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CONCLUSIONS

THIS PAPER attempted to empirically estimate the relationship between the prices banks charge businesses for services rendered and the structure of bank markets. A model of bank pricing was developed which implied that banks utilize a package or customer pricing strategy because of the regulatory prohibition on the payment of interest on demand deposits and because of profit maximization criteria. Banks supply customers with a number of services and are paid through a mixture of three types of prices: interest rates on loans, deposit balances, and fees. It is impossible to measure the relative importance of these three prices because the deposit element of the price vector causes a reduction in costs, whereas interest payments and fees are additions to revenues received by the bank.[1]

Although proportions cannot be measured directly, it must be presumed that, in terms of costs, interest payments are the most important price of bank services to most businesses. In terms of revenues received, interest rates are the most important price to most banks. But, the deposit balance is also a cost

[1] Some insights into the relative size of interest and deposit payments can be gained from all bank revenue and expense data for 1967. Interest expense for savings, time deposits, and other purchased money was approximately 45 per cent of the $16.6 billion total operating expenses. Purchased funds accounted for less than 48 per cent of total deposits of $398 billion. Thus, banks bartered services for more than half of their nonequity funds. In acquiring these funds, they incurred actual costs which accounted for a substantial portion of the 55 per cent of total operating expenses not directly attributed to purchasing funds and an undetermined amount of opportunity costs which reduced fee and interest income. During 1967, interest and discounts earned on loans accounted for approximately two-thirds and interest on securities and investments one-fifth of the $21.8 billion of operating revenue of all banks. Income earned through fees and service charges were a relatively minor source of measured income for commercial banks in 1967.

to businesses and an important revenue to banks. The statements above refer to the banking system as a whole. It is recognized that the proportion of cost to the business between interest payments and income foregone to maintain deposits and, therefore, contribution to the revenue of the individual bank, depends on the relative importance of loans and other bank services in the package of services provided by the bank.[2] Fee income is, however, a relatively minor source of bank compensation.

To estimate the influence of bank market structure on loan rates and deposit balances two models were developed and their parameters estimated. The values and signs of the coefficients of the market structure variables suggest the general conclusion that branching restrictions and the degree of concentration are positively associated with interest rates; interest rates rise with tightened branch restrictions and rise with increases in the concentration of ownership of bank deposits in a market. More particularly, the evidence suggests that small firms, those with up to one-half million dollars in assests, pay higher loan rates as branching restrictions are tightened. But, branching restrictions do not have a statistically significant effect on firms above this size. The level of market concentration has a statistically significant impact on rates paid by firms with assets up to at least $5 million.

The import of these conclusions for public policy should be evaluated with the expected size of the impact of variations in market structure on interest rates taken into account. Since different parameter estimates of the structural variables were computed for different sets of customers, it is difficult to generalize. Nonetheless, accepting the "All Customer" regression in Table 5, derived from Appendix Table D-1 as the appropriate estimate for all customers, the following statements about the

[2] There are many businesses where interest payments are the minor cost and deposits and fees are the major payment; for instance, food chains and other stores deposit large numbers of checks and do not borrow heavily from banks. Banks usually charge for such activity through deposit requirements and less frequently through fees.

impact of changes in concentration and branch restrictions are implied. If concentration in a market increased to 74 per cent (or 10 per cent from the computed mean of approximately 67 per cent), the mean loan rate for firms with below a half million dollars in assets would be expected to increase from 6.53 to 6.58; a decline of 10 per cent to 60 per cent would be expected to cause a reduction in the mean loan rate to 6.48 per cent. For firms with assets between a half million and a million dollars, rates would change from 6.38 to 6.42 and from 6.38 to 6.34. For larger firms, those with between one and five million dollars in assets, 10 per cent changes in concentration would change rates from 6.28 to 6.33 and from 6.28 to 6.23.

The expected difference in rates for firms with up to a half million dollars in assets between statewide branching and unit banking markets is 33 basis points. For these smaller firms the movement from restricted to statewide branching markets is expected to increase loan rates 13 basis points. But the evidence suggests that the rates paid by firms with assets above a half million dollars are not expected to be affected by changes in branching restrictions.

The magnitude of changes in loan rates implied by variations in the level of market concentration, less than 5 basis points for a 10 per cent change in market concentration, is almost insignificant in relation to the mean rates of 653 basis points for the smallest firms or even the 627 basis points mean rate of the largest firms.[3] The possible change in rates implied by alterations in branching restrictions, 33 basis points for the change from unit to statewide branching and 13 basis points for a change from restricted to statewide branching, each of which has far reaching implications on the structure of banking markets with regard

[3] It is interesting to note that the estimates of the effects of changes in concentration on loan rates is close to, but below, the estimates reported by Edwards and Phillips. Edwards reported that a 10 per cent increase in concentration would increase loan rates 6 basis points, Edwards, *op. cit.*, p. 90. Phillips said that a 10 per cent increase in concentration would increase loan rates 8 basis points, Phillips, *op. cit.*, p. 924. But it should be remembered that Edwards did not include a regional variable in his model and his data contained errors due to weighting. Phillips' estimates were produced from quarterly loan surveys, which is an entirely different body of data.

to number of offices and number of banks, is also not quantitatively very significant.

The conclusions concerning the relationship of deposit balances to the market structure variables are much more straightforward than the loan rate relationship. Deposit balances are not affected by variations in the concentration of ownership of bank deposits in the market or the degree of branching restrictions.

When these two sets of findings are combined, it is concluded that variations in structure probably affect the "price" of the package of services provided business customers, and the relationship is positive for both concentration and branching restrictions. But the absolute price differences are not of a magnitude to significantly affect the allocation of resources.

Prior studies that reported approximately the same positive impact of the level of concentration on interest rates on loans overstated the quantitative importance of the relationship because the "deposit" price was not incorporated in the analysis.

Although the major focus of this paper was on the estimates of the market-structure–price relationship, the parameter estimates in the regressions contain important insights into bank pricing practices that should at least be mentioned. Their value is due in large measure to the unique body of data collected and analyzed in this study.

The regression estimates lend strong support to the package pricing hypothesis. Both prices, interest rates and deposit balances, were found to be modified by the characteristics of the customer's relationship with the bank. The statistical tests presented suggest that the deposit component of the price vector is almost exclusively affected by the customer characteristics; whereas the loan rate is strongly affected by demand, region, and other elements not directly attributable to the customer.

The signs of size of bank market and size of bank in the interest rate regression suggest the possibility that some of the often reported simple relationships with loan rates may be caused by other variables not usually included in the analysis. The results of more extensive estimates and tests of these hypotheses about bank pricing practices will be reported in a forthcoming study.