

Division of Research  
Graduate School of Business Administration  
The University of Michigan

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EQUITY PARTICIPATION AGREEMENTS AND  
COMMERCIAL BANK LOANS TO SMALL  
BUSINESS FIRMS

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David J. Brophy

The University of Michigan

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## I. Introduction

The purpose of this paper is to analyze the feasibility and potential usefulness of equity participation agreements (EPA) on commercial bank loans in the financing of small business firms. A variety of EPA will be considered. In some instances, stock purchase warrants may be used as a participation vehicle or "equity kicker." In other circumstances, incremental cash payments above the basic interest rate may be used. The timing and amount of the case increment depend on some indicator of the borrower's performance, e.g., stock price, net worth, total sales, net profits, or cash flow. Both general types of agreements have been used in connection with term loans, revolving credits, lines of credit, and mortgage loans to business firms.

While equity incentive financing is not a new concept, its use in bank loans to business is a significant departure from the traditional pricing methods of U.S. banks. Because it involves an equity link to the borrower, the practice is regarded by some as altering the debtor-creditor relationship felt to be fundamental to banking. Accordingly the practice is quite controversial. Banks, their customers, legal counsel, and bank regulatory agencies express uncertainty as to the legality of EPA's and their likely implications as a means of compensation for bank credit.

## II. Scope and Methodology

There are two fundamental questions addressed in this paper: first, are EPA feasible? and, second, are they useful in increasing the volume and reducing the cost of bank credit to small business?

The first of these questions is approached through a review of the legal and regulatory limitations which appear to bear on this issue. This review will produce arguments which support the conclusion that the use of EPA by banks is well within statutory and regulatory parameters of banking.

The second question is approached by reviewing the business finance aspects of the various EPA arrangements. The analysis highlights circumstances in which the EPA can be a mutually attractive credit pricing variable for banker and small business alike.

The methodology employed in this research is wide ranging. The legal and regulatory issues have been analyzed through the review of statutes and rulings, followed by interviews with representatives of the Comptroller of the Currency, the Federal Reserve Board and the Financial Institutions Bureau of the State of Michigan. Bank counsel and lenders from 10 banks were also interviewed in this process.

In establishing a practical framework in which to consider the usefulness of EPA, the concepts of conditional reward and risk reduction are central. The argument is that the deferral of capital cost through EPA may be of special value to small firms. At the same time, EPA may be an economical substitute for the usual protective covenants employed by bankers to reduce risk and, in that respect, may be mutually beneficial to lender and borrower. With respect to the valuation of the EPA, the option pricing model is used. To accommodate the thin-market problems of the shares of small firms,

a set of alternative approaches is presented.

The research is limited in several ways and leaves room for extended treatment of issues raised herein. In particular, empirical analysis shows great promise, both on a systematic survey basis and on a case by case basis. Also, financial modeling of both the bank pricing process and the small firm capital structure decision in the presence of EPA would produce useful results. Finally, an intensive comparative analysis of the legal and regulatory boundaries facing banks with the limits of the Glass-Steagall Act, while inevitably necessary, is beyond the scope of this paper.

### III. Legal and Regulatory Considerations

The use of equity participation agreements in bank lending operations raises a number of important questions.

- A. What type of consideration may a bank legally take as income on a loan?
- B. When warrants are involved, what is the bank's position under Securities and Exchange Commission statutes and rules with respect to registration and insider activity?
- C. On what basis will the warrants received by the bank be taxed?
- D. Does the equity kicker affect the yield on the loan for purposes of compliance with state and usury laws?

These questions, in a sense, hold the key to the extent to which equity participations, and warrants in particular, may come to be used by banks at large. Some of the issues involved depend upon future regulatory interpretation. Others render significant certain provisions which the bank should negotiate in the warrant or cash over-ride agreement.

#### A. Acceptable Consideration

Those national banks which have used equity participations to date have based their decision on Comptroller's Ruling 7312.

#### Ruling 7312. Loan Agreement Providing for Share in Profits, Income or Earnings

A national bank may take as consideration for a loan a share in the profit, income, or earnings from a business enterprise of a borrower. Such share may be in addition to or in lieu of interest. The borrower's obligation to repay principal, however, shall not be conditioned upon the profit, income, or earnings of the business enterprise. [1]

The language of this ruling authorizes national banks to take a conditional consideration payment based on "profit, income, or earnings." Cash over-rides are thereby placed clearly within the charter powers of national banks. Interpretation advanced by the Comptroller's Office is that permission to use warrants or rights

to acquire the equity securities or convertible debentures of the borrower as consideration is also implicit in this ruling. [2]

The Comptroller's guidelines are interpreted as providing that under such an agreement, the bank may not pay cash for the warrants nor may any part of the principal amount of the loan be legally earmarked as the purchase price of the warrants. Any warrant taken in such a transaction may be held for an indefinite period, even after the loan is repaid. However, if the warrants are exercised (rather than sold separately) the shares so acquired must be disposed of promptly.

Many national and state banks have been reluctant to proceed with warrant plans due to uncertainty about the legality of holding an equity claim. It is therefore interesting to review the statutes and regulatory opinion bearing on the issue.

Section 24 of the National Banking Act clearly prohibits a national bank from purchasing and dealing in stock for its own account.

The business of dealing in securities and stock by the association (national bank) shall be limited to purchasing and selling such securities and stock without recourse, solely upon the order, and for the account of, customers, and in no case for its own account, and the association shall not underwrite any issue of securities or stock . . . Except as hereinafter provided or otherwise permitted by law, nothing herein contained shall authorize the purchase by the association for its own account or any shares of stock of any corporation. [3]

The consistent opinion of the courts has been that a national bank has no power to purchase or acquire corporate stock for its own account except to protect itself against loss on a debt owed to the bank. [4]

Several cases have involved this point and tend to support the opinion expressed above. [5] Two comments reflect this support:

. . . A national bank is not authorized to engage in "the business of buying and selling stocks, as a source of revenue or profit, which would subject the capital contributed by the stockholders to the hazards of speculation, independently of the ordinary risks of banking." Hotchkin v.

Third National Bank of Syracuse, 219 Mass. 234, 237, 106 N.E. 974, 975; U.S.C. supp. IV. Title 12, § 24, 12 U.S.C.A. § 24. (26 N.E. (2d) 365)

. . . Furthermore, the purpose of said section 24 is to limit a national bank to conducting the business of dealing in securities and stock in any manner other than upon a "without recourse" basis. (50 N.E. (2d) 200)

While a national bank may not purchase corporate stocks for its own account, it may purchase corporate bonds. Such bonds may, however, be convertible into common stock or have stock purchase warrants attached. Regarding purchase of such bonds by national banks, the Comptroller of the Currency has issued the following regulation:

When a bank purchases an investment security convertible into stock or with stock purchase warrants attached, entries must be made by the bank at the time of purchase to write down the cost of such security to an amount which represents the investment value of the security considered independently of the conversion feature or attached stock purchase warrants. Purchase of securities convertible into stock at the option of the issuer is prohibited. [6]

Furthermore, with respect to these bonds, the Comptroller's Investment Securities Regulation 3 provides that:

Purchase of securities convertible into stock at the option of the holder or with stock purchase warrants attached is prohibited if the price paid for such security is in excess of the investment value of the security itself, considered independently of the stock purchase warrants or conversion feature. If it is apparent that the price paid for an otherwise eligible security fairly reflects the investment value of the security itself and does not include any speculative value based upon the presence of a stock, purchase of such a security is not prohibited. If the price paid for a convertible security provides a yield reasonably similar to that of non-convertible securities of similar quality and maturity, a speculative value will not be deemed to exist. [7]

Many convertible bonds would be clearly ineligible for bank purchase when they are "in the money" because of the premium difference between their price and the price of comparable "straight" bonds. It is this premium which is taken to reflect the speculative value of the bonds.

The Comptroller, in the same section, provided added comment:

It does not follow, however, that the current market price will always reflect that feature and while, admittedly, it is sometimes difficult to determine the degree to which convertibility influences the market price, convertible issues should not be indiscriminately rejected as ineligible securities. If the convertible bonds are selling at a figure very closely within the price range of non-convertible issues of comparable quality and yield and are otherwise eligible, they must be regarded as eligible investment securities. [8]

While the bank may, with qualification, purchase a convertible bond or one with warrants, there are further limits on what it may do with any stock which results from conversion or exercise of warrants.

Corporate stock (either preferred or common) acquired by a national bank as "salvage" on an uncollectible loan or otherwise, may not be held indefinitely or for speculative purposes, but must be disposed of within a reasonable time. [9]

The bank would have to sell the stock or otherwise dispose of it within a short time after execution of the right.

However, the bank need not exercise the warrants to obtain financial benefit from them. If the warrants are registered and traded, they may be sold in the open market. Warrants may also be transferred or sold to an affiliate owned by the bank or to a trust created for the benefit of the bank's stockholders. They may be distributed directly to stockholders as dividends, transferred to the bank's pension or profit-sharing trust, or to the bank's holding company, if one exists.

For state-chartered banks, the state statute is the controlling legislation. In Michigan, for example, the statute and regulations are silent with specific respect to either type of E.P.A., although banks are expressly prohibited from owning corporate stock.



Two major questions face national and state banking supervisory agencies:

1. Does acceptance of warrants by the bank constitute dealing in securities?
2. Does the action violate the legislative policy underlying the prohibition of a bank's ownership of stock?

The first question might be solved by examination. Scrutiny of the volume and nature of warrants and the underlying equity securities by bank examiners should show whether the bank is acting intentionally as an underwriter or dealer in any specific case. Since the warrant carries no stockholder rights, it may be argued that merely holding the warrants does not violate the three basic legislative policy reasons for the prohibition of bank ownership of stock. The first of these is the variable nature of equity values. The second is to prevent too great a diversification of bank interests, which might dilute the ability of bank executives to properly attend to the banking functions of the corporation and thereby endanger the public welfare. The third is to prevent banks from owning their debtors and providing opportunities to drain or favor these debtors.

Despite the uncertainty expressed by bankers and their counsel regarding the legality of EPA, the recent financing of First Pennsylvania Corporation seems to be conclusive proof that--short of a court test--the regulatory agencies believe the use of EPA to be within the legal lending powers of banks (and banking regulatory agencies!).

In that financing, the Federal Deposit Insurance Corporation and a group of 22 private banks provided \$500 million in credit to First Pennsylvania Corporation, a bank holding company. The characteristics of the credit and its terms are set forth below.

. . . the FDIC's five-year \$325 million loan . . . will be interest-free for one year and bear interest set at 125% of the FDIC investment portfolio yield for the subsequent four years. At the current portfolio yield, the interest rate would be 10.67%. The FDIC loan will be subordinate to the assistance from the banks, but senior to the First Pennsylvania Bank's existing subordinated debt holders and stockholders.

The \$175 million in loans from private banks will be for five years, at a certificate of deposit rate established annually. They will be subordinate to depositors and other general creditors but senior to other subordinated creditors, including the FDIC.

As part of the package, First Pennsylvania will issue to the FDIC and the assisting banks warrants to purchase 20 million shares of its common stock at \$3 per share. The warrants have a seven year life and any proceeds must be invested by the holding company as equity in the bank. [10]

This credit arrangement has since been approved by First Pennsylvania stockholders. The pricing scheme very clearly employs warrants in what is obviously a trade-off for reduced interest payments both initially and over the life of the loan. The spirit of the transaction is evident in the following comment:

Bank regulators believe the aid package provides "substantial rewards" to those who have agreed to help First Pennsylvania and will prevent shareholders from receiving a complete "bail-out." [11]

It may be inferred from this remark that the trade-off of a "certain" level of interest for a return conditional on the profitability of the borrower has been accepted by the regulatory agencies. It may also be inferred that the "reward" for the partial "bail-out" is recognition by regulatory agency and by bank lenders of the use of the conditional equity participation as a premium for the acceptance of greater risk in a loan.

These appear to be important inferences, especially in the light of the following comment:

Some banks have used income participation clauses with commercial term loans and with loans on income properties, such as apartment houses. Although the authors believe that such clauses make economic sense, legislative threats to make all the interest on such loans non-deductible for the computation of income taxes and to outlaw income participations

and warrants as forms of equity (which banks are legally prohibited from holding) will probably continue to keep banks from using this technique very widely. [12]

Should this use of EPA survive without successful legal and administrative challenge, it may well resolve the uncertainty in the minds of bank lenders and result in an increased consideration of EPA as pricing vehicles.

#### B. Securities and Exchange Commission Rules

When warrants are taken rather than a cash over-ride, both the borrower and the bank must consider the implications under the Securities Act of 1933 and the Securities and Exchange Act of 1934.

Under the Act of 1933, every public distribution of securities must be registered unless exempted. While a bank loan with warrants may be construed a private placement and thereby exempt from registration, the ultimate disposition of the warrants may be considered a public distribution. An investment letter from the bank to the borrower and from any future assignee to the bank may obtain exemption for the warrants. A surer course would be for the borrower to register both the warrants and the underlying securities.

If the bank disposes of the warrants pursuant to a Securities and Exchange Commission Registration statement, which is true and complete, the probability of liability is small. If a registration statement is not used, the bank must sell the warrants privately or, if publicly distributed, the sale must be at such a time that the bank can no longer be judged an underwriter. This may be two years or more after receiving the warrants. Even so, if the bank has information which would materially and adversely affect the value of the warrants, such information should be transmitted to the buyer, whether private or public. Otherwise, insider liability is possible under the Act.

If the stock purchase warrants taken by a bank in lieu of interest come from a corporation with securities registered under the Securities Exchange Act of 1934, the question of insider activity could become a serious consideration. If the borrower is not already registered and if registration of the warrant is felt unnecessary, the S.E.C. reporting requirements would be avoided. This does not mean that potential insider liability is avoided, however.

Stock purchase warrants are defined in the Act as "equity securities" for purposes of regulation. Therefore, warrant holders are subject to the same regulations as are stockholders. The statutory definition of an insider includes directors, officers, underwriters and "each security holder of record holding more than 10 percent of any class of a security of the issuer (other than an exempted security)." [13]

Aside from fitting this definition through its warrant holdings, the bank might well be considered an insider due to information obtained even before the loan was made, for example, from previous credit or Board of Directors membership. Thus, stopping short of the 10 percent limit, however defined, may be no assurance of immunity from insider requirements.

If the bank were held to be an insider, it would be required to file a financial statement and statements regarding remuneration and material contracts between the borrower and the bank under Sections 12 (b) and 13 (b) of the Securities Exchange Act. Also, information regarding the bank's conditional equity position and credit transactions between the bank and the borrowers would be required in any proxy statements issued by the borrower.

Furthermore, under Section 16 (b) of the Act, the bank would be required to file a statement of ownership when the warrants are acquired and a statement of changes in ownership monthly thereafter. The bank would also be liable for

short-swing profits under Section 16 (b) if the warrants were exercised within six months of receipt. Even if held longer, the bank has potential liability for the abuse of insider information. It is entirely possible that the S.E.C. could, under Section 12 (b), exempt the issuer or any security holder from the disclosure requirements in any particular case. Nonetheless, the possibility of disclosure and insider responsibility is very real when a bank takes warrants with a loan.

### C. Income Tax Treatment

One of the reasons why a bank would choose to take warrants instead of a cash over-ride is the favorable tax treatment afforded the capital gain arising from the price appreciation of the warrants. This naturally raises the question of how the warrants might be taxed. It appears that there are two basic possibilities, each with a different outcome from the bank's viewpoint.

#### 1. Current Recognition of Value

Under this approach, the bank would take the warrants into ordinary income at fair market value at time of receipt, amortizing the value of the warrants over the life of the loan. If the warrants were sold at a profit more than six months after receipt, the unamortized part of the initial value would be a tax-free return of capital while the balance would be a long-term capital gain. Should the warrants become valueless, expire, or be sold for less than their original value, a capital loss would be recognized. For tax purposes the bank should always sell the warrants rather than exercising them and then selling the stock. The Comptroller of the Currency would require almost immediate sale of such stock and, since the tax holding period begins at the date of exercise, any gain on the sale of the stock would be considered short-term for tax purposes.

## 2. Deferred Recognition of Value

This approach appears less desirable for the bank and would be similar to the argument the Internal Revenue Service might advance. It is based on the contention that no income is received by the bank until the warrants are sold by the bank, since the warrants had no readily ascertainable fair market value at time of receipt. Income at sale could be fully taxable as ordinary income. Such an argument would most likely be made if the warrants or the underlying stock were not traded publicly.

In either event, the banking organization would benefit by "upstreaming" the warrants to its parent holding company. Any gain realized on the sale or exercise of the warrants will be taxed as ordinary income if the warrants are held by the bank but at capital gain rates if held by the holding company.

One of the reasons a borrower might take an EPA as part of the pricing contract on a bank loan is that the cost of the equity given in lieu of interest may be tax deductible for the borrower. This is a very "gray" area but, in the process of interviews for this paper, several instances of this treatment were found. The claim is made at the time the warrants are exercised by the lender and the amount claimed is the difference between the exercise price and the price of the equity at the time of exercise.

## D. Usury Considerations

To the extent that warrants constitute additional interest, the total interest on a loan could exceed state usury limits. In most states, but not all, usury statutes do not apply to corporations. In Michigan, for example, an interest rate above the usury ceiling may be charged if agreed to in writing by the corporation.

However, the usury law does apply to corporations in the two largest states, California and New York. One device used in these states is to establish the equity participation formula so that it, plus the contract interest payment, constitutes a yield on the loan which is within the usury rate limit. There is still some uncertainty concerning the measurement of yield for usury law purposes. If the yield in any one accounting period is calculated, it appears likely that the ceiling will be exceeded. For example, an amortized loan may be nearly written off when a substantial profit is realized on the sale of warrants by the bank. The yield, calculated for that period alone, will be much higher than if the gain had been spread over the life of the loan. It is not yet clear how the various state statutes will be interpreted on this question.

Many states' usury laws require that usurious intent at the time the loan was made must be proven to successfully prosecute. The lender would have to know the value of the warrants and demand a combination of warrants and contract rate which he knew would exceed the usury limit. Warrants are difficult to value objectively and it is felt that this fact makes it difficult to prove usurious intent. Furthermore, substitution of warrants for a portion of the contract rate is considered inconsistent with an intention to exceed the usury limit. These factors differ by individual state and local counsel should be sought in particular cases.

#### IV. Technical Considerations Regarding the Equity Participation Vehicle

If our arguments to this point have been persuasive, one may conclude that EPA are permissible under law and banking regulations and that they may be fitted into S.E.C. and usury law requirements. Two questions now arise and will be addressed in this section:

- A. What kind of EPA vehicles are likely to be used?
- B. How can the value of the EPA be estimated by lender and borrower?

The answers to these questions are very complex when the borrower is a large corporation, with common stock which is widely traded and perhaps listed on an exchange. In this paper we are concerned with the small firm corporate borrower, usually characterized by privately-held stock or lack of a substantial public market in the common shares. In this type of case, the valuation problem is both important and difficult.

##### A. Types of EPA Vehicles

There are two major types of EPA vehicles available: the stock purchase warrant and the cash over-ride conditional payment. The important characteristics of each are concisely described below.

##### 1. Stock Purchase Warrants

Under this arrangement, the bank, at the time the loan is closed, acquires warrants which give the bearer an option to buy from the borrowing firm a certain number of shares of the borrower's stock at a certain price for a certain period of time.

The bank does not possess stockholders' rights (e.g., voting and dividend rights) when it holds warrants. It does, however, have an interest in those factors which affect the value and marketability of the warrant and the underlying stock. Accordingly, the bank must try to negotiate those terms in the



warrant agreement which protect this interest. The warrant agreement should provide for adjustment in case of any type of recapitalization, as well as for continuity of the claim in case of merger. Also, it should provide for notification and information concerning actions which might affect the company and the value or outstanding amount of its stock..

Typically, when issued, the exercise price of the warrants will exceed the current price of the stock. It may be fixed over time or may progress, rising as time passes or as the number of warrants exercised increases. The warrants will normally be detachable to allow for separate sale by the bank. The expiration date of the warrants is a matter of negotiation and may run beyond the maturity date of the loan. The borrower may be able to bargain for a call feature on the warrants or for a "flush out" clause which permits the borrower to trigger exercise of the warrant by lowering the exercise price at its discretion. Both of these devices give the issuers flexibility in future financing.

In determining warrant terms, the bank and the borrower must negotiate the length of the exercise period and the distance of the exercise price from the current market price. These characteristics affect the probability of the warrant going to a high premium early in its life, given the basic considerations of high probable expected value of the stock and protection from dilution.

## 2. Cash Over-Rides

A cash over-ride is an incremental cash payment, over and above the regular interest payment, made by the borrower to the lender. The major distinction between this device and the warrant approach is that the cash compensation to the holder comes directly from the borrower rather than from some third party.

The increment is taxed as ordinary income as received and does not provide the bank with the capital gain tax advantage of warrants. The amount of the increment is typically dependent upon the value of some variable related to the operating performance of the borrower or the project being financed.

One approach bases the performance-related supplement on some current flow variable such as total sales or net profits of the firm. If the purpose of the loan is not tied to some specific, revenue generating program, but is expected to increase the total net profit of the firm, this device offers certain advantages. Cash income is realized by the bank in direct proportion to increases in the performance indicator thus removing the intermediate step of having the performance reflected in the price of the stock. The problem of secondary sale of warrants is thereby removed.

Where the credit advanced is identifiable with a particular project or asset, the flow variable may relate to the project rather than the firm as a whole. The advantage of this device is that the expected value of the project's flow variable may be more predictable than that of the borrower's firm as a whole. The lender may have particular expertise which allows him to be confident in estimating the success of, say, a real estate development. An EPA based on the project may be considered to have a higher probable expected value than one based on the borrower's total performance.

#### B. Valuation of the EPA Vehicle

An understanding of the value of the EPA vehicle is important to borrower and lender since it reflects part of a tradeoff against some accommodation offered in the loan: a reduced interest rate, easier repayment terms, greater acceptance of risk, or some other financial variable concession. Valuation is

important, not only at the time the loan is made, but also during the entire life of the EPA. The lender, over this time period, faces the constant question of whether or not to sell or exercise the warrants or the right to the conditional cash over-ride. The borrower faces the question of exercising a call on the EPA (if available) and of predicting the likely exercise of the EPA, with its attendant financial implications.

As a starting point it is useful to define the "theoretical" value of an EPA and to show how it might relate to the value of the underlying assets of the borrower. For simplicity, we shall use the conventional relationship between a warrant and the stock to which it is related. This concept may also be applied to the cash over-ride vehicle.

The theoretical value of a warrant can be determined by the relationship:

$$V_t = NP_s - E$$

where  $N$  = the number of shares that can be purchased with one warrant

$E$  = the option price associated with the purchase of  $N$  shares

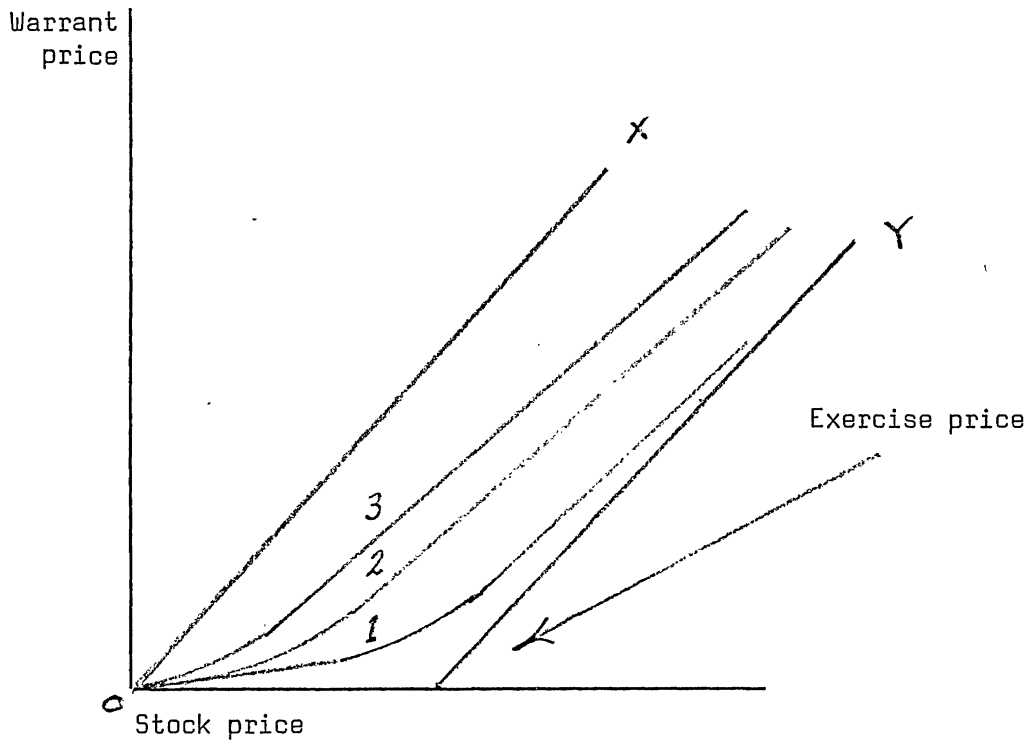
$P_s$  = the current market price of one share of the stock

To illustrate this relationship, assume that the XYZ Corporation has warrants outstanding for which  $N = 1$  and  $E = \$14$ . On a day when the company's stock price closes at, say,  $\$17$ , the theoretical value of the warrant (if it were exercised) is:

$$(1) (17) - \$14 = \$3$$

As is well-known, the market value of this warrant need not be (and probably will not be)  $\$3$  at that particular moment. In general, the relationship between market value and theoretical value may be represented as shown below in Figure 1.

Figure 1



The highest value of the warrant resides on the X curve, which represents the value of the stock. The value would approach this limit if the warrant had a very long life (expiration date) and was not expected to be exercised until far in the future.

The lowest value of the warrant (as a function of current stock prices) is shown as zero up to the exercise price and as the Y curve thereafter. It is the theoretical value of the warrant assuming a valuation one moment (i.e., a very short time) from execution.

Typically, the value relationship lies between the two parameters, as described by the three convex curves. The gap between the market line and the theoretical value line is at its maximum at the exercise price. It is also larger for the warrant with a longer time to expiration (line 3) than for those with shorter time to expiration (lines 2 and 1). Over the life of the warrant, as the time to expiration declines, the relationship shifts downward (i.e., from a line 3 type to a line 1 type) toward the instantaneous theoretical value.

An important factor in determining market value of a warrant is the volatility of the underlying stock, that is, the range of possible outcomes (i.e., stock prices) over the period to expiration date. This is an important concept in thinking about and evaluating contingent equity claims and is demonstrated in the following example.

Assume that warrants are available in two stocks, A and B. The expected value of the stock at the end of a holding period is the same (\$40 per share) and the warrant exercise price for each is the same (\$38). The probability distribution of the price of the two stocks is as follows:

<u>Probability</u>	<u>Stock A</u>	<u>Stock B</u>
.10	\$30	\$20
.25	36	30
.30	40	40
.25	44	50
.10	50	60

$$\text{Value of Option A} = 0(.10) + 0(.25) + (\$40 - \$38)(.30) + (\$44 - \$38)(.25) + (\$50 - \$38)(.10) = \$3.30$$

$$\text{Value of Option B} = 0(.10) + 0(.25) + (\$40 - \$38)(.30) + (\$60 - \$38)(.25) + (\$60 - \$38)(.10) = \$5.80$$

Thus, the expected value of the warrant is higher for the stock with the greater variance in possible stock price. This reflects the greater opportunity for more favorable outcomes under B than under A. Since the warrant cannot have a negative value, and its minimum value is zero under both A and B, the risk-return relationship in B is more favorable than in A.

A very important advance in the valuation of conditional equity claims is the Black-Scholes option pricing model. While greater degrees of complexity could be introduced, we will examine the formula for a "European" option (one which can be exercised only at maturity) on a stock which pays no dividend. The well-known accompanying assumptions are:

1. There are no transactions costs; options and stocks are infinitely divisible; and information is available to all without cost.
2. No imperfections exist in selling short an option or stock.
3. The short-term interest rate is known and constant throughout the duration of the option contract.
4. Stock prices follow a "random-walk" in continuous time pattern.

The product of the Black-Scholes model is the equilibrium value of the option or, in this case, the EPA warrant. The formulation of the model is as shown below:

$$V_o = V_s N(d_1) - \frac{E}{e^{rt}} N(d_2)$$

where  $V_s$  = the current price of the stock

$E$  = the exercise price of the option

$r$  = the short-term interest rate continuously compounded

$t$  = the length of time in years to the expiration of the option

$e$  = 2.71828

$N(d)$  = the value of the cumulative normal density function

$\ln(V_s/E) + (r + 1/2\sigma^2)t$

$$d_1 = \frac{\ln(V_s/E) + (r + 1/2\sigma^2)t}{\sigma\sqrt{t}}$$

$\ln$  = natural logarithm

$\sigma^2$  = the standard deviation of the annual rate of return on the stock continuously compounded

Essentially this model is useful because it expresses the value of the option as a function of the short-term interest rate, the time to expiration, and the variance rate of return on the stock but not as a function of the expected return on the stock.

The necessary input variables are five: the current stock price, the time to expiration of the option, the exercise price, the short-term interest rate, and the standard deviation of the stock price. The first four of these are observable for traded stocks and the fifth is readily calculated from past stock performance data. Empirical tests of this model have produced satisfactory results and, as

indicated above, its use has been extended to more complex conditions. The importance of the valuation method is that it enables both the lender and the borrower to estimate the value of the rights being exchanged. This permits the lender to assess the profitability of the loan and the borrower to assess its cost.

#### C. Special Valuation Circumstances of Small Business

The major difficulty in applying the above methodology to small business loans is the absence of accurate measures of market value of the underlying stock. Because of the informal nature of the market for small-firm stock, published quotations are not reliable indicators of current stock values. Consequently, it is difficult to obtain the stock value input for, say, the Black-Scholes model.

There are, however, several approaches open to the interested bank lender. For example, the lender and borrower could agree on an appraisal method to establish value from time to time. This could be used in connection with a "shadow warrant" or a "put" agreement as described earlier. The appraisal approach has a well-established precedent in tax court and bankruptcy proceedings.

Another approach is essentially based on accounting measures of value. Under one approach, the cash over-ride, shadow warrant, or warrant may be based on net income or cash flow as reflected by the borrower's financial statements. A refinement of this approach, and one which has had particular appeal to lenders, is the linkage of equity participation to the change in value of some asset of the borrower. Mineral reserves, real estate, or securities held are examples of the type of assets usually involved. An analogy to this approach is found in the new home mortgages which give the lender a share in the appreciation of the mortgaged property in exchange for some consideration such as a reduced contract interest rate.

It seems clear that finance practice and theory offer techniques which are useful in placing a value on the EPA, even when the borrowing firm is one with privately held or thinly traded stock. This is by no means a claim that such estimation is a trival problem. It is a suggestion that the problem is not totally insurmountable and is probably tractable with existing financial technology.



## V. Application of EPA in Small Business Credit

Up to this point we have argued that the use of EPA is quite within the legal and regulatory boundaries of bank lending and that the value of EPA can be measured by the lender and the business borrower. We now turn to the question of appropriate use: when, why, and under what circumstances is the EPA likely to be a useful pricing variable? With special regard for the characteristics of small business borrowers, we shall examine the use of EPA first as a "reward" device for concessions from the lender and second as a "protective" device intended to economically reduce potential conflicts between lender and equity-holder.

### A. The Role of the EPA as a Reward Device

It is clear that an EPA can be used to partially or fully replace or supplement the orthodox loan pricing devices such as a promised interest payment, compensating balances, loan "points" or fees. The major apparent differences between the EPA and these other pricing variables are its conditional relationship to company performance and its direct link to the equity interest of the borrower.

In one sense, the differences are of degree. All of the loan pricing variables are to an extent, conditional on the borrower's performance. For example, because of the borrower's financial distress, the actual net interest payment may be less than the promised net interest payment anticipated by the bank lender. To the extent that these pricing variables transfer value to the lender, they also reduce the share of value flowing to the initial equity holder.

By the same token, the economic value of these pricing devices tend to be variable over time. In the past 15 years, characterized as they have been by high and volatile inflation rates and interest rates, lenders have steadily reduced their willingness to offer fixed interest rate loans to business firms (large or small) for anything other than short maturities. Essentially, to cover the effects of inflation, lenders use floating interest rate formulae to protect an acceptable "real" rate of interest on loans they make. Studies on non-rate pricing variables show that these too vary significantly over the credit cycle. [14]

The use of an EPA in conjunction with the conventional set of pricing variables can offer flexibility to the bank lender and to the small business borrower. For the young firm, not yet fully established as a profitable enterprise, the EPA can be a substitute for current-period cash payments (interest rate, fees) and for the maintenance of redundant assets (compensating balances in excess of necessary working balances). In fact, given the variability (usually within "cap" limits) of these cash and balance requirements, the EPA can be of benefit to the borrower because its value (or "cost" to the firm) varies with the firm's performance indicator (chosen by negotiation) and not with some indicator external to the firm. In this sense it becomes a sharing of the risk and reward potential of the firm between lender and borrower. This is in strong contrast to the "variable rate" loan which protects the lender against changes in the real value of interest income while leaving the borrower to carry the bulk of the money rate risk.

The EPA is especially helpful to the smaller, younger firm for at least two other major reasons. First, when the borrower has no taxable income and expects none for the near future, the pre-tax and post-tax cost of debt is identical (i.e., no tax shield). The cost of debt approaches the cost of equity

which is to say that the cost of debt becomes relatively high. The impact on the firm's cash flow can be quite severe as a result. Alleviating this pressure through use of an EPA can contribute in an important way to the borrowing firm's ability to survive that particular stage of its development. At the same time, since no deferred interest payment is shown as a contingent liability by the borrowing firm, the debt-equity ratio is not impaired. This accommodation contributes to an improved value of the equity, in which value both the lender and the original equity holder share.

Second, the newer and smaller firm needs a means of compensating the commercial bank for what may be called "market access" services. This type of firm has great difficulty in tapping financial markets for funds on which to grow. Commercial banks are the most visible and, to most small business people, the most logical point of entry to those markets. And yet, due to economies of scale, the cost of banker services to small firms is very high, a factor which discourages bankers from becoming involved as creditors of smaller firms and from spending time and effort on helping smaller firms with things such as the strategic planning and structuring of their financing. By providing a financial incentive for the banker, one which is compatible with the financing needs of the borrower, the flow of bank services and credit to smaller, young firms will be increased and a positive profit result will accrue to those banks which become involved.

It should be realized also that the EPA arrangement can be tailored to fit the life cycle stage of the borrowing firm. As demonstrated in our earlier sections, the EPA may be subject to a call provision or to the alteration of exchange ratios or participation rates over time. There is no inherent reason

why the EPA should pose any more of a problem regarding future financial structure flexibility than would any other type of financial instrument.

As examples of the possible uses of the EPA arrangement--and the extent to which it represents an acceptable pricing arrangement--consider two examples: the First Pennsylvania financing and the current development of home mortgage loans in which lenders share in the equity appreciation of the home in exchange for a lower promised interest rate.

In the First Pennsylvania case--discussed earlier--the continuity of the company (a large commercial banking company) was at stake. The "bail-out" accommodation, from FDIC and some 20 commercial banks, took the form, first and foremost, of granting a term loan at all and, secondly, of granting a below the market interest rate. The lenders received warrants to buy approximately 20 million shares of the company's stock (there were 13 million shares outstanding at the time) for an historically low price of \$3 per share. The financial logic behind the loan is that the accommodation should be rewarded and the clear implication is that the form of the reward (an EPA) is both acceptable under legal and regulatory standards and acceptable to the lenders and borrowers in lieu of a periodic interest payment.\*

In the case of the home mortgage loan, it appears that the EPA argument has been accepted at the level of retail personal finance. While there are significant differences between the EPA which is functionally related to the performance of a business and one related to the price appreciation of a home, nonetheless the basic thrust is the same: there is an apparent willingness to trade-off a current interest rate for a deferred interest in the equity of the underlying property.

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\*The filing of several stockholder derivative suits in connection with this case indicates that not all stockholders are enthused about the transfer of equity control to the lenders.

Finally, the argument has been made that only those borrowers with strong growth prospects will qualify for EPA loans: otherwise the banker would not be interested. It is likely that high growth potential firms would be of greatest interest to banks. It is also likely that firms which promise to stabilize at very small size levels will be of least interest to EPA-lending banks. Between these two extremes, however, exist a great many firms which, as Wetzel points out in his study of New England [15], have strong and stable profit rates upon which can be built sources of growth. These firms do not usually attract the venture capitalists and, as a consequence, do not realize their full growth potential. By tailoring the EPA loan to the situation of these firms, the banking community could make a strong contribution to business development and greatly increase their local loan profitability at the same time.

#### B. The Role of the EPA As A Control Device

It has long been recognized by practitioners that, as a fact of life in business finance, potential for serious conflict exists between lender and the equity-holders in the borrowing firm. This is because an agency relationship exists between the two: the lender advances a loan to the borrower and thereafter depends on the borrower to act in such a way that the lender's objectives will be met (i.e., return of the loan plus promised interest, on time). There is evident moral hazard present and the lender typically seeks to protect against it by various means.

The four major sources of conflict are as follows:

1. Dividend Policy--at the limit the stockholders can declare a liquidity dividend and "steal" the company from the lender.
2. Claim Dilution--if existing debt is priced assuming no further debt will be issued, the issue of subsequent debt of equal or higher priority reduces the claim of the current creditor.

3. Asset Substitution--if a firm borrows money for the stated purpose of pursuing a low-risk business (say the buying and holding of U.S. Treasury bills) and--after receiving the money shifts to the pursuit of a high-risk business (say, race-track betting) the value of the stockholders equity rises and the value of the lender's claim falls. [16]

4. Underinvestment--the value of the lender's claim may decline if the stockholders reject projects which will benefit the debt-holders rather than the stockholders.

Some or all of these potential conflicts may be present in any business loan being considered by a bank. The typical reaction of a lender is to impose controls in the form of restrictive covenants as part of the loan agreement.

Examples of such covenants are:

1. Restrictions on the borrower's production and investment policies-- essentially, by specifying the uses to which the firm may put the borrowed funds.
2. Restrictions on the payment of dividends, typically providing that the dividends paid are financed out of new earnings or new equity contributions.
3. Restrictions on subsequent issues of securities, designed to prevent the issue of claims which would reduce the value of the current lender's claim.
4. Covenants which specify the pattern of payoffs to debt-holders. Sinking fund provisions and call provisions are two examples. Also-- and especially germane to this discussion--the provision of convertibility is an example of such a covenant.
5. Covenants which specify bonding activities by the firm. These are activities designed to reduce the cost of the lender's monitoring the performance of the borrower. Examples are the provision of required financial reports, specification of accounting techniques, requirement of officers certificates of compliance, and the required purchase of insurance.

These covenants are intended to protect the interests of the debt holder against actions of the equity holder. The higher the probability and degree of

consequence of these actions, the more comprehensive and tightly drawn will be the covenants. The cost to the borrower of these constraints is generally referred to as the agency costs of financing.

While this type of cost has been intuitively obvious for as long as finance has existed, it has only recently become a focal point of academic research in finance. An early treatment of the cost issue was presented by Van Horne who developed a linear programming model by which to estimate the cost of covenants. The cost is estimated in terms of opportunities foregone through the limitations imposed. By combining these estimated costs with the more explicit costs of the loan, the analyst is able to derive a sharper measure of the cost of the particular source of funds. [17]

How does the EPA relate to the concept of agency costs? How can it be used to reduce monitoring costs? Why would the banker want to use EPA? Why would the borrower agree to its use as part of the loan contract? We shall approach these questions by considering how the EPA can help reduce the cost of controlling for the effects of the "asset substitution" source of conflict mentioned earlier.

Let us first examine the position of a bank lending officer considering a loan to a relatively new and small business firm operated by a single owner-manager. The fundamental objective of the banker with respect to this loan is to collect the real value of the interest and retrieve the real value of the principal according to the maturity schedule. We will assume that the banker is familiar with the firm's industry, product and market and, based on this familiarity, accepts the operating plan (i.e., proposed use of the funds) put forth by the borrower and decides to make the loan.

A major cause for concern in this case is the possibility that the owner-manager may depart from the accepted operating plan once the loan funds have been transferred. The banker has approved the loan and its price based on a certain level of perceived risk; by "changing the plans" the entrepreneur may increase the riskiness of the enterprise and the bank loan.

The incentive for the entrepreneur to do this is based on the argument that by accepting projects with greater variance of expected returns, the possible return to the equity is higher. At the same time, of course, the greater variance increases the probability of bankruptcy. In the event of bankruptcy, the losses facing the corporate equity holder are limited to the value of the net worth. The lender, in general, has no claim beyond the value of the assets of the corporate borrower.

The option pricing model has been applied to the capital structure problem and is useful in this context. It provides insight and a useful framework for valuing the equity and debt of a levered firm.

To make this application, one must think of the equity of the firm as a call option against the firm's total value (the underlying assets). The writers of the option are the holders of the firm's debt. The exercise date is the maturity date of the debt and the exercise price is the maturity value of the debt.



At maturity the stockholders have a straightforward choice: to exercise the call or to forego. The "exercise" is represented by paying off the amount owed on the debt and essentially buying the firm from the debt holders. By foregoing the option, the stockholders are defaulting on the loan, thereby delivering the firm's assets to the debt holders. The decision rule is: if the firm's total market value exceeds the debt, stockholders will pay off the debt; if market value is less than the debt, the stockholders forego the exercise (i.e., they default) and the assets of the firm go to the creditors.

As demonstrated earlier, the value of an option increases with the variance of its possible returns. The stockholder in our hypothetical firm therefore has an incentive--once the money has been obtained from the borrower--to engage in projects with higher risk (i.e., greater variance of possible returns). Under the usual terms, the net benefit will accrue to the equity. Just as significantly, the gain is at the expense of the debt holder: the debt is now worth less because--with no increase in expected return--the risk of the debt has been increased by the greater variance of returns.

Essentially, as shown earlier, wealth has been transferred to the equity holder from the debt-holder. The usual precaution in situations where this kind of shift is possible (either because of the ethics of the borrower or the nature of the market served by the firm) is for the lender to apply a number of protective covenants which bind the borrower with respect to use of the funds and conduct of the business.

To demonstrate this process and to illustrate two useful applications of the EPA concept, we shall use an example presented by Van Horne. [18]

In the example, Van Horne considers a company with total value of \$4 million and newly issued debt of \$3 million (a single-payment discount loan with maturity of five years). The standard deviation of the continuously compounded rate of return on the overall value of the company is 12%. Using the Black-Scholes option pricing model, the value of the option (i.e., the common stock) is calculated to be \$1,780,526. Under the notion that the stock is really an option on the assets of the firm, the implication is that the stock is worth \$1,780,526 and the debt is worth  $\$4,000,000 - \$1,780,526 = \$2,219,474$ .

Suppose that the borrowing firm increases the riskiness of its business so that the standard deviation is 36% rather than 12%. Applying the same model, the stock value is shown to be \$2,084,431 and the debt value to be \$1,915,569. The total value of the firm has not changed but its total value has been redistributed from debt to equity.

The potential value of the EPA stands out quite clearly in this situation. The incentive for the equity-holder to raise the firm's variance is found in the wealth transfer from bank to stockholder. Imposition of the EPA would limit the amount of net wealth transfer to the stockholders which can be accomplished with any given change in variance. This is true because the increase in variance is not accomplished "free of charge" by the equity holder--his downside risk is the total loss of the equity he owns and there is likely to be an amount of sensitivity to that, perhaps even a marginal utility schedule which could be derived.

Consider also the "exercise of the option" decision rule introduced earlier. The rule states that the stockholders will "exercise" the option (i.e., pay off the debt) if the value of the firm exceeds the value of the debt; otherwise they will forego (i.e., default). This puts the lender in the position

of taking the assets of the firm at a value just equal to or below the value of the debt. After considering bankruptcy costs, the lender almost certainly faces a loss on the loan.

Now imagine that the lender has an EPA which provides for, say, 25% of the equity via warrants. With this claim on the equity the "break-even" value of the firm for stockholder exercise is \$3.25 million. At that point the net value of the option (the equity) to the other shareholders is zero if they default. The assets pass to the lender (at a value of \$3.25 million) and may be used to offset the debt (\$3 million). The EPA thus provides a cushion to the lender for the absorption of bankruptcy costs, thereby improving the lender's likelihood of coming out of bankruptcy with full recovery of principal.

The significance of the EPA is that it can be used as an alternative or complement to other protective covenants. The motive for this is two-fold. First, the covenants--while protecting the creditor--may have severe and unintended side effects on the borrower and may represent an "overkill." Second, the covenants--while curtailing the firm's activities--may not be comprehensive, thus permitting the firm to pursue the more aggressive path despite the wishes and efforts of the lender. In contrast, the EPA is a sure-fire, possibly lower-cost protector against upside variance increases.

The conclusion drawn here is that the EPA can be used as a risk-reduction device by the lender. From the borrower's viewpoint the use of the EPA would be acceptable if its value did not exceed the value of the concessions granted by the lender in terms of reduced protective covenants. In short, the EPA can be used as a device for reducing the real costs of monitoring the agency relationship. This can reduce the cost of capital to the firm and, in the end, offset the potential decline in the value of the firm's equity.

C. Evidence of the Use of EPA With Loans to Small Firms by Commercial Banks

There has been little systematic data collection regarding the use of EPA by commercial banks. A survey done by the Comptroller of the Currency as of August 31, 1970 showed that, of 502 banks sampled (including all national banks with deposits above \$225 million), 42 had equity participation loans outstanding. There were 112 such loans with a total value of \$158.9 million. This amounted to roughly 3/10 of 1% of the commercial and industrial loans held by the sampled banks at the time of the survey.

The loans tended to be concentrated among larger banks, with 64% held by banks with deposits of \$1 billion or more. While data by size of borrower were not presented, data by size of loan were given. Of the total 81% were loans of \$1 million or more, 5% were loans of \$500,000 to \$999,999 and 8% were loans of \$100,000 to \$499,999. These data do not suggest that the use of EPA by banks was directed toward smaller firms. A survey done by Boyd as of March 1, 1971 of a sample of 150 banks drew responses from 96 banks, 18 of which used equity participation loans. [19] Unfortunately, no breakdown by size of loan or size of borrower was given.

In a 1966 study of "incentive financing," Hayes gathered case examples of equity-based loans to business firms by life insurance companies. Regarding the type of firm using this type of finance he reported,

My interviews and discussions with a wide range of people concerned with insitutional investment uncovered a general conviction that only marginal or new businesses in a few high-risk industries have had to resort to incentives to obtain needed financing. However, my study of active incentive financing indicates this is not true at all.

On the contrary, it appears that the great bulk of the business organizations accomodated with incentive financings have seen well-established companies from a wide variety of industries scattered all over the country. [20]

As the theoretical framework developed earlier suggests, the EPA is useful as a positive pricing vehicle and there is no reason in financial logic why its use need be confined to some "down and out" category of "desperate" borrowers. We should not be surprised to have these observations suggest that EPA are used in large-firm financings.

It must also be remembered that the SBIC and venture capital firm are another source of EPA credit to smaller, newer business firms. One might argue that all of the EPA-linked credit extended by banks to small firms is coming through bank-controlled SBIC. As an indication of this activity, consider that SBIC-financed firms in 1979 had median employment of 10 people, median gross revenue of \$487,000 and median total assets of \$327,000. This is good evidence of specialization with "small" firms. The distribution of investment, by type, in 1978 and 1979, is shown below in millions of dollars.

	1978		1979		Percentage Change
	\$	%	\$	%	
Straight Debt	\$118.4	50.8%	\$134.5	48.0%	13.6%
Debt with Equity	89.0	38.0	67.7	24.1	(23.9)
Equity Only	25.2	11.2	77.9	27.9	209.1
	\$232.6	100.0%	\$280.1	100.0%	

Source: SBIC Digest, Washington, D.C. (Small Business Administration, February 1980), p. A-2.

These data are for the entire SBIC industry, not just the bank-related SBIC's. It is evident that the annual flow of "debt with equity" is quite modest (\$89 million in 1978, \$68 million in 1979) and that the flow of straight equity is of roughly the same size. When one bears in mind that these SBIC's are subsidized through government loans and tax concessions and that they are highly levered, the small annual flow of equity-related funding to small business is all the more remarkable.

The sum of this information, viewed against the theoretical framework established earlier, indicates that banks have not made a great volume of EPA-linked loans and that the volume of those made (either directly or through SBIC's) to small business has been very modest.

## VI. Policy Considerations for Bank Management and Regulatory Agencies

The use of EPA has raised a number of questions regarding their impact on the activities of individual banks and the banking system as a whole.

- A. Will EPA's transform banks into risk-seeking institutions which place the interest of the bank stockholder ahead of the depositor, thus becoming venturesome, "go-go" institutions?
- B. Will EPA's give the bank such a vested interest in the borrower that the bank's credit standards would be relaxed toward any borrowers in which attractive equity opportunities are available? Would this also lead to acquisition of voting control by banks over small and medium companies and substantial influence in large companies?
- C. Does equity participation represent an opportunity for banks and their customers to circumvent restrictive credit policies imposed by monetary authorities?
- D. Based upon the evidence visible to date, what appears to be the future role and significance of EPA's as a pricing device in banking?

### A. Risk Acceptance

The nature of banking regulation in the U.S. since 1933 has been aimed primarily toward the protection of depositor's funds, basically because bank deposits constitute a large part of the money supply, however defined. The operating philosophy of most U.S. banks has been similarly directed so that regulatory policy and operating policy have been relatively consistent over this period.

This policy orientation has resulted in a number of structural safeguards being built into the banking system over time, such as deposit insurance, increasingly consistent regulation of state and national banks, central bank intervention in money and capital markets, secondary market mechanisms for long-term assets, and free markets for short term funds.

Nonetheless, these structural safeguards have been sorely tested during the years 1965-1980. This period has seen the full flowering of the sharp and

recurrent financial cycle. When superimposed upon an economic condition characterized by trends toward high inflation and low real growth, the cumulative impact of this cycle on financial markets has been severe.

The major impacts on commercial banks have been in disintermediation and the erosion of real capital. Large corporate borrowers have shifted to direct borrowing via commercial paper and, at the same time, have placed their liquid balances in the same market. Money market funds have systematized this process and extended its availability to non-corporate customers. Many of the firms which offer intermediation facilities and other financial services are investment dealers and brokerage firms. Curiously, they are entering "banking" areas quite freely at the same time that their "turf" (i.e., securities underwriting, dealing, and brokering) is protected against bank competition by the Glass-Steagall Act.

A major casualty of this 15 year period of change has been the fixed-rate bond market. While reports of its total demise are probably premature, the likelihood of a long-term fixed rate bond being an attractive investment is open to question.

In this scenario, the future role of commercial banking faces a wide range of possibilities. In a recent issue of Business Week the following prospects for the corporate debt market were put forth:

- Borrowing for 20 to 30 years at fixed rates will largely be a thing of the past. Typical maturities will range from 10 to 15 years as they do now in the Eurodollar market.
- Even in the worst of times, the most creditworthy corporations and municipalities will be able to obtain credit relatively easily, while lesser credits will have severe difficulty.
- Securities convertible into equity will become commonplace, and prices and dividends of some securities will be tied to underlying assets.



- Bank loans will become far more prominent at the expense of publicly traded issues, which will shrink in importance.
- Banks will attempt to demand strong guarantees or equity kickers from borrowers, this giving them a greater say in corporate decisions. [21]

If the commercial banking industry is to increase the scope and market share of its credit activity it must come to grips with two major problems: purchased funds now equal about 2.25 times core deposits; and bank equity equals less than four percent of bank assets. The combination of pressures will require an imaginative response from the banking industry.

As a result, the role of analysis and judgement has become critically important in the credit function. In developing the customers required for continued growth, banks will need to accommodate the needs of firms in various stages of development, including less mature firms. In many cases banks will be required to extend the equivalent of risk capital: unsecured, long-term funds, the repayment of which is dependent on future earnings. This will demand an analytical approach more closely resembling that of the common stock analyst than that historically associated with the bank credit analyst.

For years, high risk commercial loans have been handled through installment loan financing where add-on interest, strict amortization, and the chattel mortgage made such loans bankable. More recently, banks have chartered small business investment companies (SBIC) to provide long-term financing to small companies with high growth potential. Equity participation is virtually a standard feature of SBIC operations and the volume of equity realizable by the bank's SBIC (in terms of value at time of closing) will represent a large voting interest in the borrowing firm.

The use of EPA's as supplemental compensation on non-SBIC business loans differs distinctly from their use in SBIC operations. The bank cannot realize voting power or dividends from this method of pricing commercial loans because

it cannot effectively hold the stock. The volume of warrants a bank may take without fearing S.E.C. insider implications is relatively small, thus limiting the profit potential open to banks. From a risk acceptance viewpoint, equity as a pricing supplement is an attractive alternative in those commercial loans which justify a relatively high yield but which do not meet the installment loan or SBIC criteria.

It is entirely possible that a banker might accept a credit which is fundamentally unsound when warrants are involved. The question is whether the lending officer is more likely to do this than if the reward were specified in other terms, such as a high interest rate, balances, fees, or the promise of subsequent or peripheral business. The answer reduces to a consideration of the quality of credit analysis, judgement and management in the particular bank and the effectiveness of regulatory examination, rather than to the intrinsic characteristics of the equity participation concept.

Certainly, the general practice of banks lending solely on the basis of equity participation seems inconsistent with the public policy goal of a stable payments system. It is also inconsistent with the bank's profit goals due to the added variability it would introduce into earnings. In practice, equity participation is most likely to be used as incremental and supplementary compensation in cases where the lender combines it with a contractual interest rate, compensating balances, and fees. The likelihood of banks becoming "go-go" institutions because of the use of such equity participations as currently exist seems remote at this time.

#### B. Vested Interest in the Borrower

One of the points of issue concerning EPA's is the fear that their use will create a bond of common interest between lender and borrower. This possibility

does exist and the implications are serious for depositors, other borrowers and the public interest. Before discussing the ramifications of this type of linkage, it is well to review some of the ways in which banks and their credit customers are already linked.

Despite the historic prohibition of holding corporate stock, banks are often in position to control the voting of certain shares. Banks may directly hold shares pledged as collateral on a defaulted loan. Through their SBIC or Edge Act activities they gain an even more direct and significant type of control over shares. Furthermore, the fact that bank trust departments are free to choose the investment distribution of trust funds and have the power to vote the shares confers upon the bank a certain degree of potential voting control and influence over the affairs of corporations.

In the orthodox bank relationship the corporate borrower is subject to certain controls in the form of restrictive covenants. Occasionally, a representative of the bank sits of the corporate board. Periodic operating reports and plans are usually required in this relationship. In effect, the bank is quite often an insider and in some cases a policy-maker by the nature of its normal relationship with the borrower.

How does the introduction of an EPA alter this relationship? As an analogy, consider the effect of equity kickers on investment bankers. Typically, an underwriter will support the price of a stock on which he holds warrants, since the favorable exercise of the warrants represents his greatest source of potential profit. The latitude available to the investment banker is significant but the key factor is that most of his decisions regarding the stock are based on the perceived impact on his warrants. There is the danger that a bank might be similarly motivated.

There are, of course, opportunities for a bank to "tout" the stock of borrowing companies. Indeed, the announcement effect of a term loan might raise the stock price, thus enhancing the warrant value. Also, a large unrealized capital gain could be protected by extension of generous credit terms during periods of temporary stress. Furthermore, bank pressure on management might be stronger if the equity stakes for the bank are higher.

The conditional equity position could certainly influence the bank's judgement and behavior in particular cases. However, there has always been ample opportunity for bank management to abuse its trust through self dealing. The regulatory agencies, through scrutiny of operations and personnel, have actively sought to control the incidence of such abuse. The general opinion of those interviewed for this research is that equity participation loans will likely draw particular attention from bank examiners.

In this case, the familiar regulatory question again arises: should potential abuse of equity kickers be controlled through prohibition or the examination procedure? It appears, at this point, that the latter method is being used, and is sufficient.

#### C. Effect on Monetary and Credit Policy

Traditionally, the major impact of restrictive monetary policy on the banking industry has been transmitted through a reduced rate of deposit expansion and depressed market values of long-term assets through interest rate increases. In the periods of tight money since 1966, banks have experienced the above phenomena and, among other things, have rationed credit, reducing or eliminating the volume of loans made for purposes felt to be non-productive, speculative, or inflationary. In part, this rationing was voluntary, but in part it also represented an aspect of the moral suasion exercised by monetary authorities.

The use of equity participation may enhance the expected profitability of loans in periods of tight money and inflation and may enable banks to maintain earnings growth despite a diminished growth rate in deposits. This may help offset the income effect of tight money on banks and, to some extent, may offset the intentions of monetary policy.

Equity participation may be particularly effective in attracting loan funds to borrowers or sectors of the financial markets which, due to credit rationing or interest rate ceilings would not normally be able to attract funds. This could partly offset the intention and effect of monetary policy. If, for example, interest rate ceilings and lending limits on mortgage and real estate development credit were being imposed well below market levels in order to hinder an inflationary expansion in housing, the incentive of equity participation might be strong enough to lure funds to the housing sector. Also, the opportunity to finance corporate acquisitions or to provide interim financing prior to a public securities issue, both of which are types of loans usually restricted by credit rationing, might be made attractive by an equity incentive.

There are other specific instances in which equity participation might complicate bank regulation and monetary policy. This suggests that even more pressure will be brought upon the structure, methods, and resources of the agencies responsible for banking regulation and monetary policy.

#### D. Future Uses of Equity Participation in Bank Lending

Business firms in the U.S. have become increasingly aware of the implications of using conditional equity participation agreements as a means of paying for credit. There has been a certain cultural shock associated with the introduction of the concept into bank lending, but indications are that this is receding and borrowers are investigating the positive aspects of this type of compensation.

In the past, warrants and conditional interest rate agreements have been associated with speculative high risk ventures or poor credit ratings. The original use of these devices by banks was, in fact, in situations where the bank had to work out recovery on deteriorating loans. It is now apparent that equity participations can be used by a borrower to obtain specially tailored financing services from banks and other investors which might not have been available without the equity incentive. Both warrants and cash over-rides can ease the cash flow pressure for borrowers and improve the terms of the bank debt. The fact that the bank loan is made available at desirable terms may improve the borrower's long run implicit cost of capital, depending on the earnings dilution resulting from the warrants or cash over-ride.

Banks which extend credit for unusual or risky purposes now seek to earn a commensurate profit for the extra analytical, managerial and judgemental effort involved. Thus, when banks are urged to finance local development, small or minority business, mergers, research and development, or other such programs, bank management should require and public policy should perhaps permit the bank to share directly in the benefits of the credit extended.

As banks become accustomed to the legal and financial details involved in equity participations, a greater variety of uses will be found for this device as a supplementary form of compensation. As legal and regulatory uncertainty is reduced through clarification, the use of EPA will proceed at an increased pace. A ratchet effect will likely occur as this essentially tight-money innovation becomes a part of regular bank pricing policy. Borrowers are already conditioned to the notion of giving up equity for credit and it remains for the banks to determine exactly how they wish to ask for it.

## VII. Conclusions

This research has produced evidence which demonstrates the commercial banks do indeed use equity participation agreements (EPA) in connection with loans to business firms. The scant data which exist indicate, however, that the reported volume of use is a very low percentage (less than one percent) of bank credit to business.

The research also determined that a major obstacle to the use of EPA has been uncertainty among banks as to the legal and regulatory propriety of EPA. As a result, banks have chosen a path of least resistance and have chosen not to use EPA beyond an occasional experimental level. One is impressed by the uncertainty and "nervousness" which exists among regulatory agencies. The chief issue is definition of the Glass-Steagall Act boundary and the division between "banking" and "commerce." As a result, regulatory agencies virtually promise that EPA loans will attract the special attention of bank examiners. This is enough to scare off all but the most truculent of bankers!

The paper presents evidence which argues strongly that EPA fall well within the legal and regulatory limits facing banks. This conclusion is reached after both a search and analysis of statutes and rulings, and after conferring with counsel at national and state level bank regulatory agencies and reading opinion letters sent to banks from those agencies. There is no apparent reason why banks cannot use EPA.

To determine whether EPA loans make sense from the viewpoint of banker and borrower, a theoretical framework of analysis was constructed. The EPA was shown to be useful in two major ways. First, it is a potential protective device for the bank against the possibility that the borrower will adopt

higher-variance (i.e., high risk, higher return on equity) projects. For the borrower, the EPA can increase the availability and reduce the cost of credit by providing an economical alternative to a comprehensive set of protective covenants usually imposed by the bank to achieve the same result. Second, it offers a reward to the bank for credit or special services offered to a borrower (e.g., a "bail-out," a commitment for continued availability of funds through difficult times). From the borrower's viewpoint, the EPA can be a fair and relatively painless way of paying for useful services on a conditional basis. This may be especially important for non-prime borrowers (the typical small business case) whose market power and price elasticity are low or non-existent.

Arguments were also advanced regarding economic and financial structure barriers to the use of EPA. For example, when a borrower has taxable income, the cost of debt is usually well below the cost of equity on an after tax basis. The EPA then becomes an expensive financing vehicle. Where no taxable income exists, the cost of debt and cost of equity are more nearly equal after tax, and the debt-equity cost differential argument is reduced in importance. Also, it is well known that the stock market as an "exit route" for EPA vehicles has been very uncertain in recent years. In the paper a variety of internal and private placement alternatives were demonstrated which make the EPA feasible, even with small-firm borrowers.

Finally, certain public policy questions were addressed and arguments advanced concerning the prospective impact such pricing would have on banking and its relation to the economy. The conclusion of this paper is that demand for this type of financing will grow and that it should be governed through regulation and not through prohibition.



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