t), \]

where \( u \) is the first-order autocorrelated error and \( e \) is an uncorrelated error. From such regressions, one obtains an estimate of \( \rho \), the autocorrelation coefficient, as the coefficient of the lagged value of \( y \). For the three equations considered here, only for the savings and loan rate equation does \( \rho \) have a t-statistic with an absolute value greater
than one (-1.89). This may lend some credence to the results obtained using the large sample statistic, \( h \).

13 Coefficient t-statistics are reported in parenthesis below each coefficient.

14 The ability of savings and loan associations in 1973-1975 to behave in a manner similar to their behavior prior to 1968, despite a sharp rise in market interest rates, is undoubtedly associated with the increased reliance of these institutions on certificate accounts. Substantially higher ceiling rates on longer-term certificates (1 year or more) were permitted beginning in 1973. The percentage of deposits in passbook savings at savings and loan associations fell from 54.6 percent in 1972 to 42.7 percent in 1975.

15 As one might expect, the losses were felt most heavily by savers who used passbook accounts. This is illustrated by the following comparisons taken from the Federal Reserve surveys of time and savings deposits:

<table>
<thead>
<tr>
<th>Date</th>
<th>% Savings Deposits at Maximum Rate Allowed</th>
<th>% Time Deposits at Maximum Rate Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/31/73</td>
<td>69.0</td>
<td>95.2</td>
</tr>
<tr>
<td>1/31/74</td>
<td>67.6</td>
<td>90.4</td>
</tr>
<tr>
<td>1/31/75</td>
<td>73.4</td>
<td>93.3</td>
</tr>
</tbody>
</table>
REFERENCES


