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Earnings Momentum, Timely Loss Recognition and Valuation Premiums[1]

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ABSTRACT

There has been debate over whether earnings momentum is due to economic fundamentals or rather manipulated business performance. This paper empirically attempts to resolve this confusion by exploiting the relations between earnings momentum and accounting conservatism. This study estimates a relation between returns and earnings momentum conditional on levels of accounting conservatism. Sample used in this study is comprised of 16,637 firm-year observations from year 1989 to year 2011. Our results show that a conservative accounting level is lower for firms that report at least one year of earnings momentum. Moreover, there is evidence consistent with under-pricing of earnings momentum that is associated with less conservative accounting in a current period but this is partially reversed in a next period. Further analysis reveals that earnings momentum determined by low accounting conservatism is directly related to higher growth and lower risk in subsequent periods. The empirical results are broadly consistent with the view that earnings momentum reported by firms is signaling stronger future performance, rather than being manipulated by managers. Collectively, this paper provides supportive evidence that earnings momentum is indicative of good firm performance rather than being a product of managerial discretion.

Keywords: Market Rewards, Earnings Targets, Earnings Momentum, Accounting Conservatism, Reporting Choices

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โมเมนตัมของกำไร การรับรู้ผลขาดทุนอย่างทันกาล และส่วนเกินมูลค่า

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บทคัดย่อ

งานวิจัยที่เกี่ยวกับโมเมนตัมของกำไรยังมีความเห็นที่แตกต่างกันว่า โมเมนตัมของกำไรเกิดจากปัจจัยพื้นฐานทางเศรษฐกิจหรือการตกแต่งผลการดำเนินงานทางธุรกิจ การศึกษาเชิงประจักษ์ฉบับนี้มุ่งหมายเพื่อยุติความขัดแย้งดังกล่าวโดยอาศัยความสัมพันธ์ของโมเมนตัมของกำไรและหลักความระมัดระวังทางการบัญชี งานวิจัยจะประมาณการความสัมพันธ์ระหว่างผลตอบแทนกับโมเมนตัมของกำไรที่มีเงื่อนไขบนระดับของความระมัดระวังทางการบัญชี ตัวอย่างสำหรับงานวิจัยฉบับนี้ประกอบด้วยข้อมูลทั้งสิ้น 16,637 ตัวอย่าง ระหว่างปี พ.ศ. 2532 – 2554 ผลการวิจัยชี้ให้เห็นว่า ระดับของความระมัดระวังทางการบัญชีจะต่ำกว่าสำหรับบริษัทที่รายงานโมเมนตั้งของกำไรตั้งแต่หนึ่งปีเป็นต้นไป นอกจากนี้ ผลการวิจัยให้หลักฐานเชิงประจักษ์ว่า การกำหนดมูลค่าที่ต่ำกว่ามูลค่าที่แท้จริงของโมเมนตัมของกำไรที่มีความสัมพันธ์กับระดับความระมัดระวังทางการบัญชีที่ต่ำกว่าจะถูกแก้ไขความผิดพลาดบางส่วนในงวดถัดไป การวิเคราะห์เพิ่มเติมยังแสดงผลการวิจัยว่า โมเมนตัมของกำไรที่ถูกสร้างขึ้นจากระดับของความระมัดระวังทางการบัญชีที่ต่ำมีความสัมพันธ์โดยตรงกับการเติบโตที่สูงและความเสี่ยงที่ต่ำในอนาคต ผลการวิจัยเชิงประจักษ์สอดคล้องกับมุมมองที่ว่า โมเมนตัมของกำไรให้สัญญาณเกี่ยวกับผลประกอบการที่แข็งแกร่งในอนาคต มิใช่การตกแต่งกำไรของผู้บริหาร ดังนั้น งานวิจัยฉบับนี้ให้หลักฐานที่สนับสนุนว่า โมเมนตัมของกำไรจะแสดงผลประกอบการที่ดีของบริษัทแทนที่จะเป็นผลผลิตที่เกิดจากวิจารณญาณของผู้บริหาร

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Introduction

A large body of research on meeting or beating earnings targets (henceforth MBET) documents incremental pricing effects for firms successful in reaching three earnings targets (i.e., zero earnings, previous period's earnings, and analysts' earnings expectations). For example, Barth et al. (1999) find that higher price-earnings multiples are assigned to companies that consecutively report at least five years of earnings increases, also known as earnings momentum.

There are several explanations to such valuation premiums. One of them is that earnings momentum indicates future growth (Bartov et al., 2002; Kasznik & McNichols, 2002). Another is that earnings momentum reflects lower business risk (Brown et al., 2009; Xie, 2011).[2] Both explanations suggest that earnings momentum is on economic grounds *(the Real hypothesis)*. However, a number of studies indicate that earnings momentum is a manifestation of successful earnings management, resulted from advantageous reporting choices, which the markets fail to detect *(the Fake hypothesis)* (Chu et al., 2019; Myers et al., 2007).

In this paper, we attempt to provide evidence on whether *the Real hypothesis* or *the Fake hypothesis* is the plausible explanation to observed market rewards to earnings momentum. In other words, we aim at resolve two distinct views of earnings momentum. On one hand, firms are able to maintain their trends of earnings growth as being determined by firms' growth opportunities. On the other hand, managers opportunistically reduce firms' conservative accounting levels by delaying bad news, thereby firms can report increasing earnings patterns. To do this, we exploit a concept of timely loss recognition (i.e., conservatism levels or C_score) and expect that if earnings-momentum firms are less conservative, they are possibly manufacturing their earnings growth because lower conservatism puts less constraints on engaging in earnings management. Therefore, estimating interrelations of earnings momentum with accounting conservatism helps solve the inconsistent views of earnings momentum documented in the MBET literature.

Our initial evidence supports *the Fake hypothesis*. We use the Khan and Watts's (2009) C_score, a measure of accounting conservatism, as an indicator of to what extent a firm can opportunistically use their discretion. We find that low C_score is positively associated with earnings momentum.

Having established these empirical patterns, we next investigate the pricing effects of earnings momentum associated with low conservatism. We find that there is a negative relation between contemporaneous returns and earnings momentum associated with low conservatism. This suggests that investors interpret low levels of accounting conservatism as tools for managing earnings upwardly. We subsequently examine the association of earnings momentum pertaining to low C_score and future returns to assess if investors fully react to their perceived information in a current period. We find that future returns

[2] Shanthikumar (2012) argues that market premiums are due to investor irrationality.

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are positively associated with less conservative momentum. This is consistent with mis-pricing, suggesting that markets under-react to earnings momentum induced by low accounting conservatism. Therefore, it is possible that less conservative accounting does not need to imply low reporting quality.

As evidenced by the future return analysis, we then ask whether accounting conservatism is predictors of growth and low risk. We go on to investigate if earnings momentum and low conservatism are associated with measures of future growth and business risk. We find that earnings momentum predicts higher growth in earnings, sales, and cash flow and signals lower future earnings variability. This is broadly consistent with the view that earnings momentum and low conservatism are informative with respect to future growth and future lower risk. We also find evidence that combinations of momentum and low conservatism are associated with higher future growth and lower future risk. This suggests that low accounting conservatism conveys information content as to business nature of aggressively investment firms. Hence, this set of results supports that investors correct their pricings when observing the realization of firm performance.

This paper makes two notable contributions to the MBET literature. First, it provides evidence as to how earnings momentum is created. Compared to other firms, earnings-momentum firms present lower conservatism which is an indicator of positive valuation implications rather than pricing penalties to opportunistic reporting choices. Evidence in this paper supports *the Real hypothesis*. Second, we provide novel evidence on mis-pricing of earnings momentum induced by aggressive accounting signals. We show that investors initially under-react to earnings momentum associated with low conservatism, but that partial reversals take place later on. This yields an interesting insight into how markets work when interpreting information conveyed by earnings momentum.

The remainder of this paper is structured as follows. Section 2 reviews the related literature and discusses the research questions. Section 3 describes the research methods. Section 4 provides the research results. Section 5 provides discussion and conclusions.

Literature Review

1) Prior Literature

Extensive literature on MBET which has been developed over two decades is succinctly abridged here. This strand of research provides substantial evidence that firms tend to show their earnings numbers that meet or beat zero profit, last period's reported earnings, and earnings forecasted by analysts.[3] Consistent with these findings, a number of MBET firms are highly asymmetric due to economic-related incentives in capital markets (i.e., higher price-earnings multiples, higher abnormal returns, and lower cost

[3] Jiang (2008) groups earnings benchmarks into profits, earnings increases, and positive earnings surprises.

of debt) (Barth et al., 1999; Bartov et al., 2002; Brown & Caylor, 2005; Jiang, 2008; Kasznik & McNichols, 2002; Koonce & Lipe, 2010; Lopez & Rees, 2002; Myers et al., 2007; Shanthikumar, 2012). However, firms experience market punishment (i.e., stock price decreases) when they cannot sustain MBET (DeAngelo et al., 1996; Kinney et al., 2002; Skinner & Sloan, 2002).

One explanation as to the valuation premiums accrued to firms who report earnings momentum is higher growth options and lower underlying risk, indicating that earnings momentum is economically genuine. Bartov et al. (2002) find that quarterly abnormal returns are higher for MBET firms because investors observe information about superior future earnings compounded in MBET. Koonce and Lipe (2010) find that earnings momentum provides a signal of higher future growth and stronger management's creditability. Kasznik and McNichols (2002) argue that firms with earnings momentum are perceived as less risky and that they attract lower discount factor applied to future payoffs. This prediction is based on the fact that future growth can partially account for incremental pricing effects of MBET. Brown et al. (2009) suggest that MBET leads to firms' higher investment visibility and more investors' attention. Consequently, costs related to asymmetric information are reduced. Xie (2011) argues that momentum breaks are predicting lower expected cash flows, which in turn lead to higher discount rate. On balance, several studies articulate the link between valuation premiums, growth opportunities, and lower perceived risk signalled by earnings momentum.

A number of previous studies investigate whether and how firms engage in earnings management in the setting of MBET. There has been extensive evidence on discontinuities in the distributions of reported earnings for certain types of earnings targets. A disproportional distribution is considered as earnings management behaviour (Burgstahler & Dichev, 1997; Burgstahler & Eames, 2006; Degeorge et al., 1999; Hayn, 1995). Bartov et al. (2002) also document that MBET firms stemmed from earnings management are still obtaining price premiums, but lower ones.

As for earnings momentum, Myers et al. (2007) empirically show that firms manage long trajectories of earnings streams in order to benefit from positive abnormal returns. Chu et al. (2019) recently document that managers exercise their discretion to manipulate accounting numbers for maintaining the valuation rewards.[4]

To the best of our knowledge, prior studies have not *directly* investigated the association between earnings momentum and earnings management in the context of accounting conservatism. We, in this study, are examining whether earnings momentum is economically real or created by managerial discretion.

[4] While Chu et al. (2019) use AAER firms investigated by SEC as a sample, we are estimating a relation between earnings momentum and management discretion in the general population.

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Specifically, one can view that we are asking the following question: *Do managers use their discretion in reporting choices by lowering firms' conservatism levels in order to report earnings momentum?*

2) Research Questions

Our inquiries are basically motivated by prior literature indicating that earnings momentum is either on fundamental economics or manipulated to obtain or maintain valuation premiums. Numerous studies primarily suggest two explanations to earnings momentum that are economic process and accounting process. Therefore, there are conflicting views as to whether either firm fundamentals or reporting choices play an important role in the MBET setting.

Given the competing theories in literature, it is interesting to disentangle and examine whether firms that report earnings momentum are driven by valuation factors (i.e., growth and discount rate) or accounting distortion. In addition, it is intriguing to investigate whether and how markets respond to information content conveyed by earnings momentum associated with levels of accounting conservatism. Specifically, if consecutive earnings increases are based on real business performance, investors are expected to understand this information and translate it into positive responses. But if managerial discretion is a driver of earnings momentum and investors can assess the quality of such momentum, they will negatively react to it. Therefore, we jointly examine the causes and effects of earnings momentum based on a divergence between economic fundamentals and financial reporting process.

To unwind these difficulties, we exploit an accounting conservatism model for two main reasons. Firstly, this method seems more appropriate than approaches used in Myers et al. (2007) and Chu et al. (2019). Despite the fact that Myers et al.'s (2007) evidence of earnings management is drawn from a simulation approach; this approach is questioned about to what extent their simulated sample captures real fundamental economics and earnings-generating processes. By implication, we cast doubt on the validity of their simulation process. Using firms subject to Accounting and Auditing Enforcement Releases (AAER firms) as a sample by Chu et al. (2019) is a cause for some concerns over their inferences. First, firms successfully engage in earnings management or even manipulation are excluded from AAER firms. Second, SEC chooses firms with bias as to the fact that they will only win legal cases. Secondly, accounting conservatism tends to capture managers' intentions of selecting opportunistic reporting choices, at the same time conservative accounting is related to a firm's life-cycle which is related to future growth and future risk, for example capitalizing research and development expenses for growth firms.

While extensive research provides inconclusive evidence on earnings momentum, we begin from asking whether firms that report earnings momentum are associated with lower accounting conservatism than those who do not. By this inquiry, it implies that engaging in opportunistic reporting choices is a common practice to create increasing earnings patterns. The formal question is stated as follows:

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Research Question I: *Do firms that report earnings momentum have lower levels of accounting conservatism than other firms?*

As the duration of earnings momentum develops, we expect to see a conservatism evolution. We therefore investigate a time-series property of accounting conservatism adopted by earnings-momentum firms. We inquire what a direction of accounting conservatism is when lengths of earnings momentum increase. We make two predictions. Consistent with *the Real hypothesis*, we expect not to observe any differences in conservatism levels between lengths of momentum. That is, earnings growth each year is supported by true business performance. However, if firms cannot maintain their strong performance and growth, we expect to see that firms exploit less conservative accounting to sustain their earnings paths, consistent with *the Fake hypothesis*. This is consistent with Fama and French (2000) who argue that profitability follows mean-reverting process. Hence, we ask the second question below.

Research Question II: *What is a direction of accounting conservatism when the duration of earnings momentum develops?*

We then proceed to an investigation into an association between returns and earnings momentum related to levels of accounting conservatism. We ask whether markets understand the economic fundamentals of earnings momentum and translate this perceived information into their valuations. That is, if earnings momentum is a proxy for low quality accounting choices, we expect a negative relation. But if earnings momentum conveys growth and risk information perceived by investors, we predict a positive one. Formally,

Research Question III: *What are the return implications of earnings momentum conditional on low accounting conservatism?*

Research Methodology

1) Measuring Accounting Conservatism

We use the Khan and Watts's (2009) C_score, a measure of accounting conservatism, as a measure of reporting quality. Many studies indicate that accounting conservatism is an effective mechanism for contracting. In particular, conservative accounting puts constraints on opportunistic managers who reap their private benefits from firms (Gao, 2013; Guay & Verreccchia, 2006; LaFond & Watts, 2008). Khan and Watts (2009) also document that accounting conservatism alleviates agency problems and enhances information environment. Extrapolating from literature, it is obvious that firms find it difficult to engage in earnings management under a high conservatism scheme.

We estimate C_score using Khan and Watts's (2009) model. It is drawn based on the Basu (1997) regression that measures asymmetric timeliness of loss recognition. Equation (1) is the model for estimating C_score.

$$\begin{aligned} X_{it} = {} & \beta_1 + \beta_2 D_{it} + RET_{it}(\mu_1 + \mu_2 SIZE_{it} + \mu_3 MBRatio_{it} + \mu_4 LEV_{it}) \\ & + D_{it} RET_{it}(\lambda_1 + \lambda_2 SIZE_{it} + \lambda_3 MBRatio_{it} + \lambda_4 LEV_{it}) \\ & + (\delta_1 SIZE_{it} + \delta_2 MBRatio_{it} + \delta_3 LEV_{it} + \delta_4 D_{it} SIZE_{it} \\ & + \delta_5 D_{it} MBRatio_{it} + \delta_6 D_{it} LEV_{it}) + \varepsilon_{it} \end{aligned} \quad (1)$$

Where *X* is adjusted earnings per share before extraordinary items and discontinued operations, scaled by price at time t-1. *D* is an indicator variable equal to one if *RET* < 0, zero otherwise. *RET* is annual returns compounded from market-adjusted returns ending the third month after fiscal year-end. *SIZE* is log market value of equity. *MBRatio* is market-to-book ratio at fiscal year-end. *LEV* is leverage, computed as long-term debt plus debt in current liabilities at fiscal year-end divided by market equity value. All variables except an indicator variable are winsorized at the top and bottom 1% tails of the distribution.

We estimate coefficient parameters of equation (1) using the annual cross-sectional regressions and calculate C_score using equation (2) as follows:

$$C\_score_{it} = \lambda_1 + \lambda_2 SIZE_{it} + \lambda_3 MBRatio_{it} + \lambda_4 LEV_{it} \quad (2)$$

C_score (i.e., incremental timeliness of bad news) is a firm-specific measure of accounting conservatism. It varies across firms conditional on firm size, growth options, and capital structure. Higher C_score indicates a higher accounting conservatism level.

2) Examining Return Implications of Earnings Momentum Conditional on Accounting Conservatism

Prior studies (e.g., Bartov et al., 2002; Myers et al., 2007) provide inconsistent results of earnings momentum which is likely to be managed by firms. We design this empirical test so as to examine investors' reactions to earnings momentum induced by aggressive accounting. The following model is to estimate the implications of earnings momentum for contemporaneous and future returns.

$$\begin{aligned} RET_{it} \text{ or } RET_{it+1} = {} & \gamma_0 + \gamma_1 Momen_{it} + \gamma_2 DC\_score_{it} + \gamma_3 Momen_{it} \times DC\_score_{it} \\ & + \gamma_4 EPS_{it} + \gamma_5 ChgEPS_{it} + \gamma_6 OCF_{it} + \gamma_7 SALE_{it} + \gamma_8 DE_{it} \\ & + \gamma_9 AGE_{it} + \gamma_{10} MBRatio_{it-1} + \varepsilon_{it} \end{aligned} \quad (3)$$

Where RET_t is annual returns compounded from market-adjusted monthly returns ending the third month after fiscal year-end. RET_{t+1} is annual returns compounded from market-adjusted monthly returns starting the fourth month and ending the fifteenth month after fiscal year-end. *Momen* is a length of

increasing annual earnings before extraordinary items per share relative to the previous year, also known as earnings momentum. *DC_score* is an indicator variable taking value of one if a firm's C_score estimated from equation (2) is lower or equal to industry average for a given period, zero otherwise. *EPS* is adjusted earnings per share before extraordinary items. *ChgEPS* is a change in adjusted earnings per share before extraordinary items relative to the previous period. *OCF* is operating cash flow. *SALE* is logarithm of sales. *DE* is debt-to-equity ratio. *AGE* is the logarithm of firm age. Other variables are previously defined. All variables except an indicator variable are winsorized at the top and bottom 1% tails of the distribution. Note that we use *SALE*, *DE* and lagged *MBRatio* because of refraining from capturing the same set of information contained in changes in prices or returns.

3) Sample

Accounting and market data are provided by Compustat and CRSP databases, respectively. We use all observations that are US listed firms on NYSE, AMEX and NASDAQ. We start collecting data from year 1988 because cash flow data could be retrieved from that year when SFAS 95 Statement of Cash Flows became effective. The initial set of our sample excluding financial firms involves 89,440 firm-year observations with 8,441 unique firms from year 1988 to year 2014. Since we require variables for C_score estimations, it yields the sample of 29,710 firm-year observations with 4,284 unique firms during year 1989 – year 2013. Having removed observations with missing variables, the final sample is comprised of 16,637 firm-year observations with 2,739 unique firms from year 1989 to year 2011. Note that we require *ex post* data for three years ahead when we perform an analysis of predictability. Sample selection process is summarized in Table 1.

Table 1 Sample Formation

Data	Firm-Year Observations	Unique Firms
Data from Compustat and CRSP databases (excluding financial firms)	89,440	8,441
Less observations with missing variables for C_score estimations and financial firms	(59,730)	(4,080)
Data available for C_score estimation	29,710	4,284
Less observations with missing variables for all analyses	(13,073)	(1,545)
Final sample for year 1989 – 2011	16,637	2,739

Note: This table reports sample formation.

We define a firm with earnings momentum as a firm who reports one year or more of increases in adjusted earnings per share before extraordinary items (EPS).[5] An EPS increase is compared with that of the previous year. By definition, we believe that a problem of survivorship bias is relieved.

We analyse the sample distribution across years. The number of observations is smooth from year 1989 to year 2011. The average sample per year is 723 observations including 443 momentum observations. The percentage of earnings-momentum firms which is 61.27% seems consistent with that reported by Myers et al. (2007). In addition, we analyse the sample distribution across industries according to the Fama and French 17-industry classifications. We find that some industries are rather difficult to sustain earnings momentum (e.g., heavily regulated industry or mining industry) indicating that earnings momentum depends at least in part on types of business.

Table 2 reports the distribution of the sample over the duration of earnings momentum. As expected, the longer duration of earnings momentum the fewer the number of firms there is. For instance, only half of firms who report one-year earnings momentum are able to carry themselves to report two-year earnings momentum. The decreasing rate of momentum development is consistent with a mean reverting process of growth when firms face competitive forces (Fama & French, 2000).

Table 2 The Distribution of Observations by Duration of Earnings Momentum

Length of Earnings Momentum	Firm-Year Observations	% of Observations
No Momentum	6,454	38.79%
1 year	5,355	32.19%
2 years	2,512	15.10%
3 years	1,134	6.82%
4 years	575	3.46%
5 years	284	1.71%
6 years	151	0.91%
7 years	80	0.48%
8 years	44	0.26%
9 years	22	0.13%
10 years or more	26	0.16%
Total	**16,637**	**100.00%**

Note: This table reports the sample distribution based on duration of earnings momentum. Earnings momentum is defined as a firm who reports one year or more of increases in adjusted earnings per share before extraordinary items (EPS). An EPS increase is relative to that of the previous year.

[5] Annual earnings per share is adjusted by cumulative adjustment factor for the effects of stock splits and stock dividends. This factor is provided by Compustat.

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Research Findings

1) Descriptive Statistics and Correlations

For brevity, we only report descriptive statistics for the primary variables in Table 3. Consistent with Burgstahler and Dichev (1997), mean (median) of *Momen* is 1.190 (1.000), suggesting that firms show earnings growth for one year on average. The longest duration of earnings momentum in this sample is 14 years. Average and standard deviation of *C_score* is 0.178 and 0.146 respectively. Both are marginally higher than those reported by Khan and Watts (2009). Annual current and future returns that are 8.4 and 8.5% respectively seem not substantially different. We also find that firms report profits on average as shown in mean and median *EPS*. Moreover, future performance on average is stronger than that in current period.

Table 3 Descriptive Statistics

Variable	Observ.	Mean	Median	S.D.	Max	Min
Momen	16,637	1.190	1.000	1.458	14.000	0.000
C_score	16,637	0.178	0.174	0.146	0.753	-0.184
RET_t	16,637	0.084	-0.028	0.567	2.688	-0.798
RET_{t+1}	16,637	0.085	-0.022	0.559	2.693	-0.780
EPS	16,637	0.381	0.388	2.172	8.069	-16.406
SALE	16,637	5.475	5.370	2.056	10.698	-0.219
OCF	16,637	0.077	0.090	0.133	0.366	-0.677
FEPS	16,637	0.430	0.400	1.954	6.892	-13.866
FSALE	16,637	5.645	5.541	2.037	10.811	0.474
FOCF	16,637	0.079	0.090	0.113	0.324	-0.583
FEVAR	16,637	4.360	0.106	29.333	337.564	0.000

Note: This table reports the descriptive statistics of the primary variables.

We report correlation matrix for the main variables in Table 4. *Momen* is negatively associated to *C_score*, suggesting that longer earnings momentum reports lower accounting conservatism. *Momen* is also directly related to RET, implying that earnings momentum is priced contemporaneously. We find inconsistent results of the relation between earnings momentum and future returns. In addition, *C_score* is inversely (positively) related to RET_t (RET_{t+1}).

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Table 4 Correlation Matrix - Pearson (Spearman) Correlations Below (Above) the Diagonal

Variable	*Momen*	*C_score*	RET_t	RET_{t+1}	*EPS*	*SALE*	*OCF*	*FEPS*	*FSALE*	*FOCF*	*FEVAR*
Momen		**-0.185**	**0.273**	-0.017	**0.366**	**0.107**	**0.240**	**0.223**	**0.124**	**0.190**	**-0.088**
C_score	**-0.203**		**-0.102**	**0.042**	**-0.431**	**-0.624**	**-0.268**	**-0.355**	**-0.636**	**-0.269**	**-0.138**
RET_t	**0.140**	**-0.029**		**-0.024**	**0.164**	**0.063**	**0.186**	**0.232**	**0.107**	**0.162**	**-0.075**
RET_{t+1}	**-0.041**	**0.124**	**-0.057**		**-0.049**	**0.042**	**0.052**	**0.242**	**0.084**	**0.194**	**-0.098**
EPS	**0.229**	**-0.263**	**0.074**	**-0.066**		**0.499**	**0.463**	**0.602**	**0.493**	**0.356**	**0.130**
SALE	**0.147**	**-0.542**	**-0.028**	**-0.048**	**0.298**		**0.279**	**0.472**	**0.985**	**0.290**	**0.259**
OCF	**0.196**	**-0.220**	**0.107**	**-0.026**	**0.342**	**0.350**		**0.383**	**0.281**	**0.594**	**-0.096**
FEPS	**0.162**	**-0.222**	**0.104**	**0.104**	**0.531**	**0.311**	**0.281**		**0.506**	**0.530**	**-0.055**
FSALE	**0.159**	**-0.555**	**0.015**	-0.009	**0.306**	**0.984**	**0.340**	**0.340**		**0.315**	**0.237**
FOCF	**0.168**	**-0.212**	**0.087**	**0.098**	**0.313**	**0.361**	**0.698**	**0.393**	**0.381**		**-0.145**
FEVAR	**-0.035**	0.014	**-0.038**	**-0.045**	**-0.174**	**0.027**	**-0.046**	**-0.497**	0.016	**-0.079**	

Note: This table reports correlation coefficients. Correlation coefficients reported in bold are statistically significant at the 1 percent level.

2) Earnings Momentum and Accounting Conservatism Levels

We perform the tests of differences in accounting conservatism levels between momentum and non-momentum firms, according to the research question 1. Table 5 reports the results.

Table 5 Tests of Differences between Momentum and Non-Momentum Firms

Variable	Unmatched Sample				Matched Sample			
	Mean Momentum	Mean Non-Momentum	t-stat.	% Bias	Mean Momentum	Mean Non-Momentum	t-stat.	% Bias
C_score	**0.163**	**0.202**	**-16.749*** **		**0.163**	**0.170**	**-2.14****	
SALEG	0.200	0.048	29.364***	47.2	0.200	0.207	-1.14	-1.7
SALE	5.574	5.319	7.809***	12.4	5.574	5.704	-4.33***	-6.3
NPM	14.760	4.839	15.843***	25.9	14.760	13.245	2.42***	4.0
DE	0.562	0.709	-7.115***	-11.1	0.562	0.574	-0.71	-0.9
AGE	2.666	2.663	0.301	0.5	2.666	2.660	0.63	0.9
Observ.	10,183	6,454			10,183	6,453		

Note: This table reports the results of differences in accounting conservatism between momentum and non-momentum firms using t-test (unmatched sample) and propensity score matching method (matched sample). *, **, *** indicate statistical significance of difference tests, at the 10 percent, 5 percent, and 1 percent level, respectively.

We begin with the unmatched sample test. To specify, we employ t-statistics to test differences in means of *C_score* between momentum and non-momentum firms. The results show that momentum firms' mean *C_score* is 0.163, significantly lower than 0.202 of non-momentum firms. Nevertheless, firms who report earnings momentum have different characteristics than those of firms who do not report momentum. For example, momentum firms report higher business growth, higher sales turnover, higher profitability, and lower leverage.

We also use Propensity Score Matching (PSM) procedure when analysing differences in *C_score* in order to control for firm characteristics. We match two types of firms using sales growth, sales turnover, net profit margin, debt to equity ratio, firm age, year, and industry. In other words, we examine differences in *C_score* after controlling for business growth proxied by sales growth (*SALEG*), firm size proxied by sales turnover (*SALE*), profitability proxied by net profit margin (*NPM*), capital structure proxied by debt to equity ratio (*DE*), firm life-cycle proxied by firm age (*AGE*), year effects, and industry effects. Although we do the best matching, PSM continues to give differences in sales turnover and profit margin. This may suggest that smaller firm size and higher profitability are business nature for firms reporting earnings momentum.

PSM procedure yields the results showing that *C_score* of momentum firms is statistically lower than that of non-momentum firms. In other words, firms who report earnings momentum present less conservative accounting after controlling for firm characteristics. This evidence can be interpreted in the way that is consistent with *the Fake hypothesis* at the beginning.

To respond to Research Question II, we further investigate whether accounting conservatism levels evolve as earnings momentum develops. This analysis gives insights into how firms behave towards asymmetric timely loss recognition over duration of earnings momentum. Specifically, we investigate the extent to which companies have increases in aggressive accounting when earnings momentum lengthens. To perform the analysis, we hold the firms fixed when comparing between spans of earnings momentum. We report the results in Table 6.

Panel A contrasts between the first year and the second year of firms who report two-year earnings momentum. We find that in the second year of earnings momentum firms report lower accounting conservatism (0.166) than that in the first year (0.181). Other characteristics of both groups are also different significantly. That is, the second year of earnings momentum show stronger financial performance than that of the first year of earnings momentum. We, in addition, find consistent results in Panels B and C. Nevertheless, conservatism levels are not different for longer earnings momentum (i.e., 5 years V.S. 4 years) as shown in Panel D. On balance, the results suggest that firms who report earnings momentum present lower accounting conservatism than other firms. The results also indicate that the longer earnings momentum, the less conservative accounting the firms adopt. All evidence leans to initially support *the Fake hypothesis*, implying that firms exploit low conservatism to create earnings momentum.

Table 6 Tests of Differences between Duration of Earnings Momentum

Panel A: 2 Years vs. 1 Year

Variable	**Sample**		
	Mean	**Mean**	**t-stat.**
	2 Years	**1 Year**	
C_score	**0.166**	**0.181**	**-3.707*** **
SALEG	0.207	0.182	2.672***
SALE	5.547	5.382	2.863***
NPM	14.633	10.246	3.964***
DE	0.513	0.604	-2.803***
AGE	2.677	2.585	4.444***
Observations	2,512	2,512	

Panel B: 3 Years vs. 2 Years

Variable	**Sample**		
	Mean 3 Years	**Mean 2 Years**	**t-stat.**
C_score	**0.137**	**0.165**	**-4.617*** **
SALEG	0.207	0.196	0.978
SALE	5.781	5.611	2.024**
NPM	17.947	14.000	2.207**
DE	0.440	0.515	-1.871*
AGE	2.740	2.656	2.930***
Observations	1,134	1,134	

Panel C: 4 Years vs. 3 Years

Variable	**Sample**		
	Mean 4 Years	**Mean 3 Years**	**t-stat.**
C_score	**0.112**	**0.127**	**-1.829***
SALEG	0.211	0.214	0.171
SALE	6.105	5.929	1.559
NPM	22.828	18.503	1.482
DE	0.408	0.446	0.687
AGE	2.827	2.752	1.942*
Observations	575	575	

Panel D: 5 Years vs. 4 Years

Variable	Sample		
	Mean 5 Years	Mean 4 Years	t-stat.
C_score	**0.093**	**0. 104**	**0.996**
SALEG	0.193	0.220	1.596
SALE	6.484	6.319	1.059
NPM	28.363	24.262	0.903
DE	0.377	0.373	0.084
AGE	2.889	2.820	1.337
Observations	284	284	

Note: This table reports the results of differences in accounting conservatism between spans of earnings momentum using t-test for the sample held the firm fixed. *, **, *** indicate statistical significance of difference tests, at the 10 percent, 5 percent, and 1 percent level, respectively.

3) Return Implications of Earnings Momentum Conditional on Conservatism Levels

We next report the estimation results of the returns implications of low-conservative-momentum firms in Table 7, giving us the answer to Research Question III. Our findings suggest a negative relation between contemporaneous market-adjusted returns and earnings momentum associated with less conservative accounting (coefficient estimate = -0.074, significant at 1 percent level), implying investors price firms at discount because of observing low conservative accounting. This is consistent with the view that markets perceive that earnings momentum is a product of opportunistic reporting choices adopted by firms.

We continue to examine whether investors fully react to the information content of low-conservative momentum by conducting the analysis of future returns. Surprisingly, the results show that future returns are positively related to low-conservative momentum. Evidence of a reversal can be interpreted in the way that investors over-discount momentum firms because they incorrectly interpret signals conveyed by earnings momentum in the prior period.

4) Additional Evidence on Earnings Momentum Associated with Low Conservatism

According to evidence of mis-pricing indicated in the future return analysis in Table 7, it is possible that if aggressive accounting leads to better future financial performance, this accounting practice tends to manifest true earnings generating processes under growth stage of life-cycle (Khan & Watts, 2009). Consequently, aggressive accounting is merely a way for communicating information which coincides with a firm's economic fundamentals.

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Table 7 The Associations between Returns and Earnings Momentum Conditional on Low Accounting Conservatism

Variable	RET_t	RET_{t+1}
INTERCEPT	0.169***	0.137***
	(0.000)	(0.000)
Momen	0.099***	-0.016**
	(0.000)	(0.045)
DC_score	0.216***	-0.095***
	(0.000)	(0.000)
Momen x DC_score	-0.074***	0.020**
	(0.000)	(0.011)
EPS	0.000	-0.007
	(0.933)	(0.257)
ChgEPS	0.036***	-0.003
	(0.000)	(0.593)
OCF	0.366***	0.025
	(0.000)	(0.739)
SALE	-0.044***	-0.001
	(0.000)	(0.916)
DE	0.040***	0.011
	(0.000)	(0.114)
AGE	-0.037***	-0.025**
	(0.000)	(0.011)
MB_{t-1}	-0.029***	-0.004
	(0.000)	(0.127)
Year FE	*YES*	*YES*
Industry FE	*YES*	*YES*
Clustered by Year	*YES*	*YES*
Clustered by Firm	*YES*	*YES*
Adjusted R^2	0.144	0.067
Observ.	16,637	16,637

Note: This table reports associations of contemporaneous and future returns with earnings momentum conditional on conservatism levels. The sample covering the period of year 1989 – year 2011 is 16,637 firm-year observations. The results are obtained from OLS Estimation according to equation (3) as follows:

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$$\begin{aligned}\mathrm{RET_{it}}, \mathrm{RET_{it+1}} = {} & \gamma_0 + \gamma_1 \mathrm{Momen_{it}} + \gamma_2 \mathrm{DC_{score_{it}}} + \gamma_3 \left(\mathrm{Momen_{it}} \times \mathrm{DC_{score_{it}}}\right) \\ & + \gamma_4 \mathrm{EPS_{it}} + \gamma_5 \mathrm{ChgEPS_{it}} + \gamma_6 \mathrm{OCF_{it}} + \gamma_7 \mathrm{SALE_{it}} + \gamma_8 \mathrm{DE_{it}} \\ & + \gamma_9 \mathrm{AGE_{it}} + \gamma_{10} \mathrm{MBRatio_{it-1}} + \varepsilon_{\mathrm{it}},\end{aligned}$$

The number of all observations and adjusted R2 are also reported. All regressions include year fixed effects, industry fixed effects, clustered standard errors by year and firm. P-values are reported in parentheses. *, **, *** indicate statistical significance of parameter estimates, at the 10 percent, 5 percent, and 1 percent level, respectively.

To explore this possibility, we investigate if earnings momentum associated with low accounting conservatism is related to measures of future growth and future business risk. The following equation is estimated.

$$\begin{aligned}\mathrm{FPER_{it}} = {} & \delta_0 + \delta_1 \mathrm{Momen_{it}} + \delta_2 \mathrm{DC\_score_{it}} + \delta_3 (\mathrm{Momen_{it}} \times \mathrm{DC\_score_{it}}) \\ & + \delta_4 CPER_{it} + \delta_5 CAPEX_{it} + \delta_6 RD_{it} + \delta_7 DE_{it} \\ & + \delta_8 SALEG_{it} + \delta_9 AGE_{it} + \delta_{10} ASIZE_{it} + \varepsilon_{it}\end{aligned} \quad (4)$$

Where *FPER* is either: 1) average value of *EPS* for three years ahead (*FESP*); 2) average value of *SALE* for three years ahead (*FSALE*); 3) average value of *OCF* for three years ahead (*FOCF*), which all reflect future growth; and 4) variance of *EPS* for three years ahead (*FEVAR*) which reflects future underlying risk. We in addition control for other potential effects (Amir et al., 2007; Fama & French, 1995: Lang et al., 1996). That is, *CPER*, a proxy for current performance, is either: 1) *EPS*; 2) *SALE*; 3) *OCF*; and 4) *EVAR* which is variance of *EPS* over past three years. *CAPEX* is capital expenditure scaled by lagged market value of equity. *RD* is research and development expenses scaled by lagged market value of equity. *SALEG* is one-year sales growth rate. *ASIZE* is logarithm of total assets.

The results in Table 8 suggest that earnings momentum is associated with higher future performance and lower future risk. Low conservatism is positively related to future earnings and future sales. That is, controlling for the information content of the conservatism indicator, we find that earnings momentum is still directly related to future firm performance *and* inversely related to future fundamentals-based risk. Importantly, the results show that combinations of earnings momentum and low accounting conservatism have predictive ability for future performance similar to that with high accounting conservatism, implying that less conservative momentum is a reflection of higher future growth and lower underlying risk.[6] In other words, the findings suggest that the relation between earnings momentum and future firm performance are not moderated by proxies for earnings management (i.e., low conservatism) shown by regression coefficients of (*Momen* x *DC_score*).

[6] To conduct robustness test, I code DC_score equal to 1 when C_score is lower than industry average, zero otherwise. We still find the unchanged results.

Table 8 The Predictive Ability of Earnings Momentum Associated with Low Conservatism for Future Growth and Risk

Variable	*FESP*	*FSALE*	*FOCF*	*FEVAR*
INTERCEPT	-0.384**	0.262***	-0.013**	-5.074***
	(0.026)	(0.000)	(0.023)	(0.000)
Momen	0.033	0.019***	0.002**	-0.520***
	(0.132)	(0.000)	(0.024)	(0.006)
DC_score	0.142**	0.077***	0.001	-0.775
	(0.016)	(0.000)	(0.755)	(0.339)
Momen x DC_score	0.036	-0.006	0.001	0.073
	(0.132)	(0.161)	(0.277)	(0.723)
EPS	0.438***			
	(0.000)			
SALE		0.907***		
		(0.000)		
OCF			0.554***	
			(0.000)	
EVAR				0.494***
				(0.000)
CAPEX	-0.176***	0.102***	0.002	1.608***
	(0.000)	(0.000)	(0.425)	(0.006)
RD	-0.017	-0.050	-0.057***	-4.281
	(0.947)	(0.329)	(0.000)	(0.184)
DE	0.005	-0.004	0.001	0.249
	(0.793)	(0.111)	(0.396)	(0.484)
SALEG	-0.215***	0.078***	-0.009**	1.866
	(0.001)	(0.004)	(0.048)	(0.117)
AGE	0.163***	-0.038***	0.001	-0.014
	(0.000)	(0.000)	(0.674)	(0.974)
ASIZE	0.071***	0.071***	0.005***	0.710***
	(0.006)	(0.000)	(0.000)	(0.004)
Year FE	*YES*	*YES*	*YES*	*YES*

Table 8 The Predictive Ability of Earnings Momentum Associated with Low Conservatism for Future Growth and Risk (Cont.)

Variable	*FESP*	*FSALE*	*FOCF*	*FEVAR*
Industry FE	*YES*	*YES*	*YES*	*YES*
Clustered by Year	*YES*	*YES*	*YES*	*YES*
Clustered by Firm	*YES*	*YES*	*YES*	*YES*
Adjusted R^2	0.325	0.972	0.507	0.385
Observations	16,637	16,637	16,637	16,637

Note: This table reports the predictive ability of earnings momentum associated with low accounting conservatism for future performance and risk. The sample covering the period of year 1989 – year 2011 is 16,637 firm-year observations. The results are obtained from OLS Estimation according to equation (4) as follows:

$$\begin{aligned}\mathrm{FPER_{it}} = {} & \delta_0 + \delta_1 \mathrm{Momen_{it}} + \delta_2 \mathrm{DC\_score_{it}} \\ & + \delta_3(\mathrm{Momen_{it}} \times \mathrm{DC\_score_{it}}) + \delta_4 \mathrm{CPER_{it}} + \delta_5 \mathrm{CAPEX_{it}} \\ & + \delta_6 \mathrm{RD_{it}} + \delta_7 \mathrm{DE_{it}} + \delta_8 \mathrm{SALEG_{it}} + \delta_9 \mathrm{AGE_{it}} + \delta_{10} \mathrm{ASIZE_{it}} + \varepsilon_{it}\end{aligned}$$

The number of all observations and adjusted R^2 are also reported. All regressions include year fixed effects, industry fixed effects, clustered standard errors by year and firm. P-values are reported in parentheses. *, **, *** indicate statistical significance of parameter estimates, at the 10 percent, 5 percent, and 1 percent level, respectively.

Extrapolating from all results, we find evidence widely consistent with *the Real hypothesis*, indicating that low accounting conservatism and less conservative momentum are informative for future growth and lower business risk. Overall, earnings momentum which is made up by aggressive accounting is signalling economic fundamentals, instead of a product of opportunistic reporting choices or managerial discretion.[7]

Discussion and Conclusion

Literature on MBET provides inconclusive evidence of whether earnings momentum is either on economic grounds or a result of accounting distortion. This study exploits accounting conservatism to solve these conflicting views. If earnings momentum is a manifestation of opportunistic reporting choices, we expect to see accounting conservatism which is lower for firms who report earnings momentum (*the Fake*

[7] When performing only cluster standard errors by firm or by industry, the results still hold.

hypothesis). If we do not observe such phenomenon, earnings momentum likely reflects strong business fundamentals (*the Real hypothesis*).

Initially, evidence supports that earnings momentum is created through less conservative accounting, consistent with *the Fake hypothesis*. We find such evidence that continues until four-year earnings momentum. Further analysis provides evidence that markets price less conservative momentum at discount but reverse their valuations subsequently.

From the reversal of pricings, we argue that low accounting conservatism are capable of predicting better future performance. Predictability analyses provide evidence suggesting that less conservative earnings momentum is informative with respect to higher growth and lower risk in the future. We conclude that earnings momentum with low conservatism is merely reflecting growth stage of a firm's life-cycle, rather than the results of managerial discretion, and that investors correct their pricings once observing future performance realisation. This conclusion is consistent with *the Real hypothesis*.

This study contributes to investors' community as a whole by giving evidence that earnings momentum is economically real as firms are growing. This evidence is also of interest to auditors and regulators as they are able to spend their times to focus on other firms who tend to engage in earnings management, rather than investigating earnings-momentum firms. Nevertheless, it is possible that earnings momentum is combinations of economic fundamentals and earnings management. This is our caveat. We leave other measures of opportunistic reporting choices with future research.

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