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FEDERAL MARITIME COMMISSION

46 CFR PART 552

[DOCKET NO. 94 - 07]

FINANCIAL REPORTING
REQUIREMENTS AND RATE OF RETURN METHODOLOGY
IN THE DOMESTIC OFFSHORE TRADES

AGENCY: Federal Maritime Commission.

ACTION: Proposed Rule.

SUMMARY: The Federal Maritime Commission proposes to amend its regulations governing financial reporting requirements and rate of return methodology applicable to vessel-operating common carriers by water in the domestic offshore trades to discontinue use of the comparable earnings test in determining the reasonableness of a carrier's return on rate base. In its place, the Commission proposes to use the weighted average cost of capital methodology. In addition, the Commission proposes to amend its rules pertaining to the treatment of insurance expenses, accumulated deferred taxes and the Capital Construction Fund for purposes of calculating a carrier's rate base. The proposed rule addresses a number of shipper and carrier concerns regarding the Commission's current rate of return methodology and would align the Commission's ratemaking methodologies more closely with those used by numerous other regulatory agencies. The intent is to improve the Commission's methodology for evaluating the reasonableness of rates filed by carriers in the domestic offshore trades and for acquiring the data that are

essential to that evaluation.

DATES: Comments due [Insert date sixty (60) days after date of publication in the Federal Register].

ADDRESS: Comments (original and fifteen copies) to:

Joseph C. Polking, Secretary
Federal Maritime Commission
800 North Capitol Street, N.W.
Washington D.C. 20573-0001
202-523-5725

FOR FURTHER INFORMATION CONTACT:

Richard J. Kwiatkowski
Bureau of Trade Monitoring and Analysis
Federal Maritime Commission
800 North Capitol Street, N.W.
Washington D.C. 20573-0001
202-523-5790

C. Douglass Miller
Office of the General Counsel
Federal Maritime Commission
800 North Capitol Street, N.W.
Washington D.C. 20573-0001
202-523-5740

SUPPLEMENTARY INFORMATION:

On March 11, 1993, the Federal Maritime Commission ("FMC" or "Commission") published a final rule in Docket No. 91-51, *Financial Reports of Common Carriers by Water in the Domestic Offshore Trades*, which amended the provisions under which carriers could obtain waivers of certain financial reporting requirements. 58 FR 13, 414. (1993) ("Docket No. 91-51"). The Commission stated that it intended "...to turn its attention, separately, to the numerous other substantive changes to 46 CFR Part 552 that have been suggested in this

proceeding." *Id.* at 13,417.¹ In this regard, the Commission conducted an extensive review of Part 552 to assess the need for changes to its financial reporting requirements and rate of return methodology in the domestic offshore trades.

Based on its review, the Commission has determined that several issues regarding the adequacy and appropriateness of various aspects of its present regulations should be addressed. The issues on which the Commission is proposing changes to existing regulations include:

- The FMC's methodology for computing an allowable rate of return on rate base.
- The treatment of deferred taxes and the Capital Construction Fund for rate base purposes.
- The definition of working capital.

Each of these issues is discussed in turn below.² Also discussed are the rules governing the allocation of assets and expenses, but no changes are proposed.

COMPUTING AN ALLOWABLE RATE OF RETURN ON RATE BASE

I. The Allowable Rate of Return Should Equal the Cost of Capital

The fundamental objective when using a rate of return on rate base method of

¹ In its Advance Notice of Proposed Rulemaking issued in Docket No. 91-51, 56 FR 57298, the Commission had solicited comments and information from the public on issues which could be addressed in a proposed rule concerning substantive guidelines for determining what constitutes a just and reasonable rate of return or profit for common carriers by water in the domestic offshore trades.

² Copies of the proposed new schedules for collecting the data required under the proposed regulations are available from the Secretary, Federal Maritime Commission.

regulation is to set a regulated firm's maximum allowable rate of return on rate base equal to the regulated firm's cost of capital. The cost of capital, sometimes referred to by economists as "the opportunity cost of capital" or "the required rate of return," is the minimum rate of return necessary to attract capital to an investment. It is the expected rate of return prevailing in capital markets on alternative investments of equivalent risk.³ The bases for setting the allowable rate of return equal to the cost of capital are legal and economic.

A. Legal Rationale

Two landmark Supreme Court cases defined the legal principles underlying rate of return regulation and provided the notion of a fair rate of return. The two cases, *Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923) and *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 391 (1944), established that investors in companies subject to rate regulation must be allowed an opportunity to earn returns sufficient to attract capital and comparable to those they would expect from investments in other firms for incurring the same amount of risk, and that revenues must not only cover operating expenses, but capital costs as well.

B. Economic Rationale

The economic rationale for setting the allowable rate of return of a regulated enterprise equal to its cost of capital is that the regulated firm's customers will thereby pay

³ A. Lawrence Kolbe, James A. Reed, Jr., and George R. Hall, *The Cost of Capital*, 3rd Printing, The MIT Press, Cambridge, Massachusetts, 1986, p. 13.

the lowest cost for service in the long run.⁴ For example, if a regulator sets the allowable rate of return above the cost of capital, the firm's stockholders will realize earnings in excess of those they could earn on alternative investments of comparable risk. Such excess earnings are paid for by the firm's customers in the form of prices higher than those that they would otherwise be required to pay. If, on the other hand, a regulator sets the allowable rate of return below the cost of capital, stockholders will realize earnings less than they could on alternative investments of comparable risk. In the short run, the firm's customers may benefit because they pay prices lower than those they would otherwise be required to pay. In the long run, however, the firm's stockholders will be unwilling to continue to invest their funds, and the firm will, therefore, lack the requisite financial capital for maintaining and augmenting the firm's physical plant and equipment. Customers, in turn, will be supplied with a lesser quantity and/or quality of service.

C. Methodologies

The Commission uses a version of the Comparable Earnings Test ("CET") to determine the reasonableness of rates of return. The carrier's projected rate of return ((net income after taxes + interest expense) / rate base⁵) is compared with the rate of return on total capital earned by U.S. manufacturing firms over an extended period of time -- the

⁴ Setting the allowable rate of return equal to the cost of capital also ensures that society's supply of capital is used most productively. Because capital markets are considered to be highly competitive, the cost of new capital is an accurate gauge of that capital's value in alternative uses. When the allowable rate of return is greater than the cost of capital, investors will supply too much capital to a regulated firm, thereby diverting capital from alternative investments where it could be more productive. Conversely, when the allowable rate of return is less than the cost of capital, investors will supply too little capital to a regulated firm, thereby allocating funds to less productive investments. Such a misallocation of resources represents a welfare loss for society as a whole.

⁵ Rate base is a carrier's investment in Commission-regulated activities. It consists of investments in vessels less accumulated depreciation, other property and equipment less accumulated depreciation, and working capital.

benchmark rate of return. Where appropriate, adjustments are made to the benchmark for current trends in rates of return, the cost of money and relative risk.

However, most regulatory agencies use the Weighted Average Cost of Capital ("WACC") methodology to set allowable rates of return, including, for example the Federal Energy Regulatory Commission, the Interstate Commerce Commission ("ICC"), the Federal Communications Commission, and the Maryland Public Service Commission. Indeed, the most recent yearbook published by the National Association of Regulatory Commissioners shows that virtually every state regulatory commission in the U.S. uses some variation of the WACC.⁶ Further, current economic literature recognizes the WACC approach as the most generally accepted method of setting allowable rates of return.

The WACC approach recognizes that there are several methods by which a firm may raise capital and each has its attendant cost. Typically, the total capital of a firm has come from three different sources, long-term debt, preferred stock⁷ and common-stock equity. Thus, the total capital of a firm may have a debt component, a preferred stock component and a common-stock equity component. Under the WACC methodology,⁸ the cost of each of these components is calculated separately and weighted by the proportion the component

⁶ See "Table 47 - Agency Authority Over Rate Of Return - All Utilities," in *Utility Regulatory Policy in the United States and Canada Compilation 1992-1993*, National Association of Utility Regulatory Commissioners ("NARUC"), Washington D.C., 1993, pp. 110-111.

⁷ Preference stock, also known as prior-preferred stock, is preferred stock that has a higher claim than other issues of preferred stock on dividends and assets in liquidation.

⁸ Charles E. Phillips, Jr., *The Regulation of Public Utilities*, 3rd ed., Public Utilities Reports, Inc., Arlington, Virginia, 1993, p. 388.

is to the total capital of the firm.⁹

To illustrate the calculation of the WACC, consider a hypothetical regulated company that has total invested capital of \$100 million, consisting of \$25 million of long-term debt, \$15 million of preferred stock, and \$60 million of common-stock equity. Assume that the firm's cost of long-term debt is 7 percent, cost of preferred stock is 9 percent, and cost of common-stock equity is 12 percent. Further, assume that the firm operates in a world where corporate taxes do not exist. The WACC for this firm is calculated as follows:

CALCULATION OF WACC¹⁰

<u>Capital Component</u>	<u>Amount (Millions of \$)</u>	<u>Proportion (%)</u>	<u>Cost (%)</u>	<u>WACC (%)</u>
Long-term debt	25	25	7	1.75
Preferred stock	15	15	9	1.35
<u>Common-stock equity</u>	<u>60</u>	<u>60</u>	12	<u>7.20</u>
Total	100	100		<u>10.30</u>

Thus, given the assumptions of this example, the WACC is 10.30 percent. The allowable

⁹ Short term debt that has become a permanent portion of the regulated firm's financing is also included in the computation. Deferred taxes are included at zero cost (unless they have been deducted from rate base).

¹⁰ The algebraic expression for the overall cost of capital or the WACC, is as follows (ignoring taxes):

$$WACC = \left(\frac{D}{D+P+E}\right)K_d + \left(\frac{P}{D+P+E}\right)K_p + \left(\frac{E}{D+P+E}\right)K_e$$

where:

- K_d is the regulated firm's cost of long-term debt capital;
- K_p is the regulated firm's cost of preferred stock capital;
- K_e is the regulated firm's cost of common-stock equity capital;
- D is the value of the regulated firm's long-term debt outstanding;
- P is the value of the regulated firm's preferred stock outstanding; and
- E is the value of the regulated firm's common-stock equity outstanding.

rate of return for this hypothetical company should, therefore, be set at 10.30 percent, which would provide the firm with the opportunity to earn revenues sufficient to service the company's overall cost of capital.¹¹

The costs of long-term debt and preferred stock capital may be calculated with relative precision. For the debt component, this is done by computing the actual total annual fixed charges on long-term debt for all issues, including any amortized discount or premium and issuance expense. The total annual fixed charges are then divided by the actual total value of long-term debt outstanding for all issues in order to arrive at the cost of debt stated as a percentage. For example, if the annual fixed charges on long-term debt are \$1,750,000 and the total long-term debt outstanding is \$25 million, the cost of debt would be 7 percent ($\$1,750,000/\$25 \text{ million} = .07$).

The cost of preferred stock is calculated in similar fashion. The actual total annual dividend requirements on the preferred stock for all issues is divided by the actual total value of preferred stock outstanding for all issues in order to arrive at the cost of preferred stock stated as a percentage. For example, if the actual total annual dividend requirements amounted to \$1,350,000 and the total value of outstanding preferred stock is \$15 million, the cost of preferred stock would be 9 percent ($\$1,350,000/\$15 \text{ million} = .09$).

The calculation of the cost of common stock equity capital, the third component of the WACC, is more difficult. Commonly used methods are the Discounted Cash Flow ("DCF"), the Capital Asset Pricing Model ("CAPM") and the Risk Premium ("RP"). Each

¹¹ In reality, a regulated firm typically does pay taxes, and the WACC must be adjusted to arrive at a final number for an allowable rate of return. Such adjustment is made by calculating the WACC on a before-tax basis ("BTWACC"). The BTWACC is described in detail later.

of these models is based on market variables (*e.g.*, stock market prices and bond yields) which reflect the expectations of investors in capital markets. More specifically, the DCF, CAPM and RP models are constructed under the generally accepted assumption that a company's stock market price at any moment in time reflects completely investors' current expectations. Because these market-based models are designed to reflect the expectations of investors, and because a company's cost of capital is defined as the rate of return expected by investors on alternative investments of equivalent risk, the WACC framework implemented through the use of such models will, in general, equate the allowable rate of return with the cost of capital.

II. The Commission's Comparable Earnings Test Compared to the WACC

A. Theoretical Issues

The Commission has used its variation of the CET in a number of rate investigations. Commission orders adjudicating the reasonableness of rate increases under the CET have been repeatedly upheld by the courts. *E.g.*, *Matson Navigation Company, Inc. v. FMC*, 959 F.2d 1039 (D.C. Cir. 1992); and *Puerto Rico Maritime Shipping Authority v. FMC*, 678 F.2d 327 (D.C. Cir.), *cert. denied*, 459 U.S. 906 (1982). However, the Commission's CET does present a theoretical shortcoming compared to the WACC method, in that it is unlikely to equate the allowable rate of return with the cost of capital, because it uses historical accounting data to calculate an average book value¹² rate of return that the regulated carrier should be allowed.

The accounting rate of return for a company is not equivalent to the firm's true

¹² Book value means the value at which an asset is carried on a balance sheet.

economic rate of return because accounting and economic concepts of income and value are substantially different. Accounting numbers are derived on the basis of generally accepted accounting principles while economics specifies the use of opportunity costs. This difference is particularly acute when the economy is characterized by high and variable rates of inflation. For example, accountants define asset values in terms of acquisition or historical costs while economists define asset values on the basis of market values or replacement costs. This distinction affects both the income statement as well as the balance sheet. Consequently, an accounting-based rate of return methodology such as the Commission's CET does not adequately measure a regulated carrier's true cost of capital. In Docket No. 91-51, the State of Hawaii noted the problems associated with using accounting data and criticized the Commission's CET for being accounting-based and not market-based.

Several empirical tests have demonstrated that there is a large discrepancy between accounting rate of return and true economic return.¹³ These studies also demonstrate that biases inherent in book returns are systematic, and that these biases do not cancel out by averaging across companies. Furthermore, the type and magnitude of bias for regulated firms are different than those of unregulated firms contained in the comparable risk group of firms selected in applying the Commission's CET method.¹⁴

¹³ See, for example, Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits," 73 Am. Econ. Rev. 82-97, March 1983; and Richard Brealy and Stewart C. Myers, *Principles of Corporate Finance*, New York: McGraw-Hill, Chapter 12, 1981.

¹⁴ Regulators (including the FMC) commonly set rates on the basis of a book value rate base. In such instances, the economic (*i.e.*, market) value of a regulated firm will tend to be closer to its book value in comparison to the economic values and book values of the unregulated firms contained in the proxy group. The book returns of the unregulated firms are, therefore, likely to be substantially more biased than those of the regulated firm under consideration.

B. Practical Issues

The WACC approach also presents some important technical advantages. First, the WACC uses the actual long-term interest expense currently provided by a regulated carrier to compute the company's cost of long-term debt capital, while the Commission's CET uses an estimate of a carrier's long-term interest expense based on moving averages of Baa-rated corporate bond yields in computing an allowable rate of return on rate base. By definition, a firm's actual long-term interest expense is more accurate than an estimate of that expense. In its comments in Docket No. 91-51, the State of Hawaii stated that the Commission's CET introduces imprecision into the calculation by requiring that parties substitute a proxy for carrier interest expense as a component of the carrier's rate of return, although this component is known and subject to verification.

Second, the WACC, when implemented properly, ensures that the regulated carrier will be allowed a return on rate base that is large enough to ensure that the carrier will have the opportunity to earn, at a minimum, revenues that are sufficient to cover its embedded (actual historical) cost of debt. Assuming that debt capital financing is less expensive than preferred stock and common-stock equity capital financing, when the *known* cost of long-term debt is weighted by the regulated company's proportion of long-term debt capital outstanding, and then added to the firm's cost of preferred stock weighted by the firm's proportion of preferred stock capital outstanding and the firm's cost of common-stock equity capital weighted by the firm's proportion of common-stock equity capital outstanding, the resulting sum (*i.e.*, the WACC) can be no less than the cost of the firm's embedded cost of debt. Such a guarantee is not available under the Commission's CET, as Matson Navigation

Company, Inc. ("Matson"), has pointed out. For example, if the long-term interest expense estimate, derived on the basis of a moving average of historical Baa corporate bond yields, is not representative of the actual long-term interest expense of the regulated carrier, or if the historical financial data reflecting the financial picture of the benchmark group of firms are not representative of the regulated carrier's financial position, then the regulated carrier's calculated allowable rate of return on rate base could fall short of its embedded cost of debt.

Third, the Commission's CET has proved difficult to apply in the case of the Puerto Rico Maritime Shipping Authority ("PRMSA"), which has a capital structure composed entirely of long-term debt and by law is not required to pay taxes. On the other hand, the WACC can be used effectively to establish an appropriate allowable rate of return for such a carrier. The WACC is computed for such a carrier by weighting the cost of long-term debt near or equal to one, the cost of preferred stock near or equal to zero, and the cost of common-stock equity near or equal to zero, and setting the corporate tax rate equal to zero. The WACC can be used effectively to compute an accurate estimate of the overall cost of capital and, in turn, to establish an appropriate allowable rate of return for a regulated carrier that is financed exclusively or almost completely by long-term debt¹⁵ and is tax-exempt, because it distinguishes between such a carrier and one that is financed with substantial amounts of common-stock equity and is not tax-exempt. In its comments in Docket No. 91-51, PRMSA observed that the Commission's CET makes no such distinction because it uses as a benchmark for every regulated carrier, regardless of actual capital

¹⁵ A profitable firm will generally have at least some amount of common-stock equity capital in its capital structure because such a firm will usually have an internal source of such capital in the form of retained earnings.

structure or tax status, a typical firm financed with a relatively balanced mixture of long-term debt and common-stock equity capital, and is not tax-exempt.

Lastly, the WACC method typically uses a number of different methods to calculate the regulated firm's cost of common-stock equity capital. This yields several different estimates of the firm's WACC providing a regulatory commission with a range of numbers from which a single number representing an allowable rate of return on rate base can be chosen. This minimizes the possibility that the allowable rate of return will be distorted by inappropriate subjective judgements or by extraordinary economic conditions existing during the time period used to measure that return. By comparison, the Commission's CET produces a single measure of an allowable rate of return.

On the basis of its review, the Commission has determined to propose the use of the WACC methodology to evaluate the reasonableness of a carrier's rates in the domestic offshore trades. The Commission believes that the WACC approach set forth in the proposed rule represents a substantial improvement over the existing methodology and addresses the criticisms voiced in comments in Docket No. 91-51. We now turn to the proposed rule.

III. Estimating the Weighted Average Cost of Capital

A. Capital Structure

The first step in calculating the WACC is to determine an appropriate capital structure (*i.e.*, the proportions of long-term debt, preferred stock, and common-stock equity capital issued by a firm to finance its operations) for the regulated firm. There are two important issues that may have to be resolved. The first is whether to calculate the WACC

using a "typical" or "ideal" capital structure as some regulatory commissions do, or the actual capital structure or that expected in the near future, as others do. The second issue concerns the situation where the regulated company is a subsidiary of a parent company. The issue is whether to use the capital structure of the subsidiary or that of the consolidated system (*i.e.*, the parent company and all of its subsidiaries) in computing the WACC.

1. Hypothetical Versus Actual Capital Structure

The WACC may be much lower when the proportion of debt contained in a company's capital structure is relatively high compared to common-stock equity. This is because the interest rate on debt is usually much lower than the cost of common-stock equity.¹⁶ In addition, debt costs the firm and the ratepayer less than equity because equity earnings are subject to income taxes and debt is not. The revenue that a company is allowed to earn on its common-stock equity is increased by amounts added to that revenue for the purpose of paying income taxes. By contrast, since interest is deductible for income tax purposes, earnings to cover debt costs are computed before any income tax calculations, and are not subject to income tax. Consequently, within limits determined by such factors as the risk of a business, the WACC may be lower and ratepayers may pay less when the firm employs a relatively large proportion of debt than when it uses a relatively large proportion of equity. Given this differential, some regulatory commissions compute the

¹⁶ There are two reasons for this: (1) debtholders have priority over equityholders as to the remaining assets of the firm in the event that the firm is liquidated; and (2) debtholders must be paid their contractual level of interest (*i.e.*, their coupon payment) before equityholders receive any compensation (*i.e.*, dividend payments). A company may reduce or eliminate dividend payments to equityholders in the event that it is under financial strain. However, it is far less likely that coupon payments will be eliminated because this could result in bankruptcy if the firm does not take corrective action. Equityholders, therefore, require a higher return than do debtholders. Consequently, it costs a firm more to issue common-stock equity than it does to issue debt. The more expensive common-stock equity financing could be borne by ratepayers in the form of higher rates.

WACC using what they believe to be the "typical," or "ideal," capital structure without regard to the actual capitalization of the regulated company in question. Other regulatory commissions base their WACC estimates on either the actual capital structure, or that expected in the near future when rates to be decided will be in effect.

There are strong reasons for using a regulated carrier's actual or expected capital structure rather than the alternative of a hypothetical or ideal capital structure in calculating the carrier's WACC. First, a regulated company's current capital structure could be the product of decisions that were logical and efficient at the time they were made, although a different capitalization might be consistent with a lower WACC at the time of a rate investigation and hearing. Although hindsight is always more accurate than foresight, a company must make financial decisions based on an evaluation of the present and projections of future conditions.¹⁷ Second, using a hypothetical or typical capital structure substitutes an estimate of what the WACC *would be* under conditions that do not exist for what it *actually* is or *will soon be* under existing conditions.¹⁸

Accordingly, the Commission's proposed rule specifies the use of a regulated domestic offshore carrier's expected capital structure in computing the carrier's WACC. The proposed rule stipulates the use of the expected rather than the actual capital structure because the Commission uses a future instead of a historic test year.

¹⁷ Charles E. Phillips, *supra* note 4, at 390.

¹⁸ James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, *Principles of Public Utility Rates*, 2nd ed., Public Utilities-Reports, Inc., Arlington, Virginia, 1988, p. 309.

2. Subsidiary Versus Consolidated Capital Structure

Where a regulated company is a wholly-owned subsidiary which obtains its common-stock equity capital through a parent company, regulators often use the capital structure of the consolidated system (*i.e.*, the parent company and all of its subsidiaries) in computing the WACC. The consolidated capital structure is an appropriate capitalization to use in calculating a regulated subsidiary's WACC when: (1) no substantial minority interest in the subsidiary exists (*i.e.*, the regulated subsidiary is wholly-owned by a parent company or nearly so), and (2) the risks are similar between the parent and subsidiary.¹⁹ In such a situation, investors' appraisals of the parent company's common stock are thought to represent the best measure of the current cost of common-stock equity to the subsidiary.²⁰

When the consolidated capital structure is used, the consolidated system's cost of common-stock equity capital (issued by the parent company), the consolidated system's cost of preferred stock, and the consolidated system's cost of long-term debt, rather than the respective capital component costs of the regulated subsidiary, are also used because the consolidated capital structure directly affects the capital component costs of the consolidated

¹⁹ The use of the consolidated capital structure differs from the "double leverage" concept used by some expert witnesses. The latter approach uses the parent company's WACC as a measure of the subsidiary's cost of common-stock equity capital along with the subsidiary's capital structure, the subsidiary's cost of preferred stock, and the subsidiary's cost of debt. Those that favor the use of such a method cite the advantage of using the actual data of the subsidiary for which an allowable rate of return is being computed. The merits of the approach are highly debatable, however, since it could produce an estimate of the cost of common-stock equity capital for the regulated subsidiary that is lower than the opportunity cost of such capital when the subsidiary is more risky than the parent, and an estimate that is higher when the subsidiary is less risky. The Commission's proposed rule does not, therefore, rely on the double leverage method of calculating the WACC for a regulated subsidiary company.

²⁰ J. Rhoads Foster, "Fair Return Criteria and Estimation," 28 *Baylor L. Rev.* 889 (1976), in Charles E. Phillips, *supra* note 4, at 392.

system and not those of the subsidiary.²¹ The use of the regulated subsidiary's capital component costs is inconsistent with the use of the consolidated system's capital structure and could, therefore, distort the WACC estimate obtained for the regulated subsidiary.

The use of the consolidated capital structure is not correct, however, when a substantial minority interest in the regulated subsidiary exists, or when the regulated subsidiary's risk differs substantially from that of the parent company. The appropriate approach in this situation is to ignore the parent-subsidiary relationship and to estimate the subsidiary's WACC using the subsidiary's own capital structure and capital component costs. This method, referred to as the "stand alone" or "subsidiary approach," recognizes the subsidiary as an independent operating company, and its cost of common-stock equity capital is inferred as the cost of common-stock equity of firms having risk comparable to that of the subsidiary.²² The basis for this method is that the required return on an investment depends on its risk (*i.e.*, the subsidiary's risk) rather than on the parent's financing costs. In short, this method emphasizes the use, rather than the source, of the subsidiary's capital funds.

The Commission's proposed rule specifies that a subsidiary carrier's capital structure

²¹ To see how a company's capital structure could affect its component capital costs, consider, for example, the case of a heavily-leveraged company (*i.e.*, one that has a relatively large proportion of debt in its capital structure). Such a company could be perceived by current and potential debtholders and equityholders as having a relatively high probability of bankruptcy (in which case coupon and dividend payments would be discontinued and the possibility that principal could also be lost would be heightened) and, therefore, as being a relatively high risk investment. Debtholders and equityholders would require a return on their investment funds that is commensurate with the relatively high risk of such a company in order for them to be willing to purchase and hold the company's debt and common stock. A heavily leveraged firm could, therefore, have relatively high costs of debt and common-stock equity capital.

²² The issue of selecting an appropriate sample of firms having risk similar to that of the regulated company under consideration is explored in detail below.

is to be used in computing the WACC unless, after notice and opportunity for comment, the Commission determines that: (1) the subsidiary carrier's parent company issues publicly-traded common-stock equity; (2) no substantial minority interest in the subsidiary carrier exists; and (3) risks are similar between the subsidiary carrier and the parent company. Under the proposed rule, no substantial minority interest in a subsidiary carrier exists when a parent company owns 90 percent or more of the subsidiary's voting shares of stock. It also must be demonstrated that both the business and the financial risks facing the parent and subsidiary are similar.²³

Such an evaluation may involve a comparison of such financial risk measures as total capitalization and debt-to-equity ratios, investment quality ratings on short-and long-term debt instruments, and coverage ratios such as the times interest earned and fixed charges coverage ratios.²⁴ There must also be an assessment of the degree to which the regulated subsidiary comprises the parent's holdings. To the extent that a subsidiary accounts for a substantial majority of the consolidated system's revenues, expenses, and profits, the business risks of the parent and subsidiary would, in general, be the same. However, where a

²³ Business risk is the variability that a company's internal (*e.g.*, the skill levels and salaries of employees) and external (*e.g.*, the number of competitors) operating variables impart to the earnings available to investors because of the fundamental nature of the company's business.

Financial risk is the additional variability that debt and preferred stock financing impart to the earnings available to common-stock equityholders.

²⁴ Times interest earned ratios ("TIER") measure the extent to which operating income can decline before a firm is unable to meet its annual interest costs. TIER is computed by dividing a firm's earnings before interest and taxes by the firms' annual interest expense.

The fixed charges coverage ratio ("FCCR") measures the ability of a firm to satisfy all of its fixed obligations. FCCR is computed by dividing the total of net income, interest expense, depreciation and amortization expense, and the provision for income taxes, by fixed charges. Fixed charges are the total of interest expense, principal payments, and capital lease obligations.

parent's holdings are diversified into areas of business unrelated to the regulated subsidiary, the business risks of the parent and of the subsidiary are more likely to differ.

Accordingly, the Commission's proposed rule states that the Commission shall consider some or all of the aforementioned business and financial risk criteria in determining whether to approve the use of a consolidated system's capital structure and component costs in computing the subsidiary's WACC.

Other measures of business and financial risks may also be used in comparing the risk of a parent with the risk of a subsidiary. These could include those discussed later for selecting an appropriate proxy group of firms.

3. Book Value Versus Market Value Capitalization Ratios

Another capital structure issue is whether to use market or book values in computing the capitalization ratios (*i.e.*, the weights) in the WACC formula. Technically, capitalization ratios should be computed on the basis of market value. A capital structure computed on the basis of historical (*i.e.*, book values) as opposed to current market values misrepresents the true capital structure over time, since price levels fluctuate. The common practice is, nevertheless, to compute capitalization ratios on the basis of book values. This is defended on grounds that a regulated firm supposedly raises capital in such a fashion that a target capitalization ratio expressed on the basis of book values is maintained by the company. Consequently, regulators must compute the firm's overall cost of capital on the same basis in order to ensure that the company's capital costs are adequately covered. In addition, book value capitalization ratios are stable and the regulator is, therefore, not required to deal with the uncertainties associated with volatile market weights. Further, effective

regulation is said to force book and market values toward equality. Accordingly, the Commission's proposed rule requires the use of book value capitalization ratios in computing the WACC.

4. Average Versus Year-End Capital Structure

Finally, there is the issue of whether a year-end or average capital structure should be used in computing the WACC. The fact that financial variables and ratios are commonly stated on an average basis argues in favor of using an expected average capital structure projected over a future test year, rather than a year-end capital structure. Earnings per share, for example, are typically expressed on the basis of average number of shares outstanding. Equity returns are also frequently expressed on the basis of average common-stock equity. In addition, an average capital structure computed over a future test year is likely to represent the company's capital structure during the time interval in which a proposed general rate increase will be in effect better than a year-end capital structure, because the company could acquire new capital from, or return existing capital to, investors during that period of time. The use of an average capital structure rather than a year-end capital structure is, therefore, more likely to enable a regulated firm to actually earn its allowable rate of return. Accordingly, the Commission's proposed rule specifies the use of test-year average²⁵ book value capitalization ratios in computing the WACC.

²⁵ Such average ratios are computed using the average amount of each capital component (expected to be) outstanding during the test year. The average test year amount outstanding for any class of capital is computed by adding the amount of a particular type of capital (expected to be) outstanding at the beginning of the test year to the amount of that same type of capital (expected to be) outstanding at the end of the test year, and dividing the sum of the two amounts outstanding by two.

B. Annual Cost of the Capital Components

Determining the cost of the regulated firm's senior capital (*i.e.*, debt and preferred stock) and common-stock equity is the second step in estimating the WACC. The costs of each of these components are then applied to the capital structure (*i.e.*, each is weighted on the basis of the proportion of the value of the total capital outstanding that each represents) in order to determine the WACC.

1. Cost of Senior Capital

There are usually few problems encountered in computing the cost of senior capital with precision. Regulatory commissions traditionally compute cost of senior capital on the basis of embedded (actual historical) cost. This is done by first computing the actual total annual fixed charges on long-term debt, including any amortized discount or premium and issuance expense, and the actual total annual dividend requirements on the preferred (and preference) stock for all issues on a dollar basis. These dollar figures are then converted to a percentage by dividing the actual total annual fixed charges on long-term debt by the actual total value of long-term debt outstanding, and the actual total annual preferred stock dividend requirements by the actual total value of preferred stock outstanding for all issues. If a future (rather than a historical) test year is used (as the FMC does), the cost of senior capital is calculated on the basis of: (1) the embedded cost for the existing long-term debt and preferred stock, and (2) the current cost for any new long-term debt and preferred stock that the regulated firm anticipates issuing on or before the final day of the projected test year.

The embedded cost is used to calculate the cost of existing senior capital in order to

determine what the senior capital will cost the firm today, in view of the fact that the majority of it was issued at prior points in time, and under bond and stock market conditions that could have differed substantially compared to those prevailing today. The objective is not to determine what the existing senior capital would cost if issued today. Rather, the embedded debt cost measures precisely what the regulated firm needs to satisfy its contractually required interest payments to those holding existing long-term debt, and preferred-dividend payments to those holding existing preferred stock. The current cost of bonds and preferred stock is, therefore, estimated only to measure the cost to the regulated firm when such senior securities are to be issued in the near future.

2. Cost of Common-Stock Equity Capital

The most critical problem in determining the WACC is that of estimating the cost of common-stock equity capital. The objective is to determine how much the regulated firm is required to earn in order to be able to entice investors into purchasing and holding its common-stock equity. A precise answer to this question is difficult to arrive at due to the absence of any expressed or fixed agreement as to the level of dividends that are to be paid by the regulated firm to its common-stock equityholders. Dividend payments, on the one hand, depend upon the profits of the regulated company. The allowable amount of profits, on the other hand, is the object of a rate investigation and hearing. A regulator, in allowing a fair rate of return, does not, therefore, have any predetermined gauge as to the level of profit and common-stock equity dividends required by investors.

There are five major methods used to estimate the cost of common-stock equity

capital: DCF, RP, CAPM,²⁶ Market-to-Book Ratio ("MBR"), and Comparable Earnings ("CE").²⁷ The DCF, CAPM, RP, and MBR methods are market-based approaches that emphasize the standard of capital attraction articulated in *Hope* and *Bluefield* by examining investors' expectations of the regulated firm's profits, dividends, and *market* prices. The CE method emphasizes the comparable earnings standard specified by those cases by estimating the return on *book* common-stock equity of firms having risk similar to that of the regulated firm under consideration. The five methods are reviewed in turn.

a. **Discounted Cash Flow Method**

The DCF method of estimating the cost of common-stock equity is the technique that is used with the greatest frequency by state and federal regulatory commissions and agencies. Its popularity reflects the intuitive appeal of the DCF model with its basis in valuation theory. That theory holds that the current market price of a common stock is equal to the present value of its expected future dividend payments plus the proceeds that an investor would expect to receive when the common stock is finally sold. Because the value of an amount of money to be received in the future is less than the value of the same amount of money received today,²⁸ the expected value of the future dividends and ultimate proceeds must be discounted back to the present at the investor's required rate of return

²⁶ The CAPM is actually a specific type of RP model.

²⁷ The CE method is used by regulatory commissions traditionally to calculate the regulated firm's cost of common-stock equity capital. This approach differs significantly from the comparable earnings test currently used by the FMC, which estimates the rate of return on total invested capital (*i.e.*, on long-term debt and common-stock equity) of the regulated carrier under consideration.

²⁸ The value of a dollar received today is greater than that of a dollar received a year from today, for example, because today's dollar can be invested and begin to earn a rate of return immediately.

in computing the present value of a common stock. The most basic mathematical representation of this concept assumes that (1) dividends grow at a constant annual rate, and (2) that an investor will hold the common stock forever. The latter assumption implies that the value of the stock depends solely on the dividends that are expected to be paid. The basic DCF model is expressed algebraically as follows:

$$P_0 = \frac{D_1}{K_e - g}$$

where:

P_0 is the current market price per share of the regulated company's common stock;
 D_1 is the dividend to be received at the end of year 1 (mathematically $D_1 = D_0(1+g)$, where D_0 is the current dividend);

K_e is the required or expected return on the regulated firm's common-stock equity capital (*i.e.*, the cost of common-stock equity capital); and
 g is the constant expected annual rate of growth in dividends per share.

The equation is solved for K_e in rate of return testimony in order to determine the cost of the common-stock equity of the regulated firm under consideration. Solving the equation for K_e yields the following expression:

$$K_e = \frac{D_1}{P_0} + g$$

Hence, the basic or standard DCF model states that the cost of common-stock equity is equal to the expected (first-year) dividend yield plus the rate at which investors expect dividends to grow in the future.

To illustrate the basic DCF model, assume that the current market price of a hypothetical regulated company's common stock is \$30.00 per share, and that a single

common stock share currently pays a \$2.00 dividend, which is expected to grow at a rate of 5 percent per year. The cost of common-stock equity capital for such a company is:

$$\begin{aligned} K_e &= \frac{\$2.00 (1.05)}{\$30.00} + .05 \\ &= .07 + .05 \\ &= .12 \text{ or } 12 \text{ percent.} \end{aligned}$$

i. Practical Issues

(a) Expected Growth Rate of Dividends

The major practical issue involves determining "g," the constant expected annual rate of growth in dividends per share. There are three techniques that are commonly used to estimate "g": (1) historical growth rates; (2) professional investment services' projections; and (3) sustainable growth or retention growth. An average of the growth rates arrived at separately using each of the three methods is often used to produce a final growth estimate. This averaging procedure is the one reflected in the proposed rule.

(i) Historical Growth Rate

The historical growth rate in dividends over some period, frequently five or ten years, is one method used to estimate "g." Historical data are used because investors' expectations of future growth are based in part on growth rates experienced in the past. The historical growth in earnings per share, or book value per share, is sometimes used as a proxy for the growth in dividends, because dividends are often increased at discrete intervals, so that their estimated growth rate can differ considerably depending upon the precise beginning and ending points of the selected data series. The proposed rule, therefore, requires averaging the historical growth rate of dividends per share, earnings per share, and book value per

share in arriving at an estimate of "g."

The period over which "g" is to be measured must be sufficiently long to avoid distortions in the data resulting from short-term conditions and aberrational years, but sufficiently short to capture foreseeable influences relevant for investors' evaluation of the future. The most recent five- and ten-year periods are commonly used to calculate the growth rate. The proposed rule uses an average of the five- and ten-year growth rates on the basis that the average represents a reasonable trade-off between the incongruous requirements of representativity and statistical adequacy.

(ii) Professional Investment Services' Projections

The expected growth rate of dividends is also commonly based upon the growth rates published by professional investment services, since investor expectations are the desired quantities in the DCF model, and investors' growth anticipations are based in part upon the projections of such services. Growth forecasts of dividends per share, earnings per share, and book value per share are published by several services, including Value Line Publishing, Inc. ("Value Line"), and the Institutional Brokers Estimation Service ("IBES"). Such growth rates are published on a regular basis, usually for five-year periods, and are readily available to investors. Expert witnesses usually develop a consensus forecast by averaging the forecasts of the professional analysts, and use this average in calculating "g." The Commission's proposed rule similarly specifies that "g" will be measured by using the average of (1) the five-year dividend, earnings, and book value forecasts published by Value Line, and of (2) the five-year earnings forecast published by IBES.²⁹

²⁹ IBES produces a consensus forecast of earnings based on the individual predictions of virtually every major brokerage house.

(iii) **The Sustainable Growth Rate**

The third technique used to estimate "g," known alternately as the "sustainable growth," "retention ratio," or "plowback" method, is to multiply the proportion of earnings expected to be retained by the company, "b," by the expected return on book equity, ROE. The relationship is expressed algebraically as $g = (b)(ROE)$. The theoretical underpinning for the method is that future growth in dividends for existing equity can only occur if a portion of the overall return to investors is plowed back into the firm rather than being paid out as dividends.

To illustrate the sustainable growth rate method, assume that a hypothetical regulated company is expected to retain 75 percent of its earnings, and is expected to earn a 10 percent return on book equity. The company's sustainable growth rate estimate of "g" is:

$$\begin{aligned} g &= .75(.10) \\ &= .075 \text{ or } 7.5 \text{ percent.} \end{aligned}$$

Both historical and projected values of "b" and ROE are used to estimate "g." Projected values are regarded as superior, however, since forecasted values incorporate current and predicted changes into the values. In addition, the use of historical realized book returns on equity in estimating ROE has been criticized because the realized returns are the product of the regulatory process itself, and are also subject to tests of reasonableness. Therefore, the Commission's proposed rule requires that the forecasted values of "b" and ROE published by Value Line be used in implementing the sustainable growth method.

(iv) Final Estimate of "g"

The final estimate of "g" for the DCF model is commonly based on an average of the separate estimates arrived at using the historical data, the professional investment services' projections, and the sustainable growth model. Thus, the Commission's proposed rule reflects such an averaging procedure.

(b) Dividend Yield

Two methods are commonly used to calculate dividend yields in DCF analyses. The standard DCF model uses the annual dividend expected to be paid 12 months following the purchase of the security. This method assumes that dividends are paid annually. The other method uses the current dividend to compute the yield portion of the annual return. This method assumes that dividends are paid continuously. However, the assumption of annual payments results in an overstatement of the required return (*i.e.*, the regulated firm's cost of common-stock equity capital), and the assumption of continuous payments results in an understatement of the required return. Since most firms pay dividends on a quarterly basis, however, it is proper to use a method that recognizes such quarterly installments. Such a method applies an adjustment factor to the current dividend yield to account for quarterly payment of dividends. The dividend yield, assuming quarterly payment of dividends, is calculated on the basis of the following formula:

$$\text{Dividend Yield} = \frac{D_0}{P_0}(1+.5g)$$

where:

D_0 is the current annualized dividend (defined as four times the current quarterly installment) per share;

P_0 is the current market price per share of the common stock; and

g is the constant expected annual rate of growth in dividends per share.

To illustrate the quarterly dividend formula, assume that the current market price of a hypothetical regulated company's common stock is \$30.00 per share, and that a single common stock share currently pays quarterly a 50 cent dividend (\$2.00 annually), which is expected to grow at a rate of 5 percent per year. The dividend yield for such a company is:

$$\begin{aligned} \text{Dividend Yield} &= \frac{\$2.00}{\$30.00} (1+.5(.05)) \\ &= .0667 (1.025) \\ &= .0684 \text{ or } 6.84 \text{ percent.} \end{aligned}$$

The Commission proposes to use this formula in calculating the dividend yield in DCF analyses.

In calculating the current price per share found in the denominator of the expression for the dividend yield, an average price over a period of time, rather than a price on a particular day, is often used in order to remove aberrations from the calculation. Such aberrations could be the result of events internal to the company (*e.g.*, the stock may go ex-

dividend³⁰) or external factors (*e.g.*, political events that affect the price of a firm's stock). The period over which to average the price of the common stock should be sufficiently long to remove the aberration, but sufficiently short so as not to obscure any real trends in the stock market. The Commission believes that the use of an average of the monthly high and low prices for a six-month period in computing the dividend yield meets these criteria, and such an average is, therefore, reflected in the proposed rule.

(c) Company-Specific Versus Comparable Group DCF Approach

The DCF model can be applied directly to a regulated company which issues publicly-traded common-stock equity (so that the requisite stock market price data for doing so exist), to a group of companies comparable in risk to the subject carrier which issue publicly-traded common-stock equity, or, where possible, both. The company-specific DCF approach provides the stock market's most direct and meaningful measure of a company's cost of common-stock equity capital. Accordingly, the Commission's proposed rule requires that the DCF model be applied directly to the subject carrier where the carrier issues common-stock equity which trades publicly.³¹ Only where a carrier issues no publicly-traded common-stock equity is the DCF model to be applied to a comparable group of firms under the proposed rule. Some expert witnesses do, however, apply the DCF model to a comparable group of firms, even where direct stock market data are available, either in

³⁰ Ex-dividend is the interval between the announcement and the payment of the next dividend. An investor who buys shares during that interval is not entitled to that dividend. Typically, a stock's price moves up by the dollar amount of the dividend as the ex-dividend date approaches, then falls by the amount of the dividend after that date.

³¹ Alternatively, under the proposed rule, the DCF model is to be applied directly to the parent company of a subsidiary carrier where a consolidated capital structure and consolidated system capital component costs are to be used to calculate the WACC, assuming that the parent company issues common-stock equity which trades publicly.

place of, or in addition to, the company-specific DCF approach. The Commission's proposed rule does not prescribe the comparable group DCF approach where direct stock market price data are available because it is not certain that this approach would improve upon the accuracy of the cost of common-stock equity capital estimate obtained using the carrier-specific DCF approach.

b. Capital Asset Pricing Model

The conceptual basis of the CAPM is that investors hold diversified portfolios consisting of individual common stocks to minimize risk. Diversification reduces the risk of the portfolio because individual common stock rates of return³² are not perfectly correlated. The rate of return on some common stocks tends to be high while on others it tends to be low so that the average risk or variability of the return of the portfolio is less than the average risk of the returns of the common stocks contained in that portfolio. Diversification does not completely eliminate risk, however, since individual common stock returns are correlated to a certain degree due to the influence of pervasive forces not specific to a particular security that affect the overall market.

The total risk of a common stock is partitioned into two components: (1) the "specific" or "unsystematic" risk unique to a company that can be diversified away in a well-constructed portfolio, and (2) the "market" or "systematic" risk that cannot be diversified away. The core idea of the CAPM is that because investors can diversify away company-specific risk, they should not be rewarded for bearing this superfluous risk. Diversified risk-

³² The annual rate of return on a common stock is the sum of two components: (1) the annual dividend yield, which is annual dividend income divided by the price of the common stock at the beginning of a given year; and (2) the annual capital appreciation or depreciation, which is the annual increase or decrease in the price of the common stock, divided by the price at the beginning of the given year.

averse investors are exposed solely to market risk and are, therefore, rewarded with higher expected returns for bearing higher market risk.

The CAPM provides a measure of market risk, known as "beta," which gauges the degree to which an individual common stock's return moves with the overall market's return. Specifically, the common stock's historical returns are compared with the overall market's historical returns (commonly measured as the returns on a broad market index such as the Standard and Poor's 500). A common stock is considered to be of above average risk if the stock's return is more volatile than that of the market,³³ and of below average risk if the stock's return is less volatile than that of the market.³⁴ "Beta" is used in the CAPM model to adjust the market premium expected by investors in comparison to debt for the riskiness of an individual common stock.

The CAPM holds that the return on a common stock expected by an investor is equivalent to that which could be earned on a riskless investment, plus a premium for assuming risk that is proportional to the common stock's market risk (*i.e.*, "beta"), and the market price of risk (*i.e.*, the difference between the overall expected stock market return and the expected return on a risk-free investment). The CAPM is represented algebraically as follows:

³³ The "beta" for such an above-average risk common stock is greater than one.

³⁴ The "beta" for such a below-average risk common stock is less than one.

$$K_e = R_f + B(R_m - R_f)$$

where:

K_e is the expected return on the regulated firm's common stock (*i.e.*, its cost of common-stock equity capital;

R_f is the expected risk-free return;

B is the relevant expected market risk "beta" of the regulated firm's common stock; and

R_m is the expected overall stock market return.

To illustrate the CAPM, assume that a hypothetical regulated company's expected "beta" is .95, the expected risk-free rate is 7 percent, and the expected overall stock market return is 12 percent. The company's cost of common-stock equity capital is:

$$\begin{aligned} K_e &= .07 + .95(.12-.07) \\ &= .07 + .0475 \\ &= .1175 \text{ or } 11.75 \text{ percent.} \end{aligned}$$

i. Practical Issues

The practical application of the CAPM requires estimates of the expected "beta" of the regulated firm, the expected risk-free rate, and the expected return on the stock market. Each of these inputs is discussed in turn.

(a) Risk-Free Rate

The yield on a 90-day Treasury Bill is theoretically risk-free. It is devoid of default risk and is subject to little interest rate risk. Treasury Bill rates vary widely, however, resulting in volatile and unreliable common-stock equity return estimates. In addition, 90-day Treasury Bill rates generally do not match investors' planning horizons, which typically are far in excess of 90 days. Short-term government obligations may also reflect the impact

of factors (e.g., inflation) differently than long-term securities such as common stocks, or may reflect different factors than those influencing the long term securities. Long-term Treasury bonds (e.g., 30-year bonds) may more closely approximate investors' planning horizons, and their yields usually match more closely with common stock returns. The yields on long-term bonds are subject to substantial interest rate risk, however, and so are not truly risk-free. A compromise is to use the yields on Treasury securities of intermediate maturities as proxies for the risk-free rate. Accordingly, the Commission's proposed rule implements the CAPM using a six-month average of five-year Treasury Note yields.

(b) "Beta"

The value of "beta" used in applying the CAPM should, in principle, be that which is expected in the future. The "beta" actually used in the practical application of the model is, however, more commonly calculated on the basis of historical data. "Beta" could be calculated by applying regression analysis, using historical price and dividend data for the regulated firm under consideration, in order to measure the variability of the return on the regulated firm's common stock relative to that of the market. The usual practice, however, is to use the "betas" published by an investment firm such as Value Line. Value Line "betas" are derived from a regression analysis between weekly percent changes in the price of a company's common stock and the weekly percent changes in the New York Stock Exchange Composite Indices over a period of five years.³⁵ Provided that the regulated firm's market

³⁵ Value Line publishes adjusted "betas." The adjustment recognizes the tendency of "betas" to move toward one. (The market index by definition has a value identically equal to one.) There are two justifications for making such an adjustment: (1) empirical studies demonstrate that "betas" tend to move toward one over time, and (2) the average "beta" is known to be one, and adjusting an estimated "beta" toward one is, therefore, an appropriate use of existing information.

risk is not expected to change appreciably in the future, "betas" based on historical data are appropriate for estimating the cost of common-stock equity. Therefore, the Commission's proposed rule specifies the use of Value Line's most current "betas" in implementing the CAPM.

(c) Market Return

The third input required by the CAPM is an estimate of the expected return on the stock market. One broad approach is to estimate the expected return on the market directly. One such technique is to apply a DCF analysis to a broad market index such as the Standard & Poor's 500. A second broad approach is the historically derived risk premium method, which involves two steps: (1) the arithmetic average difference between the actual annual returns realized in the past on the overall stock market and the risk-free rate is calculated,³⁶ and (2) this historical differential is added to the currently prevailing yield on the risk-free security. The resulting sum is a measure of the return on the market. The rationale for this method is that investors anticipate that common stocks will yield a higher return than the return on lower risk, fixed income securities, and the additional return on the common stocks is expected to be approximately equal to what it was in the past. The Commission's proposed rule stipulates the use of the historically derived risk premium method because it is relatively easy to apply, and its data requirements are relatively light compared to methods designed to measure the expected market return directly.

³⁶ The arithmetic mean, not the geometric mean, should be used, since the quantity desired is the rate of return investors expect over the next year for the random annual rate of return on the market. The arithmetic mean is the unbiased measure of the expected value of repeated observations of a random variable.

The historical risk differential is commonly based on the historical return series published annually by Ibbotson Associates in the *Stocks, Bonds, Bills, and Inflation Yearbook* ("*SBBI Yearbook*"). The *SBBI Yearbook* provides averages of the historical risk differentials relative to various government securities for the period 1926 to the present, using Standard and Poor's 500 Index to compute the overall market rate of return. The Commission's proposed rule specifies the same source for measuring the arithmetic average risk premium relative to the required risk-free rate proxy (*i.e.*, the five-year Treasury Note).

The choice of a time period for measuring the historical differential sometimes differs, but frequently it matches the entire period over which Ibbotson Associates provides the data. Returns calculated over a substantially shorter horizon (*e.g.*, five or ten years) are sometimes used to calculate the risk premium. This is not appropriate, however, due to the extreme volatility of the return on the overall stock market.³⁷ Accordingly, the Commission's proposed rule stipulates that the entire length of the data series be used as the time horizon.

In summary, the proposed rule requires that the market return used in CAPM calculations be computed using a risk premium defined as the arithmetic average historical risk differential relative to the five-year Treasury Note using the data published in the most current *SBBI Yearbook* for the period 1926 through the most recent date for which the data are available.

³⁷ In statistical terms, this extreme variability implies an extremely large standard deviation over any short period of time. Estimates of the overall market return calculated over such a short period of time are, therefore, unreliable.

c. **Risk Premium Method**

The RP method, alternately referred to as the "risk positioning method" or the "stock-bond yield spread method," is based upon the premise that common-stock equity capital is riskier than debt from an investors' perspective and that investors, therefore, require a larger rate of return on investments in common stocks than on bonds to compensate them for bearing the extra risk. Common stock equity is riskier than debt because the payment of interest and principal to debtholders has priority over the payment of dividends and return of capital to common-stock equityholders. The RP method, therefore, estimates the cost of capital by adding an explicit premium for risk to a current interest rate, frequently an interest rate on a particular government security. The general mathematical expression for the RP model is as follows:

$$K_e = K_d + RP$$

where:

K_e is the regulated firm's cost of common-stock equity capital;
 K_d is the incremental (*i.e.*, current) cost of debt; and
RP is the risk premium.

To illustrate the RP model, assume that the incremental cost of debt is 7 percent, and the risk premium is 5 percent. The regulated company's cost of common-stock equity capital is:

$$\begin{aligned} K_e &= .07 + .05 \\ &= .12 \text{ or } 12 \text{ percent.} \end{aligned}$$

i. **Practical Issues**

(a) **Risk Premium**

There are several procedures for estimating the risk premium. One common approach is to use the historical arithmetic average return differential between rates of return actually earned on investments in common-stock equities and bonds. This approach is expressed mathematically as follows:

$$K_e = K_d + \textit{Historical bond-equity spread}$$

The historical bond-equity spread, in turn, is often based on the data series published annually in the *SBBI Yearbook*. The portfolio of common stocks used as the benchmark for estimating the risk premium should be one that is composed of a broad array of firms and is well diversified, in order to minimize the potential for it to be contaminated by the peculiarities of a particular group of common stocks. The *SBBI Yearbook* database is based upon the Standard & Poor's 500 Index, which meets these criteria. The range of companies in such a broad group as the Standard & Poor's 500 Index covers the broad dimensions of investor perceptions of the trade-off between risk and return, and serves as a benchmark for investor-required returns. The Commission's proposed rule stipulates the use of the historical bond-equity spread based on the data published in the *SBBI Yearbook*.

Risk premiums based on the historical differential can be extremely volatile and may fluctuate as macroeconomic and microeconomic conditions change. The time period over which the risk premium is selected should, therefore, be sufficiently long that short-term aberrations are smoothed out. Such a time period must encompass at least several business and interest rate cycles. The Commission's proposed rule requires the use of the entire data

series (1926 - present) published annually in the *SBBI Yearbook* in estimating the risk premium.

(b) Debt Security

The particular debt security used to implement the RP model should be one which is, at least in theory, risk-free and embodies a premium for inflation similar in magnitude to that reflected in common stocks. Satisfying these criteria would isolate the spread component of the return and obviate the need to make any type of adjustment to the debt yield to account for default risk, which can vary over time, and obscure the long-term relationship between returns on common stocks and debt. These criteria are the same as those identified for selecting a debt security to measure the risk-free rate in implementing the CAPM.

Accordingly, the Commission's proposed rule stipulates the use of the six-month average five-year Treasury Note yield in implementing the RP model, for the reasons identified for selecting this same yield as the risk-free rate in implementing the CAPM.

(c) Risk Adjustment

The risk premium estimate derived from a composite market index is sometimes adjusted if there are differences in the risk of the firms represented in the common-stock equity index and that of the regulated firm under consideration. The CAPM (which is actually the company-specific form of the general RP model), for example, adjusts for such risk differences by multiplying the risk premium by "beta," which serves as the measure of relative risk in the CAPM model. The Commission's proposed rule specifies that the RP model be used in its general form without making any adjustment for risk, because the

generic form provides a useful benchmark for the range of companies contained in the Standard & Poor's 500 Stock Index on which it is based and, therefore, measures the broad dimensions of investor perceptions of the trade-off between risk and return. The cost of capital estimate produced using the RP model is not to be used as *the* estimate, but instead is to be used as a check on, and in combination with, the cost of capital company-specific estimates produced using the DCF and CAPM models.

d. Market-to-Book Ratio Method

The MBR method is based on the notion that the market value of a regulated firm's common-stock equity should be equal to its book value (plus some allowance for underpricing), and will be so if the firm's allowable rate of return on common-stock equity capital is equal to the firm's cost of common-stock equity capital. The MBR approach is considered solid conceptually, but is criticized widely for being impractical or even impossible to implement. In order to apply the MBR, a regulator must be able to accurately predict the effect that its rate order will have on the common stock price of a regulated firm in attempting to maintain the equality between the market value and book value of the firm's common stock. Critics argue that regulators are unable to produce such accurate forecasts even when sophisticated econometric models are used. In addition, a regulator may influence, but cannot control completely, the market price of the regulated firm's stock. Even if it could, the exercise of such control would produce violent swings in rate levels which would be uneconomical to both the ratepayer and the regulated firm alike. Finally, diversification by the regulated firm into unregulated activities could result in a market price that differs from book value, although the earnings of the regulated segment are restrained.

The severe practical problems involved with implementing the MBR method of computing an allowable rate of return on common-stock equity capital sharply reduces the utility of the approach. Accordingly, the Commission does not propose the MBR method of computing an allowable rate of return on common-stock equity capital.

e. Comparable Earnings Method

The CE method is based upon the fundamental economic concept of opportunity cost. This concept states that the cost of using any resource (*i.e.*, land, labor, or capital) in a particular activity is what that resource could have earned in its next best alternative use. Thus, the opportunity cost of an investment in a regulated firm's common stock is what the invested funds could have earned in their next best alternative investment (*e.g.*, in another company's common stock, in a government or corporate bond, in real estate, in gold, etc.). In brief, the CE method infers a regulated company's cost of common-stock equity capital from the average (sometimes the adjusted average) book value rate of return on common-stock equity of a group of firms comparable in risk to the regulated company.

As already discussed above, the CE method is not thought to be well grounded in economic theory, primarily because the method is implemented using accounting data rather than market information, and does not accurately reflect the regulated carrier's cost of common-stock equity capital. Accordingly, the proposed rule does not specify the CE method for computing the regulated firm's cost of common-stock equity capital.

f. Final Cost of Common-Stock Equity Capital Estimate

Rather than choosing between the DCF, CAPM, and RP methods, the Commission believes that all three methods should be used to produce separate estimates in arriving at

a final estimate of a regulated carrier's cost of common-stock equity capital, in order to avoid any inappropriate judgments that could be embodied in any one of the individual estimates. Accordingly, the proposed rule states that the Commission shall consider the cost of common-stock equity capital estimates obtained using the DCF, CAPM, and RP methods in arriving at a final cost of common-stock equity capital estimate.

C. Other Cost of Capital Issues

1. Comparable-Risk Companies

a. Comparable-Risk Cost of Common-Stock Equity Capital Estimates

When a regulated firm finances assets with common-stock equity that does not trade publicly, it is necessary to use a surrogate to impute the firm's cost of common-stock equity capital. The cost must be imputed because the regulated firm's equity position is not explicitly recognized in the capital market and, consequently, the necessary data for directly estimating the regulated firm's cost of common-stock equity do not exist. This occurs when: (1) the regulated firm is an independent company (*i.e.*, one which has no corporate parent) which issues no publicly-traded common-stock equity, or (2) the regulated firm is a subsidiary of a parent company, and the subsidiary issues no publicly-traded common stock of its own.

In the case of the independent regulated company which issues no publicly-traded common stock, the cost of common-stock equity capital must be imputed from a sample of firms having risk similar to that of the regulated company. Once an appropriate sample is selected, the cost of common-stock equity capital is calculated using the methods described earlier (*i.e.*, DCF, CAPM, and RP) to produce a range of estimates for the independent

regulated company. In the case of the regulated subsidiary, as discussed above, it may be appropriate to use the consolidated system's capital structure and component costs to estimate the subsidiary's WACC. If so, the consolidated system's cost of common-stock equity is obtained by applying the DCF, CAPM, and RP methods directly to the parent company, provided that the parent issues publicly-traded common-stock equity so that the stock market price data required for such an application exist. Otherwise, the regulated subsidiary's capital structure and component costs are used, and it is necessary to impute the subsidiary's cost of common-stock equity from a sample of firms having risk similar to that of the subsidiary.

b. Selecting a Proxy Group

The proxy group must be composed of companies whose business and financial risks are substantially comparable to the risk of the regulated firm. Since no two companies are identical in risk characteristics, and because a company's risk profile may not be perfectly stable over time, at least several companies must be chosen to maximize the reliability of the estimated cost of common-stock equity capital computed for the regulated company.

The criteria for selecting the proxy companies should evaluate the comparability of each company's business risk and financial risk with those of the regulated firm. Comparability with regard to business risk is most readily and directly accomplished by selecting companies in the same line of business as the regulated firm. The comparability of financial risk can be established by analyzing various financial statistics and investment quality ratings which are commonly used as measures of risk by investors. The Commission's proposed rule sets forth a set of risk criteria for selecting proxy companies.

The proposed rule further directs carriers that must rely on proxy companies to impute their cost of common-stock equity capital to use the prescribed risk criteria in selecting proxy companies, and to annually submit their selection of proxy companies along with their annually filed statement of financial and operating data, as required in § 552.2. After notice and opportunity for comment, the Commission shall annually designate the respective proxy group of companies for each applicable carrier in accordance with its prescribed risk criteria. The sequence of steps for selecting the proxy companies and the prescribed risk criteria are discussed in detail below.

i. Risk Criteria

(a) Step 1: U.S. Companies Listed in Value Line

The Commission's proposed rule stipulates that the proxy companies must be U.S.-based, and must be those for which *The Value Line Investment Survey* ("*Value Line*") provides financial data. The proxy companies are to be based in the U.S. so as to maintain consistent accounting and tax requirements. *Value Line* contains financial information on 1,700 companies that publicly issue common stock for over 95 industries, including the transportation sector. The use of *Value Line* as a resource for selecting proxy companies is particularly suitable since it contains the requisite historical and projected financial data for estimating the cost of common-stock equity.

(b) Step 2: Companies that Operate as Common Carriers

Consistent with the concept of selecting firms of comparable business risk, the proxy companies should be those which are in the same line of business as the regulated firm. The proxy companies should operate and derive a major portion of their gross revenues

primarily as common carriers in the business of freight transportation. The proxy group, for example, could be comprised of common carriers that transport freight by air, truck, water, and/or rail. The companies should also own or operate transportation vehicles or vessels. Excluded from this group are companies with gross revenues equal to or less than the \$25,000,000 waiver level for vessel operating common carriers in the domestic offshore trades, as described in 46 CFR §552.2(e).

(c) Step 3: Financial Analysis of Comparable Risk

The proposed rule further states that the Commission may also consider a company's financial strength in evaluating the degree of financial risk faced by each of the selected companies. This may include an examination of some, but not necessarily all, of the factors listed below.

(i) Total Capitalization Ratios and/or Debt/Equity Ratios

Total capitalization ratios and debt/equity ratios measure the proportional mix of financing in a company's capital structure. They are useful measures of financial risk because they indicate the extent of leverage or fixed-cost financing in a company (*i.e.*, the degree to which the company's assets are financed by long-term debt and/or preferred stock). A low percentage of fixed-cost financing generally denotes a low level of financial risk.

(ii) Debt Ratings

Investment analysis services, such as Standard & Poor's and Moody's, provide investment quality ratings of companies' long-term debt instruments. These include ratings on corporate bonds and commercial paper. The ratings reflect

a company's risk of default on debt obligations and the possible risk of bankruptcy. The primary basis of the debt ratings is interest coverage. This represents the number of times a company's earnings are greater than its fixed contractual charges or interest costs.

(iii) Stock Safety Rankings

Both Value Line and Standard & Poor's provide common-stock equity rankings for each company listed in their respective publications. While the basis of their ranking systems differ, they both measure the degree of risk associated with each company's common-stock equity. Value Line bases its ranking system on the stability of the common stock's price adjusted for trends, as measured by the standard deviation of weekly percent changes in the stock's market prices over a five-year period, and partially on the subjective analysis of its financial experts. Value Line's safety scale ranges from 1, the highest, to 5.

(iv) Financial Strength Ratings

Value Line rates the financial strength of each of the 1,700 companies listed in its publication relative to all the others. The ratings are based on key variables that determine financial leverage, business risk, and company size. The ratings range from A + +, the highest, to C.

(v) Standard Deviation

The standard deviation is a common statistical measure which can be used to determine the variability of a company's common-stock price changes, or

returns on common-stock equity. A high standard deviation indicates a high variability in the range of price changes or returns relative to the average price change or return. Thus, a high standard deviation implies a greater degree of risk associated with a particular company's common stock. Value Line provides a price stability index which ranks the standard deviation of the weekly percentage changes in the market price of each company's common stock over a five-year period.

(vi) The Beta Coefficient

Beta is a regression coefficient that measures the volatility of a company's common-stock price changes, or returns on common-stock equity, relative to the stock market as a whole. Where beta for the stock market equals one, common stocks with beta values of less than one are said to be less risky than the market, while stocks with beta values greater than one are said to be riskier than the market. Value Line and Standard & Poor's provide the beta values associated with the common stock of each company listed in their respective publications.

The Commission may also consider other information commonly accepted by investors as measures of risk in a company. In this regard, commenters may wish to address whether an accurate measure of comparable risk should include some consideration of the regulated firm's status as a subsidiary of a larger organization and, if so, whether the criteria for inclusion in the proxy group should include position in a larger corporate structure.

2. The Before-Tax Weighted Average Cost of Capital

The WACC was defined above as the composite of the cost of the various classes of capital used by the regulated firm weighted on the basis of the proportions of the total which each class represents. Corporate taxes were excluded. In reality, a regulated firm typically does pay taxes, and the WACC must be adjusted accordingly in arriving at a final allowable rate of return. The use of the WACC to determine an allowable rate of return without making such an adjustment would result in an understatement of the total cost of servicing capital to ratepayers. Assuming a 40 percent corporate income tax rate, for example, a company requires only \$1.00 of revenue to provide a \$1.00 return to bondholders because interest payments are tax deductible for corporate income tax purposes. The same company requires \$1.67 of revenue, however, to provide a \$1.00 return to preferred stock and common-stock equity shareholders because the firm must pay corporate income taxes, and dividend payments to such shareholders are not tax deductible.

The following before-tax expression of the WACC ("BTWACC") recognizes explicitly the existence of income taxes and is, therefore, the appropriate formula to use in computing an allowable rate of return:

$$BTWACC = \left(\frac{D}{D+P+E}\right)K_d + \left(\frac{P}{D+P+E}\right)K_p\left(\frac{1}{1-T}\right) + \left(\frac{E}{D+P+E}\right)K_e\left(\frac{1}{1-T}\right)$$

where:

K_d is the regulated firm's cost of long-term debt capital;
 K_p is the regulated firm's cost of preferred stock capital;
 K_e is the regulated firm's cost of common-stock equity capital;
 D is the value of the regulated firm's long-term debt outstanding;
 P is the value of the regulated firm's preferred stock outstanding;
 E is the value of the regulated firm's common-stock equity outstanding; and
 T is the corporate income tax rate.

To illustrate the calculation of the BTWACC, consider a hypothetical regulated company that has total invested capital of \$100 million, consisting of \$25 million of long-term debt, \$15 million of preferred stock, and \$60 million of common-stock equity. Assume that the firm's cost of long-term debt is 7 percent, cost of preferred stock is 9 percent and cost of common-stock equity is 12 percent, and that the corporate income tax rate is 40 percent. The BTWACC for this firm is calculated as follows:

CALCULATION OF BTWACC

<u>Capital Component</u>	<u>Amount (Millions of \$)</u>	<u>Proportion (%)</u>	<u>Cost (%)</u>	<u>WACC (%)</u>	<u>Tax Factor (1/1-T)</u>	<u>BTWACC</u>
Long-term debt	25	25	7	1.75	1.00	1.75
Preferred stock	15	15	9	1.35	1.67	2.25
<u>Common-stock equity</u>	<u>60</u>	<u>60</u>	12	<u>7.20</u>	1.67	<u>12.02</u>
Total	100	100		10.30		<u>16.02</u>

The allowable rate of return for this hypothetical company should, therefore, be set at 16.02 percent, which would provide the firm with the opportunity to earn revenues sufficient to service the total cost of capital and taxes.

The Commission's proposed rule specifies that the allowable rate of return on rate base for a regulated carrier in the domestic offshore trades shall be set equal to the carrier's WACC calculated on a before-tax basis. The proposed rule also stipulates the use of the regulated carrier's normalized corporate income tax rate (*i.e.*, the statutory corporate income tax rate, not the actual or effective corporate income tax rate) in computing the BTWACC. This is consistent with the approach the Commission uses currently in calculating the rate of return on rate base. Furthermore, the large majority of regulatory commissions in the U.S. use the normalized income tax rate for ratemaking and accounting purposes.³⁸

3. Flotation Costs

Three factors could theoretically result in a firm receiving as net proceeds from the issuance of common stock an amount less than the pre-announcement common stock price: (1) the cost of floating new issues (*e.g.*, the fee paid to the underwriter) and other administrative expenses (*e.g.*, printing, legal, and accounting expenses); (2) the downward market pressure resulting from the increased supply of the common stock (*i.e.*, the "market pressure" effect); and (3) the potential market price decline related to external market variables (*i.e.*, the "market break" effect).

The Commission's proposed rule specifies that an allowance for the cost of common-stock equity capital financing be made for those flotation costs that are actually incurred (*i.e.*, those that are identifiable and directly attributable to underwriting, printing, legal, and accounting expenses), but only in the event that the regulated carrier under consideration plans on issuing new common stock to the general public during the test year in question.

³⁸ See NARUC, "Table 40 - Accounting Treatment Of Tax Reductions - All Utilities," *supra* note 4, at 95-96.

No allowance would be made for any hypothetical costs such as those associated with market pressure and market break effects. The proposed rule also specifies that the allowance is to be applied solely to the new common-stock equity and not to the existing common-stock equity balance.³⁹ The regulated carrier would be required to supply the requisite information for computing the allowance.

DEFERRED TAXES AND THE CAPITAL CONSTRUCTION FUND

Under its current rules, the Commission does not address the issue of deferred taxes for calculating rate base. The Commission proposes to amend its rules to provide for the treatment of deferred taxes, including the Capital Construction Fund ("Fund").

The Fund is comprised of three components: (1) the capital account, which results from contributions, (2) capital gains on investment transactions, and (3) ordinary income, representing the earnings of Fund assets. Section 607 of the Merchant Marine Act, 1936, 46 U.S.C. app. § 1177, which governs the Fund, provides for different tax treatment for withdrawals from the various components of the Fund. Section 607 requires that the basis of vessels, barges or containers purchased with monies from the Fund be reduced by the amount of funds withdrawn from the ordinary income and capital gains components of the

³⁹ The appropriate formula for computing such as allowance is as follows:

$$k = Fs/(1+s)$$

where:

k is the required increment to the cost of the regulated firm's common-stock equity capital that will allow the company to recover its flotation costs;

F is the flotation costs expressed as a decimal fraction of the dollar value of new common-stock equity sales; and

s is the new common-stock equity sales expressed as a decimal fraction of the dollar value of existing common equity.

Fund. The proposed rule takes a similar approach, and would require carriers to reduce the cost of an asset as shown in rate base by the amount of funds withdrawn from the ordinary income and capital gains components of the Fund which are used in acquiring the asset.

A certain portion of a carrier's physical capital (rate base) is financed by deferred taxes. Unlike the debt, preferred stock, and common-stock equity components of financial capital, deferred taxes cost the carrier nothing. Deferred taxes are in the nature of an interest-free loan from the government. Given that these funds are obtained at zero cost, we believe that the carrier should not be allowed a return on that portion of rate base which results from deferred taxes, except on that portion that results from deferred taxes that may arise from the Fund or the expired Investment Tax Credit, and that rate base be reduced accordingly.

This treatment comports with the treatment of deferred taxes by other federal agencies, as well as a majority of state regulatory agencies.⁴⁰ When it is necessary to allocate such accumulated deferred taxes between Commission and non-Commission regulated activities, such allocation shall be on the ratio of vessels and other property and equipment included in rate base, less accumulated depreciation, to total company vessels and other property and equipment, less accumulated depreciation.

WORKING CAPITAL

The inclusion of working capital in rate base is intended to recognize the necessity for the carrier to maintain an adequate supply of cash for the purpose of meeting

⁴⁰ See NARUC, "Table 39 - Treatment Of Accumulated Deferred Income Taxes In Rate Base - All Utilities," *supra* note 4, at 93-94.

expenditure requirements during the period between the payment of expenses and the collection of revenue. Average voyage expense is used as the measure of working capital for a self-propelled vessel operator under the Commission's existing rule.

With regard to the treatment of insurance expense in the computation of average voyage expense, the Commission's current regulations provide for the inclusion of 90 days' hull and machinery insurance and protection and indemnity insurance. Hawaii suggests that insurance expense be treated in the same manner as other operating expenses, *i.e.*, include that amount applicable to the duration of an average voyage. The proposed rule adopts that approach.

ALLOCATION OF ASSETS AND EXPENSES

In 1980, the Commission amended its rules governing the allocation of assets and expenses. As a result of these changes, cargo cube or space occupied replaced weight or revenue ton as the basis for allocations. The rationale for this decision was that in a containership operation, the cost of providing service is the cost of providing space. The Commission concluded that the carrier's cost per container remains the same regardless of the amount of cargo in the container or revenue generated by the container.

Accordingly, Part 552 currently prescribes that vessels, accumulated depreciation and vessel expense shall be allocated on the cargo-cube-mile relationship as defined in 46 CFR § 552.5(n), while those expenses related to cargo handling are allocated on the basis of cargo cube loaded and discharged. Other property and equipment, and administrative and general expenses are required to be allocated on the voyage expense relationship, as defined in 46 CFR § 552.5(p).

Commenters in Docket No. 91-51 suggested several alternative allocation methods, including a method based on cargo carried on the outbound portion of the voyage or based on revenue generated by Commission and non-Commission regulated cargo. These proposals stemmed from the bifurcation of regulatory authority in the domestic offshore trades between the Commission and the Interstate Commerce Commission. However, that split in jurisdiction has no direct connection with the costs a carrier incurs in providing service. The Commission shall not attempt to contrive an allocation methodology as a solution to an issue that can best be remedied by legislative action.

The Federal Maritime Commission certifies pursuant to section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(n), that this rule will not have a significant economic impact on a substantial number of small entities, including small businesses, small organizational units and small government jurisdictions. The Commission grants a waiver of the detailed reporting requirements to carriers which earn gross revenues of \$25 million or less in a particular trade in accordance with 46 CFR § 552.2(e).

The collection of information requirements contained in this proposed rule have been submitted to the Office of Management and Budget for review under the provisions of the Paperwork Reduction Act of 1980 (P.L. 96-511), as amended. The incremental public reporting burden for this collection of information is estimated to range from an average of 41 hours to 65 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate,

including suggestions for reducing this burden, to Sandra L. Kusumoto, Director, Bureau of Administration, Federal Maritime Commission, Washington, D.C. 20573 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503.

List of Subjects in 46 CFR part 552

Maritime carriers, Reporting and recordkeeping requirements, Uniform system of accounts.

Therefore, pursuant to 5 U.S.C. 553, sections 18 and 43 of the Shipping Act, 1916, 46 U.S.C. app. 817 and 841a, and sections 2 and 3 of the Intercoastal Shipping Act, 1933, 46 U.S.C. app. 844 and 845, Part 552 of Title 46, Code of Federal Regulations, is proposed to be amended as follows:

Part 552 -- FINANCIAL REPORTS OF VESSEL OPERATING COMMON CARRIERS BY WATER IN THE DOMESTIC OFFSHORE TRADES.

1. The authority citation for Part 552 continues to read as follows:

AUTHORITY: 5 U.S.C. 553; 46 U.S.C. app. 817(a), 820, 841a, 843, 844, 845, 845a and 847.

2. In section 552.1, paragraph (b) is revised to read as follows and paragraph (d) is removed:

§552.1 **Purpose.**

* * * * *

(b) In evaluating the reasonableness of a VOCC's overall level of rates, the Commission will use return on rate base as its primary standard. A carrier's allowable rate

of return on rate base will be set equal to its before-tax weighted average cost of capital. However, the Commission may also employ the other financial methodologies set forth in § 552.6(f) in order to achieve a fair and reasonable result.

* * * * *

3. In section 552.2, paragraph (a) is amended by revising the filing address contained therein, paragraph (b) is redesignated as paragraph (b)(1) and revised, a new paragraph (b)(2) is added, paragraph (f)(1)(iv) is amended by deleting "and," from the end thereof, paragraph (f)(1)(v) is amended by changing the period at the end thereof to a semicolon and adding "and," to the end of the paragraph, and a new paragraph (f)(1)(vi) is added reading as follows:

§552.2 General requirements.

(a) * * *

Federal Maritime Commission, Bureau of Tariffs, Certification and Licensing,
800 North Capitol Street, N.W., Washington, DC 20573-0001

(b)(1) Annual statements under this part shall consist of Exhibits A, B, and C, as described in § 552.6, and shall be filed within 150 days after the close of the carrier's fiscal year and be accompanied by a company-wide balance sheet and income statement having a time period coinciding with that of the annual statements. A specific format is not prescribed for the company-wide statements.

(2) Concurrently with the filing of the carrier's annual financial statements required under this section, a carrier that issues no publicly-traded common-stock equity must submit for Commission approval annually:

(i) a proxy group of companies to impute the carrier's cost of common-stock

equity capital in accordance with the requirements set forth in § 552.6(e)(3); or

(ii) an application to use a consolidated capital structure in accordance with the requirements set forth in § 552.6(e)(4).

* * * * *

(f) * * *

(1) * * *

(vi) *Projected* schedules for capitalization amounts and ratios (Schedule F-I); cost of long-term debt capital calculation (Schedules F-II and F-III); cost of preferred (and preference) stock capital calculation (Schedules F-IV and F-V); corporate income tax rate (Schedule F-VI); and flotation costs (Schedule F-VII) for the 12-month period used to compute projected midyear rate base in paragraph (f)(1)(ii) of this section.

* * * * *

4. In section 552.5, paragraphs (b) and (c) are revised, and paragraphs (v), (w), (x), (y), (z), (aa), and (bb) are added to read as follows:

§552.5 **Definitions.**

* * * * *

(b) *The service* means those voyages and/or terminal facilities in which cargo subject to the Commission’s regulation under 46 CFR § 514.1(c)(2) is either carried or handled.

(c) *The trade* means that part of the Service subject to the Commission’s regulation under 46 CFR § 514.1(c)(2), more extensively defined below under *Domestic Offshore Trade*.

* * * * *

(v) *Book value* means the value at which an asset is carried on a balance sheet.

(w) *Capital structure* means a company's financial framework, which is composed of long-term debt, preferred (and preference) stock, and common-stock equity capital (par value plus earned and capital surplus).

(x) *Capitalization ratio* means the percentage of a company's capital structure that is long-term debt, preferred (and preference) stock, and common stock-equity capital.

(y) *Consolidated system* means a parent company and all of its subsidiaries.

(z) *Subsidiary company* means a company of which more than 50 percent of the voting shares of stock are owned by another corporation, called the parent company.

(aa) *Long-term debt* means a liability due in a year or more.

(bb) *Times-interest-earned ratio* means the measure of the extent to which operating income can decline before a firm is unable to meet its annual interest costs. It is computed by *dividing* a firm's earnings before interest and taxes *by* the firm's annual interest expense.

5. In section 552.6, paragraph (a)(1), the first sentence of paragraph (a)(2), the introductory text of paragraph (b)(1), paragraphs (b)(4)(i) and (b)(5), and the heading of paragraph (b)(9) are revised; paragraph (b)(10) is added; paragraphs (c)(5) and (c)(10) are revised; paragraphs (d)(1) and (d)(2) are revised; paragraphs (d)(3) and (d)(4) are redesignated (f)(1) and (f)(2) and the paragraph headings thereof revised; paragraphs (e) and (f) are redesignated (g) and (h); and a new paragraph (e) is added reading as follows:

§552.6 **Forms**

(a) *General.* (1) The submission required by this part shall be submitted in the prescribed format and shall include General Information regarding the carrier, as well as the following schedules as applicable:

Exhibit A-Rate Base and supporting schedules;
 Exhibit B-Income Account and supporting schedules;
 Exhibit C-Rate of Return and supporting schedules;
 Exhibit D-Application for Waiver;
 Exhibit E-Initial Tariff Filing Supporting Data; and
 Exhibit F-Allowable Rate of Return schedules.

(2) Statements containing the required exhibits and schedules are described in paragraphs (b), (c), (d), (e), (g), and (h) of this section and are available upon request from the Commission. * * *

(b) *Rate base (Exhibits A and A(A))-(1) Investment in Vessels (Schedules A-I and A-I(A)).* Each cargo vessel (excluding vessels chartered under leases which are not capitalized in accordance with § 552.6(b)(10)) employed in the Service for which a statement is filed shall be listed by name, showing the original cost to the carrier or to any related company, reduced to reflect the use of funds from the Capital Construction Fund's capital gains account or ordinary income account, *plus* the cost of improvements, conversions, and alterations, reduced to reflect the use of funds from the Capital Construction Fund's capital gains account or ordinary income account, *less* the cost of any deductions. All additions and deductions made during the period shall be shown on a *pro rata* basis, reflecting the number of days they were applicable during the period. The result of these computations shall be called the Adjusted Cost.

* * * * *

(4) *Investment in other property and equipment; accumulated depreciation other property and equipment (Schedule A-IV and A-IV(A)).* (i) Actual investment, representing original cost to the carrier or to any related company, reduced to reflect the use of funds from the Capital Construction Fund's capital gains account or ordinary income account, in other fixed assets employed in the Service, shall be reported as of the beginning of the year. Accumulated depreciation for these assets shall be reported both as of the beginning and as of the end of the year. The arithmetic average of the two amounts shall also be shown and shall be the amount deducted from original cost in determining rate base. The cost of additions and deductions during the period, adjusted to reflect the use of the Capital Construction Fund, shall also be reported. The carrier shall report as though all such changes took place at midyear, except those involving substantial sums, which shall be prorated on a daily basis. Allocation to the Trade shall be based upon the actual use of the specific asset or group of assets within the Trade. For those assets employed in a general capacity, such as office furniture and fixtures, the voyage expense relationship shall be employed for allocation purposes. The basis of allocation to the Trade shall be set forth and fully explained.

(ii) * * *

(5) *Working Capital (Schedule A-V).* Working capital for vessel operators shall be determined as average voyage expense. Average voyage expense shall be calculated on the basis of the actual expenses of operating and maintaining the vessel(s) employed in the Service (excluding lay-up expenses) during the average length of time of all voyages (excluding lay-up periods) during the period in which any cargo was carried in the Trade.

Expenses for operating and maintaining vessels employed in the Trade shall include: Vessel Operating Expense, Vessel Port Call Expense, Cargo Handling Expense, Administrative and General Expense and Interest Expense allocated to the Trade as provided in paragraphs (c) (2), (4) and (5) of this section.

* * * * *

(9) *Capitalization of leases (Schedules A-VII and A-VII(A)).* * * *

(10) *Accumulated Deferred Taxes (Schedules A-VIII and A-VIII(A)).* Accumulated deferred taxes, excluding deferred taxes that may arise from the Capital Construction Fund or the expired Investment Tax Credit, shall be reported both as of the beginning and the end of the year and the arithmetic average of the two amounts shall be shown. Allocation to the Trade shall be based upon the ratio of Trade Investment in Vessels (Schedules A-I and A-I(A)) *less* Accumulated Depreciation (Schedules A-II and A-II(A)) *plus* Other Property and Equipment *less* Accumulated Depreciation (Schedules A-IV and A-IV(A)) to total company investment in vessels and other property and equipment *less* accumulated depreciation.

(c) * * *

* * * * *

(5) *Interest expense and debt payments (Schedules B-IV and B-IV(A)).* This schedule shall set forth the total interest and debt payments, apportioned between principal and interest, short and long-term, on debt and lease obligations. Payments on long-term debt are to be calculated consistent with the method set forth in § 552.6(e)(7) for computing the cost of long-term debt capital. Principal and interest shall be allocated to the Trade in

the ratio that Trade rate base *less* working capital bears to company-wide assets *less* current assets. Where related company assets are employed by the filing company, the balance sheet figures on the related company's books for such assets shall be added to the company-wide total in computing the ratio. In those instances where interest expenses are capitalized in accordance with paragraph (b)(9) of this section, a deduction shall be made for the amount so capitalized.

* * * * *

(10) *Provision for income tax.* Federal, State, and other income taxes shall be listed separately. If the company is organized outside the United States, it shall indicate the entity to which it pays income taxes and the rate of tax applicable to its taxable income for the subject year. Federal, State and other income taxes shall be calculated at the statutory rate. Such tax rates are to be identical to those set forth in Schedules F-VI or F-VI(A) used in determining the carrier's allowable rate of return unless the carrier is a subsidiary of a parent company and a consolidated capital structure is to be used in that determination.

* * * * *

(d) *Rate of Return (Exhibits C and C(A))-(1) General.* All carriers are required to calculate rate of return on rate base. However, the Commission or individual carriers, at the Commission's discretion, may also employ fixed charges coverage and/or operating ratios as provided for in paragraph (f) of this section.

(2) *Return on rate base.* The return on rate base will be computed by *dividing* Trade net income *plus* interest expense *by* Trade rate base.

(e) *Maximum allowable rate of return on rate base (Exhibits F and F(A))-(1)*

General. A carrier's maximum allowable rate of return on rate base shall be set equal to the carrier's weighted average cost of capital calculated on a before-tax basis ("BTWACC").

The BTWACC is defined mathematically by the following expression:

$$BTWACC = \left(\frac{D}{D+P+E}\right)K_d + \left(\frac{P}{D+P+E}\right)K_p\left(\frac{1}{1-T}\right) + \left(\frac{E}{D+P+E}\right)K_e\left(\frac{1}{1-T}\right)$$

where:

- K_d is the carrier's cost of long-term debt capital;
- K_p is the carrier's cost of preferred (and preference) stock capital;
- K_e is the carrier's cost of common-stock equity capital;
- D is the average book value of the carrier's long-term debt capital outstanding;
- P is the average book value of the carrier's preferred (and preference) stock capital outstanding;
- E is the average book value of the carrier's common-stock equity capital (par value *plus* earned and capital surplus) outstanding; and
- T is the carrier's composite statutory corporate income tax rate.

A carrier's BTWACC shall be calculated in precise accordance with the rules set forth in this section.

(2) *Subsidiary carrier's capital structure.* Where a carrier is a subsidiary that obtains its common-stock equity capital through a parent company, the capital structure of the subsidiary shall be used in computing the BTWACC. The subsidiary carrier's cost of common-stock equity capital, the subsidiary carrier's cost of long-term debt capital, the subsidiary carrier's cost of preferred stock capital, and the subsidiary carrier's composite statutory corporate income tax rate shall also be used in computing the BTWACC. The subsidiary carrier's cost of common-stock equity capital shall be inferred as the cost of common-stock equity capital estimated for a sample of firms having business and financial risk comparable to the subsidiary carrier when the subsidiary carrier's capital structure is

used in calculating the BTWACC.

(3) *Comparable risk companies.* (i) Concurrently with the filing of the annual financial statements required under § 552.2, a carrier must submit for Commission approval a proxy group of companies to impute the carrier's cost of common-stock equity capital where:

(A) the carrier is an independent company (*i.e.*, it has no corporate parent) which issues no publicly-traded common-stock equity, or

(B) the carrier is a subsidiary that obtains its common-stock equity capital through a parent company.

(ii) After notice and opportunity for comment, the Commission will approve a proxy group of companies based on the following criteria:

(A) The proxy companies shall be based in the United States and shall be listed in *The Value Line Investment Survey*.

(B) The proxy companies shall operate and derive a major portion of their gross revenues primarily as common carriers in the business of freight transportation, and shall own or operate transportation vehicles or vessels. Companies with gross annual revenues equal to or less than the \$25,000,000 shall be excluded from the proxy group.

(C) In addition, comparable risk companies shall be selected by examining some, but not necessarily all, of the following risk indicators:

- (1) a company's total capitalization ratio and/or debt-to-equity ratio;
- (2) the investment quality ratings of a company's long-term debt instruments;
- (3) the investment safety ranking of a company's common-stock equity;

- (4) the rating of a company's financial strength, as provided by Value Line;
 - (5) the variability of a company's common-stock price changes or returns on common-stock equity (*i.e.*, the standard deviation);
 - (6) the volatility of a company's common-stock price changes or returns on common-stock equity relative to the stock market as a whole (*i.e.*, the beta coefficient); or
 - (7) other such valid indicators deemed appropriate by the Commission.
- (iii) Any proxy group of companies that has received Commission approval will not be subject to challenge in a subsequent rate investigation brought under section (3) of the Intercoastal Act, 1933.

(4) *Consolidated capital structure.* (i) Upon application, after notice and opportunity for comment, the Commission may authorize use of the capital structure of the consolidated system (*i.e.*, the parent company and all of its subsidiaries) in computing the BTWACC. The application must show that:

- (A) the subsidiary carrier's parent company issues publicly traded common-stock equity;
- (B) the subsidiary carrier's parent company owns 90 percent or more of the subsidiary's voting shares of stock; *and*
- (C) the business and the financial risks of the subsidiary carrier and the parent company are similar.

(ii) The similarity of the parent company's and subsidiary carrier's business risk shall be evaluated by examining the degree to which the consolidated system's profits, revenues, and expenses are composed of those of the subsidiary carrier, and the extent to

which the parent's holdings are diversified into lines of business unrelated to those of the subsidiary carrier, and/or other indicators of business risk deemed appropriate by the Commission. The similarity of the parent company's and subsidiary carrier's financial risk shall be evaluated by examining the consolidated system's and the subsidiary's total capitalization ratios, debt-to-equity ratios, investment quality rankings on short- and long-term debt instruments, times-interest-earned ratios, fixed charges coverage ratios (calculated to include both FMC and non-FMC regulated operations), and/or other measures of financial risk deemed appropriate by the Commission.

(iii) When the consolidated capital structure is used, the consolidated system's cost of common-stock equity capital (issued by the parent company), the consolidated system's cost of long-term debt capital, the consolidated system's cost of preferred (and preference) stock capital, and the consolidated system's composite statutory corporate income tax rate shall also be used in estimating the subsidiary's BTWACC.

(iv) Where the Commission has approved the use of a consolidated capital structure, such use will not be subject to challenge in a subsequent rate investigation brought under section (3) of the Intercoastal Act, 1933.

(5) *Book-value, average capitalization ratios.* Capitalization ratios representing the capital structure used in deriving a carrier's BTWACC shall be computed on the basis of average *projected* book value outstanding over the 12-month period used to calculate *projected* midyear rate base in § 552.2 (f)(1)(ii). The average amount of any class of capital outstanding used in determining the capitalization ratios is computed by *adding* the amount of a particular type of capital expected to be outstanding as of the beginning of the 12-

month period to the amount of that same type of capital expected to be outstanding as of the end of the 12-month period, and *dividing* the sum of the two amounts outstanding by two.

(6) *Capitalization amounts and ratios (Schedules F-I and F-I(A)).* A carrier shall show its long-term debt, preferred stock, and common-stock equity capitalization amounts outstanding, stated in book value terms, as of the beginning and as of the end of the 12-month period used to calculate *projected* midyear rate base, and the average amounts and average ratios for that 12-month period. Where a carrier is a subsidiary of a parent company, the carrier shall show its own capitalization amounts and ratios unless the carrier applies for and receives permission from the Commission to use a consolidated capital structure in computing the BTWACC. Where such permission is granted, the carrier shall show instead the consolidated system's capitalization amounts and ratios.

(7) *Cost of long-term debt capital (Schedules F-II, F-II(A), F-III, and F-III(A)).*

(i) The cost of long-term debt capital¹ shall be calculated by the *carrier* for the 12-month period used to compute *projected* mid-year rate base on the basis of:

(A) *embedded* cost for *existing* long-term debt; and

(B) *current* cost for any *new* long-term debt expected to be issued on or before the final day of the 12-month period.

(ii) The arithmetic average annual percentage rate cost of long-term debt capital calculated on the basis of all issues of long-term debt expected to be outstanding as of the

¹ The cost of sinking fund preferred stock shall be computed in accordance with the regulations for calculating the cost of long-term debt.

beginning and as of the end of the 12-month period used to compute *projected* mid-year rate base shall be the cost of long-term debt capital used in computing the BTWACC.

(iii) The annual percentage rate cost of long-term debt capital for all issues of long-term debt expected to be outstanding as of the beginning and as of the end of the 12-month period used to compute *projected* mid-year rate base shall be calculated separately for the two dates by:

(A) *multiplying* the cost of money for each issue under clause (e)(7)(v)(J) below by the principal amount outstanding for each issue, which yields the annual dollar cost for each issue; and

(B) *adding* the annual dollar cost of each issue to obtain the total dollar cost for all issues, which is divided by the total principal amount outstanding for all issues to obtain the annual percentage rate cost of long-term debt capital for all issues.

(iv) The arithmetic average annual percentage rate cost of long-term debt capital for all issues to be used as the cost of long-term debt capital in computing the BTWACC shall be calculated by:

(A) *adding* the total annual dollar cost for all issues of long-term debt capital expected to be outstanding as of the beginning of the 12-month period used to compute *projected* mid-year rate base to the total annual dollar cost for all issues of long-term debt capital expected to be outstanding as of the end of the 12-month period, and *dividing* the resulting sum by two, which yields the average total annual dollar cost of long-term debt for all issues for the 12-month period;

(B) *adding* the total principal amount outstanding for all long-term debt issues expected to be outstanding as of the beginning of the 12-month period used to compute *projected* mid-year rate base to the total principal amount outstanding for all long-term debt issues expected to be outstanding as of the end of the 12-month period, and *dividing* the resulting sum *by* two, which yields the average total principal amount expected to be outstanding for all issues for the 12-month period; and

(C) *dividing* the average total annual dollar cost of long term debt for all issues for the 12-month period *by* the average total principal amount expected to be outstanding for all issues for the 12-month period, which yields the average annual percentage rate cost of long-term debt capital for all issues to be used in computing the BTWACC.

(v) *Cost of long-term debt capital calculation (Schedules F-II, F-II(A), F-III and F-III(A)).* The carrier shall calculate the annual percentage rate cost of long-term debt capital for all issues of long-term debt expected to be outstanding as of the beginning and as of the end of the 12-month period used to compute *projected* mid-year rate base separately for the two dates, and shall also calculate the average annual percentage rate cost of long-term debt for all issues for the 12-month period. The carrier shall support these calculations by showing in tabular form the following for each class and series of long-term debt expected to be outstanding as of the beginning and as of the end of the 12-month period separately for the two dates:

- (A) Title;
- (B) Date of issuance;
- (C) Date of maturity;
- (D) Coupon rate (%);
- (E) Principal amount issued (\$);
- (F) Discount or premium (\$);

- (G) Issuance expense (\$);
- (H) Net proceeds to the carrier (\$);
- (I) Net proceeds ratio (%), which is the net proceeds to the carrier *divided* by the principal amount issued;
- (J) Cost of money (%), which, for *existing* long-term debt issues, shall be the yield-to-maturity at issuance based on the coupon rate, term of issue, and net proceeds ratio determined by reference to any generally accepted table of bond yields; and, for long-term debt issues to be *newly* issued on or before the final day of the 12-month period, shall be based on the average current yield (published in such a publication as *Moody's Bond Survey*) on long-term debt instruments similar in maturity and investment quality as the long-term debt security that is to be issued;
- (K) Principal amount outstanding (%);
- (L) Annual cost (\$); and
- (M) Name and relationship of issuer to carrier.

Where a carrier is a subsidiary of a parent company, the carrier shall show the cost of long-term debt calculations and information required in this paragraph for its own cost of long-term debt unless the carrier applies for and receives permission from the Commission to use a consolidated capital structure in computing the BTWACC. Where such permission is granted, the subsidiary carrier shall show the required cost of long-term debt calculations and information for the consolidated system's long-term debt.

(vi) In the event that new long-term debt is to be issued on or before the final day of the 12-month period used to compute *projected* mid-year rate base, the carrier shall submit a statement explaining the methods used to estimate information (A) through (M) required under paragraph (e)(7)(v).

(8) *Cost of preferred (and preference) stock capital Schedules F-IV, F-IV(A), F-V, and F-V(A).* (i) The cost of preferred (and preference) stock capital shall be calculated by the carrier for the 12-month period used to compute *projected* mid-year rate base on the basis of:

(A) *embedded* cost for *existing* preferred (and preference stock); and

(B) *current* cost for any *new* preferred (and preference) stock to be issued on or before the final day of the 12-month period.

(ii) The arithmetic average annual percentage rate cost of preferred (and preference) stock capital calculated on the basis of all issues of preferred (and preference) stock expected to be outstanding as of the beginning and as of the end of the 12-month period used to calculate *projected* mid-year rate base shall be the cost of preferred (and preference) stock capital used in computing the BTWACC.

(iii) The annual percentage rate cost of preferred (and preference) stock capital for all issues of preferred (and preference) stock expected to be outstanding as of the beginning and as of the end of the 12-month period used to compute *projected* mid-year rate base shall be calculated separately for the two dates by:

(A) *multiplying* the cost of money for each issue under clause (e)(8)(v)(I) below by the par or stated amount outstanding for each issue, which yields the annual dollar cost for each issue; and

(B) *adding* the annual dollar cost of each issue to obtain the total for all issues, which is *divided* by the total par or stated amount outstanding for all issues to obtain the annual percentage rate cost of preferred (and preference) stock capital for all issues.

(iv) The arithmetic average annual percentage rate cost of preferred (and preference) stock capital for all issues to be used as the cost of preferred (and preference) stock capital in computing the BTWACC shall be calculated by:

(A) *adding* the total annual dollar cost for all issues of preferred (and preference) stock capital expected to be outstanding as of the beginning of the 12-month period used to compute *projected* mid-year rate base to the total annual dollar cost for all issues of preferred (and preference) stock capital expected to be outstanding as of the end of the 12-month period, and *dividing* the resulting sum by two, which yields the average total annual dollar cost of preferred (and preference) stock for all issues for the 12-month period;

(B) *adding* the total par or stated amount outstanding for all preferred (and preference) stock issues expected to be outstanding as of the beginning of the 12-month period used to compute *projected* mid-year rate base to the total par or stated amount outstanding for all issues expected to be outstanding as of the end of the 12-month period, and *dividing* the resulting sum by two, which yields the average total par or stated amount expected to be outstanding for all issues for the 12-month period;

(C) *dividing* the average total annual dollar cost of preferred (and preference) stock for all issues for the 12-month period by the average total par or stated amount expected to be outstanding for all issues for the 12-month period, which yields the average annual percentage rate cost of preferred (and preference) stock capital for all issues to be used in computing the BTWACC.

(v) *Cost of preferred (and preference) stock capital calculation (Schedules F-IV, F-IV(A), F-V, and F-V(A)).* The carrier shall calculate the annual percentage rate cost of preferred (and preference) stock capital for all issues of preferred (and preference) stock expected to be outstanding as of the beginning and as of the end of the 12-month period used to compute *projected* mid-year rate base separately for the two dates, and shall also

calculate the average annual percentage rate cost of preferred (and preference) stock for all issues for the 12-month period. The carrier shall support these calculations by showing in tabular form the following for each issue of preferred (and preference) stock as of the beginning and as of the end of the 12-month period separately for the two dates:

- (A) Title;
- (B) Date of issuance;
- (C) Dividend rate (%);
- (D) Par or stated amount of issue (\$);
- (E) Discount or premium (\$);
- (F) Issuance expense (\$);
- (G) Net proceeds to the carrier (\$);
- (H) Net proceeds ratio (%), which is the net proceeds to the carrier *divided* by the par or stated amount issued;
- (I) Cost of money (%), which, for *existing* preferred (and preference) stock issues, shall be the dividend rate *divided* by the net proceeds ratio; and, for preferred (and preference) stock issues to be *newly* issued on or before the final day of the 12-month period, shall be the estimated dividend rate *divided* by the estimated net proceeds ratio;
- (J) Par or stated amount outstanding (\$);
- (K) Annual cost (\$); and
- (L) If issue is owned by an affiliate, name and relationship of owner.

Where a carrier is a subsidiary of a parent company, the carrier shall show the cost of preferred (and preference) stock calculations and information required in this paragraph for its own preferred (and preference) stock unless the carrier applies for and receives permission from the Commission to use a consolidated capital structure in computing the BTWACC. Where such permission is granted, the subsidiary carrier shall show the required cost of preferred (and preference) stock calculations and information for the consolidated system's preferred (and preference) stock.

(vi) In the event that new preferred (and preference) stock is to be issued on or before the final day of the 12-month period used to compute *projected* mid-year rate base,

the carrier shall submit a statement explaining the methods used to estimate information (A) through (L) required under paragraph (e)(8)(v).

(9) *Cost of common-stock equity capital.* A carrier's cost of common-stock equity capital shall be calculated using the Discounted Cash Flow ("DCF"), Capital Asset Pricing Model ("CAPM"), and Risk Premium ("RP") methods. A final estimate of that cost shall be derived from the separate estimates obtained using each of the three methods.

(10) *DCF method.* (i) The DCF model that shall be used in calculating a carrier's cost of common-stock equity is defined algebraically as follows:

$$K_e = \frac{D_o}{P_o}(1+.5g) + g$$

where:

K_e is the carrier's cost of common-stock equity capital;
 D_o is the carrier's current annualized dividend (defined as four times the current quarterly installment) per share;
 P_o is the current market price per share of the carrier's common stock; and
 g is the constant expected annual rate of growth in the carrier's dividends per share.

(ii) *Current market price per share of common stock.* The current market price per share of the carrier's common stock used in the DCF model shall be an average of the monthly high and low market prices during a six-month period commencing not more than nine months prior to the date on which the proposed rates are filed.

(iii) *Estimated growth rate of dividends.* The estimate of g used in the DCF model shall be an average of three separate estimates obtained using historical growth rate data, professional investment services' projections, and the sustainable growth rate model.

(iv) *Historical growth rate estimate of g.* The historical growth rate estimate of g shall be an average of the carrier's most recent five- and ten-year historical growth rate averages of dividends per share, earnings per share, and book value per share.

(v) *Professional investment services' projections estimate of g.* The professional investment services' projections estimate of g shall be an average of Value Line's five-year forecasted growth rate of dividends per share, earnings per share, book value per share, and the Institutional Brokers Estimation Service's five-year forecasted growth rate in earnings per share for the carrier.

(vi) *Sustainable growth rate estimate of g.* The sustainable growth rate estimate of g shall be obtained by *multiplying* the proportion of earnings expected to be retained by the carrier by the expected return on book equity. Value Line's forecasted values for expected retained earnings and expected return on book equity shall be used in arriving at the sustainable growth rate estimate of g.

(11) *CAPM.* (i) The CAPM that shall be used in calculating a carrier's cost of common-stock equity is represented algebraically as follows:

$$K_e = R_f + B(R_m - R_f)$$

where:

K_e is the carrier's cost of common-stock equity capital;
 R_f is the expected risk-free rate of return;
 B is the relevant market risk beta of the carrier's common stock; and
 R_m is the expected overall stock market return.

(ii) *Expected risk-free rate of return.* A six-month average of five-year Treasury Note yields computed over a period not more than nine months prior to the date on which

the proposed rates are filed shall be used as the estimate of the expected risk-free rate of return in the CAPM.

(iii) *Expected beta.* Value Line's most current market risk beta of the carrier's common-stock shall be used as the estimate of the expected beta in the CAPM.

(iv) *Expected overall market return.* The expected overall return on the stock market shall be estimated by *adding* the six-month average of five-year Treasury Note yields used as the estimate of the expected risk-free rate *to* the *arithmetic* average difference between the actual annual returns realized historically by the Standard & Poor's 500 Stock Index and the five-year Treasury Note. The arithmetic average differential shall be based on the complete historical series published annually by Ibbotson Associates in the most recent *Stocks, Bonds, Bills and Inflation Yearbook*, for the period 1926 through the most recent date for which the specified data are available.

(12) *RP method.* (i) The RP model that shall be used in calculating a carrier's cost of common-stock equity is defined mathematically as follows:

$$K_e = K_d + RP$$

where:

K_e is the regulated carrier's cost of common-stock equity capital;
 K_d is the incremental cost of debt; and
 RP is the risk premium.

(ii) *Risk Premium.* The risk premium used in the RP model shall be the historical *arithmetic* average return differential between rates of return actually earned on investments in the Standard & Poor's 500 Stock Index and the five-year Treasury Note. This risk premium shall be based on the complete historical data series published annually in the

Stocks, Bonds, Bills and Inflation Yearbook, for the period 1926 through the most recent date for which the specified data are available.

(iii) *Incremental cost of debt.* A six-month average of five-year Treasury Note yields computed over a period not more than nine months prior to the date on which the proposed rates are filed shall be the estimate of the incremental cost of debt in the RP model.

(iv) *Risk adjustment.* The RP model shall be used in its generic form and the risk premium specified herein shall not be adjusted for any possible differences in the risk of the firms represented in the Standard & Poor's 500 Stock Index and that of the carrier under consideration. The generic RP model shall be used as a benchmark for the range of companies contained in the Standard & Poor's 500 Stock Index on which it is based, and, therefore, shall be used to measure the broad dimensions of investor perceptions of the trade-off between risk and return.

(13) *Corporate income tax rate (Schedules F-VI and F-VI(A)).* The corporate income tax rate used in computing the BTWACC shall be the carrier's composite statutory corporate income tax rate for the 12-month period used to compute *projected* midyear rate base. Such rate shall be a composite of the carrier's Federal and State income tax rates, and of any other income tax rate to be applied to the carrier's income by any other entity to which the carrier is to pay income taxes. The carrier shall calculate and show its composite statutory corporate income tax rate as well as its Federal, State, and any other applicable statutory income tax rates separately for the 12-month period used to compute *projected* midyear rate base. The carrier shall also state the name of any entity other than

the Federal and State governments to which it is to pay taxes. Where a carrier is a subsidiary of a parent company, the carrier shall show its own statutory corporate income tax rates unless the carrier applies for and receives permission from the Commission to use a consolidated capital structure in computing the BTWACC. Where such permission is granted, the carrier shall show instead the consolidated system's statutory corporate income tax rates.

(14) *Flotation costs (Schedules F-VII and F-VII(A)).* (i) A carrier's cost of common-stock equity capital shall be adjusted to reflect those costs of floating new issues that are actually incurred, but only in the event that new common stock is to be issued to the general public during the 12-month period used to compute *projected* midyear rate base. Those flotation costs for which an allowance shall be made must be *identifiable*, and must be *directly attributable* to underwriting fees, and printing, legal, accounting, and/or other administrative expenses. No allowance shall be made for any hypothetical costs such as those associated with market pressure and market break effects. The allowance shall be applied solely to the new common-stock equity and shall not be applied to the existing common-stock equity balance. The formula that shall be used to compute such an allowance is as follows:

$$k = Fs/(1+s)$$

where:

k is the required increment to the cost of the carrier's common stock equity capital that will allow the company to recover its flotation costs;
F is the flotation costs expressed as a decimal fraction of the dollar value of new common-stock equity sales; and
s is the new common-stock equity sales expressed as a decimal fraction of the dollar value of existing common-stock equity capital.

(ii) *Flotation costs data (Schedules F-VII and F-VII(A)).* (A) In the event that new common-stock equity is to be issued during the 12-month period used to compute *projected* midyear rate base, the carrier shall show separately by category the estimated costs of floating the new issues to the extent that such costs are *identifiable* and are directly *attributable* to actual underwriting fees, and to printing, legal, accounting, and/or other administrative expenses that must be paid by the carrier. The carrier shall submit a statement explaining the method used in estimating the flotation costs. The carrier shall also show estimates of the date of issuance; number of shares to be issued; gross proceeds at issuance price; and net proceeds to the carrier.

(B) Where a carrier is a subsidiary that obtains its common-stock equity capital through a parent company, and the parent company intends to issue new common-stock equity during the 12-month period, the carrier shall show separately by category the estimated costs to the parent company of floating the new issues, and estimates of the above items relative to the parent company's issuance of new common-stock equity, provided that such carrier applies for and receives permission from the Commission to use a consolidated capital structure in computing the BTWACC.

(f) *Financial ratio methods-(1) Fixed charges coverage ratio.*

(i) * * *

(ii) * * *

(2) *Operating ratio.*

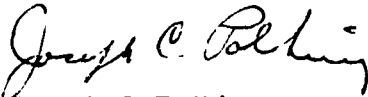
(i) * * *

(ii) * * *

(g) * * *

(h) * * *

By the Commission.


Joseph C. Polking
Secretary