Accretive Investment*

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Abstract

EPS maximizers invest in accretive projects that generate enough income next year to pay for their own short-term funding using the firm's cheapest available source of capital (equity, debt, or cash). This is the max EPS analog to the positive-NPV rule. On a per-dollar basis, accretive projects have income yields above the firm's financing yield. An IRR is a multiperiod generalization of the project's income yield. A payback period is the project's income yield expressed as a multiple. Growth stocks have earnings yields below the riskfree rate. These firms view equity financing as cheap and fund new projects by issuing shares even when cash is present. Value stocks have earnings yields above the riskfree rate. These firms borrow enough to make external financing (both equity and debt) look expensive compared to cash, giving them high investment-cash flow sensitivities. We find empirical support for our model's predictions.

Keywords: Earnings Per Share (EPS), Accretion, Dilution, Real Investment, Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, Profit Margins, M&A Payment Method, Investment-Cash Flow Sensitivity

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Introduction

An EPS (earnings per share) forecast represents a firm's expected earnings over the next year divided by its current share count

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

The earnings forecast in the numerator has three components. $\mathbb{E}[\text{NOI}_1]$ is the firm's expected net operating income next year. $\bar{\imath} \times \text{Debt}$ is the company's promised interest expense. $\text{rf} \times \text{Cash}$ is interest income on cash reserves.

In academic circles, it is widely believed that EPS-obsessed CEOs tend to underinvest. The logic is simple. Researchers believe that a CEO should use the positive-NPV (net present value) rule. The correct approach is to invest in projects where the present value of the future income stream is larger than the full upfront cost. Since the income generated in years $t \geq 2$ cannot be accretive to next year's EPS forecast, researchers figure that EPS maximizers must require a project to generate enough income in year $t = 1$ to cover its full upfront cost. If true, then EPS maximization would set an impossibly high bar for new investments, which very few projects would be able to clear.

But is it true? In 2023 Microsoft paid $69B for Activision and advertised the deal as "accretive to non-GAAP earnings per share upon close."[1] ExxonMobil justified spending $60B on Pioneer Natural Resources in 2024 by promising the deal would be "accretive immediately to ExxonMobil earnings per share."[2] Keurig Dr. Pepper told its investors to expect "EPS accretion in year one" of its $18B deal for JDE Peet's in 2025.[3] IBM runs the world's largest industrial research lab. The company is also famously EPS obsessed. There are business-school case studies written about Big Blue's 2010 EPS roadmap (Esty and Mayfield, 2015). When the firm hit this audacious EPS target, the company's CEO attributed much of the success to "investment in research and development."[4]

[1] Microsoft Press Release. "Microsoft to acquire Activision Blizzard." Jan 18, 2022. [link]
[2] ExxonMobil Press Release. "ExxonMobil announces merger with Pioneer." Oct 11, 2023. [link]
[3] Keurig Dr. Pepper Press Release. "Keurig Dr Pepper to Acquire JDE Peet's." Aug 25, 2025. [link]
[4] IBM Press Release. "2010 Fourth-Quarter and Full-Year Results." Jan 18, 2011. [link]

Evidently, there is more to making EPS-maximizing investment decisions than just saying "No." This paper characterizes the max EPS analog to the positive-NPV rule. To be EPS accretive, a project must add enough income next year to pay for its own short-term funding expense

$$\underbrace{\mathbb{E}[\Delta \text{NOI}_1]}_{\substack{\text{Income added} \\ \text{next year}}} - \underbrace{\text{FY} \times \text{Cost}}_{\substack{\text{Added expense} \\ \text{next year}}} > \$0 \tag{2}$$

The financing yield, FY, is the fraction of the project's cost that must be paid next year when using the firm's cheapest funding option (equity, debt, or cash).

We organize our discussion around a running numerical example, involving a project that costs \$100M and is expected to add \$4M of income each year going forward. If an EPS-maximizing CEO can fund the project at an earnings cost of just \$2M next year, then she faces a financing yield of $\text{FY} = \frac{\$2\text{M}}{\$100\text{M}} = 2\%$. Under these conditions, the project is accretive. Investing would add \$4M in income next year at an expense of just \$2M. With 200M shares outstanding, funding the project would increase the CEO's EPS forecast by $\left(\frac{\$4\text{M}-\$2\text{M}}{200\text{M}}\right) = +\$0.01/\text{sh}$. Any working CEO could run the same numbers for her own firm.

Right or wrong, many real-world CEOs care deeply about how a project will impact next year's EPS forecast. We take this fact seriously and derive the consequences for investment policy. The accretive investment rule makes distinct predictions for how growth and value stocks fund projects, how investment responds to changes in financing conditions, and why CEOs often talk in terms of IRRs (internal rates of return), payback periods, and profit margins.

Section 1. We begin by deriving and analyzing the accretive investment rule. The EPS-maximizing CEO in our model has already financed her firm's existing assets in the most accretive way possible. Then she learns about one more project, which costs Cost today and would add $\mathbb{E}[\Delta \text{NOI}_1]$ to her firm's income next year. Should she fund it? The CEO's capital structure is fixed. Her earnings yield, bond terms, and cash holdings are all determined by prior decisions. The only question is whether she should fund it. Will the project generate enough income next year to cover its own short-term funding expense?

There are three classic problems in corporate finance: capital structure, real investment, and payout policy. Figure 1 shows how the same accretive logic speaks to all three. Moreover, the solutions to each problem snap together to form a coherent whole. The EPS-maximizing CEO in our model takes two things as given: her existing assets and how they are financed. These two objects are the output of the EPS-maximizing capital-structure and payout policies.

Ben-David and Chinco (2026a) analyzes how EPS maximizers finance their existing assets by focusing on the short-term earnings hit. To sell an extra share of equity at Price, a CEO must promise the buyer a share's worth of expected earnings next year, $\mathbb{E}[\mathrm{EPS}_1]$. So each dollar of equity capital has an earnings cost of $\mathrm{EY} \times \$1$ where $\mathrm{EY} = \frac{\mathbb{E}[\mathrm{EPS}_1]}{\mathrm{Price}}$ is the firm's earnings yield. Borrowing another dollar adds $\mathrm{i} \times \$1$ to the firm's interest expense where $\mathrm{i} \geq \mathrm{rf}$ denotes the firm's marginal interest rate. The marginal interest rate on a firm's next dollar of debt need not equal the average interest rate on its existing debt, $\mathrm{i} \neq \bar{\imath}$. If the CEO spends a dollar of cash, then she can no longer collect $\mathrm{rf} \times \$1$ in riskfree interest income by investing the money in Treasuries.

EPS maximizers choose whichever source of financing has the lowest earnings cost. This logic determines the functional form of the firm's financing yield in the current paper, $\mathrm{FY} = \min\{\mathrm{EY}, \mathrm{i}, \mathrm{rf}\}$. Notice that FY is a characteristic of the firm, not a property of the project's future cash flows. The CEO reads her earnings yield and the Treasury yield off of a Bloomberg terminal. She calls up her investment bank to get a quote on new bond terms. An EPS-maximizing CEO does not need to know how these numbers were determined.

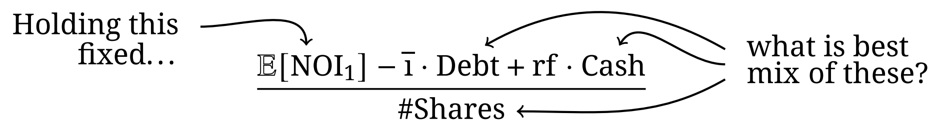
We give the CEO one more project, assuming she has already funded all other worthwhile investment opportunities she was aware of. What would happen if the CEO could invest in more than one project? How should she prepare her firm's finances in anticipation of future funding needs? Would she retain cash? Or would it be more accretive to return the money to shareholders? These questions define the CEO's payout policy, and we describe how an EPS maximizer answers them in Ben-David and Chinco (2026c).

The same underlying logic underpins the most accretive approach to all "three pillars" of corporate finance (Damodaran, 2014). To see the commonality,

Figure 1. The three pillars of corporate finance in the max EPS paradigm.

The CEO's existing assets are fixed. She finances them using whichever capital source (equity, debt, or cash) sacrifices the least expected earnings next year.

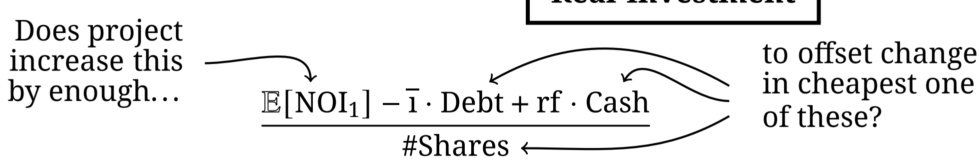
Capital Structure



Ben-David and Chinco (2026a)

The CEO has already chosen her capital structure and funded every worthwhile project she knew about. Then she discovers one more project. Investing is accretive if it generates more than enough income next year to cover its own financing expense using the firm's cheapest funding source.

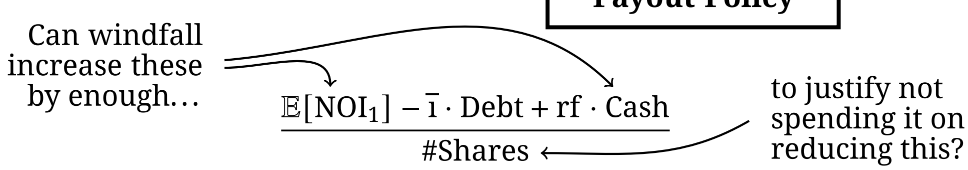
Real Investment



Ben-David and Chinco (2026b)

The CEO has already chosen her capital structure but has not yet funded any projects. She receives a cash windfall. Can she generate enough extra income by investing the money to justify not spending it on buybacks?

Payout Policy



Ben-David and Chinco (2026c)

it is helpful to think in terms of yield spreads. If we divide both terms in Equation (2) by a project's upfront cost, then we get

$$\{\mathrm{IY} - \mathrm{FY}\} \;>\; 0\%\mathrm{pt} \tag{3}$$

An EPS maximizer invests in projects that have income yields, $\mathrm{IY} = \frac{\mathbb{E}[\Delta \mathrm{NOI}_1]}{\mathrm{Cost}}$, above her firm's financing yield. She levers up when equity markets are charging more per dollar of capital than bond markets, $\{\mathrm{EY}{-}\mathrm{i}\} > 0\%\mathrm{pt}$. The CEO returns cash to shareholders when buybacks offer a higher yield than her firm can generate by using the money to fund the average project, $\{\mathrm{EY}{-}\overline{\mathrm{IY}}\} > 0\%\mathrm{pt}$.

The accretive investment rule manifests in different ways for growth and value stocks. "Growth stocks" have earnings yields below the riskfree rate, $\mathrm{EY}^G < \mathrm{rf}$, so these firms see equity as cheap. By funding the \$100M project with equity, a $\mathrm{EY}^G = 2\%$ growth stock can add \$4M next year at an earnings cost of just \$2M. The company's sky-high price-to-earnings ratio, $\mathrm{PE}^G = \left(\frac{1}{2\%}\right) = 50\times$, makes issuing shares cheaper than spending cash if $\mathrm{rf} = 3\%$. Why sacrifice \$3M in riskfree interest income when equity markets only need to be paid \$2M?

"Value stocks" have earnings yields above the riskfree rate, $\mathrm{EY}^V > \mathrm{rf}$, so they see equity as expensive compared to riskfree debt. Before learning about the \$100M project, an EPS-maximizing value stock will have already exhausted its riskfree borrowing capacity, levering up to equate the marginal cost of equity and debt. Suppose equality occurs at $\mathrm{EY}^V = \mathrm{i}^V = 5\%$. In that case, the value-stock CEO would have to commit \$5M in expected earnings next year to fund a project that is only expected to generate \$4M in income next year. It would be dilutive to invest on those terms. However, the CEO's decision would change if cash were to appear on her balance sheet. The moment that happened, her financing yield would suddenly drop to $\mathrm{rf} = 3\%$. Cash would allow the CEO to add \$4M of income at an expense of just \$3M, making the project accretive.

Notice how the two kinds of firms group their financing options in different ways. For a growth stock, there is a fault line separating equity financing from everything else, $\mathrm{EY}^G < \mathrm{i}^G = \mathrm{rf}$. For a value stock, it is external capital markets and internal cash that sit on different continental plates, $\mathrm{EY}^V = \mathrm{i}^V > \mathrm{rf}$. These distinctions are not the result of a fixed cross-sectional sort. The fraction of value stocks in the economy will vary over time as interest rates change. The $\text{EY}^V = 5\%$ value stock in our running example would behave like a growth stock if rates rose from $\text{rf} = 3\%$ to 6%. The $\min\{\cdot\}$ operator also generates subtle context-dependent behavior. For example, rising PE ratios only affect the investment decisions of companies that see equity markets as their cheapest funding source, $\text{EY} < \min\{\text{i}, \text{rf}\}$.

Section 2. Next, we show that the accretive investment rule and the positive-NPV rule take opposite approaches to solving the same basic problem. To decide whether to fund a project, a CEO must find some way of comparing two incompatible quantities: the upfront cost and the flow of future benefits. There are exactly two options. A CEO can convert the project's future benefit stream into an equivalent upfront amount. Or she can convert the project's upfront cost into an equivalent annual expense going forward. The positive-NPV rule takes option #1. The accretive investment rule takes option #2.

On the one hand, we are following the classic Rabin (2013) playbook. We examine the consequences of making a single change to an otherwise standard model. On the other hand, swapping out max NPV for max EPS is not a minor operation. This objective-change procedure affects a CEO's horizon, her conception of risk, how she reasons about costs of capital, etc. We show that all these knock-on effects operate through just three channels. First, EPS maximizers do not discount a project's short-term income. Second, they do not count any long-term benefits in the project's favor. Third, they do not worry about any long-term financing payments, either.

The "EPS maximizers invest less" fallacy comes from ignoring the third channel. The EPS-maximizing CEO in our running example never compares the project's \$4M income next year to its full \$100M cost. She cares about the short-term financing expense needed to raise this amount of capital. When in charge of the $\text{EY}^G = 2\%$ growth stock, it was accretive to invest because the financing hit was just \$2M. Funding the project added \$4M − \$2M = +\$2M to the CEO's next-twelve-month earnings forecast. The accretive investment rule can lead to overinvestment when short-term financing is especially cheap.

Section 3. Many popular investment metrics are popular precisely because they skip the most important step in any present-value calculation: choosing a discount rate. For example, Berk and DeMarzo (2007) explains that "one reason why managers like calculating an IRR is that you do not need to know the opportunity cost of capital." An IRR is not a heuristic version of the positive-NPV rule. Instead, we show that it is a multi-period extension of IY. The yield to maturity on a par bond is an IRR. The \$100M project that generates \$4M of annual income is priced at par, IY = IRR = 4%.

A CEO who funds the IY = 4% project in our running example would be able to recoup the upfront cost in $\left(\frac{1}{4\%}\right) = 25$ years. This expected payback period is nothing more than the project's income yield expressed as a multiple. It is like talking about a company's $\text{PE} = \left(\frac{1}{\text{EY}}\right)$ rather than its earnings yield. When a CEO says a target has a low PE, she means it will add a lot of income per dollar spent. The same is true for an internal project with a short payback period.

The EPS-maximizing CEO in our simple model has a 1-year horizon. This is a strategic choice, which makes it easier to understand the core economic principles. However, nothing in our analysis hinges on this particular choice. An EPS maximizer with a 2- or 3-year horizon would still be ignoring decades of subsequent cash flows.

We call $\frac{\mathbb{E}[\Delta \text{NOI}_1]}{\text{Cost}}$ an "income yield" because that is what it is: a "yield". The project's resale value never enters the calculation. Nevertheless, market participants typically refer to this quantity as a "return on investment" (ROI). It is also extremely common for CEOs to describe looking for projects that will boost the firm's profit margin. This jargon only makes sense when thinking in terms of short-term EPS gains and losses. To be good for margins, a project must have a higher income yield than the firm's existing asset base.

Section 4. The accretive investment rule predicts which companies fund investments by issuing stock, which draw on internal cash reserves, and where to find the dividing line between the two groups. Our regression results confirm that growth stocks ($\text{EY} < \text{rf}$) tend to fund acquisitions by issuing new shares, even when cash is available. By contrast, the data show that value stocks ($\text{EY} > \text{rf}$) prefer to fund investment out of internal cash reserves and quit spending when this capital source runs dry. When a company crosses the EY = rf threshold, its investment decisions change the very next year. We are not just sorting on PE ratios. The relevant cutoff changes with the riskfree rate.

These regressions do not conclusively prove that CEOs are EPS maximizers. But look around you, that much is already clear. In a world where most CEOs used the positive-NPV rule, M&A press releases would lead with a deal's NPV surplus. CEOs would regularly talk about discount rates. Data vendors would sell 20-year project-level cash-flow forecasts. All these things would make it straightforward to compare a project's upfront cost to the present value of its future benefits. Funding sources would largely be an afterthought.

On planet Earth, deal announcements lead with the expected EPS pop. CEOs almost never mention discount rates. Only 1% of conference calls mention a discount rate in any form (Gormsen and Huber, 2025). IBES sells next-twelve-month earnings forecasts at the firm level. Large public companies put financing costs front and center in shareholder communications. Moreover, the hurdle rate is a characteristic of the firm, not a property of future cash flows. Textbooks call the positive-NPV rule the "gold standard" (Brealey, Myers, and Marcus, 2001). But, in places where gold is plentiful, you do not have to work very hard to pull the stuff out of the ground.

EPS-maximizing CEOs are people, too. They face adjustment costs (Lucas, 1967; Hayashi, 1982; Abel, 1983; Abel and Eberly, 1994; Caballero and Engel, 1999; Cooper and Haltiwanger, 2006) and financing frictions (Myers, 1977; Myers and Majluf, 1984; Fazzari, Hubbard, and Petersen, 1988). In a world where CEOs fixate on short-term EPS gains, there are still agency problems (Jensen and Meckling, 1976; Jensen, 1986). EPS maximizers suffer from behavioral biases (Stein, 1989, 1996; Baker, Stein, and Wurgler, 2003; Malmendier and Tate, 2005; Baker, Ruback, and Wurgler, 2007; Polk and Sapienza, 2008).

We do not run a horse race against these theories because we are not in competition with them. We are offering researchers a better benchmark. Right now, every model assumes that CEOs use the positive-NPV rule. Think of how much more these mechanisms could explain if you added them to a theory that reflects how real-world CEOs actually describe their own decisions.

1 Earnings per Share

This section characterizes when an EPS-maximizing CEO will fund a new project. Subsection 1.1 describes the decision problem faced by the CEO in our model. Subsection 1.2 establishes the accretive investment rule: fund the project if and only if next year's expected income gain exceeds the added financing expense when using the firm's cheapest available capital source. Subsection 1.3 rescales the accretive investment rule into yield-spread form and shows that the underlying logic matches how EPS maximizers make capital-structure decisions. Subsection 1.4 outlines how the principle of EPS maximization classifies growth and value stocks. The two kinds of firms set different investment hurdles and fund projects that clear this bar in different ways.

1.1 Decision Problem

Consider an EPS-maximizing CEO who has just learned about a new project. The project requires a single upfront payment of $\text{Cost} > \$0$ today. If she funds it, her firm's expected net operating income next year will rise by $\mathbb{E}[\Delta\text{NOI}_1]$. The ratio of these two quantities defines the project's income yield

$$\text{IY} \;=\; \frac{\mathbb{E}[\Delta\text{NOI}_1]}{\text{Cost}} \tag{4}$$

Assets are expensive, but they also produce income. Before the CEO learned about the project, her firm's expected net operating income next year, $\mathbb{E}[\text{NOI}_1]$, was the income produced by its existing asset base. If she funds the project, her asset base will expand. This is where the additional $\mathbb{E}[\Delta\text{NOI}_1]$ comes from.

We organize our discussion around a single running numerical example involving a project with $\text{Cost} = \$100\text{M}$. If the CEO were to give the thumbs up, the project would add $\mathbb{E}[\Delta\text{NOI}_1] = \$4\text{M}$ to her firm's net operating income next year, giving it an income yield of $\text{IY} = \frac{\$4\text{M}}{\$100\text{M}} = 4\%$. An EPS maximizer only cares about the first installment, $\mathbb{E}[\Delta\text{NOI}_1] = \$4\text{M}$. But the project is expected to add \$4M of income each year going forward.

This is not merely a teaching device. The calculation is one that any CEO could execute this afternoon. Every input is a market price. The firm's earnings yield is the ratio of its EPS forecast to its stock price. The marginal interest rate is a quote from the firm's investment bank. The riskfree rate is a Treasury yield. Feed in these three numbers and the accretive investment rule returns a verdict. Appendix A contains a long list of detailed case studies. These applications show how real-world CEOs calculate the accretive pop from specific projects.

This paper is the second of three papers on accretive corporate finance. Each paper addresses one of the three classic problems in the field: capital structure, real investment, and payout policy. The solutions build on each other. A firm's capital structure determines the cost of funding new investments. Investment decisions then determine whether a CEO should hold onto cash or return the money to shareholders. We chose the structure of the CEO's decision problem in this paper with these other two papers in mind.

We assume that the CEO has already financed her existing asset base in the most accretive way possible. Ben-David and Chinco (2026a) characterizes how EPS maximizers think about the cost of capital. The CEO can finance a project by issuing equity, selling bonds, or spending cash. The cost of each option is determined by the required earnings hit next year:

(#1) Issuing Equity.

To sell a share of equity, the CEO must promise the new owner a share's worth of expected earnings next year. The shareholder is giving Price dollars of capital in exchange for $\mathbb{E}[\text{EPS}_1]$ dollars of expected earnings. The short-term earnings hit from each dollar raise is $\text{EY}{\times}\$1$ where $\text{EY} = \frac{\mathbb{E}[\text{EPS}_1]}{\text{Price}}$ is the firm's earnings yield. The CEO can purchase $\$1 \times \left(\frac{1}{\text{EY}}\right)$ dollars of capital from equity markets with each dollar of expected earnings. This inverse earnings yield is known as the firm's price-to-earnings ratio, $\text{PE} = \left(\frac{1}{\text{EY}}\right)$. It is a common way to quote the cost of equity capital.

(#2) Selling Bonds.

The earnings cost of borrowing another dollar is the required interest payment next year, $\text{i} \times \$1$. We use i to denote the firm's marginal interest rate; whereas, $\bar{\text{i}}$ denotes the average interest rate on the firm's existing debt. This means that bond markets are willing to lend $\$1 \times \left(\frac{1}{\mathrm{i}}\right)$ dollars of capital in exchange for one dollar of expected earnings.

(#3) Spending Cash.

The earnings cost of spending a dollar of cash is the foregone riskfree interest payment this money would have otherwise generated next year, $\mathrm{rf} \times \$1$. EPS-maximizing CEOs think about cash like negative riskfree debt or, equivalently, like making a riskfree loan. Thus, spending $\$1 \times \left(\frac{1}{\mathrm{rf}}\right)$ of cash will lower a company's expected earnings next year by one dollar.

Immediately after she puts the finishing touches on her capital structure, the CEO discovers one more project she could invest in. Should she fund it? Is the benefit worth the cost? How does she think about the two things? Those are the questions we answer in this paper.

Note that, when making these decisions, the CEO's existing asset base will be a product of her past investment decisions. In any given year, the CEO might expect to fund several projects. How should she prepare? Should she retain cash on her balance sheet in anticipation of these funding needs? Or would it be more accretive to return the cash to shareholders now and rely on external capital markets when the projects arrive? That question defines the firm's payout policy and is the subject of Ben-David and Chinco (2026c).

Throughout the paper, we will talk about projects in terms of the income they generate. But really, a project generates a stream of cash flows $\{\mathrm{CF}_t\}_{t \geq 1}$, some of which get classified as income $\{\Delta\mathrm{NOI}_t\}_{t \geq 1}$. Accruals drive a wedge between the two streams: depreciation, working-capital changes, capital expenditures, non-cash gains and losses, stock-based compensation, and tax-timing differences.

This wedge matters in practice. Firms spend a lot of time on cash-flow reconciliation statements. We do not emphasize the distinction here because it does not play a big role in the existing literature. It is the Gordon model regardless of whether income or cash flows are being priced. The same pricing formula, $\text{Price} = \mathbb{E}[\mathrm{X}_1] \times \left(\frac{1}{\mathrm{r}-\mathrm{g}}\right)$, applies whether X_1 could stand for dividends, earnings, or free cash flow among other things. Since an EPS forecast is about income, we will set $\mathrm{X}_1 = \Delta\mathrm{NOI}_1$ in our analysis.

1.2 Accretive Investment

We can get a sense of what the accretive investment rule will look like by analyzing what happens to a company's EPS forecast when it funds the \$100M project in different ways. To start with, consider the CEO of a company with \$400M of expected earnings next year. The firm has 200M shares outstanding, giving a baseline EPS forecast of

$$\underset{\substack{\text{EY = 2\%} \\ \text{Baseline}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\mathbb{E}[\text{Earnings}_1]}{\#\text{Shares}} = \frac{\$400\text{M}}{200\text{M}} = \$2.00/\text{sh} \tag{5}$$

The company's shares trade at Price = \$100/sh, which points to an earnings yield of $\text{EY} = \frac{\mathbb{E}[\text{EPS}_1]}{\text{Price}} = \frac{\$2.00/\text{sh}}{\$100/\text{sh}} = 2\%$. Assume that the riskfree rate is rf = 3%.

Suppose the CEO of this company funds the \$100M project in our running example out of internal cash reserves. Next year, the project will add \$4M to the firm's income, but the company will no longer be able to collect $\text{rf} \times \text{Cost} = 3\% \times \$100\text{M} = \$3\text{M}$ of riskfree interest income. On net, the trade-off is worth it. The firm's expected earnings would rise to \$400M + {\$4M−\$3M} = \$401M, giving the CEO a slightly higher EPS forecast

$$\underset{\substack{\text{EY = 2\%} \\ \text{Spend cash}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M} + \{\$4\text{M}-\$3\text{M}\}}{200\text{M}} = \$2.005/\text{sh} \tag{6}$$

Nothing changes if the CEO funds the project by selling bonds. The company's shares trade at $\left(\frac{1}{2\%}\right) = 50\times$ forward earnings, so it is cheaper for the firm to finance its existing asset base using all equity. With no outstanding debt, the company can borrow at the riskfree rate, i = rf = 3%. The first dollars of debt are safe when lending to a company with \$400M of expected earnings. Funding the project by selling bonds would add $3\% \times \$100\text{M} = \$3\text{M}$ in interest expense. With i = rf, the earnings cost of a new dollar of debt equals the foregone interest income on a dollar of spent cash. The +\$0.005/sh accretive pop is identical.

But things are different if the CEO funds the project by issuing shares. In that case, her company's earnings would rise to \$400M + \$4M = \$404M exactly as before, but the project's added income would be split across a slightly larger share base, $\frac{\text{Cost}}{\text{Price}} = \frac{\$100\text{M}}{\$100/\text{sh}} = +1\text{M}$. Because equity markets are willing to pay so much for a single share's worth of the company's expected earnings next year, this turns out to be the firm's most accretive option

$$\underset{\substack{\text{EY = 2\%} \\ \text{Issue equity}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M} + \$4\text{M}}{200\text{M} + 1\text{M}} = \$2.01/\text{sh} \tag{7}$$

The firm's low earnings yield makes equity cheaper than cash and debt.

Now let's put this same EPS-maximizing CEO in charge of a different company. The new firm still expects to generate $400M of earnings next year and its stock also trades at $100/sh. But the second company only has 80M shares outstanding. Hence, before investing, the firm has an EPS forecast of

$$\underset{\substack{\text{EY = 5\%} \\ \text{Baseline}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M}}{80\text{M}} = \$5.00/\text{sh} \tag{8}$$

The second company's higher EPS forecast translates into a higher earnings yield, $\text{EY} = \frac{\$5.00/\text{sh}}{\$100/\text{sh}} = 5\%$. Equity markets are not willing to pay as much for each dollar of this firm's expected earnings, $\left(\frac{1}{5\%}\right) = 20\times$ vs. $50\times$. As such, the new firm will be highly levered. When in charge of the first firm, the CEO chose to remain unlevered. When running the second firm, she will have already levered up until her marginal interest rate rose to match her earnings yield, $\text{EY} = \text{i} = 5\% > 3\% = \text{rf}$. As a result, the CEO would have to pay interest of $5\% \times \$100\text{M} = \$5\text{M}$ to fund the same project by selling bonds. Previously, debt financing was accretive, just not as accretive as equity. Now it is outright dilutive

$$\underset{\substack{\text{EY = 5\%} \\ \text{Sell bonds}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M} + \{\$4\text{M} - \$5\text{M}\}}{80\text{M}} = \$4.9875/\text{sh} \tag{9}$$

What about equity financing? At an unchanged $100/sh stock price, the second company must still issue $\frac{\text{Cost}}{\text{Price}} = \frac{\$100\text{M}}{\$100/\text{sh}} = +1\text{M}$ new shares to fund the project. But this float expansion now operates on a smaller base, 80M shares outstanding rather than 200M. As a result, the dilutive effect is $\frac{+1\text{M}/80\text{M}}{+1\text{M}/200\text{M}} = \frac{+1.25\%}{+0.50\%} = 2.5\times$ larger, outweighing the project's +$4M income boost

$$\underset{\substack{\text{EY = 5\%} \\ \text{Issue equity}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M} + \$4\text{M}}{80\text{M} + 1\text{M}} \approx \$4.9875/\text{sh} \tag{10}$$

The first firm's bargain-basement earnings yield made equity markets the cheapest source of capital, EY = 2%. The CEO financed her existing asset base and the new project by issuing shares. Since the first dollars of debt are riskfree, spending cash and selling bonds had equivalent EPS impacts, i = rf = 3%. The second firm's earnings yield was higher, so the CEO financed her existing assets by levering up. As a result, when the CEO considered investing in the new project, both forms of external financing were equally expensive, EY = i = 5%.

We just saw that funding the project would be dilutive if equity and debt are the CEO's only funding options. Things change if the CEO has cash on her balance sheet. Funding the project out of internal cash reserves would cost the second company rf × Cost = 3% × \$100M = \$3M in foregone riskfree interest income next year. However, this earnings hit would be a small price to pay in exchange for a project that is expected to add \$4M of income

$$\underset{\substack{\text{EY = 5\%} \\ \text{Spend cash}}}{\mathbb{E}[\text{EPS}_1]} = \frac{\$400\text{M} + \{\$4\text{M}{-}\$3\text{M}\}}{80\text{M}} = \$5.0125/\text{sh} \tag{11}$$

When running this second company, the EPS-maximizing CEO's investment decisions are highly sensitive to the presence of cash.

All these calculations have a similar form. To determine whether the project is accretive, the CEO compared the added income next year, $\mathbb{E}[\Delta\text{NOI}_1]$, to the added financing expense next year, FY × Cost. For debt and cash, this expense was next year's interest payment, i × Cost or rf × Cost. For equity, it was the dilutive effect of expanding the firm's share base, EY × Cost.

Proposition 1. *Define a firm's financing yield as* $\text{FY} = \min\{\text{EY}, \text{i}, \text{rf}\}$. *An EPS-maximizing CEO is mulling over a project with upfront* $\text{Cost} > \$0$. *Investing in the project would add* $\mathbb{E}[\Delta\text{NOI}_1] > \$0$ *to her firm's expected earnings next year. It is accretive to fund the project if and only if the following inequality is satisfied*

$$\underbrace{\mathbb{E}[\Delta\text{NOI}_1]}_{\substack{\textit{Income added} \\ \textit{next year}}} - \underbrace{\text{FY} \times \text{Cost}}_{\substack{\textit{Added expense} \\ \textit{next year}}} > \$0 \tag{2}$$

This is the max EPS *analog to the positive-NPV rule.*

The financing yield FY represents the firm's cheapest available source of funding given current market conditions. It is a characteristic of the firm, not a property of the project's future income stream. FY depends on the company's three earnings costs of capital, all of which are determined by market prices. Hence, the same project can be accretive for one company but dilutive for another. The first EY = 2% company wanted to invest in the \$100M project from our running example. Absent cash, the second EY = 5% company did not.

FY is also the minimum of the three earnings costs of capital, not the weighted average. Textbook capital budgeting prescribes a discount rate that mixes available financing sources, often weighted by a target capital structure and adjusted for the project's risk. The EPS maximizer above does none of that. She takes her three financing costs as given, picks the cheapest one, and optimizes from there. Project riskiness affects whether $\mathbb{E}[\Delta\text{NOI}_1]$ gets realized, but it does not affect the CEO's choice of FY.

1.3 Yield-Spread Machine

The same max EPS model speaks to all three classic problems in corporate finance: capital structure, real investment, and payout policy. To see the common thread, it is helpful to write the accretive investment rule in Equation (2) as a yield spread. Dividing through by the project's upfront price tag, $\text{Cost} > \$0$, puts the inequality on a per-dollar basis. The income gain per dollar invested is the project's income yield, $\text{IY} = \frac{\mathbb{E}[\Delta\text{NOI}_1]}{\text{Cost}}$. The earnings cost per dollar spent is the firm's financing yield, $\text{FY} = \min\{\text{EY}, \text{i}, \text{rf}\}$. Both sides now carry the same units: dollars of expected earnings next year per dollar invested today.

Proposition 2. *It is accretive for a CEO to invest in any project that has an income yield higher than her firm's financing yield*

$$\{\text{IY} - \text{FY}\} \;>\; 0\%\text{pt} \tag{3}$$

To a leading order, investing will alter the company's EPS forecast by $\Delta\mathbb{E}[\text{EPS}_1] = \{\text{IY}-\text{FY}\}\times\left(\frac{\text{Cost}}{\#\text{Shares}}\right)$ *where the share count reflects the firm's float prior to investing.*

The first company above had an earnings yield of EY = 2%. By issuing shares to fund the project, the CEO was able to raise her EPS forecast by

$$\underset{\substack{\text{EY = 2\%} \\ \text{Issue equity}}}{\Delta\mathbb{E}[\text{EPS}_1]} \;=\; \{4\% - 2\%\} \times \left(\frac{\$100\text{M}}{200\text{M}} \right) \;=\; +\$0.010/\text{sh} \tag{12}$$

Facing a riskfree rate of rf = 3%, the CEO of the first company would also be willing to fund the project by spending cash if she had to. But the yield spread would be narrower, {4%–3%} = +1%pt rather than {4%–2%} = +2%pt, making the investment less accretive

$$\underset{\substack{\text{EY = 2\%} \\ \text{Spend cash}}}{\Delta\mathbb{E}[\text{EPS}_1]} \;=\; \{4\% - 3\%\} \times \left(\frac{\$100\text{M}}{200\text{M}} \right) \;=\; +\$0.005/\text{sh} \tag{13}$$

Since the first dollars borrowed are riskfree, i = rf, funding the project with debt would deliver the same +\$0.005/sh accretive pop as spending cash.

When running the second company, the same CEO faced a higher marginal interest rate, i = 5%. This made it dilutive to fund the project by selling bonds

$$\underset{\substack{\text{EY = 5\%} \\ \text{Sell bonds}}}{\Delta\mathbb{E}[\text{EPS}_1]} \;=\; \{4\% - 5\%\} \times \left(\frac{\$100\text{M}}{80\text{M}} \right) \;\approx\; -\$0.0125/\text{sh} \tag{14}$$

Since the firm had already levered up enough to equate its earnings costs of equity and debt, EY = i = 5%, funding the project by issuing shares was equally dilutive, −\$0.0125/sh. Cash mattered a lot for the second company. If cash were to appear on its balance sheet, the rf = 3% riskfree rate would flip the sign of the project's yield spread, {4%–5%} = −1%pt vs. {4%–3%} = +1%pt, transforming it into an accretive venture

$$\underset{\substack{\text{EY = 5\%} \\ \text{Spend cash}}}{\Delta\mathbb{E}[\text{EPS}_1]} \;=\; \{4\% - 3\%\} \times \left(\frac{\$100\text{M}}{80\text{M}} \right) \;\approx\; +\$0.0125/\text{sh} \tag{15}$$

EPS maximizers view real investment as a form of yield-spread arbitrage. Investing in a project is tantamount to acquiring income-producing assets. The CEO is being offered a project with an income yield of IY by asset markets. Capital markets are quoting her a financing yield of FY. The CEO invests when the income yield that asset markets are offering exceeds the cheapest financing yield offered by capital markets.

Accretive capital-structure and payout-policy decisions follow the same template. Ben-David and Chinco (2026a) characterizes the most accretive way to finance a firm's existing assets. Let $\ell = \frac{\text{Debt}}{\text{Assets}} \in [0, 1)$ to denote a firm's initial leverage ratio. If a CEO issues one less share and instead borrows the money at her firm's marginal interest rate, then her EPS forecast will change by

$$\underset{\substack{\text{Borrow share price} \\ \text{Issue one less share}}}{\Delta\mathbb{E}[\text{EPS}_1]} = \{\text{EY} - \text{i}\} \times \left(\frac{\text{Price}}{1-\ell}\right) \tag{16}$$

Since $\left(\frac{\text{Price}}{1-\ell}\right) > 0$, the sign of the effect hinges on the yield spread, $\{\text{EY}-\text{i}\}$. When $\text{EY} > \text{i}$, it is accretive to lever up. When $\text{EY} < \text{i}$, it is accretive to delever.

Ben-David and Chinco (2026c) characterizes when it is accretive to return cash to shareholders. Let $\overline{\text{IY}}$ denote the yield a CEO can achieve by using cash to fund all the high-yield projects she can think of and parking the rest in Treasuries. If the CEO were to use this money to buy back shares, she would lose out on the extra income these investments would produce. But each dollar spent on buybacks would reduce her earnings cost of financing by $\text{EY} \times \$1$. Hence, the change in the CEO's EPS forecast would be

$$\underset{\substack{\text{Buy back shares} \\ \text{Cut investment}}}{\Delta\mathbb{E}[\text{EPS}_1]} = \{\text{EY} - \overline{\text{IY}}\} \times \left(\frac{\text{Cash}}{\#\text{Shares}}\right) \tag{17}$$

Since $\left(\frac{\text{Cash}}{\#\text{Shares}}\right) > 0$, the sign of the effect hinges on the yield spread, $\{\text{EY}-\overline{\text{IY}}\}$. When $\text{EY} > \overline{\text{IY}}$, the accretive pop of repurchases is too strong to ignore. When $\text{EY} < \overline{\text{IY}}$, it is more accretive to hold onto cash and invest the money.

In all three cases, an EPS-maximizing CEO is engaging in a form of yield-spread arbitrage. When making capital-structure decisions, the relevant margin is between capital markets: equity vs. debt. When making real-investment decisions, the relevant margin is between asset markets and capital markets. When making payout-policy decisions, the relevant margin involves the boundary of the firm. Different yield spreads, same accretive logic.

1.4 Growth vs. Value

Yield-spread logic is one common thread connecting the max EPS approach to all three classic problems in corporate finance. Here is another. Notice that a firm's earnings yield can get arbitrarily small, $\mathrm{EY} > 0\%$. By contrast, the company's marginal interest rate is bounded from below by the riskfree rate, $\mathrm{i} \geq \mathrm{rf}$. This asymmetry in the earnings cost of equity and debt capital produces a bifurcation in EPS-maximizing policies. There are two different groups of firms which each take separate paths to the top of Mt. Accretion. We call these two groups "growth" and "value".

Growth stocks have earnings yields below the prevailing riskfree rate. The EPS-maximizing CEO of a growth stock sees the best possible bond-market terms as expensive compared to issuing equity

$$\mathrm{EY} < \mathrm{rf} \quad \rightsquigarrow \quad \text{Growth Stock} \tag{18a}$$

$$\mathrm{EY} > \mathrm{rf} \quad \rightsquigarrow \quad \text{Value Stock} \tag{18b}$$

Value stocks have higher earnings yields. The EPS maximizers in charge of these firms see riskfree debt as cheap compared to what equity markets are offering.

The principle of EPS maximization defines "growth" and "value" in a way that is related to existing definitions. Growth stocks have a high price-to-earnings ratio, $\mathrm{PE} > \left(\frac{1}{\mathrm{rf}}\right)$. Value stocks have a lower multiple, $\mathrm{PE} < \left(\frac{1}{\mathrm{rf}}\right)$. But notice that the approach is not based on a cross-sectional sort. Above, the first firm is a growth stock because its earnings yield is below the riskfree rate, $\mathrm{EY} = 2\% < \mathrm{rf} = 3\%$. We compare the company's PE ratio to the inverse riskfree rate, $\left(\frac{1}{2\%}\right) = 50\times > \left(\frac{1}{3\%}\right) \approx 33\times$, not the multiples of other firms at the time. The second firm is a value stock because it has $\mathrm{EY} = 5\% > 3\%$ and $\left(\frac{1}{5\%}\right) = 20\times < 33\times$.

For our purposes, the key thing is that growth and value stocks find it accretive to finance themselves in different ways. Growth stocks have access to such cheap equity capital that they see little reason to borrow or spend cash. An EPS-maximizing growth stock will fund any project that satisfies the inequality below by issuing shares

$$\mathrm{FY}^G = \mathrm{EY}^G < \mathrm{i}^G = \mathrm{rf} \tag{19}$$

By the time that she learns about a new project, the EPS-maximizing CEO of a value stock has already levered up substantially. She exhausts her riskfree borrowing capacity when financing her existing asset base, levering up until her marginal interest rate rises to match her firm's higher earnings yield. As a result, not only is cash the CEO's preferred funding source for new projects, it also lowers the bar for a project to be accretive. With cash, a project's income yield only needs to be higher than rf; without cash, it needs to clear $\text{EY}^V = \text{i}^V$

$$\text{FY}^V = \begin{cases} \text{EY}^V = \text{i}^V & \text{w/o cash} \\ \text{rf} & \text{with cash} \end{cases} \tag{20}$$

And, for precisely this reason, when cash does appear on the balance sheet of an EPS-maximizing value stock, it does not stay there for long.

Proposition 3. *EPS-maximizing growth stocks require new projects to clear a lower hurdle than EPS-maximizing value stocks*

$$\text{FY}^G < \text{FY}^V \tag{21}$$

Cash does not alter the hurdle rate of an EPS-maximizing growth stock. This group of firms funds all projects with sufficiently high income yields by issuing equity. Cash lowers an EPS-maximizing value stock's hurdle rate. This group of firms prefers to fund projects out of internal cash reserves whenever possible.

In our empirical analysis, we will classify a company as either a growth stock or a value stock based on the sign of its excess earnings yield

$$\text{ExcessEY} = \text{EY} - \text{rf} \tag{22}$$

Growth stocks have negative spreads, $\text{ExcessEY}^G < 0\%\text{pt}$. Value stocks have positive spreads, $\text{ExcessEY}^V > 0\%\text{pt}$. When the S&P 500 has a negative excess earnings yield, you know that stock prices must be high. The typical large public company finds it cheaper to issue shares than to borrow riskfree.

Notice that this quantity is also closely related to the impact of cash on each firm's investment hurdle

$$\text{FY}_{\text{w/o cash}} - \text{FY}_{\text{with cash}} \;=\; \max\{\,0\%\text{pt},\,\text{ExcessEY}\,\} \tag{23}$$

The $\text{EY}^G = 2\%$ growth stock has a negative excess earnings yield, $\text{ExcessEY}^G = \{2\%-3\%\} = -1\%\text{pt}$. It would cost this firm $\{3\%-2\%\} \times \$100\text{M} = \$1\text{M}$ more to fund the project by spending cash than by issuing shares. The $\text{EY}^V = 5\%$ value stock has $\text{ExcessEY}^V = \{5\%-3\%\} = +2\%\text{pt}$. If cash were to appear on the firm's balance sheet, its CEO would suddenly be able to fund the same project with $\{5\%-3\%\} \times \$100\text{M} = \$2\text{M}$ less earnings next year.

The $\min\{\cdot\}$ operator is doing important work. Because FY is the cheapest of the firm's three sources of capital rather than a weighted average, a small change in financing conditions can produce a discrete jump in FY. Think about the value stock in the running example. With cash on its balance sheet, $\text{FY}^V = \text{rf} = 3\%$ and the \$100M project with $\text{IY} = 4\%$ is accretive. Without access to internal cash reserves, rf drops out of the choice set. This causes FY^V to jump up to $\min\{\text{EY}^V, \text{i}^V\} = 5\%$. The same \$100M project with $\text{IY} = 4\%$ is now dilutive. Nothing about the project changed. Nothing about the firm's invested capital or business model changed. Yet the verdict on the project flipped from accretive to dilutive. This is not how textbook models work.

The distinction between external and internal financing only matters for value stocks. Equity and debt are equally expensive, $\text{EY}^V = \text{i}^V > \text{rf}$. Cash is the outlier. For a growth stock, the important watershed is between equity and everything else, $\text{EY}^G < \text{i}^G = \text{rf}$. Equity is cheap; debt and cash are equally expensive. The $\text{EY}^G = 2\%$ growth stock can fund the \$100M project by issuing shares at an earnings cost of $2\% \times \$100\text{M} = \$2\text{M}$. Why would she spend cash and give up $3\% \times \$100\text{M} = \$3\text{M}$ in riskfree interest income? For a growth stock, holding cash is like holding negative riskfree debt. Both carry an earnings cost of $3\% \times \$1 = \$0.03$ on the dollar.

2 Present-Value Logic

This section compares the accretive investment rule to the textbook approach based on present-value logic. Subsection 2.1 defines the positive-NPV (net present value) rule. There are three reasons why an EPS maximizer and an NPV maximizer might disagree about whether to fund a project. Only one of these reasons pushes the EPS maximizer to invest less. Subsection 2.2 demonstrates that the other two reasons can push our EPS-maximizing CEO to overinvest in spite of her short-term focus. Subsection 2.3 shows that the exact choice of horizon used by an EPS maximizer is a second-order detail compared to the long tail of payouts she ignores.

2.1 The Positive-NPV Rule

Corporate-finance textbooks present the positive-NPV rule as the right way to evaluate a project. Berk and DeMarzo (2007) tells readers that "when making an investment decision" they should "select the option with the highest NPV." According to Welch (2008), "it is the appropriate decision benchmark." Ross, Westerfield, and Jordan (2009) describes capital budgeting itself as nothing more than the "search for investments with positive net present values." The same view runs throughout the empirical literature: every approach gets measured against the positive-NPV rule.

Formally, for any positive rate $\mu \geq 0\%$ and any cash-flow stream $\{\mathrm{CF}_t\}_{t\geq 1}$, the present-value operator is defined as

$$\mathbb{PV}_{\mu}[\{\mathrm{CF}_t\}_{t\geq 1}] \;=\; \sum_{t=1}^{\infty} \frac{\mathbb{E}[\mathrm{CF}_t]}{(1+\mu)^t} \tag{24}$$

The same future cash-flow stream can have different present values, depending on the choice of μ. Consider the \$100M project in our running example, which is expected to generate \$4M each year going forward. At $\mu = 3.5\%$, the present-value operator outputs $\sum_{t=1}^{\infty} \frac{\$4\mathrm{M}}{(1+3.5\%)^t} = \$4\mathrm{M} \times \left(\frac{1}{3.5\%}\right) \approx \$114.3\mathrm{M}$. At $\mu = 4.5\%$, the present value drops to $\$4\mathrm{M} \times \left(\frac{1}{4.5\%}\right) \approx \$88.9\mathrm{M}$.

The present-value operator is a mechanical device. It does not tell the CEO which value of μ to use. The positive-NPV rule requires setting the scaling factor equal to the project's risk-adjusted discount rate, $\mu = \mathrm{r}$. The right rate is the riskfree rate plus a premium that reflects the project's exposure to aggregate shocks. There is no generally agreed upon formula for the risk premium. The CEO has to intuit a number based on her own judgment.

Given a choice of discount rate, the positive-NPV rule says to fund projects with present values that exceed their upfront cost

$$\mathrm{NPV} \;=\; \mathbb{PV}_{\mathrm{r}}[\{\mathrm{CF}_t\}_{t\geq 1}] \;-\; \mathrm{Cost} \;>\; \$0 \tag{25}$$

As illustrated above, the verdict on the \$100M project in our running example is different for r = 3.5% and 4.5%. When r = 3.5%, the project is worth investing in, NPV = \$114.3M − \$100M = +\$14.3M. When r = 4.5%, the positive-NPV rule says to walk away, NPV = \$88.9M − \$100M = −\$11.1M.

An EPS maximizer takes the earnings costs of capital EY, i, and rf as given. The growth stock CEO in our running example sees $\mathrm{FY}^G = 2\%$ because equity markets are pricing her shares at 50× forward earnings. The cash-rich value stock CEO sees $\mathrm{FY}^V = 3\%$ because there is cash on her balance sheet and the Treasury yield is 3%. Absent cash, the same CEO would have seen $\mathrm{FY}^V = 5\%$ because her shares are trading at 20× forward earnings and her investment bank is quoting her a 5% marginal interest rate. These quantities are all directly observable and set by outside forces at the firm level. By contrast, an NPV maximizer must choose the correct value of r for each project herself. She must solve for the appropriate risk premium on her own each time. This is a key operational difference between the two investment rules.

The present-value operator is defined over a generic cash-flow stream. Different versions of the positive-NPV rule price dividends, free cash flow to equity, free cash flow to the firm, or pretax versus after-tax flows. We do not need to commit to one. The proposition below sets that question aside so the comparison with the accretive investment rule isolates the differences in timing and discounting rather than the wedge between income and cash flow.

Proposition 4. *Suppose that a project has* $\Delta\text{NOI}_t = \text{CF}_t$ *for all* $t \geq 1$*. There are three reasons why an EPS maximizer and an NPV maximizer might disagree about whether to invest when evaluating the project in isolation*

$$\begin{aligned}\big\{\mathbb{E}[\Delta\text{NOI}_1]-\text{FY}\times\text{Cost}\big\} - \big\{\mathbb{PV}_\text{r}[\{\Delta\text{NOI}_t\}_{t\geq1}]-\text{Cost}\big\} = (\mathbb{E}-\mathbb{PV}_\text{r})[\Delta\text{NOI}_1] \\ - \mathbb{PV}_\text{r}[\{\Delta\text{NOI}_t\}_{t\geq2}] \\ + (1-\text{FY})\times\text{Cost}\end{aligned} \tag{26}$$

The left-hand side of Equation (26) compares the EPS maximizer's accretive surplus to the project's net present value. When the difference is positive, an EPS maximizer rates the project more highly than an NPV maximizer. When negative, the NPV maximizer rates the project more highly.

Think about the \$100M project that is expected to generate \$4M of income each year going forward. The NPV calculation for this project does not depend on which firm is evaluating this project. The verdict is determined by the project's discount rate. If it is appropriate to discount the project at r = 4.5%, then it is negative NPV, $\$4\text{M}\times\left(\frac{1}{4.5\%}\right) - \$100\text{M} = -\$11.1\text{M}$. If the right number is r = 3.5%, then the project is positive NPV, $\$4\text{M}\times\left(\frac{1}{3.5\%}\right) - \$100\text{M} = +\$14.3\text{M}$.

The accretive surplus depends on which firm is doing the calculation. The $\text{EY}^G = 2\%$ growth stock has $\text{FY}^G = 2\%$, which makes the project accretive, $\$4\text{M} - 2\% \times \$100\text{M} = +\$2\text{M}$. The $\text{EY}^V = 5\%$ value stock runs a different set of numbers. If the firm has cash on its balance sheet, then its financing yield is equal to the riskfree rate, $\text{FY}^V = \text{rf} = 3\%$. On these terms, the project is accretive, $\$4\text{M} - 3\% \times \$100\text{M} = +\$1\text{M}$. If the value stock has to raise external financing, then $\text{FY}^V = \text{EY}^V = \text{i}^V = 5\%$ and the project is dilutive, $\$4\text{M} - 5\% \times \$100\text{M} = -\$1\text{M}$.

The right-hand side of Equation (26) decomposes that gap between these calculations into three distinct channels:

#1) $+(\mathbb{E}-\mathbb{PV}_\text{r})[\Delta\text{NOI}_1]$

An EPS maximizer does not discount or risk-adjust the project's $t = 1$ income. The present value of a dollar that the CEO expects to be paid next year is $\frac{\$1}{1+\text{r}}$. The accretive investment rule counts the full dollar. In the running example at r = 4.5%, this difference is \$4M $-$ $\left(\frac{\$4\text{M}}{1+4.5\%}\right) \approx$ \$0.2M. It is small relative to the other two: the year-one income bump is only one discount-rate step away from its present value.

#2) $-\mathbb{PV}_{\text{r}}[\{\Delta\text{NOI}_t\}_{t\geq 2}]$

When the CEO greenlights a project, the new assets generate income next year, $t = 1$, as well as in subsequent years, $t \geq 2$. An NPV maximizer capitalizes the $t \geq 2$ income stream into the expected resale price of the project at the end of year 1. The accretive investment rule does not. In the running example at r = 4.5%, the discounted $t \geq 2$ income stream is worth roughly $\sum_{t=2}^{\infty} \frac{\$4\text{M}}{(1+4.5\%)^t} = \frac{\$4\text{M}\times(1/4.5\%)}{1+4.5\%} \approx$ \$85.1M. The positive-NPV rule credits this value to the project. The accretive rule does not.

#3) $+(1-\text{FY}) \times \text{Cost}$

The accretive investment rule cares about the share of the upfront cost the CEO has to pay for next year, FY×Cost. The positive-NPV rule counts the project's full price tag, Cost. The wedge between them is $(1-\text{FY}) \times \text{Cost}$. In the running example with $\text{FY}^G = 2\%$, this equals $(1-2\%) \times \$100\text{M} = \$98\text{M}$. The EPS maximizer's short-termism applies to costs as well as to benefits. Cheap short-term financing makes the term especially large.

Risky debt introduces a further complication for the positive-NPV rule. When a firm has debt outstanding with positive default probability, the discount rate that prices its existing equity differs from the discount rate that prices the project's cash flows on a stand-alone basis. Myers (1977) called this the debt-overhang problem. Part of the project's value accrues to existing creditors through reduced default probability, and equity holders fund the project only if the residual NPV is positive at their own higher discount rate. The NPV maximizer has to work through that calculation explicitly. The accretive investment rule does not require any such adjustment. FY is read directly from current market pricing. Proposition 4 avoids this complication by assuming the project is evaluated in isolation. We provide further details in Appendix B.

At a basic level, deciding whether to invest requires comparing a lump-sum cost to a flow of future benefits. There are two ways to put them on equal footing. Convert the benefit flow into a lump-sum amount. This is the textbook positive-NPV rule. Or convert the upfront cost into a flow of expenses. This is the accretive investment rule. Neither option is perfect. The choice between them is partly a choice about which inputs the manager can rely on.

The positive-NPV rule's verdict hinges on payments far into the future. Year-one income alone is rarely enough to clear the upfront cost. Take the running example at $r = 3.5\%$. The \$4M projected for next year contributes $\frac{\$4\text{M}}{1+3.5\%} \approx \$3.9\text{M}$ to the project's $\$4\text{M} \times \left(\frac{1}{3.5\%}\right) \approx \$114.3\text{M}$ present value. The remaining \$110.4M of the project's present value never appears on any financial statement.

The accretive investment rule errs in the opposite direction. It ignores long-term payouts entirely. This is also incorrect. But at least it is concrete. Every input to the accretive investment rule shows up on next year's income statement: \$2M of earnings dilution if the CEO issues equity, \$5M of interest expense if she borrows, \$3M of foregone interest income if she spends cash.

It is not unreasonable to apply present-value reasoning. This is how fixed-income markets operate. A bond's price reflects its expected discounted payoff. But the logic is not compulsory. Fixed income is special. When a firm issues a 15-year corporate bond, every promised payment is printed on the note at the time of sale. Coupons used to be physical tabs the holder ripped off one by one and mailed in for cash. The main certificate was redeemed at maturity for the face value. The buyer knew the payment stream down to the penny years in advance. Present-value logic makes a lot of sense in this sort of scenario.

A real-investment decision is different. Put yourself in the shoes of an executive at a fast-food chain in the early 2000s. You are thinking about rolling out a new restaurant concept. The project's profits over the next fifteen to twenty years will depend on technologies and habits that have not yet emerged: smartphones (the iPhone came out in 2007), delivery apps (Uber Eats, DoorDash, GrubHub), and social media (Facebook, X [née Twitter], Instagram, TikTok). You can use a bond trader's discount-rate machinery, but the cash-flows being discounted have almost nothing in common with a coupon payment.

Proposition 4 decomposes the gap between an EPS maximizer and an NPV maximizer without taking a stand on who is making a mistake. There is no divine law stating: "Thou shalt divideth the cash flows and computeth the sum." The two rules are peers, not a correct option and its degraded approximation. Both are valid approaches. Each is part of a broader decision-making framework. The same logic that drives accretive investment decisions also steers capital-structure and payout-policy choices (Ben-David and Chinco, 2026a,c).

2.2 Accretive Overinvestment

At r = 4.5%, the \$100M project in our running example with a \$4M future income stream has a negative NPV of $\$4\text{M} \times \left(\frac{1}{4.5\%}\right) - \$100\text{M} = -\$11.1\text{M}$. The positive-NPV rule says to walk away. An EPS-maximizing CEO would choose to invest when running two of the three companies we have considered. The EPS maximizer in charge of the $\text{EY}^G = 2\%$ growth stock sees an accretive surplus of $\$4\text{M} - 2\% \times \$100\text{M} = +\$2\text{M}$ when funding the project with equity issuance. The cash-rich value stock CEO gets an accretive pop of $\$4\text{M} - 3\% \times \$100\text{M} = +\$1\text{M}$ by funding the project out of internal cash reserves. The accretive investment rule pushes both firms to overinvest relative to the positive-NPV benchmark. The proposition below generalizes this observation.

Proposition 5. *Consider a project with* $\mathbb{E}[\Delta\text{NOI}_t] = \text{IY} \times \text{Cost}$ *for all* $t \geq 1$. *Let* $\text{r} > 0\%$ *denote the project's correct risk-adjusted discount rate. The project can be both negative NPV and accretive if*

$$\text{r} \;>\; \text{IY} \;>\; \text{FY} \tag{27}$$

The first inequality implies $\text{NPV} < \$0$. *The second implies accretiveness.*

The no-growth assumption makes for an especially clean comparison because both investment rules reduce to IY vs. a single threshold. The accretive rule compares IY to FY. The positive-NPV rule compares IY to r. Overinvestment is exactly the wedge of income yields between these two thresholds, $\text{r} > \text{IY} > \text{FY}$. The wedge is non-empty whenever short-term financing is cheaper than the project's correct risk-adjusted discount rate.

The running example at r = 4.5% falls inside the wedge for two of the three firms. The growth stock sees IY = 4% $>$ FY^G = 2% and recommends the project even though it is negative NPV, r = 4.5% $>$ IY = 4%. The cash-rich value stock sees IY = 4% $>$ FY^V = rf = 3% and also funds the project. The loss of $11.1M in present value terms is only important if CEOs care about expected discounted payoffs. Welfare consequences depend on the choice of objective (Brunnermeier, Simsek, and Xiong, 2014). Only the CEO of the cash-poor value stock sees the project as dilutive. She walks away because the EPS arithmetic does not work, FY^V = 5% $>$ IY = 4%, not because the positive-NPV rule told her to.

The mechanism behind Proposition 5 is not limited to no-growth scenarios. The EPS maximizer ignores two things in Proposition 4: the portion of the upfront cost beyond next year's financing, (1−FY) × Cost, and the project's long-tail income, $\mathbb{PV}_{\text{r}}[\{\Delta\text{NOI}_t\}_{t\geq 2}]$. Whenever the first oversight dominates the second, she funds projects the positive-NPV rule rejects. The no-growth assumption lets us state the condition compactly as r $>$ IY $>$ FY. For other cash-flow profiles, the math is messier, but the economics is the same.

Graham, Harvey, and Rajgopal (2005) surveyed 401 executives and found that 55% "would avoid initiating a very positive NPV project if it meant falling short of the current quarter's consensus earnings." Researchers often cite this as evidence that EPS maximizers tend to underinvest. Proposition 5 shows that the same logic can run the other way, too. Our max EPS model predicts that the same CEOs would happily initiate a very negative NPV project, so long as it is accretive. The survey did not ask about this possibility. It should have. The conventional wisdom among academics is that EPS maximization always produces underinvestment. The symmetric effects do not support this view.

2.3 Defining "Short Term"

We set the EPS maximizer's horizon at 1 year throughout this paper. EPS-maximizing CEOs in the real world sometimes use longer horizons. It is not uncommon to see a 3-year EPS forecast or 5-year guidance. That being said, the exact definition of "short-term" is a second-order detail compared to the long tail of future income an EPS maximizer ignores.

To illustrate, think about the \$100M project in the running example. If the CEO invests, her firm's earnings will rise by \$4M every year going forward. An EPS maximizer with a 1-year horizon only considers the project's first \$4M payout. An EPS maximizer with a 2-year horizon would count \$4M + \$4M = \$8M of the project's income. In both cases, the CEO ignores over 90% of the benefit stream when priced close to par. The distinction between having a 1- or 2-year horizon is minor relative to all the income that gets ignored from year 3 onward. The proposition below formalizes this insight.

Proposition 6. *Consider a project with a benefit stream that looks like a T-year annuity. Let $\mathrm{r} > 0\%$ denote the correct risk-adjusted discount rate for these future cash flows. If an EPS maximizer has a horizon less than*

$$\left[\ \log(2) - \log\left(1{+}e^{-\mathrm{r}\cdot T}\right)\ \right] \times \left(\frac{1}{\mathrm{r}}\right) \ \textit{years} \tag{28}$$

then her investment decision will reflect less than half the project's present value.

The inequality in Equation (28) has two informative limits. As $T \to \infty$, the project's productive lifespan carries on indefinitely, and the right-hand side simplifies to $\log(2) \times \left(\frac{1}{\mathrm{r}}\right)$. At $\mathrm{r} = 4.5\%$, the formula outputs a value of roughly 15 years. An EPS maximizer's horizon would have to exceed 15 years before her decision reflected half the present value of the full income stream. It is also instructive to look at the short-annuity limit, $T \ll \left(\frac{1}{\mathrm{r}}\right)$. Here, the right-hand side of Equation (28) collapses to approximately $T/2$. When the length of a project's productive lifespan is short relative to the discounting scale, the present-value midpoint is the same as the temporal midpoint.

The takeaway is that "short term" can be set to 1 year, 2 years, 3 years, or 5 years without changing the economic substance of the comparison with the positive-NPV rule. The annuity formulation in Proposition 6 lets us state the point cleanly, but the insight generalizes to other cash-flow profiles. For projects with realistic multiples, most of the present value comes from the long tail of future income. EPS maximizers focus their attention on a much shorter horizon. The number of years that an EPS maximizer includes in her calculations is small relative to the number she leaves out.

3 Quoting the Income Yield

Graham and Harvey (2001) asked executives how they made investment decisions. 76% said that they computed an IRR (internal rate of return), and 57% said they calculated the project's payback period. This section shows that these two metrics are not fully fledged investment rules. An IRR or a payback period is not directly comparable to the positive-NPV rule. Subsections 3.1 and 3.2 show that both are ways to quote a project's income yield, IY, which represents the first half of the accretive investment rule. We also cover two other common ways of quoting IY that Graham and Harvey (2001) did not ask about. Subsection 3.3 describes how a project's income yield is often called the return on investment (ROI). Subsection 3.4 outlines the logic behind talking about how a project will impact the firm's profit margin.

3.1 Internal Rate of Return

An internal rate of return (IRR) is the choice of $\mu \geq 0\%$ that sets the present value of a project's future cash-flow stream equal to its upfront cost

$$\text{IRR} \;=\; \big\{\, \mu \geq 0\% \;:\; \mathbb{PV}_\mu[\{\text{CF}_t\}_{t\geq 1}] = \text{Cost} \,\big\} \tag{29}$$

The IRR investment rule says to fund projects that have IRRs in excess of some pre-specified hurdle rate, Hurdle $\geq 0\%$,

$$\text{IRR} - \text{Hurdle} \;>\; 0\,\%\text{pt} \tag{30}$$

Like the positive-NPV rule, the IRR rule uses the present-value operator, $\mathbb{PV}_\mu[\{\text{CF}_t\}_{t\geq 1}]$. For this reason, corporate-finance textbooks often describe them as close relatives. The conventional wisdom is that the IRR rule is a simplified version of the positive-NPV rule that usually gives the right answer. "The IRR rule will give the correct decision (that is, the same answer as the NPV decision rule) in many, but not all, situations" (Berk and DeMarzo, 2007). Textbooks devote the bulk of their IRR coverage to pathological cases where the cash-flow stream changes sign more than once.

But an IRR is not a “simplified” version of NPV. Computing an NPV only requires evaluating $\mathbb{PV}_{\mu}[\{\mathrm{CF}_t\}]$ once at $\mu = \mathrm{r}$. To find a project’s IRR, a CEO must search for the rate μ that sets $\mathbb{PV}_{\mu}[\{\mathrm{CF}_t\}] = \mathrm{Cost}$. This requires evaluating the same present-value operator over and over again until a root is found. A CEO who can compute an IRR can certainly compute an NPV. She is choosing not to. What differs is not the difficulty of the computation but what the two rules ask the CEO to know.

The positive-NPV rule requires the CEO to choose a risk-adjusted discount rate for the project. This is the hardest step and the most consequential one. Should she discount at $\mathrm{r} = 3.5\%$ or 4.5%? We have already seen how the answer flips the NPV of our \$100M project from +\$14.3M to −\$11.1M. Once the CEO commits to a value of r, the rest of the NPV calculation is arithmetic.

The IRR rule skips this step entirely. Instead of choosing r ahead of time based on the project’s risk profile, the CEO solves for the rate μ that would make the project zero-NPV. Then she compares this break-even rate to a hurdle. The CEO never has to take a stand on what the right risk-adjusted discount rate actually is. This is why CEOs like using IRRs.

Textbooks do acknowledge this point in passing. “Why use the IRR instead of the NPV investment criterion? The answer is that the former is often quite intuitive and convenient. . . you can compute it without having looked at financial markets, interest rates, or costs of capital. This is IRR’s most important advantage over NPV: It can be calculated before you know what the appropriate interest rate (cost of capital) is” (Welch, 2008). “The IRR may have a practical advantage over the NPV. We can’t estimate the NPV unless we know the appropriate discount rate, but we can still estimate the IRR. Suppose we didn’t know the required return on an investment, but we found, for example, that it had a 40 percent return. We would probably be inclined to take it because it would be unlikely that the required return would be that high” (Ross et al., 2009).

However, these quotes treat the issue as a matter of convenience. It is much more than that. The IRR bypasses the key step of the positive-NPV rule. The risk-adjusted discount rate is the defining feature of the positive-NPV rule. Its entire authority rests on choosing the right one. If the positive-NPV rule were really the standard that CEOs aspire to, you would expect their shortcuts to be rough-and-ready methods for choosing r: rules of thumb for estimating betas, simplified approaches to the equity premium, sector-level benchmarks, etc. Instead, Graham and Harvey (2001) finds that three quarters of CEOs reach for an investment rule that avoids having to choose r altogether.

An IRR is a multi-period generalization of the project's income yield, IY. The yield to maturity on a coupon bond is its IRR. A bond priced at par has a yield to maturity equal to its coupon rate, because the buyer pays exactly what the income stream is worth at that rate. The \$100M project in our running example is like a par bond. It costs \$100M and generates \$4M per year, so $\text{IY} = \frac{\$4\text{M}}{\$100\text{M}} = 4\%$. The project also has IRR = 4%. This par-bond analogy generalizes. As long as a project's income is a fixed percentage of the current cost basis, the IRR equals the income yield. The holding period does not matter.

If the project can be resold for \$100M at the end of next year, then investing would have an IRR of

$$\underbrace{\frac{\$4\text{M} + \$100\text{M}}{1+\text{IRR}}}_{\text{Present value}} = \underbrace{\$100\text{M}}_{\text{Cost}} \quad \rightsquigarrow \quad \text{IRR} = 4\% \tag{31}$$

If the CEO collects \$4M of income from the project in each of the next 2 years and then sells it for \$100M to recoup the cost, then we again get

$$\underbrace{\frac{\$4\text{M}}{1+\text{IRR}} + \frac{\$4\text{M} + \$100\text{M}}{(1+\text{IRR})^2}}_{\text{Present value}} = \underbrace{\$100\text{M}}_{\text{Cost}} \quad \rightsquigarrow \quad \text{IRR} = 4\% \tag{32}$$

The project is expected to add \$4M of income every year. But, in Equation (31), its total cash flow in year 1 is \$104M. The same thing happens in Equation (32). The total cash flow in year 2 is \$104M, not \$4M. In both cases, the added \$100M represents the resale value of the project's assets. At the time of investment, these assets were worth Cost. So let Cost_t denote the value of the assets associated with the project at the end of year t. If each period's expected income is proportional to the value of the project's assets at the start of that period, $\mathbb{E}[\Delta\text{NOI}_t] = \text{IY}\times\text{Cost}_{t-1}$, then we get IRR = IY.

Proposition 7. *Consider a project with an expected income boost in year t that is proportional to its cost basis at the start of the year*

$$\mathbb{E}[\Delta\text{NOI}_t] \;=\; \text{IY} \times \text{Cost}_{t-1} \tag{33}$$

If the project's cost basis goes to zero at the end of its productive lifespan, $\text{Cost}_T = \$0$, *then* IRR = IY. *Under these conditions, the IRR rule in Equation* (30) *and the accretive investment rule in Equation* (2) *are equivalent.*

When a CEO tells her board that a project clears the hurdle by +2%pt, she is telling them how accretive the deal is. The $100M project in our running example is expected to generate $4M each year going forward. Its IRR solves

$$\underbrace{\sum_{t=1}^{\infty} \frac{\$4\text{M}}{(1{+}\text{IRR})^t}}_{\text{Present value}} \;=\; \underbrace{\$100\text{M}}_{\text{Cost}} \qquad \rightsquigarrow \qquad \text{IRR} = 4\% \tag{34}$$

If we write the infinite sum as $\sum_{t=1}^{\infty} \frac{\$4\text{M}}{(1+\text{IRR})^t} = \$4\text{M} \times \left(\frac{1}{\text{IRR}}\right)$, then we can solve for $\text{IRR} = \frac{\$4\text{M}}{\$100\text{M}} = 4\%$. A growth-stock CEO with $\text{EY}^G = 2\%$ sees $\{\text{IRR}-\text{Hurdle}\} = \{4\%-2\%\} = +2\%\text{pt}$. This is precisely the yield spread that an EPS maximizer cares about, $\{\text{IY}-\text{FY}\} = \{4\%-2\%\} = +2\%\text{pt}$. Each dollar of capital deployed generates $2\% \times \$1 = +\$0.02$ of additional income.

Textbooks spend pages on the special cases: projects with multiple sign changes, non-conventional cash flows, etc. These pathological cases are real. They do exist. But they are not the projects CEOs have in mind when they quote the difference between an IRR and a hurdle rate. The standard project is a cost today followed by a stream of income tomorrow. For that sort of project, the IRR rule and the accretive investment rule say the same thing. The conditions in Proposition 7 cover the payout profiles of most projects a CEO will encounter: acquisitions carried at purchase price, capital expenditures depreciated on any schedule, debt-financed deals, long-lived infrastructure, etc. We work through the math for a long list of concrete examples in Appendix C.

3.2 Payback Period

The payback-period rule says to fund projects that generate enough income each year to quickly recoup their upfront cost. 57% of the executives in Graham and Harvey's survey said that they always or almost always took this logic into consideration. "Other than NPV and IRR, the payback period [was] the most frequently used technique (Graham and Harvey, 2001)." This is surprising given that textbooks have lamented the shortcomings of the payback criterion for decades. Welch (2008) calls it "a stupid idea." Brealey et al. (2001) says the logic is so foolish that "there is little point in dwelling on its deficiencies."

Academics always have the same complaint. Ross et al. (2009) puts it succinctly: 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." The payback-period rule ignores the time value of money. It never discounts anything. Therefore, it cannot reproduce the verdict of the positive-NPV rule.

But this is the same observation we made about the IRR. The positive-NPV rule requires the CEO to choose a risk-adjusted discount rate. The payback-period rule skips this step entirely. The CEO divides cost by expected income, and the calculation is done. No discount rate enters at any point. In textbooks, this is a bug. To practitioners, it is a feature. Payback period is not a failed approximation. It is something else entirely.

A project's payback period is the reciprocal of its income yield

$$\text{Payback period} = \frac{\text{Cost}}{\mathbb{E}[\Delta \text{NOI}_1]} = \left(\frac{1}{\text{IY}}\right) \tag{35}$$

The \$100M project in our running example costs \$100M and generates \$4M per year, giving it an expected payback period of $\frac{\$100\text{M}}{\$4\text{M}} = 25$ years. A PE ratio quotes a firm's earnings yield as a multiple. If EY = 2%, then PE = $\left(\frac{1}{2\%}\right) = 50\times$. The payback period does the same thing for a project's income yield. If IY = 4%, then the expected payback period is $\left(\frac{1}{4\%}\right) = 25$ years.

Investment bankers often refer to a project's payback period as a "build multiple." It is the cost of building a unit of productive capacity divided by the income that unit generates. An acquisition multiple is the same ratio applied to an M&A target. The price paid divided by the target's earnings. The build-versus-buy decision reduces to comparing the two multiples. It is more accretive to build when the build multiple is below the acquisition multiple, and more accretive to buy when the acquisition multiple is below the build multiple.

Proposition 8. *An EPS maximizer is considering acquiring a target or funding an internal project. If she chooses the M&A deal, assume she can add the target's earnings without modification,* $\mathbb{E}[\Delta\text{NOI}_1] = \mathbb{E}[\text{Earnings}_1^{\odot}]$*, and that she does not overpay,* $\text{Cost} = \text{MarketCap}^{\odot}$*. It is more accretive to fund organic growth if the internal project has a payback period less than the target company's PE ratio*

$$\text{Payback period} = \left(\frac{1}{\text{IY}}\right) \;<\; \text{PE}^{\odot} \tag{36}$$

The running example makes the comparison concrete. We have already seen that a growth-stock CEO with $\text{EY}^G = 2\%$ would fund the \$100M project with an income yield of $\text{IY} = 4\%$. But suppose the CEO is able to find a target company with the exact same assets, which is trading at $\text{PE}^{\odot} = 20\times$. The target company's earnings yield, $\text{EY}^{\odot} = \left(\frac{1}{20\times}\right) = 5\%$, makes it more accretive to purchase the assets in an M&A deal, $\{5\%–2\%\} = +3\%\text{pt}$, than to build the assets internally, $\{4\%–2\%\} = +2\%\text{pt}$. The project has an internal build multiple of $\left(\frac{1}{4\%}\right) = 25\times$ while the same assets can be purchased at just $20\times$ forward earnings.

Practitioners in capital-intensive industries report build multiples and acquisition multiples in identical units. Cell-tower operators quote cost per tower for both construction and acquisition.[5] Pipeline companies report "project EBITDA multiples" for organic investment and "investment-to-EBITDA multiples" for acquisitions.[6] Upstream oil companies track dollars per drilling location for both organic exploration and corporate M&A. Trade publications plot the two numbers as multi-year time series.[7] In each case, the build-versus-buy decision is a comparison of two payback periods.

[5] SBA Communications 8-K. "Q4 1999 Tower Portfolio Growth." Jan 11, 2000. [link]
[6] Kinder Morgan Press Release. "First Quarter 2026 Financial Results." Apr 16, 2026. [link]
[7] Enverus Research. "Upstream M&A sails to \$17B in Q1 '25." Jun 4, 2025. [link]

3.3 Accounting "Returns"

If you buy a share of stock today, your return over the next year will be determined by both dividend payments and changes in the resale value. Accounting variables with "return" in the name do not work this way. They ignore the part of the return formula analogous to capital gains. Return on investment (ROI), return on assets (ROA), return on equity (ROE)—these are all yields. Each one divides some measure of income next year by an amount of capital today.

When a CEO says a project "has a 4% ROI," she is talking about the income yield on this investment

$$\text{ROI} = \frac{\mathbb{E}[\Delta\text{NOI}_1]}{\text{Cost}} \tag{37}$$

The \$100M project in our running example has IY $= \frac{\$4\text{M}}{\$100\text{M}} = 4\%$. It also has a 4% IRR and a 4% ROI. The corresponding multiple, $\left(\frac{1}{4\%}\right) = 25\times$, represents the project's payback period in years. These are all common ways of quoting the same underlying quantity.

Practitioners sometimes tack a "C" on the end and call the project's income yield a return on invested capital (ROIC). When applied to a single project, ROI and ROIC are interchangeable. But ROIC can also refer to the average income yield on a firm's existing assets

$$\overline{\text{IY}} = \frac{\mathbb{E}[\text{NOI}_1]}{\text{Assets}} \tag{38}$$

The numerator in $\overline{\text{IY}}$ is the firm's expected net operating income if the CEO stands pat, not the additional income from funding one more project. The denominator in $\overline{\text{IY}}$ is the value of the firm's existing assets, not the cost of acquiring new ones.

Context usually resolves any uncertainty in meaning. A CEO who says her firm "has earned a 4% ROIC" is quoting $\overline{\text{IY}}$. A CEO who says a new plant "will generate a 4% ROIC" is quoting IY. The firm's ROIC reflects the income-generating capacity of its past investments. The project's ROIC can be used to evaluate the accretiveness of the next investment. Paired with the right hurdle rate, it represents one half of the income-vs-financing yield spread at the heart of the accretive investment rule (Equation 3).

3.4 Profit Margin

Corporate executives talk about how good investments increase the firm's profit margin. This is the fourth way of describing a project's income yield. Graham and Harvey (2001) did not ask executives about increasing their profit margins because the goal makes little sense in present-value terms. Aghion and Stein (2008) models a task called margin expansion, but margins in that paper carry no accounting content. The approach only makes sense to people who think in terms of short-term EPS gains and losses.

The link between margin growth and IY runs through the DuPont formula. Think about multiplying a firm's average income yield by $\left(\frac{\mathbb{E}[\text{Sales}_1]}{\mathbb{E}[\text{Sales}_1]}\right)$ and then decomposing it into two factors

$$\overline{\text{IY}} = \underbrace{\left(\frac{\mathbb{E}[\text{NOI}_1]}{\mathbb{E}[\text{Sales}_1]}\right)}_{\substack{\text{Operating} \\ \text{profit margin}}} \times \underbrace{\left(\frac{\mathbb{E}[\text{Sales}_1]}{\text{Assets}}\right)}_{\substack{\text{Asset} \\ \text{turnover}}} \tag{39}$$

When the firm books a dollar of sales next year, how much will it get to keep as net operating income? The answer is called the company's "operating profit margin". How many dollars of sales will each dollar of the firm's existing asset base produce next year? The answer to this question is called "asset turnover".

A high profit margin means that the firm gets to keep more income from each dollar of sales that a project generates, $\frac{\mathbb{E}[\Delta\text{NOI}_1]}{\mathbb{E}[\Delta\text{Sales}_1]}$. Holding turnover constant, more income per dollar of sales means more income per dollar of capital. Thus, if the new project has roughly the same turnover as the firm's existing asset base, $\frac{\mathbb{E}[\Delta\text{Sales}_1]}{\text{Cost}} = \frac{\mathbb{E}[\text{Sales}_1]}{\text{Assets}}$, then "is good for margins" will be a reliable synonym for "has a high income yield".

Proposition 9. *A CEO is considering a project that would increase her sales next year,* $\mathbb{E}[\Delta\text{Sales}_1] > \$0$*. If the project's turnover is the same as her existing assets,* $\frac{\mathbb{E}[\Delta\text{Sales}_1]}{\text{Cost}} = \frac{\mathbb{E}[\text{Sales}_1]}{\text{Assets}}$*, then funding the project will increase her firm's operating profit margin when*

$$\text{IY} > \overline{\text{IY}} \tag{40}$$

Margin growth is neither necessary nor sufficient for EPS accretion.

When a firm's profit margin rises, it tells you that a new project has a higher income yield than its existing assets, $\text{IY} > \overline{\text{IY}}$. If the project were free, then a higher $\overline{\text{IY}}$ would imply a higher $\mathbb{E}[\text{EPS}_1]$. To see why, use the definitions of $\mathbb{E}[\text{NOI}_1] = \overline{\text{IY}} \times \text{Assets}$ and $\text{Debt} = \ell \times \text{Assets}$ to rewrite the EPS formula as

$$\mathbb{E}[\text{EPS}_1] \;=\; \{\overline{\text{IY}} - \ell \cdot \bar{\imath}\} \times \left(\frac{\text{Assets}}{\#\text{Shares}}\right) \tag{41}$$

But assets are expensive. To determine accretiveness, you must account for the earnings hit from financing this upfront cost.

A project that is good for margins, $\text{IY} > \overline{\text{IY}}$, may not have an income yield high enough to cover its own financing expense, $\text{IY} < \text{FY}$. The \$100M project in our running example has IY = 4%. Suppose the firm's existing assets earn $\overline{\text{IY}} = 3\%$. The project is margin accretive, $4\% > 3\%$. But if the CEO faces a financing yield of FY = 5%, the project is dilutive to EPS, $\{4\%–5\%\} = –1\%\text{pt}$. Each dollar of capital deployed destroys $1\% \times \$1 = \$0.01$ of earnings. Now reverse the scenario. Suppose the firm has $\overline{\text{IY}} = 6\%$ and the CEO faces FY = 2%. Funding the same project would now lower the firm's profit margin, $4\% < 6\%$. But the investment would be accretive to EPS, $\{4\%–2\%\} = +2\%\text{pt}$.

Saying that a project will increase a firm's profit margin is just another way of talking about the project's income yield, IY. It is the same as with IRR, payback, and ROI. None of these four metrics are complete investment rules unto themselves. They each represent half of the accretive investment rule. All these variations exist due to frequent repetitive use.

A weekend jogger might call himself "fast". An Olympic sprinter will say he is consistently first out of the blocks but has trouble transitioning into his drive phase. CEOs have similarly nuanced ways of talking about a project's income yield. They do not just say IY is "big". CEOs quote an IRR in situations where a single-period estimate feels too crude. When deciding whether to build or buy, they compare payback periods to target PE ratios. Many accounting variables with "return" in the name are actually yields, and ROI maps onto a project's "income yield". In sectors where all projects have the same asset turnover, "margin growth" is a reasonable proxy for "high yield".

4 Empirical Support

This section presents empirical support for the max EPS theory. Subsection 4.1 asks whether it makes sense to start every model with the positive-NPV rule as the default assumption. The direct evidence says no. Subsection 4.2 asks how much our max EPS model can explain. We revisit hypotheses that were originally motivated by present-value logic, such as M&A payment method and investment-cash flow sensitivity. We run regressions to show that the accretive investment rule can explain these empirical patterns without needing to estimate any additional free parameters. But this analysis only scratches the surface. Subsection 4.3 highlights how the max EPS paradigm pushes researchers to organize events differently and ask different kinds of questions.

4.1 Direct Evidence

If CEOs regularly used the positive-NPV rule, what would their investor presentations look like? You would expect to see present-value calculations, discount rates, and measures of systematic risk. We study 215 Investor Day presentations by S&P 500 companies. Present-value logic is functionally absent. Accretive reasoning is pervasive. The evidence is not anecdotal. It is diagnostic.

An Investor Day is a company-hosted event where senior management presents strategic priorities, financial targets, and growth plans to institutional investors and sell-side analysts. Most S&P 500 companies hold them every two to five years. The audience is overwhelmingly financial, consisting of portfolio managers, research analysts, and investor-relations professionals. We downloaded the most recent Investor Day presentation for 215 S&P 500 companies from each company's investor-relations page. The resulting dataset includes firms in 11 GICS sectors. See Appendix D for further details.

Textbook corporate finance says executives add value by investing in positive-NPV projects. The CEO estimates a project's future cash flows, discounts them at the appropriate risk-adjusted rate, and then invests if the present value exceeds the cost. The CEO is supposed to use a factor model (CAPM, Fama-French, etc) to estimate the right discount rate given the project's systematic risk. If this logic

Present-Value Logic Is Scarce

	N	$N/215$
Mention present value	14	6.5%
Use positive-NPV rule to justify investment	0	0.0%
Mention discount rate	6	2.8%
Use discount rate for investment decision	0	0.0%
Mention beta or CAPM	4	1.9%
Use factor model to calculate cost of capital	1	0.5%

Table 1. Sample consists of the most recent Investor Day presentation for 215 S&P 500 companies. N is the number that mention or use a component of present-value logic. “Mention” means the term appears anywhere in the CFO’s slides. “Use” means the company applies the concept to accomplish something.

were the dominant approach, Investor Day presentations ought to put these sorts of calculations front and center.

Table 1 shows that they rarely do. Not a single Investor Day presentation in our sample uses the positive-NPV rule to justify an investment. Not a single presentation describes using a discount rate to evaluate an important project. One company uses a factor model to estimate the return on equity, Hartford Insurance Group. But it gets used as evidence of good past performance, not as an input to project selection and financing.

14 presentations (6.5%) mention “present value” or “NPV.” In every case, the concept is peripheral. For example, United Rentals and Wabtec use NPV figures to value tax benefits. MetLife calculates the NPV of actuarial liabilities. Fidelity National Information Services describes its M&A strategy as “DCF-based” without elaboration. The 6 discount-rate mentions and 4 beta mentions follow the same pattern. For instance, Huntington Bancshares’ presentation talks about depositor betas. None of this has anything to do with deciding whether the next project is worthwhile.

Charter Communications is the only presentation that labels its investment rule “positive NPV.” However, immediately below on the same slide, the company says a positive-NPV investment must have an ROI greater than the firm’s cost of capital. In other words, the one company that invokes the positive-NPV rule by

Accretive Reasoning Is Pervasive

	N	N / 215
Quote an earnings target or growth rate	206	95.8%
Say investment drives earnings growth	156	72.6%
Include either “accretive” or “accretion”	69	32.1%

Table 2. Sample consists of the most recent Investor Day presentation for 215 S&P 500 companies. N is the number that exhibit a particular kind of accretive reasoning. “Quote an earnings target or growth rate” includes any earnings metric presented as a goal or forecast. “Say investment drives earnings growth” means the presentation draws an explicit connection between investment decisions and the firm’s earnings trajectory. For a presentation to “include either accretive or accretion”, at least one of the words must appear in the deck.

name actually uses the accretive investment rule. Textbooks see present-value logic as the “gold standard” (Brealey et al., 2001). Yet, in 215 presentations designed to communicate how management creates shareholder value, not one company uses the rule to justify an investment.

What do CEOs talk about instead? Table 2 gives the answer. 95.8% quote an earnings target or growth rate. 72.6% draw a direct connection between investment and earnings growth. About a third use “accretive” jargon. These presentations describe new plants, acquisitions, R&D programs, store rollouts, and capacity expansions. They quantify the expected benefits. They name financing sources and quote costs. They explain how investment drives earnings growth. They just do not frame any of this in present value terms.

Only 9 of 215 presentations (4.2%) fail to discuss earnings. We talked about Charter Communications already. Align Technology, Moderna, and Tesla track revenue growth and cash flows. PTC spotlights ARR (annual run rate), a metric which reflects the annualized value of shorter-term subscriptions. CenterPoint Energy and Consolidated Edison are regulated utilities. Equity Residential and Federal Realty are REITs that focus on FFO (funds from operations).

Consider American Express. This is a company that understands how interest rates and discounting work. Amex is one of the 14 firms that brings up a present-value concept in its Investor Day presentation. The slide deck is one of 6 that

Figure 2. American Express's (AXP) 2024 Investor Day presentation. [source]

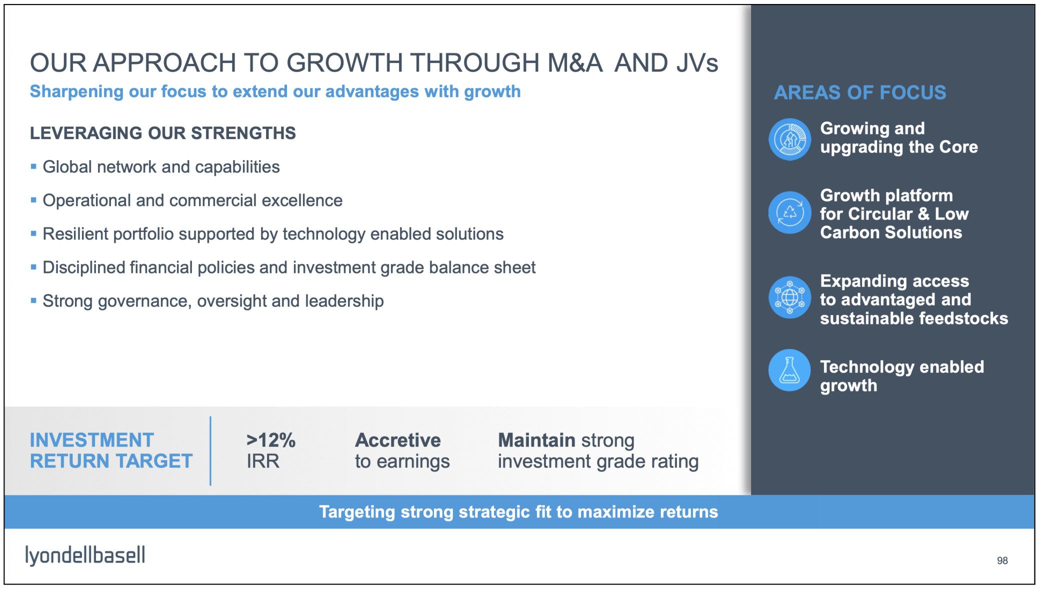


Figure 3. LyondellBasell's (LYB) 2023 Investor Day presentation. [source]

use the term "discount rate". But look at how. The discount rate reference has to do with contract terms offered to merchants. The present-value concept is "customer lifetime value", the total revenue Amex expects to get from each customer. This is a marketing metric, not a capital-budgeting input. Figure 2 shows Amex makes accretive investment decisions. The company's Investor Day presentation mentions customer lifetime value in passing. There are multiple slides spotlighting the firm's "aspiration" of mid-teens EPS growth. There is one 3-letter acronym that matters, and it is not NPV. Why insist on modeling Amex's decision-making in present-value terms?

CEOs are not hiding the fact that they think in accretive terms. They tell their shareholders. Figure 3 reproduces a slide from LyondellBasell's 2023 Investor Day describing the company's approach to M&A. Three investment criteria appear at the bottom of the page. A deal must have an IRR greater than 12% and be accretive to earnings. It must also leave the firm's investment-grade credit rating alone. There is no mention of NPV or discounting. This is the accretive investment rule stated openly on a slide meant for shareholders. The goal is to make people want to hold the company's stock.

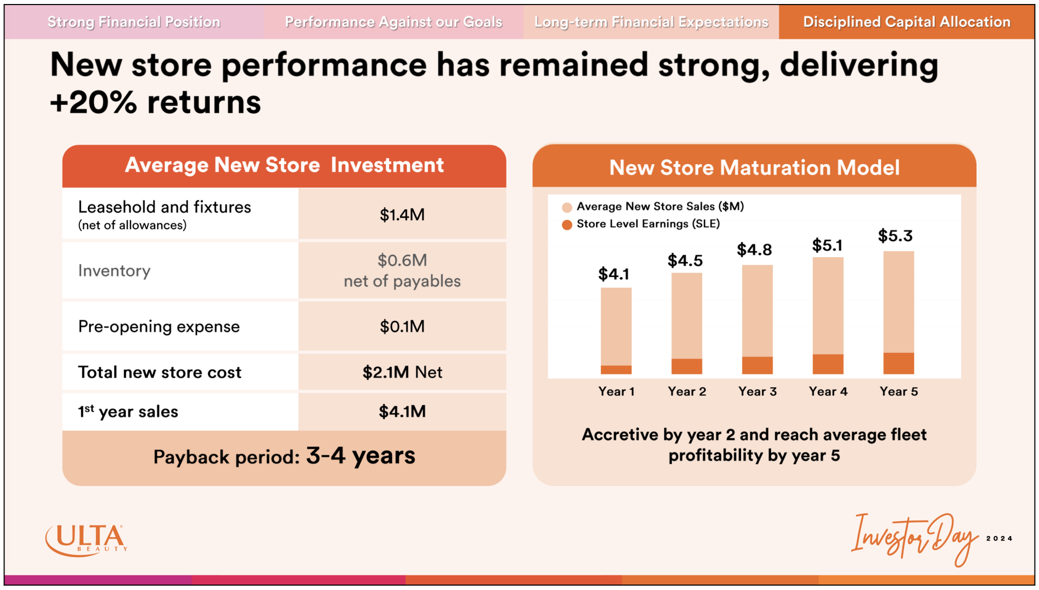


Figure 4. Ulta Beauty's (ULTA) 2024 Investor Day presentation. [source]

Figure 4 reproduces a slide from Ulta Beauty's 2024 Investor Day where the company spells out the economics of opening a new store. Each one costs $2.1M. Sales in year 1 are $4.1M on average. The payback period is 3 to 4 years. Each store is aiming to be "accretive by year 2." This slide is not a survey response. It is meant to justify an investment decision to the firm's shareholders. Not a single presentation in our sample uses the positive-NPV rule this way.

IRR, payback period, ROI, and margin growth—these are all ways of quoting a project's income yield. Table 3 reports how frequently each flavor of IY appears in Investor Day presentations. IRR (7.9%) and payback period (6.0%) show up about as often as mentions of NPV (6.5%). This is consistent with the survey findings in Graham and Harvey (2001). But there is a crucial difference. Companies which mention NPV do not make investments based on the positive-NPV rule. Companies which mention an IRR or a payback period actually do. LyondellBasell uses IRR to make acquisitions. Ulta Beauty reports a payback period for each new store.

As it turns out, IRR and payback period are not even the most common ways to quote a project's income yield. ROI appears in 115 of 215 slide decks (53.5%).

How Companies Quote Income Yields

	N	$N\,/\,215$
Quote internal rate of return (IRR)	17	7.9%
Quote payback period or build multiple	13	6.0%
Quote acquisition multiple in M&A deal	5	2.3%
Quote a project-level ROI or ROIC	115	53.5%
Point to increasing profit margins	46	21.4%
Report income yield in any form	166	77.2%

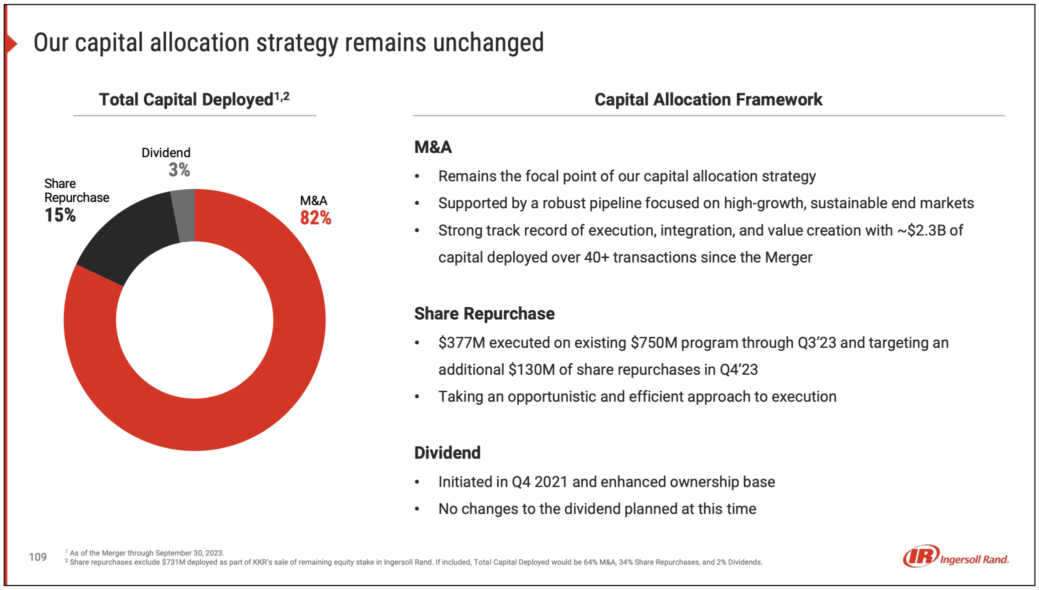
Table 3. Sample consists of the most recent Investor Day presentation for 215 S&P 500 companies. N is the number that quote a project's income yield in a particular way. Categories are not mutually exclusive. A single presentation can report an IRR, a payback period, an ROI, and point to increasing margins. The bottom row shows the number that quote the income yield in any form.

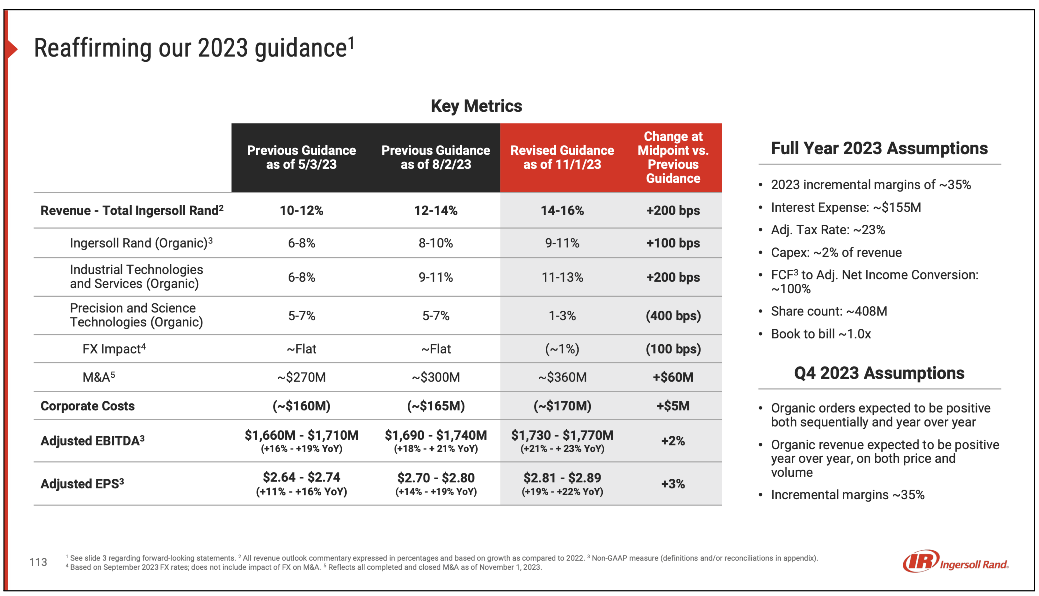
This variable is a yield, not a return as the acronym suggests. Companies fully appreciate the distinction. KLA's 2026 Investor Day presentation even explains how its ROI numbers are "based on the investment payback approach" and so "do not factor in the time value of money."

The other common way that CEOs talk about income yields is by pointing to changes in their profit margins. The income yield on the average dollar of a firm's existing assets can be written as $\overline{\text{IY}} = \text{Margin} \times \text{Turnover}$. When turnover is stable, the statement "the project will increase margins" is tantamount to saying "the project has a high IY." Table 3 shows that 46 of 215 slide decks (21.4%) take this approach.

Altogether, 77.2% of presentations report the income yield in at least one form. From a present-value perspective, ROI, payback period, IRR, and profit margins look like unrelated metrics. From a max EPS perspective, they are all ways of quoting the same object. The fact that CEOs use all of them, often interchangeably, is hard to explain unless you take max EPS seriously.

The academic consensus is that EPS maximizers spend too much on buybacks and too little on investment (Admati, 2017). The conclusion comes from extrapolating the findings in narrow well-identified settings (Bushee, 1998; Roychowdhury, 2006; Bhojraj, Hribar, Picconi, and McInnis, 2009; Almeida, Fos,





	Previous Guidance as of 5/3/23	Previous Guidance as of 8/2/23	Revised Guidance as of 11/1/23	Change at Midpoint vs. Previous Guidance
Revenue - Total Ingersoll Rand[2]	**10-12%**	**12-14%**	**14-16%**	**+200 bps**
Ingersoll Rand (Organic)[3]	6-8%	8-10%	9-11%	**+100 bps**
Industrial Technologies and Services (Organic)	6-8%	9-11%	11-13%	**+200 bps**
Precision and Science Technologies (Organic)	5-7%	5-7%	1-3%	**(400 bps)**
FX Impact[4]	~Flat	~Flat	(~1%)	**(100 bps)**
M&A[5]	~$270M	~$300M	~$360M	**+$60M**
Corporate Costs	**(~$160M)**	**(~$165M)**	**(~$170M)**	**+$5M**
Adjusted EBITDA[3]	**$1,660M - $1,710M** (+16% - +19% YoY)	**$1,690 - $1,740M** (+18% - + 21% YoY)	**$1,730 - $1,770M** (+21% - + 23% YoY)	**+2%**
Adjusted EPS[3]	**$2.64 - $2.74** (+11% - +16% YoY)	**$2.70 - $2.80** (+14% - +19% YoY)	**$2.81 - $2.89** (+19% - +22% YoY)	**+3%**

Figure 5. Ingersoll Rand's (IR) 2023 Investor Day presentation. [source]

Spending More on Investments Than Buybacks

Panel (a)	N	$N/215$
Report % allocated to investment	90	41.9%
Report % allocated to repurchases	85	39.5%
Report both allocation shares	82	38.1%
Have capital allocation figure	73	34.0%

Panel (b)	N	$N/82$
Investment % > Repurchases %	47	57.3%
Average investment allocation		43.3%
Average repurchase allocation		33.6%

Table 4. Panel (a) looks at the most recent Investor Day presentation for 215 S&P 500 companies. N is the number that report an investment and/or repurchase allocation percentage. Panel (b) focuses on the 82 Investor Day presentations that report both allocation percentages. The allocation to investment includes spending on internal projects and R&D as well as M&A activity.

and Kronlund, 2016; Gutierrez and Philippon, 2017; Ladika and Sautner, 2020; Bird, Ertan, Karolyi, and Ruchti, 2022; Terry, 2023).

But these narrow well-identified settings are special. They are not representative of broader reality. There may be quarters where a company temporarily reduces funding for a few projects to avoid missing an earnings target. This sort of thing does happen. But it would be wrong to conclude from those episodes that CEOs consistently cut real investment in pursuit of EPS growth. People go on diets to look good in their wedding photos, but getting married does not make you eat less in general.

Table 4 puts this in perspective. 82 companies report how they allocate capital between investment and share repurchases. 57.3% of them allocate more to investment. The average investment allocation is 43.3%. The average repurchase allocation is 33.6%. While public companies do buy back shares, they spend even more money on real investment.

Figure 5 illustrates the pattern. The top panel shows that Ingersoll Rand allocated 82% of its capital to M&A and only 15% to share repurchases. The bottom panel shows that the company saw short-term EPS growth as its key metric. This is a company run by EPS maximizers. And they pursue this goal by way of investing, not financial engineering.

Investor Day presentations are far from the only source of direct evidence. M&A press releases describe deals as being immediately accretive and say how much EPS will rise. Appendix A provides 9 worked examples showing companies run the numbers. Other researchers have studied the link between EPS accretion and M&A activity (Martin, 1996; Harford, 1999; Shleifer and Vishny, 2003; Faccio and Masulis, 2005; Dong, Hirshleifer, Richardson, and Teoh, 2006; Harford, Klasa, and Walcott, 2009; Gorbenko and Malenko, 2018; Dasgupta, Harford, and Ma, 2024). These papers treat accretion and dilution concerns as a departure from the positive-NPV rule. Yet, to the best of our knowledge, no S&P 500 company has quoted a deal-level NPV surplus in an M&A press release.

Many CEOs have EPS targets built into their compensation contracts (Bens, Nagar, Skinner, and Wong, 2003; Edmans and Gabaix, 2016; Bennett, Bettis, Gopalan, and Milbourn, 2017). Short-term EPS growth also affects equity prices (Andrade, 1999; Bartov, Givoly, and Hayn, 2002; Chang, Hartzmark, Solomon, and Soltes, 2017; Johnson, Kim, and So, 2020). Sell-side analysts make price forecasts by multiplying the firm's EPS forecast times a trailing PE (Ben-David and Chinco, 2026d). No single piece of evidence is bulletproof. None has to be. Anyone who understands present-value logic will surely appreciate the collective weight of a long list of slightly discounted observations.

4.2 Regression Results

The existing literature takes the CEO's objective as given and tests specific predictions under that objective. Chava and Roberts (2008) does not simultaneously demonstrate that debt covenants affect investment and that CEOs use the positive-NPV rule. The authors assume the second part and test whether their theory explains the data under that assumption. We do the same. The previous subsection established that many CEOs care about EPS growth, but that evidence says nothing about whether our model is a good one. In principle, we could be right about living in a world of EPS-maximizing CEOs but wrong about the implications. The regressions below show that this is not the case.

We create an annual dataset of firm characteristics at fiscal year end by merging variables from WRDS' Ratios Suite onto annual Compustat data. We get end-of-day prices for each stock from CRSP. We calculate a firm's EPS forecast and forward earnings yield from the IBES unadjusted summary file. We use the 10-year Treasury yield as our riskfree rate. Data on bond issuances comes from SDC. See Appendix E for further details about data construction.

The accretive investment rule says that a growth-stock CEO (EY $<$ rf) should fund projects by issuing equity because that is her cheapest financing source. A value-stock CEO (EY $>$ rf) should spend cash reserves or borrow instead. The dividing line sits at EY = rf, pinned down by the model with no free parameters. To test these predictions, we look at how companies finance acquisitions and capital expenditures.

For M&A activity, we regress the percent of the deal value that the acquirer delivers to target shareholders by issuing equity on a growth-stock indicator

$$\underbrace{100 \times \left(\frac{\sum_{a \in A_{n,t+1}} \text{StockPmt}_a}{\sum_{a \in A_{n,t+1}} \text{DealValue}_a} \right)}_{\%\text{EquityFinanced}_{n,t+1}} \overset{\text{OLS}}{\sim} \hat{\alpha} + \hat{\beta} \times \underset{(\text{EY} < \text{rf; PE} > 1/\text{rf})}{\text{IsGrowthStock}_{n,t}} \tag{42}$$

$A_{n,t+1}$ is the number of acquisitions made by the nth firm the following year. $\sum_{a \in A_{n,t+1}} \text{DealValue}_a$ is the total cost of all deals completed. The numerator $\sum_{a \in A_{n,t+1}} \text{StockPmt}_a$ is the dollar value of the shares issued to finance this amount. This part of the analysis only includes firms with at least one acquisition.

Table 5 reports the results. Growth-stock acquirers deliver 26.4%pt more of the deal value in equity (column 1). The effect survives firm fixed effects (column 2) and loses roughly 1/3 of its magnitude with year fixed effects (column 3). The DotCom Era produced both more growth stocks and more equity-financed deals, so year-level variation explains part of the pattern.

Column (4) adds PE fixed effects. The specification compares companies with the same earnings yield. Some are classified as growth stocks because the riskfree rate is higher at the time. We find that this group of firms uses more equity financing. Column (5) adds controls for firm size, profitability, Dependent Variable: %EquityFinanced

	(1)	(2)	(3)	(4)	(5)
IsGrowthStock EY < rf; PE > 1/rf	26.4*** (2.9)	19.3*** (2.2)	18.7*** (2.2)	22.5*** (2.1)	22.0*** (2.4)
$\log_2$(MarketCap)					−2.2***
Profitability					−0.3*
BookToMarket					−0.1***
Tangibility					0.1**
Firm FE	*N*	*Y*	*N*	*N*	*N*
Year FE	*N*	*N*	*Y*	*N*	*N*
PE-ratio FE	*N*	*N*	*N*	*Y*	*N*
# Obs	7,532	6,728	7,532	7,220	7,229
Adj. R^2	11.5%	23.9%	18.7%	11.1%	12.9%

Table 5. %EquityFinanced: percent of an acquirer's total deal value in fiscal year $(t{+}1)$ that was delivered to target shareholders by issuing equity. IsGrowthStock: indicator that is one for observations with a forward earnings yield below the 10-year Treasury rate, EY < rf, and zero otherwise. Numbers in parentheses are standard errors double-clustered by firm and year. *, **, and *** denote statistical significance at 10%, 5%, and 1%. We do not report the intercept, fixed-effect coefficients, or standard errors on the controls. Sample includes public companies with an acquisition in fiscal year $(t{+}1)$.

book-to-market, and asset tangibility. The estimate barely moves. What matters is whether equity is a company's cheapest financing source, not whether the company looks "growthy" on other dimensions.

Figure 6 shows a shift in the use of equity financing at the dividing line between growth and value stocks, EY = rf. The location of this threshold has changed dramatically over time. In the early 1980s when the 10-year Treasury rate was a little over 10%, a {EY−rf} = −1%pt growth stock had an earnings yield of EY = 9% and PE ratio of $\left(\frac{1}{9\%}\right) = 11\times$. When the 10-year Treasury rate was sitting at ~2% in the late 2010s, a {EY−rf} = −1%pt growth stock had an earnings yield of EY = 1% and PE ratio of $\left(\frac{1}{1\%}\right) = 100\times$. The companies trading at 11× in 1985 (e.g., Chrysler and Bethlehem Steel) were qualitatively different from those trading at 100× in 2020 (e.g., Netflix and Zoom). This fact ameliorates concerns about bunching in the running variable on either side of EY = rf.

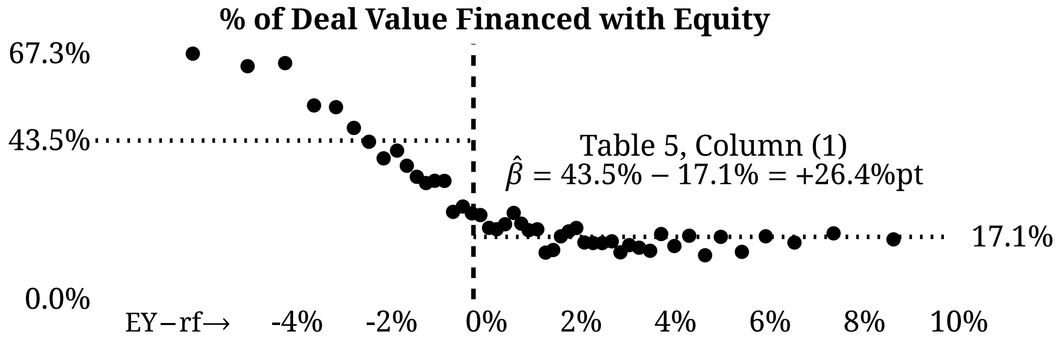


Figure 6. Binned scatterplot showing how likely an acquirer is to pay target shareholders with stock. x-axis: Difference between the acquirer's forward earnings yield and the 10-year Treasury rate, EY−rf. Growth stocks are on the left, EY $<$ rf. Value stocks are on the right, EY $>$ rf. y-axis: Percent of an acquirer's total deal value in year $(t{+}1)$ that was paid by issuing equity. Sample includes public companies with an acquisition in fiscal year $(t{+}1)$.

EPS-maximizing value stocks see cash as their cheapest funding source and quickly burn through any reserves. We test this prediction by looking at changes in cash for firms that make significant investments in year $(t{+}1)$

$$100 \times \left(\frac{\Delta \text{Cash}_{n,t+1}}{\text{Assets}_{n,t}} \right) \overset{\text{OLS}}{\sim} \hat{\alpha} + \hat{\beta} \times \underset{(\text{EY} < \text{rf};\ \text{PE} > 1/\text{rf})}{\text{IsGrowthStock}_{n,t}} \tag{43}$$

Value-stock acquirers barely change their cash position (increase of just 0.3%), suggesting that cash was used to finance the deal. Whereas, growth stocks which make an acquisition the following year still manage to add cash worth 3.8% of their current assets. The 3.8%−0.3% = +3.5%pt difference is the slope coefficient reported in column (1) of Table 6 panel (a). Instead of an acquisition, Table 6 panel (b) looks at firms with above-median capex to sales the following year. Column (1) reports a difference of +2.7%pt. The various controls in columns (2)-(5) do not change the picture. Value stocks tend to fund investment out of cash reserves. Growth stocks do not.

The right-hand side of both panels in Figure 7 tells the same story. Value stocks (EY $>$ rf) fund investments out of internal cash reserves. Moreover, the way that EPS maximization defines "value stock" helps with identification.

Dependent Variable: $100 \times \left(\frac{\Delta\text{Cash}}{\text{Assets}}\right)$

Panel (a)	Acquirers (1)	(2)	(3)	(4)	(5)
IsGrowthStock EY < rf; PE > 1/rf	$3.5^{\star\star\star}$ (1.6)	$3.2^{\star\star\star}$ (1.1)	$2.8^{\star\star\star}$ (1.1)	$1.3^{\star\star\star}$ (0.6)	$2.2^{\star\star\star}$ (0.7)
$\log_2$(MarketCap)					0.0
Profitability					0.0
BookToMarket					$-0.1^{\star\star}$
Tangibility					0.0
Firm FE	*N*	*Y*	*N*	*N*	*N*
Year FE	*N*	*N*	*Y*	*N*	*N*
PE-ratio FE	*N*	*N*	*N*	*Y*	*N*
# Obs	7,508	6,703	7,508	7,196	7,210
Adj. R^2	1.0%	7.9%	3.4%	4.8%	1.5%

Panel (b)	Hi CapEx (1)	(2)	(3)	(4)	(5)
IsGrowthStock EY < rf; PE > 1/rf	$2.7^{\star\star\star}$ (0.7)	$1.5^{\star\star\star}$ (0.4)	$2.8^{\star\star\star}$ (0.6)	$1.1^{\star\star\star}$ (0.4)	$1.8^{\star\star\star}$ (0.4)
$\log_2$(MarketCap)					−0.1
Profitability					0.0
BookToMarket					$-0.1^{\star\star\star}$
Tangibility					$-0.1^{\star\star\star}$
Firm FE	*N*	*Y*	*N*	*N*	*N*
Year FE	*N*	*N*	*Y*	*N*	*N*
PE-ratio FE	*N*	*N*	*N*	*Y*	*N*
# Obs	25,254	24,506	25,254	23,982	23,846
Adj. R^2	1.0%	10.7%	3.8%	3.5%	1.8%

Table 6. $100 \times \left(\frac{\Delta\text{Cash}}{\text{Assets}}\right)$: change in a firm's cash and equivalents from fiscal year t to $(t{+}1)$ as a percent of its total assets in fiscal year t. IsGrowthStock: indicator that is one for observations with a forward earnings yield below the 10-year Treasury rate, EY < rf, and zero otherwise. Numbers in parentheses are standard errors double-clustered by firm and year. *, **, and *** denote statistical significance at 10%, 5%, and 1%. We do not report the intercept, fixed-effect coefficients, or standard errors on control variables. Panel (a) looks at the subset of observations with at least one acquisition in fiscal year $(t{+}1)$. Panel (b) looks at the subset with above-median CapEx / Sales in fiscal year $(t{+}1)$.

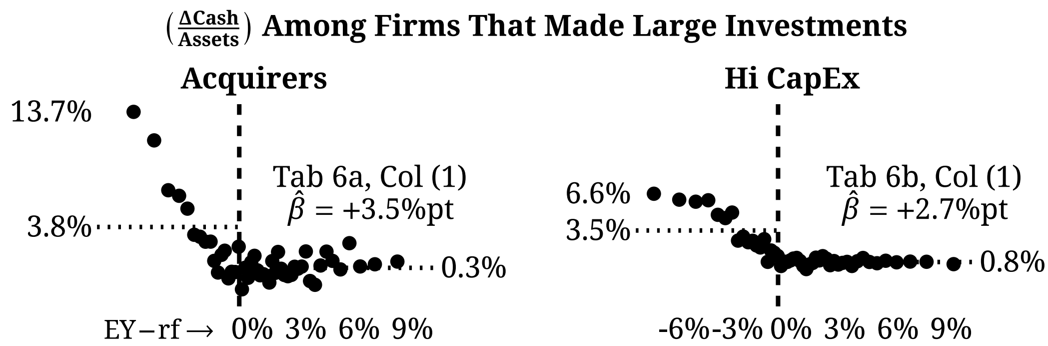


Figure 7. Binned scatterplot showing the change in cash holdings among firms that make significant investments. Left panel looks at companies that made at least one acquisition in year $(t+1)$. Right panel looks at companies with above-median CapEx / Sales in year $(t+1)$. x-axis: a firm's forward earnings yield minus the 10-year Treasury rate in year t, EY−rf. Growth stocks are on the left, EY $<$ rf. Value stocks are on the right, EY $>$ rf. y-axis: Change in cash and equivalents from year t to $(t+1)$ as a percent of total assets in year t.

DuPont Chemical was trading at PE $\approx$ 8× in 1985 when the Treasury rate was roughly ~10.5%. In 2020 when rates were ~2%, Google had a multiple of PE $\approx$ 25×. These two firms have nothing in common except for an excess earnings yield of $\{\text{EY}-\text{rf}\} = \left\{\left(\tfrac{1}{8\times}\right) - 10.5\%\right\} = \left\{\left(\tfrac{1}{25\times}\right) - 2\%\right\} = +2\%\text{pt}$.

Table 7 looks at how investment responds to changes in a firm's growth/value classification. We replace $\text{IsGrowthStock}_{n,t}$ with $\text{WasGrowth}_{n,t-1}$ and add indicators for whether a firm switches classification between years $(t-1)$ and t. When a growth stock becomes a value stock, its equity usage drops and it stops accumulating cash. When a value stock becomes a growth stock, equity replaces cash as the preferred funding source.

There is a large literature studying both M&A payment method and investment-cash flow sensitivity (Baker and Wurgler, 2002; Baker et al., 2003; Fazzari et al., 1988; Kaplan and Zingales, 1997; Almeida, Campello, and Weisbach, 2004; Faulkender and Wang, 2006; Denis and Sibilkov, 2010; DeAngelo, DeAngelo, and Stulz, 2010; Acharya, Almeida, and Campello, 2007). Our baseline max EPS model generates these patterns using a single mechanism and no free parameters.

Dependent Variable:	%Equity Financed	$\frac{\Delta \text{Cash}}{\text{Assets}}$	
Sample:	Acquirers	Acquirers	Hi CapEx
	(1)	(2)	(3)
WasGrowth	21.8*** (2.4)	2.6*** (0.9)	3.1*** (0.6)
WasGrowth→IsValue	−16.8*** (2.2)	−3.3*** (1.1)	−2.4*** (0.5)
WasValue→IsGrowth	8.2*** (2.2)	0.3 (0.6)	1.2*** (0.3)
Year FE	*Y*	*Y*	*Y*
# Obs	7,014	6,991	23,223
Adj. R^2	18.3%	2.6%	3.5%

Table 7. This table looks at how a firm's capital structure changes following a change in value-vs-growth classification. WasGrowth: indicator that is one for observations with a forward earnings yield below the 10-year Treasury rate, EY $<$ rf, in fiscal year $(t-1)$. WasValue→IsGrowth: indicator that is one if firm transitioned from value stock in year $(t-1)$ to growth stock in year t. WasGrowth→IsValue: indicator that is one if firm transitioned from growth stock in year $(t-1)$ to value stock in year t. Standard errors are double-clustered by firm and year. *, **, and *** denote statistical significance at 10%, 5%, and 1%. We do not report fixed-effect coefficients.

4.3 More Than Predict

Our simple max EPS model generates a long list of testable predictions on its own. The subsection above shows that these predictions line up with the observed data on corporate investment. These regression results are a useful first step. But they barely scratch the surface of what the theory has to offer. The logic of accretion can also serve as an organizing research principle.

EPS maximization tells researchers to ask different kinds of questions and group concepts differently. Think about Graham and Harvey (2001)'s survey. The original paper treated "IRR" and "hurdle rate" as separate investment rules in Figure 2. Our analysis shows that this is tantamount to having separate entries for "present value of future cash flows" and "upfront cost". Our simple max EPS model says that CEOs should view IRR, payback period, and target PE as different ways of talking about a project's income yield. A new EPS-focused version of the survey would ask about ROIs and profit margins. PE ratios and dilution concerns would show up in the main line of questioning about the cost of equity, not on page 43 in Subsection 5.8.2 about "Other Factors".

The usual objection to EPS maximization is that it predicts absurd behavior like zero investment. This is a red herring. The zero-coupon convertibles episode in 2020 and 2021 shows what regulators actually have to worry about. Under pre-2020 accounting rules, zero-coupon convertibles were free money. A company that issued one of these bonds could get capital today without paying interest next year or issuing any shares. Before COVID, there was not much demand for these instruments. Then the pandemic happened, pushing equity volatility high enough to create demand for zero-coupon convertibles. EPS-maximizing CEOs responded in force, issuing roughly $60B across 2020 and 2021. FASB recognized the problem and closed the loophole with ASU 2020-06. Issuance collapsed. Appendix F provides a full account of the episode.

Accounting rules are irrelevant to a frictionless NPV maximizer. To an EPS maximizer, they are paramount. Any accounting standard that determines how financing costs reach the income statement can impact whether a project gets funded. The capitalized-interest exemption (GAAP ASC 835-20) is a clean case study. Firms are able to defer the income-statement impact of interest payments made while a project is under construction. Instead of facing an immediate earnings hit, the payments get rolled into the cost basis. This inflated cost means that projects with long build times must generate higher income yields once operational. See Appendix G for further details.

Our simple max EPS model suggests new solutions as well. Right now, only interest expense can be capitalized. The earnings hit from issuing equity cannot be capitalized. Thus, an EPS-maximizing growth stock must borrow to finance longer-term projects even though the company would prefer to issue equity. There is no reason to restrict financing in this way. Companies frequently report a diluted EPS statistic, which pretends that hypothetical future shares have already been issued. If it is acceptable to include vapor-shares a little early, it is acceptable to wait until a project is operational before adding shares.

Present-value logic offers an organizing principle, but the paradigm makes zero predictions on its own. The two M&M irrelevance theorems say that a simple present-value model makes no predictions about leverage and payout policy. To use the positive-NPV rule, a CEO must select the right discount rate, and there is no consensus about how to do that. The asset-pricing literature contains a "zoo" (Cochrane, 2011) of possibilities. By contrast, our simple max EPS model matches how CEOs describe their own choices and generates testable predictions of its own. On top of all that, the theory also helps researchers organize their thinking and ask the right questions. It is a better benchmark model.

5 Conclusion

EPS-maximizing CEOs are happy to invest. They fund any project that will add more income next year than it takes to cover its own short-term financing expense, $\mathbb{E}[\Delta\text{NOI}_1] > \text{FY} \times \text{Cost}$. This is the max EPS counterpart to the positive-NPV rule. Written as a yield spread, the accretive rule says to fund projects with income yields above the firm's financing yield, $\{\text{IY}{-}\text{FY}\} > 0\%\text{pt}$.

Accretive logic explains why CEOs quote IRRs and payback periods as well as why they talk about profit margins. EPS-maximizing growth stocks fund projects by issuing shares even when cash is available. EPS-maximizing value stocks see internal cash reserves as their cheapest source of capital. These are both manifestations of the same underlying accretive investment rule, which also dictates the firm's leverage and payout-policy choices. In all these cases, the relevant hurdle rate is a characteristic of the firm, not a property of future cash flows. The functional form of $\text{FY} = \min\{\text{EY}, \text{i}, \text{rf}\}$ implies that a project can be dilutive on Monday but accretive on Tuesday if rates move.

We are not running a horse race against the entire existing literature. We are handing researchers a different starting line. Look around: deal announcements lead with the EPS pop, companies almost never quote a specific discount rate, and data vendors sell next-twelve-month EPS forecasts. Think of how much more could be explained by adjustment costs, financing frictions, agency conflicts, and behavioral biases if you added these mechanisms to a baseline model that reflected what real-world CEOs actually do.

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Proofs and Derivations

Proof. **(Proposition 1)**

The CEO has three financing options. Issuing equity adds $\Delta\text{\#Shares} = \frac{\text{Cost}}{\text{Price}}$ *shares to the denominator of the EPS forecast and* $\mathbb{E}[\Delta\text{NOI}_1]$ *to the numerator*

$$\begin{aligned}
\Delta\mathbb{E}[\text{EPS}_1] &= \left(\frac{\mathbb{E}[\text{Earnings}_1] + \mathbb{E}[\Delta\text{NOI}_1]}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}\right) - \left(\frac{\mathbb{E}[\text{Earnings}_1]}{\text{\#Shares}}\right) && \text{(44a)}\\
&= \left(\frac{\mathbb{E}[\text{Earnings}_1] + \mathbb{E}[\Delta\text{NOI}_1]}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}\right) \times \left(\frac{\text{\#Shares}}{\text{\#Shares}}\right) \\
&\qquad - \left(\frac{\mathbb{E}[\text{Earnings}_1]}{\text{\#Shares}}\right) \times \left(\frac{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}\right) && \text{(44b)}\\
&= \frac{\text{\#Shares} \times \mathbb{E}[\Delta\text{NOI}_1] - \mathbb{E}[\text{Earnings}_1] \times \left(\frac{\text{Cost}}{\text{Price}}\right)}{\text{\#Shares} \times \left\{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)\right\}} && \text{(44c)}\\
&= \frac{\text{\#Shares} \times \mathbb{E}[\Delta\text{NOI}_1] - \text{\#Shares} \times \left(\frac{\mathbb{E}[\text{EPS}_1]}{\text{Price}}\right) \times \text{Cost}}{\text{\#Shares} \times \left\{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)\right\}} && \text{(44d)}\\
&= \frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)} && \text{(44e)}\\
&\approx \frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares}} && \text{(44f)}
\end{aligned}$$

The final step drops $\frac{\text{Cost}}{\text{Price}}$ *from the denominator, overstating the magnitude of the change by a factor of* $\left(1 + \frac{\text{Cost}}{\text{MarketCap}}\right)^{-1}$, *where* $\text{MarketCap} = \text{Price} \times \text{\#Shares}$

$$\begin{aligned}
\frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)} &= \left(\frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}\right) \times \left(\frac{\text{\#Shares}}{\text{\#Shares}}\right) && \text{(45a)}\\
&= \left(\frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares}}\right) \times \left(\frac{\text{\#Shares}}{\text{\#Shares} + \left(\frac{\text{Cost}}{\text{Price}}\right)}\right) && \text{(45b)}\\
&= \left(\frac{\mathbb{E}[\Delta\text{NOI}_1] - \text{EY} \times \text{Cost}}{\text{\#Shares}}\right) \times \left(\frac{1}{1 + \frac{\text{Cost}}{\text{MarketCap}}}\right) && \text{(45c)}
\end{aligned}$$

$\left(\frac{\text{Cost}}{\text{MarketCap}}\right)$ *is small when the cost of the project is small relative to the firm as a whole. In the running example, the distortion is on the order of* $\pm\$0.0001/\text{sh}$.

Selling bonds adds $\mathbb{E}[\Delta\mathrm{NOI}_1] - \mathrm{i} \times \mathrm{Cost}$ *to earnings and leaves the share count alone, giving the same form with* i *in place of* EY *and no approximation error*

$$\Delta\mathbb{E}[\mathrm{EPS}_1] = \left(\frac{\mathbb{E}[\mathrm{Earnings}_1] + \mathbb{E}[\Delta\mathrm{NOI}_1] - \mathrm{i} \times \mathrm{Cost}}{\#\mathrm{Shares}}\right) - \left(\frac{\mathbb{E}[\mathrm{Earnings}_1]}{\#\mathrm{Shares}}\right) \tag{46a}$$

$$= \frac{\mathbb{E}[\Delta\mathrm{NOI}_1] - \mathrm{i} \times \mathrm{Cost}}{\#\mathrm{Shares}} \tag{46b}$$

Spending cash forgoes $\mathrm{rf} \times \mathrm{Cost}$ *in riskfree interest, giving the same form with* rf *in place of* i*. The EPS-maximizing CEO picks the option with the smallest financing rate,* $\mathrm{FY} = \min\{\mathrm{EY}, \mathrm{i}, \mathrm{rf}\}$*. Since* $\#\mathrm{Shares} > 0$*, investing is accretive if and only if* $\mathbb{E}[\Delta\mathrm{NOI}_1] - \mathrm{FY} \times \mathrm{Cost} > \$0$. □

Proof. **(Proposition 2)**

Divide both sides of Equation (2) by $\mathrm{Cost} > \$0$ *to get*

$$\underbrace{\frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}}}_{\text{Income yield, IY}} - \mathrm{FY} > 0\%\mathrm{pt} \tag{47}$$

The leading-order EPS change from the proof of Proposition 1 rearranges as

$$\Delta\mathbb{E}[\mathrm{EPS}_1] = \frac{\mathbb{E}[\Delta\mathrm{NOI}_1] - \mathrm{FY} \times \mathrm{Cost}}{\#\mathrm{Shares}} = \frac{\mathrm{IY} \times \mathrm{Cost} - \mathrm{FY} \times \mathrm{Cost}}{\#\mathrm{Shares}} \tag{48a}$$

$$= \{\mathrm{IY} - \mathrm{FY}\} \times \left(\frac{\mathrm{Cost}}{\#\mathrm{Shares}}\right) \tag{48b}$$

This gives the approximate expression for project accretiveness. □

Proof. **(Proposition 3)**

A growth stock has $\mathrm{EY}^G < \mathrm{rf}$ *by Equation (18a) and* $\mathrm{i}^G = \mathrm{rf}$ *since the firm has not levered beyond the riskfree borrowing limit. Hence* $\mathrm{FY}^G = \min\{\mathrm{EY}^G, \mathrm{i}^G, \mathrm{rf}\} = \mathrm{EY}^G$*. Spending cash sacrifices more expected earnings than issuing new shares, so adding* rf *to the choice set does not change* FY^G*.*

A value stock has $\mathrm{EY}^V > \mathrm{rf}$ *by Equation (18b) and* $\mathrm{i}^V = \mathrm{EY}^V$ *since the CEO has levered up until her marginal interest rate matches her earnings cost of equity. Without cash,* $\mathrm{FY}^V = \mathrm{EY}^V = \mathrm{i}^V$*. With cash,* $\mathrm{FY}^V = \min\{\mathrm{EY}^V, \mathrm{i}^V, \mathrm{rf}\} = \mathrm{rf}$*. Either way,* $\mathrm{FY}^V \geq \mathrm{rf} > \mathrm{EY}^G = \mathrm{FY}^G$*, which is Equation (21).* □

Proof. **(Proposition 4)**

First, expand the left-hand side of Equation (26) as follows

$$\begin{aligned}\big\{\mathbb{E}[\Delta\mathrm{NOI}_1]-\mathrm{FY}\times\mathrm{Cost}\big\} - \big\{\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}]-\mathrm{Cost}\big\} \\ = \mathbb{E}[\Delta\mathrm{NOI}_1] - \mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] + (1-\mathrm{FY})\times\mathrm{Cost}\end{aligned} \tag{49}$$

Then, split the present-value term at $t = 1$ to get

$$\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] \;=\; \mathbb{PV}_{\mathrm{r}}[\Delta\mathrm{NOI}_1] \;+\; \mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 2}] \tag{50}$$

Substituting this two-term expression back into Equation (49) and rearranging yields the right-hand side of Equation (26). □

Proof. **(Proposition 5)**

The project is negative NPV whenever

$$\$0 \;>\; \mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\geq 1}] \;-\; \mathrm{Cost} \tag{51a}$$

$$= \;\mathrm{IY}\cdot\mathrm{Cost}\times\left(\tfrac{1}{\mathrm{r}}\right) \;-\; \mathrm{Cost} \;=\; \left\{\mathrm{IY}\cdot\left(\tfrac{1}{\mathrm{r}}\right)-1\right\}\times\mathrm{Cost} \tag{51b}$$

Satisfying this condition for $\mathrm{Cost} > \$0$ *requires* $\mathrm{r} > \mathrm{IY}$. *This is the first inequality in Equation (27). The project is accretive whenever*

$$\$0 \;<\; \mathbb{E}[\Delta\mathrm{NOI}_1] \;-\; \mathrm{FY}\times\mathrm{Cost} \tag{52a}$$

$$= \;\mathrm{IY}\times\mathrm{Cost} \;-\; \mathrm{FY}\times\mathrm{Cost} \;=\; \{\mathrm{IY}-\mathrm{FY}\}\times\mathrm{Cost} \tag{52b}$$

Satisfying this condition requires $\mathrm{IY} > \mathrm{FY}$. *This is the second inequality.* □

Proof. **(Proposition 6)**

The present value of a T-year annuity that pays coupon $C{\cdot}\mathrm{d}t$ each instant is

$$\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\leq T}] \;=\; \int_0^T e^{-\mathrm{r}\cdot t}\cdot[C{\cdot}\mathrm{d}t] \tag{53a}$$

$$= \;C\times\left(\tfrac{1}{\mathrm{r}}\right)\cdot\left(1-e^{-\mathrm{r}\cdot T}\right) \tag{53b}$$

$\left(\tfrac{1}{\mathrm{r}}\right)$ *is the usual perpetuity multiple.* $\left(1-e^{-\mathrm{r}\cdot T}\right)$ *is an adjustment factor to account for the fact that payments stop at time T.*

An EPS maximizer with horizon $H \leq T$ only considers the flow of payments up until this date, $t \leq H$. This shorter payment stream has present value

$$\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t\leq H}] \;=\; C\times\left(\tfrac{1}{\mathrm{r}}\right)\cdot\left(1-e^{-\mathrm{r}\cdot H}\right) \tag{54}$$

The CEO's investment decision is based on payments that constitute less than half of the project's present value if

$$\begin{aligned}
\mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t \leq H}] &< \tfrac{1}{2} \cdot \mathbb{PV}_{\mathrm{r}}[\{\Delta\mathrm{NOI}_t\}_{t \leq T}] && (55a) \\
C \times \left(\tfrac{1}{\mathrm{r}}\right) \cdot \left(1 - e^{-\mathrm{r}\cdot H}\right) &< \tfrac{1}{2} \cdot \left\{ C \times \left(\tfrac{1}{\mathrm{r}}\right) \cdot \left(1 - e^{-\mathrm{r}\cdot T}\right) \right\} && (55b) \\
\left(1 - e^{-\mathrm{r}\cdot H}\right) &< \tfrac{1}{2} \cdot \left(1 - e^{-\mathrm{r}\cdot T}\right) && (55c) \\
e^{-\mathrm{r}\cdot H} &> \tfrac{1}{2} \cdot \left(1 + e^{-\mathrm{r}\cdot T}\right) && (55d)
\end{aligned}$$

Taking logs and dividing by $-\mathrm{r}$ *gives the threshold in Equation* (28). □

Proof. **(Proposition 7)**

We aim to show $\mathrm{IRR} = \mathrm{IY}$ *when* $\mathbb{E}[\Delta\mathrm{NOI}_t] = \mathrm{IY} \times \mathrm{Cost}_{t-1}$ *and* $\mathrm{Cost}_T = \$0$. IRR *is the* $\mu \geq 0\%$ *such that*

$$\mathrm{Cost}_0 = \sum_{t=1}^{T} \frac{\mathrm{CF}_t}{(1+\mu)^t} \qquad (56)$$

We use $\mathbb{E}[\Delta\mathrm{NOI}_t] = \mathrm{IY} \times \mathrm{Cost}_{t-1}$ *to rewrite the total cash flow in year t as*

$$\begin{aligned}
\mathrm{CF}_t &= \mathbb{E}[\Delta\mathrm{NOI}_t] - \Delta\mathrm{Cost}_t && (57a) \\
&= \mathrm{IY} \times \mathrm{Cost}_{t-1} - (\mathrm{Cost}_t - \mathrm{Cost}_{t-1}) && (57b) \\
&= (1+\mathrm{IY}) \times \mathrm{Cost}_{t-1} - \mathrm{Cost}_t && (57c)
\end{aligned}$$

If we set $\mu = \mathrm{IY}$, *then we get the following telescoping sum on the right-hand side of Equation* (56) *in which the consecutive terms cancel out*

$$\begin{aligned}
\sum_{t=1}^{T} \frac{(1+\mathrm{IY}) \times \mathrm{Cost}_{t-1} - \mathrm{Cost}_t}{(1+\mathrm{IY})^t} &= \sum_{t=1}^{T} \left[\frac{\mathrm{Cost}_{t-1}}{(1+\mathrm{IY})^{t-1}} - \frac{\mathrm{Cost}_t}{(1+\mathrm{IY})^t} \right] && (58a) \\
&= \mathrm{Cost}_0 - \frac{\mathrm{Cost}_T}{(1+\mathrm{IY})^T} && (58b)
\end{aligned}$$

If $\mathrm{Cost}_T = \$0$, *then the right-hand side equals* Cost_0, *confirming* $\mathrm{IRR} = \mathrm{IY}$. *If* $\mathrm{IRR} = \mathrm{IY}$ *and* $\mathrm{Hurdle} = \mathrm{FY}$, *then the IRR rule in Equation* (30) *becomes* $\mathrm{IY} - \mathrm{FY} > 0\%\mathrm{pt}$. *This is the yield-spread form of the accretive investment rule in Equation* (2). □

Proof. **(Proposition 8)**

Both options cost the same amount, $\mathrm{Cost} = \mathrm{MarketCap}^{\odot}$, *so the financing expense is identical regardless of which the CEO chooses. Organic growth adds*

$\mathrm{IY} \times \mathrm{Cost}$ *to next year's income. The acquisition adds*

$$\mathbb{E}[\mathrm{Earnings}_1^{\odot}] \;=\; \frac{\mathrm{MarketCap}^{\odot}}{\mathrm{PE}^{\odot}} \;=\; \frac{\mathrm{Cost}}{\mathrm{PE}^{\odot}} \tag{59}$$

Thus, organic growth will be more accretive than the M&A deal if

$$\mathrm{IY} \times \mathrm{Cost} \;>\; \frac{\mathrm{Cost}}{\mathrm{PE}^{\odot}} \tag{60}$$

Canceling out the $\mathrm{Cost} > \$0$ *on both sides and rearranging gives* $\left(\frac{1}{\mathrm{IY}}\right) < \mathrm{PE}^{\odot}$. □

Proof. **(Proposition 9)**

We aim to show that a project increases margins if its own income yield exceeds that of the firm's existing assets. Funding a project increases the firm's margin if

$$\underbrace{\frac{\mathbb{E}[\mathrm{NOI}_1] + \mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathbb{E}[\mathrm{Sales}_1] + \mathbb{E}[\Delta\mathrm{Sales}_1]}}_{\textit{After investing}} \;>\; \underbrace{\frac{\mathbb{E}[\mathrm{NOI}_1]}{\mathbb{E}[\mathrm{Sales}_1]}}_{\textit{Before}} \tag{61}$$

If we cross-multiply and cancel $\mathbb{E}[\mathrm{NOI}_1] \times \mathbb{E}[\mathrm{Sales}_1]$ *from both sides, then we get*

$$\frac{\mathbb{E}[\mathrm{NOI}_1] + \mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathbb{E}[\mathrm{Sales}_1] + \mathbb{E}[\Delta\mathrm{Sales}_1]} > \frac{\mathbb{E}[\mathrm{NOI}_1]}{\mathbb{E}[\mathrm{Sales}_1]} \tag{62a}$$

$$\big(\mathbb{E}[\mathrm{NOI}_1]+\mathbb{E}[\Delta\mathrm{NOI}_1]\big) \times \mathbb{E}[\mathrm{Sales}_1] > \big(\mathbb{E}[\mathrm{Sales}_1]+\mathbb{E}[\Delta\mathrm{Sales}_1]\big) \times \mathbb{E}[\mathrm{NOI}_1] \tag{62b}$$

$$\mathbb{E}[\Delta\mathrm{NOI}_1] \times \mathbb{E}[\mathrm{Sales}_1] > \mathbb{E}[\Delta\mathrm{Sales}_1] \times \mathbb{E}[\mathrm{NOI}_1] \tag{62c}$$

$$\frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathbb{E}[\Delta\mathrm{Sales}_1]} > \frac{\mathbb{E}[\mathrm{NOI}_1]}{\mathbb{E}[\mathrm{Sales}_1]} \tag{62d}$$

If all assets have the same turnover, $\frac{\mathbb{E}[\Delta\mathrm{Sales}_1]}{\mathrm{Cost}} = \frac{\mathbb{E}[\mathrm{Sales}_1]}{\mathrm{Assets}}$*, then moving from margins to income yields means multiplying both sides by the same constant. This gives us*

$$\mathrm{IY} = \frac{\mathbb{E}[\Delta\mathrm{NOI}_1]}{\mathrm{Cost}} \;>\; \frac{\mathbb{E}[\mathrm{NOI}_1]}{\mathrm{Assets}} = \overline{\mathrm{IY}} \tag{63}$$

To see that margin growth is not sufficient for EPS accretion, consider the $\$100\mathrm{M}$ *project in our running example with* $\mathrm{IY} = 4\%$*. If the firm's existing assets have* $\overline{\mathrm{IY}} = 3\%$ *and the CEO faces a financing yield of* $\mathrm{FY} = 5\%$*, then* $\mathrm{IY} > \overline{\mathrm{IY}}$ *but* $\mathrm{IY} < \mathrm{FY}$*. Conversely, to see that margin growth is not necessary for EPS accretion, suppose that the firm has* $\overline{\mathrm{IY}} = 6\%$ *and the CEO faces a financing yield of* $\mathrm{FY} = 2\%$*. In this new scenario,* $\mathrm{IY} > \mathrm{FY}$ *but* $\mathrm{IY} < \overline{\mathrm{IY}}$*.* □