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The Cost of Equity as a Yield: Embedded Bankruptcy Risk in Valuation

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Abstract

This paper develops a valuation-based interpretation of the cost of equity by recovering an implied capitalization rate from observed equity prices and contemporaneous earnings under a maintained **steady-state abstraction**. In the empirical illustration, "earnings" (E) is taken as the earnings per share measure implicit in the reported price-earnings ratio (P/E) obtained from publicly available investment data sources (so that c is recovered mechanically as $c = 1/(P/E)$). The recovered rate is algebraically equivalent to the earnings yield and is interpreted as a valuation discount rate, analogous to a bond yield, rather than as an expected return implied by asset-pricing equilibrium restrictions. Exposure to financial distress and bankruptcy is embedded in reduced form through earnings capitalization, while price volatility is treated separately. An empirical illustration documents cross-sectional dispersion in implied capitalization rates across firms and market segments.

Keywords

Cost of Equity, Capitalization Rate, Earnings Yield, Equity Valuation, Bankruptcy Risk, Reduced-Form Valuation

1. Introduction

Valuation in corporate finance rests on discounting cash flows to the present using an appropriate cost of capital. For equity, this discounting reflects the residual nature of the claim: equity holders receive cash flows only after contractual obligations have been met and are therefore uniquely exposed to permanent capital loss in states of financial distress or bankruptcy.

In much of the academic asset-pricing literature, the cost of equity is identified with an expected return implied by equilibrium restrictions, most prominently those associated with the Capital Asset Pricing Model and its extensions (Fama and

French [1]). This identification traces back to the equilibrium asset-pricing framework formalized by Sharpe [2], in which the cost of equity is defined as an expected return required by investors rather than as a valuation discount rate inferred directly from prices. Within this framework, discount rates and expected returns are treated as equivalent objects and realized or expected stock returns are frequently used as empirical proxies for valuation discount rates. By contrast, applied valuation practice commonly interprets equity prices through capitalization measures, such as price-earnings ratios and earnings yields, which directly relate contemporaneous prices to contemporaneous measures of firm performance.

This paper adopts a valuation-based perspective. Market prices are treated as observed outcomes of competitive trading and are used to recover an implied equity capitalization rate from contemporaneous prices and an earnings measure under a maintained steady-state abstraction. In the empirical illustration, the earnings measure is the one implicit in reported price-earnings ratios from publicly available investment data sources. The recovered rate is interpreted as a valuation discount rate—analogous to a bond yield inferred from bond prices—rather than as an equilibrium expected return. Exposure to financial distress and bankruptcy is embedded in reduced form through the capitalization of earnings, without explicit modeling of default probabilities, recovery rates, or state-contingent payoffs.

The framework is deliberately non-structural and descriptive. It does not impose preferences, technologies, or equilibrium conditions, nor does it seek to estimate risk premia or forecast realized returns. Instead, it yields a market-implied valuation statistic inferred directly from observed prices, summarizing how the market capitalizes contemporaneous earnings subject to the possibility of permanent loss. Price volatility is treated separately as a descriptive feature of price dynamics rather than as a determinant of valuation discounting.

The remainder of the paper proceeds as follows. Section 2 formalizes the recovery of the implied capitalization rate under the steady-state abstraction and clarifies its interpretation relative to expected-return constructs. Section 3 describes the data sources. Section 4 presents an empirical illustration documenting cross-sectional dispersion in implied capitalization rates across firms and market segments. Section 5 provides interpretation, discusses limitations and scope, and concludes.

2. Recovering an Implied Equity Capitalization Rate from Market Prices

This section develops a valuation-based framework for recovering an implied equity capitalization rate from observed prices and contemporaneous earnings under a maintained steady-state abstraction.

2.1. Steady-State Abstraction and Recovery of the Implied Rate

This section formalizes the recovery of an implied equity capitalization rate from

observed market prices and contemporaneous earnings under a maintained steady-state abstraction. Under this abstraction, contemporaneous earnings attributable to shareholders (E) are treated as a level stream, permitting direct application of present-value logic. In the empirical illustration below, E is not reconstructed from financial statements; instead, it is taken as the earnings per share measure implicit in the reported P/E ratio from public investment data sources (and may therefore reflect provider conventions, such as trailing versus forward and GAAP versus adjusted definitions).

This steady-state valuation logic is closely related to the capitalization framework underlying the Gordon dividend model, which interprets equity prices as the present value of a long-run dividend *level* under maintained stationarity assumptions (Gordon [3]).

Equilibrium vs. steady-state (why the distinction matters).

The steady-state abstraction should be distinguished from equilibrium conditions commonly invoked in asset-pricing models. An equilibrium characterizes prices and allocations consistent with optimization or no-arbitrage but does not by itself fix how prices map to contemporaneous accounting measures such as earnings. By contrast, the steady-state abstraction is a maintained valuation environment that treats contemporaneous earnings as a level stream, allowing prices and earnings to be interpreted jointly as capitalization objects without modeling growth, adjustment dynamics, or state-contingent payoffs.

Recovery equation.

Formally, under standard present-value logic for a level perpetuity, the current equity price equals contemporaneous earnings per share divided by a constant capitalization rate c. Rearranging yields the implied capitalization rate:

$$c = E/P = 1/(P/E) \tag{1}$$

Numerically, c corresponds to the earnings yield (the inverse of the price-earnings ratio). In this paper, the cost of equity is therefore measured as the earnings yield recovered from contemporaneous prices and the earnings concept embedded in reported P/E ratios under the maintained steady-state abstraction.

Methodological Remark: Why "simple arithmetic" is the point (and why it's not too simple)

A natural concern is that Equation (1) follows from elementary present-value arithmetic rather than from asset-pricing machinery. This is intentional. The object recovered here is not a structural parameter or an equilibrium expected return; it is a reduced-form valuation statistic that reconciles observed prices with contemporaneous earnings under a maintained valuation abstraction.

When the objective is to recover a reduced-form **valuation operator** from observable prices and contemporaneous earnings, algebraic inversion is not a simplification but a requirement—it is the only logically well-posed and non-circular way to infer the market-implied capitalization of earnings. Introducing additional structure (stochastic discount factors, state-contingent payoffs, equilibrium restrictions) would re-impose assumptions the framework deliberately avoids and

would shift the object from "inferred from prices" to "imposed on prices".

This point is especially important for bankruptcy risk in equity. Bankruptcy for equity does not correspond to a payoff state with separately observable probabilities and recoveries independent of prices; attempts to model bankruptcy risk structurally therefore either infer probabilities from prices (creating circularity) or impose strong parametric assumptions that are not empirically identifiable. The reduced-form capitalization rate avoids this by embedding exposure to permanent loss directly in the market's capitalization of earnings, without decomposing it into separately identified default primitives.

The fixed-income analogy is instructive: bond yields embed credit risk through discounting even when default probabilities and recoveries are not separately identified. The implied equity capitalization rate plays an analogous role for common equity.

2.2. Interpretation: Capitalization Rate versus Expected Return

The capitalization rate recovered in Equation (1) should be distinguished from the cost of equity as it appears in expected-return asset-pricing models. In that literature, the cost of equity is defined as an expected return implied by equilibrium restrictions, and discount rates and expected returns are treated as equivalent objects. Realized or expected stock returns are therefore often used as empirical proxies for valuation discount rates.

The valuation-based framework adopted here deliberately departs from this identification. The implied capitalization rate is interpreted as a valuation discount rate inferred directly from market prices—analogous to a bond yield inferred from bond prices—rather than as an equilibrium expected return. It reconciles contemporaneous earnings with observed prices under a maintained steady-state abstraction and is recovered by algebraic inversion rather than imposed by equilibrium conditions.

This distinction is essential for interpretation. A discount rate is a valuation operator that maps cash flows into prices, whereas an expected return is a statistical property of realized payoffs. While the two may coincide under restrictive assumptions, they are not logically identical. Because realized equity returns reflect price dynamics, reinvestment effects, and realized shocks, they do not provide a reliable proxy for the valuation discount rate applied by the market.

2.3. Distress, Bankruptcy, and Reduced-Form Embedding in Valuation

Interpreted as a valuation discount rate, the implied capitalization rate clarifies how exposure to financial distress and bankruptcy enters equity valuation without explicit modeling of default events. Equity holders bear the residual claim on the firm and are therefore uniquely exposed to permanent capital loss in states of severe distress, reorganization, or bankruptcy. Under the steady-state abstraction, this exposure is reflected directly in how contemporaneous earnings are capitalized.

The framework embeds distress and bankruptcy exposure in a deliberately reduced-form manner. It does not model default probabilities, recovery rates, or state-contingent payoffs. Instead, variation in the implied capitalization rate is interpreted as reflecting differences in the perceived durability of current earnings, including exposure to permanent loss. When earnings are viewed as less durable, they are capitalized at higher rates, resulting in lower prices relative to earnings.

This interpretation also separates two economically different notions of risk in equity markets. Price volatility describes the variability of prices over trading horizons and is a property of price dynamics. Exposure to permanent loss arises from distress and bankruptcy and enters valuation through the discounting of earnings. Under the steady-state abstraction, volatility remains a descriptive statistic of price behavior rather than a valuation input.

2.4. Leverage and Tax Considerations

Most firms finance operations with both equity and debt. Because earnings attributable to shareholders reflect financing choices—through interest expense and tax treatment—leverage can affect both observed earnings and equity prices and therefore the implied capitalization rate recovered from Equation (1).

In this framework, leverage is not introduced as a structural determinant of the capitalization rate. Its influence is reflected implicitly through the earnings and prices that enter the recovery equation. The approach therefore remains valuation-based and avoids imposing a structural mapping from capital structure decisions to equity discount rates.

3. Data Sources

This section describes the data sources used to recover the implied equity capitalization rate and to illustrate its cross-sectional variation across firms and market segments.

The empirical illustration uses publicly available valuation metrics drawn from widely used investment websites and related financial data providers. For each firm, the price-earnings ratio (P/E) is recorded, and the implied capitalization rate is recovered mechanically as the inverse of P/E. Because the illustration relies on reported P/E figures, the earnings concept embedded in P/E follows the data provider's convention (e.g., trailing versus forward; GAAP versus adjusted), and may vary across sources. Debt-to-equity ratios are taken from the same public sources when available.

Firms are grouped into broad size/exchange segments to provide an illustrative cross-section. The labels "large-cap," "Mid-Cap," and "small-cap" are used descriptively rather than as a strict, externally benchmarked classification, and the groupings are intended to support a simple comparison of implied capitalization rates across firms of different perceived scale.

Because market-capitalization breakpoints vary across data vendors and over time, the empirical illustration does not rely on a single authoritative cutoff sched-

ule. Instead, firms were selected to reflect a range from very large, widely followed firms to smaller firms with more limited scale.

The exchange labels in the tables are reported for transparency, but exchange listing is not treated as equivalent to size. The objective is not to provide a definitive taxonomy, but to offer a compact descriptive cross-section for illustrating dispersion in implied capitalization rates.

4. Empirical Illustration: Dispersion in Implied Capitalization Rates

This section provides an empirical illustration of the valuation-based framework using a small cross-section of profitable firms drawn from major U.S. exchanges. For each firm, the implied equity capitalization rate is recovered mechanically as the inverse of a reported P/E ratio (*i.e.*, the reported earnings yield) and reported alongside basic valuation and leverage measures. The exercise is descriptive: its purpose is to illustrate how the recovered capitalization rate varies across firms under the steady-state abstraction, not to estimate expected returns or test asset-pricing models.

The tables show that the implied capitalization rate (the inverse of reported P/E) can differ substantially across firms. In this illustration, several large, widely followed firms have relatively low implied rates, while the Mid-Cap and smaller-firm groups display wider dispersion. These comparisons are sample-specific and intended to demonstrate the mechanics and interpretation of the recovered rate, rather than to establish population-level patterns.

4.1. Large-Cap Firms (NYSE and NASDAQ)

We begin with a small set of large-capitalization firms listed on the NYSE and NASDAQ. Within this group, implied capitalization rates are generally lower than those reported later for many smaller firms.

Table 1. Implied equity capitalization rates for selected large-capitalization firms listed on the NYSE.

Security	Year	Price-earnings ratio	Capitalization rate c%	Debt/Equity ratio
Exxon Mobile	2025	21.82	4.58	0.17
United Health Group	2025	20.35	4.91	0.77
Eli Lilly	2025	46.09	2.16	3.82
Boeing	2025	106.67	0.93	29.83

Table 1 reports the price-earnings ratio (P/E), the implied equity capitalization rate recovered as c = 1/(P/E), and the debt-to-equity ratio (D/E) for selected profitable Large-Cap firms in the year shown. The implied rate is interpreted as the market-implied capitalization of the earnings concept embedded in the reported

P/E under a steady-state abstraction. The numbers are descriptive and are not intended to represent expected returns.

In this illustration, the firms in Table 1 exhibit relatively low implied capitalization rates under the steady-state abstraction (*i.e.*, relatively high reported P/E ratios and low earnings yields).

A comparable set of large-capitalization firms listed on NASDAQ is shown in Table 2.

Table 2. Implied equity capitalization rates for selected large-capitalization firms listed on NASDAQ.

Security	Year	Price-earnings ratio	Capitalization rate c%	Debt/Equity ratio
Costco Wholesale Corp	2025	53.63	1.86	1.64
Palantir Technologies	2023	273	0.36	0 No long-term debt
Meta Platforms Inc,	2025	22.29	4.48	0.39
Broadcom	2025	77.51	1.29	0.76

Table 2 reports the price-earnings ratio (P/E), the implied equity capitalization rate c = 1/(P/E), and the debt-to-equity ratio (D/E) for selected profitable NASDAQ-listed firms in the year shown. The implied rate reflects the capitalization of the earnings concept embedded in the reported P/E under the steady-state abstraction.

In this illustration, the NASDAQ large-capitalization firms in Table 2 also exhibit relatively low implied capitalization rates under the steady-state abstraction (*i.e.*, high reported P/E ratios and low earnings yields).

Mid-Cap firms in Table 3 display moderate dispersion in implied capitalization rates, with some firms capitalized at relatively low implied rates and others requiring higher implied rates to reconcile earnings and prices.

4.2. Mid-Cap Firms (NYSE and NASDAQ)

We next turn to mid-capitalization firms listed on the NYSE and NASDAQ. Relative to large-capitalization firms, Mid-Caps are often more heterogeneous in business models and financial resilience. Table 3 reports implied capitalization rates, price-earnings ratios, and leverage measures for a small Mid-Cap sample.

Table 3 reports price-earnings ratios (P/E), implied equity capitalization rates c = 1/(P/E), and debt-to-equity ratios (D/E) for selected profitable Mid-Cap firms in the year shown. The table illustrates cross-sectional variation in the capitalization of current earnings across firms with heterogeneous scale and financial characteristics.

Table 3. Implied equity capitalization rates for selected mid-capitalization firms listed on NYSE and NASDAQ.

Security	Year	Price-earnings ratio	Capitalization rate c %	Debt/Equity ratio
Pool Corp NASDAQ	2025	28.12	3.55	1.64
AGCO Corp NYSE	2025	13.70	7.29	1.78
Hudbay Minerals NYSE	2025	13.07	7.65	0.92
U-Haul Holding Co NYSE	2025	47.91	2.08	1.73

Compared with the large-capitalization firms reported earlier, the mid-capitalization firms in Table 3 show greater dispersion in implied capitalization rates, which may reflect more heterogeneous market capitalization of earnings within this segment.

Small-Cap firms show wide dispersion in implied capitalization rates, and in several cases the implied rates are substantially higher than those of the large-capitalization firms. Under the paper's reduced-form interpretation, higher implied rates correspond to heavier discounting of the earnings concept embedded in reported P/E ratios.

4.3. Small-Cap Firms (NYSE American)

Finally, we examine a small set of small-capitalization firms listed on NYSE American. Table 4 reports the implied capitalization rates and associated measures for these firms.

Table 4. Implied equity capitalization rates for selected small-capitalization firms listed on NYSE American.

Security	Year	Price-earnings ratio	Capitalization rate c %	Debt/Equity ratio
Fluor Corp	2024	4.05	24.69	0.28
Lincoln National Corp	2024	1.63	61.34	0.74
Boyd Gaming	2024	11.6	8.62	3.04
Dycom Industries	2025	39.43	2.53	0.09

Table 4 reports price-earnings ratios (P/E), implied equity capitalization rates $c = 1/(P/E)$, and debt-to-equity ratios (D/E) for selected profitable small-cap firms in the year shown. The figures reflect the capitalization of the earnings concept

embedded in the reported P/E under the steady-state abstraction.

Within this illustration, the small-capitalization firms in Table 4 exhibit the widest dispersion in implied capitalization rates across the sample.

For some firms, the most recent year reported by public sources at the time of collection was earlier than 2025.

4.4. Discussion

Taken together, the tables illustrate substantial cross-sectional dispersion in implied capitalization rates across the firms reported. Interpreted through the steady-state abstraction, this dispersion indicates that the market capitalizes the earnings concept embedded in reported P/E ratios quite differently across firms. These comparisons are descriptive and are not intended to estimate expected returns, infer risk premia, or test asset-pricing models.

4.5. Discussion and Limitations of the Illustration

The illustration inherits the limitations of the steady-state abstraction and the use of accounting earnings. Reported P/E ratios can reflect expectations about growth, reinvestment, cyclicality, and accounting choices. In addition, publicly reported P/E ratios may embed different provider conventions (e.g., trailing versus forward; GAAP versus adjusted), so the implied capitalization rates reported here should be interpreted as illustrative valuation snapshots rather than as precisely harmonized measurements.

The empirical results are intended as an illustrative cross-sectional snapshot based on a small set of hand-collected observations from publicly available sources and are not designed to support statistical inference. The purpose of the tables is to demonstrate the transparency of recovering an implied equity capitalization rate mechanically as $c = 1/(P/E)$ and to show that the implied rate can vary substantially across firms. A comprehensive large-sample analysis using harmonized databases (e.g., CRSP/Compustat) is left for future research.

The debt-to-equity ratio is included as a familiar balance-sheet indicator that provides additional context on financing structure across firms. In this reduced-form setting, D/E is reported descriptively, and no attempt is made to separately identify leverage, tax, or causal effects on the implied capitalization rate.

5. Interpretation and Conclusion

5.1. Limitations and Scope

The analysis in this paper is deliberately valuation-based and reduced form. The recovery of the implied equity capitalization rate relies on a maintained steady-state abstraction in which contemporaneous earnings attributable to shareholders are treated as a level stream. This abstraction permits a transparent inversion from observed prices and earnings to a market-implied capitalization rate, but it necessarily abstracts from growth, payout policy, reinvestment dynamics, and state-contingent cash-flow variation.

As a result, the implied capitalization rate should not be interpreted as a structural parameter, an estimate of an expected return, or a forecast of realized equity performance. Differences in price-earnings ratios across firms may reflect a variety of factors—including expectations about growth, cyclicality, accounting practices, or transitory earnings components—that are not disentangled within the present framework. The objective is not to decompose valuation multiples into underlying primitives, but to characterize how the market capitalizes contemporaneous earnings at a point in time under a common valuation abstraction.

The framework also does not model bankruptcy events, default probabilities, recovery rates, or transition dynamics explicitly. Exposure to financial distress and permanent capital loss is embedded in reduced form through the capitalization of earnings inferred from market prices. Variation in the implied capitalization rate therefore reflects differences in how aggressively earnings are discounted, rather than estimates of bankruptcy likelihood or compensation for risk in the expected-return sense.

Similarly, leverage and tax considerations are not introduced as structural determinants of the capitalization rate. Their effects operate through observed earnings and prices and are therefore part of the measurement environment rather than modeled channels. Cross-sectional comparisons of implied capitalization rates should accordingly be understood as descriptive comparisons of valuation outcomes, not as causal statements about capital structure or risk premia.

These limitations are not shortcomings of the approach but reflect its intended scope. The contribution of the paper lies in clarifying the interpretation of a familiar valuation statistic—the earnings yield—as a market-implied valuation discount rate distinct from expected-return constructs. The framework provides a transparent mapping from observable market data to valuation outcomes without imposing equilibrium restrictions or structural assumptions and is therefore best viewed as an interpretive tool for understanding how markets capitalize earnings subject to the possibility of permanent loss.

Taken together, the scope and limitations outlined above clarify that the object recovered in this paper is not a structural or predictive parameter, but a deliberately reduced-form valuation statistic whose purpose is to characterize how markets capitalize contemporaneous earnings in the presence of potential permanent loss.

5.2. Concluding Remarks

This paper develops a valuation-based interpretation of the cost of equity by recovering an implied capitalization rate from observed equity prices and contemporaneous earnings under a maintained steady-state abstraction. Within this framework, the cost of equity is interpreted as a valuation discount rate—analogous to a bond yield—rather than as an expected return inferred from asset-pricing equilibrium restrictions.

Interpreted as a valuation discount rate, the implied capitalization rate embeds

exposure to financial distress and bankruptcy in reduced form through the capitalization of earnings. When contemporaneous earnings are perceived to be less durable or more exposed to permanent loss, they are capitalized at higher rates, resulting in lower prices relative to earnings. This mechanism parallels fixed-income valuation, where bond yields embed credit risk through discounting without requiring explicit modeling of default probabilities or recoveries.

The framework highlights a distinction between two economically different notions of risk in equity markets. Exposure to permanent loss arising from financial distress and bankruptcy enters valuation through the capitalization rate applied to earnings, while price volatility describes the variability of market prices over trading horizons and remains conceptually distinct from valuation discounting. Under the steady-state abstraction, volatility is therefore treated as a descriptive property of price behavior rather than as a determinant of the discount rate.

The analysis is deliberately reduced form and non-structural. It does not model growth, payout policy, default probabilities, or equilibrium expected returns, nor does it seek to estimate risk premia. Instead, it provides a transparent mapping from observable prices and earnings to a market-implied valuation statistic that summarizes how the market capitalizes contemporaneous earnings at a point in time.

Viewed in this way, the implied equity capitalization rate is neither a prediction of realized returns nor a structural parameter tied to preferences or technology. It is a descriptive valuation object inferred from prices, whose role is to characterize how aggressively the market discounts earnings subject to the possibility of permanent loss. The empirical illustration documents substantial cross-sectional variation in this valuation statistic across firms and market segments, consistent with heterogeneous market assessments of earnings durability under the maintained steady-state abstraction.

The empirical illustration relies on publicly reported P/E ratios from investment websites, whose conventions (e.g., trailing vs. forward and GAAP vs. adjusted) may differ across sources; the resulting implied capitalization rates should therefore be read as illustrative valuation snapshots.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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