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CHANGES IN INDIVIDUAL OWNERSHIP OF BANKS AND THEIR EFFECT ON PERFORMANCE

BY

R. Rodney Pakonen

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Introduction

This study was conducted to determine whether changes in ownership or control of commercial banks from one individual or group of individuals to another individual or group of individuals can be expected to result in changes of operating characteristics. This is not the first study which has attempted to analyze the effects of new ownership on the operating performance of commercial banks; at least two other studies have approached the same or similar questions. Robert Lawrence attempted to assess the impact on operating performance when a bank holding company acquired an independent unit bank.[1/] Paul Jessup studied the impact of a change in ownership or control from one individual or group of individuals to another individual or group of individuals.[2/]

The results of the two studies, while not exactly the same, tend to complement each other. According to Jessup:

> Significant differences in operating performance are associated with changes in individual bank ownership. A principal finding is that banks with new owner-managers tend to have higher loan-asset ratios. Also, they place greater emphasis on consumer loans. While thus increasing their communities' loan availability, these banks generally do not charge higher prices for their services, as measured by revenue on loans/total loans and service charges on deposit accounts/demand deposits.[3/]

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[1] Robert J. Lawrence, The Performance of Bank Holding Companies, (Washington, D.C.: Board of Governors of the Federal Reserve System) 1967.

[2] Paul F. Jessup, Changes in Bank Ownership: The Impact on Operating Performance, (Washington, D.C.: Board of Governors of the Federal Reserve System) 1969.

[3] Ibid., p. 23.

Lawrence reported:

> On the basis of the evidence derived from this study, the principal factors that policy makers must weigh in deciding whether to convert from independent banking (that is, unit or limited branch banking) to holding company banking can be reduced to the following question: aside from any anti-competitive effects are the possible adverse consequences of some loss of local control of banks more than offset by the greater benefits that would arise from having a larger amount of potential bank credit made available to the economic units of the community?[4/]

Methods

In both of the aforementioned studies, the primary method of analysis was to compare various operating ratios of acquired banks before and after changes in ownership or control. Because these ratios could change through time, acquired banks were compared with "similar" banks that did not experience changes in ownership or control. If the means of any ratio of these two groups were significantly different before acquisition and not significantly different after the ownership change, or, analogously, if the means of any ratio of these two groups were not significantly different before and significantly different after acquisition, both authors would conclude that a significant change in that operating characteristic was a result of the acquisition.

Their primary statistical test can be summarized symbolically by letting:

B_i^{NP} = Operating statistic for a bank in the base year which was not purchased during the years under study ($i = 1, 2, \ldots, n_1$).

T_i^{NP} = Operating statistic for a bank in the terminal year which was not purchased during the years under study ($i = 1, 2, \ldots, n_1$).

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[4] Lawrence, p. 25.

B_i^P = Operating statistic for a bank in the base year which was subsequently purchased ($i = 1, 2, \ldots, n_2$).

T_i^P = Operating statistic for a bank in the terminal year which had been purchased during the years under study ($i = 1, 2, \ldots, n_2$).

Their null hypotheses were:

$$\frac{1}{n_1}\sum_{i=1}^{n_1} B_i^{NP} = \frac{1}{n_2}\sum_{i=1}^{n_2} B_i^{P}$$

and

$$\frac{1}{n_i}\sum_{i=1}^{n_1} T_i^{NP} = \frac{1}{n_2}\sum_{i=1}^{n_2} T_i^{P}$$

To accept the conclusion that a change in the operating ratio was the result of the acquisition, one of the null hypotheses had to be accepted and the other rejected. If both null hypotheses were either rejected or accepted, it was concluded that no significant change in that operating characteristic resulted from the acquisition.

Upon closer investigation, it becomes apparent that this method of measuring for significant differences could lead to erroneous conclusions. A numerical illustration provides an example. Suppose banks that are not purchased during the period under study increase their loan/deposit ratio from 50 percent to 75 percent. Suppose, also, banks that are purchased increase their loan/deposit ratio from 45 to 67.5 percent. Using the method described above, it might be possible that the five percentage points difference between the two sets of banks in the beginning year was not significantly different, but that the difference in the ending year was significant. Thus, using Jessup's methodology, it would be concluded that there was a significant change in loan/deposit ratios between these two sets of banks when, in fact, those banks that were not purchased increased their loan/deposit ratios at the same rate as those banks that were purchased.

An alternative statistical test can be used to minimize the possibility of reaching this type of erroneous conclusion. Instead of comparing a set of banks with its control group to determine if the operating characteristics are significantly different at any point in time, it seems more appropriate to determine if the operating characteristics change more over a period of time for one set of banks than for the control group. Thus, for example, the operating characteristic under question could change because of changes in the economic climate, but if it changes <u>more</u> or <u>less</u> for those banks that were acquired than for the control group, it could be concluded that the difference in the change was due to the acquisition. This is the null hypothesis that will be tested in this paper. Symbolically, the test for each operating characteristic is:

$$\frac{1}{n_i}\sum_{i=1}^{n_1}(T_i^{NP} - B_i^{NP}) = \frac{1}{n_2}\sum_{i=1}^{n_2}(T_i^{P} - B_i^{P})$$

The data used by Paul Jessup to test his hypotheses were also used in this study. Independent banks in Minnesota were separated into three categories: non-par banks in rural one-bank towns, par banks in rural one-bank towns, and par banks in rural two-bank towns. Each group was then further broken down on the basis of whether or not ownership or management had changed. Quoting Jessup:

> Of the 302 independent, rural,nonpar banks in one-bank towns, 33 underwent changes in control and management during 1961-65. The operating performance of these banks can be examined before and after the change. One hundred seventy nine independent rural, nonpar banks in one-bank towns, had no apparent change in ownership or top management during 1960 -66. These banks, which are apparently "similar" except for the ownership change, serve as the control group for comparative performance. The remaining 90 of the 302 banks are classified as "other".... These "other" banks underwent some shifts in top management within a family or established management group, but control did not pass to <u>new</u> management and

ownership; and therefore they are not included in the analysis. For purposes of analytical clarity and public policy implications, this study focuses on the dichotomy of a set of banks with new owner-management and a control group of similar banks with no major changes in owner-management.

... of the 58 independent, rural, par banks in one bank towns, 9 underwent changes in control during 1961-65 while 29 experienced no major changes in owner-management. This provides another sample and control group. Similarly, there are 8 rural towns in which one independent bank underwent an ownership change while the other independent bank continued with the same owner-management. These 8 towns provide a third sample and control group.[5/]

Results

Non-par banks in rural one-bank towns will be considered first. As shown in Table I, performance characteristics of those banks that experienced ownership or management changes between 1960 and 1966 changed significantly more than did those of banks which remained under the same ownership or management. Of the 26 ratios examined, changes in five were statistically significantly different at the one percent level and six were different at the five percent level. Of those cases in which changes were significantly different for the two groups of banks, the changes were such that would signify more aggressiveness by those banks that experienced changes in ownership or control. Those banks that experienced changes in ownership increased their loan-asset ratios by 8.72 percentage points while those banks that did not experience an ownership change reduced their loan-asset ratio by 0.10 point on average. Because of the increased importance of loans in their asset portfolios, those banks that experienced changes in ownership tended, also, to have greater increases in both their consumer loans-total assets and farm loans-total assets ratios than did those banks

[5] Jessup, p.8

TABLE I

Comparison of Changes in Operating Characteristics, 1960 - 1966
(Independent, Non-Par Banks in Rural One-Bank Towns)

Ratio	Banks that changed ownership (32 observations)	Banks that did not change ownership (177 observations)	T-values of differences in mean change
Net Current Earnings/Total Capital Accounts	-3.16	-0.93	1.4108
Total Operating Revenue/Total Assets	0.83	0.43	1.9134
Net Current Earnings/Total Assets	-0.29	-0.43	0.4537
Interest and Dividends on U.S. Government Securities/ Total Operating Revenue	-2.67	3.43	2.7062**
Revenue on Loans/Total Operating Revenue	6.07	-1.28	2.9898**
Service Charges on Deposit Accounts/Total Operating Revenue	0.45	-0.63	1.9782*
Salaries and Wages/Total Operating Revenue	-0.56	-4.44	2.2982*
Interest on Time & Savings Deposits/Total Operating Revenue	7.03	10.63	1.8945
All Other Expenses/Total Operating Revenue	-3.45	-5.78	1.8313
Net Current Earnings/Total Operating Revenue	-7.87	-4.68	1.3555
Revenue on Loans/Total Loans (Net)	0.41	0.41	0.0067
Government Securities/Total Assets	-6.51	-1.56	2.5298*
Other Securities/Total Assets	-0.30	2.99	1.9838*
Loans (Net)/Total Assets	8.72	-0.10	3.3584**
Cash/Total Assets	-2.13	-1.32	1.1247
Capital Accounts/Total Assets	-0.47	-0.63	0.5809
Capital Accounts/Total Assets Less Government Securities Less Cash	-3.54	-1.95	1.5696
Time Deposits/Total Deposits	4.97	6.50	1.1369
Interest Paid/Total Deposits	1.01	1.02	0.0709
Farm Loans/Total Assets	2.31	-2.47	3.3495**
Real Estate Mortgages/Total Assets	0.24	-0.92	1.1150
Consumer Loans/Total Assets	3.88	1.24	2.1397*
Business Loans/Total Assets	1.52	0.77	1.0487
Service Charges on Deposit Accounts/Demand Deposits	0.12	0.04	1.0054
Total Operating Expenses/Total Assets	0.80	0.37	2.1916*
Other Current Operating Expenses/Total Assets	-0.09	-0.23	3.2631**

* Significant at five percent level ** Significant at one percent level

which did not change ownership. In addition, those banks reduced the relative importance of government securities and other securities in their asset portfolios. As a result, revenue on loans as a percent of total operating revenue rose for acquired banks while it fell for those banks which did not change ownership, and the reverse movement occurred with respect to interest and dividends on government securities as a percent of total operating revenue. Probably because of the increased importance attributed to lending by those banks where ownership was transferred, expenses tended to rise more.

Par banks in rural one-bank towns that experienced ownership or management changes between 1960 and 1966 exhibited changes in only two of the 26 examined operating characteristics that were significantly different than for similar banks that did not undergo changes in ownership or management (See Table II). In these two cases, salaries and wages as a percent of total operating revenue rose faster and other securities as a percent of total assets rose less rapidly than for those banks that did not experience a change in ownership. In rural two-bank towns, no significant differences between the two groups were detected (See Table III).

Conclusion

The results of this study lead to the conclusion that, with the possible exception of non-par banks in rural one-bank towns, a change in ownership of a bank from one individual to another will not lead to a significant change in operating performance over and above any change that would occur simply because of changing economic conditions. It does appear, however, that changes in ownership do lead, in general, to increases in expenses, especially in wages and salaries. This finding is consistent with Jessup's earlier work.[6/]

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[6] Jessup, p. 22.

TABLE II

Comparison of Changes in Operating Characteristics, 1960 - 1966
(Independent, Par Banks in Rural One-Bank Towns)

Ratio	Banks that changed ownership (9 observations)	Banks that did not change ownership (29 observations)	T-values of differences in mean change
Net Current Earnings/Total Capital Accounts	-3.29	-1.36	0.7595
Total Operating Revenue/Total Assets	0.49	0.44	0.1572
Net Current Earnings/Total Assets	-0.50	-0.22	0.8724
Interest and Dividends on U.S. Government Securities/Total Operating Revenue	-1.08	1.58	0.7061
Revenue on Loans/Total Operating Revenue	4.46	-0.49	1.2607
Service Charges on Deposit Accounts/Total Operating Revenue	0.14	-0.81	1.0924
Salaries and Wages/Total Operating Revenue	3.16	-4.08	2.4571*
Interest on Time & Savings Deposits/Total Operating Revenue	9.38	10.50	0.2351
All Other Expenses/Total Operating Revenue	-5.16	-6.28	0.3843
Net Current Earnings/Total Operating Revenue	-11.59	-5.85	0.9080
Revenue on Loans/Total Loans (Net)	0.33	0.44	0.4564
Government Securities/Total Assets	-4.48	-2.56	0.4257
Other Securities/Total Assets	0.02	5.21	2.0575*
Loans (Net)/Total Assets	5.91	0.23	1.2722
Cash/Total Assets	-1.99	-3.00	0.8401
Capital Accounts/Total Assets	-1.27	-0.58	1.1127
Capital Accounts/Total Assets Less Government Securities Less Cash	-4.48	-2.79	0.7256
Time Deposits/Total Deposits	4.94	5.64	0.2276
Interest Paid/Total Deposits	1.02	1.05	0.0582
Farm Loans/Total Assets	-0.73	-2.39	0.4858
Real Estate Mortgages/Total Assets	0.47	-0.98	0.7937
Consumer Loans/Total Assets	2.81	1.34	0.8723
Business Loans/Total Assets	1.54	1.44	0.0639
Service Charges on Deposit Accounts/Demand Deposits	0.14	0.02	0.6751
Total Operating Expenses/Total Assets	0.84	0.47	0.9741
Other Current Operating Expenses/Total Assets	-0.16	-0.20	0.3970

* Significant at five percent level   ** Significant at one percent level

TABLE III

Comparison of Changes in Operating Characteristics, 1960 - 1966
(Independent Banks in Rural Two-Bank Towns)

Ratio	Banks that changed ownership (8 observations)	Banks that did not change ownership (8 observations)	T-values of differences in mean change
Net Current Earnings/Total Capital Accounts	-3.92	0.87	1.3259
Total Operating Revenue/Total Assets	0.65	0.56	0.2119
Net Current Earnings/Total Assets	-0.50	-0.05	1.4673
Interest and Dividends on U.S. Government Securities/ Total Operating Revenue	-2.71	-0.24	0.5298
Revenue on Loans/Total Operating Revenue	11.06	-0.31	1.5943
Service Charges on Deposit Accounts/Total Operating Revenue	1.29	0.05	0.8560
Salaries and Wages/Total Operating Revenue	0.38	-5.44	1.5704
Interest on Time & Savings Deposits/Total Operating Revenue	11.91	11.43	0.0703
All Other Expenses/Total Operating Revenue	-6.15	-5.99	0.0399
Net Current Earnings/Total Operating Revenue	-11.82	-3.93	1.2088
Revenue on Loans/Total Loans (Net)	0.71	0.17	1.3121
Government Securities/Total Assets	-4.73	-3.52	0.3012
Other Securities/Total Assets	-0.91	1.74	0.7472
Loans (Net)/Total Assets	9.74	3.42	1.0716
Cash/Total Assets	-4.19	-2.35	0.6990
Capital Accounts/Total Assets	-1.18	-0.89	0.2870
Capital Accounts/Total Assets Less Government Securities Less Cash	-3.80	-2.95	0.3398
Time Deposits/Total Deposits	4.39	5.92	0.3955
Interest Paid/Total Deposits	1.21	1.14	0.1073
Farm Loans/Total Assets	1.43	0.10	0.4065
Real Estate Mortgages/Total Assets	0.71	0.10	0.2213
Consumer Loans/Total Assets	4.86	1.59	0.9268
Business Loans/Total Assets	2.69	1.97	0.2605
Service Charges on Deposit Accounts/Demand Deposits	0.37	0.15	0.7265
Total Operating Expenses/Total Assets	0.92	0.54	0.7955
Other Current Operating Expenses/Total Assets	-0.10	-0.14	0.3428

* Significant at five percent level   ** Significant at one percent level

The findings of this study, however, appear to be generally contradictory to those found in Jessup's earlier study. In contrast to his finding that "significant differences in operating performance are associated with changes in individual bank ownership,"[7/] the results of this study suggest that changes in individual bank ownership will not materially affect the operating performance of that bank. The reason for these two conflicting results is due to the different statistical methods used in the two studies.

[7] Jessup, p. 23.