The Optimal Banking Structure: Theory and Evidence from the United States

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1. The Optimal Banking Structure and the Public Interest

The consuming public (in contrast to producers and government officials) is served best by organizations that determine, meet and even anticipate the public's demands at the least cost for a given level of quality. For consumers, the banking structure is optimal where financial institutions have the desire and ability to serve them and are rewarded accordingly. In general, this situation prevails where firms are wealth maximizing competitors which are neither subsidized, penalized nor regulated by the government and where entry into and exit from the market is not constrained. Firms in such a market seek to produce goods and services according to the demands of consumers as expressed by their willingness to exchange their resources (money) for these services[1]. The level of output is that which, at the margin, balances the cost of the resources used with the amount of resources that people are willing to exchange for the output[2].

In producing goods and services, firms try to combine resources optimally, so that a given level and mix of outputs is produced with the most efficient combination and amounts of inputs. This optimal use of

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[1] Specific consumer demand depends on the distribution of wealth among individuals. Fiscal measures are preferable to the control of market prices and institutions to correct (according to some ethical standard) a mal-distribution of wealth.

[2] A rigorous description of resource allocation in competitive markets is available in most price theory textbooks.

resources occurs not because producers wish to conserve society's wealth but because they wish to maximize their own wealth and/or position in the industry. Thus the labor services of tellers, bookkeepers, managers and others are combined with computers, adding machines and other equipment, supplies, buildings, etc., to produce at the least cost the service demanded by businessmen, housewives and others.

An exception to this general proposition may occur when the industry is subject to externalities (neighborhood effects). Negative externalities, where the costs of production are not borne by those who benefit from this production (such as a chemical plant that dumps waste products into a river) are not characteristic of the banking industry and hence may be ignored. However, positive externalities may occur when banks provide public services (such as offering financial education to low income workers) whose benefits do not redound to the banks. In this event, it may be beneficial to subsidize the producer of positive externalities, though it is difficult to determine the optimum amount of the subsidy and be assured that the desired response will be forthcoming[3].

In contrast to competitive markets, consider the situation where there is only one bank (or a cartel). The bank's owners would gain more by charging consumers higher prices and/or providing fewer services, even though less output was purchased, than they would if the market were competitive. While government regulation might be invoked to reduce the prices charged (as is done in public utility regulation), it is unlikely that the regulated prices would be set at the optimal level (as they are by competition).

More important, perhaps, competitive markets provide suppliers with the motivation to serve the public and use resources efficiently. If one bank does not provide services demand and/or does not develop new and better services that consumers might prefer, another bank can prosper by doing so. If a bank operates inefficiently, its owners and managers forfeit the resources wasted. Government regulation, even when imposed for the benefit of the consumer, is not as effective as competition because the regulators generally cannot know as much as the banks' managers about the demands of consumers and the ways in which resources can be combined in fulfilling these demands. Nor are government regulations always designed and enforced to benefit the

[3] See *Benston* (February 1972, pp. 209 - 13) for a more complete discussion of the role of mutual savings banks.

consuming public. Regulations often are imposed to create cartels, reduce competitive pressures or benefit a particular supplier or group of firms. Regulators, who are in contact with those whom they regulate rather than with consumers and who may contemplate working in the future for the firms they regulate, tend more to identify with suppliers and sympathize with their problems than with the general public and its problems. In contrast, competition among suppliers regulates more effectively the prices charged and quality of service rendered.

For competitive banking markets to operate optimally, four important conditions must obtain. First, entry into the market must be unrestricted. If such is not the case, a poorly run bank or one that finds itself in a monopoly position can continue to offer higher priced and/or inadequate services to the public to the extent that people lack alternatives. Obviously, it would be preferable for suppliers to find those people whose demands are poorly met.

Second, exit, either by merger or failure must be possible. If such is not the case, the structure of the industry may not change to meet changing circumstances (which may be internal or external to the bank). Both of these conditions are under the control of governmental authorities who often, incorrectly, do not allow them to apply to the banking industry.

Third, banks must not collude to form a cartel or monopoly. The possibility of monopoly is meaningful because the owners of banks can increase their wealth more if they can create a cartel. However, where entry into the market is not restricted, a monopoly would be subverted by the same desire of people to increase their wealth since sharing (at least part of) the extraordinary profits of monopolies is a lure for new entrants. But since such entry may take some time, during which the public is ill served, and since new entrants may join the cartel, thus re-instating the monopoly, governmental authorities cannot rely entirely on market forces cure monopolies.

Fourth, economies of scale that result in "natural" monopolies must not exist. If the most efficient size of banks is the largest bank possible, then a competitive market will result in the survival of one bank. Although its ability to take advantage of its monopoly position would be limited by the possibility that new competitors could enter the market (even if for a limited time), it still would be the sole seller of banking services in the market.

To summarize, then, the operation of market forces that would allocate resources and serve the public optimally depens on (1) unrestricted entry and exit from the industry and (2) the absence of collusive or natural monopolies. Evidence from the United States on the extent to which these considerations apply to the banking industry and are likely to continue is discussed next. The possibility of natural monopoly and the presence of economies of scale are considered first because the policies adopted by the banking authorities cannot change the situation but rather must adapt to it.

2. Economies of Scale in Banking

a) The Effects of Economies, Diseconomies and No Economies of Scale

If the banking industry is characterized by significant and continuous economies of large scale operations, eventually only one bank would survive under free competition. Then the banking authorities would be faced with a dilemma. An efficient banking industry is desirable because the public (customers and bank owners) benefits from bank services being produced at the least cost. However, the resulting monopoly is undesirable to consumers because they will not participate fully in the economies of scale and, perhaps more important, because they will have few alternatives to the services provided by the monopoly bank. Should new competitors be unable to enter the market, the authorities might have to restrict the size to which a bank can grow or regulate the prices it charges the public (as is done in public utility regulation).

If banking is characterized by diseconomies of scale, a large number of smaller banks could operate side by side. (Such a situation seems to be the case for gasoline stations.) In this event, the authorities might view attempts of banks to merge as organizational changes motivated more by a desire to eliminate competition than by a desire to achieve operating economies.

If banks are not subject to important economies or diseconomies of scale, the optimal size and number of banks will be determined by the market that is served, by the particular talents of bank managers, and by anti-competitive mergers. The considerable demands for banks' services by the large number of customers in cities, for example, would result in there being many more banks, both in number and kind, than

would exist in rural areas. The particular talents of banking managers play an important role: as a result, some banks may specialize in retail services and others in wholesale services, some may be large and others small, depending on the ability of their managers to control large or small organizations, etc. Changes in the talents of managers (and their ability to adapt to changing markets and technology) also may result in poorly or well run, too large or too small banks at any point in time. Were it not for the final factor, anti-competitive mergers, the optimal policy of the government authorities in this situation would be to allow changes in the number of banks via new entrants and mergers (assuming for the moment that free entry and exit do not create other problems).

b) Evidence on Economies of Scale

Let us consider, then, the existing evidence on economies of scale. Several studies have been published that provide a fairly good, though not sufficiently complete, picture of the cost structure of commercial banks. The most useful of these studies are by *Benston* (June 1965) and *Bell* and *Murphy* (1968), which use data gathered by the Federal Reserve in its function cost analysis program[4]. These researchers defined the output of banks as the average number of deposit accounts and loans processed per year, holding constant variations in the size and activity of accounts and loans. Number of deposit and loan accounts is preferable to dollars as a measure of output because the former is what banks process and what generates operating costs. In addition, comparing costs per dollar of deposits of a bank that deals with customers who hold accounts with large balances to that ratio for a bank whose customer account balances are smaller is like comparing costs per dollar of sales of a wholesaler to those of a retailer. Such a comparison might lead to the erroneous conclusion that wholesalers (or large banks with few accounts) are more efficient than retailers (or small banks with relatively more customers), *cet. par.*

Separate analyses were made of the direct costs of processing demand deposits, time deposits, installment loans, mortgage loans, business and other loans, securities, and collateral services (trust and safe deposit). In addition to output, the studies accounted for effects of type, average

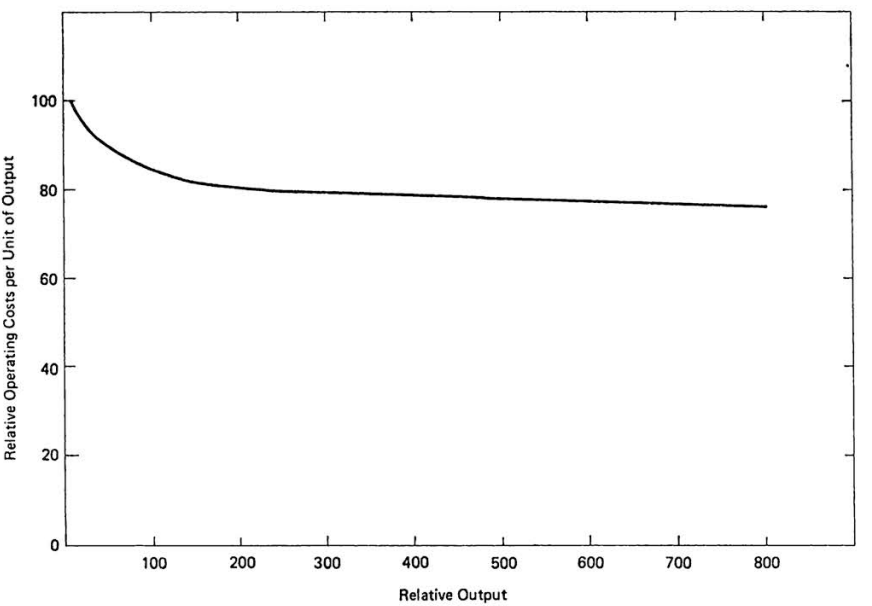
[4] Other published studies include *Alhadeff* (1954), *Gramley* (1962), *Greenbaum* (1967), *Horvitz* (1965), *Powers* (1969) and *Schweiger* and *McGee* (1961). These studies are critically reviewed and rejected because of the methodology used. See *Benston* (May 1972) for this analysis.

balances and activity of accounts, wage levels in the area, number of branches operated, and other factors, by including these as independent variables in multiple regressions. Overhead (administration, business development and occupancy) was analysed separately.

Benston analysed data for 1959, 1960 and 1961 for 80 to 83 banks, of which the largest had $ 55 million in assets. *Bell* and *Murphy* analysed data for 1963, 1964 and 1965 from 210 to 283 banks, of which the largest had $ 800 million in assets. For most banking services, the elasticities — average percentage change in operating costs associated with a unit percentage change in output (the number of accounts served) — are less than one, indicating economies of scale. Howerver, the economies due to large scale operations are not great (none is less than .85) and, for all except demand deposit and real estate loan services, are not consistently statistically significant.

Although the differing elasticities for different banking services indicate that a bank cannot be represented completely by a single cost function, an overall average elasticity can be constructed by calculating the effect on costs of a 10 percent increase in each banking service meas-

*Relationship between Cost and Output based on an Overall Elasticity of 93**



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ured at the average level of activity for the banks sampled (which, in effect, provides a weighted average). *Bell* and *Murphy* (1968, pp. 68 - 9) determined that total operating costs increase by 9.3 percent when weighted overall output increases by 10 percent (holding all other variables constant at their geometric mean values). Chart I was constructed using this overall measure of economies of scale. The "base" bank charted has an output of 10 and average operating (unit) costs of 100. A bank with an output of 50 has unit costs of 89.4 and one ten times larger than the base bank, with an output of 100, has unit costs of 85.1. Higher output banks have less than proportionally lower unit costs: a bank with output of 500 has unit costs equal to 76.1 and a 1000 unit output bank's cost are 72.5 compared to 100.0 for the base bank, although they are 50 and 100 times larger than it. Thus, as Chart I shows, the operating cost advantage of larger size diminish rather quickly.

Two additional aspects of the relationship between the size of banks (as measured by output in terms of accounts and loans) and costs should be considered. Chart I was constructed by assuming that larger banks have the same types of output (demand deposits, installment loans, etc.) and organization as do smaller banks. This assumption is useful with respect to types of output, because the type of output (measured by the number of deposit and loan accounts) need not be a function of bank size measured by total deposits or assets. But usually a bank cannot grow large (in terms of the *number* of customers it deals with) unless it establishes branches. Therefore the costs of branching must be considered explicitly.

The studies reported above show that operating costs of banks with branches are higher than those of unit banks with the same rate of output, *cet. par.* The relationship between additional branching cost and savings from larger scale operations was examined by *Benston* (May 1965) and *Bell* and *Murphy* (1968), who found that one offset the other. In their sample, *Bell* and *Murphy* found that the average (large) branch bank had the same costs per unit of output as the average (small) unit bank, even though the branch bank operated multiple outlets (p. 67, table IV - 6). Thus branch banks can offer customers the convenience of many offices without incurring greater net operating costs.

A similar study of the costs of savings and loan associations (which are only authorized to service savings deposits and mortgage loans) was made by *Benston* (1969). Data from most U. S. associations (3,159) for

each of five years (1962 through 1966) were analysed. Consistent elasticities that average .92 over the entire range of the data were found — virtually the same as those found in the other studies for comparable outputs of commercial banks. The major difference was considerably higher branching costs for the specialized savings and loan associations.

c) Limitations of the Evidence

Before the implications of the data on regulation are explored, four limitations of the commercial bank studies should be mentioned. First, the latest year of the data is 1965. Since that date, changes in computer technology may have altered the production function for some of the banking services examined. Second, the studies do not specify well the effect of branch banking. Third, the "giant" banks are not represented; the largest bank included has 57,000 demand deposit accounts (assets of $ 801 million).

These three shortcomings are alleviated somewhat by a recent, as yet unpublished, study of demand deposit costs by *Daniel, Longbrake* and *Murphy* (1971). They used 1968 functional cost data that included 956 banks, the largest of which had over 100,00 demand deposits accounts, about twice the number of the largest bank in the *Bell* and *Murphy* (1968) studies. For the 610 banks which had computers for more than a year, their analysis shows slightly lower economies of scale (.929 with a standard error of .014) than those previously measured; insignificant economies of scale for the 78 banks which had computers less than a year (.987 with a standard error of .046); and small but significant diseconomies of scale for the 268 banks with no computers (1.043 with a standard error of .021). This further research thus indicated that once computer technology is adopted, banks with a higher level of output have a somewhat smaller operating advantage over small banks than previously measured, but banks without computers (which generally are small) have a considerably greater operating disadvantage, at least with respect to demand deposits.

The fourth limitation of the cost studies is that they exclude some possibly important aspects of economies of scale. A bank that receives deposits and makes loans over a heterogeneous geographical economic area can reduce its discretionary assets (lower yielding reserves and investments) because offsets from different areas reduce the variability of its cash flows. A large bank also can more readily capture gains from innovations than a small bank, especially considering that innovations in

service industries, such as banking, are readily copied and expropriated by others. Small banks have the advantage of direct motivation and control of employees and the ability to innovate and change without going through a bureaucratic structure. Nor are differences in the quality of output, which might be associated with size, measured completely. To the extent that these advantages and disadvanages of size are reflected in earnings rather than in costs, they will be neglected by cost studies of economies of scale.

d) Policy Implications of the Evidence

Given the limitations of the data (particularly the absence of very large banks from the samples), the primary policy implication that may be drawn from the studies reviewed above is that the authorities need not be overly concerned about the existence of a natural monopoly in banking were banks allowed to grow in size (*de novo* or by merger). Very small banks, however, may not be economically viable in the absence of regulatory protection. But this fact, by itself, does not justify such protection.

However, the conclusion about small banks must be tempered by a caveat and by the findings of other studies. Advances in computer technology, particularly off-premises computers and, to some extent, time sharing, are making the newer methods available to small banks[5]. The belief that well-run small banks probably can adopt this new technology and otherwise compete successfully with large banks is supported by studies by *Kohn* (1966), *Kohn* and *Carlo* (1969) and *Chandross* (1971), which are reviewed below. The experience of state wide branching in California also reinforces the belief that small banks can exist side-by-side with large, branch banks. As Table I shows, the giant Bank of America does not seem to have had an overwhelming advantage over smaller banks.

Hence, the conclusion of this section is that banking authorities should have few fears that unrestricted competition would result in one or a few surviving banks as a result of natural monopoly. Rather, while

[5] *Daniel,* et. al. (1971) found that banks who used off-premises computers had lower operating costs per demand deposit account than banks who used in-house computers. The value of time sharing for small banks, however, is questioned in an article by *Bower* and *Downes* (1971) that reports on studies made for the FDIC.

Table I

Percentage of Total Commercial Bank Deposits Held by California Banks
(as of December 1931)

	1940	1950	1960	1970
Largest Bank	34,4 %	43,6 %	42,3 %	37,8 %
Next Largest Three	24,6 %	23,1 %	32,7 %	31,8 %
Largest Four	*59,0 %*	*66,7 %*	*75,0 %*	*69,6 %*
Next Largest Four			13,4 %	16,1 %
Largest Eight	41,0 %	33,3 %	*89,6 %*	*85,7 %*
All Other Banks			10,4 %	14,3 %
	100,0 %	100,0 %	100,0 %	100,0 %

Sources: 1940 and 1950, Alhadeff (1954), Table 8, p. 42. — 1960 and 1970, FDIC.

large branch banks have some operational cost advantages over small banks, on average, it appears that these advantages are not great enough to overcome specific managerial or other advantages that individual banks may have. Therefore, it is concluded that a wide range of medium sized and large banks can exist, although very small banks would have to be very well run or in protected positions to survive were the market for bank services free from restraints.

3. Competitive Behavior and the Number and Concentration of Banks in a Market

The data on economies of scale indicate that, were it not for the possibility of anti-competitive collusion, the banking authorities could allow all except perhaps the largest banks to merge and otherwise change their form of organization without fear that a natural monopoly would exist. The data also indicate that the operating costs of a large bank (one with, say, 60,000 demand deposit accounts or $ 800 million in assets) are seven percent, or less, beneath those of a bank half as large. Consequently, unless a merger reduces meaningful competition, it should not be prevented. Otherwise, operating and other inefficiencies may be continued, desirable change stifled and owners of resources (banks) prevented from using their property as they wish. A possible additional exception is the merger of very small banks in rural areas. The data indicate that considerable economies of scale might result, but

competition also would be reduced and possibly eliminated. Therefore, in order to determine the relative advantage to the public of mergers, the authorities should have evidence that mergers which reduce the numbers of competitors actually measurably reduce the benefits the public derives from banking services. The evidence is examined next.

In general, it would appear that the greater the number of competing firms, the more likely it is that effective competition will occur, and the less likely it is that collusive arrangements will be entered into or, if agreed to, maintained, *cet. par.* However, it is not obvious how many banks are required for active competition or what is the optimal size or spatial distribution of banks in a market. Four banks may seem preferable to three, but three actively competing may in fact be preferable to two well run banks and two poorly run banks. Similarly, four banks with assets of $ 100 million each may be preferable to one bank with assets of $ 300 million and ten with assets of $ 10 million. It can also be true that for some customers the former is preferable and for others the latter distribution is better. To further complicate matters, banks produce many different products for which the market is not the same, even assuming that one can measure the market for demand deposits, time deposits, the various types of loans, etc.

a) Evidence on Concentration and Prices

Despite the difficulties involved, a number of researchers have attempted to measure the relationship between the number or concentration of banks in a market and their competitive behavior. Most of these studies have serious conceptual and statistical shortcomings that result in findings of limited, if any, value. Few of the studies included many of the obviously important variables (such as type, risk and cost of handling loans) that might explain differences in interest rates charged. Concentration and definition of markets is crudely measured; generally the percentage of deposits or assets held by the largest two or three banks in a county or SMSA (standard metropolitan statistical area) is used. The effect on prices of having more than two or three competitors in an area is rarely measured. Nevertheless, the brief review of the studies that follows can provide some insight and conclusions for policy making[6].

[6] Also see the historical survey and review of studies on the banking structure given in *Fischer* (1968) and *Guttentag* and *Herman* (1967).

The effect on gross interest rates on business loans of the number and/or concentration of banks in a market, generally defined as a city or standard metropolitan statistical area (SMSA), was studied by *Edwards* (1965), *Kaufman* (1966), *Meyer* (1967), *Holland* (1964), *Brucker* (1971), *Schweiger* and *McGee* (1961), *Edwards* (1964), *Flechsig* (1965), *Phillips* (1967) and *Jacobs* (1971). These studies are summarized very briefly in Table II. All of these studies (except *Flechsig's* and a Federal Reserve study reported by *Holland*) indicate that the greater the concentration ratio (the percentage of assets or deposits held by the largest two or three banks) in a market and/or the smaller the number of banks, the higher the average rate charged on loans. However, this finding, while it may be correct, is limited by the measurement problems encountered by most of the researchers.

In several of the studies (*Edwards* 1965, *Kaufman*, and *Meyer*), interest rates on loans were measured as the gross rate received on *all* loans at a bank without accounting for even major differences in risk and types of loans held by the banks (such as installment, mortgage and commercial). *Brucker* accounted for these differences very crudely by including in his regressions the percentage of various types of loans to total loans. However, like the others, he did not account for the reduction in interest rates charged businesses for their non-interest bearing deposits or other services purchased[7].

Holland simply reports the findings of a Federal Reserve study but does not give actual estimates made. *Schweiger* and *McGee* used data gathered by comparative shoppers for standard automobile loans; however, they did not provide adequate statistics to determine whether differences detected are other than random.

Edwards (1964), *Flechsig* and *Phillips* used data from Federal Reserve Board surveys of business loans made at a large sample of banks. *Edwards* found a statistically significant (but economically small) positive relationship between rates charged on loans and percentage of deposits held by the largest three banks in an SMSA. *Flechsig* reran the data used by *Edwards* and found that the relationship could be due to regional differences. In both of these studies, the size of loans was not accounted for. Since larger loans generally have lower gross interest rates than smaller loans, a correlation between their average size in more or less concentrated areas would confound the results. *Phillips*

[7] Many other criticisms of these studies could be made. See *Benston* (June 1972) and *Murphy* and *Weiss* (1969).

corrected this error by computing separate regressions for interest rates on each of four sizes of loans granted by banks in 19 cities in each of four periods. Thus he presents replicated, disaggregated data. *Phillips* found a statistically significant (but economically slight)[8] positive relationship between loan rates and concentration.

Jacob's study is the best of the group. He studied the determinants of the rates charged on loans for 8,000 customers at 160 banks, accounting for the deposits held by the borrowers, the size of their loans, collateral, length of borrowing relationship, other demand variables, concentration measured by the deposits held by the offices of the three largest banks in the SMSA and the extent of branching regulations. He found a statistically significant (but economically slight)[9] positive relationship between loan rates and concentration. *Jacobs* also found a statistically significant negative relationship that was economically more important[10] between loan rates and restrictions on branching for small companies (assets under $ 5 million) only.

Aspinwall (1970) studied the relationship between rates charged on conventional mortgages on single family dwellings and the number or concentration of commercial banks, savings and loan associations and mutual savings banks in SMSA's. He adjusted for the effects of differences among the SMSA's in loan-to-value ratios, deposit size of commercial banks, change in the number of households and median family income. The regressions computed reveal that the greater the number of banking institutions the lower are average interest rates. However, as found in the other studies reviewed above, the magnitude of the relationship is small[11]. Moreover, *Aspinwall* did not include such important mortgage lenders as mortgage, finance and insurance companies. Their absence may account for his findings.

Researchers also have studied the effect of concentration on interest rates paid on time and savings deposits (*Kaufman* 1965 and *Edwards*

[8] A ten percent increase in concentration was associated with a 6 basis point increase in loan rates.

[9] A ten percent increase in concentration is associated with an increase in loan rates of 5 basis points.

[10] A movement from unit banking to restricted branching might lower loan rates by 18 basis points and from restricted branching to state wide branching another 18 basis points.

[11] An area with 20 instead of 10 institutions has interest rates on mortgages that are 3 basis points lower; for an area with four instead of three institutions, the average rate is 1 basis point lower.

1965) and the fees charged for checking accounts (*Bell* and *Murphy* 1969 and *Weiss* 1969). These studies also are summarized in Table II. The former studies found that time and savings account interest rates were lower in areas with high concentration ratios. Since savings accounts are more homogeneous than commercial loans, this finding is less subject to the criticisms mentioned above relating to gross interest on commercial loans.

The papers on demand deposit service fees are quite well done. *Bell* and *Murphy* adjusted for the effects of differences in the cost of servicing regular checking accounts in fourteen New England market areas, and used as measures of concentration the share of deposit accounts (measured in eight alternative ways) held by the largest three banks. Whether measured by dollars or numbers, all revealed that service charges, net of operating costs, were significantly higher in areas that were characterized by greater concentration of deposit accounts of all sizes. *Weiss* studied the offering of "no service charge" (NSC) checking accounts by New England banks and found that "... where NSC checking was introduced early, there is generally a larger number of commercial bank competitors and the retail banking markets are relatively less concentrated" (pp. 17 - 18).

Thus, it appears that banks are somewhat more competitive and serve the public better where there are a greater number of institutions. However, there is little available evidence that shows how many more than two or three banks are desirable for there to be meaningful competition that benefits the public. Nor do the studies on business loan interest rates reveal more than the slightest relationship between rates charged and concentration. Nevertheless, it seems reasonable to conclude that regulatory authorities should be wary of approving mergers between banks (particularly large ones) that serve the same market. And they should consider *Jacob's* finding that unrestricted branching is more beneficial for small businesses than is decreased concentration.

4. Regulatory Policy Towards Mergers and Acquisitions

It is now established in U. S. law that mergers that significantly lessen competition should be approved only when one or more banks may fail because the market cannot presently support as many banks as exist. In deciding whether a merger "may 'substantially' lessen

competition, or tend towards monopoly"[12], the banking authorities face two problems: (1) does the larger, post-merger bank provide net competitive benefits to the public through greater competition in some banking markets and reduced competition in others; and (2) will the merger foreclose future potential competition. To provide a context in which these problems can be discussed, and perhaps solved, let us consider first the reasons for which banks wish to merge with or acquire other banks.

a) Motivations for Mergers and Acquisitions

Three possible motivations for bank mergers may be delineated: (1) bankers believe that normal and perhaps extraordinary profits can be made by entering new markets, but they are prevented by state laws from establishing branches *de novo;* (2) bank managers believe that stockholders' wealth will be maximized[13]; or (3) top management wants the bank to grow to increase their power, prestige and/or salary[14].

(1) Mergers because *De Novo* Branching is Prohibited: Where state laws restrict branching, banks wishing to expand into a given area must acquire existing banks by merger or through purchase by a holding company. In these states, regulations may actually cause increased concentration.

(2) Wealth Maximization, Cost Economies and Capital Flow Facilitation: A merger might increase the wealth of the owners of an acquired bank through operating and cash management economies from joint operations, profits from increased and/or improved services (such as a larger branch network), solution of management succession and estate tax problems, increased marketability of shares of a closely held bank, etc. The acquiring bank's owners may benefit for many of the same reasons and also may find it preferable (in the capital budgeting sense) to buy an operating bank than to start a branch *de novo;* in effect, the "premium" (amount over book value) paid for an acquired bank represents the present value of the expenses of establishing a new branch, expenses that are not capitalized in the accounting records of

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[12] Brown Shoe Company vs. The United States, 370 U. S. 294, 321 (1962).

[13] This hypothesis is argued strongly by Federal Revenue Board Governor George W. *Mitchell* (1965).

[14] This hypothesis is presented by *Cohen* and *Reed* (1967) and, the authors believe, demonstrated. While they may be correct, their data cannot support this conclusion.

the acquired bank. If the acquiring and acquired banks are not substantial competitors and if there are no restrictions on entry into the market, the possibility of monopoly profits cannot be part of these calculations.

But what evidence is there that mergers result in operating or other economies? The data presented above on economies of scale indicate that operating economies would result from mergers of small banks into branch systems but that mergers of large banks probably would not give rise to important savings in operating costs (especially when one considers the cost of merging). Studies have been made of post-merger operations of merged and purchased banks that provide additional data on this question.

The post-acquisition performance of banks acquired by holding companies was examined in several studies. *Lawrence* (1967) studied the performance of 43 banks acquired by holding companies during the period 1954 - 63 and compared their pre- and post-acquisition data with data from 55 independent but similar banks. He found that the acquired banks increased their loans (especially installment loans) and increased service charges on demand deposit accounts, but otherwise, "... differences in performance between acquired banks and other banks were minimal" (p. 24). *Talley* (1971) replicated *Lawrence's* study with data from 82 banks acquired by holding companies between 1966 and 1969. His results paralleled those reported by *Lawrence*, with the exception that the banks in *Talley's* study did not increase their demand deposit service charges. A comparable study of holding company acquisition in three northern states by *McLeary* (1968) presented similar findings, as did an analysis of post-acquisition operations of New England banks by *Weiss* (1971) and of Ohio banks by *Ware* (1971). Finally, *Piper* and *Weiss* (1971) summarize a further analysis of data derived from *Piper's* (1971) study of 102 holding company acquisitions and conclude that the "operating revenues of the acquired banks generally increased significantly after acquisition, often largely as a result of expansion in consumer lending (reflecting a change in product mix rather than higher prices). However, revenue increases were typically matched by corresponding large increases in operating costs" (p. 5).

With respect to holding company acquisitions, then, the published studies do not indicate that operating economies or significantly improved services to the public, other than expanded consumer lending,

resulted, or that poor banks were prevented from failing. But as *Weiss* (1971) concludes, "The available evidence suggests that holding company acquisitions have not led to such anti-competitive results and that post-acquisition price changes (to consumers) are relatively minor" (p. 10).

No studies are available on whether true mergers (an acquired bank being integrated into the whole as a branch) resulted in reduced operating cost. However, *Cohn* and *Reid's* (1967) comparison of stock prices of banks that merged with those that didn't indicates little net advantage to stockholders. In addition, *Rotwein's* (1965) study of bank mergers in California between 1947 and 1960 indicates that, in these mergers, there was little possibility of improvements in operating costs since the banks acquired were well run and were probably acquired for this reason. *Smith* (1969) studied 139 mergers between 1960 - 1967 in the Fourth Federal Reserve District. He compared the profitability, asset and liability distribution of acquiring and acquired banks with a matched sample of non-merging banks and reached conclusions similar to *Rotwein's*. (Neither of these studies considered the effect of mergers on performance.) Thus there is reason to believe that mergers were not undertaken for and did not result in operating cost savings.

However, there are not sufficient data available for acceptable conclusions to be reached. In particular, it is important to emphasize that savings in operating costs are not the only (or most important) economy that may be derived from mergers. An important operating factor (particularly relevant to banking) is facilitation of capital flows from one part of a state to another. Investors' wealth can be increased by shifting capital from a declining to an expanding area, as population and business shift or are expected to shift, throwing expected rates of return from banking out of equilibrium[15]. Because stockholders pay income taxes on dividends but not on earnings retained by corporations, it is preferable for stockholders if their bank invests directly in areas with higher rates of return. Therefore, such investments can best be made by mergers with banks in expanding areas. The opportunity to invest in other banks is especially important for U. S. banks because they cannot make equity investments in other businesses (unless they form bank holding companies) or in banks outside of their own states. In addition, investment in banks is usually preferable for stockholders because bank managements have a natural advantage in evaluating and

[15] I am indebted to William *Meckling* for insights into this question.

operating in their own area rather than nonbanking activities. Thus, while it is true that capital can (and does) flow directly to banks in higher rate of return areas in the form of direct equity and debt investments (until the expected risk adjusted marginal rate of return is equalized in all investments), the flow is facilitated and the total social value of resources within a state is maximized if mergers are possible.

In addition, studies on the post-merger performance of banks acquired as branches by *Kohn* (1964), *Horvitz* and *Shull* (1964), *Bacon* (1967) and *Kaufman* (1969) indicate that the public has benefited from mergers. *Kohn's* is the most careful study of those reviewed. He compared the pre-merger loan ratio, services charges, rates paid on savings deposits, lending activity, etc., of the banks acquired with their post-merger behavior as branches. All New York State bank mergers between 1951 and 1961 inclusive were studied by means of a questionnaire (80 percent replies were received). He concludes that the merged banks generally increased lending to their communities and, with respect to price and services: "The great majority of bank mergers in New York State during the period 1951 through 1961 have been, on balance, beneficial to the interests of the public both in terms of their immediate and longer-range effects ..." (p. 187). *Horvitz* and *Shull* replicated *Kohn's* study for all 1962 mergers nationwide. Except for increases in service charges on checking accounts, their results parallel *Kohn's* findings[16].

Bacon studied the merger of 15 of the 21 banks in Marion County, Indiana. He reports that most of the banks merged were small, poorly managed institutions, ill-equipped to serve their customers. *Kaufman* reports the results of surveys of customers before and after a merger of two of the three banks in Elkhart, Indiana. He found that "Only a small proportion of the customers viewed the decline in the number of banks as having an unfavorable effect on either the quality of banking services or the number of competitors" (p. 7). Thus, a merger that results in a branch does appear to benefit or at least not damage the public.

(3) Bank Size or Growth Maximization: There is evidence that this motivation for merger is of some importance. *Piper's* (1971) study of holding company acquisitions and *Smith's* (1969) study of mergers

[16] This finding may be related to the greater proportion of time to total deposits and rate of interest paid on time deposits by branch banks. Lower charges on demand deposits are implicit interest payments on these deposits. Branch bank may prefer explicit interest payments and charges for service.

reveal that the acquiring banks more often than not paid premiums to the stockholders of the acquired bank that do not seem economically justified. The premium paid may be a function of state laws that prohibit *de novo* branching. However, there is reason to believe that the desire of bank management for growth as such is a motivating factor for many mergers. Nevertheless top managements' desire for growth need not be contrary to the stockholders' interest. For one thing, growth may be a good proxy for expected profits. For another, allowing top management to pursue their desire for growth may be an excellent way of motivating and compensating those managers.

If we assume, for argument's sake, that the management of a given bank consumates a merger that does not benefit the bank's stockholders, it follows that the merged bank will not be as profitable as other banks, stockholders will lose and, eventually, management will be replaced. But even if one assumes that stockholders are unable to get rid of inept or unsuccessful management, still the *public* will not be harmed. Management may attempt to offset the adverse effects of its diseconomic merger by raising prices or reducing services. But the public can always switch to other banks and, assuming that entry is not restricted, other financial institutions, lured by the new profit potential, might step into the ill served market, thus forcing the offending institution to serve the public better or leave the market. Finally, while it is true that investors may be harmed, it is not the banking authorities' function to protect stockholders from inept management except in situations of fraud.

In conclusion, reason and evidence support the policy of not restricting mergers regardless of the motivations involved, except in situations where collusion among banks results in monopoly practices. This also assumes that entry into banking is unrestricted. But before the question of entry is considered (in Section V), the two regulatory problems raised in the first part of this section are discussed.

b) Effects of Mergers on Competition in Different Markets

The first problem faced by the banking authorities is whether or not a merger will reduce competition more than it increases it. In this regard, the greatest consideration must be given to that portion of the public for whom there are relatively few alternative sources of banking services. Specifically, the demands of *local* customers — small businessmen and individuals — generally should be favored over the demands

of large businesses which can borrow in many cities. Arguments that a merger is necessary to increase the loan limits of a bank usually are without basis since banks can, and do, participate with other banks in making large loans.

But to apply this criterion the authorities must measure, among those banks that wish to merge, the specific business of specific groups of customers. This requires operational definitions of the relevant markets. As the controversy over the 1963 Philadelphia-Girard merger decision illustrates, the relevant market is difficult to define because banks produce many products that may be purchased by customers in widely differing areas[17]. Some recent research on the problem by *Gelder* and *Budzeika* (1970), and *Eisenbeis* (1971) shows that the market for banking services may be quite wide and is not coextensive with standard legal or geographic boundaries. While it may be easy to measure the effect on competition of the merger of two of the three banks in an isolated town, it is difficult in a town served by, say, six medium size banks to assess the impact of the merger of two of them. It appears, then, that unless a merger will "substantially lessen competition", a liberal policy on mergers together with a less restrictive policy on entry will provide the best protection to the public against possible collusion.

c) Potential Competition

The second problem faced by banking authorities is whether or not to prevent mergers of banks that do not presently compete on the theory that such mergers will foreclose future competition between them. This doctrine of potential competition has been followed in New York State (and is being emphasized by the FDIC). According to a study by *Kohn* and *Carlo* (1970), it appears to have been successful in increasing the number of competitors in some markets. Between 1961 and 1963, the New York State Banking Department denied ten of thirteen cases in the belief that major institutions would otherwise enter the market of the mergee. As a result, potential competition became actual competition. Still, it is difficult, as *Kohn* and *Carlo* point out, to determine whether potential competition actually will occur. And there is a further problem, where entry has occurred, in determining whether the new competitors did in fact provide better service than a merged

[17] See the papers originally published in the *National Banking Review*, reprinted in *Studies in Banking Competition and the Banking Structure* (1966).

institution would have provided[18]. Finally, by denying mergers in instances other than those where competition clearly will benefit a significant part of the public, the authorities may stifle needed change in the banking structure and certainly are denying the owners of banks the right to dispose of their property as they see fit.

Aside from these limitations, it should be noted that validity of the potential competition doctrine is based on two assumptions: (1) that the market in which entrance is desired is monopolized; and (2) that the supply of potential competitors is limited.

With respect to the first assumption, if the market does not offer an opportunity for at least ordinary returns (net of the cost of entry), new entrants will not appear, monopoly or no. In a market characterized by monopoly profits, the immediate question is, "why have other banks not entered the market"? One answer may be that entry was restricted by banking laws, in which event concern with the elimination of potential competition is misplaced. Another is that profit potential might be less than the cost of establishing a new bank or branches. As a result, *de novo* entry would not be economic. In this event, infusion of additional capital via merger may be the only way to increase the resources available to consumers in such a market as discussed above.

The assumption that there is a limited supply of entrants in turn assumes that: (1) the market for banking services within the state cannot support many banks; (2) the resources available from existing banks or new entrants are insufficient for expansion into the market; and/or (3) bankers lack the desire to enter new markets even though there are potential net profits to be gained. Under the first limitation, merger of two banks will eliminate one of them as a possible competitor and, if there are few competitors operating in the state, this reduction may "substantially lessen competition and tend towards monopoly". For small states, this possibility requires the authorities to decide whether possible improvements (and, for small banks, economies of larger scale) outweigh the possible anticompetitive effects of merger.

An assumption that existing banks lack resources for expansion into new markets and/or that there are an insufficient number of effective

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[18] Often, the fact that a city of SMSA is served by four or fewer commercial banks is believed to be evidence of oligopoly practices. However, the evidence on concentration and performance reviewed above provides no support for this belief.

competitors within a state depends on the exclusion of banks from other states, because there are few, if any, non-legal barriers. The limitation is an artificial and arbitrary one imposed by the bank regulatory authorities (as discussed in Section V). Were inter-state banking permitted, the resource limitation could be eliminated by entrance of "foreign" banks, and branch offices and/or out-of-state holding companies could offer their services to the public[19].

It is possible that where bankers lack the motivation or ability to enter a new market *de novo*, it is because they learned their banking in a period when such possibilities were prevented by restrictive regulations. Consequently, when such bankers do attempt to expand into new markets by merger, they may do so without first carefully considering the alternative costs and benefits of establishing *de novo* branches. Adequate evidence that this situation exists might prompt banking authorities to educate bankers and/or delay approval of merger applications until the applicants show that they have fully considerd *de novo* alternatives. However, since it is doubtful that many bankers would fail to adapt to new regulations within a few years, a delay/education policy should be temporary, automatically terminating after a set period of time.

The conclusion, then, is that continuing restriction of mergers based on the potential competition doctrine is not well founded in theory for any but small states, if those. Even where the number of potential in-state entrants is limited, it would be preferable to allow out-of-state banks to establish offices. The potential competition doctrine is justified, if at all, by the behavioral assumption that banks previously restricted need to be forced to consider *de novo* entry. Thus the doctrine has only short-run, temporary value for large states and is not an optimal policy even for small states.

d) Conclusion

In summary, the evidence reviewed on bankers' motivations for mergers indicates that savings in operating costs do not appear to have been

[19] Federal law prohibits national and Federal Reserve member banks from establishing branches outside of the states in which they are chartered. Most states have similar restrictions on the banks they charter and on out-of-state banks. The Federal Reserve may permit holding companies to purchase or establish banks in states other than the one in which they are chartered only if this is expressly permitted by state law.

a strong motivation for or result of holding company acquisitions, although such savings may have been obtained in "true" mergers, where the acquired bank became a branch of the acquiring bank. More important motivations may have been avoidance of state restrictions on *de novo* branching and facilitation of capital flows between declining and expanding areas of a state. Management's desire for growth and large size also may have been important in merger decisions. Whatever the motivation, the data show that mergers result in better services, lower prices and higher rates on savings for the consuming public.

Thus, it appears that when mergers do not substantially eliminate competition they are in the public interest. True, in some markets mergers will eliminate competition for some customers and in other enhance it. But, considering the difficulty of defining those markets in which banks actually compete, it is preferable to control possible monopoly practices by following a liberal merger policy together with relatively unrestricted entry (by new banks, branches and extended powers of other financial institutions). An analysis of the potential competition doctrine reveals that it is based on the belief that the supply of potential competitors is limited and/or that bankers desire to expand via merger without first adequately considering the benefits of *de novo* expansion. To the extent that they obtain, both of these conditions are the result of laws that restrict entry. Therefore, the rationale for restricting entry into banking markets is considered next.

5. Entry

As discussed in Section I, unrestricted entry of firms into markets is sufficient for competitive behavior that benefits the public. But entry into U. S. banking markets is restricted. Only institutions chartered as commercial banks can offer some of the most essential banking services (particularly demand deposits). Commercial bank charters must be applied for and often are denied. The establishment of branches frequently is prohibited or restricted by state law. Given the (to economists) obvious value of unrestricted entry for eliminating or reducing the antisocial effects of monopolies and poor management, why is it difficult to enter the banking business?

a) Barriers to Entry

Two types of barriers to entry may be distinguished: (1) economic barriers and (2) regulatory barriers. Each is considered in turn.

In his comprehensive study, *Barriers to New Competition* (1956), *Bain* groups economic barriers to entry into four classifications: economies of scale, product differentiation, absolute-cost, and capital requirements. None of these is an important barrier to entry into banking.

To begin with, economies of scale (discussed previously) are not great above a quite low level of output. And, although economies of scale for giant banks have not been studied rigorously, the fact that the Bank of America and other very large banks in New York City and Chicago have not overwhelmed other banks argues against great scale as a barrier to competition (see Table I). Furthermore, *Kohn* (1966) has shown that small banks can compete effectively with large banks.

Product differentiation is difficult to achieve in banking because money is one of the most standard of goods. Quality and innovative packaging of services are used to compete for greater share of market, but these can be copied easily. In addition, bank examination and FDIC insurance have reduced if not eliminated most differences in the risk characteristics of banks.

Absolute-cost advantage refers to control over raw materials, patents, etc., by established firms, which bars new entrants from efficient production processes or forces them to incur higher costs. There are few such situations in banking. Labor, materials, equipment and money are available from competitive markets and do not give one bank or another an advantage in acquisition (except where government rules intervene, such as Regulation Q, which limits the rate of interest banks can pay on deposits).

The last possible economic barrier, capital requirements, is lower for banking than for most industries[20]. Thus, there are few, if any, economic barriers to entry into banking.

Government regulations, on the other hand, are an important barrier restricting entry and competition. Banks are chartered by the Comptroller of the Currency or by the individual states. Branching is controlled by state laws. Before passage of the Banking Act of 1935, entry

[20] National bank and state Federal Reserve member charters require a minimum capital and surplus of $ 120,000 to $ 240,000 (depending on the size of the community). New York State (as an example) requires capital of from $ 50,000 to $ 100,000. However, the chartering authorities usually require more than the minimum amount. If the requirements are greater than the amount that is optimal for an investment, they can be an economic barrier or, at least, an obstruction.

into commercial banking essentially was unrestricted. In most states it usually was not difficult to get the state banking commission to grant a state charter if a national bank charter was denied by the Comptroller, and vice versa[21]. But the Banking Act of 1935 required that the Federal agencies (Comptroller of the Currency, Federal Reserve and FDIC), consider "the financial history and condition of the bank, the adequacy of its capital structure, its future earnings prospects, the needs of the community to be served by bank . . ."[22] before deposit insurance is granted. *Pelzman* (1965) analysed the effect of the Act on new bank formation and estimated that "The result of these restrictions has been the loss of competition from about 2,220 new banks which would have formed in the absence of entry controls. There appears to be no noticeable offsetting gain to this loss" (p. 174).

b) Rationale for Government Restrictions

Restrictive control over entry was established because legislators and the public believed that "over banking" and destructive competition were responsible for the U. S. bank failures of the 1920's and, in large part, for the collapse of the banking system in the 1930's. There is some evidence to support the belief that bank failures in the 1920's were a function of "over banking". In a study of the causes of bank failures in this period, *Benston* (1971) finds that the data suggest, though do not demonstrate, a positive relationship between increased chartering and subsequent increased failures (pp. 17 - 20). However, there is also reason to believe that the economic gains from expansion in banking facilities were greater than the losses due to bank failures. The great wave of failures in the 1930's, in any event was due primarily to the restrictive monetary policy followed by the Federal Reserve that reduced the liquidity available to banks and resulted in great capital losses, particularly in bond holdings. For this period, prior chartering of banks bore little relationship to failures.

There have been relatively few bank suspensions in the post-depression period. Only 131 banks were suspended from 1943 through 1969, an average per year of 0.3 per hundred banks operating. Most of these failures were due to embezzlement and financial irregularities by officers

[21] See Federal Reserve System Committee on Branch, Group and Chain Banking Vol. 10 (1932).

[22] Section 101 (12 U. S. C. 1814 (b), 1815, 1816).

and employees; very few were due to poor management and none to "destructive competition" (*Benston,* 1971). Thus, it appears that fears of over-banking are not relevant today.

In any event, prevention of bank failures should be given much less attention. Many of the original reasons for preventing such failures are no longer relevant[23]. Among these no longer valid reasons are maintenance of the currency, prevention of bank runs, protection of small depositors, and disruption of communities and the economy in general. The first reason is obsolete since commercial banks no longer issue currency. Federal deposit insurance has prevented bank runs and completely protects most depositors. So long as there is more than one bank in a community or permissible branch banking the failure of a bank causes most people only an inconvenience and is less disruptive than the failure of most large businesses. Generally, research on the great depression (and on depressions in general) has shown that bank failures were not a primary causal factor and, in any event, resulted in a decline in the money supply and credit that could have been readily offset by the Federal Reserve (*Warburton* 1966, particularly p. 2).

Nor should there be concern over "destructive competition" generally. Aside from absence of any theory that supports this concept, there is no evidence that the phenomenon ever occured[24], particularly in banking markets. The findings of several studies support this conclusion. *Benston* (1964) and *Cox* (1966) independently examined the hypothesis that banks' payment of interest on demand deposits (which was prohibited by the Banking Act 1933) resulted in their taking greater risks than they otherwise would have and failing. The evidence shows conclusively that such was not the case. *Motter* and *Carson* (1964) very carefully studied the effects of removal of restrictions against New York City banks from opening branches in adjoining Nassau County in 1960. They report that the existing banks were not made unprofitable or unsafe: rather "there can be no doubt that Nassau consumers benefited from the expansion of banking facilities" (p. 512) in the form of added

[23] See *Benston* (1971) for a more complete discussion.

[24] The Standard Oil case is the standard example of destructive competition. While folklore has it that *Rockefeller* forced out his competition by undercutting their prices in order to create the Standard Oil monopoly, an excellent study by John S. *McGee* shows that this did not happen. *Rockefeller,* being very smart, did not engage in destructive competition. Rather he bought out his competitors, sharing with them the monopoly profits he expected to gain. (See John S. *McGee,* 1958.)

convenience, lower rates on loans, and higher rates on savings deposits. In an analysis of the effects of the some 100 *de novo* branches opened in New York State between July 1, 1960 and December 31, 1964, *Kohn* (1969) also found that the profitability of competing banks was not significantly adversely affected, although their deposit growth rate did slow down. He concludes that "... the evidence does not support the view that most unit banks are unable to adjust successfully to a new competitive force in the community" (p. 22).

The effect of new bank entry was studied by *Chandross* (1971) and *Fraser* and *Rose* (1972). *Chandross* analysed the effect of new bank entry into 98 formerly one-bank towns during 1950 - 61. He compared the ratios of net operating income to assets, net profits to capital, capital to risk assets: while there is evidence that the banks took greater risks these were not greater than those accepted by comparable, non-monopoly banks. *Fraser* and *Rose* conducted a similar study of the effects of a new bank on existing banks in isolated one-, two- and three-bank towns in the Eleventh Federal Reserve District (southwest) during 1962 to 1964. The found the new banks "... brought about significant changes in the nature of the banking services offered to the local communities by the established banks. Loan-asset ratios increased, greater emphasis was placed on business and consumer loans, while the prices for key banking services ... did not appear to rise relative to the norm. Also, established banks in the new entry communities were spurred into entering the competition for time deposits. These benefits to the public occurred without an adverse impact upon bank profitability or growth" (pp. 76 - 7).

Restrictions on branching stem from concerns that are almost contrary to the fear of bank failures. From 1921 through 1931, only seven of the 8,816 U. S. banks suspended were branch banks with more than 10 branches, of which only three operated branches outside their main office city. This record reflects the fact that unit banks, especially small ones, cannot diversify their portfolios or personnel and so suffer greatly when a local economic depression or errors in judgement occur. (Federal Reserve Committee, Vol. 10, 1932, p. 60.) California, with statewide branching had relatively few failures even among unit banks and Canada, which permits country-wide branching, had only one failure (in 1923).

Fear of concentration of resources in a few large banks is a major reason for opposition to branch banking. However, *Shull* and *Horvitz*

(1964), who researched this question very carefully, compared unit banking states with states that permit branch banking and found that, after taking account of population and geographic region, the number of competing banks is greater in towns not a part of metropolitan areas, about the same in smaller standard metropolitan statistical areas (SMSA), though fewer in larger SMSA's. Thus, for consumers in smaller communities, who have fewer alternatives, branch banking results in a greater choice as well as greater convenience. Similarly, *Jacobs* (1971) found that small businesses were charged lower commercial loan rates in branch banking than in restricted branching and unit branching SMSA's.

The benefits to the public of new entrants into a market has been fairly well documented. Studies by *Kohn* (1964) and *Horvitz* and *Shull* (1964) comparing the pre- with the post-merger behavior of unit banks merged with branch banks show no reduction in loans to the local community and a general increase in interest rates paid on savings deposits. *Weiss* (1969) reports that new banks were pioneers and early adopters of "no service charge checking". *Motter* (1965), who studied the performance of banks chartered in 1962, concludes that "... the operating results to date have been favorable for most of the 1962 class. Bank customers have enjoyed substantial benefits from this class" (p. 369). The effect of new banks in reducing monopoly profits is shown in the study by *Chandross* (1971), reviewed above.

The conclusion of the reasoning and evidence must be that greatly reduced governmental restrictions on entry would be in the public interest. Possible bank failures can be controlled by requiring new banks to have adequate capital and to be managed by responsible and experienced bankers. But, these considerations should not be over-emphasized, as they have been since 1935. Given both FDIC insurance and bank examination by the FDIC, state and federal banking authorities can be much more liberal in granting new charters than they have been. This liberality also will allow them similar liberality in permitting mergers.

It is important to note that entry can take several forms, in addition to new charters. The authorities can be much less fearful of managerial errors by banks which establish branches, since a branch can be unprofitable generally without seriously affecting the parent bank. Another important source of new entrants is expansion of the powers of other financial institutions. Were U. S. thrift institutions, in particular, given

Table II: **Summary of Studies on the Effect of Concentration of Bank Performance**

Study	Data and Measure of Performance	Method	Measure of Concentration	Shortcomings	Findings
A. Interest Rates on Business Loans					
Brucker (1970)	Balance sheets and income statements of banks by state economic areas: ratios of gross income to total loans.	Regression	Percentage of total assets held by largest three banks.	Same as Edwards (1965): also variables used are poorly out of date.	Somewhat higher rates, but findings are not meaningful.
Edwards (1964)	FRB loan surveys; total business interest paid divided by total loans.	Regression	Percentage of deposits held by three largest banks in SMSA.	Not clear whether difference in yields is due to differences in risk and regional supply and demand.	Slightly higher rates, but findings are not meaningful.
Edwards (1965)	Balance sheets and income statements of 1 400 banks in 36 areas; ratio of gross income to total loans.	Tables and regressions	Percentage of deposits held by three largest bank in SMSA.	Interest rates measured as total earnings on all loans-risk and type.	Slightly higher rates, but findings are not meaningful.
Flechsig (1965)	Same as Edwards (1964)	Regression	Same as Edwards (1964) but excludes MSB deposits.	"Corrects" Edwards' work by using regional variables.	No significant differences.
Holland (1964)	Balance sheet, income statement ratios.	Regression	One, two and three bank towns.	Only short summary of findings given; no data.	No difference.
Jacobs (1971)	Survey of loans made to 8 500 customers by 160 banks who returned questionnaires of 600 polled.	Regression	Percentage of deposits held by offices of the largest three banks in SMSA.	Few; only study that includes consideration of deposits held by borrowers.	Slightly higher rates due to concentration; somewhat higher for small businesses due to branching restrictions.
Kaufman (1966)	Balance sheet and income statements of Iowa banks: ratios of gross income to total loans.	Regression	Number of banks or market share of largest bank in country.	Same as Edwards (1965). In addition, differences in costs were not even crudely measured.	Higher rates, but findings are not meaningful.

Meyer (1967)	Same as Edwards (1964) excluding state-wide branching areas.	Regression	Same as Edwards (1964)	Same as Edwards (1964) and Edwards (1965)	Slightly higher rates, but findings are not meaningful.
Phillips (1967)	Four FRB surveys of short term business loans in 19 cities; rates weighted by size of loans.	Regression	Percentage of deposits held by largest three banks in city.	Other services received by borrowers and implicit payment for deposits not accounted for.	Slightly higher rates.
Schweiger and McGee (1961)	Comparative shopping for standardized consumer loans.	Tables and averages	3 unit vs. 8 multiple office cities and number of banks in towns in 6 Illinois counties.	Limited coverage; no statistics given to determine significance of differences.	Somewhat higher rates.
B. Interest Rates on Mortgage Loans					
Aspinwell (1970)	Interest rates on conventional single residence mortgages by SMSA, size of bank, loan value ratio.	Regression	Percentage of time deposits held by largest three institutions and number of institutions.	Risk and regional differences not fully accounted for; lending by mortgage and insurance companies ignored.	Slightly higher rates where fewer institutions.
C. Deposit Services					
Bell and Murphy (1969)	Functional cost and savings data for 14 cities.	Regression	Percentages of eight classifications of deposits held by three largest banks.	None	Higher service charge.
Edwards (1965)	As above; average rates on time and savings deposits.	As above	As above	Only percentage change in population used to specify demand.	Lower rates
Kaufman (1966)	As above	As above	As above	As above	Lower rates paid
Weiss (1969)	Survey of all commercial banks in New England on adoption of no charge checking accounts.	Tables	Percentage of demand deposits under $ 10.000 held by largest three banks in SMSA and Herfindahl Index.	Concentration only factor accounted for.	No charge checking accounts introduced where concentration lower.

the power to make unsecured consumer installment and business loans and to provide checking account services, they would constitute actual or potential entrants in many banking markets. Thus, for most states, the supply of new entrants probably would be sufficient to present existing banks with actual and potential competition. There are almost no economic barriers to entry. Only regulatory barriers are important. These should be reduced almost to the point of removal.

Zusammenfassung

Die optimale Struktur des Bankwesens: Theorie und Praxis in den Vereinigten Staaten

Die optimale Struktur des Bankwesens wird dadurch gekennzeichnet, daß die Banken bei einem gegebenen Qualitätsgrad den Bankleistungswünschen der Öffentlichkeit zu den niedrigstmöglichen Kosten gerecht werden. Gesamtwirtschaftlich bedeutet eine optimale Struktur, daß der Bedarf der Öffentlichkeit mit dem rationellsten Mittel-Aufwand befriedigt wird. Diese Kriterien werden durch eine auf Wettbewerb ausgerichtete Markt-Struktur, die frei von staatlichen Unterstützungen und Eingriffen sowie Sanktionen ist, erfüllt. Um ein optimales Funktionieren des Wettbewerbs auf den Märkten zu gewährleisten, müssen folgende Voraussetzungen gegeben sein: Eintritte in und Ausscheiden aus dem Markt (durch Fusionen, Übernahme oder Insolvenzen) sollten nicht beschränkt sein; Kartelle und Monopole darf es nicht geben.

Um festzustellen, in welchem Ausmaß diese Bedingungen für das Bankwesen zutreffen, wurden in den Vereinigten Staaten empirische Untersuchungen angestellt.

Zunächst wurden die Möglichkeiten von Einsparungen durch stärkeres Wachstum analysiert. Denn wenn das Bankwesen durch wesentliche und dauerhafte Kosteneinsparungen bei hohem Geschäftsvolumen charakterisiert wäre, so würde letztendlich bei freiem Wettbewerb nur eine Bank überleben. Eine Durchleuchtung von Analysen der Betriebskosten von Geschäftsbanken und Sparinstituten ergab statistisch zwar bedeutsame, aber umfangmäßig relativ unerhebliche Kostenersparnisse. Einer Leistungs-Steigerung von 100 % stand ein Kostenanstieg von 93 % gegenüber. Zwar schienen kleinere Banken weniger rationell als große Institute zu arbeiten, jedoch nahm der Kostenvorteil bei Wachstum sehr schnell ab.

Trotz des Mangels, daß in den erwähnten Untersuchungen Großbanken nicht enthalten waren, geht aus den Analysen von Staaten wie z. B. Kalifor-

nien hervor — dies wird durch praktische Erfahrungen gestützt —, daß ein freier Wettbewerb im oben definierten Sinne nicht zu einer Beherrschung des Marktes durch eine oder wenige sehr große Banken führen dürfte.

Daraus wäre zu folgern, daß seitens der zuständigen Behörden Fusionen zumindest soweit genehmigt werden sollten, wie der Wettbewerb nur unwesentlich dadurch eingeschränkt wird. Dabei ist allerdings die Schwierigkeit zu bedenken, eine wirklich exakte Definition der Beurteilungskriterien zu geben. Behörden verwenden normalerweise nur das Konzentrationsverhältnis als Maßstab für die Intensität der Konkurrenz. Demgegenüber wird nicht in Betracht gezogen, in welchem Ausmaß eine größere Zahl von Banken oder eine geringere Machtstellung der einzelnen Bank am Markt mit größeren Vorteilen für die Allgemeinheit verbunden ist. Um dies festzustellen, wurden Untersuchungsergebnisse bezüglich der Konzentrationswirkungen auf Kreditzinsen, Gebühren für Dienstleistungen im Kontokorrentverkehr sowie Zinsen auf langfristige Einlagen analysiert. Fast alle Studien, die sich mit Kreditzinsen befassen, sind so wenig aussagekräftig, daß daraus keine Schlußfolgerungen gezogen werden können. Aus anderen, brauchbaren Untersuchungen ergibt sich, daß die Zinssätze für Darlehen in Gebieten, in denen nur wenige Kreditinstitute existieren oder die von einzelnen Banken beherrscht werden, etwas höher sind. Ebenso scheinen die Gebühren für Dienstleistungen im Kontokorrentverkehr höher und die Zinsen für langfristige Einlagen in der Tendenz niedriger zu liegen als in Regionen mit scharfer Konkurrenz. Doch reichen die bestehenden empirischen Untersuchungen keineswegs aus, um zwingende und allgemeingültige Aussagen treffen zu können.

Infolge der unzulänglichen Daten fällt es Behörden relativ leicht, bis zu einem gewissen Grad durch Fusionen nicht beunruhigt zu sein, da sie davon ausgehen können, daß keine wesentliche Einschränkung des Wettbewerbs erfolgt.

Zwecks Analyse der Vorteile einer seitens des Staates liberalen Fusionspolitik wurden in einem nächsten Schritt die Motivationen untersucht, die für Kreditinstitute maßgebend waren, sich mit anderen Banken zusammenzuschließen oder andere Institute zu erwerben. Dabei wurde deutlich, daß Kostenvorteile offenbar kein Grund für oder das Ergebnis von Fusionen bzw. den Erwerb von anderen Banken waren. Vielmehr schien das Hauptstreben darin zu liegen, dem Kundenkreis allgemein bessere Leistungen durch ein breiteres Sortiment an Kredit- und Dienstleistungen zu bieten. Aus Untersuchungen von Fusionen nicht untereinander konkurrierender Kreditinstitute sowie von Fusionen, die den Wettbewerb bei verschiedenen Kundengruppen unterschiedlich beeinflussen, ergab sich folgender Schluß: Fusionen wirken sich fühlbar nur auf lokale und kleinere Kunden aus. Fusionsverbote, die mit der möglichen Einschränkung des Wettbewerbs motiviert werden, beruhen gewöhnlich nicht auf zwingenden Argumenten.

Eine bedeutsame Rolle für ein gutes Funktionieren von Märkten, auf denen Konkurrenz besteht, spielt der freie Zutritt. Es werden heutzutage immer noch Zutrittsbeschränkungen in Erwägung gezogen. Während ökonomische Schranken als zu schwach angesehen werden, gelten dirigistische Maßnahmen als zu tiefgreifend. Eine Analyse dieser Überlegungen zeigt, daß das Grundmotiv, das hinter den staatlichen Restriktionen, die den Zutritt zu den Bankmärkten regeln, steht, auf überkommenen Vorstellungen beruht. Die Furcht vor ruinösem Wettbewerb, vor zu vielen Banken und vor möglichen Insolvenzen ist nicht stichhaltig. Es kann im Gegenteil als erwiesen gelten, daß der Öffentlichkeit im Hinblick auf die Preise und die Quantität und Qualität der Dienstleistungen durch einen offenen Zugang zum Bankenmarkt durch neue Institute sehr gedient ist, ohne daß die Sicherheit der einzelnen Institute ernsthaft gefährdet ist. Um diesen Zustand zumindest aufrechtzuerhalten und ihn ggf. weiter auzubauen, sollte die Administration den Zugang neuer Banken erlauben und fördern, sei es durch Neugründungen oder durch Errichtung von Niederlassungen. Nur so kann eine optimale Versorgung der Öffentlichkeit mit Bankleistungen gewährleistet sein.

Summary

The Optimal Banking Structure: Theory and Evidence from the United States

The optimal banking structure is one in which banks determine, meet and even anticipate the public's demands at the least cost for a given level of quality. For the economy, the optimal structure is one in which the public's demands are met with the most efficient expenditures of resources. A competitive market structure, free from government subsidies, penalties and regulations meets these criteria. For competitive markets to operate optimally, the following conditions must obtain: entry and exit (via mergers, acquisition or failure) should be unrestricted, and cartels and natural monopolies should not occur. The extant empirical evidence from the United States is considered to determine the extent to which these conditions apply to the banking industry.

Economies of scale are considered first because, if the banking industry is characterized by significant and continuous economies of large scale operations, eventually only one bank would survive under free competition. The studies of the operations costs of commercial banks and savings and loan associations reviewed report statistically significant but not very great economies of scale: a 100 percent increase in output is associated with a 93 percent increase in costs. Thus, small banks appear less efficient than large banks,

but the cost advantage of larger size diminishes fairly rapidly. Although data on giant banks were not included in the studies, the analyses reported and the experience in states such as California indicate that free competition should not lead to the dominance of the market by one or a few very large banks as a consequence of operating economies of scale.

It would seem, then, that the authorities should permit mergers except where these substantially reduce competition. But competitive markets are difficult to define operationally. Since the authorities usually rely on concentration ratios to measure competition, the extent to which a greater number or lesser dominance of banks in a market is associated with greater benefits to the public should be considered. Evidence is reviewed on the effect of concentration on interest rates for loans, service fees for demand deposits, and interest paid on time deposits. Most of the studies on loan interest rates are so poorly structured that no conclusions can be accepted. Those studies that are useful indicate slightly higher interest rates on loans in areas where there are few financial institutions, or dominance by two or three banks. Service charges on deposits also appear to be higher and interest paid on time deposits lower in areas where competition is reduced. But the evidence is weak.

Since the evidence does not indicate that more than a few institutions are necessary for competitive conditions to exist, the authorities need not be overly concerned that mergers usually will reduce competition. To determine the benefits from a liberal merger policy, the motivation of banks to merge with or acquire other banks is considered. Studies reveal that savings in operating costs do not appear to have been a motive for or result of mergers or acquisitions of banks by holding companies. They also reveal that merged and acquired banks tend to serve the public better by offering more loans and service. Mergers that affect competition differently for different classes of customers and mergers of banks that do not presently compete also are discussed. It is concluded that the effect of mergers on local and smaller customers should be given precedence and that prohibition of mergers that reduce potential competition is not usually based on valid reasoning.

The keystone to the effective operation of competitive markets is free entry. Barriers to entry are considered. Economic barriers are found to be slight and regulatory barriers great. Analysis shows that the rationale behind government restrictions on entry into banking is based on outmoded considerations. Fear of destructive competition, overbanking and bank failure are not valid. To the contrary, a considerable body of evidence shows that new entrants to banking markets improve prices and service to the public with no evident adverse effect on the safety of existing institutions. Thus, the authorities should allow and encourage entry into banking markets via new banks, branching, and expansion of banking powers to allow other institutions to serve the public.

Résumé

La structure optimale du système bancaire: théorie et pratique aux Etats-Unis

La structure optimale du système bancaire se caractérise par la capacité des banques de répondre, à un degré de qualité donnée, à la demande du public en services bancaires aux prix les plus réduits. Sur le plan de l'économie globale, la structure optimale signifie que les besoins du public sont satisfaits par l'engagement le plus rationnel de moyens. Ces critères sont appliqués dans une structure de marché orientée sur la concurrence, exempte d'aides, d'interventions et de sanctions de l'Etat. Le fonctionnement optimal de la concurrence sur les marchés requiert les conditions suivantes: interdiction de limiter l'accès ou le retrait du marché (par fusions, absorptions ou faillites); interdiction des cartels et des monopoles.

Afin d'établir dans quelle mesure ces conditions s'appliquent au secteur bancaire, des recherches empiriques ont été entreprises aux Etats-Unis.

L'on a d'abord analysé possibilités d'économies par une croissance plus élevée. Car si le secteur bancaire était caractérisé par des économies de coûts importantes et durables avec un volume d'affaires élevé, une seule banque survivrait finalement dans un régime de libre concurrence. L'examen d'analyses des coûts de fonctionnement de banques d'affaires et d'institutions d'épargne permit de définir statistiquement des économies de coûts certes non négligeables, mais relativement modestes en volume: à un accroissement d'activité de 100 % s'oppose une hausse des coûts de 93 %. Les plus petites banques semblent travailler de manière moins rationelle que les grands établissements, mais l'avantages dans le domaine des coûts décroît rapidement avec la croissance.

Quoique de grandes banques ne furent pas englobées dans les recherches précitées, l'on peut déduire d'analysis d'Etats, comme par exemple la Californie, — et avec l'appui d'expériences pratiques — que la libre concurrence définie supra ne peut pas conduire à la domination du marché par une ou quelques très grandes banques.

Il faudrait donc tirer de ce qui précède la conclusion que les fusions devraient être admises par les autorités dans la mesure où elles ne réduisent guère la concurrence Une difficulté se présente toutefois, celle de la définition très exacte des critères de jugement. Les autorités n'utilisent généralement que le rapport de concentration comme mesure de l'intensité de quelle un plus grand nombre de banques ou une position moins puissante de chaque banque est liée à des avantages supérieurs pour le public. A l'effet d'en savoir plus à ce sujet, l'on a analysé les résultats d'enquêtes concernant les effets de la concentration sur les taux d'intérêt du crédit, les redevances de services en compte-courant et les taux d'intérêt de dépôts à long terme.

Presque toutes les études portant sur les taux du crédit sont tellement peu explicatives qu'il est impossible d'en tirer des conclusions. D'autres études, plus utilisables, ont établi que les taux d'intérêt des prêts sont légèrement plus élevés dans les régions à faible densité d'établissements financiers ou à domination quelques banques. Il semble pareillement que les redevances de prestations en compte courant soient plus élevées et les taux d'intérêt des dépôts à long terme plus modestes que dans les règions à forte concurrence. Les recherches empiriques disponsibles ne suffisent toutefois pas à établir des conclusions générales et contraignantes.

A cause de ces données lacunaires, il est assez aisé pour les autorités d'accepter un certain degré de concentration, car elles estiment ne pas devoir craindre une réduction sensible de la concurrence.

Pour analyser les avantages d'une politique libérale de l'Etat à l'égard des fusions, l'on a ensuite examiné les motivations décisives pour les établissements financiers en faveur de fusions et d'absorptions. Il en ressortit clairement que les avantages en matière de coûts ne furent manifestement pas le motif ni le résultat des fusions ou absorptions. L'objectif principal semble plutôt consister à améliorer le service à la clientèle par un éventail plus large d'activités. Des études sur des fusions entre établissements financiers non concurrents et sur des fusions influençant diversément la concurrence entre groupes ont démontré que les fusions ne sont ressenties que par les clients locaux et peu importants. Les interdictions de fusions motivées par la réduction possible de la concurrence ne reposent généralement pas sur des arguments décisifs.

Le libre accès joue un rôle primordial dans le bon fonctionnement des marchés vivant en régime de concurrence. Pourtant, aujourd'hui encore, l'on formule des considérations sur des restrictions à l'accès. Si le compartimentage économique est considéré comme trop faible, les mesures dirigistes sont estimées excessivement interventionnistes. L'analyse de ces considérations montre que le motif principal des restrictions que l'Etat pose à l'accès au marché bancaire réside dans des idées traditionelles. L'appréhension d'une concurrence ruineuse, d'un nombre excessif de banques et de faillites possibles n'a pas de sens. L'on peut au contraire prétendre que, en matière de prix, de qualité et de quantité des services, le public est bien servi par le libre accès au marché de nouveaux établissements, sans pour autant que la sécurité de chaque institution soit sérieusement mise en péril. Afin de conserver ou éventuellement même de développer cette situation, l'administration devrait autoriser et promouvoir l'accès de nouvelles banques, soit par de nouvelles créations, soit par l'ouverture de succursales. C'est la seule façon d'assurer au public un service bancaire optimal.

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