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### Title

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### Permalink

<https://escholarship.org/uc/item/9t39c7pt>

### Journal

Rutgers Business Review, 2

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### Publication Date

2017

Peer reviewed

# Does Investing in the Long Term Pay Off for Firms?

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## *Abstract*

*Observers have argued that managers pay too much attention to short term results at the expense of long run value. This article expands on the managerial implications of research that examines the relationship between short-termism and firm performance. Using capital expenditure data from US manufacturing firms, the authors confirm that most firms have the opportunity to increase performance by lengthening their investment horizons. However, a small subset of firms that make extremely long horizon investments would benefit from shorter investment time horizons. The authors make several recommendations for managers seeking to lengthen investment time horizon to increase firm profits.*

In recent months, lengthy reports from the Aspen Institute,<sup>1</sup> Harvard Business Review,<sup>2</sup> and McKinsey & Co.<sup>3</sup> have all stressed the need for American managers to reverse their tendency to focus on short-term results at the expense of long-term performance. Our research reveals that similar reports have been published virtually every year for the past quarter century. The popular press has also noted that a long-term focus can be a competitive advantage. Amazon's dominance, for example, has been attributed in part to

Jeff Bezos' focus on long-term performance.<sup>4</sup> Why does such managerial myopia persist despite all this attention? Part of the answer is that long term thinking is easier said than done. Experts attribute managerial myopia to many different sources, including a high US cost of capital, pressure from the stock market for quarterly earnings, and managerial incentive programs that emphasize current performance outcomes, among other factors.<sup>5</sup> At an even more basic level, short-termism is deeply engrained in human behavior, as most individuals favor immediate income or benefits relative to delayed income or benefits.

Another part of the answer may be that business executives do not believe their short-termism harms results. Everyone can point to examples of seemingly shortsighted decisions, but these examples do not provide proof of a general problem. With a little effort, we can also find examples where decision-makers emphasized outcomes far in the future to the apparent detriment of performance. Getting beyond anecdotal evidence has been difficult for research scholars because proxies for time horizon in business are hard to find. For example, some research has used R&D to approximate a firm's time horizon but R&D has also been used as a proxy for concepts not directly related to time, including risk preference, availability of technological opportunity, efforts to differentiate, and efforts to innovate.<sup>6</sup> Each of these interpretations may be reasonable, but the number and variety of them makes it hard to rely on R&D data to understand how executives are managing time horizons. Another approach, McKinsey's Corporate Horizon Index, blends together several different factors in a self-described "descriptive analysis" that is not suitable for econometric research.

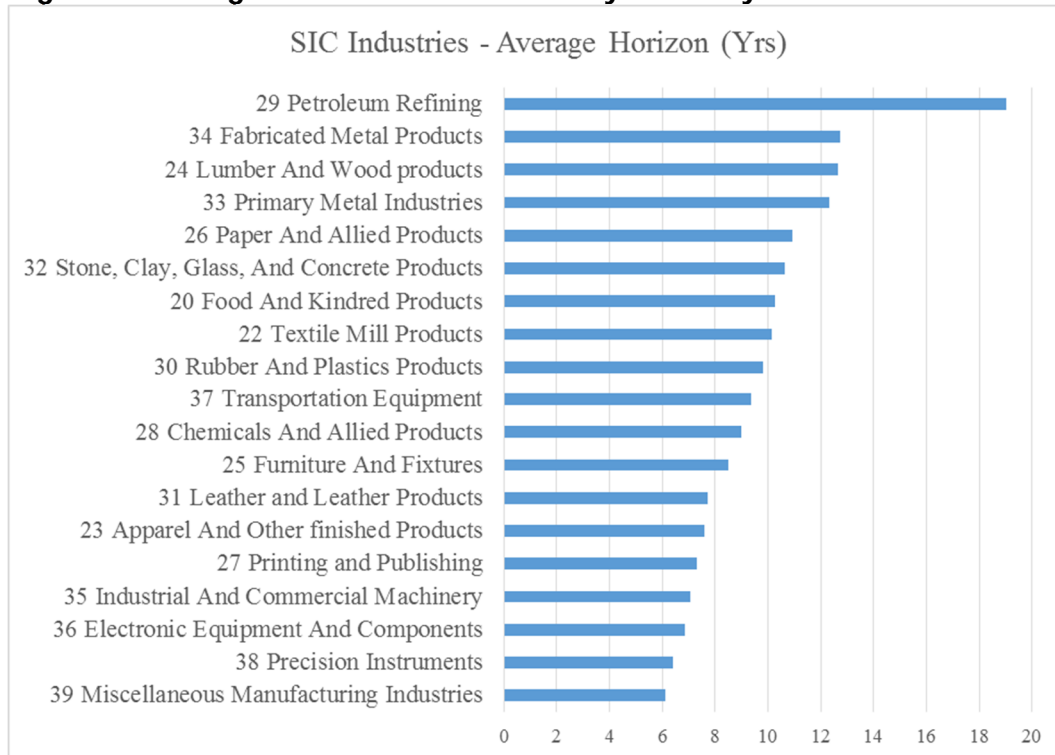
For our econometric analysis, we used a direct measure of time horizon that depends on interpreting accounting data in precisely the way intended.<sup>7</sup> A firm buying a piece of capital equipment must specify how long it expects the equipment to be productive. This expectation determines how much the firm depreciates that equipment in any given year. In firms that use straight-line depreciation (roughly 80% of US manufacturing firms), the depreciation in any year equals the asset's original cost divided by its expected life. This means we can estimate the weighted-average expected life of a firm's physical assets from data on depreciation and asset cost (expected life equals asset cost divided by depreciation). We call this a firm's aggregate investment horizon. This provides a way to consider when a firm exhibits a longer or shorter horizon, whether a firm invests with a longer or shorter horizon than its industry peers, and how such behaviors influence firm performance.

Industry comparisons represent an essential feature of this study. As Figure 1 shows, the average investment horizon varies widely by industry. For a petroleum refining company, a 15-year investment horizon would be

## Does Investing in the Long Term Pay Off for Firms?

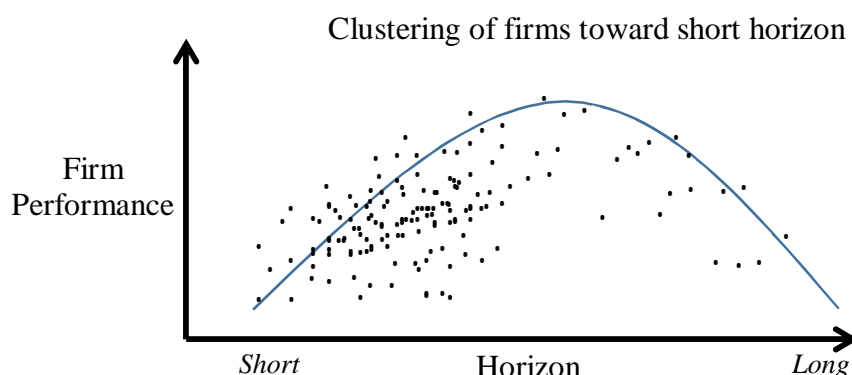
shorter than average, whereas the same 15 years would be longer than average for the horizon of an electronic equipment manufacturer. To accommodate this fact, we analyzed each company relative to the average horizon for its industry.

**Figure 1. Average Investment Horizon by Industry**



Using data on manufacturing firms headquartered in the United States from 1991 to 2011 and an econometric procedure that holds constant stable firm characteristics and many other factors, we find that investment horizon has an inverted U-shaped association with return on assets. Finding evidence of this curved relationship is a key element of the study. If we use a model that imposes a linear relation between horizon and return on assets (ROA) we find a positive relation but one that implies that the benefits of longer horizons continue without limit. Theorizing that a non-linear relation makes sense because of the possibility that a firm could become too focused on the long term, we find that a curved relationship fits the data better. Our results confirm three key ideas: first, that eventually the benefits from longer horizons run out; second, that very short horizons are associated with even lower ROAs than a linear model implies; and third, that most firms are clustered toward the short-term end of the scale. We illustrate our theorized non-linear relation and clustering of firms in Figure 2.

Figure 2. Relationship between Time Horizon and Firm Performance



The econometric results also help quantify the value of longer horizons. Holding all else equal, firms with horizons 4 or more years shorter than their industry average have predicted return on assets (ROA) under 1%. Predicted ROA increases to 3% for firms close to average horizon levels, and reaches 4.5% for horizons 5 years longer than average. The positive association between horizon and performance tops out when a firm's horizon exceeds its industry average by 8 years. A small number of firms appear to take a good idea too far, as predicted returns for horizons longer than 8 years fall short of the observed peak. However, this scenario occurs rarely; more than 95% of firms we studied have horizons in the region where increases in investment horizon result in higher predicted ROA.

Some have claimed that the stock market pressures managers for short-term earnings. Consequently, we also examined whether the association between horizon and performance varied with the level of short-term earnings pressure stockholders exert. We measure this by the average turnover of a firm's shares in a given year, assuming that high turnover (more frequent sales and purchases of the firm stock) indicates added pressure for short-term improvement, whereas low turnover indicates more patient capital. Our results show that firms with impatient stockholders have even more to gain from lengthening their time horizon than do firms with patient stockholders. While firms with patient and impatient investors have roughly the same predicted ROA if they adopt long horizons, firms with impatient investors and low horizons achieve much lower results than firms with patient investors and low horizons. Put bluntly, firms that do not resist short-termist pressures from impatient investors pay an extremely large price.

### **How can firms lengthen their investment horizon?**

Our econometric results are consistent with the recommendations of the Aspen Institute, Harvard Business Review, and McKinsey & Co. – but with an interesting twist. Hypothesizing a curved relation between horizon and performance (not a linear one) allowed us to find an upper limit to the benefits of horizon. This limit can be interpreted as an optimal level, and consistent with the general notion that short-termism abounds, we find that the optimal horizon is about 8 years longer than the current horizon of US firms, on average. Given this, we now consider several “dos and don’ts” for managers seeking to increase investment horizon in pursuit of higher ROA.

***Don’t engage in false fiscal prudence.*** Some of our past research shows that firms increase long horizon investments when they have outperformed recent expectations.<sup>8</sup> Not surprisingly, financial pressures can lead to many short-term choices framed as prudent attempts to save money. A strategy of picking the lower cost options only works when the options have identical properties. More commonly, the lower-price option is a similar-but-inferior alternative that will perform the same function now but wear out sooner. Given the costs of non-performance and replacement, the “cheaper” alternative often turns out the costlier one.

***Do give long horizon projects appropriate weight.*** While managers should not favor investments just because they have a long horizon – taking a good idea too far – they must appropriately discount the future. Most of the time, horizon is a side issue and not a key decision criterion. However, many of the tools managers use to judge investments have inherent biases for the short-term. Returns on a fixed horizon and pay-back period criteria ignore returns beyond that fixed (usually short) horizon or the payback time. While finance theorists recommend net present value or internal rate of return criteria for these reasons, firms usually implement them using discount rates or hurdle rates *double* what the finance theorists recommend.<sup>9</sup> Such overly “conservative” discount rates overly discount the value of cash flows obtained several years into the future.

***Don’t confuse horizon and risk.*** Managers increase discount rates for long horizon investments, but only a subset of these investments entail high risk. For example, although the costs of upgrading to energy efficient lighting may take several years to recoup, such upgrades generally have very low risk. According to finance theorists, the unsystematic (project-specific) risks that mainly concern firms actually should not influence the cost of capital.<sup>10</sup> If you must adapt the discount rate for unsystematic risk, do not blithely confuse horizon and risk.

***Do explain your long term thinking to stakeholders.*** Managers’ dedication and expertise puts them in the best position to decide the worth

of long horizon investments. Firms should explain the reasoning for their long term decisions to multiple stakeholders. Such explanations will have the firm communicate goals and expectations broadly, and force managers to test their logic against the critiques of interested outside stakeholders. Our study found the worst outcomes occurred when managers gave in to impatient investors by adopting extremely short-term investment practices.

***Don't justify pet projects as long term investments.*** Just because something has a long horizon doesn't make it a good investment. Whenever managers pass off wasteful spending as "long term," they diminish their credibility with other stakeholders and make it harder to rally support behind other long horizon opportunities that have a good chance of generating profits. Using the uncertainty that surrounds any long horizon investment to give unwarranted support to a pet project will come back to haunt managers when they need credibility to remain patient in evaluating returns.

### Conclusion

Most firms indeed have an opportunity to improve performance by giving more weight to the long term – because short-termist tendencies have kept them from the best possible outcomes. The most severe performance shortfalls appear in the firms with very short investment horizons, while firms with unusually long investment horizons experience diminishing returns that can even turn negative at extreme levels. By understanding how a firm's investment horizon compares to its peers, its managers can find ways to strike a better balance between the short and long term, thus improving ROA.

### Authors

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## Does Investing in the Long Term Pay Off for Firms?

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### Endnotes

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## Does Investing in the Long Term Pay Off for Firms?

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