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Firm life cycle and financial statement comparability☆

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ABSTRACT

This paper examines how financial statement comparability varies between firms in the mature stage of their life cycle and firms in other life cycle stages. We hypothesize that mature firms are inclined to produce financial statements that are comparable among their industry peers. Using a sample of U.S. listed companies from 1987 to 2019, we find evidence to support our hypothesis. We also find that this association between life cycle and comparability is moderated by information asymmetry. A battery of robustness tests validates our initial findings. We extend the financial statement comparability literature by providing evidence on a determinant of comparability. Our study provides insights to policymakers regarding the necessity to consider firm life cycle when designing financial accounting standards.

1. Introduction

This paper examines whether financial statement comparability (hereafter comparability) differs between firms in the mature stage of their life cycle and firms in other stages of their life cycle (hereafter FLC). We also examine whether information asymmetry and agency problems moderate the relationship between comparability and the FLC stages. Comparability is one of the key qualitative characteristics in the financial reporting framework (Financial Accounting Standards Board (FASB), 2018). Comparability increases financial statement users' ability to evaluate a focal firm's performance against its peers by highlighting the similarities and differences between entities that arise due to, or despite of, similar economic circumstances (FASB, 2010). Comparability increases the quality and transparency of the information environment, and thereby enables investors, analysts, auditors and institutional investors to more closely monitor managerial behavior (De Franco, Kothari, & Verdi, 2011). However, focusing on comparability without assessing whether comparability changes across the FLC provides a static perspective. This motivates us to examine the relation between FLC and comparability.

Studies on the determinants of comparability suggest that accounting standards and regulations (Barth, Landsman, Lang, & Williams, 2012; Brochet, Jagolinzer, & Riedl, 2013; Dhole, Lobo, Mishra, & Pal, 2015; Edmonds, Smith, & Stallings, 2018), internal governance mechanisms (Endrawes, Feng, Lu, & Shan, 2018; Francis, Pinnuk, & Watanabe, 2014), the mimicking of strategic imperatives (Francis et al., 2014) and geographical proximity (De Franco, Hou, & Mark, 2021) affect comparability. Imhof, Seavey, and Watanabe (2022) suggests that firms that face higher competition are less likely to produce comparable financial statements owing to concerns about the disclosure of proprietary information. We extend the literature on the determinants of comparability and examine whether FLC affects the degree of comparability.

A firm's life cycle is comprised of introduction, growth, maturity, shakeout and decline stages (Dickinson, 2011). While the conventional life cycle theory argues that organizations transition from birth to decline monotonically, the contemporary life cycle theory argues that firms' evolution over the life cycle is nonlinear (Habib & Hasan, 2019). Prior research shows that stock price reaction to earnings, accruals mispricing, value relevance of accounting measures, dividend policy, accrual quality, cost of equity, forecasting profitability and growth, corporate policies and other disclosure initiatives, such as corporate social responsibility (CSR), differ across FLCs (Anthony & Ramesh, 1992; Coulton & Ruddock, 2011; DeAngelo, DeAngelo, & Stulz, 2006; Faff, Kwok, Podolski, & Wong, 2016; Hasan, Hossain, Cheung, & Habib, 2015; Hribar & Yehuda, 2015; Vorst & Yohn, 2018).[1]

Krishnan, Myllymäki, and Nagar (2021) finds that the effective internal control mechanisms deployed by mature firms results in higher matching quality and fewer restatements compared to other firms. We

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[1] See Habib and Hasan (2019) for a comprehensive review of accounting and finance literature on FLC.

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extend Krishnan et al. (2021) and examine whether comparability, an oft-cited financial reporting quality measure, differs between mature firms and firms in other stages of the life cycle. Earnings quality (measured using accruals and earnings persistence for instance) does not guarantee comparability, as comparability acts as a benchmark within the industry. Thus, firms that are more comparable to their industry peers help investors to make better choices among industry peers. We further examine whether variation in information asymmetry and agency problems across FLCs affect comparability; issues not addressed by Krishnan et al. (2021).

Life cycle stages are characterized by unique factors. These factors, such as strategies, resources and competitive environment (Dickinson, 2011) create different organizational structures, systems and agency problems and, thus, shape the financial reporting processes. This dynamic (Hasan & Habib, 2017) creates a setting for comparability among firms within a life cycle stage to vary across stages. Mature-stage firms have established organizational structures, better internal controls and skilled employees (Coulton & Ruddock, 2011; Hanks, 1990; Krishnan et al., 2021), all of which facilitate the preparation of comparable financial statements. Further, mature firms' steady cash flows and profitability (Dickinson, 2011; Habib & Hasan, 2019; Hasan & Habib, 2017) help managers in estimating future revenues and expenses more accurately, thus, enhancing comparability between industry peers.

Introduction and growth firms might also have incentives to produce comparable financial statements, as such firms confront information asymmetry problems and have limited access to financing, which is critical for investment and innovation to sustain competitive advantage (Dickinson, 2011). More comparable financial statements can provide access to external financing. However, introduction and growth firms also have underdeveloped accounting systems and weaker internal controls that act as barriers against increasing the level of accuracy of future accounting estimates, thus, resulting in lower levels of comparability. Decline stage firms also suffer from poor comparability owing to the "liability of senescence" phenomenon. More specifically, decline firms' internal inefficiencies, and erosion of technology, products, business concepts and management strategies (Hasan & Cheung, 2018), pave the way for them to avoid using their existing resources to establish sound accounting systems, practices and internal control mechanisms, thus, reducing comparability.

Based on a U.S. sample of 56,110 firm-year observations from 1987 to 2019, we document that comparability is higher among mature firms than for firms in other life cycle stages. Our empirical findings also suggest that firms in the mature stage produce significantly more comparable financial statements relative to firms in other life cycle stages when there is marked information asymmetry. Our results remain robust to several sensitivity tests.

We contribute to the litertaure in two important ways. First, by documenting that firm life cycle is linked to financial statement comparability, we respond to De Franco et al.'s (2021) call for exploring new determinants of financial statement comparability, and extend the comparability literature. Second, we extend the FLC literature by providing evidence that firm life cycle plays an important role in the disclosure of comparable financial statements. More importantly, we produce evidence on two plausible moderating factors that explain the FLC and comparability association. Examining the impact of FLC on comparability is potentially important to regulators, investors, analysts, and auditors. For example, if comparability varies across the FLC, knowing which stages of the life cycle are problematic could alert analysts and auditors to be more attentive in analyzing and auditing firms. Similarly, regulators could monitor and mandate or encourage comparability among firms in a particular stage of the life cycle.

The paper is organized as follows. This introduction is followed by literature and hypotheses development in section 2. Section 3 presents our methodology, while section 4 discusses our empirical results and our robustness tests. Section 5 concludes the paper.

2. Literature and hypothesis development

2.1. Firm life cycle

According to the firm life cycle theory, firms evolve through distinct life cycle stages. Revenue generation, profitability, and cash flows are uncertain during the introduction and growth stages. These firms encounter a "liability of newness" and are prone to exit the market (Hasan & Habib, 2017). Growth firms focus on product modification and improvement owing to intense competition. Firms in the decline stage concentrate more on survival. Consequently, Hasan and Habib, Hasan, and Al-Hadi (2017) argue that firms in the introduction, growth, and decline stages of the FLC show "fragile financial performance" (p. 23), which may jeopardize shareholder value. In contrast, firms in the mature stage have more stable revenues and cash flows and, therefore, overall uncertainties are relatively lower. Furthermore, mature firms have a larger customer base and diversification advantages, leading to lower cash flow risk (Dickinson, 2011).

Life cycle theory also suggests that the reward for acquiring market share to create demand advantages, or for building capacity to create cost advantages, diminishes over a firm's life cycle stages. In other words, rewards are larger in the earlier stages of the FLC. Therefore, it is necessary to maximize revenue growth in the earlier stages of the FLC to create a permanent demand or cost benefits over competitors (Karnani, 1984; Porter, 1980; Wernerfelt, 1985). Consequently, firms at different stages of the life cycle require different management skills, priorities, structures and strategies (Miller & Friesen, 1980, 1984; Quinn & Cameron, 1983). Accordingly, firms display different operating, investing and financing cash flow patterns across different stages of the life cycle (Dickinson, 2011).

Prior empirical evidence has found that FLC affects firm-level outcomes. For example, various stages of FLC are shown to affect the stock market response to accounting information (Anthony & Ramesh, 1992); investment, financing, and cash policies (DeAngelo et al., 2006; Faff et al., 2016); risk-taking propensities (Habib & Hasan, 2017); tax avoidance (Hasan, Al-Hadi, Taylor, & Richardson, 2017), and CSR disclosures (Hasan & Habib, 2017). Hasan and Habib et al. (2017), for example, finds evidence that the resource base and competitive advantages of mature firms allow them to invest more in CSR-related activities than firms at other stages of the corporate life cycle. During the early stages of the FLC, managers are likely to invest in diversifying strategies and in opportunities that may provide long-term survival (Donaldson & Lorsch, 1983) at the expense of poor short-term financial performance, in contrast to mature stage firms. These strategic imperatives lead to higher levels of information asymmetry between investors and managers for firms in the introduction and growth stages of their life cycle. Consequently, firms at the earlier stages of their FLC are less likely to be followed by analysts (Barth, Kasznik, & McNichols, 2001; Lehavy, Li, & Merkley, 2011).

There is a lack of empirical evidence on how different stages of the FLC affect firm reporting behavior, with only a few exceptions. Hansen, Hong, and Park (2018) finds that unconditional reporting conservatism decreases over life cycle stages. Bakarich, Hossain, Hossain, and Weintrop (2019) finds that each of the life cycle indicators is a determinant of different textual characteristics, such as complexity, tone, and sentiment of 10-Ks. Krishnan et al. (2021) observes lower quality financial reporting practices during the introduction, growth, and decline stages, compared with the mature stage of the firm life cycle.

Berger and Udell (1998) suggests that firms at different life cycle stages differ in their ability to raise funds. For instance, young firms generally choose private equity, whereas mature firms rely mainly on public markets. Information asymmetry in combination with reputation effect plays a role in determining the sources of financing at different stages of the FLC. Specifically, firms at their introduction stage are relatively small, unknown, and less closely followed by analysts and investors. This creates information asymmetry (Berger & Udell, 1998),

which causes mispricing (Myers & Majluf, 1984). In contrast, mature firms are known to investors and more closely followed by analysts, suffer less from information asymmetry problems and, hence, incur a lower cost of capital (Hasan et al., 2015). Vorst and Yohn (2020) documents higher comparability as well as co-movement in returns, operating performance and investments, within pairs of life cycle peers.

2.2. Financial statement comparability

According to the FASB conceptual framework, comparability helps ensure the usefulness of financial statements for decision-makers. More specifically, Concept Statement #8 of the FASB (2010) prescribes that firm-specific information is more useful to investors when they can compare information between firms. In the equities markets, it is essential for investors to evaluate alternative opportunities. This comparison would be difficult without comparable financial statements (FASB, 2010). We argue that comparability is a distinct qualitative characteristic that facilitates the detection of opportunistic managerial behavior. Prior research finds that comparability is a monitoring tool, which reduces information processing costs for investors and monitoring agents. For example, managers in more comparable firms employ less accrual-based earnings management (Sohn, 2016). Comparability enables stakeholders to draw in-depth inferences about economic similarities and differences across firms within the industry. Prior empirical evidence suggests that comparability lowers information acquisition costs because it reduces uncertainties associated with comparing similar economic events reported differently. Consequently, comparability increases the quality of financial statement information (De Franco et al., 2011).

De Franco et al. (2011) provides a technique for measuring comparability using a reverse earnings/returns regression of a set of comparable firms. They find that comparability increases analyst coverage and forecast accuracy, and is inversely related to forecast dispersion. Accordingly, comparability enriches the quality of the information environment. Applying De Franco et al.'s measurement strategy, a stream of studies examines various firm-level consequences of comparability. Empirical evidence suggests that comparability reduces the cost of equity (Imhof, Seavey, & Smith, 2017) and the cost of borrowing (Kim, Kraft, & Ryan, 2013), increases internal capital market efficiency (Cheng & Wu, 2018), reduces bad news hoarding, increases future earnings response coefficients (Choi, Choi, Myers, & Ziebart, 2019; De Franco et al., 2011; Kim, Kim, & Kim, 2020; Kim, Li, Lu, & Yu, 2016), and affects corporate employment decision-making favorably (Zhang, Ntim, Zhang, & Elmagrhi, 2020).

There is, however, a paucity of research that examines the determinants of comparability. Endrawes et al. (2018) finds that effective audit committee attributes, such as independence and size increase comparability. Auditor quality is also found to increase comparability (Francis et al., 2014). Based on legitimacy theory, De Franco et al. (2021) argues that managers try to gain legitimacy for their strategic imperatives by mimicking the strategies and policies of larger and more established peers in the industry. The paper provides empirical evidence to support this assertion. Specifically, firms have higher financial statement comparability with industry peers located in the same metropolitan area than with industry peers situated outside the metropolitan area. As competition acts as a disciplinary mechanism, competition improves comparability and, hence, reduces agency costs (Majeed, Yan, & Tauni, 2018). Cheng (2021) finds that product differentiation reduces comparability through product market competition.

Another stream of studies examines the role of accounting standards and regulations affecting comparability. For instance, Brochet et al. (2013) and Barth et al. (2012) study the effect of the mandatory adoption of IFRS on comparability. Dhole et al. (2015) examines the role of the SEC's XBRL Mandate on accounting comparability. Edmonds et al. (2018) examines the variation in reporting comparability following implementation of the Statement of Financial Accounting Standards (SFAS) No. 131: "Disclosures about Segments of an Enterprise and Related Information". The study finds that segment information reformulated according to how companies manage their business is associated with enhanced financial comparability, but greater segment information disaggregation attributed to SFAS No. 131 adoption is associated with diminished comparability. Prior research also finds that higher proprietary costs discourage firms from reporting more comparable financial statements (Imhof et al., 2022).

As comparability generates various benefits, by increasing the quality of the information environment and reducing information acquisition costs, it is important to understand what factors drive comparability.

2.3. Hypothesis development

2.3.1. Firm life cycle and financial statement comparability

The firm life cycle theory suggests that firms go through a series of predictable patterns of development and that resources, capabilities, strategies and structures vary significantly with the stages of development (Miller & Friesen, 1980, 1984; Quinn & Cameron, 1983). The unique factors of each stage of the FLC present a variety of incentives for managers to supply comparable financial statements. Similarly, investors at each stage of the FLC have different expectations and their demands for comparable financial statements differ accordingly. We expect to find greater comparability among firms in the mature stage than among firms in other life cycle stages for the following reasons.

Mature firms have relatively steady profitability and less volatile cash flows. In addition, they operate in a more certain environment (Dickinson, 2011; Habib & Hasan, 2019; Hasan & Habib, 2017). Therefore, it is less challenging for managers of mature firms to estimate future revenues and expenses that reflect actual economic circumstances and, thus, enhance comparability. Mature firms have relatively more formal organizational structures (Hanks, 1990), trained staff (Coulton & Ruddock, 2011) and advanced internal control mechanisms (Krishnan et al., 2021) compared with other firms. Krishnan et al. (2021) finds that strong internal control mechanisms possessed by mature firms increase matching quality and reduce financial restatements. We argue that these characteristics enable managers to estimate financial values for economic activities accurately and to choose accounting policies that are in line with industry practices. Therefore, comparability is higher for mature firms.

In contrast, firms in the introduction and growth stages of their life cycles are likely to exhibit less comparability. First, introduction-stage firms suffer from knowledge deficits about potential revenues and costs (Jovanovic, 1982). They are still developing organization practices, processes, systems, structures, capacities, and employee skills (Pérez, Llopis, & Llopis, 2004). Based on the 'liability of newness' phenomenon (Freeman, Carroll, & Hannan, 1983; Jovanovic, 1982), the introduction-stage firm's initial endowments, such as monetary resources and technological or managerial capability, act as barriers to implementing good accounting systems and internal controls (Doyle, Ge, & McVay, 2007; Krishnan et al., 2021). Second, growth firms have a complex organization structure, aiming towards innovation, growth and diversification (Dickinson, 2011) and, as a result, have difficulties in creating and maintaining sound accounting information systems (Ashbaugh-Skaife, Collins, & Kinney Jr., 2007; Doyle et al., 2007). Consequently, introduction and growth firms have less comparable financial statements relative to their mature firm counterparts. Firms in the decline stage are characterized by very low or negative profit margins, low levels of efficiency and low capacity utilization (Dickinson, 2011). According to Hasan and Cheung (2018), decline firms face a relatively high likelihood of exiting the market owing to their internal inefficiencies, and erosion of technology, products, business concepts and management strategies over time: the "liability of senescence" phenomenon. Further, decline firms are riskier (Habib & Hasan, 2017; Hasan et al., 2015; Hasan & Habib, 2017). As a result, decline stage firms

are more likely to produce less comparable financial statements. Based on the preceding discussion, we develop the following hypothesis:

H1. *The mature stage of the firm life cycle is positively associated with financial statement comparability.*

2.3.2. Firm life cycle, comparability and information asymmetry

Mature firms have a long history of existence in the market and are closely followed by analysts and investors. These are factors that lead to fewer information asymmetry problems (Hasan & Habib, 2017). They have an enhanced information environment, which creates a high demand for comparable financial statements. Prior research suggests that analysts follow firms with greater levels of disclosures (Lang & Lundholm, 1993). Comparability facilitates meaningful comparisons among firms, and allows analysts to make inferences about economic similarities and differences across comparable firms. We argue that mature stage firms are likely to produce comparable financial statements, because doing so increases the quality of the information environment and its transparency, thus, reducing analysts' private information acquisition costs (Verrecchia, 1990). Well-established internal control systems in mature firms also facilitate an enhanced information environment, providing confidence in the minds of investors about the quality of financial statements. Comparable firms become benchmarks for each other, thereby, fostering peer monitoring. This greater peer monitoring reduces information asymmetry (Kim et al., 2016). Thus, we expect that mature firms' comparability is induced by the improved information environment and reduced information asymmetry, together with enhanced internal control systems.

In contrast, we expect that firms in other life cycle stages have low comparability induced by high information asymmetry and poor internal controls. Introduction stage firms have higher idiosyncratic volatility and higher costs of equity capital, implying greater uncertainty about future cash flows and stock returns (Habib & Hasan, 2017; Hasan et al., 2015; Hasan & Habib, 2017). These uncertainties create an opaque information environment with high information asymmetry. Lack of skilled staff (Coulton & Ruddock, 2011; Habib & Hasan, 2019) and weak internal controls (Krishnan et al., 2021) coupled with complex accounting requirements reduces comparability. Founder-owners control firms in their early FLC stages, and have fewer resources to allocate on disclosure compliance (Habib & Hasan, 2019). Therefore, such firms are more likely to suffer from asymmetric information problems. However, introduction and growth firms have higher financing needs (Dickinson, 2011) and they face greater challenges in acquiring financing due to the high cost of capital arising from increased information asymmetry (Hasan et al., 2015). Therefore, introduction and growth firms do have incentives to produce comparable financial statements to increase transparency and the quality of the information environment. Although some factors motivate introduction and growth firm managers to provide comparable financial statements, we take the view that the presence of information asymmetry and internal control weaknesses in these firms compromise their comparability.

H2. *The positive association between mature firms and financial statement comparability is moderated by the presence of information asymmetry.*

2.3.3. Firm life cycle, comparability and free cash flows

Free cash flows exist for mature firms, relative to other firms because mature firms have available cash flows but fewer investment opportunities (Dickinson, 2011; Habib & Hasan, 2019). Consequently, investors and monitoring agents of mature firms demand comparable financial statements in order to mitigate free cash flow-induced agency problems. Thus, we expect that mature firms' comparability is higher due to free cash flow problems.

H3. *The positive association between mature firms and financial statement comparability is moderated by the presence of free cash flow problems.*

Table 1
Sample selection and industry distribution.

Panel A: Sample Selection

Criteria	Observations
Firm-year observations for comparability measure (1987–2019)	88,506
Less: Financial and regulated observations (SIC 6000–6999, SIC 4900–4999)	(25,120)
Less: Observations with non-U.S. firms, period duration other than 12 months and currency code other than USD	(7276)
Final Sample (6455 unique firms: 1987–2019)	56,110

Panel B: Industry distribution

2-Digit SIC	Industry	Observations	%
01–14	Agriculture & mining	3155	5.62
15–17	Building construction	375	0.67
20–21	Food & kindred products	1420	2.53
22–23	Textile mill products & apparels	578	1.03
24–27	Lumber, Furniture, Paper, and Printing	2384	4.25
28–30	Chemical, Petroleum, and Rubber & Allied Products	8333	14.85
31–34	Metal	2715	4.84
35–39	Machinery, electrical, computer equipment	18,127	32.61
40–49	Railroad, Communications and Other Transportation	3738	6.66
50–51	Wholesale goods, building materials	2624	4.67
53–59	Store merchandise, auto dealers, home furniture stores	2111	3.76
70–79	Business services	7674	13.68
80–99	Others	2876	5.13
	Total	56,110	100

Notes: Panel A presents sample selection, and Panel B presents industry distribution of the sample.

3. Methodology

3.1. Sample

We start with a sample of 88,506 firm-year observations from 1987 to 2019 for which data on comparability measures are available. Our sample period begins in 1987 because, prior to that year, cash-flow data required for estimating FLC were unavailable. We exclude 25,120 observations belonging to financial (SIC 6000–6999) and regulated industries (SIC 4900–4999) firms. We also drop 7276 observations where the firm is incorporated outside the U.S., where the financial year duration is different from 12 months, or where the currency code is not USD. Our final sample consists of 56,110 firm-year observations relating to 6455 unique firms from 1987 to 2019. All financial data are sourced from the CRSP/Compustat merged database, and analyst data are retrieved from I/B/E/S. Table 1, Panel A summarizes the sample selection criteria. Table 1, Panel B, presents the industry distribution of the sample. Our sample observations come from a diverse range of industries, with two-digit SIC codes 35–39 (32.61%), 28–30 (14.85%) and 70–79 (13.68%) commanding the largest industry representation.

3.2. Life cycle stages

We follow Dickinson's (2011) measure of FLC proxies and classify the sample into different FLC stages based on cash flow patterns, where OPCF is net operating cash flows; INCF is net investment cash flows; and

FICF is net financing cash flows[2]:

(1) Introduction (INTRO): if OPCF <0, INCF <0, and FICF >0;
(2) Growth (GROWTH): if OPCF >0, INCF <0, and FICF >0;
(3) Mature (MATURE): if OPCF >0, INCF <0, and FICF <0;
(4) Decline (DECLINE): if OPCF <0, INCF >0, and FICF >0 or FICF<0; and
(5) Shake-out (SHAKE): the remaining cash flow patterns are classified into the shake-out stage.

In our robustness tests, we use two alternative life cycle measures. The first measure is based on Hribar and Yehuda (2015), which developed a composite life cycle measure using four variables. These variables are (i) cumulative sales growth over the past 2 years; (ii) capital expenditures plus R&D expense as a proportion of total assets; (iii) difference between change in total stockholders' equity and net income scaled by total assets; and (iv) the number of years since the first year that the firm's data became available on the CRSP database. The composite measure is then ranked into five groups and the top, bottom, and middle groups are defined as the growth, maturity, and decline stages, respectively. We denote this measure as *HY_MATURE*. The second alternate measure is retained earnings over total assets, denoted as *RETA*, following DeAngelo et al. (2006). This proxy measures the extent to which a firm is self-financing or reliant on external capital. Accordingly, a higher RETA implies that firms are likely to be mature or old with declining investment opportunities, while firms with a low RETA are likely to be young and growing.

3.3. Measuring comparability

We follow De Franco et al. (2011) and assume that two firms' accounting systems are relatively comparable if they report similar accounting numbers, given the same set of economic events. Accordingly, we use the financial statement comparability measure of De Franco et al. (2011), which has been extensively employed in recent accounting and finance research (Chen, Collins, Kravet, & Mergenthaler, 2018; Endrawes et al., 2018; Fang, Li, Xin, & Zhang, 2016; Habib et al., 2017; Habib, Hasan, & Al-Hadi, 2020; Kim et al., 2016; Zhang et al., 2020). De Franco et al. (2011) uses the following time-series regression using firm *i*'s 16 previous quarters of earnings and stock returns:

$$EARNINGS_{it} = \alpha_i + \beta_i RETURN_{it} + \varepsilon_{it} \quad (1)$$

Where, *EARNINGS* is the quarterly net income before extraordinary items scaled by the beginning-of-period market value of equity, and *RETURN* is the raw stock return during quarter *t*. The estimated coefficients $\hat{\alpha}$ and $\hat{\beta}$ are firm i's accounting system or a function that maps firm i's economic events (returns) into accounting numbers (reported earnings). Similarly, the accounting system of firm *j* from the same 2-digit SIC industry as firm *i* is proxied by $\hat{\alpha}$ and $\hat{\beta}$, which are estimated using the firm *j*'s earnings and returns. Then, we quantify the similarities in the accounting systems of firms *i* and *j* by comparing their respective accounting response to the same set of economic determinants. In other words, we calculate the predicted earnings of firms *i* and *j* using their accounting functions with firm *i*'s economic events,

$$E(EARNINGS)_{i,i,t} = \hat{\alpha}_i + \hat{\beta}_i RETURN_{i,t} \quad (2)$$

$$E(EARNINGS)_{i,j,t} = \hat{\alpha}_j + \hat{\beta}_j RETURN_{i,t} \quad (3)$$

where $E(EARNINGS)_{i,\,i,\,t}$ is firm *i*'s predicted earnings given firm *i*'s accounting function and firm *i*'s return in period *t*, and $E(EARNINGS)_{i,\,j,\,t}$ is firm *j*'s predicted earnings given firm *j*'s accounting function and firm *i*'s return in period *t*. The pair-wise comparability between firms *i* and *j*, $COMPACCT_{i,\,j,\,t}$, is calculated as the negative value of the average absolute difference between the predicted earnings using firm *i*'s and firm *j*'s accounting functions:

$$COMPACCT_{i,j,t} = -\frac{1}{16}\sum_{t-15}^{t}\left|E(EARNINGS)_{i,i,t} - E(EARNINGS)_{i,j,t}\right| \quad (4)$$

We estimate $COMPACCT_{i,\,j,\,t}$ for each firm i and firm j combination, where ($i \neq j, j = 1, \ldots, j$), for j firms within the same 2-digit SIC industry. A smaller difference between $E(EARNINGS_{i,\,i,\,t}) - E(EARNINGS_{i,\,j,\,t})$ suggests a higher value of $COMPACCT_{i,\,j,\,t}$ and indicates a higher level of comparability between firm i's and firm j's accounting functions. Finally, we measure firm i's comparability $COMPACCT_{i,\,j,\,t}$ using (1) *M4_COMP*, $COMPACCT_{i,\,j,\,t}$ of 4 firms j with the highest comparability to firm i during year t, (2) *M10_COMP*, $COMPACCT_{i,\,j,\,t}$ of 10 firms j with the highest comparability to firm i during year t, and (3) *IND_COMP*, the median $COMPACCT_{i,\,j,\,t}$ for all firms j in the same industry as firm i during year t.

In robustness analysis, we use three alternative comparability measures, following Francis et al. (2014). Our first alternative comparability measure is based on the following equation:

$$Diff\_TAC_{ijt} = abs\left(TAC_{it} - TAC_{jt}\right) \quad (5)$$

Where $Diff\_TAC_{ijt}$ is the absolute value of the difference between signed total accruals (difference between income before extraordinary items and cash flows from operations adjusted for cash flows from extraordinary items, scaled by beginning of year total assets) for firm-pairs in the same 2-digit SIC industry classification in year *t*. We deploy the industry median of comparability values based on Eq. (5) above in our empirical specification and denote this as *IND_COMP_TAC*. A lower value of *IND_COMP_TAC* indicates greater comparability between firm pairs. Therefore, a negative and significant coefficient on *FLC_MATURE* for this alternative comparability measure would be consistent with the baseline finding.

Our second alternative proxy closely follows the estimation procedure mentioned above, but we use difference in abnormal accruals, instead of total accruals, following Francis et al. (2014). We estimate the following equation:

$$Diff\_ABAC_{ijt} = abs\left(ABAC_{it} - ABAC_{jt}\right) \quad (6)$$

Where $Diff\_ABAC_{ijt}$ is the absolute value of the difference between abnormal accruals (Jones, 1991; Kothari, Leone, & Wasley, 2005) for firm-pairs in the same 2-digit SIC industry classification in year t. We deploy the the industry median of comparability values based on Eq. (6) above, and denote this as *IND_COMP_ABAC*. A lower value of *IND_COMP_ABAC* indicates greater comparability between firm pairs. Therefore, a negative and significant coefficient on *FLC_MATURE* for this alternative comparability measure would be consistent with the baseline finding.

Our final alternative proxy for comparability is the earnings comovement measure derived from Francis et al. (2014) using Eq. (7) below:

$$Earnings_{iq} = \alpha_{ij} + \beta_{ij} Earnings_{jq} + \varepsilon_{ijq} \quad (7)$$

Where $Earnings_{iq}$ ($Earnings_{jq}$) is income before extraordinary items for firm *i* (firm *j*) for quarter *q* scaled by average total assets of each firm. Eq. (7) is estimated over 16 consecutive quarters q for all unique pairs of

[2] Dickinson (2011, footnote 7) combines the three net cash flow activities into eight possible patterns, which are then collapsed into five stages as follows:

	Introduction	Growth	Maturity	Decline	Decline	Shake-out	Shake-out	Shake-out
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
OPCF	−	+	+	−	−	+	+	−
INCF	−	−	−	+	+	+	+	−
FICF	+	+	−	+	−	+	−	−

Table 2
Descriptive statistics.

Panel A: Continuous variables

Variable	N	Mean	Median	SDEV	Min	Max
M4_COMP	56,110	−0.720	−0.290	1.309	−25.720	−0.010
M10_COMP	56,110	−1.023	−0.450	1.652	−27.240	−0.020
IND_COMP	56,110	−3.573	−2.890	2.456	−36.330	−0.350
IND_COMP_TAC	54,254	0.101	0.068	0.192	0.010	27.263
IND_COMP_ABAC	32,528	0.094	0.068	0.100	0.008	2.523
IND_COMP_ ECOM	46,401	0.000	−0.014	0.058	−0.083	0.908
RETA	55,764	−0.503	0.121	2.070	−13.257	0.928
SIZE	56,110	5.643	5.548	2.189	−0.894	13.221
LEVERAGE	56,110	0.222	0.188	0.209	0.000	0.939
ROA	56,110	−0.035	0.031	0.231	−1.275	0.245
CFO	56,110	0.037	0.076	0.189	−0.965	0.330
SD_CFO	56,110	0.039	0.029	0.033	0.005	0.194
SD_SGROW	56,110	0.441	0.149	1.368	0.028	11.439
SD_SALE	56,110	0.052	0.038	0.045	0.002	0.257
MB	56,110	2.959	2.013	4.650	−14.042	29.250
FLUIDITY	56,110	0.171	0.153	0.093	0.030	0.483
SPREAD	52,623	0.024	0.010	0.044	0.000	2.250
ANALYST	36,046	9.109	7.000	7.365	2.000	55.000
FCF	55,577	−0.016	0.025	0.194	−0.972	0.327

Panel B: Dummy variables

Variable	Value = 0	%	Value = 1	%
FLC_INTRO	48,802	86.98	7308	13.02
FLC _GROWTH	40,424	72.04	15,686	27.96
FLC_MATURE	32,888	58.61	23,222	41.39
FLC _DECLINE	51,847	92.40	4263	7.60
FLC _SHAKE	50,479	89.96	5631	10.04
HY_MATURE	37,841	80.00	9461	20.00
AUDITOR	10,565	18.83	45,545	81.17
ICW_AUD	19,559	94.04	1239	5.96
ICW_MGT	22,439	93.33	1603	6.67

Panel C: Descriptive statistics across corporate life-cycle stages

	INTRO (*N* = 7308)			GROWTH (*N* = 15,686)			MATURE (N = 23,222)			SHAKE (*N* = 5631)			DECLINE (*N* = 4263)		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
M4_COMP	−1.08	−0.52	1.57	−0.57	−0.24	1.06	−0.58	−0.23	1.14	−0.91	−0.36	1.64	−1.16	−0.56	1.70
M10_COMP	−1.53	−0.80	1.98	−0.82	−0.38	1.35	−0.84	−0.36	1.44	−1.26	−0.55	2.05	−1.62	−0.85	2.13
IND_COMP	−4.77	−3.95	3.03	−3.13	−2.63	1.95	−3.11	−2.65	1.98	−3.87	−3.09	2.74	−5.31	−4.34	3.32
IND_COMP_TAC	0.18	0.11	0.27	0.09	0.07	0.10	0.08	0.06	0.08	0.10	0.07	0.17	0.15	0.09	0.48
IND_COMP_ABAC	0.15	0.11	0.14	0.09	0.07	0.09	0.08	0.06	0.07	0.10	0.07	0.09	0.14	0.10	0.13
IND_COMP_ ECOM	0.01	−0.01	0.07	0.04	0.01	0.10	0.04	0.01	0.10	0.03	0.00	0.09	0.02	0.00	0.07
RETA	−2.10	−0.81	3.23	−0.05	0.14	0.93	0.13	0.26	0.85	−0.55	0.07	2.13	−2.77	−1.50	3.57
SIZE	4.10	3.96	1.68	6.01	5.97	1.96	6.27	6.28	2.17	5.23	5.09	2.19	4.05	3.96	1.61
LEVERAGE	0.24	0.18	0.24	0.25	0.24	0.20	0.22	0.19	0.19	0.18	0.10	0.22	0.18	0.07	0.24
ROA	−0.26	−0.14	0.34	0.03	0.04	0.10	0.05	0.05	0.10	−0.03	0.02	0.21	−0.33	−0.23	0.37
CFO	−0.19	−0.10	0.24	0.09	0.08	0.06	0.13	0.12	0.07	0.05	0.06	0.14	−0.27	−0.16	0.27
SD_CFO	0.06	0.05	0.04	0.03	0.03	0.03	0.03	0.02	0.03	0.04	0.03	0.03	0.06	0.05	0.04
SD_SGROW	1.13	0.30	2.45	0.26	0.14	0.75	0.20	0.12	0.54	0.38	0.17	1.13	1.33	0.34	2.63
SD_SALE	0.07	0.06	0.05	0.05	0.04	0.04	0.05	0.03	0.04	0.06	0.04	0.05	0.06	0.05	0.05
AUDITOR	0.70	1.00	0.46	0.85	1.00	0.36	0.85	1.00	0.36	0.77	1.00	0.42	0.74	1.00	0.44
MB	3.76	2.28	6.85	2.93	2.12	3.74	2.81	2.00	4.01	2.50	1.61	4.38	3.12	1.87	6.20
FLUIDITY	0.20	0.19	0.10	0.18	0.16	0.09	0.15	0.13	0.08	0.17	0.15	0.09	0.22	0.21	0.11
SPREAD	0.04	0.02	0.05	0.02	0.01	0.03	0.02	0.01	0.04	0.03	0.01	0.06	0.03	0.02	0.06
ANALYST	5.56	4.00	4.25	9.22	7.00	7.09	10.34	8.00	8.01	8.42	6.00	7.06	5.51	4.00	4.24
ICW_AUD	0.10	0.00	0.30	0.07	0.00	0.25	0.04	0.00	0.20	0.08	0.00	0.27	0.08	0.00	0.28
ICW_MGT	0.11	0.00	0.32	0.07	0.00	0.25	0.05	0.00	0.21	0.09	0.00	0.28	0.09	0.00	0.28
FCF	−0.28	−0.18	0.27	0.02	0.02	0.13	0.08	0.07	0.08	0.02	0.02	0.12	−0.24	−0.17	0.22

Notes: Panel A presents descriptive statistics of the continuous variables used in the models, Panel B reports the descriptive statistics for the dummy variables, and Panel C presents descriptive statistics of variables used in the models for each of the FLC stages. All variables are defined in the Appendix.

firms in the same 2-digit SIC industry. We measure accounting comparability for firm *i* and *j* in Eq. (7) as the adjusted R^2 from the regression. We deploy the industry median of comparability values based on Eq. (7) above and denote this as *IND_COMP_ECOM*. A higher value of this measure indicates greater earnings comparability between firm-pairs and, hence, a positive and significant coefficient would support H1.

3.4. Empirical model

To investigate whether mature firms are associated with higher comparability, we estimate the following regression model.

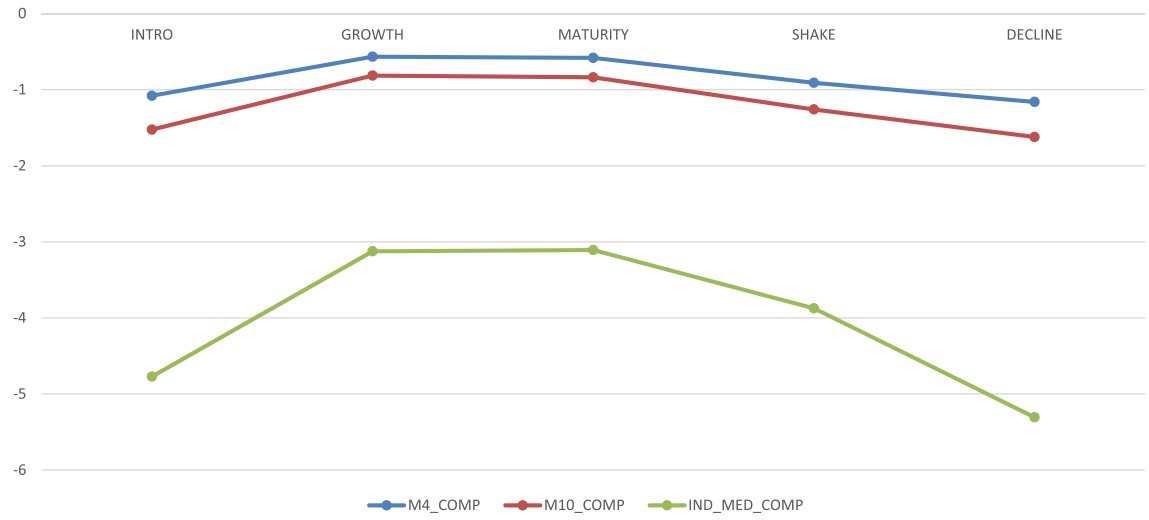

Fig. 1. Life cycle-wise mean comparability measures.
Notes: This figure depicts variation in the comparability measures across the FLC

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC\_MATURE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (8)$$

In Eq. (8), the dependent variable, $IND\_COMP_{i,t}$ measures financial statement comparability as defined in Section 3.3. Because *M4_COMP* and *M10_COMP* are somewhat arbitrary permutations of the De Franco et al. (2011) measure, we use the *IND_COMP* measure for our correlation and subsequent regression analyses. However, we report the descriptive statistics for *M4_COMP* and *M10_COMP* measures, and also report the untabulated regression result using these two proxies for the baseline regression. The variable of interest is $FLC\_MATURE_{i,t}$ which is defined in Section 3.2. A positive and significant coefficient on *FLC_MATURE* would support H1.

We include a number of control variables in Eq. (8) following prior literature. Firm size and market-to-book ratio capture a broad range of unobservable firm characteristics. Hence, we control for firm size (*SIZE*), measured as the natural log of total assets, and growth opportunities (*MB*) measured as the ratio of the market value of equity to the book value of equity. Following Francis et al. (2014), we control for leverage (*LEVERAGE*) measured as the ratio of total debt to total assets; the standard deviation of growth in quarterly sales for the preceding 16 quarters (*SD_SGROW*), the standard deviation of sales measured as the standard deviation of the preceding 16 quarter sales scaled by end-of-quarter assets (*SD_SALE*), and auditor (*AUDITOR*) measured as a dummy variable equal to 1 if the firm is audited by one of the top 8 auditors, and 0 otherwise. We also control for profitability (*ROA*) measured as income before extraordinary items scaled by total assets, operating cash flows (*CFO*) measured as operating cash flows scaled by total assets, and the standard deviation of cash flows (*SD_CFO*) measured as the standard deviation in quarterly cash flows from operations for the preceding 16 quarters scaled by end-of-quarter assets. Imhof et al. (2022) finds that intense product market competition increases proprietary costs, and hence, decreases financial statement comparability. We, therefore, control for product market competition (*FLUIDITIY*) (Hoberg, Phillips, & Prabhala, 2014). Finally, we include year- and industry-fixed effects. We winsorize the continuous variables at the 1st and 99th percentiles to deal with extreme observations and outliers. All variables are defined in the Appendix.

4. Empirical results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics of the variables used in this study. Panel A reports pooled descriptive statistics for the continuous dependent and control variables. *M4_COMP* has a mean of −0.720 and ranges between −25.72 and − 0.010. The mean and median for *M10_COMP* of the sample firms are −1.023 and − 0.450, respectively, and the mean (median) for *IND_COMP* is −3.573 (−2.890). Panel B shows that about 41% of the sample firms are mature-stage firms, 28% are growth-stage firms, and 13% are introduction-stage firms. About 10% and 8% of the firms belong to the shake-out and decline stage of the FLC, respectively when the Dickinson (2011) measures are used to construct life-cycle proxies. This distribution is similar to that of prior studies, such as Habib and Hasan et al. (2017). In contrast, 20% of firm-year observations are classified as mature-stage firms when the Hribar and Yehuda (2015) measure of life-cyle is used (*HY_MATURE*). More than 80% of the firm-year observations were audited by a top eight auditor. Internal control weaknesses (*ICW*) are reported in 6% (6.7%) of firm-years when auditor (management) assessment of ICW is used to proxy for ICW.

Panel C shows life cycle-wise descriptive statistics. The mean values of *ROA* are negative in the introduction, decline, and shakeout stages (−0.26, −0.33 and − 0.03, respectively), but positive in the growth and maturity stages (0.03 and 0.05, respectively). The standard deviation of sales growth (*SD_SGROW*) is higher in the introduction stage (1.13) and lower in the growth and maturity stages (0.26 and 0.20, respectively). This trend is in line with life cycle theory. The decline stage reports a *SD_SGROW* of 1.33, which is greater than mature-stage firms, probably because of their investment intensity as a "bounce back" strategy. Mean values of *LEVERAGE* are highest in the growth stage (0.25) followed by the introduction (0.24) and maturity (0.22) stages. In line with the way in which the stages and defined, and also with prior studies (Dickinson, 2011), the introduction (−0.19) and decline (−0.27) stages have negative *CFO*. The maturity stage has the highest positive *CFO* (0.13). Mean values of *MB* are 3.76, 2.93, 2.81, 3.12 and 2.5 for the introduction, growth, maturity, decline and shake-out stages, respectively. As expected, *FLUIDITY* in the introduction stage (0.20) is higher than that in the growth (0.18) and mature (0.15) stages.

Fig. 1 shows the variation in the comparability measures across the FLCs. It is evident that all three comparability measures increase from the introduction to the growth stage, and remain somewhat constant

Table 3
Correlation table.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
[1] *IND_COMP*	1.00																			
[2] *IND_COMP_TAC*	−0.17	1.00																		
[3] *IND_COMP_ABAC*	−0.17	0.79	1.00																	
[4] *IND_COMP_ECOM*	0.05	−0.03	−0.05	1.00																
[5] *FLC_MATURE*	0.13	−0.16	−0.17	0.03	1.00															
[6] *HY_MATURE*	0.06	−0.04	−0.04	0.01	0.06	1.00														
[7] *RETA*	0.38	−0.20	−0.21	0.08	0.25	0.09	1.00													
[8] *SIZE*	0.12	−0.19	−0.21	0.07	0.26	−0.02	0.34	1.00												
[9] *LEVERAGE*	−0.11	−0.05	−0.05	0.01	−0.02	−0.08	−0.05	0.31	1.00											
[10] *ROA*	0.39	−0.29	−0.30	0.04	0.28	0.11	0.65	0.30	−0.10	1.00										
[11] *CFO*	0.30	−0.17	−0.18	0.10	0.36	0.10	0.64	0.32	−0.07	0.81	1.00									
[12] *SD_CFO*	−0.16	0.28	0.32	−0.06	−0.18	−0.05	−0.34	−0.41	−0.15	−0.30	−0.35	1.00								
[13] *SD_SGROW*	−0.15	0.12	0.13	−0.05	−0.14	−0.07	−0.35	−0.17	0.01	−0.35	−0.39	0.34	1.00							
[14] *SD_SALE*	−0.06	0.16	0.17	0.01	−0.11	−0.03	−0.11	−0.26	−0.09	−0.06	−0.08	0.48	0.13	1.00						
[15] *AUDITOR*	0.06	−0.03	−0.02	0.01	0.05	−0.01	0.11	0.25	0.08	0.07	0.07	−0.07	−0.01	−0.06	1.00					
[16] *MB*	0.04	0.04	0.06	−0.04	−0.00	−0.02	−0.04	0.01	−0.07	0.02	0.02	0.10	0.03	0.02	0.02	1.00				
[17] *FLUIDITY*	−0.21	0.15	0.18	−0.02	−0.24	−0.09	−0.29	−0.10	0.05	−0.32	−0.29	0.15	0.25	−0.03	0.03	0.04	1.00			
[18] *SPREAD*	0.04	0.07	0.08	−0.02	−0.09	0.01	−0.01	−0.39	0.03	−0.07	−0.08	0.13	0.01	0.14	0.03	−0.11	−0.01	1.00		
[19] *ANALYSTS*	0.12	−0.08	−0.08	0.08	0.15	−0.03	0.17	0.67	0.08	0.17	0.22	−0.23	−0.08	−0.18	0.19	0.14	0.09	−0.26	1.00	
[20] *FCF*	0.24	−0.21	−0.20	0.01	0.37	0.11	0.51	0.29	−0.12	0.69	0.83	−0.29	−0.34	−0.05	0.06	0.04	−0.32	−0.13	0.17	1.00

Notes: The table presents pairwise Pearson correlation coefficients. Correlations significant at the 5% level or better are bold faced. All variables are defined in the Appendix.

Table 4
Regression results for firm life cycle and financial statement comparability.

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (8)$$

Panel A: Mature firms and financial statement comparability

	IND_COMP			
	OLS		FE	
	(1)		(2)	
	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.246***	9.42	0.062***	2.88
SIZE	0.208***	16.86	0.680***	17.64
LEVERAGE	−1.900***	−16.37	−1.857***	−11.95
ROA	4.902***	32.15	3.618***	24.11
CFO	−0.549***	−3.19	−0.799***	−4.94
SD_CFO	−1.495**	−1.98	−1.921**	−2.00
SD_SGROW	−0.014	−0.86	−0.003	−0.13
SD_SALE	−4.922***	−9.42	−4.055***	−7.24
AUDITOR	0.127**	2.37	−0.098	−1.18
MB	0.026***	7.19	0.009***	2.71
FLUIDITY	−1.318***	−5.80	−1.182***	−4.47
Constant	−2.986***	−12.71	−6.503***	−23.18
Year	Yes		Yes	
Industry	Yes		No	
Firm	No		Yes	
Adjusted R^2	0.352		0.189	
F-statistic	88.861		51.939	
Observations	56,110		56,110	

Panel B: Firms in other life cycle stages and financial statement comparability.

	IND_COMP			
	OLS		FE	
	(1)		(2)	
	Coef.	*t*-stat	Coef.	*t*-stat
FLC_INTRO	−0.926***	−15.13	−0.460***	−8.59
FLC_GROWTH	0.027	1.06	0.076***	3.38
FLC_DECLINE	−1.381***	−16.48	−0.706***	−9.71
FLC_SHAKE	−0.578***	−12.33	−0.265***	−7.02
SIZE	0.185***	15.30	0.659***	17.12
LEVERAGE	−1.973***	−17.05	−1.910***	−12.28
ROA	4.989***	32.81	3.663***	24.33
CFO	−1.875***	−9.60	−1.538***	−8.34
SD_CFO	−1.489**	−2.01	−2.077**	−2.18
SD_SGROW	−0.008	−0.55	−0.003	−0.13
SD_SALE	−4.537***	−8.88	−3.903***	−7.02
AUDITOR	0.128**	2.42	−0.088	−1.07
MB	0.026***	7.33	0.008**	2.45
FLUIDITY	−1.188***	−5.29	−1.177***	−4.46
Constant	−2.395***	−10.66	−6.162***	−22.09
Year	Yes		Yes	
Industry	Yes		No	
Firm	No		Yes	
Adjusted R^2	0.339		0.196	
F-statistic	82.883		51.621	
Observations	56,110		56,110	

Notes: Panel A shows the regression results for the relation between comparability and the firm life cycle measure (*FLC_MATURE*). Panel B shows the regression results for the relation between comparability and firms in other life cycle stages. Column 1 shows the OLS estimates and Column 2 shows the fixed effect estimates in both panels. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

from the growth to the mature stage, but decrease from the mature to the shake-out stage and from the shake-out to the decline stage, resembling an inverted "U" shape pattern. This pattern is similar to that shown in Krishnan et al. (2021).

Table 3 presents correlation coefficients between the variables used in the empirical models. The correlation between *IND_COMP* and

FLC_MATURE is positive and significant (correlation 0.13, $p < 0.05$), as is the correlation between *IND_COMP* and the alternative life cycle measures *HY_MATURE* (correlation 0.06, $p < 0.05$) and *RETA* (correlation 0.38, $p < 0.05$). The correlation between *IND_COMP* and alternative comparability measures are also consistent with expectation, although the highest correlation is 0.17, thereby, suggesting that these comparability measures do not capture the same constructs. The direction of other correlations is as expected. *ROA* is highly correlated with *IND_COMP* (correlation 0.39, p < 0.05) and *CFO* (correlation 0.30, p < 0.05). *SD_CFO* is also highly correlated with *SIZE* (correlation −0.41, p < 0.05). The unreported variance inflation factors (VIFs) show that none of the VIFs is greater than 3.52 (mean VIF is 1.68), which suggests that multicollinearity is not a concern for our empirical analysis.

4.2. Regression results

Table 4 presents the results of the multivariate regression, where the dependent variable is the *IND_COMP* measure of De Franco et al. (2011). Higher values for *IND_COMP* imply more comparability and, thus, a positive association between the life cycle stages and *IND_COMP* indicates increased levels of financial statement comparability. Panel A uses FLC_MATURE as the only life cycle stage, and reports the OLS regression results in Column (1). The coefficient on *FLC_MATURE* is positive and statistically significant (coefficient 0.246, $p < 0.01$).[3] Considering this, we infer that firms in the mature stage of the FLC produce more comparable financial statements. Relative to the reference category of firms in other life cycle stages, comparability is 0.25 points higher for a mature-stage firm. Column (2) presents the fixed effects regression results and shows evidence consistent with the OLS results (the coefficient on *FLC_MATURE* is 0.062, p < 0.01).[4]

In Panel B of Table 4, we report our baseline equation results using dummy variables indicating different stages of FLC. Our reference category is the mature stage firms (*FLC_MATURE*). Column (1) presents the OLS regression results. *FLC_INTRO* is negatively and significantly associated with *IND_COMP*, suggesting that firms in the introduction stage of the FLC produce less comparable financial statements relative to the reference category of mature stage firms. Firms in the introduction stage of the FLC have 0.926 points less comparable financial statements than those in the mature stage. Similarly, *FLC_DECLINE* is negatively and significantly associated with *IND_COMP*. The financial statement comparability score is 1.38 points lower for firms in the decline stage of the FLC when compared with firms in the mature stage. *FLC_SHAKE* and *IND_COMP* is also negatively and significantly associated. For instance, the financial statement comparability figure in the shakeout stage is, on average, 0.58 points lower than that of mature stage firms. These findings imply that firms in the introduction, decline and shakeout stages of the FLC are less likely to produce comparable financial statements relative to mature stage firms.[5] These results hold when fixed effect modes are used (Column 2). However, the coefficient on *FLC_GROWTH* is insignificant in the OLS specification, but positive and significant in the FE specification. One plausible explanation for the more comparable financial statements produced by growth firms could be their reliance on external financing; i.e., more comparable reporting may make it easier to access external financing.

4.3. Cross-sectional analysis (test of H2 and H3)

4.3.1. Firm life cycle, comparability and information asymmetry

We now discus the results of the moderating effects of information asymmetry on the association between FLC and comparability. We measure information asymmetry using three measures. First, bid-ask spread (*SPREAD*), a dummy variable taking the value of one if the firm-year bid ask spread is higher than the industry median and zero otherwise. Second, analysts following (*ANALYST*), a dummy variable taking the value of one if the number of analysts following a firm is lower than the industry median and zero otherwise. The third is internal control weaknesses (*ICW*), measured following Krishnan et al. (2021), using two variants of ICW. The first variant is based on an auditor assessment of ICW (*ICW_AUD*), which is a dummy variable that equals one if the firm's internal control system is weak according to auditor assessment, and zero otherwise. The second variant is based on management assessment of ICW (*ICW_MGT*): a dummy variable that equals one if the firm's internal control system is weak according to management assessment, and zero otherwise.

Panel A of Table 5 reports the result using bid-ask spread as the proxy for information asymmetry. Across all three columns, we find the coefficient on *SPREAD* negative and significant, suggesting that information asymmetry reduces comparability for firms on average. Column (2) shows that the coefficient on the interactive variable *FLC_MATURE*SPREAD* is positive and significant (coefficient 0.38, $p < 0.01$). This suggests that financial statement comparability increases for mature firms relative to other firms when information asymmetry is high. The coefficient on *FLC_MATURE* continues to be positive and significant. As shown in Column (3), we find that introduction, decline and shake-out firms have negative and significant interaction terms. This implies that, compared with mature firms, the firms in these three life cycle stages exhibit lower comparability when information asymmetry is high. As discussed in Section 2, many of these firms have underdeveloped accounting systems and weaker internal controls that act as barriers for them to increase the level of accuracy of future accounting estimates, thus, resulting in lower levels of comparability.

Panel B reports the result using analysts following (*ANALYST*) as the proxy for information asymmetry. Across all three columns, we find the coefficient on *ANALYST* to be negative and significant suggesting that when there is high information asymmetry, the comparability is lower for firms on average. Column (2) shows that the coefficient on the interactive variable *FLC_MATURE*ANALYST* is positive and significant (coefficient 0.317, $p < 0.01$). This suggests that financial statement comparability increases for mature firms relative to other firms when information asymmetry is high. Column (3) shows that the interactive coefficients for the introduction, decline and shake-out firms are negative and significant. This implies that, compared with mature firms, the firms in these three life cycle stages exhibit lower comparability when information asymmetry is high.

Panels C and D present the regression results for the relation between comparability and firm life cycle, conditional on information asymmetry proxied by ICW assessments. Panel C uses *ICW_AUD* as the information asymmetry proxy and reveals that the coefficient on the interactive variable *FLC_MATURE*ICW_AUD* is positive and significant (coefficient 0.396, $p < 0.01$) (Column 2), implying that financial statement comparability increases for mature firms when information asymmetry is high. A similar positive and significant effect is found in Panel D when *ICW_MGT* is used as the proxy for information asymmetry (coefficient 0.378, $p < 0.05$) (Column 2). Column (3) in both panels shows that the coefficients on *FLC_DECLINE*ICW* are negative and significant, while the coefficient on *FLC_GROWTH*ICW* is negative and marginally significant for the *ICW_AUD* proxy only.

[3] The coefficients on *FLC_MATURE* are also positive and statistically significant for *M4_COMP* (coefficient 0.112, $p < 0.01$), and for *M10_COMP* (coefficient 0.148, $p < 0.01$) (untabulated).

[4] While our prediction is that FLC is related to comparability, this relation could arise because the two variables are responding similarly to underlying time invariant factors. We, therefore, address this concern by performing a firm-level fixed effects regression.

[5] When *M4_COMP* is regressed on these variables, the following untabulated coefficients are found: *FLC*INTRO* (−0.33, $p < 0.01$), *FLC*GROWTH* (0.003, insignificant), *FLC*DECLINE* (−0.49, $p < 0.01$), and *FLC*SHAKE* (−0.30, p < 0.01). When *M10_COMP* is used as the comparability measure, the coefficients (untabulated) are: *FLC*INTRO* (−0.45, $p < 0.01$), *FLC*GROWTH* (0.002, insignifcant), *FLC*DECLINE* (−0.65, $p < 0.01$), and *FLC*SHAKE* (−0.38, $p < 0.01$).

Table 5
Firm life cycle, comparability and information asymmetry.

Panel A: Bid-ask spread

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 SPREAD_{i,t} + \beta_3 FLC * SPREAD_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (8.1)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.253***	9.60	0.082***	3.00		
SPREAD	−0.814***	−16.93	−0.966***	−19.88	−0.652***	−10.38
FLC_MATURE SPREAD*			0.377***	7.15		
FLC_INTRO					−0.770***	−9.72
FLC_GROWTH					−0.016	−0.61
FLC_DECLINE					−0.738***	−7.09
FLC_SHAKE					−0.270***	−6.35
*FLC_INTRO * SPREAD*					−0.266***	−2.85
FLC_GROWTH SPREAD*					0.026	0.47
FLC_DECLINE SPREAD*					−0.811***	−6.60
*FLC_SHAKE * SPREAD*					−0.446***	−5.56
SIZE	0.073***	4.74	0.078***	5.02	0.064***	4.11
LEVERAGE	−1.610***	−13.59	−1.626***	−13.69	−1.711***	−14.44
ROA	4.800***	30.87	4.791***	30.83	4.849***	31.26
RATIO	−0.536***	−3.04	−0.627***	−3.53	−1.843***	−9.20
SD_CFO	−1.778**	−2.27	−1.721**	−2.20	−1.788**	−2.32
SD_SGROW	−0.018	−1.09	−0.018	−1.11	−0.014	−0.90
SD_SALE	−4.962***	−9.27	−4.955***	−9.28	−4.556***	−8.73
AUDITOR	0.065	1.18	0.062	1.13	0.063	1.18
MB	0.016***	4.50	0.016***	4.62	0.017***	4.74
FLUIDITY	−1.520***	−6.36	−1.571***	−6.57	−1.435***	−6.07
Constant	−0.907***	−4.62	−1.865***	−10.23	−1.515***	−8.28
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.340		0.341		0.352	
F-statistic	78.317		78.053		80.150	
Observations	52,623		52,623		52,623	

Panel B: Analysts following

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 ANALYST_{i,t} + \beta_3 FLC * ANALYST_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (8.2)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.250***	9.61	0.040	1.13		
ANALYST	−0.425***	−8.70	−0.569***	−11.30	−0.340***	−5.72
*FLC_MATURE*ANALYST*			0.317***	6.53		
FLC_INTRO					−0.699***	−6.37
FLC_GROWTH					−0.001	−0.03
FLC_DECLINE					−0.716***	−5.13
FLC_SHAKE					−0.309***	−5.19
*FLC_INTRO*ANALYST*					−0.285**	−2.51
*FLC_GROWTH*ANALYST*					0.032	0.64
*FLC_DECLINE*ANALYST*					−0.774***	−5.25
*FLC_SHAKE*ANALYST*					−0.350***	−4.35
SIZE	0.140***	8.80	0.144***	9.01	0.122***	7.68
LEVERAGE	−1.841***	−15.98	−1.850***	−16.04	−1.933***	−16.82
ROA	4.966***	32.66	4.970***	32.66	5.042***	33.25
CFO	−0.596***	−3.47	−0.670***	−3.86	−1.956***	−10.03
SD_CFO	−1.698**	−2.25	−1.637**	−2.17	−1.670**	−2.25
SD_SGROW	−0.013	−0.82	−0.013	−0.83	−0.008	−0.55
SD_SALE	−4.928***	−9.45	−4.918***	−9.45	−4.537***	−8.90
AUDITOR	0.141***	2.63	0.136**	2.55	0.134**	2.55
MB	0.022***	6.16	0.023***	6.25	0.022***	6.32
FLUIDITY	−1.415***	−6.26	−1.451***	−6.42	−1.328***	−5.95
Constant	−2.253***	−8.92	−2.483***	−13.20	−2.087***	−11.01
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.329		0.330		0.343	

(*continued on next page*)

Table 5 (*continued*)

Panel B: Analysts following

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 ANALYST_{i,t} + \beta_3 FLC * ANALYST_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} (8.2)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
F-statistic	78.723		77.937		82.281	
Observations	56,110		56,110		56,110	

Panel C: Auditor assessment of internal control weaknesses

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 ICW\_AUD_{i,t} + \beta_3 FLC * ICW\_AUD_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} (8.3)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.224***	5.81	0.202***	5.13		
ICW_AUD	−0.246***	−2.60	−0.385***	−3.04	−0.034	−0.33
FLC_MATURE ICW_AUD*			0.396***	2.63		
FLC_INTRO					−1.003***	−8.50
FLC_GROWTH					0.002	0.05
FLC_DECLINE					−1.305***	−8.74
FLC_SHAKE					−0.500***	−7.74
FLC_INTRO ICW_AUD*					−0.146	−0.53
FLC_GROWTH ICW_AUD*					−0.307*	−1.69
FLC_DECLINE ICW_AUD*					−0.975**	−2.39
FLC_SHAKE ICW_AUD*					−0.011	−0.04
SIZE	0.131***	5.73	0.132***	5.77	0.114***	5.06
LEVERAGE	−1.615***	−8.96	−1.616***	−8.95	−1.714***	−9.57
ROA	4.368***	15.75	4.369***	15.74	4.365***	15.92
CFO	−0.345	−1.14	−0.351	−1.16	−1.627***	−4.91
SD_CFO	−0.979	−0.78	−0.964	−0.77	−0.664	−0.54
SD_SGROW	−0.028	−1.33	−0.029	−1.35	−0.021	−1.01
SD_SALE	−6.194***	−5.67	−6.174***	−5.66	−5.821***	−5.39
AUDITOR	−0.050	−0.65	−0.052	−0.67	−0.038	−0.50
MB	0.014***	2.77	0.014***	2.78	0.015***	3.13
FLUIDITY	−1.884***	−5.06	−1.892***	−5.08	−1.682***	−4.57
Constant	−2.810***	−5.34	−1.774***	−8.26	−1.329***	−6.07
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.296		0.296		0.308	
F-statistic	53.866		53.101		53.816	
Observations	20,798		20,798		20,798	

Panel D: Management assessment of internal control weaknesses

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 ICW\_MGT_{i,t} + \beta_3 FLC * ICW\_MGT_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} (8.4)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.261***	6.68	0.238***	6.00		
IC_WEAK_MGR	−0.282***	−2.92	−0.408***	−3.20	−0.082	−0.76
FLC_MATURE ICW_MGT*			0.378**	2.44		
FLC_INTRO					−1.073***	−9.76
FLC_GROWTH					0.003	0.06
FLC_DECLINE					−1.283***	−9.72
FLC_SHAKE					−0.498***	−7.77
FLC_INTRO ICW_MGT*					−0.083	−0.32
FLC_GROWTH ICW_MGT*					−0.292	−1.56
FLC_DECLINE ICW_MGT*					−0.906**	−2.54
FLC_SHAKE ICW_MGT*					0.028	0.11
SIZE	0.190***	8.62	0.191***	8.67	0.169***	7.83
LEVERAGE	−1.678***	−9.31	−1.679***	−9.31	−1.758***	−9.82
ROA	4.867***	19.12	4.868***	19.12	4.891***	19.32
CFO	−0.171	−0.59	−0.177	−0.61	−1.410***	−4.42
SD_CFO	−0.376	−0.29	−0.363	−0.28	−0.370	−0.28
SD_SGROW	−0.020	−0.92	−0.020	−0.93	−0.013	−0.62
SD_SALE	−6.926***	−6.54	−6.907***	−6.53	−6.380***	−6.09
AUDITOR	0.132*	1.67	0.131*	1.65	0.137*	1.76

(*continued on next page*)

Table 5 (*continued*)

Panel D: Management assessment of internal control weaknesses

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 ICW\_MGT_{i,t} + \beta_3 FLC * ICW\_MGT_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (8.4)$$

	IND_COMP					
	(1)		(2)		(3)	
MB	0.021***	4.15	0.021***	4.16	0.022***	4.47
FLUIDITY	−1.201***	−3.15	−1.212***	−3.17	−1.013***	−2.67
Constant	−4.238***	−9.15	−2.905***	−11.65	−2.379***	−9.71
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.335		0.335		0.346	
F-statistic	57.630		56.631		55.779	
Observations	24,042		24,042		24,042	

Notes: This table presents empirical results for the moderating effect of information asymmetry on the association between comparability and FLC. Panel A shows regression results using bid-ask spread (*SPREAD*) as the proxy for information asymmetry. Panel B shows regression results using analysts following (*ANALYST*) as the proxy for information asymmetry. Panel C shows regression results using internal control weakness assessment by auditor (*ICW_AUD*) as the proxy for information asymmetry. Finally, Panel D shows regression result using internal control weakness assessment by management (*ICW_MGT*) as the proxy for information asymmetry. Column (1) in each Panel reports the coefficient on *FLC_MATURE*, the moderating variable, and the control variables. Column (2) reports the coefficient on *FLC_MATURE*, the variable representing the interaction between *FLC_MATURE* and the moderating variable, and the control variables. Finally, Column (3) reports the coefficients on firms in other life cycle stages, the variables representing the interaction between firms in other life cycle stages and the moderating variable, and the control variables. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

Table 6
Firm life cycle, comparability and free cash flows.

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC_{i,t} + \beta_2 FCF_{i,t} + \beta_3 FLC * FCF_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEVERAGE_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 SD\_CFO_{i,t} + \beta_9 SD\_SGROW_{i,t} + \beta_{10} SD\_SALE_{i,t} + \beta_{11} AUDITOR_{i,t} + \beta_{12} MB_{i,t} + \beta_{13} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} (8.5)$$

	IND_COMP					
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	0.247***	9.44	0.286***	8.69		
FCF	−0.122	−0.80	−0.084	−0.55	0.168	0.53
*FLC_MATURE*FCF*			−0.471	−1.64		
FLC_INTRO					−0.838***	−12.19
FLC_GROWTH					0.062*	1.91
FLC_DECLINE					−1.638***	−16.89
FLC_SHAKE					−0.600***	−10.63
*FLC_INTRO*FCF*					−0.169	−0.49
*FLC_GROWTH*FCF*					−0.522*	−1.77
*FLC_DECLINE*FCF*					−1.735***	−4.26
*FLC_SHAKE*FCF*					1.399***	2.84
SIZE	0.209***	16.85	0.209***	16.85	0.185***	15.18
LEVERAGE	−1.905***	−16.22	−1.908***	−16.22	−1.985***	−16.88
ROA	4.876***	31.85	4.867***	31.79	4.970***	32.50
CFO	−0.423*	−1.88	−0.406*	−1.79	−1.674***	−6.55
SD_CFO	−1.543**	−2.03	−1.424*	−1.88	−1.825**	−2.47
SD_SGROW	−0.012	−0.73	−0.011	−0.69	−0.009	−0.56
SD_SALE	−4.984***	−9.43	−4.993***	−9.45	−4.534***	−8.76
AUDITOR	0.122**	2.27	0.122**	2.26	0.118**	2.23
MB	0.026***	7.14	0.026***	7.20	0.025***	6.99
FLUIDITY	−1.348***	−5.88	−1.347***	−5.87	−1.235***	−5.47
Constant	−1.976***	−8.60	−3.338***	−20.93	−2.779***	−17.57
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.326		0.326		0.340	
F-statistic	75.436		75.448		79.688	
Observations	55,577		55,577		55,577	

Notes: This table presents empirical results of the moderating effect of free cash flow (*FCF*) on the association between comparability and FLC. Column (1) reports the coefficient on *FLC_MATURE*, *FCF* (the moderating variable), and control variables. Column (2) reports the coefficient on *FLC_MATURE*, the interactive variable *FLC_MATURE*FCF*, and the control variables. Finally, Column (3) reports the coefficients on firms in other life cycle stages, the variables representing the interctaion between firms in other life cycle stages and *FCF*, and the control variables. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

Table 7
Endogeneity test: 2SLS regression.
First stage regression

$$FLC\_STAGE_i = \alpha + \beta_1 FIRM\_AGE_i + \beta_2 RETA_i + \beta_3 EBIT_i + \beta_4 AGROWTH_i + \varepsilon_i \quad (9)$$

$$FLC\_MATURE_{i,t} = \beta_0 + \beta_1 INSTRUMENT_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (9.1)$$

Second-stage regression

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC\_MATURE\_Pred_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (9.2)$$

2SLS				
	(1)		(2)	
	First-Stage		Second-Stage	
	Coef.	*t*-stat	Coef.	*t*-stat
INSTRUMENT	0.186***	28.04		
FLC_MATURE_Pred			1.774***	8.61
FIRM	0.010***	4.53	0.168***	12.23
LEVERAGE	−0.122***	−8.93	−1.638***	−13.80
ROA	−0.321***	−19.58	5.384***	31.89
CFO	1.136***	43.59	−2.289***	−7.86
SD_CFO	0.204**	2.19	−1.865**	−2.50
SD_SGROW	0.006***	3.76	−0.020	−1.30
SD_SALE	−0.550***	−8.73	−3.949***	−7.56
AUDITOR	0.032***	4.22	0.099*	1.85
MB	−0.000	−1.12	0.027***	7.51
FLUIDITY	−0.419***	−12.42	−0.392	−1.55
Constant	0.451***	19.84	−4.078***	−21.79
Year	Yes		Yes	
Industry	Yes		Yes	
Partial F-statistic	786.45***			
Underidentification test	586.078***			
Weak Identification test	1661.931			
Adjusted R-squared	0.231		0.270	
F-statistic	140.13		73.992	
Observations	55,617		55,617	

Notes: This table presents the 2SLS regression analysis. FLC_STAGE is the FLC stage (*FLC_INTRO*, *FLC_GROWTH*, *FLC_MATURE*, *FLC_SHAKE*, and *FLC_DECLINE*). *FIRM_AGE* is the company's listing period, *RETA* is retained earnings scaled by total assets, *EBIT* is the earnings before interest and taxes, and *AGOWTH* is the asset growth rate. *INSTRUMENT* is the FLC measure calculated using multiclass linear discriminant analysis. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * p < 0.10, ** p < 0.05, *** p < 0.01, using two-tailed tests.

Taken together, the evidence presented in Table 5 suggests that mature firms tend to produce more comparable financial statements than other firms when information asymmetry is high, thereby, supporting H2.

4.3.2. Firm life cycle, comparability and free cash flows

Table 6 presents results for H3, which posits a moderating effect for free cash flows on the relationship between FLC and comparability. We predict that mature firms' higher free cash flows will moderate the firm life cycle and comparability association. Descriptive statistics in Panel C, Table 2 shows that the mean *FCF* is largest for the *MATURE* firms (average *FCF* of 0.08) compared with firms in other life cycle stages. We measure *FCF* as operating cash flow less capital expenditures divided by beginning-of-year total assets. The results are presented in Table 6. Column (2) shows that the coefficient on the interactive variable *FLC_MATURE*FCF* is negative and insignificant, thereby, rejecting H3.[6] Column (3) documents that the coefficients on the interactive variable for growth and decline firms are negative and at least marginally significant, but that for shake-out firms the coefficient is positive and significant.

[6] However, untabulated results using the alternative comparability measures document positive and significant coefficients on the interactive variable (coefficients 0.39, $p < 0.05$ for *M4_COMP* and 0.43, p < 0.05 for *M10_COMP*). We, thus, find support for H3 using these two comparability measures.

Table 8
Alternative measures of firm life-cycle.

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC\_ALT_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (10)$$

	IND_COMP			
	(1)		(2)	
	Coef.	*t*-stat	Coef.	*t*-stat
HY_MATURE	0.076**	2.25		
RETA			0.250***	12.48
SIZE	0.208***	14.97	0.189***	15.34
LEVERAGE	−1.838***	−14.82	−1.862***	−15.39
ROA	5.382***	29.56	4.026***	26.38
CFO	−0.157	−0.79	−1.060***	−6.14
SD_CFO	−1.165	−1.41	0.489	0.64
SD_SGROW	0.006	0.41	0.007	0.38
SD_SALE	−5.539***	−9.36	−5.033***	−9.65
AUDITOR	0.163***	2.67	0.135**	2.54
MB	0.020***	5.09	0.031***	8.14
FLUIDITY	−1.186***	−4.94	−1.108***	−4.64
Constant	−3.356***	−8.03	−2.446***	−9.20
Year	Yes		Yes	
Industry	Yes		Yes	
Adjusted R^2	0.315		0.343	
F-statistic	63.697		62.826	
Observations	47,302		55,764	

Notes: This table presents the regression results for the relation between comparability and alternative measures of firm life cycle (*FLC_ALT*). Column (1) reports results using *HY_MATURE* as the alternative life cycle measure. Column (2) reports results using *RETA* as the alternative life cycle measure. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

4.4. Addressing endogeneity issues

The empirical estimates presented above suggest that mature firms have a strong positive association with comparability. We also provide results to ascertain whether or not information asymmetry and agency problems, such as free cash flows, moderate the FLC - comparability association. Although we have included a wide-range of time-varying firm-level control variables to account for factors that may affect the main effect, our models could still be driven by omitted variables. In other words, our results may be spurious if our models omit any key variables that affect both FLC and comparability. We use the two-stage least squares (2SLS) method to address this endogeneity issue.

First, following Faff et al. (2016), we use a discriminant method to construct a FLC indicator variable using the Eq. (9) below.

$$FLC\_STAGE_i = \alpha + \beta_1 FIRM\_AGE_i + \beta_2 RETA_i + \beta_3 EBIT_i + \beta_4 AGROWTH_i + \varepsilon_i \quad (9)$$

Where *FLC_STAGE* is the FLC stage (*FLC_INTRO*, *FLC_GROWTH*, *FLC_MATURE*, *FLC_SHAKE*, and *FLC_DECLINE*). *FIRM_AGE* is the company's listing period, *RETA* is retained earnings scaled by total assets, *EBIT* is earnings before interest and taxes, and *AGROWTH* is the asset growth rate. Four dummy variables representing the four stages of the FLC are constructed using a discriminant method similar to that discussed in Section 3.2. Second, Following Zhang and Xu (2021), we use this FLC indicator variable as the instrument in our 2SLS method.

Table 7 presents our results. Column 1 shows first-stage regression estimates. The instrument is positively and significantly associated with *FLC_MATURE* (coefficient 0.186, $p < 0.01$). As per Column (2), *FLC_MATURE_pred* is positively and significantly associated with

Table 9
Alternative measure of comparability.

$$COMP\_ALT_{i,\,t} = \beta_0 + \beta_1 FLC\_MATURE_{i,\,t} + \beta_2 SIZE_{i,\,t} + \beta_3 LEVERAGE_{i,\,t} + \beta_4 ROA_{i,\,t} + \beta_5 CFO_{i,\,t} + \beta_6 SD\_CFO_{i,\,t} + \beta_7 SD\_SGROW_{i,\,t} + \beta_8 SD\_SALE_{i,\,t} + \beta_9 AUDITOR_{i,\,t} + \beta_{10} MB_{i,\,t} + \beta_{11} FLUIDITY_{i,\,t} + \beta_{12} CFO\_COV_{i,\,t} + \beta_{13} RET\_COV_{i,\,t} + Fixed\ Effects + \varepsilon_{i,\,t} (11)$$

	IND_COMP_TAC		IND_COMP_ABAC		IND_COMP_ECOM	
	(1)		(2)		(3)	
	Coef.	*t*-stat	Coef.	*t*-stat	Coef.	*t*-stat
FLC_MATURE	−0.020***	−14.45	−0.015***	−17.77	−0.000	−0.67
SIZE	0.001	1.27	−0.001***	−3.96	0.001**	2.46
LEVERAGE	−0.001	−0.15	0.002	0.80	−0.007***	−3.34
ROA	−0.268***	−9.87	−0.165***	−16.91	−0.012***	−4.71
CFO	0.218***	8.28	0.134***	11.55	0.020***	5.83
SD_CFO	0.944***	8.45	0.620***	17.66	0.041**	2.52
SD_SGROW	0.001	0.70	−0.000	−0.44	−0.001***	−4.19
SD_SALE	0.188***	4.85	0.090***	5.46	0.063***	5.37
AUDITOR	−0.010***	−3.49	−0.005***	−3.26	−0.002	−1.35
MB	0.000*	1.68	0.001***	3.63	0.000	0.56
FLUIDITY	0.043***	2.88	0.039***	6.60	−0.010*	−1.80
CFO_COV	–	–	–	–	0.021***	8.31
RET_COV	–	–	–	–	0.100***	11.11
Constant	0.056***	5.50	0.057***	12.63	0.001	0.11
Year	Yes		Yes		Yes	
Industry	Yes		Yes		Yes	
Adjusted R^2	0.108		0.213		0.154	
F-statistic	53.301		97.048		17.368	
Observations	54,254		53,611		45,692	

Notes: This table presents the regression results for the relation between firm life cycle and alternative measures of comparability. Column (1) uses industry median of comparability based on total accruals (*IND_COMP_TAC*) as the alternative comparability measure. A lower value of *IND_COMP_TAC* indicates greater comparability between firm pairs. Column (2) uses industry median of comparability based on abnormal accruals (*IND_COMP_ABAC*) as the comparability measure. A lower value of *IND_COMP_ABAC* indicates greater comparability between firm pairs. Column (3) uses earnings covariation (*IND_COMP_ECOM*) as another comparability proxy. A higher value of *IND_COMP_ECOM* indicates greater earnings comparability between firm-pairs. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

IND_COMP (coefficient 1.774, $p < 0.01$), and the partial F-test value, 786.45, is significant at the 1% level. This suggests that our original results hold after controlling for omitted variable bias and errors.

4.5. Robustness tests and additional analysis

4.5.1. Alternative measures of firm life cycle

We use two alternative measures of FLC as detailed in Section 3.2 to assess the robustness of our findings to alternative FLC measures. Column (1) in Table 8 reports the regression results using the Hribar and Yehuda (2015) FLC measure. We find the coefficient on *HY_MATURE* positive and significant (coefficient 0.076, $p < 0.05$) which corroborates our main finding using the Dickinson (2011) FLC measure. Column (2) reports results using *RETA* as the alternative life cycle measure. The coefficient on *RETA* is positve and highly significant (coefficient 0.25, $p < 0.01$) which again corroborates our primary finding.

4.5.2. Alternative measures of comparability

Although we use the De Franco et al. (2011) measure as our primary comparability measure as it is dynamic, capturing similarities over time, and firm-specific, this measure is not without limitations (see section 5.3. of De Franco et al. (2011) for a discussion). A particular limitation in our setting is that we failed to find any firm-year observations where the life cycle stage *does not change* over 16 consecutive quarters. Over a 16 quarter rolling window, the maximum number of observations and their respective frequencies through the full sample period include: Introduction: 12 times ($N = 46$), Growth 13 times ($N = 1$), Maturity: 12 times ($N = 1105$), Decline: 12 times ($N = 17$), and Shakeout: 15 times ($N = 237$). Therefore, it is possible that a firm could have been in different life cycle stages during the comparability measures construction.

We use three alternative proxies for financial statement comparability following Francis et al. (2014) to determine whether the baseline regression results remain consistent with the De Franco et al. (2011) measure. The estimation procedures are detailed in section 3.3. Regression results are presented in Table 9. Column (1) uses *IND_COMP_TAC* as the alternative comparability measure, and finds the coefficient on *FLC_MATURE* negative and significant (coefficient − 0.02, $p < 0.01$). Recall that a lower value implies higher comparability and, therefore, this finding is consistent with our main finding using the De Franco et al. (2011) measure. Column (2) uses *IND_COMP_ABAC* as the comparability measure and, again, shows a result consistent with expectation (coefficient − 0.015, $p < 0.01$). These findings suggest that mature-stage firms have greater similarity (i.e., smaller difference) in the accruals structure and, hence, have greater comparability. *IND_COMP_TAC* and *IND_COMP_ABAC* capture whether a pair of firms in the same industry year have a similar accruals structure. We would expect that a pair of firms in the mature stage would have similar accounting choices leading to higher comparability. In contrast, firms in other life cycle stages might have different accounting estimates between firm pairs due to inherent differences across their respective life cycle stages and, hence, may be less comparable. Column (3) uses earnings covariation (*IND_COM_ECOM*) as another comparability proxy. A positive and significant coefficient would support the main finding. However, we find the coefficient on *FLC_MATURE* is negative but insignificant. This inconsistency of results may have occurred owing to the fundamental conceptual differences of the two measurements of

Table 10
Additional Analysis.

Panel A: Prior year maturity vs first time maturity

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 CONT_{i,t} + \beta_2 NEW_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 LEVERAGE_{i,t} + \beta_5 ROA_{i,t} + \beta_6 CFO_{i,t} + \beta_7 SD\_CFO_{i,t} + \beta_8 SD\_SGROW_{i,t} + \beta_9 SD\_SALE_{i,t} + \beta_{10} AUDITOR_{i,t} + \beta_{11} MB_{i,t} + \beta_{12} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (12.1)$$

	IND_COMP	
	Coef.	*t*-stat
CONT	0.265***	8.58
NEW	0.185***	8.14
SIZE	0.204***	17.79
LEVERAGE	−1.774***	−17.26
ROA	4.598***	35.09
CFO	−0.425***	−2.81
SD_CFO	−1.607**	−2.29
SD_SGROW	−0.015	−1.10
SD_SALE	−4.620***	−9.65
AUDITOR	0.116**	2.32
MB	0.023***	6.99
FLUIDITY	−1.292***	−6.16
Constant	−2.985***	−13.01
Test of difference in coefficient (*CONT* – *NEW*)	8.07***	
Year and Industry Controls	Yes	
Adjusted R^2	0.354	
F-statistic	87.664	
Observations	56,110	

Panel B: Sub-sample of firms where there is no abnormal pattern of life-cycle changes

$$IND\_COMP_{i,t} = \beta_0 + \beta_1 FLC\_MATURE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEVERAGE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 CFO_{i,t} + \beta_6 SD\_CFO_{i,t} + \beta_7 SD\_SGROW_{i,t} + \beta_8 SD\_SALE_{i,t} + \beta_9 AUDITOR_{i,t} + \beta_{10} MB_{i,t} + \beta_{11} FLUIDITY_{i,t} + Fixed\ Effects + \varepsilon_{i,t} \quad (12.2)$$

	IND_COMP	
	Coef.	*t*-stat
FLC_MATURE	0.191***	6.71
SIZE	0.188***	15.43
LEVERAGE	−1.689***	−14.47
ROA	5.017***	27.52
CFO	−0.436**	−2.13
SD_CFO	−2.112***	−2.58
SD_SGROW	−0.008	−0.43
SD_SALE	−4.881***	−8.71
AUDITOR	0.148***	2.64
MB	0.026***	6.67
FLUIDITY	−1.137***	−4.85
Constant	−3.319***	−7.09
Year and Industry Controls	Yes	
Adjusted R^2	0.325	
F-statistic	64.524	
Observations	42,778	

Notes: This table presents regression estimates when *CONT* and *NEW* firms are used in the models (Panel A). *CONT* = the firm is a mature firm in year t-1 and year t; *NEW* = the firm was not a mature firm in year t-1 but is a mature firm in year t. For Panel B, normal pattern of life-cycle changes is assumed to exist when the life-cycle moves within ±1 level, e.g., MATURE in year t, GROWTH or DECLINE in year t-1. All variables are defined in the Appendix. *t*-statistics are based on standard errors clustered at the firm-level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, using two-tailed tests.

comparability. In particular, the De Franco et al. (2011) comparability metric maps earnings to stock returns and, hence, captures earnings similarity for underlying similar economic circumstances. In contrast, Francis et al. (2014) earnings covariation comparability metric captures anything that creates earnings similarity irrespective of whether economic conditions are similar.

4.5.3. Additional analysis

In our additional analysis, we first examine whether comparability is significantly different between CONT firms and NEW firms. CONT firms are firms that were mature in both year t-1 and in year t, whereas NEW firms were not mature in year t-1, but are mature in year t. As shown in Table 10, Panel A, while both CONT and NEW firms are positively and significantly associated with comparability, the coefficient on *CONT* is larger than the coefficient on *NEW*.

Second, we conduct a sub-sample analysis of firms where there is no abnormal pattern of life-cycle changes.[7] For this, a "normal" pattern of life-cycle changes is assumed to exist when the life-cycle moves within ±1 level, e.g., MATURE in year t and GROWTH or DECLINE in year t-1 or vice-versa. Results are presented in Table 10, Panel B. As can be seen, the coefficient on *FLC_MATURE* remains positive and statistically significant at the 1% level, suggesting that our baseline results hold for firms with a normal pattern of life-cycle changes.[8]

5. Conclusion

Firm life cycle theory suggests that firms evolve through distinct life cycle stages. Revenue generation, profitability and cash flows are uncertain during the introduction and growth stages. Introduction, growth, maturity, shakeout and decline phases of FLC reflect the evolution in organization, financing, investment, and structure that firms experience (Miller & Friesen, 1984). Although not all firms go through each phase for the same duration, each stage of the FLC has its own unique characteristics. The changing internal and external operating environments at each stage affect fundamental business models. As a result, motivation to disclose comprehensive high quality information differs, depending on the requirements and characteristics of each life cycle stage.

Financial statement comparability is the degree of similarity between the financial statements of two firms that have faced similar economic transactions, as these economic transactions map into their financial accounting systems. Comparability reduces information acquisition costs and increases the quality of financial information presented in financial statements (De Franco et al., 2011). We hypothesize that firms in the mature FLC phase tend to produce comparable financial statements by comparison with firms in other FLC phases, because mature firms have established internal controls, organization structures and skilled employees. We find evidence supporting this hypothesis. We also find that marked information asymmetry positively moderates the association between FLC and comparability, indicating that such information asymmetry provides incentives for managers to produce comparable financial statements in order to enhance the quality of the information environment. However, alternative interpretations could also exist. For instance, it could also be argued that managers might be less inclined to produce more comparable financial statements if they operate in highly competitive industries (Imhof et al., 2022), in order to reduce the proprietary costs of disclosures.

We caution against a causative interpretation of our study. Dickinson's (2011) FLC classification requires the inclusion of four life cycle stages as explanatory variables in the regression model. Therefore, it is a challenging task to find instrumental variables that are related to all life cycle stages at a given point in time. Thus, we identify this as a limitation of our study.

Accounting regulators and practitioners repeatedly stress the beneficial role of comparability in financial reporting, arguing that it

[7] We thank an anonymous reviewer for the suggestion.

[8] We also run an additional analysis using firms with an abnormal pattern of life-cycle changes. Untabulated results show that the coefficient on *FLC_MATURE* remains positive and statistically significant (coefficient 0.252, $p < 0.01$). As can be seen, the coefficient on *FLC_MATURE* is higher in the case of abnormal change in life-cycle pattern when compared with normal change in life-cycle pattern (Panel B).

enhances the usefulness of financial statements for investors' decision-making. Financial statement comparability across firms is an essential qualitative characteristic that is required by financial reporting frameworks. Given the regulatory and practical imperatives of comparability, it is important to examine its determinants. Thus, our study extends the financial statement comparability literature by providing evidence that comparability differs across firm life cycle stages.

Appendix A. Variable definition

Variable	Definition
M4_COMP	Firm-year level accounting comparability, which is the average of the top four comparability combinations for firm *i* and other firms in the same 2-digit SIC in a given year.
M10_COMP	Firm-year level accounting comparability, which is the average of the top ten comparability combinations for firm *i* and other firms in the same 2-digit SIC in a given year.
IND_COMP	Firm-year level accounting comparability, which is the industry median of comparability combinations for firm *i* and other firms in the same 2-digit SIC in a given year.
IND_COMP_TAC	Firm-year level accounting comparability following Francis et al. (2014), which is the industry median of comparability (equals the absolute value of the difference between total accruals) combinations for firm *i* and other firms in the same 2-digit SIC in a given year.
IND_COMP_ABAC	Firm-year level accounting comparability following Francis et al. (2014), which is the industry median of comparability combinations (equals the absolute value of the difference between abnormal accruals) for firm *i* and other firms in the same 2-digit SIC in a given year.
IND_COMP_ ECOM	Firm-year level accounting comparability following Francis et al. (2014), which is the industry median of comparability combinations (equals the level of earnings covariance as the adjusted R^2 from a regression using 16 consecutive quarters for all unique pairs of firms) for firm *i* and other firms in the same 2-digit SIC in a given year.
FLC_INTRO	Dummy variable equals 1 if the net cash flow from financing activities is positive while the net cash flow from operating and investing activities are both negative, and 0 otherwise.
FLC_GROWTH	Dummy variable equals 1 if the net cash flow from investing activities is negative while the net cash flow from operating and financing activities are both positive, and 0 otherwise.
FLC_MATURE	Dummy variable equals 1 if the net cash flow from operating activities is positive while the net cash flow from financing and investing activities are both negative, and 0 otherwise.
FLC_DECLINE	Dummy variable equals 1 if the net cash flow from operating activities is negative, the net cash flows from investing activities is positive, and the net cash flows from financing activities is either positive or negative, and 0 otherwise.
FLC_SHAKE	Dummy variable equals 1 if the firm year does not belong to any of the other life cycle categories.
HY_MATURE	Dummy variable equals 1 if the firm-year observation belongs to maturity stage of firm life cycle, following Hribar and Yehuda (2015). Hribar and Yehuda (2015) first combined four classification variables (cumulative sales growth over two years, capital expenditures plus R&D expense as a proportion of total assets, a measure of net capital transactions, and firm age) and then rank the combined measure into five groups to construct three life-cycle stages: growth (top quintile), maturity (middle quintile), and decline (bottom quintile).
RETA	Retained earnings scaled by total assets.
SIZE	Natural log of total assets.
LEVERAGE	Total debt divided by total assets.
ROA	Income before extraordinary items divided by total assets.
CFO	Operating cash flows divided by total assets.
SD_CFO	Standard deviation in quarterly cash flows from operations, scaled by end of quarter assets, for preceding 16 quarters.
SD_SGROW	Standard deviation of growth in quarterly sales for preceding 16 quarters.
SD_SALE	Standard deviation of preceding 16 quarter sales, scaled by end of quarter assets.
AUDITOR	Dummy variable equals 1 if the firm is audited by one of the top 8 auditors, and 0 otherwise.
MB	Market value of equity divided by book value of equity.
FLUIDITY	Firm-specific competitive threat measure developed by Hoberg et al. (2014) and made available in the Hoberg–Phillips Data Library. It is a measure of how intensively the product market around a firm changes in each year. Higher fluidity values represent greater product-market competition and vice-versa.
CFO_COV	Cash flow covariation of firm-pairs following Francis et al. (2014), which is measured analogously to earnings comparability covariation.
RET_COV	Monthly stock return covariation of firm-pairs following Francis et al. (2014), which is measured analogously to earnings comparability covariation.
SPREAD	Bid-ask spread, a dummy variable taking the value of one if the firm-year bid-ask spread is higher than the industry median and zero otherwise. Bid-ask spread is the absolute value of the annual average difference in daily bid and ask price, scaled by closing price, in year t.
ANALYST	Analysts following, a dummy variable taking the value of one if the firm-year number of analysts is lower than the industry median and zero otherwise.
ICW_AUD	Dummy variable equals 1 if the firm's internal control system is weak according to auditor assessment and zero otherwise.
ICW_MGT	Dummy variable equals 1 if the firm's internal control system is weak according to management assessment and zero otherwise.
FCF	Difference between operating cash flow and capital expenditures divided by beginning-of-year total assets.

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