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Introduction

The trade-off theory has been widely applied to explain both optimal capital structure decisions and payout policies. The deviation from target leverage ratio has been studied in the literature, however...

The existing studies focus on the actual *changes* of dividends, without a consideration of the time-varying effects of firms' characteristics on firms' payout policies

1. Return information provided by dividends

Information about future cash flows

An increase in dividend payout conveys good news about cash flow, while a reduction in dividend payout signals bad news (e.g., Pettit, 1972). --- Mixed empirical evidence

Information about firms' systematic risk

Dividend changes are negatively related to firms' exposure to systematic risks (e.g., Grullon, Michaely, and Swaminathan, 2002)

2. Dividend smoothing

Firms smooth their Dividend Per Share (DPS) towards their target DPS (Leary and Michaely, 2011).

Puzzle: investors do not reward managers' efforts on smoothing dividends (Larkin, Leary, and Michaely, 2017).

Research Question

Q1. Whether dividend deviation is a **measure** of risk?

Under-paying firms have greater exposure than over-paying firms to the factor constructed on dividend deviation

Q2. Whether such a risk is **priced**?

Higher returns will be required for under-paying firms than firms paying higher-than-expected dividends

Methodology

Estimation of Optimal Dividend Payout

$$DPS_{i,t} = \alpha + \delta_1 \frac{EBIT}{Assets_{i,t-1}} + \delta_2 \frac{FCF}{Assets_{i,t-1}} + \delta_3 LogAssets_{i,t-1} + \delta_4 \frac{M}{B_{i,t-1}} + \delta_5 \frac{RE}{Assets} + \delta_6 ROAVOL_{i,t-1} + \delta_7 Levratio_{i,t-1} + Industry + \varepsilon_{i,t}$$

Construction of Dividend Deviation

$$DD_{i,t} = \frac{DPS_{i,t} - DPS_{i,t}^*}{\sigma_{DPS_{i,t}}}$$

Results

Table 2. Estimation of Optimal DPS

	Coefficient
EBIT/Assets	-0.097 (-1.43)
FCF/Assets	0.261*** (8.27)
LogAssets	0.105*** (33.79)
M/B	-0.039*** (-4.45)
RE/Assets	0.087*** (4.18)
ROAVOL	-0.219*** (-4.27)
Levratio	-0.158*** (-4.02)
Industry Effect	Yes
Obs.	81,449
Adj. R2	0.14

Table 3. Portfolios Sorted by Dividend Deviation

Panel A: EW return	Rank	Mean	Size	B/M	DivDev	CAPM α	FF3 α	FF3+L α	FF4 α	FF4+L α	FF5 α	FF5+ML α	FF3+U α	β (UMO)
1 (Under)		0.97*** (3.65)	6.78	0.85	-1.57	0.36*** (3.26)	0.27*** (3.60)	0.25*** (3.46)	0.47*** (6.10)	0.45*** (5.97)	0.31*** (3.64)	0.44*** (6.02)	0.00 (-0.02)	0.56*** (10.66)
2		0.89*** (3.29)	5.88	1.02	-0.64	0.29*** (2.50)	0.16** (2.36)	0.14** (2.19)	0.32*** (5.22)	0.31*** (4.97)	0.14** (1.99)	0.26*** (4.60)	0.06 (0.91)	0.20*** (4.43)
3		0.80*** (2.88)	5.26	0.87	-0.27	0.21* (1.68)	0.04 (0.56)	0.02 (0.31)	0.20*** (3.30)	0.18*** (3.09)	0.02 (0.33)	0.13** (2.58)	0.06 (0.89)	-0.05 (-0.98)
4		0.66** (2.53)	5.20	0.80	0.17	0.11 (1.98)	-0.04 (-0.64)	-0.05 (-0.86)	0.11* (1.87)	0.10* (1.68)	-0.04 (-0.58)	0.07 (1.29)	0.01 (0.21)	-0.11** (-2.25)
5 (Over)		0.52** (2.29)	5.87	0.99	1.62	0.03 (0.26)	-0.15*** (-2.77)	-0.16*** (-2.92)	-0.02 (-0.31)	-0.02 (-0.49)	-0.17*** (-3.09)	-0.07 (-1.54)	-0.04 (-0.77)	-0.22*** (-5.40)
D1-D5		0.45*** (5.72)				0.33*** (4.65)	0.42*** (5.73)	0.41*** (5.63)	0.48*** (6.20)	0.47*** (6.13)	0.47*** (6.36)	0.51*** (6.74)	0.04 (0.74)	0.79*** (22.64)
Adj. R2						0.29	0.35	0.35	0.37	0.37	0.36	0.37		0.69
α						0.20	0.13	0.12	0.22	0.21	0.13	0.18		0.93
avg. adj. R2						0.81	0.93	0.94	0.95	0.95	0.94	0.96		0.93
GRS p-value						0.00	0	0	0	0	0	0		0.98

Table 5. Fama-MacBeth (1973) Regressions

Variable	Panel A: Fama-MacBeth (1973) Factor Premiums				
	UMO	FF3+U	FF4+U	FF5+U	FF5+MLU
Constant	0.03 (0.18)	-0.24 (-0.65)	-0.21 (-0.59)	0.03 (0.08)	0.12 (0.28)
UMO	0.47*** (4.23)	0.51*** (5.81)	0.57*** (6.27)	0.56*** (6.02)	0.56*** (5.98)
MKT		0.77* (1.84)	0.77* (1.86)	0.41 (0.92)	0.31 (0.61)
SMB		0.06 (0.41)	0.02 (0.16)	0.22 (1.54)	0.22 (1.54)
HML		0.51** (2.10)	0.80*** (2.74)	0.16 (0.62)	0.19 (0.56)
UMD			0.66 (1.09)		0.20 (0.31)
RMW				0.06 (0.30)	0.08 (0.39)
CMA				0.38* (1.79)	0.36* (1.73)
LIQ					0.48 (0.52)
Adj R2	0.13	0.37	0.38	0.39	0.39

Table 10 Fama-MacBeth Regressions of Dividend Deviation on Risk Measures

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Beta	-0.16*** (-21.03)												-0.70*** (-22.39)
Avgstd_eps		-0.30E-02*** (-6.93)											-0.28E-02*** (-4.72)
Std_ret			-0.16*** (-20.05)										-13.00*** (-15.99)
LogME				-0.13*** (-22.81)									-0.13*** (-27.16)
LogBM					0.09*** (15.71)								0.01 (0.90)
MOM						-0.07*** (-8.88)							-0.25*** (-13.64)
PROF							-0.01** (-2.07)						0.13*** (4.58)
INV								-0.11*** (-21.21)					-0.18*** (-10.06)
TURN									-0.43*** (-16.48)				-7.70* (-1.84)
ILLIQ										0.45*** (3.08)			-5.44*** (-3.58)
Ret(-1,-1)											-0.02*** (-4.44)		-0.19*** (-8.66)
Ret(-13,-36)												-0.05*** (-6.72)	-0.04*** (-5.45)

Figure 1. Cumulative Performance of the investment strategies

