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# What information matters to investors at different stages of a firm's life cycle?

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ARTICLE INFO	A B S T R A C T
Accepted by Roger Graham	We examine the role of reported accounting information (e.g., earnings and book values) relative to analysts'
Keywords:	earnings forecasts to determine what information is most relevant for explaining market value conditional on a
Life cycle	firm's life cycle stage. Using the life cycle measure developed in Dickinson (2011), we find that accounting
Value relevance	information and analysts' earnings forecasts are each informative for market values, but in differing ways
Relative relevance	conditional on a firm's life cycle stage. In both returns and price specifications, we find that for growth and
Analysts' forecasts	mature firms, investors put relatively more weight on analysts' forecasts. Conversely, for introduction and de-
	cline firms, investors find accounting information more relevant for stock price and stock returns. However,
	consistent with Burgstahler and Dichev (1997), we find that book values are more relevant than earnings for
	firms that are more likely to exercise an abandonment option (i.e., introduction and decline firms). Overall, our
	findings are also consistent with our predictions derived from a simple learning model by Pastor and Veronesi

#### 1. Introduction

Equity value can be defined as a linear function of accounting information (such as book value and earnings) and "other information" (Ohlson, 1995). Prior studies have examined the role of analysts' forecasts as a proxy for other information (Bryan & Tiras, 2007; Dechow, Hutton, & Sloan, 1999; Ohlson, 2001). In this study, we propose that firm life cycle also impacts equity values and should be a lens through which determinants of value are viewed. Specifically, we ask whether investors rely more heavily on accounting data or analysts' earnings forecasts at different stages of a firm's life cycle.

Schaberl (2016) points out that earnings and forecasts of earnings vary in terms of reliability and timeliness because earnings are the outcome of the financial reporting process whereas forecasts of earnings are probability assessments of future outcomes. We hypothesize that life cycle represents a benchmark upon which to assess both types of value-relevant information. For example, there is recent evidence that suggests that knowledge of a firm's stage in its life cycle improves the forecasting function (Vorst & Yohn, 2018).

Gort and Klepper (1982) categorized life cycle stages as: introduction, growth, mature, and decline. We operationalize life cycle using Dickinson's (2011) accounting-based measure derived from operating, investing and financing cash flow patterns. There are several reasons why life cycle arguably determines which information investors find useful. First, prior literature has documented a decrease in value relevance for firms that incur negative earnings (Basu, 1997; Collins, Maydew, & Weiss, 1997; Elliott & Hanna, 1996; Hayn, 1995).<sup>2</sup> Second, the information contained in audited financial statements is more reliable than the information contained in analysts' forecasts. However, financial statement information likely possesses lower predictive value for introduction and/or decline firms than for mature firms. For that reason, analysts' forecasts, which rely on information beyond historical financial statements, may be more predictive of future outcomes and that predictive ability will arguably vary by life cycle stage.

Third, conservative accounting gives rise to asymmetry in reported accounting earnings and book values. Basu (1997) demonstrates that

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<sup>&</sup>lt;sup>2</sup> Burgstahler and Dichev (1997) among others (Berger et al., 1996; Collins et al., 1997) suggest that book values better capture firm value for firms with negative earnings as adaptation values (i.e., abandonment options) become more salient. Introduction and decline firms are more likely to report negative earnings.

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accounting earnings asymmetrically report bad news more quickly than good news. Because earnings incorporate losses earlier than gains, earnings may be more value relevant for firms in less profitable life cycle stages. Fourth, Anthony and Ramesh (1992) suggest and find that financial statement data is differentially informative about a firm's earnings generation ability conditional on life cycle stage and that earnings response coefficients are related to a firm's stage in its life cycle. However, other research finds that the equity market does not fully incorporate all information provided by firm life cycle (Dickinson, 2011; Vorst & Yohn, 2018). Therefore, it is unclear whether investors and analysts will differentially *use* life cycle information in their assessments.

Fifth, to the extent that a firm's information environment and uncertainty about future earnings vary across life cycle stages, the weight investors assign to analysts' forecasts versus accounting information is likely to vary. A simple learning model by Pastor and Veronesi (2009) suggests that investors assign more importance to a more precise signal (i.e. lower uncertainty) relative to the overall uncertainty about firm value. Given that accounting information is less sensitive to overall uncertainty (i.e., is confirmative in nature) than analysts' earnings forecasts, we expect the relative relevance of accounting information and analysts' forecasts to vary systematically across life cycle stages.

To answer the research question, we investigate the value relevance of accounting information and analysts' forecasts conditional on firm life cycle stage. Specifically, we follow Schaberl (2016) and examine the relative relevance of each earnings component and analysts' forecasts in two ways. First, we use return regressions to measure relative relevance  $(rR^2)$  as the incremental explanatory power of earnings (or forecasts) scaled by the combined explanatory power of earnings and forecasts with respect to the cross-section of annual stock returns. We estimate our regressions by life cycle stage to decompose total explanatory power within each life cycle stage into the proportion of explanatory power that is attributable to 1) earnings and earnings changes, 2) changes in analysts' forecasts, and 3) the overlapping explanatory power provided by earnings levels, earnings changes and analysts' forecasts together (the common or redundant portion of information). This allows us to identify which variables are relatively more useful to investors within each life cycle stage. We also are able to compare the relative relevance across life cycle stages to investigate how each determinant of value varies by stage.

Second, we repeat the relative relevance tests using price regressions where we regress market value per share on book value of equity per share, earnings per share, and analysts' one-year ahead earnings forecasts. Once again, we estimate our regressions by life cycle stage to decompose total explanatory power within each life cycle stage into the following: percent of incremental explanatory power which is captured by 1) book values and earnings 2) analysts' forecasts, and 3) the overlapping explanatory power provided by the accounting information (book values and earnings) and analysts' forecasts together (the common or redundant portion of information).

In the results from both the returns and price regressions, we find that life cycle stage significantly and differentially affects the magnitude in which each information source is incorporated into firm value. Reported earnings and analysts' forecasts of future earnings are each informative for market values, but in differing ways conditional on a firm's life cycle stage. In both specifications (returns and price regressions), we find that investors in growth and mature firms put relatively more weight on analysts' forecasts. Conversely, for introduction and decline firms, investors find accounting information relatively more useful than forecasts.

In the main tests, we document that accounting information is more important in explaining price than is forecasted earnings for introduction and decline firms. However, we do not distinguish between the value relevance of earnings versus book values. Burgstahler and Dichev (1997) predict and find that book values are more value relevant for firms that generate negative or depressed earnings but that earnings

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better explain value when the firm's current operating activities are successful. Therefore, in additional analyses, we further break down accounting information into its earnings versus book value components. We find that book value matters substantially more than earnings in explaining equity value for introduction and decline firms, while earnings matter significantly more than book value for mature firms. We interpret this evidence as earnings dominating book values when recursion value (or generating profits from existing operations) is high, as it is for mature firms. The interpretation of our result is consistent with the overall findings in Burgstahler and Dichev (1997).

Kothari (2001) states that "the most promising area of research ... is to relate time-series properties of earnings to economic determinants like competition, technology, innovation, effectiveness of corporate governance, incentive compensation policies, etc." We believe that we contribute to that goal because firm life cycle is a parsimonious method of incorporating such economic characteristics into the returns-earnings analysis. Additionally, Hand (2001) called for more research into when, where, how, and why other information matters to investors This study provides evidence that life cycle information is a framework on which the value relevance of accounting information (earnings and book values) and other information (as proxied for by analyst forecasts) should be assessed. In other words, the relative informativeness of accounting information versus forecasts is dependent on the economic profile captured by firm life cycle stage.

This research contributes to several ongoing streams of literature including: 1) gaining a deeper understanding of how analysts use information to make forecasts; 2) addressing the ongoing debate about the declining value relevance of financial statement information by identifying which types of firms rely most on reported earnings and book values to convey value relevant information versus which types rely on information intermediaries to go beyond the audited financial statements; 3) adding to the discussion regarding how the information environment varies between types of capital markets participants, e.g., analysts and investors; and 4) how reported earnings are used for contracting purposes such as debt covenants and compensation contracts such that an understanding of investors' use of earnings versus analysts' forecasts informs the efficacy of using earnings as a key summary measure without considering the context of firm life cycle.

The next section provides background to our setting and presents our hypotheses. Section 3 develops our empirical models, provides the descriptive analysis of our empirical data, and conducts our tests of hypotheses. Finally, Section 4 presents our conclusions.

#### 2. Background and hypotheses development

In this study, we investigate the value relevance of accounting earnings and analysts' forecasts separately and simultaneously to determine whether each source of information serves as distinct versus complementary inputs to a firm's market value. Ball, Jayaraman, and Shivakumar (2012) states that to look at accounting information in isolation, without including other information, overlooks the important confirmatory and disciplining effects of financial reporting on other timelier information sources such as analysts' forecasts (p. 164). We view each information source conditional on its life cycle stage, as discussed below.

#### 2.1. Life cycle

Firm life cycle stages are distinct phases that result from both internal (e.g., strategy choice, financial resources, and managerial ability) and external factors (e.g., competitive environment and macroeconomic factors) (Dickinson, 2011). Dickinson states firms are comprised of multiple products and services, each with its own product life cycle stage. However, those product life cycle stages can be aggregated to produce a life cycle stage mapping at the firm level. Unlike product life cycles, firm life cycle does not need to progress linearly through the Download English Version:

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