

# Are Investor Time Horizons Shortening?

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## INTRODUCTION

The rise in quarterly capitalism in corporate America—increased pressure to meet quarterly earnings predictions and cater to shareholder preferences for short-term returns—has gained significant coverage in the business world and popular press in recent years.<sup>1</sup> Increasingly, popular opinion suggests that firms bow to shareholder pressures, taking steps to smooth earnings and boost share prices in the short-term; firms do so by cutting Research and Development (R&D) investment, engaging in extensive cost-cutting, or increasing dividends and share buybacks.<sup>2</sup> As Laurence Fink notes:

[I]n the wake of the financial crisis, many companies have shied away from investing in the future growth of their companies. Too many companies have cut capital expenditure and even increased debt to boost dividends and increase share buybacks . . . . [W]hen done for the wrong reasons and at the expense of capital investment,

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1. See, e.g., Robert C. Pozen, *Can We Break the Tyranny of Quarterly Results?*, HARV. BUS. REV. (Oct. 27, 2009), <https://hbr.org/2009/10/can-we-break-the-tyranny-of-qu.html> [<https://perma.cc/C9A2-4B7R>]; James Surowiecki, *The Short-Termism Myth*, NEW YORKER (Aug. 24, 2015), <https://www.newyorker.com/magazine/2015/08/24/the-short-termism-myth> [<https://perma.cc/Y3RX-JVVV>].

2. See Daniel Vasella & Clifton Leaf, “*Temptation is All Around Us*” *Daniel Vasella of Novartis Talks About Making the Numbers, Self-Deception, and the Danger of Craving Success*, FORTUNE (Nov. 18, 2002), [http://archive.fortune.com/magazines/fortune/fortune\\_archive/2002/11/18/332268/index.htm](http://archive.fortune.com/magazines/fortune/fortune_archive/2002/11/18/332268/index.htm) [<https://perma.cc/Q37R-J3GR>]. For examples of empirical research confirming these sentiments, see Brian J. Bushee, *The Influence of Institutional Investors on Myopic R&D Investment Behavior*, 73 ACCT. REV. 305 (1998); John R. Graham et al., *The Economic Implications of Corporate Financial Reporting*, 40 J. ACCT. & ECON. 3 (2004).

[returning cash to shareholders] can jeopardize a company's ability to generate sustainable long-term returns.<sup>3</sup>

These observations suggest that firms are engaged in behavior intended to boost share prices in response to increasingly impatient shareholders. Evaluating whether investor time horizons are, in fact, shifting is of critical importance not only to firms but to the economy as a whole. Short-termism has been called "one of the greatest threats to America's enduring prosperity."<sup>4</sup>

Recent estimates at the industry level show that investor discount rates have increased in recent years, supporting the notion that short-termism is on the rise.<sup>5</sup> However, we do not have evidence at the firm level documenting whether and how market discounting is changing over time or how such discounting differs between firms according to firm behavior and characteristics. A recent article by Sampson and Shi estimates market discounting at the firm level as a proxy for investor time horizons, which not only reveals how time horizons have changed but also how they vary between firms.<sup>6</sup> Below, we discuss some observations on changing investor behavior, followed by a review of the evidence presented by Sampson and Shi. We conclude with a brief evaluation of why increased market discounting suggests that investor time horizons are shortening as well as what this means for firms.

## I. RECENT CHANGES IN INVESTOR IDENTITY AND BEHAVIOR

Investor characteristics appear to have changed significantly over the past decades, both in terms of the identity of the investors themselves as well as their behavior. Since 1950, a massive shift has taken place where many institutional owners have replaced direct, retail holdings of shares; in 1950, ninety-two percent of shares were held by individual investors, and by 2006, that number had declined to thirty-two percent. Institutional ownership climbed from eight percent to sixty-eight percent over the same time period.<sup>7</sup> At the same time, holding periods for shares collapsed from

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3. Letter from Laurence D. Fink, Chairman & CEO, BlackRock, to Corporates (Mar. 21, 2014), <http://online.wsj.com/public/resources/documents/blackrockletter.pdf> [https://perma.cc/4ZWE-TW2R].

4. Joe Biden, *How Short-Termism Saps the Economy*, WALL ST. J. (Sept. 27, 2016), <https://www.wsj.com/articles/how-short-termism-saps-the-economy-1475018087>.

5. See generally Richard Davies et al., *Measuring the Cost of Short-Termism*, J. FIN. STABILITY, June 2014, at 16.

6. Rachelle C. Sampson & Yuan Shi, *Are US Markets Becoming More Short-Term Oriented? Evidence and Implications of Market Discounting of Firms, 1980-2013* (Working Paper, Oct. 1, 2017) <https://ssrn.com/abstract=2837524>.

7. Ronald J. Gilson & Jeffrey N. Gordon, *The Agency Costs of Agency Capitalism: Activist Investors and the Revaluation of Governance Rights*, 113 COLUM. L. REV. 863, 875 (2013); John C. Bogle, Founder & Former Chairman, Vanguard Grp., Remarks at the Miller Center of Public Affairs

the average of seven years in 1940<sup>8</sup> to seventeen weeks in 2015.<sup>9</sup> Shortening holding periods will likely result in greater impatience for returns; however, some institutional investors are more patient than others and the effect of institutional investors on discounting may hinge on such behavioral differences.

Bushee categorizes institutional investor behavior into three main groups: dedicated (investors with concentrated holdings and low turnover), transient (characterized by high turnover and diversification), and quasi-indexers (widely diversified holdings but lower turnover).<sup>10</sup> Higher turnover generally puts greater short-term pressure on firms. Bushee shows that firms held by more transient institutional investors are more likely to cut R&D spending in order to make earnings targets; this translates into lower firm value in long-term earnings.<sup>11</sup> In contrast, when held by more dedicated institutional investors, firms are less likely to make such cuts in spending to meet analyst expectations for earnings.<sup>12</sup> Sampson and Shi also report that the composition of institutional owners has changed drastically over time: in 1981, dedicated and transient investors each made up about fourteen percent of institutional owners, while in 2013, transient owners composed thirty-three percent of such investors and dedicated owners constituted only three percent of such investors.<sup>13</sup>

These fundamental shifts in investor identity and behavior to favor more short-term holdings have direct implications for firm behavior. Firm executives are increasingly paid via stock-based compensation, the value of which depends critically on share price. This is one of the most direct mechanisms that investors can use to influence firm behavior and strategy. Despite this identified link between investor preferences and firm behavior, we lack a more direct measure of how markets discount firms and whether this shows shifting investor time horizons. Sampson and Shi identify such a measure, estimate the link with firm characteristics, and discuss why such a measure captures investor time horizons.<sup>14</sup>

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at the University of Virginia (Feb. 8, 2006), [https://www.vanguard.com/bogle\\_site/sp20060208.htm](https://www.vanguard.com/bogle_site/sp20060208.htm) [<https://perma.cc/ZXU9-D7R7>].

8. Andy Haldane, Exec. Dir. Fin. Stability, Bank of Eng., Patience and Finance, Speech at the Oxford China Business Forum in Beijing (Sept. 9, 2010), <http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2010/speech445.pdf> [<https://perma.cc/9KPX-9DQD>].

9. Jason Zweig, *Why Hair-Trigger Traders Lose the Race*, WALL ST. J. (Apr. 10, 2015), <https://blogs.wsj.com/moneybeat/2015/04/10/why-hair-trigger-stock-traders-lose-the-race/>.

10. Bushee, *supra* note 2, at 305–33.

11. Brian J. Bushee, *Do Institutional Investors Prefer Near-Term Earnings over Long-Run Value?*, 18 CONTEMP. ACCT. RES. 207 (2001).

12. *Id.*

13. Quasi-indexers make up the remainder and represent the largest category of institutional block holders at 64% in 2013, with uncategorized institutions taking up the balance. These statistics do not appear in the working paper but are available upon request.

14. Sampson & Shi, *supra* note 6.

## II. ESTIMATING MARKET DISCOUNTING: A LINK WITH INVESTOR TIME HORIZONS

To capture investor time horizons, Sampson and Shi adapt the market discounting measure used by Davies and others.<sup>15</sup> This measure is based on a capital asset pricing model of stock prices, whereby stock price is modeled as a function of expected future dividends and a terminal stock price and discounted by variables capturing the cost of capital—specifically, the risk-free interest rate and company-specific risk premium. In essence, the measure is an evaluation of a stock as investment, assuming (in the case of Sampson and Shi) that the stock is held for five years and then sold at the end of the investment period. Traditional finance models hold that present stock prices are not only a reflection of past firm behavior, but expectations for the future in terms of dividends and stock price appreciation. A market discount factor is added to this traditional asset pricing model. If there is no additional discounting by the market over and above the firm's cost of capital, then the market discount factor should be equal to one. Sampson and Shi estimate this market discount factor using information on all firms listed on the New York Stock Exchange and NASDAQ exchange over the years from 1980 to 2013 (inclusive).<sup>16</sup> A non-linear random coefficient model is used in order to generate firm-specific estimates of market discounting over time. Sampson and Shi transform this variable postestimation so that higher values represent greater market discounting of firms.<sup>17</sup>

Results from this estimation display several striking trends. First, market discounting shows some volatility over time, particularly around market-wide financial shocks such as the dot-com bubble and financial crisis of 2007–2008. Market discounting also demonstrates an unequivocal rise over time. Several alternative measures and robustness checks confirm this trend. To ensure that this rise is not simply an artifact of shifting composition of listed firms on the U.S. stock exchanges, Sampson and Shi also graph within firm movement of market discounting over time;<sup>18</sup> this graph reveals that market discounting not only increased market-wide over 1980 to 2013 but also increased within firms for the vast majority of the sample.<sup>19</sup>

An examination of market discounting across industries reveals similar patterns, but interestingly also reveals significant between-firm

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15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*

heterogeneity.<sup>20</sup> To explore this heterogeneity and corroborate market discounting as a proxy for time horizons, Sampson and Shi estimate the relationship between a firm's discount by the market and that firm's behavior and characteristics.<sup>21</sup> Specifically, the market discount is regressed on measures capturing past firm investment behavior, ownership by different types of institutional investors, and other measures capturing the market's short-term pressures on firms.<sup>22</sup> These measures represent proxies identified by earlier research that are correlated with firm investment horizons and behavior.

Results from Sampson and Shi's estimation show that market discounting is strongly correlated in expected ways with these variables.<sup>23</sup> Firm investments in research and development as well as capital equipment are typically characterized by longer-term payoffs and, thus, signal a more distant investment horizon. Consistent with this logic, such investments are negatively correlated with market discounting.<sup>24</sup> In contrast, a firm's market discount is positively correlated with its transient institutional investor holdings, but negatively correlated with its dedicated holdings. These results are as projected: institutional owners that hold shares for longer periods of time place less pressure on firms to generate short-term returns. Other previously identified measures to capture external pressures on firms to generate short-term returns include the extent of analyst coverage, the threat of shareholder activism, and the firm's earnings response coefficient (i.e., how responsive the firm's stock price is to earnings announcements). These variables are all positively correlated with a firm's market discount, as anticipated. Overall, Sampson and Shi interpret these consistent correlations as evidence that market discounting does embody time horizons.<sup>25</sup>

### III. IMPLICATIONS OF SHORTENING INVESTOR TIME HORIZONS

As previously discussed, market discounting reflects past firm behavior and future expectations for performance, as well as preferences around firm actions. Sampson and Shi highlight a number of firm examples to illustrate this point. Some firms, such as Ericsson, are heavily discounted by the market for R&D investments of a type that are disapproved of by analysts; these analysts opined that Ericsson was "doing

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20. *Id.*

21. *Id.*

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.*

too many things” and was spread too thin.<sup>26</sup> Microsoft, in contrast, also invested significant sums in R&D but was much less discounted by the markets.<sup>27</sup> Several other examples demonstrate how market discounting encompasses investor preferences for firm behavior. While these anecdotes explain firm heterogeneity in market discounting, they do not explain the market-wide trends.

Sampson and Shi also propose several systemic, market-wide factors that affect how investors discount firms.<sup>28</sup> These factors are likely linked to rising uncertainty and compressed cycles of investment and production in the market, resulting from increased firm exposure to globalization, rapid technological change, and market-wide financial shocks. In light of these overall trends, it may be rational for investors to prefer short-term returns over more uncertain, longer-term payoffs. However, given the ability of investors to pressure firms via influence over share price, it becomes critically important that investor time horizons match what is optimal for firms.

Empirical evidence reveals the issues that arise when firms bow to market pressures. Survey-based and larger-scale empirical evidence from other studies show that managers will forgo profitable investments<sup>29</sup> and cut R&D<sup>30</sup> to smooth earnings. Firms may invest less in durables when they have extensive analyst coverage, which makes stock prices more volatile and responsive to news.<sup>31</sup> If investment options are not transparent to the market, firms have been found to cater to shareholder preferences and invest suboptimally.<sup>32</sup> Firms have also failed to make necessary investments in response to industry technological shifts in order to conform to analyst expectations.<sup>33</sup>

The research above highlights that, for some firms, rising investor impatience can lead to suboptimal firm investment. However, for other firms, pressure to generate short-term returns is an important discipline to

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26. Stephen D. Moore, *Ericsson Seeks to Calm Investors' Jitters—CEO Aims to Balance Research, Profit Needs*, WALL ST. J. (EUROPE EDITION) (Nov. 26, 1993).

27. Sampson & Shi, *supra* note 6.

28. *Id.*

29. *See generally* Graham et al., *supra* note 2.

30. Bushee, *supra* note 2.

31. Mark R. DesJardine, *Under Pressure: The Causal Effect of Financial Analyst Coverage on Long-Term Capital Investments*, (Aug. 25, 2015) (unpublished manuscript), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2650729](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2650729).

32. *See generally* Christopher Polk & Paola Sapienza, *The Stock Market and Corporate Investment: A Test of Catering Theory*, 22 REV. FIN. STUD. 187 (2009), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.366.6099&rep=rep1&type=pdf> [<https://perma.cc/9CUF-MPMM>].

33. *See generally* Mary J. Benner & Ram Ranganathan, *Measuring Up? Persistence and Change in Analysts' Evaluative Schemas Following Technical Change*, 28 ORG. SCI. 760 (2017).

constrain the firm from unprofitable and opportunistic investments.<sup>34</sup> The question then becomes how to evaluate the market-wide upward shift in discounting identified by Sampson and Shi. Since Sampson and Shi observe that market discounting is increasing for the vast majority of firms listed on U.S. stock exchanges, it seems likely that, for at least some firms, an appropriate match between investor and firm investment time horizons will not be had. This may lead not only to potential underinvestment in critical factors for firm and economic growth, but also to changes in the character of investment, where, for example, firms outsource research instead of conduct research in-house. This outsourcing behavior has proved less beneficial to the firm than internally conducted research and development in terms of contributions to firm productivity.<sup>35</sup>

#### CONCLUSIONS

Sampson and Shi demonstrate (via numerous empirical tests) that market discounting is rising—a signal that investor time horizons are indeed shrinking. These results have been highlighted in recent debates on the extent to which short-termism exists<sup>36</sup> and how it affects the economy.<sup>37</sup> While interpreting shortening investor time horizons as detrimental to all firms is overly simplistic, Sampson and Shi's analysis reveals that shrinking time horizons are so ubiquitous in the financial market that they warrant questions over whether public firms are facing undue pressures to generate short-term returns.<sup>38</sup>

The results presented may help explain declining research and development productivity<sup>39</sup> as well as stagnant total factor productivity growth.<sup>40</sup> Concurrent shortening of investor time horizons suggests, in part, that underlying these trends is under-investment or otherwise suboptimal investment by firms; this can include reduced investments in worker training, new manufacturing equipment, and development of the

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34. See John Asker et al., *Corporate Investment and Stock Market Listing: A Puzzle?*, 28 REV. FIN. STUD. 342 (2015) (evidencing that publicly listed firms invest less and are less sensitive to investment opportunities than their private counterparts).

35. Anne Marie Knott, *Outsourced R&D and GDP Growth* (Ctr. for Econ. Stud., Working Paper No. 16-19, 2016), <http://3we057434eye2lrosr3dcshy.wpengine.netdna-cdn.com/wp-content/uploads/2015/07/Outsourced-RD-and-GDP-growth.pdf> [<https://perma.cc/56CP-JG82>].

36. Tyler Cowen, *Maybe Companies Aren't Too Focused on the Short Term*, BLOOMBERG (Oct. 7, 2016, 6:00 AM), <https://www.bloomberg.com/view/articles/2016-10-07/maybe-companies-aren-t-too-focused-on-the-short-term>.

37. Rachelle C. Sampson, *Short-Term Thinking in Corporate America is Strangling the Economy*, VOX (Oct. 3, 2016, 10:10 AM), <https://www.vox.com/the-big-idea/2016/10/3/13141852/short-term-capitalism-clinton-economics> [<https://perma.cc/49RG-BHVG>].

38. Sampson & Shi, *supra* note 6.

39. See generally Knott, *supra* note 35.

40. Total factor productivity captures the combined productivity for capital and labor. Total factor productivity growth from 1980 to 2013 is shown in Sampson & Shi, *supra* note 6.

next great product or service that will generate returns for years to come. The implications are difficult to understate since productivity undergirds economic growth and standards of living. As such, Galston and Kamarck argue that “[a]s the growth of the U.S. workforce slows dramatically, economic growth will depend increasingly on improved productivity, most of which comes from raising capital investment per worker. Failing to make productivity-enhancing capital investments will doom our economy to a new normal of slow growth.”<sup>41</sup>

Ultimately, Sampson and Shi provide one of the first market-wide assessments of firm level discounting with direct implications for investor time horizons. Naturally, additional work across disciplines is required to triangulate this pattern and to offer richer context for understanding the full implications. By documenting and corroborating such a persistent trend in investment horizons, we hope to engage academic researchers, business leaders, and policymakers in broader dialogues on why our concept of time is changing and what the implications for our economy may be.

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41. William A. Galston & Elaine Kamarck, *More Builders and Fewer Traders: A Growth Strategy for the American Economy*, BROOKINGS (June 1, 2015), <https://www.brookings.edu/wp-content/uploads/2016/06/CEPMGalstonKamarck4.pdf> [<https://perma.cc/2REN-RRKF>].