

# Pledging Requirements and Bank Asset Portfolios

By *Ronald A. Ratti*

Under state and Federal law, commercial banks are required to hold government securities as a reserve against government deposits. While these pledging requirements are potentially important links between the asset and liability sides of a bank's portfolio, they have largely been ignored in the professional literature. This omission cannot be justified even if pledging requirements have no effect on bank demand for Government securities, because locking up Government securities as a pledge against public deposits forecloses their use as a source of bank liquidity and reduces flexibility in the management of bank assets. Moreover, if pledging requirements do have an impact on bank holdings of Government securities, fluctuations in the growth of government deposits will have important implications on the ability of banks to meet credit demands and on bank profitability.<sup>1</sup>

The purpose of this article is to examine the role of pledging requirements and to determine their impact on the asset portfolio of banks and

on bank profitability. The first section of the article reviews the pledging requirements on both Federal and state and local government deposits, with particular emphasis on the requirements of the seven states in the Tenth District. In the second section, the arguments—both favorable and critical—concerning the role of pledging requirements are presented, and possible alternative procedures are discussed. The third section summarizes the empirical evidence on the effectiveness and likely consequences of pledging with regard to bank profitability and asset composition.

## STATUTORY PLEDGING REQUIREMENTS

### Federal Government Deposits

Under Federal law, Federal Government deposits in excess of those insured by the Federal Deposit Insurance Corporation (FDIC) must be backed by eligible collateral at least

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<sup>1</sup> As of November 2, 1978, Treasury tax and loan account depositories may administer their accounts under either a note option or a remittance option. Both options require the pledge of acceptable collateral. The Treasury projects that there will be an average of around \$8 to \$8.5 billion in TT&L balances at depositories, compared with average balances of about \$1.5 billion in recent years. This anticipated sharp upward swing in government funds at depositories can be expected to have an impact on bank asset portfolios.

equal to this **amount**.<sup>2</sup> Eligible collateral consists of obligations issued or insured by the U.S. Government or agencies at face value, obligations of the states at 90 per cent of face value, and obligations of other political subdivisions that are not in default at 80 per cent of face value.' All assets accepted as satisfactory collateral for Federal Government deposits are required to be physically located with a Federal Reserve Bank or its branches or with a custodian prescribed by the Federal Reserve.

### State and Local Government Deposits

Thirty-eight states have similar pledging requirements for the deposits of state and local **governments**.<sup>4</sup> These laws and regulations differ widely regarding the proportion of government deposits that must be covered by eligible collateral, what constitutes eligible collateral, how that collateral is valued, and its appropriate physical condition. For example,

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<sup>2</sup> The provisions are included in the National Bank Act of 1919, the Second Liberty Bank Act of 1917, and U.S. Treasury Circulars Nos. 92, 176, and 848.

<sup>3</sup> Other eligible collateral, as set out in Treasury Circular No. 92, would be 1) the obligations issued or guaranteed by the International Bank for Reconstruction and Development, the Interamerican Development Bank, or the Asian Development Bank at face value; 2) loans to students which are insured by Federal insurance, a state agency, or nonprofit institutions or organizations, at face value; 3) obligations of domestic corporations, at 80 per cent of face value; or 4) commercial and agricultural paper and bankers' acceptances having a maturity of less than one year, at 90 per cent of face value. As of October 16, 1978, the acceptable maturity on this last category has been extended to two years. However, the items have also been restricted to obligations of domestic corporations. In the future, the obligations of individuals and partnerships and of foreign borrowers will not be acceptable.

<sup>4</sup> The states without laws requiring the pledging of assets for government deposits or where pledging is not practiced are Arkansas, Connecticut, Delaware, Indiana, Iowa, Maine, Massachusetts, New Hampshire, Rhode Island, Utah, Vermont, and Wisconsin.

about half of these states have a uniform pledging requirement for state and local deposits that ranges from 5 per cent in South Dakota and New Jersey to **110** per cent in California, Minnesota, Mississippi, and **Oklahoma**.<sup>5</sup> Five states have no pledging requirements on county or municipal deposits but require a pledge against state **deposits**;<sup>6</sup> two states have no requirements on municipal deposits but do have them on state and county deposits; and one state, North Dakota, has no pledging requirements on state deposits but does have them on county and municipal deposits. The remaining states that allow pledging have differential nonzero requirements on state, county, and municipal deposits. In these states the maximum pledging requirement is **120** per cent on state deposits and **110** per cent on county and municipal **deposits**.<sup>8</sup>

As to eligible collateral, direct obligations of the U.S. Government satisfy pledging requirements in all states. Obligations guaranteed by the United States and those of U.S. Government agencies are accepted by most states. Also widely accepted are state bonds, notes and certificates of indebtedness, county and municipal securities, and revenue bonds. It is very common, though, for states to restrict eligibility to obligations issued within their own jurisdiction. The method of valuation of eligible collateral for pledging purposes is either at par or at market value (usually not to exceed par value). In some jurisdictions it is at par value

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<sup>5</sup> The other states with a uniform pledge for state and local deposits are Arizona, Colorado, Kansas, Louisiana, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Virginia, and Wyoming.

<sup>6</sup> These are Georgia, Michigan, South Carolina, Vermont, and West Virginia.

<sup>7</sup> Hawaii and West Virginia.

<sup>8</sup> The above summary on state pledging ratios was drawn from Appendix C, "Pledging Assets for Public Deposits," American Bankers Association, Washington, D.C. (1976).

for some eligible items and market value for other eligible items. The market value criteria tend to be the most frequently applied.

Most state statutes require the physical transfer of pledged assets to a custodian. The designated custodian is usually either a Federal Reserve Bank or branch or a large correspondent bank. For member banks of the Federal Reserve System the custodian is the relevant regional Federal Reserve Bank or branch. Typically, prior approval of the custodian is required before additions or subtractions may be made in the pledged collateral.

### Requirements in Tenth District States

The great variation in pledging requirements among states is illustrated by the requirements

of states in the Tenth District, as summarized in Table 1. Six of the states have a uniform pledging ratio for various categories of local government deposits, varying from 50 per cent in New Mexico, through 70 per cent in Kansas and 100 per cent in Colorado, Missouri, and Wyoming, to 110 per cent in Oklahoma. In Kansas, however, if a bank is successful in obtaining government funds and its bid is in excess of the rate on 3-month U.S. Treasury bills, the requirement becomes 100 per cent. Also, a resource pooling option is available to banks in Colorado that would lower their ratio to 50 per cent. In **Nebraska**, the ratio is 110 per cent on state funds and 100 per cent on county and municipal funds. All these pledging ratio requirements refer to government funds in excess of those insured by the FDIC.

**Table 1**  
**PLEDGING REGULATIONS OF TENTH DISTRICT STATES**

	Pledging Ratios on Deposits			Eligible Collateral Includes*	Valuation Method
	State	County	Municipal		
	(In per cent)				
Colorado	100 <sup>†</sup> *	100 <sup>†</sup>	100 <sup>†</sup>	First Mortgages	Market
Kansas	70*	70*	70*	First Mortgages	Par
Missouri	100 <sup>§</sup>	100	100	Other State Bonds	Market#
Nebraska	110	100	100	Other State Bonds II	Market**
New Mexico	50	50	50		Mixed <sup>††</sup>
Oklahoma	110	110	110		Par
Wyoming	100	100	100		Market

\*A blank indicates eligible security in that state is limited to obligations issued or guaranteed by the United States or its agencies, its own state bonds, and its own state subdivision obligations. An entry indicates the **acceptability** of the entry in addition to the preceding.

†A resource pooling option is available to the banks in Colorado that would lower the ratio to 50 per cent. To date it has not been utilized.

‡If the bank obtaining public funds placed a bid in excess of the current 3-month U.S. Treasury bill rate, the ratio rises to 100 per cent.

§ The ratio on state funds in Missouri had been 110 per cent until 1975.

|| Restricted to those states whose bonds are purchased by the Board of Education Lands and Funds. This means virtually all states.

#Statutes silent. Market valuation method widely used.

\*\*The statutes on state and county funds are silent regarding the valuation method, and market value criteria have come to be used. The statute regarding municipal deposits explicitly states face value to be the appropriate valuation method, but apparently market value is used.

††Par value for obligations of state of New Mexico and its subdivisions, market value for other obligations.

Each of the Tenth District states accepts as eligible collateral the obligations issued or guaranteed by the United States or its agencies, their own state bonds, and their own state subdivision obligations. Missouri and Nebraska are the only states that find the bonds of other states acceptable, and Colorado and Kansas allow first mortgages as eligible collateral. Eligible collateral is valued on the basis of market value in Colorado and Wyoming, and face value in Kansas and Oklahoma. In New Mexico, the obligations of the state and its subdivisions are valued at face value, and other acceptable obligations are valued at market value. In Missouri and Nebraska, the statutes are silent regarding the method of valuing securities, and market value criteria have been adopted. Acceptable custodians for pledged securities are the Federal Reserve Bank of Kansas City, its branches, or a large correspondent bank. Also, subject to the approval of the state banking commissioner, banks in Nebraska, New Mexico, Oklahoma, and Wyoming that are not members of the Federal Reserve System may retain on their own premises the securities pledged against state and local government deposits.

### **THE ROLE OF PLEDGING REQUIREMENTS**

The basic reason for the imposition of pledging requirements is to ensure the safety of government deposits in **banks**.<sup>9</sup> That is, a political entity whose deposits are backed entirely by securities is guaranteed no loss if the bank holding its deposits should fail. Pledging requirements thus serve to ensure that the political community with funds deposited in a failed bank will not endure any particular financial hardship. However, some observers have argued that the banking system is now much more regulated and stable than it was during the time pledging requirements were introduced, so that the argument concerning

the safety of government deposits is not as valid. Moreover, some believe that the safety of these deposits can be guaranteed by alternative means within the existing regulatory framework.

A second argument used to support the use of pledging requirements is that they strengthen the market for Government securities. Most states rule ineligible for pledging purposes the obligations issued by other states or political subdivisions not in their jurisdiction. This has the effect of improving the market for their own debt and for that of their political subdivisions. If the argument concerning the strengthening of the market for Government securities is valid, however, the demand on the part of banks for other asset items, primarily loans, is reduced. This implies that bank credit becomes available on less favorable terms following imposition of the requirements. Thus, funding of government projects at lower costs has to be weighed against the increased cost of obtaining credit for private borrowers at commercial banks.

A third argument suggested in favor of pledging requirements is that they cause banks to hold more Government securities than would otherwise be the case, thereby making bank portfolios safer. However, if the existence of pledging requirements causes a bank to hold a larger quantity of Government securities, it is by no means obvious that the bank has a less

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<sup>9</sup> The National Bank Act of 1864 contained a provision requiring that U.S. deposits in national banks be secured by a pledge of U.S. bonds or other securities. Prior to this act, Congress had required (since 1779) that the United States be first satisfied in the event of the insolvency of a debtor, including banks. In 1930, pledging by national banks was authorized for state and local government deposits, and shortly thereafter most states passed laws allowing state banks to pledge assets not only against state and local government deposits but also against deposits of the United States. Before this time, government deposits were secured by alternative means such as surety bonds.

risky portfolio than **before**.<sup>10</sup> Indeed, to the extent that holdings of nonpledged short-term securities are reduced, bank liquidity may be reduced as a result of the requirement."

Another potential problem with pledging requirements is that they may lead to suboptimal portfolio behavior. That is, if the management of government deposits is subject to more restrictions than that of **nongovernment** deposits, the former can be expected to be less profitable. Hence, banks may not hold a portfolio of assets that would maximize either long-run profits or the well-being of their shareholders. This potential problem is complicated by an additional factor: since state laws on pledging differ widely regarding the fraction of government deposits that needs to be secured, there is a differential incidence of pledging requirements between states and differential regulatory burdens on banks in different states.

### Possible Alternatives

Alternative proposals are usually designed to meet some of the problems referred to above. To be considered practical, however, the proposals must also ensure the security of government funds. One proposal that meets this requirement to some extent would grant

preferred but unsecured status to government **deposits**.<sup>12</sup> The experience of the FDIC suggests that government funds would invariably be recoverable under this option, although only after a delay. A second proposal that would not involve such delays would be a state government insurance system." Under this proposal, the insurance rates paid by commercial banks could be determined by the level of government funds on deposit and the characteristics of the depository institution. Insurance coverage up to some specified limit could be provided on government deposits, with the balance secured by a pledge of government securities with the FDIC.

A final category of proposals involves standardizing pledging requirements by extending the role of the FDIC. These proposals vary from advocating 100 per cent FDIC insurance for all government funds to advocating the present insurance coverage plus the pledge of acceptable collateral equal to 100 per cent of the uninsured balances secured with the FDIC.

## THE IMPACT OF PLEDGING REQUIREMENTS

### Effect on Security Holdings

Changes in deposits of any type will normally cause banks to alter their Government security

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<sup>10</sup> This argument is similar to one concerning reserve requirements and bank solvency. In this connection it is widely recognized that if the existence of the reserve requirement results in a level of excess reserves smaller than what the level of reserves would be in the absence of the requirement, bank liquidity has been reduced.

<sup>11</sup> In Appendix A of "The Pledging of Bank Assets: A Study of the Problem of Security for Public Deposits" (Chicago: Association of Reserve City Bankers, 1967), Charles F. Haywood reports the results of a survey of pledged assets at insured commercial banks in mid-1966. The survey revealed substantial immobilization of the security portfolio. It was found that 50 per cent of direct U.S. Government and almost 40 per cent of state and local governments were set aside.

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<sup>12</sup> Adopted in Mississippi in addition to pledging requirements.

<sup>13</sup> State insurance schemes for government monies are run by the Public Deposit Protection Commission in Connecticut, by the State Treasurer's Sinking Fund in Iowa, the State Deposit Guarantee Fund in Wisconsin, and the Insurance Fund for Public Deposits in Indiana. An alternative to state insurance would be a private scheme involving the use of surety bonds. Its major drawback, however, is that it involves indirect **pledging—i.e.**, acceptable collateral has to be pledged with the private company supplying the insurance. Since the use of surety bonds in lieu of pledging is allowable in most states, and banks typically do not elect this option, it cannot be considered a viable option.

holdings. However, to the extent that pledging requirements influence security holdings, the impact of changes in government deposits will differ quantitatively from the impact of changes in private deposits.<sup>14</sup> The material below presents results of an empirical investigation into the effects of pledging requirements on holdings of Government securities by banks. In particular, the investigation focuses on the extent that pledging requirements cause banks to alter their holdings of Government securities in response to changes in the funds that governments deposit with them.

The impact of changes in government deposits was examined by applying regression analysis to data on member banks in the Tenth Federal Reserve District reported on call reports for 1977. The regression analysis was used to measure the impact on holdings of Government securities of various factors--such as changes in government deposits and changes in other deposits at banks.<sup>15</sup> From the analysis, estimates were derived of the extent that holdings of Government securities change due to changes in particular types of deposits.

The results of the regression analysis are presented in Table 2.<sup>16</sup> They show the impact

<sup>14</sup> It should be borne in mind that other factors, such as different rates of turnover or interest rate payments between government and nongovernment deposits, could also cause a difference in impact.

<sup>15</sup> In order to obtain a single call report number for assets and liabilities for 1977, a weight of one-eighth was given to the December 1976 call, weights of one-quarter each to the March, June, and September 1977 calls, and a weight of one-eighth to the December 1977 call. It should be emphasized that the empirical results are based on data drawn from member banks of the Tenth Federal Reserve District. Although results for other banks during the same period are unlikely to be different, it is possible that results for other time periods may yield different conclusions. In particular, a major weakness of any cross section study is the absence of factors, such as interest rates, that change over time. A more elaborate study combining time and cross section data would allow an evaluation of these qualifications.

on bank holdings of governments of a \$1 increase in various types of deposits, under the assumption that all other deposits and total resources do not change. For example, a \$1 increase in total deposits leads to an increase of **\$.382** in holdings of U.S. Government securities and a decline of **\$.222** in holdings of state and local securities. These results can be explained in terms of general liquidity considerations. As deposits increase relative to bank capital, the bank compensates on the asset side by moving into items that are readily marketable, such as U.S. Government securities, and out of items such as state and local securities.

The results of the regression analysis indicate that pledging requirements do affect bank holdings of state and local government securities. As shown in Table 2, banks increase their holdings of state and local government

<sup>16</sup> The regression equations underlying the results in the table are:

$$\begin{aligned}
 \text{U.S. Sec./TA} &= -301 + 382\text{D/TA} + 475\text{T/TA} + 473\text{S/TA} + 369(1/\text{TA}) \\
 &\quad (-352) \quad (343) \quad (510) \quad (488) \quad (18.09) \\
 &\quad + 051\text{GD/TA} + 034\text{GTS/TA} + \text{State Dummy Variables} \\
 &\quad (29) \quad (.43) \quad R^2 = 200, F = 15.12, N = 740, \\
 \text{SPS Sec./TA} &= 276 - 222\text{D/TA} - 187\text{T/TA} - 030\text{S/TA} - 220(1/\text{TA}) \\
 &\quad (504) \quad (-311) \quad (-131) \quad (-48) \quad (-754) \\
 &\quad + 462\text{GD/TA} + 003\text{GTS/TA} + \text{State Dummy Variables} \\
 &\quad (412) \quad (.06) \quad R^2 = 168, F = 12.24, N = 740, \\
 \text{Total Loans/TA} &= 663 - 184\text{D/TA} - 071\text{T/TA} - 102\text{S/TA} - 132(1/\text{TA}) \\
 &\quad (688) \quad (-147) \quad (-67) \quad (-93) \quad (-258) \\
 &\quad - 410\text{GD/TA} - 055\text{GTS/TA} + \text{State Dummy Variables} \\
 &\quad (-208) \quad (-61) \quad R^2 = 179, F = 13.21, N = 740, \\
 \text{Cash Due/TA} &= 132 + 152\text{D/TA} - 123\text{T/TA} - 079\text{S/TA} - 040(1/\text{TA}) \\
 &\quad (490) \quad (432) \quad (-420) \quad (-257) \quad (-277) \\
 &\quad - 151\text{GD/TA} + 055\text{GTS/TA} + \text{State Dummy Variables} \\
 &\quad (-273) \quad (1217) \quad R^2 = 377, F = 36.61, N = 740.
 \end{aligned}$$

where U.S. Sec. = U.S. Government securities, SPS Sec. = state and political subdivision securities, TA = total assets, D = total demand deposits, T = total time deposits, S = total savings deposits, GD = government demand deposits, GTS = government time and savings deposits.

**Table 2**  
**REGRESSION RESULTS: IMPACT ON HOLDINGS OF GOVERNMENT**  
**SECURITIES OF A \$1 INCREASE IN DEPOSITS**

<u>Deposits</u>	<u>U.S. Government Securities</u>	<u>State and Local Securities</u>	<u>Loans</u>	<u>Cash</u>
Total Demand	.382	-.222	-.184*	.152
Total Time	.475	-.187		
Total Savings	.473	-.030*		
Government Demand	.051*	.462	-.410	-.151
Government Time and Savings	.034*	.003*		

\*Statistically insignificant variables. All others are statistically significant at the .005 level of confidence.

securities by **\$.462** in response to a \$1 increase in government demand deposits. This is the net effect of the pledging requirement, since if government demand deposits increase by \$1 and total demand deposits remain fixed, non-government demand deposits decline by \$1. In the absence of pledging requirements, the effect of this change in the private-government composition of deposits would be zero. Table 2 also shows that changes in government time and savings deposits have no impact on holdings of state and local securities. The regression analysis indicates that the impact of a \$1 change in the private-government composition of time and savings deposits leads to an increase in holdings of state and local securities of only **\$.003**, an amount that is too small to be statistically significant."

The analysis also indicates that pledging requirements do not affect holdings of U.S. Government securities by banks. The estimated

<sup>17</sup> However, if the security portfolio is broken down by remaining maturity classes, the existence of the pledge on government time and savings deposits will cause banks to hold a significant, but small, extra amount of short-term state and local securities. These results are not reported here.

changes in holdings of U.S. Government securities resulting from a \$1 change in the ownership of both demand deposits and time and savings deposits are too small to be statistically significant. However, changes in total deposits do result in changes in holdings of U.S. Government securities. For example, an increase of \$1 in demand, time, and savings deposits results in increases in U.S. security holdings of **\$.382**, **\$.475**, and **\$.473**, respectively. Thus, the results suggest that banks use as a pledge against government deposits the U.S. Government securities they would have held anyway in the absence of pledging requirements.

#### Effect on Other Assets

The above results indicate that because of pledging requirements, the security portfolio of banks is **\$.462** larger for every dollar of government demand deposits than it would be with no pledging requirements. For a given level of total bank resources, this means that holdings of other assets—such as cash and loans—are lower. Regression analysis, similar to the above, was conducted to examine the impact on cash and total loans. As shown in Table 2,

pledging requirements meant a reduction of **\$1.410** in loans and **\$1.151** in cash for each dollar in government demand deposits. That is, if total demand deposits remain fixed, and a change in the ownership of demand deposits occurs so that government deposits increase by **\$1** and nongovernment demand deposits fall by **\$1**, loans would fall **\$1.410** and bank cash would fall **\$1.151**.

### Effect on Liquidity

Pledging requirements also may have an effect on bank liquidity. The extent of the effect, though, depends upon the definition of liquidity and the effectiveness of pledging requirements. The broadest definition of liquidity, which is employed here, is the sum of cash plus the security portfolio in excess of required reserves and pledged securities. The effect of the pledging requirement is assumed to be the differential impact on assets of a change in government deposits compared to a change in nongovernment deposits.

As summarized in Table 2, a shift in the ownership of **\$1** of demand deposits from the private to the government sector results in an increase in state and local securities of **\$1.462** and a reduction in cash of **\$1.151**. That is, the sum of cash and the security portfolio rises by **\$1.311** (**\$1.462** minus **\$1.151**) as a result of the shift. However, the effect on liquidity is not simply **\$1.311**—it will be **\$1.311** minus any change in required reserves and pledged securities. Since government and nongovernment deposits are subject to the same reserve requirements, there is no effect on required reserves resulting from a change in the ownership of deposits. The situation is obviously different, however, for the amount of securities that must be pledged. For states in the Tenth District, as shown in Table 1, the smallest pledging ratio on state and local deposits is 50 per cent, and for five of the states at least 100 per cent. This observation, coupled

with the 100 per cent pledging ratio on Federal Government deposits, implies that an increase in government demand deposits of **\$1** and a reduction in nongovernment demand deposits of **\$1** results in an increase in the amount of securities that needs to be pledged of at least **\$1.50**. These results imply that bank liquidity is reduced as a result of pledging.<sup>18</sup>

### Effect on Profitability of Government Deposits

The existence of pledging requirements also may be expected to reduce profits because they are a restriction on the operating activities of banks. To examine this issue, an empirical investigation was made of the relative profitability of government and nongovernment deposits. Three alternative measures of net income were employed—net operating income (that is, net income before taxes, securities gains or losses, and loan loss provision), income before taxes, and net income after taxes.<sup>19</sup> These income measures were regressed in turn on asset and liability items drawn from consolidated reports of condition for member

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<sup>18</sup> If the definition of liquidity is restricted to cash due plus securities with a maturity of less than five years less required reserves and pledged securities, the negative effect on liquidity of the pledging requirement is even larger. According to results not reported in the text, a shift of **\$1** in the ownership of demand deposits from the private to the government sector results in an increase of about **\$1.20** in cash due and securities with a maturity of less than five years. This value is far below the increase in the value of the securities that needs to be pledged.

<sup>19</sup> Net income before taxes, securities gains or losses, and loan loss provision is essentially the value of services sold, minus operating costs exclusive of loan loss provision. From the Consolidated Report of Income form for 1977 it would be given by "income before taxes and securities gains or losses" plus "provision for possible loan losses." Net income before taxes is calculated from the 1977 Consolidated Report of Income by adding "securities gains (losses), gross" to "income before taxes and securities gains or losses."

banks of the Tenth Federal Reserve District for, 1977.<sup>20</sup>

The results indicate that pledging requirements raise the cost of government time and savings deposits by \$.012 in terms of net operating income, \$.030 in terms of net income before taxes, and \$.020 in terms of net income after taxes. The effect of pledging on the cost of each dollar of government demand deposits is \$.013, \$.017, and \$.015 in terms of net operating income, net income before taxes, and net income after taxes, respectively. These results are consistent with the view that government deposits are less profitable than private deposits.<sup>21</sup>

### The Variability of Government Deposits

Given a stable and predictable relationship between government deposits and various asset items, pledging requirements will only result in shifts in the asset portfolio if government deposits grow at a different rate than nongovernment deposits. The extent of any difference in the growth rates of government and nongovernment deposits can be examined by considering the fraction of total deposits owned by the government sector. If the fraction rises,

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<sup>20</sup> The asset items were taken to be gross loans, U.S. securities (sum of U.S. Treasury, U.S. agency and corporations' securities), the securities of state and political subdivisions, demand deposits at U.S. banks, and other noncash assets (a residual item amounting to total assets less loans, all government securities, and cash due from banks). The liability items were taken to be total demand deposits, total time deposits, total savings deposits, other liabilities (total liabilities minus deposits), government demand deposits, and government time and savings deposits. A scale variable (the inverse of total assets) and state dummy variables were also included.

<sup>21</sup> Strictly speaking, this conclusion only follows with any degree of confidence with regard to time and savings deposits. The effect of the pledging requirement on the cost of government demand deposits is not statistically significant.

government deposits are growing faster; if the ratio falls, private deposits are growing faster. In Chart I, the behavior of government deposits relative to total deposits is recorded separately for member and nonmember banks of the Tenth District from 1969 to 1977. As the chart shows, there have been substantial shifts in the relative rates of growth of government and private deposits.<sup>22</sup>

### CONCLUSION

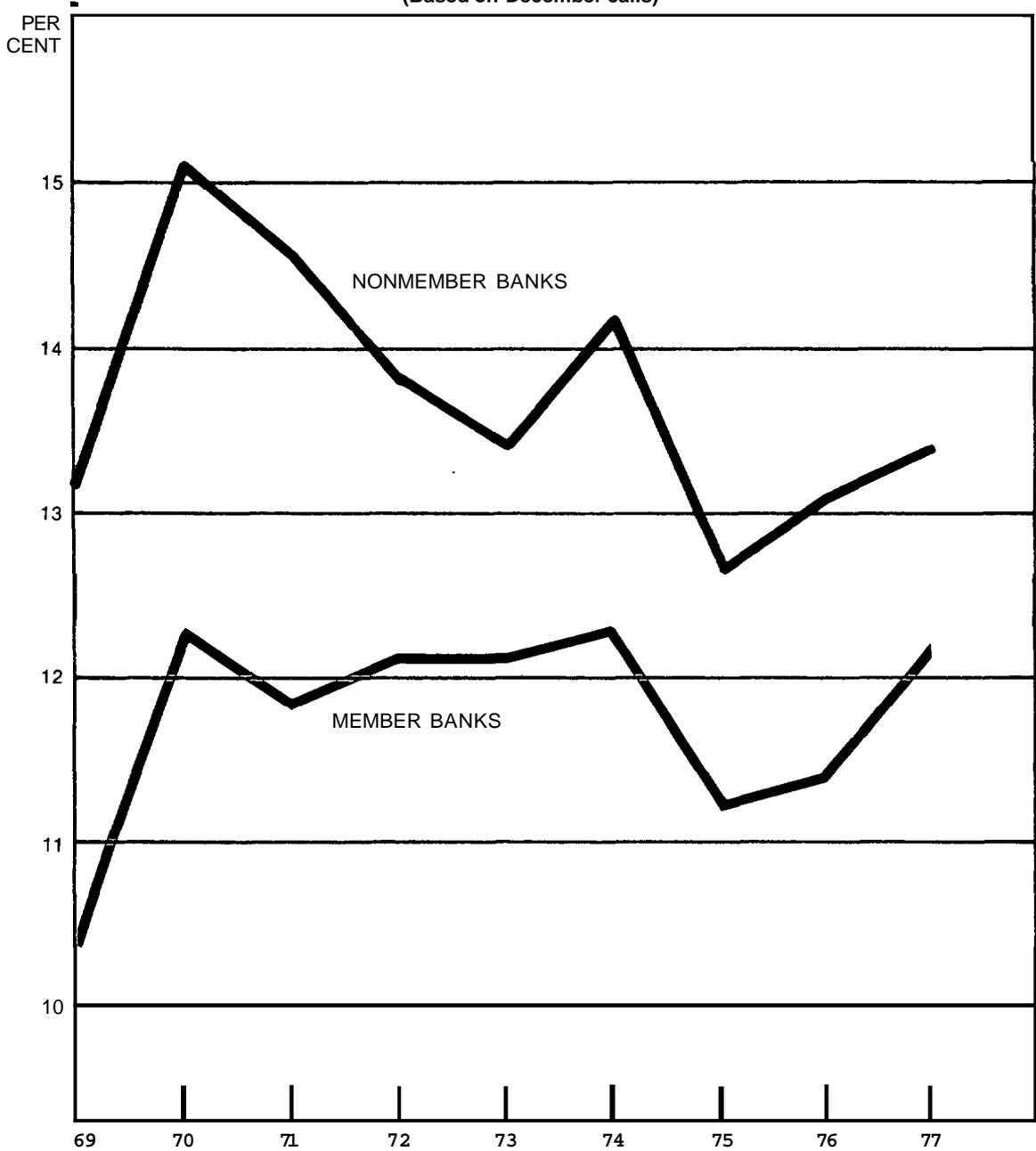
A major conclusion of this study is that demand by banks for state and local securities is greater as a result of the presence of pledging requirements. However, this strengthening in the demand side for state and local securities necessarily implies a weakening in banks' demand for other asset items. The item bearing the principal burden of this displacement was found to be private loans. Therefore, any argument advocating the use of pledging requirements on the grounds that they make government borrowing easier has to be tempered with the realization that they also make borrowing by the private sector more difficult.

Another conclusion is that pledging

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<sup>22</sup> In late 1978, moreover, there was a substantial shift in the ownership of liabilities at commercial banks due to a change in Treasury and Federal Reserve policy. As of November 2, 1978, Treasury tax and loan account depositories were allowed to administer their accounts under either a note option or a remittance option. See Footnote 1. Although the options have a differential impact on reserve requirements, they do not have a differential impact on holdings of acceptable collateral. Both options require that balances be secured by the pledge of acceptable securities. For a summary of these changes and an analysis of their likely impact on Federal Reserve management of bank reserves, see Joan E. Lovett, "Treasury Tax and Loan Accounts and Federal Reserve Open Market Operations," Federal Reserve Bank of New York, *Quarterly Review*, Summer 1978, pp. 41-46.

Chart 1  
GOVERNMENT DEPOSITS AS A PERCENTAGE OF TOTAL DEPOSITS  
AT TENTH DISTRICT BANKS  
(Based on December calls)



requirements tend to reduce the liquidity of banks below levels that would exist in their absence. Although the demand for government securities was increased as a result of pledging requirements, the increase was found to be less than the value of securities that needed to be pledged. This result, together with the finding concerning the displacement of cash, means

that pledging requirements reduce bank liquidity, when the latter is defined as cash plus securities held in excess of pledging requirements. Therefore, the adverse effect of pledging requirements on bank liquidity should be carefully considered by those advocating the pledging of eligible collateral as a means of securing government funds.