1972

Empirical and Theoretical Aspects of Accounting for the Issuance of Convertible Debt.

Gordon Adolph Hosch

Louisiana State University and Agricultural & Mechanical College

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EMPIRICAL AND THEORETICAL ASPECTS OF ACCOUNTING
FOR THE ISSUANCE OF CONVERTIBLE DEBT

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Department of Accounting

by

Gordon A. Hosch
B.S., Louisiana State University in New Orleans, 1963
M.B.A., University of Arkansas, 1965
August, 1972
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ABSTRACT

The extensive use of convertible debt (in excess of $1.5 billion annually) has made this type of security very prominent in financing the activities of modern corporate organizations. In addition, as a result of Accounting Principles Board Opinion No. 15, these securities have a direct influence upon reported earnings per share. Considering these factors, it is imperative that the financial statement presentation of convertible bonds reflect the economic characteristics inherent in these securities.

In order to determine whether current practice satisfactorily achieves the goal of reporting the economic substance of the transaction, this study was designed to evaluate the acceptability of allocation of value to the conversion option. More specifically, the null hypothesis of this study is that there would be no significant difference for theoretical or predictive purposes under alternative procedures of accounting for convertible bonds.

The testing of the theoretical portion of the hypothesis involves an examination of the current literature together with information obtained from the files of the Accounting Principles Board. In addition to these data, an interview was conducted with the Assistant Administrative Director of the APB.
The empirical research encompasses a retrospective analysis of the effects of allocation on the use of accounting data in projecting the movement of common stock prices. The data used were obtained from the annual reports of companies having convertible bonds outstanding from 1961 to 1970. In addition to this restriction, each company had to have conducted profitable operations during this period in order to qualify. The companies used were randomly selected from a list of prospective companies prepared from information contained in Moody's Industrial Manual.

A regression analysis was made with price of the common stock as the dependent variable and several accounting ratios as the independent variables. In the final analysis, the coefficients of determination for the two sets of data (one adjusted for valuation of the conversion feature and the other unadjusted) were compared to determine if there was a significant difference between them.

The results of the analysis led to the rejection of the theoretical portion of the null hypothesis and an acceptance of the predictive aspect.

From a theoretical point of view, it was clearly shown that the valuation of the conversion option of convertible bonds is necessary in order (1) to account for the two economic elements (the conversion privilege and the debt element) present in the debt-equity package, (2) to charge operations of the period with the actual cost of the funds
used, and (3) to comply with the distinction between liability and owners' equity necessary for proper reporting. The study also indicates that the valuation problem could be solved with the cooperation of the financial analysts and investment bankers.

The empirical test of the null hypothesis indicated there was no significant difference between the predictive ability of the information taken directly from the financial statements and the same data adjusted for valuation of the conversion privilege at the 95 per cent level of confidence.

The overall conclusion is that the valuation of the conversion privilege should be made in financial statements proposing to show the financial position and results of operations of corporate organizations.

The financial statement presentation of this information should classify the discount resulting from the valuation procedures as a contra account to the face value of the debt element, and the conversion feature should be classified as part of contributed capital. It was further determined that the discount should be amortized over the life of the bonds as additional interest expense.
Chapter 1

INTRODUCTION

In the latter 1940's the cessation of hostilities and the restructuring of a war-time economy created a tremendous need for capital for regearing industry and to keep pace with the ever growing problem of inflation. At that time the future of the national economy was anything but certain. During World War II the Gross National Product rose above $200 billion, and the populace of the country wondered whether the end of the war would also bring an end to economic growth.

The pains of the depression still stood foremost in the minds of many as the peace celebrations began to draw to a close. Economists were predicting everything from "boom to bust," and this variant outlook may have been the spark that kindled the growth of the use of convertible bonds.

These financial instruments held the key to financial security from an investor's standpoint in that they offered the speculative element of an equity, which provides somewhat of a hedge against a rise in price levels, and the security of a debt instrument. Since the price levels of equity securities have a high correlation with inflation trends, the convertibility feature offers some protection against the
perils of inflation. However, there is no such thing as perfect protection. During several periods within the last five years this protective element has not functioned successfully, as price levels have soared while at the same time prices of stock were plummeting, but the general trend exhibited in the past should prevail (i.e., equity prices should, over the long run, follow the movement of the general price level), and the exception that has been witnessed in recent years should not be expected to continue. Thus, while equity protection against inflation is not perfect, at present, there seems to be no better means available.

Also concerning the protection of the debt element, since bond prices vary inversely with the interest rate, the pure debt value will fluctuate, but it, too, provides an element of security—the degree of which will vary with the business risk of each company. In addition, there is the "guaranteed return and redemption" feature of debt that also has some aspect of security.

Thus these financial instruments seem to offer an investor as much protection as is presently possible, and this, alone, has been an important factor in the growth in the use of convertible debt.

THE PROBLEM

Use of Convertible Securities

While the convertible security was not an idea spawned by this economic uncertainty, it definitely was
tailor-made for such circumstances. The actual origin of convertibles is not known, but there is definite proof of the use of this type of financing as far back in time as King Charles I of England (1600-1649).\(^1\)

The use of convertible securities in the United States can be traced back to the 1850's and 60's, but recent emphasis on the utilization of the securities far overshadows their initial activity. From Table 1 (see page 4) it can be seen that in 1959 a little over one-half billion dollars of convertible debt was issued and this brought the total outstanding to two and one-half billion.

During the early 1960's convertible debt was used rather sparingly as compared to the period of 1965-1970. At the end of 1965 there was $3.4 billion of this type security outstanding. Since 1965 the phenomenal growth in the use of convertible bonds has created the current situation that exists in relation to the proper accounting procedures that should be followed upon issuance.

While the final drafts and approvals of Accounting Principles Board Opinion No. 10\(^2\) were being compiled, an

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\(^1\)In this instance King Charles was allowed to convert his bonds of the London Water Company into stock. The first recorded issue of actual convertible securities dates back to the early 1700's. For an extended discussion of this topic see C. James Pilcher, *Raising Capital with Convertible Securities* (Ann Arbor: Bureau of Business Research, University of Michigan, 1955).

<table>
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<th>Amount</th>
<th>Number of Issues</th>
<th>Dollar Inc. (Dec.) Over Previous Year</th>
<th>Percentage of Dollar Inc. (Dec.) Over Previous Year</th>
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<td>$ 514.9</td>
<td>79</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>1960</td>
<td>347.2</td>
<td>94</td>
<td>(167.7)</td>
<td>(33%)</td>
</tr>
<tr>
<td>1961</td>
<td>525.1</td>
<td>82</td>
<td>177.9</td>
<td>51%</td>
</tr>
<tr>
<td>1962</td>
<td>325.5</td>
<td>83</td>
<td>(199.6)</td>
<td>(38%)</td>
</tr>
<tr>
<td>1963</td>
<td>228.6</td>
<td>50</td>
<td>(96.6)</td>
<td>(30%)</td>
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<tr>
<td>1964</td>
<td>372.4</td>
<td>49</td>
<td>143.8</td>
<td>62%</td>
</tr>
<tr>
<td>1965</td>
<td>1,183.3</td>
<td>61</td>
<td>810.9</td>
<td>218%</td>
</tr>
<tr>
<td>1966</td>
<td>1,760.7</td>
<td>96</td>
<td>577.4</td>
<td>49%</td>
</tr>
<tr>
<td>1967</td>
<td>4,062.3</td>
<td>230</td>
<td>2,301.6</td>
<td>131%</td>
</tr>
<tr>
<td>1968</td>
<td>2,699.0</td>
<td>202</td>
<td>(1,363.3)</td>
<td>(33%)</td>
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<tr>
<td>1969</td>
<td>2,792.2</td>
<td>135</td>
<td>93.2</td>
<td>3%</td>
</tr>
<tr>
<td>1970*</td>
<td>1,552.8*</td>
<td>41*</td>
<td>N/A</td>
<td>N/A</td>
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*January - August

additional $1.8 billion of convertible debt was issued. The amazing fact is the increase immediately following the Opinion requiring allocation of value to the conversion privilege. During 1967 an all time high of $4.1 billion of these securities was issued. This was a 131 per cent increase over the amount issued in the preceding year. It appears that the allocation requirement did not stop or even hinder in any way the use of convertible bonds. Actually there has been a marked decrease in the issuance of convertible debt in 1968 and 1969 as compared to 1967. The fact that this is the period after the suspension of the paragraphs of Opinion No. 10 requiring allocation probably had no effect, but it is an interesting turn of events.

The figures presented for 1970 can be misleading. During the first six months of that year $1,462,400,000 of convertible bonds were issued, but due to the unstable and overall downward trend of both the bond and stock market only $90 million was issued in July and August combined.

Thus while there is a definite trend toward the continual use of convertible debt an annual rate of approximately seven times that of the early 1960's, there seems to be little or no chance, in the near future, of ever surpassing 1967. Despite this, $2 billion to $3 billion of these securities are issued each year thereby making them an important instrument in the financial world. Even the
issuance of Opinion No. 15\(^3\) on earnings per share did not have a material effect on the use of convertible debt. It is clear that these securities play a far more important role in financial planning than simply a sham to be used to aid the financial presentation of expanding companies.

This continued heavy use of convertible bonds is one of the factors that created much of the criticism of Opinion No. 10, and it is one of the reasons for this study. A financial instrument as important as convertible debt must be accounted for in a manner that discloses its inherent characteristics in order to present fairly the financial position of a firm issuing these securities.

**Need for More Attention on Accounting for Liabilities**

Recently there has been a renewed interest in accounting for liabilities. The result of current topics arising in the areas of income tax allocation, lease accounting, and accounting for pensions have focused attention on the need for an autonomous definition of this term that will coincide with the continuity assumption that is basic to modern accounting.

The methods of accounting for taxes, for long-term leases by the lessee, and for pension costs involve some similar problems, although each has created new problems and challenges for the accounting profession and for accounting theory. The common problems include the nature and reporting of the related assets and

liabilities and the timing of expenses or other income
effects. In each case, questions arise regarding the
nature of liabilities. Does a liability exist when
the creditor does not acknowledge the debt? Should
obligations be reported if it is unlikely that they
will be paid in the aggregate? Regarding the timing
of expenses, questions arise regarding whether emphasis
should be placed on cash flows, assumed or arbitrary
associations with revenues, or on changes in the valua-
tion of assets and liabilities. . . .4

In each of these areas those opposed to recognition
have used as their major argument the fact that the liability
aspect of the problem does not fit the definition of a
liability that was in use at the time the problem arose.5
This argument was heavily influenced by a narrow concept
that failed to adequately reflect the economic nature of the
transaction. The emphasis was on a legalistic approach
where a liability was recognized only when there was a direct
debtor-creditor relationship.

While pronouncements from the Accounting Principles
Board (APB) have substantially reached a solution to the
various areas mentioned above, the lack of a workable
definition is apparent again in the Opinions dealing with
convertible securities. Here the Board has changed approach
from one that required allocation of value to the conversion
feature of convertible debt (Opinion No. 10) to the suspen-
sion of this Opinion before it came into effect (Opinion No.

4Eldon S. Hendriksen, Accounting Theory (rev. ed.;

5For examples of this situation see Thomas M. Hill,
"Some Arguments Against the Inter-Period Allocation of
Income Taxes," The Accounting Review, CIV (July, 1957), 358,
and ibid., p. 477.
and finally to a complete reversal of their original approach by the issuance of Opinion No. 14 which prohibits allocation of value as attributable to the conversion feature.

Summary of the Significance of the Problem

From the preceding discussion it can easily be seen that there is a definite need for more research in the area of liabilities. At the same time, the specific topic of convertible debt remains in prominence as a result of the extensive use of these securities (see Table 1). Each year in excess of $1.5 billion of these bonds are being issued, and there is no indication of any decrease in use on the part of the corporate financiers.

The whole situation is complicated by the fact that the proper accounting treatment of convertible debt is dependent upon an understanding of the instrument plus a meticulous distinction between the concept of a liability and owners' equity. Thus, the liability problem is closely associated to the classification of convertible debt, and the latter cannot be resolved without some attention being directed toward the concept of a liability.

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In addition, the area of convertible debt has also expanded to earnings per share. Through the concept of a residual security and Opinion No. 15, convertible debt can directly influence the numerator and the denominator in the earnings per share calculation. Thus in addition to the balance sheet treatment of these securities, the concept of earnings per share and its significance enters the accounting question. As such, the proper reporting of convertible debt is very important in financial accounting.

NATURE OF CONVERTIBLE DEBT

With the use of convertible debt reaching the limits it has, some questions arise as to the nature of this form of obtaining funds and the necessity, if any, for special treatment in the accounting records. The type of convertible debt referred to in this study is bonds that can be exchanged for common stock of the issuing company at the option of the holder.

While there is no specific pattern of features that must be included in an issue, practically all of these securities are unsecured and subordinated to all existing creditor claims and possibly to all future issues of debt. In addition, the nominal rate of interest is usually several percentage points below the "current market rate" for similar securities without the conversion option. The intent is to offer to the public an issue priced at par—usually
$1,000 per bond.\textsuperscript{8} With the price and the subordination
given factors in the bargaining, the points of negotiation
center on the coupon interest rate and the conversion price.\textsuperscript{9}

Since practically all of the recent issues of these
securities carry a conversion price that is approximately
15-20 per cent above the current market value of the related
stock, the major question for negotiation is the coupon rate of interest.\textsuperscript{10} Of course the major point of contention here
involves a trade-off between interest and capital gains.\textsuperscript{11}
The actual tax aspects of this situation represent a signifi­
cant factor that must be considered in the preparation of an
offering by the company and its financial consultants, and as

\textsuperscript{8}Copies of work sheets used by Merrill Lynch, Pierce,
Fenner and Smith covering convertible bonds issued from
January, 1967, through August, 1970, indicate that out of a
total of 522 issues only 9 (1.7 per cent) were sold at a
price other than par.

\textsuperscript{9}The conversion price relates to the number of
shares that can be obtained from converting the bond divided
into the par value of the bond. Care must be taken not to
confuse this with the conversion value of the security and
the conversion parity. The former is the number of shares
that can be obtained from conversion multiplied by the market
value of each share. The conversion parity of the bond is
the current market price of the security divided by the
number of shares of common stock that can be obtained upon
conversion.

\textsuperscript{10}William Schwartz and Julius Spellman, Guide to
Convertible Securities (New York: Convertible Securities

\textsuperscript{11}For a more extended discussion of this topic see
Eugene F. Brigham, "An Analysis of Convertible Debentures,"
Readings in Contemporary Financial Management, eds. Keith B.
Johnson and Donald E. Fischer (Glenview: Scott, Foresman
Valuation of Convertible Bonds--Part I: The Model," Industrial
such will be considered later in this study.

The conversion feature creates a possible call on common stock at the option of the holder. Therefore when purchasing this type of security two basic rights are obtained: (1) the right to hold the security until maturity (or call by the issuer) and collect the interest and (2) the right to exchange the bond for stock in the issuing company. Since these are mutually exclusive rights, a great deal of controversy has arisen over whether or not recognition should be given to both aspects, i.e., should the conversion value be recognized in the accounting records. The situation can be summarized as follows: is the convertible bond a true hybrid security, or is it, in fact, basically a debt instrument?

If the security is a true hybrid (i.e., it contains incongruous elements), it would be desirous to separate these different elements on the financial statements. However, if the security is only a debt instrument, there is no need for recognition of anything at issuance except the debt element.

THE POSITION TAKEN BY THE APB

The current position of the American Institute of Certified Public Accountants (Accounting Principles Board Opinion No. 14) is that due to the inseparability of the rights there should be no separate accounting for the conversion feature. However, this position against allocation
seems to be founded, as a review of the files of the APB shows, on the difficulty of determining the "straight investment value" of the bonds, the concomitant reduction of earnings from the discount amortization, and the nondeductibility of the periodic write off of the discount for tax purposes.

THE PURPOSE OF THE STUDY

Accounting procedures should be predicted upon a logical base of postulates and assumptions. While no definitive study with any authoritative support has been completed in the broad area of generally accepted accounting principles, the omission of an item from the financial statements is not justified simply because the data is difficult to obtain or unfavorable to operations. Accounting generally emphasizes the economic substance of events over the specific legal form used; and, it is important that the same attitude be established for the accounting for the issuance of convertible debt.

With this in mind, it is the purpose of this study

12The APB has recently (October, 1970) issued Number 4 in a series of "Statements" in which they present a hierarchy of accounting principles. Since a "Statement" does not have the authoritative support of an "Opinion," it simply presents the Board's view for educational and developmental purposes. See Accounting Principles Board, Accounting Principles Board Statement Number 4: Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises (New York: American Institute of Certified Public Accountants, 1970).
to analyze the data available in order to evaluate the acceptability of allocation of value to the conversion option. More specifically, the null hypothesis of this study is that there would be no significant difference for theoretical or predictive purposes under alternative procedures of accounting for convertible bonds.

RESEARCH METHODOLOGY

The proper accounting treatment for convertible debt will be examined from two approaches: theoretical and empirical. The former will concentrate on determining whether or not a value should be placed on the conversion feature from a logical point of view using the theoretical structure of accounting and finance. Here the current literature in both fields together with data obtained from the files of the APB are used for analytical support.

The empirical research encompasses a retrospective analysis of the effects of allocation on the use of accounting data in projecting the movement of common stock prices. The data used were obtained from the annual reports of companies having convertible bonds outstanding from 1961 to 1970. In addition to this restriction, each company had to have conducted profitable operations during this period in order to qualify. The companies used were randomly selected from a list of prospective companies prepared from information contained in Moody's Industrial Manual.13

The actual testing procedure involved a regression analysis using the price of the common stock as the dependent variable. Several ratios that would be affected by allocating value to the conversion privilege were used as the independent variables. The analysis involved a comparison of the coefficient of determination ($r^2$) for the two sets of data (one adjusted for valuation and the other unadjusted) to determine if there is a significant difference between them at the 95 per cent level of confidence.

The final evaluation of the acceptability of allocation procedures involves an analysis of the results of both the theoretical and empirical tests.

THE SCOPE OF THE STUDY

The major subject area of this study is the presentation of the proper method of disclosure for convertible debt on the financial statements of the issuing company. While the particular methods chosen to value the conversion feature are an important consideration, they are discussed only as a means of presenting a complete picture of the overall problem. In addition, the areas of earnings per share, other convertible securities, and debt issued with warrants are all part of the general problem of financial statement presentation of the complex and often mystifying financial structure of modern corporations; however, they are of interest here only in as much as they help provide an insight to the central problem of convertible debt.
The empirical portion of this study does not include the development of a complete model for purposes of forecasting the movement of common stock prices. On the other hand, there was an attempt to use enough data to obtain a significant prediction of the movement of stock prices; however, the central focus of attention is on the effects of valuing the conversion privilege of convertible bonds.

In order to be of any value in reaching a conclusion, the calculation of the more important ratios used must be affected by valuing (and subsequently amortizing against income) the conversion feature. Thus those ratios selected must serve two functions. First, they must contain elements that will change as a result of valuing the conversion privilege, and second, they must serve some useful function in the overall evaluation of stock price movements. As a result of this condition some other products of the reporting process that may have a significant relationship to the market price of common stock would not be represented in the final equation. However, since these data elements would be of little value in achieving the purpose of this study, they may be eliminated without any prejudicial effect on the final conclusions. While there are some variables included in the original equation that were not directly affected by the allocation process, the intent here was to make the study as complete as possible without losing sight of the central purpose.

It is an accepted conclusion that many factors other
than published accounting information have both a direct and
indirect influence upon the market price of a company's
residual security. Examples of these exogenous causal
factors are such things as the illness of the President;
expectations regarding the future growth of the economy; the
elasticity of the demand for the products of a given company;
current and expected economic measures adopted by the Presi­
dent and Congress; the structure of interest rates; speeches
by company officers, security analysts and others; pure
speculation on the part of prospective investors and a host
of other similar factors--the list is probably endless.
Since these exogenous factors affect some companies dif­
erently than others, in addition, because of the nature
of the items, their exact effects cannot be determined.

This is not to say that each of the variables
selected have the same effect on all companies. Regression
analyses run in preparation for this study often produced
results with one dependent variable having an overwhelmingly
significant relationship with the price of the stock, and
more often than not this variable was different from company
to company. The point at issue here is that the independent
variables included in this portion of the study are likely
to have an effect on stock price that can better be pre­
dicted than those previously mentioned. In addition, the
variables used are more adaptable to quantitative measure­
ment. This would hold true even where many companies are
considered and there is therefore a greater "averaging
effect" on the analysis than if it were restricted to only one company.

THE LIMITATIONS OF THE STUDY

As with any other attempt to limit the operations of the "real world" to a particular equation or series of equations, the regression analysis is not without limitations that must be understood before the results can be properly evaluated. However, these limitations are not of such import that they negate any generalizations that are derived from the results.

One of the limiting factors is that there are many methods that can be used to estimate the value of securities. In this study a financial ratio analysis approach is followed, and one must recognize the limitations of this method as there will be other factors that will affect the value of a security.14 In addition, other approaches to security valuation could be used, the more important of these being the intrinsic approach and charting. However, the nature of a ratio analysis approach is more conducive to the purpose of this study.

It is also quite possible that some data other than that selected would influence stock price but was not

14 This method has been used in several studies, one of the most extensive of which was prepared by Beaver, Kettler, and Scholes. See William Beaver, Paul Kettler, and Myron Scholes, "The Association Between Market Determined and Accounting Determined Risk Measures," The Accounting Review, XLV (October, 1970), 654-82.
included in the original equation in an attempt to keep the study at a workable size. In addition, the combinations of variables tested may not completely cover the gamut of all possible selections. Here the possibility exists that other combinations of information affected by allocating value to the conversion feature could have been included, although those that were employed represent the ratios that generally are considered to be used by most of the readers of financial statements.

An additional limiting factor lies in the use of information projected into the future. Instead of a direct relationship of current data to current stock prices, the information may simply serve as support for the investor's projections for the particular company or it may require the adjustment of his expectations. In either case the effect may be substantial, but not directly measurable. Since only direct relationships can be tested through the methodology chosen, the indirect influence of many of these factors may combine to offset the direct effect whether it be statistically significant or not; but by the very nature of the indirect effects, it would be virtually impossible to measure them quantitatively.

Another important factor that must be controlled in some fashion is time. No matter what assumptions are made regarding the timing of published information, certain leaks and other premature exposures often make the actual distribution of financial information anticlimatic. Some form of
lagging procedure can be used to allow for some of this dis-
parity, but it would be practically impossible to eliminate
it altogether. Even if the distribution of this information
could be controlled until a particular time, not all investors
would receive it at the same time, and even more importantly,
not all of them would react simultaneously.

Since both the unadjusted and the adjusted equations
used practically the same information, it was decided not to
detrend these figures. The reasoning behind this approach
was that the purpose of the empirical portion of the study
is to measure the relative predictive ability of the two
sets of data and not the absolute value of the coefficients
of determination (r^2). As such, it is not likely that the
presence of any trend would disturb the analysis because it
would have approximately the same affect on both equations.
The probable result of a detrending procedure would be to
reduce r^2 for both the adjusted and the unadjusted data, but
it would not change the relative relationship between them.

As in any other communication of information certain
problems result from the simple procedure of coding (the
summarizing and reporting of the data) and decoding (the
translating of the data by the reader). The perspective of
each potential reader of financial information varies from
individual to individual and when this is combined with the
relatively unknown quantity of the investor's decision model,
there is no way of predicting the precise effect that widely
disseminated information has on a particular variable,
namely stock price for a particular company.

Despite the limitations of this study, there is still significant information that it can supply in evaluating the effects of accounting for the conversion privilege of convertible debt. The major caution that must be observed is that the conclusions drawn from the results do not overstep the boundaries as set forth above.

THE ORGANIZATION OF THE STUDY

In order to logically study the problem of allocation of value to the conversion feature of convertible debt it is imperative that the security itself and the reasons for its use be thoroughly understood. This analysis plus a discussion of the differences between the conversion option and warrants form the basis of Chapter 2. In addition, in order to complete the task of putting convertible debt in the proper perspective, a history of the various Opinions and background information germane to this study is reviewed.

Once the nature of the conversion feature is understood, the next step in analyzing the problem of allocation involves the study of the concept of a liability in general. The object here is to develop an independent definition of a liability that provides the profession with a foundation upon which it can build in the future. This analysis is prepared in Chapter 3.

Chapter 4 presents the case for allocation from both a positive and a negative approach, i.e., both the pros and
cons are analyzed. In addition there is a study of the arguments offered as rebuttal material by the opposing sides of the question. Included in the discussion are materials obtained from the files of the APB regarding convertible debt.

The actual process of valuation is the subject matter of Chapter 5. Here various methods of computation are studied together with the balance sheet treatment of the related items: (1) the bond liability account, (2) the premium/discount account, and (3) the account that would be used for recording any value allocated to the conversion privilege.

The empirical portion of the study is found in Chapter 6. The testing procedure involves a comparison of the coefficients of determination of a regression analysis on the unadjusted and adjusted data with stock price as the dependent variable and several accounting ratios as the independent variables. The purpose is to determine if there is a significant difference in the "predictive ability" of the data as presented in the annual reports (unadjusted) and the same information adjusted for valuation of the conversion option (with the concomitant amortization of the resulting bond discount) at the 95 per cent confidence level.

The final chapter represents a summary of the research methods used and the findings from both an empirical and theoretical approach. In addition, the final conclusions are presented regarding the proper accounting treatment for the issuance of convertible debt and areas for future study are discussed.
Chapter 2

CONVERTIBLE DEBT IN PERSPECTIVE

A complete analysis of the accounting for the conversion feature necessarily involves a discussion of the factors behind the use of these securities. For only through a thorough understanding of the instrument itself and the circumstances surrounding its use can the profession begin to account for the economic attributes of the conversion option. Therefore, the purpose of this chapter will be to examine the reasons for the use of convertible debt (from both the issuer and the buyer's point of view) and the events leading to the current status of accounting for these securities. Also included in this chapter is an analysis of warrants and their relationship to bonds with the conversion feature. Many of the characteristics presented in this chapter will form the basis for a later discussion designed to determine the proper method of accounting for the issuance of convertible debt.

REASONS FOR THE ISSUANCE OF CONVERTIBLE DEBT

Reduction of Interest Rate

One of the reasons for the use of a conversion privilege was to add a "sweeter" or an additional feature to
the bonds in order to induce some reduction in the interest rate.\(^1\) That this factor still exists there can be no argument. As evidenced by a review of *Moody's Convertible Bonds*\(^2\) it can be seen that the interest rate on these securities is from one-half to several points below the "norm" for similar securities issued at the same time. A study of several large corporations prepared by Eugene Brigham showed that those who mentioned the alternative issuance of standard debt indicated that an increase in the interest rate of approximately one-half to one per cent would have been necessary to maintain the same issue price.\(^3\) Thus it would seem these companies especially did not seek to issue straight debt securities. The small decrease in interest cost hardly would be justified to the existing common stockholders in return for a conversion privilege.

**Additional Equity Capital**

Recently there appears to be a trend of issuing convertible debt merely as a means of ultimately obtaining additional equity capital. This has been substantiated by several empirical studies. Brigham found that of the 22

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large corporations he studied, 73 per cent (16 companies) were primarily interested in obtaining equity capital while the remainder initially wanted to issue debt but found that the economic and market conditions were such that a straight bond issue could not be sold at a reasonable rate of interest.\textsuperscript{4} C. James Pilcher also came to the same conclusion from his study of the use of convertible securities made in 1955, the only difference being that at that time about 63 per cent of the 75 companies he studied desired to raise common equity.\textsuperscript{5} These results were based on the issuance of convertible debt and preferred stock during 1948-1953.\textsuperscript{6}

\textsuperscript{4}Ibid., pp. 344-45.

\textsuperscript{5}C. James Pilcher, Raising Capital with Convertible Securities (Ann Arbor: Bureau of Business Research, University of Michigan, 1955), pp. 60-62.

\textsuperscript{6}Additional support for this position can be found in a study by Browman (Keith L. Browman, "The Use of Convertible Subordinated Debentures by Industrial Firms 1949-59," Quarterly Review of Economics and Business, III (Spring, 1963), 73-74.) and a study by Otto Poensgen. Poensgen's findings show clearly that the conversion privilege usually is set at a relatively low level in order to allow for conversion of the securities long before the maturity date. The data he studied indicated that the conversion price was projected to be reached by the common stock in less than four years, and hardly ever greater than ten (the latter included two standard deviations from the sample mean). See Otto H. Poensgen, "The Valuation of Convertible Bonds: Part II--Empirical Results and Conclusions," Industrial Management Review, VII (Spring, 1966), 95. Thus it is difficult to come to any conclusion other than that managements' intent in issuing convertible debt in most instances has shifted to the desire to obtain equity capital on a delayed basis.
Brigham also determined that 46 per cent of the companies he studied had a policy of actively encouraging conversion through a well-timed call or through increased common stock dividends. A relatively high 31 per cent of these companies indicated they had no plans to force or encourage conversion at all. The important fact to keep in mind here is that these were rather large companies who were not forced into using convertible debentures. In general they could have either issued straight debentures or stock at "reasonable" costs, but instead, they chose convertibles.

The very use of the conversion option indicates, at minimum, the willingness of management to raise common equity capital and the degree of this acceptance can easily be measured by the relationship between the market price and the conversion price at the date of issuance. This can be projected to a definite interest to issue equity if the conversion price is set low enough relative to the current market price of the common stock and the economic and market trends.

**More Funds Are Made Available**

Another reason for issuing convertible debt is that more funds can be provided on a per share basis than through a large issue of stock. By setting the conversion price 15-20 per cent above the current market value of the common stock, the effective result in most cases would be the
issuance of equity securities.\textsuperscript{7} The issue price for a large block of stock will almost always be set below the current market price of the shares in order to insure the success of the issue. Anytime a large block of securities is "dumped" on the market the price will always fall—if for no other reason than the supply and demand relationship. Brigham's study supports this and indicates the probable reduction in price would range from two to five per cent of the current market price. He also found that small companies and those requiring large sums of funds met the most adverse conditions.\textsuperscript{8}

An additional aspect of this situation is that the underwriting commission on new issues of debt is usually less than the charges on equity securities. Components, Inc. is a prime example of this situation. In 1967 the company issued both convertible bonds and common stock during the year and the underwriting commissions on the bonds totaled about 2 per cent of the total issue price, whereas the cost of issuing the stock was over 5 per cent of the price of the

\textsuperscript{7}Poensgen, loc. cit.

\textsuperscript{8}The same effect was found by Charles Vinson in his study of convertible securities (Charles E. Vinson, "Rates of Return on Convertibles: Recent Investor Experience," \textit{Financial Analysts Journal}, XXVI (July-August, 1970), 113). In addition by obtaining more per share through the issuance of convertible debt than directly issuing common stock, overall fewer shares will be outstanding, and, therefore, the dilution on earnings per share will be less. This is still another factor favoring the common stockholders.
Thus another advantage of issuing convertible debt would be the lower flotation cost, especially if substantially all of the bonds were converted. In such a situation the company would pay for issuing bonds, but actually be issuing stock. There is, of course, some administrative cost involved in the conversion that would offset some of this advantage, however, the overall results still favor the convertible bonds.

**Lag Time**

Management can also make wise use of the lag time between the issuance of the convertible debentures and the conversion. By wisely setting the conversion price a company can issue convertible bonds and have funds to invest in construction, increased inventory levels, and other areas, and not have actual dilution of earnings until after the assets were acquired and generating revenue. In order for this to be effective the reader of the statements must be able to understand the difference between potential and actual dilution.\(^9\)

\(^9\)Prospectuses issued by Components, Inc. in February and July, 1967.

\(^{10}\)Since the issuance of Opinion No. 15, requiring the inclusion of most convertible securities in earnings per share, this factor has been somewhat diminished in importance, but there is still a clear distinction between actual and potential dilution.
Other Reasons for Issuance of Convertible Debt

Still another advantage of convertible debt is the call provision that is included in each issue. This allows management to virtually replace the debt with equity securities at almost any time that is profitable to the company. It also gives management more flexibility in determining the capital structure of the company.

In order to make the issue more attractive the conversion privilege has often been used as an offset to limitations of the issue that would normally make it unattractive to prospective investors, e.g., subordination, lack of a sinking fund, and the presence of a call provision. Actually the various covenants included in the bond indenture serve the many and varied interests of the purchaser and the issuer. What may be important to one may be totally immaterial to another. Thus, the entire package must be examined in light of the circumstances of the individual or company buying or issuing the securities.

Convertible bonds have also been used in mergers and acquisitions. In these types of situations convertible debt is issued in exchange for a company whose stock has a high dividend yield.

Despite the many reasons for the use of the conversion feature with debenture bonds, a vast majority of the evidence indicates the primary intent of management is to
issue equity securities on a delayed basis.\textsuperscript{11}

REASONS FOR THE PURCHASE OF
CONVERTIBLE SECURITIES

Two-Way Protection

One of the major reasons for purchasing convertible debentures is the two-way protection offered by these securities. Many analysts feel these debt instruments give the investor the best of two possible worlds. The inflationary factor is covered by the growth of the market value of the common stock and the resulting improvement of the investor's position through an increasingly more "valuable" conversion option. When the purchaser of the convertible debt desires to convert, it will usually be for his immediate gain.

On the other hand, should the market fall, interest rates usually fall, and the down side protection as to the principal and interest through a fixed maturity date and preference position (in relation to the common stockholders) in the event of liquidation should offer support to the market value of the bonds. Brigham refers to this lower valuation as follows.

\ldots the conversion value and the stock-debt value combine to establish a lower bound for the price of the bond. Logically, the bond would not sell for less than its value as straight debt \ldots and if it would fall below the conversion value \ldots arbitragers would

\textsuperscript{11}See studies by Brigham, Pilcher, and others that were previously cited.
enter the market, short the stock, and cover their short positions by buying and converting bonds. This latter process would continue until the market price of the bond is drawn up to its conversion value. The higher of these two floors dominates... forming the effective market value floor.  

In addition to this "floor" protection, the investor can share in company prosperity by electing to convert. Two of the major factors that would influence this decision are the dividend yield as compared to the interest rate on the bonds and the future outlook for company profits. Thus the purchaser of a convertible debenture can profit from an increasing market that simply pushes up the related common stock and/or from a favorable outlook for future profits. In either situation the purchaser can convert and sell the stock at a profit or he can sell the bonds before they are called. The latter would probably also yield a handsome profit because the market value of the bonds would tend to fluctuate closely with the stock into which it can be converted.

Leverage

In addition to this two-way protection the investor can get a better leverage factor with convertible debentures. Since most convertible bonds sell at or above the equivalent value of the shares under option, this creates an unfavorable price disparity and therefore precludes the use of "built in" leverage as can be found with common stock warrants. But an

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artificial leverage factor is created by the Federal Reserve System through its margin requirements. As of April 21, 1972, an individual may purchase convertible debt with a cash payment of only one-half of the total cost. This financing of 50 per cent of the total price is compared to a maximum financing of 45 per cent of the cost in a stock purchase.13

If an investor purchases ten $1,000 bonds (at par) convertible into ten shares of common stock each, he need only "put up" $5,000 in cash. On the other hand if another investor purchased 100 shares of stock selling at $100 per share he would have to pay a minimum of $5,500 in cash when the sale was consummated. Assuming the stock rises 10 per cent and then it is sold, the second investor will show a profit of about 15 per cent (before interest and taxes). Assuming the bond holder converts and sells his stock, he will show a profit of 19 per cent (before interest and taxes). Since the taxes would be the same and the interest differential would be nominal, the investor who purchased the bond initially will have earned a greater return on the original cash invested.

Antidulition Clause

Since speculation through the conversion aspect is probably the main reason for the success of these debentures, ___________

13These figures represent the margin requirements as set by Regulation T of the Federal Reserve Act.
one other provision should be mentioned here—the anti-dilution clause. This factor protects the original investment in its relation to the common stock equity outstanding against events such as stock splits, dividends, and issuances at low prices. Therefore some of the uncertainties the investor must face are reduced during the period of time the convertible debt is outstanding.

Fewer Restrictions on Purchase

The fact that the issuing company is actually placing bonds on the market will attract some institutional buyers who for one reason or another are prohibited from purchasing common stock. By purchasing a convertible bond, the institution usually will be able to benefit from an increasing market for either stock or bonds. Since these markets usually work opposite each other,¹⁴ versatility would be a definite reason for purchasing convertible bonds. The widening of the potential market would also be an advantage to the issuing company.

WARRANTS vs. CONVERTIBLE DEBT

The same economic conditions led to a rebirth of both detachable warrants and the conversion privilege in association with debt securities. The reactivation of these

financial instruments, under similar conditions\textsuperscript{15} and with each having a like effect on corporate capital, has led to a great deal of confusion in the accounting profession. Since these similarities are combined with the inherent difference of separability from the basic debt instrument, many accountants have come to the conclusion that each should be accounted for under different procedures.

The problem is that these instruments are not judged separately upon their inherent characteristics, but rather, upon a comparison of these characteristics. Usually the writer will attempt to determine the proper accounting procedures for whichever one he feels is more evident (because of separability this is usually warrants) and then imputes the accounting procedures for the other based upon whether he sees a difference or similarity between the two. In essence the Board has taken this position and decreed that warrants should be valued when issued in conjunction with debt, but not so for the conversion feature.\textsuperscript{16}

The line of reasoning behind this type of thinking is that the detachable warrants and the debt securities are two separate instruments, and, therefore, upon issuance

\textsuperscript{15}In each case the decreasing attractiveness of pure debt securities was a major factor in the phenomenal growth of these financial instruments.

there is an obvious package the buyer is purchasing. The separability combined with the separate market that develops for the warrants leads to the natural conclusion of different accounting for each. However, there is no separate market for the conversion feature, therefore, many accountants have taken the position that there should not be an allocation of value to this feature when the bonds are issued.

The subject of convertible debt actually came up during a discussion of warrants at a meeting of the APB, and since that time there has been much confusion as to the true nature of the conversion privilege. While the object of this study is to determine the proper accounting procedures that should be followed for convertible debt, warrants are continually being brought into prominence in current literature, thus it becomes necessary to briefly examine this type of financial instrument.

**Purpose of Warrants**

The warrant differs mainly from the conversion option in two significant aspects: (1) separability from the debt instrument (nondetachable warrants are not considered here) and (2) usually the warrant plus a payment of cash is necessary to obtain the common stock. Like convertible debt, warrants were used in the past as an added inducement to make the security marketable. It compensated for a lower interest rate or a low credit rating and was used where the issuer was primarily interested in debt financing.
The terms of the warrants—i.e., the number issued, the period over which they may be exercised and the relationship between exercise price and the market price of the related stock at date of issue—are generally influenced by the desire of a successful debt financing rather than to make the warrant issue itself, attractive and are limited to those considered necessary for that purpose.17

Unlike convertible debt, warrants have hardly changed from their original use and still represent a provision of a debt issue. John Raben points out that there must be an inherent difference between warrants and the conversion privilege because there were very few of the former issued in 1966-67, whereas there were a considerable quantity of issuances of convertible debt (see Table 1, page 4). The reasoning here is that if there were no differences between the two, there would not be such extreme variations in use.18 Winthrop Lenz further differentiates between the two by stating that warrants are used by second- and third-rate companies and second- and third-rate underwriters.19

17Draft A of the position taken by the APB during the early discussions of the suspension of paragraphs 8 and 9 of Opinion No. 10, p. 4. (The actual draft was circulated among the members of the subcommittee on convertible securities in the form of a memorandum.)

18Summary of the discussion at the convertible security subcommittee meeting on October 13, 1967. (This is part of a summary circulated among the members of the APB. Mr. Raben was a representative from Sullivan & Cromwell.)

19Ibid., Mr. Lenz was the representative from Merrill Lynch, Pierce, Fenner and Smith. A different view was held by a representative from Moody's Investors Service at a convertible securities subcommittee meeting on August 22, 1968. He felt that since warrants are being used in acquisitions there is somewhat of a tendency to consider them as part of an overall equity financing.
Obviously such a castigation can not apply to convertible debt.

... [In addition,] the two types of issues are not often used to achieve the same purpose. Convertible securities are of course very common and in many, if not most, instances are in essence an issue of common stock in a form more attractive to investors, while the issuance of debt with warrants is relatively rare for large companies and is largely confined to special situations.20

The Tax Viewpoint

The Internal Revenue Service has also recognized the difference between these two types of securities in that they allow the amortization of a discount on bonds due to debt warrants as additional interest, but not so with convertible securities, i.e., the amortization of the resulting discount is not an acceptable deduction.21

Flexibility

While the conversion privilege offers some flexibility to the issuing corporation, the use of warrants places the corporation at the "mercy" of the holders of the securities. Management can not force the use of warrants nor call them in and retire them. A possible exception would exist for warrants with a limited life, but during that time management

20 Position Paper submitted to the APB by the United Aircraft Corporation prior to a meeting between the subcommittee on convertible securities and "various interested parties." The meeting was held on October 13, 1967, p. 1.

21 Internal Revenue Code Regulations 1.1232-3(b)(2) (i), (ii).
is virtually helpless to encourage the exercise of the warrants. This can create problems for the management of the issuing company because outstanding warrants reduce borrowing capacity while the potential equity dilution reduces the attractiveness of future common stock issues.

Other Differences

The investor also recognizes other differences between these two types of securities. Warrants are more attractive to the speculator because they represent a smaller capital investment. In addition, institutional investors who are prohibited from buying stock can purchase convertible debentures, but not warrants.

Therefore it can easily be seen that there is a definite difference between debt with warrants and convertible debt.22 This difference is so apparent that it has caused many accountants to arbitrarily argue that the two should not be accounted for in the same manner. Since it is easier to agree that warrants and the related debt securities should be separate than for the conversion feature and the related debt instrument, many accountants have accepted allocation for warrants but not for the conversion feature.

The logic of accounting for convertible debt as its nature indicates has been disregarded and the simpler approach that it is different from bonds with warrants and,

22 In addition to the preceding arguments, an overwhelming majority of the correspondence between the APB and non-Board members supports this approach.
therefore, should be accounted for differently is prevalent. Now that the two securities have been differentiated, this study will investigate the accounting for convertible debt on its inherent characteristics and the substance of the transaction—not merely its legal form.

BACKGROUND OF THE SITUATION LEADING TO APB OPINION NUMBER 14

The AICPA was reorganized in 1959 in order to provide for the advancement of a written code to take the place of the vague and often misunderstood concept of generally accepted accounting principles. The Accounting Principles Board was promulgated by a Special Committee on Research Program in a report issued in late 1958, and adopted by the Institute in early 1959.23

. . . One of the objectives of the reorganization was to be able to attack the broad problems of financial accounting at four levels: (1) the establishment of basic postulates; (2) the establishment of broad principles; (3) the setting up of rules or other guides for the application of principles in specific situations; and (4) research. . . .24

Inherent in these objectives is the need for narrowing the areas in which alternative procedures are acceptable. In addition, the official pronouncements of the Board are supposed to be based on a thorough researching of the topic


and the final position should reflect a logical extension of the research. The force of these Opinions lies in the fact that they are assumed to have "substantial authoritative support," and thus material deviations must be noted in the auditor's opinion or in footnotes to the financial statements.

**APB Acceptance vs. General Acceptance**

To date the Board has had some problems achieving the limitation of alternative procedures—probably their most glaring defeat lies in Opinions No. 2 and 4 (these deal specifically with the question of accounting for the investment credit). Originally the Board required the credit to be recognized over the life of the asset, but as a result of considerable pressure and by open violation by some of the national CPA firms, the Board backtracked on its original decision and allowed the use of an alternative method which recognized the full benefit of the credit in the year of incurrence.

This was a clear example of a violation of the original charge to the APB. The merits and demerits of either approach are not of importance here; but rather, the fact

25*Accounting Principles Board, Accounting Principles Board Opinion Number 2: Accounting for the "Investment Credit" (New York: American Institute of Certified Public Accountants, 1962).*

26*Accounting Principles Board, Accounting Principles Board Opinion Number 4: Accounting for the "Investment Credit" (New York: American Institute of Certified Public Accountants, 1964).*
that the first real authoritative statement issued by the Board led to the creation of another acceptable alternative accounting procedure. An attempt to eliminate the flow-through method in the Opinion on accounting for income tax was again thwarted by the general membership of the Institute. While the requirement to allocate the investment credit over the life of the asset was included in the exposure draft, it never appeared in the formal version of the Opinion. Thus it seems the Board is "allowed" to "require" certain procedures as long as they are consistent with current practice or are favored by the practitioners. Such a pragmatic approach to accounting theory will continue to stifle the development of a broad theoretical base for accounting thought. Actually this whole problem can be summarized as a lack of distinction between acceptance by the Board and general acceptance of accounting principles. This is substantiated by the following statements included in each

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27 Statement No. 4 issued by the APB is a nonauthoritative codification such as the type the Board was originally charged to create, but the problem lies in the data presented. As stated in the body of the Statement (p. 2) "It [the Statement] identifies and organizes ideas that for the most part are already accepted." In other words, a codification of current practice. And as summarized by George Catlett in his dissent (p. 105) "... this statement--by providing a conceptual basis for, and by giving authoritative status to, current accounting practices--will represent an unfortunate deterrent to the achievement of improvements in practice." See Accounting Principles Board, Accounting Principles Board Statement Number 4: Basic Concepts and Accounting Principles Underlying Financial Statements of Business Enterprises (New York: American Institute of Certified Public Accountants, 1970).
Opinion since 1965 in a concluding section entitled "Notes."^{28}

(a) "generally accepted accounting principles" are those principles which have substantial authoritative support.

(b) Opinions of the Accounting Principles Board constitute "substantial authoritative support,"

(c) "Substantial authoritative support" can exist for accounting principles that differ from Opinions of the Accounting Principles Board.^{29} [Italics not in the original.]

It must also be remembered that any departure from a Board Opinion must be disclosed "... in footnotes to the financial statements or in independent auditors' reports when the effect of this departure on the financial statements is material."^{30} This really means that if an alternative has "substantial authoritative support" it is acceptable to follow it, but if the Board has approved another approach this fact must be disclosed in the statements. Here the Institute has formally acknowledged the possible difference between a procedure acceptable to the APB (a position declared to have "substantial authoritative support") and another acceptable to the practitioners and/or their clients.

Situations such as this are the primary reason for the lack of success on the part of the APB to substantially

^{28}While the exact wording is not still used, the basic implication is there, the only difference is that the Board has chosen to somewhat disguise it.

^{29}Accounting Principles Board, Opinion No. 14, op. cit., p. 211.

^{30}Ibid., p. 212.
lessen the quantity of alternatives currently acceptable.

Patrick Kemp draws the following conclusions as the result of the current predicament:

... The AICPA council could not have designed a more effective device for undermining the confidence of the public in financial statements and in the reports of CPAs on these statements if it had tried to do so.\footnote{31}

**Opinion Number 10**

Thus the stage is set for the issuance of Opinion No. 10.\footnote{32} Paragraphs 8 and 9 required the allocation of value to the conversion feature upon issuance of convertible debt and to warrants issued in conjunction with debt securities.

Originally the Board had decided to include warrants and earnings per share as one issue; but the quantity of material in these areas proved to be an unworkable task, and therefore, they were divided into two separate topics. The actual allocation prescribed in Opinion No. 10 was originally intended for use in accounting for bonds with detachable warrants. Then the question of convertible debt was raised at a Board meeting, and after some discussion it seemed logical to use the same procedures in accounting for both


types of instruments. At that time there was no indication that any serious problems would result. The growth of the economy and the financial markets historically had produced some discounts on the "investment value" of convertible debt, but there was no evidence that would suggest the large discounts that resulted from the actual application of the prescribed procedures.

The usual predraft exposure process and the actual exposure draft produced no reasonable concern over the allocation procedures or the results produced thereby. The few unfavorable comments that were received dealt with disapproval of "as if accounting," but there was no indication of any widespread dissatisfaction. In fact the Securities and Exchange Commission approved of the procedures as prescribed by the Opinion.33

Thus Opinion No. 10 became effective for fiscal periods beginning after December 31, 1966. The intent of the Board in using the omnibus type of Opinion (the type used for Opinion No. 10) was to consider several items that are not of the nature that would necessitate a separate Opinion and were not controversial—and this seemed, at the time, that type of topic.

Opinion Number 12

The problems began when the provisions of the Opinion

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33Robert N. Sempier, Assistant Administrative Director, Accounting Principles Board, private interview held during visit to the AICPA offices in New York, November 25, 1970.
were applied to specific situations. Rumblings of disfavor from the Investment Bankers Association (IBA), some lawyers, and corporate officials then began to create a wave of disapproval. This resistance reached a considerable level when the financial market began to reflect the tremendous inflationary spiral then present in the economy. No longer was the discount recognized by allocation an insignificant amount, and the accounting began to reflect the charge of an item that was not deductible for tax purposes, thus creating a "double deduction" in the determination of net income.

In addition some members of the APB led by George Catlett began to apply pressure on the other members to approve a resolution to reconsider the original position. After several attempts to have a review of the Opinion passed, the Board agreed in August, 1967, to restudy the situation. By that time the IBA had organized their resistance and presented a considerable wealth of information attacking allocation. At the same time the investment bankers, whose cooperation and help was needed to determine the amount of the discount, were reluctantly supplying the necessary data, and their attitude created considerable concern among the practitioners. This plus the significant difference between the expected discounts and those resulting from the actual application of the provision for

34Letters written by George Catlett during May and August, 1967, and distributed to the members of the APB.
allocation, and the other internal and external pressures exerted on the Board finally led to the suspension of the allocation provision in December, 1967. This was before Opinion No. 10 came into effect. Unless earlier application was instituted by a company or its auditors, the earliest published reports that would have had to use allocation would have been those dated December 31, 1968.

At the time of the issuance of Opinion No. 10 there was no opposition or qualifications by any of the members of the Board that were considered substantial enough to publish with the Opinion and the IBA and others now complaining had no comments on the exposure draft. Thus it would have seemed that, at least accounting wise, there was no serious opposition to the theoretical aspects of allocation of value to the conversion feature of convertible debt.

After the Board agreed to restudy the situation there was still considerable disagreement as to exactly what should be done with the allocation provision in Opinion No. 10. A subcommittee formed to review this matter could reach no agreement as to the method of handling the situation. The positions of the members of the subcommittee covered a complete spectrum from leaving the Opinion as it was to a complete suspension of the related provisions until all

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aspects of the situation could be considered.\textsuperscript{36} In addition, some members of the Board raised the problem of a retroactive Opinion when and if a solution was reached. Thus the "new" decision of the Board could be carried back to the effective date of the original Opinion.

The Board finally voted for "... temporarily suspending the effectiveness of paragraphs 8 and 9 of Opinion No. 10 retroactively to their effective date."\textsuperscript{37} Allocation was still considered to be an acceptable practice and the door was left open for the retroactive application of a future Opinion on this topic. In addition, the Board chose to require a dual presentation of earnings per share reflecting the effect of conversion of those securities whose accounting would have been affected by paragraphs 8 and 9 of Opinion No. 10. This additional disclosure applied only to those companies who chose not to follow the original Opinion.\textsuperscript{38} It seems here that the Board felt a definite need to forewarn the statement reader of the possible effects of convertible debt. This is further emphasized by the fact that disclosure of earnings per share was only "strongly recommended" in Opinion No. 9, whereas it was required (in certain instances) by Opinion No. 12.

\textsuperscript{36}Letter dated October 17, 1967, for P. L. Defliese, chairman, to the members of the subcommittee set up to examine the situation that developed after the issuance of Opinion No. 10.

\textsuperscript{37}Accounting Principles Board, \textit{Opinion No. 12}, op. cit., p. 191.

\textsuperscript{38}Ibid., pp. 191-93.
The exposure draft of Opinion No. 12 had a limited distribution. The usual broad circulation was not followed. In general only those who were underwriters of convertible debentures and debentures with warrants and those who commented on Opinion No. 10 received copies of the draft. There was considerable dissatisfaction with the warning of a possible retroactive Opinion issued in the future and the apparent discrimination upon those companies issuing convertible debt through the required disclosure in earnings per share. Still, the Opinion was issued, but this time with some dissension.39

Opinion Number 14

In an attempt to gather more information on the allocation topic, the subcommittee, formed to study the data already gathered and to begin working on a new Opinion, arranged for a symposium on convertible debt and earnings per share to take place on January 14, 1969.

While no minutes were kept at the symposium, the position papers (submitted by each participant prior to the meeting) and the follow-up letters sent in by those attending the conference provided the subcommittee with a wealth of

39 The comments of the members of the Board published with the Opinion ranged all the way from concurrence with publication, but disagreement with certain paragraphs, to complete dissension. The questions raised were those of the possibility of retroactive application of a future Opinion and the earnings per share disclosure.
material on the topics. Later, in March, 1969, the Board issued Opinion No. 14 which required allocation of the issue price between bonds and detachable warrants, but not for convertible bonds. The symposium mentioned above was conducted after the issuance of the exposure draft of Opinion No. 12, and it seemed to reinforce the position taken by the Board which was expressed in Opinion No. 14.

SUMMARY

As indicated in Chapter 1, the increase in the use of convertible debt over the past seven years has been phenomenal. An examination of the advantages this type of financing has, for both the issuer and the investor, clearly indicate the reasons for its popularity. From the point of view of the issuing company there are two major considerations: (1) a reduction in the coupon interest rate and (2) the possible issuance of equity capital on a deferred basis.

Convertible bonds usually carry a stated interest rate that is approximately one-half to one per cent (or in some instances as much as several points) below that of similar debt without the conversion feature. When this difference is approximately a percentage point or more, the savings to the issuing company could be quite substantial. However, a recent trend has been developing whereby the

40 The information supplied by these reports and the follow-up letters will be used in later chapters involved in the discussion of the allocation concept.
interest saving is considered secondary to the issuer, and
the delayed issuance of equity capital has become the primary
reason for using convertible debt. Several independent
studies have verified the existence of this trend, and it
seems the decision of management to use convertible debt
must, at a minimum, indicate some desire to raise common
equity capital.

Since most conversion prices are set approximately
15-20 per cent above the market value of the stock at the
time the bonds are issued, the effect of using convertible
debt (if converted) would be to obtain more funds on a per
share basis than if the stock had been issued instead of the
bonds. In addition, by wisely setting the conversion rate,
and by inclusion of a call feature, management can also have
more flexibility in determining the capital structure.

The investor is assumed to have a more secure posi­
tion with convertible debt than many other forms of invest­
ment. If the stock market declines, the investment value of
the bonds as straight debt forms a lower level for the market
value of these securities. On the other hand, if the stock
market rises, the conversion feature increases in value and
the investor can convert and realize a profit on the stock
if he elects to sell.

The Federal Reserve System also currently requires a
lower down payment on the purchase of convertible bonds than
is required for common stock. This allows the sophisticated
investor more leverage and a greater return on his investment.
Since most of these securities include an anti-dilution clause in the indenture, additional protection is afforded the investor.

As a result of these advantages it is easy to understand the recent surge in the use of convertible debt and the importance it has as a financial instrument.

Like convertible bonds, debt issued with warrants has also become a very popular method of obtaining capital. The similarities between these two instruments have led to a considerable amount of confusion, however, a close examination of these securities clearly indicates an inherent difference that must be understood before the proper accounting procedures for either can be determined.

Warrants are generally used as support for a successful debt issue rather than as a means of obtaining equity capital. The terms of the agreement are specifically devised with this intent, and when this is combined with the fact that detachable warrants usually develop a market separate from the bonds, it is difficult to understand how they can be confused with the conversion feature. However, confusion does exist, and when it is combined with the separability factor (a feature absent from convertible debt), many accountants assume that warrants should be valued and the conversion feature should not. Additional support for this position is usually found in the tax treatment which allows a deduction for the amortization of a discount created by valuing warrants, whereas, there is no such provision for a
discount resulting from valuing the conversion option.

The background of the accounting treatment of convertible debt involves a conflict between the Board and some outside pressure groups. Originally the APB required allocation of value to the conversion feature, but as a result of the lack of "general acceptance" on the part of the profession, the provision was suspended before its effective date. Thus, before there was an extensive use of the allocation procedures they were temporarily suspended. This action drastically limited the ability of the members of the Board to study the actual effect of the allocation requirement on the financial statements of companies with convertible debt.

In place of empirical evidence the Board relied on letters, statements of the opinions of various groups, and other information received from "interested parties." This information plus the results of a symposium held in January, 1969, provided the support for the issuance of a third Opinion dealing with convertible debt, but this time allocation was deemed unacceptable.

The relevance of these facts to this study will be contained in future chapters, however, before the question of accounting for convertible debt is examined, it is imperative that a workable concept of a liability be established.
Chapter 3

THEORETICAL ASPECTS OF LIABILITIES

The lack of theoretical work\(^1\) that is currently being done in the area of liability accounting results, in part, from the clash between the legal and the economic approach. Due to the very nature of the information which accounting must deal with, each of these approaches has had some influence in the development of accounting theory. Keller and Zeff have even gone so far as to label the relationship between the legal and economic approach as schizophrenic.\(^2\) However problematical this predicament may be, there has been some progress in recent years in expanding the particular situation under review. But, until an independent theory of liabilities is developed, the Board or any other accounting authority will have to use "brush fire" techniques when specific problems arise.

In order to properly account for convertible debt it must first be determined whether the security represents a

\(^1\)A review of the current literature will clearly exhibit the lack of writing on this area in that there are only a very few articles written in this area in the last five years.

hybrid combination of various covenants (part liability and part equity) or basically a debt instrument (a liability only). This can be resolved only by a thorough examination of the concept of a liability.

Since the convertible debt problem cannot be properly studied without a complete analysis of the underlying aspects, it is the purpose of this chapter to examine the theoretical factors involved and to use these to develop a definition of a liability that would help to alleviate some of the problems that exist in this area. Once this has been done, the question of the measurement of liabilities can be discussed.

APPROACHES TO CORPORATE EQUITY

Practically all of the current writings on convertible debt fail to examine the concept of a liability, and consequently attempt to build upon a weak or nonexistent foundation. As a result, the discussions presented in the literature by the authors do not penetrate the surface of the problem, instead, they merely shuffle the various arguments in a different order or present them from a slightly different point of view. Due to this lack of an in-depth study of the liability aspect, there is a noticeable deficiency in examining the basic theory behind this subject. Nowhere has any one attempted to present an analysis of the real problem, i.e., the conflict between the entity and the proprietary approaches to corporate equity. For herein lies the real reason for the lack of agreement upon procedures for
accounting for convertible debt. The arguments usually presented are superficial to this primary issue, and for some reason many of the theorists and practitioners have chosen to ignore this area.

In order to develop a definition of a liability that will be relevant to the problem of convertible debt it is important that a sharp distinction be made between the concept of a liability and owners' equity. In an attempt to accomplish this task, a review of the basic accounting theory in this area is necessary.

**Entity Theory**

The entity theory centers on the separate existence the firm has apart from the owners and other equity holders. The underlying basis for this approach can easily be seen through the equality that exists between assets and equities (more formally, \( \Sigma A = \Sigma L + \Sigma OE \)). The basic difference this approach does recognize between liabilities and stockholders' equity is that the former can be directly measured whereas stockholders' equity represents ". . . the rights of the stockholders [as] . . . measured by the valuation of assets originally invested plus the valuation of reinvested earnings and subsequent revaluations. But the rights of the stockholders to receive dividends and share in net assets upon liquidation are rights as equity holders rather than owners.
of the specific assets."\(^3\)

The entity concept focuses the attention of the accountant upon the activities of the enterprise as a whole, in fact, Paton and Littleton felt that "... it has become almost axiomatic that the business accounts and statements are those of the entity rather than those of the proprietor, partners, investors, or other parties or groups concerned."\(^4\)

This places an artificial screen between the owners and the firm that is not recognized at law for all forms of business activity. There is, of course, limited liability and the separation of ownership and management for most large corporations, but it does not hold true for small business organizations—partnerships and proprietorships.\(^5\) Thus the owner is viewed as a supplier of funds in almost the same terms as a creditor with the matter of repayment being dependent upon the proprietor's own wish rather than by any accounting or legal restriction.

In this matter of use of the entity concept, Gilman offers a test of applicability—the maintenance of double


\(^4\)W. A. Paton and A. C. Littleton, *An Introduction to Corporate Accounting Standards* (Iowa City: University of Iowa College of Business Administration, 1940), p. 8.

\(^5\)This distinction may not be present for all corporations because in actual practice many owners of small corporations and closed corporations are forced to include restrictive covenants in loan and other agreements that effectively avert such a limitation.
entry records. Here he suggests that if any form of business endeavor (no matter how simple) keeps a separate set of double entry records, there is an implied entity approach. While this is probably too inclusive for practical purposes, the entity approach to the equity of an organization is deeply ingrained in accounting thought. Examples can be found almost everywhere. The use of cost as a valuation for assets is a natural extension of this approach.

In addition, the entity concept emphasizes an analysis of the detail items that constitute net income. This approach to periodic earnings is an alternative to the proprietary theory which uses the change in net worth (net of proprietary adjustments) over the period as the basic measuring device. There are many other specific applications of the entity concept, but these serve as prime examples of the tendency of the AICPA to follow the entity approach.

The very emphasis of the AICPA on the selection of an inventory costing method that best measures income is an overt action supporting the entity theory. But even the Institute must yield to the existence of an opposite approach to the equity of an organization. Here the obvious lack of

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7Hendriksen, op. cit., p. 500.
an approval of LIFO over FIFO,\(^8\) the importance placed on the virtual all-inclusive income approach to income in Opinion No. 9\(^9\) and the importance placed on earnings per share (Opinion No. 15)\(^10\) all give recognition to the proprietary point of view.

**Proprietary Theory**

The proprietary approach to equity places the owner at the center or hub of all enterprise activities. Everything is viewed in light of its ultimate effect upon owners' (proprietors') equity. In equation form this is summarized as the \(\Sigma A - \Sigma L = OE\). Under this approach to enterprise equity the separation of the individual items of revenue and expense have no particular relevance as such, instead, they merely stand as increases or decreases in proprietorship not involving proprietary investment or withdrawals. Thus the balance sheet and not the income statement becomes the most important single financial statement.

The very computation of earnings per share implies the importance of the owners to the organization and the fact


that the business functions for the proprietor(s). Unlike
the entity approach, the proprietary theory considers pay­
ments to creditors in the form of interest and taxes as
expenses rather than a distribution of profits. Thus while
the entity theory is dominant in accounting, it is by no
means exclusive. Actually a proprietary approach has been
quite influential. In addition to those areas previously
mentioned, the equity method of recording investments in
consolidated subsidiaries is supported by this approach.
The all-inclusive method of measuring income centers on the
change in net worth from period to period (exclusive of
capital transactions). This concentration on the final net
result as opposed to the detail causes of the change would
include all sources of revenues and expenses.

The theoretical problem that inhibits the acceptance
of a proprietary approach to equity theory lies in the fact
that it is best suited for a partnership or a sole proprietor­
ship form of economic organization. This results from the
common law view of these organizations and the relationship
between management and ownership. The close adherence to
the proprietary theory in these types of organizations can
easily be seen by the closing entries whereby all items of
revenue or expense, gain or loss are transferred directly to
the personal equity account of each owner. The Internal
Revenue Code also fosters a similar approach in taxing the
income of a proprietorship and a partnership as opposed to
that of a corporation.
In order to realistically view a corporation in terms of the proprietary theory one must look past the artificial veneer of the corporate structure and concentrate on the equity of the stockholders. Under this circumstance the proprietary approach to the equity structure of a corporation would be reasonable. But even if this is accomplished it is still difficult for many theorists to accept the results and their implied circumvention of a legal entity.

Other Equity Theories

Despite the several major areas in which the proprietary theory has current recognition, the entity theory is by far the most influential for corporate accounting. This results from the fact that the latter is more closely related to the economic organizational aspects of the corporation. Add to this the growth in size and complexity of the modern corporation and it is easy to see how the popularity of the entity theory developed. However, the emphasis on the corporate form of organization is not a limiting factor because the entity approach is also dominant in general proprietorship and partnership accounting.

While the two preceding theories of accounting equities are the dominating force behind current accounting theory, there are several others that deserve brief mention.\(^\text{11}\) Hendriksen refers to one of these, the residual

\(^{11}\text{All of these theories are discussed in more detail in Hendriksen's book on accounting theory. See Hendriksen, Accounting Theory, op. cit., Chapter 17.}\)
equity theory, as a subdivision of the entity theory. The basic distinction is that under the former all investors other than capital stockholders are thought of as outsiders as opposed to all investors being outsiders under the pure entity approach. The overall objective here is to provide information for common stockholders to use in making investment decisions.\textsuperscript{12}

The opposite of such a narrow approach to equity is the enterprise theory. Here the role of the corporation is viewed as a social institution with all of society as the recipient of the benefits of the organization. This, of course, extends the span of the reporting responsibility of management, and to a great extent offers a picture of the trend in corporate theory. Current social problems such as wage negotiations and the effects of price changes are relevant in this approach to the corporate equity. The approach to income is that of a value-added concept. Thus economic theory is carried to its fullest extent in that income is the excess of the total value of goods and services produced over the value of the goods and services acquired (including dividends, interest, and taxes).

The idea of stewardship is carried to its fullest extent in the commander theory as proposed by Goldberg.\textsuperscript{13} Any thought of ownership is abandoned and the role of

\textsuperscript{12}Ibid., p. 501.

\textsuperscript{13}Louis Goldberg, \textit{An Inquiry into the Nature of Accounting} (Iowa City: American Accounting Association, 1965).
accounting is to report what management has done with the assets entrusted to them. Thus the control aspect is emphasized. This is the approach taken in cost accounting and as such is greatly emphasized for internal purposes, but there has been little or no acceptance of the commander theory for external reporting.

Outside of the entity and proprietary theories, the fund theory probably has achieved the greatest acceptance for external reporting, while limited to governmental and other nonprofit institutions. Vatter defined a fund as "... a collection of service potentials that have been brought together for some functional purpose—administrative, entrepreneurial, or social." He further defines equity as "... restrictions that apply to the assets in the fund, which therefore condition the operations of the fund as dictated by the management." Corporate accounting also has been influenced somewhat by this approach, witness the accounting for branches, estates, trusts, and sinking funds. Here as in all aspects of fund accounting income plays a subordinate role to maintenance of capital.

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15Ibid., p. 19.
Since the central focus of this study is based upon accounting for the issuance of convertible debt, the various approaches to corporate equity are important in their ultimate effect on the concept of a liability. The major reason for considering the allocation of value to the conversion feature is for a proper accounting for both the liability and the equity elements involved. Therefore these concepts will be explored under each theory in order to determine which best fits the needs of this study.

**Entity Theory**

The entity theory does recognize the existence of liabilities as apart from owners' equity, but each is viewed as a claim against the entity and its assets. This can easily be seen by an illustration related to the topic of this study. Suppose $100,000 of convertible bonds were issued for $102,000. The bonds have a ten-year life and can be converted into 1,500 shares of $50 par common stock. Five years from the date of issuance the bonds are converted by all of the debt holders. Accordingly, omitting any reference to the valuation of the conversion feature, and using currently acceptable procedures for accounting for convertible debt, under the entity theory the following entry normally would be made:
Bonds Payable .................... 100,000
Premium on Bonds Payable . . . . 1,000
Common Stock .......................... 75,000
Premium on Common Stock ............... 26,000

The influence of the entity theory can be seen in that the change from creditor to owner equity has no effect on the total of the equity side of the balance sheet nor the retained earnings. The transaction is simply viewed as a switch of types of equity, it matters not whether the item is a part of owners' equity or creditors' equity. Thus while there is a concept of a liability in connection with the entity theory, there is no real distinction between it and owners' equity. This seems to be the path chosen by the APB in Opinion No. 14. The decision not to require allocation of value to the conversion privilege is obviously based, in theory, on the entity concept. Since under this approach the corporation does not recognize any real distinction between the sources of funds, there is no need to consider the possibility of a package deal upon the issuance of convertible debt. It would seem though that even allowing for the inherent differences between warrants and the conversion feature, the same logic would hold for bonds issued with detachable warrants.

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17This approach to recording the issuance of bonds with detachable warrants was suggested by several accountants replying to the publication of the Exposure Draft of Opinion No. 14.
Proprietary Theory

On the other hand, the proprietary approach would require the accountant to look at the above transaction in terms of its effect upon the owners' equity in the business. Since this theory views liabilities as obligations of the proprietors, the conversion of the bonds and the issuance of the stock would be considered to have separate effects due to the two different types of equity involved.

Ideally the consideration for the stock should be measured at the fair market value of the debt instrument when converted (if this is not available, the fair market value of the stock would suffice). Thus the common stock is deemed to have been issued at its fair market value. Therefore if the common stock in the preceding example was selling for $70 per share (the market value of the bonds would be approximately 105) and the conversion transaction would be recorded in the following manner under the proprietary assumption:

<table>
<thead>
<tr>
<th>Entry</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds Payable</td>
<td>100,000</td>
</tr>
<tr>
<td>Premium on Bonds Payable</td>
<td>1,000</td>
</tr>
<tr>
<td>Loss on Conversion of Bonds</td>
<td>4,000</td>
</tr>
<tr>
<td>Common Stock</td>
<td>75,000</td>
</tr>
<tr>
<td>Premium on Common Stock</td>
<td>30,000</td>
</tr>
</tbody>
</table>

While the contributed capital of the business is greater, the total stockholders' equity would be the same as under the entity concept. The overall effect amounts to a capitalization of retained earnings. The clear distinction between owners' and creditors' equity made by the proprietary theory would require the recording of a loss when stock
valued at $105,000 is issued upon the conversion of bonds carried on the books at $101,000.

Other Equity Theories

The funds approach to equity views the situation similarly to the entity concept. Using Vatter's definition, "the real significance of equities . . . is to be found in the restrictions they impose upon the asset fund, not the quasi-legal or equitable considerations that may be involved." Thus there would be no real difference between the restriction placed on assets by the creditor or owner claims, and the same accounting procedures as used for the entity concept would hold true.

The commander theory in emphasizing stewardship requires the manager (commander) to account for the net assets entrusted to him.

. . . A shareholder . . . is not basically concerned with the assets or the liabilities of the company of which he is a member; his concern is with shareholders' funds. He is not basically concerned with profit but with dividends, not with the rate of profit to sales but with return on capital. Any interest he may evidence in assets, liabilities or profits is secondary. The commander, however, is concerned with all these as a matter of basic and primary interest for they are the resources over which he has command or the results of his handling them. . . .

As a result, the change in equity relationships brought


about by the conversion would be of importance to the com-
mander, and, in order to fully disclose the results, an
approach similar to the proprietary theory would probably be
used. This would best disclose the results of the commander's
decisions and give the stockholders a better measure with
which to evaluate the effectiveness of management.

The enterprise theory approaches the subject from a
point of reference similar to that of the entity theory.
The only basic difference being a much broader concept of
the unit of account—that of the whole society. Ladd
defines the capital of a corporation as the "... stock of
money or monetary equivalents of other resources which has
flowed into the corporation from creditors, stockholders,
profitable operations, or other sources." In this view
the enterprise approach would require the same entry for the
conversion of the bonds as does the entity theory, again
making no real distinction between different sources of
capital.

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20 Hendriksen compares the two as follows: "While in
the entity theory the firm is considered to be a separate
economic unit operated primarily for the benefit of the
equity holders, in the enterprise theory the corporation is
a social institution operated for the benefit of many
cit., p. 502.

21 Dwight R. Ladd, *Contemporary Corporate Accounting
and the Public* (Homewood: Richard D. Irwin, Inc., 1963),
p. 52.
DEFINITION OF A LIABILITY

The emphasis that has been placed on income measurement has created an atmosphere where the income statement has predominated over the balance sheet. Probably the most glaring statement to this effect is presented in Accounting Research Bulletin No. 43 where the Institute has stated that the major objective in inventory accounting is the proper determination of income through the matching process. In addition, accounting literature is replete with references substantiating this hypothesis. Therefore if this approach is projected on the accounting for convertible bonds, the important element becomes the proper determination of the annual charge for interest. Since this figure is determined partially by the rate of interest stated in the bond indenture and partially by the amortization of the premium or discount on the issuance of the bonds, the valuation of the conversion feature takes on added significance. The presence or absence of a value for this right will directly affect periodic income. Thus, the proper valuation procedures should be of utmost importance to the Board, and any definition of a liability, in order to be acceptable, must allow for the proper accounting treatment of the proceeds upon issuance of convertible bonds.

The Legal Approach

The epitome of the legalistic approach to liabilities lies in the definition supplied by Eric Kohler:

"... liability: 1. An amount owing by one person (a debtor) to another (a creditor), payable in money, or in goods or services: the consequence of an asset or service received or a loss incurred; particularly, any debt (a) due or past due (current liability), (b) due at a specific time in the future (e.g., funded debt, accrued liability), or (c) due only on failure to perform a future act (deferred income; contingent liability)."

For many years this approach, or a similarly restrictive one, was followed by the accounting profession. The results of this have already been explored in Chapter 1, and while many current definitions, if literally followed, would lead to this same narrow concept, the overall trend is to use the term "obligation" as the key point of reference. The usual definition of this term emphasizes "a binding requirement as to action; ... [or] the binding power or force of a promise, law, duty, agreement. ..." This, of course,


24 The support behind this type of approach can be found in an article by Moonitz: "Lawyers, in the nature of their profession, must be concerned primarily with what happens if participants do not live up to their agreements or, what amounts to the same thing analytically, disagree as to the meaning of the contracts made. As a consequence, the law (to the extent that it is influenced by this attitude) tends to recognize debts only when a rather rigorous set of conditions has been satisfied." See Maurice Moonitz, "The Changing Concept of Liabilities," The Journal of Accountancy, CIX (May, 1960), 42.

opens the door to any interpretation the reader or writer wishes. It can be broad enough to encompass the "normal," legalistic approach and the peripheral area necessary to a workable definition, or it can be limited to the legalistic approach.

For purposes of this study the former approach will be taken and a liability will be viewed as an obligation in the broadest sense of the word. In addition it will be defined in terms of the continuity assumption, where the emphasis will be placed on the future both in terms of continued operation and the use of management expectations in so far as future plans are concerned.

Characteristics of Liabilities

In order to properly define a liability the general characteristics or identifiable qualities of these items must be determined. Moonitz studied the use of the term from an issue of Accounting Trends and Techniques and summarized the following list of attributes.

1. A liability involves a future outlay of money, or an equivalent acceptable to the recipient.

2. A liability is the result of a transaction of the past not the future.

3. The amount of the liability must be the subject of calculation or close estimation.

4. Double-entry is taken for granted.26

Wendell Trumbull listed the "leading features" of liabilities as:

26Moonitz, op. cit., 44.
1. They are nonowner equities, claims, interests or asset reservations.

2. They generally involve future asset expenditures for their settlement.

3. They should relate to assets already recognized.27

Professor Trumbull further concluded that these characteristics should be broadly interpreted in order to develop the proper atmosphere for liability accounting.

Of course every author writing on this subject will have a separate list of characteristics he feels are the most significant, but a review of the current literature will show that they are simply repetitious of those mentioned above. The wording may vary, but the overall intent is the same. Therefore, since these characteristics are essential for a proper accounting for liabilities, they will be used as the basis for the definition used in this study.

Definition of a Liability as Used in this Study

Proper accounting for liabilities should specifically involve the separation of liabilities and owners' equity, and in addition it should be sufficiently broad to allow for the proper accounting treatment for the economic substance of complex corporate transactions. In order to achieve the former, the proprietary approach to equity must be accepted as the dominant force in liability accounting so that the various elements of corporate equity may be placed in their

proper perspective. To follow an entity approach would not preclude a further division of equities into liabilities and owners' equity, but it would not emphasize the difference enough to properly segregate each; and without this separation there can never be a proper accounting for the issuance of convertible debt, or for that matter, any liability.

Evidence of the insufficiency of the entity approach is presented in Chapter 1. During the time when tax allocation, pensions and other problems arose, the Board was following a strict entity approach in defining liabilities, and it is clear that this was not sufficient for accounting for the economic effects of the transactions. It is hoped that by using a proprietary approach more emphasis will be placed on a liability as a separate classification, and thereby improve accounting in this area.

Therefore, with the characteristics previously discussed and with an approach that will enable the accountant to not only properly measure income, but also aid in presenting a more usable balance sheet, a liability should be defined as follows:

Liabilities . . . [are] economic obligations of an enterprise that are recognized and measured in conformity with generally accepted accounting principles.

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28 Many accountants agree that under the limitations of the balance sheet it has decreased in usefulness. Moonitz has even gone so far as to call it a "post-closing trial balance." Thus in order to aid in presenting the economic position of the organization, some changes are necessary. The area of liabilities is just one segment that must be modernized, but it would be a start in the right direction.
Liabilities also include certain deferred credits that are not obligations but that are recognized and measured in conformity with generally accepted accounting principles.29

This, of course, is the definition as proposed by the APB in Statement No. 4. It is felt, however, that if a sufficiently broad interpretation is followed that it will be satisfactory for the stated purpose. While this definition has some limitations, there is such a proliferation of definitions (practically every text book and other reference work has developed one) that the addition of another would not in any way improve accounting in this area. Since this particular definition has been published with the approval of the Board, there is a certain amount of authority already supporting it, whereas a definition suggested in this study would not have any of this "built-in" support. This is a practical approach that has some disadvantages, however the current state of theory in this area needs changing, and some support for a beginning is necessary. What is needed is the application of a definition that would be sufficiently broad to be workable in dealing with modern corporate problems, and it is felt that this could be accomplished with this definition.

In addition, the accounting practitioners must recognize the need for emphasizing the concept of a liability

as a separate element in accounting theory. However, without the overt support of the theoreticians this would be impossible. In other words, more work needs to be done in the current literature on the part of the academicians in order to increase interest and point out the problems that exist in this area.

There could be some discussion over the use of this definition when it has already been established that a proprietary approach should be followed. An analysis of this definition reveals that it has some characteristics of both the entity and proprietary approaches. However, the important point to be remembered here is that it does achieve the desired separation of liabilities and owners' equity that is necessary for the proper accounting for convertible debt, and if this definition is interpreted from a proprietary approach, this separation will be emphasized more than if an entity approach is followed. When this emphasis factor is combined with the "built-in" support previously mentioned, the chances for achieving the proper accounting for convertible debt are increased.

In order to have a workable definition, it must be remembered that the term "obligation" should be taken in its broadest possible sense, and not the narrow legalistic approach. Therefore, as previously mentioned, the term "obligation" is intended to mean a binding requirement to action, and not merely a debt in the legal sense.

While this definition does not institute any new
ideas nor require any radical changes in currently accepted accounting procedures, it does specifically state what has been "understood" by many, but actually practiced by few—the full implementation of generally accepted accounting principles. And it must be remembered that included in this mythical list is the continuity (going concern) assumption. (This, of course, assumes the continued operation of the business into the foreseeable future.) It is hoped that by making this an explicit part of the definition that accountants will accept its ramifications, i.e., the full implementation of all contracts currently in force and other effects of continued profitable operations.

In an earlier chapter it was pointed out that there was a distinct difference between acceptance by the AICPA and acceptance by the practicing accounting populace. Thus there must be a concerted effort by the staff of the Institute, the Board, and all others interested in accounting theory to influence the practitioners to implement to its fullest extent the application of this approach to liability accounting. It will be this implementation that will guarantee the successful differentiation between liabilities and owners' equity. No matter how good a concept (of any type) may be, if it lacks general acceptance, it will stagnate and eventually pass on to oblivion. This has been proven in the past, and it will continue to be the case until some change is made in the enforcement of decisions of the APB or any other governing body. And since not only proper accounting
for convertible debt, but the development of an independent theory of liabilities is at stake, the profession has much to gain from its success.

This definition will also more than adequately satisfy the other characteristics or attributes as previously presented that generally are associated with liabilities. For example, it definitely will involve an outlay of some acceptable means of satisfaction of the obligation. Continuing this line of thought, it is important to remember that the definition restricts liabilities to those obligations where management's initial intent is to satisfy them through the disbursement of assets, the performance of services, or the incurrence of other liabilities. The intent to use any other method of satisfaction would preclude classification as a liability, and therefore, require the item to be classified as some other type of equity.\textsuperscript{30} Since some form of payment is required, there is, in addition, the implied assumption that the item can be valued and that some transaction has preceded its recognition.

A normal extension of this concept of a liability would require a separate definition of owners' equity. In order to continue to emphasize the distinction between the two sources of corporate equity, the definition of owners'

\textsuperscript{30}This is already ingrained in accounting theory, witness the definition commonly accepted for current liabilities and the treatment of dividends payable in the company's own stock that remain unpaid at the end of the year.
equity that would coincide best with the above analysis of liabilities would be residual in nature, i.e., the excess of assets over liabilities. Incidentally, this approach is also followed by the APB in Statement No. 4.\textsuperscript{31} If this is exploited by the Board and followed by the populace, the future may provide some interesting changes in accounting principles and procedures. As previously stated a review of the current literature will indicate the scarcity of work that is being done in the area of a theory of liabilities, however, if the Institute follows up what was started in Statement No. 4, the situation could very well change in the near future.

If the preceding definition of owners' equity is placed into an equation format, the results would be something like the following:

\[
\text{Assets} - \text{Liabilities} = \text{Owners' Equity} \\
(\Sigma A - \Sigma L = OE)
\]

This, of course, is the implementation of the proprietary theory as defined in the beginning of this chapter. Thus, it would seem that to properly draw a distinction between liabilities and owners' equity it will be necessary to follow the proprietary approach to corporate equity as opposed to the entity theory. It would also be possible to follow the commander theory since it is similar to that of the proprietary approach, however, it has already been

\textsuperscript{31}Accounting Principles Board, \textit{Statement No. 4}, op. cit., p. 50.
pointed out that this approach is better adapted to internal, as opposed to external, reporting. Therefore, this study will adopt a proprietary theory for liability and owners' equity definitional purposes.

Using somewhat similar definitions, Sprouse and Moonitz segregated two major features distinguishing liabilities from owners' equity.

. . . The owners' equity is distinguishable from liabilities on two grounds: first, the amount of the owners' equity is residual in nature while the maturity values of liabilities are independently determined. Whenever a change in assets is not exactly offset by a change in liabilities, or vice versa, the difference is automatically reflected in owners' equity as the residual interest. Second, liabilities are in a continuous and irresistible process of maturing while the owners' equity matures only at the volition of the owners of the business enterprise or their representatives or upon ultimate liquidation. Thus, liabilities are obligations, the amounts and maturities of which are not solely within the control of the business enterprise. The owners' equity does not constitute an obligation because, ordinarily, the business enterprise is not legally or equitably compelled to provide payments or services to owners other than by the decision of the owners or their representatives. Only in the final stages of liquidations, as owners' equities may be converted into obligations of known amounts with impending maturities, do they completely disappear as a class of interests having separate and distinct significance from that of liabilities.32

The necessity to accurately account for these two elements of equity requires a definite distinction to be made between them in the financial statements. As such, the

proprietary approach to corporate equity would be the logical extension of the preceding discussion whether or not the subject of convertible debt was under consideration.

**MEASUREMENT OF LIABILITIES**

The problem of measurement in accounting has recently received considerable attention. The use of current values, price-level adjustments, imputed interest, and many other deviations from historical cost have been seriously studied by many leading theoreticians. While this is not new in and of itself, the systematic fashion and broad scope of attention that has been directed toward this subject is certainly at variance with the scattered instances of study that were exhibited in the past. While much of the current literature has focused attention on net income, and therefore, asset valuation, some interest is being generated in the area of liabilities, more specifically long-term liabilities. The APB has recently issued an Opinion requiring that an element of interest be recognized in recording noncurrent receivables and payables. And it further requires that if the interest

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33In addition to many references throughout the current literature, the AAA has made quantifiability one of the basic standards for accounting information (see American Accounting Association, *A Statement of Basic Accounting Theory* (Evanston: American Accounting Association, 1966), p. 7) and the Graduate School of Business at Stanford has given recognition to the current importance of this topic in a seminar held in March, 1965 (see Robert Jaedicke, Yuiji Ijiri, and Oswald Nielsen, eds., *Research in Accounting Measurement* (Iowa City: American Accounting Association, 1966).
is not explicitly stated, that it be imputed.\textsuperscript{34}

The important factor to be remembered in valuing long-term debt is that the instrument consists of two elements—principal and interest—and any acceptable valuation procedure must take this into account. This is basically the position taken by the Board in Opinion No. 21. In essence the suggested valuation procedure would require the recognition of the time value of money through discounting both elements of the obligation back to the present time. The resulting difference (if any) between the face value of the bonds and the discounted value will be recorded as a premium or discount.

This approach represents a direct (as opposed to an indirect) valuation of the liability. Such a procedure is possible because the obligations usually take the form of a determinable stream of cash payments at specified future dates, and as such do not pose any special theoretical or practical problems. The valuation of these securities is considerably less uncertain than the valuation of items such as goodwill, and as a result provide a more stable basis for the accountant to work with.\textsuperscript{35}

\begin{flushright}
\textsuperscript{34}Accounting Principles Board, \textit{Accounting Principles Board Opinion Number 21: Interest on Receivables and Payables} (New York: American Institute of Certified Public Accountants, 1971).
\end{flushright}

\begin{flushright}
\end{flushright}
While the basic balance sheet disclosure will not change, there is somewhat of an element of controversy concerning the applicable rate of interest that should be used in discounting the principal and interest. The Opinion specifies the use of the current rate of interest on instruments of similar companies with similar credit ratings. The use of the market rate of interest at the date of issuance is supportable under the historical cost basis. Since this has long been the accepted method of accounting for assets, the Board's preference for the use of this rate is understandable, but there is another approach that is currently being mentioned in academic circles. This involves the recognition of the term structure of interest rates in the accounts. As such, the expense for the period would be the rate of interest in existence during that period multiplied by the carrying value of the bonds. Any difference between the periodic charge and the amount of interest actually paid would be an adjustment to the carrying value of the bond much as the premium or discount amortization is now treated.\(^{36}\)

In general most of the theoreticians favoring the use of a varying interest rate associate this method of

\(^{36}\)Bierman has developed an approach where the estimated interest rates over the life of the bond would be projected to an average to be paid each period. This average rate would be used for the payment of interest and as a base for the annual adjustment to the carrying value of the debt. One stipulation or limitation to his observations is that the bonds must be sold at par. For an extended discussion see Harold Bierman, Jr., "The Term Structure of Interest Rates and Accounting for Debt," *The Accounting Review, XLII* (October, 1968), 657-61.
valuation with the use of current values for assets. \(^{37}\)

While such a radical departure from generally accepted accounting principles is viewed by many to be in the far distant future, two notable publications of the AICPA should be mentioned here. In Accounting Research Study No. 3 Sprouse and Moonitz stated that:

> In the general reports, plant and equipment should be restated in terms of current replacement cost whenever some significant event occurs. . . . Even in the absence of . . . [such an event] the accounts could be restated at periodic intervals, perhaps every five years. . . . \(^{38}\)

In addition, the APB has "... tentatively agreed that investments in readily marketable stocks which are carried as current assets be accounted for at market value rather than cost. . . . The Board plans to give high priority to the development of an Opinion on this subject. . . ." \(^{39}\)

Thus it can be seen that the presence of current values in the balance sheet is gradually being accepted as the norm. While there is still much ground to be covered, the acceptance of the Board's proposal will mark an important change of attitude of the practicing accountants. Whether or not this will lead to recognition of the term structure of

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\(^{38}\)Sprouse and Moonitz, Accounting Research Study Number 3, op. cit., p. 34.

interest rates in the accounts is a matter of speculation, but it certainly should be given consideration. However, at this point in time it does not seem that a broad departure from accounting for historical cost will be adopted in the near future. Therefore, this study will follow the approach of valuing liabilities at the present value of the principal plus interest using the market rate of interest that was in existence at the time the securities were issued.\textsuperscript{40}

**SUMMARY**

After reviewing the theory behind accounting for corporate equity, it was determined that a proprietary approach would lead to a better distinction between liabilities and owners' equity than an entity approach. This led to a residual type of definition for owners' equity—one that exactly fits the current approach supported by the APB in Statement No. 4. Since the definition of a liability used in the Statement seems to fulfill the characteristics of a liability as determined in this study, and also carefully distinguishes them from owners' equity, it was deemed to be acceptable for the purpose of this study. The fact that a pronouncement of the Board carries some influence in the accounting profession played an important part in the use of these definitions.

\textsuperscript{40}A more detailed discussion of the actual application of this concept to convertible debt can be found in Chapter 6 of this study.
Once a liability had been defined, the next step in the process was to measure the debt element. Here again, the Board has issued a pronouncement (in this case an Opinion) in this area. In this Opinion the Institute specifically requires the use of present value techniques to value receivables and payables, and if no interest rate is stated in the contract, an imputed rate must be used. In general the acceptance of present value as a measure of the liability on the balance sheet is somewhat of a departure from a strict interpretation of historical cost that had been previously followed. However, a cost approach was followed in that the Board recommended the use of the rate of interest that existed when the security was issued (for discount purposes) as opposed to recognition of the term structure of interest rates.

In the next two chapters the data developed in the preceding discussions of liabilities and convertible debt will be applied directly to convertible bonds in order to determine the proper accounting procedures that should be followed upon issuance of these securities. With the preceding theoretical base to act as support for the conclusions reached in this study, the final results will produce a logical solution based on currently accepted accounting theory, and not one that was developed to fit the needs of a certain segment of the financial world.
Chapter 4

THEORETICAL ASPECTS OF VALUATION OF THE
CONVERSION PRIVILEGE

A convertible bond consists of two components, a
debt element and a call upon the common stock of the issuing
company.¹ Since these two provisions are inseparable, the
security is not solely debt, nor is it entirely an equity
security; instead, it represents a combination of features
unlike either debt or equity in their purest forms. And, it
is this inseparability that can be singled out as the key­
stone of the problem. If the elements were separable, e.g.,
like detachable warrants, the problem would not exist, there
would be some disagreement, but none of any magnitude. How­
ever, separation is not physically possible, and the problem
begins when an attempt is made to fragment the security and
divide it into two distinct and measurable parts. It is here
that the controversy develops, and it is at this point where,
in addition to the economic, financial, and accounting theory,

¹Letter written to Clifford V. Heimbucher (Chairman
of the APB) by George Catlett (APB member and partner in
Arthur Andersen & Co.), August 7, 1967, p. 2. Statements to
this effect can also be found in practically every article
written in this area, and this generalization was accepted by
a vast majority of those corresponding with the APB in one
form or another (both for and against allocation) relating
to the three Opinions under question (Numbers 10, 12, and
14).
the problems of implementation have taken over, and the theoretical analysis has been forced into a secondary position. This is further emphasized by the fact that many accountants believe that, except in extreme cases, the call portion represents an element of shareholders' equity.²

From the time of the issuance of Opinion No. 10³ there developed a continuing controversy over the allocation of value to the conversion privilege of convertible bonds. The detailed events that took place from that point to March, 1969, when Opinion No. 14⁴ was issued, are traced in Chapter 2 of this study. The purpose of this chapter is to examine the support offered by the opposing sides together with the respective counter arguments in order to develop a logical conclusion based upon accounting and financial theory.

The respective concepts will be discussed in terms of the principles involved, with implementation being mentioned only because it represents one of the arguments against allocation. The actual measurement problem together


with the financial statement presentation aspects are the topic of the next chapter. The purpose of this organization is to prevent measurement difficulties from clouding the theoretical issues, or, what is even worse, being confused with defects in the underlying theory. In order to achieve this, value judgments and vague accusations like "true," "fictional accounting," and other such terminology will not be considered as valid arguments.  

THE CASE FOR ALLOCATION

In many instances the proponents of allocation fall into the same "labelization" type of arguments of which they accuse their opponents. It is not uncommon to see a letter in the Board's file with the major point that allocation will reflect the "true" nature of the transaction. While the person corresponding with the Board may feel this is true, it is analogous to the counter arguments such as a "fictitious" charge. As such this study will avoid this approach by analyzing the arguments that should be used in place of this vague generalization, more specifically, how

\[^5\text{One of the reasons for adopting the present system of determining acceptable accounting procedures dealt with the need for adequate research facilities for the Institute. As such, the Board has accumulated a wealth of information (primarily letters from interested parties and position papers submitted by companies participating in the symposium held in January, 1969) which will serve as the major source of data for this chapter. In addition, other information included in the file of the APB was gathered by the subcommittee appointed to study this issue: Philip L. Defliese, chairman, John C. Biegler, George R. Catlett, and Frank T. Weston (all members of the Board).}\]
allocation actually reflects the "true" nature of the trans-
action.

Substance vs. Form

One of the basic accounting principles which is
generally interpreted as being critical to external readers
is full disclosure, i.e., the proper reporting of any fact
that could influence the decision of an informed investor.
This more than any other single "principle" has played the
major role in influencing financial accounting. The need to
disclose enough information for a fair presentation of the
operations and financial position of a business has led to
extensive and rather detailed procedures for statement
preparation, and it is along this line of reasoning that the
topic of allocation of value to the conversion feature of
convertible bonds came up.

Accountants have strived to achieve the recognition
of the substance of a transaction in the financial state-
ments. This is done in order to recognize the economic facts
of a situation instead of the particular legal format used.
Attempts to accomplish this have sometimes been met with
strong opposition. This is the result partly of the con-
servative nature of the profession, and, thus, the resulting
hesitancy to deviate from the legalistic norm that has gained
acceptance over the years. The main problem is that this
legalistic basis that was sufficient in the past no longer
is acceptable in the modern world of the multifaceted busi-
ness organization. The authors of today's business trans-
actions have to contend with complex tax and other legal restrictions that did not exist in the past. Future minded accountants, then, have attempted to look past the legal veil to analyze the economic effects of a transaction before attempting to record it. Naturally this means change, and naturally it will be met with opposition. However, the substance aspects of a transaction must be used for analytical purposes, or else accountants will leave themselves open to the claim of inaccurate reporting. The formalization of accounting procedures for capitalization of leases, tax allocation, imputation of interest on receivables and payables, and many other recent Opinions represent the triumph of substance over form. But in the case of convertible bonds, the Board succeeded with Opinions 12\(^6\) and 14 in reversing an otherwise apparent victory for substance that was contained in Opinion No. 10.

After the issuance of Opinion No. 9\(^7\) the Board saw a need for additional disclosure in so far as the effect of the equity element in convertible bond issues. The fact that Opinion No. 10 was issued in the same month (December, 1966) as Opinion No. 9 is proof that the Board felt the presentation of earnings per share using the residual

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security concept would not adequately reflect the effects of the economic substance of the issuance of convertible bonds. The absence of any valuation being placed on the capital element (the call) must have disturbed the Board or else paragraphs 8 and 9 of Opinion No. 10 would never have been published.

One of the reasons discussed in Chapter 2 for the issuance of convertible debt is the lower cash interest rate that can be obtained as a trade-off for the conversion privilege. Thus the call must have some value or else it would have no effect on the security, i.e., the interest rate would have to be increased in order to sell anywhere near par. As previously mentioned, this is a generally accepted fact. As a result, the issuance of a convertible bond in actuality represents the issuance of two rights: (1) the sale of a debt security and (2) a call option on the issuer's stock. The accounting procedures prescribed whenever a package deal is issued is always allocation of value to each element. However, the Board, after considerable external pressure, has chosen to ignore the substance of the transaction and let the legal form influence their final decision.

One possible reason for this action could be a misunderstanding of the basic nature of the value allocated to the conversion feature. The fact that this value has been labeled an imputed cost and thereby something that does not really exist seems to stem from the journal entry that is
usually proposed to record the issuance of the bonds and the call option (the debt-equity package). Assume, for example, that a convertible bond with a face value of $100,000 is issued at par\(^8\) and that the conversion privilege has been valued at $20,000. The standard entry would be either:

\[
\begin{align*}
\text{Cash} & \quad \text{100,000} \\
\text{Discount on Convertible Bonds} & \quad \text{20,000} \\
\text{Convertible Bonds Payable} & \quad \text{100,000} \\
\text{Contributed Capital} & \quad \text{20,000}
\end{align*}
\]

or

\[
\begin{align*}
\text{Cash} & \quad \text{100,000} \\
\text{Convertible Bonds Payable} & \quad \text{100,000} \\
\text{Discount on Convertible Bonds} & \quad \text{20,000} \\
\text{Contributed Capital} & \quad \text{20,000}\)
\]

There is absolutely nothing inherently incorrect with this procedure, however, at the same time, it does nothing to erase the misconception that only one transaction has taken place. Another, possibly clearer, approach would be to assume an allocation of the proceeds as follows:

\[
\begin{align*}
\text{Amount paid for the bonds} & \quad \text{$80,000} \\
\text{Amount paid for the call option} & \quad \text{$20,000} \\
\text{Total proceeds} & \quad \text{$100,000}
\end{align*}
\]

This would then be recorded as follows:

\[
\begin{align*}
\text{Cash} & \quad \text{80,000} \\
\text{Discount on Convertible Bonds} & \quad \text{20,000} \\
\text{Convertible Bonds Payable} & \quad \text{100,000} \\
\text{Cash} & \quad \text{20,000} \\
\text{Contributed Capital} & \quad \text{20,000}
\end{align*}
\]

\(^8\)Most convertible bonds are issued at or near par value. For a complete discussion of this fact see Chapter 1 of this study.

This procedure would emphasize the separate element that the conversion privilege represents in the transaction. And according to Imdieke and Weygandt would state clearer the fact that the value of the call feature is a computed cost rather than an imputed cost. This alone would circumvent the arguments of many of those corresponding with the Board on this subject. And as such, it would show that a considerable portion of those against allocation object only as a recourse to form; and that analogous arguments which were advanced with respect to lease contracts and other areas are as unpersuasive in that context as in this one.

The American Accounting Association has come to this same conclusion through a somewhat different approach. In their formal statement of position, the committee charged with studying this topic determined that the debt-equity package could be viewed as one of four items: (a) solely debt, (b) solely equity, (c) part debt and part equity, or (d) a new balance sheet classification, "dequity."

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10Leroy F. Imdieke and Jerry J. Weygandt, "Accounting for that Imputed Discount Factor," The Journal of Accountancy, CXXIX (June, 1970), 57. This approach was also taken by Robert Hampton and John McClare; see Memorandum submitted to the APB subcommittee on convertible debt by Robert Hampton, III, and John K. McClare (partners, S. D. Leidesdorf & Co., CPAs, and at one time members of the APB), September 22, 1967, p. 3.

11Hampton and McClare, Memorandum submitted to the APB, ibid., p. 1.

12American Accounting Association, "Statement of Task Force Committee of American Accounting Association on Exposure Drafts of Proposed APB Opinions on Accounting for
. . . [The committee agrees] with the draft Opinion statements that both convertible debt and debt with warrants possess characteristics of debt and of equity (Draft, paragraphs 3, 13). Alternatives (a) and (b) deny this dual nature and are unacceptable. Alternative (d) is intriguing but in commenting on this exposure draft . . . [the committee] shall not presume to recast or expand the basic concepts of accounting. Thus by elimination . . . [the committee accepts] (c). Stated positively, alternative (c) accepts the dual nature of each type of security and measures the magnitude of each aspect. The measurement difficulties are not the determining factors (Draft, paragraph 12), and the conclusions of the earnings per share draft are dependent on the ability to determine investment value. [References to "Draft" refer to the exposure draft on convertible debt and debt with warrants.]13

The last sentence of the AAA committee's position brings out another interesting point. The Board has admitted in Opinion No. 1514 that a comparison of yields between convertible bonds and similar securities without the conversion option is possible, even though difficult, and a specific test has been included in the Opinion that they feel accurately determines this relationship. The curious point this must bring to the mind of the reader is that since both topics (convertible securities and earnings per share) were being studied at the same time, how could an acceptable test be developed for one use but not the other? This inconsistency in approach was also noted in many of the letters

Convertible Debt and Debt Issued with Stock Purchase Warrants and Earnings per Share," November 6, 1968.

13Ibid., p. 4.

written to the Board, the most notable of which was probably Philip L. Defliese (his reference is to the position of George Catlett, an opponent to allocation):

... we are putting ourselves in an untenable position if we waive allocation of discount on convertible debt on the grounds of implementary problems in determining an "ex-conversion" value but then, in the Opinion on EPS, rely on such a value for determining the residual or non-residual status of a security—which, as I indicated in my other letter, we are having a hard time getting away from. (I'm not happy either). George's proposal is to take a position that the addition of the conversion feature to a debt issue involves no cost to the issuer. While this gets us away from the apparent posture of saying in one Opinion that an "ex-conversion" value can't be estimated while at the same time suggesting its use in another Opinion, it gives rise to other problems:

(1) The "no cost" approach appears to apply to debt-warrant issues equally as well as to convertible issues. Therefore, a different conclusion does not seem to be logical.

(2) I really think there is an element of cost although present accounting techniques may not be adequate to measure it or sufficiently sophisticated to call for its recognition. As a practical matter, if we did not believe this, then we should not have issued Paragraphs 8 and 9 [Opinion No. 10].15 [Italics not in the original.]

Mr. Defliese does attempt to justify this discrepancy by "falling back" on the implementation question by stating "I think that at the heart of this problem is whether or not an amount can be estimated within reasonable limits for allocation to the conversion feature for purpose of imputing

discount. "\(^{16}\) In addition in a statement of position, George Catlett continued the defense of this inconsistency by stating there was less reason for concern over residual status regarding earnings per share because:

(1) Any differences as a result of residual security classification are only a matter of timing if the conversion right continues to grow in value. In other words, no permanent errors are built into the accounting.

(2) Pending residual treatment, the dilutive effect is fully and accurately disclosed in the pro forma earnings per share. If discount is imputed, however, it affects the income determination and is not susceptible of self-correction with the passage of time.\(^{17}\)

The only problem is that Mr. Catlett modifies his justification by stating that "While the difficulties in this regard should not necessarily control the accounting theory, they do present a practical problem."\(^{18}\) Again, all of the criticism that can be generated lies mostly in the area of implementation, and even the critics themselves, admit that this is not sufficient reason to void the principle. Therefore, in the words of the opponents, their arguments are not of such import as to negate the theoretical principle of allocation.

Another major counter argument offered by opponents to allocation centers on the inseparability of the two

\(^{16}\)Ibid., p. 2.

\(^{17}\)Position Paper submitted by George Catlett, April 10, 1968, p. 7.

\(^{18}\)Loc. cit.
rights. While there is a complete discussion of this factor later in this chapter, it will be sufficient to mention here that accounting theorists and practitioners have for many years recognized the need to go behind apparent or real inseparability in order to properly account for the economic effects of a transaction, and to change at this point seems to be unsupportable.

If reporting the substance of a transaction is one of the goals of accounting, and it is difficult to argue otherwise, then as previously indicated, the conversion privilege must be valued upon the issuance of the bonds. Then the only argument that could be advanced against allocation would be that even though there are two economic rights present in the transaction, separation does not really reflect what has happened. In order to analyze this approach several points must be considered: management's intent upon issuance of the securities, the prospects of future conversion, the actual cost of borrowing, and the possibility of a put existing rather than a call. The remainder of this section will be devoted to these areas.

Management's Intent Upon Issuance of the Securities

The data presented in Chapter 2 regarding the reasons for the use of convertible bonds indicated that in a vast majority of the cases the intent of management upon issuing convertible debt was to effect a delayed issuance of common
The reasons for the delay are not relevant to this topic, however, if management did intend to effectively issue common stock but chose convertible bonds, this fact should have a bearing on the statement presentation of the transaction. Since this is not the only reason for the use of these securities, nor is it always certain that conversion (even if intended) will ever be realized, both elements of the transaction should be recorded. It is difficult to see how one would reason otherwise. On the other hand, if conversion of the complete issue was assured, then, perhaps, there would be no debt element at all and the entire proceeds of the issue would be really a prepayment on the common stock. If the other extreme exists, i.e., that the conversion feature has no value, there are some who would argue that the proceeds represent the purchase price of the debt issue alone.

While the extent of conversion will serve as a measure of the degree to which management has realized its intent upon issuance of the convertible bonds, it does not in any way alter this original intent. Management decided to issue two economic rights and the bonds were selected as the method of conveyance, and this factor should be reflected in the body of the financial statements. After all, management intent is the basis for many classification decisions,

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19 See studies by Brigham, Pilcher, and others that were cited in Chapter 2. In addition, the Board made specific mention of this fact in a rough draft of the Exposure Draft of Opinion No. 14 dated August 26, 1968, p. 2.
e.g., marketable securities vs. long-term investments and the classification of fixed assets not currently in use. And, there have been no substantiative arguments that would alter this procedure when the accounting for convertible bonds is being considered.

The Prospects for Future Conversion

Many opponents feel that this factor of ultimate conversion is a key factor, i.e., if no conversion does take place, the transaction actually involved the issuance of debt securities only, and therefore, allocation of value to the conversion privilege would only serve to misstate the actual interest cost of the securities. It seems the point that all of these critics are missing is whether or not there is conversion, at the issuance of the bonds the indenture prescribed that conversion was possible; and therefore, the call privilege did have some value. The extent of this value is irrelevant at this point.

It must be kept in mind that if this privilege had no value it would not have been advantageous to the issuing company to include it in the covenants associated with the bonds because there would be no reduction in the concomitant

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20Letters written to the APB by H. N. West (Treasurer, Broadway-Hale Stores, Inc.), September 18, 1967, p. 1, R. L. Barbanell (Leob, Rhoades & Co.), September 11, 1967, p. 2; memorandum submitted to the APB subcommittee on convertible debt by Standard & Poor's Corporation (undated, approximately September, 1967), p. 1; and many other items included in the APB file on convertible debt expressed this position. An actual discussion of this point is covered later in this chapter.
interest rate. Thus they would be giving up something and getting nothing in return. In addition, the possibility that the bond itself is worthless is an equally ridiculous assumption. It must have some value, no matter how small. Therefore, the possibility that the conversion feature is valueless or that it is equal to the entire proceeds from the issuance of the bonds is zero. Thus, both theoretically and practically, the situation calls for an analysis where both elements in the package have some value at the date of issuance.

Therefore, the probability of conversion should not influence the decision of whether or not the conversion privilege should be valued. Instead of taking a negative approach the same result could be derived by analyzing the conversion feature directly. It has already been stated that the call privilege is one part of a two-part package that has value upon issuance of the bonds. As such the buyer is clearly paying for this right just as if the corporation had sold only the right with no bond or any other security to cloud the issue. This is what the suggested journal entry form (see previous discussion) is trying to convey. Thus the corporation is selling two elements one of which happens to be a conversion right, and the buyer is paying for this right irrespective of whether or not it is used. The

21 This approach was also supported by the SEC, see the letter from Andrew Barr to Philip L. Deliese, October 2, 1967, p. 2.
probability of conversion as reflected in the conversion price set by management will definitely affect the amount of value attributed to the conversion feature, however, in this chapter valuation procedures are not the major point of issue.

Subsequent changes in the initial valuation for accounting purposes is irrelevant. This is a currently accepted practice and has worked well enough for other allocations in the past so that there is no need to change it now. Subsequent economic events should not invalidate allocations of any sort that were properly made at the date of the transaction. To do otherwise would destroy the cost basis of accounting.

The Actual Cost of Borrowing

The actual interest cost to the borrower of money represents a comparison of the proceeds received with the interest that will be paid (with an appropriate allowance for time). This measure is defined as the cash yield of a security in Opinion No. 15.\textsuperscript{22} As such it represents the interest cost of a security to the issuing company. Thus the two variables in the computation (cash interest and the issue price) must be measured as accurately as possible in order to properly determine the interest cost. The cash

\textsuperscript{22}Using the example as presented in the Opinion (Opinion No. 15, op. cit., p. 273) the cash yield for a security with a coupon rate of 4% (on a par of $100) and a market value of $80 would be 5%. (This was computed as follows: \( .04 \times \frac{100}{80} = \frac{4}{80} = 5\% \)).
interest to be paid can easily be computed as the par value of the security multiplied by the coupon rate of interest.

The second half of the computation is where the problem begins. The measurement of the proceeds becomes a critical element in the calculation. If no value is attributable to the conversion feature, then the amount received for the bonds (usually par) represents the total proceeds, on the other hand, if part of the issue price is allocated to the conversion value, then the amount attributable to the bond is reduced and the effective interest rate will be increased. If the preceding arguments regarding the issuance of two economic elements are accepted, there can be no interpretation other than the fact that the value of the conversion privilege should be deducted from the proceeds when determining the issue price of the bonds (or the bonds could be valued directly—see Chapter 5). As such the actual interest cost of the bonds will vary from the coupon rate.  

The recording of the interest cost of bonds other than those convertible into common stock is handled in a manner that effectively charges the period with an interest element that approximates the market rate (on similar securities) in effect at the time of issuance of the bonds. If

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23 Since in most instances convertible bonds are issued at or very near par, the ultimate effect would be to increase the interest cost over the coupon rate. However, if the bond is issued at a premium large enough to more than offset the value of the conversion privilege (a very unlikely supposition) the actual interest cost may be less than the contractual rate.
the conversion privilege is considered to be a separate element in the original transaction, consistency would require that the interest charge for the period be measured in terms of a higher rate than that included in the bond issue. To do otherwise would be to treat similar transactions (the issuance of debt securities where they can be valued) differently.24

As such it seems the only logical conclusion that can be drawn from these facts is that the allocation of value to the conversion privilege reduces the proceeds applicable to the debt portion of the package and the resulting discount (or reduced premium) should then be accounted for without relating it in any way to the conversion right. Once an allocation is made, the accounting procedures should treat the debt-equity package as two separate elements.

The opponents to allocation claim that unless there is conversion of a material portion of the bond issue the actual interest cost remains at the coupon rate. Thus, the only economic cost involved in the conversion feature is the loss of a possible opportunity to sell common stock at a later date at a price greater than the conversion price. The only problem they contend is that this type of cost is not generally recognized for accounting purposes.25

24 This is essentially the position originally taken by the APB in *Opinion No. 10*, op. cit., p. 148.

Another view of this same idea was contained in the position paper submitted by the United Aircraft Corporation.

We view bond discount on convertible debt resulting from the application of Paragraph 8 as an imputed cost rather than a real cost, and one which is lacking in logic as may be seen from consideration of two possible outcomes:

(i) To the extent that the bonds are converted, the issuer will have sold common stock (which was probably his objective in most cases) at a price higher than that which could have been obtained at the time the proceeds of the issue were received.

(ii) To the extent that the bonds are not converted but are called or retired at maturity, the issuer will have borrowed at a lesser interest rate than could have been possible on straight debt.

Both situations represent a benefit to the issuer, and do not suggest any cost which he should recognize. However, Paragraph 8 of Opinion No. 10 would require him to record a cost [amortization of bond discount during the periods when the securities are outstanding as debt]. . . . 26

George Catlett takes the position that there is no cost involved but, instead, the conversion privilege represents the consideration the issuer gives the buyer in return for the right to use the funds from what he calls a refundable advance without an interest cost. 27

While the critics admit the APB is attempting to develop procedures that will more accurately account for the cost of money, the arguments tend to circumvent the issue by

26 Position Paper submitted to the APB by the United Aircraft Corporation (undated, approximately September, 1967), p. 3.

27 Letter from George Catlett to Clifford V. Heimbucher, May 31, 1967, p. 3.
failing to distinguish between the two economic rights involved. As previously stated, this basic fault underlies a major portion of the arguments against allocation.

Philip Defliese has taken what is probably the most supportable stance against this cost idea in a summary from his position as sent to the members of the APB.

... while there obviously is an economic cost to the company when it sells such a call, its determination is subject to many economic factors which accounting has not yet undertaken to measure. To recognize this cost now would be the same as taking a position that oil companies should recognize in income immediately the present value of oil resources upon their discovery. Accounting is not yet ready to embrace economic theory to this extent. ...28

While the major point of Mr. Defliese's statement has some validity, there is somewhat of a movement in present accounting procedures into the area of deviation from historical cost (as traditionally measured). The use of an imputed interest rate on receivables and payables is already a reality and the Board is now working on an exposure draft that calls for the use of market value for temporary investments. Each of these was unheard of, except possibly in academic circles, even as recent as a few years ago. It would seem that Mr. Defliese may have underestimated the speed of the movement of this force in present accounting. However reluctant the Board may be to move into a new era of accounting it seems that the time has come to make that move, especially if it means a better presentation of the economic

28 Addendum to a letter from Philip L. Defliese to the members of the APB, June 19, 1968, p. 1.
facts. And even Mr. Defliese admits this is true.

If the procedures for recording the issue of convertible bonds as suggested at the beginning of this chapter are followed, then ultimate conversion or failure of conversion is irrelevant. By treating a portion of the proceeds as a capital contribution in payment for a call privilege, "... [a] situation [is created that] is analogous to stock sold on a subscription basis where there is a possibility of default and forfeiture by the subscriber of the amount paid."29 This substantiates the conclusions drawn earlier that after the allocation is made the convertible bonds should be treated like any other debt security in so far as amortization of premium or discount is concerned.

George Catlett in his personal position statement states that "imputed discount on convertible debt is based on the faulty premises that (1) the greater the equity characteristics, the higher the interest cost, and (2) the greater the debt characteristics, the lower the interest cost."30 His statement is basically true, however it is not illogical as he seems to imply. His analysis misses the basic cause: again, the sale of two economic rights. With a fixed value to allocate between the two elements of the transaction, a change in the valuation of one must have the opposite effect on the other. This merely presents a clear

29Imdieke and Weygandt, "Accounting for that Imputed Discount Factor," 57.
picture of the effects of the transaction, i.e., the greater the debt characteristics, the closer the package is to pure debt and as a result, the more realistic the coupon interest rate is relative to the market rate for similar securities, thus a lower discount element. As the debt characteristics decline (a lower coupon rate would usually be the cause) the coupon rate bears less and less of a reasonable comparison to other similar debt and a greater value is allotted to the conversion privilege.\textsuperscript{31} The net charge against earnings (interest plus or minus amortization) will probably not vary as much as Mr. Catlett suspects.

In George Catlett's statement of his position against allocation, he attacks the actual interest cost theory by following the approach that the conversion privilege actually represents a saving to the company, and as such, completely by-passes the cost aspect. The saving he speaks of is similar in nature to the many other covenants that are included in the indenture (e.g., various forms of security, dividend restrictions, and subordination) and contribute to the development of the coupon rate of interest. He completely ignores the existence of a cost factor

\textsuperscript{31} It must be remembered that these bonds usually sell at or near par. Since the conversion feature is one of the main determinants of the price, it is usually set to allow the bond to sell at the desired price with the existing coupon rate. However, if the conversion rate is held constant and the coupon rate is allowed to vary, the price of the package will vary with the coupon rate.
indicating that such a discount would deny the existence of the savings.\textsuperscript{32}

In connection with this approach, Mr. Catlett has attacked allocation by expanding the discussion to include other provisions of the bond issue. The counter to his approach is that he, like most of the other foes of allocation, fail to distinguish between the two economic concepts at the issuance of the convertible bonds. However, this approach has been used by others to challenge the economic cost approach by insisting that if value is attributed to the conversion feature, the other covenants in the indenture should also be valued.

Imdieke and Weygandt (supporters of allocation) have actually concurred with this approach and suggested some journal entries to recognize these features. For example, a restriction on dividends might be recorded as follows:

\begin{align*}
\text{Cash} & \quad \hdots \quad \text{XX} \\
\text{Discount on Convertible Bonds} & \quad .XX \\
\text{Convertible Bonds Payable} & \quad .XX
\end{align*}

\begin{align*}
\text{Cash} & \quad \hdots \quad .XX \\
\text{Liability for Restrictions on Dividends} & \quad .XX^{33}
\end{align*}

One observation that should be mentioned, is the possibility that if this approach is carried to its logical extreme, accountants may find the bond has no value at all, but rather, that each covenant has its own value. This idea is

\textsuperscript{32}Catlett, Position Paper, op. cit., p. 3.

\textsuperscript{33}Imdieke and Weygandt, "Accounting for that Imputed Discount Factor," 58.
further complicated by the fact that the various provisions normally included in a bond indenture, in addition to having a value, effect the valuation of the other provisions to the extent that it may not be possible to value any of them separately.\textsuperscript{34}

Naturally this argument brings in the forbidden thought of "normalizing." If there is one thing accounting procedures should not do, it is normalize income (either directly or indirectly). However, it must be considered that this is one of the arguments that were proposed against allocation of value to stock purchase warrants, leases and practically every other instance where the Board has attempted to include the economic effects of a transaction in the accounting statements.\textsuperscript{35}

This factor of allocation of value to all of the features of a bond was presented as support for non-allocation to the conversion privilege by countless replies to the Board. In each case the writer felt that the proper cost of money for accounting purposes did not include allocation of value to the conversion privilege. However, many did reference what they called the "true" bond discount. This was labeled as an "actual cost" because it was an economic

\textsuperscript{34}Matthew J. Stephens, "Inseparability and the Valuation of Convertible Bonds," The Journal of Accountancy, CXXXII (August, 1971), 58.

\textsuperscript{35}Letter written by Robert E. Koehler (Vice-President of Finance, Marriott Corporation) to Richard C. Lytele (Administrative Director of the APB), November 14, 1968, pp. 1-2.
fact which demanded accounting recognition, whereas the 
value of the conversion right was not. Again, a major por-
tion of the argument was based upon a misunderstanding of 
the allocation process with respect to the conversion right. 
In the instance of all of the other covenants mentioned, 
none of them created an equity element. In each case if a 
breakdown was used, the liability would simply be divided 
into separate parts. The total liability portion of the 
debt-equity package would not change, and it is doubtful that 
such a breakdown would provide any additional information 
for the reader. The conversion feature differs because it 
does create an element of stockholders' equity, and as such 
should be segregated for full disclosure purposes.

Another distinction between the two situations lies 
in the inherent difference between the two types of covenants.

. . . the so-called "singling out" of the conversion 
feature is in fact isolating the one element in con-
vertibles that is not a normal inherent aspect of all 
debt arrangements but is actually an element of equity. 
It is, therefore, neither arbitrary nor illogical to 
"single out" the conversion feature, since all interest-
determining factors are inherently related to all debt 
contracts, and are afforded all the accounting necessary 
or appropriate by merely recording the issuance of debt 
and disclosing the restrictions.36

Thus the conversion feature cannot be combined with 
the other covenants in a bond indenture. The differences 
previously described are more than sufficient to distinguish 
it from these features and, therefore, acceptance of the 

36Hampton and McClare, Memorandum submitted to the 
APB, op. cit., p. 3.
total allocation idea is not necessary if one favors allocation of value to the conversion privilege.

It is also possible that if the separate features of this or any other security be valued and placed on the balance sheet the financial statement would become a conglomerate mass of individual items with the end result of not presenting any understandable information to the reader. Another interesting point would be that if each element was valued, would it ever be possible that the sum of the parts would be greater than the whole?

The Possibility of a Put Existing Rather than a Call

Throughout this discussion the conversion privilege has been referred to as a call upon the issuing company's stock that is purchased by the investor. The reason for this approach was that the buyer was investing in two different contracts: (1) the bond and (2) the right to exchange the bond for common stock. While the term "call" usually refers to "an option to buy a share of stock at a specified price within a specified period," the conversion of stock does not involve an outflow of funds. However, the basic concept is still there: an option to acquire stock at a given value during a specified period of time.

Some critics, in an attempt to discredit the call

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aspect, have argued that what has actually been issued is a "put" option. The reasoning generally follows that since most of these debt-equity packages include a call provision, and since many conversions are actually "forced" through this call procedure and, the issuer has complete control over the call of an issue, the corporation is really issuing a put option. Following the arguments offered for allocation, they feel that "... if a value is properly assignable to the 'call,' it would appear equally valid to assign some value to the 'put' since it has, in fact, real value to the issuer."\[39\]

The Investment Bankers Association subcommittee report continues:

"... Historically, grounds would support assigning a greater value to it than to the "call," in fact, because our research indicates that conversion occurs in the majority of cases as a result of action by the issuer. Accordingly, within the realm of Opinion No. 10 theory, one can argue that the value to the issuer of the "put" offsets, or perhaps more than offsets, the value to the purchaser of the "call." In our view, all of these are more matters of speculation than items that should be recorded as charges or credits in financial statements.\[40\]

The intent of this approach is to confuse the issue by

\[38\]A put is generally defined as "an option to sell a specific security at a specified price within a designated period," ibid., p. 833.


\[40\]Loc. cit.
adding many aspects of the bond that supposedly have value and end up with the argument that to value all of them would only add confusion to the statements. However, the subcommittee seems to have ignored two major points in relation to this argument:

... For the put situation to exist, both of two conditions must be met: (a) the conversion price at the date of issuance must be below the current market by at least as much as the call premium on the debt, and (b) the debt must in fact be immediately callable. Lacking either of those conditions, the put argument cannot be sustained.

While it is conceivable that a convertible security might at the date of issue incorporate the features prerequisite to sustaining such an argument, no convertible issues with which we are familiar have done so to date: both prerequisites are usually missing, and we know of no case in which one is not. Accordingly, we see no merit in the argument that the conversion feature is by nature a put rather than a call at the date of issue. ... 41

Thus, it seems, another argument against allocation does not have enough substance to withstand close scrutiny. Admittedly, there is a possibility of the situation described by the IBA subcommittee existing, however, Mr. Hampton and Mr. McClare (both CPAs and at one time members of the APB) reduce the probability practically to zero.

Position of the Securities and Exchange Commission

The Securities and Exchange Commission (SEC) supported the Board in the issuance of Opinion No. 10 in so far as the

41 Hampton and McClare, Memorandum submitted to the APB, op. cit., p. 2.
principle of allocation is concerned. Mr. Barr and his associates felt that valuation of the conversion privilege would report the actual facts of the transaction in that both the liability and capital aspect would be properly valued and the charge against revenues (including amortization of the premium or discount) would reflect "... the actual cost to the borrower of the outstanding debt or the yield to the holder." 42 Despite approval of allocation in theory, the Commission agreed to the suspension (by Opinion No. 12) because of the need for further study of the problem. 43

Later Mr. Barr stated that because of the "difficulties involved" in the valuation of the conversion feature, the SEC ". . . would not oppose the practical result of the Board's Opinion . . . that 'no portion of the proceeds from the issuance of convertible debt securities should be accounted for as attributable to the conversion feature.' 44 However, the Commission felt the Opinion should be worded to indicate that allocation was not necessary, as opposed to the exposure draft position that it should not be recorded. 45

Thus the SEC has always supported the allocation upon

45 Loc. cit.
theoretical grounds, but in the end it yielded to practical difficulties in application. There was a clear reluctance on the Commission's part, but eventually the position of Opinion No. 14 was accepted. This sort of acquiescence could be forecasted by the actions of the SEC during the period between Opinion No. 12 and No. 14. Companies filing with the Commission during this time had the choice of recognition or nonrecognition, but some form of disclosure of the amount of the discount and the annual amortization was required. This was usually achieved through footnotes in both annual statements and prospectuses. In each case, however, management included statements to the effect that allocation was not required, but if it were, the amount of the discount and amortization was indicated. It should be clear, therefore, that the SEC did as much as possible to require the publication of the discount and related amortization figures before the issuance of Opinion No. 14.

The Position of the American and New York Stock Exchanges and the Civil Aeronautics Board

Both the New York and the American stock exchanges joined the SEC in endorsing the issuance of Opinion No. 10.  

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46 See prospectuses issued by International Silver Co., Miles Laboratories, National Can Corporation, and others distributed during the period of the suspension of Opinion No. 10 (paragraphs 8 and 9).

However, the New York Stock Exchange later followed a "no preference" approach in a letter to the Board.\textsuperscript{48} It would seem that again the theoretical aspect of allocation is preferable, but as the practical problems begin to arise, there is somewhat of a "soft peddling" approach that is taken. It almost seems these groups are stating that a theoretical approach to financial reporting is fine—as long as it is not too difficult to implement.

The only other agency that took an active stand in the allocation controversy was the Civil Aeronautics Board (CAB). In an official statement of position, the CAB specifically waived their accounting rules in order to permit the recording of value for warrants and the resulting discount on the debt securities, but their position with respect to convertible bonds was more restrictive.

Carriers who have accounted for convertible debt and debt with warrants in accordance with paragraphs 8 and 9 have violated the provisions of the USAR. Ordinarily, we would have required correction when such violations occurred. In this instance, however, such action has been delayed pending the outcome of our own review of this accounting in light of the Board's regulatory needs to determine whether this accounting should be incorporated into the USAR.\textsuperscript{49} [Italics not in the original.]

The reasoning of the CAB is much the same as other

\textsuperscript{48}Letter from the New York Stock Exchange to the APB, August 29, 1968, p. 1.

\textsuperscript{49}Letter from Warner H. Hord (Director, Bureau of Accounts and Statistics, Civil Aeronautics Board) to Chief Accounting Officers, Certified Air Carriers (Arthur Andersen & Co., Subject File, Reference No. UN 5900-60), February 16, 1968, pp. 1-2.
objections to allocating value to the conversion privilege, i.e., only one physical security is involved, and the lack of an "objective" standard of measurement.\textsuperscript{50}

\textbf{Conversion Privilege vs. Warrants}

While a comparison of the conversion privilege and detachable warrants in Chapter 2 produced the general conclusion that these two securities are entirely different both in use and composition, the current literature and the files of the APB are replete with references to a comparison of the two for accounting purposes. The purpose of this section is not to reiterate the discussion contained in Chapter 2, but, rather, to take it one step further, i.e., an examination of the conversion privilege (alone) and the warrant (alone).

The preceding discussion has shown that the purchaser of a convertible bond is actually obtaining two economic rights— one of which is the option to convert the bond into common stock. If this right is compared to the detachable warrants, then there is but one conclusion that can be logically drawn: each represent a distinct element of a complex transaction. As such, each of these options must be valued on the books of the issuing company. To do otherwise is to justify inconsistency of recording with arguments that are rather weak and unsubstantiated.

Other than attacking the two types of securities

\textsuperscript{50}\textit{Ibid.}, pp. 2-3.
from the separability point of view, the arguments against treating the two options the same generally emphasize the different characteristics and uses of each. That such differences do exist cannot be argued (these were examined in Chapter 2), however, the question is should they be allowed to create artificial differences from an accounting point of view?

It has already been pointed out that some accountants see the inherent differences between the two securities and therefore, assume the accounting for each should also be dissimilar. Allocation of value to warrants is easier to substantiate, therefore, it is usually assumed by these accountants that no value should be allocated to the conversion privilege. Again, form wins the battle against substance. The previously mentioned IBA committee claims to have studied the two securities from both a form and substance approach, however, a close examination of their presentation indicates that only the "external" or "physical" characteristics were analyzed and an emphasis was placed upon separability and measurement.51

Philip Defliese (an opponent to allocation) admits the "basic" differences between the conversion privilege and warrants are not material enough to require different

51 Investment Bankers Association, Memorandum to the APB, op. cit., p. 3.
First, despite the many differing terms we find between debt-with-warrant issues and convertible debt issues, there is sufficient similarity in substance and theory to sustain a position that the accounting for the two should be the same. In each case a "call" on stock is being sold and ordinarily accounting recognition of that sale should be given. . . .

At this point it seems there is a very strong argument for allocation. The counter arguments offered against allocation did not negate the positive advantages of the procedure. A complete summary and a final decision as to the correct theoretical recording of the issuance of convertible bonds will be presented at the end of this chapter. However an independent comment from one of the members of the FEI seemed to summarize the entire situation from the position of those in favor of allocation: "This proposed Opinion [No. 14] would seem to be more the result of pressure by the underwriting community than a reasoned conclusion based on

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52 This approach was also supported by some of the members of the Financial Executives Institute. See Financial Executives Institute, Committee on Corporate Reporting, "Discussion Memorandum" (Supplement to position paper), January 9, 1969, pp. 1-3. (Overall the Financial Executives Institute was in favor of Opinion No. 14.) However, the American Accounting Association committee assigned to study this topic agreed with the position that both types of securities should be treated in the same manner. See American Accounting Association, Statement of Task Force Committee, op. cit., p. 3 and Imdieke and Weygandt, "Accounting for that Imputed Discount Factor," 56-57.

53 Defliese, Addendum to letter to the APB, op. cit., p. 3.
the facts. It certainly appears to complicate an already complicated situation."\(^54\)

THE CASE AGAINST ALLOCATION

The preceding discussion represents the arguments presented by those who propose allocation of value to the conversion privilege and the counter arguments offered by the opposition. In general, the proponents feel that allocation is necessary in order to reflect the "true" nature of the transaction, and unless it is recorded in the accounts, the financial statements do not reflect the economic substance of the transactions entered into by the company.

With this in mind it now becomes necessary to examine the negative side of the question. While many of the arguments against allocation were used in rebuttal to those presented for allocation in the first half of this chapter, this section will be limited to those arguments not yet covered and the counter arguments proposed by those favoring the procedure.

Inseparability

The case for and against two economic rights existing at the sale of a convertible bond have already been presented in great detail, however, another facet of this problem deals with physical separation. As previously indicated

\(^54\)Financial Executives Institute, Discussion Memorandum, op. cit., pp. 2-3.
there was some question as to whether or not two separate economic rights existed, on the other hand, there is absolute agreement when it comes to the issue of physical separability. Unanimously all agree that it is not possible for separation to exist. If the conversion right is exercised, the bond must be surrendered, and if the bond matures, the conversion privilege expires—neither action can be implemented independent of the other. With physical inseparability as a given factor, the issue becomes, is the lack of separability sufficient to prevent allocation of value to the conversion privilege?

Since detachable warrants usually have a market of their own (even when not detachable for a period of time) many opponents to allocation classify them as a non-refundable advance toward the potential purchase of common stock. This is basically the reason for the recording of a credit to contributed capital upon the issuance of bonds with these warrants. In addition, the separate market aspect allows an independent valuation to develop for the warrants that does not exist for the conversion privilege. This latter feature is emphasized quite heavily by those opposing allocation. The primary reason they offer for not valuing all of the covenants of debt issued with detachable warrants lies in the inability to determine a value with reasonable certainty. Thus, they believe they have successfully developed an

55 See especially Investment Bankers Association, Joint Memorandum, op. cit., p. 2.
argument against valuing the conversion option, while, at the same time, supporting the allocation of value to warrants.

The inability to separate debt and the conversion feature leads to the general conclusion that these securities must be viewed as debt when issued (a legal interpretation) and continued to be reflected as such till redemption either through retirement or conversion—"... the fact that... [this] debt may be satisfied with stock does not increase the issuer's net worth at the outset."56 This same argument of separability is offered as a challenge to the existence of a call on the issuing company's stock. Again, the lack of a physically separate security is the main point at issue.

Therefore the opponents to allocation feel the debt-equity package must be either primarily debt or primarily equity at any given time (it cannot be primarily both at the same time). Those who oppose allocation feel this inseparability prevents any consideration of a capital element arising upon issuance or an increase in the cost of the debt over the life of the bonds. George Catlett feels so strongly about this approach that he even goes so far as to state that even if the conversion privilege does have value, the lack of separability would prevent the recognition of it.

56 Ibid., p. 4.
on the company's financial statements. 57

The Financial Executives Institute and many of the other critics of allocation have labeled "forced separation" of one legal instrument as "fictitious" or "as if" accounting. They feel the legal form should take precedence over the economic substance of the transaction. Matthew Stephens (Associate Professor of Accounting--The University of Pennsylvania in Philadelphia) carried the argument to the extent that he calls the separation of the debt and the conversion feature as accounting for form more than substance. 58

Those who favor allocation feel that physical inseparability is an irrelevant point. Their approach is that accounting has recognized the need to allocate value to the various elements of a transaction where there was an element of inseparability--whether apparent or real. The classical example is the purchase of a building and the land upon which it stands. Due to the lack of depreciation on land, a separate valuation is imperative, even though it may require the use of appraisals (estimates by trained experts). This is done even though a physical separation would involve the destruction of the building. Some accountants feel it is possible that neither has value without the other. In this instance any errors will be reflected in periodic net income.

and the asset carrying value on the balance sheet; yet even though estimates may vary considerably between appraisors, this has been approved accounting procedure for many years and there is no real support for a change.

That valuation of the conversion feature is difficult is accepted by both sides, however, those favoring allocation feel it is no more difficult than attempting to separate the land and building previously discussed or the interest factor in a lease set up primarily for financing purposes. Some of the very same arguments offered against capitalizing that type of lease are being used against allocation of value to the conversion privilege (e.g., legal restrictions, possible violation of usury laws, and kill the use of these instruments).\(^5^9\) To this date there has been no wide spread calamity resulting from the requirement to capitalize financial leases. In addition, Hampton and McClare draw an even deeper analogy in their memorandum to the APB.

\[\ldots\text{To state that convertibles are solely debt until an action takes place to make them solely equity is as unconvincing and inconclusive as to state that every lease contract provides rent and nothing else--no interest, no principal, no equity in the property.}\]^\(^6^0\)

The Board has taken this concept and expanded it to


\(^6^0\)Hampton and McClare, Memorandum submitted to the APB, op. cit., p. 2.
include the recognition of interest as a separate element on long-term receivables and payables; and if no such interest exists in the contract, it must be imputed. This procedure is going much further into "as if" accounting than that proposed by the allocation of value to the conversion privilege where recognition would be given to a computed value as opposed to an imputed one. In fact, the position the Board has taken with respect to allocation (and the implied use of present value techniques to record convertible bonds) is so inconsistent with the use of present value for long-term receivables and payables that there is special mention of the fact that Opinion No. 14 was not altered by the new Opinion (Opinion No. 21). In each of the cases mentioned above a single legal instrument was separated into two transactions. Why, then, should accounting for convertible bonds be different? Surely the separation procedures in a lease or non-interest bearing note cannot be less difficult than that of valuing the conversion feature.

The situation is well summarized by Philip Defliese in his position statement, "Separability helps in the case of warrants; lack of separability should not hinder (in theory) in the case of convertible debt." [Italics not in


62Ibid., p. 418.

63Defliese, Addendum to letter to APB, op. cit., p. 3.
the original.] Thus, it would seem, the fact of inseparability is not sufficient, in itself, to offset the theoretical advantages of allocation. When the Board uses such a factor as the main support for their position, it creates the natural question as to whether or not there was some other reasons that were the real deciding factor.

**Tax Effects**

While somewhat unsettled at the time of the issuance of Opinion No. 14, the tax regulations that apply to convertible bonds are now very specific.

. . . While the definitions of bond discount and bond premium are both based upon a comparison of the redemption and issue prices, only the regulations providing for the amortization of bond premium specify that the premium attributable to the conversion feature should be valued and excluded. The regulations providing for the amortization of bond discount contain no similar requirement, and there is no question that the omission is deliberate. In other words, the amount allocable to a conversion feature cannot exceed the value of the feature or the total premium, whichever is lower. Thus, when a convertible debenture is

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64 This same conclusion was reached by Imdieke and Weygandt, but they approached it from a different point of view. They reasoned that "the only real distinction between them [the conversion privilege and warrants] is that the additional payment made when the equity instrument is formally acquired takes different forms. The warrant holder pays additional cash to the issuing firm; the convertible debt holder pays for his stock by foregoing the receipt of interest from conversion date until maturity date, and the receipt of the maturity value itself. Thus it is argued that the distinction reduces to one of method of form of payment only, rather than any difference in substance." See Imdieke and Weygandt, "Accounting for that Imputed Discount Factor," 57.

issued at a premium price, it is possible that neither discount nor premium will be recognized for tax purposes.66

There was much speculation during the late 1960's regarding how the Internal Revenue Service (IRS) would treat the discount, and according to the current regulations the majority proved correct, however, several companies like J. P. Stevens were allowed to deduct the discount as additional interest expense.67

Regarding this point, an interesting controversy arose. Many of those responding to the Board's exposure drafts claimed they felt the IRS would not allow the deduction and, therefore, this was some support for a similar accounting treatment, i.e., no value allocated to the conversion feature. Miss Agger and Mr. Strout presented a different approach with an attempt at "reverse psychology." It was their contention that the repeal of paragraphs 8 and 9 of Opinion No. 10 would appear to the IRS as an acquiescence on the part of the Board to the fact that a reasonable value of the conversion feature could not be measured. The omission from the financial statements of this element of paid-in capital would then, they felt, lead the IRS to a


refusal of the deduction for tax purposes. The extent of the influence the actions of the APB had upon the subsequent tax regulations is not known, but the possibility of this "reverse thinking" does pose an interesting question. The thought of what "might have been" does not change the current position of the nondeductability of a discount created by allocation of value to the conversion privilege, however, given the tax rules, the question is to what extent should this influence accounting procedures?

While the general consensus among accountants is that tax provisions should not influence what is thought to be the proper accounting treatment of an item, there were some strong arguments that somewhat modified this approach. In general, some of the respondents felt that since allocation was not proper in the first place, the IRS was supporting their position, and to include allocation (with concomitant amortization) in the financial statements without a deduction for the tax effect would magnify the distortion in the statements.

As another approach to this idea of tax deductibility, those opposing allocation felt that if the IRS allowed the deductibility of the discount (a premium is includable in income—see above discussion) it would result in ordinary income to the holder under Section 1232 of the Internal Revenue Code. Under this approach the discount would

\[68\] Ibid., pp. 4-5.
represent an "interest free" borrowing (because of the reduced coupon rate) and result in the constructive receipt of income to the holder. It was the position of this group that the possibility of ordinary income on disposition of the bonds would virtually "kill" their present use as a financial instrument, especially when the corporation could not take a tax deduction for the periodic amortization of the discount.

Thus, in summary, those opposing allocation felt that "when there is a serious question as to whether the discount accounting can be supported in theory, the fact that the Internal Revenue Service does not recognize the discount compounds the difficulty of justifying the discount." Still another approach is offered by Matthew Stephens:

... While it is generally inadvisable to have accounting principles determined by the tax law, it also seems inadvisable for the accounting profession to establish an accounting principle that equates two securities which differ with respect to a major decision variable. Since tax consequences are an important element in valuation of security investments and the decision as to the type of security to be issued, the accounting profession should proceed very cautiously before it prescribes a treatment for convertible bonds which essentially equates the accounting

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69 Memorandum submitted to the APB by Standard & Poor's Corporation (undated, approximately September, 1967), p. 3. See also Financial Executives Institute, "Comments in Support of the Reconsideration of Paragraphs 8 and 9 of Opinion No. 10" (as submitted to the APB), September 18, 1967, p. 2.

70 See especially Investment Bankers Association, Memorandum to the APB, op. cit., pp. 13-14.

valuation of these securities to bonds with detachable warrants. . . .72

The position of those favoring allocation stated simply was that tax considerations should not affect accounting procedures—with no modifications. The main support here is that both the accounting and tax approaches are based on completely different assumptions, and that, as a result, they should not be confused as either supporting or contradicting each other.73 After all, there are numerous differences between the accounting and tax treatment of items of revenue and expense. Some of these cause permanent differences and others are merely the result of timing. The fact that there is a difference does not necessarily make one artificial, nor does it force the use of illogical procedures.

The Problem of Measurement

A detail analysis of the mechanics of the measurement question is contained in the next chapter, but because of the frequency of mention in correspondence with the Board, this point should be considered, in general, as an argument


73 It is generally felt that financial accounting should be concerned with economic events for measuring the progress of a business, whereas the central focus of tax accounting is to develop an equitable base upon which the tax is levied and to approach this from the view of ease of collection.
against allocation. Therefore, the emphasis in this chapter will be placed on whether or not measurement problems should affect theoretical decisions and not an evaluation of specific measurement techniques.

One of the major reasons for the reconsideration of convertible bonds after Opinion No. 10 was the objections of the investment bankers—those on whom the accountants had to rely to estimate the value of the conversion privilege. Their main objection was related to objectivity. More specifically, they were concerned with having to estimate the value of the conversion privilege "... with sufficient accuracy and objectivity to form the basis for accounting entries." Mr. Malin continues by summarizing the problems:

There are two main impediments to objective or sound valuation. First, the absence of any market benchmarks to permit direct separate valuation of the conversion feature alone. Second, the virtual absence from the trading market of any debt instruments comparable to the typical convertible debt instrument minus only the conversion feature. ...  

If any one argument had to be singled out as that

74The problem of dealing with implementation of the valuation concept was mentioned more than any other factor as an argument against the acceptance of the principle of allocation. This is true for those against allocation conceptually as well as those in favor of the principle, but against acceptance because of the problems incurred in measurement.

75Letter from Robert A. Malin (Vice-President, Blyth & Co., Inc.) to Philip L. Defliese, April 11, 1968, p. 1. Despite the fact that this letter was written after the suspension, it still reflects the opinion of the investment bankers with respect to allocation.

76Ibid., p. 3.
which caused those analysts the most consternation, it would have to be the lack of a separate market for the conversion feature. The fact that there would be no independent confirmation through the exchange procedure really placed them in what they thought was an impossible position. Quotations such as investment value are "... intended to be merely general indications of the broad range of values that might apply under current circumstances, are generally based on yield tables without regard to comparability of issues, but rather on the rating of issuer, and that they can and do change materially within short periods of time." This approach was also substantiated by the position taken by Standard and Poor's and Moody's. Thus, it seems these companies are willing to publish information for general usage in comparing companies, but when it becomes a situation where their estimates will be used in the financial statements (and subjected to the liability as prescribed under the Securities Act of 1933) it becomes a different matter. Even under these circumstances, it hardly seems that their estimates are any more subject to liability than those of the appraisals of the land and buildings previously mentioned, and the latter's estimates have been included in financial statements for years.

Standard and Poor's in their Memorandum even go so far as to label their figures as a "grossly imprecise

77Loc. cit.
estimation." Their reasoning is that there is such a high degree of subjectivity entering into the calculation that no one set of criteria can be established in some formula type of format.

The pricing of a debt obligation rests on a number of factors in addition to the credit of the issuer, [e.g.,] . . . sinking fund provisions [and] redemption features. . . . One issue may command a somewhat better market than another of similar statistical characteristics because it is a good but "new" name, i.e., the issuer has not for some time resorted to the public capital markets, thus affording prospective retail buyers of the bonds a further measure of diversification in their portfolios. In another direction, it can be argued that a certain element of the appeal of convertible debentures for some investors lies in the fact that they are able to obtain a hedge position while at the same time reducing their tax liability by virtue of the lower interest rate vis-à-vis straight debentures. It is impossible to reduce the sum of these varying considerations to a concrete figure.

The argument of many of the accountants opposing allocation is to carry this position one step further by indicating that because of the inability of the investment bankers to come up with a specific formula, "forced" allocation would result in still another variation in accounting. This, of course, would be the exact opposite of the charge given to the Board at its inception, i.e., to narrow areas of generally accepted accounting alternatives. As such

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78 Standard & Poor's Corporation, Memorandum to the APB, op. cit., pp. 3-4.

79 Ibid., p. 4.

80 Addendum to letter from Nelson G. Harris (Vice-Chairman, Committee on Corporate Reporting, Financial Executives Institute) to Philip L. Defliese, September 18, 1967, p. 3.
the results would lead to more complex footnotes and confusion among statement readers.

Those who favor allocation counter these measurement problems with the fact that estimates are basic to accounting. Quite often estimates of depreciable lives, collectability of receivables and others in addition to those previously mentioned, must be used because of the periodicity concept. The underlying theory has always been that even if the estimate is incorrect, as long as it is reasonable it would be better than omitting the information entirely. The very nature of periodic accrual based financial statements is supported by this presumption, and now some want to deviate simply because the data are difficult to obtain.

Granted Moody's and Standard and Poor's do vary their estimates of investment value, however, by their own admission, they do not present these data for any purpose other than general statistical comparisons. However, if the accountants depended upon them, the figures could be refined to a point where the possibility of a material error would be minimized. Since both sides can offer examples of published values for a given group of companies that support their contention, this factor must be considered irrelevant until someone does a detailed analysis of the fact over a span of time. However, what would prevent the use of the procedures followed by J. P. Stevens Co.? In this case the company solicited estimates from several investment bankers of the value of the conversion option on bonds they were issuing, and used the figure which seemed to be the most realistic (incidentally the three estimates they obtained
varied only three percentage points from the lowest to the highest). Again, a reasonable estimate is better than no information at all. Another possibility would be to have the investment bankers work together to determine a reasonable value of the conversion privilege for a particular company. Thus, it seems these problems could be worked out if the investment bankers would try to cooperate.

As previously mentioned the SEC required disclosure in some form of the value of the conversion option during the period of suspension of paragraphs 8 and 9 of Opinion No. 10. Here the accountants and the investment bankers were able to develop figures the Commission felt were suitable for financial statement presentation. The counter argument to this is that all it proves is that the SEC has the power to "command." However, it must be remembered that the SEC has had this authority for over thirty years; and it has used it sparingly, except where it was felt necessary for proper financial statement disclosure.

Overall, measurement problems could prove to be a serious impediment to implementing the valuation concept. However, it is the purpose of this chapter to review only the theoretical approach and the preceding arguments do not seem to be of such import as to negate the principle.

81 An analysis of the reporting practices of several of these companies is included in Chapter 5.

82 Malin, Letter to the APB, op. cit., p. 3.
Allocation for Convertible Preferred

Many of those opposing the allocation of value to the conversion privilege of convertible bonds offer as an argument for their position the idea of allocation for preferred stock; or, in question format, if it is appropriate to allocate value to the conversion feature of convertible bonds, then why would not the same procedures be applicable to convertible preferred stock?83 The assumption is that there is little, if any, difference between these two securities. Those opposing allocation feel the lack of a definite maturity date is irrelevant.

... few convertible preferred stock issues are intended to be or will be outstanding indefinitely. As with convertible debt, they generally have call and/or sinking fund provisions. Most of the convertible debt issues probably will be called and/or converted prior to maturity; and most of the convertible preferred stock issues also probably will be called and/or converted within a comparable period of time.

To say that there is an additional financing cost (above the nominal rate of interest) in the case of convertible debt which should be reflected in earnings per share but not such a financing cost (above the dividend rate) in the case of convertible preferred stock is to let form prevail over substance and does not reflect the business aspects of these transactions.84

The rebuttal proposed by those favoring allocation


84 Catlett, Position Paper, op. cit., p. 6.
emphasizes the fact that one of the purposes of allocation is to separate the debt and equity portion of the package that was issued. To require the same accounting procedures for convertible preferred stock would simply create an additional equity element with dubious results. Some go so far as to say the division would even be "meaningless." Hampton and McClare contend that the results are "trivial."

... if, after such a division, a corresponding charge were recorded as discount on stock, established accounting principles would require that this newly created discount be offset against the newly created capital surplus—a meaningless "wash." Thus there seems to be no particular value in having the issuance of convertible preferred stock refined to include recording of the conversion option. Since the preferred stock would already be an element of equity, to allocate would simply increase the detail in the financial statements with no increase in the information presented.

SUMMARY AND CONCLUSIONS

In the beginning of the chapter it was indicated that the controversy over the accounting treatment of convertible debt lies in the attempt to segregate the security into two separate economic rights and that this discord is

85 Imdieke and Weygandt, "Accounting for that Imputed Discount Factor," 58; and Hampton and McClare, Memorandum submitted to the APB, op. cit., p. 3.

86 Hampton and McClare, Memorandum submitted to the APB, ibid., p. 4.
compounded when the measurement of each right is attempted. It is generally agreed that both sides of the question have developed rather detailed support for their position as well as counter arguments against their opponents. The issue is so highly contested that it took four Opinions (Nos. 9, 10, 12, and 14) to settle it from the point of view of the APB, and there are still many who do not agree with the final decision of the Board.

Those favoring allocation believe the substance of a transaction should be presented in the financial statements as opposed to the particular legal form it takes. This group contends the Board originally recognized the fact that Opinion No. 9 would not sufficiently disclose the economic results of issuing convertible bonds, and thus Opinion No. 10 was used to correct the situation. Of course the central point here is that the substance of the transaction involved the issuance of two economic rights which should be valued at the issuance of the debt-equity package.

The usual result of valuation is that the debt itself would be issued at less than par. This discount resulted from a comparison of the lower interest rate on the bonds and the yield rate of similar securities (except for the conversion privilege). Since the discount arises from a different yield and market rate, this discount is like any other discount and should be amortized over the life of the security as additional interest expense. Thus the "true" interest rate yielded by the bonds would be reflected in the
statements and the economic effects of the transaction would be correctly recorded. It was also suggested that if the original issuance of the debt-equity package were recorded in two separate transactions, the distasteful imputed element would be averted and the discount would become a computed cost. As such, in an attempt to present a net income figure that reflects the economic progress the business has made during the period, the valuation of the conversion feature is necessary in order to obtain the cost of the funds used.

Allocation is also considered, by its proponents, to represent accounting for management's intent upon issuance of the security. It was illustrated in Chapter 2 that one of the major reasons behind the issuance of convertible bonds is the intent of management to issue equity capital (common stock) on a delayed basis at a price higher than the current market value of the stock. Therefore the recording of the call on the common stock is necessary to reflect the real reasoning behind the issue. As a result, the prospect of future conversion becomes a moot point because the procedures prescribed by allocation are to record the economic facts that exist at the date of issuance and not subsequent economic events.

The conversion privilege is often referred to as a call upon the common stock of the issuer. In fact, this economic right is the basis for the necessity of an allocation to be recorded. The right is definitely not a put (and thereby a right of the issuer that offsets the call) because
the conditions upon issuance are not conducive to recognition of the put.

While support for allocation came from various Board members, the American Accounting Association, the Securities and Exchange Commission, and various independent accountants, financial analysts, and attorneys, the Board decided against it citing two major arguments, i.e., inseparability and the practical problems of measurement. In the former the Board felt that the lack of the ability to physically separate the two economic rights required that the legal aspects of the transaction should govern the accounting recognition. Thus the debt-equity package should be considered debt (due to its legal form) until some event takes place (either conversion or retirement) that would require recognition to be given to some other method of disclosure. Some even believe this represents the recognition of substance over form.

Despite the fact that it is a generally accepted conclusion that tax procedures should not affect accounting, many of those opposing allocation use the lack of a tax deduction for the additional interest created by the discount as an argument against allocation. They contend that required allocation would "kill" the use of convertible bonds as a financial instrument because of the high cost of use.

The position of the opponents is supposedly solidified by the problems of measurement. It is contended that a weak theoretical approach which is almost impossible to accurately measure should not be considered as acceptable.
In fact in much of the correspondence and in many of the rough drafts of Opinion No. 14 this factor was considered to be a very prominent reason for the opposition to allocation. It was felt that the inclusion of this "grossly imprecise figure" in the financial statements would only serve to confuse the readers. The primary reason for the inaccurate measurement was the lack of any kind of benchmarks or guideposts as are present in the market value of detachable warrants. The representatives of Moody's and Standard and Poor's who corresponded with the Board felt their figures were unable only as a guide or estimate of the value of the securities, and, consequently, not of the accuracy necessary for recording in the financial statements.

Finally, the allocation of value to the conversion feature of convertible preferred stock was indicated as a similar technique as allocation for convertible bonds. This was supported by the fact that both securities are convertible into common stock and each has a call provision. Therefore, they are substantially similar enough in so far as economic attributes to require the same accounting treatment.

A review of these major arguments (no counter arguments were included in the above summary) should lead the reader to the conclusion that those opposing allocation really base their position on the problems involved in measurement. It was clearly exhibited that there are two economic rights in existence at the issuance of the debt-equity package and even their inseparability cannot change
this economic fact. Good accounting theory must, therefore, give recognition of this in the financial statements in order to reflect the actual nature of the transaction (i.e., reflect the "correct" charge for the use of the funds in the financial statements, and thereby, give recognition to the substance of the transaction over the form).

However, if one looks at the inseparability of the elements of the transaction, in so far as measurement, a different picture develops. Here the lack of a specific procedure that would apply in all cases and the lack of any market figures to serve as guidelines do cast some doubt over the validity of that aspect of allocation. But since this chapter deals with the theoretical aspects, the only conclusion that can be reached is that the allocation of value to the conversion feature of convertible bonds is the correct procedure. That this is true was admitted by some of the most prominent critics. Since allocation must be assumed to be the proper method of accounting for this debt-equity package, it only remains now for the measurement aspect to be examined, and this is the topic of the next chapter.
Chapter 5

VALUATION AND REPORTING OF THE CONVERSION PRIVILEGE

It was determined in the preceding chapter that from a theoretical approach valuation of the conversion privilege is consistent with accounting for the substance of a transaction as opposed to its legal format. Therefore, the use of some form of valuation procedure is mandatory in order to reflect the economic events that have taken place. The approach followed was strictly theoretical with measurement being mentioned only in a generalized manner as it related to the underlying concepts. The reason for segregating the measurement aspect was to clearly separate the practical problems from those of a theoretical nature. With this accomplished, it now becomes time to study the measurement aspects of the problem.

The position of those against allocation has been centered around the absence of any type of objective verification of the valuations developed by the investment bankers. This lack of an independent confirmation of the investment value of the bonds through a formal exchange mechanism has worried not only the investment bankers, but also the
accountants who stress the objectivity principle.\(^1\) Therefore, in order for the procedure of allocation to be acceptable for actual use, some measurement method must be proven to be satisfactory.

With this in mind, the purpose of this chapter is to examine the measurement problem, develop an acceptable solution, and to present a method of reporting this information to the readers of the financial statements in a clear and precise manner.

THE VALUATION PROCESS

There are four major approaches to the measurement question that have been proposed from the initial appearance of this problem in Opinion No. 9\(^2\) (December, 1966) to the present time. While some were developed primarily for the measurement of earnings per share, they can easily be modified to focus attention on the conversion feature. During the discussion of these methods it must be kept in mind that in order to be acceptable, a method must provide for the allocation of value to the two basic economic rights developed in the preceding chapter. Any approach that does not achieve this objective must be rejected.


No matter how well a principle is supported in theory, if the measurement problem cannot be satisfactorily solved, there is no basis for inclusion in the financial statements. To do so would only add numbers and not meaning to the statements. Quantifiability must, therefore, act not only as a goal, but also as a limitation. The profession has not yet developed techniques for including items in the financial statements that cannot be reasonably measured in terms of the dollar.

The Traditional Method

The traditional method of accounting for the value of the conversion privilege is to ignore it entirely, thus assigning it a value of zero. There is no attempt to record anything upon the issuance of the debt-equity package other than the bonds, i.e., the only discount or premium that would be recorded would result from a comparison of the maturity value of the securities with the total funds provided by the transaction. The only possible recognition given to the conversion feature would be disclosed through footnotes. In this situation a footnote is used to describe the conversion privilege and to indicate the number of additional shares of common stock that may have to be issued if the bonds were converted. Thus the debt-equity package is treated as if it were solely debt and the conversion option was simply another covenant like a required sinking fund or a dividend restriction.
The journal entry to record the issuance of $100,000 of convertible bonds for $98,000 (with the additional provision that the conversion option was valued at $20,000) would be as follows:

Cash...............................98,000
Discount on Convertible Bonds: .... 2,000
Convertible Bonds Payable............. 100,000

The balance sheet would contain the face value of the bonds in the long-term liability section, and the discount would either be reported as a deferred charge or a contra account to the bond liability (see discussion later in this chapter). Thus, with the exception of a footnote describing the conversion privilege, there would be no difference between this issue and the issuance of ordinary bonds. As a result of Opinion No. 14 the accounting for these bonds would directly follow the procedures used for "usual" bond discounts. Based upon the information developed in the preceding chapter, total liabilities would be overstated and owners' equity would be understated. This would result in an overstatement of earnings during the outstanding life of the bonds.

Therefore, the traditional procedure totally ignores the substance of the transaction and concentrates disclosure on a pure legal approach, and since no recognition is given

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to the two rights that existed when the securities were issued, this method cannot be deemed acceptable. It should also be emphasized that under this method no recognition is given to the effect on earnings per share by the potential dilution resulting from the sale of the call on the issuing company's stock.

The Residual Security Method

Chronologically the next step was the issuance of Opinion No. 9 and the formal introduction of the residual security concept. As presented in the Opinion, convertible debt and other securities may be classified as residual, and as such assumed to be common stock and not "senior securities" in the computation of earnings per share.\(^4\) This approach, then, would include in the statements the recognition of the possible dilution that could take place if the bonds were converted into common stock.

The measurement aspect involves a comparison of the estimated value of the equity portion of the security to the actual market value of the security. If the former constituted a major portion of the total value of the security, then for purposes of computing earnings per share, the

\(^4\)The Opinion defines a situation requiring residual security treatment as one where there is "... more than one class of common stock... outstanding, or... [where] an outstanding security has participating dividend rights with the common stock, or... [where] an outstanding security clearly derives a major portion of its value from its conversion rights or its common stock characteristics. ..." Accounting Principles Board, Opinion No. 9, op. cit., p. 120.
security would be treated like common stock. Therefore, for computations of earnings per share the bonds are treated on either a converted or nonconverted basis depending upon whether they met the test of a residual security.

Under this concept the entry to record the issuance of the $100,000 par value bonds would be exactly the same as under the traditional method. The balance sheet presentation would also follow the same procedures, and even the income statement disclosure would be the same. The only variation that would exist would be the earnings per share presentation (assuming residual status) where the interest charge (net of tax) would be added back to net income and the denominator would be increased by the number of additional common shares that could be issued under the terms of the conversion option.

In so far as reporting earnings per share, the disclosure is reasonably adequate in that there is some recognition given to the conversion option in the body of the financial statements. However, like the traditional method, the residual method gives no acknowledgment to the two economic rights that existed upon the issuance of the debt-equity package. And primarily because of this, the residual approach must also be considered as unacceptable. While some progress was made with respect to the recognition of the conversion feature in the financial statements, it is not enough to adequately satisfy the need for full disclosure as discussed in the preceding chapter.
In summary, the basic approach as developed by the residual security concept is that the debt-equity package is considered as debt for balance sheet purposes (i.e., the conversion feature is valued at zero) and either debt or equity (nonconverted or converted) for earnings per share purposes. While there are many different methods for determining the residual nature of a security (e.g., the investment value test, the market parity test, and the cash yield test) they all have the Shortcoming of the residual concept in general, and as such, neither can be considered as adequately disclosing the true nature of the transaction.5

The Imputed Discount Method

The next development in the measurement of the conversion option was published in the same month (December, 1966) as Opinion No. 9. As previously mentioned, Opinion No. 106 marked the beginning of the controversy regarding valuation of the conversion option of convertible debt. In actuality the Board prescribed that the value of the conversion option be recorded as debt discount with the credit going to contributed capital.

5For a detailed analysis of each of these methods see Henry W. Longfield, Jr., A Comparison of Methods for Identifying those Convertible Bonds to be Included in Earnings Per Share (Ann Arbor: University Microfilms, Inc., 1970).

It has already been shown in the preceding chapter that this method of recording the valuation of the conversion privilege followed the dual economic rights concept, therefore, the illustrative journal entry will be the same as that recommended by Imdieke and Weygandt. (The basic data are the same as that which was used for the illustration of the traditional method, i.e., the issuance of $100,000 of convertible bonds for $98,000, and a conversion option worth $20,000.)

Cash ....................... 78,000
Discount on Convertible Bonds. . .22,000
   Convertible Bonds Payable. . . . . . . 100,000
Cash ....................... 20,000
   Contributed Capital. . . . . . . . . . . . . . . . . 20,000

The reason for recording the conversion privilege was to place the estimated value of the call in the financial statements and to record the actual proceeds received for the debt portion of the package. Thus both economic elements are valued at the issuance of the securities and income would bear a net charge for interest based upon the actual cost of the funds. As a result of the timing of Opinions No. 9 and No. 10, it should be clear that the Board felt the use of the residual security approach (and by implication the traditional approach also) was not sufficient disclosure for the effects of this type of transaction.

While the imputed discount approach does achieve a major portion of the requirements as set forth to judge the acceptability of these methods, it does not specifically provide for any adjustment of earnings per share other than the inclusion of additional interest expense as a result of amortizing the resultant discount. Therefore, while it is preferable to the other methods previously discussed, it is by no means a panacea.

The Dual Method

Dudley Curry has suggested what he has labeled the "dual method" as the approach that would best present the diverse characteristics of the convertible security in the financial statements.\(^8\) In essence the approach Dr. Curry suggests is the presentation of the transaction as follows:

1. The par amount of the CVD [convertible debt] issue would be reported on the right side of the balance sheet in an intermediate section between liabilities and stockholders' equity.

2. Net income figures would be reported in the income and retained earnings statements on the dual assumptions of nonconversion and conversion.

3. Per-share figures would be available for earnings, dividends, and book value of stock on the dual assumptions of nonconversion and conversion.\(^9\)

"In comparison with the conventional straight-debt method, the dual method would require virtually no changes in


\(^9\)Ibid., p. 182-83.
recording the usual CVD transactions. . . . It is in the financial reporting of the resultant account balances that the dual method would produce significant differences from the conventional [traditional] method.\textsuperscript{10}

The main criticism offered against this approach is that Dr. Curry forces a conversion vs. nonconversion assumption upon the reader and therefore, he has not recorded the two economic rights that exist at the issuance of the securities. As a result of this omission, the true nature of the transaction is not presented in the body of the financial statements. Actually he circumvents the issue and attempts to alleviate the problem by passing it on to the reader, i.e., present both converted and nonconverted data and make the reader decide which is the best interpretation for his needs.

A Partial Valuation Approach

James Katz has suggested a method of reporting convertible debt that would eliminate the need for disclosing the discount. In effect he would charge the period with additional interest based on the difference between the coupon rate and the rate of interest the bonds would have had to carry if the conversion feature was absent from the issue.\textsuperscript{11} The journal entry for the additional interest would

\textsuperscript{10}Ibid., p. 182.

be similar to the following:

Interest Expense .................. XX
Contributed Capital ............. XX

The amount of the additional interest would be computed by applying "this difference [the difference between interest rates] . . . on a weighted average of the outstanding debentures during the period."\(^{12}\)

While Mr. Katz feels this approach would yield substantially the same results as Opinion No. 10, he is ignoring the main point of the reason for allocation. By not presenting the full value of the conversion option initially, the statements would be materially different than if the method suggested by the Board were followed. And by omitting this element, his method does not present the economic situation that exists when the bonds are issued.

There are many possible modifications of the above procedures, however, those discussed represent the major approaches to the valuation of convertible debt. The primary criticism of each, with the exception of the imputed discount method, is that there is no valuation placed upon the conversion option at the issuance of the debt-equity package. As a result, this method, at least in principle, must be chosen as the only acceptable procedure to present the information that is required to fully disclose the true nature of the transaction.

\(^{12}\)Loc. cit.
The Board, in Opinion No. 10, specifically stated that "The discount or reduced premium, in the case of convertible debt obligations, may ordinarily be measured as the difference between the price at which the debt was issued and the estimated price for which it would have been issued in the absence of the conversion feature." The primary argument against use of this procedure was that there were no benchmarks that could be used in the process of developing the value of the conversion option (see Chapter 4). Without a market value to act as a guidepost, as was present in the case of warrants, the calculation had to be made from a purely theoretical approach. This, of course, introduced another element into financial accounting that could not be objectively verified in the traditional manner, and as such, resulted in much confusion in the financial world.

However, the Board's method must be studied from a logical approach in order to properly evaluate its merits. The normal accounting procedures upon issuance of a type of "package deal" requires allocation of value to each element. The particular procedures followed usually depend upon the circumstances. If the fair market value of each element in the transaction is known, then a relative market value approach is used. Here the total proceeds is divided

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between each component in the proportion that the fair market value of that component bears to the total fair market value of the package. On the other hand, if the value of only one of the items (in a two-part package) can readily be determined, it is used and the other is valued at the residual amount.

Since the latter approach is considered to be satisfactory, the problem reduces itself down to the selection of a method of valuing either the bonds without the conversion feature or the conversion feature itself. To follow a relative fair market value approach would require an estimate of the value of both of the economic elements of the transaction, and therefore, introduce an even greater possibility of error. And since those opposing valuation have a major portion of their argument centered on this factor, it is only reasonable that the method which offers the least possibility of error be used.

**Direct Measurement of the Conversion Option**

In order to directly measure the value of the conversion right several critical assumptions must be made. First, a growth rate for the market value of the stock must be assumed, and second, some future date must be chosen as the time of conversion. These two factors are necessary to be able to estimate the future value of the stock. Once this amount has been developed, a provision must then be made for a rate of return to allow the purchaser of the option an element of income. Thus, the two critical points
in the analysis involve the selection of a particular point in time to use as an exercise date and some form of discounting or other procedure to allow for a return on the money invested. Both of these factors would vary a great deal between investors: e.g., some may be willing to hold the option a long time in hopes of larger gains, while others may feel a smaller gain over a shorter period of time is more important.

Thus the value of the call option would be a very "personal" type of computation that would show a considerable variance from one investor to another. Since those purchasing the debt-equity package would have widely varying investment goals, any attempt to value the call option directly must include some assumptions about these factors, and must therefore, involve a considerable degree of "averaging." As such, the results, due to the highly personal nature of the assumptions, are likely to lose their significance in so far as external reporting is concerned. The widely diverse uses to which financial statements are committed could hardly be satisfied through this procedure.

Direct Measurement of the Investment Value of the Debt

It has been previously shown that the debt-equity package consists of two economic rights: (1) the debt element and (2) the call option. If the latter cannot be reasonably measured, then some method of valuing the bonds (without the conversion feature) is needed. The actions of
the Board indicate they must have felt an attempt to value the call option brought in too many variables which could not be satisfactorily estimated for financial reporting purposes. Therefore, their conclusions seem to follow the above conclusions and attention must now be directed to valuing the debt instrument, itself.

The overall approach that is involved in direct measurement of the debt portion of the package is an estimation of the issue price (through some form of present value yield approach) of the bonds without the conversion feature and then the comparison of this figure to the proceeds with the residual value being allocated to the conversion privilege.

There are four factors that generally form the basis for determining the investment value of a convertible bond:

1. bond quality;
2. maturity yields from non-convertible securities of comparable quality and equivalent maturity;
3. combination of differences in coupon rates, call price, sinking fund provisions, and other similar terms of the issue;
4. company's earnings performance in its industry and latest

The logic behind this assumption is based upon the different methods of valuation suggested by the APB. It has been mentioned that the Board suggested a comparison of debt with and without the conversion feature as the appropriate method for valuing the conversion option. However, when it came to warrants, they prescribed a relative fair market value allocation since the market price for the warrants was readily determinable. Thus, they must have felt this exchange price was the best approach or else why wouldn't the same procedure as determined to be acceptable for convertible debt be used for warrants? The only conceivable reason must have been that the Board felt the valuation of the call privilege directly was not as reliable as a residual valuation under the circumstances. Loc. cit.
forecast of general business conditions.\textsuperscript{15}

It can easily be seen from this list that this approach to valuation is very subjective. The relative weights given to each factor as well as the effects of the various combinations of covenants could easily vary from one estimate to another. However, any differences arising would result from variations in the professional opinions of the investment bankers studying the issue, and not differences in factors that would depend upon personal rates of return and other elements peculiar to the direct valuation of the call privilege.

There is no doubt that in some instances estimates of these figures prepared by various investment bankers could conceivably vary materially, but this should not negate the use of the techniques. Appraisals of assets by trained experts have been used for many years for allocating value in package deals, and it is a well known fact that these appraisals could vary considerably. It was suggested in the preceding chapter that the effects of the variation could be partially alleviated through the use of averages or through the cooperation of several investment bankers in developing a single estimate of the investment value of the bonds.

Due to the nature of the task, it is easy to under-

\footnote{Allen Ford, "Should Cost be Assigned to Conversion Value?" \textit{The Accounting Review}, XLIV (October, 1969), 821 (Letter from Albert C. Esokait (Vice-President of Moody's Investors Service, Inc.) to Allen Ford dated January 24, 1968).}
stand why the investment bankers are reluctant to supply the information. It is clear that the legal liability aspect mentioned in Chapter 4 is a material factor. However, the basic reason for their lack of cooperation—the absence of an exchange price to aid in valuation—should give the analysts comfort. Without any value to compare against their estimates, how could the investment banker be proven wrong? The basis for the allocation is value at the date of issuance and the only way a question could be raised concerning the validity of the amount assigned to the conversion privilege would be if it were given a sizable value, and there were no conversions (or vice versa). In all probability the cause of such a situation would be economic events subsequent to the date of issuance, and surely no one would attempt to hold them liable for such events.

Another problem that seems to have been given too much attention in relation to this calculation is what might be termed "exactness." No one should expect these financial specialists to develop a value that could be defended like a calculation of wages paid during a particular period. The whole approach is that theoretically two rights are issued, and to ignore one because of difficulty of measurement places the profession in a precarious position. Overall, a reason—

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able estimate is all that can be expected, and that is better than no estimate at all.

BALANCE SHEET CLASSIFICATION

The Bond Liability and Discount

If no value is computed for the conversion privilege, i.e., it is assumed to be zero, the balance sheet treatment would be similar to the issuance of ordinary bonds. A premium or discount would be recorded by a comparison of the maturity value of the bonds with the proceeds from the issuance. Theoretically the premium or discount account should be presented on the balance sheet as a modification of the par value of the debt—as an adjunct or contra account, respectively. However, "it has been standard practice for many years to show bond discount on the balance sheet as a deferred charge and bond premium as a deferred credit, with the bond liability account remaining at face value throughout the life of the bonds."17

This form of presentation is clearly delineated in the 1971 edition of Accounting Trends and Techniques where it is shown that debt discount or expense represents the most frequently mentioned item in the "Deferred Charges" and "Other Asset" classification of the 600 reports that were

studied.18 The apparent support offered for this approach was the definition of a deferred charge in Bulletin No. 43: "... deferred charges ... [are] unamortized debt discount and expense, bonus payments under a long-term lease, costs of rearrangement of factory layout or removal to a new location, and certain types of research and development costs."19 Even though this method of classification has become a tradition in financial reporting,20 the theory aspect of the situation indicates that such a procedure is improper. There is an implication of future benefit present in an item classified as an asset, and it is difficult to find any such benefit in a bond discount. To the contrary, it arises from a situation where the borrower must repay an amount greater than that which was actually borrowed. In addition, it can be reasoned that the premium or discount should be reported in conjunction with the debt element in order to fully disclose the facts concerning the issue. The origin of the premium or discount lies in a comparison of the market rate of interest (for similar securities) and the coupon rate on the bond; and an extension of this reasoning would require the resulting valuation account be reported in


19Ibid., p. 94.

20A review of several issues of Accounting Trends and Techniques will support this conclusion.
conjunction with the maturity value of the debt.

... the standard practice tends to breakdown the integrity of the left-hand side of the balance sheet as a showing of assets; it lends encouragement to the tacking on of a catch-all section of questionable deferred charges or "unadjusted debits." These titles, along with deferred credits, are particularly objectionable, since they defy logical explanation independent of bookkeeping technicalities.

Therefore, it would seem the only logical classification for bond discount would be as a liability contra account. This reasoning would apply to any situation where a discount exists. The fact that the discount arises as a result of issuing two economic rights is irrelevant to the analysis, once the proceeds for the debt portion has been determined, then the recording of the bonds would follow the normal procedures for debt issuances.

The Conversion Option

If value is allocated to the conversion privilege, three items must be presented on the balance sheet: the maturity value of the bonds, the discount on the bonds, and the value of the conversion option. The classification of the first two has already been discussed, so it is now time to turn to the conversion privilege.

The Board has specifically stated that the credit should be ". . . accounted for as paid-in capital (typically by a credit to capital surplus)." And in accordance with

\(^{21}\text{Seidler, op. cit., pp. 20-34-35.}\)

\(^{22}\text{Accounting Principles Board, Opinion No. 10, op. cit., p. 147.}\)
the Opinion, most of the companies reflecting the value of
the conversion feature in their financial statements
followed this approach. At that time the procedure was
consistent with that prescribed for warrants. The theo-
retical support lies in the fact that the amount credited to
contributed capital represents the consideration given for
the right to obtain stock in the future. This is considered
to be sort of a down payment on the issuance of the stock,
and therefore, additional paid-in capital.

One deviation from this approach can be seen in the
statements for J. P. Stevens & Co., Inc. This company was
one of the first to adopt the procedure of allocation of
value to the conversion option even before it was introduced
in the Opinion. However, the accountants for Stevens chose
to present the value of the call privilege as a deferred
credit rather than an element of paid-in capital in the 1965
statements. This was adjusted in 1966 to bring the

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23 This statement disclosure (a credit to paid-in
capital) can be found in the 1967 annual reports for the
Armstrong Rubber Company; Airlift International, Inc.;
Television Manufacturers of America Co.; Components, Inc.;
and Bangor Punta Corporation. It must be remembered that
paragraphs 8 & 9 of Opinion No. 10 were suspended before its
effective date (see Chapter 2), therefore, the only companies
that actually followed the allocation provisions were those
with fiscal years ending before December 31, 1967, and who
decided to adopt the Opinion before its effective date. As
a result, there are only a few examples of this type of
reporting. However, these examples are consistent with the
Opinion and the then current reporting practices.

24 Accounting Principles Board, Opinion No. 10, op.
accounts in agreement with Opinion No. 10.25

The Net of Discount Approach

It seems the accounting for the conversion feature prior to its suspension was fairly well stabilized, however, there are some alternative approaches to the suggested financial statement presentation. One of the more plausible of them being that of Hector Anton. Actually Dr. Anton has suggested that bonds, in general, be valued on the balance sheet in a manner similar to the techniques that are used for computing the present value of the securities. Assuming a 50-year, 3 per cent, $100,000 bond issue sold to yield 5 per cent (proceeds $63,385.89), he would disclose the following information:

\[
\begin{align*}
\text{ASSETS} & \\
\text{(none)} & \\
\text{LIABILITIES} & \\
\text{Long term liabilities} & \\
\text{Bonds Payable--principal (face amount $100,000, maturing January 1, 2022)} & \$8,464.73 \\
\text{Bonds Payable--interest (semiannual payments of $1,500,000)} & \$54,921.16 \\
& \$63,385.89
\end{align*}
\]

Footnotes to the financial statements were used to describe the initial recording of the value of the conversion option and the subsequent adjustment. See the Annual Reports for J. P. Stevens & Co., Inc. for 1965 and 1966, p. 17.

Hector R. Anton, "Accounting for Bond Liabilities," The Journal of Accountancy, CII (September, 1956), 53. In actual practice this illustration would be modified to show the current portion of the interest as a current liability.
This procedure represents the reporting of the present value of two liabilities and could be used for convertible debt by applying a discount rate equal to the interest the bonds would have to bear if there were no conversion feature. This would eliminate the need for reporting the discount, but, unfortunately, it would also fail to disclose the value of the conversion option, and that has been determined to be of utmost importance in the reporting of convertible debt.

Net of Tax Reporting

Another facet of the statement presentation problem deals with the tax aspect of the situation. While the position of the Internal Revenue Service had not been specifically set forth when the Board was reviewing convertible debt accounting, there was considerable speculation that the amortization of the discount would not be allowed for tax purposes. Despite this fact there were numerous references in the Board's files regarding the use of a net of tax reporting of the discount. The consensus of those favoring this approach seemed to be that "... the resulting after-tax cost of interest plus discount amortization should be the same as the net interest cost if a nonconvertible debenture had been issued with a higher interest rate."  

The concept of net of tax reporting was supported by many companies expressing an opinion on allocation including

the United Aircraft Corporation, however, their approach was somewhat different.

... Since discount on debt issued with warrants is deductible for tax purposes, then imputed discount on convertible debt should also be so treated in the accounts. Since we would be imputing a discount in the first place, there should be no theoretical difficulty in imputing a tax benefit also.28

The SEC had accepted this approach in at least one case, but later reversed itself and refused to allow the hypothetical tax reduction of the discount in the financial statements.29

It is difficult to justify the recording of tax effects where such effects do not exist. If there is an attempt to apply this procedure, then consistency would require that all of the items in the financial statements, where tax and accounting differ, would have to be adjusted for this nonexistent feature, and needless to say, this would not lead to an improvement in the quality of the statements. Instead, it would destroy the objective of reporting economic effects.

SUMMARY AND CONCLUSIONS

The American Accounting Association has listed quantifiability as one of the four basic accounting standards.30 As such it ranks very high in importance among those

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studying accounting and those practicing it as a profession. That this is true can easily be seen by reviewing the files of the Board with respect to convertible debt. The subcommittee studying the situation included the measurement problem in a specific outline of items that must be resolved before an Opinion on the subject could be issued. As a result, the correspondence, position papers, and other data in the files of the APB are replete with references concerning the measurement problems associated with convertible bonds. The general approach that most of these references take is that the lack of a separate market for the conversion feature makes measurement a hazardous undertaking, and this has led to a situation where the investment bankers have practically revolted against the accounting profession.

Despite this resistance there has been some progress in refining the measurement process. The actual valuation procedure has developed from three major approaches: (1) the traditional and residual security approach of assigning an arbitrary zero value to the conversion right; (2) the imputed discount approach of attempting to compute a value for the right; and (3) the dual method of presenting both conversion and nonconversion data in the statements. However, the two economic elements that exist at the issuance of the debt-equity package place a restriction upon the acceptance of an approach that only the second method (the computation of a value for the option) successfully satisfies. Thus, the other methods either ignore or attempt to circumvent the
substance of the transaction in favor of a strict adherence to its legal form.

The traditional method treats convertible debt as if it were an ordinary bond with the exception of a footnote to the financial statements describing the conversion feature and the maximum number of shares of common stock that could be issued under the current circumstances. The residual security method goes one step further and modifies earnings per share by assuming conversion (under the condition that the bonds draw a major portion of their value from the conversion feature). On the other hand, the dual method developed by Dr. Curry simply presents data with and without conversion and, therefore, forces the reader to make a decision as to which is the most representative of the actual situation.

Once the imputed discount has been accepted as the best financial statement presentation of the debt and the call privilege, it then becomes necessary to place a dollar value upon each element. An examination of the direct valuation of the call option versus a valuation of the debt without the conversion option clearly indicates the latter has less possibility of error and, therefore, should be used for statement purposes. As a result, the conversion option should be measured as prescribed in Opinion No. 10, i.e., the residual amount after deducting the issue price of the debt without the conversion option from the total proceeds of the debt-equity package.
Since there is a great deal of subjectivity in this measurement procedure, this approach is not without its limitations. However, the results should not produce material errors in the financial statements. This can be attested to by those companies that elected to apply paragraphs 8 and 9 of Opinion No. 10 before they became effective. It seems apparent that if there was as much error in the computations as those opposing allocation have claimed, no one would have adopted it before the required date.

After the conversion option has been valued, it then becomes necessary to report it on the balance sheet. Since the proceeds allocated to the call privilege represent the cost of the right to obtain common stock in the future, it should be classified as part of contributed capital. This would be consistent with the procedure used for debt issued with warrants. However, the classification of the discount on the bonds is somewhat questionable. Traditionally bond discount has been reported on the financial statements as a deferred charge, but a liability contra account presentation would illustrate the economic facts of the situation much better. Therefore, it is suggested that the latter approach be adopted, in addition, it seems to be more in agreement with the current position taken by the Board in Opinion No. 21.  

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Finally, the application of a net of tax approach to valuation of the conversion privilege was determined to be in direct opposition to the economic facts of the situation because the IRS does not allow such a discount to be deductible for tax purposes, and therefore, to impute this procedure would not improve the data presented in the financial reports.

Since the theoretical aspects of the valuation problem have been discussed, the empirical feature must also be studied in order to complete an analysis of this topic. Questions such as the effect the inclusion of the call privilege on the financial statements and the effective use of the statements with allocation must be examined in order to make a logical decision as to the applicability of valuing the conversion option. As such, the next chapter deals with the allocation question from a practical or use oriented approach.
"Accounting information is the chief means of reducing the uncertainty under which external users act. . . ."\(^1\) The specific purpose served by the data will vary depending upon the needs of the reader and the particular decision model employed, however, it is generally accepted that a prevalent use of financial data lies in the formulation of investment decisions. The final selection of a particular economic alternative (or some combination of alternatives) for the use of investment funds will probably rest on some form of published accounting information.

Whether these data are used directly or indirectly in formulating a given investment portfolio has been the subject of much controversy and a plethora of published information. The research usually follows one of the three major approaches to the subject, i.e., the use of an interview or questionnaire, computer simulation, or an empirical


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Despite this rather broad coverage in terms of methodology, there is still considerable disagreement over the extent of the influence of published accounting information on stock prices. Several of the studies indicate that the information published in financial reports has only a slight direct effect on the price of stock of a given company, while others take a completely opposite approach. However, the purpose of this paper is to supply information that will lead to an evaluation of the null hypothesis as stated in Chapter 1: that there would be no significant difference for theoretical or predictive purposes under alternative procedures of accounting for convertible bonds. Since the theoretical aspects of the question have already been examined, the purpose of this chapter will be to study the empirical (or predictive) portion of the hypothesis.

THE MODEL

Selection of Companies

The overall approach to this study was to apply the statistical technique of regression analysis to both the unadjusted data (as reported by the companies studied) and the adjusted data, and then to determine whether or not a significant difference exists between the coefficients of determination of the two equations. In order to accomplish

\textsuperscript{2}For a review of the major works in each area see George J. Benston, "Published Corporate Accounting Data and Stock Prices," \textit{Journal of Accounting Research, Supplement, V} (1967), 1-2.
this task a sample of ten companies was randomly selected from a list of corporations having convertible debt outstanding in 1961. This list was prepared from the July, 1969, edition of *Moody's Industrial Manual.* The companies selected had to meet two basic qualifications: (1) that one or more issues of convertible bonds were outstanding from 1961 to 1970, and (2) that the companies conducted profitable operations during this period. Such a sample would allow for an error in the prediction of less than 5 per cent at the 95 per cent confidence level. Thus from this sample the effects of allocating value to the conversion privilege can be projected to all companies using convertible debt with an acceptable level of confidence.

While there was no concerted effort to bring about dispersion of the companies studied, they varied in size (based on total assets in 1970) from Thriftimart, Inc., $65 million, to Union Oil Company of California, $2,515 million. Included also were many varied industries from sales of food items to natural resources, and from surgical instruments to companies specializing in leisure-time products. Specifically the companies were:

- AMF Incorporated
- Brunswick Corporation
- Combustion Engineering, Inc.
- Copperweld Steel Company
- FMC Corporation
- Fruehauf Corporation

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Scott Paper Company
Sybron Corporation
Thriftimart, Inc.
Union Oil Company of California

It can easily be seen that there is a wide variety of corporations included which will allow the conclusions to be extended to any type of industrial corporation. Neither from the span of the sample nor from data found while completing the study was there any reason found that would restrict the applicability of the projected conclusions provided by the study. In addition, none of the companies selected had convertible debt outstanding in 1961 of less than 20 per cent of the total long-term debt, and in four companies it was in excess of 50 per cent. Thus these companies were representative of those corporations that had a significant portion of convertible debt outstanding. This is an important factor in applying the results of this study to any company with convertible debt, because if the findings are applicable to companies with a large quantity of convertible debt, they certainly will apply to those with a small portion.

The accounting data used in the calculations were taken from the annual report(s) published by each company. In those instances where the company could not or would not supply reports for a particular year, the information was obtained from Moody's Industrial Manual. This procedure was adopted in an attempt to use as nearly as possible the same data that was made available to the stockholders and
prospective stockholders. Where necessary, appropriate adjustments were made to the data to make all years comparable. These adjustments are explained in detail below.

The Regression Equation

As previously indicated many factors influence the level of the stock market. Initially this study contained eight independent variables. These were selected because they are those that are most commonly mentioned throughout accounting and financial literature. In addition, they measure the major features of an investment in common stock—namely risk, income through dividends, and capital appreciation through the earnings of the firm. An active attempt was made to include data from both the balance sheet and the income statement. Recent criticism of the exclusion of the former is evident in the writings of Chambers, W. A. Paton, Jr., and others. It seems that the emphasis currently being placed on the income statement has been subjected to a great deal of disagreement by many accounting theorists, thus this study has attempted to bridge this gap by employing data from both statements thereby utilizing each to its fullest in analyzing the movement of stock prices.

An additional factor that often influences the movement of stock prices is that of the general level of the stock market. In many instances this item can be more important than any other piece of information, witness the two major stock market declines in the 1960's. Therefore the inclusion of this statistic should add an element of
stability and give the study a broader base.

With these factors in mind, the following equation was used:

\[ \frac{P_{jt}}{P_{jt-1}} = f\left( \frac{D_{jt}}{D_{jt-1}} + \frac{E_{jt}}{E_{jt-1}} + \frac{I_{jt}}{I_{jt-1}} + \frac{M_{jt}}{M_{jt-1}} + \frac{DS_{jt}}{DS_{jt-1}} + \frac{C_{jt}}{C_{jt-1}} + \frac{DO_{jt}}{DO_{jt-1}} + \frac{A_{jt}}{A_{jt-1}} \right) \]

where:

\[ P_{jt}/P_{jt-1} \] = the stock price of a share of common stock of company j in period \( t \) divided by period \( t-1 \). Here \( L \) is a lag factor to allow for the delay after the end of an accounting period before the financial information is released to the public,

\[ D_{jt}/D_{jt-1} \] = the long-term debt-owners' equity ratio of company j in period \( t \) divided by period \( t-1 \),

\[ E_{jt}/E_{jt-1} \] = the earnings per share of company j in period \( t \) divided by period \( t-1 \),

\[ I_{jt}/I_{jt-1} \] = the times interest earned ratio of company j in period \( t \) divided by period \( t-1 \),

\[ M_{jt}/M_{jt-1} \] = the general level of the stock market in period \( t \) divided by period \( t-1 \),

\[ DS_{jt}/DS_{jt-1} \] = dividends per share of common stock for company j in period \( t \) divided by period \( t-1 \),

\[ C_{jt}/C_{jt-1} \] = the ratio of convertible debt to long-term debt for company j in period \( t \) divided by period \( t-1 \),

\[ DO_{jt}/DO_{jt-1} \] = the dividend payout ratio for company j in period \( t \) divided by period \( t-1 \), and

\[ A_{jt}/A_{jt-1} \] = the asset to owners' equity ratio for company j in period \( t \) divided by period \( t-1 \).
Stock Price

The calculation of stock price is based on the closing stock quotations on whichever market the stock is traded for five trading days following the release of the accounting information. The release date was assumed to be the date of the president's letter. In those instances where the president's letter was not dated, the date of the auditor's opinion, appropriately adjusted by the average time between the date of the opinion and the president's letter for those periods where the information was available, was used. The effect of computing the stock price at the projected release date of the financial statements was to build into the study a lag feature. The necessity for this should be apparent, i.e., the price of the stock immediately after the end of a particular period cannot reflect the effects of that period until the financial information can be compiled and released to the investing public. In those few instances where no financial reports were available, the average release date from the other years was used in projecting the issuance of the reports.

In selecting the period of time to be used to measure the price of the stock an average of five days was used.

There is the distinct possibility that this information was anticipated in advance and already discounted by the market, however, this factor would be considered through the use of the time lag.
because Benston\(^5\) found that a period as long as a month was probably too long, and he suggested that future research try weekly or even daily stock price data. Since the latter was deemed too short a period of time, weekly data were used.

The percentage relationship used from one period to the next required that an adjustment be made to some of the years so that period \(t\) and period \(t-1\) were both in the same terms. Therefore, adjustments were necessary for large stock dividends and stock splits. No changes were deemed necessary in those instances where small stock dividends were issued. It was felt that a small increase in the number of shares outstanding would not affect market value. If additional shares were issued in other than a stock dividend or stock split there was no adjustment as long as there was compensation to the corporation involved.

Since the market tends to react to the ex-dividend date with a reduction in the price of the stock, it can reasonably be assumed that the stock price included the amount of the dividend up to the time when it went "ex-dividend." Therefore, whenever a dividend was declared during the period of time that was used for the measurement of the stock price the amount of the dividend was deducted from the market quotation. This allowed the analysis to consider the "pure" price of the stock without any distor-

\(^5\)Benston, "Published Corporate Accounting Data and Stock Prices," op. cit., 28.
tion resulting from declared, but unpaid, dividends.

**Long-Term Debt-Owners' Equity Ratio**

The long-term debt-owners' equity ratio was calculated by dividing the long-term debt outstanding by the total stockholders' equity. Since most companies report any debt discount and/or issue expense as an other asset (or in a deferred charge category), the maturity value of the long-term debt was used in the calculation.

**Earnings Per Share**

Basically the earnings per share figure used was that which was presented to the stockholders in the annual reports. In an attempt to relate stock price to earnings, however a modification was used in some instances. The intent was to use a figure for net income that approached the old current-operating approach. Under this concept net income is essentially a normal, recurring type of figure, i.e., all extraordinary items were excluded from the calculation.

It was felt that this approach to income would be more relevant to the reader for measuring the economic progress made by the company during the period under calculation. It would also serve as a more stable base for predicting future operating results. This approach supports the

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6See the preceding chapter for an analysis of this point and a discussion of the balance sheet classification of all items included in this study.
theory that the knowledgeable investor will use a measure of income for investment purposes that bears a reasonable comparison in terms of causation and trend analysis, and not simply one that has occurred this year as a result of some nonrecurring transactions. In addition, in those years prior to APB Opinion No. 9, it put all companies on a similar base for net income. Actually, though, there were only a few instances where any change had to be made to the reported figure, and in these instances, except as mentioned below, the difference was very minor.

The virtual plague that encompassed the bowling industry in the mid-to-late 1960's created some accounting problems for Brunswick and AMF. Both of these companies included in income, and rightly so according to accounting definitions, the write-down of receivables and inventories resulting from the slump in activity. The obvious nature and nonrecurring aspect of this item led to the conclusion that income would better reflect the results of operations if the write-off was eliminated from the calculations.

Since the regression analysis was performed with the current year \( t \) expressed as a percentage of the preceding year \( t-1 \) in every instance where there was a change in the base it was taken into consideration. This occurred where the preceding year was restated for some reason (especially

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in mergers), or a stock dividend or stock split occurred. Actually this type of adjustment was made for several of the variables where the current year was not comparable to the preceding year because of some event other than normal operations.

Again an attempt was made to use the data as it was presented to the readers of the financial statements in order to tie as closely as possible any reaction that would result from the relative change from year to year, and at the same time eliminate any distortion that could result from comparing figures that did not have a comparable base.

Whenever a computation of earnings per share was necessary, it was prepared in accordance with the theoretical procedures that were applicable at that time. Since the period of time covered by this study spanned three major pronouncements with respect to earnings per share this latter point is especially important to preserve the accuracy of the analysis.

**Times Interest Earned**

The calculation for times interest earned is that which is proposed by most textbooks and security analysts in that income, after adding back interest expense, is divided by the periodic charge for interest as reflected in the income statement. Basically this plus the long-term debt-owners' equity ratio and the asset-owners' equity ratio (see later discussion) reflect a popular measure of risk involved in a particular investment from both the balance sheet and
the income statement point of view.

Level of the Stock Market

The price of a particular security does not exist in a vacuum. Therefore, the mere existence of a major trend in the stock market, either upward or downward, can account for some of the change in the price of a given stock. In many instances this "drag" or "pull" effect exerted by the general level of the market will offset the effects that accounting data or any other information would have on the price fluctuations of a share of stock.

In an attempt to measure the movement of the level of the stock market the selection of an indicator became a problem. There are several averages that are available, namely the Dow Jones Industrial Average (DJIA), the Standard & Poor 500, and the measure prepared by the New York Stock Exchange. A good argument could be made for any one of these, however it was felt that because of the extent of the general knowledge on the part of the investing public, and the vast amount of publicity directed toward the DJIA, together with the fact that all of the companies used in the study are broadly classified as industrial corporations, made this a suitable indicator of investor temperament in the market. Of course there are many arguments against the theoretical accuracy of the DJIA as a general measurement device, however, the benefits as previously mentioned were felt to overshadow these arguments, and the criticisms were not felt to be of the nature that would affect this particular study.

The actual computations that were made paralleled
those for computing the stock price for each year, i.e., the closing level of the DJIA was averaged for five trading days following the release of the financial statements. This placed both measures of stock prices in the same time period and should account for the "push" or "pull" effect exerted by the general level of the market.

**Dividends Per Share**

Like earnings per share, the figures used for dividends per share were as close to those actually reported by the company as possible. In this instance the only changes that were necessary resulted from events which made the data of the current year (t) not comparable with the previous year (t-1). Thus adjustments were made for events such as stock dividends and splits where the basis for comparison was disturbed without any receipt of compensation. The actual figure used was the cash dividends paid to the common stock (or residual security) holders. Again, most of this information was historical in nature and taken directly from the annual reports.

**Convertible Debt to Total Debt**

This variable was used in the study in an attempt to determine whether or not the change in the quantity of convertible bonds in relation to total long-term debt influenced the price of the stock. This could also be included as a measure of risk in that it indicates there is some possibility of dilution with regard to earnings resulting from the
issuance of debt that could be converted into common stock.

**Dividend Payout**

Another variable that was used to indicate a form of income was dividend payout. This differs from the other two measures of income in that it represents the percentage of income available to common stockholders that was paid out in the form of dividends, thereby indicating to investors the maximum possible increase in dividends that could be paid and the thinking of management with respect to the financing of the business.

**Asset-Owners' Equity Ratio**

The final measure of risk was the asset-owners' equity ratio. In this calculation total assets were divided by owners' equity. Even though this ratio measures just about the same factors as the debt-owners' equity ratio, it was included in the analysis because of the fact that most companies report any discount related to debt as an other asset rather than a contra account, and it was felt that this factor should be represented in the regression equation.

**The Adjustment for Valuation of the Conversion Feature**

Theoretically the market value of a bond represents the present value of the principal plus the present value of the periodic interest payments discounted at the market rate of interest for similar securities. A premium or discount on the issuance will result if this market (yield) rate
differs from the stated (nominal) rate. Mathematically this can be stated as follows:

\[
V = M \times \frac{1}{(1 + i)^n} + I \times \frac{1 - \frac{1}{(1 + i)^n}}{i}
\]

where:

\(V\) = the present value of the bond,

\(M\) = the maturity value of the bond,

\(I\) = the stated interest payment in dollars per period,

\(i\) = the market rate of interest per interest period, and

\(n\) = the number of interest payments over the life of the bonds.

Since the premium or discount is based upon the difference between the market rate of interest and the stated rate, an alternative and often simpler, computation may be employed:

\[
V = M + \left[ (I \times M) - (i \times M) \times \frac{1 - \frac{1}{(1 + i)^n}}{i} \right]
\]

(Each symbol in the preceding equation has the same meaning as that used in the original equation.)

Simply stated, this formula indicates that the present value of a bond is equal to the maturity value plus or minus (as the case may be) the difference between the stated interest in dollars per interest period and the yield interest

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discounted at the yield rate. Therefore, eliminating the
maturity value of the bond, the discount or premium would
be:

\[ Y = \left[ (1 \times M) - (1 \times M) \right] \times \frac{1 - \frac{1}{(1 + i)^n}}{i} \]

where:

\( Y \) = the amount of the premium or discount, and the
remainder of the variables are the same as
previously indicated.

This equation can then be modified to produce the
dollar value of the conversion privilege by a few simple
changes:

\[ X = \left[ (i_s \times M) - (i_f \times M) \right] \times \frac{1 - \frac{1}{(1 + i_f)^n}}{i_f} \]

where:

\( X \) = the dollar amount of the discount,
\( M \) = the maturity value of the bonds,
\( i_s \) = the market rate of interest for similar securi­
ties without the conversion privilege,
\( i_f \) = the yield rate in terms of the issue price of
the convertible bond under consideration, and
\( n \) = the number of interest payments over the life of
the bond.

As indicated in a previous chapter "X" will almost always be
a discount figure because the conversion feature is usually
set at a level that will allow the issuance of the bonds at
par.

In general the above equation means that the dollar
amount attributable to the conversion privilege is the dif­
ference between the actual issue rate and the rate of
interest on similar securities without the conversion privilege discounted at the latter interest rate.

The theory behind this procedure is that if the conversion feature were not present in the bond it would have to sell at a higher rate of interest, and therefore, the value of the conversion privilege is attributable to the difference between this rate and the actual yield rate. The actual yield rate and not the nominal rate was used because there could have been some discount or premium attributable to the bond itself, and it would be incorrect to include that in the valuation of the conversion privilege.

Application of the Valuation Procedures

There is basically no difficulty involved in applying this formula once the yield rate of similar securities without the conversion feature is determined. For bonds rated Aaa to Baa (using Moody's rating scheme) monthly yield rates for corporate industrial bonds are presented in the blue insert pages of each edition of Moody's Industrial Manual. These rates date back to January, 1919. However, a problem arises when bonds rated below Baa are used.

In this study approximately half of the bonds were rated Ba and B, therefore a variation of the valuation procedure was used. Actually this procedure consisted of developing the relevant yield figures similar to those published by Moody's, except they were for the Ba and B levels. The information came from reviewing the nonconvertible bond issues recorded in Moody's Industrial Manual for several
issues from 1962-1971 (the 1962 manual covers the reports for 1961). These figures were then used for the yield of the nonconvertible bonds in the discount calculations.

Accounting Effects of Valuing the Conversion Privilege

Once a dollar valuation has been placed on the conversion feature, the effects upon each of the independent variables must be determined. The general approach was to amortize the discount created over the life of the bond on a straight-line basis. There was the possibility that the effective yield (or constant rate) method was used by a company, but not probable. In fact, Andrew Barr, Chief Accountant of the Securities and Exchange Commission, wrote to the Accounting Principles Board indicating that unless the Board overtly made the yield method acceptable, the lack of use by reporting companies would preclude it from being classified as a generally accepted accounting principle.\textsuperscript{9} This plus the fact that the difference between the two is usually not material makes the use of the straight-line method acceptable.

As previously indicated the discount was treated as an other asset (or possibly a deferred charge) on the balance sheet. The amortization of the asset was included in the definition of net income, as is the amortization of any

\textsuperscript{9}The APB subsequently included a special provision in Opinion No. 12 (paragraph 16) that approved the use of the compound interest method of amortization.
other discount, as an addition to interest expense. The credit created by valuing the conversion feature was set up as part of contributed capital.

The tax aspect of the amortization of the discount attributable to the conversion feature was not very clear during part of the time covered by this study, however, the government eventually settled it in that "... no portion of the cost of a convertible debenture, attributable to the conversion privilege, is to be treated as amortizable bond discount under Sec. 163 or original issue discount under Sec. 1232." This approach was not consistently applied during the time span covered by this study, nor between companies, so in an attempt to achieve uniformity and to be as accurate as possible, no consideration of income tax was used on the conversion privilege. The point was finally cleared up in 1969 with Sec. 1232 of the Internal Revenue Code.

Since there were almost constant changes (reductions) in the quantity of convertible bonds outstanding for each company, some allowance had to be made to account for these changes. No exact information is available on a company by company basis, so it was assumed that all conversions and other reductions took place at mid-year. The effects of

using this period should cause the least possible deviation from what actually took place.

The overall approach of these procedures, then, is to treat the difference between the actual cash yield rate on the security and the cash yield rates on similar securities without the conversion feature to be the valuation of the conversion privilege, and this amount was then amortized over the life of the security as additional interest expense. The ratios previously indicated were then regressed against the price of the stock (with each expressed as a percentage of the preceding year) in both the unadjusted and adjusted forms.

RESULTS OF THE REGRESSION ANALYSIS

Regression analysis is a statistical tool for deriving the relationship between a dependent variable and one or more independent variables. It is based upon a mathematical equation that expresses the functional relationship which exists between the dependent variable and the independent variable(s), i.e., it measures the cause and effect relationship that exists between phenomena.

Correlation analysis measures the degree of association between the dependent and the independent variable(s). The coefficient of correlation, commonly referred to as "r," measures the closeness of the relationship between the dependent and independent variables, and the coefficient of determination \(r^2\) indicates the percentage of the variation
that is measured by the independent variable(s). In this study the information derived from the regression analysis was used to measure the correlation between the movement of stock prices and the data studied.

The Original Equation

The results of the original equation are summarized in Table 2 and Table 3. From the former it can be seen that there is a significant relationship between stock price and the accounting ratios and other data selected at the .01 level. This means that there is less than a 1 per cent chance that a coefficient of correlation and determination could be that large by a pure chance relationship between the variables. In addition, it is evident that there is little difference between the unadjusted and the adjusted data. A difference of only .014 (for $r^2$) is not significant at the .95 level. Thus it would seem that the null hypothesis would have to be accepted in regard to the predictability of the data after a value has been assigned to the conversion privilege.

Table 2

Statistical Results of the Regression Analysis Using the Original Equation--Correlation Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of correlation ($r$)</td>
<td>.519&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.504&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Coefficient of determination ($r^2$)</td>
<td>.269&lt;sup&gt;a b&lt;/sup&gt;</td>
<td>.255&lt;sup&gt;a b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Standard error of the estimate</td>
<td>.205</td>
<td>.207</td>
</tr>
</tbody>
</table>

<sup>a</sup>Significant at the .01 level.

<sup>b</sup>Difference not significant at .95 level.
However a close examination of Table 3 indicates that the variables which have the most significant relationship regarding the price of the stock are the general level of the stock market, the dividend payout ratio, and dividends per share (the former two at the .001 level and the latter at the .02 level). The other variables were significant at the .30 level or lower which is not acceptable from a statistical point of view. Thus two of the variables explaining most of the stock price variation had nothing to do with the question of determining whether or not the allocation of value to the conversion privilege produces better information for predictive purposes.

The Modified Equation

Since the results of the analysis indicates there is virtually no difference between the two sets of figures, the original equation was altered to include only those variables that would be affected by valuing the conversion privilege. The purpose of this modification was to eliminate those variables that were included in order to add an element of completeness to the study, and to focus attention on those accounting variables that would be affected by the allocation procedures used. This would eliminate any interrelationships between the variables that would be affected by allocation and those that would not be changed. In addition, due to the lack of a significant difference between the two original equations, this procedure would help isolate any
Table 3
Statistical Results of the Regression
Analysis Using the Original
Equation—By Variables

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.356</td>
<td>.191</td>
<td>.439</td>
<td>.442</td>
<td>.810</td>
<td>.432</td>
</tr>
<tr>
<td>Long-term debt-owners' equity ratio</td>
<td>-.099</td>
<td>-.057</td>
<td>.073</td>
<td>.073</td>
<td>-1.359</td>
<td>-.790</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>.003</td>
<td>.001</td>
<td>.004</td>
<td>.003</td>
<td>.629</td>
<td>.396</td>
</tr>
<tr>
<td>Times interest earned</td>
<td>-.136</td>
<td>-.101</td>
<td>.076</td>
<td>.080</td>
<td>-1.802</td>
<td>-1.265</td>
</tr>
<tr>
<td>General level of the stock market</td>
<td>.732</td>
<td>.738</td>
<td>.189</td>
<td>.191</td>
<td>3.870&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.870&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Dividends per share</td>
<td>.356</td>
<td>.330</td>
<td>.129</td>
<td>.129</td>
<td>2.765&lt;sup&gt;b&lt;/sup&gt;</td>
<td>2.555&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Convertible debt to long-term debt</td>
<td>-.008</td>
<td>-.008</td>
<td>.020</td>
<td>.020</td>
<td>-.399</td>
<td>-.392</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>-.342</td>
<td>-.323</td>
<td>.074</td>
<td>.074</td>
<td>-4.606&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-4.363&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Asset-owners' equity ratio</td>
<td>.162</td>
<td>.247</td>
<td>.314</td>
<td>.315</td>
<td>.516</td>
<td>.783</td>
</tr>
</tbody>
</table>

<sup>a</sup>Significant at the .001 level.

<sup>b</sup>Significant at the .01 level.

<sup>c</sup>Significant at the .02 level.
differences that may exist between the two groups of data. There was also the possibility that since there was such a significant contribution to the coefficient of correlation made by the Dow Jones Industrial Average and the other variables that did not change with the allocation process, the results of the analysis could have been clouded and any difference that did exist between the adjusted and unadjusted data would not stand out as much as it would if these variables were eliminated.

The results of the modified analysis are presented in Tables 4 and 5 (see page 193). From Table 4 it can be seen that there is no direct significant relationship between stock price and the variables used, however they did contribute something in explaining the movement of stock prices. Since it is not the purpose of this study to produce an equation that will predict the market price of common stock, the lack of a significant relationship (predictive wise) is irrelevant. The important result lies in the difference, if any, between the relative predictive ability of the two equations.

As in the original equation, the modified equation shows that there is little difference between the predictive ability of the unadjusted and the adjusted data. In fact, the spread between the two coefficients of determination is less—.008 as opposed to .014 for the original equation. This difference, as in the original equation, is not significant at the .95 level, and therefore, the null hypothesis
Table 4
Statistical Results of the Regression Analysis Using the Modified Equation--Correlation Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Unadjusted</th>
<th>Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of correlation (r)</td>
<td>.327</td>
<td>.315</td>
</tr>
<tr>
<td>Coefficient of determination (r²)</td>
<td>.107a</td>
<td>.099a</td>
</tr>
<tr>
<td>Standard error of the estimate</td>
<td>.226</td>
<td>.227</td>
</tr>
</tbody>
</table>

aDifference not significant at the .95 level.

Table 5
Statistical Results of the Regression Analysis Using the Modified Equation--By Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.304</td>
<td>1.176</td>
<td>.409</td>
</tr>
<tr>
<td>Long-term debt-owners' equity ratio</td>
<td>-.081</td>
<td>-.049</td>
<td>.080</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>.001</td>
<td>.000</td>
<td>.005</td>
</tr>
<tr>
<td>Times Interest earned</td>
<td>-.073</td>
<td>-.037</td>
<td>.081</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>-.275</td>
<td>-.259</td>
<td>.076</td>
</tr>
<tr>
<td>Asset-owners' equity ratio</td>
<td>.180</td>
<td>.222</td>
<td>.342</td>
</tr>
</tbody>
</table>

aSignificant at the .001 level.
must be at least partially accepted. This result is supported by an analysis of the means and standard deviations of the variables in the modified equation, where, except for earnings per share, there is virtually no difference between the adjusted and the unadjusted data (see Table 6).

Table 6

Comparison of Mean and Standard Deviation of Variables in the Modified Equation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Un-adjusted</td>
<td>Adjusted</td>
</tr>
<tr>
<td>Long-term debt-owners' equity ratio</td>
<td>1.043</td>
<td>1.034</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>1.792</td>
<td>2.132</td>
</tr>
<tr>
<td>Times interest earned</td>
<td>1.055</td>
<td>1.042</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>1.023</td>
<td>1.025</td>
</tr>
<tr>
<td>Asset-owners' equity ratio</td>
<td>.996</td>
<td>.996</td>
</tr>
</tbody>
</table>

The closeness of the relationship between the two sets of data is also illustrated by the simple correlation coefficients, i.e., the correlation between each variable and the other variables on an individual basis (see Tables 7 and 8, pages 195 and 196, respectively). In practically every case the difference between the correlation coefficients is .02 or less. It can also be seen from these
Table 7

Statistical Results of the Regression Analysis Using the Modified Equation—Simple Correlation Between Variables—Unadjusted Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stock Price</th>
<th>Long-Term Debt-Owners' Equity Ratio</th>
<th>Earnings per Share</th>
<th>Times Interest Earned</th>
<th>Dividend Payout</th>
<th>Asset-Owners' Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock price</td>
<td>1.000</td>
<td>-0.147</td>
<td>-0.045</td>
<td>0.080</td>
<td>-0.366</td>
<td>0.085</td>
</tr>
<tr>
<td>Long-term debt-owners' equity ratio</td>
<td>-0.147</td>
<td>1.000</td>
<td>0.039</td>
<td>-0.433</td>
<td>0.150</td>
<td>-0.327</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>-0.045</td>
<td>0.392</td>
<td>1.000</td>
<td>0.466</td>
<td>-0.038</td>
<td>-0.258</td>
</tr>
<tr>
<td>Times interest earned</td>
<td>0.080</td>
<td>-0.433</td>
<td>0.466</td>
<td>1.000</td>
<td>-0.371</td>
<td>-0.026</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>-0.366</td>
<td>0.150</td>
<td>-0.038</td>
<td>-0.371</td>
<td>1.000</td>
<td>0.030</td>
</tr>
<tr>
<td>Asset-owners' equity ratio</td>
<td>0.085</td>
<td>-0.327</td>
<td>-0.258</td>
<td>-0.026</td>
<td>-0.030</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Table 8
Statistical Results of the Regression Analysis Using the Modified Equation--Simple Correlation Between Variables--Adjusted Data

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stock Price</th>
<th>Long-Term Debt-Owners' Equity Ratio</th>
<th>Earnings per Share</th>
<th>Times Interest Earned</th>
<th>Dividend Payout</th>
<th>Asset-Owners' Equity Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stock price</td>
<td>1.000</td>
<td>- .128</td>
<td>- .048</td>
<td>.112</td>
<td>- .368</td>
<td>.093</td>
</tr>
<tr>
<td>Long-term debt-owners' equity ratio</td>
<td>- .128</td>
<td>1.000</td>
<td>.040</td>
<td>- .403</td>
<td>.148</td>
<td>- .328</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>- .048</td>
<td>.040</td>
<td>1.000</td>
<td>.474</td>
<td>- .029</td>
<td>- .256</td>
</tr>
<tr>
<td>Times interest earned</td>
<td>.112</td>
<td>- .403</td>
<td>.474</td>
<td>1.000</td>
<td>- .391</td>
<td>.014</td>
</tr>
<tr>
<td>Dividend payout</td>
<td>- .368</td>
<td>.148</td>
<td>- .029</td>
<td>- .391</td>
<td>1.000</td>
<td>.008</td>
</tr>
<tr>
<td>Asset-owners' equity ratio</td>
<td>.093</td>
<td>- .328</td>
<td>- .256</td>
<td>.014</td>
<td>.008</td>
<td>1.000</td>
</tr>
</tbody>
</table>
tables that multicollinearity is not a relevant factor in this situation.

Other Results

The lack of a significant direct relationship between stock price and accounting information should not be startling. It must be remembered that the results of this analysis can only measure direct relationships, and there is a distinct possibility that accounting data has an indirect relationship on stock prices. Results similar to the above were found in several studies, especially that prepared by Benston.\textsuperscript{12} However, most of the authors ignore the possibility of an indirect relationship where the accounting information is used in a supportive manner.

It may very well be that the cause of the low correlation between stock price and accounting data lies in the two major declines that took place in the market during the 1960's. It is quite possible that they had an effect on stock prices which exceeded that of the other data. This seems to be born out by the results indicated in Table 3. However, as it was indicated in Chapter 1 of this study, the conclusions drawn must be considered in light of the inherent limitations, and here it is apparent that not all of the data available in the accounting statements was used. But rather, since the study was limited to the effects of

\textsuperscript{12}Benston, "Published Corporate Accounting Data and Stock Prices," op. cit., 22-54.
allocating value to the conversion privilege, only those variables that would have been effected by this procedure were used. In addition, it is quite possible that W. A. Paton, Jr., is correct in his position that short-term price changes are probably not linked to accounting data.\(^{13}\)

No matter what approach is taken, no real conclusions can be drawn as to the effectiveness of accounting information in general for predicting the movement of stock prices from this study. To do so would overstep the scope as outlined in Chapter 1. Since this study was not designed to explore this question fully, any results in that area should be interpreted with this limitation in mind.\(^{14}\) Here the point at issue is not the absolute effectiveness of the two groups of data, but rather, the relative effectiveness of the adjusted data vs. the unadjusted data.

**SUMMARY AND CONCLUSIONS**

As previously indicated, one facet of the null hypothesis of this study dealt with the allocation of value

\(^{13}\text{W. A. Paton, Jr., "Discussion of Published Corporate Accounting Data and Stock Prices," Journal of Accounting Research, Supplement, V (1967), 20.}\)

\(^{14}\text{This particular topic has been explored in many different forms by numerous research techniques, and no one answer acceptable to even most of the researchers has yet to be advanced. Future research will undoubtedly narrow the areas of difference, however, at the present time there is a general acknowledgment that accounting information does effect decisions of investors, but exactly how is still unknown.}\)
to the conversion feature of convertible bonds and the effect this had on the use of accounting information for predicting movements in the price of common stock. From the preceding analysis it can be seen that by regressing the stock price (expressed as a percentage of the preceding year) against several accounting ratios dealing with risk, dividend income, and capital appreciation (also expressed as a percentage of the preceding year) there is no significant difference between the unadjusted and the adjusted data at the 95 per cent confidence level. In addition to the support for this conclusion found in Tables 2-8, a simple percentage analysis of earnings per share points out this same result. Table 9 shows that the percentage change between unadjusted and adjusted earnings per share is greater than 2.4 per cent in only 8 per cent of the observations studied, i.e., in 92 per cent of the cases studied the allocation of value to the conversion privilege would cause less than a 2.4 per cent reduction in earnings per share. In approximately 20 per cent of the observations studied there was no change in the earnings per share figure.

This same conclusion was reached by those companies who used the footnote form of disclosure for the valuation of the conversion privilege prior to the issuance of APB Opinion No. 14.\(^{15}\) In each case management saw fit to include

Table 9
Percentage Change in Earnings Per Share
After Valuing the Conversion Privilege

<table>
<thead>
<tr>
<th>Percentage Change</th>
<th>Per Cent of Observations*</th>
<th>Cumulative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Up to .4%</td>
<td>19</td>
<td>40</td>
</tr>
<tr>
<td>.5% to 1.4%</td>
<td>36</td>
<td>76</td>
</tr>
<tr>
<td>1.5% to 2.4%</td>
<td>16</td>
<td>92</td>
</tr>
<tr>
<td>2.5% to 3.4%</td>
<td>3</td>
<td>95</td>
</tr>
<tr>
<td>Over 3.4%</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

*Total number of observations was 100.

a notation as to the immaterial affect on income that an allocation procedure would create.

Thus it seems that the evidence tends to require the acceptance of the null hypothesis in so far as the predictive aspect is concerned, i.e., there is no significant difference for predictive purposes under alternative procedures of accounting for convertible bonds.
Chapter 7

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY OF THE RESEARCH

The Purpose of the Study and Research Methodology

The purpose of this study was to determine whether there would be any significant difference for theoretical or predictive purposes under alternative procedures of accounting for convertible bonds.

In order to test this hypothesis the study was designed from a theoretical approach (1) to examine the concept of a liability as distinguished from owners' equity, (2) to scrutinize the positions of those favoring allocation of value to the conversion privilege as well as those against allocation, and (3) to determine whether or not a satisfactory procedure for measuring the value of the conversion feature could be developed.

The empirical aspect involved a test of the effects of allocation on the "predictive ability" of the financial statement data through the use of multiple correlation analysis. The procedure involved two regression analyses (one with allocation of value to the conversion privilege and one without allocation) of the market price of the
common stock of each company against financial accounting ratios that would be affected by valuation (and the con- comitant amortization) of the conversion feature. The coefficients of determination for the regression analyses of both sets of data were compared in order to determine if they were significantly different at the 95 per cent level of confidence.

The Problem and Its Significance

Before one can properly analyze the accounting for a security as complex as a convertible bond, it is very important that the instrument, itself, and the circumstances surrounding its use be thoroughly understood. The extent of use of these securities (over $1.5 billion each year since 1965 and as much as $4.1 billion in 1967) substantiates the fact that they are not merely a whimsical fad of the financial world. Convertible debt is being used by all types of companies engaged in practically every form of business possible. And when this use factor is combined with the absolute lack of a consistent, workable definition of a liability that is sufficient to properly describe the complex environment that exists today, it is no wonder the convertible debt problem has never been settled. Instead of developing acceptable concepts that distinguish between liabilities and owners' equity, the profession, as a whole, has been content with attempting to solve the problems as they arise in a sort of "brush fire" fashion. Thus, this area of accounting theory is in need of serious research from a conceptual level.
Scope and Limitations

This study is intended to examine the theoretical and the empirical aspects of the valuation question. In order to accomplish this goal, many areas had to be included that could, in themselves, represent topics for similar studies (e.g., warrants and specific valuation procedures), however, they are covered here only in the depth necessary to satisfactorily discuss convertible bonds.

The use of an empirical study requires a thorough understanding of the conditions under which it was developed before any meaningful inferences can be drawn. Therefore, it is important to remember that the model used to examine the relative predictive ability of the adjusted data (with allocation) and the unadjusted data (without allocation) was not designed as a complete model for forecasting the movement of common stock prices. As such, the major point of emphasis was to determine if allocation of value to the conversion feature (together with the amortization of any resulting premium or discount) would produce a better basis for the prediction of stock price.

Therefore the variables included in the equations were selected with the purpose of (1) illustrating some factor in the valuation of common stock price movement, and, at the same time, (2) representing an element that would be affected by the overall allocation procedure.

As with any study of this nature, there is always the possibility data other than that selected would affect the
dependent variable and it is also possible that other combinations of data would produce different results. However, these limitations are no different from any other empirical study, and they will not have a serious impact on the findings.

**Reasons for the Use of Convertible Bonds**

The purpose of Chapter 2 was to place convertible bonds in their proper perspective in the financial world. This was necessary because proper accounting for the debt-equity package would require an understanding of the security and the events leading up to the present position of the Board.

Two major reasons are usually offered for the use of convertible debt: (1) the issuance of debt securities at a reduced interest rate and (2) the desire on the part of management to obtain equity financing on a delayed basis. In the former, an analysis of *Moody's Convertible Bonds*\(^1\) indicates that these securities carry an interest rate that is below the "norm" for similar securities. This conclusion is supported through the findings of several independent research studies and has been an accepted fact for quite some time.

Presently, there seems to be a trend toward the use of convertible bonds as a temporary substitute for the

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\(^1\) *Moody's Investors Service, Moody's Bond Survey* (New York: Moody's Investors Service, Inc.).
issuance of equity capital. Several studies document this trend and indicate that it has become the major reason for the use of these securities. One possible reason for the delayed issuance of equity is that the conversion price is usually set above the current market value of the common stock, and therefore, the use of the conversion option would generate more funds on a per share basis (assuming conversion) than would otherwise be obtainable through the immediate issuance of common stock. The delayed issuance of stock can also work to management's advantage by allowing the funds to become revenue generating before the stock is issued and by providing flexibility in the financial structure of the firm. To a great extent management can manipulate these securities by wisely setting the conversion price and making strategic use of the call provision.

Investors usually purchase convertible bonds because these financial instruments hold the key to financial security in that they offer the protective element of an equity and the protection of a debt instrument. Since the price levels of equity securities have a high correlation with inflation trends, the convertibility feature offers some protection against the perils of inflation. However, there is no such thing as perfect protection. During the last five years this protective element has not functioned successfully, but the general trend should prevail (i.e., equity prices should, over the long run, follow the movement of the general price level), and the exception that has been
witnessed in recent years should not be expected to continue. Thus, while equity protection against inflation is not perfect, at present, there seems to be no better means available.

Since bond prices vary inversely with the interest rate, the value of the pure debt feature will fluctuate, but it, too, provides an element of security—the degree of which will vary with the business risk of each company. In addition, there is the "guaranteed return and redemption" feature of debt that also has some aspect of security.

Thus these financial instruments seem to offer an investor as much protection as is presently possible, and this, alone, has been an important factor in the growth in the use of convertible debt.

In addition, an artificial leverage factor is built into this security by the Federal Reserve System. As of April 21, 1972, the margin requirement allowed the purchase of convertible bonds through financing 50 per cent of the total price as compared to 45 per cent for common stock. This, of course, would allow the investor to finance a larger portion of the purchase price and, therefore, provide for a greater return on the initial investment.

Convertible bonds have also been used in mergers and acquisitions. In these types of situations convertible debt is issued in exchange for a company whose stock has a high dividend yield.

The investor can also find protection through an
antidilution clause and a wider market for possible sale. The antidilution clause protects the original investment in relation to the common stock outstanding at the time of the purchase against future stock splits and dividends. A wider market exists for these bonds because many institutional investors who are prohibited from purchasing stock are allowed to buy convertible bonds.

Warrants

The use of debt with warrants has often been mistaken as practically the same thing as convertible debt. However, a close analysis of these two investment packages indicates there are a great many differences, one of which is the general circumstances under which each is used. The warrant is usually included in a situation where the issuer is primarily interested in debt financing rather than the issuance of additional equity capital.

However, the principal difference lies in the separability aspect. Most warrants can be physically separated from the bond and even develop a separate market. And, it is this factor that has generally caused most of the problems for convertible debt. Accountants can easily measure the value of the warrant because of this separate market, and they then use the separability factor as a basis for concluding that value should not be allocated to convertible debt. As such, the argument is purely one of ease of computation rather than inherent logic.

Other differences exist between these two types of
securities, but with the exception of the tax treatment, they are of minor significance. The Internal Revenue Service has further complicated the situation by allowing the amortization of a discount created by valuing warrants, but not allowing a similar discount for convertible debt. This action has supplied additional support for those who use the argument of inseparability as the principal reason for not valuing the conversion privilege.

The Current Position of the APB with Respect to Convertible Debt

To date the APB has had considerable difficulty with gaining general acceptance for some of the Opinions that have been issued. Probably the most notable of these being the investment credit controversy. However, this difference between acceptance by the Board and general acceptance of Opinions again came up with regard to the original requirement for allocation of value to the conversion privilege.²

Paragraphs 8 and 9 of Opinion No. 10 required allocation for both the conversion privilege and warrants. At the time of issuance of the Opinion (December, 1966) there seemed to be very little opposition to the procedure. It was not until several months later that the Investment Bankers Association and a few members of the Board began to complain that any significant disfavor was shown.

After several unsuccessful attempts, the Board finally voted to reconsider the issue and suspended paragraphs 8 and 9 of Opinion No. 10 until a final decision could be reached. During the suspension period the Board received a considerable quantity of correspondence regarding the allocation question and a subcommittee was established to formally study the topic. The subcommittee held a symposium on January 14, 1969, to consider the issue and the results were published as Opinion No. 14.\(^3\) The final decision was to require allocation for detachable warrants, but not for convertible bonds. Thus the Board had, again, reversed itself from a previous position and it is this reversal that has led to the current situation.

**The Concept of a Liability**

The concept of a liability is particularly important to the convertible debt question because allocation is contingent upon the existence of two economic elements— one a liability and one part of owners' equity. As such, the situation can be reduced to the conflict between the entity and the proprietary approaches to corporate equity.

The entity theory centers on the separate existence the firm has apart from the owners and other equity holders. The problem is not that liabilities are ignored, but rather,

that the distinction between liabilities and owners' equity is not specifically emphasized.

For almost forty years the AICPA has relied upon an entity approach in defining a liability, and as such there was no particular distinction between liabilities and owners' equity. As a result, there seemed to be no urgent need to develop an independent concept of a liability.

The proprietary theory approach to equity places the owner at the center of all enterprise activities, i.e., everything is viewed in relation to its effect on owners' equity. Thus there is a sharp distinction between the concept of a liability and owners' equity— one that is further emphasized in the importance this approach places on the balance sheet for financial statement disclosure. The ultimate change in owners' equity is more important than the detail items that comprise the net change.

The theoretical problem that inhibits the acceptance of the proprietorship approach lies in the separate existence a corporation is assumed to have. Since a corporation is a legal entity, many accountants cannot force themselves to accept the apparent paradox. Despite this fact, the proprietary theory has achieved wide acceptance in influencing accounting procedures.

Other approaches to corporate equity (the residual equity theory, the social enterprise theory, and the commander theory) have not gained wide acceptance to date, and therefore, have had very little effect on corporate
accounting. In addition they seem to be modifications of the entity or proprietary theories. However, the funds theory has gained wide acceptance for nonprofit organizations, but as such has not had a material effect on accounting for profit-making organizations.

The effect of these approaches can be seen by contrasting the accounting procedures used to record the conversion of bonds. Under the entity theory the carrying value of the bonds (par value plus premium/minus discount) is assumed to be the proceeds of the issuance of the common stock, as such no gain or loss is recorded, instead, the book value of the bonds becomes the recorded value for the stock issued. On the other hand, the proprietary theory requires that the issuance of the stock be recorded at the fair market value of the bonds (or the fair market value of the stock). As a result, if the fair market value of the bonds was greater than the book (carrying) value, the corporation would record a loss on the conversion.

The influence of the entity approach can easily be seen in the book value approach because with the corporation as a separate entity, both creditors and owners are viewed as suppliers of funds. In fact, a strict interpretation of the entity concept would view payments to each as a distribution of profits. However, the emphasis on owners' equity can clearly be seen in the "new accounting" that is required under the proprietary concept.

A review of the approaches to corporate equity is
important in defining a liability in this study because of the need for a distinct separation between liabilities and owners' equity. This separation is necessary in order to properly account for convertible debt, and it seems only a proprietary approach achieves the required degree of differentiation. Therefore, a proprietary approach will be used as a basis for defining a liability in this study.

On the other hand, separation is not the only problem that arises. The actual definition that has been used in the past was heavily influenced by the legal implications involved. As such there has been considerable difficulty in developing a workable definition for the complex transactions that modern corporations enter into daily. And, it is clear that such a narrow approach is not sufficient to properly account for liabilities.

While every author has a preferential list of characteristics which an item must meet to be classified as a liability, certain of these characteristics predominate: (1) that it results from transactions entered into by the entity and (2) that it requires future satisfaction through the disbursement of assets.

With these factors in mind, the concept of a liability, for purposes of this study, is defined as follows:

Liabilities . . . [are] economic obligations of an enterprise that are recognized and measured in conformity with generally accepted accounting principles. Liabilities also include certain deferred credits that are not obligations but that are recognized and measured in conformity with generally
accepted accounting principles.\textsuperscript{4} This definition seems to accomplish the necessary distinction between liabilities and owners' equity while at the same time provide a workable concept. It also has the added feature of official support of the Institute.

**Measurement of Liabilities**

Once the concept has been defined, it becomes necessary to measure liabilities. In general, the approach has been to discount both principal and interest at the market rate of interest for similar securities, and to amortize any resulting premium or discount over the life of the securities. This seems to be acceptable from a historical cost point of view, and while there has been some interest shown in recognizing changes in interest rates in the financial statements, it currently represents such a deviation from standard practice that further study is needed before it could be considered for acceptance. As a result, at the present time, the use of the market rate of interest for similar securities at the time the bonds were issued is sufficient for accounting purposes.

**The Case for Allocation**

Those favoring the allocation of value to the conversion privilege base their argument upon the premise that

this procedure reflects the true nature of the transaction by emphasizing the economic substance of the transaction, recognizing the intent of management upon issuing the securities, and recording the actual cost of the funds. Additional support for allocation also can be found through the original position of the Securities and Exchange Commission and the American and New York Stock Exchanges.

**Emphasis of the economic substance of the transaction.** The recognition of the substance of a transaction in the financial statements results in reporting the economic facts of the situation instead of the legal format used. This approach is necessary for full disclosure in order to contend with the complex tax and other legal restrictions that form the environment for modern business transactions. The application of this approach to convertible bonds requires the separate recognition of the two economic elements that exist in this security: (1) the debt element and (2) the conversion privilege.

A considerable degree of misunderstanding has arisen over the relationship of these two rights. Part of this problem has resulted from the normal procedure to record the issuance of the bonds where the conversion privilege is recorded as part of one journal entry. Instead, a separation of the proceeds into the amount paid for the bonds and the amount paid for the conversion right (with separate journal entries) would help clarify the circumstances under which the transaction arose—the issuance of bonds and the
sale of a call on common stock.

The lack of recognition of the conversion right is also inconsistent with the conclusions of Opinion No. 15. In this Opinion the Board has devised a specific test for determining whether or not a convertible bond should be included in primary earnings per share. The rebuttal offered by those opposing allocation is the problem of implementation. However, the test used for computing earnings per share is not any less difficult to implement than such a test (or calculation) for valuing the conversion feature. Therefore, the problem of implementation is not of the magnitude as to negate the validity of the concept of allocation.

As a result of the dual economic nature of the conversion right, some of the critics of allocation feel there is a put element that exists concurrent with the call option, and that the put has greater value because of the ability of management to force retirement or conversion. A careful study of the economic circumstances that exist upon the issuance of the debt-equity package will clearly indicate that they are not conducive to recognition of the put, and therefore, this argument should not affect the allocation question.

Additional support for allocation can be found

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through an examination of the conversion right and warrants as economic rights, i.e., without consideration of the debt element. As such, each represents the right to obtain common stock in the future and should be accounted for accordingly. Since most authorities agree that detachable warrants issued with bonds should be valued and recorded as contributed capital, then it only seems reasonable to follow the same procedures for the conversion option.

**Management intent.** Presentation of the call privilege on the financial statements recognizes the intent of management in issuing these securities. As indicated in Chapter 2, one of the basic reasons for the use of convertible debt was to issue common stock on a delayed basis. The purpose for the delay is not relevant here, and neither is the ultimate result—the degree of actual conversion. The intent present in the concept of allocation is to recognize the two economic elements that exist when the securities are issued. Thus the corporation is selling the debt-equity package, and the buyer is paying for both of the rights involved irrespective of whether or not the conversion right is exercised. Failure to record the conversion privilege because of future expectations would serve only to deviate from the cost basis of accounting.

**Actual cost of the funds.** There is a general trend in accounting to emphasize the income statement over the
If this reasoning is carried over to the convertible debt problem, then allocation takes on even more significance. The procedures required to recognize the conversion right also record the debt element in terms of its actual issue price. As a result, normal amortization procedures of the resulting discount (or possible premium) charge revenues of the period with the actual interest cost of the debt.

The normal argument against the actual interest cost approach is that unless there is conversion of a material portion of the bond issue, the interest cost remains at the coupon rate. In addition, the opponents to allocation argue that the only "cost" to the corporation is the possible loss of an opportunity to issue common stock at a later date at a price greater than the conversion price. Since accounting has not yet attempted to record this type of cost, those opposing allocation feel there is no need for recording anything except the issuance of the bonds.

In an attempt to further cloud the actual interest cost issue, the opponents of allocation claim that if the true interest cost is to be determined, then all of the covenants in the indenture should be given recognition on the financial statements. This has even been supported by some of the advocates of valuation. However, there is one

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major factor that is ignored by this approach—the conversion privilege is an element of owners' equity, whereas the other covenants would simply be additional detail presented in the liability section. Also the opponents seem to forget that the other provisions are normal to most bond issues, although they may vary somewhat for convertible bonds; but then, there is some variation between nonconvertible bonds also. On the other hand, the inclusion of the conversion privilege is not normal to a bond issue, and therefore, it should be given separate recognition in the financial statements.

Therefore, in order to properly match the actual cost of the funds against the revenues of the period, allocation of value to the conversion privilege is mandatory.

**Position of the Securities and Exchange Commission and the major stock exchanges.** The Securities and Exchange Commission supported the allocation concept, and has done everything in its power to force adoption. In fact, during the period of suspension of the requirement for allocation, the SEC required disclosure of a value that could be attributed to the conversion privilege and the resultant effect upon income. However, as a result of the "difficulties involved," the Commission decided to support the conclusions of the Board. The only other governmental agency to express an opinion on this question was the Civil Aeronautics Board and they deferred a decision on the acceptability of allocation procedures until after Opinion No. 14. Their final
decision supported the position taken by the APB.

The New York Stock Exchange and the American Stock Exchange both supported the original position of the Board favoring allocation, but the New York Stock Exchange later changed its position to a "no preference" approach.

**The Case Against Allocation**

The opposition to allocation is developed from four points of view: inseparability, the position of the Internal Revenue Service, the measurement problem, and the relationship between convertible preferred stock and convertible debt.

**Inseparability.** The major point in the case against allocation lies in the inseparability of the conversion right and the debt element. The lack of physical separation and a separate market value for the conversion option has caused many accountants and financial analysts to take a position against the concept of allocation. This type of thinking reverts to a strict legal interpretation of the situation and, as such, ignores the substance of the transaction. If this approach were taken in the case of leases there would be no provision for capitalization of any leasing agreements. In addition if substance is ignored, there would be no need for recognition of interest on long-term receivables and payables. The fact that the lack of physical separability complicates the situation is accepted by both sides of the question, however, those favoring allocation believe it should not negate the theoretical considerations.
Position of the Internal Revenue Service. The Internal Revenue Service has added support to the position of those against allocation by not allowing the amortization of the resulting discount as a deduction in determining taxable income. This position evolved after much inconsistency in treatment on the part of the taxing authorities. However, there is a general presumption that tax regulations should not affect accounting procedures. Since each has a different purpose for the figure labeled as income, it is only logical that the two figures will not agree. Therefore, neither should be taken as support or contradiction of the other.

Measurement. The measurement question permeates the arguments against allocation. It is generally held by those against the valuation of the conversion feature that a procedure of questionable validity should not be placed in the financial statements when the problems of measurement are as great as that which exist for valuing the conversion privilege.

The lack of an exchange value for the right is deemed by the investment bankers to be a major factor in their position against allocation. The investment services even go so far as to contend that the data published regarding the investment value of the pure debt element is a "grossly imprecise estimation" intended only for use in comparing companies and not for financial statement disclosure. In their argument the fear of liability under the Securities Act of
1933 is an influential factor.

Estimates have been used in accounting for many years both before and after the 1933 Act, and it is difficult to understand how the present case differs from past instances. In addition, in order to offset some of the problems that could occur, combines of investment banking firms could be formed to determine the value of a particular issue, or some form of average could be used if there are variances in the estimates of individual firms. In any event some form of reasonable estimation for the value of the conversion privilege could be determined if those involved would cooperate with the accountants.

Relationship between convertible preferred stock and convertible bonds. Many of those opposing the allocation concept attempt to force consideration of convertible preferred stock on the assumption that there is little if any difference between the two securities. The rebuttal offered against this position lies in the basic nature of preferred stock. The allocation of value to the conversion privilege is to provide for the recognition of the debt and equity elements present in convertible bonds. If this same logic were applied to preferred stock, the effect would simply create an additional element of contributed capital. Since the preferred stock would already be an element of equity, allocation would only increase the detail in the financial statements with no increase in the information presented.
Valuation of the Conversion Privilege

Due to the possible limitations created by the procedural problems of allocation it is imperative that this question be resolved before implementation of the concept in the financial statements. There are four major approaches to this problem: the traditional method, the residual security method, the imputed discount method, and the dual method.

The traditional method. The traditional method ignores the conversion privilege entirely. The recording of the issuance of the convertible bonds would be exactly the same as if they were nonconvertible bonds. The only recognition that is given to the conversion aspect is a footnote describing the provisions of the indenture and the additional number of shares of common stock that could be issued if the bonds were converted.

The residual security method. The residual security method improves the accounting only very slightly. While the recording of the issuance of the bonds and the financial statement presentation would be the same as under the traditional method, the procedure specifies that earnings per share be adjusted by assuming conversion if the bonds clearly derive a major portion of their value from the conversion privilege or the common stock characteristics exhibited in the security. The adjustment involves adding back to net income the charge for interest (net of tax) and inclusion of the additional common shares in the denominator.
The imputed discount method. The imputed discount method is in actuality the approach originally prescribed by the Board for recognition of the value of the conversion feature in the financial statements. As such the proceeds from the issuance of the bonds are divided between the conversion right and the bonds. Following this procedure the conversion option is recorded in the accounts separate from the bonds and the resulting discount is amortized as additional interest expense.

The dual method. The dual method was developed by Dr. Dudley Curry and requires a recording of data similar to that set forth under the traditional method. The major difference is that the par amount of the convertible bonds would be reported between liabilities and owners' equity and net income and earnings per share figures would be reported on the assumption of conversion and nonconversion. The theory Dr. Dudley has is that the reader should make the decision as to whether the bonds should be considered as debt (unconverted) or as common stock (converted).

A partial valuation approach. Another approach that has received some attention was prepared by James Katz. It involves the recognition of the value of the conversion option through a charge to interest expense and a credit to contributed capital each period. This charge would be based on the difference between the coupon rate of the bond issue and the rate the bonds would have had to bear if there were
A comparison of methods. An analysis of each of these approaches with the exception of the imputed discount method clearly indicates a complete disregard for the valuation of the conversion privilege when the bonds are issued. And since this was previously determined to be a significant feature of the debt-equity package they must be considered as unsatisfactory and rejected. The only fault with the imputed discount method is that it does not adjust earnings per share except by the additional interest resulting from the amortization of the discount. However, this is not an inherent weakness in the method, and, therefore, the imputed discount method should be employed in order to properly reflect the circumstances that exist at the issuance of the debt-equity package.

If it is decided to use the imputed discount approach, the conversion option must be valued. Any attempt to determine the value of the conversion right directly would involve selecting a future date for conversion, estimating the future growth rate of the stock, and some form of discounting procedure must be employed in order to allow the purchaser an element of income.

It is also possible to value the conversion option by determining the price the bonds would have yielded if there were no conversion right attached. As such the option would be valued at the residual amount of the proceeds after deducting the estimated investment value of the bonds. A
review of the circumstances involved indicate this approach would be easier to apply, and less susceptible to error than direct valuation of the conversion privilege.

Financial Statement Presentation

The balance sheet classification is an issue where there was considerable agreement. The par value of the bonds would be reported as a long-term liability and the conversion option would be classified as an element of contributed capital. However, there was some controversy concerning the reporting of the discount. Historically this account has been classified as an asset (other asset/deferred charge). The current theoretical approach is to place it on the balance sheet as a contra account to the bond liability. This procedure seems to present the circumstances of the issuance of the bonds in a clearer manner.

It would also be possible to record the present value of the principal and the interest elements of the bond issue on the balance sheet using the yield rate of interest the bonds would have had to bear if there were no conversion feature as the discount rate. However, this procedure ignores the value of the conversion option and therefore was deemed unacceptable.

A modification of the presentation of the conversion value as an element of contributed capital was suggested by some of the companies corresponding with the APB concerning the convertible debt problem. This procedure provided for the imputation of a hypothetical tax effect and thereby
reporting the discount net of tax. Since this is definitely against the current tax regulations, it seems to be too much of a deviation from accounting for the economic effects of the transaction to be acceptable.

The Empirical Aspects of Valuation

The final chapter in the body of this study involved an analysis of the effects of allocation upon the usefulness of the accounting data. One of the ways in which external reports are used is to provide information for investors and prospective investors. In order to measure the usefulness of the adjusted data a test was devised to correlate the price of the common stock at the time the annual reports were released against certain independent variables. Since the objective was to determine if there was a significant difference between data with and without allocation of value to the conversion privilege, the coefficients of determination of the two sets of data were analyzed as a final step.

The companies used were randomly selected from those listed in *Moody's Industrial Manual* that (1) had one or more issues of convertible bonds outstanding from 1961 to 1970, and (2) conducted profitable operations during this period. The sample allowed an error in the prediction of

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8 The companies used in the study were: AMF Incorporated; Brunswick Corporation; Combustion Engineering, Inc.; Copperweld Steel Company; FMC Corporation; Fruehauf Corporation; Scott Paper Company; Sybron Corporation; Thriftimart, Inc.; and Union Oil Company of California.
less than 5 per cent at the 95 per cent confidence level.

The accounting data were taken directly from the annual reports of the companies used, and where the reports were not available the data came from Moody's Industrial Manual. This procedure was adopted in an attempt to use as nearly as possible the same data that was made available to the readers of the financial statements.

The independent variables used in the original equation were: long-term debt-owners' equity ratio, earnings per share, times interest earned, dividend payout, and asset-owners' equity ratio. These were selected because they represent the more popular ratios reflecting the basic elements of risk evaluation and income, and because they would be directly affected by allocation of value to the conversion privilege and the concomitant amortization of the bond discount.

Additional variables added to complete the original equation included: the general level of the stock market, dividends per share, and convertible debt to long-term debt. These were initially included in the calculation in order to achieve as broad a base as possible for the analysis.

The conversion option was valued in accordance with paragraphs 8 and 9 of Opinion No. 10. As a result the actual yield interest rate was compared to the yield rate for similar securities as published in Moody's Industrial
The actual yield rate was used in order to separate any original discount from the valuation of the conversion option. After the value of the conversion feature was determined, the resulting discount was amortized on a straight-line basis and recorded as an other asset on the balance sheet with appropriate recognition given to any retirements or conversions of the bonds.

Results of the Analysis

The results of the study indicated both the adjusted and unadjusted original equations were significant at the .01 level, however, there was not a significant difference between the two at the 95 per cent confidence level. In an attempt to further refine the results, a modified equation was used whereby the second group of variables mentioned above was eliminated because they were not directly affected by the allocation procedures. However, the results did not produce a significant difference between the two sets of data (at the 95 per cent confidence level).

As a result it can only be assumed that the allocation of value to the conversion privilege would not significantly affect the use of the financial statements in so far as using the information as a device for predicting the movement of common stock prices.

9 Where the yield rates were not available in Moody's Industrial Manual, tables similar to those presented by Moody's were developed.

10 Historically this has been the traditional method of reporting bond discounts.
A Summary of the Results of this Study

The evidence presented in this study indicates there is a definite need for allocation of value to the conversion option in so far as accounting theory is concerned. However, from the use approach it would not make the information more effective for predicting stock prices. Thus the null hypothesis as set forth in Chapter 1 must be partially accepted and partially rejected. Since the theoretical aspect should be considered as the overall guiding factor, it must be reasoned that the conversion privilege should be valued upon the issuance of convertible bonds.

CONCLUSIONS

Financial statements must communicate the results of thousands of transactions that transpire over a given period of time. These statements must present the economic substance of each transaction as it relates to the reporting entity. Accordingly, the null hypothesis that there would be no significant difference for theoretical or predictive purposes under alternative procedures of accounting for convertible bonds must be, at least, partially rejected; from a theoretical approach the evidence indicates allocation is necessary to present the true nature of the transaction.

The recognition of the substance of the transaction, i.e., the existence of two economic elements at the issuance of the bonds, requires that allocation procedures be used. Otherwise, there is no recognition given to the call option
purchased by the issuer, as such, the entire proceeds from the transaction are assumed to have been received for the debt element. Inherent in this assumption is the concept of a zero value for the conversion option, and of course, this could not reasonably be the situation. If this right had no value, then the bonds would not have generated the same amount of funds at issuance.

Allocation is also required if any attempt to account for the actual cost of borrowing is made. The inclusion of a conversion right allows the bonds to be issued at an interest rate that is lower than that of similar securities without the conversion feature. As a result of allocation, a discount is usually recognized and the amortization of this discount increases the net cost of the funds obtained to a level consistent with the issuance of debt without the conversion privilege and the same coupon rate as is present on the convertible bonds.

The procedures used for allocation result in the recognition of the bond liability as a separate element from the call option. This is consistent with the definition of a liability as developed in this study. This definition specifically limits liabilities to "economic obligations" and "deferred credits," and does not allow the recognition of an element of contributed capital as part of the obligation. This conclusion is also supported by the fact that the proprietary approach to corporate equity should be used in interpreting the definition of a liability. An analysis
of both the proprietary and entity theories revealed that the former places more emphasis on the distinction between liabilities and owners' equity, and therefore, it should be used in defining a liability. If this is done, the two economic rights that exist upon issuance of the bonds must be segregated in the financial statements.

As such, it is imperative that an allocation of funds be made at the issuance of the debt-equity package in order to comply with the liability restriction. To do otherwise would result in a backward movement toward the entity concept, and it is clear that under this approach there is not the distinct separation between liabilities and owners' equity that is necessary for proper recognition of liabilities.

The actual valuation process can be accomplished through consultations with investment bankers and other financial analysts. These experts are capable of measuring the investment value of the debt portion of the package as it relates to similar securities without the conversion feature. However, it must be remembered that the dollar value placed on the conversion option is an estimate and neither the accountants nor the investing public should place an unreasonable demand for "exactness."

Therefore, it has been shown that valuation of the conversion option of convertible bonds is mandatory in order: (1) to account for the economic elements present in the debt-equity package, (2) to charge the operations of the period
with the actual cost of the funds used, and (3) to comply with the distinction between a liability and owners' equity necessary for proper reporting. The study also indicates that the valuation problem could be solved with the cooperation of the financial analysts and the investment bankers.

The only segment of the study that does not strongly support allocation is the use of accounting data for predicting the movement of stock prices. However, the results of this test indicate there is no significant difference as a result of allocation, therefore, even the empirical approach does not negate the overall conclusions.

The evidence also indicates that the discount resulting from allocation should be classified on the balance sheet as a liability valuation account, and the value of the conversion privilege, itself, should be classified as part of contributed capital. This balance sheet presentation discloses the economic effects of the transaction and clearly describes the effects of the conversion feature on the debt element. In addition, a footnote will be necessary to fully explain the conversion option.

The process of allocation of value to the conversion right of convertible debt will result in the need to adjust the earnings per share computation. Opinion No. 15 requires an "if converted" treatment for convertible bonds if the cash yield of the security is less than two-thirds of the prime interest rate at the time of issuance. The procedure recommended in this study must supersede this provision and
allow primary earnings per share to be influenced only by the amortization of the resulting discount. However, it would be necessary to continue the fully diluted computation as it presently stands—the assumption of the conversion of all convertible debt.

One advantage from this procedure will be the elimination of the arbitrary test for convertible debt that currently exists for earnings per share. In addition, it would also allow primary earnings per share to be "more representative" of the "actual" situation that exists at the end of the period, and fully diluted to be a pro forma computation.

This allocation procedure would allow the effects of issuance of convertible bonds to be recognized in both figures, whereas the current procedure (the two-thirds test) generally excludes most convertible debt from any consideration in primary earnings per share.¹¹

RECOMMENDATIONS FOR FURTHER RESEARCH

The results of this study clearly point out several major areas of consideration for future analysis. The most important of these in so far as convertible debt is concerned is the measurement of the conversion option. While it was concluded that investment bankers could develop an acceptable figure, it was generally conceded that there is a great deal

of subjectivity in the analysis. Since this was one of the major arguments against valuation of the conversion option, more research is needed in this area in order to quantify the procedures as much as possible.

The need for more research in the area of liabilities in general was mentioned in Chapters 1 and 3. The definition prescribed in Statement No. 4\(^{12}\) should be viewed as a temporary measure until the concept can be studied in detail for all items in that classification. This definition fulfills the requirements for convertible bonds, but there was no attempt to apply it to other problems in this area. Therefore, additional research is needed in order to develop a workable definition of a liability as a balance sheet classification in general.

It was also mentioned in Chapter 3 that the valuation of a bond using the market rate of interest in existence at the time the bonds are issued has been accepted as a means of implementing the historical cost concept, and therefore, use of the term structure of interest rates, by implication, is a deviation from the cost approach. However, since other areas of deviation from cost have been explored in recent years, it is suggested that some research be directed toward the implementation of this concept.

Another area in need of future study lies in the

\(^{12}\)Accounting Principles Board, *Statement No. 4*, op. cit., p. 50.
actions of the Board. There is currently a great deal of research into the area of the development of accounting principles, and in some instances the future of the Accounting Principles Board, as it is known today, is in jeopardy. However, no matter what form of leadership is used, some provision for the future study of a problem, in depth, should be made before any definitive position has been taken. In several instances the Board has had a great deal of difficulty implementing its decisions, and part of this has resulted from the lack of independent study. Of course there is also the part that has been the result of yielding to external pressure as was the case of convertible debt. Thus something needs to be done in this area, and it should not be implemented without a concentrated effort at objective study.
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Commitees on Accounting Procedure and Accounting Terminology. 
Accounting Research and Terminology Bulletins. Final ed. 


ANNUAL REPORTS, PROSPECTUSES 
AND OTHER DATA

Companies Used in the Empirical Study

AMF Incorporated
Brunswick Corporation
Combustion Engineering, Inc.
Copperweld Steel Company
FMC Corporation
Fruehauf Corporation
Scott Paper Company
Sybron Corporation
Thriftimart, Inc.
Union Oil Company of California

Others

Airlift International, Inc.
Armstrong Rubber Company
Bangor Punta Corporation
Components, Inc.
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VITA

Gordon Adolph Hosch, son of Mr. and Mrs. Adolph G. Hosch, was born in New Orleans, Louisiana, on August 5, 1941. He attended public elementary and secondary schools in New Orleans.

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EXAMINATION AND THESIS REPORT

Candidate: Gordon A. Hosch

Major Field: Accounting

Title of Thesis: Empirical and Theoretical Aspects of Accounting for the Issuance of Convertible Debt

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Date of Examination:

May 11, 1972