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THE MAX EPS PARADIGM FOR CORPORATE FINANCE

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ABSTRACT

There are three classic problems in corporate finance: capital structure, real investment, and payout policy. In three companion papers, we characterize the max EPS solution to each one. The max EPS approach delivers an optimal leverage ratio even in the absence of frictions, an investment rule based on comparing yields rather than using a risk-adjusted discount rate, and a payout policy where accretive buybacks are preferred to neutral dividends. Our max EPS model draws a bright line between growth and value. Growth stocks have earnings yields below the riskfree rate; value stocks have earnings yields above it. This single comparison leads the two kinds of firms to pursue different constellations of EPS-maximizing policies. The model also produces easy-to-follow calculations that closely mirror what practitioners actually do. This review article ties together these results to form a new max EPS paradigm for corporate-finance research.

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Introduction

There are three questions that every CEO has to answer: How should I finance my existing assets (capital structure)? Which new projects should I start and where should I get the money to pay for them (real investment)? At what point should I return the resulting profits to my shareholders (payout policy)? These are the three classic problems in academic corporate finance, and real-world CEOs solve all three with an eye toward EPS (earnings per share).

This review article outlines the max EPS paradigm for corporate-finance research. The underlying theory is developed in three companion papers. Ben-David and Chinco (2026a) studies capital structure. Ben-David and Chinco (2026b) looks at real investment. Ben-David and Chinco (2026c) examines payout policy. Rather than treating EPS maximization as a mistake or a heuristic, each of these papers asks: What would a rational manager do if she were actually trying to maximize her firm's short-term EPS forecast? Here, we give an accessible overview of the key results and show how they snap together.

All three papers start from the same place. What differs is the question being asked and what the CEO takes as given. To study capital structure, we fix the firm's asset base and let the CEO choose her debt-vs-equity mix. To study real investment, we take the firm's optimal leverage as solved and hand the CEO a costly new project. To study payout policy, we roll the clock back and give the CEO an unexpected cash windfall before any projects have been funded. The three problems nest neatly inside one another.

A company's EPS forecast is expected earnings for the upcoming year divided by current shares outstanding

$$\mathbb{E}[\mathrm{EPS}] = \frac{\mathbb{E}[\mathrm{Earnings}]}{\#\mathrm{Shares}} = \frac{\mathbb{E}[\mathrm{NOI}] - \bar{\imath} \cdot \mathrm{Debt} + \mathrm{rf} \cdot \mathrm{Cash}}{\#\mathrm{Shares}} \tag{1}$$

$\mathbb{E}[\mathrm{NOI}]$ is the net operating income (NOI) that the company's existing assets are expected to generate over the next twelve months. $\bar{\imath} \cdot \mathrm{Debt}$ is the firm's promised interest expense on its pre-existing debt. $\bar{\imath}$ is the mean interest rate on outstanding bonds. In general, this historical average rate will differ from the firm's marginal interest rate, i, on the next \$1 borrowed. $\mathrm{rf} \cdot \mathrm{Cash}$ is the riskfree interest income that a company collects on unused cash.

CEOs who fixate on $\mathbb{E}[\mathrm{EPS}]$ growth are not making a blunt-force knuckle-dragging error: "Ugg chief of Humana Inc. Me cut investment and do buybacks. Always best policy." The truth is far more interesting. The max EPS paradigm generates a rich set of economic trade-offs. The theory makes nuanced predictions about how CEOs choose corporate policies.

Capital Structure. In Section 1, we begin by looking at how CEOs boost their EPS by making accretive financing decisions. The goal is to fund the firm's existing assets with less earnings. Each source of capital has its own earnings cost. For equity, this is the company's earnings yield, $\mathrm{EY} = \frac{\mathbb{E}[\mathrm{EPS}]}{\mathrm{Price}}$. To issue an extra share, a CEO must promise the buyer a single share's worth of expected earnings, so each \$1 ties up $\mathrm{EY} \cdot \$1$ of expected earnings next year. To borrow an extra \$1, the CEO must promise to pay interest of $\mathrm{i} \cdot \$1$ next year. If she spends \$1 of cash, the CEO forgoes $\mathrm{rf} \cdot \$1$ in riskfree interest income next year.

EPS maximizers take these costs as given and tilt their capital structure toward the cheapest option. Consider a company with a 20× price-to-earnings (PE) ratio and an earnings yield of $\mathrm{EY} = \left(\frac{1}{20\times}\right) = 5\%$. The firm's EPS-maximizing CEO will see equity financing as expensive if the average interest rate on her existing debt is $\bar{\mathrm{i}} = 3\%$. Each \$1 that she has borrowed is freeing up $\{5\% - 3\%\} \times \$1 = \$0.02$ of expected earnings for shareholders to enjoy. If the CEO can borrow an additional \$1 at $\mathrm{i} = 4\%$, then it will be accretive to lever up even further. The company's existing shareholders need to be paid $5\% \times \$1 = \$0.05$ in exchange for \$1 of capital. Creditors are only asking for $4\% \times \$1 = \$0.04$.

We show that there is an optimal max EPS leverage even in the absence of frictions. Why? Because an EPS-maximizing CEO and her creditors each have different goals. Bond prices reflect the present value of all future interest payments. But an EPS maximizer only cares about the interest payment she promised to make next year. As a result, a change in leverage is no longer zero-sum, and Modigliani and Miller (1958)'s capital-structure irrelevance theorem no longer holds. There is a best way to slice the pizza when one person likes cheese and the other prefers the crust.

Real Investment. In Section 2, we characterize the EPS-maximizing investment rule. Assets are expensive, but they also generate income. An NPV (net present value) maximizer decides whether the trade-off is worth it by comparing an asset's upfront cost to the present value of its expected future income stream, $\sum_{t=1}^{\infty} \frac{\mathbb{E}[\Delta \mathrm{NOI}_t]}{(1+\mathrm{r})^t}$. The positive-NPV rule says to invest when the present value exceeds the upfront cost when using the right risk-adjusted discount rate.

By contrast, an EPS-maximizing CEO compares the extra income an asset will produce next year, $\mathbb{E}[\Delta \mathrm{NOI}_1]$, to its short-term funding requirement given her firm's cheapest available source of capital. The CEO will invest if and only if the asset's income yield next year exceeds her firm's hurdle rate, $\mathrm{IY} = \frac{\mathbb{E}[\Delta \mathrm{NOI}_1]}{\mathrm{Cost}} > \mathrm{HR} = \min\{\mathrm{EY}, \mathrm{i}, \mathrm{rf}\}$. This is the max EPS analog to the positive-NPV rule.

What matters is the minimum cost of capital, not the weighted average. Consider a project that costs \$100M today and is expected to boost next year's income by \$4M. This project has an income yield of $\mathrm{IY} = \frac{\$4\mathrm{M}}{\$100\mathrm{M}} = 4\%$. If the CEO can fund the project with cash, then her hurdle would be $\mathrm{HR} = \mathrm{rf} = 3\%$. In this case, investing would add $\{4\% - 3\%\} \times \$100\mathrm{M} = +\$1\mathrm{M}$ to her earnings forecast. But if she must issue equity at $\mathrm{EY} = 5\%$, then the same project would dilute the CEO's earnings forecast by $\{4\% - 5\%\} \times \$100\mathrm{M} = -\$1\mathrm{M}$.

Maximizing EPS does not mean minimizing investment. This is a common misconception among researchers. Suppose the \$100M project is expected to generate \$4M per year in perpetuity. At a discount rate of $\mathrm{r} = 8\%$, the project's present value would be $\$4\mathrm{M} \times \left(\frac{1}{8\%}\right) = \$50\mathrm{M}$. This is well below its \$100M cost, but the project's income yield is high enough to cover the cost of spending cash, $\mathrm{IY} = 4\% > 3\% = \mathrm{rf}$. So an EPS-maximizing CEO with \$100M in internal cash reserves would happily greenlight this negative-NPV project.

IRRs (internal rates of return) and payback periods fit neatly into the max EPS paradigm. IRRs are multi-period income yields. A manager can assess how accretive a project will be by comparing its IRR to her firm's hurdle rate, $\{\mathrm{IY}-\mathrm{HR}\}$. Likewise, a project's expected payback period is just a way of quoting its income yield as a multiple, $\mathbb{E}[\text{Payback Period}] = \frac{\mathrm{Cost}}{\mathbb{E}[\Delta \mathrm{NOI}_1]} = \left(\frac{1}{\mathrm{IY}}\right)$. EPS maximizers like investing in projects with short payback periods for the same reason that they like acquiring M&A targets at a low multiple, $\mathrm{PE} = \left(\frac{1}{\mathrm{EY}}\right)$.

Payout Policy. In Section 3, we turn to the EPS-maximizing payout policy. Payout timing is immaterial in present-value models because an increase in today's dividend payment will reduce the future resale price by the same amount. By contrast, payout timing matters a lot in the max EPS framework because next year's EPS forecast does not include the future resale price. Hence, Modigliani and Miller (1961) no longer holds. \$1 of cash returned via buybacks reduces the firm's earnings commitments by $\mathrm{EY} \times \$1$. The question is whether a CEO could have generated even more income by investing the money.

Suppose our $\mathrm{PE} = 20\times$ company realizes an unexpected \$200M cash windfall. The firm has an earnings yield of $\mathrm{EY} = \left(\frac{1}{20\times}\right) = 5\%$, so the CEO can free up $5\% \times \$200\mathrm{M} = \$10\mathrm{M}$ in expected earnings by repurchasing shares. The CEO can also retain the cash and invest the money. Suppose she allocates \$150M to projects that have an average income yield of $\overline{\mathrm{IY}} = 6\%$. All remaining cash just sits in Treasuries, $\mathrm{rf} = 3\%$. In this scenario, keeping cash on balance sheet is the CEO's most accretive option, $6\% \times \$150\mathrm{M} + 3\% \times \$50\mathrm{M} = \$10.5\mathrm{M}$. But if the CEO only had \$115M of high-yield projects, she would be better off distributing the money, $6\% \times \$115\mathrm{M} + 3\% \times \$85\mathrm{M} = \$9.5\mathrm{M}$, less than the \$10M buyback hurdle.

The spread between a company's earnings yield and the riskfree rate, $\mathrm{EY} - \mathrm{rf}$, controls both sides of the retain-vs-return trade-off. A high excess earnings yield makes spending internal cash reserves look cheap compared to issuing equity. But the same high excess earnings yield also raises the opportunity cost of cash retention by making buybacks more attractive. The wider the spread, the cheaper cash looks as a funding source and the more accretive it is to buy back shares. It is precisely the companies that would most prefer to fund new projects with cash that face the strongest pressure to distribute the money.

The max EPS paradigm draws a bright line between buybacks and dividends. Repurchasing shares can generate an accretive pop. Dividends bypass the income statement entirely and so are never a CEO's most accretive option. Companies pay dividends for reasons unrelated to EPS—e.g., signaling, clienteles, sentiment, etc. Our max EPS model tells us where these outside forces are most likely to win out: among stocks whose earnings yields are just barely above the riskfree rate. These firms get the smallest accretive pop from buybacks.

Value vs. Growth. The value/growth distinction shows up in every application of the max EPS paradigm. The existing literature treats this as an empirical regularity. There is no deep theoretical reason for the value/growth divide. In the max EPS paradigm, the distinction has a clear source: whether equity financing is cheap or expensive compared to the cheapest possible debt.

Growth stocks have low earnings yields, $\mathrm{EY} < \mathrm{rf}$, and high PE ratios, $\mathrm{PE} > (\frac{1}{\mathrm{rf}})$. These firms see equity as their cheapest source of capital. Even riskfree borrowing costs more than equity issuance, so they remain unlevered. Growth stocks fund projects with equity, but they still retain cash. Lending to Uncle Sam at $\mathrm{rf} = 3\%$ is a great deal for a 50× firm that can borrow at $\mathrm{EY} = (\frac{1}{50\times}) = 2\%$.

The picture reverses for value stocks, which have higher earnings yields, $\mathrm{EY} > \mathrm{rf}$, and lower multiples, $\mathrm{PE} < (\frac{1}{\mathrm{rf}})$. An EPS-maximizing value-stock CEO will lever up because equity is expensive compared to riskfree debt. After exhausting her riskfree borrowing capacity, this CEO will fund projects out of internal cash reserves whenever possible. Cash is this value-stock CEO's cheapest financing option. But, if she cannot fund enough high-yield projects, her company's higher earnings yield will force her to return the money.

The max EPS paradigm defines growth and value stocks differently. The existing literature says "value stocks" have lower PE ratios than most other stocks. By contrast, the max EPS paradigm calls any firm with $\mathrm{PE} < (\frac{1}{\mathrm{rf}})$ a "value stock". This distinction has teeth. Consider a company with a 20× PE and an earnings yield of $\mathrm{EY} = (\frac{1}{20\times}) = 5\%$. The firm is a growth stock when $\mathrm{rf} = 7\%$ but a value stock when $\mathrm{rf} = 3\%$. A rate hike can reclassify a company without changing its fundamentals. Value stocks are not always 30% of the market.

Key Differences. At the moment, every corporate-finance model starts by assuming CEOs maximize shareholder value defined in present-value terms

$$\text{Shareholder PV} \;=\; \underbrace{\frac{\mathbb{E}[\mathrm{Div}_1]}{1+\mathrm{r}} + \cdots + \frac{\mathbb{E}[\mathrm{Div}_T]}{(1+\mathrm{r})^T}}_{\substack{\text{PV of expected}\\ \text{dividend stream}}} \;+\; \underbrace{\frac{\mathbb{E}[\mathrm{Price}_T]}{(1+\mathrm{r})^T}}_{\substack{\text{PV of expected}\\ \text{resale price}}} \tag{2}$$

$\mathbb{E}[\mathrm{Div}_t]$ is the company's expected dividend payment t years from now, $\mathbb{E}[\mathrm{Price}_T]$ is the expected resale price of each share, and $\mathrm{r} > 0\%$ is the discount rate.

In one sense, we are following the usual behavioral playbook (Rabin, 2013). We start with this completely standard model. Absent any frictions, the two M&M theorems imply that leverage and payout policy are irrelevant. Real investment is the only way to generate value for shareholders. We then make exactly one change. All our findings come from swapping out the CEO's objective function. Instead of maximizing shareholder PV like in Equation (2), the CEO looks to increase her short-term EPS forecast à la Equation (1).

But, in another sense, this is a bit like claiming that only one thing has changed after your first kid is born. Sure, we are only replacing the objective function. But there are many differences between the per-share earnings forecast in Equation (1) and the discounted cashflow (DCF) formulation of shareholder value in Equation (2). Our formulation of the max EPS paradigm sheds light on where the differences lie, which ones matter, and why.

Some are critical. For example, EPS maximizers reason about the cost of capital in terms of yields, not discount rates. The earnings cost of equity is $\mathrm{EY} = \left(\frac{1}{\mathrm{PE}}\right)$, not a risk-adjusted r_E derived from the CAPM or a more complicated multi-factor model. Moreover, CEOs see this cost as a characteristic of the firm, not a property of expected future cash flows. An EPS maximizer evaluates all policy options using her firm's current market-implied EY. She does not re-derive new costs of equity to reflect each policy's anticipated EPS impact.

Other differences are cosmetic. For example, our model focuses on next year's expected EPS, but some firms set multi-year EPS targets. The exact definition of "short-term" is not critical. What matters is all the terms that get left out. The S&P 500's dividend yield is roughly 2%, and the definition of EPS in Equation (1) contains no analog to $\mathbb{E}[\mathrm{Price}_T]$. Thus, EPS maximizers are ignoring 98% of the textbook shareholder PV formula in Equation (2). Whether CEOs are looking at $T = 1$ or $T = 2$ is second-order by comparison.

Main Takeaways. In a series of three papers, we show how the same simple max EPS model can speak to all three of the classic topics in academic corporate finance: capital structure, real investment, and payout policy. This review article gives an accessible overview of the key results. There is still plenty of math. But there is no theorem-proof-theorem-proof.

We are not arguing that CEOs should be EPS maximizers. We are acknowledging that this is what CEOs are doing right now and deriving the implications. The claim is not that every CEO makes every decision based exclusively on next year's EPS impact. This is clearly not true. The world is a complicated place. Corporate executives are not 1850s-era steampunk automatons. They start by determining whether a policy is accretive and make adjustments from there.

If you are a working corporate-finance researcher, there is a lot to like about the max EPS paradigm. The theory matches how market participants describe their own decisions. And the math produces easy-to-follow calculations with clean yes/no answers. Is this policy accretive? Compare two yields. This is different from the max{Shareholder PV} framework, where the answer often hinges on decimal-place differences in model-implied discount rates. We highlight this point with a running numerical example that translates every theoretical result into concrete numbers. See Appendix A for details.

Corporate executives clearly care about EPS growth. This is unequivocally true. Managers "need a simple metric of performance…[and] the market has selected EPS to fulfill this role" (Almeida, 2019). We give an overview of the evidence in Appendix B. All three companion papers include an empirical component, and the results are compelling. But there is a reason why we put this evidence at the back of the paper: it does not matter whether max EPS logic explains 60% or 95% of corporate decision-making. The number is definitely not 0%. CEOs spend a lot of time debating whether policies are accretive or dilutive. It is worth understanding what these terms actually mean.

Finally, this review article focuses on how max EPS thinking answers the three key questions that CEOs face. But CEOs are not the only ones who fixate on short-term EPS growth. Many equity investors do as well. Ben-David and Chinco (2026d) shows that sell-side analysts see accretion as the main driver of value. They often set a target price by multiplying the firm's short-term EPS forecast times a trailing PE ratio. This observation helps explain how EPS maximization can be a stable outcome. That being said, an EPS-maximizing CEO does not need to know how her current share price was determined. She takes the valuation as given and makes decisions from there.

Figure 1. How the three classic problems in corporate finance look when viewed through max EPS-colored glasses.

The CEO's asset base is set in stone. She looks to finance these assets using the capital source (equity, debt, cash) that sacrifices the least expected earnings next year.

Capital Structure

Holding this fixed. . .

$$\frac{\mathbb{E}[\text{NOI}] - \bar{\imath}\cdot\text{Debt} + \text{rf}\cdot\text{Cash}}{\#\text{Shares}}$$

what is best mix of these?

Ben-David and Chinco (2026a)

The CEO has already optimized her capital structure and funded all accretive projects that she was aware of. Then, one additional project unexpectedly becomes available. If she greenlights this final project, the added financing expense will cut into her expected earnings next year. But investing will still be accretive if the project is expected to generate even more income.

Real Investment

Does project increase this by enough. . .

$$\frac{\mathbb{E}[\text{NOI}] - \bar{\imath}\cdot\text{Debt} + \text{rf}\cdot\text{Cash}}{\#\text{Shares}}$$

to offset change in cheapest one of these?

Ben-David and Chinco (2026b)

The CEO has already optimized her capital structure, but she has not yet funded any projects. She receives an unexpected cash windfall. Given her optimal investment rule, can the CEO generate enough extra income by investing the windfall to justify not using the money to buy back shares?

Payout Policy

Can windfall increase these by enough. . .

$$\frac{\mathbb{E}[\text{NOI}] - \bar{\imath}\cdot\text{Debt} + \text{rf}\cdot\text{Cash}}{\#\text{Shares}}$$

to justify not spending it on reducing this?

Ben-David and Chinco (2026c)

1 Capital Structure

This section shows how an EPS-maximizing CEO chooses her firm's capital structure. The analysis follows Ben-David and Chinco (2026a). We start by studying a manager who is buying assets to form a company. She must decide how much to borrow and how many shares to issue. The asset base is fixed; the only question is how to finance it. This is the cleanest version of the capital-structure problem: an ex ante decision with no legacy debt, no accretive projects on the horizon, and no cash on hand. We then sequentially relax these assumptions—allowing market conditions to shift after the firm is up and running, putting cash on the balance sheet, and so on. The simplest max EPS model gives a clear reason for distinguishing between value and growth stocks.

1.1 Problem Setup

A manager is buying assets to form a company. She pays Assets for the firm's asset base and must decide how to finance the purchase. The CEO borrows Debt and issues #Shares shares at a price of Price per share to cover the rest. There are no legacy liabilities, no accretive projects, and no cash on hand.

Once the firm is up and running, its expected EPS will depend on two things: the income its assets are expected to generate next year, $\mathbb{E}[\text{NOI}]$, and the interest expense on the debt the CEO just took out, $\bar{\imath} \cdot \text{Debt}$,

$$\mathbb{E}[\text{EPS}] \;=\; \frac{\mathbb{E}[\text{NOI}] \;-\; \bar{\imath} \cdot \text{Debt}}{\#\text{Shares}} \tag{3}$$

$\bar{\imath}$ is the average interest rate on the CEO's newly issued debt. In general, this average rate will differ from the marginal rate i on the next \$1 borrowed. When the CEO borrows a small amount, her entire loan is riskfree and $\bar{\imath} = \mathrm{i} = \mathrm{rf}$. But if she borrows enough to risk defaulting in a bad state of the world, lenders on the last tranche will demand a risk premium. The average rate $\bar{\imath}$ blends the cheap early dollars with the more expensive later ones, while i reflects the interest paid on the next \$1 borrowed.

Define the company's leverage ratio as

$$\ell = \frac{\text{Debt}}{\text{Assets}} \tag{4}$$

This is the central object of interest when studying capital structure. What is the optimal debt-vs-equity mix when financing a company's existing assets?

Consider a company with Assets = \$10B in assets that are expected to produce $\mathbb{E}[\text{NOI}]$ = \$400M in net operating income next year. To start with, suppose the CEO uses no debt at all, $\ell = 0.0$. She finances the entire asset base by issuing shares at Price = \$50/sh, giving her #Shares = $\frac{\$10\text{B}}{\$50/\text{sh}}$ = 200M shares. With no interest expense, the firm's EPS forecast is $\mathbb{E}[\text{EPS}] = \frac{\$400\text{M}}{200\text{M}}$ = \$2.00/sh.

Can the CEO do better? Suppose she borrows Debt = \$3B. At this leverage level, $\ell = \frac{\$3\text{B}}{\$10\text{B}} = 0.3$, the firm's debt is riskfree, i = rf = 3%. The CEO must promise to pay 3% × \$3B = \$90M in interest next year. That leaves \$400M − \$90M = \$310M in expected net income. She would now only need \$10B − \$3B = \$7B in equity, so the CEO's required share count would fall to $\frac{\$7\text{B}}{\$50/\text{sh}}$ = 140M, and her EPS forecast would rise to $\frac{\$310\text{M}}{140\text{M}}$ = \$2.21/sh—up by \$0.21/sh from \$2.00/sh.

Can she do even better? Yes. Suppose the CEO borrowed \$6B in total. At this higher leverage, $\ell = \frac{\$6\text{B}}{\$10\text{B}} = 0.6$, the CEO has pushed well past her riskfree borrowing limit. The first \$4B still costs 3%, but lenders demand a higher rate beyond that, with the marginal rate rising to i = 5% at \$6B. The CEO's total interest expense would be \$120M + \$80M = \$200M, leaving \$200M in expected net income. At the same time, the CEO's required equity base would shrink to \$10B − \$6B = \$4B, meaning that she would only have to issue $\frac{\$4\text{B}}{\$50/\text{sh}}$ = 80M shares. The reduction in her share count would more than compensate for her higher interest expense, $\frac{\$200\text{M}}{80\text{M}}$ = \$2.50/sh.

But there is such a thing as too much debt. Suppose the CEO borrowed \$7B. At $\ell = 0.7$, her marginal interest rate would have climbed to i = 6%. Her total interest expense would be \$120M + \$80M + \$55M = \$255M, leaving just \$145M in expected net income. She would only need \$3B in equity, or $\frac{\$3\text{B}}{\$50/\text{sh}}$ = 60M shares. But the reduction in her share count would no longer compensate for the higher interest expense, $\frac{\$145\text{M}}{60\text{M}}$ = \$2.42/sh, down from \$2.50/sh at $\ell = 0.6$.

1.2 Yield-Spread Machine

Clearly, levering up does not always boost EPS. Each additional dollar of debt adds i to the interest bill, and i keeps rising as the CEO borrows more. Eventually, interest expense eats up earnings faster than the shrinking share count can compensate. To understand the inflection point, it helps to rewrite the EPS forecast in terms of a yield spread. In the max EPS paradigm, every decision boils down to this sort of yield spread calculation: what do you earn on an asset? What does it cost to finance? Which is bigger? Positive yield spreads are accretive; negative yield spreads are dilutive. Capital structure is the first instance of this logic, but far from the last.

To see the connection, it is helpful to define the CEO's return on invested capital (ROIC) as

$$\text{ROIC} \;=\; \frac{\mathbb{E}[\text{NOI}]}{\text{Assets}} \tag{5}$$

This average income yield tells us how much income each \$1 of the firm's existing assets are expected to generate next year. Like other accounting variables with "return" in the name, ROIC is actually a yield.

With these definitions, we can rewrite the firm's EPS forecast as

$$\begin{aligned}
\mathbb{E}[\text{EPS}] \;&=\; \frac{\mathbb{E}[\text{NOI}] \;-\; \bar{\imath}\cdot\text{Debt}}{\#\text{Shares}} && (3)\\
&=\; \frac{\text{ROIC}\cdot\text{Assets} \;-\; \bar{\imath}\cdot(\ell\cdot\text{Assets})}{\#\text{Shares}} \\
&=\; \big\{\text{ROIC} - \ell\cdot\bar{\imath}\big\} \times \left(\frac{\text{Assets}}{\#\text{Shares}}\right) && (3')
\end{aligned}$$

The CEO's expected EPS comes from capturing a yield spread, $\{\text{ROIC} - \ell\cdot\bar{\imath}\}$, on each share's portion of the firm's assets, $\left(\frac{\text{Assets}}{\#\text{Shares}}\right)$.

Our CEO's firm has Assets = \$10B and $\mathbb{E}[\text{NOI}]$ = \$400M, so its average income yield is ROIC = $\frac{\$400\text{M}}{\$10\text{B}}$ = 4%. When the CEO borrows \$3B at $\bar{\imath}$ = rf = 3%, she has $\ell = 0.3$ leverage and the yield spread is $\{4\% - 0.3\cdot 3\%\} = 3.1\%$. If she instead borrowed \$6B, her leverage would rise to $\ell = 0.6$ and her average rate would climb to $\bar{\imath} = 3.33\%$. Her yield spread would shrink to $\{4\% - 0.6\cdot 3.33\%\}$ =

2.0%. More of the firm's income would go toward interest. Yet the CEO's EPS forecast would still rise, as we saw in the dollar calculation above, because more leverage also means fewer shares outstanding. But at $\ell = 0.7$, the yield spread would shrink further to $\{4\% - 0.7 \cdot 3.64\%\} = 1.45\%$, and the CEO's EPS forecast would fall. At some point, the narrowing spread overwhelms the declining share count. The optimal leverage balances two competing forces: a narrower yield spread and a smaller share count. How do we find the right balance?

1.3 Optimal Leverage

To find the EPS-maximizing leverage, we need to connect the share count to the CEO's leverage decision. The key insight lies in how the connection is made. Our CEO is buying assets to create a new firm. If the total asset base costs Assets and the CEO borrows Debt $= \ell \cdot$ Assets, then the remaining equity value is MCap = Assets − Debt. This is the component that the CEO needs to finance with new equity issuance. More leverage means fewer shares.

If the CEO can sell a share of equity for Price dollars, then raising the required amount of equity capital would require her to issue

$$\#\text{Shares} = \frac{\text{MCap}}{\text{Price}} = \frac{\text{Assets} - \text{Debt}}{\text{Price}} \tag{7a}$$

$$= (1 - \ell) \times \left(\frac{\text{Assets}}{\text{Price}}\right) \tag{7b}$$

Substituting this formula for the share count back into the CEO's EPS forecast gives the following expression

$$\mathbb{E}[\text{EPS}] = \left\{\text{ROIC} - \ell \cdot \bar{\imath}\right\} \times \left(\frac{\text{Price}}{1 - \ell}\right) \tag{3''}$$

The fact that ℓ shows up twice hints at the existence of a trade-off.

Now ask: what happens if the CEO adjusts her leverage by a tiny amount? If she borrows \$1 more and issues one less share, then her interest expense will go up and her earnings commitments to shareholders will go down. How much less earnings will the CEO have to promise to shareholders? The answer is given by the company's earnings yield

$$\mathrm{EY} \;=\; \frac{\mathbb{E}[\mathrm{EPS}]}{\mathrm{Price}} \tag{8}$$

An EPS-maximizing CEO treats this yield as the cost of equity capital. Return to our CEO at zero leverage. In that initial configuration, she had to issue 200M shares at Price = \$50/sh. The CEO's expected EPS was \$2.00/sh, and her firm's unlevered earnings yield was $\mathrm{EY} = \frac{\$2.00/\mathrm{sh}}{\$50/\mathrm{sh}} = 4\%$. To raise the first \$50 of equity capital, the CEO had to promise her initial shareholder 4% of each \$1 in expected earnings next year.

The effect on the company's EPS forecast is given by

$$\tfrac{\mathrm{d}}{\mathrm{d}\ell}\mathbb{E}[\mathrm{EPS}] \;\propto\; \mathrm{EY} - \mathrm{i} \tag{9}$$

This is the key result of Ben-David and Chinco (2026a). The firm captures a levered spread between its earnings yield and its marginal cost of debt. When equity is expensive relative to debt, $\mathrm{EY} > \mathrm{i}$, the CEO will lever up. Each \$1 of debt she substitutes for equity frees up $\{\mathrm{EY} - \mathrm{i}\} \times \$1$ of expected earnings. When debt is expensive relative to equity, $\mathrm{i} > \mathrm{EY}$, the CEO would like to delever.

Return to our running example. At zero leverage, the CEO's earnings yield is $\mathrm{EY} = 4\%$ and riskfree debt costs $\mathrm{i} = \mathrm{rf} = 3\%$. The spread is $\{4\% - 3\%\} \times \$1 = \$0.01$ per dollar, so levering up is accretive. Suppose she borrows \$3B at $\mathrm{rf} = 3\%$, bringing her to $\ell = 0.3$. Her EPS rises to \$2.21/sh and her earnings yield climbs to $\mathrm{EY} = \frac{\$2.21}{\$50} = 4.4\%$. The spread has widened to $\{4.4\% - 3\%\} = 1.4\%$, so the next riskfree dollar is even more attractive.

She keeps borrowing. By \$6B in total debt, she has reached $\ell = 0.6$. The marginal interest rate on the last dollar is $\mathrm{i} = 5\%$, and her EPS has risen to \$2.50/sh, giving $\mathrm{EY} = \frac{\$2.50}{\$50} = 5\%$. The spread is now $\{5\% - 5\%\} = 0\%$. The CEO has no incentive to borrow another dollar: the interest cost would exactly match the earnings she frees up. This is the optimum, $\ell_\star = 0.6$.

What if she goes too far? At \$7B in debt, $\ell = 0.7$, the marginal rate has climbed to $\mathrm{i} = 6\%$. Her EPS would fall to \$2.42/sh and her earnings yield would become $\text{EY} = \frac{\$2.42}{\$50} = 4.8\%$. The spread is negative, $\{4.8\% - 6\%\} = -1.2\%$. Each additional dollar of debt now destroys more earnings than the shrinking share count can save.

1.4 Cost of Capital

EPS maximizers think about costs of capital differently. For an EPS-maximizing CEO, the cost of equity is a yield, not a discount rate. This distinction is critical. In standard corporate finance, the cost of equity r_E is a discount rate—the expected return that shareholders require to hold the firm's stock. Estimating it requires an asset-pricing model. For instance, the CAPM says to compute the cost of equity capital using the formula $\mathrm{r}_E = \mathrm{rf} + \beta \cdot \{\mathbb{E}[\mathrm{r}_M] - \mathrm{rf}\}$. Different models give different numbers. Two analysts looking at the same company can disagree about r_E by several percentage points depending on whether they use the CAPM, Fama-French, or some other factor model.

For an EPS maximizer, the cost of equity is the earnings yield: $\text{EY} = \frac{\mathbb{E}[\text{EPS}]}{\text{Price}}$. Both inputs are directly observable—an analyst consensus forecast and a market price. No asset-pricing model is needed. No beta. No equity-premium estimate. Our CEO's firm trades at a 20× PE, so her cost of equity is $\text{EY} = 5\%$. Period.

A concrete example makes the distinction vivid. The previous analysis showed how our CEO arrived at her optimal leverage of $\ell_\star = 0.6$. She now has 80M shares outstanding, expected EPS of \$2.50/sh, and a share price of \$50/sh. Suppose she wants to raise an extra \$100M by issuing 2M new shares. What does this equity cost her? The EPS maximizer's answer is immediate: those 2M new shares will each claim \$2.50/sh in expected earnings, so the issuance costs \$5M per year in EPS dilution. That 5% cost on \$100M raised is just her earnings yield, $\text{EY} = \frac{\$2.50/\text{sh}}{\$50/\text{sh}} = 5\%$.

Now think about what a present-value analyst would do. She would estimate the firm's cost of equity using some asset-pricing model. Suppose the CEO is running a company with $\beta = 1$ in a world with a $\{\mathbb{E}[\mathrm{r}_M] - \mathrm{rf}\} = 5\%$ equity risk premium, and $\mathrm{rf} = 3\%$. In that case, we would have $\mathrm{r}_E = 3\% + 1 \cdot 5\% = 8\%$, so the \$100M issuance would "cost" $\mathrm{r}_E \times \$100\text{M} = \$8\text{M}$ per year.

But the CEO never sees this \$8M figure in her income statement. It is not an expense she pays. It is a theoretical required return that shareholders demand in equilibrium. The CEO's accountant will tell her the issuance costs $5\% \times \$100\text{M} = \$5\text{M}$ in diluted earnings—and that is the number that determines whether the issuance is accretive or dilutive.

The earnings yield also responds to leverage differently than r_E does. When the CEO borrows a dollar and retires a share, EPS rises because the same expected earnings are divided among fewer shares. The earnings yield climbs along with EPS. This is not a risk adjustment—it is a ratio effect. The textbook cost of equity r_E also rises with leverage, but for a completely different reason: equity becomes riskier, the firm's beta increases, and the required return rises to compensate shareholders. We return to this contrast in the next subsection.

Crucially, the cost of equity and the cost of debt are not symmetric. The EPS maximizer takes her current market-implied earnings yield as given. It is a number she reads off the screen—today's expected EPS divided by today's share price. But when she tries to borrow an extra dollar from bond markets, creditors do not simply quote her the old rate. They price the marginal loan to reflect her new total debt. When leverage is low, the firm can borrow riskfree at $\mathrm{i} = \mathrm{rf}$. But once the CEO borrows past her firm's riskfree borrowing capacity, lenders face the possibility of default in a bad state of the world and demand compensation. Hence, $\mathrm{i}(\ell)$ rises as the firm borrows more and more.

Our CEO starts with $\mathrm{EY} = 4\%$ in a $\mathrm{rf} = 3\%$ world. At low leverage, she borrows riskfree at $\mathrm{rf} = \mathrm{i} = 3\%$, so levering up is accretive: each dollar of debt-for-equity substitution frees up $\{4\% - 3\%\} \times \$1 = \$0.01$ of expected earnings. As she borrows more, the resulting EPS gains push her earnings yield even higher, making the next riskfree dollar still more attractive. This positive feedback loop continues until the firm exhausts its riskfree borrowing capacity.

Beyond that point, the marginal interest rate starts climbing. Lenders see that the firm's promised payment now exceeds its asset value in the bad state, so they charge a risk premium. In our example, $\mathrm{i} = 3\%$ while debt is riskfree, then $\mathrm{i} = 4\%$ at $\ell = 0.5$, then $\mathrm{i} = 5\%$ at $\ell = 0.6$. Meanwhile, the CEO's earnings yield has also been rising with leverage, but i is now climbing faster. At $\ell_\star = 0.6$, the two curves cross: $\mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star) = 5\%$. The CEO has no incentive to borrow another \$1 because the two costs of capital exactly line up.

Notice that the CEO does not need to know why her earnings yield is above or below her marginal interest rate. Maybe the stock is undervalued. Maybe rates are unusually low. Maybe the market is perfectly efficient and the spread reflects risk. It does not matter. Whatever the reason, the EPS-maximizing response is the same: lever up when $\mathrm{EY} > \mathrm{i}$; delever when $\mathrm{EY} < \mathrm{i}$.

In this sense, the EPS-maximizing CEO behaves like a "cross-market arbitrageur" (Ma, 2019), exploiting the spread between equity and debt markets even in the complete absence of mispricing. Classic papers on market timing (Baker and Wurgler, 2002) and managerial opportunism (Stein, 1996) require the CEO to know the correct price of her shares. An EPS maximizer simply takes prices as given and responds accordingly.

1.5 Modigliani and Miller (1958)

Modigliani and Miller (1958)'s capital-structure irrelevance theorem is one of the most important results in all of economics. The entire field of corporate finance is organized around this one result. Tirole (2010) calls it "a detonator for the theory of corporate finance, a benchmark whose assumptions needed to be relaxed in order to investigate the determinants of financial structures." Researchers have become "so accustomed to this paradigm that other views…have the flavor of phlogiston. Not only do they seem wrong, it is difficult to believe that sensible folk could hold such beliefs" (Ross, 1988).

This irrelevance result follows from a single assumption: that shareholders and creditors both value their respective stakes in the company in the same way. Both sides are assumed to use present-value logic, discounting expected future payoffs at the appropriate risk-adjusted rate. Shareholders and creditors may disagree about riskiness—equity is riskier than debt—but they agree about the method. If everybody is measuring their slice of the firm's cash flows with the same ruler, then splitting those cash flows between debt and equity is a zero-sum game. In that case, \$1 diverted to creditors is \$1 taken from shareholders.

The max EPS paradigm breaks the assumption that both sides value their stakes in the same way. An EPS-maximizing CEO prices equity using the earnings yield—a one-period ratio of next year's expected EPS to today's share price. By contrast, her creditors care about the present value of all future interest payments. These are different yardsticks. Because the two sides are being measured with different rulers, a change in leverage is no longer zero-sum.

The earnings yield also rises with leverage, but not as a risk adjustment. It rises as a mechanical ratio effect—the same expected earnings divided among fewer shares. This ratio-based increase does not offset the cheapness of debt, and the weighted average cost of capital does not stay flat.

This is how EPS maximization can generate an optimal capital structure even without taxes, bankruptcy costs, agency problems, etc. We are not arguing that these considerations do not matter. They surely do. Our point is that max EPS generates an optimal leverage even before introducing any of them. The standard approach needs a friction to get a theory of capital structure off the ground. The max EPS paradigm does not.

1.6 Value vs. Growth

The distinction between value and growth stocks is one of the most robust empirical regularities in finance. The max EPS paradigm gives a theoretical foundation for this divide. A firm's marginal interest rate cannot fall below the riskfree rate, $\mathrm{i} \geq \mathrm{rf}$. So, even though the EPS definition is smooth and continuous, the comparison EY versus i has a qualitatively different character depending on whether EY is above or below rf

$$\mathrm{EY} < \mathrm{rf} \quad \rightsquigarrow \quad \text{Growth Stock, } \mathrm{PE} > \left(\tfrac{1}{\mathrm{rf}}\right) \tag{10a}$$
$$\mathrm{EY} > \mathrm{rf} \quad \rightsquigarrow \quad \text{Value Stock, } \mathrm{PE} < \left(\tfrac{1}{\mathrm{rf}}\right) \tag{10b}$$

Our CEO's firm has an unlevered earnings yield of $\mathrm{EY} = 4\%$ in a $\mathrm{rf} = 3\%$ world. Since $\mathrm{EY} > \mathrm{rf}$, this is a value stock. We have already seen what she does: she borrows \$1 riskfree at 3% and retires one share, saving $\{4\% - 3\%\} \times \$1 =$

\$0.01 of earnings commitments. Better still, when the CEO levers up, the resulting EPS increase pushes her earnings yield even higher, making the next riskfree dollar even more attractive. This positive feedback loop continues until the firm has exhausted its riskfree borrowing capacity. After that, lenders start charging a risk premium, and the CEO continues borrowing at progressively higher rates until i has climbed to meet EY. By the time she reaches her optimal leverage of $\ell_\star = 0.6$, her firm trades at a 20× PE with EY = 5%.

Now suppose the same CEO had created her firm in a rf = 7% world instead. Nothing about the company's operations has changed—same \$10B in assets, same \$400M in expected income, same 4% unlevered earnings yield, same 25× unlevered PE. But now EY < rf. Even the cheapest possible debt—riskfree borrowing at 7%—costs more than issuing equity at 4%. If she borrowed \$1 at 7% and retired one share, then she would tie up an additional $\{7\% - 4\%\} \times \$1 = \$0.03$ in earnings next year. That would be dilutive. In this new scenario, levering up would destroy EPS. The EPS-maximizing policy would be to use no debt at all. The same company that trades at a levered 20× PE when rf = 3% would sit at an unlevered 25× PE when rf = 7%.

The result is a sharp discontinuity. Value stocks borrow aggressively. Growth stocks use no debt. There is nothing gradual about the transition—the same CEO running the same company makes a completely different financing decision depending on the riskfree rate. A rate hike can transform a value stock into a growth stock without changing anything about the company itself. The effect is even more dramatic at extreme multiples. A 50× firm has an earnings yield of just $\left(\frac{1}{50\times}\right) = 2\%$. Such a company is a growth stock even in a rf = 3% world: riskfree borrowing at 3% costs more than equity at 2%.

This is exactly what we see in the data. In the 1990s, when the 10-year Treasury rate was 7%, our CEO's company would have been an unlevered 25× PE growth stock carrying little debt. In the 2010s, when rf = 3%, the same firm would lever up to a 20× PE value stock. The EPS-maximizing threshold is not a fixed cross-sectional cutoff. It moves with interest rates, and firm behavior moves with it. Like the yield-spread logic itself, this value-versus-growth distinction is not specific to capital structure. It will organize many max EPS predictions.

1.7 Ex Post Refinancing

So far we have been studying an EPS-maximizing CEO who was buying assets to create a new firm. In that ex ante setting, the CEO optimizes her debt-vs-equity mix from scratch. But the exact same yield-spread logic applies after the firm is up and running.

Suppose our CEO created her firm and set her leverage optimally at some earlier date. Initially, her yield spread was $\{\mathrm{EY}(\ell_\star) - \mathrm{i}(\ell_\star)\} = 0\%\mathrm{pt}$. Since then, market conditions have shifted. Maybe her stock price dropped, pushing up her earnings yield. Maybe the Fed cut rates, pushing down her marginal borrowing cost. Either way, the yield spread may have moved, $\{\mathrm{EY} - \mathrm{i}\} \neq 0\%\mathrm{pt}$.

If the CEO's earnings yield now exceeds her firm's marginal interest rate, $\{\mathrm{EY} - \mathrm{i}\} > 0\%\mathrm{pt}$, she can boost her EPS forecast by borrowing a \$1 and buying back equity. This is just the capital-structure logic applied in real time: debt-financed share repurchases are accretive when $\mathrm{EY} > \mathrm{i}$. No new theory is needed. The repurchase reduces the share count, while the extra \$1 of debt raises interest expense. The net effect on EPS is positive whenever the first effect dominates, which happens precisely when $\mathrm{EY} > \mathrm{i}$.

But repurchases are not always accretive! If the CEO's marginal interest rate exceeds her earnings yield, $\mathrm{i} > \mathrm{EY}$, then borrowing \$1 to buy back equity would be dilutive. The interest cost would eat up more earnings than the reduced share count would conserve. In that scenario, the CEO could actually boost her EPS forecast by doing the opposite: issuing a share and using the proceeds to retire \$1 of expensive debt.

Suppose the Fed raises rates sharply after our CEO has levered up to $\ell_\star = 0.6$, where her firm trades at a 20× PE. Her marginal interest rate climbs to $\mathrm{i} = 7\%$, but her earnings yield settles at $\mathrm{EY} = 5\%$. Now $\mathrm{i} > \mathrm{EY}$. A \$1 debt-financed repurchase would reduce expected earnings by $\{5\% - 7\%\} \times \$1 = -\$0.02$. That is dilutive. The popular narrative that buybacks are "always good for EPS" ignores the financing side. The accretive pop from a repurchase comes from the spread $\{\mathrm{EY} - \mathrm{i}\}$, and that spread can easily be negative when borrowing costs are high relative to the firm's earnings yield.

Now flip the scenario. The Fed cuts rates instead, and our CEO's stock price rises sharply. Her earnings yield compresses to EY = 3%, while her marginal borrowing cost falls to i = 5%. Debt is still expensive relative to equity. Issuing new shares—which managers often resist because it "dilutes" EPS—would actually be accretive here. Raising \$1 of equity and using it to retire \$1 of debt would conserve $\{5\% - 3\%\} \times \$1 = \$0.02$ of earnings commitments.

In theory, repurchases and equity issuances are symmetric. The CEO levers up when EY > i and delevers when i > EY. In practice, the symmetry breaks down. When levering up, i is the interest rate on the next \$1 borrowed—the rate that bond markets would charge on a new loan given the firm's total debt. When delevering, the relevant rate is the highest interest rate on existing debt—the most expensive \$1 the CEO could retire. We write both as i, but in an ex post setting they need not be the same. If market conditions have shifted, the rate on old debt and the rate on new debt can diverge substantially.

There is also an operational asymmetry. Levering up is easy: the CEO issues a bond and uses the proceeds to buy back shares. Delevering is hard. Most corporate bonds carry large prepayment penalties—call protection, make-whole provisions, or outright non-call periods. Corporate bonds are not like mortgages. A homeowner can refinance whenever rates drop. A CEO who locked in 5% debt for ten years cannot simply retire it when rates drop and her earnings yield falls to 3%. She has to wait for the bonds to mature.

The result is that ex post refinancing is primarily a one-way street. CEOs can easily tilt toward more leverage by repurchasing shares, but they cannot easily tilt back. The practical consequence is that the accretive repurchase is the dominant form of ex post capital-structure adjustment. Equity issuances to retire expensive debt are theoretically accretive but rarely observed.

Share prices matter too. At her current price of \$50/sh, our CEO's earnings yield is $\text{EY} = \frac{\$2.50}{\$50} = 5\%$. A debt-financed repurchase is accretive whenever $i < 5\%$. But suppose the stock price doubled to \$100/sh. The same \$2.50 in expected EPS would now imply $\text{EY} = \frac{\$2.50}{\$100} = 2.5\%$. Even borrowing at rf = 3% would be dilutive. The higher the stock price, the cheaper equity becomes relative to debt, and the less attractive buybacks are to an EPS maximizer.

These examples illustrate a broader pattern. Growth stocks start out with unlevered earnings yields that are strictly below the cheapest possible interest rate, $\mathrm{EY}(0) < \mathrm{rf}$. So they do not find it accretive to lever up following a small rate cut unless the change pushes them into value-stock territory. By contrast, value stocks start out with their levered earnings yield exactly equal to their marginal interest rate, $\mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star)$. So anything that lowers the cost of debt will make repurchases attractive to a value stock.

The post-2008 buyback boom fits neatly into this framework. In the decade following the financial crisis, interest rates were historically low while earnings yields for many firms remained elevated. A large fraction of the market found itself in a regime where $\mathrm{EY} \gg \mathrm{i}$, making debt-financed repurchases deeply accretive. There is not much mystery here if you think like an EPS maximizer.

1.8 Free Cash Flow

Up to this point, every dollar of the firm's assets has been invested capital—assets that generate operating income. But many firms hold large cash balances alongside their operating assets. This cash is free to deploy. The yield-spread logic applies to these assets too.

When we allow for this possibility, we get the EPS definition from the introduction

$$\mathbb{E}[\mathrm{EPS}] \;=\; \frac{\mathbb{E}[\mathrm{NOI}] \;-\; \bar{\mathrm{i}} \cdot \mathrm{Debt} \;+\; \mathrm{rf} \cdot \mathrm{Cash}}{\#\mathrm{Shares}} \tag{1}$$

The new term, $\mathrm{rf} \cdot \mathrm{Cash}$, is the riskfree interest income the firm collects next year on its free cash. A timing convention is important here. When studying optimal leverage, we assume that the CEO has already spent whatever cash was worth spending on accretive projects. The income generated by those projects is already reflected in $\mathbb{E}[\mathrm{NOI}]$. The Cash that remains is money the CEO chose not to deploy. This "free" cash sits in Treasuries and earns a yield of rf.

Idle cash is like negative riskfree debt. Each \$1 generates $\mathrm{rf} \cdot \$1$ in riskfree interest income. \$1 of riskfree debt adds $\mathrm{rf} \times \$1$ in interest expense. Hence, holding cash and paying down riskfree debt are mirror-image transactions.

With the value-growth distinction in hand, the implications are immediate. Return to our CEO in the $\mathrm{rf} = 3\%$ world, where her firm is a value stock. She has already levered up past her riskfree borrowing capacity and is paying a marginal interest rate of $\mathrm{i} > \mathrm{rf}$ on her last \$1 of debt. If \$1 of cash appeared on her balance sheet, the most accretive thing she could do would be to use the money to retire expensive risky debt, saving $\{\mathrm{i} - \mathrm{rf}\} \times \$1$ in the process. Cash does not accumulate at value stocks because it gets immediately redeployed.

Now consider the same CEO in a $\mathrm{rf} = 7\%$ world, where her firm is a growth stock. She chose to remain unlevered because even riskfree debt was more expensive than equity, $\mathrm{EY} = 4\% < \mathrm{rf} = 7\%$. But she would prefer negative leverage if she could get it. Cash is the next best thing. \$1 of cash earns $7\% \times \$1 = \$0.07$ in riskfree interest income, which is more than the $4\% \times \$1 = \$0.04$ she would have to promise shareholders. So when cash appears on a growth stock's balance sheet, its EPS-maximizing CEO will hold onto it. Lending to Uncle Sam at $\mathrm{rf} = 7\%$ is a great deal when equity only costs $\mathrm{EY} = 4\%$.

This explains a long-standing puzzle in corporate finance: why do some firms hoard large cash reserves while others spend them as fast as they arrive? Bates, Kahle, and Stulz (2009) documents that the average cash-to-assets ratio for US industrial firms more than doubled from 1980 to 2006. No additional frictions are needed to generate this pattern.

The logic also speaks to a long-running debate about investment-cash flow sensitivities (Fazzari, Hubbard, and Petersen, 1988; Kaplan and Zingales, 1997). A value stock starts off with $\mathrm{rf} < \mathrm{EY}(0)$. Then, the CEO levers up $\ell_\star \gg 0$ until $\mathrm{rf} < \mathrm{EY}(0) < \mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star)$. Hence, if an extra \$1 of cash arrives on a value stock's balance sheet, the firm's EPS-maximizing CEO will immediately see it as her cheapest source of capital. For a growth stock, cash is cheap too, but equity is even cheaper, $\mathrm{EY}(0) < \mathrm{rf} = \mathrm{i}(0)$. When an extra \$1 of cash arrives on a growth stock's balance sheet, the EPS maximizer in the corner office will sit on it. This helps explain conflicting results in the literature. In the 1970s and 80s, most public companies were value stocks, so investment-cashflow sensitivities were high. By the 1990s, many had become growth stocks with lower sensitivities.

2 Real Investment

This section shows how an EPS-maximizing CEO decides which projects to undertake. The analysis follows Ben-David and Chinco (2026b). We start with a manager who has already optimized her capital structure and funded all accretive projects that she was aware of. Then a new project unexpectedly appears on her doorstep. Should she invest? The answer, once again, hinges on a yield spread: the project's expected income next year versus the cost of financing it with the firm's cheapest source of capital. The same logic that determined optimal leverage now determines optimal investment.

2.1 Problem Setup

The three classic decisions in corporate finance follow a natural ordering. When studying whether it would be accretive to invest in the new project, the CEO's funding cost will depend on her firm's optimal capital structure. So it makes sense to study one right after the other. Recall how the firm's EPS forecast is defined

$$\mathbb{E}[\mathrm{EPS}] \;=\; \frac{\mathbb{E}[\mathrm{NOI}_1] \;-\; \bar{\imath} \cdot \mathrm{Debt} \;+\; \mathrm{rf} \cdot \mathrm{Cash}}{\#\mathrm{Shares}} \tag{1}$$

When studying real investment, we will assume that our EPS-maximizing CEO has already optimized her capital structure.

At the start of the period, the CEO could have had some accretive projects to invest in. We assume that she has already funded them. The income generated by those projects is already reflected in $\mathbb{E}[\mathrm{NOI}_1]$. If it was optimal to fund those projects by issuing additional debt, then the firm's average interest rate $\bar{\imath}$ reflects these new loans. If it was optimal to spend internal cash reserves, then that money has already been deducted from the last term in the numerator of Equation (1). Cash reflects the remaining free cash, which is why the CEO only collects riskfree interest income on this money, $\mathrm{rf} \cdot \mathrm{Cash}$.

Then one more project unexpectedly shows up on her doorstep. Our analysis will focus on this final project. It has an upfront price tag of $\mathrm{Cost} > \$0$. If the CEO decides to invest in the project, then it will boost her firm's expected net operating income over the next twelve months by $\mathbb{E}[\Delta\text{NOI}_1] = \text{IY} \times \text{Cost}$, where the project's income yield is defined as

$$\text{IY} \;=\; \frac{\mathbb{E}[\Delta\text{NOI}_1]}{\text{Cost}} \tag{11}$$

A typical project will generate income next year as well as in subsequent years. Let $\{\Delta\text{NOI}_t\}_{t\geq 1}$ denote the entire sequence of future project benefits. The income yield only captures the first year's expected boost, $\mathbb{E}[\Delta\text{NOI}_1]$. It says nothing about what the project will deliver from year $t = 2$ onward.

Return to our running example. The CEO's firm has Assets = \$10B in assets, $\mathbb{E}[\text{NOI}_1]$ = \$400M, and trades at Price = \$50/sh with a 20× PE. This means that the CEO faces an earnings yield of EY = 5%. The new project costs Cost = \$100M and is expected to generate $\mathbb{E}[\Delta\text{NOI}_1]$ = \$4M in additional income next year, so its income yield is $\text{IY} = \frac{\$4\text{M}}{\$100\text{M}} = 4\%$.

The word "project" is basically code for asset acquisition. A project might be a new factory, a fleet of delivery trucks, an oil field, or an M&A target. What these have in common is that they are expensive and they generate income. The CEO pays the Cost upfront and, in return, her firm's expected income will rise by $\mathbb{E}[\Delta\text{NOI}_1]$ next year. Whether the asset is a physical plant or an entire company, the same logic applies.

It is important to emphasize that EPS maximizers think about both costs and benefits in terms of yields. The income yield tells you how much income the project is expected to generate next year. It is a benefit. If the manager invests, her expected NOI next year will rise by $\mathbb{E}[\Delta\text{NOI}_1] = \text{IY} \times \text{Cost}$. This quantity is different from the firm's earnings yield, EY. The earnings yield is a cost of capital—the price of raising \$1 via equity. The income yield is the reward from deploying \$1 in a new project.

2.2 Accretive Investment

Should the CEO invest in a project with an income yield of IY? That depends on how much earnings must be sacrificed to finance the upfront cost. We have already seen how an EPS maximizer thinks about costs of capital. To issue \$1 of equity, the CEO must promise new shareholders $\mathrm{EY} \times \$1$ of expected earnings next year. Borrowing an extra \$1 comes with an earnings hit of $\mathrm{i} \times \$1$. The opportunity cost of spending \$1 of cash is the foregone $\mathrm{rf} \times \$1$ in riskfree interest income it could have generated.

An EPS-maximizing CEO will use whichever source of capital is cheapest. We already know which one that is. A value stock ($\mathrm{EY} > \mathrm{rf}$) will have already levered up until $\mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star)$, exhausting its cheap riskfree borrowing capacity along the way, $\ell_\star \gg 0$. If a value stock has cash, then it will be the firm's cheapest financing option: $\mathrm{HR} = \mathrm{rf}$. Otherwise, a value stock has to rely on more expensive external financing, $\mathrm{HR} = \mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star) > \mathrm{rf}$. A growth stock ($\mathrm{EY} < \mathrm{rf}$) will have chosen to remain unlevered, $\ell_\star = 0$, because even riskfree debt is more expensive than equity. For this firm, the relevant hurdle rate is its earnings yield, $\mathrm{HR} = \mathrm{EY}(0)$. Putting everything together, we see that a firm's investment hurdle is given by

$$\mathrm{HR} \;=\; \min\left\{ \underset{\substack{\text{Issue}\\\text{equity}}}{\mathrm{EY}} \,,\, \underset{\substack{\text{Sell}\\\text{bonds}}}{\mathrm{i}} \,,\, \underset{\substack{\text{Use}\\\text{cash}}}{\mathrm{rf}} \right\} \tag{12}$$

Notice that HR is a yield, not a discount rate.

An accretive project is expected to generate more than enough income next year to cover its own short-term funding requirements

$$\mathbb{E}[\Delta \mathrm{NOI}_1] \;>\; \mathrm{HR} \times \mathrm{Cost} \tag{13}$$

If a project's income yield is higher than the firm's hurdle rate, $\mathrm{IY} > \mathrm{HR} = \min\{\mathrm{EY}, \mathrm{i}, \mathrm{rf}\}$, then an EPS maximizer will greenlight it. She invests if

$$\{\mathrm{IY} - \mathrm{HR}\} \;>\; 0\%\mathrm{pt} \tag{14}$$

This is the capital-budgeting analog of the yield-spread logic from Section 1. There, the CEO compared the earnings yield to the marginal interest rate. Here, she compares the project's income yield to her financing yield.

To make the rule concrete, return to our running example. Consider a 20× PE firm in a $\text{rf} = 3\%$ world. Its earnings yield is $\text{EY}(\ell_\star) = \left(\frac{1}{20\times}\right) = 5\%$, so the firm is a value stock. We know that the firm's unlevered earnings yield must be somewhere in the range $\text{rf} = 3\% < \text{EY}(0) < 5\% = \text{EY}(\ell_\star)$, but we do not need to know exactly where. Now consider a project with an income yield of $\text{IY} = 4\%$. If the value stock has cash, it will invest: the project's income yield clears the firm's financing-yield hurdle, $\text{HR} = \text{rf} = 3\%$. But if the value stock has already spent its cash, then she would have to rely on external financing at $\text{HR} = \text{EY}(\ell_\star) = \text{i}(\ell_\star) = 5\%$. Since $\text{IY} = 4\%$ falls short of this higher threshold, the project would be dilutive and the CEO will walk away.

Now consider a 50× PE firm in the same $\text{rf} = 3\%$ world. Its earnings yield is $\text{EY} = \left(\frac{1}{50\times}\right) = 2\%$. Since $\text{EY} < \text{rf}$, we are talking about a growth stock. The CEO will have no debt, $\ell_\star = 0$, and she will see equity as her cheapest source of capital, $\text{HR} = \text{EY}(0) = 2\%$. She would gladly invest in the $\text{IY} = 4\%$ project. Notice the ordering: growth stocks face the lowest hurdle, $\text{HR} = \text{EY}$; value stocks with cash face an intermediate hurdle, $\text{HR} = \text{rf}$; and value stocks without cash face the highest hurdle, $\text{HR} = \text{EY}(\ell_\star) = \text{i}(\ell_\star) > \text{rf}$.

This ordering highlights why capital structure must be solved before investment. When our value stock was unlevered, her earnings yield was $\text{EY}(0) = 4\%$. The $\text{IY} = 4\%$ project would have been right on the boundary between accretive and dilutive. But after levering up to $\ell_\star = 0.6$, where her firm trades at a 20× PE, her earnings yield has risen to $\text{EY}(\ell_\star) = 5\%$. The same project is now clearly dilutive in the absence of free cash: $\text{IY} = 4\% < \text{HR} = 5\%$. The capital-structure decision reshapes the investment landscape.

The min operator in Equation (12) is doing important work. Because the hurdle rate is not a weighted average, a small change in the firm's circumstances can produce a discrete jump in how projects are evaluated. The value stock in the example above goes from enthusiastically investing, $\text{IY} = 4\% > \text{HR} = \text{rf} = 3\%$, to walking away the moment it runs out of cash, $\text{IY} = 4\% < \text{HR} = \text{EY}(\ell_\star) = 5\%$. Nothing about the project has changed. The firm's assets, earnings, and stock price are all the same. But the cheapest source of capital has shifted from cash to external financing, and the hurdle rate has jumped discontinuously.

2.3 Positive-NPV Rule

Corporate-finance textbooks say to follow the positive-NPV rule. Berk and DeMarzo (2007) tells readers that, "when making an investment decision, select the option with the highest NPV." Welch (2008) explains how "it is the appropriate decision benchmark—and no other rule can beat it." According to Ross, Westerfield, and Jordan (2009), "the capital-budgeting process can be viewed as a search for investments with positive net present values (NPVs)."

When deciding whether to greenlight a project, a manager needs some way of comparing its upfront cost with the uncertain stream of future benefits spread out across multiple years. The positive-NPV rule says to do this by converting the project's expected future income stream into today's dollars

$$\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] \;=\; \sum_{t=1}^{\infty} \frac{\mathbb{E}[\Delta\mathrm{NOI}_t]}{(1+\mathrm{r})^t} \tag{15}$$

The textbook approach requires the CEO to carefully select the project's discount rate, $\mathrm{r} > 0\%$, to reflect the risk profile of its future income stream.

A project has a positive NPV if the output of this present-value calculation exceeds its full upfront cost

$$\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] - \mathrm{Cost} \;>\; \$0 \tag{16}$$

Return to the $\mathrm{Cost} = \$100\mathrm{M}$ project from our running example. If the project is expected to generate $\mathbb{E}[\Delta\mathrm{NOI}_t] = \$4\mathrm{M}$ every year in perpetuity and the CEO uses a discount rate of $\mathrm{r} = 4.5\%$, then the present value of the project's future income stream is $\$4\mathrm{M} \times \left(\frac{1}{4.5\%}\right) \approx \$89\mathrm{M}$. Since $\$89\mathrm{M} < \$100\mathrm{M}$, the project is negative NPV. Textbooks would recommend walking away.

Applying the positive-NPV rule requires knowing exactly which discount rate to use. The answer is highly sensitive to this choice. If the CEO above had used $\mathrm{r} = 3.5\%$ instead of 4.5%, the same project would be worth $\$4\mathrm{M} \times \left(\frac{1}{3.5\%}\right) \approx \$114\mathrm{M}$. Now textbooks would say to invest. A 1%pt change in the risk-adjusted discount rate is enough to alter how \$100M gets spent.

It is not just that the positive-NPV rule allows small changes in r to have enormous implications for capital allocation. The issue is that neither 4.5% nor 3.5% appears on the firm's financial statements. The discount rate reflects the riskfree rate plus a premium calibrated to the project's exposure to aggregate shocks. Reasonable people can disagree about the right number. The positive-NPV rule asks a CEO to stake \$100M on a quantity that is inherently subjective.

An EPS maximizer's decisions also require precise forecasts. But the forecasts involve directly observable quantities. How much income will this project generate over the next twelve months? How much earnings will I have to sacrifice to fund the upfront cost? Which number is bigger? The answers to these questions do not reflect the CEO's risk preferences. They are directly observable outcomes, which show up on the firm's financial statements.

A project with IY = 4.5% is expected to generate \$4.5M in extra income next year. One with IY = 3.5% would generate \$3.5M. The \$4.5M − \$3.5M = +\$1M difference is something a CEO can point to on her firm's income statement. An EPS maximizer does not need to predict how much income the project will be generating two decades in the future, nor does she need to know how to value this 20-year distant payoff today. She simply asks whether the project's expected income next year is enough to cover its funding requirement next year. Apples to apples. Discount rates to dust.

2.4 Defining "Short-term"

How much does the exact definition of "short-term" matter? Not much. To see why, return to our Cost = \$100M project and suppose it generates a perpetuity of $\mathbb{E}[\Delta\mathrm{NOI}_t] = \$4\mathrm{M}$ each year going forward, $t = 1, 2, 3, \ldots$ Think about writing out the first couple of terms in the infinite sum from Equation (15)

$$\mathbb{PV}_{\mathrm{r}}[\$4\mathrm{M\ Perpetuity}] \;=\; \frac{\$4\mathrm{M}}{1+\mathrm{r}} + \frac{\$4\mathrm{M}}{(1+\mathrm{r})^2} + \cdots \tag{17}$$

EPS maximizers clearly care about the first \$4M of income and clearly ignore the "$\cdots$" terms, which represent the present value of the \$4M payments from year $t = 3$ onward. You might think it matters whether or not they also care about the second \$4M of income. But, for the purposes of comparing max EPS to max NPV, the important thing is the infinite sequence of terms from year $t = 3$ onward that gets left out no matter what.

When discounting at r = 4%, this income stream would be valued at \$100M. The investment would have an earnings multiple of $\mathrm{PE} = \left(\frac{1}{\mathrm{r}-0}\right) = 25\times$, meaning that next year's \$4M income boost would only make up 4% of the project's present value. The income generated by the project in year 2 would contribute slightly less, $\frac{\$4\mathrm{M}}{(1+4\%)^2} \,/\, \$100\mathrm{M} \approx 3.7\%$. Regardless of whether an EPS maximizer includes the second \$4M income boost, she is still ignoring $100\% - \{4\% + 3.7\%\} \approx$ 92% of the project's present value.

Another way to see this is to recognize that the "$\cdots$" terms in Equation (17) are just the expected resale price, i.e., the price at which the project's remaining income stream could be sold at the end of year 1:

$$\mathbb{E}[\mathrm{Price}_1] = \frac{\mathbb{E}[\Delta\mathrm{NOI}_2]}{(1+\mathrm{r})} + \frac{\mathbb{E}[\Delta\mathrm{NOI}_3]}{(1+\mathrm{r})^2} + \cdots \tag{18a}$$

$$= \frac{\$4\mathrm{M}}{(1+\mathrm{r})} + \frac{\$4\mathrm{M}}{(1+\mathrm{r})^2} + \cdots = \$100\mathrm{M} \tag{18b}$$

We can therefore write the present value of the project as

$$\mathbb{PV}_{\mathrm{r}}[\$4\mathrm{M\ Perpetuity}] = \frac{\$4\mathrm{M}}{1+\mathrm{r}} + \frac{\$100\mathrm{M}}{1+\mathrm{r}} \tag{19}$$

The second $\frac{\$100\mathrm{M}}{1+4\%} = \$96\mathrm{M}$ term makes up 96% of the project's present value. What matters when juxtaposing max EPS with max NPV is this missing term.

Yet another way to think about this is via bond math. In the example above, we could just as easily have talked about a 2-year 4% coupon bond with a face value of \$100M that was priced at par. The present value of this bond is

$$\mathbb{PV}_{\mathrm{r}}[\mathrm{Coupon\ Bond}] = \frac{\$4\mathrm{M}}{1+\mathrm{r}} + \frac{\$4\mathrm{M}}{(1+\mathrm{r})^2} + \frac{\$100\mathrm{M}}{(1+\mathrm{r})^2} \tag{20}$$

An EPS maximizer focuses on the coupon payments. The terminal face-value payment does not enter into her calculations.

EPS maximizers interpret the world as a sequence of annuities. An NPV maximizer looks at an asset and sees a stream of future cash flows, each of which must be discounted at the appropriate rate and summed into a single present value. An EPS maximizer looks at the same asset and asks a much simpler question: what is its yield?

She treats the project's expected income next year as if it were a coupon payment on a bond trading near par. The project's income yield, IY, plays the role of the coupon rate. The hurdle rate, HR, plays the role of the prevailing market yield. If the coupon rate exceeds the market yield, the bond trades above par. If $\mathrm{IY} > \mathrm{HR}$, the project is accretive.

This does not mean that EPS maximizers punish projects for generating income in the distant future. They simply do not reward them for doing so. To see this, consider three projects that all cost $\mathrm{Cost} = \$100\mathrm{M}$. The first delivers \$4M next year and nothing afterwards. The second is a 2-year 4% coupon bond at par: it pays \$4M in each of the next 2 years plus \$100M in face value at the end of year 2. The third pays \$4M every year starting next year and continuing on forever. All three projects have an income yield of $\mathrm{IY} = 4\%$. That is what matters to an EPS maximizer. She would evaluate all three identically.

On one hand, this is a bit silly. A project that only delivers \$4M next year is clearly less attractive than a project that delivers \$4M next year and \$104M the year after, or a project that delivers an infinite stream of \$4M benefits. But it is also silly to think that a 5bps decline in r, from $\mathrm{r} = 4.00\%$ to 3.95%, would make the third project worth ~\$1M more than the second

$$\mathbb{PV}_{3.95\%}[\text{Project 2}] = \frac{\$4\mathrm{M}}{(1+\mathrm{r})} + \frac{\$4\mathrm{M}}{(1+\mathrm{r})^2} + \frac{\$100\mathrm{M}}{(1+\mathrm{r})^2} \approx \$100.1\mathrm{M} \tag{21a}$$

$$\mathbb{PV}_{3.95\%}[\text{Project 3}] = \$4\mathrm{M} \times \left(\frac{1}{\mathrm{r}}\right) \approx \$101.3\mathrm{M} \tag{21b}$$

Executives have no way of knowing the discount rate to this level of precision. Every model is a lie. The calculations behind max EPS and max NPV are each unrealistic in their own peculiar way. But only one of them seems to be empirically relevant. Corporate executives obsess over EPS, not NPV.

2.5 Main Differences

Our model allows us to carefully inspect where the differences between max EPS and the textbook present-value approach lie. The results are enlightening. As the above calculations demonstrate, EPS maximization has its own internal logic and structure. This is not a naive mistake. We now characterize how max EPS and max NPV can produce different investment outcomes.

To do this, we compare the EPS-maximizing investment rule with a ratio version of the positive-NPV rule. If $\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] - \mathrm{Cost} > \$0$, then $\frac{\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}]}{\mathrm{Cost}} - 1 > 0\%$. We prove in Ben-David and Chinco (2026b) that there are three reasons why an EPS maximizer and an NPV maximizer might disagree about whether to invest in a project

$$\left\{ \frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}} - \mathrm{HR} \right\} - \left\{ \frac{\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}]}{\mathrm{Cost}} - 1 \right\} \propto \begin{aligned} &(\mathbb{E} - \mathbb{PV}_{\mathrm{r}})[\Delta\mathrm{NOI}_1] \\ &- \mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 2}] \\ &+ (1 - \mathrm{HR}) \times \mathrm{Cost} \end{aligned} \tag{22}$$

When the left-hand side of Equation (22) is positive, EPS maximizers find a project more appealing. For example, return to the IY = 4% project with a Cost = \$100M price tag. For the 50× PE growth stock with HR = EY = 2%, the project is accretive: $\left\{\frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}} - \mathrm{HR}\right\} = \left\{\frac{\$4\mathrm{M}}{\$100\mathrm{M}} - 2\%\right\} = +2\%\mathrm{pt}$. If this project was negative-NPV and only generated \$96M in present value, then we would have $\left\{\frac{\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}]}{\mathrm{Cost}} - 1\right\} = \left\{\frac{\$96\mathrm{M}}{\$100\mathrm{M}} - 1\right\} = -4\%\mathrm{pt}$, making the entire left-hand side equal to $\{+2\%\mathrm{pt}\} - \{-4\%\mathrm{pt}\} = +6\%\mathrm{pt}$.

When the left-hand side of Equation (22) is negative, NPV maximizers are more excited about the project. In the absence of cash, the 20× PE value stock faces $\mathrm{HR} = \mathrm{EY}(\ell_\star) = \mathrm{i}(\ell_\star) = 5\%$ and would view the IY = 4% project as dilutive: $\left\{\frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}} - \mathrm{HR}\right\} = \left\{\frac{\$4\mathrm{M}}{\$100\mathrm{M}} - 5\%\right\} = -1\%\mathrm{pt}$. If the project was positive NPV, generating \$102M in present value, then we would have $\left\{\frac{\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}]}{\mathrm{Cost}} - 1\right\} = \left\{\frac{\$102\mathrm{M}}{\$100\mathrm{M}} - 1\right\} = +2\%\mathrm{pt}$, making the left-hand side $\{-1\%\mathrm{pt}\} - \{+2\%\mathrm{pt}\} = -3\%\mathrm{pt}$.

Negative terms on the right-hand side of Equation (22) cause EPS maximizers to underinvest. There is only one of these: $-\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 2}]$. When a CEO greenlights a project, the investment will often generate income next year, $t = 1$, as well as in subsequent years, $t \geq 2$. An NPV maximizer appreciates this fact and capitalizes these subsequent gains into the sale price of her firm's assets in year 1. By contrast, an EPS maximizer only cares about the expected NOI boost in year 1. And, as a result, she will be less likely to invest.

However, the other two terms in Equation (22) are both positive and make EPS maximizers more likely to invest, potentially flipping the effect. First, there is $+(1 - \text{HR}) \times \text{Cost}$. This term embodies the fact that EPS maximizers ignore long-term financing costs. Their short-termism implies that they only count the portion of a project's funding requirements that must be paid next year. As a result, when short-term financing becomes especially cheap, it is possible to get EPS-driven overinvestment.

We also have $+(\mathbb{E} - \mathbb{PV}_{\text{r}})[\Delta\text{NOI}_1]$. This term captures the fact that EPS maximizers do not risk-adjust or discount a project's expected benefit, making the project appear more attractive. Even in the absence of risk, a sure-fire \$1 next year is only worth $\left(\frac{\$1}{1+\text{rf}}\right)$ today. Risky projects that deliver most of their gains in good states next year will also seem more attractive to EPS maximizers.

The EPS-maximizing capital-budgeting rule makes no assumptions about how assets are priced. An NPV maximizer needs a correctly specified asset-pricing model to compute $\mathbb{PV}_{\text{r}}[\cdot]$. If she uses the wrong discount rate, she will misvalue projects and make mistakes. An EPS maximizer sidesteps this problem entirely. Her investment decisions depend on IY and HR, both of which are directly observable. While researchers view EPS maximization as a behavioral mistake, the approach has empirical bite even if there are no pricing errors and the CAPM holds perfectly.

2.6 Overinvestment

CEOs who fixate on EPS growth wind up underinvesting because they are too focused on the short term. This is one of the most widely held views in academic corporate finance. Stein (1989) argues that "managers forsake good investments so as to boost current earnings." Terry (2023) estimates that short-term pressure to meet earnings forecasts reduces long-run growth, costing the U.S. economy roughly 6% of output per century. And in their landmark survey, Graham, Harvey, and Rajgopal (2005) report that 55% of CFOs "would avoid initiating a very positive NPV project if it meant falling short of the current quarter's consensus earnings."

This idea implicitly assumes that EPS maximizers compare a project's expected income next year, $\mathbb{E}[\Delta\mathrm{NOI}_1]$, to the full upfront cost:

$$\mathbb{E}[\Delta\mathrm{NOI}_1] \ \overset{?}{\lesseqgtr}\ \mathrm{Cost} \tag{23}$$

If that were the case, then clearly EPS maximizers would invest less. A project that costs Cost = \$100M and generates $\mathbb{E}[\Delta\mathrm{NOI}_1]$ = \$4M next year would never pass this test, regardless of how much income it delivers in subsequent years.

But this is not how the world works. EPS maximizers are short-termist, but they do not just focus on short-term benefits. They also only worry about short-term costs. As we showed in Equation (13), the correct comparison is

$$\mathbb{E}[\Delta\mathrm{NOI}_1] \ \overset{?}{\lesseqgtr}\ \mathrm{HR} \times \mathrm{Cost} \tag{13}$$

An EPS maximizer compares next year's income to next year's expense, HR×Cost. When HR = rf = 3%, the relevant cost is 3% × \$100M = \$3M, not \$100M.

As a result, EPS maximization can easily lead to overinvestment. Return to our running example. Suppose the \$100M project generates \$4M in income every year in perpetuity. At a risk-adjusted discount rate of r = 8%, the project would be negative NPV. The present value of its expected income stream, $\$4\mathrm{M} \times \left(\frac{1}{8\%}\right) = \$50\mathrm{M}$, would be well below its \$100M price tag. But the value stock with cash on hand has a hurdle rate of HR = rf = 3%, and the project's income yield is IY = 4% > 3%. The EPS-maximizing CEO would greenlight the project.

Our point is not that CEOs should be maximizing EPS. Obviously, overinvestment is a bad thing. Our point is that it is important to carefully model what CEOs are actually doing. If you do not, you wind up in situations like this, believing that EPS maximization always leads to underinvestment. The truth is much more interesting. Graham et al. (2005) asked CFOs whether they would avoid a positive-NPV project to meet earnings targets. We hope that the next survey asks whether they would initiate a negative-NPV project if it was sufficiently accretive. This is the investment banking industry in a nutshell.

The convertible-bond boom of 2020-2021 provides a vivid illustration. When interest rates were near zero, firms were able to issue zero-coupon convertible bonds, giving them access to financing with no near-term interest expense. From an EPS maximizer's perspective, this was essentially free money: HR $\approx$ 0%, so virtually any project would be accretive. Issuance of convertible bonds in May 2020 alone hit a record $20.7B as companies rushed to exploit this loophole.[1] Regulators responded with Accounting Standards Update (ASU) 2020-06, which required all convertible debt to use the "if-converted" method, immediately reflecting potential dilution in EPS.[2] The acronym "EPS" appears 177 times in this regulatory document. The entire episode was driven by the EPS arithmetic, not by a sudden change in project NPVs.

2.7 Internal Rate of Return

75.6% of the CFOs in Graham and Harvey (2001) reported using an IRR hurdle when evaluating projects. This was the single most common capital-budgeting method, edging out even the positive-NPV rule, 74.9%. Two decades later, Graham (2022) found that this pattern had barely changed: at least three-quarters of large firms still always or almost always use IRR. "Despite flaws that can lead to poor investment decisions," Kelleher and MacCormack (2004) observe, "IRR will likely continue to be used widely during capital-budgeting discussions because of its strong intuitive appeal."

A project's internal rate of return (IRR) is the discount rate that equates the present value of its future income stream with the upfront cost

$$\text{IRR} \;=\; \Big\{\, \mathrm{r} > 0\% \;:\; \mathbb{PV}_{\mathrm{r}}[\{\Delta\text{NOI}_t\}_{t\geq 1}] = \text{Cost} \,\Big\} \tag{24}$$

[1] K. Duguid and I. Moise. "Financing hunt during pandemic lifts convertible debt issuance to record." *Reuters.* Jun 2 2020.

[2] J. Schaeffer and N. Guruji. "Recent FASB Simplifications to Convertible Bond Accounting." *EquityMethods.* Oct 4 2020.

As Welch (2008) explains, it is a "'sort-of average rate of return' that is implicit in future cash flows." Notice that computing an IRR requires solving a fixed-point problem that uses the $\mathbb{PV}_{\mathrm{r}}[\cdot]$ operator from the NPV rule. If you can calculate an IRR, then you can also compute the NPV using some other choice of r.

The IRR rule says to compare one specific choice to a predetermined hurdle rate and invest if

$$\{\mathrm{IRR} - \mathrm{HR}\} \;>\; 0\%\mathrm{pt} \tag{25}$$

Corporate-finance textbooks tend to emphasize the shortcomings of this approach. Berk and DeMarzo (2007) warns that "the IRR rule should not be used unless all negative cash flows precede the positive ones." Otherwise, a project might have "multiple IRRs, or the IRR may not exist."

But these objections miss the deeper point. Even if using an IRR was only a tiny bit worse than the positive-NPV rule, its persistence would still be "a puzzle" (Brealey, Myers, and Marcus, 2001). "Given that NPV seems to be telling us directly what we want to know (Ross et al., 2009)," why bother using any alternative procedure? There is a prominent callout box in Berk and DeMarzo (2007) discussing the persistence of "rules other than the NPV rule." A CEO who can solve Equation (24) clearly has the technical sophistication to calculate an NPV. Why doesn't she? Is finding r by solving a fixed-point problem really more "intuitive" than using the CAPM?

The popularity of IRRs makes perfect sense in the max EPS paradigm. An IRR is just the multi-period analog of an income yield, IY. The yield to maturity of a coupon bond is its IRR. Return to our numerical example involving a project with expected benefits of $\mathbb{E}[\Delta\mathrm{NOI}] = \$4\mathrm{M}$ per year and upfront $\mathrm{Cost} = \$100\mathrm{M}$. The project's income yield is $\mathrm{IY} = \frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}} = 4\%$. If we think of this as a one-period investment where the firm recovers its cost at the end of the year, then Equation (24) gives us

$$\$100\mathrm{M} \;=\; \frac{\$4\mathrm{M}}{1+\mathrm{IRR}} + \frac{\$100\mathrm{M}}{1+\mathrm{IRR}} \qquad \rightsquigarrow \qquad \mathrm{IRR} = 4\% \tag{26}$$

When a CEO compares this IRR to her firm's hurdle rate, she is following the EPS-maximizing investment rule from Equation (13).

The same logic extends to multiple periods. If we think of the project as a two-period investment, Equation (24) becomes

$$\$100\text{M} \;=\; \frac{\$4\text{M}}{1+\text{IRR}} + \frac{\$4\text{M}}{(1+\text{IRR})^2} + \frac{\$100\text{M}}{(1+\text{IRR})^2} \qquad \rightsquigarrow \qquad \text{IRR} = 4\% \tag{27}$$

By setting the present value equal to the upfront cost, IRR assumes away any fluctuations due to price appreciation or multiples expansion, effectively putting all the emphasis on short-term cash flows. Hence, an IRR winds up being a multi-year average income yield. It is inherently an EPS-maximizer's tool.

2.8 Payback Period

If textbooks dislike the IRR rule, then they positively despise the payback-period rule. Welch (2008) calls it "a stupid idea." Brealey et al. (2001) says the logic is so foolish "there is little point in dwelling on its deficiencies." According to Ross et al. (2009), the payback-period rule "doesn't ask the right question. Because time value is ignored, the payback period reflects how long it takes to break even in an accounting sense, but not in an economic sense."

Yet 56.7% of the CFOs in Graham and Harvey (2001)'s survey said that they always or almost always took payback periods into consideration. "Other than NPV and IRR, the payback period [was] the most frequently used technique." Among small firms, Graham (2022) found that payback was actually more prevalent. CFOs reported that information in corporate plans is only reliable about two years ahead, which naturally encourages a focus on near-term payback.

A project's expected payback period is

$$\mathbb{E}[\text{Payback Period}] \;=\; \frac{\text{Cost}}{\mathbb{E}[\Delta\text{NOI}_1]} \;=\; \left(\frac{1}{\text{IY}}\right) \tag{28}$$

The project is expected to generate income of $\mathbb{E}[\Delta\text{NOI}_1]$ next year. Its expected payback period tells you how many years it would have to repeat this feat to cover its upfront cost. Payback period is an upside multiple. It is like using a PE ratio to talk about a firm's earnings yield, $\text{PE} = (\frac{1}{\text{EY}})$.

By writing down a proper max EPS model, we get to see why CEOs quote payback periods. It would be foolish to evaluate a project based solely on its payback period. But that is not what real-world CEOs do. It would also be foolish to consider only the present value of a project's benefits and ignore the cost. That is not what textbooks say to do either. It is the NPV rule, not the PV rule.

Saying that a project will pay for itself within a few short years is analogous to saying that an M&A target can be acquired at a low PE ratio. Graham and Harvey (2001) found that 38.8% of CFOs considered a target company's PE ratio when evaluating an acquisition. IRR, payback period, PE ratio. These are all different ways of expressing the same EPS-maximizing logic. Future CEO surveys should be designed with this unity in mind.

Return to our running example. The \$100M project with $\mathbb{E}[\Delta \mathrm{NOI}_1] = \$4\mathrm{M}$ has a payback period of $\left(\frac{\$100\mathrm{M}}{\$4\mathrm{M}}\right) = 25$ years and an income yield of $\mathrm{IY} = \frac{\$4\mathrm{M}}{\$100\mathrm{M}} = \left(\frac{1}{25}\right) = 4\%$. Now consider an acquisition target with a market cap of \$100M and expected earnings of \$4M. The target has a PE ratio of $\left(\frac{\$100\mathrm{M}}{\$4\mathrm{M}}\right) = 25\times$ and an earnings yield of $\mathrm{EY} = 4\%$. The two calculations are identical. A CEO who prefers projects with short payback periods is doing the same thing as a CEO who prefers targets with low PE ratios. A growth stock with a $50\times$ PE would invest in both. A value stock with a $20\times$ PE would invest in neither.

2.9 Capitalized Interest

Strictly speaking, an EPS maximizer would never invest in a project that is not expected to produce any income next year, $\mathrm{IY} = 0\%$. This is often raised as an objection, a gotcha meant to demonstrate that CEOs cannot actually be EPS maximizers. But the objection really underscores the point.

Public companies do not invest in many projects that have literally zero expected short-term income. Pharmaceutical companies dedicate enormous R&D budgets to extending patents on existing drugs. Companies routinely structure projects with large long-term benefits so that they also produce adequate short-term gains. The fact that CEOs go out of their way to avoid $\mathrm{IY} = 0\%$ projects is evidence for EPS maximization, not against it.

There are some cases where projects genuinely have zero short-term benefits. And, when investing in these projects, firms take advantage of the capitalized-interest exemption. Under GAAP (ASC 835-20), a firm can roll the interest expense incurred during a project's construction phase into the cost basis rather than taking an immediate EPS hit. The company still makes the interest payments. The expense just does not show up in earnings.

To illustrate, return to the 50$\times$ PE growth stock from our running example, with EY = 2% and rf = 3%. Consider a \$100M project that will not generate any income in year 1. Starting in year 2, it will yield a constant annual income boost of $\mathbb{E}[\Delta \text{NOI}] = \$4\text{M}$. The CEO would not fund this project by issuing equity. That would immediately dilute her earnings by 2% $\times$ \$100M = \$2M next year, and the firm would get nothing to show for it prior to year $t = 2$. But, suppose the CEO borrows \$100M at rf = 3% and capitalizes the 3% $\times$ \$100M = \$3M interest expense in year 1. Her firm still has to write a \$3M check to its creditors, but this expense does not show up on its income statement. Instead, the expense gets added to the project's cost basis, \$100M + \$3M = \$103M, making its adjusted income yield slightly lower once operational, $\left(\frac{\$4\text{M}}{\$103\text{M}}\right) \approx 3.9\%$. Since $3.9\% > 3\%$, the project is accretive from year $t = 2$ onward.

This explains why some growth stocks carry debt despite having costs of equity capital below the riskfree rate. Equity is their cheapest source of financing for projects that produce income right away. But for projects with zero short-term income, equity financing would cause an immediate EPS hit with no offsetting benefit. Debt financing combined with the capitalized-interest exemption lets the CEO avoid this dilutive hit.

These sorts of accounting wrinkles deserve more attention. They matter enormously to practitioners. They are also theoretically interesting. For example, there is no reason why firms should not be able to capitalize the earnings cost of equity issuance, EY $\times$ Cost, in the same way they capitalize interest expense. Companies already report various kinds of diluted EPS statistics, $\frac{\mathbb{E}[\text{Earnings}_1]}{\#\text{Shares}+\mathbb{E}[\Delta\#\text{Shares}]}$, which pretend that hypothetical future shares have already been issued. If it is acceptable to include these shares early, then why can't a firm delay including shares until a project is operational?

3 Payout Policy

This section shows how an EPS-maximizing CEO decides whether to retain cash or return it to shareholders. The analysis follows Ben-David and Chinco (2026c). We start with a manager who has already optimized her capital structure and funded every accretive project she knew about. Then her company realizes an unexpected cash windfall. The CEO now faces an all-or-nothing decision: she can keep the money on balance sheet, using some of it to fund new projects and parking the rest in Treasuries; or, she can move the cash windfall off balance sheet by repurchasing shares. Retaining cash will boost her expected income. Returning cash will lower her earnings commitments. The max EPS payout policy says to pick whichever option offers the highest yield on her cash.

This simple rule produces an interesting bifurcation when paired with the EPS-maximizing capital structure and investment rules. Growth stocks have such cheap equity financing that they never spend cash on projects, yet their low earnings yield also means that riskfree interest income is enough to justify retention. Value stocks see cash as their cheapest funding source, but their higher earnings yield raises the opportunity cost of keeping cash on balance sheet. It is precisely the companies that benefit most from internal cash reserves that face the highest hurdle for holding onto the money.

3.1 Problem Setup

Section 1 showed how an EPS maximizer optimizes her leverage in the absence of cash. We assume that the CEO has already done this. Then, immediately afterwards, she realizes an unexpected cash windfall of Windfall dollars. In Section 2, we studied a marginal investment decision: should the CEO fund one more project? Here, we roll the clock back. Instead of asking about the Nth project, we ask whether it is worth keeping the cash windfall on balance sheet in order to fund all N projects, leaving the remainder in Treasuries. The alternative is to return the entire amount to shareholders, and to begin with we will assume that the CEO does so by repurchasing shares.

Given this logic, we build on the expected EPS definition used in Section 1. This calculation reflects earnings from the firm's existing asset base and financing arrangements but does not yet account for any income the cash windfall might generate

$$\begin{aligned} \mathbb{E}[\text{Non-Cash EPS}] &= \frac{\mathbb{E}[\text{NOI}] - \bar{\imath} \times \text{Debt}}{\#\text{Shares}} && (3) \\ &= \{\text{ROIC} - \ell \cdot \bar{\imath}\} \times \left(\frac{\text{Assets}}{\#\text{Shares}}\right) && (3') \end{aligned}$$

Here, we will explicitly label this forecast as "non-cash EPS." $\text{ROIC} = \frac{\mathbb{E}[\text{NOI}]}{\text{Assets}}$ denotes the average income yield on each \$1 of the firm's existing asset base. $\ell = \frac{\text{Debt}}{\text{Assets}}$ is the leverage ratio used to finance this invested capital. The firm's promised interest payment next year is $\bar{\imath} \times \text{Debt}$, where $\bar{\imath} \geq \text{rf}$ is the average interest rate on the company's existing loans and bonds.

Prior to the cash windfall, the firm's EPS forecast depends entirely on the levered yield spread, $\{\text{ROIC} - \ell \cdot \bar{\imath}\}$, applied to each share's portion of the asset base. In our running example, the firm has \$10B of assets generating \$400M of expected NOI, so ROIC = 4%. Having already levered up to $\ell_\star = 0.6$, the firm has 80M shares outstanding and a non-cash EPS forecast of $\mathbb{E}[\text{Non-Cash EPS}] =$ \$2.50/sh. The CEO then realizes a \$200M cash windfall, or $\left(\frac{\text{Windfall}}{\#\text{Shares}}\right) = \$2.50/\text{sh}$. At first glance, a cash windfall equal to the firm's entire EPS forecast might seem large. But you should not compare the two: one is a stock variable, the other is a flow. This \$200M cash windfall represents just $\left(\frac{\text{Windfall}}{\text{Assets}}\right) = 2\%$ of the firm's \$10B asset base.

3.2 Retaining Cash

The CEO has two options. She can retain the cash, using a fraction θ of the windfall to fund $N \geq 1$ accretive projects and parking the remainder in Treasuries. Or she can return the entire amount to shareholders by repurchasing shares. First, suppose that the CEO keeps the cash on balance sheet, giving herself the opportunity to add to her non-cash EPS by investing the money.

The CEO can collect riskfree interest income by parking all her cash in Treasuries. In that case, her cash windfall would add rf $\times$ Windfall to her firm's expected earnings next year

$$\underset{\text{Treasuries}}{\mathbb{E}[\text{EPS}]} = \frac{\mathbb{E}[\text{NOI}] - \bar{\imath} \times \text{Debt} \;+\; \text{rf} \times \text{Windfall}}{\#\text{Shares}} \tag{30a}$$

$$= \mathbb{E}[\text{Non-Cash EPS}] \;+\; \text{rf} \times \left(\frac{\text{Windfall}}{\#\text{Shares}}\right) \tag{30b}$$

In our running example, rf = 3%. So investing the entire \$200M windfall in Treasuries would generate 3% $\times$ \$200M = \$6M in riskfree interest income.

The CEO also has the option of using some of her cash windfall to fund higher-yield projects. Suppose she can think of $N \geq 1$ projects. The nth project has income yield

$$\text{IY}_n = \frac{\mathbb{E}[\Delta\text{NOI}_n]}{\text{Cost}_n} > \text{rf} \tag{31}$$

Collectively, these projects have a combined price tag of

$$\theta \cdot \text{Windfall} = \sum_{n=1}^{N} \text{Cost}_n \tag{32}$$

where $\theta \in [0, 1)$ denotes the CEO's potential cash-usage rate. What fraction of the CEO's cash windfall could she spend on high-yield projects if she wanted to? θ is the answer to this question. Because the windfall arrives unexpectedly, the CEO is unlikely to have good projects lined up to absorb the entire amount.

The CEO's investment opportunities have an average income yield of

$$\overline{\text{IY}} = \frac{\mathbb{E}[\Delta\text{NOI}_1] + \cdots + \mathbb{E}[\Delta\text{NOI}_N]}{\theta \cdot \text{Windfall}} \tag{33}$$

In other words, the CEO has access to investment opportunities with an expected payback period of $(1/\overline{\text{IY}})$ years.

Return to our running example. Suppose the CEO has $N = 2$ projects. The first costs $\text{Cost}_1 = \$50\text{M}$ and has an income yield of $\text{IY}_1 = 10\%$, generating \$5M in additional income next year. The second is the $\text{Cost}_2 = \$100\text{M}$ project from Section 2, with $\text{IY}_2 = 4\%$ and \$4M of expected income. Together, the two projects have a combined price tag of $\theta \cdot \text{Windfall} = \$150\text{M}$, giving a usage rate of $\theta = 75\%$. The average income yield is $\overline{\text{IY}} = \frac{\$5\text{M}+\$4\text{M}}{\$150\text{M}} = 6\%$, equivalent to a payback period of $\left(\frac{1}{6\%}\right) \approx 17$ years.

The CEO's blended cash yield has two components

$$\begin{aligned} \text{CY} &= (1-\theta) \cdot \text{rf} + \theta \cdot \overline{\text{IY}} && \text{(34a)} \\ &= \text{rf} + \underbrace{\theta \cdot \{\overline{\text{IY}}-\text{rf}\}}_{\Delta\text{CY}} && \text{(34b)} \end{aligned}$$

If the CEO leaves all her cash in Treasuries, then her average cash yield would be $\text{CY} = \text{rf}$. By using some of her windfall to fund accretive projects, $\overline{\text{IY}} > \text{rf}$, the CEO can increase her average cash yield by $\Delta\text{CY} = \text{CY}-\text{rf} = \theta \cdot \{\overline{\text{IY}}-\text{rf}\}$.

If the CEO retains her cash windfall, she can fund both projects and park the remaining \$50M in Treasuries. Her blended cash yield would be $\text{CY} = (1\text{–}0.75) \times 3\% + 0.75 \times 6\% = 5.25\%$, with a yield boost of $\Delta\text{CY} = 0.75 \times \{6\%\text{–}3\%\} = 2.25\%\text{pt}$ above Treasuries alone. The resulting EPS forecast is

$$\begin{aligned} \underset{\text{Retain cash}}{\mathbb{E}[\text{EPS}]} &= \frac{\mathbb{E}[\text{NOI}] - \bar{\imath} \times \text{Debt} + \text{CY} \times \text{Windfall}}{\#\text{Shares}} && \text{(35a)} \\ &= \mathbb{E}[\text{Non-Cash EPS}] + \text{CY} \times \left(\frac{\text{Windfall}}{\#\text{Shares}}\right) && \text{(35b)} \end{aligned}$$

In our example, the total income from cash would be $\text{CY} \times \text{Windfall} = 5.25\% \times \$200\text{M} = \$10.5\text{M}$, adding $5.25\% \times \$2.50 \approx \$0.13/\text{sh}$ to her EPS forecast.

The portion of the cash windfall that the CEO does not use for project funding, $(1-\theta) \cdot \text{Windfall}$, is what researchers get to see on the balance sheet at fiscal-year end; the portion that gets spent on projects, $\theta \cdot \text{Windfall}$, is called "capital expenditures"

$$\text{CY} \cdot \text{Windfall} = \text{rf} \cdot \text{Cash} + \overline{\text{IY}} \cdot \text{CapEx} \tag{36}$$

Researchers should not confuse the firm's free cash balance with the size of the windfall. After funding both projects, only $\text{Cash} = (1-\theta) \cdot \text{Windfall} = \$50\text{M}$ sits in Treasuries. But the \$150M that got deployed into projects is still working for the CEO—it just shows up as extra NOI rather than interest income.

3.3 Returning Cash

The CEO can also return her cash windfall to shareholders by spending the money on repurchases. Given the company's current stock price, the CEO can buy back $(\frac{\text{Windfall}}{\text{Price}})$ shares. Afterwards, the CEO would no longer have to promise any expected earnings to the previous owners. Thus, each \$1 of cash spent on buybacks will shave EY $\times$ \$1 off of the CEO's earnings commitments

$$\text{EY} \;=\; \frac{\mathbb{E}[\text{EPS}]}{\text{Price}} \tag{8}$$

Since shareholders get any residual expected earnings not used for financing purposes, the opportunity cost of cash retention is the company's earnings yield.

Following the cash-financed repurchase, the firm's new EPS forecast would be given by

$$\begin{aligned}
\underset{\text{Return cash}}{\mathbb{E}[\text{EPS}]} \;&=\; \frac{\mathbb{E}[\text{NOI}] - \bar{\imath} \times \text{Debt}}{\#\text{Shares} - (\frac{\text{Windfall}}{\text{Price}})} && \text{(37a)} \\
&\approx\; \mathbb{E}[\text{Non-Cash EPS}] \;+\; \text{EY} \times \left(\frac{\text{Windfall}}{\#\text{Shares}}\right) && \text{(37b)}
\end{aligned}$$

In our running example, the CEO would spend her \$200M buying back $(\frac{\$200\text{M}}{\$50/\text{sh}}) =$ 4M shares, shrinking her share count from 80M to 76M. Her non-cash earnings of \$200M would now be spread across fewer shares, giving $\mathbb{E}[\text{EPS}] = \frac{\$200\text{M}}{76\text{M}} \approx$ \$2.63/sh. Using the leading-order approximation, the accretive pop is $\Delta\mathbb{E}[\text{EPS}] =$ $\text{EY} \times (\frac{\text{Windfall}}{\#\text{Shares}}) = 5\% \times \$2.50 \approx \$0.13/\text{sh}$.

Suppose a CEO initially planned on retaining her cash windfall, using a fraction $\theta \in [0, 1)$ of the money to fund high-yield projects, and investing the rest in Treasuries. If she instead returned the entire cash windfall to shareholders via repurchases, her company's EPS forecast would change by

$$\underset{\text{Return cash}}{\mathbb{E}[\text{EPS}]} \;-\; \underset{\text{Retain cash}}{\mathbb{E}[\text{EPS}]} \;=\; \{\text{EY} - \text{CY}\} \times \left(\frac{\text{Windfall}}{\#\text{Shares}}\right) \tag{38}$$

An EPS-maximizing CEO will retain cash if investing offers the higher yield, $\text{EY} < \text{CY}$. She will return cash if buybacks offer the higher yield, $\text{EY} > \text{CY}$.

The value stock's $\{\text{EY} - \text{rf}\} = 2\%\text{pt}$ spread makes cash financing cheap, but it also makes repurchases highly accretive. The CEO must generate enough project income to clear this bar. If the first project's income yield fell from $\text{IY}_1 = 10\%$ to $\text{IY}_1 = 8\%$, the average income yield would drop to $\overline{\text{IY}} = \frac{\$4\text{M}+\$4\text{M}}{\$150\text{M}} \approx 5.33\%$ and the blended cash yield to $\text{CY} = 0.25 \times 3\% + 0.75 \times 5.33\% \approx 4.75\%$. Since $\text{CY} < \text{EY} = 5\%$, the CEO would return the money via repurchases.

EPS maximizers do not use a special ad hoc rule for cash. Equation (3) says that they view their companies as yield-spread machines, generating non-cash EPS by capturing a levered yield spread on the firm's invested-capital base. Equation (38) shows that cash retention works the same way: the benefits come from capturing an analogous yield spread on the firm's cash per share. Cash is just another asset the firm can choose to hold.

3.4 Internal Consistency

Up until now, we have taken the CEO's cash-usage rate as given. If she retains cash, she spends a fraction θ on projects and parks the rest in Treasuries. But the max EPS paradigm also governs how projects get funded. If we require internal consistency—the CEO applies the same max EPS logic to all three decisions—then θ is no longer a free parameter.

The key insight is that growth stocks and value stocks fund projects differently. A growth stock ($\text{EY} < \text{rf}$) sees equity as her cheapest source of capital. If she has high-yield projects, she would fund them by issuing shares, not by spending cash. Spending \$1 of cash means forgoing $\text{rf} \times \$1$ in riskfree interest income; issuing \$1 of equity only costs $\text{EY} \times \$1 < \text{rf} \times \$1$. A value stock ($\text{EY} > \text{rf}$) sees cash as her cheapest source of capital—cheaper than equity, cheaper than new debt at the margin

$$\text{EY} < \text{rf} \quad \rightsquigarrow \quad \text{Growth Stock, PE} > \left(\tfrac{1}{\text{rf}}\right) \tag{10a}$$

$$\text{EY} > \text{rf} \quad \rightsquigarrow \quad \text{Value Stock, PE} < \left(\tfrac{1}{\text{rf}}\right) \tag{10b}$$

Define the CEO's EPS-maximizing usage rate as

$$\theta_\star = \begin{cases} 0 & \text{Growth Stock; EY} < \text{rf; PE} > \left(\frac{1}{\text{rf}}\right) \\ \theta & \text{Value Stock; EY} > \text{rf; PE} < \left(\frac{1}{\text{rf}}\right) \end{cases} \tag{40}$$

A growth stock's EPS-maximizing usage rate is $\theta_\star = 0$: she funds every accretive project with equity and leaves her entire cash windfall in Treasuries. A value stock keeps $\theta_\star = \theta$: she funds projects out of internal cash reserves because that is her cheapest option.

The max EPS payout policy manifests in two different ways. Growth Stocks ($\text{EY} < \text{rf}$) retain cash and invest in Treasuries, $\theta_\star = 0$ and $\text{CY} = \text{rf}$. Value Stocks ($\text{EY} > \text{rf}$) only retain cash if they can generate a large enough yield boost by using the money to fund high-yield projects

$$\Delta\text{CY} = \theta_\star \cdot \{\overline{\text{IY}} - \text{rf}\} > \text{EY} - \text{rf} \tag{41}$$

If she cannot, the CEO returns her cash windfall to shareholders via repurchases.

Return to our running example. The $50\times$ PE growth stock has $\text{EY} = 2\% < \text{rf} = 3\%$. She parks her entire cash windfall in Treasuries, $\theta_\star = 0$ and $\text{CY} = \text{rf} = 3\%$. Since $\text{rf} > \text{EY}$, retention is accretive. Lending to the US government at $\text{rf} = 3\%$ is a great deal when equity only costs $\text{EY} = 2\%$. This is exactly what Microsoft did in the late 1990s, when the company's $31\times$ PE ratio and $\text{rf} \approx 6.2\%$ made it a textbook growth stock. Microsoft collected $6.2\% \times \$7\text{B} \approx \$440\text{M}$ in riskfree interest income during FY1997 and funded acquisitions like WebTV by issuing equity rather than spending cash.[3]

The $20\times$ PE value stock has $\text{EY} = 5\% > \text{rf} = 3\%$. She cannot justify retention by parking the money in Treasuries alone: $\text{rf} = 3\%$ falls well short of $\text{EY} = 5\%$. Instead, she must fund enough high-yield projects to close the gap. The CEO needs $\Delta\text{CY} = \theta_\star \cdot \{\overline{\text{IY}} - \text{rf}\} > \text{EY} - \text{rf} = 2\%\text{pt}$. In Section 3.2, our CEO had two projects giving her $\theta_\star = 75\%$ and $\overline{\text{IY}} = 6\%$, so $\Delta\text{CY} = 0.75 \times \{6\% - 3\%\} = 2.25\%\text{pt}$. Just enough to clear the bar.

[3] John Markoff. "Microsoft to Buy WebTV." *The New York Times.* Apr 7th 1997.

This is the central tension in the max EPS payout policy. A value stock's higher earnings yield makes internal cash reserves her cheapest source of capital: she can shave $\{\text{EY} - \text{rf}\} \times \$1$ off her financing expenses by replacing equity with cash. But the same high earnings yield also raises the opportunity cost of retention. To justify keeping cash on balance sheet, the CEO must generate enough project income to beat the accretive pop from buybacks. Thus, companies that would get the most benefit from funding high-yield projects with cash, $\text{EY} \gg \text{rf}$, must also do the most work to justify cash retention, $\{\text{EY} - \text{rf}\} \gg 0\%\text{pt}$.

3.5 Modigliani and Miller (1961)

Payout policy matters in the max EPS paradigm. There is a clear right and wrong answer: Growth stocks retain cash. Value stocks retain only if they have sufficiently good investment opportunities; otherwise they repurchase. This is a direct violation of Modigliani and Miller (1961), which says that payout policy is irrelevant in the absence of frictions.

This irrelevance result is tied to the functional form of shareholder PV. The standard present-value approach assumes that CEOs maximize something like the following objective

$$\begin{aligned}
\text{Shareholder PV} &= \frac{\mathbb{E}[\text{Div}_1]}{1+\text{r}} + \frac{\mathbb{E}[\text{Price}_1]}{1+\text{r}} && \texttt{for}\ t = 1, 2, 3, \ldots\texttt{:}\ \texttt{replace}\ \mathbb{E}[\text{Price}_t]\ \texttt{with}\ \tfrac{\mathbb{E}[\text{Div}_{t+1}]}{1+\text{r}} + \tfrac{\mathbb{E}[\text{Price}_{t+1}]}{1+\text{r}} \qquad (2\text{a}) \\
&= \frac{\mathbb{E}[\text{Div}_1]}{1+\text{r}} + \sum_{t=2}^{\infty} \frac{\mathbb{E}[\text{Div}_t]}{(1+\text{r})^t} && (2\text{b}) \\
&= \frac{\mathbb{E}[\text{Div}_1]}{1+\text{r}} \times \left(\frac{1+\text{r}}{\text{r}-\text{g}}\right) && \text{Assume } (1+\text{g})^t = \tfrac{\mathbb{E}[\text{Div}_{t+1}]}{\mathbb{E}[\text{Div}_1]} \qquad (2\text{c})
\end{aligned}$$

As you can see, present-value logic comes in several different flavors. But, if CEOs are not computing some version of this function, Modigliani and Miller (1961)'s irrelevance theorem breaks down. No frictions needed.

The critical feature of Equation (2) is the future resale price, $\mathbb{E}[\text{Price}_1]$. You can include the term directly like in Equation (2a). You can recursively substitute out the future price to arrive at the discounted dividend model (DDM) in Equation (2b). Under constant growth, this model collapses to the Gordon growth formula in Equation (2c). Any way you represent things, the $\mathbb{E}[\text{Price}_1]$ term is doing all the heavy lifting. The S&P 500's dividend yield is roughly 2%, so the future resale price accounts for roughly 98% of Equation (2).

The present-value framework stacks the deck against payout timing. Increases in $\mathbb{E}[\text{Div}_1]$ will always be offset by some sort of decline in $\mathbb{E}[\text{Price}_1]$. But next year's earnings does not include $\mathbb{E}[\text{Price}_1]$, so payout policy can have real effects on $\mathbb{E}[\text{EPS}]$, even in a frictionless world. This is why Modigliani and Miller (1961) breaks down in the max EPS paradigm. In practice, Steve Ballmer chose to distribute \$70B to MSFT shareholders in 2003 and 2004. Had he been thinking in present-value terms, there would have been no need for such urgency.

3.6 Dividends Are Dominated

The previous subsection discussed payout irrelevance in terms of dividends. But, so far, the CEO in our model has only returned cash via repurchases. Both approaches move the same amount of cash off balance sheet

$$\text{Windfall} = \overbrace{\underbrace{\left(\frac{\text{Windfall}}{\text{\#Shares}}\right)}_{\substack{\text{Amount}\\\text{mailed}}} \times \underbrace{\text{\#Shares}}_{\substack{\text{to every}\\\text{shareholder}}}}^{\text{Pay dividend}} = \overbrace{\underbrace{\text{Price}}_{\substack{\text{Amount}\\\text{received}}} \times \underbrace{\left(\frac{\text{Windfall}}{\text{Price}}\right)}_{\substack{\text{by those}\\\text{who sell}}}}^{\text{Buy back shares}} \tag{43}$$

but they receive very different accounting treatment. This matters to EPS maximizers. Earnings per share is an accounting variable.

The specific rules can be found in ASC 260, Earnings per Share. But the high-level takeaway is simple: dividends completely bypass next year's income statement. This special accounting treatment is no accident. The accounting standards have been designed to treat dividend payments in a neutral way. They are meant to neither encourage nor discourage companies from distributing cash to their shareholders.

After announcing a dividend, a CEO can no longer invest her cash to generate extra income. So, because her share count also remains the same, her EPS forecast would not change either

$$\underset{\text{Dividend}}{\mathbb{E}[\text{EPS}]} = \frac{\mathbb{E}[\text{NOI}] - \bar{\text{ı}} \times \text{Debt} + 0\% \times \text{Windfall}}{\#\text{Shares} - 0} \tag{44a}$$

$$= \mathbb{E}[\text{Non-Cash EPS}] \tag{44b}$$

In our running example, the value stock has 80M shares and $\mathbb{E}[\text{Non-Cash EPS}] =$ \$2.50/sh. If the CEO mails a $\left(\frac{\$200\text{M}}{80\text{M}}\right) = \$2.50/\text{sh}$ dividend check to the owner of each share, her EPS forecast stays at \$2.50/sh. No extra income, no change in share count. It is as if shareholders received the cash windfall directly.

But, by trying to remain neutral, the accounting guidelines have made it so that dividends are never the most accretive payout policy. Suppose that, instead of following the next most accretive policy, an EPS-maximizing CEO chose to return her cash windfall to shareholders by paying each one a dividend of $\left(\frac{\text{Windfall}}{\#\text{Shares}}\right)$. The change in her EPS forecast would be

$$\underset{\text{Dividend}}{\Delta\mathbb{E}[\text{EPS}]} = -\max[\text{EY}, \text{CY}] \times \left(\frac{\text{Windfall}}{\#\text{Shares}}\right) < \$0/\text{sh} \tag{45}$$

For our value stock, the next most accretive policy is retention, $\max[\text{EY}, \text{CY}] = \max[5\%, 5.25\%] = 5.25\%$. Choosing a dividend instead would lower her EPS forecast by $5.25\% \times \$2.50/\text{sh} \approx \$0.13/\text{sh}$. This is the income her cash windfall would have generated under retention. By paying a dividend, the CEO gives up that income and gets nothing in return.

$\left(\frac{\text{Windfall}}{\#\text{Shares}}\right)$ is the size of the dividend payment. The more money mailed to the owner of each share, the larger the effect on that share's slice of the firm's expected earnings. The interesting term is $\max[\text{EY}, \text{CY}] \geq \text{rf}$. For a growth stock, $\text{EY} < \text{rf}$, the most accretive policy is to retain cash and invest the money in Treasuries. Collecting riskfree interest income is a growth stock CEO's highest-yield use of her cash windfall, $\text{CY} = \text{rf}$ and $\max[\text{EY}, \text{CY}] = \text{rf}$. However, an EPS-maximizing value stock would never lend its entire cash windfall to the US government while borrowing from equity markets at a higher rate, $\text{EY} > \text{rf}$. The CEO of such a company would either use her cash to buy back shares or spend some of the money funding higher-yield projects.

3.7 Most Likely to Pay Dividends

In the standard present-value framework, dividends are irrelevant. Our model says something stronger: dividends are dominated. This is more useful. Rather than simply asserting that payout policy does not matter, we can predict which EPS-maximizing CEOs would give up the least by paying a dividend.

To fix ideas, imagine that a CEO faces an exogenous "demand for dividends," D4D, which reflects the combined benefit of paying a dividend for reasons outside our model. Not every value stock considers paying a dividend. A value stock with sufficiently good investment opportunities, $\mathrm{CY} > \mathrm{EY}$, finds it accretive to retain cash. Dividends are only on the table for value stocks that would otherwise repurchase, $\mathrm{EY} > \mathrm{CY}$. Among these firms, the CEO opts for dividends when the outside benefit exceeds the accretive pop from buybacks

$$\text{Pay Dividend} \;=\; 1[\,\mathrm{D4D} > \mathrm{EY} \mid \mathrm{EY} > \mathrm{CY}\,] \tag{46}$$

By repurchasing \$1 of shares, the CEO boosts her EPS forecast by $\mathrm{EY} \times \$1$. She will only forgo this benefit if dividend demand is high enough. Our goal is to predict which value stocks are most likely to pay dividends.

We prove in Ben-David and Chinco (2026c) that, if dividend demand is independent of earnings yield among value stocks at the repurchase margin, $\mathrm{D4D} \perp \mathrm{EY} \,|\, \{\mathrm{EY} > \mathrm{CY}\}$, then lower-EY value stocks are more likely to pay dividends

$$\Pr[\text{Pay Dividend} \,|\, \mathrm{EY} > \mathrm{rf}] \quad \text{is decreasing in} \quad \mathrm{EY} \tag{47}$$

A CEO with $\mathrm{EY} = 10\%$ only pays a dividend if $\mathrm{D4D} > 10\%$, whereas a CEO with $\mathrm{EY} = 5\%$ requires only $\mathrm{D4D} > 5\%$. If dividend demand does not shift up with EY among repurchasers, fewer high-EY firms clear the hurdle.

Our value stock has $\mathrm{EY} = 5\%$, just 2%pt above $\mathrm{rf} = 3\%$. She is a marginal value stock. The accretive pop from repurchasing \$2.50/sh of shares is $5\% \times \$2.50 = \$0.125$/sh. A deep value stock with $\mathrm{EY} = 10\%$ would get twice the pop, $10\% \times \$2.50 = \$0.25$/sh, making her far less willing to forgo buybacks in favor of a dividend.

Our model is deliberately agnostic about why investors value dividends. The D4D variable is a reduced-form stand-in for any reason a CEO might face pressure to pay a dividend. Hartzmark and Solomon (2019) show that investors treat dividends as separate from price changes. Hartzmark and Solomon (2015) document price pressure from dividend-seeking funds. Brav, Graham, Harvey, and Michaely (2005) find that corporate executives view dividends as long-term commitments, whereas they describe cash-financed repurchases as a short-term perk. Baker, Mendel, and Wurgler (2016) formalize this intuition, showing that investors use past dividends as reference points when evaluating current payouts. Each of these could be a component of D4D. The prediction in Equation (47) holds regardless.

3.8 Different Kind of Catering

It is often said that a company should only hold onto cash if it has better investment opportunities than its shareholders. For example, in his 1984 shareholder letter, Warren Buffett wrote that cash "should be retained only when it produces incremental earnings equal to, or above, those generally available to investors." This is not how things work in the max EPS paradigm.

Consider our 50× PE growth stock. She parks her \$200M cash windfall in Treasuries. The resulting riskfree interest income is $\text{rf} \times \text{Windfall} = 3\% \times \$200\text{M} = \$6\text{M}$. But equity markets price this income at the firm's PE multiple

$$\underbrace{\overset{\substack{\text{Interest income}\\ 3\%\cdot\$200\text{M}=\$6\text{M}}}{(\text{rf}\cdot\text{Cash})}\times\overset{50}{\text{PE}}}_{\text{Market valuation}} = \$300\text{M} \tag{48}$$

The CEO put \$200M of cash on balance sheet and the market values it at \$300M. She created +\$100M of value without doing anything special. The growth stock CEO does not need better investment opportunities than her shareholders. All she did was lend cash to the US government. The growth stock CEO created value by simply retaining cash. The extra value comes from markets pricing the resulting riskfree interest income at a premium multiple.

The value stock tells a different story. The CEO of this company has a 20× PE, which means the same \$6M of riskfree interest income will only get valued at $(3\% \times \$200\text{M}) \times 20 = \$120\text{M}$. She put in \$200M of cash and destroyed \$80M of value. This is the value stock CEO who needs Buffett's "better investment opportunities" to justify holding cash.

In effect, EPS maximizers engage in a form of catering. However, the mechanism is different from Baker and Wurgler (2004a,b). Baker and Wurgler argue that firms initiate dividends when the market places a premium on dividend-paying stocks. Their story is about the market repricing a firm's remaining assets after it announces a payout. Our story is about the multiple currently being applied to the firm's cash. An EPS-maximizing CEO retains cash when the market prices her interest income at a premium, $\text{PE} > (\frac{1}{\text{rf}})$, and returns it when the market applies a discount, $\text{PE} < (\frac{1}{\text{rf}})$.

That being said, the two catering mechanisms are not mutually exclusive. EPS maximizers take their earnings yield and PE ratio as given. So, while there is no multiples expansion in our model, it does not matter how markets determine a firm's current share price. All our results hold if prices are "correct". They are equally valid if prices reflect sentiment and/or a taste for dividends.

3.9 Accretion vs. Value Creation

We just saw how the key results about payout timing can be reinterpreted in terms of changes in shareholder PV. Can we reinterpret everything this way? No. While it is possible to understand the retain-vs-return decision through the lens of shareholder PV, the preference for buybacks over dividends is specific to EPS maximization.

Return to our running example. The growth stock has $\mathbb{E}[\text{EPS}] = \$2.00$, $\text{Price} = \$100$, $\text{PE} = 50\times$. The value stock has $\mathbb{E}[\text{EPS}] = \$2.50$, $\text{Price} = \$50$, $\text{PE} = 20\times$. Suppose each firm receives a \$1/sh cash windfall. Both companies can distribute the cash by mailing a \$1 check to the owner of each share. After the dividend, the firm no longer holds the cash, so it earns no interest income—the \$1/sh bypasses the income statement entirely. But shareholders now have an extra \$1 of cash, which they can invest themselves. If they park the \$1 in Treasuries at rf = 3%, then they will collect $3\% \times \$1 = \$0.03$ of riskfree interest income next year. The income would just show up in their retail brokerage account instead of the firm's income statement.

It turns out that repurchases always deliver exactly \$1 of shareholder value per \$1 of cash, regardless of the impact on next year's EPS forecast. If the growth stock spends its \$1/sh windfall buying back shares, it retires $\left(\frac{\$1/\text{sh}}{\$100/\text{sh}}\right) = 1\%$ of shares outstanding. The company's new EPS would be +\$0.02/sh higher

$$\underset{\substack{\text{Buybacks}\\ \text{G, \$100/sh}}}{\mathbb{E}[\text{EPS}]} = \frac{\$2.00/\text{sh}}{1 - \left(\frac{\$1/\text{sh}}{\$100/\text{sh}}\right)} \approx \$2.02/\text{sh} \tag{49}$$

Given the company's PE = 50×, the market values this extra $\{\$2.02/\text{sh} - \$2.00/\text{sh}\} = +\$0.02/\text{sh}$ of earnings at $\$0.02/\text{sh} \times 50 = \$1/\text{sh}$.

The value stock's lower share price (\$50/sh vs. \$100/sh) means that its CEO can retire a larger fraction of shares with the same amount of cash: $\left(\frac{\$1}{\$50}\right) = 2\%$. This results in a larger accretive pop (+\$0.05/sh vs. +\$0.02/sh)

$$\underset{\substack{\text{Buybacks}\\ \text{V, \$50/sh}}}{\mathbb{E}[\text{EPS}]} = \frac{\$2.50/\text{sh}}{1 - \left(\frac{\$1/\text{sh}}{\$50/\text{sh}}\right)} \approx \$2.55/\text{sh} \tag{50}$$

But the value stock also has a lower PE ratio (20× vs. 50×). So the market values its larger EPS gain at $(\$2.55/\text{sh} - \$2.50/\text{sh}) \times 20 = \$1/\text{sh}$, just like before.

Buybacks vs. dividends has a big impact on a firm's EPS forecast, but not on shareholder value. What matters for shareholder value is the retain vs. return decision. To illustrate, suppose the growth stock held onto the \$1/sh cash windfall and invested the money in Treasuries. The resulting riskfree interest income would add +\$0.03/sh to its EPS forecast

$$\underset{\text{G, TBill}}{\mathbb{E}[\text{EPS}]} = \$2.00/\text{sh} + 3\% \times \$1/\text{sh} = \$2.03/\text{sh} \tag{51}$$

However, because equity markets are pricing the firm's earnings at a premium multiple, this extra +\$0.03/sh would get valued at $(\$2.03/\text{sh} - \$2.00/\text{sh}) \times 50 = \$1.50/\text{sh}$. This is +\$0.50/sh more than the \$1/sh cash windfall.

The value stock can also lend \$1/sh to the US government. But, given the company's lower PE ratio, the resulting +\$0.03/sh bump in earnings would only be valued at (\$2.53/sh − \$2.50/sh) × 20 = \$0.60/sh. Thus, the same decision would cost the firm's shareholders \$1.00/sh − \$0.60/sh = −\$0.40/sh.

a) $\Delta\mathbb{E}[\text{EPS}]$	2%, 50× Growth Stock	5%, 20× Value Stock
Hold Treasuries	+\$0.03	+\$0.03
Pay Dividend	+\$0.00	+\$0.00
Buy Back Shares	+\$0.02	+\$0.05

b) ΔShareholder Value	Growth Stock	Value Stock
Hold Treasuries	+\$1.50	+\$0.60
Pay Dividend	+\$1.00	+\$1.00
Buy Back Shares	+\$1.00	+\$1.00

Dividends and repurchases both deliver exactly \$1 of value per \$1 of cash. The only policy that can create or destroy value is retention, and it depends on whether $\text{EY} \lesseqgtr \text{rf}$. But while dividends and repurchases are equivalent from a shareholder-value perspective, they have very different effects on the firm's EPS forecast. If CEOs get judged on EPS growth, then buybacks should dominate.

This is a key piece of evidence that CEOs are EPS maximizers. A value-maximizing CEO would be indifferent between repurchases and dividends—both deliver \$1 of value per \$1 of cash. An EPS-maximizing CEO strictly prefers repurchases because they boost her EPS forecast.

Prior to 1983, open-market share repurchases exposed firms to potential liability for stock-price manipulation under the Securities Exchange Act. SEC Rule 10b-18 changed all that. The aggregate value of shares repurchased by US firms tripled in 1983 (Grullon and Michaely, 2002). The continued preference for buybacks in subsequent years tells us which objective is operative.

One might think that longer-term shareholders would correct these distortions. Not so. We have already seen why present-value logic is unhelpful for understanding the choice between repurchases and dividends. Both deliver identical value, so long-term shareholders have no reason to push back on a CEO's preference for buybacks.

But what about the retain-vs-return decision? Here, longer-term considerations can actually reinforce EPS-maximizing behavior. The growth stock in our running example trades at 50×, giving the firm an earnings yield well below Treasuries, rf = 3%. The market prices \$1/sh of riskfree interest income at \$1.50, a +\$0.50 premium over face value. A short-term EPS maximizer would retain cash because rf > EY. But long-term shareholders want the same thing: they collect +\$0.50 of extra value for every year the cash stays on balance sheet.

Conclusion

Every model in academic corporate finance currently starts from the same premise: CEOs choose policies to maximize shareholder value defined in present-value terms. This assumption plays a starring role in many of the field's most important results, including both M&M theorems. When an entire field rests on a single starting assumption, that assumption had better be airtight. Yet a large fraction of corporate executives describe their decisions using a different language entirely: accretion, dilution, and EPS growth. Whatever you think the exact fraction of EPS maximizers is, it is not zero. And it is not small.

We take this observation seriously. In three companion papers, we develop a max EPS paradigm for corporate finance and show how it speaks to all three of the field's classic problems. The resulting economics is surprisingly rich. EPS maximizers have an optimal capital structure even absent frictions. They make accretive investments by comparing yields, not discounted cashflows. They face a genuine retain-vs-return trade-off, which is governed by the firm's excess earnings yield, and strictly prefer buybacks over dividends. The value/growth distinction emerges naturally from the max EPS paradigm. The approach also explains the popularity of IRRs and payback periods.

None of this requires exotic assumptions. We make exactly one change to the standard model: we replace the CEO's objective function. There are no new frictions, no new information asymmetries, no new agency conflicts. The math produces easy-to-follow calculations with clean yes/no answers. Is this policy accretive? Compare two yields. By contrast, in the max NPV framework, the answer can hinge on decimal-place precision in model-implied discount rates.

We are not arguing that CEOs should maximize EPS. Nor are we claiming that our simple model explains everything. But note that the M&M framework proudly explains nothing about capital structure and payout policy, and these two irrelevance theorems are considered great achievements in financial economics. A simple model that makes sharp predictions is valuable because it gives you a clear benchmark to reason from. Most researchers have a caricature of EPS maximization in mind: a short-sighted CEO who mechanically cuts investment and plows every dollar into buybacks. If that were the whole story, there would be nothing left to study. The truth is far more interesting.

The max EPS Cheat Sheet

$$\mathbb{E}[\text{EPS}] = \frac{\mathbb{E}[\text{NOI}] - \bar{\text{i}} \cdot \text{Debt} + \text{rf} \cdot \text{Cash}}{\#\text{Shares}}$$

Cost of Capital = Yield	Accretive/Dilutive	Growth Stocks	Value Stocks
Not discount rate	Not pos/neg NPV	$\text{EY} < \text{rf}$, $\text{PE} > \left(\frac{1}{\text{rf}}\right)$	$\text{EY} > \text{rf}$, $\text{PE} < \left(\frac{1}{\text{rf}}\right)$

Capital Structure
Section 1

1. Earnings cost of capital:
   Equity $\rightsquigarrow$ $\text{EY} = \left(\frac{1}{\text{PE}}\right)$
   Debt $\rightsquigarrow$ i
   Cash $\rightsquigarrow$ rf
2. Optimal leverage:
   Growth Stocks:
   $\text{EY}(0) < \text{rf} \rightsquigarrow \ell_\star = 0$
   $\text{EY}(0) < \text{rf} = \text{i}(0)$
   Value Stocks:
   $\text{EY}(0) > \text{rf} \rightsquigarrow \ell_\star \gg 0$
   $\text{EY}(\ell_\star) = \text{i}(\ell_\star) > \text{rf}$
3. Public companies are yield-spread machines
4. CEO and creditors pursue different objectives
   Not zero-sum
   Breaks M&M
5. $\text{EY}(\ell)$ rises with leverage
   Not due to risk
6. CEO acts like cross-market arbitrageur
   No mispricing needed
7. Buybacks driven by $\text{EY} > \text{i}$
   Not repricing
   2010s buyback boom occurred when rates fell to zero, $\text{EY} \gg \text{i}$
8. Growth/value composition can change over time
   Helps explain conflicting empirical findings in existing literature

Real Investment
Section 2

1. Expected income next year
   vs.
   Funding cost next year
   Invest if expected income can cover project's own short-term funding
2. Project's income yield must exceed firm's hurdle rate
   $\text{IY} > \text{HR} = \min\{\text{EY}, \text{i}, \text{rf}\}$
3. Cheapest source of capital matters
   Not WACC
4. EY, i, and rf taken as given
   No pricing model needed
5. Overinvestment
   Cheap short-term financing can make neg-NPV projects accretive
6. Hurdle rates, low to high:
   Growth Stocks:
   $\text{HR} = \text{EY}(0) < \text{rf} = \text{i}(0)$
   Value Stocks (w/ cash):
   $\text{HR} = \text{rf} < \text{EY}(\ell_\star) = \text{i}(\ell_\star)$
   Value Stocks (no cash):
   $\text{HR} = \text{EY}(\ell_\star) = \text{i}(\ell_\star) > \text{rf}$
   Running out of cash causes value-stock hurdle to jump
7. IRR is multi-period analog to income yield, $\text{IRR} \sim \sum_t \text{IY}_t / T$
8. $\mathbb{E}[\text{Payback period}] = \left(\frac{1}{\text{IY}}\right)$ is a multiple
   Like target PE in M&A deal

Payout Policy
Section 3

1. CY is blended cash yield
   If $\text{CY} > \text{EY} \rightsquigarrow$ retain cash
   If $\text{CY} < \text{EY} \rightsquigarrow$ return cash
2. Growth Stocks:
   Always retain
   Interest income priced at premium
   Value Stocks:
   Sometimes retain
   Must fund enough high-yield projects that $\Delta\text{CY} > \text{EY} - \text{rf}$
3. $\text{EY} > \text{rf}$ makes cash financing cheap
   AND
   repurchases accretive
4. Accretive buybacks preferred to neutral dividends
5. Accretion ≠ Value creation:
   Preference for buybacks specific to max EPS
6. Marginal value stocks most likely to pay dividends
   $\text{EY} \approx \text{rf} + \epsilon$
7. max EPS payout policy consistent with max EPS financing and investment
8. Timing matters because $\mathbb{E}[\text{EPS}]$ does not include $\mathbb{E}[\text{Price}_1]$ like PV models
   Breaks M&M

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A Running Example

This appendix collects the details of the running numerical example used throughout the paper. The example features two firms, one value stock and one growth stock, that both start with identical net operating income forecasts but differ in their market valuations. The riskfree rate is $\mathrm{rf} = 3\%$.

Unlevered Primitives

If they remain unlevered, both firms would have to issue #Shares = 200M. Each has an expected net operating income of $\mathbb{E}[\mathrm{NOI}] = \$400\mathrm{M}$, giving each an unlevered EPS forecast of \$2.00/sh. The only difference is in market valuation. The value stock trades at \$50/sh ($\mathrm{PE} = 25\times$, $\mathrm{EY} = 4\%$) with \$10B of assets and $\mathrm{ROIC} = 4\%$. The growth stock trades at \$100/sh ($\mathrm{PE} = 50\times$, $\mathrm{EY} = 2\%$) with \$20B of assets and $\mathrm{ROIC} = 2\%$.

	Value Stock	**Growth Stock**
Price	\$50/sh	\$100/sh
#Shares	200M	200M
$\mathbb{E}[\mathrm{EPS}]$	\$2.00/sh	\$2.00/sh
Assets	\$10B	\$20B
$\mathbb{E}[\mathrm{NOI}]$	\$400M	\$400M
ROIC	4%	2%
PE	25×	50×
EY	4%	2%

The two firms generate the same expected income and the same EPS. The growth stock has twice the asset base, so its return on invested capital is half as large. The market assigns a higher price per share to the growth stock because it is pricing in future growth not captured in current NOI.

Interest-Rate Schedule

The riskfree rate $\mathrm{rf} = 3\%$ is available to all borrowers. Beyond that, the marginal interest rate a firm faces depends on how much it borrows. The value stock can borrow up to \$4B at $\mathrm{rf} = 3\%$. Beyond \$4B, the marginal rate rises linearly, reaching 5% at \$6B. Formally, $\mathrm{i}(\mathrm{Debt}) = 3\% + 1\% \times (\mathrm{Debt} - \$4\mathrm{B})/\$1\mathrm{B}$ for $\mathrm{Debt} \in [\$4\mathrm{B}, \$6\mathrm{B}]$. The first \$4B costs \$120M in interest. The \$4B-\$6B tranche costs \$80M (average rate of 4%). At \$6B of total debt, the marginal rate equals 5%, total interest is \$200M, and $\bar{\mathrm{i}} = \$200\mathrm{M}/\$6\mathrm{B} = 3.33\%$.

The growth stock's interest rate schedule does not matter because it never levers up, $\mathrm{EY} = 2\% < \mathrm{rf} = 3\%$. The only relevant rate is $\mathrm{rf} = 3\%$.

A.1 Capital Structure

Growth stock. The growth stock's unlevered earnings yield is below the riskfree rate: $\mathrm{EY}(0) = 2\% < \mathrm{rf} = 3\%$. Borrowing at the riskfree rate is dilutive. Each dollar of debt costs 3% in interest but only retires shares yielding 2%. The CEO stays unlevered, $\ell_\star = 0$.

To see this, suppose the growth stock borrows \$1B at rf = 3%. Interest is \$30M, leaving earnings of \$400M − \$30M = \$370M. Equity falls to \$20B − \$1B = \$19B, so the share count drops to \$19B/\$100 = 190M. The EPS forecast falls to $\mathbb{E}[\mathrm{EPS}]$ = \$370M/190M = \$1.95/sh, below the unlevered \$2.00/sh. The \$1B of debt costs \$30M in interest but only retires 10M shares carrying \$20M of earnings commitments.

Value stock. The value stock's unlevered earnings yield exceeds the riskfree rate: $\mathrm{EY}(0) = 4\% > \mathrm{rf} = 3\%$. Borrowing at the riskfree rate is accretive. Each dollar of debt costs 3% in interest but retires shares yielding 4%. The CEO should lever up. It is not optimal for a value stock to remain unlevered.

- $\ell = 0.3$. This is \$3B of debt, all at rf = 3%. The interest expense would be \$90M. Expected earnings would be \$310M. The firm would have equity of \$7B and 140M shares. Its EPS forecast would be $\mathbb{E}[\mathrm{EPS}]$ = \$2.21/sh. The earnings yield rises to $\mathrm{EY}(0.3) = 4.4\%$, which still exceeds the marginal interest rate of $\mathrm{i}(0.3) = 3\%$. The CEO keeps borrowing.
- $\ell = 0.5$. This is \$5B of debt, the first \$4B costs \$120M and the \$4B-\$5B tranche costs \$35M (average rate 3.5%), for total interest of \$155M. Earnings are \$245M, shares are 100M, and $\mathbb{E}[\mathrm{EPS}]$ = \$2.45/sh. The earnings yield is $\mathrm{EY}(0.5) = 4.9\%$, the marginal rate is $\mathrm{i}(0.5) = 4\%$. Still profitable to borrow more, but the gap is narrowing.
- $\ell_\star = 0.6$. The value stock borrows \$6B: \$4B at rf and \$2B above rf with i rising from 3% to 5%. Total interest is \$120M + \$80M = \$200M. Earnings are \$200M, equity is \$4B, shares are 80M, and $\mathbb{E}[\mathrm{EPS}]$ = \$200M/80M = \$2.50/sh. The PE compresses to \$50/\$2.50 = 20× and the earnings yield rises to $\mathrm{EY}(0.6) = 5\%$, which equals the marginal interest rate at \$6B, $\mathrm{i}(0.6) = 5\%$. The CEO has no incentive to borrow more or less.
- $\ell = 0.7$. Overshooting to \$7B of debt confirms the optimum. The additional \$1B tranche (\$6B-\$7B) has i rising from 5% to 6%, costing \$55M. Total interest rises to \$255M, earnings fall to \$145M, shares drop to 60M, and $\mathbb{E}[\mathrm{EPS}]$ = \$2.42/sh, below the \$2.50 at $\ell_\star = 0.6$. Borrowing is dilutive at the margin: $\mathrm{i}(0.7) = 6\% > \mathrm{EY}(0.7) = 4.8\%$.

Summary. The value stock levers up, boosting its EPS forecast from \$2.00/sh to \$2.50/sh and compressing its PE from 25× to 20×. The growth stock stays put. Its numbers are the same as the unlevered primitives.

	Value Stock	**Growth Stock**
$\ell_\star$	0.6	0.0
Price	\$50/sh	\$100/sh
#Shares	80M	200M
$\mathbb{E}$[EPS]	\$2.50/sh	\$2.00/sh
PE	20×	50×
EY	5%	2%
Market cap	\$4B	\$20B
Earnings	\$200M	\$400M

A.2 Real Investment

A single project is available: it costs \$100M and is expected to generate $\mathbb{E}[\Delta\text{NOI}] = \$4\text{M}$ of additional net operating income next year. The project has an income yield of $\text{IY} = \frac{\$4\text{M}}{\$100\text{M}} = 4\%$.

Value Stock. Suppose the company funded the project. Here is what would happen under each financing option.

- Equity.

  The company would have to issue $\frac{\$100\text{M}}{\$50/\text{sh}} = 2\text{M}$ new shares, bringing its total share count to 82M. The firm's expected earnings would rise to \$204M, and its EPS forecast would fall to $\frac{\$204\text{M}}{82\text{M}} = \$2.49/\text{sh}$. The project is dilutive because $\text{IY} = 4\% < \text{EY}(0.6) = 5\%$.

- Debt.

  At the margin, the value stock can borrow at $\text{i}(0.6) = 5\%$. The required interest expense would be $5\% \times \$100\text{M} = \$5\text{M}$, so the firm's expected earnings would become $\$200\text{M} + \$4\text{M} - \$5\text{M} = \$199\text{M}$. The value stock's share count would not change, 80M, but its EPS forecast would fall to $\frac{\$199\text{M}}{80\text{M}} = \$2.49/\text{sh}$. Also dilutive, because $\text{IY} = 4\% < \text{i}(0.6) = 5\%$.

- Cash.

  Suppose that \$100M of the firm's asset base is cash. The opportunity cost of using this cash to fund the project is the foregone $3\% \times \$100\text{M} = \$3\text{M}$ in riskfree interest income it would have generated. Hence, the firm's expected earnings would become $\$200\text{M} + \$4\text{M} - \$3\text{M} = \$201\text{M}$. The value stock's share count would not change, 80M, but its EPS forecast would rise to $\frac{\$201\text{M}}{80\text{M}} = \$2.51/\text{sh}$. The project is accretive because $\text{IY} = 4\% > \text{rf} = 3\%$.

Growth Stock. Suppose the company funded the project. Here is what would happen under each financing option.

- Equity.

  The company would have to issue $\frac{\$100\text{M}}{\$100/\text{sh}} = 1\text{M}$ new shares, bringing its total share count to 201M. The firm's expected earnings would rise to \$404M, and its EPS forecast would become $\frac{\$404\text{M}}{201\text{M}} = \$2.01/\text{sh}$. The project is accretive because $\text{IY} = 4\% > \text{EY}(0) = 2\%$.

- Debt.

  The growth stock is unlevered, so it borrows at $\text{rf} = 3\%$. The required interest expense would be $3\% \times \$100\text{M} = \$3\text{M}$, so the firm's expected earnings would become $\$400\text{M} + \$4\text{M} - \$3\text{M} = \$401\text{M}$. The growth stock's share count would not change, 200M, and its EPS forecast would rise to $\frac{\$401\text{M}}{200\text{M}} = \$2.005/\text{sh}$. The project is accretive because $\text{IY} = 4\% > \text{rf} = 3\%$.

- Cash.

  Suppose that \$100M of the firm's asset base is cash. The opportunity cost of spending it is the foregone $3\% \times \$100\text{M} = \$3\text{M}$ in riskfree interest income. Hence, the firm's expected earnings would become $\$400\text{M} + \$4\text{M} - \$3\text{M} = \$401\text{M}$. The growth stock's share count would not change, 200M, and its EPS forecast would rise to $\frac{\$401\text{M}}{200\text{M}} = \$2.005/\text{sh}$. The project is accretive because $\text{IY} = 4\% > \text{rf} = 3\%$. The debt and cash cases produce identical results because the growth stock is unlevered: $\text{i}(0) = \text{rf}$.

Summary. The value stock only invests in the project if it has sufficient internal cash reserves. The project would be dilutive in a world where the firm has to rely on external financing. The growth stock sees the project as accretive under all three options, but equity is most accretive.

A.3 Payout Policy

Both companies realize an unexpected \$200M cash windfall. For the value stock, this amounts to $\frac{\$200\text{M}}{80\text{M}} = \$2.50/\text{sh}$. For the growth stock, it is $\frac{\$200\text{M}}{200\text{M}} = \$1.00/\text{sh}$. The companies each have access to a pair of investment opportunities: Project 1 costs \$50M and yields $\text{IY} = 10\%$ ($\mathbb{E}[\Delta\text{NOI}] = \$5\text{M}$). Project 2 costs \$100M and yields $\text{IY} = 4\%$ ($\mathbb{E}[\Delta\text{NOI}] = \$4\text{M}$). Together, these projects can absorb \$150M of the \$200M windfall, giving a max usage rate of $\theta = \frac{\$150\text{M}}{\$200\text{M}} = 0.75$. The average investment yield is $\overline{\text{IY}} = \frac{\$5\text{M}+\$4\text{M}}{\$150\text{M}} = 6\%$. The remaining \$50M earns $\text{rf} = 3\%$ in Treasuries. The blended cash yield is $\text{CY} = 0.25 \times 3\% + 0.75 \times 6\% = 5.25\%$.

Value Stock. The value stock's earnings yield is $\text{EY}(0.6) = 5\%$, and $\text{CY} = 5.25\% > 5\% = \text{EY}$, so it is accretive to keep the cash windfall on balance sheet. The added income from cash comes out to \$10.5M: \$9M from projects plus $3\% \times \$50\text{M} = \$1.5\text{M}$ from Treasuries. The firm's EPS forecast rises to $\frac{\$200\text{M}+\$10.5\text{M}}{80\text{M}} = \$2.63/\text{sh}$. The $\text{CY} = 5.25\%$ yield on the \$2.50/sh cash windfall adds $5.25\% \times \$2.50/\text{sh} \approx \$0.13/\text{sh}$ to $\mathbb{E}[\text{EPS}]$.

Growth Stock. The growth stock's earnings yield is $\text{EY}(0) = 2\%$, far below $\text{CY} = 5.25\%$. Thus, retention wins easily. Even the riskfree interest income from investing the entire cash windfall in Treasuries ($\text{CY} = \text{rf} = 3\%$) would be enough to cover the opportunity cost of not repurchasing. Cash income from Treasuries alone is $3\% \times \$200\text{M} = \$6\text{M}$, and EPS rises to $\frac{\$400\text{M}+\$6\text{M}}{200\text{M}} = \$2.03/\text{sh}$. The $\text{rf} = 3\%$ yield on the \$1.00/sh cash windfall adds $3\% \times \$1.00/\text{sh} = \$0.03/\text{sh}$ to $\mathbb{E}[\text{EPS}]$.

Catering Theory. The growth stock has an earnings yield of $\text{EY}(0) = 2\%$, giving the firm a $\text{PE} = \left(\frac{1}{2\%}\right) = 50\times$. This company invests its entire \$200M cash windfall in Treasuries. The market values the resulting riskfree interest income at $(3\% \times \$200\text{M}) \times 50 = \$300\text{M}$, creating +\$100M of value.

The value stock has an earnings yield of $\text{EY}(0.6) = 5\%$, giving the firm a $\text{PE} = \left(\frac{1}{5\%}\right) = 20\times$. The company uses some of its \$200M cash windfall to fund high-yield projects. The market values the total income from cash, $5.25\% \times \$200\text{M} = \$10.5\text{M}$, at $(5.25\% \times \$200\text{M}) \times 20 = \$210\text{M}$, creating just \$10M of value. Had the value stock left all \$200M of its cash windfall in Treasuries like the growth stock, then the resulting \$6M in riskfree interest income would only have been priced at $(3\% \times \$200\text{M}) \times 20 = \$120\text{M}$.

Accretion vs. Value. Consider a separate \$1/sh cash windfall for each firm. Both companies can distribute the cash as a dividend ($\Delta\mathbb{E}[\text{EPS}] = \$0.00$), buy back shares, or hold Treasuries. For the growth stock, buybacks retire 1% of shares (\$1/\$100) and boost EPS by +\$0.02/sh; for the value stock, buybacks retire 2% of shares (\$1/\$50) and boost EPS by +\$0.05/sh. Holding Treasuries adds $\text{rf} \times \$1 = +\$0.03/\text{sh}$ to both firms' EPS forecasts.

The EPS impacts differ sharply across policies, but shareholder value tells a different story. Dividends and repurchases both deliver exactly \$1 of value per \$1 of cash: the growth stock's +\$0.02 of extra EPS is worth $\$0.02 \times 50 = \$1.00$, and the value stock's +\$0.05 is worth $\$0.05 \times 20 = \$1.00$. The only policy that creates or destroys value is retention. The growth stock's +\$0.03 of interest income is worth $\$0.03 \times 50 = \$1.50$, creating \$0.50 of value. The value stock's +\$0.03 is worth only $\$0.03 \times 20 = \$0.60$, destroying \$0.40 of value.

B Empirical Evidence

This section reviews the evidence on how market participants describe their own decision-making. There are two main takeaways. First, many executives do not have present-value logic in mind when choosing corporate policies. Some CEOs probably do follow the textbook approach, and reasonable people can disagree about the exact percentage. But it is not 100%. There is no debating that. Second, while academics fixate on shareholder PV (Equation 2), many CEOs focus on EPS (Equation 1). It is such a common goal that specialized jargon has emerged. Things that increase a firm's EPS forecast are called "accretive". Things that reduce expected EPS are "dilutive". People talk about EPS enough that it is worth understanding what maximizing this objective would entail.

B.1 CEO Presentations

Every year, public companies hold investor days. These are high-stakes events where a CEO stands in front of portfolio managers, sell-side analysts, and institutional shareholders to make the case that her company deserves a spot in their portfolios. When the spotlight is on, CEOs choose to highlight EPS growth. This is the key metric.

Consider CVS Health's 2025 Investor Day (Figure 2). The company operates one of the largest pharmacy-benefit and healthcare-services platforms in the United States. There are many things the CEO could have bragged about: prescription volumes, patient outcomes, market share in retail pharmacy. The centerpiece, though, was delivering "mid-teens adjusted EPS CAGR through 2028." This is what CVS wanted shareholders to take away from the event.

American Water is the largest publicly traded water and wastewater utility in the United States. The company's June 2025 investor presentation told a similar story. The CEO led with a slide highlighting the firm's 7-9% long-term EPS CAGR target (Figure 3). This growth would come from investments and acquisitions. The slide laid out the key drivers of "sustainable shareholder return". EPS growth topped the list.

The pattern holds across very different industries. 3M held its 2025 Investor Day to unveil CEO Bill Brown's turnaround plan (Figure 4). The company's medium-term commitment for 2025-2027 prominently featured "EPS accelerating to HSD %" (high single digits). The firm's new long-term incentive plan (LTIP) would allocate 50% of its weight to cumulative EPS. An industrial conglomerate with ~1,000 new product launches on the horizon chose to promote its EPS target above all else.

Figure 2. CVS Health Investor Day 2025 (December 10, 2025). Top panel: title slide. Bottom panel: the company's headline commitment to shareholders is delivering "mid-teens adjusted EPS CAGR through 2028."

Figure 3. American Water Investor Presentation (June 2025). Top panel: title slide. Bottom panel: the company's long-term financial targets lead with a 7-9% EPS CAGR, driven by regulated rate-base investments and acquisitions.

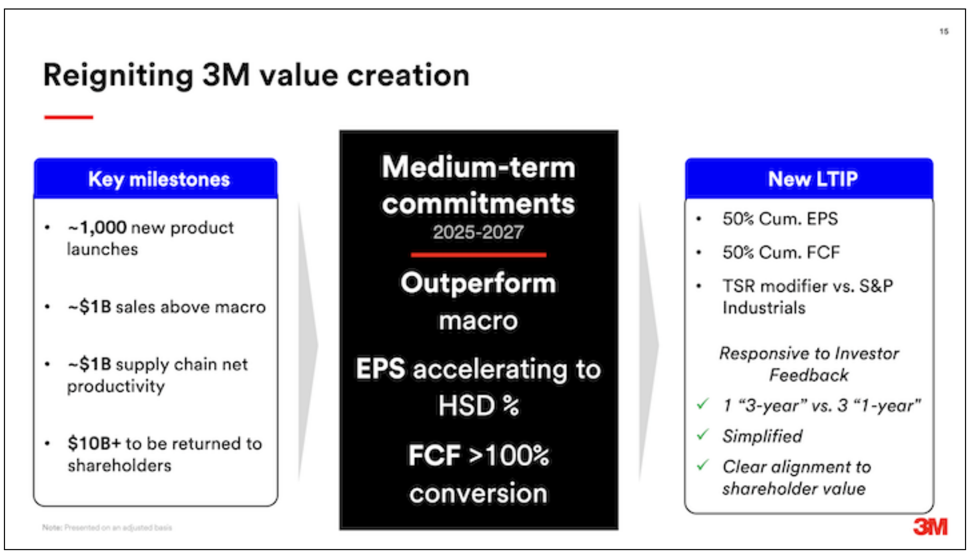


Figure 4. 3M Investor Day 2025. Top panel: title slide. Bottom panel: the company's medium-term commitments for 2025-2027 prominently feature "EPS accelerating to HSD %" (high single digits). The new long-term incentive plan (LTIP) allocates 50% of its weight to cumulative EPS.

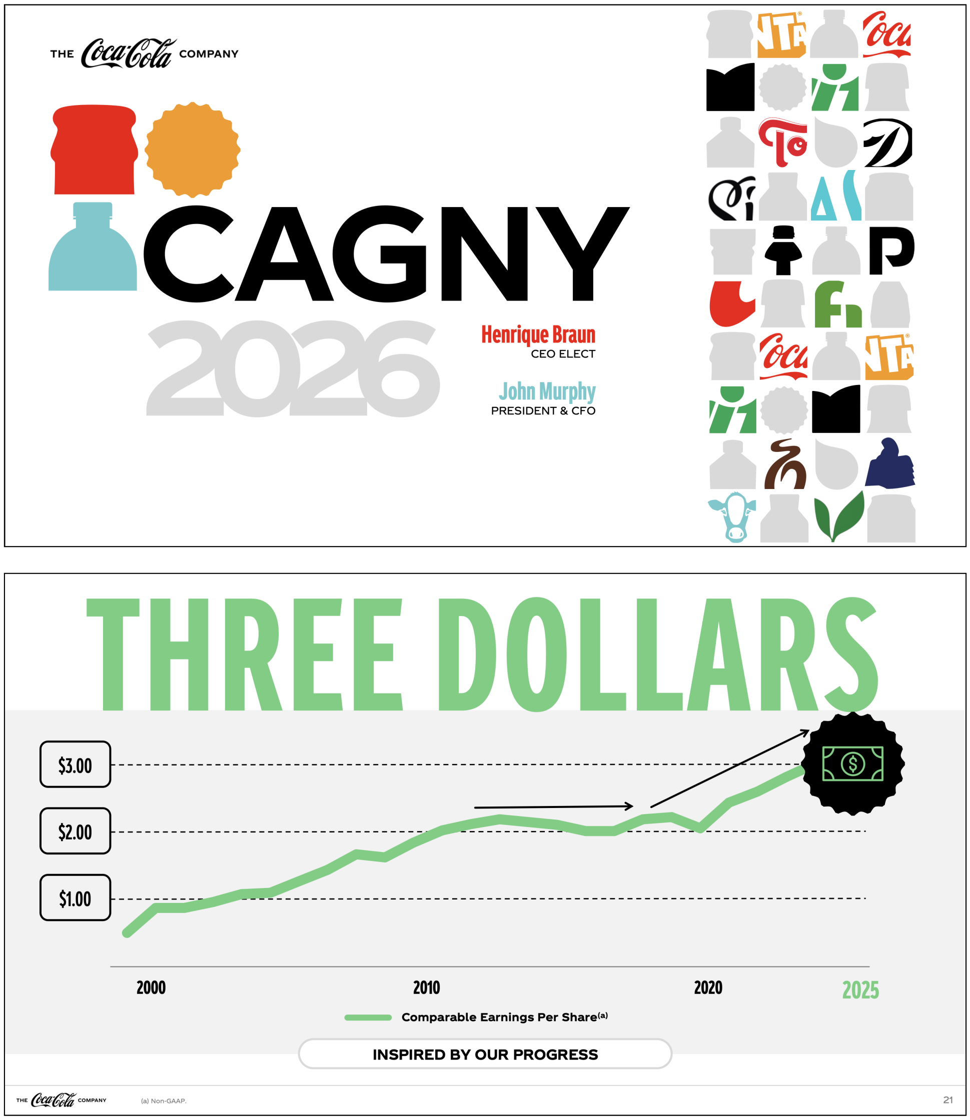
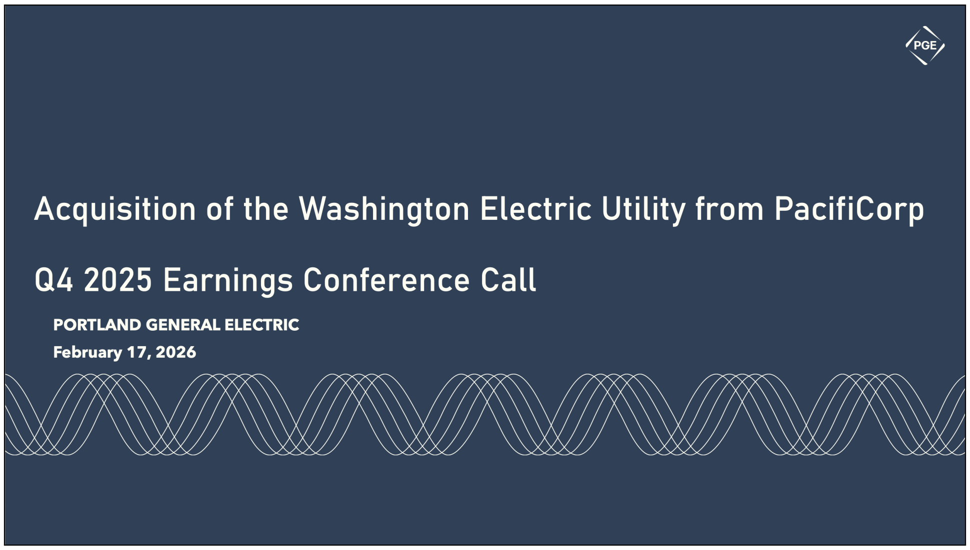


Figure 5. The Coca-Cola Company, CAGNY 2026 presentation. Top panel: title slide. Bottom panel: the marquee slide is a 25-year time series of comparable EPS rising from roughly $1/sh to nearly $3/sh with headline "THREE DOLLARS."



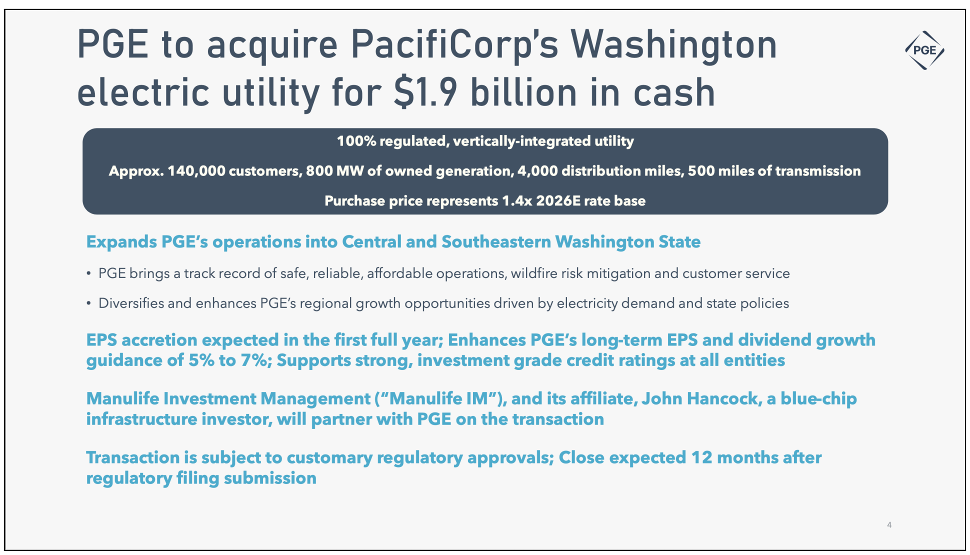


Figure 6. Portland General Electric, Q4 2025 Earnings Conference Call (February 17, 2026). Top panel: title slide announcing the acquisition of PacifiCorp's Washington electric utility for $1.9B in cash. Bottom panel: the first financial talking point in blue is "EPS accretion expected in the first full year."

Coca-Cola's 2026 CAGNY (Consumer Analyst Group of New York) presentation (Figure 5) devoted an entire slide to a single chart showing the firm's EPS rising from roughly $1/sh in the late 1990s to nearly $3/sh. This is one of the most recognized consumer brands on the planet. Its CEO could have highlighted the firm's revenue growth, its global market penetration, or the company's brand equity. Instead, his marquee slide was a 25-year EPS trajectory with "THREE DOLLARS" written in big bold letters at the top.

EPS maximizers invest constantly and frame the outcomes in the language of accretion. Portland General Electric's February 2026 acquisition of PacifiCorp's Washington electric utility is a case in point (Figure 6). PGE spent $1.9B in cash to acquire 140,000 customers, 800MW of owned generation, and 4,000 distribution miles. This was a major capital commitment. Yet the very first financial talking point was: "EPS accretion expected in the first full year." The deal "enhances PGE's long-term EPS and dividend growth guidance of 5% to 7%."

PGE did not justify its investment in PacifiCorp with an NPV (net present value) calculation. Instead, the company touted the immediate EPS impact. The same logic appears whenever a public company announces a new project or acquisition. Executives do not walk shareholders through a DCF (discounted cash flow) analysis. They say the deal is accretive. That is the pitch.

B.2 Survey Responses

As far back as Lintner (1956), academic researchers have been using surveys to probe the motives behind managers' decisions. Tables 1a and 1b present a meta-analysis of 22 survey papers. For each study, we record the number of respondents, the corporate-finance topic covered, and whether EPS-related reasoning shows up in the survey—either because the researchers asked about it or because managers brought it up on their own. Collectively, this literature paints a clear picture: when given the opportunity to describe their goals, most managers point to EPS growth as their primary objective.

The most striking pattern is how rarely researchers ask about EPS. Many surveys present respondents with a long list of options with one glaring omission: EPS. Gitman and Forrester (1977), Schall et al. (1978), Ryan and Ryan (2002), Hermes et al. (2007), and Bennouna et al. (2010) all follow this design. It is hard for respondents to say "I maximize EPS" when researchers never ask.

Hard, but not impossible. Even in surveys that do not directly ask about EPS, the objective sometimes finds a way to shine through. Gitman and Mercurio (1982) asks about the cost of capital and gets back answers focused on yields—a hallmark of max EPS thinking. Tsetsekos et al. (1991) does not ask about EPS,

Meta-Analysis of Survey Literature

	#Obs	Topic	EPS Asked about?	EPS Talked about?	Notes
Lintner (1956)	28	Dividend		✓	Earnings give firm capacity to pay dividends. No explicit questions about overall corporate objective.
Petty, Scott, and Bird (1975)	109	CapBudg	✓	✓	68% rank EPS growth as their #1 or #2 corporate objective.
Gitman and Forrester (1977)	103	CapBudg			Survey asks about payback, accounting rate of return (ARR), IRR, and NPV. Does not include EPS as a listed option.
Schall, Sundem, and Geijsbeek (1978)	189	CapBudg			Same survey design. No EPS option provided.
Baker, Gallagher, and Morgan (1981)	136	Repurch	✓	✓	EPS growth explicitly listed and ranked as top repurchase motive.
Gitman and Mercurio (1982)	177	CapBudg		✓	Most popular responses focus on yields, which stem from max EPS thinking. Paper assumes answer comes from Gordon model.
Baker, Farrelly, and Edelman (1985)	318	Dividend			Lintner-style reasoning: Earnings give capacity to pay dividends. No questions about EPS.
Pinegar and Wilbricht (1989)	176	CapStrct	✓	✓	Dilution second most common reason for not issuing equity even though option is buried at end of survey in different question.
Tsetsekos, Kaufman, and Gitman (1991)	183	Repurch			No direct questions about EPS, but 66% repurchase for "low stock price"—i.e., when the PE is compressed and buybacks would be most accretive.
Trahan and Gitman (1995)	84	General			Never asks about EPS. Table 5: textbook theories that academics treat as settled (M&M irrelevance, trade-off theory) are the ones practitioners want explained.
Baker and Powell (1999)	198	Dividend			Replicates Baker et al. (1985). Same Lintner-style reasoning. Still no questions about EPS.
Ryan and Ryan (2002)	205	CapBudg			NPV barely preferred over IRR among Fortune 1000 CFOs. Again, no questions about EPS.

Table 1a. "Asked about?": Does the survey include questions consistent with max EPS reasoning (e.g., EPS targets, dilution avoidance, yield-based cost of capital). "Talked about?": Do respondents give answers reflecting max EPS logic?

Meta-Analysis of Survey Literature (Ctd.)

	#Obs	Topic	EPS Asked about?	EPS Talked about?	Notes
Graham and Harvey (2001, 2002)	392	General		✓	Dilution #1 concern when issuing equity (~70%), but EPS omitted from cost-of-capital analysis. Survey labeling obscures unity of max EPS thinking. IRR and hurdle rate are separated; NPV treated as one. Payback period = 1/IY is internal-project analogue of the target PE = 1/EY in M&A deal.
Bancel and Mittoo (2004)	87	CapStrct	✓	✓	Dilution #1 concern when issuing equity in 16 European countries.
Brounen et al. (2004, 2006)	313	General			Multiple tables about different discount-rate calculations. No questions about EPS.
Mukherjee, Kiymaz, and Baker (2004)	75	M&A			DCF gets checkboxes; multiples must be written out. About 1990s M&A, but no questions on "tech roll-up" or "multiples arbitrage".
Brav et al. (2005)	384	Div+Rep	✓	✓	Absent constraints, firms prefer repurchases over dividends 4:1. Accretion #1 motive.
Graham et al. (2005)	401	ErnMgmt	✓	✓	78% would pass up NPV>0 project to smooth earnings. Nothing about over-investment. i.e., green-lighting accretive NPV<0 project.
Hermes, Smid, and Yao (2007)	87	CapBudg			No check boxes about EPS. Write-in responses excluded.
Bennouna, Meredith, and Marchant (2010)	88	CapBudg			Sample excludes firms that do not pay lip-service to DCF. Dropdown menu refers to any non-NPV/IRR cost of capital as an "arbitrarily chosen figure."
Lins, Servaes, and Tufano (2010)	204	CashHld			No questions about EPS. Never defines "excess cash". Survey cannot distinguish between "cash held as insurance" and "cash waiting to be deployed."
Dichev, Graham, Harvey, and Rajgopal (2013)	169	ErnQlty	✓	✓	Respondents believe 20% of other CEOs manipulate earnings each quarter. EPS "used by investors in valuing the company."

Table 1b. "Asked about?": Does the survey include questions consistent with max EPS reasoning (e.g., EPS targets, dilution avoidance, yield-based cost of capital). "Talked about?": Do respondents give answers reflecting max EPS logic?

but 66% of respondents say they repurchase shares when the stock price is low. This is exactly when buybacks are most accretive: a compressed PE ratio means each dollar spent on repurchases retires more shares and boosts EPS more.

When researchers do ask about EPS, the responses are overwhelming. Petty et al. (1975) finds that 68% of managers rank EPS growth among their top corporate objectives. Baker et al. (1981) lists EPS growth as an explicit option and managers rank it as their top repurchase motive. Brav et al. (2005) documents that, absent constraints, firms prefer repurchases over dividends by a ratio of 4:1, with accretion as the primary reason why.

Perhaps the most revealing findings come from one of the largest and most influential surveys in the sample. Graham and Harvey (2001, 2002) survey 392 executives, asking questions that span multiple areas of corporate finance. Dilution is the number one concern when issuing equity, cited by roughly 70% of respondents. Yet EPS plays no role in the paper's cost-of-capital analysis. Presumably, 70% of CEOs felt there was some connection.

The survey's architecture obscures the unity of max EPS thinking. IRR and hurdle rates are listed as two separate options, but NPV is treated as a single technique. Participants were not shown one checkbox for the "present value of project benefits" and another for "the upfront cost". A project's expected payback period, $\left(\frac{1}{\mathrm{IY}}\right)$, is just the internal-project analog of the target PE = $\left(\frac{1}{\mathrm{EY}}\right)$ in an M&A deal. Yet, the survey treats each metric as its own category.

Graham et al. (2005) pushes this further: 78% of CFOs say they would sacrifice positive-NPV projects to smooth their earnings path. Under the max EPS paradigm, it is a natural consequence of the objective function. A project that is NPV-positive but dilutive to next year's EPS forecast will not clear the hurdle. This is often read as evidence that EPS maximization leads to under-investment. Not so. The survey does not ask managers whether they would also green-light negative-NPV projects that happen to be accretive.

Dichev et al. (2013) closes the loop. When asked directly about EPS, their respondents confirm that it is "used by investors in valuing the company." Moreover, CFOs believe that roughly 20% of other companies manipulate earnings in any given quarter. This belief is itself revealing: if managers think their peers are managing earnings, they must believe that the market rewards firms for hitting EPS targets. Otherwise, why bother?

The fact that many academic researchers have a strong bias against EPS maximization makes managers' survey responses all the more surprising. There is a huge experimenter-demand effect (Schwarz, 1999). Put yourself in the shoes of an executive in one of these studies. Your favorite business school professor has just called to interview you. This has to be flattering. It has to be awkward telling him that all those in-class NPV calculations are irrelevant.

B.3 Sell-Side Analysts

CEOs have to answer to their shareholders. If shareholders consistently applied present-value logic, then a CEO who fixated on short-term EPS growth at the expense of long-run discounted payoffs would quickly find herself out of a job. In this scenario, shareholder PV maximization would be enforced from the demand side, even if some CEOs were inclined to pursue a different objective. But is there any evidence of this?

The problem is that most market participants do not tell us which payoffs they expect to receive, let alone how they discount them. However, sell-side equity analysts do give us a peek under the hood. When analysts publish a report, they state their expected EPS forecast for the upcoming year and explain how they priced it. Ben-David and Chinco (2026d) examines these reports and documents that 94% of sell-side analysts set price targets using a trailing PE ratio. Only 32% even mention a discount rate.

Rather than discounting a company's entire expected earnings stream, the typical analyst asks: how would the market have priced this firm if it had announced next year's expected earnings today?

$$\mathbb{E}[\text{Price}] \;=\; \mathbb{E}[\text{EPS}] \times \text{TrailingPE} \tag{52}$$

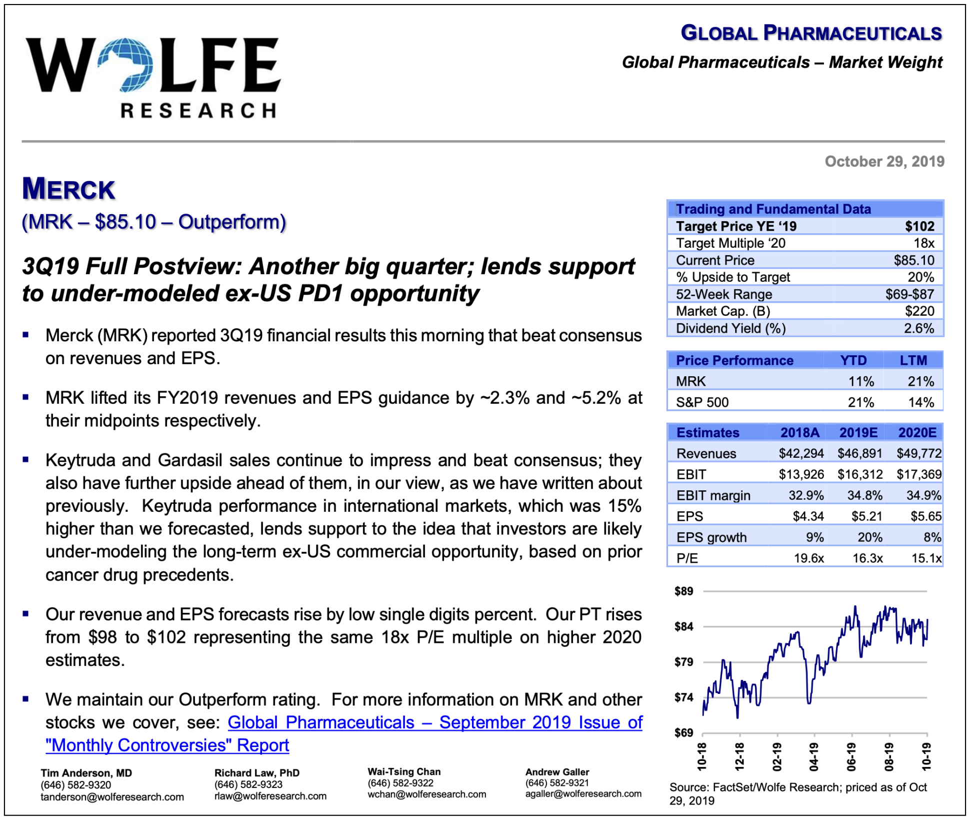
This pricing rule is fundamentally different from the present-value approach in Equation (2). A trailing PE is not a stand-in for the Gordon model's PE = $\left(\frac{1}{\text{r}-\text{g}}\right)$, which is forward looking. A trailing PE is backward looking. It is extracted from how the market has recently priced similar firms. It is a characteristic of the company, not a property of expected future cash flows.

To see why this distinction matters, consider Wolfe Research's October 2019 report on Merck (Figure 7). MRK reported third-quarter results that beat consensus on both revenue and EPS. The analyst responded by lifting the 2020 EPS estimate from \$5.44 to \$5.65 and raising the price target from \$98 to \$102—"representing the same 18× P/E multiple on higher 2020 estimates." The PE ratio did not budge. All of the price-target revision came through the $\mathbb{E}$[EPS] channel.

This is a telling asymmetry. A positive earnings surprise does not just affect next year's forecast. Beating expectations by a wide margin should also change beliefs about longer-run growth. Under the Gordon model, PE = $\left(\frac{1}{\text{r}-\text{g}}\right)$, a higher g should produce multiples expansion. Instead, the analyst calculates

$$\$98/\text{sh} = \$5.44/\text{sh} \times 18 \tag{53a}$$

$$\underbrace{\$102/\text{sh}}_{\mathbb{E}[\text{Price}]} = \underbrace{\$5.65/\text{sh}}_{\mathbb{E}[\text{EPS}]} \times \underbrace{18}_{\text{PE}} \tag{53b}$$



WOLFE RESEARCH

GLOBAL PHARMACEUTICALS

Global Pharmaceuticals – Market Weight

October 29, 2019

MERCK

(MRK – $85.10 – Outperform)

3Q19 Full Postview: Another big quarter; lends support to under-modeled ex-US PD1 opportunity

- Merck (MRK) reported 3Q19 financial results this morning that beat consensus on revenues and EPS.
- MRK lifted its FY2019 revenues and EPS guidance by ~2.3% and ~5.2% at their midpoints respectively.
- Keytruda and Gardasil sales continue to impress and beat consensus; they also have further upside ahead of them, in our view, as we have written about previously. Keytruda performance in international markets, which was 15% higher than we forecasted, lends support to the idea that investors are likely under-modeling the long-term ex-US commercial opportunity, based on prior cancer drug precedents.
- Our revenue and EPS forecasts rise by low single digits percent. Our PT rises from $98 to $102 representing the same 18x P/E multiple on higher 2020 estimates.
- We maintain our Outperform rating. For more information on MRK and other stocks we cover, see: Global Pharmaceuticals – September 2019 Issue of "Monthly Controversies" Report

Trading and Fundamental Data	
Target Price YE '19	**$102**
Target Multiple '20	18x
Current Price	$85.10
% Upside to Target	20%
52-Week Range	$69-$87
Market Cap. (B)	$220
Dividend Yield (%)	2.6%

Price Performance	YTD	LTM
MRK	11%	21%
S&P 500	21%	14%

Estimates	2018A	2019E	2020E
Revenues	$42,294	$46,891	$49,772
EBIT	$13,926	$16,312	$17,369
EBIT margin	32.9%	34.8%	34.9%
EPS	$4.34	$5.21	$5.65
EPS growth	9%	20%	8%
P/E	19.6x	16.3x	15.1x

Source: FactSet/Wolfe Research; priced as of Oct 29, 2019

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Figure 7. Report about Merck (MRK) published on October 29th 2019 by Wolfe Research. The lead analyst on this report was Tim Anderson. Following a third-quarter earnings beat, the analyst raises his price target from \$98 to \$102, "representing the same 18× P/E multiple on higher 2020 estimates."

The entire update to shareholder PV runs through the change in short-term earnings, $\Delta\mathbb{E}[\text{EPS}] = \$0.21/\text{sh}$ and $\Delta\mathbb{E}[\text{Price}] = \$0.21/\text{sh} \times 18 \approx \$4/\text{sh}$. The calculations in Equation (53) treat accretion as the main driver of shareholder value, and nearly all sell-side reports follow the same template: forecast next year's earnings, apply a multiple, arrive at a price target.

Analysts turn to a DCF model only when the standard approach breaks down. Figure 8 reproduces a 2010 JP Morgan coverage-initiation report on Pacific Biosciences (JP Morgan, 2010). The analyst, Tycho Peterson, explicitly states that multiples-based valuations "are common in the life science tools industry" but that "since PACB is unprofitable (and as yet lacks revenue), we have chosen to use a DCF methodology." Present-value logic is a fallback option, not an airtight assumption worthy of building an entire field around.

J.P.Morgan

Pacific Biosciences Inc.

Third Generation Sequencing Comes of Age; Initiate at Overweight

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North America Equity Research
06 December 2010

Initiation
Overweight
PACB, PACB US
Price: $12.97
Price Target: $17.00

Life Science Tools & Diagnostics

(a) Top of first page

Valuation
Multiple-based valuations (e.g. P/E and EV/EBITDA) are common in the life science tools industry, though since PACB is unprofitable (and as yet lacks revenue), we have chosen to use a DCF methodology.

(b) Valuation section

Figure 8. Coverage-initiation report about Pacific Biosciences published on December 6th 2010 by JP Morgan. The lead analyst on this report was Tycho Peterson, a member of *Institutional Investor* magazine's All-America team.

Within the max EPS paradigm, none of this evidence about sell-side analysts is strictly necessary. An EPS-maximizing CEO takes her share price as given when making decisions. She does not need to know how her shares should be priced. Unlike the rest of behavioral corporate finance, our model does not require us to take a stand on how asset prices get determined. But the evidence is valuable in a broader context.

The standard defense of max{Shareholder PV} is that even if some CEOs stray from present-value logic, shareholders will discipline them back into line. That defense presumes shareholders themselves think in terms of Equation (2). The sell-side evidence suggests otherwise. The analysts who set price targets for institutional investors use the same logic that max EPS CEOs use: they see short-term EPS gains as the main driver of shareholder value. The CEO's objective function and analysts' pricing rule are two sides of the same coin.

B.4 Activist Investors

Activist investors offer a complementary piece of evidence—and, in some ways, a more revealing one. A sell-side analyst writes for her institutional clients. An activist investor stands up in front of fellow shareholders and tries to win a vote. His arguments have to resonate with the median shareholder. If the investing public thought in terms of discounted cash flows, an activist would frame his pitch in those terms.

In February 2013, David Einhorn of Greenlight Capital Management gave a public presentation to fellow Apple shareholders in an effort to convince the company to distribute its cash hoard.[4] Figure 9 shows a key slide. Einhorn's argument was that an \$84B cash-financed repurchase program would mechanically boost Apple's per-share earnings from \$45/sh to \$52.80/sh, and that this \$7.80/sh EPS gain should be valued at Apple's existing 10× PE ratio: $\$528/\text{sh} - \$450/\text{sh} = \$7.80/\text{sh} \times 10 \approx +\$78/\text{sh}$.

No discounting. No estimate of how the buyback would change Apple's long-run growth rate. Just an EPS forecast times a backward-looking multiple, like in Equation (52). This is a sophisticated investor, managing billions of dollars, making a public case to the shareholders of the world's most valuable company. The framework he reached for was $\mathbb{E}[\text{EPS}] \times \text{TrailingPE}$.

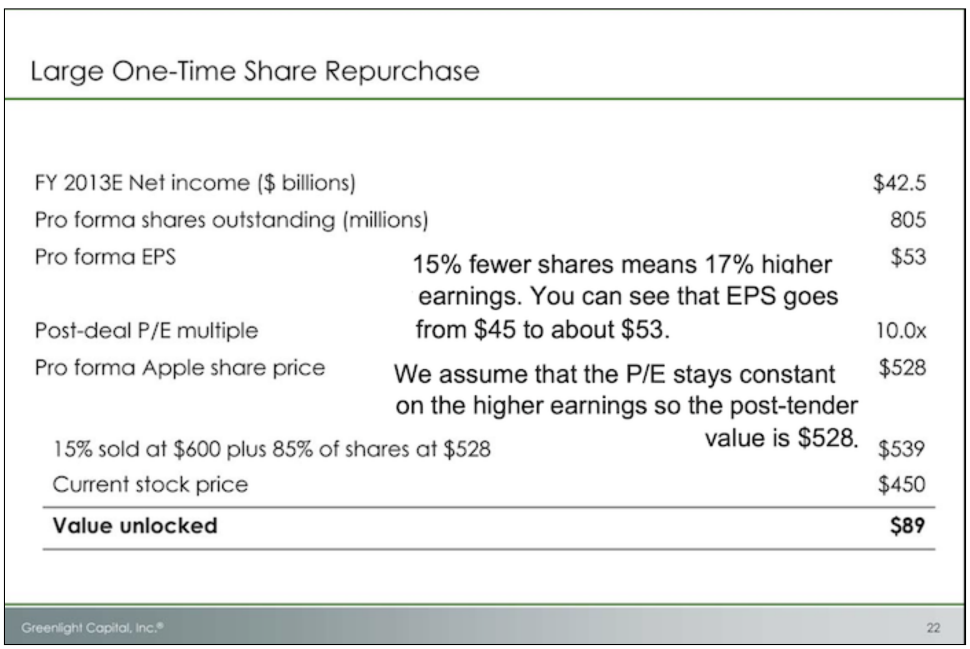
The fact that Einhorn thought this argument would be persuasive tells us something about how the broader investing public thinks. Later in the presentation, he invited shareholders to "build in whatever multiple expansion you think is right for a more shareholder-friendly capital allocation and apply it to each scenario." He acknowledged that determining Apple's correct PE multiple is a genuinely hard problem, noting that "equity investors have to look to a wide range of valuation metrics and business issues when valuing the common stock."

The point is not that Einhorn had a strong view that 10× was the uniquely correct PE for Apple. The point is that pinning down the right multiple is hard and different investors approach the problem differently. In Einhorn's view, "the equity market is more interested in Apple's total earnings, and the business issues that drive those earnings" than in any single pricing formula. He went further, observing that "equity investors value companies using a number of metrics that have little to do with the common dividend yield."

B.5 Main Takeaways

A student in Raymond Wolfinger's political-science seminar once dismissed a factual observation as mere anecdote. Wolfinger's rejoinder became a famous aphorism: "The plural of anecdote is data." (Polsby, 1984) It is ironic that researchers, who could not be bothered to check the historical record, have started using the negated version as a putdown. We have deliberately chosen to

[4]David Einhorn. "iPrefs: Unlocking Value." Conference Call. February 21, 2013. [link]


Large One-Time Share Repurchase

FY 2013E Net income ($ billions)	$42.5
Pro forma shares outstanding (millions)	805
Pro forma EPS	$53
Post-deal P/E multiple	10.0x
Pro forma Apple share price	$528
15% sold at $600 plus 85% of shares at $528	$539
Current stock price	$450
Value unlocked	**$89**

15% fewer shares means 17% higher earnings. You can see that EPS goes from $45 to about $53.

We assume that the P/E stays constant on the higher earnings so the post-tender value is $528.

Greenlight Capital, Inc.® 22

Figure 9. Presentation by David Einhorn of Greenlight Capital Management to Apple (AAPL) shareholders. Einhorn's calculation details how an $84B cash-financed repurchase program would generate a +7.80/sh EPS pop and a share price increase of $528/sh – $450/sh = $7.80/sh × 10 ≈ +$78/sh.

present vivid concrete examples. But, while each one might be a mere anecdote on its own, together they constitute a data set.

Not every corporate decision stems from maximizing shareholder PV as defined in Equation (2). Some CEOs probably do focus on shareholder value defined in present-value terms. Reasonable people can disagree about the exact percentage. But it is not 100%. There is no debating that.

This observation should be alarming to researchers. It is not a question of total R^2. Every model in academic corporate finance rests on the assumption that CEOs maximize Equation (2). When an entire field is built on a single foundational premise, that premise had be airtight!

It would be front page news if an astronomer discovered that $F = ma$ did not hold on Valetudo (S/2016 J2), a tiny irregular Jovian moon less than a kilometer across. No one would respond with: “Sure, but this is just one tiny hunk of space debris. Newtonian mechanics does seem to work on Jupiter’s other 94 moons.” No media outlet would run a story like the one in Figure 10(a).

If a biologist learned that Lamarckism operated on Catalina Island, the finding would shake the field to its core. No one would say: “Yeh, but that is only the third-largest of California’s Channel Islands, and the rest are populated by animals which evolve according to Darwinian principles.” If you saw the headline in Figure 10(b), it would seem like a joke.

max{Shareholder PV} may not be on the same level as $F = ma$. Corporate decision-making does not carry the same intellectual heft as the theory of evolution. But the methodological point remains. When every corporate-finance model builds on the same initial premise, every corporate executive had better think that way. Any evidence to the contrary is a five-alarm fire.

CEOs spend enough time talking about EPS growth, accretion, and dilution that it is worth understanding what maximizing this objective would entail. To be clear, we are not arguing that every CEO exclusively maximizes EPS. That would be repeating the sins of the existing literature—swapping one monolithic assumption for another. Nor do we argue that max EPS is optimal. Maybe the obsession with EPS is a mistake. Or maybe it is a reasonable second-best solution in a world where discount rates are hard to estimate. We work out the implications of max EPS for corporate finance, regardless of why CEOs are pursuing this objective or whether they should be.

Most researchers take a dim view of EPS maximization because they have a caricature in mind: a short-sighted CEO who mechanically cuts investment and plows every dollar into buybacks. If that were the whole story, there would be nothing left to study. But the caricature is wrong. The simplest possible max EPS model generates a coherent, internally consistent, and surprisingly rich set of predictions about the three core problems in corporate finance.

The Daily News

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Newtonian Mechanics Does Not Hold on Valetudo, but Paradigm Still Correct on Other 94 Moons of Jupiter

BY CLARK KENT

Physicists announced today that Newton's second law of motion, F = ma, does not hold on Jupiter's tiny irregular moon Valetudo (S/2016 J 2). The finding, published in a major journal, was immediately downplayed by the paper's own authors, who noted that the law continues to perform well on the remaining 94 known Jovian satellites.

"We find that Newtonian mechanics produces large and statistically significant forecast errors on Valetudo," the authors wrote. "However, a simple horse-race comparison shows that F = ma outperforms alternative force laws on Europa, Ganymede, Io, Callisto, and 90 other moons. On balance, we conclude the paradigm remains intact."

Critics pointed out that when a fundamental law fails anywhere, it fails everywhere. "You don't get to run a forecast accuracy tournament across moons and declare victory because your model wins 94 to 1," said one physicist, who requested anonymity to preserve departmental harmony. "If there is a single place where F = ma doesn't work, you need a new theory. That's how science works."

The authors responded that their sample of 95 moons represents a substantial improvement over prior work, which had examined only a small number of moons "with a particular focus on one type of satellite, the Galilean moon."

(a) Newton Fails

The Daily Bugle

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Scientists Find Natural Selection Doesn't Work on Catalina — but Say It Doesn't Matter

Lamarckian inheritance confirmed on third-largest Channel Island; authors argue 7-to-1 win for Darwin vindicates paradigm

BY PETER PARKER

Biologists announced today that Darwinian evolution by natural selection does not operate on Santa Catalina Island. Instead, species on the island evolve according to Lamarckian inheritance, with organisms passing acquired traits directly to their offspring. The finding, published in a major journal, was immediately downplayed by the paper's own authors, who noted that natural selection continues to operate normally on the other seven Channel Islands.

"We find that Darwinian evolution produces large and statistically significant prediction errors on Catalina," the authors wrote. "However, a simple horse-race comparison shows that natural selection outperforms Lamarckism on Santa Cruz, Santa Rosa, San Miguel, Anacapa, San Nicolas, San Clemente, and Santa Barbara. On balance, we conclude the paradigm remains intact."

The authors added that their sample of 8 islands represents a substantial improvement over prior work, which had examined only a small number of islands "with a particular focus on one type of island, the Galápagos."

(b) Darwin Fails

Figure 10. Fake newspaper headlines. Each story describes researchers discovering that a foundational scientific law fails in a specific setting but dismissing the finding because the law still holds everywhere else.