1969

Study of short-term investment procedures utilized by major Montana cities and counties from 1966 through 1968

Gary E. Notti
The University of Montana

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A STUDY OF SHORT-TERM INVESTMENT PROCEDURES
UTILIZED BY MAJOR MONTANA CITIES AND
COUNTRIES FROM 1966 THROUGH 1968

By

Gary E. Notti

B.S., Montana State University, 1967

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

UNIVERSITY OF MONTANA

1969

Approved by:

[Signatures]

Chairman, Board of Examiners

Dean, Graduate School
ACKNOWLEDGEMENTS

Those officials who went to a great amount of effort, and whose active cooperation made possible the preparation of this paper, deserve a note of appreciation.

Special words of recognition go to the following treasurers and their staffs: Clarence Lindseth and Elaine Brown, Gilbert Carter, Opal Eggert, J. W. Smith, Helen Nybo, Milan Kovich, Joseph O'Neill, and Robert Schabarker.

G. E. N.
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CHAPTER 1

INTRODUCTION

Money and finance have been matters of concern for thoughtful citizens in all modern societies. Money and finance serve fundamental purposes. Finance is not a static subject, and particularly during the post war years, there have been changes in the character of financial operations. It will be worthwhile to take a good look at some of the evolutionary financial factors inherent in our society, and most significantly in Montana.

State and local government finance has been growing rapidly; it accounts for about one twelfth to one tenth of national income. The role of state and local government is becoming enlarged in many areas by the increasing demands on it.

Government is called on to build schools and help provide education, to improve roads and provide the facilities needed for an ever increasing population. In short, government is called on to improve our standard of living.

---

A higher standard of living does not mean simply that people use up greater amounts of the same variety of goods. A higher standard of living usually implies new and quite different goods and services.

In the long run, a higher standard of living is possible only with a larger income. If government is to do more for its citizens in the long run, it can finance added activities only by taxing away a larger portion of the income stream. In the short run, borrowing can meet the needs of local governments, but this only leads to a transitional solution. In order to bridge this gap, government must maximize the utilization of their resources. They must place their available funds in areas which yield the maximum returns, i.e., they must utilize the most lucrative investment procedures.

The first part of this paper will briefly explore the basic abstractions of the money market. The primary purpose of this is to give the lay reader a foundation on which he can build an understanding of the subsequent subject matter.

The subsequent chapters of the text discuss county and local governmental activity in the field of money and finance. Precisely, the paper will cover investment procedures utilized predominantly by Montana governmental units, using their current statistics in the financial field, and showing what can be, and what has been done to improve upon these procedures.
I. SAMPLING METHODS

The sample of cities and counties used was selected quite simply. The primary intention was to choose units which were assumed to have the most cash available for investment purposes. Consequently, the specific units chosen were the largest cities and counties, by population, in Montana. Their geographical locations are dispersed throughout the state. The original sample included the following areas:

<table>
<thead>
<tr>
<th>CITIES</th>
<th>COUNTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billings</td>
<td>Yellowstone</td>
</tr>
<tr>
<td>Bozeman</td>
<td>Gallatin</td>
</tr>
<tr>
<td>Butte</td>
<td>Silverbow</td>
</tr>
<tr>
<td>Great Falls</td>
<td>Cascade</td>
</tr>
<tr>
<td>Helena</td>
<td>Lewis and Clark</td>
</tr>
<tr>
<td>Kalispell</td>
<td>Flathead</td>
</tr>
<tr>
<td>Missoula</td>
<td>Missoula</td>
</tr>
</tbody>
</table>

There were two methods used for gathering the data included. The first and primary method was by telephone interview. The other was by personal visit to the respective offices of the officials involved.

As part of the telephone interview, a special point was made to speak with the treasurer of each county and city. Every effort was made to be precise and exact concerning the nature and importance of the information requested. When terminating the interview, the respondent was asked to repeat what he thought had been requested. This was done in an attempt to ensure accuracy. Some respondents were cooperative, others were not. In general, the treasurers were
relatively cooperative and appeared to be interested. However, their interest in some instances was more apparent than real.

Lack of real interest on the part of some treasurers forced a reduction in sample size to the following:

<table>
<thead>
<tr>
<th>CITIES</th>
<th>COUNTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billings</td>
<td>Yellowstone</td>
</tr>
<tr>
<td>Bozeman</td>
<td>Gallatin</td>
</tr>
<tr>
<td>Butte</td>
<td>Cascade</td>
</tr>
<tr>
<td>Helena</td>
<td>Lewis and Clark</td>
</tr>
</tbody>
</table>
CHAPTER II

THE MONEY MARKET

I. BASIC CONCEPTS

The term 'money market' does not refer to a 'place' in the sense that the market is housed in a single building, as is a stock exchange or a commodity market. It is, rather, a group of institutions and arrangements that bring lenders and borrowers together. It brings into focus all the forces of supply and demand for short-term funds. The distinguishing characteristics of the money market are, in fact, the dealing in short term funds; that is, obligations with one year or less to maturity, and impersonal relationship between buyers and sellers.2

Commercial banks are the chief source of short-term funds in the money market.3 Money market instruments, such as Treasury bills, Treasury notes, commercial paper, and certificates of deposit, have short maturities and are easily sold with little risk of capital loss. Therefore, they are an ideal medium to fulfill the need of liquidity and yet

2 Farwell, Financial Institutions, p. 199.
produce some income. Commercial banks are important holders of the whole range of money market instruments.

There is a network of financial institutions, such as Federal Reserve Banks, dealers in federal government obligations, earnings banks, insurance companies, savings and loan associations, mortgage bankers, the securities exchange, and finance companies. Each institution at various times provides a portion of loanable funds and at other times joins with large numbers of consumers, thousands of business firms, and hundreds of governmental units as "demanders" or "buyers" of money, i.e., as short-term borrowers.

As in other free markets, the concept of supply and demand largely determines prices in the money market. A single price does not prevail because money is loaned, under various terms and contractual agreements, by lenders with different investment requirements to debtors who use it for a wide variety of purposes. There are, for example, not only differences in the uses for which money is borrowed, but differences in the length of time to maturity. As a result, there can be no one rate of interest; there is, rather, a complex "structure of rates".

II. MONEY MARKET INSTRUMENTS AVAILABLE TO MONTANA COUNTIES AND CITIES

The largest and most significant segment of the money market is concerned with the buying and selling of
obligations of the federal government. Of the four types of issues being tendered, two are considered as short-term, open-market instruments. Therefore, they are of most interest to the local government's available short-term funds. The two types are Treasury bills and certificates of indebtedness maturing in one year or less. Treasury notes run for an intermediate term of one to five years, and bonds include all obligations issued for five or more years.

The money market instruments available to Montana governmental units are regulated by state law. According to Montana law:

It shall be the duty of all county, city, and town treasurers to deposit all public funds in their possession and under their control in any solvent bank or banks located in the county, city or town of which such treasurer is an officer. The treasurer is hereby authorized to invest such public moneys not necessary for immediate use by such county, city or town, in direct obligations of the United States government, payable within not to exceed one hundred eighty (180) days from the time of such investment.

The treasurers are also allowed to purchase bank securities as long as they maintain an amount sufficient to insure the safety and prompt payment of all county

---

4Farwell, Financial Institutions, p. 201.

5Sec. 16-2618, Revised Codes of Montana, 1947.
The three short-term investment instruments utilized by Montana governmental units and of most interest to short-term investors are Treasury bills, Treasury notes, and certificates of deposit.

**Treasury Bills**

Treasury bills are obligations of the United States promising to pay a specified amount, without interest, on a specified date. They are issued on a discount basis and are available in denominations of $1,000; $5,000; $10,000; $100,000; $500,000; and $1,000,000.

Bills have a maturity of not more than one year and generally are issued with a maturity of ninety one days.\(^7\)

A peculiar aspect of Treasury bills is that the Treasury does not designate what rate of interest they shall earn. Instead, it offers the bills on a basis of competitive bidding.

The fact that practically all government security dealers and many banks submit offers for new issues of Treasury bills means that any issue may become widely distributed before maturity. Secondary purchases are made in the over-

---

\(^6\) Sec. 16-2050, Revised Codes of Montana, 1947.

the-counter market by dealers and dealer banks.\textsuperscript{8} Therefore, the bills can be cashed in immediately if ever such a need should arise. This is a very practical feature for investors of short-term funds.

Bills are an extremely safe investment. According to the author of a leading textbook on money and banking:

\begin{quote}
Treasury bills have an unimpeachable credit standing and are unparalleled in liquidity and marketability excellence. Bills are an ideal means of investing money temporarily pending the payment of taxes and cash dividends, spending for new facilities, and outlays for other purposes.\textsuperscript{9}
\end{quote}

\textbf{Treasury Notes}

Treasury notes are intermediate-term obligations of the United States government with maturities of one to five years. For investors unwilling to incur the market risks that exist in the long-term bond market, the Treasury note is an ideal investment medium.

Ordinarily, rates on notes are higher than on the short-dated bills and certificates of deposit. The Treasury announces the rate of interest that it will pay on notes. The interest is usually paid each six months rather than at maturity.

\textsuperscript{8}Farwell, \textit{Financial Institutions}, p. 204.

Certificates of Deposit

In 1961 the larger commercial banks, having concluded that their customers were not likely to leave demand deposit money with them in sufficient amounts to permit a desirable rate of growth, decided to become more aggressive in seeking funds by, in effect, buying deposits. The instrument used was the negotiable certificate of deposit. 10

Most banks set minimum limits on the size of certificates they will sell. The limits are usually related to bank size.

Prime certificates of deposit, those issued by the largest money-market banks, are usually sold to yield about one-fourth per cent more than Treasury bills of comparable maturity. The banks are regulated by the Federal Reserve Board on the maximum rate they can pay on time deposits.

CHAPTER III

SHORT-TERM FINANCIAL STATISTICS OF MAJOR MONTANA CITIES AND COUNTIES

The statistics obtained from the governmental units differed in both quantity and quality. Therefore, when interpreting and organizing the data, certain assumptions were drawn concerning the terminology and figures provided, in order to add uniformity.

All data obtained was from the months of February, May, August, and November of 1966, 1967, 1968, and the first quarter of 1969. These months were chosen in an attempt to obtain data representative of the whole year. May and November are property tax months and represent high balances. February and August are periods of low income to the governmental units and represent low balances.

Throughout this paper, the term "cash on hand" is used to refer to actual currency maintained in the office; the term "demand deposits" refers to money maintained in checking accounts; and "investments" refers to short-term investments in Treasury bills or certificates of deposit.

There is, apparently, a general pattern among Montana's major cities and counties concerning their finan-
cial procedures.

Exhibit One shows the percentage distribution of short-term funds for all Montana cities and counties involved in the study. These are combined averages for all governmental units studied for 1966, 1967, 1968, and the first quarter of 1969.

EXHIBIT 1

TOTAL AVERAGE DISTRIBUTION OF AVAILABLE SHORT-TERM FUNDS FOR MAJOR MONTANA CITIES AND COUNTIES SURVEYED

(In Percent)

1966 - 1969

<table>
<thead>
<tr>
<th></th>
<th>CITIES</th>
<th>COUNTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH ON HAND</td>
<td>1.1%</td>
<td>2.7%</td>
</tr>
<tr>
<td>DEMAND DEPOSITS</td>
<td>43.6</td>
<td>45.3</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>55.3</td>
<td>52.0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
On the basis of this exhibit, it appears that city and county treasurers are becoming increasingly aware of the importance of short-term investments.

In 1966, 55.3\% per cent of city short-term funds were in productive resources compared with 39 per cent for counties.

By the end of 1968, a noticeable shift had taken place. City short-term investments increased to 58 per cent of total short-term funds, and during the same period, county short-term investments had risen to 50 per cent of the total.

By March 31, 1969, city short-term investments increased to 63 per cent of the total, and county short-term investments increased to 58.6 per cent of the total.

Exhibit Two shows the average distribution of available short-term funds for each Montana city and county studied.

This exhibit also indicates an increasing awareness in the importance of short-term investments.

Between 1966 and March 31, 1969, seven of the eight units surveyed decreased the percentage of short-term funds in idle cash. Apparently, the same seven units placed the unproductive idle cash into short-term productive resources, i.e., short-term investments.

The greatest improvement was made by Cascade County. In 1966, only 25 per cent of its short-term funds were in productive short-term investments. By March 31, 1969,
## EXHIBIT 2

### AVERAGE DISTRIBUTION OF AVAILABLE SHORT-TERM FUNDS

**FOR EACH MONTANA CITY AND COUNTY STUDIED**

*(IN PERCENT)*

**1966 - 1969**

<table>
<thead>
<tr>
<th></th>
<th>Cash on Hand</th>
<th>Demand Deposits</th>
<th>Investments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>66 67 68 69</td>
<td>66 67 68 69</td>
<td>66 67 68 69</td>
</tr>
<tr>
<td>BILLINGS</td>
<td>1 2 1 na</td>
<td>35 33 40 na</td>
<td>64 65 59 na</td>
</tr>
<tr>
<td>BOZEMAN</td>
<td>2 3 4 1</td>
<td>54 51 45 43</td>
<td>44 46 51 56</td>
</tr>
<tr>
<td>HELENA</td>
<td>na 3 4 na</td>
<td>42 52 32 30</td>
<td>58 45 64 70</td>
</tr>
<tr>
<td>CASCADE</td>
<td>na na na na</td>
<td>75 79 49 23</td>
<td>25 21 51 71</td>
</tr>
<tr>
<td>GALLATIN</td>
<td>5 6 6 1</td>
<td>54 40 37 39</td>
<td>41 54 57 60</td>
</tr>
<tr>
<td>LEWIS AND CLARK</td>
<td>na na na na</td>
<td>64 81 67 61</td>
<td>36 19 33 39</td>
</tr>
<tr>
<td>YELLOWSTONE</td>
<td>na na na na</td>
<td>46 57 41 na</td>
<td>54 43 59 na</td>
</tr>
</tbody>
</table>

**Notes:**

na--not available
77 per cent of its short-term funds were in short-term investments, an increase of 52 per cent.

The next best improvement was made by Gallatin County. Between 1966 and March 31, 1969, the percentage of short-term funds in productive resources increased 19 per cent.

Diversification is a basic investing principle. However, six Montana governmental units had all short-term investments in certificates of deposit. Only two units were diversified, investing in both certificates of deposit and United States Treasury bills.

EXHIBIT 3

TYPES OF SHORT-TERM INVESTMENTS UTILIZED BY MAJOR MONTANA CITIES AND COUNTIES SURVEYED
(In Percent)

<table>
<thead>
<tr>
<th></th>
<th>Certificate of Deposit</th>
<th>U.S. Treasury Bills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cascade</td>
<td>100%</td>
<td>9%</td>
</tr>
<tr>
<td>Helena</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>All Others</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Banks are subject to regulation on the maximum rate they can pay on time deposits. Therefore, during periods of tight money, Treasury bill rates are higher than certificate of deposit rates.\textsuperscript{11} During the period studied, this

was often times the case. However, as indicated in Exhibit Three, only two units took advantage of these higher rates.

Since Treasury bills entail a minimum risk, have immediate liquidity, and pay a good rate of interest, they should be utilized by local governmental units when advantageous.

For instance, during 1967, Montana banks paid an average of 4 per cent interest on certificates of deposit. Treasury bills for the same period yielded from 4.25 to 5.25 per cent. In May of 1968, Montana certificates of deposit earned an average of 4.5 per cent, while Treasury bills earned an average of 5.56 per cent.

EXHIBIT 4

AVERAGE MARKET QUOTATIONS ON NINETY DAY U. S. TREASURY BILLS AND CERTIFICATES OF DEPOSIT (In Percent)

<table>
<thead>
<tr>
<th></th>
<th>1968</th>
<th>1969</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITED STATES TREASURY BILLS</td>
<td>5.56 %</td>
<td>6.68 %</td>
</tr>
<tr>
<td>NEGOTIABLE CERTIFICATES OF DEPOSIT--N. Y.</td>
<td>5.625</td>
<td>5.625</td>
</tr>
<tr>
<td>NEGOTIABLE CERTIFICATES OF DEPOSIT--MONT.</td>
<td>4.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

SOURCE: Irving Trust Company--New York

Exhibits Seven and Twelve show idle cash balances for the city of Butte and Yellowstone County from 1966 through 1968.

Exhibits Five, Six, Eight, Nine, Ten, and Eleven show
idle cash balances and short-term investments maintained by the rest of the units surveyed for the same period.

Adequate cash to meet daily needs should be kept available at all times. However, it is wasteful to carry larger balances of cash on hand or in demand deposits than are likely to be required by the actual needs of the governmental units. Therefore, when the cash balance is adequate, excess cash should be invested in short-term bank or government securities.

On the basis of Exhibits Five through Twelve, it appears that all governmental units maintained excessive cash balances. An adequate cash balance should be determined by each governmental unit, based upon its specific requirements.

The remainder of this paper deals specifically with each governmental unit surveyed. Adequate cash balances for each unit were assumed. These balances were subjectively determined, using the minimum and average cash balances of each unit.

I. CITY OF BILLINGS

Exhibit Five shows idle cash balances and short-term investments for the city of Billings from 1966 through 1968.

The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)
In 1967, Billings placed 65 per cent of its short-term funds in productive resources, i.e., short-term investments, making it the best year for investment purposes. This compared with investment purchases of 64 per cent in 1966 and only 59 per cent in 1968. Billings was the only unit which did not increase the percentage of investments by 1969.

The average cash balances for the years surveyed were $1,000,000 in 1966, $1,166,000 in 1967, and $1,300,000 in 1968. The lowest balance recorded was $550,000 in August of 1967.

It is assumed that $600,000 would be an adequate cash balance for the city of Billings. Consequently, interest income was lost because of an excessive cash balance.

For instance, in 1968 the average cash balance was $1,300,000. This exceeds the adequate cash balance by $700,000. Had $700,000 been invested at 5.66 per cent, the interest earned would have been $36,920.

Treasury bills would have been an ideal investment. If the cash requirements had exceeded $600,000, the Treasury bills could have been liquidated, and interest would have been earned to that point.
City of Billings

EXHIBIT 5

CASH BALANCES AND SHORT-TERM INVESTMENTS
FOR 1966, 1967 AND 1968

(THOUSANDS OF DOLLARS)
II. CITY OF BOZEMAN

Exhibit Six shows idle cash balances and short-term investments for the city of Bozeman from 1966 through 1968.

The percentage distribution of short-term funds from 1966 through March 31, 1969, was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH ON HAND</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>DEMAND DEPOSITS</td>
<td>54</td>
<td>51</td>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>44</td>
<td>46</td>
<td>51</td>
<td>56</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

In 1966 and 1967 the percentage of unproductive short-term funds exceeded the percentage of productive short-term investments. In 1968, and the first quarter of 1969, the position reversed, but there was still an excess of unproductive cash.

The average cash balances were $470,000 in 1966, $437,500 in 1967, and $440,000 in 1968. The minimum balance was $330,000 in May of 1967.

It is assumed that $150,000 would be an adequate cash balance for Bozeman. In this case, the interest lost during 1968 was $15,985.

On the basis of Exhibit Six, it appears that Bozeman maintained relatively stable balances from 1966 through 1968. The lowest cash balance was $330,000 in May of 1966,
City of Bozeman

EXHIBIT 6

CASH BALANCES AND SHORT-TERM INVESTMENTS
FOR 1966, 1967 AND 1968

($ THOUSANDS OF DOLLARS)

1500

Cash Balances

Short-Term Investments

1300

Total Cash Balances and Short-Term Investments

1100

FEB MAY AUG NOV 1966

FEB MAY AUG NOV 1967

FEB MAY AUG NOV 1968
increasing to the highest balance of $600,000 in November of 1968. This compared with a minimum investment of $290,000 in May of 1966, to a maximum of $480,000 in November of 1968.

III. CITY OF BUTTE

Exhibit Seven shows the idle cash balances maintained by the city of Butte from 1966 through 1968.

Ordinarily, revenue is high during May because property taxes are due on May 31. However, in this case, the balances provided were for the beginning, rather than for the end of the month.

According to Exhibit Seven, there was a definite pattern in the cash balances maintained by Butte during the period studied. The cash balances were extremely high in November, averaging $933,000, and comparatively low in August, averaging only $286,666.

The average yearly cash balances were $468,333 in 1966, $490,000 in 1967, and $540,000 in 1968.

It is assumed that $150,000 would be an adequate cash balance. Therefore, using 1968 as an example, the interest lost was $21,680.

IV. CITY OF HELENA

Exhibit Eight shows idle cash balances and short-term investments maintained by the city of Helena from
City of Butte

EXHIBIT 7
CASH BALANCES FOR 1966, 1967 AND 1968

$ (THOUSANDS OF DOLLARS)

1100
1000
900
800
700
600
500
400
300

Cash Balances

FEB MAY AUG NOV 1966
FEB MAY AUG NOV 1967
FEB MAY AUG NOV 1968
1966 through 1968.

The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH ON HAND</td>
<td>na</td>
<td>3%</td>
<td>4%</td>
<td>na</td>
</tr>
<tr>
<td>DEMAND DEPOSITS</td>
<td>42%</td>
<td>52%</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>58</td>
<td>45%</td>
<td>64%</td>
<td>70%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The only year the percentage of idle cash exceeded the percentage of short-term investments was 1967. Until 1969, all short-term investments were in certificates of deposit. In 1969, Treasury bills comprised 67 per cent of the total short-term investments.

The investment procedures utilized by Helena improved considerably in 1968 and 1969. The percentage of short-term funds invested in 1968 was 64 per cent. In 1969, it increased to 70 per cent, compared with only 45 per cent in 1967.

On the whole, except for 1967, Helena utilized the best financial procedures. For instance, in February of 1966, $120,000 were in cash, while $290,000 were invested productively. In November of 1969, $75,000 were in idle cash, while $335,000 were invested productively.
City of Helena

EXHIBIT 8


(THOUSANDS OF DOLLARS)

$ 450
  400
  350
  300
  250
  200
  150
  100
  50

Cash Balances
Short-Term Investments
Total Cash Balances and Short-Term Investments

FEB MAY AUG NOV 1966
FEB MAY AUG NOV 1967
FEB MAY AUG NOV 1968
V. CASCADE COUNTY

Exhibit Nine shows the idle cash balances and short-term investments of Cascade County from 1966 through 1968.

The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEMAND DEPOSITS</td>
<td>75%</td>
<td>79%</td>
<td>49%</td>
<td>23%</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>25</td>
<td>21</td>
<td>51</td>
<td>77</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

In 1967, the lowest year for short-term investments, Cascade County had an average of $4,237,500 in unproductive resources, or 79 per cent of the total short-term funds. The situation improved considerably in 1968, when only 49 per cent of the total was in idle cash. By 1969, Cascade County's idle cash percentage decreased to an unprecedented 23 per cent.

Cascade was the only governmental unit surveyed which diversified investments prior to 1969. In 1967, 3 per cent of its short-term investments were in Treasury bills; it increased to 54 per cent in 1968 and dropped to 44 per cent in the first quarter of 1969.

The average cash balances for the years surveyed were $3,125,000 in 1966; $4,237,500 in 1967; and $3,600,000 in 1968. These were the highest balances maintained by any Montana governmental unit.

Assuming that $1,000,000 would be an adequate cash
Cascade County

EXHIBIT 9

CASH BALANCES AND SHORT-TERM INVESTMENTS
FOR 1966, 1967 AND 1968

(THOUSANDS OF DOLLARS)

$ 9300

□ Cash Balances
□ Short-Term Investments

8400
□ Total Cash Balances and Short-Term Investments

7500

6600

5700

4800

3900

3000

2100

1200

FEB MAY AUG NOV 1966
FEB MAY AUG NOV 1967
FEB MAY AUG NOV 1968
balance, $147,160 of potential income was lost in 1968.

VI. GALLATIN COUNTY

Exhibit Ten shows the idle cash balances and short-term investments of Gallatin County from 1966 through 1968.

The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CASH ON HAND</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
<td>1%</td>
</tr>
<tr>
<td>DEMAND DEPOSITS</td>
<td>54</td>
<td>40</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>41</td>
<td>54</td>
<td>57</td>
<td>60</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Gallatin County increased the percentage of short-term investments consistently from 1966 through March 31, 1969. The only year the percentage of idle funds exceeded the percentage of productive resources was 1966.

Based upon Exhibit Ten, it appears that the November months were critical. The average November cash balance was $2,033,333, while the average investment balance was only $800,000.

The yearly average cash balances were $1,233,750 in 1966; $1,368,750 in 1967; and $1,213,750 in 1968.

Assuming an adequate cash balance of $350,000, $48,888 of interest income was lost in 1968.
Gallatin County

EXHIBIT 10

CASH BALANCES AND SHORT-TERM INVESTMENTS
FOR 1966, 1967 AND 1968

$ (THOUSANDS OF DOLLARS)

- Cash Balances
- Short-Term Investments
- Total Cash Balances and Short-Term Investments

1966
1967
1968
VII. LEWIS AND CLARK COUNTY

Exhibit Eleven shows the idle cash balances and short-term investments of Lewis and Clark County from 1966 through 1968.

The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEMAND DEPOSITS</td>
<td>64%</td>
<td>81%</td>
<td>67%</td>
<td>61%</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>36</td>
<td>19</td>
<td>33</td>
<td>39</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Of all units involved, Lewis and Clark County maintained the highest percentage of short-term funds in idle cash. The idle funds were 64 per cent of the total in 1966. This increased to an unbelievable 81 per cent in 1967, then decreased to 67 per cent in 1968, and to 61 per cent in 1969.

During 1967, the average cash balance was $1,826,250, compared with an average investment balance of only $441,250.

There was an improvement in 1968 and 1969, but Lewis and Clark County was easily the worst investor of short-term funds.

VIII. YELLOWSTONE COUNTY

Exhibit Twelve shows the idle cash balances maintained by Yellowstone County from 1966 through 1968.
EXHIBIT 11


(THOUSANDS OF DOLLARS)
The percentage distribution of short-term funds for the same period was: (Excerpt from Exhibit 2)

<table>
<thead>
<tr>
<th></th>
<th>1966</th>
<th>1967</th>
<th>1968</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEMAND DEPOSITS</td>
<td>46%</td>
<td>47%</td>
<td>41%</td>
</tr>
<tr>
<td>SHORT-TERM INVESTMENTS</td>
<td>54</td>
<td>43</td>
<td>59</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

In 1967, the percentage of short-term funds in idle cash exceeded the percentage in short-term investments. The best year was 1968, when 59 per cent of the funds were in short-term investments. However, even in the best year, the idle funds were excessive.

The yearly average cash balances were $3,301,250 in 1966; $3,202,500 in 1967; and $2,900,000 in 1968. These figures are surpassed only by Cascade County.

Assuming an adequate cash balance of $1,000,000, the interest income lost in 1968 was $107,540.
EXHIBIT 12
CASH BALANCES FOR 1966, 1967 AND 1968

(THOUSANDS OF DOLLARS)
CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

Transactions in short-term government obligations, bankers' acceptances, and commercial paper are handled in the money market. The money market comprises all the facilities of the country for the borrowing and lending of money for short periods of time.

The two money market instruments which should be most desirable for Montana's governmental units are United States Treasury bills and Bankers' certificates of deposit.

The Treasury bill is the shortest-term, open-market debt instrument issued by the Federal government. It earns daily interest and has excellent liquidity and marketability.

The certificate of deposit is issued by commercial banks to attract short-term funds. It generally yields about one-quarter percent more than Treasury bills of comparable maturity.

Apparently, city and county treasurers are becoming
increasingly aware of the importance of short-term investments.

Between 1966 and the first quarter of 1969, the percentage of city short-term funds employed in productive resources increased 7.7 percent. During the same period, the county percentage increased 19.6 percent.

Six of the eight units surveyed had all short-term investments in certificates of deposit. Only Cascade County and the city of Helena diversified, investing in both certificates of deposit and Treasury bills.

II. CONCLUSIONS

It appears that all Montana governmental units surveyed maintained excessive cash balances between 1966 and 1968.

Depending on its specific requirements, each governmental unit should maintain an adequate cash balance. However, the idle cash balance should not be allowed to exceed 25 percent of total short-term funds.

Had this been the case between 1966 and 1968, the average interest earned per year by each unit surveyed would have been as follows:
<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Average Cash Balances From 1966 - 1968</td>
<td>Total Average Cash Balances At 25 Per Cent</td>
</tr>
<tr>
<td>Billings</td>
<td>$1,155,000</td>
</tr>
<tr>
<td>Bozeman</td>
<td>449,000</td>
</tr>
<tr>
<td>Helena</td>
<td>120,000</td>
</tr>
<tr>
<td>Cascade</td>
<td>3,654,000</td>
</tr>
<tr>
<td>Gallatin</td>
<td>1,272,000</td>
</tr>
<tr>
<td>Lewis and Clark</td>
<td>1,863,000</td>
</tr>
<tr>
<td>Yellowstone</td>
<td>3,135,000</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$11,640,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Column C</th>
<th>Column D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference (A - B)</td>
<td>Average Interest Lost Per Year (4.91% X Column C)</td>
</tr>
<tr>
<td>Billings</td>
<td>$382,000</td>
</tr>
<tr>
<td>Bozeman</td>
<td>237,000</td>
</tr>
<tr>
<td>Helena</td>
<td>50,000</td>
</tr>
<tr>
<td>Cascade</td>
<td>2,247,000</td>
</tr>
<tr>
<td>Gallatin</td>
<td>620,000</td>
</tr>
<tr>
<td>Lewis and Clark</td>
<td>1,196,000</td>
</tr>
<tr>
<td>Yellowstone</td>
<td>1,479,000</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$6,203,000</strong></td>
</tr>
</tbody>
</table>

Based on the above figures, it appears the surveyed Montana governmental units lost approximately $305,000 a year by maintaining excessive cash balances. The $305,000 figure is believed to be conservative and does not include interest lost due to idle school district funds. This also does not include interest which could have been earned by utilizing the investment medium yielding the highest rate of return.
Presumably, the three main reasons attributed to maintaining excessive cash balances at such high costs are: (1) the treasurers' lack of knowledge, (2) their lack of real interest, and (3) the high turnover of city and county officials.

It seems inevitable that efforts must be made to solve this investment problem. Therefore, some suggestions as to its solution are in order.

It is suggested that Montana's governmental units take more advantage of United States Treasury bills. They are an excellent medium for short-term funds, earn daily interest, and depending on economic conditions, sometimes yield higher interest rates than certificates of deposit. The greatest advantage of Treasury bills to short-term investors, however, is their immediate liquidity in the secondary market.

The many facets of city and county governmental finance yield more than a few investment problems. The city and county treasurers may not always understand the implications involved. Therefore, it is suggested that city and county treasurers seek the aid of local investment firms.

Among the objectives of such action would be greater understanding of available investment opportunities, utilization of the firms' knowledge and experience, and ultimately, an improvement in city and county invest-
The final suggestion for a solution is on the same line as the preceding suggestion. It urges that a permanent "investor" be placed on the treasurer's staff. Such a position would first of all center on the various aspects of the investment problem. The "investor" would be responsible for establishing and maintaining a yearly minimum cash balance; be responsible for all short-term investments; and have complete knowledge of city or county governmental finance.
BIBLIOGRAPHY


