



The Capital Reinvestment Story

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Introduction

What is the purpose of a firm? The generally accepted answer is something along the lines of “maximize the value of the business for its owners,” which in the case of a publicly traded company is the stockholders. But what does that answer really mean in practice? That is, what should a company’s management actually *do* in order to maximize the value of the firm? Should management try to grow the business as *fast* as possible? Should they seek to make the firm as *large* as possible? At Epoch, we have always believed that the key to maximizing value for shareholders is not about growth (either of revenues or of earnings) or about size; it’s about properly allocating capital.

In the normal course of operations (i.e., assuming the company is not for sale and is not planning to raise more capital), there are only five things that companies can do with their free cash flow:

1. Pay a cash dividend
2. Buy back stock
3. Pay down debt
4. Reinvest in the business
5. Make an acquisition

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For a company's management, maximizing the value of the firm requires an understanding of when it is appropriate to return capital to shareholders—items 1, 2, and 3 above—and when it is appropriate to allocate that capital to investments in the business or to acquisitions. Good managers know that when their expected return on invested capital (ROIC) from reinvestments or acquisitions is greater than the cost of the capital they will employ, then making those investments or acquisitions will increase the value of the firm. If a company's marginal cost of capital¹ is greater than the ROIC that can be earned through reinvestment or acquisitions, then investing in those projects or businesses will reduce the value of the firm. In such situations, the shareholders would be better served by having management return capital to them through one of the first three uses of cash listed above.

We should note that these two broad categories for the uses of cash—i.e., return it to shareholders or invest it—are not mutually exclusive. Many companies will find that they have some projects that merit investment, but not necessarily enough to use up all of their free cash flow. For these companies, it makes sense to invest in some projects while at the same time returning some of the free cash flow to shareholders.

Epoch's investment process has always focused on this issue. The first question we ask a company's management is "what is your policy for allocating capital?" Our Global Equity Shareholder Yield strategy has focused on companies that are returning a sizable portion of their annual free cash flow to their shareholders. We have never had a particular bias as investors toward those companies; rather, our bias is toward companies that have sensible capital allocation policies. Capturing the "shareholder yield" uses of free cash flow

in a systematic way is one way to implement our investment philosophy. What about the other two uses of cash—reinvestment and acquisition? Is there a way to systematically identify companies that are properly allocating capital to these two areas? And if there is, would a portfolio of such companies be likely to generate superior returns? We believe the answer to both questions is "yes," and have created our Capital Reinvestment strategy to capture what we believe are the superior investment results that can be achieved by focusing on companies that are generating premium levels of ROIC.

To understand how we came to this conclusion, we need to examine three questions:

1. Why do we believe that ROIC matters more than growth?
2. Does high ROIC persist, i.e., is it predictable? And
3. Do companies with high ROIC generate superior returns to shareholders?

We'll start with the first question.

Why Focus on ROIC and Capital Allocation Rather Than EPS and Earnings Growth?

Earnings per share (EPS) is undoubtedly the most widely followed measure of corporate performance. Investors obsess about whether a company beats its expected EPS by a penny, or whether it falls short. Analysts try to pin down what a company's EPS growth rate will be in the future. And portfolio managers often talk about "PEG Ratios"—i.e., PE-to-Growth ratios—as a useful measure for assessing whether a stock is reasonably priced.

1. The cost of capital is usually referred to generically as WACC, standing for Weighted Average Cost of Capital. Technically, this refers to the weighted average cost of all of the firm's capital. In evaluating a firm on an overall basis, it is appropriate to compare the firm's average ROIC to its WACC. At the margin, though, in evaluating the impact of a potential new investment, it is more appropriate to compare the incremental cost for the capital that would be used to the incremental ROIC that the investment would earn. See, for example, Danaher's recent acquisition of Pall Corporation. Danaher noted that it expected to earn a "high single digit" ROIC from the acquisition in year five, with higher levels in later years. This may not seem particularly high, and will in fact bring down the firm's average ROIC. But the company also noted that it was funding the purchase with cash on hand and with newly issued debt that would cost less than 2%. As long as the incremental ROIC is greater than this incremental cost of capital, the value of the firm will increase.

We think this is all deeply misguided. We have written many times about what we call the distinction between accounting and finance. The essence of our concern boils down to this: earnings are derived through an accrual accounting process, involving many subjective decisions about the timing of when to recognize revenues and when to recognize expenses. Over the long term, earnings and cash flow will ultimately match up, but there can be long periods when a company appears to be quite profitable, as measured by earnings, only to see those earnings disappear after the fact to match the reality of the underlying cash flow. See, for example, the earnings of the U.S. banking sector in the years 2004-2007, which looked great at the time, but which had to be written down significantly after the fact when the assumptions behind the accruals turned out to be off base.

What's more, measuring a capital investment project by its impact on EPS, even when everything goes exactly as planned, can be misleading. Because accrual accounting postpones the recognition of the original expense of building a new factory, for example, it reduces that expense in present value terms. As a result, a project that has a negative net present value when measured in terms of cash flow can actually appear to be adding to a company's EPS in every year of the project's life.

The correct way to evaluate any prospective capital investment is the way you would evaluate it if it you were investing your own

money (i.e., if you owned the company outright). Namely, if you invest in a new project or make an acquisition, how much cash will you have to spend, and how much cash do you think you are going to receive (both measured in present value terms)? If the investment generates more cash than it consumes, it increases the value of the business. If it uses up more cash than it generates, it reduces the value of the business. Taking into account the fact that capital has a cost associated with it, we can generalize this statement to say that a company should only invest in projects when the return on the marginal invested capital exceeds the firm's marginal cost of capital. (For a more detailed discussion of the importance of using marginal figures rather than averages, see the sidebar to the right).

Although it may not seem that way on the surface, this is actually quite different than saying that a firm should seek to raise its earnings growth rate. To illustrate, consider the two hypothetical companies shown in Table 1. (This example is drawn from *Value: The Four Cornerstones of Corporate Finance*, by Tim Koller, Richard Dobbs, and Bill Huyett.) Both companies currently have annual revenues of \$1,000, from which they generate earnings of \$100. Both companies experience growth in revenues and earnings of 5% per year. The table shows their revenues and earnings out to five years. If you only look at earnings, you would conclude that these two companies are of equal value (**Table 1**).

Table 1: Earnings Don't Tell the Whole Story

Company A	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	\$1,000	\$1,050	\$1,102.5	\$1,157.6	\$1,215.5
Earnings	\$100	\$105	\$110.3	\$115.8	\$121.6
Investment	-\$25	-\$26.3	-\$27.6	-\$28.9	-\$30.4
Free Cash Flow	\$75	\$78.8	\$82.7	\$86.8	\$91.2

Company B	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	\$1,000	\$1,050	\$1,102.5	\$1,157.6	\$1,215.5
Earnings	\$100	\$105	\$110.3	\$115.8	\$121.6
Investment	-\$50	-\$52.5	-\$55.1	-\$57.9	-\$60.8
Free Cash Flow	\$50	\$52.5	\$55.1	\$57.9	\$60.8

Why Using Marginal Figures Matters

It is worth taking a moment to focus on the difference between the concepts of average and marginal, both with regard to the cost of capital and to return on investment, and on why that difference matters. You will often hear that a company should invest only when the return on a potential investment is greater than the firm's "WACC," or weighted average cost of capital. WACC is just what it sounds like: the weighted average of the cost of the company's existing equity capital and debt capital. The cost of debt capital is easy to measure – it's the interest rate that the firm has to pay on its debt. If a firm has multiple debt issues outstanding (including bank loans), each with a different interest rate, then its weighted average cost of debt is the average of the interest rates that the firm is paying, weighted to reflect the size of each borrowing. The cost of equity capital is harder to observe directly, since a firm is not required to make cash distributions to shareholders. But that does not mean that equity capital is free. Even if they do not receive dividends, equity holders expect to earn a return on their investment through the appreciation of the stock price. So the cost of equity capital is usually thought of as the expected return on equities in general, adjusted for a firm's equity beta (i.e., its level of systematic equity market risk). Higher-beta firms are thought of as having a higher cost of equity capital, while lower-beta firms have a lower cost of equity capital.

To better understand why the distinction between "average" and "marginal" matters,

But now let's look further behind the accounting numbers. If we look at the two bottom rows of information for each firm, we find that Company A needs to reinvest 25% of its earnings each year in order to maintain its 5% growth in revenues and earnings, while Company B needs to reinvest 50% of its earnings. Thus, Company A generates \$75 in free cash flow in year 1, while Company B generates only \$50 in free cash flow. In both cases, those free cash flow figures then grow at 5% per year, just like the earnings and revenue figures do.

If you were considering buying each company outright and wanted to figure out how much each was worth, would you look at the earnings figures or the free cash flow figures? The earnings figures tell you something about how much profit the business generated in each year, but they don't give you any indication of how much of that profit you would need to reinvest to keep the business going. The sensible thing to do would be to look at the free cash flow figures, because they tell you how much cash is actually going to be left over for you at the end of each year.

So what do those free cash flow numbers tell us about these two businesses? If we assume that each firm has a cost of capital of 10% and discount the future free cash flows into present value terms at that rate (assuming that both firms maintain their 5% growth rates forever), we find that Company A is worth \$1,500, and company B is worth \$1,000.

That seems straightforward enough. After all, Company A requires less of its profit to be reinvested, and as a result generates more free cash flow from the same revenue stream as Company B, so it is worth more. But think about what these valuation figures mean for the metrics that most investors rely on, if both companies were selling at their fair values. On a price/earnings basis, Company A would have a P/E of 15, while Company B would have a P/E of 10. And since both companies grow at 5%, Company A's PEG ratio (P/E to growth) would be 3, while Company B's would be 2. Most investors, relying on accounting data and the valuation metrics that people apply to that data, would look at these two companies and conclude that Company B is a better value than Company A, because you are paying a lower P/E and a lower PEG ratio for the same earnings and the same growth in earnings. Yet as we have demonstrated, both stocks are in fact fairly valued.

This might seem like a harmless mistake; even though investors might wrongly see Company B as being more attractively valued than Company A, they would not really be doing any harm by acting on that view, because both companies are fairly priced. But consider a slightly different scenario: what if Company A was trading in the market at \$1,400, and Company B was selling at \$1,100? Now, Company A would have a P/E of 14 and a PEG ratio of 2.8. Company B would sell at a P/E of 11 and a PEG ratio of 2.2. Once again, most investors would look at those ratios and

consider a hypothetical example. Suppose a company has a capital structure consisting of 80% equity and 20% debt, with a total enterprise value (i.e., equity plus debt) of \$1 billion. The debt has a weighted average interest rate of 5%, while the equity cost of capital is assumed to be 10%. The firm's WACC will therefore be 9%. The firm has a single line of business which is earning a 14% return on the invested capital, 500 basis points over the WACC. Now suppose that the firm is considering making an investment in a new line of business that will cost \$200 million, and plans to fund the project entirely with newly issued debt. Interest rates have fallen, and the firm can now borrow at a cost of 3%, rather than the 5% it is paying on its existing debt. The firm believes the new business will earn a return on investment of 8%. Should the firm go ahead with the investment?

From the perspective of average cost of capital, this does not look like a good investment. The firm's existing WACC is 9%, so an 8% return would be 100 basis points below that; using 9% as the hurdle would make it seem that the project will destroy value for the company. But the project will not be funded by the firm's existing capital; it will be funded by the addition of \$200 million in debt, which will cost 3%. The 8% return on the project will be 500 basis points higher than the cost of the capital being used to fund the project, the same spread as the firm is earning on its existing business. So the company will in fact be creating value by taking on the investment. In evaluating a prospective capital investment, it is the cost of the marginal capital employed that matters,

say that Company B offered a better value. But if they acted on this view, they really *would* be doing themselves harm, because they would be overpaying for Company B while passing up the chance to buy Company A at a discount to its fair value.

We mentioned a moment ago that Company A is worth more than Company B because it can generate more free cash flow than Company B from the same revenue stream. But why is that the case? *It happens because Company A earns a higher return on the incremental capital it invests in the business.* And *that* is the key issue an investor needs to understand in analyzing these two companies. Consider what happens from year one to year two in Table 1. Company A invests \$25 into the business, and as a result it sees its earnings grow by \$5 in year two. Dividing that \$5 increase in profit by the \$25 that the company needed to invest to make it happen, we see that the company earned a 20% return on the incremental capital it invested. But Company B had to invest \$50 to generate that same \$5 increase in profits, meaning its incremental ROIC was only 10%. (If we look at the results in terms of the increase in free cash flow, Company A had a CFROI—cash flow return on investment—of 15%, while Company B's CFROI was only 5%.)

It is the ability to earn a higher marginal ROIC that makes Company A worth more than Company B, even though their accounting earnings are the same. As soon as you understand this, you immediately realize how so much of traditional investment analysis, with its focus on earnings alone (i.e., without reference to the investment required to generate those earnings) and its reliance on earnings-based valuation metrics, is hopelessly simplistic. And many of the classification schemes that investors use—such as “value stocks” versus “growth stocks”—are similarly flawed. Going back to the example in Table 1, is Company B a “value stock” because it trades at a lower P/E multiple than Company A? And does that mean that Company A is a “growth stock?” Both companies have the exact same earnings growth rate! (In truth, some real world Value and Growth indices are constructed pretty much that way—the companies trading at the lowest multiples of earnings or book value are put into the Value index, and everything else is lumped into the Growth index, yet the median earnings growth rates in Value and Growth indices are quite similar.) And as we demonstrated earlier, if the market prices really were \$1,400 for Company A and \$1,100 for Company B, Company A would be the true “value” stock, because it would be the one selling below its fair value, despite having higher P/E and PEG ratios than Company B.

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not the average cost of all of the firm's capital.

Similarly, it is the marginal ROIC that matters in this situation, not the average ROIC that the firm earns on all of its businesses combined. To see why, suppose that instead of earning 8%, the new business was expected to earn only 2%. If the firm goes ahead with the investment, its average ROIC would drop from 14% to 12%. (It would have \$1 billion in capital earning 14% and \$200 million in capital earning 2%; that produces a weighted average ROIC of 12%.) In addition, of course, adding the \$200 million in debt costing 3% would change the firm's WACC. As a first approximation, ignoring any impact on the cost of equity capital, the debt would lower the WACC from 9% to 8% thanks to its low interest rate. But if we assume that the added leverage raises the firm's beta, and hence raises the cost of the equity capital to 11%, the net effect on WACC would be to lower it only to 8.7%. Since the new average ROIC of 12% would still be higher than the firm's new 8.7% WACC, does that mean that the investment makes sense? The answer is no, because the firm would be borrowing new capital at a cost of 3% to fund an investment that would earn 2%. That's a formula for destroying value. It's the marginal return on capital that matters in evaluating new projects, not the average.

To see just how important ROIC really is relative to growth, let's change the scenario in Table 1 so that both companies grow at 7% instead of 5%. We are assuming that for these companies, marginal ROIC and average ROIC are the same. That is, the firms have ample investment opportunities available to them that will still earn the same ROIC at the margin that they have been earning previously. (Note that this is not always the case. A company may be earning a high level of ROIC on a business, but there may be no opportunity to invest further in that business; the business may consist of a niche product sold to a specialized market that is already fully covered.) We are also assuming, for the sake of simplicity, that the marginal cost of capital will remain at 10%. In Table 2 we show what the revenue, earnings, and free cash flow numbers would look like for the two companies over the first five years in this world of 7% growth (**Table 2**).

Table 2: 7% Growth Scenarios

Company A	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	\$1,000	\$1,070	\$1,144.9	\$1,225.0	\$1,310.8
Earnings	\$100	\$107	\$114.5	\$122.5	\$131.1
Investment	-\$35	-\$37.5	-\$40.1	-\$42.9	-\$45.9
Free Cash Flow	\$65	\$69.6	\$74.4	\$79.6	\$85.2

Company B	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	\$1,000	\$1,070	\$1,144.9	\$1,225.0	\$1,310.8
Earnings	\$100	\$107	\$114.5	\$122.5	\$131.1
Investment	-\$70	-\$74.9	-\$80.1	-\$85.8	-\$91.8
Free Cash Flow	\$30	\$32.1	\$34.3	\$36.8	\$39.3

Because Company A has an incremental ROIC of 20%, it now needs to reinvest 35% of its earnings in order to generate 7% growth, up from 25% earlier (i.e., 35% reinvestment of earnings multiplied by 20% return on investment yields 7% in additional earnings). So the free cash flow in year one drops from the \$75 that we saw in Table 1 to \$65 in Table 2. For Company B, with its 10% incremental ROIC, the reinvestment required to generate 7% growth is 70% of earnings each year, up from 50% previously. So Company B's free cash flow drops from \$50 to \$30 in year one. But even though both cash flow streams are starting at lower levels than in Table 1, they now grow at 7% per year rather than 5% per year. What is the net effect on the fair value of each company if we discount the free cash flow stream in perpetuity back to present value based on the same 10% cost of capital we used earlier?

The answer may surprise you. Company A will now be worth \$2,167, an increase of 44%. But the value of Company B *will not have changed at all*; it will still be worth \$1,000. How can that be? The explanation is that Company A's ROIC (20%) is greater than its cost of capital (10%), so making additional investments will raise the value of the company. Company B's ROIC is the same as its cost of capital: 10%. For Company B, making additional investments doesn't raise the value of the company, because the return on the investment is the same as the cost of funding that investment. Consider this analogy: if I use money that costs 5% in order to invest in something that earns 5%, that investment produces no net value. Raising the size of the investment won't change that fact; the investment will produce no net value regardless of how much more money I invest. But if I can earn 10% on an investment using money that costs 5%, making the investment will increase my net worth, and the more money I invest, the bigger the increase in my net worth will be.

Now let's take this logic another step. If a company's ROIC is *lower* than its marginal cost of capital, then making new investment will actually *decrease* the value of the company, *even if the rate of earnings growth increases*. Let's go back to Table 1 and change the assumptions about Company B. Suppose Company B's ROIC had been 8% rather than 10%, but it still was reinvesting so as to grow at 5% per year. Under that scenario, even with the same earnings as before, the company would have started out being worth \$750 rather than \$1,000. That is because with an 8% ROIC rather than a 10% ROIC, the company would have to

reinvest 63% of its earnings each year rather than 50% in order to generate that same 5% growth in revenues and earnings, so there would be less free cash flow left over every year. And if it then raised its level of investment further so as to grow its earnings at 7%, as in Table 2 (which would require reinvesting 88% of the earnings each year), the value of the company would fall to \$417, because the free cash flow would be reduced even further. How could the company increase its fair value in this situation? By reinvesting less of its earnings and accepting a lower earnings growth rate. The apocryphal First Rule of Holes states that when you find yourself in a hole, stop digging. Similarly, companies that are investing money at a lower ROIC than their cost of capital should stop making those investments! By doing so, they would free up more cash flow to be returned to shareholders, raising the value of the company.

The traditional focus on earnings and earnings growth is incomplete, and can be misleading, because it too often leaves out the crucial relationship between ROIC and reinvestment that determines both the earnings growth rate and the level of free cash flow that the business generates (which in turn determines the value of the company). **Table 3** takes the scenario from Tables 1 and 2 and shows a wider range of outcomes, across different levels of growth and different levels of the gap between ROIC and WACC.

The rows in Table 3 represent different growth rates, while the columns show different levels of the ROIC premium that the company earns relative to its cost of capital. (Remember,

Table 3: Impact of ROIC and Growth on Intrinsic Value

		ROIC-WACC						
		-2%	0%	2%	4%	6%	8%	10%
Growth	9%	(\$1,237)	\$990	\$2,474	\$3,534	\$4,330	\$4,948	\$5,443
		113%	90%	75%	64%	56%	50%	45%
	7%	\$417	\$1,000	\$1,389	\$1,667	\$1,875	\$2,037	\$2,167
		88%	70%	58%	50%	44%	39%	35%
	5%	\$750	\$1,000	\$1,16	\$1,286	\$1,375	\$1,444	\$1,500
		63%	50%	42%	36%	31%	28%	25%
	3%	\$893	\$1,000	\$1,071	\$1,122	\$1,161	\$1,190	\$1,214
		38%	30%	25%	21%	19%	17%	15%

this is a simplified world in which the firm's average ROIC and its marginal ROIC are the same, and in which marginal and average cost of capital are similarly equal.) We have highlighted where Company A starts out in green, and where Company B starts out in blue. In each cell, the top figure shows the present value of the company's future free cash flows for that particular combination of growth and ROIC, and the bottom figure shows the level of reinvestment that the company would have to do (as a percentage of its earnings) in order to maintain that growth rate.

difference in the value of Company B whether it grows at 7%, 5%, or 3%. Finally, looking at the remaining columns in the table, we see that for companies whose ROIC is greater than their WACC, like Company A, investing to raise growth will raise the value of the company.

The key message to take from Table 3 is this: raising a company's earnings growth rate may or may not raise the value of the company (and could even lower it), but raising the company's ROIC will always raise the intrinsic value of the company. Read across the rows in Table 3; you will see that for any level of growth, higher

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The table demonstrates that changes in earnings growth tell us nothing, on their own, about changes in the value of the company. Investing for higher growth can raise the value of the company, lower it, or leave it unchanged—the result depends on whether the company's ROIC exceeds its WACC or not. For the company whose ROIC is 2% below its WACC (the left hand column), raising the company's growth rate reduces its value, because every dollar the company invests returns less than a dollar in net present value. In fact, if the company were to try to grow at 9%, it would theoretically have a negative value, because it would need to invest more than 100% of its earnings. In other words, it would run out of money, and the only way it could stay in business would be to raise additional capital.

Continuing across to the second column in Table 3, we see that, as noted earlier, a company whose ROIC is equal to its WACC (such as Company B in our example) can raise its growth rate without raising the value of the company. In fact, if you look at the top row, you can see that even companies like this can run into trouble if they try to grow too much, because they too will eventually use up all of their cash flow and leave nothing for the owners. If we added another row to the top of the table with 11% growth, the first number in the second column would also be negative, because again, the company would need to be investing more than 100% of its earnings each year. But for lower levels of growth (and reinvestment), you can see that there is no

ROIC (assuming marginal cost of capital does not change) leads to a higher value for the company.

To many people, the fact that higher earnings growth can potentially reduce the value of a company seems counter intuitive. Here's another counter intuitive lesson from Table 3: a company with lower earnings growth and a higher P/E multiple can be a better value than a company with higher earnings growth and a lower P/E multiple. Remember that each company shown in Table 3 starts out with \$100 in earnings, so the fair value P/E multiple is simply the company value shown in the table divided by 100. When we assumed that Company A was growing at 5% per year, it was worth \$1,500, so its fair value P/E was 15. But what if Company A was only going to grow at 3%? Then it would have been worth \$1,214, so its fair P/E would have been 12.14 (and its PEG ratio would have been 4.05). Those numbers are still higher than the figures we found for Company B when we assumed it was growing at 5%: a fair P/E of 10 and a PEG ratio of 2. Suppose Company A was selling a little below its fair value (say, at 11.5 times earnings) and Company B was selling a little above fair value (at 10.5 times earnings). Ask most investors which stock they would prefer, a company growing at 5% with a P/E of 10.5 and a PEG ratio of 2.1 (i.e., Company B), or a company growing at 3% with a P/E of 11.5 and a PEG ratio of 3.8 (i.e., Company A), and what do you think they will answer? Most investors would likely prefer company B, without asking the most important question: *what levels of ROIC do the two*

companies earn? In our example, Company A earns a high enough ROIC relative to Company B to more than justify the price differential. You would be better off buying A, even with its higher P/E and lower growth.

Let's summarize what we have discussed so far. Good managers should try to maximize returns to shareholders by allocating capital properly. When they have opportunities to make an investment (internally or externally) that will earn a higher ROIC than the marginal cost

Recent academic research indicates that this is not in fact the case, and that ultimately, prices *do* reflect the analytical framework we have described. That actually creates an opportunity for us, because if markets really do price stocks in the way we have described, but most investors are using a different framework, then they are the ones who are going to have difficulty generating good performance. In fact, this could be part of the explanation of why so many active managers have trouble outperforming passive benchmarks. We'll

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of the capital needed to fund the investment, they should do so. When the prospective ROIC from investments is lower than the marginal cost of capital, they should instead return capital to shareholders. On the other side of the coin, the best way for investors to evaluate the worth of a company is to focus on how the company allocates capital to generate future free cash flow—i.e., how the company uses money to make more money. A P/E ratio is pretty much useless in answering that question. Investors need to exercise great care in using traditional metrics like earnings growth and P/E ratios, because absent an understanding of the dynamics of a company's ROIC and its reinvestment rate, those metrics can lead to erroneous conclusions about whether a company is fairly valued.

At this point, a skeptical observer might say that while this analysis is certainly logical, and the math seems compelling, there is still the nagging fact that most investors do continue to rely on the metrics we just dismissed, including P/E ratios, in making decisions. Markets are not machines, they might say, but rather they are collections of people trading with each other. If most of those people are using a different set of rules than the ones we have just outlined to make decisions, are we just tilting at windmills by insisting that our methodology is better? What good is using an analytical framework that is theoretically correct if everyone else (or a large majority, anyway) is relying on a different set of rules? Won't those other investors be the ones who will end up determining prices, using their rules?

have more to say on this in the third section of this paper. For now, let's talk more about the academic research.

In the 1960s, building on the work that Harry Markowitz had done in the previous decade to develop the "mean-variance" model of investing (in which assets are described purely in terms of their mean expected return and the variance of those returns), Jack Treynor, William Sharpe, and John Lintner, all working independently, developed what came to be known as the Capital Asset Pricing Model (CAPM). In the world of CAPM, everything that investors had previously thought was important about a company—things like how much money the company was making, whether the stock seemed cheap or expensive, or whether the company was small and unproven (i.e., riskier) or large and successful (i.e., less risky)—was deemed unimportant. CAPM said that the only risk you get paid to take (i.e., risk that is said to be "priced") is risk that you can't diversify away. Things like profitability, valuation, or size were risks that were specific to individual companies, and those risks could be diversified away by holding lots of stocks. The only risk that you couldn't diversify away was the inherent risk of owning stocks, since ultimately all stocks represent claims on uncertain future cash flows. CAPM theorized that all of the variance in returns between stocks could be explained by their varying levels of exposure to this "systematic" risk of owning stocks as an asset class, exposure that the model captured in a single factor called "beta." The market as a whole was defined as having a beta of 1.00. If the stock market earned an excess return over the risk-free rate of 10%, then a stock with a beta

of 1.10 would be expected to earn an excess return of 11%, while a stock with a beta of 0.90 would earn an excess return of 9%.

Over time, research demonstrated that beta did not in fact seem to predict individual stock returns well. A cottage industry grew up in the 1980s demonstrating the existence of “anomalies” such as the small-cap effect (smaller stocks seemed to do better than their betas would predict) or the value effect (stocks with low price/book ratios also outperformed on a beta-adjusted basis). Some practitioners took these findings as evidence that CAPM was flawed; academics responded that the model was “mis-specified”—that is, it did not include the right variables.

Sure enough, in 1992 Eugene Fama and Kenneth French published their research on what came to be known as the Three Factor CAPM. They found that adding a size factor and a value factor (based on price/book ratio) to the existing systematic risk factor (i.e., beta) enabled them to explain a greater percentage of the variance across stock returns than the original single-factor version of CAPM. They noted that these additional factors also helped to explain some other seeming anomalies in the original CAPM, such as leverage (higher leverage stocks did better than predicted by beta) and P/E (low P/E stocks tended to outperform).

But the story did not end there. In more recent years, a number of researchers have documented that it does in fact matter how profitable a company is—that is, even after taking into account a stock’s level of systematic risk, its size, and its valuation, profitability in and of itself exercises an influence on prices. Novy-Marx (2012) documented a “gross profitability premium,” with gross profitability defined as the ratio of gross profit (revenues minus cost of goods sold) to assets. As Novy-Marx noted, “Profitable firms generate significantly higher returns than unprofitable firms, *despite having significantly higher valuation ratios* [emphasis added].” Similarly, Asness, Frazzini, and Pedersen (2013) concluded that the market rewards “quality,” defined as a combination of characteristics including profitability (measured several ways), growth, safety (measured on dimensions such as beta, volatility, leverage, and earnings stability), and payout (i.e., how much of the earnings does management pay out to shareholders).

For two companies whose profitability increases by the same amount, the company that can achieve that profitability increase with less investment will earn a higher return.

As we saw earlier, though, it is possible for a company to raise its profits and its profit growth rate while at the same time *reducing* the value of the company. How can we square that finding with the latest research on the positive return associated with profitability? The answer takes the form of yet another version of CAPM. Fama and French (2014) expanded their three factor model into a five factor model. In addition to the previously included beta, size, and value factors, the latest model includes a factor for profitability, but also a factor for investment. And here’s the key thing—in a cross-sectional examination of returns, the profitability factor has a positive return, as we would expect, but the results for the investment factor show that companies with *lower* investment do better than companies with higher investment.

Think about what that means—for two companies whose profitability increases by the same amount, *the company that can achieve that profitability increase with less investment will earn a higher return*. That is exactly what we demonstrated earlier in our comparison of Company A and Company B. When the two companies raised their earnings growth from 5% to 7%, Company A’s value went up but Company B’s did not. That was because Company A was able to raise its profits while investing less than Company B. And that, as we pointed out, was because Company A earned a better ROIC than Company B. So it turns out that you do need to look beyond the earnings figures to properly understand what drives stock prices; ROIC does matter.

Before we move on to the next of our original three questions, we can’t help but stop for a moment to note the irony inherent in this latest, five-factor version of CAPM. As we mentioned earlier, when CAPM first came along fifty years ago, its proponents essentially told investors that all the things they had traditionally looked at—“how much money the company was making, whether the stock seemed cheap

or expensive, or whether the company was small and unproven (i.e., riskier) or large and successful (i.e., less risky)—didn't matter, and that beta, the measure of "systematic risk," was the only risk factor that the market rewarded. Now, fifty years later, CAPM has come to include factors that measure, well, how much money a company makes, whether the stock is cheap or expensive, and whether the company is small and unproven or large and successful. It turns out that traditional investors weren't far off the mark.

Does High ROIC Persist?

In Part I we demonstrated why differences in ROIC matter in valuing companies, and reviewed recent academic literature that has confirmed the importance of ROIC in explaining stock returns. The higher a company's ROIC, the more likely the company is to be able to generate additional value for shareholders through reinvestment or acquisitions. But the academic studies are all, by nature, backward looking; they are based on explaining past returns as a function of profitability and investment. As investors, though, we have to focus on future returns, so we need to be able to answer the question, "which companies will have the highest ROIC in the *future*?" Which leads naturally to another question: Do high levels of ROIC persist? That is, do past levels of ROIC predict future levels?

At first glance, it might seem problematic to say that we can identify companies that will earn the highest levels of ROIC in advance. After all, there is no way to know with certainty what level of ROIC a particular investment project or acquisition is going to generate in the future. At the individual company level, this is certainly true. Anything can happen: a technology company might find that a competitor releases a new product based on a revolutionary technology, rendering its own product suddenly obsolete. A pharmaceutical company might find that an existing drug that has been on the market for several years causes previously unknown harmful side effects, and has to be withdrawn. And so on.

**... high levels of ROIC (minus WACC)
do persist from year to year.**

Koller, Dobbs, and Huyett (2011) looked at trends in ROIC over the ten years from 1995 to 2005. They found that among companies whose ROIC was greater than 20% in 1995, 67% were still earning ROIC above 20% in 2005, 14% had an ROIC between 10% and 20% in the later year, and 19% had seen their ROIC fall to below 10%. There was similar persistence at the other end of the spectrum. Among the companies whose ROIC was below 10% in 1995, 57% of them still earned an ROIC less than 10% in 2005, while 28% had seen ROIC move up into the 10–20% range and 15% had improved to an ROIC greater than 20%.

Similarly, Mauboussin (2007) looked at persistence over the 9-year period from 1997 to 2006 for a universe of 1000 non-financial US companies, using a different sorting technique. He sorted companies into quintiles based on their ROIC in 1997, and then again based on their ROIC in 2006. Then he measured the distribution of the stocks from each 1997 quintile into the 2006 quintiles. The results were similar to those described above. Of stocks that were in the top quintile in 1997, 41% were in the top quintile in 2006. At the other extreme, 39% of the bottom quintile companies based on 1997 ROIC were also bottom quintile based on 2006 ROIC. If we broaden the analysis a bit, we note that 64% of the stocks that made the top quintile in 1997 were in the top two quintiles in 2006, while only 25% fell into the bottom two quintiles. Keep in mind that if ROIC in 1997 had no ability to predict ROIC in 2006, we would expect to see 20% of the stocks from the top quintile in the earlier year in each of the five quintiles from the later year. So we would see 40% in the top two quintiles in 2006 and 40% in the bottom two quintiles. The fact that the actual figures were 64% and 25% indicates that there is some persistence of high ROIC. There was similar persistence for stocks with low ROIC. For the stocks in the bottom quintile in 1997, 57% ended up in the bottom two quintiles in 2006 (including 39% in the bottom quintile alone), while only 27% were in the top two quintiles (again, versus 40% for each pair of quintiles if ROIC had completely regressed to the mean.)

These studies both indicate moderate persistence in ROIC over decade-long periods. But both studies are now several years out-of-date, and in addition, as investors, we are unlikely to hold stocks for such long time periods. The time horizon that interests us, in terms of whether ROIC persists, is shorter. We

undertook our own analysis of persistence in ROIC, but instead of comparing ROIC quintiles a decade apart, we looked at the persistence of ROIC quintiles from one year to the next, over the years from 1990 to 2022, for the stocks in the MSCI World Index. **Table 4** summarizes the results when we average all the years.

It is interesting to note that the top quintile is actually the quintile that has had the greatest persistence. That is, the 75% figure that we pointed out a moment ago (representing what percentage of top quintile companies remained in that quintile from one year to the next) is higher than the figure for any other quintile. How

Table 4: Annual Persistence of ROIC, 1990 – 2022

		ROIC-WACC Quintile in Year X+1				
		1	2	3	4	5
ROIC Quintile in Year X	1	75%	14%	3%	1%	2%
	2	14%	54%	20%	5%	3%
	3	2%	18%	47%	20%	6%
	4	1%	5%	19%	48%	20%
	5	1%	2%	5%	19%	62%

What we are looking at in Table 4 is the average of the yearly distribution matrices, showing where the stocks in each ROIC quintile in a given year ended up in the following year. For example, to take the number in the upper left cell, on average, 75% of the companies in the top quintile for ROIC in any year remained in the top quintile the next year. Moving across to the right, the table tells us that 14% of the companies in the top quintile in one year fell to the second quintile the next year, and so on. (Just as a reminder, if ROIC exhibited no persistence whatsoever, every cell in this table would have a figure of 20%; that is, of the stocks in any given quintile in year X, 20% would end up in each of the five possible quintiles in year X+1.) The shaded cells show the stocks that remained in the same quintile from one year to the next. In each row, this is the cell with the highest percentage. That is, the most likely outcome for stocks in any quintile is that they will remain in that same quintile the following year. There is very little migration from one extreme to the other in a single year. Only 2% of companies in the top quintile one year ended up in the bottom quintile the next year, on average. And only 1% of companies in the bottom quintile one year made it into the top quintile the next year. (The numbers in each row do not add to 100% because some companies drop out of the sample each year due to mergers or bankruptcies.)

much variation did we observe in this number? It ranged from a high of 76% between 2014 and 2015 to a low of 55% from 2007 to 2008. Given what happened in 2008 (i.e., the Global Financial Crisis), it is not surprising that this was the year when we saw the greatest turnover within that top quintile. Even so, more than half of the firms within that quintile remained there despite the turmoil in the economy.

The persistence that we observe in ROIC would seem to contradict basic economic principles. Companies that are earning premium ROICs should attract more competitors, eager to earn similar returns, and the competition should drive down those returns. Over the long term high returns on capital should revert to the average. But the key question is, just how long is the “long term?” Based on the evidence in Table 4, a year is clearly not enough time for ROIC to revert completely to the average. And the earlier studies that we reviewed above showed that even over ten years, there is still some persistence for companies with the highest and lowest levels of ROIC.


Why does this occur? The answer is complex. Think about what ROIC actually is: it is operating profit divided by invested capital. Now think about operating profit as the price you can charge minus the costs you incur. Companies that earn higher ROIC are either able to charge a higher price, incur lower

costs, or run their business with less invested capital. The first two factors make for a higher numerator in the ROIC calculation, while the third factor makes for a lower denominator. Of course, companies may be earning higher ROIC because of some combination of these factors; our point was simply to break ROIC out into its major drivers, so we can think further about why some companies might have an advantage over others on each of those drivers.

A big part of what drives differences in ROIC across companies is industry structure, and the way that industry structure in turn affects both the ability to raise prices and the ability to lower costs. There is, of course, variation in ROIC across companies within the same industry, but when we look across industries we see quite a bit of variation in the average level of ROIC by industry, to the point that what might qualify as a high level of ROIC within one industry (paper, for example) may be quite low in another (such as pharmaceuticals). In considering why this is the case, it is helpful to keep in mind Michael Porter's "five forces" framework for understanding the structure of a particular industry. The forces that Porter identified are: 1) threat of new entrants, 2) threat of substitutes, 3) the bargaining power of suppliers, 4) the bargaining power of buyers, and 5) rivalry among existing firms. All of these forces influence a company's ability to earn a higher ROIC.

Consider the first two of the five forces, which both deal with the ease or difficulty with which a firm's customers can turn to someone else, either a new entrant to the industry selling a similar product, or a firm selling a different product that the customer can use instead. If an industry has few barriers to entry, participants in that industry will probably not be able to charge higher prices for long without attracting new entrants. Similarly, companies whose products can easily be replaced by a substitute will always have difficulty raising prices (unless the substitute product has become more expensive as well for some reason). Conversely, companies in industries with high barriers to entry will be able to raise prices with less fear of attracting new competitors. And companies whose products serve a unique purpose, making them hard to replace, will also have more pricing power.

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The second pair of forces—the bargaining power of suppliers and of buyers—influences not only pricing power, but cost control. In any relationship between buyers and sellers, the side with fewer, more concentrated participants will be at an advantage, for they can play the larger number of smaller participants on the other side of the transaction off against one another to achieve better pricing. Think of Wal-Mart, which is well known for forcing its wide array of small suppliers to continually lower their prices; Wal-Mart has all the bargaining power, because they can offer their suppliers access to a huge market, and if the supplier doesn't go along with Wal-Mart's demands, Wal-Mart can turn to someone else or simply stop carrying the product—it's not as if they have a shortage of products in their stores. This is good for Wal-Mart's ROIC (it keeps their costs down), but bad for the ROIC of their suppliers (Wal-Mart's costs are their revenues). Broadly speaking, the worst situation to be in is to buy from a small number of large suppliers and sell to a small number of large buyers; you will get squeezed from both sides. The best position to be in is to buy from a diverse group of small suppliers and sell to a diverse group of small buyers.

Finally, there is the fifth force, industry rivalry—how fiercely do companies within the industry compete with one another? A couple of key factors in this area are 1) industry concentration: the fewer the companies, the less likely it is that they will compete on price; witness the ability of the airlines to finally raise prices and make them stick now that mergers have greatly reduced the number of competitors, and 2) ease of exit: if getting out of the business is hard, because the assets are expensive and hard to repurpose, firms will compete more vigorously rather than exit the business, making it harder to earn high ROIC. The classic example that is used here is railroads versus airlines: if a particular route becomes unprofitable for an airline, it can switch the planes to another route. A railroad can't just tear up its tracks and lay them somewhere else in the same circumstances, so it will fight harder to maintain its business on that route.

The process of reversion to the mean can take many years. An economist's time horizon is quite different than an investor's time horizon.

Industry structure is not the only thing that affects ROIC, of course. There are factors that are specific to the nature of an individual company or product than to the structure of the industry. A company may have invented a unique manufacturing process that enables it to produce at lower cost than its competitors. Or a product may enjoy patent protection that enables its producer to charge a premium price without fear of competition (at least as long as the patent lasts). In addition, some products simply require less capital, which is of course the denominator in the ROIC calculation. Generating a dollar of revenue by making steel requires a bigger capital investment than generating a dollar of revenue by writing software. If the software company can succeed in generating revenue, it is likely to have a higher ROIC than a steel company.

So yes, there are good reasons why some companies have higher ROIC than others, and why those companies are able to maintain that ROIC advantage for at least some amount of time. In the end, of course, it is impossible for a company to maintain a dominant position forever. The history of American business is

filled with examples of companies that were once thought invincible, sometimes even as leaders in innovation, and which have now either disappeared or are shadows of their former selves: Montgomery Ward, Bethlehem Steel, Polaroid, Eastman Kodak, Xerox. New technology makes existing products obsolete, sometimes almost overnight. Consumer tastes change, and some companies miss the turn and get left behind. Foreign competitors arise, and rewrite the rules of the industry.

The important point to keep in mind is that this process of reversion to the mean can take many years. An economist's time horizon is quite different than an investor's time horizon. Yes, we know that in the long run, ROIC reverts to the mean. But as John Maynard Keynes—ironically, an economist—noted in 1923, “But this long run is a misleading guide to current affairs. In the long run we are all dead. Economists set themselves too easy, too useless a task, if in tempestuous seasons they can only tell us, that when the storm is long past, the ocean is flat again.”

Applying Keynes's point to our topic: we can say with great confidence that the dominant firms of the current era—Google, Apple, Microsoft, Facebook—are unlikely to be as dominant 25 or 50 years from now as they are today (assuming they still exist!). But that doesn't necessarily mean that investors won't be able to earn superior returns by holding those companies over the next 10 years, while those companies are still in a dominant position that enables them to earn high levels of ROIC. And that brings us to our third and final question.

Do Companies With High ROIC Generate Superior Returns to Shareholders?

We have now demonstrated, in Part I, that ROIC matters in driving stock returns. Companies with higher ROIC can earn higher profits while investing less than other firms, and the market rewards both of those things. But we have also demonstrated, in Part II, that there is persistence in ROIC; companies which had high ROIC in the past are likely to continue to have high ROIC in the future, at least for a while. That would seem to hold out a tantalizing possibility: can you generate superior investment returns by holding companies that have experienced high ROIC in the recent past, on the assumption that enough of them will continue to do so in the

future that they will lift the overall portfolio to earn better than average returns?

Earlier, we mentioned that Mauboussin (2007) had looked at the persistence of ROIC on an end-to-end basis for the nine years from 1997 to 2006. In a follow-up study (2008), he measured the performance of the stocks in each of the 1997 ROIC quintiles, also on an end-to-end basis, for the same 1997–2006 period. It turned out that just holding the entire first quintile from 1997 did not generate the best returns. While it did turn out that 1997’s quintile 5 performed noticeably worse than the other four quintiles, there was little variation in the average returns for quintiles 1 through 4 (and quintile 4 actually had the highest average return). While stocks that started in the first two quintiles and ended in the first two quintiles tended to do better than the overall market, stocks that started in those top quintiles but fell to the bottom two quintiles did poorly enough that even though there weren’t that many of them, they pulled the average returns for those top two quintiles down to the point that they did not differ meaningfully from the returns for quintiles 3 and 4 (which benefited from good returns from the stocks that were able to rise into the top two quintiles). In other words, even though stocks in those top two quintiles were more likely than average to maintain high ROIC in the later year, and even though the stocks that *did* maintain high ROIC outperformed the market, there were enough stocks that fell into the bottom two quintiles, and performed badly enough while doing so, to offset the good returns of the stocks that maintained the high ROIC.

This is not surprising. After all, the research cited in Part I demonstrated that the market responds to ROIC, so we would expect stocks with deteriorating ROIC to perform poorly. But as we also noted in Part II, Mauboussin’s study assumed that you held the stocks for nine years, making no change to your portfolio. We saw earlier that when we shortened the holding period for each quintile to one year, the persistence of ROIC increased. Did the same hold true for performance? That is, if you just held the stocks in the top quintile for a year, and

then rebalanced your portfolio to reflect the latest membership in the top quintile, would you have performed better?

Our research indicates that the answer is yes. We measured the capitalization-weighted performance of each quintile on a monthly basis over the 33-year period. To avoid foresight bias, for the purposes of this analysis we assumed that you would not know the ROIC data until 90 days after the end of a company’s annual reporting period. For example, in measuring the performance of quintile 1 for January of 2010, the membership in that quintile is not based on fundamental data as of December 31, 2009, because it would not have been available on that date. Instead, we base the quintiles for calendar 2010 on the data as of September 30, 2009, on the assumption that this data would have been available by December 31st of that year. (In the analysis shown in Table 4, we did not use a lag. Quintile 1 for 2010 was based on data as of December 31, 2009. In that analysis, we were simply looking to see whether ROIC persisted, and it did not matter when you actually knew the information.) **Table 5** shows the equal weighted returns for each quintile on a year by year basis over the ten years in our study.

Holding the quintile of highest ROIC companies would have been a winning strategy over these 33 years. In fact, the cumulative returns line up in exactly the same order as the quintiles over 10, 20, and 30 years.

In one sense, this is not surprising. The academic research indicates that the market rewards profitability and punishes investment, meaning that companies with the best ROIC (i.e., those companies that can generate the most profitability with the least investment) should perform well. And given that high levels of ROIC do show a high degree of persistence from one year to the next, it is not unreasonable to think that stocks with the highest levels of ROIC in the very recent history should therefore perform well (because they are more likely to experience above average levels of ROIC over the ensuing year).

Table 5: Annual Performance of ROIC Quintiles

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
1990	-0.3%	-8.5%	-15.0%	-19.3%	-19.5%
1991	35.2%	21.6%	17.2%	12.9%	8.8%
1992	7.9%	0.6%	-3.4%	-8.7%	-14.7%

Table 5: Annual Performance of ROIC — WACC Quintiles Cont.

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
1993	31.3%	27.4%	39.3%	32.0%	36.9%
1994	2.4%	2.7%	4.3%	16.3%	16.8%
1995	22.8%	20.6%	16.5%	5.8%	-1.3%
1996	24.0%	17.7%	15.4%	4.0%	-4.4%
1997	7.0%	4.5%	-0.4%	-16.2%	-23.2%
1998	15.1%	4.0%	6.0%	8.2%	18.3%
1999	24.4%	14.0%	8.7%	18.3%	17.4%
2000	-5.4%	-2.6%	-1.9%	0.9%	-12.5%
2001	-9.7%	-1.5%	-12.0%	-13.4%	-20.9%
2002	-16.5%	-5.8%	-7.9%	-10.1%	-31.6%
2003	38.9%	41.1%	44.5%	53.7%	72.3%
2004	20.4%	20.0%	26.1%	22.9%	20.0%
2005	9.6%	13.6%	14.5%	17.5%	13.4%
2006	18.8%	23.7%	22.0%	22.9%	17.8%
2007	10.6%	12.0%	8.9%	6.3%	3.4%
2008	-43.0%	-41.8%	-43.1%	-41.1%	-39.0%
2009	50.3%	49.7%	45.8%	38.6%	31.7
2010	21.1%	22.8%	17.4%	16.4%	19.4%
2011	-2.2%	-6.2%	-7.9%	-5.5%	-14.3%
2012	16.0%	18.2%	15.8%	12.2%	2.9%
2013	31.0%	28.4%	26.5%	22.6%	23.1%
2014	7.0%	5.9%	0.1%	1.6%	-1.3%
2015	2.8%	2.2%	-1.6%	-4.8%	-7.7%
2016	6.0%	5.0%	7.7%	12.3%	14.1%
2017	30.7%	25.0%	23.5%	22.3%	15.0%
2018	-9.5%	-12.4%	-13.7%	-13.1%	-10.0%
2019	30.7%	26.3%	21.6%	19.8%	20.3%
2020	23.0%	17.3%	8.6%	4.1%	12.5%
2021	17.1%	12.5%	12.3%	11.7%	4.0%
2022	-21.2%	-16.0%	-14.0%	-10.3%	-28.1%
10-Year Annualized Return	10.4%	8.4%	6.2%	5.9%	3.0%
20-Year Annualized Return	10.7%	10.3%	8.6%	8.6%	6.0%
30 Year Annualized Return	9.9%	9.4%	7.7%	6.9%	3.1%

In another sense, however, the results are somewhat puzzling, because they imply that investors are not fully pricing in the value of having high ROIC. It is as if the market is continually surprised that companies that have experienced high ROIC in the recent past turn out to be more likely to experience high

ROIC again the following year, despite the historical evidence about ROIC persistence. As we hinted at earlier, part of the explanation may be that too many investors continue to employ an analytical framework that does not fully take into consideration the role that ROIC plays in creating value. Many investors still rely

on the traditional valuation metrics that we mentioned earlier, such as P/E ratios and PEG ratios. But neither one tells you anything about a company's ROIC, and as we demonstrated in our Company A/Company B example, they can lead to erroneous conclusions about which company is overvalued and which is undervalued.

One has to wonder, then, why so many investors continue to focus on earnings. The answer may be that it is because so many corporate CEOs and CFOs focus on earnings. As to why they focus on earnings, we would simply point out that people tend to respond to incentives, and many, if not most senior executives get paid at least partly on the basis of their company earnings.

In the end, for whatever reason, too many investors seem to focus on erroneous measures of valuation, rather than seeking to understand the real mechanics of value creation. And that, in turn, could help explain why so many active managers fail to outperform broad market benchmarks over the long term.

Summary and Conclusion

In Part I, we demonstrated that the value of a company depends not on its earnings, but on the free cash flow that the business generates. (In some sense, this is almost just an alternate version of the famous 1958 Modigliani-Miller theorem, which said that the value of a firm is unaffected by how the claims on its cash flows are structured.) Furthermore, a company's ability to generate free cash flow depends on two things: the amount of capital that the firm needs to reinvest in the business, and the return that the firm earns on that invested capital. Companies increase their value when they earn a return on invested capital that exceeds the marginal cost of that capital. Because traditional valuation metrics ignore the relationship between ROIC, reinvestment, and earnings, they are of limited use, and can lead investors to make erroneous judgments. Academic work in recent years has confirmed that the market does in fact reward companies with better ROIC.

In Part II we examined the persistence of rates of return on invested capital. Our goal was to see whether there is a way to predict which companies will have high ROIC in the future. Economic theory holds that high rates of ROIC

attract competition, and in the long run those high rates of ROIC will regress to the mean. This is indeed true over a time scale of decades, but over the shorter time horizon in which most investors operate, both high and low ROIC persist to a high degree from year to year. There are a host of sensible reasons why this is so, relating to industry structure, barriers to entry, and other factors.

Finally, having seen that the market rewards high ROIC and that high ROIC is somewhat predictable, we turned in Part III to an examination of whether an investor could have earned superior returns by holding companies that had experienced the highest level of ROIC in the recent past. We found that over the most recent ten year period, this would indeed have been a good strategy. When we sorted stocks into quintiles each year based on their most recent level of ROIC, there was a perfect correlation with performance on a cumulative basis over every long term period. This implies an inefficiency in the market, which we attributed to the fact that most investors rely on the easily understood but flawed valuation metrics whose shortcomings we documented in Part I.

The conclusion of this lengthy journey is that because ROIC demonstrates persistence, and because most investors do not properly appreciate its importance, we believe there is an opportunity for investors to earn superior returns by focusing in a systematic way on harvesting the benefits of owning companies with high ROIC.

If we have gone at great length, it is only a reflection of the importance we put on this topic. Since Epoch's founding, we have always focused on the importance of understanding free cash flow and ROIC. As part of that focus, we have often talked about the five uses of free cash flow. Our Global Equity Shareholder Yield strategy grew out of this focus, based on the three uses of cash flow that return capital to shareholders. Epoch's Global Equity Capital Reinvestment strategy is the natural complement to our Shareholder Yield strategy. The Capital Reinvestment strategy systematically captures the returns generated by companies that are successfully earning high levels of ROIC. Together, the two strategies demonstrate Epoch's commitment to our core investment philosophy, which is to focus on companies that allocate capital properly.

Resources

Books

Koller, Tim, Richard Dobbs, and Bill Huyett. *Value: The Four Cornerstones of Corporate Finance*, New Jersey, John Wiley & Sons, 2011.

Priest, William W., and Lindsay H. McClelland. *Free Cash Flow and Shareholder Yield: New Priorities for the Global Investor*, New Jersey, John Wiley & Sons, 2007.

Articles and Papers

Asness, Clifford S., Andrea Frazzini, and Lasse H. Pedersen, "Quality Minus Junk" working paper, October 2013.

Bouchaud, Jean-Philippe, Stefano Ciliberti, Augustin Landier, Guillaume Simon, and David Thesmar, "The Excess Returns of 'Quality' Stocks: A Behavioral Anomaly," working paper, January 2016.

Fama, Eugene F., and Kenneth R. French, "A Five-Factor Asset Pricing Model," *Journal of Financial Economics* 116(1), 2015, 1–22.

Mauboussin, Michael, "Death, Taxes, and Reversion to the Mean," *Mauboussin on Strategy*, December 14, 2007.

Mauboussin, Michael, "ROIC Patterns and Shareholder Returns," *Mauboussin on Strategy*, January 18, 2008.

Mauboussin, Michael, "Measuring the Moat: Assessing the Magnitude and Sustainability of Value Creation," *Credit Suisse research report*, July 22, 2013.

Novy-Marx, Robert, "The Other Side of Value: The Gross Profitability Premium," *Journal of Financial Economics* 108(1), 2013, 1–28.

Priest, William W., Jr., "Rate of Return as a Criterion for Investment Decisions," *Financial Analysts Journal*, July–August 1965.

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