

COMMERCIAL BANK FINANCING THROUGH
THE USE OF CAPITAL NOTES

by 0285

JOHN JOSEPH HERYNK

B. S., Kansas State University, 1968

A MASTER'S REPORT

Submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1970

Approved by:


Major Professor

ACKNOWLEDGEMENT

The writer gratefully acknowledges the assistance of his major professor, Professor Donald F. DeCou, who provided encouragement and advice, through the various stages in the preparation of this report.

Appreciation is also extended to Dr. Edgar S. Bagley and Dr. Eugene J. Laughlin for serving as committee members and for guidance in preparing the final manuscript.

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I. INTRODUCTION

One of the most significant forces to have come about in the commercial banking industry in recent years has been the large demand for new sources of funds. The most important of these sources has been time and savings deposits. Over this same time period the growth in the total amount of time deposits and savings deposits has exceeded the growth in total bank capital. Time deposit growth especially has increased at a faster rate than the amount of growth in total bank capital.

Commercial bank capital ratios have been coming down for a century and a half. The capital to total assets ratio has stayed below 10% for the last 20 years. Also, the ratio of capital to deposits has closely paralleled this trend. Accompanying the downward drift of bank capital ratios has been a steady evolutionary change in attitudes of bankers and supervisory officials alike. These attitudes have focused on the amount of capital that is necessary for safe and efficient banking.

The pronounced changes in the standards of capital adequacy over the past half century have reflected not only the shifts that have occurred in the structure of banks' assets, but also the changes in the economic and financial environment in which banks operate. The broad economic environment in which banks operate today has also been affected by the ever changing

monetary and fiscal policies. Through the use of more efficient monetary and fiscal policies, such as the establishment of the Federal Deposit Insurance Corporation (FDIC), today's banker has discovered that the relative amount of capital that is necessary for the safe and efficient operation of the banking system is far less than was considered necessary prior to the 1930's.

One of the subjects most likely to engage the attention of bankers in future years is the amount of bank capital that will be needed to support the expansion of bank credit and deposits in a growing economy. Parallel to this question, bankers must also ask the question of how such capital should be provided.

Capital funds have been necessary in a commercial bank for three types of needs--(1) to obtain a charter and begin operations, (2) to provide funds to sustain operations, and (3) to provide protection for creditors in case of liquidation. Technically, the funds represented by a bank's capital stock have not been available for protection of creditors except in liquidation.¹

With lower capital adequacy, one has been faced with the problem of how to increase capital at a faster rate than is

¹Richard V. Cotter, "Capital Ratios and Capital Adequacy," The National Banking Review, Vol. 3, No. 3, (March, 1966), p. 344.

possible through retained earnings alone. If one by-passes the traditional means of increasing capital through retained earnings, one has been faced with two alternatives; new common or preferred stock financing and straight or convertible debenture bond issues.

Throughout this paper, capital notes and subordinated debentures are used to mean the same debt instrument. Like subordinated debentures, capital notes are subordinated to the claims of the bank's depositors. Capital notes and subordinated debentures are a form of unsecured indebtedness, usually in long term obligations, but capital notes are characterized by a shorter, less formal agreement than a debenture. Another distinguishing feature of capital notes as compared to debentures is the avoidance of payment of the state issuance tax normally levied on debenture issues. Thus, the issuance tax consideration has influenced most issuing banks to choose capital notes rather than subordinated debentures.

It is the intent of this report to examine the use of capital notes by commercial banks as a means of raising capital. The use of capital notes as a means of raising additional financing is a relatively recent approach by commercial banks to expanding their capital base. In December, 1962, the Comptroller of the Currency permitted national banks to consider capital notes and debentures as having equal standing with other capital in meeting supervisory standards. Since that time, bank debt financing has expanded rapidly (Table 1).

Table 1.--Capital and Deposit Accounts
of National Banks

(dollar amounts in millions)				
	<u>1963</u>	<u>1967</u>	<u>1968</u>	<u>% change 1963-1968</u>
capital notes and debentures	\$ 265	\$ 1,235	\$ 1,256	374%
preferred stock	25	55	58	132
common stock	3,959	5,312	5,694	44
surplus	6,700	8,832	9,747	45
undivided profit	2,529	3,549	4,051	60
reserves	290	747	718	148
total capital accounts	13,548	19,730	21,524	59
demand deposits	89,389	123,038	138,629	55
time and savings deposits	61,434	108,336	123,255	101

Source calculated from: William B. Camp, Annual Report 1968 of the Currency (Washington, D.C.: U.S. Government Printing Office, 1969), p. 2. James J. Saxon, 101st Annual Report 1963 Comptroller of the Currency (Washington, D.C.: U.S. Government Printing Office, 1964), p. 37. Stanley Silverberg, "Bank Borrowing: An Analysis of Recent Experience," The National Banking Review, Vol. 2, No. 2, (December, 1964), pp. 232-233.

From 1963 to December, 1968, capital notes and debentures were issued primarily by larger banks. During 1968, a total of 4,716 national banks issued debt financing. Of the 4,716 issuing banks, 149 banks had deposits of \$100.0 to 499.0 million, while 1,018 banks had deposits over \$500.0 million. In contrast, no bank issued capital notes or debentures with deposits of less than \$5.0 million.¹

Until the onset of the depression, senior capital (debt instruments and preferred stock) was seldom used by commercial banks. Typically banks were capitalized only with common stock and retained earnings. As banks began to fail during the 1930's, the Reconstruction Finance Corporation (RFC) was established as a government corporation to lend to banks. In 1933 further action was taken when the Emergency Banking Act authorized the RFC to purchase preferred stocks of banks. Furthermore, this act also permitted the RFC to purchase bank capital notes and debentures--obligations which were subordinated to deposit liabilities.²

Since the creditor position of debenture holders typically is subordinated to depositor claims, debentures have stood in the same relationship to deposits as have equity investment in the

¹William B. Camp, Annual Report 1968. Report by the Comptroller of the Currency, Washington, D.C., August 29, 1969, p. 209.

²Paul F. Jessup, Innovations in Bank Management: Selected Readings, New York: Holt, Rinehart and Winston, Inc., 1969, p. 187.

event of bank failure. Capital notes or debentures have sometimes been referred to as "debt that serves as equity." This has been attributed to the fact that debentures have some characteristics of a bond and some characteristics of preferred stock. Preferred stock has been able to afford depositor protection, avoid fixed commitments, and provide a permanent source of capital without diluting the equity position of the common shareholders. On the other hand, debentures have accomplished many of the same results but have an additional advantage in that interest costs are deductible for income tax purposes. However, they have a fixed commitment and do not provide a permanent source of capital.

The vast majority of bank debentures have a 20 to 25 year maturity, with the latter figure most common among larger banks. Furthermore, most debenture issues have included a so-called sinking fund provision which, in most cases, requires compulsory prepayment of 80 to 100 percent of the issue in annual installments beginning at the end of the sixth year.¹

In addition to considering capital notes or debentures as a source of capital, one may also view these debt instruments as a source of funds similar to long-term deposits. In other words, one could have compared them to long-term certificates of deposit (CD's) with a fixed maturity. Viewed in this way, one has been able to observe additional cost savings to the issuing

¹Stanley Silverberg, "Bank Borrowing: An Analysis of Recent Experience," The National Banking Review, Vol. 2, No. 2, (Dec., 1964), p. 228.

bank in two different ways. First, for member banks there has been no reserve requirement at the Federal Reserve. Second, because these debt instruments have longer terms to maturity than certificates of deposit, there has not been as great a need for secondary reserves to provide liquidity support for the obligations. These secondary reserve investments are often low yielding assets.¹

Commercial banks have had a long history of operating with low rates of return on assets. In order to afford returns on bank equity comparable to returns on the equity investments in nonfinancial corporations, commercial banks have historically relied heavily on leverage through deposit liabilities. Thus, commercial banks have had a long history of operating with substantially more leverage than do most nonfinancial corporations.

It has been argued by commercial bankers that through the issuance of capital notes it is possible to earn a higher rate of return on the equity capital investment in a bank than if one finances through equity alone. Through the use of financial leverage, a commercial bank has combined the use of borrowed funds along with equity funds in order to meet the capital needs of the bank. If the return on acquired assets exceeds the cost of borrowing, then the commercial bank, through "favorable" leverage, has been able to raise its rate of return on equity. A typical member bank has earned a return of approximately 9% after taxes on its equity capital investment.

²Jessup, Innovations in Bank Management: Selected Readings, p. 193.

Thus, if it raised new equity capital by the sale of common stock, the new capital costs the bank 9% even though the new stockholders only receive a portion of this 9% in the form of dividends. But, if the bank had sold capital notes or debentures at a before-tax interest rate of 5%, the after-tax cost to a bank in the 48% bracket would have been around 2.4%.

In the previous example, one has assumed that the primary reason for the use of capital notes or debentures is to increase a bank's capital base in order to support deposit growth and meet rising loan demands. Therefore, if 2.4% is subtracted from the 9% return the bank earns on this capital, 6.6% has accrued to the old shareholders. This is on the assumption that as soon as the debenture capital is acquired by the bank, it has been able to earn the full 9% return on the use of the new capital plus the 9% return on equity capital that they had previously received. This accounts for the fact that the rate earned on common equity (Table 2) can be increased from 9.2% to 12.2% by moving from a zero to a 30% debt position.

Although these figures have been somewhat outdated, they still show the relative increase in the rate of return to common equity through the use of leverage. In addition to leverage, two other advantages made possible through debenture financing have been that the stockholder's proportionate interest in the bank's earnings is not diluted and the stockholders do not lose any of their managerial control.

Table 2.--Leverage Effect of Debenture Capital All Member Banks - 1962.

(Amounts in millions)							
Assumed debt position	Average capital accounts	Capital deben- tures	Common equity	Net operating earnings ¹	Estimated ² debenture interest cost	Earnings after interest cost	Rate earned on common equity
0%	\$19,223	\$ ---	\$19,223	\$1,774	\$ --	\$1,774	9.2%
10%	19,223	1,922	17,301	1,774	46	1,728	10.0%
20%	19,223	3,845	15,378	1,774	92	1,682	10.9%
30%	19,223	5,767	13,456	1,774	138	1,636	12.2%
40%	19,223	7,689	11,534	1,774	185	1,589	13.8%
50%	19,223	9,611	9,612	1,774	231	1,543	16.1%

¹After estimated 52% applicable income tax rate.
²After tax and assuming 5% coupon.

Source: Edward J. Mock, "A Further Look at Capital Notes," Banking, Vol. LVIII,
No. 10, April 1966, p. 52.

The point has been raised that capital notes are not capital in the same sense as common stock. The issuance of capital notes creates a debtor-creditor relationship and difficulty can occur if the interest is not paid on the capital notes, not to mention the obligation to repay the principal at maturity. In the case of capital notes, a missed interest payment may result in foreclosure, whereas a missed dividend on cumulative preferred stock will suffer far less serious consequences. Furthermore, the issuance of capital notes may have reduced the bank's overall ability to borrow, since the total amount of debenture financing may not exceed the capital stock plus one-half of surplus for national banks.¹

The Board of Governors of the Federal Reserve System has ruled that debentures do not constitute "capital stock" or "surplus" for various provisions of the Federal Reserve Act. They have further stated that under their legal interpretation member banks issuing convertible debentures have not been required to subscribe to additional Federal Reserve Bank stock until such debentures are converted into capital stock.²

As previously mentioned, most subordinated debentures have a maturity of 20-25 years. This has caused somewhat of a

¹Wesley Lindow, "Bank Capital and Risk Assets," The National Banking Review, Vol. 1, No. 1, (Sept. 1963), p. 45.

²Eugene F. Brigham and Michael Kawaja, "The Use of Convertible Debentures in Commercial Bank Financing," The Bankers Magazine, Vol. 150, No. 4, (Autumn 1967), p. 32.

problem, not only in banks but in all businesses, in that it is much more difficult to predict cyclical fluctuations, associated with longer maturities, as compared to seasonal fluctuations associated with shorter maturities.

First, the loans and demand deposits of commercial banks show greater seasonal fluctuations than do the assets and liabilities of nonfinancial businesses. Traditionally, banks have solved this problem by remaining more liquid than nonfinancial businesses. With new means of capitalization, through capital notes, the liquidity position of banks is being challenged.

With outstanding capital notes, banks have an obligation to pay interest at least twice a year. In order to prevent foreclosure a bank must meet all these interest payments promptly. The very nature of a commercial bank has been to have a widely varying demand for loans and thus demand deposits. With this problem of wide seasonal fluctuations, banks have been faced with the added risk of not meeting one of the interest payments on capital notes. This would not have been a problem had the bank issued preferred stock. Preferred stock dividends could have been postponed to a later date with little immediate financial difficulty.

Another problem that might arise from the issuance of subordinated debentures is associated with a poor estimate as to the time of sale of capital notes. If a commercial bank were to become locked into a high interest rate or "cost of

capital," and if interest rates were to fall, they would probably become riskier in regards to the solvency of the bank. This problem, coupled with the seasonal fluctuations in demand deposits and loans, could conceivably cause a bank to fail.

In his article, "A Critical Look at Capital Notes," Martin Kern has listed five reasons he believes that capital notes should be questioned. (1) Kern has stated that some attention should be given to the fact that the Federal Reserve Board of Governors does not share the prevailing enthusiasm for capital notes. According to Kern, the reason the Federal Reserve Board disapproves has been because subordinated debentures are repayable debt, not "capital" and "surplus". The Federal Reserve Board has stated that capital notes or debentures do not constitute capital, capital stock, or surplus for the purposes of provisions of the Federal Reserve Act. (2) Kern has also stated that the widespread use of bank debentures during times of prosperity tends to eliminate the safeguard of their use during a period of great stress. However, with the development of the FDIC and sounder methods of implementing monetary and fiscal policies, this point may not be as relevant as it has been in the past. (3) Kern has further stated that debt means risk no matter how you slice it. Kern has pointed out that some of the most enduring of the nation's blue chip companies have achieved notable success without the use of debt financing. With the addition of debentures (which are subordinated to deposits), commercial

bank equity capital has had double responsibility in the protection of both deposits and debentures. (4) According to Kern, the fact that debt has been suitable for corporate capital structures generally, does not necessarily mean that it is suitable for commercial banks. Changes in the cost of money have affected both revenues and expenses, a characteristic that is applicable to financial institutions. If market interest rates dropped, the value of the capital notes would be even less because of the adverse effect on profitability. (5) Possibly the most telling criticism of capital notes has reflected less on the issuer than on the lender. Kern has stressed that the lender must take a back seat to deposits, bankers acceptances and letters of credit, and obligations to other creditors. He has also stated that the lender has received a twenty to twenty-five year nonrated capital market instrument with wide risk variation that is frequently not marketable because it was privately placed.¹

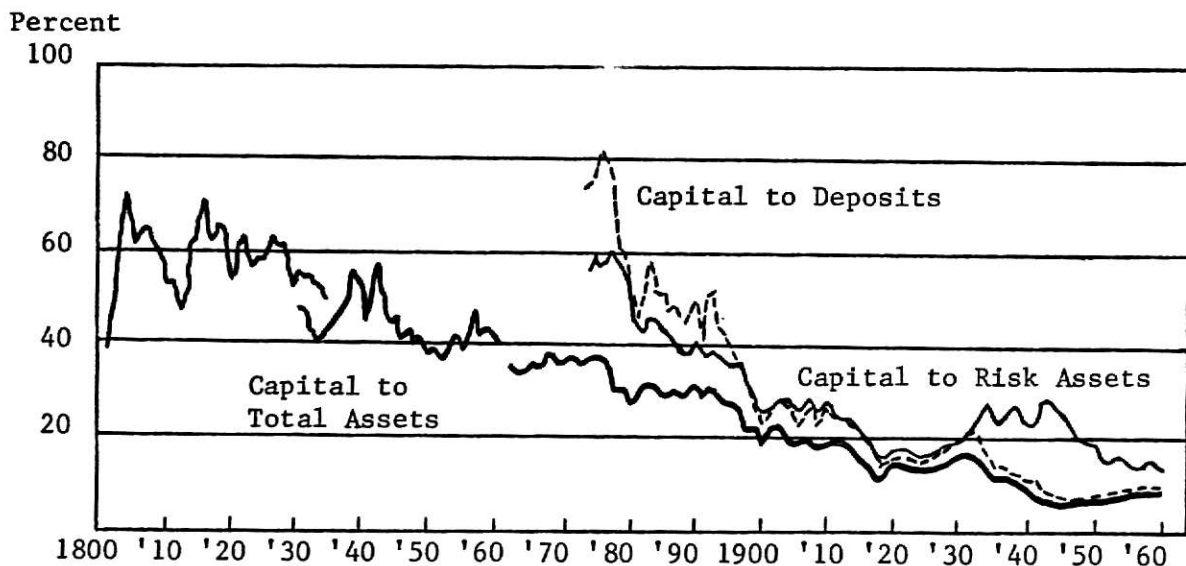
¹Martin Kern, "A Critical Look at Capital Notes," Banking, Vol. LVIII, No. 5, (Nov., 1965), pp. 50-51.

II. HISTORICAL CHANGES IN BANK CAPITAL AND CAPITAL ADEQUACY

In order to gain some knowledge of capital adequacy it may prove profitable to study recent trends in bank capital ratios. Traditionally, the capital adequacy of banks has been analyzed as a ratio of capital to deposits, risk assets, and total assets.

Generally speaking, the basic capital ratios have been coming down for a century and a half (Fig. 1.). During the

Figure 1.—Bank Capital as a Percent of Assets
and Deposits 1803-1963



Source: Wesley Lindow, "Bank Capital and Risk Assets," The National Banking Review, Vol. 1, No. 1, (September 1963), p. 30.

early 1800's, the ratio of capital to total assets ranged around 60% and has steadily declined thereafter. By the early 1900's this ratio had fallen to a level of approximately 20%. With the expansion of bank assets and the war years, capital-to-total assets reached a low of 6% in 1945. Some improvements have occurred in the last 20 years but the ratio has stayed below 10 percent.¹

The ratio of capital to deposits have followed a closely parallel trend, running somewhat above the ratio of capital to total assets. By 1945 this ratio had fallen to just over 6%. Recently, the capital-deposits ratio has risen to approximately the 10% level.²

The ratio of capital to risk assets, which are defined as total assets less cash and United States Government securities, had run close to 60% in the late 1870's, but declined to about 25% after the turn of the century. Rapid loan expansion during and following both world wars caused the ratio of capital to risk assets to reach new low levels. By 1963 the ratio of capital to risk assets had fallen to an all time low of 14 percent.³

¹Lindow, "Bank Capital and Risk Assets," p. 30.

²Ibid.

³Ibid., pp. 30-31.

One of the primary responsibilities of a commercial bank has been to maintain an adequate degree of liquidity. The major problem that has arisen is the fact that it is very difficult to measure "adequate" liquidity in quantitative terms. In order to arrive at some sort of quantitative measure for liquidity it has become necessary to estimate variations in deposits and loan demands.

If a bank has failed to maintain an "adequate" level of liquidity it faces the obvious difficulty of not being able to meet deposit withdrawals. On the other hand, if a bank has maintained excess liquidity it may retard bank earnings to the stockholders.

Liquidity ratios of commercial banks have declined due to an increased demand for tax-exempt securities as opposed to U.S. Government securities. Thus, another reason for declining liquidity ratios has been the increase in lengths of maturities associated with tax-exempt securities.¹

The acceptance of greater risks, through lower liquidity ratios, has not stirred the attention of bankers as much as might be anticipated. Most bankers seem to have felt that less liquidity is necessary today as compared to the past, because of more efficient monetary and fiscal controls. More efficient controls have been reflected in such areas as the Federal Reserve Board of Governors and the establishment of the FDIC.

¹Jessup, Innovation in Bank Management, pp. 66-67.

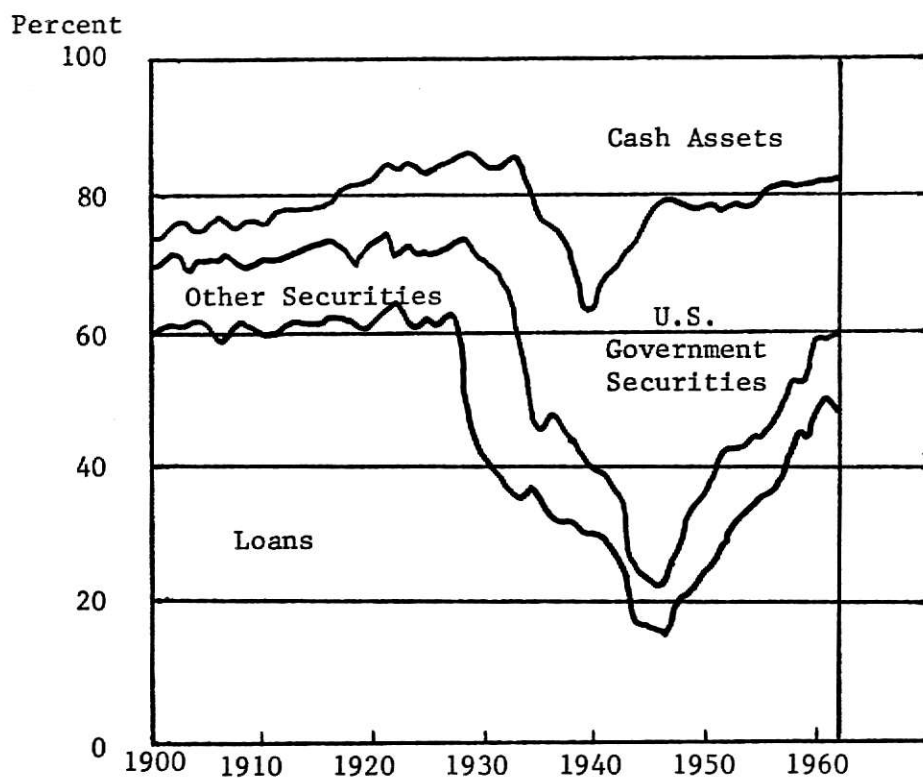
In the years following World War II, loans and securities, other than U.S. Government securities, have expanded rapidly. Since World War II, commercial bank investments in U.S. Government securities have continued to decline, not only in absolute size, but also as a percentage of bank assets, while loans have continued to advance rapidly.

One reason for this redistribution of assets has been the natural tendency for banks to become more profit-oriented as compared to liquidity-oriented. Thus banks have shifted from low yielding U.S. Government securities to higher yielding commercial loans and tax-exempt securities (municipal bonds).

In economic terms, the most important reason for this shift has been due to the fact that the Federal debt was substantially reduced in the early postwar period. Furthermore, the Federal debt has grown far less rapidly than the debt of business firms, consumers, and state and local governments (Fig. 2.).

There has been no specific rule to follow in regards to the adequacy of a bank's capitalization. However, as mentioned earlier, there have been ratio analyses developed that can assist banks in initiating efforts to determine their individual capital needs. In recent years, commercial banks have maintained a relationship of capital to total deposits close to the traditional one-to-ten ratio. Since 1962 banks have increasingly issued more debt financing in the form of

Figure 2.--Percentage Distribution of Assets All
Commercial Banks 1900-1962



Source: Wesley Lindow, "Bank Capital and Risk Assets," The National Banking Review, Vol. 1, No. 1, (September 1963), p. 31.

capital notes and debentures in order to bring capital levels back up to "adequate" levels in relation to demand deposits. A rapid growth in deposits has created a need for more bank capital. In December 1962, the Comptroller of the Currency permitted national banks to consider senior capital as having equal standing with other capital in meeting supervisory requirements. Since that time, there has been a growing popularity of debt financing by commercial banks.

While there may be no quantitative measures that are generally acceptable as measuring capital adequacy for a commercial bank, there probably is a point at which management or supervisory authorities suggest that the amount of capital is too low. At the same time, there is probably a point at which bankers and supervisory authorities suggest more bank capital is necessary in order to increase bank assets at a rate comparable to the growth of the economy as a whole. Therefore, the problem of "adequate" bank capital is probably a question of how much and for what reasons rather than merely a question of the more capital the better.

III. ISSUING CAPITAL NOTES TO RAISE NEW CAPITAL

Until the Comptroller's recent ruling about capital debentures, banks had traditionally raised additional capital funds by selling new shares of common stock or by retention of earnings. With funds obtained by retention of earnings, managers tried to maximize the return on shareholders' equity within the context of an acceptable degree of risk. At the same time, management maintained complete and independent control in formulating banks' business policies. With the sale of new shares of common stock, a stockholder would be required to subscribe to his proportionate share of the new shares in order to maintain his interest in the bank's future earnings.

Through the use of capital notes or debentures, it has been possible for the issuing bank to increase the earnings of the common stockholders. This phenomenon has become known as "favorable" leverage.

Leverage has been referred to as the practice whereby business firms finance the acquisition of assets through borrowing in order to increase the ratio of assets to equity investment. Although many nonfinancial firms have been primarily equity-financed, for commercial banks, leverage--through deposits--necessarily plays a major role in operations.

Earnings on bank assets typically have been substantially less than the cost of bank capital.¹ However, the earnings margin on deposits (the difference between earnings on the investment of deposit funds and their cost of acquisition and retention) has tended to raise the rate of return on equity investment to a level which equals or exceeds the cost of bank capital. As long as deposit derived funds are invested profitably, the higher the ratio of deposits to capital, the higher will be the return on bank capital, other factors held constant.²

The major attractiveness of debentures probably has been their potential for increased leverage. Furthermore, this attractiveness has existed not only for thinly capitalized banks, but for banks with ample capital also. Under both situations, banks have been able to raise dividends and substitute debt for some portion of equity. While debentures have provided stockholders with potential for increased leverage, they have also provided additional protection for depositors.

Most banks that have sold capital notes appear to have done so in order to meet a capital need. In this sense one could conclude that capital note financing was considered as a substitute for equity financing. Furthermore, capital notes have been favored by commercial bankers as opposed to other sources of senior security (namely, preferred stock) in that

¹The term "cost of bank capital" refers to the return that must be earned on stockholder investment to attract, maintain, or justify an investment.

²Stanley Silverberg, "Bank Debenture Financing: A Comparison of Alternatives," The National Banking Review, Vol. 3, No. 1, (Sept., 1965), pp. 45-46.

interest costs are deductible for income tax purposes. Thus, commercial banks interest costs are shared by the Federal Government. In contrast, dividends on preferred stock are not deductible by commercial banks for income tax purposes.

The factor that has made debenture capital profitable has been the fact that for each dollar in the capital base there is a multiple of \$14 of more of deposit funds on which the typical member bank earns approximately 1%. Therefore, one of the prime candidates for capital notes or debentures has been the bank whose capital to deposits ratio has been out of line with management's desired level.¹

Although leverage, through the use of capital notes or debentures, has appeared attractive in times of high earnings, it can involve a dangerous drain on the earnings of a bank in times of adversity. Thus, during a period of low earnings, a bank might experience difficulty in meeting the interest requirement on outstanding debt issues. Likewise, of major importance to the investor has been the sphere of restrictions imposed on banks to prevent floating additional debt financing which would be equal to or senior to the present outstanding issue. However, for those who oppose the issuance of debentures, the long-term fixed cost associated with debt has remained the paramount objection.

¹Mock, "A Further Look at Capital Notes," p. 122.

The Comptroller has granted national banks permission to include capital notes and debentures as part of the total capital funds for the purpose of computing loan limits. However, the Board of Governors of the Federal Reserve System have ruled that capital notes and debentures do not constitute a part of a bank's capital stock or surplus. Therefore, the issuance of capital notes may reduce the bank's overall ability to borrow, since the total amount which a national bank may borrow (other than from the Federal Reserve or through Federal funds) may not exceed capital plus one-half of surplus.¹

Capital notes have been considered by some bankers as a source of funds for conversion into earning assets, much like demand deposits. Thus, if a bank does not need a larger capital base to cushion deposit growth, or if the debenture capital raised has been in excess of the present capital needs of the bank, then the debentures have not been serving their primary purpose. Therefore, rather than serving the primary purpose of backing deposits and meeting an increasing loan demand, debentures have been regarded merely as available funds. However, there has been little available evidence to support this argument in that it is doubtful that one can identify the use of bank's funds in this manner.

As a source of funds, debentures have evolved as an alternative to traditional banking practices. Banks generally

¹Lindow, "Bank Capital and Risk Assets," p. 45.

have been able to trade their own liabilities (deposits) for less liquid liabilities of others (loans and investments). In trading their own long-term indebtedness for loans and investments (for the most part having shorter maturities), banks have relied primarily on the fact that the "quality" of their liabilities have exceeded the "quality" of their customers' liabilities. As long as banks can make money on this kind of exchange without substantial risk, debentures have appeared to be an attractive source of funds.¹

The relative attractiveness of debentures as a source of funds for strongly capitalized banks has been substantially diminished with the advent of short-term unsecured bank promissory notes. On August 28, 1964, the Comptroller of the Currency sanctioned the use of promissory notes of any maturity as a normal part of the banking business. Thus, a number of larger banks have sold their own promissory notes in roughly the same manner that many large corporations sell commercial paper. Banks had already been competing in the money market through certificates of deposits (CD's). But CD's have been subject to reserve requirements, FDIC assessments, and an interest rate ceiling. Therefore, some banks have replaced a significant portion of their CD's with short-term notes in order to take advantage of savings in reserve requirements.²

¹Silverberg, "Bank Borrowing," p. 230.

²Ibid.

If properly used, bank debt capital has promised to make it possible for both bank depositors and stockholders to benefit. Failure to understand the many implications of the trend in bank debt capital could be detrimental to the longer-term best interests of the banking industry and the public. For this reason, monetary and supervisory authorities have carefully studied the use of debenture financing as a source of capital funds. Furthermore, the use of such debt capital has caused a need for re-examination by supervisory authorities as to what constitutes "adequate capital."

The Comptroller of the Currency has set a limit on debentures of approximately 33 percent of a national bank's total capitalization, including the debenture itself and the bank's loan loss reserves (50 percent of a bank's pre-debenture capitalization). The legal limit on national bank borrowing is 100 percent of capital and 50 percent of surplus, which on the average would limit a national bank to total borrowing equal to approximately 50 percent of its pre-debenture capitalization.¹

Another problem that arises in the estimate of cost of capital has been due to the fact that the rates of return to equity quite often vary considerably over the life of the firm. Therefore, it has been especially difficult to make realistic estimates beyond a few years.

In examining the cost of capital for commercial banks one must grant that banks have operated with substantially more leverage than have nonfinancial corporations. Through the use

¹Ibid., pp. 225-226.

of relatively high degrees of leverage, commercial banks have tended to raise their rate of return on equity investment to a level which equals or exceeds the cost of bank capital. The limits placed on deposit-capital ratios by the supervisory authorities may have prevented risk from becoming a factor for equity investors' consideration. However, the limited amount of available statistical evidence has not supported the view that the market penalizes a high degree of deposit leverage by setting a higher capital cost on the equity investment of banks with low capital-deposit ratios.¹

Although debenture financing may increase the rate of return earned on the equity capital investment, it also increases the possibility of bankruptcy. Thus, supervisory authorities have faced a dilemma in setting a debt-to-equity limit for commercial banks. At some point, additions to debentures may unduly impose fixed commitments on a bank and expose the bank to considerable financial risk. On the other hand, if debentures have increased the protective cushion for depositors, more debentures should provide even more of a protective cushion. However, one would also be interested in knowing how much additional "cushion" debentures would provide if the bank was forced to liquidate.

¹Ibid., p. 218.

IV. RISK AND THE COST OF CAPITAL

Traditionally it has been impossible to predict the future performance of a company and its future financial position with complete certainty. There seems to have been too many subjective variables that cannot be controlled or cannot be measured precisely. Technological change, conditions in the world economy, changes in monetary and fiscal policies, and other factors have increased the difficulty in accurately estimating the element of risk or uncertainty.

If one has assumed that the objective of a firm has been to maximize the wealth of the owners through an increase in the value of the equity investment; the firm should have moved to where the marginal cost of a bank's capital equals the marginal revenue of a bank's capital ($MC=MR$). However, the firm has only been able to move towards $MC=MR$, because the equilibrium position of $MC=MR$ has been constantly changing. Likewise, estimates of interest rates have been difficult to measure because of their constantly changing equilibrium positions in the financial markets.

In moving towards a point where $MC=MR$, increased leverage may enable a bank to raise its rate of return on equity capital. However, at some point increased leverage may cause bank stockholders to become concerned about increased risk and thus require a higher return on their equity investment. The

cost of bank capital, like the cost of capital for firms in other industries, may be considered the return that must be earned on stockholder investment to attract, maintain, or justify an investment.

Since 1962, the reduction in the cost of capital has remained the paramount advantage of capital notes. During this same period, institutional lenders have gained little experience in rating the credit risk of capital notes or debentures of commercial banks. There have been few quantitative measures to guide a lender in determining his position in the event of bank failure. However, there has been progress in measuring the margin of safety that a bank's flow of earnings provides over and above the fixed interest and principal redemption charges of capital notes.

Many financial observers believe that some degree of debt (capital notes) has had little effect on the cost of equity capital. Rather, it has reduced the overall cost of bank funds, and thus will have benefited the position of equity investors. However, if an increase in debt financing has been assumed to be synonymous with an increase in risk, the additional risk will have been borne by the debt investors and the bank stockholders.

The typical institution has approached the consideration of senior securities with the following expectation: preferred stock capital is likely to prove moderately cheaper than common

equity capital, and subordinated debt capital is potentially very much less costly than common equity capital.¹

The risk associated with the use of debt capital securities has been thought of as being twofold. First, there has been the risk associated with raising the necessary cash to pay the mandatory interest and the principal at maturity. Secondly, there has been the risk that repayment of the debt would so deplete the capital position of the bank as to threaten depositor confidence or invoke the concern of supervisory authorities.²

It has also been suggested that it is hard to see any difficulty for bank management in finding the cash for relatively small periodic interest payments. Likewise, it has been emphasized that the maturity date for debentures is a fixed and known one, which management could plan to meet. Further, it has been possible to refinance the outstanding debt issue through an advanced refunding in the years preceding the maturity date. At times, banks have experienced difficulty in refinancing CD's. Therefore, although it remains possible to refinance outstanding debt issues, it is doubtful that banks could do so without experiencing difficulty.

As a prospective investor, the bank has been interested in both risk and timing. Other things being equal, the bank has

¹Charles M. Williams, "Senior Securities--Boon for Banks?", Harvard Business Review, (July-Aug., 1963), p. 85.

²Ibid., p. 90.

selected investments with anticipated net returns that are near and relatively riskless to those expected returns that are distant and risky. In selecting alternative investments, the present value of each investment's future returns should have exceeded the cost of capital. If this course of action has been followed, the bank will have set as its goal the maximization of wealth through an increase in the value of their stocks.

All firms have financed themselves with some combination of debt-to-equity. As a firm has increased its quantity of capital, the debt-to-equity ratio has also changed. In determining the source of financing, the firm has been concerned with the cost of capital and opportunity cost. The cost of capital has been defined as the minimum rate of return required by the owners, while opportunity cost is the sacrifice of a rate of return or benefit from a rejected alternative.

One component cost of the capitalization rate has been the interest rate. U.S. Treasury Bills have been thought of as being the best definition of the pure cost of money in that they are the least risky and pay the lowest rate of interest of the spectrum of marketable securities. Furthermore, as an investment becomes riskier, the expected rate of return becomes higher. Thus, creditors' expected rates of return have been lower than the expected rates of return on equity because creditors' expected rates of returns have been less risky. Likewise, the expected rate of return to owners has been

greater than the expected rate of return to the firm because equity's expected rate of return has been more risky.

In determining a particular debt-to-equity structure for a firm, one has been interested in both the cost of capital and risk. If a firm accepts the idea that the cost of capital has been the minimum rate of return required by the owners, it then becomes concerned with the element of risk.

In a discussion of risks, one has been primarily interested in two forms: (1) business risk, and (2) financial risk. Traditionally, business risks have been associated with the inherent risks of a given industry while financial risks have been concerned with how a particular firm finances itself (all-equity financing as opposed to some combination of debt-to-equity financing).

Business risk for any given industry has been either relatively high or low. For example, there has been more risk associated with a company that operates in a cyclical industry as compared to a business that operates in a noncyclical industry. Thus, durable capital goods firms, such as manufacturers of heavy equipment used in construction, generally have performed better than a noncyclical industry in an expansion phase of the business cycle. Likewise, they have performed poorer than a noncyclical industry in the contraction phase of the business cycle. However, a business concerned with perishable staples required for everyday living has not been affected as much by changes in the business cycle.

Likewise, a record of fluctuating profits from year to year has been a sign of greater risk. The firm that has maintained a steady growth in earnings over the years has been preferred to a firm with erratic earnings, even though both firms may show the same net profit for any given year. It has been more difficult to predict the future for firms with erratic earnings as compared to firms with relatively stable growth in earnings.¹

The capital structure of a particular firm may reveal risks that could be classified as financial risks. A large portion of debt may place a burden upon the firm. Interest must be paid on the debt and the debt must be retired on schedule. No rule has been given that will fit every firm in deciding upon a safe proportion of debt. In general, a company that operates in a cyclical industry has had a smaller proportion of debt in its capital structure, due to the fact that profits have been more uncertain than for noncyclical companies. Therefore, in a noncyclical industry, such as a public utility, there has been a greater proportion of debt in the capital structure because of less risk associated with a relatively stable profit.²

In discussing the choice between debt and equity financing, it has been convenient to compare the Modigliani-Miller (MM) hypothesis with the so-called "traditional"

¹Carl L. Moore and Robert K. Jaedicke, Managerial Accounting, 2d ed.; Dallas: South-Western Publishing Co., 1967, pp. 168-169.

²Ibid., p. 169.

hypothesis. Both MM and the traditionalists have been interested in the effect that a change in debt-to-equity (financial leverage) has, or can be assumed to have, on a company's overall cost of capital. Likewise, both MM and the traditionalists have been interested in the relationship between the cost of equity capital and the cost of debt capital as compared to the overall cost of capital to the firm.

Both MM and the traditionalists have assumed that under conditions of certainty and perfect markets there would be no difference between debt and equity financing. Thus, the problem of debt financing has existed only when uncertainty exists. In discussing the MM and the traditionalists' hypotheses, it has been convenient to set up the following relationships:

\bar{Y} = expected value for net operating income

Y = potential value for net operating income

p = company's overall cost of capital

E = market value of the equity investment

D = market value of the debt investment

V = overall value of the firm

$$V = \frac{\bar{Y}}{p}$$

i = rate of interest

k_i = expected rate of return to debt

k_e = expected rate of return to equity

$$p = k_i \frac{D}{V} + k_e \frac{E}{V}$$

F = debt charges

m = pretax marginal cost of borrowing

$$m = \frac{\Delta F}{\Delta D}$$

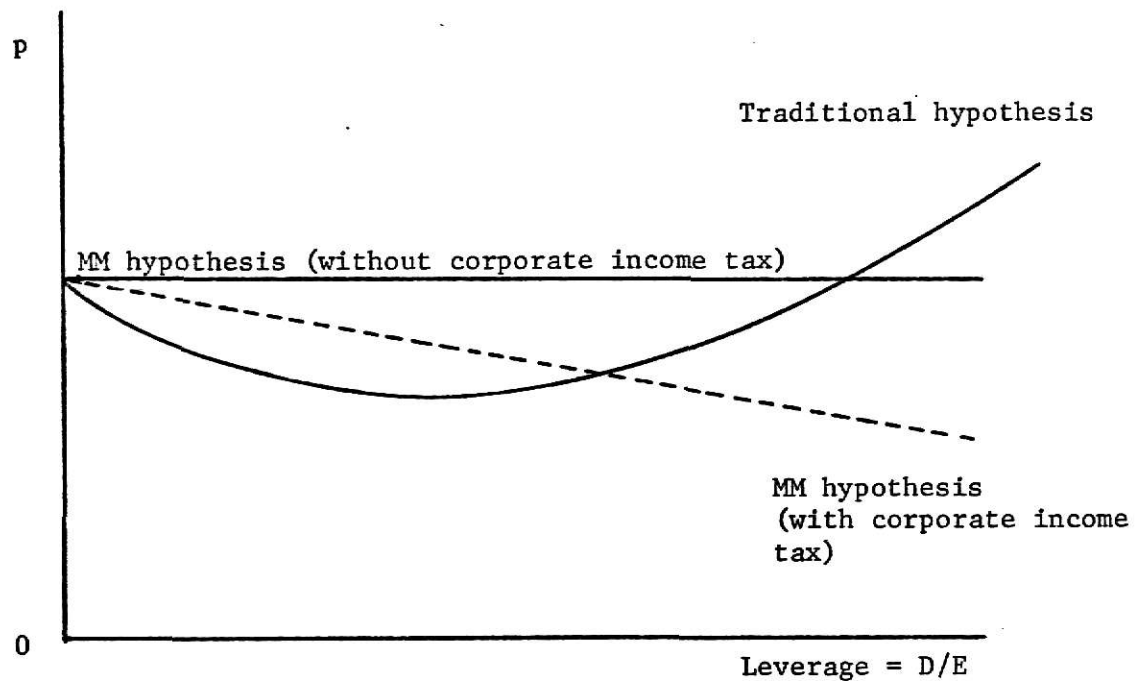
The "traditionalists" have stated that the stockholders' value per share can be increased by judicious use of debt. Modigliani-Miller have implied that, in the absence of taxes on corporate income, the value of a firm has been independent of the proportion of debt to total capitalization.¹

Therefore, the traditionalists have believed that the debt-to-equity ratio (financial leverage) has been a major factor in determining the company's overall cost of capital. The traditionalists have argued that as debt-to-equity increases the potential for bankruptcy also increases. The traditionalists have stated that this may cause the company's overall cost of capital to rise.

The MM hypothesis has stated that the total value of the firm is fixed by the amount of expected yearly income (\bar{Y}) and the uncertainty connected with this income. In the absence of taxes on corporate income, MM have contended that the value of the firm (V) is in no way dependent on debt-to-equity (financial leverage). This hypothesis has become known as Proposition I (Fig. 3.).

¹Alexander A. Robichek and Stewart C. Myers, Optimal Financing Decisions, ed. by Ezra Solomon, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965, p. 21.

Figure 3.--The Company's Overall Cost of Capital



Source: Alexander A. Robichek and Stewart C. Myers, "The General Problem of Capital Structure," Optimal Financing Decisions, ed. by Ezra Solomon (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 22.

In order for the MM model to be valid, one must have made the following assumptions:

(1) Firms are grouped into homogeneous risk classes. Therefore, one has in effect assumed that investors have "required" the same rate of return for all firms whose expected income is regarded by investors as identically risky.

(2) MM have stated that the true value of Y is not known, therefore, it has been regarded as a random variable. Thus, in effect, one has been using past and present income as data in a sampling process to make an inference about the value of Y , and as the profits of the firm have been observed over the years, stockholders may well have changed their best estimates of what Y might be.

(3) MM have assumed that all present and prospective investors have arrived at identical estimates of average expected income (\bar{Y}).

(4) Stocks and bonds have been assumed to be traded in perfect markets. This means, among other things, that individuals have been able to borrow substantial amounts at the same rate of interest charged corporations.

(5) In their initial model, MM assumed that there were no taxes on corporate income.¹

Under these assumptions MM have proven that if the total market value of the company (V), of two firms with identical constant expected yearly income (\bar{Y}) and in the same risk class differs, it will have been advantageous for investors to arbitrage so as to bring the values of the corporations into equality, regardless of any differences in the firms' leverage. According to MM, if there has been a situation whereby the total market value of a firm (V) has been greater than V for another

¹Ibid., p. 23.

firm, then the stockholder has been able to benefit by selling his shares in the over-valued firm and buying new shares in the alternative firm. MM have stated that this has been possible if the difference in valuation has been due to a difference in capital structure (all-equity financing as opposed to a combination of debt and equity financing). MM have explained that it has been immaterial to the stockholder as to whether he has owned stock in a firm with a debt-to-equity capital structure, or, through personal leverage, owned stock in an all-equity financed firm. Furthermore, MM have stated that the stockholder is equally satisfied with either opportunity as long as the debt-to-equity ratio of a given firm equals the stockholder's personal leverage.

Therefore, the essence of the MM argument has been that the arbitrage process will have established a market equilibrium in which the total value of a firm will have depended only on investors' estimates of the firm's business risk and its expected future income. The general condition for this equilibrium to exist has been that no two claims to expected future cash receipts considered to be identical in risk can sell at prices such that the expected rates of return on the claims differ.¹

MM's Proposition I has been attacked by the traditionalists in that they have believed that the borrowing rates for

¹Ibid., pp. 24-25.

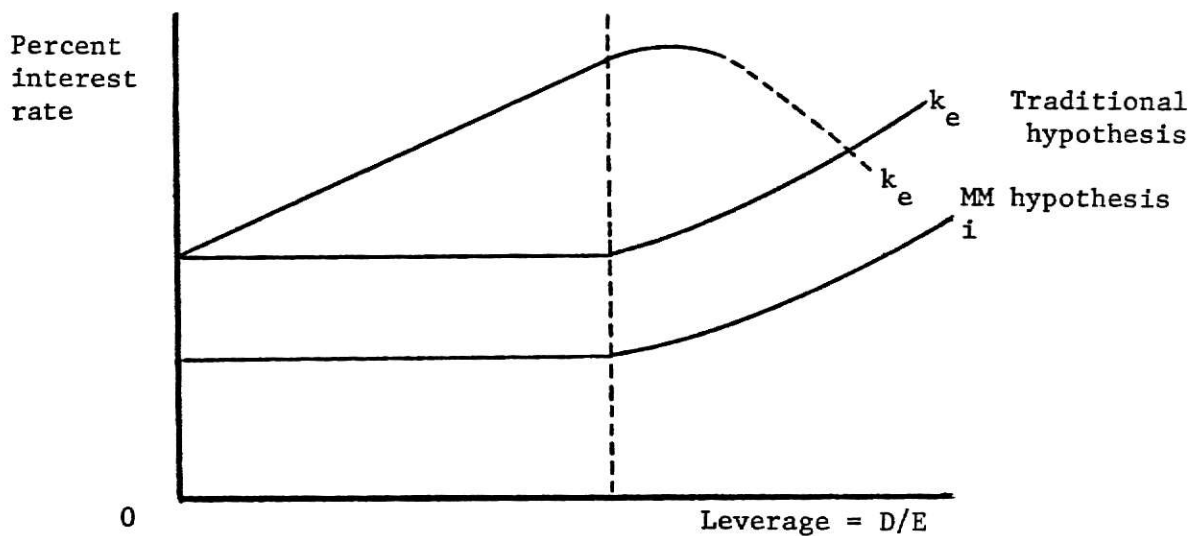
corporations realistically differ from borrowing rates of individuals. The traditionalists have argued that corporations probably have been able to borrow at lower rates than individuals because of greater credit worthiness. Secondly, the traditionalists have stated that from the standpoint of the individual shareholder, there may have been less risk in corporate than in personal borrowing (for an equivalent amount of leverage) due to the limited liability of the corporation. Thirdly, the traditionalists have opposed MM's idea of defining risk only in terms of the corporate risk class (business risk) and the degree of personal or corporate leverage. The traditional approach has been one of somewhat more complexity. The traditionalists have argued that brokerage fees, other transaction costs, and taxes might hinder the arbitrage process. However, like MM, the traditionalists have recognized that it has not been necessary for every shareholder to arbitrage, but rather a few active traders could bring about market equilibrium for the total value of the firms.

In discussing the validity of the MM hypothesis it has become necessary to study the behavior of the required rates of return on debt and equity as a function of leverage (debt-to-equity ratio). This relationship has become known as MM's Proposition II, which has been expressed mathematically as:

$$k_e = \frac{p (E+D) - k_i D}{E}$$

Normally, the rate of interest on debt has been taken as given by the market.¹ Thus, by the process of definition, MM have established a value for the required rate of return on equity. According to MM, the required k_e will have increased linearly as a function of leverage (D/E) as long as i remains constant. (Fig. 4.)

Figure 4.--Expected Rates of Return to Equity



Source: Alexander A. Robichek and Stewart C. Myers, "The General Problem of Capital Structure," Optimal Financing Decisions, ed. by Ezra Solomon (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 27.

¹Ibid., p. 27.

If i rises at higher levels of leverage (the region to the right of the vertical dotted line), k_e will have increased at a decreasing rate, and according to MM may even decline if i is sufficiently high.¹

On the other hand, the traditionalists have reasoned that the required k_e does not increase materially for low levels of leverage, but that it has risen sharply as leverage has been increased. Thus, this has resulted in the U-shaped curve for the company's overall cost of capital.²

Since the required rate of return (k_e) has depended on the rate of interest (i), it has been important to specify how the i rate has been measured. In general, it has not been obvious that the expectations of stockholders and creditors have coincided. This has largely been attributed to uncertainty and changing equilibrium positions. In any case, the variable i has been defined as the rate creditors expect to receive and the company (and its stockholders) expect to have to pay.³

In comparing the traditional model with the MM model, it has been observed that each model's conclusions follow from the assumptions that each model itself makes. Therefore, it has

¹Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," The American Economic Review, Vol. XLVIII, No. 3, (June 1958), pp. 274-275.

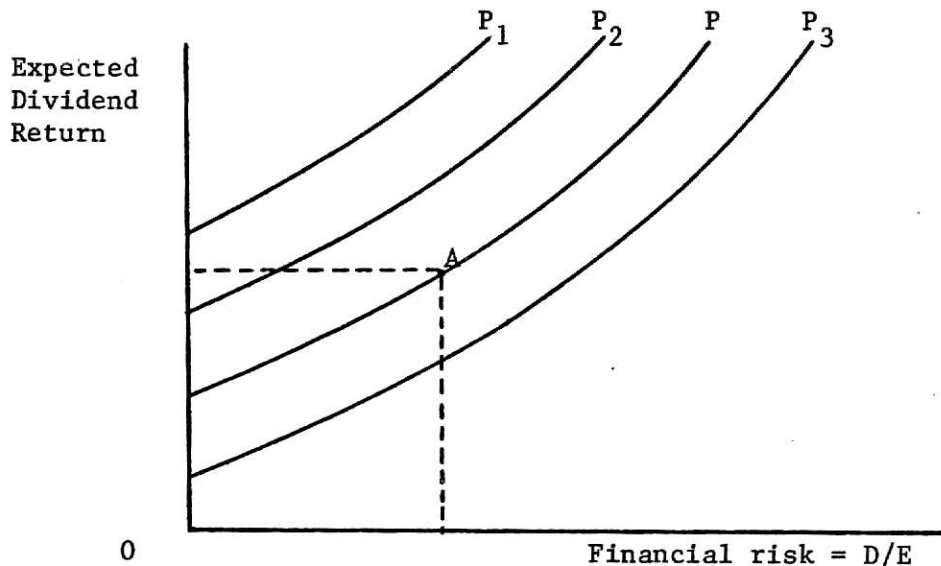
²Robichek and Myers, "The General Problem," p. 28.

³Ibid., p. 29.

been concluded that the MM model is more correct on a theoretical basis because its assumptions are more general.

Unlike MM, the traditionalists have attempted to describe the choice between debt and equity as a tradeoff between risk and expected dividend return (Fig. 5.).

Figure 5.--Tradeoff Between Risk and Expected Dividend Return



Source: Alexander A. Robichek and Stewart C. Myers, "The General Problem of Capital Structure," Optimal Financing Decisions, ed. by Ezra Solomon (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965), p. 31.

The indifference curve (P) describes a series of points where the investor is indifferent between expected dividend return and financial risk. Thus, point (A) describes a stockholder's position for a particular combination of risk and expected dividend return. Furthermore, any position above

an indifference curve is preferred to any positions on the curve, while positions on the curve are preferred to positions below it.

According to the traditionalists, these indifference curves may be viewed as defining the share price of a stock. Therefore, the market price of a firm's stock has been maximized when investors expect a combination of risk and expected return which is on the highest possible indifference curve. Furthermore, the traditional position has argued that, at lower levels of debt, stockholders would be willing to accept greater risk in return for higher expected dividends made possible by increasing the proportion of debt to equity in the firm's capitalization. However, at higher levels of debt, the increased expected dividends would not offset the greater risk created by the substitution of debt for equity.¹

According to the traditionalists, the really crucial part of the Modigliani-Miller hypothesis is their statement, that the company's overall cost of capital (p) will not rise, no matter how far the use of leverage is carried. The traditionalists believe this conclusion might hold if one assumes (through the process of arbitrage) that the rate of interest paid on debt does not rise as leverage is increased.

But in practice, the average rate of interest paid on debt, must rise as leverage is increased. For extreme leverage

¹Ibid., p. 32.

positions, i.e., as the company approaches an all-debt situation, it is clear that the average rate of interest paid on debt will be at least equal to the company's overall cost of capital. Given the general attitude of bondholders and bondrating agencies, it is highly likely that the average rate of interest paid on debt will be above the company's overall cost of capital for positions of extreme leverage.¹

As the average cost of debt rises, the marginal cost of borrowing, $m = \Delta F / \Delta D$, must be above the average rate of interest paid on debt. Therefore, there is some point of leverage at which a company finds that m , the marginal cost of more debt, is higher than its average cost of capital. Taking into account the general attitudes of those who supply debt funds, this point is likely to be reached quite rapidly if leverage is increased beyond levels acceptable to the debt markets.²

According to Ezra Solomon, the point at which a company finds that the marginal cost of borrowing \geq the company's average overall cost of capital represents the maximum use of leverage, for it can be argued that no rational company will finance with more pure debt if it can do so more cheaply by using a mixture of debt and equity similar to that outstanding in its existing structure. According to Solomon, if this fact is accepted, the argument between Modigliani-Miller and

¹Ezra Solomon, "Leverage and the Cost of Capital," Journal of Finance, Vol. XVIII, No. 2, (May 1963), p. 276.

²Ibid.

the traditional hypothesis would agree that leverage is clearly excessive if carried beyond the point at which the company's rising marginal cost-of-debt curve intersects the overall cost of capital curve.¹

Likewise, Robichek and Myers have stated that, in order for the MM proposition to hold (k_e declining as debt is substituted for equity), the marginal interest rate must be greater than the stockholders' required rate of return on equity (k_e). They have further stated that this is impossible if investors are averse to risk and perfect markets exist. Thus, if the marginal interest rate is less than the stockholders' required rate of return on equity, k_e cannot decline. Robichek and Myers have also stated that in perfect markets a company cannot reduce the overall cost of its debt by issuing any particular combination of senior and junior securities, thus the cost of borrowing depends only on business risk and the degree to which a firm is levered. Furthermore, Robichek and Myers have criticized MM's idea that the financial manager can ignore the choice between debt and equity as irrelevant to the firm's stockholders.²

Perhaps ironically, both the MM and traditional positions now seem to point to the same conclusion: that there is some degree of leverage which will maximize the value of the firm. This is an important conclusion, even though we cannot pinpoint which combination of debt and equity financing is optimal.³

¹Ibid.

²Robichek and Myers, "The General Problem," pp. 34-37.

³Ibid., p. 47.

V. SUMMARY AND CONCLUSION

As was stated earlier, capital ratios of commercial banks have been coming down for a century and a half. The capital to total assets ratio has stayed below 10% for the last 20 years. Likewise, the ratio of capital to deposits has decreased to approximately 10% while the ratio of capital to risk assets has decreased to approximately 14 percent.

Accompanying the downward drift of bank capital ratios has been the ever changing environment in which commercial banks operate. Thus, decreasing capital ratios have been the concern of supervisory authorities and bankers alike. Supervisory authorities have advocated that capital growth should stay in line with demand and time deposit growth. Therefore, their primary concern has been depositor safety.

On the other hand, many bankers have argued that there is less need for capital today than in the past. They have been quick to point out that the environment in which banks operate today is much less risky than earlier periods. With the development of the FDIC, sounder monetary and fiscal controls, and more efficient supervisory authorities, bankers have generally felt that today's capital ratios do not have to be as large as in the past in order to insure an adequate degree of protection for depositors.

During the decade 1960-1970, commercial banks experienced a rapid need for new capital in order to maintain adequate capital ratios. During this decade, demand deposits and time or savings deposits grew at a much faster rate than commercial bank capital. Thus, there has been an increased strain on commercial banks to meet the large capital needs of a growing economy.

Until December 1962, capital notes and debentures had been authorized only in distress situations. At this time, the Comptroller of the Currency granted national banks the power to issue capital notes as a method of raising additional capital requirements. Since December 1962, debt financing has grown rapidly. During 1968, 4,716 national banks issued capital notes and debentures. Of the 4,716 issuing banks, 1,018 banks had deposits over \$500.0 million. Capital notes have generally been favored by bankers due to the fact that they are a relatively inexpensive means of raising additional capital funds. Likewise, capital notes have met with little opposition from depositors. Like equity capital, capital notes have generally been thought of as providing depositors with a cushion of protection.

However, capital notes have met with heavy criticism from the Federal Reserve Board of Governors. The Board has stated that capital notes do not constitute "capital" in the sense provided by the various provisions of the Federal Reserve

Act. Furthermore, the Board has been critical of the temporary nature and the additional fixed commitments associated with capital note financing.

Others opposed to capital note financing have criticized the additional risks associated with debt financing. The "traditionalists" have argued that with an increase in debt-to-equity there is an increase in financial risk. This additional risk has been associated with the additional fixed costs incurred with an increase in debt financing. Thus, fixed costs incurred with an increase in debt financing. Thus, fixed costs of interest payments and redemption payments at maturity, have brought criticism from those opposed to capital note financing.

However, at the same time, advocates of capital notes have pointed out that today's banker is more adequately equipped to handle the additional fixed costs associated with debt financing than ever before. This has largely been attributed to sounder management practices and a safer environment in which banks operate today as compared to the past.

In discussing the additional risk associated with debt financing, one has been interested in understanding capital markets. Two different schools of thought have developed over this problem. The Modigliani-Miller (MM) hypothesis has stated that the debt-to-equity structure of a firm does not affect, in any way, the total market value of a firm, but rather, it states that the total value of a firm is fixed by the amount of constant expected yearly income and the

uncertainty associated with this income (business risk). In the absence of corporate income tax, the MM model has stated that the overall cost of capital to the firm is in no way associated with the amount of leverage. Furthermore, the MM model has described the stockholders' required rate of return on equity as being an increasing linear function of debt-to-equity as long as the interest rate remains constant.

In contrast the traditionalists have argued that the overall cost of capital to the firm and the total market value of the firm is influenced by the degree of leverage. Therefore, they have stated that an increase in debt-to-equity (financial risk) has influenced the overall cost of capital and market value of the firm. The traditionalists have stated that, as a firm replaces equity with debt, the market price of a share of stock and the total market value of the firm may rise for "reasonable" levels of debt, and then fall if leverage becomes unreasonably high. Furthermore, the traditionalists have argued that the stockholders' required rate of return on equity remains constant over "reasonable" levels of debt but then rises for increasing amounts of leverage.

Although the MM model and the traditional model disagree on the effect an increase in debt-to-equity has on the overall cost of capital to the firm, the effect on total market value of the firm, and the stockholders' required rate of return, both models now seem to agree that there is some degree of leverage that will maximize the value of the firm. However,

neither model can pinpoint which combination of debt and equity financing is optimal. Thus, at some combination of debt-to-equity, bank stockholders may become concerned about increased risk and require a higher return on their equity investment. Likewise, as stockholders become concerned about increased risk, management may also become concerned about the overall cost of capital to the firm and the total market value of the firm.

Today's investment analysts, underwriters, and bond investors have had little experience in evaluating the risk attached to bank indebtedness. For one thing, banks already have a considerable amount of leverage in the form of demand deposits to which debentures are subordinated, so that in the event of bank failure the debenture holder would be near the bottom of the list of claimants. On the other hand, bank earnings have shown remarkable resistance to cyclical declines during the past 20 years.¹

Technological change, conditions in the world economy, changes in monetary and fiscal policies, and other factors have increased the difficulty of measuring risk quantitatively. Thus, until a dynamic model capable of measuring subjective variables in a quantitative manner is developed, today's financial managers must use qualitative methods of measuring risk.

¹Silverberg, "Bank Borrowing," p. 227.

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COMMERCIAL BANK FINANCING THROUGH
THE USE OF CAPITAL NOTES

by

JOHN JOSEPH HERYNK

B. S., Kansas State University, 1968

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF ARTS

Department of Economics

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1970

With the development of the Federal Deposit Insurance Corporation, sounder monetary and fiscal controls, and more efficient supervisory authorities, the environment in which today's banker operates has changed considerably. Parallel to this change has been the change in the attitudes of bankers as to what constitutes their primary objective. In past years many bankers have considered liquidity as their primary objective with profitability as their secondary objective. Likewise, capital ratios have become smaller during this same time period. This was primarily due to the fact that demand and time deposits grew at a faster rate than commercial bank capital. As capital funds continued to flow out of banks into more profitable enterprises, bankers gradually shifted their primary objective to profitability. Through this approach, bankers hoped to attract new capital funds back into banking.

As bankers became more profitability oriented, as opposed to liquidity oriented, they became more aware of the fact that there was a greater need for new capital funds in order to accomplish their primary objective. However, even though banks have become more profitability oriented, they have been hard pressed to keep up with the rapid growth in capital requirements. Thus, capital ratios continued to fall.

In December 1962, the Comptroller of the Currency granted national banks the power to issue capital notes as a source of raising new bank capital. Capital notes have been issued by

many large banks, primarily because of their relatively low costs (due to their tax advantage) as compared to equity financing. Capital notes have provided essentially the same protective cushion to depositors as equity capital.

Those opposed to capital notes have supported the bankers' secondary objective, "liquidity," more strongly. Thus, supervisory authorities have been primarily interested in short-run as opposed to long-run conditions of a bank. They have considered the safety of depositors (short-run) as being more important than the profitability of the bank (long-run). They have further stated that debt financing may place excessive pressure on the solvency of a bank in times of recession or depression. Therefore, one of the major objections of debt financing seems to be the financial risk associated with the issuance of capital notes. On the other hand, the Modigliani-Miller hypothesis has argued that the total value of a firm is determined only by constant expected yearly income and business risk and is in no way affected by financial risk (leverage).

Commercial bankers, supervisory authorities, stockholders, and creditors seem to have regarded risk as a major component in capital note financing. Although there has been some disagreement on the effects of all-equity financing as opposed to a combination of debt and equity financing, one of the major problems has been accurately measuring the degree of risk.

Since December 1962, there probably has not been time enough to adequately judge the full-merit of capital note

financing in commercial banks. During this time period, our economy has not experienced a major recession.

In deciding whether or not to issue capital notes, financial managers have been confronted with the problem of measuring the degree of risk. Although there may be no quantitative methods available to management for measuring risks, certain subjective judgements must be made with respect to the amount of risk that will be taken. Likewise, management must make subjective decisions as to the amount of capital that is necessary to support bank asset growth proportionate to economic growth as a whole.

This report has made no attempt to provide an answer for the difficult problem of measuring risk. Rather it has been the intent of this report to provide a view of some of the many difficult problems confronted by a financial manager in deciding whether or not to issue capital notes as a source of financing.