

REVIEW ARTICLE

RESEARCH ON INSTITUTIONAL INVESTORS AND CORPORATE SHORT-TERMISM: A CHRONOLOGICAL REVIEW OF FOUR DECADES OF DEBATE

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Abstract: While the pursuing of short-term goals is a strategic necessity for firms, it becomes detrimental to the sustainability of business if it destroys the long-term value. Institutional Investors (IIs) ensure that corporate decisions are made for the purpose of enhancing firm's long-term value. The literature on the role of IIs in combating Corporate Short-termism (CS) is, however, inconclusive. In order to synthesize the seemingly scattered literature for future researchers and academicians, this paper aims to review previous studies on the relationship between IIs and CS in the period from 1988 to 2018. We assess and present CS measurements and relevant theories. Based on our review, we categorize the findings of previous research into two different categories. While the first category of studies supports that IIs discourage firms from CS, others found that IIs induce CS. Under each category, we chronologically review the empirical findings. In aggregate, we find that majority of previous studies support the view that IIs are sophisticated and long-term oriented. However, the restriction of the debate to the US and other few emerged economies implies the necessity of providing evidence from emerging economies, which emanates from the detrimental impact of short-termism on stakeholders and the already-fragile developing economies

Keywords: Institutional Investors, Managerial Myopia, Short-termism, R&D.

Introduction

In a recent interview, Kenneth Frazier, CEO of Merck & Co; one of the largest pharmaceutical companies in the world, became the latest to express concerns about Corporate Short-termism (CS). He admitted the fact that some investors exert pressure on managers to focus on the short run even if this means the dilution of firm's long-term value. Mr. Frazier said that "certain constituencies, including some subsets of investors, often press us to focus on the short term...my job is to ensure that our decisions do not make sense only for the short term, otherwise we will be borrowing value from the future and bringing it into the present."^[1] This fear of CS is the concern of a wide number of directors, practitioners and academics around the world. Indeed, 87 percent of a thousand

executives and directors from different countries surveyed by Barton *et al.* (2016) said that they feel pressured to act myopically and perform strongly within two years or less. In addition, 65 percent of the directors surveyed admitted that this pressure has been on the rise over the past five years. Similarly, 78 percent of 400 executives surveyed by Graham *et al.* (2005) admitted that they would choose smooth profits over projects with long-term value. For this reason, Edmans (2009) describes the decision to invest in long-term investments as one of the biggest challenges that face modern businesses. The debate of CS has, however, largely focused on American businesses who were blamed to have lost their competitive advantage to their Japanese and German counterparts during the 1980s and 1990s (Laverty, 1996; Bushee, 1998).

¹ Kenneth Frazier's interview by Harvard Business Review from the March-April 2018 issue p. 82-87, retrieved from <https://hbr.org/2018/03/businesses-exist-to-deliver-value-to-society>

Notwithstanding, a number of academics from countries and regions outside US, including UK, mainland Europe and Taiwan, raised the concern that CS is a global issue (e.g., Jones and Danbolt, 2003; Brossard *et al.*, 2013; Chen *et al.*, 2015).

The widely cited reason of CS pressure is the existence of myopic institutional investors. However, literature on the relationship between institutional ownership and CS falls generally into two diverse views. While the first view claims that Institutional investors (IIs) encourage companies to invest for the long run, the other view provided evidence showing that IIs are a major source of CS. In this article, we reviewed the literature based on these two competing arguments. We found that most studies support that sophisticated IIs view. In contrast, a few studies in the literature found that IIs have preferences for the short-term earnings over the long-term value. However, the findings of the previous research are likely to be sensitive to the variation in the methods used to measure CS. This is because CS is a multi-dimensional phenomenon that emanates from multiple sources, as discussed by Rajgopal (2017).

The reason of carrying out this review is the lack of any article that synthesizes the literature in detail, which makes drawing generalizable conclusions difficult. Therefore, the article adds important contributions to the existing literature. First, we provide a chronological review that highlights the evolution of CS debate over the last four decades. Thus, this makes easy for researchers to simply identify the gaps in the literature. Second, we divide the review into two competing themes (sophistication VS short-termism of IIs) on which the current debate is based. Therefore, researchers and company directors may consider the evidence provided by each category in corporate governance discussions. Third, we summarize the measures used as a proxy for CS in the extant literature. We believe that this would be a signal to future researchers to overcome the limitations of these measures. The remainder of the paper is organized as following. Section two and three presents the method of review and measures of

CS, respectively. Section three and four reviews the literature. The last sections conclude the paper.

Scope of the Review

To collect relevant studies for our review, we carried out a comprehensive search of previous literature using two methods. First, we started with the most influential articles on the relationship between institutional investors and managerial myopia, including articles indirectly related to the debate (e.g., Bushee, 1998; Hansen & Hill, 1991; Kochhar & David, 1996; Wahal & McConnel, 2000). From the preliminary review of these articles, we noticed that the earliest available study is Graves (1988) and we, accordingly, divided the survey into four periods (1980s, 1990s, 2000s and 2010s), all of which contain ten years except the last one which extends from 2010 to 2018. Using Google Scholar, we run a customized search based on these intervals and used the following keywords: *institutional investors/shareholders, managerial myopia, managerial short-termism corporate short-termism, investment time horizon, myopic investors, R&D expenditures, R&D intensity and R&D spending*. The inclusion of these three R&D-related keywords is due to the extensive use of R&D expenditures by previous studies as an indication of firm's investment time horizon (e.g., Hansen & Hill, 1991; Bushee, 1998). Then, we switched from any keyword to the next after obtaining about fifty articles without a match. This procedure was conducted after adding *institutional investors* to each of R&D keywords to filter out irrelevant articles.

Second, to ensure that all relevant studies are included in our review, we searched websites of Science Direct, Emerald, Taylor & Francis Online, Springer Link, Sage Publications, Academy of Management (AOM), Wiley Online Library, Harvard Business Review, and American Accounting Association (AAA) journals using the aforementioned keywords. By doing so, we could find articles not captured by the first procedure and those published in journals of other relevant fields than Accounting

and Finance. Apart from these literature studies, we also include in our review some other relevant studies that provide theoretical or empirical argument for the existence of CS. We identified a total of sixty-four articles for the purpose of achieving the objective of this paper. After completing the search process, we firstly review the methods used by these studies. Then, we classify relevant studies into two themes based on the theoretical arguments. Under each theme, we review the classified studies on a chronological basis to highlight the evolution of the debate, which is particularly important for future researches to identify the trend of the debate and changes in the behaviour of institutional investors over time.

Measures of Corporate Short-termism

Many terms are used by previous studies to mean the extent of sacrificing the long-term value for short-term earnings, including “managerial short-termism”, “managerial myopia”,

“corporate innovation” and “corporate short-termism”. However, CS studies from different fields, including Management, Accounting, Economics and Finance, define CS in a relatively similar way. Lavery (1996, p.826) indicated that definition of CS is pivotal to the debate and defined it as “decisions and outcomes that pursue a course of action that is best for the short term but suboptimal over the long run”. The CS definition is particularly important for the choice of measures and indicators of CS, the selection of which is vital for logical justification of CS hypothesis (Rajgopal, 2017). In this section, we present some of the measures being used by the literature to reflect the extent of CS. It is, however, important to note that the use of CS as a terminology is a mirror image of “long-term investment”. While all of CS measures have their advantages and disadvantages, the focus here is to critically evaluate their ability to generate conclusive findings. Table 1 summarizes the main limitations these measures.

Table 1: Main Limitations of Existing Corporate Short-termism Measures

Measure [definition] of Short-termism	Utilization by Previous Studies	Main Limitation
R&D expenditures to sales/R&D per employee [The decision to under-invest in innovation by reducing the scale of R&D investments].	Vast majority of previous studies (e.g., Graves <i>et al.</i> , 1988; Eng & Shackell, 2001)	First, not all components of R&D expenditures are invested for the long run. Second, R&D investments may only be feasible for firms with great growth opportunities.
PPE expenditures/sales ratio [The reduction of capital expenditures that makes a company unable to trade competitively].	e.g., Wahal and McConnell (2001), Bena <i>et al.</i> (2017)	Some firms may have already outsourced their production and may not need additional PPE expenditures, accordingly.
Real Activities Management (RAM) [the manipulation of real activities, such as giving excessive discounts, to boost short-term earnings, which may endanger long-term value]	Roychowdhury (2006)	The manipulation of earnings using RAM does not necessarily mean that the firm focuses on the short run at the expense of the long-term value.
McKinsey Index [the length of corporate investment horizon determined by “patterns of investment, growth, earnings quality and earnings management”]	A descriptive analysis study of short-termism (i.e. Barton <i>et al.</i> , 2017)	Some of the five measures used in the index may not reliably measure corporate short-termism (for further discussion, see Rajgopal, 2017).

Discourse Analysis [the investment horizon of corporate voluntary information]	Brochet <i>et al.</i> (2012)	The number of keywords formed the basis for this measure. However, the degree of subjectivity seems very high since the use of specific words in managerial discussions with investors as an indicator of short-termism may wrongly classify some firms.
Time-based measure [the length of capital expenditures' useful life]	Souder <i>et al.</i> (2016)	The measure assumes the use of straight-line method of depreciation, thus ignoring firms with other depreciation methods. The limitation of PPE expenditures/sales ratio applies here as well.
New products / patents developed [the amount of patents or products introduced to the market]	e.g., Kochhar & David (1996), Bena <i>et al.</i> (2017)	Although this measure reflects the output of long-term investments, it ignores firms that might put in large capital in feasible long-term investments, the outputs of which are yet to be seen.
Cutting R&D expenditures in response to an earnings decline [the decision to reduce innovative expenditures for short-term profits]	e.g., Bushee (1998)	The reduction of R&D expenditures as a response to profits decline is more indicative of the presence of RAM than corporate short-termism.

R&D Expenditures

R&D expenditures are important drivers of firms' innovation and sustainable future (Chen *et al.*, 2015). However, the "temporal tradeoff" when taking decisions of investing in R&D, which returns back the investment after a long time and depresses the short-term earnings, makes the R&D expenditures subject to CS (David *et al.*, 2001; Eng & Shackell, 2001). In fact, Chen *et al.* (2015) revealed that managers cut R&D spending to achieve short-term profit goals. This is because the uncertainty involved in R&D investments is high (Latham & Braun, 2010), and they do not produce significant positive returns (Laverty, 1996). However, the reliability of using R&D expenditures as the only indicator of CS is questionable for many reasons as summarized in Table 1. First, R&D may not be particularly long-run in nature or composition (Mansfield, 1980; Laverty, 1996). Indeed, Mansfield (1980) found that the productivity of an industry is increased by R&D expenditures if and only if these expenditures are long-term

oriented. Furthermore, Falk (2012) found that although R&D intensity have a significant positive relationship with employment and sales growth in the two years following the initial investment, this relationship decreases over the long run. Second, the use of R&D ignores the fact that what matters is not the input but the output of investment (Edmans, 2017). Third, R&D expenditures are only productive for firms with great growth potential and may not be worthwhile for others (Szewczyk *et al.*, 1996). Fourth, R&D expenditures are likely to have a U-shaped relationship with long-term value, where excessive R&D expenditures may be wasteful of resources (Yoo & Rhee, 2013). Studies in which only R&D is used as measure of CS may not, therefore, provide conclusive findings (Laverty, 1996).

Capital Expenditures

Although capital expenditures are often made for the purpose of enhancing the companies' competitive advantage (Ernst & Young, 2016),

the use of Property, Plant and Equipment (PPE) as a measure of CS also suffer from some limitations as presented in Table 1. First, firms might have outsourced their production or might have a built-up capacity (Rajgopal 2017). Second, investments in these assets are likely to be “sensitive” to micro-economic variables. A firm that has a small share in the market demand does not need to invest heavily in PPE, although it might focus on other long-term investments such as R&D to increase its market share. Third, if R&D and PPE are really proxies for long-term investment, they should be expected to have the same relationship with the level of IIs, for example. However, the findings of Samuel (2000) provided evidence to the contrary. While the study found that the ownership of IIs has a positive relationship with firm’s PPE expenditures, their relationship with R&D expenditures was found negative. Fourth, the use of capital expenditures as indicator of firm’s horizon ignores the output of expenditures, which may not sometimes worthwhile. Therefore, the capital expenditures are less likely to capture firm’s investment horizon, at least when used as the only indicator of CS.

Real Activities Management (RAM)

RAM is the act of using real business activities to boost short-term earnings, such as offering excessive discounts, lowering cost of sales and reducing expenditure on long-term investments such as R&D. It may give some indication of short-termist outlook because “actions taken in the current period to increase earnings can have a negative effect on cash flows in future periods” (Roychowdhury, 2006, p. 338). In addition, RAM may have real negative consequences in the long run unlike accrual earnings manipulation (Zang, 2011; Sakaki *et al.*, 2017). Various studies in the literature used RAM in the context of the short-termism debate (e.g. Roychowdhury, 2006; Sakaki *et al.*, 2017). However, as Table 1 implies, this behavior does not necessarily mean that the company prioritizes the short-term earnings over the long-term. In fact, Taylor and Xu (2010) found that firms that use RAM do

not suffer significantly from subsequent decline in operating performance. We do, therefore, believe that using RAM only as a symptom of CS cannot be also reliable.

Brochet et al. (2015) Measure

The majority of literature studies utilized quantitative measures extracted from publicly-available financial data. Interestingly, Brochet *et al.* (2015) were the first to argue that voluntary disclosures to investors can be an important indicator of managers’ focus on the short run. They analyze the discourse used in “quarterly conference calls” between managers and investors and identify the keywords that are probably linked with short-term horizon and those that are linked with long-term horizon. After reading 33000 transcripts of manager-shareholder conferences, the authors identified 10 words, which were considered as indicators of short-termism (e.g., daily, weekly, quarterly, etc), and 11 words that are indicators of long-term orientation (e.g., long-term, looking forward, looking ahead, etc). Based on this analysis, they measure CS as the proportion of short-term words to long-term words. In order to verify their index, the authors asked undergraduate and graduate students to rate the identified words on 1-to-5 Likert scale. The ratings of the respondents were generally consistent with the authors’ classification of words. While this measure added the all-important qualitative aspect to the measurement of CS, it may not be reliable *per se* for many reasons. First, managers may use words in the long-term orientation category to signal that the company is being managed for the long run for the purpose of fooling investors. Second, the use of words such as “this year” may not reliably determine CS, a matter that may lead to mislabeling of some long-term oriented companies.

McKinsey Investment Horizon Index

This index has been developed by researchers from McKinsey group (i.e., Barton *et al.*, 2017). The combined index contains capital expenditures to depreciation ratio, accruals to

revenue, the absolute difference between growth in earnings and growth in revenues, incidence of missing or beating EPS by less than two cents and the difference between EPS growth and growth in earnings. The index was then applied to data from 615 non-financial firms in the US in the period from 2000 to 2015. In general, the index is the most comprehensive measure in the debate in terms of the number of CS symptoms included. Nevertheless, it has some drawbacks, which were highlighted by Rajgopal (2017). For instance, the index considers firms that report higher “earnings growth” than “revenue growth” as short-termist firms. However, this may misclassify efficient companies that can reduce their fixed costs without reducing the level and quality of service (Rajgopal, 2017).

Other Measures

Bushee (1998) considered firms that cut R&D expenditures in response to profits decline as myopic firms. This means that the firm is boosting its short-term profits to avoid investors’ dissatisfaction in the case of “earnings disappointment”. However, the focus of this measure on short-term earnings makes it more indicative of RAM than CS.

On the other hand, a number of other researchers developed various models to reflect the tendency of firms to CS, including the number of useful-life years of property, plant and equipment (used by Souder *et al.*, 2016), number of new products introduced by a firm (used by Kochhar and David, 1996) and strategic competitive actions taken by a firm (utilized by Connelly *et al.*, 2010). While each of these measures add a significant measure to the debate, the multi-dimensionality of CS makes it necessary to use a more comprehensive index. In particular, the inclusion of qualitative aspects of CS into the measurement and the use of qualitative surveys are necessary to partly address the limitations of the current literature. These surveys may be conducted at the level of institutional investors, members of audit committee, academics and other experts. For instance, following Brochet *et al.* (2015), the construction of an index based on

experts’ responses may complement the existing measures of CS.

Theoretical Underpinnings

To explain the relationship between IIs and CS, previous studies have used two competing views. While one of these views justify that IIs are short-term sighted, the other view considers IIs as sophisticated investors who encourage firm’s long-term value.

From the other hand, other theories that are not covered in this review deal with the very existence of CS. For instance, a multidisciplinary theory that is widely cited in this regard is the inter-temporal choice (hereafter referred to as ITC).

According to Read (2003, p.2), ITC “is used to describe any decision that requires trade-offs among outcomes that will have their effects at different times”. In other words, decisions that are subject to ITC are those in which the best option for the short term, in order to achieve a particular objective such as maximization of earnings, is not the same best option for the long term (Lavery, 1996). Given that long-term investments tend to yield returns in the long run, firms are likely to face ITC when making these decisions. Another theory is the efficient market theory, which assumes that shareholders are rational and take their “sell and buy” decisions on the publicly available information that is relevant to the assessment of investee’s future potential (Hansen and Hill, 1991). Accordingly, they encourage long-term investments only if these could increase future net cash flows and discourage otherwise (Hansen and Hill, 1991). Based on this argument, there would be no relationship between IIs and CS.

Consistent with this theory, Yan and Zhang (2009) investigated the relationship between IIs shareholding and long-term stock returns (i.e. up to 3 years) and found that although short-term IIs positively associate with short-term earnings surprises, stock prices of firms held by short-term IIs do not reverse in the long run. They also found that the existence of long-term

IIs has no bearing upon stock prices in the long run. Their findings are consistent with efficient market hypothesis and suggest that the horizon of IIs has no relationship with the long-term value of the firm. Even though this is the only study we found supporting this hypothesis, the extent to which the three-years-stock-price reflects the negative impact of short-termism is questionable. In fact, Stein (1989) challenged this argument and provided evidence showing that institutions continue to act myopically even if the market is fully efficient.

Notwithstanding, the previous literature studies majorly fall into two categories, the first of which is the view that IIs are myopic and the second is the view that IIs are long-term oriented. In this section, we present the theoretical justifications and hypotheses of these two views.

Myopic Institutions Theory

This theory explains the behavior of IIs when responding to long-term strategic investments, such as R&D, and the effect of their response on share prices and, eventually, managers' behavior. Institutional fund managers are subject to impatience of their investors who push them to avoid profit declines, even if it is a result of strategic investment (Hansen & Hill, 1991; Wahal & McConnell, 2001). This pressure may force them to sell their shares when profits decline temporarily and buy more favorable shares. Given that IIs often hold a considerable number of shares, this behavior may then cause a decline in share prices. In this regard, the findings of Latham and Braun (2010) suggest that current stock prices are likely to determine managers' decisions on R&D intensity. To avoid share price decline, managers of firms invested by IIs may, therefore, cut long-term investments and innovative projects, which would take a long time to pay off (Hansen and Hill, 1991). This can be by either undervaluing cash flows in the long-run or by applying high discount rates to these projects (Black & Fraser, 2002). The pressure on managers may even be worse if the share price decline and stock undervaluation

may expose the company to potential hostile takeovers, after which managers may lose its control (Tylcote, 1987; Stein, 1988; Stein, 1989; Kochhar & David, 1996; Smith, 1996). In many cases, managers, therefore, adopt anti-takeover provisions, which previous research found to induce CS by cutting long-term investments (e.g., Mahoney *et al.*, 1997). From another perspective, when managers of IIs' business are evaluated on quarterly or annual basis, which is a common practice, they may not also risk their rewards with investments that would pay off in the future (Graves, 1988). This theory predicts a positive relationship between institutional shareholding and CS.

Sophisticated Institutions Theory

Competency-difficulty (CD) gap measures the difference between the level of investors' competence and the difficulty involved in decision making. The larger this gap, the more investors take their decisions based on simplified criterion (Hansen & Hill, 1991). In the context of shares portfolios, investors with wider CD gap may simply sell and buy shares in response to earnings decline. On the other hand, IIs make use of economies of scale, access to management, sophistication of business models and competent management skills (Kochhar & David, 1996; Eng & Shackell, 2001). Individual investors are, therefore, expected to have wider CD gap than IIs (Hansen and Hill, 1991). By the virtue of their sophistication, IIs are expected to behave as a "buffer" between individual investors and corporate managers who are then allowed to invest in long-term investments (Wahal & McConnell, 2000). In fact, Aghion *et al.* (2013, p. 277) found that "CEOs are less likely to be fired in the face of profit downturns when institutional ownership is higher". Furthermore, long-term investments are risky due to the long-time they take to payback the investment. Therefore, sophisticated IIs are more effective than individuals to manage these risks through diversification and, hence, more likely to invest in firms with high R&D expenditures (Baysinger *et al.*, 1991). This theory predicts

a negative relationship between institutional shareholding and CS.

Agency Theory

According to the “information asymmetry” argument of the agency theory, investors have less access to business information than managers. The information includes taking decisions related to time-horizon of investments (Hansen and Hill, 1991; Kochhar and David, 1996). Therefore, as Jensen’s 1986 study argued, pressure from capital market participants, including IIs, serves as a disciplinary mechanism to reduce agency conflicts (cited in Stein, 1989). The main argument is that targets of shareholders and managers may be different. Particularly, principals “shareholders” may be unable to assess managerial decisions (Honore *et al.*, 2015), a matter that becomes more complicated with the uncertainty of long-term investments. However, IIs can be argued to have more information than individual IIs, thus allowing managers to invest for the long-term. Hence, from the corporate governance perspective, IIs play a monitoring role (Yoo & Rhee, 2013) and, therefore, tend to reduce the extent of CS. Another important motive for IIs to play a monitoring role is the difficulty to exist. Due to their significant shareholdings, IIs find themselves “locked-in” into their stock ownership. This is due to the possibility of stock price decline and capital losses if they are to sell such substantial shareholding (Hansen & Hill, 1991). In this circumstance, IIs are effectively forced to focus on the long-term because of “higher costs of exist” (Kochhar & David, 1996; David *et al.*, 2001). By doing so, IIs are likely to act as monitors and reduce agency conflicts. These arguments also predict a negative relationship between institutional shareholding and CS.

Chronological Review of Literature Findings

We categorize previous studies into two different hypothetical themes under which the findings of previous studies are chronologically presented. These themes are based on the hypotheses predicted in Section 4. Table 2 summarizes notable studies in the literature.

Myopic Institutional Investor Hypothesis

Myopic IIs Theory states that IIs pressure corporate managers to focus on the short-term earnings through the sale of their often significant shareholding, an issue that may result in short-term decline in share prices. This is even more severe with the existence of hostile takeover threats, as documented by some previous studies (e.g., Stein, 1989). However, as shown in Table 2, while some of the studies that support this hypothesis found all IIs as myopic (e.g., Graves, 1988; Jones and Danbolt, 2003), others provided evidence that only some types of IIs are short-termist (e.g., Bushee, 2001; Eng & Shackell, 2001; Connelly *et al.* 2010).

In a survey of 325 UK finance directors, Marston and Craven (1998) evaluated the extent to which managers believe that IIs evaluate them on short-term basis and showed that managers see their investors as short-termist. Using 59 responses of a sample of finance managers from US and Swedish companies, Segelod (2000) also used a qualitative approach to investigate managers’ perception towards CS.

Table 2: Summary of Notable Literature Studies

Study	Measure of Dependent Variable	Measure of Independent Variable (IV)	Method	Key Findings
Graves (1988)	R&D expenditures to sales ratio, R&D per employee	IV: percentage of shares held by Institutional Investors (IIs) Control variables include market share, profit and interest rates	Sample: 22 computer manufacturing companies Country: US Sample period: 1976-1983 Analysis: Ordinary Least Squares (OLS) Regression	A significant negative relationship exists between IIs ownership and R&D. Hence, IIs induce Corporate Short-termism (CS).
Graves (1990)	R&D expenditures to sales ratio, R&D expenditures per employee	IV: Percentage of shares held by IIs, lagged by one year Control variables: same as in Graves (1988)	Sample: 133 firms in 6 R&D-intensive industries Country: US Sample period: 1965-1984 Analysis: Generalized Least Squares (GLS) regression	The relationship between IIs and CS is dependent upon industry type. Some sectors showed no significant relationship, others showed a positive significant relationship between IIs and R&D.
Hansen & Hill (1991)	R&D expenditures to sales ratio	IV: shares held by IIs (%) Control variables: lagged firm-specific R&D intensity, lagged industry-specific R&D lagged cash resources, lagged size, lagged diversification and lagged insider shareholding	Sample: 129 firms in 4 R&D-intensive industries Country: US Sample period: 1977-1987 Analysis: GLS regression	There is a significant positive relationship between IIs and R&D to sales. Hence, IIs reduce CS.

Baysinger <i>et al.</i> (1991)	R&D expenditures per employee	IV: shares held by IIs (%) Control variables: industry R&D intensity, firm size and diversification	Sample: 176 firms from Fortune 500 Country: US Sample period: 1981-1983 Analysis: OLS regression	A significant positive relationship exists between IIs and R&D per employee. Hence, IIs reduce CS.
Kochhar & David, (1996)	Number of new products developed	IV: shares held by IIs (%) Control variables: size, leverage, liquidity, insider ownership and diversification	Sample: 135 companies Country: US Sample period: 1989 Analysis: OLS regression	Conditional relationship. No significant relationship between IIs and CS, in total. However, only the ownership by pressure resistant IIs (without business relationship with the company) is positively related to new products developed and, therefore, reduces CS.
David <i>et al.</i> (1996)	R&D expenditures to sales ratio	IV: activism by IIs (proxies of active engagement and monitoring), Shares held by IIs% Control variables: leverage, performance, size, outside directors, CEO duality, CEO tenure and diversification	Sample: 82 industrial companies Country: US Sample period: 1987-1993 Analysis: OLS regression	Conditional relationship. The ownership of IIs itself has no relationship with CS. However, IIs activism encourages managers to be more innovative and long-term oriented. Hence, there is a negative (positive) relationship between IIs activism and CS (R&D intensity).
Mahoney <i>et al.</i> (1997)	Change in R&D and capital expenditures to sales ratio	IV: shares held by IIs% Control variables: market value of equity, market to book value and takeover variables	Sample: 261 S&P 500 firms Country: US Sample period: 1984-1988 Analysis: OLS regression	Companies with higher IIs ownership are less likely to cut long-term investments than those with lower IIs ownership. Hence, IIs reduce CS.

Bushee (1998)	Change in R&D expenditures as a response to earnings decline (Yes/No)	IV: shares held by IIs% Control variables: change in R&D in the prior year, change in industry R&D, change in GDP, change in sales, Tobin's Q, firm size, distance from earnings goal, leverage and free cash flows.	Sample: 13,944 firm-year observations Country: US Sample period: 1983-1994 Analysis: logistic regression	IIs, in general, reduce the possibility of cutting R&D expenditures to reverse an earnings decline. However, when classifying IIs based on their trading frequency, IIs with higher portfolio turnover "transient investors" force managers to cut R&D in response to an earnings decline.
Samuel (2000)	PPE expenditures, R&D expenditures and advertising expenditures, each divided by total assets replacement cost	IV: shares held by II% Control variables: sales, cash flows and Tobin's Q	Sample: 603 manufacturing companies Country: US Sample period: 1972-1990 Analysis: OLS regression	Ownership by IIs has a positive relationship with PPE expenditures, negative with R&D expenditures and no relationship with advertising expenditures.
Wahal & McConnell (2000)	R&D expenditures to prior year sales ratio, and PPE expenditures to prior year's book value of PPE (both industry-adjusted)	IV: shares held by IIs% Control variables: lagged market to book ratio, lagged leverage ratio, lagged ratio of operating income to assets and managerial ownership.	Sample: 2500 firms Country: US Sample period: 1988-1994 Analysis: OLS regression	There is a positive (negative) association between the fraction of owned by IIs and R&D and PPE expenditures (CS). IIs are, therefore, likely to discourage CS.
Bushee (2001)	Amount of firm value that reflects expected near-term earnings using Ohlson valuation model.	IV: shares held by IIs% Control variables: firm size, firm's S&P stock rating, listing age, stock liquidity, dividend yield, firm riskiness indicators including leverage, R& D intensity among other factors.	Sample: 10,380 firm-years observations Country: US Sample period: 1980-1992 Analysis: OLS regression	IIs have preference, although weak, for near-term profits at the expense of long-term earnings. Particularly, IIs who are "transient investors" and those that are liable under strict fiduciary regulations (e.g., banks) strongly prefer the short-term value. The evidence moderately supports that IIs induce CS.

David <i>et al.</i> (2001)	R&D expenditures to sales ratio	IV: activism by IIs (proxies of active engagement and monitoring), Shares held by IIs% Control variables include: size, diversification, free cash flow, leverage, industry R&D expenditures and performance.	Sample: 73 industrial companies Country: US Sample period: 1987-1993 Analysis: OLS regression	IIs' activism, not ownership by IIs, positively (negatively) associates with R&D to sales ratio (CS). This relationship is stronger if the activism is proxy-based if the firm is in a technology-intensive industry and if the firm has high growth potential.
Eng & Shackell (2001)	R&D to sales ratio	IV: Shares held by IIs% Control variables: sales, industry R&D, pre-R&D cash flows, gross national product and Tobin's Q	Sample: 58 industrial companies Country: US Sample period: 1981-1989 Analysis: OLS regression	Ownership by IIs is positively (negatively) associated with R&D spending (CS). Banks, insurance and investment companies (other IIs, including pension funds, universities and private institutions) invest less (more) in companies with higher R&D intensity.
Jones & Danbolt (2003)	Abnormal returns upon the announcement of R&D projects	IV: dummy variable; 1 if institutional shareholding is more than 5% and 0 if not	Sample: 54 listed companies that announced R&D projects Country: UK Sample period: 1991-1996 Analysis: OLS regression	When R&D projects are announced, the market positively responds with abnormal returns. However, firms with ownership by IIs have lower abnormal returns. Hence, IIs induce CS.
Roychowdhury (2006)	Real Activities Manipulation	IV: shares held by IIs% Control variables include: market to book value and size (logarithm of market value of equity)	Sample: 3672 companies Country: US Sample period: 1987-2001 Analysis: OLS regression	Firms generally engage in real activities manipulation, which may reduce long-term value. This is reduced by the existence of institutional shareholders. Hence, IIs reduce CS to some extent.

Connelly <i>et al.</i> (2010)	“Strategic competitive actions” and “tactical competitive actions”	IV: shares held by dedicated IIs% shares held by transient IIs% Control variables include: size, performance, previous competitive actions, financial slack and CEO compensation	Sample: 72 companies in the Fortune 500 Country: US Sample period: 1997-2006 Analysis: Negative Binomial Regression (NBR)	Ownership by dedicated IIs who hold shares over time is positively associated with “strategic competitive actions”. On the other hand, ownership by transient IIs is associated negatively with strategic actions and positively with tactical actions. Hence, only some types of IIs may induce CS.
Aghion <i>et al.</i> (2013)	“Citation-weighted patents”	IV: shares held by IIs% Control variables include: R&D stock and size (sales)	Sample: 803 companies Country: US Sample period: 1991-1999 Analysis: OLS regression, Poisson regression and NBR	Ownership by IIs is positively associated with firm’s innovation. The relationship is consistent even if R&D expenditures are used as dependent variable.
Brossard <i>et al.</i> (2013)	R&D expenditures to assets ratio	IV: 1 if firm’s shareholding is dominated by IIs and 0 otherwise Control variables: Tobin’s Q, return on sales and industry type	Sample: 324 companies Country: 15 European countries Sample period: 2002-2009 Analysis: OLS regression	Percentage of IIs shareholding is positively associated with R&D spending. However, firms with impatient IIs tend to reduce R&D expenditures.
Brochet <i>et al.</i> (2015)	Number of keywords that indicate short-termism to the number of words that refer to long-term orientation (using the discourse of quarterly conference calls between managers and investors)	IV: number of shares held by long-term investors to total number of shares%, based on Bushee (2001) classification of IIs Control variables include: leverage, liquidity, return on equity and size	Sample: 17,783 companies Country: US Sample period: 2002-2008 Analysis: OLS regression	The discourse-based measure of CS is robust and reliable. While firms with transient IIs tend to involve in CS, Ownership of long-term IIs is negatively associated with CS.

<p>Chen <i>et al.</i> (2015)</p>	<p>Current change in R&D expenditures to sales ratio</p>	<p>IV: Prior change in earnings IV (moderator): shares held by IIs%</p> <p>Control variables: book-to-market ratio, size, leverage, cash availability and industry R&D level</p>	<p>Sample: 932 companies Country: Taiwan Sample period: 2002-2012 Analysis: OLS regression</p>	<p>In general, firms adjust current R&D expenditures based on previous year's decline in earnings, thus providing support for the existence of CS. After classifying the sample into groups, IIs were found to intensify CS only in those firms that cut R&D expenditures to reverse an earnings decline (short-termist firms). In particular, domestic (foreign) IIs were found to intensify (discourage) CS.</p>
<p>Bena <i>et al.</i> (2017)</p>	<p>R&D and PPE expenditures to assets ratio; Number of employees; Number of patents</p>	<p>IV: shares held by foreign IIs%</p> <p>Control variables include: domestic IIs%, insider ownership, logarithm of sales, Tobin's Q, cash availability and debt to assets ratio</p>	<p>Sample: 30,952 companies Country: 30 countries Sample period: 2000-2010 Analysis: OLS regression</p>	<p>Higher percentage of foreign IIs encourages long-term investment and is positively associated with innovation output. The results do not change even after restricting the sample to non-US firms.</p>

When managers were asked if there is a pressure from the stock market, including IIs as participants, which force them to sacrifice the long-term value, they admitted that such pressure exists. However, the study found that US managers in the survey are subjected to more pressure from the stock market than Swedish managers. Similarly, Black and Fraser (2002) studied five countries (Australia, Germany, Japan, UK and US) and found that all of them underestimated cash flows that accrue over five years, although German and Japanese companies were found less myopic than those in the other countries. This may imply that myopic IIs exist as a problem globally, but its extent varies from country to country. Indeed, some previous studies documented that the impact of stock ownership on R&D investments, which is often taken as a proxy for the long-term or short-term orientation of companies, vary among different

countries (e.g., Lee and O'Neill, 2003).

A question that raises itself here is whether IIs, in general, are myopic. In this regard, Ryan and Schneider (2002) drew the attention of researchers and practitioners to the importance of understanding the heterogeneity of IIs. The evidence of Kochhar and David (1996) showed that only firms with IIs who maintain business relationships with investees, such as banks, are likely to overlook the long-term value. Furthermore, Bushee (1998) showed that only "transient investors" who frequently trade their stakes induce CS. Connelly *et al.* (2010) also indicated that ownership by transient investors is negatively related to firm's "strategic competitive actions". More significantly, Bushee (2001) found that all IIs have some preference for the short-term value. However, IIs with "strict fiduciary" responsibilities (e.g., banks) have a strong negative relationship with

the amount of firm value that reflects the long-term earnings. Consistent with this finding, the study of Eng and Shackell (2001) also indicated that banks, insurance companies and investment companies tend to invest less in firms with high R&D expenditures. Furthermore, as in Table 2, Brochet *et al.* (2015) found that transient IIs induce CS, thus supporting the view that only some IIs are myopic.

All the studies presented thus far provided evidence from US markets. Therefore, to overcome this limitation in the literature, Jones and Danbolt (2003) found that the abnormal returns that followed the announcements of R&D investments by UK listed companies are lower for firms with higher percentage of institutional shareholding. They argued that this evidence is indicative of the presence of some short-termist preferences in UK stock market. Using a qualitative approach to study whether companies are actually subject to short-term pressures, Liljebloom and Vaihekoski (2009) provided evidence from 149 CFOs in the 500 largest Finnish companies. Their results indicate that companies generally face moderate pressure to perform myopically and that firms with higher institutional shareholdings are more subject to short-term pressures. Additionally, their study found that these firms use lower discount rates and relatively shorter payback periods when assessing long-term investments, thus making the possibility of reducing these investments more likely for these firms. In a multi-country study, Brossard *et al.* (2013) studied the case of fifteen European countries and found that firms with “impatient” IIs are associated with lower R&D expenditures. More recently, Chen *et al.* (2015) found that managers generally cut long-term investments to meet short-term goals. The study also found that domestic IIs in Taiwan intensify myopic investment decisions, in contrast to foreign IIs.

Sophisticated Institutional Investor Hypothesis

CD Gap Theory assumes that IIs are more sophisticated than individual investors due to their accumulated experience and investment

management skills. In fact, Wooldridge (1988) and Chauvin and Hirschey (1990) found that capital markets positively react to strategic investment decisions, such as R&D. Particularly, Szewczyk *et al.* (1996) found that markets’ response to R&D announcements is positively associated with the level of ownership by IIs. Thus, if the CD Gap Theory holds, IIs will positively behave in response to an increase in R&D or other long-term investments, which may result in subsequent temporary decline in profits. These arguments, therefore, predict a positive relationship between the level of II ownership and CS, which is also consistent with the monitoring role of IIs in agency conflict.

Shortly after his seminal study (i.e., Graves, 1988) in computer manufacturing industry, Graves (1990) expanded his sample to six R&D-intensive industries, which covered 133 US firms from 1965 to 1984, as indicated in Table 2. Using Generalized Least Squares (GLS) regression, the paper estimated relationships for each industry and showed that the impact of IIs on R&D spending varies accordingly. While many firms in their sample exhibited no significant impact for IIs on CS (R&D spending), those that showed a significant impact supported the “sophisticated IIs hypothesis”. However, the estimation of models for each industry in this study makes it difficult to conclude a particular relationship. Notwithstanding, their conclusions provided important implication for the debate, which demonstrated that the relationship may be dependent upon industry type. After Graves and Waddock (1990) called for more scrutiny of IIs’ role in strategy by policy makers and researchers, Hansen and Hill (1991) and Baysinger *et al.* (1991) supported the “sophisticated IIs hypothesis”. The first employed data from 129 US listed firms in four research-intensive sectors from 1977 to 1987 and found that higher IIs ownership is associated with higher R&D, and vice versa. The evidence of Baysinger *et al.* (1991) from 167 companies selected from fortune 500 also agreed that institutional investors encourage more R&D spending. In other words, they showed that IIs encourage investments that

are oriented towards the long-term and, hence, prevent managers to take myopic decisions that may deteriorate the long-term value. This study controlled for many factors that were overlooked by Graves (1988, 1990), including industry R&D intensity, liquidity, diversification and managerial ownership. In an attempt to overcome the drawbacks of using R&D as a CS indicator, Kochhar and David (1996) used the new products developed by a firm to reflect its tendency to myopic behavior. Controlling for most of those variables in Hansen and Hill (1991) and using data from 135 manufacturing companies in US, Kochhar and David (1996) showed that there is no relationship, in total, between IIs and CS. However, after dividing IIs to “pressure-sensitive” and “pressure-resistant” categories, they found that only pressure-resistant IIs are positively associated with new products developed, hence, providing conditional evidence in favor of the sophisticated IIs hypothesis. These findings highlighted the heterogeneity of institutional investors for the first time in the literature. In support of these results, the authors argued, in another study, that IIs that have business relationship with investees (pressure-sensitive) are ineffective, in the context of their role in corporate governance (David & Kochhar, 1996). Other studies took a different perspective and argued that what matters is not the existence of IIs *per se* but whether IIs are active in their monitoring role “activism”.

The findings of David *et al.* (1996) showed that the activism of IIs is what encourages firms to be more innovative, arguing that the use of IIs ownership by previous research mistakenly assumes that IIs are active in monitoring investees. Consistent with this conclusion, Smith (1996) empirically found that successful shareholder activism leads to subsequent improvement in performance and maximizes shareholders’ wealth. Clyde (1997) provided evidence that the size of ownership is important and found that IIs who effectively police managerial behavior are those with large shareholdings. The study argued that this large ownership incentivizes them to monitor managerial decisions, although IIs are generally superior to individual investors in

terms of playing a more active monitoring role (David *et al.*, 1998).

To avoid takeover threats that may cause managerial myopia as argued by the myopic institutions theory, previous research suggested that the introduction of anti-takeover provisions may reduce managers’ attention to these threats and enhance their quality (e.g., Chemmanur *et al.*, 2011), although this is not universal, as Mahoney *et al.* (1997) and Honore *et al.* (2015) provided evidence to the contrary. It is important to note that the link between takeover threats and CS is a separate topic in the debate which the paper does now present in detail. Nevertheless, while firms protected from hostile threats by these provisions were found to cut subsequent long-term investments by Mahoney *et al.* (1997), they revealed that firms with higher IIs ownership are less likely to cut long-term strategic investments. A very important study to the debate was conducted by Bushee (1998) using the financial data of a sample of US companies from 1983 to 1994. The paper considers firms that cut R&D expenditures as a response to an earnings decline as myopic corporations. According to this study, IIs reduce the extent of CS, in general. More importantly, the study revealed that not all IIs encourage long-term investments. After classifying IIs to “transient”, “quasi-indexers” and “patient” groups, the author found that firms with more transient IIs are likely to cut R&D and, hence, encourage CS. This conclusion has many implications for the debate. First, it implies that the extent to which IIs are associated with long-term orientation of firms is conditional on their characteristic such as trading frequency. Only investors who are patient in nature can discourage firms from myopic investments. In fact, supporting the notion that not all IIs are sophisticated, Connelly *et al.* (2010) revealed that only dedicated IIs encourage the adoption of strategic competitive actions. Second, it shows that the classification of IIs based on particular behavior or factor is significant for CS research in order to generate more conclusive findings.

To support the sophisticated IIs hypothesis qualitatively, Solomon and Solomon (1999) surveyed unit trust managers in UK and found

that unit trusts are active investors and that they establish longer relationships with their investees. This study was followed by Wahal and McConnell (2000) who empirically found that both Property, Plant and Equipment (PPE) and R&D expenditures depress short-term profits. They argued that the level of both can be indicators of innovation or CS and, accordingly, they employed these expenditures as a proxy for long-term investments. Using a sample of 2500 US firms, their findings showed that these PPE and R&D investments are higher for firms with larger institutional ownership. In support of these findings, Jiambalvo *et al.* (2002) revealed that companies with higher IIs ownership put more emphasis on future profits. Furthermore, they found that current prices in these companies give more value to forward-looking profit-irrelevant information. Consistent with their previous study (i.e., David *et al.*, 1996), David *et al.* (2001) re-emphasized that what matter is not only the ownership of IIs but their activism. This study also showed that the positive impact of activism by IIs on long-term investments. They additionally showed that the nature of activism and whether the investee has growth opportunities or in a technology-driven industry moderate this positive impact. This emphasizes that IIs are not all sophisticated and may have different preferences for corporate strategies (Hoskisson *et al.*, 2002). For instance, Ryan and Schneider (2002) argued that public pension funds are the most likely IIs to monitor investees. Eng and Shackell (2001) found that although generally large IIs ownership is positively associated with firm's R&D spending, only IIs other than banks, insurance and investment companies, such as universities and pension funds, invest in firms with higher R&D spending. Although Tobin's Q has a little to say about CS, Ferreira and Matos (2008) showed that only foreign IIs (as contrast to domestic IIs) are associated with higher firm value (i.e. Tobin's Q). Indeed, Chen *et al.* (2015) documented a negative relationship between foreign IIs and CS.

However, the majority of literature studies tend to support that IIs focus on value-creating

long-term investments even if the level of R&D spending is not the measure of CS. To the extent that manipulation of real activities (previously and hereafter referred to as RAM) can be a proxy for firm's short-term orientation, studies using RAM show that IIs reduce the incidence of RAM. For instance, Roychowdhury (2006) found that managers generally tend to engage in RAM to avoid presenting annual earnings decline, and that this tendency is restricted by the existence of IIs. This finding is consistent with other previous research in the context of RAM (e.g., Zang, 2011; Kalgo *et al.*, 2015; Sakaki *et al.*, 2017) that also showed that firms are less likely to engage in RAM when ownership by IIs is high, and vice versa. Callen and Fang (2013) found that stable IIs are negatively associated with one-year-ahead crash risk of share price. Moreover, Aghion *et al.* (2013) claimed that utilization of R&D expenditures as a measure of innovation underestimates the role of IIs. Accordingly, they used number of patents granted as a proxy for innovation and found that there is a positive association between IIs and innovation, thus further supporting the sophisticated IIs hypothesis.

The focus of the largest body of the literature on US markets may cast some doubt on whether IIs are sophisticated in other countries and, accordingly, tend to encourage innovation. However, plenty of studies in different countries also support the long-term orientation of IIs. Brossard *et al.* (2013) provided evidence from Europe and support that firms with higher ownership by IIs, in general, tend to invest more in long-term investments (i.e. R&D). More importantly, Bena *et al.* (2017) investigated the relationship between foreign IIs and long-term investments in a sample derived from thirty countries around the world. Their results emphasized that foreign IIs are positively associated with long-term investment (R&D and PPE) and innovation output. This relationship held even after the US companies were excluded from the sample. Hence, this emphasizes that the sophisticated IIs hypothesis regarding CS is not restricted to US markets.

Implications of the Current Literature and Future Research Agenda

The paper presented two competing views on the relationship between the level of long-term investments and institutional shareholding. The surveys of previous studies (i.e. Graham *et al.*, 2005; Barton *et al.*, 2016) revealed that CS is a real issue. In fact, Barton *et al.* (2017) showed that companies with long-term orientation perform better than those with short-term outlook. However, the majority of studies in the debate supported that institutional owners are not the ones to be blamed for CS, where these studies found that firms with IIs, or active IIs, do not sacrifice the long-term value for immediate earnings. Therefore, this means that there are other factors that may explain the pressure of CS expressed by the aforementioned surveys, such as executive compensation and quarterly reporting. In addition, it stresses the importance of addressing both IIs and directors to assess their perceptions. Although a few previous studies were carried out in this regard (e.g., Solomon & Solomon, 1999; Segelod, 2000; Liljeblom & Vaihekoski, 2009), the qualitative evidence (e.g., using interviews, expert-oriented focus groups, surveys) is still limited. Therefore, we recommend future research to conduct wider surveys of both directors and IIs in order to provide more conclusive findings. Moreover, the drawbacks of the measures being used by the current literature need to be addressed by future research, since the utilization of the right metric is fundamental to the debate of CS (Rajgopal, 2017).

The existence of a considerable number of studies that found IIs as myopic exerts some doubt on the extent to which IIs encourage long-term investments. One explanation of their finding is that only some IIs are myopic as supported by previous studies (e.g., Hansen & Hill, 1991; Bushee, 1998). Another explanation is that IIs with small stakes in firms have little incentive to monitor CS. Thus, the focus should be on block holders as conceded by Edmans (2009). He argues that these investors can improve firm's long-term value by the virtue

of their large shareholding even if they do not actively intervene in investees. However, Zeng and Lin (2011) indicated that ownership concentration is negatively associated with long-term investments (i.e. R&D spending). One interpretation of their results, which contradict with Edmans' argument, may be that only IIs, not individuals, who are block holders, are likely to discourage firms to make myopic decisions, as moderately supported by Clyde (1997). Future research may further examine this argument.

There are several other implications for future research. First, the concentration of most literature studies on US companies ignores the consideration of country differences in the behaviour of IIs. Therefore, there is a need to further examine whether IIs in other countries exacerbate or discourage short-termism, particularly in emerging economies. Second, as corporate governance is meant to monitor that companies are managed for the wealth of shareholders, it can be said that the behaviour of IIs is moderated by the strength of firm's governance system. However, the current literature is yet to examine this argument. Third, the current measures of CS in the literature suffer from some drawbacks that may hinder the generalization and conclusiveness of previous findings. Therefore, future researchers may consider developing a comprehensive CS index.

Conclusion

The paper aimed to review the current literature studies on the relationship between institutional shareholding and corporate myopia. While most previous studies support the view that IIs are long-term oriented either through their ownership or activism, a number of studies support the view that IIs encourage firms to sacrifice the long-term value for short-term earnings. However, given that short-termism is a multi-dimensional problem, the findings of these studies are more likely to be sensitive to the differences of the measures utilized by these studies. In addition, the scarcity of qualitative assessment of the relationship between IIs and CS reduces the generalization of the extant literature findings.

Therefore, we proposed several opportunities to future research to further investigate the impact of institutional ownership or activism on firm's investment horizon. We do not claim that our review is free from some limitations, however. First, we might have overlooked some previous studies that were not captured by our search. Second, other studies dealing with other types of owners who may discourage or encourage myopic investment decisions (e.g., family ownership as in Calabro *et al.*, 2019) are not covered by our review. Nevertheless, we believe that the use of the same method of review we followed would give consistent findings.

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