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Benefits of Bank Diversification: The Evidence from Shareholder Returns

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I. Introduction

THIS STUDY INVESTIGATES WHETHER shareholders of banks and bank holding companies perceive benefits to product and geographic expansion by examining the formation of one bank holding companies and changes in regulations affecting those holding companies.¹ The Bank Holding Company Act of 1956 limited interstate ownership of banks by companies owning more than one bank and restricted the range of their permissible nonbanking activities. However, those companies which owned only one bank were not subject to the Bank Holding Company Act and thus were unrestricted in the types or geographic locations of their nonbanking subsidiaries. Such one bank holding companies (OBHCs) could enter manufacturing as well as offer a full range of securities and investment banking services.²

It was not until mid 1968, however, that several major money center banks began to organize themselves into OBHCs and to acquire a wide range of

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¹ In a world of perfect markets, all beneficial diversification can be done by individual investors on their own account. Diversification by a firm could create no value for investors unless it was accompanied by real changes in the cash flows available to investors—perhaps due to cost savings in the form of economies of scale or scope and/or increases in revenues due to an exercise of monopoly power. Smith and Schreiner (1969), Mandelker (1974), Halpern (1983), Jensen and Ruback (1983), among others have examined the effects on stock values of diversification through mergers and other methods of expansion. The empirical research in mergers provide mixed evidence on net gains to stockholders. Halpern (1983) and Jensen and Ruback (1983) survey empirical research on gains to stockholders of merging firms. They conclude that acquired firm shareholders gain. In studies of tender offers, results suggest acquiring firm shareholders, gain, whereas, in studies of mergers results for acquiring firm shareholders are mixed.

² Black, Miller and Posner (1978) discuss the effects of bank holding company activities on bank risk and how such bank holding companies might best be regulated. see Curry (1978) and the references therein.

subsidiaries engaging in activities not permitted to either banks or subsidiaries of multibank holding companies (MBHCs). If such diversification had value, a revaluation of the shares of those banks announcing one bank holding company formations should be observed. Indeed, Strachan (1968) in the *American Banker*, argued that Citicorp's announced formation on July 3, 1968 sparked a broad rally for bank equities reflecting investor response to the potential of the OBHC form. Such a response should reflect the expected value of the associated product and geographical diversification over that available for banks. Alternatively, this response could be interpreted as the implied costs of restrictions on bank product and geographic diversification.

Congress responded to the end run around the McFadden Act and Douglas Amendment restrictions on interstate banking and the Glass-Steagall provisions separating banking and commerce by passing the 1970 Amendments to the Bank Holding Company Act of 1956. These amendments subjected OBHCs to the same regulations as MBHCs and expanded slightly the range of nonbanking activities permitted to MBHCs. Therefore, if bank holding company diversification has value to shareholders, examination of stockholder response to passage of the 1970 amendments should reflect a downward reevaluation of the shares of OBHCs and an upward reevaluation of MBHC equities.

II. Related Empirical Evidence

Two studies provide evidence on the effects of OBHC formation and the related issue of governmental regulation. Using monthly returns and formation dates as event dates, Martin and Keown (1981) studied OBHCs formed between July 1968 and July 1974. They concluded that "the formation of a one-bank holding company generally does not have a significant impact on the return generating mechanism for the underlying common stock of the affected bank" [p. 392].

There are three problems with Martin and Keown's use of actual formation dates as the event dates. First, formal announcement of an institution's intention to form a holding company often predated the actual formation by several months. Presumably, the announcement of intentions to form a OBHC, rather than the actual formation itself, would be the information on which investors would act. Second, Martin and Keown mixed data on OBHC formations occurring prior to the 1970 Amendments, when there were no limits on permissible nonbanking activities, with data on formations occurring subsequent to the 1970 Amendments, when permissible nonbanking activities were essentially limited to those financial activities permitted to subsidiary banks themselves. Finally, Strachan (1968) suggested that the favorable market response which followed Citicorp's announcement of its intention to form a OBHC reflected a revaluation of diversification potential to the industry as a whole. If markets are efficient, a broad response would be expected to the first few announcements, and then a tapering off would be observed as the market appropriately anticipated the candidates for formation.

In the second study, Aharony and Swary (1981) investigated the stock market's response to passage of the 1970 Amendments. They concluded that the 1970 Amendments had no differential effect on the risk and return to OBHCs, MBHCs

and independent banks. There are, however, problems with their specifications of event dates.

For example, a "Pre-enactment Phase" (22 Nov. 1968 through 9 January 1970) was identified as the period during which there were "... no discernable expectations of the forthcoming amendment," and "... precedes any specific mention of the act in the financial press." But Table 1 shows that a congressional staff report was published, several bills were introduced and hearings were held during that period. In fact, the prospects for legislation were quite large and the principal issue was not whether legislation would be passed, but rather what the appropriate grandfather date for existing nonbanking activities should be. Aharony and Swary defined the "Legislative Phase (12 Jan. 1970 through 24 Dec. 1970) as the period during which Senate and House hearings were held and compromises proposed. But Table 1 clearly shows that legislation was introduced into the House as early as Feb. 1969, hearings were held during 1969 and legislation passed both the House and Senate resolving the uncertainties prevailing during this legislative phase by Dec. 18, 1970. Finally Aharony and Swary specified the "Implementation Phase" (8 Jan. 1971 through 30 July 1971) as the period of uncertainty about the interpretation and implementation of the Act. But Table 1 shows that the Federal Reserve published a list of 10 proposed nonbanking activities as early as Jan. 25, 1971 and cleared 10 for implementation effective June 15. Thus, any uncertainty was resolved before the 30 July 1971 date used by the authors.

In addition to problems with specification of time periods, Aharony and Swary looked at cumulative average residuals calculated over relatively long time periods. With the exception of a one week enactment week, the periods they used were 30 to 60 weeks long. Detecting significant changes with such cumulative residuals may be difficult even if such changes actually exist (see Brown and Warner (1980)). One important finding of Aharony and Swary was the apparent presence of a strong industry effect. In view of this finding, it is important to provide for an industry control in the present research.

III. Data

The data set used in this study consists of weekly stock returns (dividends plus capital gains) for 78 U.S. banks for the period January 1968 through December 1975. The sample includes the major money center banks as well as a wide variety of smaller concerns and is divided into three separate groups as follows:³

³ For periods when a bank was listed on either the New York or American Stock Exchanges, weekly returns were calculated from the CRSP file of daily stock returns. During the period of the study, however, most bank stocks were traded over the counter, and for these firms weekly returns (adjusted for stock splits and dividends) were calculated from Friday bid prices in the ISL OTC Daily Stock Records. If Friday prices were unavailable, Thursday bid prices were used. To insure that each bank was properly categorized the corporate history of each of the sample banks was checked using *Standard and Poor's Corporation Record* and *Moody's Bank and Finance Manual*.

In selecting the sample banks the following procedures were used. A list of all MBHCs formed by year end 1968 was obtained from the Federal Reserve. MBHCs that were foreign banks (e.g. The Bank of Tokyo) or entities with little or no banking activity were eliminated. An initial list of the banks announcing plans to form OBHCs was obtained from the U.S. House Staff Report (1969) (dated February 11, 1969) listing of 34 of the largest commercial banks that had announced plans to form OBHCs. One entity, Union Bancorp, actually formed in October 1967. An initial list of independent banks was developed by checking the ISL OTC Daily Stock Record. Any independent

1. 30 institutions that announced plans to form OBHCs in 1968 and 1969, prior to the passage of the 1970 Amendments,
2. 35 institutions that were already MBHCs in 1968, and hence could not choose the OBHC form of organization,
3. 13 banks that remained independent (IND) throughout the 1968–1975 period and did not take advantage of any diversification benefits of organizing as a bank holding company.

For each of the OBHCs legal *formation dates* were collected from *Moody's Bank and Finance Manual* and *Standard and Poor's Corporation Record*. When available, the date the first mention appeared in the press of intention to form a OBHC (hereafter referred to as an *announcement date*) was gathered by consulting the *Wall Street Journal Index* and the *Funk and Scott Index of Corporations and Industries*. While in one case the announcement and formation dates occurred in the same week, announcement dates typically preceded legal formation by a lengthy period. In the sample, the median delay between announcement and formation dates was 5 months.

In addition, limited price data were gathered for 12 banks that formed OBHCs after the 1970 Amendments. Specifically, weekly returns were calculated for the five week period centered on the formation date and the five week period centered on the announcement date.

IV. Methodology

Returns to shareholders are used to test whether organizational and regulatory changes are perceived by the markets as affecting the value of banking organizations.⁴ Such a value change is *ex ante* in nature. It represents the capital market's assessment of the future, and not necessarily what will occur. Additionally, in efficient markets, security prices will not react to regulatory changes unless those changes are different from those anticipated. Capital market data do, however, allow important analysis of the wealth effects of regulatory change and, by implication, analysis of the cost imposed by regulation on the owners of the regulated entities. Furthermore market prices observed in capital markets are subject to few of the problems involved in using reported accounting data that are often utilized in evaluating regulatory issues. A discussion of these problems and numerous examples are reported in Schwert (1981).

In analyzing stock return performance, weekly abnormal returns (ar_{jt}) are

banks known to have failed or received government assistance due to financial difficulties were eliminated. Finally, all banks listed on the CRSP tapes were candidates for inclusion in the sample. These initial lists were pared to the final 78 by requiring that necessary return data be available in the ISL records. A list of the companies included in the study is available from the authors upon request.

⁴ Changes in shareholder value should not necessarily be equated with changes in value to society. For example, an increase in share price might be due to either increased exploitation of market power in product markets (and the resultant harm to consumers) or to real cost savings (which may represent a net gain to all parties). Furthermore, a test on shareholder returns is not capable of distinguishing between increases in shareholder value at the expense of creditors and increases due to a higher value of the bank's assets. Masulis (1980) found the effects of exchange offers (switching debt and equity) on bondholder's values to be small if not zero. Since exchange offers provide greater opportunities for bondholder losses (gains) than are present in the case of OBHC formation, changes in the value of creditors' holdings are likely to be negligible.

constructed for each bank as $ar_{jt} = r_{jt} - c_{jt}$, where r_{jt} = weekly return for bank j in week t and c_{jt} = control return for bank j in week t . Weeks are defined relative to some designated event week t_j^* for each bank where $t_j^* = 0$. These weekly abnormal returns are aggregated into a portfolio abnormal return AR_t defined as

$$AR_t = \frac{1}{N} \sum_{j=1}^N ar_{jt}.$$

where N is the number of banks in the portfolio. Tests using AR_t are used to see if stock returns are significantly affected by the events of interest.

To test whether AR_t is significantly different from zero the statistic TAR_t is calculated as $TAR_t = AR_t/\sigma$, where σ is the standard deviation of AR_t measured over the 26-week period including $t = -24$ to $t = -13$ and $t = 27$ to $t = 40$. If AR_t is normal, independent and identically distributed over t then TAR_t will be distributed Student's t with 25 degrees of freedom. This procedure is the Crude Dependence Adjustment (see Brown and Warner (1980)) which accounts for cross-sectional dependence in performance measures.⁵ To test the hypothesis that the events of interest affect stock returns over a number of weeks, a cumulative abnormal return CAR_t is calculated as

$$CAR_t = \sum_{i=t_b}^t AR_i$$

where t_b is the week in which the cumulating process begins. The significance of CAR is assessed with the statistic $TCAR_t$ calculated as

$$TCAR_t = \frac{\sum_{i=t_b}^t TAR_i}{\sqrt{t - t_b + 1}}$$

which is distributed approximately standard normal.

Controls, Portfolios and Event Dates

Critical in the calculation of the above statistics are specifying control returns (c_j), choosing the relevant event dates (t_j^*) and forming appropriate portfolios for analysis. The event dates are alternatively OBHC announcement dates, OBHC formation dates, or dates in the chronology displayed in Table 1. The appropriate portfolios (e.g. all OBHCs, money center OBHCs) are discussed in the results section as they relate to specific hypotheses to be tested.

Control returns are calculated in two ways. First, the Fisher Index, an equally weighted portfolio of all common stocks on the New York and American Exchanges, is used. This index is designed to control for general movements in stock prices. Second, returns on an equally weighted portfolio of MBHCs are used to provide a better control in analyzing the effects of OBHC formations. The pattern of returns on OBHCs is more similar to returns on MBHCs than to stock returns in general (FISHER Index) in terms of average returns, standard

⁵ AR_t was also calculated with two alternate definitions of σ : σ from $t = 27$ to $t = 52$ and σ from $t = -38$ to $t = -13$. The results were essentially the same as those reported in the paper. Technically the AR_t will not be independent especially when event weeks are separated but clustered in the same calendar time as is the case in this study. This is because returns separated in event time for two different banks will correspond to the same calendar week. Brown and Warner's (1980, p. 251) simulation results show that such dependence induced by the crude adjustment procedure is small and that the Crude Dependence Adjustment performs well in a wide range of simulation environments.

deviations and correlations. Use of MBHC controls for other factors that would have effects on the entire set of banks, not just on stocks in general. For example, splitting the time period studied in half, the maximum difference between the average returns of OBHC and MBHC occurs in 1968–1971 and is 3.3% on an annual basis. This is in contrast to an annual difference of 5.17% between OBHC and the FISHER Index for the same period.

Correlation coefficients between the indices are high. Of particular interest is the relationship between MBHC returns and those of OBHCs. The simple correlation coefficient between MBHC and OBHC is .859 for the entire 1968–75 period which is higher than comparable correlation coefficients between these two bank indices and the FISHER stock index. Comparable results hold in the two subperiods 1968–71 and 1972–75.

Since bank stocks were relatively thinly traded during the period of this study, there could be problems in calculating risk measures for such securities as discussed by Scholes and Williams (1977). However, serial correlation for bank stocks is not substantially different from that for stocks in general. As a result, thin trading should not pose a special problem for this study.

Finally, Brown and Warner (1980) show that for event type studies using the less favorable conditions of monthly data, market adjusted returns (equivalent to the use of the FISHER Index as a control) have about the same discriminating power as methods involving company specific risk adjustments (e.g. calculation of betas). Therefore, given the limited data available for this study, firm specific risk adjustments were not calculated in this study. The use of MBHC as a control allows for possible improvement over the FISHER Index as a result of an industry control.

V. Empirical Results

Table 2 shows the response to the announcement to form OBHCs. The abnormal returns are computed for a period of 12 weeks preceding the announcement and 26 weeks following the announcement, using the return on MBHC as a control. The only pattern of market response that could be detected was in the period immediately surrounding the announcement. Therefore, the abnormal returns are presented for a period of only 4 weeks (-2 , -1 , 0 , and $+1$ where 0 is the week of the announcement) and the cumulative abnormal returns are calculated over these 4 weeks.

The first panel presents the abnormal returns of Citicorp around its announcement on July 3, 1968. The CAR over the 4 week period was 10.9% and statistically significant at the 5% level. Probably due to leakage of information, there is some response before the announcement week (4% in week -2). Additionally, some response could be detected in the week following the announcement (4.4% in week 1).

This substantial positive response of the market is contrary to the findings of previous studies that the formation of a OBHC does not have a significant impact on stock prices. To check the sensitivity of the results to the definition of the control portfolio, a number of alternative definitions were used. Panels B–D in Table 2 present abnormal returns for Citicorp based on the following control

portfolios: a portfolio of OBHCs, excluding Citicorp⁶; a portfolio of Money Center Banks, excluding Citicorp (which is a subset of OBHC), and the Fisher equally weighted index. Each CAR is substantial (between 9.0% and 17.3%) and statistically significant.⁷ These results support the conclusion that the announcement of Citicorp of its intention to form a OBHC had a positive impact on its stock prices.

The next question is whether Citicorp's announcement impacted on stock prices of other banks. Assuming perfect market foresight, the banks most likely to be influenced are those that eventually become OBHCs; MBHCs could not change their organizational structure and smaller independent banks are in general not as likely to be able to engage in significant diversification. Panel E in Table 2 reveals that OBHC had a CAR of 2.1% around the date on which Citicorp made the announcement when MBHCs are the control, but it is significant only at the 20% level. The reason that 2.1% over a period of 4 weeks is not statistically significant is that the associated standard deviation (2.5%) is relatively large due to the "clustering of events" on the same date; week 0 is the same calendar week for all the banks. Brown and Warner (1980) show that the general impact of clustering events is to lower the number of securities whose month '0' behavior is independent, which makes it more difficult to reject the null hypothesis. Panel F in Table 2 contains essentially the same banks as in Panel E, but the events are not clustered, and the resulting standard deviation is much smaller (1.0% vs. 2.5%). In addition, the four abnormal returns reported in Panel F are positive, and the probability for such an outcome is around 6%. Therefore, Citicorp's announcement probably had a positive impact on stock prices of other candidates to form OBHCs.

In an efficient market new information is immediately impounded in stock prices. As shown in Table 1, the announcement made by Citicorp was not the first announcement to reach the market about the formation of a OBHC. There were 3 earlier announcements made by relatively smaller regional banks: Union Bancorp Inc., Wachovia Corp. and NCNB. The announcements made by these 3 banks did not have any impact on OBHC stocks. The CAR in Panel G in Table 2 over the 4 weeks surrounding Wachovia's announcement was .4% and the abnormal return was negative in the week of the announcement. For some reason, the three earlier announcements received very little attention in the financial press. And, only when Citicorp made its announcement was it widely mentioned that there were actually some earlier announcements.

Panel F in Table 2 shows the market response to the individual announcements made by OBHCs. For each bank, week 0 is defined as its announcement week. The CAR of 4.3 is statistically significant but substantially smaller than the CAR of 10.9% for Citicorp. One possible explanation is that part of the market

⁶ Because Citicorp was a money center bank, using money center banks as a control measures as closely as possible the impact of the announcement on Citicorp.

⁷ During the weeks of July 1968 most major banks reported significant increases in earnings, including Citicorp. It might be argued that this earnings announcement explains the increase in Citicorp's stock price rather than the announcement to form a OBHC. This can not explain our findings however. Even when other major banks, also with favorable earnings, are used as controls the abnormal returns for Citicorp are large and statistically significant.

Table 1
Chronology of Bank Holding Company
Expansion and Legislation 1968–1971

1. May 9, 1968	Wachovia Bank and Trust announced conversion of charter to national status and formation of OBHC.
2. June 18, 1968	North Carolina National Bank announced intention to form OBHC— <i>June 20 American Banker</i>
3. July 3, 1968	First National City Bank announced intention to form OBHC
4. Feb. 11, 1969	Publication of Staff Report for the Committee on Banking and Currency, House of Representatives, "The Growth of Unregistered Bank Holding Companies—Problems and Prospects"
5. Feb. 17, 1969	Patman introduced HR. 6778
6. Feb. 18, 1969	Proxmire introduced S. 1052
7. Feb. 29, 1969	Sparkman introduced S. 1211
8. March 24, 1969	Treasury sponsored BHC bills HR. 9385 and S. 1664
9. April 15–18 April 21–25	Hearings were held on HR. 6778
10. July 23, 1969	HR. 6778 reported out of House Banking Committee
11. Nov. 5, 1969	HR. 6778 Passed House after debate on Nov. 4 & 5.
12. May 12 & 28, 1970	Senate Banking Committee hearings on HR. 6778
13. Aug. 10, 1970	Senate reported amended HR. 6778
14. Sept. 16, 1970	Senate passed amended HR. 6778
15. Dec. 15, 1970	Conference Report on HR 6778 which was required because HR 6778 passed House and Senate in different forms.
16. Dec. 16, 1970	House approved
Dec. 18, 1970	Senate approved
17. Jan. 25, 1971	FRB published proposed list of 10 nonbanking activities

Table 2
Abnormal Returns and Significance Tests¹
Around the Announcement Dates

	Control	−2	−1	0	1	CAR
A Citicorp using own date	MBHC	.040 (1.52)	.017 (.65)	.007 (.28)	.044 (1.65)	.109 (2.05)*
B Citicorp using own date	OBHC	.034 (1.63)	.016 (.77)	.003 (.13)	.040 *1.82)*	.091 (2.18)*
C Citicorp using own date	Money Market OBHCs	.036 (1.18)*	.018 (.90)	.001 (.07)	.035 (1.75)*	.090 (2.26)*
D Citicorp using own date	Fisher Index	.053 (1.88)*	.051 (1.80)*	.010 (.34)	.059 (2.07)*	.173 (3.04)*
E OBHC using Citicorp date	MBHC	.008 (.62)	.002 (.16)	.006 (.45)	.006 (.46)	.021 (.84)
F OBHC using own date	MBHC	.011 (2.23)*	.016 (3.09)*	.017 (3.36)*	−.001 (−.20)	.043 (4.24)*
G OBHC using Wachovia date	MBHC	.003 (.17)	.004 (.25)	−.007 (−.46)	.004 (.28)	.004 (.12)
H Last 3 announcements using own dates (3/ 69–11/69)	MBHC	−.024 (−1.12)	.006 (.29)	.025 (1.21)	.020 (.94)	.028 (.65)

¹ The numbers in parenthesis are the t-statistics for the abnormal returns and the Z-statistics for the cumulative abnormal returns (CAR). The stars indicate results significant at the 5% level, for a one tailed test.

adjustment occurred with earlier announcements. For example, OBHCs experienced a 2.1% *CAR* (Panel E) when Citicorp made its announcement.

To investigate more fully the market's adjustment process, Panel H of Table 2 presents the results for the last three banks in the sample that made their announcements prior to the 1970 amendment. In an efficient market these announcements should not contain too much information. The *CAR* of these 3 banks was 2.8%, and the abnormal return in the announcement week was 2.5%. Although positive, these returns are not statistically significant, and the response is less strong than for an "average" OBHC (4.3% in Panel F).

Table 3 presents an important subdivision of the OBHC sample based on the different restrictions prevailing on intrastate branching and MBHC operations. The results permit a partial test for shareholder perceptions of the relative importance of product and geographic diversification. For example, in statewide branching states, the principal advantage of the OBHC form was the additional product diversification and interstate operations offered by nonbanking expansion. Panel A shows there was a statistically significant response (2.4%) in the announcement week but the *CAR* over the four week period was not significant. In contrast, the banks in the OBHC unit bank sample shown in Panel D operated in states with absolute prohibitions on any form of intrastate banking. The positive market response in weeks -2 and -1 and the large (13.0%) and highly significant *CAR* suggests that shareholders anticipated substantial benefits from product and geographic diversification. In between these two extremes are the two limited branching OBHC samples. The limited branching results in Panel B are for the sample banks that had an intrastate banking option via multibank holding companies but chose the OBHC option instead to take advantage of nonbanking and geographic expansion. The results for this sample are nearly identical with the statewide banking sample; the week zero return is significant but the *CAR* is not. In contrast, the limited branching sample in Panel C did not have an intrastate expansion option. Since the principal differences for the banks in Panels C and D and those in A and B pertain to the degree of intrastate bank

Table 3
Abnormal Returns and Significance Tests¹ Around OBHC Announcement
Dates for OBHCs in Statewide Branching, Limited Branching and Unit
Banking States—MBHC Returns as Control

	-2	-1	0	1	CAR
A Statewide Branching	.006 (.65)	.000 (.03)	.024 (2.83)*	-.005 (-.63)	.024 (1.40)
B Limited Branching and MBHCs	-.003 (-.43)	-.001 (-.13)	.022 (2.66)*	.006 (.69)	.022 (1.39)
C Limited Branching and No MBHCs	.007 (.79)	.021 (2.10)*	.008 (.82)	.003 (.34)	.039 (1.98)*
D Unit Banking (No MBHCs)	.058 (3.06)*	.070 (3.65)*	.014 (.76)	-.012 (-.62)	.130 (3.42)*

¹ The numbers in parenthesis are the t-statistics for the abnormal returns and the Z-statistics for the cumulative abnormal returns (CAR). The stars indicate results significant at the 5% level, for a one tailed test.

expansion that was possible, the larger positive *CARs* could be interpreted as reflecting the perceptions of shareholders of the incremental values of branching. The results imply that about an 8 to 9 percentage point increase in the *CAR* is associated with the ability to branch on even a limited branching basis, a 2 percentage point increase is attributable to an intrastate option and about 2 percentage points reflect the additional value of interstate banking and product diversification. The largest portions of the perceived benefits appear to be associated with limited branching which tends not to involve significant geographic diversification. This finding suggests that the major benefit of the OBHC form was the ability to serve new customers segments such as the retail market.

In addition to the results reported in Tables 2 and 3, other empirical tests were performed. For consistency with the work of Martin and Keown (1981), market responses to actual formations were also tested. As indicated earlier the median delay between the announcement date and the formation date was 5 months. In an efficient market no market response to the formation would be expected, and this hypothesis was confirmed⁸. The *CAR* around the formation date was practically zero.

Additionally, abnormal returns were examined for a sample of 12 OBHCs (not part of the original sample of 78 banks) which decided to change their organizational structure after the amendment of 1970. The results revealed that there was no market response to either the announcement or the actual formation. There are two possible reasons for such an outcome. The first is that these announcements were made more than two years after Citicorp's announcement. Therefore, any change in investor's expectations was already impounded in stock prices. The second reason is that the 1970 amendment reduced the diversification potential of banks and therefore the benefit perceived by the market was reduced.

Finally, (using FISHER Index as control) abnormal returns and *CARs* for the OBHC and MBHC samples were compared around the series of legislative and regulatory actions (detailed in Table 1) that culminated in bringing OBHCs under the Bank Holding Company Act and in drastically curtailing permissible OBHC activities. MBHCs, on the other hand, benefited from these legislative actions as a result of the expansion of their nonbanking activities. The hypothesis was that these actions could have negatively affected shareholders' evaluations of OBHC shares relative to those of MBHCs. The empirical results, however, were generally insignificant and did not support this hypothesis. In those few instances where there were significant *CARs*, the differences between the OBHCs and MBHCs were quantitatively small.

One possible explanation for not finding a significant negative market responses to the increased regulation of OBHCs might be found in further analysis of the subdivided OBHC sample results presented in Table 3. It was suggested that the greatest positive responses to OBHC formations centered on the degree to which bank branching options were increased. However, the legislative actions affected primarily the product diversification options of both MBHCs and OBHCs which might not have been perceived of much value. The intrastate

⁸ When the announcement was made, there was in general no uncertainty about the eventual formation.

options were largely unaffected. Subsequent studies of the performance of non-banking activities of bank holding companies tend to support this conclusion by failing to find significant benefits associated with nonbanking expansion.

VI. Conclusions

The benefits of bank diversification have been examined by analyzing shareholder perceptions of such benefits as measured by changes in the value of bank stocks. The 1968–74 time period was studied since it provided a unique opportunity to study both the effects of OBHC formations (avoiding limitations on bank diversification) and the changes in legislation affecting banks ability to diversify.

The announcements of OBHC formation coincided with significant positive abnormal returns to shareholders. These positive returns are consistent with an upward revaluation of the bank's value to reflect the increased expansion opportunities accompanying the OBHC form. Furthermore, the stock market seems to have been relatively efficient in digesting these announcements. The positive abnormal returns were concentrated in a few weeks around the announcement dates of OBHC formations. No abnormal returns could be observed around actual formation dates. This may explain why earlier empirical research using formation dates was unable to detect the market's positive response. Additionally, consistent with efficient markets, the "information effect" of earlier announcement was more pronounced than that for later announcements. Presumably after the first major OBHC announcements, the market started to form expectations about future announcements. Evidence consistent with this contention is the impact of Citicorp's announcement (the first major money center bank to choose the OBHC form) on other banks.

Announcements of OBHC formations after the 1970 amendments were not associated with positive abnormal returns. These amendments reduced the scope of OBHC activities, and there had been many early announcements of OBHC formations that probably led to earlier price adjustments. Thus the lack of positive returns is not surprising. By comparing subsets of banks forming OBHCs which had different restrictions on branching and holding company operations, further evidence on the benefits of bank diversification was obtained. It appears that the major benefit was associated with the ability to enter markets traditionally served by banks with branching capability and not with diversification into activities outside those closely related to banking.

Passage of the 1970 amendments effectively closed the OBHC loophole and changed the nature of allowable bank diversification. Neither the Act nor the set of events associated with its passage are associated with significant revaluations of OBHCs relative to MBHCs. Perhaps this is because the legislation did not remove those elements of bank diversification which appeared to be of most value as perceived by shareholders. In addition, the inability to specify a precise event date makes it difficult to detect abnormal returns.

The results bear directly on several policy issues being debated today. For example, they suggest that financial product and geographic diversification may be perceived by shareholders as increasing the value of the firm. Moreover, the

greater benefits are associated with branching and diversification within different customer market segments. Benefits of product diversification were also found to exist, albeit of a much lower order of magnitude. Caution should be exercised in extrapolating these results too far, however. Numerous technological and financial innovations have evolved which have broadened significantly the (Kane 1981, Eisenbeis 1981) array of products offered and the areas over which services can be delivered. For these reasons, further search on the benefits of geographic and product diversification in the present environment is warranted.

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