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How do good, bad and systemic bond downgrades affect dividend policy?

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Motivation

- Previous studies do not consider the information embedded in credit rating announcements when they examine the effect of credit rating changes on dividend smoothing.

- This information is important as it reveals the reason that lies behind a credit rating change.

- Building on the work of Goh and Ederington (1993) we classify credit rating downgrades into good, bad and systemic downgrades.

- We investigate how each of the three types of bond downgrade impacts on dividend smoothing given the different information content they convey .

Contribution

- We show that the information that lies behind a credit rating announcement is crucial when investigating the impact of bond rating changes on dividend smoothing.

- Bad and good bond downgrades convey different information to shareholders and debtholders and this matters for dividend smoothing.

- We find that firms with bad bond downgrades smooth dividends less whereas firms with good bond downgrades smooth dividends more.

- Firms with bond upgrades are high growth firms and therefore smooth dividends less.

Credit Rating Events

	S&P's explanation	Number of Events
Total Downgrades		317
Bad	Weak operating performance, deterioration in earnings & cash flows etc.	88
Good	Debt – financed expansion, change in firm's leverage, transfer wealth from bondholders to stockholders etc.	129
Systemic	terrorist attacks, external economic environment etc.	69
The rest	No reason, no announcement, more than one reason	31
Total Upgrades		180
Type 1	Strong operating performance, amelioration in earnings, cash flows etc.	104
Type 2	Successful acquisitions, Debt – financed expansion, change in firm's leverage, transfer wealth from bondholders to stockholders etc.	26
Type 3	external economic environment, etc.	17
The rest	No reason, no announcement, more than one reason	33

Related Literature

- There is a number of empirical studies that focus on how changes in credit ratings affect dividend policy.
- Grullon et al. (2002) show that a credit rating change occurs around a dividend change
- Booth et al. (2006) provide evidence that rated firms smooth dividends more than non-rated firms.
- Khiu and Pyles (2016) find that downgraded firms reduce both dividends and investments than no credit rating change firms.
- Asimakopoulos et al. (2021) find a negative association between dividend smoothing and bond downgrades without considering the information content of credit rating events; inconclusive evidence on credit rating upgrades.

Hypotheses Testing

We formulate the following four hypotheses:

- ✓ H1: Bad bond downgrades are negatively related to dividend smoothing

  Bad bond downgrades convey negative news to the capital market ➡
  signaling weak financial performance

- ✓ H2: Good credit rating downgrades are positively related to dividend smoothing

  Good bond downgrades convey positive news to shareholders ➡
  wealth transfer from bondholders to shareholders

- ✓ H3: Systemic bond credit rating downgrades are negatively related to dividend smoothing

  Systemic bond downgrades are associated with negative external environment

- ✓ H4: Credit rating upgrades are negatively associated with dividend smoothing

Data and Sample

- ✓ We collect financial data for the US firms from COMPUSTAT and dividend data from CRSP.
- ✓ We focus on aggregated quarterly dividends because most firms pay dividends on a quarterly basis.
- ✓ Our sample period is from 1995-2016 because credit rating announcements are available since 1995 in the S & P credit ratings database.
- ✓ We winsorize all firm-specific variables, including firm-specific variables, including dividends at the 1st and 99th percentiles.
- ✓ We limit our study sample to firms that pay dividends for at least 20 years.
- ✓ We exclude utilities and financials

Lintner Model with bad and good downgrades…

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + e_{i,t} \quad (1)$$

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i,t-1} Down_{i,t} + b_2 DPS_{i,t-1} Up_{i,t} + e_{i,t} \quad (2)$$

where SOA: 1-(α_1+b_1) for credit rating downgrade 1-(α_1+b_2) for credit rating upgrade

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i,t-1} Down1_{i,t} + b_2 DPS_{i,t-1} Down2_{i,t} + b_3 DPS_{i,t-1} Down3_{i,t} + b_4 DPS_{i,t-1} Down4_{i,t} + e_{i,t} \quad (3)$$

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i,t-1} Up1_{i,t} + b_2 DPS_{i,t-1} Up2_{i,t} + b_3 DPS_{i,t-1} Up3_{i,t} + b_4 DPS_{i,t-1} Up4_{i,t} + e_{i,t} \quad (4)$$

Lintner Model with bad and good downgrades and EPS

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i.t-1} Down_{i,t} + b_2 DPS_{i,t-1} Up_{i,t} + c_1 EPS_{i,t} Down_{i,t} + c_2 EPS_{i,t} Up_{i,t} + e_{i,t} \quad (5)$$

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i,t-1} Down1_{i,t} + b_2 DPS_{i,t-1} Down2_{i,t} + b_3 DPS_{i,t-1} Down3_{i,t} + b_4 DPS_{i,t-1} Down4_{i,t} + c_1 EPS_{i,t} Down1_{i,t} + c_2 EPS_{i,t} Down2_{i,t} + c_3 EPS_{i,t} Down3_{i,t} + c_4 EPS_{i,t} Down4_{i,t} + e_{i,t} \quad (6)$$

$$DPS_{i,t} = a_o + a_1 DPS_{i,t-1} + a_2 EPS_{i,t} + b_1 DPS_{i,t-1} Up1_{i,t} + b_2 DPS_{i,t-1} Up2_{i,t} + b_3 DPS_{i,t-1} Up3_{i,t} + b_4 DPS_{i,t-1} Up4_{i,t} + c_1 EPS_{i,t} Up1_{i,t} + c_2 EPS_{i,t} Up2_{i,t} + c_3 EPS_{i,t} Up3_{i,t} + c_4 EPS_{i,t} Up4_{i,t} + e_{i,t} \quad (7)$$

Lintner Model with different econometric techniques

	basic	ind. Fe	year fe	ind. & year fe	firm fe	firm & year fe	firm fe & AR	FGLS
DPS_{t-1}	0.921***	0.920***	0.911***	0.909***	0.854***	0.795***	0.790***	0.790***
	(125.45)	(123.52)	(120.78)	(118.66)	(79.52)	(66.38)	(19.93)	(65.73)
EPS_t	0.0371***	0.0373***	0.0349***	0.0350***	0.0406***	0.0369***	0.0413***	0.0413***
	(16.42)	(16.41)	(15.50)	(15.50)	(15.82)	(14.53)	(10.19)	(15.17)
Constant	0.00317	0.00370	0.0192**	0.0201**	0.0585***	0.125***	0.143*	0.143**
	(0.37)	(0.43)	(2.23)	(2.31)	(5.04)	(9.83)	(1.85)	(2.19)
Obs.	3024	3024	3024	3024	3024	3024	3024	3024

Lintner Model with downgades and upgrades

Equations	(2)	(5)
DPS_{t-1}	0.807***	0.817***
	(20.82)	(20.96)
$Downgrade_t * DPS_{t-1}$	-0.0178	-0.0178
	(-1.20)	(-0.89)
$Upgrade_t * DPS_{t-1}$	-0.137***	-0.239***
	(-4.96)	(-5.06)
$Downgrade_t * EPS_t$		-0.00163
		(-0.19)
$Upgrade_t * EPS_t$		0.0352***
		(3.19)
EPS_t	0.0420***	0.0387***
	(10.33)	(8.59)
Constant	0.126*	0.122
	(1.65)	(1.59)
Obs.	3024	3024

Downgrades and Upgrades: Different firm characteristics

	Downgrade	Upgrade	Difference
Size	22.744	22.707	-0.037
Age	45.779	43.311	-2.468*
Asset Tangibility	0.319	0.325	0.006
Earnings Volatility	0.041	0.043	0.003
Cash to Total Assets	0.059	0.071	0.012**
Market-to-Book Ratio	1.593	1.950	0.357***
Payout Ratio	0.674	0.339	-0.336***
Free Cash Flow	0.082	0.112	0.030***
Profitability	0.130	0.174	0.044***
Dividend Yield	0.029	0.015	-0.014***
Leverage	0.318	0.242	-0.077***
Retained Earnings	0.340	0.333	-0.007
Liability	0.261	0.260	-0.001
Liquidity	0.374	0.405	0.031*
Financial Deficit	0.053	0.040	-0.012
Altman's Z – Score	3.051	4.188	1.137***

Good, Bad and Systemic Downgrades on Dividend Smoothing

Equations	(3)	(6)
DPS_{t-1}	0.793***	0.791***
	(19.73)	(19.76)
$Down1_t * DPS_{t-1}$	-0.0612**	-0.0459*
	(-2.53)	(-1.72)
$Down2_t * DPS_{t-1}$	0.0401*	0.119***
	(1.75)	(3.19)
$Down3_t * DPS_{t-1}$	-0.0737**	-0.0752**
	(-2.29)	(-2.19)
$Down4_t * DPS_{t-1}$	-0.00618	0.0127
	(-0.20)	(0.37)
$Down1_t * EPS_t$		-0.0156
		(-1.10)
$Down2_t * EPS_t$		-0.0374***
		(-2.96)
$Down3_t * EPS_t$		0.0104
		(0.51)
$Down4_t * EPS_t$		-0.0144
		(-0.94)
EPS_t	0.0393***	0.0411***
	(9.53)	(9.40)
Constant	0.139*	0.136*
	(1.78)	(1.75)
Obs.	3024	3024

Bad and Good Downgrades convey different information

Panel A: Bad and Good Downgrades	Bad	Good	Difference
Size	22.498	22.897	0.399**
Age	47.091	44.504	-2.587
Asset Tangibility	0.313	0.329	0.016
Earnings Volatility	0.040	0.039	-0.001
Cash to Total Assets	0.060	0.048	-0.012
Market-to-Book Ratio	1.422	1.796	0.373***
Payout Ratio	0.853	0.522	-0.331***
Free Cash Flow	0.073	0.099	0.025***
Profitability	0.122	0.150	0.028***
Dividend Yield	0.032	0.024	-0.008***
Leverage	0.325	0.295	-0.029*
Retained Earnings	0.354	0.373	0.019
Liability	0.267	0.264	-0.004
Liquidity	0.415	0.354	-0.061***
Financial Deficit	0.003	0.106	0.103***
Altman's Z – Score	3.049	3.303	0.254

Upgrade types and dividend smoothing

Equations	(4)	(7)
DPS_{t-1}	0.808***	0.821***
	(21.27)	(21.58)
$Up1_t * DPS_{t-1}$	-0.175***	-0.361***
	(-4.90)	(-5.43)
$Up2_t * DPS_{t-1}$	-0.0986	-0.00735
	(-1.63)	(-0.10)
$Up3_t * DPS_{t-1}$	0.0285	0.0659
	(0.47)	(0.45)
$Up4_t * DPS_{t-1}$	-0.0355	-0.0151
	(-0.91)	(-0.27)
$Up1_t * EPS_t$		0.0693***
		(3.93)
$Up2_t * EPS_t$		-0.0275**
		(-2.32)
$Up3_t * EPS_t$		-0.00426
		(-0.14)
$Up4_t * EPS_t$		-0.00566
		(-0.49)
EPS_t	0.0421***	0.0392***
	(10.58)	(9.56)
Constant	0.122	0.114
	(1.60)	(1.49)
Obs.	3024	3024

Type 1 Upgrade and bad downgrades

	Bad	Up 1	Difference
Size	22.498	22.664	0.166
Age	47.091	45.683	-1.408
Asset Tangibility	0.313	0.329	0.016
Earnings Volatility	0.040	0.042	0.002
Cash to Total Assets	0.060	0.074	0.014*
Market-to-Book Ratio	1.422	2.121	0.699***
Payout Ratio	0.853	0.319	-0.534***
Free Cash Flow	0.073	0.119	0.045***
Profitability	0.122	0.181	0.059***
Dividend Yield	0.032	0.016	-0.016***
Leverage	0.325	0.252	-0.072***
Retained Earnings	0.354	0.363	0.009
Liability	0.267	0.262	-0.006
Liquidity	0.415	0.419	0.004
Financial Deficit	0.003	0.010	0.007
Altman's Z - Score	3.049	4.422	1.373***

Conclusion

- This study reveals the role of the information embedded in the announcement of a credit rating change when investigating the impact of bond downgrades on dividend smoothing.

- We show that there is an asymmetric effect of bond rating downgrades on dividend smoothing focusing on the information content of the announcements of credit rating downgrades.

- Bad and systemic downgrades are negatively related to dividend smoothing whereas good downgrades are positively related to dividend smoothing.

- We find that firms with bad bond downgrades are less profitable, have lower growth opportunities and free cash flows compared to good bond downgrades.

- There is a negative association between bond upgrades and dividend smoothing as these firms prefer to hold cash for future growth opportunities.