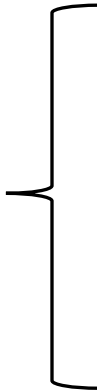


# Earnings acceleration and stock returns

Shuoyuan He, Ganapathi (Gans) Narayanamoorthy  
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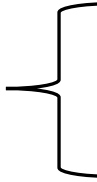
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# 1. Introduction

## Background

1. Many scholars have proved that profit is a kind of anomaly that can significantly predict stock returns.
2. Earnings acceleration, or the change in earnings growth, has anecdotally been discussed as a viable trading strategy in the popular press.

# 1. Introduction

## Motivation

1. Despite anecdotal references to its use in the investing world, and in contrast to the vast number of studies on the capital market implications of earnings growth, earnings acceleration has received limited research attention.

## Research question

1. Is earnings acceleration a kind of anomaly that can stably obtain excess return?

Yes

2. What is the source of the premium of earnings acceleration?

Investors not incorporating the implications of earnings acceleration for future growth.

# 1. Introduction

## Research Contents

1. We find economically significant excess returns to an earnings acceleration-based strategy over a quarter following an earnings announcement (with a significant portion accruing over the first month).
2. In portfolio tests, the incremental excess returns at 1.8% over a month translate to an annualized returns of over 23%.
3. Our results indicate that the abnormal returns are consistent with investors not incorporating fully the implications of current earnings acceleration for future earnings growth.

# 1. Introduction

## Related researches

1. Academic circles have put forward many anomalies about profit, such as post-earnings announcement drift (PEAD, Bernard and Thomas, 1990), profit trend anomaly (Akbas et al., 2017), gross profit anomaly (Novy-Marx, 2013), accrual anomaly (Sloan, 1996), past earnings volatility (Cao and Narayanamoorthy, 2012).
2. Cao et al. (2011) find that annual earnings acceleration is associated with long window contemporaneous returns.
3. There is a mean regression phenomenon in profitable enterprises (Brooks and Buckmaster, 1976; Dichev and Tang, 2009).

# 1. Introduction

## Contribution

1. This is the first study to examine the implications of earnings acceleration for future returns, which contributes to the literature by documenting the future return implications of earnings acceleration or the second derivative of earnings.

## 2. Research design: Variable

The primary variable of interest is our earnings acceleration measure, which we define as the earnings growth in quarter  $t$  minus the earnings growth in quarter  $t-1$ .

$$EAA_{i,t} = EGA_{i,t} - EGA_{i,t-1} = \frac{EPS_{i,t} - EPS_{i,t-4}}{|EPS_{i,t-4}|} - \frac{EPS_{i,t-1} - EPS_{i,t-5}}{|EPS_{i,t-5}|}$$

$$EAP_{i,t} = EGP_{i,t} - EGP_{i,t-1} = \frac{EPS_{i,t} - EPS_{i,t-4}}{|StockPrice_{i,t-4}|} - \frac{EPS_{i,t-1} - EPS_{i,t-5}}{|StockPrice_{i,t-5}|}$$

$$SA_{i,t} = SG_{i,t} - SG_{i,t-1} = \frac{SPS_{i,t} - SPS_{i,t-4}}{|SPS_{i,t-4}|} - \frac{SPS_{i,t-1} - SPS_{i,t-5}}{|SPS_{i,t-5}|}$$

$$PA_{i,t} = PG_{i,t} - PG_{i,t-1} = (ROA_{i,t} - ROA_{i,t-4}) - (ROA_{i,t-1} - ROA_{i,t-5})$$



## 2. Research design: Data

Data Source: Compustat、CRSP、I/B/E/S (detail) databases

Period: 1972.01 to 2015.12.

Sample: All New York Stock Exchange (NYSE), American Stock Exchange (Amex), and Nasdaq. We exclude financial and utility firms.

## 2. Research design: method

Univariate portfolio analysis

Bivariate portfolio analysis

Fama-MacBeth regressions

The primary abnormal return measures are calculated over two windows:

- (a) a window beginning two days after quarter  $t$ 's earnings announcement date and ending on day 30.
- (b) a window beginning two days after quarter  $t$ 's earnings announcement date and ending one day after quarter  $t+1$ 's earnings announcement date.

### 3.1 Empirical result: Earnings acceleration and stock return

Panel A: Equal-weighted portfolio returns										
EA deciles	One-month abnormal returns (VMAR)					Quarter-long abnormal returns (VMARQ)				
	EAA	EAP	EAV	SA	PA	EAA	EAP	EAV	SA	PA
Lowest	0.001 (0.404)	-0.002 (-0.617)	-0.002 (-1.196)	0.000 (-0.038)	0.002 (0.56)	0.010 (2.515)	0.007 (1.152)	-0.001 (-0.397)	0.001 (0.225)	0.003 (0.466)
2	0.000 (0.213)	0.000 (0.199)	0.002 (0.956)	0.002 (1.203)	0.001 (0.346)	0.004 (0.995)	0.001 (0.353)	0.002 (0.594)	0.005 (1.316)	0.002 (0.573)
3	0.001 (0.951)	0.001 (0.596)	0.003 (1.867)	0.003 (1.54)	0.003 (1.438)	0.003 (0.959)	-0.001 (-0.195)	0.008 (2.352)	0.007 (2.275)	0.006 (1.684)
4	0.003 (1.821)	0.003 (1.902)	0.003 (1.923)	0.005 (3.063)	0.005 (3.271)	0.006 (1.826)	0.006 (2.187)	0.010 (3.437)	0.012 (3.704)	0.008 (2.978)
5	0.004 (2.967)	0.006 (5.159)	0.007 (4.008)	0.006 (3.933)	0.006 (3.778)	0.009 (3.326)	0.012 (5.689)	0.017 (5.078)	0.014 (5.224)	0.013 (4.603)
6	0.009 (6.121)	0.011 (8.682)	0.010 (5.439)	0.008 (5.018)	0.010 (6.283)	0.019 (6.638)	0.023 (10.864)	0.022 (6.841)	0.017 (6.142)	0.017 (6.222)
7	0.013 (8.213)	0.012 (7.872)	0.011 (6.445)	0.011 (7.248)	0.012 (7.288)	0.027 (7.096)	0.023 (8.586)	0.025 (7.04)	0.024 (8.165)	0.022 (7.331)
8	0.013 (7.284)	0.013 (7.959)	0.014 (7.565)	0.013 (7.594)	0.016 (8.046)	0.027 (7.596)	0.026 (8.704)	0.030 (8.186)	0.028 (8.732)	0.030 (8.329)
9	0.014 (7.223)	0.015 (7.279)	0.016 (8.535)	0.014 (7.628)	0.018 (8.31)	0.033 (8.529)	0.031 (7.81)	0.032 (9.168)	0.032 (8.824)	0.036 (9.172)
Highest	0.015 (6.225)	0.016 (5.131)	0.018 (8.484)	0.013 (5.868)	0.020 (6.775)	0.037 (8.233)	0.042 (6.19)	0.038 (9.306)	0.035 (7.405)	0.046 (6.604)
Highest - Lowest	0.014 (9.218)	0.018 (10.254)	0.020 (13.736)	0.013 (8.975)	0.017 (7.648)	0.026 (11.078)	0.034 (11.451)	0.039 (15.866)	0.034 (12.724)	0.042 (10.314)

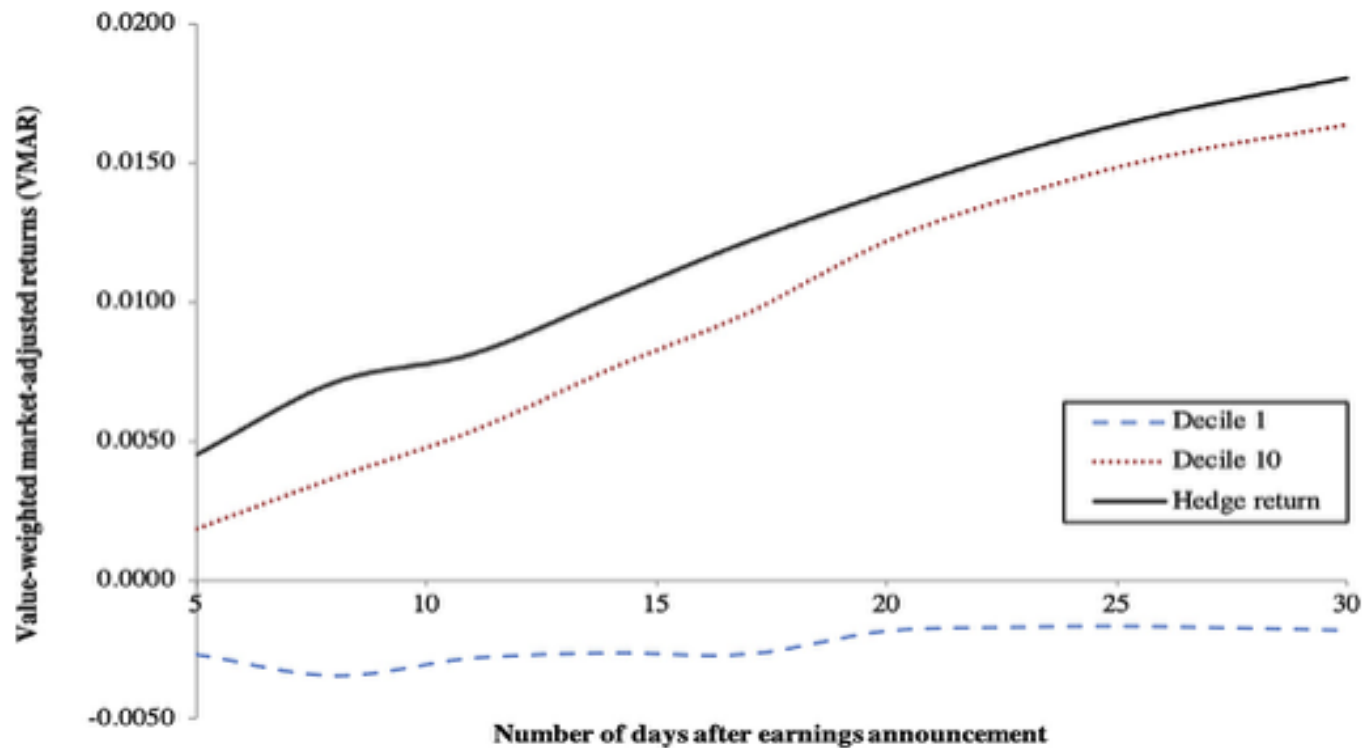
The month-long VMAR for the bottom decile on EAP is -0.2% while the VMAR for the topmost decile is 1.6%. This represents a hedge portfolio return of 1.8% over one month.

### 3.1 Empirical result: Earnings acceleration and stock return

Panel A: Equal-weighted portfolio returns										
EA deciles	One-month abnormal returns (VMAR)					Quarter-long abnormal returns (VMARQ)				
	EAA	EAP	EAV	SA	PA	EAA	EAP	EAV	SA	PA
Lowest	0.001 (0.404)	−0.002 (−0.617)	−0.002 (−1.196)	0.000 (−0.038)	0.002 (0.56)	0.010 (2.515)	0.007 (1.152)	−0.001 (−0.397)	0.001 (0.225)	0.003 (0.466)
2	0.000 (0.213)	0.000 (0.199)	0.002 (0.956)	0.002 (1.203)	0.001 (0.346)	0.004 (0.995)	0.001 (0.353)	0.002 (0.594)	0.005 (1.316)	0.002 (0.573)
3	0.001 (0.951)	0.001 (0.596)	0.003 (1.867)	0.003 (1.54)	0.003 (1.438)	0.003 (0.959)	−0.001 (−0.195)	0.008 (2.352)	0.007 (2.275)	0.006 (1.684)
4	0.003 (1.821)	0.003 (1.902)	0.003 (1.923)	0.005 (3.063)	0.005 (3.271)	0.006 (1.826)	0.006 (2.187)	0.010 (3.437)	0.012 (3.704)	0.008 (2.978)
5	0.004 (2.967)	0.006 (5.159)	0.007 (4.008)	0.006 (3.933)	0.006 (3.778)	0.009 (3.326)	0.012 (5.689)	0.017 (5.078)	0.014 (5.224)	0.013 (4.603)
6	0.009 (6.121)	0.011 (8.682)	0.010 (5.439)	0.008 (5.018)	0.010 (6.283)	0.019 (6.638)	0.023 (10.864)	0.022 (6.841)	0.017 (6.142)	0.017 (6.222)
7	0.013 (8.213)	0.012 (7.872)	0.011 (6.445)	0.011 (7.248)	0.012 (7.288)	0.027 (7.096)	0.023 (8.586)	0.025 (7.04)	0.024 (8.165)	0.022 (7.331)
8	0.013 (7.284)	0.013 (7.959)	0.014 (7.565)	0.013 (7.594)	0.016 (8.046)	0.027 (7.596)	0.026 (8.704)	0.030 (8.186)	0.028 (8.732)	0.030 (8.329)
9	0.014 (7.223)	0.015 (7.279)	0.016 (8.535)	0.014 (7.628)	0.018 (8.31)	0.033 (8.529)	0.031 (7.81)	0.032 (9.168)	0.032 (8.824)	0.036 (9.172)
Highest	0.015 (6.225)	0.016 (5.131)	0.018 (8.484)	0.013 (5.868)	0.020 (6.775)	0.037 (8.233)	0.042 (6.19)	0.038 (9.306)	0.035 (7.405)	0.046 (6.604)
Highest - Lowest	0.014 (9.218)	0.018 (10.254)	0.020 (13.736)	0.013 (8.975)	0.017 (7.648)	0.026 (11.078)	0.034 (11.451)	0.039 (15.866)	0.034 (12.724)	0.042 (10.314)

Over the quarter-long window, the corresponding hedge return is 3.4%. Moving from the bottom decile to the top decile, the stock returns are monotonically increasing, showing that the anomaly gradually increases in acceleration decile and is not concentrated in a particular decile.

### 3.1 Empirical result: Earnings acceleration and stock return



The evolution of the cumulative abnormal return over the month-long (day 2 to day 30) window for the top and bottom decile of earnings acceleration. Decile one has a small negative return in the immediate aftermath of the earnings announcement and then remains at roughly that level for the entire month. Decile ten increases virtually monotonically to reach 1.6% at day 30.

### 3.1 Empirical result: Earnings acceleration and stock return

EAP deciles	Equal-weighted portfolio returns					Value-weighted portfolio returns				
	EMAR	SAR	FF3	FFM	FF5	EMAR	SAR	FF3	FFM	FF5
Lowest	−0.010 (−5.199)	−0.002 (−1.028)	−0.004 (−2.273)	−0.004 (−2.449)	−0.003 (−1.786)	−0.015 (−5.264)	−0.008 (−3.072)	−0.008 (−3.601)	−0.007 (−3.761)	−0.007 (−3.49)
2	−0.009 (−6.499)	−0.001 (−0.414)	−0.003 (−2.327)	−0.003 (−2.776)	−0.002 (−2.388)	−0.012 (−4.631)	−0.004 (−2.108)	−0.003 (−2.113)	−0.004 (−2.367)	−0.003 (−2.112)
3	−0.008 (−6.021)	0.001 (0.538)	−0.001 (−1.735)	−0.002 (−1.894)	−0.001 (−1.412)	−0.011 (−4.203)	−0.003 (−1.603)	−0.001 (−0.347)	−0.001 (−0.699)	−0.001 (−0.599)
4	−0.006 (−4.578)	0.002 (2.173)	0.000 (0.678)	0.000 (0.419)	0.001 (0.863)	−0.009 (−3.425)	−0.001 (−0.525)	0.000 (−0.239)	−0.001 (−0.499)	−0.001 (−0.74)
5	−0.003 (−1.804)	0.005 (5.834)	0.003 (4.227)	0.003 (3.687)	0.003 (4.112)	−0.003 (−1.16)	0.005 (3.808)	0.003 (2.74)	0.003 (2.216)	0.003 (2.565)
6	0.001 (1.043)	0.010 (10.16)	0.007 (10.81)	0.007 (10.66)	0.007 (10.52)	−0.006 (−2.339)	0.003 (2.353)	0.003 (3.145)	0.002 (2.772)	0.003 (2.541)
7	0.003 (2.139)	0.011 (11.142)	0.008 (10.398)	0.008 (10.205)	0.008 (10.71)	−0.005 (−2.082)	0.003 (1.906)	0.003 (2.731)	0.002 (2.161)	0.003 (2.355)
8	0.004 (3.282)	0.013 (11.807)	0.008 (9.796)	0.008 (9.898)	0.008 (10.219)	−0.006 (−2.344)	0.002 (1.051)	0.001 (1.059)	0.001 (0.948)	0.000 (0.245)
9	0.006 (3.731)	0.014 (10.512)	0.009 (7.787)	0.009 (8.066)	0.010 (8.452)	−0.004 (−1.278)	0.004 (2.088)	0.003 (2.211)	0.004 (2.409)	0.004 (2.703)
Highest	0.007 (3.183)	0.016 (7.084)	0.011 (5.769)	0.011 (6.107)	0.012 (6.372)	0.000 (−0.101)	0.007 (2.96)	0.005 (3.012)	0.005 (2.805)	0.006 (3.472)
Highest - Lowest	0.018 (9.973)	0.018 (9.946)	0.015 (9.899)	0.015 (9.642)	0.015 (9.637)	0.015 (4.338)	0.015 (4.535)	0.013 (4.982)	0.012 (5.061)	0.013 (5.108)

We present the results for the robustness of the anomaly to alternative risk adjustments.

### 3.1 Empirical result: Earnings acceleration and stock return

Variables	One-month abnormal returns (VMAR)			Quarter-long abnormal returns (VMARQ)		
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	0.007*** (4.109)	0.008*** (4.104)	0.008*** (4.289)	0.016*** (4.742)	0.017*** (4.823)	0.016*** (4.470)
EGP	0.009*** -4.956	0.012*** (5.025)	0.012*** (5.102)	0.042*** (12.878)	0.038*** (8.041)	0.040*** (7.952)
EAP	0.016*** (10.628)	0.016*** (9.221)	0.015*** (9.429)	0.023*** (8.792)	0.023*** (8.428)	0.021*** (8.251)
SIZE	-0.009*** (-3.295)	-0.004 (-1.212)	-0.003 (-0.951)	-0.041*** (-6.797)	-0.032*** (-4.344)	-0.028*** (-3.944)
TREND		0.005** (2.217)	0.004* (1.930)		0.013*** (3.809)	0.012*** (4.484)
BM		0.014** (4.303)	0.014*** (4.350)		0.025*** (3.521)	0.024*** (3.431)
PASTRET		-0.010*** (-3.328)	-0.011*** (-3.457)		-0.005 (-0.932)	-0.006 (-1.097)
GP		0.011*** (3.632)	0.012*** (3.778)		0.017*** (3.296)	0.018*** (3.696)
ACC		-0.013*** (-9.909)	-0.012*** (-9.416)		-0.022*** (-9.502)	-0.019*** (-8.127)
VOL		-0.011*** (-6.461)	-0.012*** (-6.993)		-0.028*** (-8.598)	-0.032*** (-10.535)
AG1		0.001 (0.588)			0.003 (0.995)	
AG2			-0.001 (-0.219)			-0.014*** (-3.817)
Observations	355,492	244,864	244,864	347,802	239,353	239,353
R-squared	0.010	0.053	0.053	0.019	0.067	0.068
Number of groups	176	162	162	176	162	162

We present regression analysis of excess returns from the earnings acceleration strategy after including all the controls.

The regression coefficient on EAP, our earnings acceleration variable, is significant.

## 3.2 Empirical result: Earnings acceleration and other anomaly

Panel A: Two-way sorting, controlling for Mscore effect

			EAP					
Mscore effect			Lowest	2	3	4	Highest	Highest - Lowest
Mscore	Underpriced	0.008 (6.221)	−0.002 (−0.881)	0.001 (0.895)	0.009 (7.151)	0.015 (10.055)	0.020 (8.304)	0.021 (7.438)
	2	0.007 (5.29)	−0.003 (−1.417)	−0.001 (−0.904)	0.008 (6.195)	0.014 (8.872)	0.016 (7.305)	0.019 (7.981)
	3	0.006 (4.555)	−0.006 (−3.07)	0.001 (0.669)	0.009 (6.361)	0.012 (7.203)	0.011 (4.945)	0.017 (7.769)
	4	0.006 (3.802)	−0.004 (−1.445)	0.002 (1.377)	0.009 (5.4)	0.010 (5.459)	0.011 (4.701)	0.015 (6.261)
	Overpriced	0.001 (0.684)	−0.007 (−2.366)	0.000 (−0.164)	0.003 (1.538)	0.006 (2.545)	0.005 (1.998)	0.012 (5.445)
	Underpriced - Overpriced	0.006 (3.029)	0.005 (1.613)	0.002 (0.694)	0.006 (2.223)	0.009 (3.401)	0.014 (4.667)	

The trading strategy yields consistently positive returns across all rows showing the robustness of the strategy to other well documented anomalies captured in M-Score.



## 3.2 Empirical result: Earnings acceleration and other anomaly

Panel C: Two-way sorting, controlling for Profit Trend effect

			EAP					Highest - Lowest
TREND effect			Lowest	2	3	4	Highest	
TREND	Lowest	0.006	−0.001	0.004	0.011	0.010	0.011	0.011
		(3.162)	(−0.354)	(1.907)	(5.827)	(4.858)	(3.541)	(4.014)
	2	0.008	0.002	0.002	0.007	0.013	0.016	0.014
		(5.295)	(0.765)	(1.073)	(4.664)	(6.788)	(6.445)	(5.325)
	3	0.008	0.002	−0.001	0.009	0.013	0.017	0.016
		(5.349)	(0.549)	(−0.554)	(6.105)	(7.644)	(5.886)	(5.739)
4	0.009	0.001	0.002	0.008	0.015	0.023	0.022	
	(5.54)	(0.459)	(1.228)	(5.182)	(7.716)	(6.454)	(6.841)	
	Highest	0.015	0.005	0.008	0.012	0.021	0.026	0.020
		(5.32)	(1.744)	(3.569)	(4.982)	(7.269)	(6.369)	(7.033)
Highest - Lowest		0.009	0.006	0.004	0.003	0.011	0.015	
		(5.298)	(2.242)	(2.216)	(1.291)	(4.13)	(5.475)	

The earnings acceleration strategy tends to produce much higher excess returns than the profitability trend anomaly.

### 3.3 Empirical result: Earnings acceleration and earnings growth

Then we examine whether earnings acceleration has incremental predictive ability for future earnings growth and whether the future abnormal return from the earnings acceleration strategy is associated with this predictive ability.

We estimate a regression of future earnings growth on past earnings acceleration.

$$EGP_{t+k} = \alpha + \beta EAP_t + \gamma EGP_t + \varepsilon_{t+k}$$

$EGP_{t+k}$  represents the seasonal earnings growth one, two and three quarters in the future.

### 3.3 Empirical result: Earnings acceleration and earnings growth

Variables	One-quarter-ahead earnings growth			Two-quarters-ahead earnings growth			Three-quarters-ahead earnings growth		
	EGP <sub>t+1</sub>			EGP <sub>t+2</sub>			EGP <sub>t+3</sub>		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	-0.001 (-0.670)	0.000 (0.134)	0.002 (0.803)	-0.002 (-0.832)	0.002 (0.791)	0.001 (0.660)	-0.001 (-0.349)	0.002 (0.480)	0.002 (0.549)
EGP	0.416*** (56.963)	0.323*** (35.022)	0.331*** (37.623)	0.220*** (34.501)	0.166*** (24.196)	0.176*** (26.078)	-0.006 (-0.786)	-0.045*** (-7.011)	-0.035*** (-5.727)
EAP	-0.018*** (-4.642)	0.011*** (2.813)	0.005 (1.277)	0.046*** (10.331)	0.056*** (14.611)	0.046*** (12.373)	0.237*** (41.149)	0.248*** (39.663)	0.238*** (39.761)
SIZE	-0.024*** (-8.788)	-0.060*** (-18.104)	-0.045*** (-14.236)	-0.047*** (-13.194)	-0.074*** (-18.407)	-0.056*** (-14.589)	-0.070*** (-18.082)	-0.088*** (-21.543)	-0.073*** (-18.452)
TREND		0.030*** (8.583)	0.016*** (4.336)		-0.007 (-1.145)	-0.021*** (-5.276)		0.013* (-1.682)	0.003 (0.723)
BM		-0.046*** (-10.363)	-0.052*** (-11.891)		-0.052*** (-10.384)	-0.063*** (-12.571)		-0.055*** (-10.578)	-0.066*** (-12.720)
PASTRET		0.124*** (23.265)	0.131*** (21.600)		0.083*** (17.250)	0.088*** (17.881)		0.043*** (6.353)	0.049*** (6.199)
GP		0.011*** (2.692)	0.017*** (4.540)		0.005 (0.791)	0.011** (2.047)		-0.007 (-1.096)	-0.002 (-0.330)

Table 8 reports the regression results testing the relation between earnings acceleration and the earnings growth for each of the three subsequent quarters.

While the coefficient for one quarter ahead growth is negative, the coefficients for the two subsequent quarters are significantly positive.

### 3.3 Empirical result: Earnings acceleration and earnings growth

Variables	Three-day abnormal return (t+1)			Three-day abnormal return (t+2)			Three-day abnormal return (t+3)		
	VMAR3 <sub>t+1</sub>			VMAR3 <sub>t+2</sub>			VMAR3 <sub>t+3</sub>		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Constant	0.004*** (6.804)	0.004*** (5.637)	0.003*** (5.198)	0.004*** (6.866)	0.003*** (4.875)	0.003*** (5.098)	0.004*** (6.817)	0.003*** (3.039)	0.003*** (2.921)
EGP	0.006*** (3.495)	0.003 (1.595)	0.003* (1.704)	-0.000 (-0.259)	-0.000 (-0.060)	0.000 (0.318)	-0.006*** (-7.626)	-0.005*** (-4.740)	-0.005*** (-4.438)
EAP	0.002*** (3.716)	0.002*** (3.286)	0.002*** (3.235)	0.005*** (8.506)	0.004*** (5.864)	0.004*** (5.454)	0.008*** (11.102)	0.007*** (8.416)	0.007*** (8.120)
SIZE	-0.007*** (-5.318)	-0.004*** (-3.291)	-0.004*** (-2.949)	-0.007*** (-5.695)	-0.005*** (-3.220)	-0.004*** (-2.865)	-0.007*** (-5.666)	-0.004*** (-2.767)	-0.003** (-2.369)
TREND		-0.000 (-0.116)	0.001** (2.283)		0.000 (0.339)	-0.000 (-0.312)		-0.001 (-0.668)	-0.001 (-1.168)
BM		0.008*** (9.067)	0.008*** (8.352)		0.006*** (6.814)	0.006*** (6.100)		0.007*** (7.580)	0.007*** (6.879)
PASTRET		0.002** (2.548)	0.002*** (2.770)		0.001 (0.791)	0.001 (1.025)		-0.002* (-1.736)	-0.001 (-1.506)

We assess whether the earnings acceleration anomaly is attributable to the market missing, at least partially, the implications of earnings acceleration for earnings growth in the future.

The coefficient on EAP is positive and significant, which indicates that investors do not appear to incorporate fully the implications of earnings acceleration for subsequent earnings.

### 3.3 Empirical result: Earnings acceleration and earnings growth

#### The Mishkin test

Several prior studies conduct the Mishkin test to examine whether the signs and magnitudes of abnormal stock returns reflect the market's understanding of the earnings process.

$$EGP_{t+k} = \alpha + \beta EAP_t + \gamma EGP_t + \varepsilon_{t+k}$$

$$VMAR_{t+1} = k_0 + k_1 \varepsilon_{t+k} + \mu_{t+1}$$

$$VMAR_{t+1} = (k_0 - k_1 \alpha^*) + k_1 EGP_{t+k} - k_1 \beta^* EAP_t - k_1 \gamma^* EGP_t + \mu_{t+1}$$

$\beta$  is the actual coefficient on our variable of interest.

$\beta^*$  is the coefficient inferred from the market's expectation of  $EGP_{t+k}$ .

### 3.3 Empirical result: Earnings acceleration and earnings growth

**Panel B: Two-quarters-ahead**

Parameter	Coef.	z-statistics	p-value
$\gamma$	0.207	107.150	0.000
$\beta$	0.039	19.990	0.000
$\gamma^*$	0.022	0.660	0.509
$\beta^*$	-0.500	-14.160	0.000
Test of market efficiency:		$\gamma = \gamma^*$	$\beta = \beta^*$
Likelihood ratio statistics:		31.26	232.270
Marginal significant level:		0.000	0.000

**Panel C: Three-quarters-ahead**

Parameter	Coef.	z-statistics	p-value
$\gamma$	-0.023	-11.970	0.000
$\beta$	0.238	121.660	0.000
$\gamma^*$	-0.222	-6.430	0.000
$\beta^*$	-0.331	-8.890	0.000
Test of market efficiency:		$\gamma = \gamma^*$	$\beta = \beta^*$
Likelihood ratio statistics:		31.27	214.530
Marginal significant level:		0.000	0.000

$\beta$  is positive, indicating a positive actual association between earnings acceleration and future earnings growth.

$\beta^*$  is negative, suggesting market's negative assessment of the effect of earnings acceleration on future earnings growth.

### 3.3 Empirical result: Earnings acceleration and earnings growth

**Panel B: Two-quarters-ahead**

Parameter	Coef.	z-statistics	p-value
$\gamma$	0.207	107.150	0.000
$\beta$	0.039	19.990	0.000
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Test of market efficiency:		$\gamma = \gamma^*$	$\beta = \beta^*$
Likelihood ratio statistics:		31.27	214.530
Marginal significant level:		0.000	0.000

The likelihood ratio test reject that  $\beta = \beta^*$  , indicating that market underestimates the implication of earnings acceleration for future earnings.

### 3.4 Empirical result: Additional tests

We estimate a Taylor-series expansion of the earnings process using the past 8 quarters' earnings, and define earnings acceleration as the coefficient on the square of the time variable.

This definition is analogous to acceleration in physics, and it frees us from the need to use a deflator in defining earnings acceleration.

The acceleration variable defined in this manner also positively predicts future abnormal returns.



## 4. Conclusion

1. We find economically significant excess returns to an earnings acceleration-based strategy over a quarter following an earnings announcement (with a significant portion accruing over the first month).
2. The abnormal returns are consistent with investors not incorporating fully the implications of current earnings acceleration for future earnings growth, especially two and three quarters in the future.

## 4. Comment & Inspiration

1. If a anomaly can significantly predict the future stock returns, its rate of change and acceleration may also predict the future returns.
2. If a anomaly can neither be attributed to risk bearing nor to mispricing, it may be because the anomaly can predict future earnings or future earnings growth.