Competition between commercial banks and thrift institutions: the evidence from Montana

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COMPETITION BETWEEN COMMERCIAL BANKS AND THRIFT INSTITUTIONS: THE EVIDENCE FROM MONTANA

By

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B.S., University of Montana, 1978

Presented in partial fulfillment of the requirements for the degree of Masters of Business Administration

UNIVERSITY OF MONTANA
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Approved by:

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INTRODUCTION

Commercial banks, mutual savings banks, savings and loans and credit unions are all financial intermediaries competing for similar consumer markets. There is an abundance of research that has examined commercial bank performance and structure relative to the other financial intermediaries. In much of this research the type of variables used limited the results.

In discussions with commercial bankers and others affiliated with the field this author learned that the people in the commercial bank industry feel strong competition from savings and loans. Little mention was made about credit unions and their competitive effects on commercial banks. It was the author's feeling that credit unions compete with commercial banks more so than do savings and loans. Therefore another objective of this paper is to test the author's theory.

In an attempt to make this research reflect current trends the technical data used are from various reports of condition on financial intermediaries during the seventies. The seventies saw developments in 1) the services the financial intermediaries provided their customers and 2) how the intermediaries attracted new customers. Some services
include electronic transfer of funds, drive up windows, and special savings accounts. A partial list for customer attractions includes giving gifts for opening large size accounts, making the interiors of the institution more pleasant to be in, and offering more personalized service to savers. It is interesting to note that the majority of these new services and attractions was initiated by the non-commercial bank intermediaries but were quickly copied by banks. Overall the seventies was a very active and competitive time in the financial intermediary industry.

This study has three unique features. First, to attempt to rid the imbalance of variable usage no dummy variables are used. Figures on assets, savings, and performance ratios are used for all types of institutions.

Second, the data used are from the institutions in Montana. By reporting on the State of Montana, the competitive aspects between savings and loans, credit unions, and commercial banks can best be analyzed because there are no mutual savings banks in the state.

Third, Montana is a unit banking state in which commercial banks cannot branch. At the same time, state law permits savings and loans state-wide branching and credit unions with limited branching powers.

The organization of this paper is designed to present an overview of the American banking system with special emphasis on Montana. This comprises the content of Chapter I and details the respective development of each of the three financial intermediaries active in Montana.

Chapter II provides a discourse on the variables used in previous research to test commercial bank performance and markets along with the variables used to represent savings and loans and credit unions. In this chapter the model used in this research is developed and explained.

Chapter III begins with a brief discussion on the data, the limitations of the model and the model methodology. The remaining segment of the chapter provides the results and analysis of the regression work.

Notes on Terminology

The term 'thrift institution' refers to mutual savings banks, savings and loans, and credit unions. Today thrift institutions as well as commercial banks offer forms of savings and demand deposit type accounts.

In regard to savings, commercial banks, savings and loans, and mutual savings banks provide their depositors interest on deposits. Credit unions offer their depositors dividends.

In regard to demand deposits, commercial banks offer checking accounts which are non-interest bearing and, most
recently, NOW accounts. Savings and loans and mutual savings banks offer NOW accounts and in certain circumstances non-interest bearing checking accounts. The latter is not widespread. Credit unions offer their customers share drafts; this is restricted by state laws.

A NOW account is a Negotiable Order of Withdrawal which in effect allows the depositor to initiate a withdrawal form that can be negotiated in the same manner as a regular bank check. A share draft is a note drawn against a credit union member's deposits. These also function similarly to bank checks.

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Ibid.
CHAPTER I

No longer are commercial banks, credit unions, and savings and loans ostensibly different from one another. Savings and loans and credit unions are steadily obtaining more power to offer services that were once the exclusive province of the commercial banking industry. One example is the NOW account or Negotiable Order of Withdrawal. With this instrument, savings and loans and banks can offer a demand deposit-type account while paying interest on the account balance. Until NOW accounts came into use, banks could not offer interest on checking nor could savings and loans offer any form of checking account.

Savings and Loan Institutions

The aim of the savings and loan is to serve the non-business consumer. Until approximately twenty years ago, when commercial banks began to aggressively go after the non-business market, savings and loans had little competition. With the erosion of the interest rate differential between savings and loans and commercial banks on savings accounts to one-quarter of one percent (0.25%), the successful pursuit of the consumer market on the part of the savings and loan required innovative management.
Savings and loan institutions promoted savings accounts as the basic weapon against financial insecurity by showing a need to save for the future (e.g., retirement, health, college for children).

In the 1960s and 1970s, inflation began to take a large toll on the average consumer. Savings were no longer sufficient to pay for large expenses such as retirement, hospital bills, and college tuition. As for the latter, savers were finding themselves in a bind. While their savings were not adequate to pay for the high costs of college tuition, the fact that they had some substantial savings often invalidated requests for financial aid for their children.

During the 1960s and early 1970s individuals had a fear of any one institution of any type having too much information about them. This resulted in a desire to do banking business in more than one financial intermediary. At that time it was not uncommon for a family to have various accounts in a number of banks and savings and loans. A change in attitude occurred during the seventies. Bank users wanted more convenience which resulted in a desire for one-stop banking. One-stop banking means wanting to do all banking business (i.e., savings, checking, loans, etc.) through one intermediary.

Savers are not as young as they were twenty years ago. The age of 'plastic debt' or credit cards has caused a
shift in attitudes for the young and newlyweds from saving to spending. Today the older individuals are the savers. As a result, savings and loans are attempting to change their image to reattract the young.

There are numerous sources of funds for financial intermediaries including Certificates of Deposit, checking accounts, savings accounts and interest from loans. For the most part, savings and loans are restricted to acquiring funds from savings accounts and mortgage loans. Savings accounts are among the most costly source of funds because the institution must pay the customer interest. The income from mortgage interest is limited because, until recently, mortgage rates could not be adjusted with inflation. As a result mortgage revenue was becoming a poor source of income for the savings and loan. Unless savings and loans could acquire higher rates on mortgages and add other sources of funds, savings and loans would suffer from the increasing inflation.

Regulation Q, the regulation that permits savings and loans to offer higher interest on savings than commercial banks, is no longer sufficient. Before the desire for one-stop banking, the interest differential was enough to give savings and loans an edge in the consumer saving market. Numerous studies have indicated a strong indifference toward the interest rate differential by savers. Vernon found that the differential of three-quarters of one percent would be
required to maintain the savings and loan share of deposits over time. This is presumed to be reflective of the premium assigned by savers for the convenience of one-stop banking, a service which could only be provided by commercial banks until recently.

The struggle of savings and loans for financial security has been emphasized in tests which proved that of alternative assets, including long-term government bonds and common stock, savings and loan shares were the closest substitute for commercial bank time deposits.

As a result, savings and loans want changes in the regulations and powers governing them and commercial banks. Although the regulation Q differential appears ineffectual as indicated by Vernon, savings and loans would like to maintain it. At the same time savings and loans would like to acquire more bank-like powers for themselves.

To compete with the commercial banks, savings and loans want to offer checking accounts to their customers. (Mutual savings banks initiation of NOW accounts is evidence of this desire.) With NOW accounts, savings and loans


assume they can provide a new service to those savers who no longer wish to save for a rainy day; savings and loans would have the ability to attract the young who do not save. Savings and loans also hope they can lessen their need to pay the high costs for time deposits and provide convenient one-stop banking.

Savings and loans also need diversification. Recognizing that their future depends upon earning power, savings and loans need to earn the rates that will provide this. Savings and loans are therefore beginning to offer installment loans, variable rate mortgages and other lending services. (These services vary between states and are not available throughout the United States.) Savings and loans want to become full service financial institutions for individuals.

The savings and loans also need to be attractive in order to lure the consumer. Attractive means offering a high return on savings, a third party instrument, a line of credit and a vehicle which will give the consumer unquestioned access to his funds.

Savings and loans have had some advantages in meeting the need to become more attractive. 1. Being the home mortgage lender, savings and loans have had an easy time keeping family units aware of the benefits to be derived from pending legislation. 2. Savings and loans have also had an advantage in knowing whom to contact regarding social
security direct deposits and have been able to solicit the recipients. 3. Most important, in the 1960s, while commercial banks were improving batch processing, the savings and loans prepared for the electronic wave of the future. This translates into the savings and loans having more computerization of records than commercial banks. In fact, savings and loans are approximately 50 percent on-line as compared to only 20 percent for commercial banks. Through this computerization individuals can have greater access to funds no matter where they are or where their funds are.

Regulations of savings and loans have been changing. In the 1970s savings and loans were permitted to make non-negotiable transfers from savings accounts for household related items to their customers. In 1974 all depository institutions in Massachusetts and New Hampshire (except for credit unions) were authorized to offer NOW accounts. In Nebraska, savings and loans began to POS (point of sale) electronic funds transfer system.

In April 1974, Washington State enacted legislation for the use of automated facilities throughout the state for commercial banks, savings and loans and mutual savings banks. By December 1974, the Federal Home Loan Bank Board (FHLBB) adopted a regulation which gave depositors traveling more than 50 miles from their homes access to their savings account balances through any other federally insured savings and loan by means of a travelers convenience withdrawal.
Savings and loans chartered in California began offering variable rate mortgages in 1975. In April of that same year the FHLBB adopted two regulations:

1. Federal savings and loans could offer their customers bill paying service from interest bearing savings accounts (a move leading up to the acceptance of interest bearing checking accounts). One form of this service is "Pay by Phone."


By 1976, the Federal Reserve System adopted a policy for automated check clearing systems to offer their services to all types of financial institutions. Illinois savings and loans began offering non-interest bearing checking accounts (NOW) in 1976. Effective March 1, of that year Congress authorized all depository institutions in New England to offer interest bearing NOW accounts. In May 1976, the governor of New York signed legislation permitting checking accounts with overdraft privileges for savings and loans and Mutual savings banks. VISA, USA Inc., altered its bylaws permitting savings and loans to issue credit cards in 1976. (As of August 1977, 124 of the nation's 469 savings
and loans were offering bank credit cards to their customers.\textsuperscript{6}

The new deposit services at non-commercial bank institutions which were developed during the seventies are not very different from the basic demand deposit of commercial banks excepting that NOW customers can earn interest. This has led to controversy between commercial banks and state and federal legislatures. Commercial banks are still under the 1933 regulation which forbids them from offering interest on demand deposits. The result is that savings and loans are now making the best of the interest rate differential.

\textbf{Credit Union Institutions}

Credit unions have held a certain niche in the field of financial institutions. They provided a "socially desirable means of self-help among groups of wage workers or farmers having a community of interest."\textsuperscript{7} Although commercial banks feel secure and isolated from the threat of credit unions, in the author's opinion credit unions will become major competitors to commercial banks in the near future.


\textsuperscript{7}House Banking Committee's Report of June 1934 on FCUA.
Credit unions in the United States began in New Hampshire in 1908. By 1934, when the first credit union legislation was passed, there were over 2000 credit unions. Legislation was formulated on the precedent of what was already functioning rather than on what should be. As a result, membership was based on a previously held 'common bond' between members; which was the 'community of interest' noted in the previous paragraph.

Credit unions have progressed substantially since 1934. Originally permitted to issue loans only up to $50 in 1934, by 1977 credit unions could make 30 year mortgage loans. Credit unions are the fastest growing financial intermediary today with over 23,000 credit unions operating in the United States and with combined assets of over $50 billion. Although small as compared to commercial bank assets of $1,05 trillion and savings and loan assets of $390 billion, credit unions already have 20 percent of all auto loans and 17 percent of the installment credit market.

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11 Ibid.
Much of the growth is due to the credit union's ability to charge less interest on loans, (federal regulation limits the credit union rate of interest at no more than 12 percent per year), and the ability to pay higher dividends than the legal ceilings of commercial banks and savings and loans on savings. (In 1973 the limit on dividends was raised to 7 percent for credit unions.) Credit unions can afford to charge less interest because they are often subsidized. For example, credit unions are exempt from state and federal taxes. They have smaller reserve requirements than commercial banks; they need no capital investment; they are housed free of rent on the employer's premises; and they are largely staffed by volunteer labor. Coupled with these advantages, credit unions have their own central bank, U.S. Central, which provides investment and borrowing services. This in turn eases liquidity problems. Credit unions, are simply less complex than commercial banks and are able to undersell commercial banks.

Each of the elements of credit unions mentioned above has caused angry comments from other financial institutions but none seem to raise so much fire as 'Common Bond'. There are credit unions today which meet the 'common bond' requirement under such headings as: 1. women and men who don't shun the label 'feminist'; 2. all convicts in Oregon; 3. all whose last name is Lee; and 4. all who own
and ride Arabian horses for pleasure.\textsuperscript{12} Financial inter-
mediaries other than credit unions feel that the use of these
types of "Common Bonds" is stretching the spirit of the law.

Credit unions have forged ahead for over twenty-five
years competing with other financial intermediaries. The
recent extension from 10 to 30 years for mortgage loans,
including maturities of up to 15 years for mobile homes is
exciting the savings and loans. Although only recent com-
petitors in the home mortgage market, credit unions have
competed successfully in the consumer loan market for some
time. In 1976, credit unions were the third largest
consumer installment lender in the United States with over
$34 billion outstanding.\textsuperscript{13} Commercial banks with $18
billion devoted to consumer loans hold 48 percent of the
total consumer installment debt.\textsuperscript{14} Over 76 percent of
credit union assets are in consumer loans. Between 1970 and
1976 credit union loans had increased at an average annual
rate of 16 percent, while bank loans increased only 10
percent.\textsuperscript{15}

\textsuperscript{12}Ibid.

\textsuperscript{13}Jean M. Lovati, "The Growing Similarity Among
Financial Institutions," Federal Reserve Bank of St. Louis,
October 1977.

\textsuperscript{14}Ibid.

\textsuperscript{15}Ibid.
Credit union strength in the consumer loan market and availability of higher earnings on savings are the major reasons for the growth of credit unions. Credit cards are furthering the strong credit union growth. Membership rules of VISA, USA Inc., were extended in 1976 to include credit unions. This is important to credit unions because: 1) it is an additional service credit unions can offer their members and 2) credit unions can charge no more than 12 percent on loans, therefore the usual finance charge of 1-1/2 percent per month for late payments on credit cards will only be 1 percent through credit unions. This attracts members to credit unions.

Credit unions have attacked commercial banks from the liability side also. In 1974, five credit unions introduced share draft accounts which are similar to commercial bank checking accounts and NOW accounts. By 1977, more than 940 credit unions in 46 states offered share drafts.\footnote{Jean M. Lovati, "The Growing Similarity Among Financial Institutions," Federal Reserve Bank of St. Louis, October, 1977.}

Credit unions are allowed to pay a maximum of 7 percent on shares. Although not all pay that high rate, about 50 percent of all credit unions paid between 6 and 7 percent on shares during 1975.\footnote{Ibid.} The favorable rate differential between credit unions and other financial...
intermediaries appeals to current and potential credit union members. As a result of the higher rate, savers are less likely to withdraw their shares and place them in other instruments for earnings thus protecting credit unions from disintermediation (An explanation of disintermediation is presented on page 22.)

The credit union industry has grown in both membership and assets. Although during the 1969 to 1976 period the number of credit unions decreased by 5.3 percent, membership increased by 57.5 percent. Savings in credit unions increased 185.6 percent, loans jumped 163.3 percent and total assets grew 182.1 percent.\(^\text{18}\)

Credit union resources are not evenly distributed among the numbers of credit unions. In a 1974 report by the National Credit Union Association, figures showed only 5.5 percent of all credit unions having more than $5 million in assets. This small group accounted for more than three-fifths of the total national credit union assets. The largest single group of credit unions, slightly more than 50 percent, are those having assets less than $250,000. This group accounts for only 3.4 percent of credit union resources.\(^\text{19}\)


\(^{19}\)Jack Burke, "Credit Unions: Past, Present, Future?", Banking, September, 1976.
Who are the credit union members? Today they are no longer the "wage workers and farmers" of the House Banking Committee Report of 1934. Of all United States' families, currently 18 percent have at least one member who belongs to a credit union. About 33 percent are high school graduates, 16 percent are college graduates and 13 percent have done postgraduate work. Credit union members today are educated and are also high wage earners. Nearly one-half of all families with one or more credit union members earn over $15,000 per year.  

The size of credit union share accounts has also been changing drastically. In 1965 the average size of Federal credit union share accounts was $525 with only 20.9 percent of all shares in accounts greater than $5000. Within nine years, by 1974, the average account size grew to $900 with a full 42 percent of the accounts holding more than $5000.  

Scanning the services which credit unions provide their members one may conclude that credit unions appear to be a marriage between savings and loans and commercial banks. Credit unions can offer all the installment loans a  

\footnote{Ibid.}

\footnote{Jack Burke, "Credit Unions: Past, Present, Future?", Banking, September, 1976.}
shareholder requires plus share draft and credit cards. If a member wishes to buy a house or mobile home, the credit union can provide the necessary mortgage. As for savings, credit unions offer the highest legal rate. In total, the credit union industry is doing a lot of the right things to cause their skyrocketing growth. Consequently, credit unions are tough competition for savings and loans and commercial banks.

Commercial Bank Institutions

Commercial banks are in a reactive mode due to the emergence of thrift institutions in the 1960s into commercial bank markets. Interest on demand deposits, remote banking through point of sale (POS) terminals and the popularization of electronic funds transfer (EFT) are all thrift institution creations which commercial banks have encompassed into their portfolio of services. (A result of the threat from thrifts.)

After World War II, the prevailing attitude in the commercial banking industry was "the world is our oyster." As a result, commercial banks had no desire to compromise in order to meet the changing public wants and demands. By the late sixties this attitude had changed.

Up until World War II interest rates were low and depositors left funds in demand deposit accounts for lack of profitable, highly liquid, alternatives. Commercial banks
had no reason to stress the solicitation of time and saving deposits. This resulted in a void in the provision of financial services for the small non-commercial individual. Commercial banks, through their concentration on commercial clients, indicated an almost total disregard for the individual. A vacuum was created which the thrifts began to fill.

By the 1960s the infant thrifts had grown into relative giants forcing commercial banks to move strongly into markets they had previously not been interested in. The decision to mobilize was rooted in a number of elements. Interest rates were rising, causing a decrease in the volume of demand deposits. Individuals were shifting funds from demand deposit accounts into savings accounts at thrift institutions in order to gain from the higher interest. To fight for treasury bill dollars the commercial banks were forced to offer negotiable time certificates.

Although commercial banks found time and saving deposits more expensive than demand deposits, the former were preferable to the alternative of 'no deposits'. Commercial banks were therefore forced to compete aggressively for savings dollars. Commercial banks, still stronger than the thrifts, were able to weaken the inroads made by the thrifts. This caused the thrifts to call upon Washington. Federal Reserve Board Regulation Q cited earlier was Washington's response to insure that commercial banks would be prevented from paying as much on savings as thrifts.
Commercial banks again found themselves in a precarious situation. While they were enjoying their growth from the non-commercial markets, many had shifted from asset allocation to a new policy of aggressive liability management.

The former asset allocation had involved obtaining funds, analyzing the volatility of this money and then lending and investing to match loan and investment maturities to the length of time the commercial bank felt it would be able to keep the deposits. Their maturity and volume depended on whatever the bank was able to obtain on the liability side.

In the mid-1960s, aggressive banks made assets the basic determinants of bank policy. Commercial banks made loans and investments and then funded them through aggressive solicitation of time deposits. If commercial banks made the loans and then went out to find the money, they had to be certain the money resources would not dry up, leaving the bank with a serious liquidity squeeze.\(^{22}\)

Regulation Q made this fear an everyday occurrence. Commercial banks were not able to acquire the funds necessary and were forced to develop new actions. The large banks began to utilize their overseas offices as a means of

attracting Eurodollars. Commercial banks also began relying on bank holding companies which could offer commercial paper at rates higher than those restricted by regulation Q.\textsuperscript{23}

Thrift institutions were not concerned about the use of Eurodollars or bank holding companies because neither infringed much on savings deposits. Still the thrifts suffered disintermediation as the small depositors drained their accounts. (Disintermediation involves the movement of funds from the savings deposits of individuals, charities and others and the placement of these funds directly into the money market in order to take advantage of higher rates of return.) One money market instrument is the Treasury Bill which commercial banks provided. To protect the thrifts, the Treasury stepped in and raised the minimum investment from $1,000 to $10,000.\textsuperscript{24}

This step did not help the thrifts. Whereas the hope was that savers who previously could afford to purchase the $1,000 T-Bill would now be forced to keep their funds in savings accounts, these individuals pooled their resources in a mutual-type fund in order to buy the $10,000 T-Bill.

Commercial banks benefited from the attitudinal change to one-stop banking of the late sixties. As

\footnotesize
\begin{itemize}
  \item \textsuperscript{24}Ibid.
\end{itemize}
mentioned earlier, until that time customers wanted multiple sources of financial intermediaries. There was a fear of any one institution having too much control on the individual. With the emphasis in one-stop banking, there was less fear of the interest rate differential and savings and loans continued to feel the effects of disintermediation.

As illustrated in the sections discussing savings and loans and credit unions, these institutions were creating new services to fight off commercial bank competition. One of the first major moves by the commercial banking industry to fight back was to copy the thrifts. This occurred with their introduction of point of sale terminals, telephonic transfer of funds and NOW accounts. In many of these moves, commercial banks, although late into the field, have taken the lead. NOW accounts are an example. Mutual savings banks started NOW accounts in New England in 1972, commercial banks were able to enter the market in 1974. Within two years, (by 1976), commercial banks, with fewer institutions, had surpassed savings banks in deposits.²⁵

The issue of NOW accounts must also be perceived as a change in demand deposits as well as savings. Until recently commercial bank markets involving checking accounts


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were monopolistic. The struggle of the thrifts changed this with the introduction of NOW accounts and credit union share drafts. The thrifts have had an advantage in this market because they are starting from a base of zero in building their checking account balances. Commercial banks on the other hand are forced to pay interest on funds they formerly acquired without interest. Consequently, the thrifts can afford to be more aggressive in competing to induce the public to bring in its money.

The commercial bankers have realized that it is to their advantage to be more selective than other institutions in attracting funds. They are competing only for the more profitable business by letting the thrifts solicit the general public. One way in which they have done this is through higher minimum balance requirements. An exemplary result is found in Massachusetts. By the end of 1977 the average NOW account in a Mutual savings bank was $900 while in commercial banks it was $5,000.\textsuperscript{26}

Through selective use of NOW accounts, Eurodollars, commercial paper and copying thrift institution innovations, commercial banks have been fairly successful in fighting the competition. Copying thrift institution electronic transfer

\textsuperscript{26}Forbes, "More Trouble for the Banks", November 1, 1977.
systems, commercial banks came up with Customer Bank Communication Terminals (CBCT). In December 1974, the Comptroller of the Currency interpreted the McFadden Act to permit national commercial banks to operate CBCT's. In essence, the Comptroller of Currency did not envision a CBCT as a branch office. In June 1975, the U.S. District Court ruled that a CBCT was a branch and therefore violated the McFadden Act. This was later upheld by the U.S. Supreme Court. In the end, commercial banks could set up CBCT's as branches in accordance with individual state law on branching.  

There are two forces striking the commercial bank. The first is the trend toward relaxing the competitive boundaries between all financial intermediaries. These boundaries were once represented by commercial bank checking accounts, savings and loan mortgages and passbook savings and credit unions assisting wage workers and farmers. At one time each institution represented a different market but this is no longer the case. The second force includes the efforts of these financial intermediaries to achieve and maintain a position of dominance in light of the failing boundaries.

Another outcome of the strong emergence of thrifts is that commercial banks are forced to reevaluate their entire pricing schedule and make banking more efficient. If commercial banks are forced to pay interest on demand deposits, the costs will be placed on the public. This is not necessarily a negative aspect because the public may be willing to accept additional charges if they get something extra in return. An example of something extra is the POS and CBCT terminals. Customers have gained 24 hour access to their funds while the institutions are saving money. The net result is that with similar additions to commercial bank services, they will meet the challenge of competition in the future.

Montana

Montana banking started in a frontier saloon for the purpose of safeguarding bags of gold dust. In 1866 the first national commercial bank was chartered in Helena. By 1915, the state legislature enacted laws which form the foundation of the state's present banking code. During the 1915 session a bill was passed prohibiting the organization of any additional private banks. At that time there were 208 state banks, 64 national banks, and 23 private banks.

Initially designed to serve miners and their interests, the commercial bankers' responsibilities have changed in Montana. Moving with the changing emphasis of
the state’s economy, commercial banks shifted from mining to agriculture and most recently to manufacturing.

Montana bank growth has had problems. Before the depression nearly half of all the commercial banks closed in Montana. With only a short time to acclamate to tight money, Montana witnessed another 51 bank failures during the 1930-33 period. These actions were followed by bank mergers, other liquidations and the entrance of bank holding companies to Montana. By 1941 the $184 million in deposits were held in 112 commercial banks.28

Postwar Montana has shown increases in the number of banks. In 1945, there were 111 commercial banks, in 1960 there were 135 and in 1977, 157.29

Chart 1

BANKS IN MONTANA

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>157</td>
</tr>
<tr>
<td>1960</td>
<td>135</td>
</tr>
<tr>
<td>1945</td>
<td>111</td>
</tr>
</tbody>
</table>


29Ibid.
Although Montana is a unit banking state, three banks have branches throughout the state.\textsuperscript{30} There are also four active bank holding companies in Montana—First Bank Stock System, Bancorporation of Montana, Western Bancorporation, and Northwest Bancorporation.

Unlike many other states, Montana is not chartered for Mutual savings banks; therefore, there are fewer competitors for consumer savings dollars. In 1969 there were 135 commercial banks, 17 savings and loan associations and 140 credit unions. All of these institutions enjoyed strong growth since 1969. By 1977 there were 157 commercial banks, 15 savings and loans with 46 branches and 134 credit unions.

\textbf{TABLE 1}

\begin{tabular}{|l|l|l|l|l|}
\hline
Year & Banks & Savings & S&L & Credit \\
& & & & \\
& & Loans Assn. & Branches & Unions \\
\hline
1970 & 139 & 19 & 26 & 146 \\
1971 & 143 & 17 & 25 & 144 \\
1972 & 146 & 17 & 26 & 140 \\
1973 & 149 & 17 & 26 & 139 \\
1974 & 152 & 17 & 32 & 138 \\
1975 & 154 & 16 & 36 & 136 \\
1976 & 155 & 16 & 44 & 137 \\
1977 & 157 & 15 & 46 & 134 \\
\hline
\end{tabular}

\textsuperscript{30}Ibid.
Although the number of credit unions decreased during that period the reader should not assume that the credit union has become less important as a financial intermediary. In 1970, on average, a credit union in Montana held $349,000 in assets. By 1977 this had increased 544 percent to $1,899,000 per credit union unit. Commercial banks on the other hand grew only 189 percent in assets per bank unit. This closely resembled the pattern throughout the United States. Commercial banks during the 1970-77 period had total asset increases nationally of 214 percent while credit unions nationally increase 500 percent. Growth in savings deposits resembles the asset growth. Savings in commercial banks increased 260 percent while in credit unions they increased 478 percent. (See Chart II).

Savings and loans also enjoyed growth in savings and assets but they followed more closely the growth patterns of commercial banks. In Montana, savings and loan assets grew 298 percent and savings increased 196 percent.

Reports of Condition—Credit Union National Association.

Reports of Condition—Montana State Department of Business Regulations.

Reports of Condition—Credit Union National Assn., and Montana State Dept., of Business Regulations.

Ibid.

Federal Home Loan Bank Board.
Chart 2

Asset and Savings Growth on Average in Commercial Banks, Savings and Loans, and Credit Unions in Montana from 1970 to 1977.

ASSETS

<table>
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<th></th>
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<tbody>
<tr>
<td>Asset Growth</td>
<td>189%</td>
<td>298%</td>
<td>544%</td>
</tr>
</tbody>
</table>

SAVINGS

<table>
<thead>
<tr>
<th></th>
<th>Bank</th>
<th>S&amp;L</th>
<th>CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savings Growth</td>
<td>260%</td>
<td>196%</td>
<td>478%</td>
</tr>
</tbody>
</table>

SOURCE: Reports of Credit Union, CUNA
Reports of Condition—Montana State Department of Business Regulations. Federal Home Loan Bank Board.
(See Table 2 and 3)
TABLE 2

Total assets of banks, savings and loans, credit unions and the yearly percent increase. (In thousands)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bank</th>
<th>S&amp;L</th>
<th>CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>1867146</td>
<td>277585</td>
<td>51038</td>
</tr>
<tr>
<td>1971</td>
<td>2117044</td>
<td>329991</td>
<td>60666</td>
</tr>
<tr>
<td>1972</td>
<td>242078</td>
<td>387266</td>
<td>73347</td>
</tr>
<tr>
<td>1973</td>
<td>2735051</td>
<td>432960</td>
<td>83560</td>
</tr>
<tr>
<td>1974</td>
<td>2994011</td>
<td>483232</td>
<td>101108</td>
</tr>
<tr>
<td>1975</td>
<td>3347371</td>
<td>571899</td>
<td>129712</td>
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<tr>
<td>1976</td>
<td>3569264</td>
<td>689552</td>
<td>174340</td>
</tr>
<tr>
<td>1977</td>
<td>4005763</td>
<td>829441</td>
<td>254596</td>
</tr>
</tbody>
</table>

Percent Increase: 214% 298% 498%

(Note: Percentages rounded to nearest percent)

TABLE 3

Aggregate Savings Per Financial Institution Type. (In thousands of dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Bank</th>
<th>S&amp;L</th>
<th>CU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>911463</td>
<td>108426</td>
<td>43643</td>
</tr>
<tr>
<td>1971</td>
<td>1063906</td>
<td>114745</td>
<td>52234</td>
</tr>
<tr>
<td>1972</td>
<td>1277955</td>
<td>128649</td>
<td>63879</td>
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<tr>
<td>1973</td>
<td>1462315</td>
<td>156606</td>
<td>74205</td>
</tr>
<tr>
<td>1974</td>
<td>1639829</td>
<td>150820</td>
<td>88659</td>
</tr>
<tr>
<td>1975</td>
<td>1873011</td>
<td>172216</td>
<td>114248</td>
</tr>
<tr>
<td>1976</td>
<td>2126945</td>
<td>195099</td>
<td>145939</td>
</tr>
<tr>
<td>1977</td>
<td>2374777</td>
<td>213679</td>
<td>208726</td>
</tr>
</tbody>
</table>

Overall percentage growth per institution: (70-77) 260% 197% 478%
During the 1960s the three financial intermediaries, (commercial banks, savings and loans, and credit unions) competed for savings by offering interest payments and by giving premiums such as gifts. Today there is less gift giving and greater emphasis on fulfilling customer needs along with providing greater convenience. As a result of savings and loan and credit union's ability to branch within the state, commercial banks are at a supposed disadvantage. Commercial banks are further disadvantaged in competing with credit unions because the latter also has privileges to offer demand deposits through share drafts. Interest is paid on share draft deposits but not on commercial bank deposits.
CHAPTER II

Few of the articles on commercial bank performance take savings and loans and credit unions into consideration. The result is that these articles fail to show the competitive influence thrift institutions have on commercial banks.

In the studies that do take savings and loans and credit unions into account, there is limited representation in the variable usage. For instance, commercial banks are represented by many performance and market variables and thrift institutions are represented with only a single variable. Most often this single variable is used to denote the presence or lack of presence of a thrift institution in a commercial bank market area. (See Fraser and Rose-8, and Vergrugge-21). The research presented in this paper utilizes performance and market variables of savings and loans and credit unions as well as for commercial banks. This is one of the unique aspects of this research. The purpose of this chapter is to present the model that will be tested and link it with earlier research in the field.

Model

The model used in this study tests four bank performance variables as the dependent variable. The fifteen
Independent variables are grouped into four classes: 1) General economic and demographic; 2) Commercial bank activity and performance; 3) Credit union activity and performance; and 4) Savings and loan activity and performance (see Table 4 page 36 for a list of all variables and their respective notation).

Because of the numerous services commercial banks offer (loans, savings accounts, checking accounts, time certificates, etc.), operating performance of commercial banks must be measured using more than one performance indicator. The four used in this study were compiled from studies by Fraser and Rose (7), Heggestad (10), and Ware (22).

The four performance variables are represented by $P_1$, $P_2$, $P_3$, $P_4$. $P_1$ is the average rate charged on all loans by commercial banks. Found by dividing the total revenue on loans by the average loans outstanding, $P_1$ is used to reflect the average price charged for loans and was assumed that the more competitive the market environment, the lower the rate would be.

Ware (22) points out two problems that can emerge from this measure. One, aggregating all types of loans in a particular market may conceal the fact that loans have different prices and therefore the average price may not be representative. Two, the interest rate charged for similar type loans may vary for different customers as a result of
credit worthiness and compensating balances. In this study, the use of a state-wide aggregate presents a fairly homogenous market whereby particular differences in rates may balance themselves out. Furthermore, in the study by Fraser and Rose (7), it was found that loan composition has little effect on average loan rate.

P2 is the ratio of time and savings deposits to total deposits in commercial banks. This ratio has been found to be the single most important factor explaining commercial bank profit in a number of studies.

---


### TABLE 4

**Variables Used in Model**

**Dependent Variables**
- $P_1 = \frac{\text{Total Revenue on Loans}}{\text{Total Loans Outstanding}}$
- $P_2 = \frac{\text{Tire and Savings Deposits}}{\text{Total Deposits}}$
- $P_3 = \frac{\text{Net Operating Income}}{\text{Average Capital}}$
- $P_4 = \frac{\text{Total Loans}}{\text{Total Deposits}}$

**Independent Variables**
- $G_1 = \text{Population}$
- $G_2 = \text{Per Capita Income}$
- $G_3 = \frac{\text{Farm Employment}}{\text{Total Employment}}$
- $B_1 = \text{Total Number of Banks in the State}$
- $B_2 = \frac{\text{Operating Expenses}}{\text{Total Assets (Banks)}}$
- $B_3 = \frac{\text{Wage and Salary Benefits}}{\text{Total Assets (Banks)}}$
- $S_1 = \text{Total Number of Savings and Loan Associations in the State}$
- $S_2 = \text{Total Number of Savings and Loan Branches in the State}$
- $S_3 = \text{Total Assets of Savings and Loans}$
- $S_4 = \text{Interest on Loans at Savings and Loans}$
- $S_5 = \frac{\text{Net Operating Income (EBT)}}{\text{Total Assets (Savings and Loans)}}$
- $C_1 = \text{Total Number of Credit Unions in the State}$
- $C_2 = \text{Total Assets of Credit Unions}$
- $C_3 = \text{Interest on Loans at Credit Unions}$
- $C_4 = \frac{\text{Net Operating Income (EBT)}}{\text{Total Assets (Credit Unions)}}$
For this reason the non-bank financial intermediary effect on the commercial bank ratio is critical. P2 is used to test the strength of non-banks on the commercial bank portfolio. Fraser and Rose (7) found that the presence of savings and loans reduced the ratio of time to total deposits of commercial banks in smaller cities.39

P3 is the ratio of net current operating income (EBT) to average total capital. This is the only measure of a commercial bank's average profitability. It was assumed that a lower average profit rate would be found in markets with a highly competitive element.

P4 measure loans to total deposits. Like P2, this is used to test the impact of non-banks on bank portfolio composition.

General Economic and Demographic Variables

These variables are represented by G1, G2, and G3. Population (G1) and per capita income (G2) are the first variables to influence the demand of a bank's products and services. The wealthier the market area the lower the price elasticity of demand for these products. Both Heggestad (10) and Kaufman (13) found that the prices of at least some bank

39Donald R. Fraser and Peter S. Rose, "More on Banking Structure and Performance; The Evidence from Texas."
products increase with per capita income in bank markets.\textsuperscript{40} \(G_3\), the ratio of farm employment to total employment, is used as a measure of economic activity. A presumption is made that the more industrial the market area the higher the level of economic activity.\textsuperscript{41}

\textbf{Bank Activity and Performance Variables}

\(B_1, B_2\) and \(B_3\) represent these variables. \(B_1\) is the number of banks operating in the State of Montana per year. This figure has two effects. One, the greater the number of banks operating, the greater the competition for both bank and non-bank financial institutions. Two, the number of banks is a variable of bank convenience. Studies by Taylor (20), Lovati (15) and others pointed out the strength of convenience as a determinant in choosing a financial institution.\textsuperscript{42}


As the number of commercial banks increases, the availability and hence convenience increases. Competitively, credit unions have been found to be close substitutes for commercial banks in regard to the convenience of one-stop banking.

B2 is the ratio of operating expenses to total assets and B3 is the ratio of wage and salary benefits to total assets. Both are used as measures of operating efficiency. Since the ability to service assets at the lowest possible costs enhances profitability, these ratios should be negatively correlated to profit.

B2 as a measure for operating efficiency is also a measure of the bank's management. Monitoring costs is an essential aspect of bank management, hence it is assumed that poor efficiency is an indicator of poor management. Using B3 as a cost indices further helps to control for the effect that efficiency has on performance.

Credit Union Activity and Performance Variables

Four variables representing credit union activity within Montana are used, (C1, C2, C3, C4). C1 represents the number of credit unions active within the state. The number of institutions should have a negative effect on bank performance and activity because of the competition.

Competition is viewed from both the standpoints of more individual competitors and the change in convenience due to credit union availability.
Two Notes: 1) The number of credit unions (without branches) has decreased. The figure including branches could not be obtained. 2) Although the number of institutions has decreased the number of members as well as total assets have increased. C2 is the aggregate level of credit union assets. This is used to effect the growth of credit unions and to help explain the differences due to the decline in units as mentioned above. The use of the total asset figure is also an indication of the credit union industry reaction to and participation in the growth of the market area. A look back at the previous chapter and the section on Montana will further emphasize the need for the total asset figure in the equation.

C3 denotes the income credit unions have made on loans. Although not an indication of the loan rate to the consumer, the figure directly shows that part of credit union income attributed to loans and indirectly to the volume of credit union loans. As important as the figure itself is, the strong changes (increases) in the loan demand as seen through income should have a strong effect on bank revenue.

C4 is the ratio of net operating income before taxes (EBT) to total assets. In much the same way as P4, this measures the credit union's average profitability. Until recently, there existed an assumption in the credit union
industry that if the individual credit union increases in size it gains, from among other things, economies of scale. Based on this assumption and the fact that credit unions in the state have increased in size on a per unit basis, there should be an increase in profitability. Using the EBT/TA ratio, the evidence does not indicate this increase in profit. There could be other factors involved but it appears that credit unions face diseconomies of scale with growth. Such were the findings of Koot (14) in 1978.

Savings and Loan Activity and Performance Variables

The variables used in testing the savings and loan effect on banks are the same as for credit unions but for one difference. Like credit unions, savings and loans can branch. In attempting to determine the effect of competition through the number of institutions and convenience, both the number of associations and total number of branch offices were used.
CHAPTER III

Data, Limitations and the Regression Process

The data for this study spans the period 1970 to 1977. The figures used are aggregate totals for banks, credit unions and savings and loans within the State of Montana. Data for banks were provided by the Montana Department of Business Regulation. For credit unions data were provided by Credit Union National Association, Madison, Wisconsin and the Montana Department of Business Regulation. All data for savings and loans were provided by the Federal Home Loan Bank Board, District 12, Seattle, Washington. Characteristics for the population came from compilations by the Bureau of Economic Analysis at the University of Montana, Missoula, Montana, and the U.S. Department of Commerce as well as the Bureau of the Census.

Initially the author had hoped to test the model using 20 time periods rather than the currently used 8 and also a random sample of 40 banks rather than the aggregate totals. Lack of consistent data for all institutions over the desired time periods (in part due to confidentiality restraints on individual bank information and changes in the filed bank reports) forced the reduction of the test's scope and span substantially.
Model Methodology

To analyze the determinants of bank markets and performance, this research uses multiple regression techniques. The analysis attempts to predict changes in the dependent variable as a result of the changes made in the independent variables.

Due to the limitations of data in this paper, the author made certain manipulations in an attempt to gain the most from the available information. A major concern dealt with the number of independent variables that could be tested with each dependent variable. Therefore in this paper, if sufficient data were available there would be only four equations tested.

A look at Table 5 points out the use of not four but fifty-six equations. For this study, with only eight data points, no more than three independent variables were used at a time. There should have been hundreds of equations. To avoid much unnecessary work which would likely obfuscate the results, the author chose to use a sample of the equations.

The sample equations are of two groups. The first ensures that each dependent variable is tested at least once with each independent. This is represented in Table 5 with the first five equations under each dependent variable. The second group of equations were derived at the author's discretion using the Simple R correlation of independent
variables between each other and the dependents. The least singly correlated independent variables were grouped together. This system of grouping was used with the hope of limiting collinearity between independent variables.
### TABLE 5

#### EQUATIONS USED PER PERFORMANCE VARIABLE

<table>
<thead>
<tr>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1, G3, G2</td>
<td>G1, G3, G2</td>
</tr>
<tr>
<td>B1, B3, B2</td>
<td>B1, B3, B2</td>
</tr>
<tr>
<td>C1, S5, S4</td>
<td>S3, S1, S2</td>
</tr>
<tr>
<td>G2, C3, C4</td>
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</tr>
<tr>
<td>S3, S1, S2</td>
<td>C3, C3, C4</td>
</tr>
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<td>B1, G3, B2</td>
<td>B1, B3, G3</td>
</tr>
<tr>
<td>S1, B2, S5</td>
<td>B2, S1, S5</td>
</tr>
<tr>
<td>C1, B3, C4</td>
<td>B2, S1, G3</td>
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<tr>
<td>B2, B3, G3</td>
<td>G1, B3, S5</td>
</tr>
<tr>
<td>S1, B2, G3</td>
<td>B2, C4, B3</td>
</tr>
<tr>
<td>G1, G3, S5</td>
<td>B1, B3, C4</td>
</tr>
<tr>
<td>C3, C2, C4</td>
<td>C2, B3, S5</td>
</tr>
<tr>
<td>B1, C3, S5</td>
<td>C1, B3, C4</td>
</tr>
<tr>
<td>C1, S5, C3</td>
<td>G2, C4, C3</td>
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<td>B1, C3, S5</td>
</tr>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
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</tr>
<tr>
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<td>B1, B3, B2</td>
</tr>
<tr>
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<td>S3, S2, S1</td>
</tr>
<tr>
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<td>C1, S4, S5</td>
</tr>
<tr>
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<tr>
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</tr>
<tr>
<td></td>
<td>C1, C3, C4</td>
</tr>
</tbody>
</table>

**Note:** All equations are presented with the inclusion of the step-wise function performed by the computer.
Results and Analysis

The statical significance of each independent variable as related to the four dependent variables are presented in Table 6. Independent variables which had statically significant coefficients are indicated with the notation 'S' on Table 6. Independent variables which are not found statically significant are represented with the notation 'I'. This indicates that the independent variable was relatively an unimportant predictor for changes in the dependent variable.

The reader is again made aware of the author's discretion in compiling the results of the numerous equations and their output of respective coefficients per variable. In almost all cases a single independent variable testing one dependent was found significant in each equation. In cases where a variable was found significant in only one subrun, the notation on Table 6 is in parenthesis. Because of the consistency of significance per independent variables throughout each set of equations, the author feels that the use of additional equations would be unnecessary.

(Author's comment: The impetus behind this study was the voice of the commercial banking industry against savings and loans. Commercial banks fear infringement on their performance and markets by savings and loans. A quick review of Table 6 shows savings and loans to be a minor determinant of bank performance as compared to credit unions.)
TABLE 6

SUMMARY OF RESULTS OF PERFORMANCE TESTS FOR BANKS IN THE STATE OF MONTANA

<table>
<thead>
<tr>
<th>Performance Variables</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>S1</th>
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<th>S3</th>
<th>S4</th>
<th>S5</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>S+</td>
<td>I</td>
<td>(S-)</td>
<td>S+</td>
<td>(S+)</td>
<td>I</td>
<td>S-</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>S-</td>
<td>I</td>
<td>(S+)</td>
<td>I</td>
</tr>
<tr>
<td>P2</td>
<td>S+</td>
<td>I</td>
<td>I</td>
<td>S+</td>
<td>S+</td>
<td>(S+)</td>
<td>(S-)</td>
<td>I</td>
<td>S+</td>
<td>S+</td>
<td>I</td>
<td>S-</td>
<td>(S+)</td>
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<td>I</td>
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<td>(S+)</td>
<td>I</td>
<td>I</td>
<td>S+</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>S+</td>
<td>S+</td>
<td>S+</td>
<td>I</td>
<td>(S+)</td>
<td>S+</td>
<td>S+</td>
</tr>
<tr>
<td>P4</td>
<td>S+</td>
<td>S+</td>
<td>S-</td>
<td>S-</td>
<td>S+</td>
<td>S+</td>
<td>S-</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>I</td>
<td>S-</td>
<td>I</td>
<td>(S+)</td>
<td>(S+)</td>
</tr>
</tbody>
</table>

I = Insignificant  
S = Significant at the 5 percent critical level  
S* = Significant at the 1 percent critical level  

When significant, the sign is indicated.

( ) Denotes the case where the variables was found to cause an increase in standard error in only one of at least a few equation runs.
Table 6 is a summary of the results of the performance and market tests. The following discussion explains how each dependent variable was changed with a change in the independent variable. At the same time this section ties together the results of previous research with the present findings.

**PI—Total Revenue on Loans to Total Loans Outstanding**

Commercial bank loan revenue is significantly affected by two of the three demographic variables: total population (G1) and employment ratio (G3). G1's positive significance indicates that increases in population may yield increases in loan revenue for commercial banks. The employment ratio had a negative significance which indicates that as the market area economy becomes more industrialized and less agricultural, net revenue on loans increases. These findings are consistent with the results in the research by Ware (25).

The number of commercial banks (B1) was found to correlate positively to PI while the number of savings and loans and credit unions were found negatively correlated. This is consistent with the findings of Ware (25), Fraser and Rose (7), and Kaufman (13) who determined that as bank concentration increases due to an increase in the number of commercial banks and a decrease in the number of other similar type institutions, commercial banks are able to
effect higher loan rates and thus increase revenue.\textsuperscript{43}

B2, the operating expense to total assets variable was positively correlated to the average loan rate. Ware (25) found similar results and concluded that commercial banks with relatively high costs also charged high average rates on their loans. Ware also found this result similar to average service charges on demand deposits and concludes that less efficient commercial banks in these markets are able to charge higher rates for their service.\textsuperscript{44}

Interest on loans at credit unions (C3) was found to have positive significance. This variable, as a result of the regression outcome is not perceived as a determinant of the commercial bank loan rate. Instead the result indicates that credit unions are advantaged by the changing industrial make-up of the market area similarly to commercial banks.


The fact that $S_4$, interest on loans at savings and loans, was not found to be significant, implies that there is a difference in markets in which commercial banks and savings and loans compete. This reinforces the arguments that savings and loans and commercial banks are compliments of each other rather than competitors in effecting loan rates or revenues.\(^4^5\)

P2—Time and Savings Deposits to Total Deposits

Total population was found to exhibit positive correlation with P2 indicating that growth in population yields greater increases in time and savings deposits than in any other type of deposit. Both per capita income and the employment ratio were found not to be statistically significant for the deposit ratio.

All three commercial bank variables, (number of banks operating expenses to total assets, and wage and salary benefits to total assets) demonstrated strong positive significance. The positive correlation between commercial bank numbers and increases in time and savings deposits indicate a link with the population increase. This is witnessed in the argument that population growth and shifts

necessitate corresponding growths and shifts in banking offices if banks are to both service their old customers and attract new ones.\textsuperscript{46}

As expected, both cost factors, B2 and B3, demonstrated positive significance. This result exemplifies the fact that time and savings deposits are among the costliest of all deposits. It is expected that as time deposits make up a larger share of all deposits, the costs to the commercial bank will increase.

Both the number of savings and loan institutions and credit unions were, as expected, negatively significant to P2. The implication, consistent with the findings of Fraser and Rose (7) and Kaufman (13), is that as the number of financial intermediaries other than commercial banks decrease and the number of commercial banks increase, customers will turn more toward the commercial banks for their needs. This was also consistent with the study which highlighted convenience as a most important factor in acquiring deposits.\textsuperscript{47}

S3 and S4 indicate a complimentary effect between savings and loans and commercial banks. Both S3 and S4 are

\begin{itemize}
\end{itemize}
indicators of savings and loan growth which was similarly enjoyed by commercial banks. C2 and C3 responded also in similar manner. The conclusion based on the regression is that all financial intermediaries benefited from the growth in population and economies of the tested market area.

The regression model does not bring out the degrees to which each institution was affected by the growth. Table 4 is used as a supplement to show the actual and relative growth positions. During the test period, (1970-1977) time and savings deposits at commercial banks increased 26 percent while credit union shares grew 478 percent. Savings and loans showed the worst performance with a growth of only 197 percent. Asset growth in all institutions reflects the same type of growth patterns as seen in Table 5.

**P3—Net Operating Income to Average Capital**

Neither population nor the employment ratio had significant effect on P3 although per capita income (G2) had a positive effect. The implication here is that earnings by a commercial bank are influenced by the market's wealth. These results do not coincide with other research. In the study by Ware (25) he found no significance in economic activity in 1969. In the test for 1970 he found the population and industrialization variables to be significant. His conclusion was that commercial banks in areas of population growth also had high profits while a commercial bank in a
more industrialized area had poorer profits. In the study by Kaufman (13), there was no consistency in the results of economic demand factors on profits. (As a result of the inconsistencies the author recommends that additional research be done on this element.)

B2, operating expense to total assets, is positively correlated to net operating income. This was found consistent with the findings of Ware (25) and Kaufman (13). The reason behind an increase in profits as a result of increased expenses rests in the ability of the commercial bank to charge more for their services and for their loans as they themselves become less efficient. In Montana this had an overwhelming effect. While operating expenses increased 28 percent, net operating income to total capital increased 35 percent.

Total assets, interest on loans, and net operating income to total assets of credit unions and savings and loans held positive correlation with P3. Apparently these

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institutions also benefited from growth from exogenous forces as did commercial banks.

This is less surprising an outcome for savings and loans than for credit unions. Again this is based on the attitude that savings and loans are compliments with commercial banks. During the 1970-1977 period, commercial bank income increased 30 percent while credit union income vascillated until reaching an overall increase of .7 percent. It appears that credit unions concentrated on asset and share growth rather than on earnings. Credit union assets and shares grew approximately 400 percent during that time period while commercial bank assets and shares grew only half as much.

Overall it seems apparent that the per capita income variables had similar effects on P3 as with S3, S4, S5, C2, C3, and C4. All indicated a correlation with G2 between .8976 and .9164. This indicates collinearity between G2 and the savings and loan and credit union variables. This may also explain the positive correlations with P3 of all the independents.

**P4—Total Loans to Total Deposits**

No savings and loan variables were found to have any significance in testing the commercial bank loan to deposit ratio. Savings and loans, primarily in the home mortgage market, do not compete with commercial banks in the consumer loan market, thus the results are not surprising.
All three demographic variables are significant with P4. G3, the employment ratio, is negative while G1 and G2 are positive. This indicates an increase in loan demand as a result of increased population, a more industrialized market and a seemingly increasing per capita income. The author uses 'seemingly' because he feels that had the per capita income figure been adjusted for real dollars the result would have been a negative correlation. That in itself is a cause for increased demand in loans.

While all bank variables are also found to be significant in testing the loan deposit ratio, only B3, the wage/salary variable, is negatively correlated. An increase in the number of commercial banks servicing the market indicates their ability to increase their efficiency as regards their help. This appears to be a result of economies of scale.

Operating expenses are positively correlated to the loan deposit ratio. Loans cost more to process than do deposits thus an increase in loans would effect an increase in operating expenses.

Credit union assets were not found to be significant determinants of P4 but the number of credit union institutions, their interest on loans and their operating income were significant. Of these three correlations only C1, (number of institutions), was found to be negative.
A notable equation in this set combines C1, C3, and C4. C1 has an R Square of .71703 and an error factor .02216. With the addition of C3, the R Square moved to .82875 and the error factor dropped to .0188. At this point the equation was still insignificant. With the inclusion of C4, the R Square rose to .9822 and the error factor dropped to .0068. All F statistics were well above the Table F of .1669 for the 1 percent critical range.

Together the three variables indicate strong credit union efficiency in the consumer loan market and their strong effect on commercial banks. Although credit unions and commercial banks have prospered from the overall loan demand growth, credit unions have done so at a higher rate.
CONCLUSION

The conclusion on banking structure and performance is that 1) savings and loans are competitors of commercial banks primarily in the field of time and savings deposits and, 2) credit unions are competitors of commercial banks in the field of savings deposits and loans.

In this study an overview of the structure of financial intermediaries active in the United States was presented. The emphasis was in providing the reader with an awareness of the growth of each of three unique financial intermediaries active within Montana—Commercial banks, Credit Unions, and Savings and Loans. During the 1960s and 1970s these institutions have struggled against each other for similar consumer markets. As a result, innovations, in the way 'banking' is conducted, have proliferated. Among these innovations are electronic funds transfer, credit card usage and interest bearing checking type accounts (NOW).

During the latter period of the 1960s and continuing through the 1970s, consumer attitudes changed from a desire of having more than one financial institution to the convenience of one-stop banking. This was a key development in strengthening the fight between all financial intermediaries.

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Until now, few studies examining commercial bank markets and performance used adequate variables to represent the competition of credit unions and savings and loans upon commercial banks. This study has attempted to change that position. In doing so the research brought to the surface two specific findings. First, savings and loans were found to be complimentary to commercial banks. Although savings and loans have an advantage in acquiring time deposits because of the higher rate of interest they can offer, commercial banks offer the convenience of one-stop banking. Although commercial banks tend to feel that the presence of a savings and loan is determined to commercial bank markets, this research shows that for the most part this notion is unfounded and unrealistic.

Second, credit unions were found to be in direct competition with commercial banks and with savings and loans. As for commercial banks, credit unions provide consumer loans, savings and credit cards. As a result of credit union services, they too offer the convenience of one-stop banking. As for savings and loan competition, credit unions offer savings at a higher rate than savings and loans and can also provide their members with mortgage loans. The primary restriction on credit unions rests in their membership regulations, but even these do not appear to create too much of a problem.
In Montana as in the rest of the United States, credit unions are the fastest growing financial intermediary. Commercial banks are second and savings and loans the slowest. The greatest advantage commercial banks have in resisting the competition in consumer markets is their size.

It is the recommendation of this author that as a result of this study and the changing scene in the 'banking' markets, that future studies of commercial bank performance and markets include specific variables (aside from dummy variables) denoting the presence of credit unions, savings and loans and mutual savings banks (where applicable).
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