

ISSUES REGARDING THE DIRECT USE OF STOCK PRICE AND PRICE/EARNINGS DATA IN THE UNIT VALUATION OF CENTRALLY ASSESSED TAXPAYERS

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Taxing authorities use the unit valuation concept (in contrast to the summation valuation concept) to value the operating assets of centrally assessed taxpayers, such as railroads, airlines, electric utilities, telecom companies, and interstate pipelines. Taxing authorities also use the unit valuation concept to value the operating assets of some locally assessed taxpayers, such as water and waste water companies, cellular telephone providers, cable TV companies, and petroleum and natural gas refineries. In their unit valuation analyses, many assessors use "comparable company" stock prices and price/earnings multiples in the direct capitalization method and in the stock and debt method. This discussion explains the conceptual and practical problems associated with the direct use of public company stock market data in the valuation of taxpayer operating assets.

INTRODUCTION

Many types of industrial and commercial taxpayers are subject to the unit valuation concept of property taxation assessment. The unit concept of property valuation contrasts with the more common summation concept of property valuation.

In the summation valuation concept, each of the taxpayer subject assets is individually appraised and "summed" to a total value. This valuation procedure includes each parcel of real estate and each piece of tangible personal property. In the unit valuation concept, all of the taxpayer subject assets are appraised collectively—as one aggregate "unit" of operating assets.

Centrally assessed taxpayers are often subject to unit valuation. That is because these taxpayers own assets that (1) move or (2) cross over multiple taxing jurisdictions. Common examples of centrally assessed taxpayers include railroads, airlines, telephone companies, electric companies, interstate pipelines, and so on.

Even locally assessed taxpayers may be subject to unit valuation if the taxpayer subject assets are (1) complex and (2) fully integrated. Common examples of such taxpayers include CATV systems, oil and gas refineries, mining properties, water and wastewater companies, and so forth.

Income approach methods are commonly used in the valuation of all types of property. And, all income approach property valuation methods typically fall into

two categories: (1) the yield capitalization method and (2) the direct capitalization method. In the unit valuation context, property tax appraisers (particularly those who work for taxing authorities), often use a particular version of the direct capitalization method. In this version, the valuation variables (particularly the direct capitalization rates) are extracted from publicly traded "comparable company" stock prices and price/earnings multiples.

Income approach valuation methods are commonly used in the unit valuation of centrally assessed (and some locally assessed) taxpayers. Of the two common income approach methods, analysts typically assign a much greater weight to the yield capitalization method indication than to the direct capitalization method indication in the final value synthesis and conclusion procedure. This discussion describes some of the reasons for this analytical preference of the yield capitalization method over the direct capitalization method in ad valorem taxation unit valuations.

THE YIELD CAPITALIZATION METHOD

In the yield capitalization method, both (1) the measurement of economic income and the yield capitalization rate are intended to be specific to the subject unit. The discrete period income projection is based on the analyst's best estimate of the prospective income generation of the subject taxpayer operating assets.

And, the analyst estimates the yield capitalization rate (or present value discount rate) based on a risk and expected return analysis of the subject taxpayer operating assets—compared to all other classes of investment opportunities.

In the yield capitalization method, the income projection can accommodate cyclical changes in economic income. It can accommodate uneven expected rates of change in prospective income. And, it can even accommodate an expected fundamental change in the economic income of the subject taxpayer unit.

In the yield capitalization method, the capitalization rate is typically based on a weighted average cost of capital (WACC)/band of investment method rate estimation procedure. And, the cost of equity component of the WACC is typically based on the CAPM, or the capital asset pricing model. The CAPM estimates a cost of equity capital based on risk and expected return metrics that are applicable to the taxpayer operating assets subject to property taxation.

THE DIRECT CAPITALIZATION METHOD

In the direct capitalization method, the economic income subject to capitalization is also intended to relate directly to the subject taxpayer unit. Accordingly, other than for differences in projected growth rates, the income projection used in the yield capitalization method is not fundamentally different from the income projection used in the direct capitalization method.

However, the procedure for estimating the direct capitalization rate is often fundamentally different in the yield capitalization method than in the direct capitalization method. As mentioned above, virtually all analysts use some version of the CAPM to estimate the cost of equity component of the yield capitalization rate.

As will be described below, the CAPM appropriately estimates a yield capitalization method for unit valuation purposes.

However, as some valuation analysts (particularly those who work for taxing authorities) apply the direct capitalization method, the direct rate cost of equity is extracted directly from (1) the stock prices and (2) stock price/earnings multiples of selected “comparable” publicly traded companies.

Using this direct capitalization rate estimation procedure, all of the investment attributes of publicly traded stocks are impounded in the direct cap rate. This is true even if the subject taxable property (i.e., the operating assets of the subject taxpayer) do not enjoy any of the investment attributes of publicly traded stocks.

Since the direct capitalization method extracts rates directly from stock market prices, property tax valuation analysts should consider two fundamental issues:

1. the selected “comparable” properties (i.e., publicly traded securities) should be directly comparable to the subject taxable property (i.e., the unit of taxpayer operating assets), and
2. any investment attributes associated with the “comparable” properties (i.e., publicly traded securities) will be impounded into the valuation of the subject taxable property (i.e., the unit of taxpayer operating assets).

For reasons that are described below, neither of these two fundamental issues apply to the use of yield capitalization rates derived from the CAPM. As this discussion explains, the use of “comparable” stock-price-derived capitalization rates creates fundamental problems with the use of the direct capitalization method for property tax valuation purposes. In contrast, the use of CAPM-derived yield capitalization rates mitigates the fundamental problems with the use of the yield capitalization method for property tax valuation purposes.

With regard to the income subject to capitalization, the direct capitalization method only allows for the estimation of a single period stabilized income projection. Since this income estimation is for a single period, it cannot vary over time. In other words, the direct capitalization method does not allow for:

1. any expected cyclical changes in unit income or
2. any changes in unit income not represented by a constant growth rate.

While the estimation of the single period stabilized income is very important to the direct capitalization method, it is difficult to project this stabilized income. For example, a careful analysis is required in order to determine if the stabilized income should be based on:

1. last year’s actual income,
2. an average of the last three years’ actual income,
3. an average of the last five years’ actual income, or
4. some other base period actual income.

The projection of stabilized income is intended to be an estimate of the most likely level of income, on average, in the future. However, many analysts simply increase the prior period actual operating income by a growth rate in order to estimate the prospective stabilized income.

THE DIRECT USE OF STOCK PRICES TO DERIVE DIRECT CAPITALIZATION RATES

With regard to the procedure of extracting direct capitalization rates from publicly traded company stock prices, there are two serious comparability problems:

1. The “comparable” companies selected for the capitalization rate extraction analysis are often not comparable enough to the subject taxpayer unit to provide any meaningful rate selection guidance.
2. The selected “comparable” company stock price and price/earnings data relate to liquid securities that trade in extremely efficient capital markets; in contrast, the subject taxpayer unit relates to illiquid operating assets that do not trade in an organized or efficient market.

Accordingly, from an investment risk and expected return perspective, there is a fundamental lack of comparability between:

1. the stock price and price/earnings data used to estimate the direct capitalization rate and
2. the taxable operating assets included in the subject taxpayer unit.

There are well defined comparability criteria when analysts use the direct capitalization method in a summation valuation of real estate and tangible personal property. There are also well defined criteria for the identification and quantification of adjustments (to increase the comparability of the comparable properties to the subject property) when analysts use the direct capitalization method in a summation valuation of real estate and tangible personal property.

However, many taxing authority valuation analysts do not follow these same criteria for comparability and adjustments when they use the direct capitalization method for unit valuation purposes. If these comparability and adjustment criteria are not followed, then the results of the direct capitalization method-based unit valuation will be unreliable.

In fact, the direct use of stock price and price/earnings data affects the reliability of both the direct capitalization method and the stock and debt method for unit valuation purposes.

Exhibit 1 presents a list of ten analytical problems related to the direct use of stock price-related data that affect the application of:

1. the direct capitalization method and
2. the stock and debt method.

ANALYTICAL PROBLEMS WITH THE DIRECT USE OF STOCK PRICES AND PRICE/EARNINGS MULTIPLES

The general comparability problems regarding the direct use of stock price and price/earnings data in the unit valuation

of operating assets were mentioned above. These general comparability problems include:

1. the lack of comparability of the selected comparable companies and the subject taxpayer unit of operating assets and
2. the lack of comparability of the publicly traded securities (i.e., liquid securities traded on efficient stock exchanges) and the unit (i.e., illiquid taxpayer operating assets for which there is no ready secondary market).

In addition to these general comparability problems, there are other analytical problems associated with the direct use of stock price and price/earnings multiple data to derive direct capitalization rates for property tax valuation purposes:

1. Stock price/earnings multiples are substantially variable (and sometimes erratic) in the short term.
2. Stock price/earnings multiples are affected by macroeconomic events that are not related to the subject taxpayer company.
3. Stock price/earnings multiples are quickly and substantially distorted based on short-term industry-specific or comparable company-specific events or disclosures.
4. Stock price/earnings multiples are always forward looking—accordingly they reflect the investment community’s expectation of future income that has not been (and may never be) earned.
5. Stock price/earnings multiples tend to artificially inflate the value indications of the more successful companies in an industry—particularly if the stock price/earnings multiples include consideration of comparable companies that have experienced below average financial performance.

Each of these analytical problems is described below.

As used above, the term “stock price/earnings multiple” includes stock price multiples that are derived from price/net operating income, price/net income, price/net cash flow, and so forth. This term also includes both the comparable company price/earnings multiples themselves and the direct capitalization rates that are derived from the comparable company stock price/earnings multiples.

Stock Market Price/Earnings Multiples Are Erratic

Stock market price/earnings multiples can change materially and very quickly. The stock prices of publicly traded companies can change 10 percent, 20 percent, or more in a single day. Daily changes in broad stock market indices (such as the Dow Jones Industrial Average) of 100 points, 200 points, or more are also not uncommon.

While these rapid and significant stock price changes clearly reflect the investment community's current perception of stock values, they do not necessarily reflect an owner's perception of taxpayer company operating asset values.

If the price of a comparable company stock changed (increased or decreased) by 20 percent in one day, no rational investor—or taxing authority valuation analyst—would expect that the market value of the taxpayer unit of operating assets also changed 20 percent in one day. Nonetheless, the direct use of stock price/earnings data in the direct capitalization method can lead to that unreasonable conclusion.

Stock Market Price/Earnings Multiples Are Influenced by Macroeconomic Events

Stock price/earnings multiples can change substantially even when there is no fundamental change (1) in the comparable company operation or (2) in the general condition of the comparable company/taxpayer industry. Rather, stock price/earnings multiples often change substantially in response to macroeconomic or political conditions.

For example, announced or perceived changes in Federal Reserve monetary policy, changes in Congressionally mandated fiscal policy, changes in White House nominations for Supreme Court justices, advances or defeats in the war in Iraq, can all cause substantial changes in stock market prices—and in the resulting stock price/earnings multiples.

Similarly, the election or appointments of political candidates in the United States—or as far away as Russia, China, or Israel—can cause substantial changes in stock market prices—and in the resulting stock price/earnings multiples.

As a result of changes in stock prices due to these macroeconomic or political announcements, there is no corresponding change in the market value of the subject taxpayer operating assets. Nonetheless, the direct use of stock price/earnings data in the direct capitalization method can lead to that unreasonable conclusion.

Stock Market Price/Earnings Multiples Are Affected by Short-Term Phenomena

Stock price/earnings multiples can change materially based on short term phenomena. For example, when a selected comparable company—or the subject taxpayer company—either attains or fails to obtain security analysts' quarterly earnings estimates, then the stock price (and corresponding price/earnings multiple) often change materially. This is true even though the operating results that triggered the price change (1) are short term and (2) do not reflect any long-term positive or negative trend in that company's performance.

Likewise, a single event can materially change the stock price levels in an entire industry. For example, after the 1996 crash of the Value Jet flight in the Florida Everglades, the stock price of Value Jet and many other discount airlines decreased materially. At the same time, the stock price of the major full-service airlines increased materially.

These sudden and short-term stock price changes have a direct effect on the corresponding company's multiple. Nonetheless, these sudden and short-term comparable company stock price increases or decreases do not represent a fundamental change in the value of the subject taxpayer company operating assets.

When one comparable company experiences (1) short-term operating results above/below security analyst expectations or (2) a one-time aberrational event, that should not affect the market value of the subject taxpayer operating assets. Nonetheless, the direct use of stock price/earnings data in the direct capitalization method can lead to that unreasonable conclusion.

Stock Market Price/Earnings Multiples Are Always Forward Looking

Both (1) security analysis/portfolio management theory and (2) empirical stock market data indicate that stock prices (and corresponding price/earnings multiples) are forward looking—or *ex ante*. That is, stock prices depend on investors' expectations regarding the future results of operations and financial position of the publicly traded comparable companies.

First, when there is a difference between comparable company expected operating results and historical operating results, there are practical problems with the use of the market-derived *ex ante* price/earnings multiples to the subject taxpayer *ex post* financial data.

Second, and perhaps more importantly, comparable company stock prices (and the corresponding price/earnings multiples) are based on what investors think will happen in the future. Investors will impound their expectations into the comparable company stock prices if the investors believe that the comparable companies will:

1. develop new product lines,
2. expand into new markets,
3. make major capital expenditures, or
4. consummate mergers and acquisitions.

Of course, these comparable company expected results of operations may never actually materialize. And, the comparable company actual future results of operations may turn out to be considerably below the expected future results of operations.

More importantly, while investors may expect that a comparable company may successfully achieve these investment opportunities, the subject taxpayer may not have (or may not want to pursue) the same investment opportunities. Nonetheless, the value increment associated with the comparable company's PVGO (present value of growth opportunities) will be impounded in the price/earnings multiple used to derive the subject taxpayer direct capitalization rate.

Therefore, if the ex ante stock prices (and corresponding price/earnings multiples) are used in the taxpayer unit valuation, the subject taxpayer will be assessed based on the results of business operations that have not yet occurred as of the valuation date—and that may never occur.

And, the subject taxpayer will be assessed based on the expected economic benefit (1) of products and markets it has not yet developed and (2) of capital expenditures and mergers/acquisitions it has not yet made. The direct use of stock price/earnings data in the direct capitalization method can lead to this unreasonable conclusion.

Stock Market Price/Earnings Multiples Exaggerate the Value of Above-Average Taxpayer Units

Typically, when comparable company results of operations deteriorate, the comparable company stock prices do not decrease in the same proportion. For example, when a public comparable company has a "bad year" financially, its stock price will decrease. However, typically, the stock price will not decrease at the same percent as the comparable company decrease in operating results.

Therefore, stock price/earnings multiples actually tend to increase when an industry—or when particular public comparable companies—have deteriorating financial results.

For example, let's assume comparable company Alpha 2004 earnings are \$10 per share and its January 1, 2005, stock price is \$100 per share. This corresponds to an Alpha January 1, 2005, price/earnings multiple of 10X.

Let's assume Alpha 2005 earnings are \$6 per share (or a 40 percent decrease from 2004 earnings). Let's assume that the Alpha January 1, 2006, stock price is \$75 per share (or a 25 percent decrease from the January 1, 2004, stock price).

This realistic example results in an Alpha January 1, 2006, price/earnings multiple of 12.5X. This means that the comparable company Alpha price/earnings multiple increased (by 25 percent) when its earnings decreased (by 40 percent).

One explanation that security analysts offer for this well-documented phenomenon is the concept that stock prices are forward looking—and that investors expect a future rebound in the subject industry/comparable company financial performance.

Therefore, when the subject taxpayer experiences a financially successful year, the direct capitalization method will artificially inflate the indicated taxpayer unit value. This is because the inflated price/earnings multiples (of the less profitable than average comparable companies) are applied to the (more profitable than average) subject taxpayer unit earnings.

The result is that the direct capitulation method overstates the taxpayer unit value as a result of overstated direct cap rates derived directly from the inflated price/earnings multiples of the comparable companies.

The value of a successful taxpayer unit of operating assets should not be influenced by stock prices inflated by investors' expectations for the rebound of less successful comparable companies. Nonetheless, the direct use of stock price/earnings data in the direct capitalization method can lead to that unreasonable conclusion.

Exhibit 2 presents a list of ten of the many risk and expected return investment attribute differences between (1) publicly traded stock and (2) taxpayer operating assets. Because of these (and other) investment attribute differences, the direct use of stock prices and price/earnings multiples is inappropriate in property tax valuations. This conclusion is true both for the use of the direct capitalization method and the stock and debt method of unit valuation.

THE USE OF YIELD CAPITALIZATION RATES AND THE CAPM

A cost of equity capital method that directly uses publicly traded stock prices is only appropriate in the valuation of equity securities. Stock prices, unlike the values of operating assets, incorporate valuation influences such as investor sentiment, company news, security analyst recommendations, and technical trading influences.

A cost of equity capital method that uses relative rates of return (e.g., the capital asset pricing model) is appropriate in the valuation of operating assets. This is because the CAPM (and related yield capitalization rate methods) rely only indirectly on stock market data.

That is, the CAPM relies on relative rates of stock market-based investment returns. It does not rely directly on current stock market prices and/or stock price/earnings multiples.

In fact, all of the components of the CAPM are measured in relation to (1) relative rates of return and not (2) absolute stock prices or price/earnings multiples. For this reason, the use of CAPM (and related yield capitalization rate methods) mitigates—but does not completely eliminate—the analytical problems associated with the direct use of stock market data.

Table 1 contrasts (1) the direct capitalization method cost of equity formula with (2) the yield capitalization

Table 1
Comparison of the Direct Capitalization Method
Cost of Equity Capital Component
and the Yield Capitalization Method
Cost of Equity Capital Component

Direct Capitalization Method/Cost of Equity Capital
Based on the Direct Use of Stock Prices

$$k_e = E / P$$

k_e = Cost of equity capital

E - Earnings per share (i.e., current earnings divided by current stock price)

P = Share price (i.e., current stock price)

Yield Capitalization Method/CAPM Cost of Equity Capital
Using Relative Rates of Investment Return

Capital Asset Pricing Model:

$$k_e = R_f + B * (R_m - R_f)$$

Where:

k_e = Cost of equity capital

R_f = Risk-free rate of return (i.e., U.S. Treasury bond interest rate, not stock price related)

$(R_m - R_f)$ = General market equity risk premium; a relative measurement between (1) historical composite of stock market rate of return and (2) the historical risk-free (i.e., U.S. Treasury bond) rate of return

B = Beta; a relative measurement between (1) an individual security (e.g., taxpayer company) historical rate of return and (2) the historical composite stock market rate of return, calculated as: covariance of an individual security and the market divided by the market variance (a long-term relative measure)

method CAPM formula. The direct capitalization rate method is based directly on stock prices and price/earnings multiples. The CAPM is comprised of variables that relate to relative rates of investment return.

Because of its direct use of stock price data the direct capitalization method is more affected than the yield capitalization method by:

1. the analytical problems listed in Exhibit 1 and
2. the investment attribute differences listed in Exhibit 2.

Table 2 presents a simplified illustrative example of this effect. For Table 2, let's assume that the "correct" value of the taxpayer operating assets is equivalent to \$40 per share. Let's assume this is the corresponding net asset value per share to our hypothetically "correct" value of the taxpayer unit of operating assets.

Let's assume that the taxpayer company public stock price is \$50 per share. And, let's assume that the difference between the \$40 net asset value per share and the \$50 stock price per share is due to the differences in the investment attributes of publicly traded stocks compared to the investment attributes of operating assets.

SUMMARY AND CONCLUSION

When the direct capitalization method relies directly on public company stock price/earnings data, valuation analysts typically weight the yield capitalization method more heavily than the direct capitalization method in the final value synthesis and conclusion.

This discussion summarized:

1. some of the conceptual and practical problems associated with the direct use of stock prices and stock price/earnings data in the direct capitalization method, and
2. some of the reasons why analysts prefer to rely on the yield capitalization method as compared to the direct capitalization method.

With regard to unit valuation, the yield capitalization method uses income and capitalization rate (i.e., risk and expected return) factors that are directly associated with the subject taxpayer unit of operating assets.

With regard to unit valuation, the direct capitalization method uses stock market price and price/earnings multiple data to derive capitalization rates that do not reflect the

Table 2
Illustrative Example of the Effect of Investment Influences
on the Direct Capitalization Method
Relative to the Yield Capitalization Method

Direct Capitalization Method—With the Direct Capitalization Rate
Based on the Direct Use of Stock Price Data

Direct Capitalization Rate Components— Unaffected by Public Stock Investment Influences		Direct Capitalization Rate Components— Public Stock Price Includes 25% Investment Influences Premium	
Earnings per share	\$4	Earnings per share	\$4
Net asset value per share	\$40 [a]	Public stock price per share	\$50 [b]
Price/earnings multiple	10 times	Price/earnings multiple	12.5 times
Earnings/price direct capitalization rate	10%	Earnings/price direct capitalization rate	8%

- [a] Net asset value per share is unaffected by the investment influences of publicly traded stock
 [b] The public stock price impounds a 25% premium due to stock market investment influences

Direct Capitalization Rate Conclusion:

Due to the effect of an assumed 25% stock market investment influences premium, the direct capitalization rate is decreased by 20%—that is, 8%/10% -1

Yield Capitalization Method—with the CAPM Yield Capitalization Rate
Based on Relative Rates of Investment Return

CAPM Unaffected by Stock Market Investment Influences:

$$\begin{aligned} k_e &= R_f + B * (R_m - R_f) \\ &= 5\% + 1.0 * (15\% - 5\%) \\ &= 15\% \end{aligned}$$

Where:

- R_f = 5% assumed risk-free rate of return
 B = 1.0 assumed industry beta
 $R_m - R_f$ = long-term historical equity risk premium

CAPM Affected by Stock Market Investment Influences

$$\begin{aligned} k_e &= R_f + B * (R_m - R_f) \\ &= 5\% [a] + 1.0 [b] * (15\% - 5\%)(1.25) [c] \\ &= 17.5\% \end{aligned}$$

Where:

- [a] R_f of 5% is not affected by stock market investment influences
 [b] B of 1.0 is not affected by stock market investment influences
 [c] $R_m - R_f$ is assumed to increase by 25% due to the stock market investment influences (a smaller increase would be more likely due to the long-term nature of the equity risk premium)

Yield Capitalization Rate Conclusion:

In the CAPM, based on the effect of an assumed 25% stock market investment influences premium, the yield capitalization rate is increased by only 16.7%—that is, 17.5%/15% - 1.

risk and expected return of the taxpayer unit of operating assets.

When used for unit valuation purposes, the direct use of “comparable” company stock price/earnings data in the direct capitalization method will lead to unreasonable value conclusions for several reasons. The analyst may attempt to identify and quantify adjustments to the stock market-derived price/earnings data in order to mitigate the problems with the use of the direct capitalization method.

However, if both the quantity and the magnitude of such adjustments are significant, then it is appropriate to assign little or no weight to the direct capitalization method value indication (or the stock and debt method value indication) in the unit value reconciliation and correlation.

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Exhibit 1

Analytical Problems Related to the Direct Use of Stock Price Data in Both the Direct Capitalization and Stock and Debt Methods

1. Stock prices are influenced by investor expectations of future income from future assets (i.e., assets not yet in existence as of the assessment date).
2. Stock prices change constantly and can materially increase or decrease in the short term; the values of taxpayer operating assets do not fluctuate in this manner.
3. Stock prices are influenced by macroeconomic factors unrelated to the income-producing capacity of the subject taxpayer operating assets.
4. Stock prices are affected by industry factors that do not specifically relate to the subject taxpayer operating assets.
5. Stock prices include investor perceptions of the value of all of the subject/comparable company's assets—both tangible assets and intangible assets.
6. Stock prices are influenced by investor perceptions of intangible investment influences (e.g., liquidity premiums, investor income tax attributes, etc.) not related to either the taxpayer tangible assets or the taxpayer intangible assets.
7. Stock prices are influenced by general changes in the total market demand for investment-grade securities; this change in demand for securities does not affect the demand for the subject taxpayer operating assets.
8. Stock prices are influenced by investor perceptions of political factors (e.g., wars, elections, etc.); these perceptions do not affect the demand for the subject taxpayer operating assets.
9. When the subject taxpayer company—or the selected guideline companies—operate in multiple industries, stock prices may be disproportionately influenced by investor perceptions of operating assets not included in the subject taxable unit.
10. The use of stock prices and stock price/earnings multiples overstates the values of successful taxpayer companies, particularly if the taxpayer industry includes low performance guideline companies.

Exhibit 2

Differences in the Risk and Expected Return Investment Attributes Between Publicly Traded Stocks and Operating Assets

1. Lack of marketability/liquidity—Stocks are perfectly liquid. Operating assets are extremely illiquid.
2. Capital reinvestment calls—Public stock investors do not expect to have to make continuing investments in their stock investments. Corporate taxpayers are often required to make continuing (and substantial) investments in operating assets.
3. Investment time horizon—Public stock investors have a very short investment time horizon. Corporate taxpayers have a very long time horizon for investments in operating assets stocks; in many industries, there is a great deal of regulation as to how investors can use or dispose of operating assets.
4. Regulatory risk—There are few regulations that limit an investor's ability to sell publicly traded stocks. In many industries, there is a great deal of regulation as to how investors can use or dispose of operating assets.
5. Limited/unlimited risk—Public stock investors can never lose more than their original investment. The value of taxpayer operating assets could turn negative due to a large litigation award, bankruptcy declaration, environmental liability, and so on.
6. Diversification—Public stock investors can easily diversify their investment portfolio. Corporate taxpayers invest all of their assets in one industry.
7. Wealth concentration—Public stock investors can invest in many different types of investment instruments. Corporate taxpayers invest all of their corporate wealth in operating assets.
8. Transaction costs—Investors can buy and sell publicly traded stocks at very low transaction (i.e., brokerage) costs. Corporate taxpayers incur high brokerage costs to sell operating assets.
9. Market efficiency/inefficiency—Investors can sell publicly traded stocks quickly at a known market price. Corporate taxpayers face an unknown price when they sell operating assets.
10. Investment depreciation versus investment appreciation—Investors expect publicly traded stocks to appreciate over time. Corporate taxpayers expect operating assets to depreciate over time—and to require constant reinvestment/replenishment.