Modelling Japanese firms' dividend payout policies using new data

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Context

- A large literature hypothesises that firms have medium-term dividend payout targets (DPS/EPS) and adjust their annual dividends toward their medium-term target smoothly over time.
  - Partial adjustment model, dividend smoothing (Lintner, 1956).
- Little hard data for the hypothesised targets.
  - Once-off US surveys such as Lintner (1956), Brav et al. (2005).
  - Hanaeda and Serita (2008), Suzuki et al. (2018) for Japan.
- What are the characteristics of these targets over time and in the cross section?
- What if we can collect data on systematically disclosed dividend payout targets?

Nippon Steel Corporation ASR – dividend policy

３　【配当政策】

当社は、業績に応じた利益の配分を基本として、企業価値向上に向けた投資等に必要な資金所要、先行きの業績見通し、連結及び単独の財務体質等を勘案しつつ、第２四半期末及び期末の剰余金の配当を実施する方針としています。

「業績に応じた利益の配分」の指標としては、連結配当性向年間30%程度を目安とします。

なお、第２四半期末の剰余金の配当は、中間期業績及び年度業績見通し等を踏まえて判断することとしています。

期末の剰余金の配当については、従前どおり定時株主総会の決議によることとし、これ以外の剰余金の配当・処分等（第２四半期末の剰余金の配当を含む。）については、機動性を確保する観点等から、定款第33条の規定に基づき取締役会の決議によることとします。

当第２四半期末の配当については、１株につき75円を実施しました。当期末の配当については、2024年６月21日開催の第100回定時株主総会において、１株につき85円（年間配当金としては、１株につき160円。）とすることを決議しました。

決議年月日	配当金の総額（百万円）	１株当たり配当額（円）
2023年11月１日 取締役会決議	69,143	75
2024年６月21日 第100回定時株主総会決議	78,381	85

Section IV Part 3 of Nippon Steel Corporation's Annual Securities Report for the fiscal year 2023.

Nippon Steel Corporation ASR – dividend policy

3. Dividend Policy

The Company's basic profit distribution policy is to pay dividends from distributable funds at the end of the first half (interim) and second half (year-end) of the fiscal year, in consideration of the consolidated operating results and such factors as capital requirements for investment and other activities aimed at raising corporate value and performance prospects while also considering the financial structure of the Company on both consolidated and non-consolidated basis.

The Company has adopted a consolidated annual payout ratio target of around 30% as the benchmark for the "payment of dividends from distributable funds in consideration of the consolidated operating results."

The level of the first-half dividend is determined based on consideration of interim performance figures and forecasts for the full fiscal year performance.

As in the past, the year-end dividend payment will be made according to the resolution of the General Meeting of Shareholders, and any other form of distribution and appropriation of surplus (including the interim dividend) will be made according to the resolution of the Meeting of the Board of Directors as provided in Article 33 of the Articles of Incorporation and with the aim of securing flexibility in financial operations.

, The Company paid a dividend of 75 yen per share at the end of the first half. Regarding the year-end dividend, the Company resolved at the 100th General Meeting of Shareholders held on June 21, 2024 to pay a year-end dividend of 85 yen per share (the annual dividend is 160 yen per share).

Date of resolution	Total amount of dividends (Millions of Yen)	Dividends per share (Yen)
The Meeting of the Board of Directors held on November 1, 2023	69,143	75
The 100th General Meeting of Shareholders held on June 21, 2024	78,381	85

Section IV Part 3 of Nippon Steel Corporation's Annual Securities Report for the fiscal year 2023 (official English translation).

Building the target database

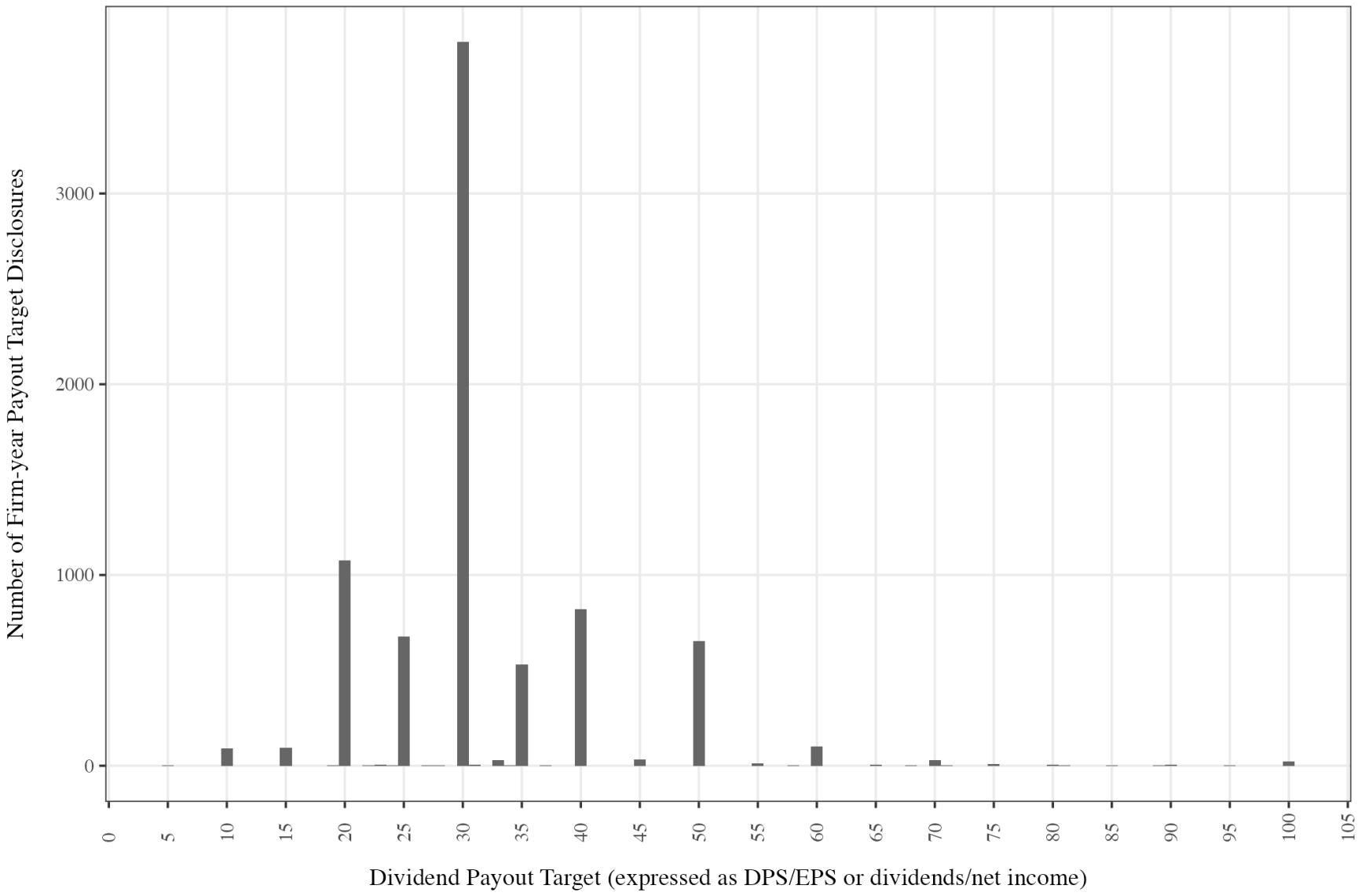
- Annual Securities Report (有価証券報告書, Yukashouken Houkokusho or Yuho), Section IV *Status of the Reporting Company* (第４ 提出会社の状況), Part 3 *Dividend Policy* (３ 配当政策).
  - Voluntary disclosure of a numerical medium-term dividend payout target (DPS/EPS or Cash Dividends/Net Income).
- Download the ASR via the EDINET API (10 year window) and extract the DPT using text analysis in R and Python.
  - Pre-2008 DPT collected from PDFs.
- Firm-level financial data from Nikkei NEEDS.
- Unbalanced panel of annual data from January 2006 to June 2024 (obs. dated the end of each firm's FY). All listed and delisted firms.

TSE target disclosure & dividend payment

	Prime	Standard	Growth
Observations			
DPT Disclosed	8020	1323	374
Dividend Payer	30809	10157	1683
Total Observations	35435	12500	5085
Firms			
DPT Disclosed	1208	439	118
Dividend Payer	2471	1912	431
Total Firms	2731	2163	990

- Exclude Nagoya, Fukuoka, Sapporo exchanges, firms in TSE industry "9999" (unclassifiable and investment funds).

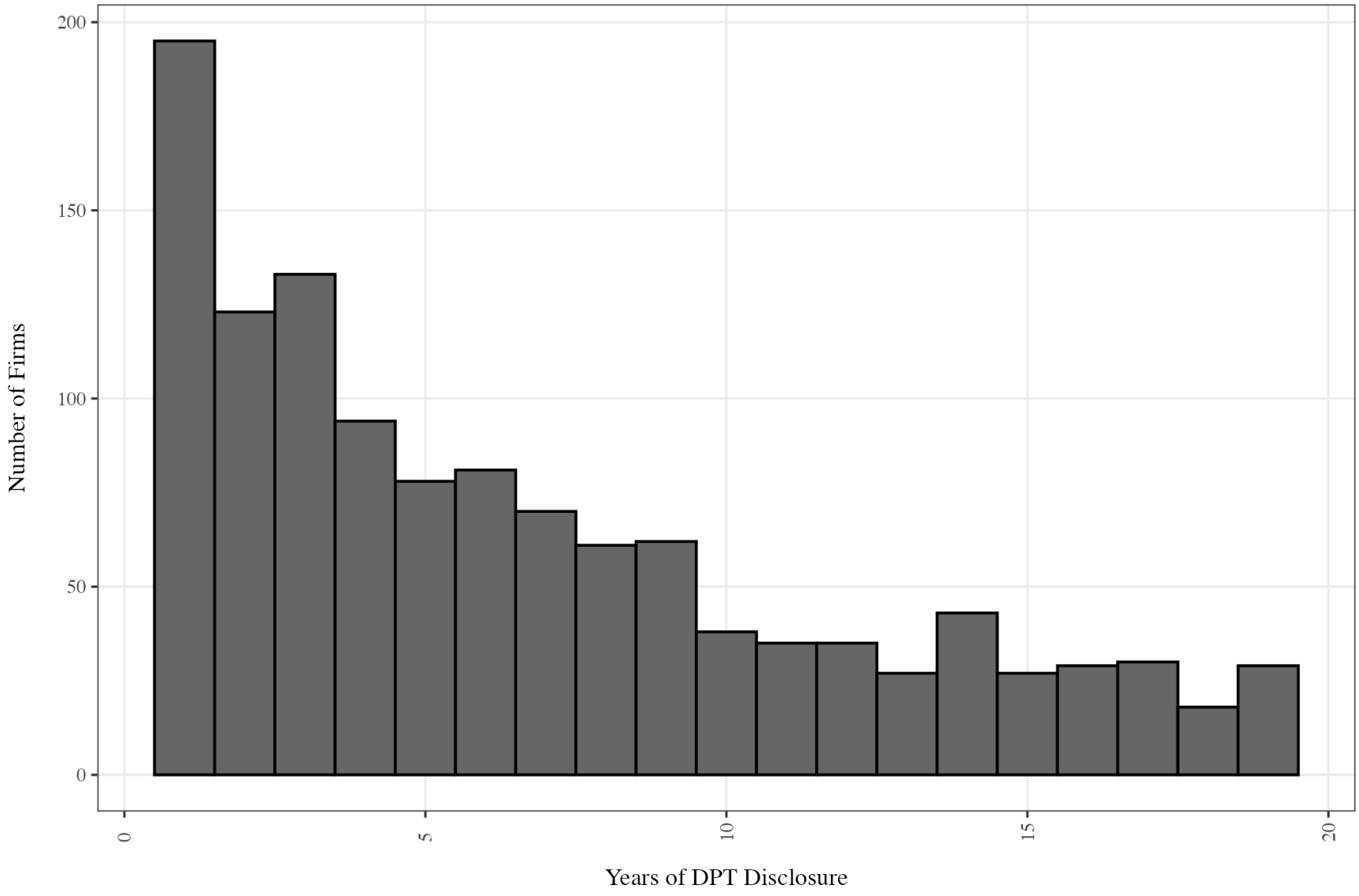
Dividend payout targets extracted



Descriptive statistics for DPT by year

Year	Mean	Med	Min	Max	SD	Firms Up	Mean Up	No Change	Firms Down	Mean Down	No Prev.	Firms
2006	29.56	30	10	100	10.68						205	205
2007	28.98	30	10	100	10.73	5	9	172	5	-8	124	304
2008	28.83	30	10	90	8.96	23	9	244	6	-21	68	341
2009	28.78	30	10	90	8.49	10	10	279	7	-9	30	325
2010	29.30	30	10	90	8.93	13	10	288	1	-10	20	322
2011	29.48	30	10	60	8.14	10	10	293	4	-21	18	325
2012	29.16	30	10	65	7.98	8	7	299	1	-20	30	337
2013	29.21	30	10	90	8.83	15	12	307	3	-8	50	375
2014	29.92	30	10	90	9.09	28	10	343	7	-8	60	430
2015	31.22	30	5	80	9.72	48	11	313	4	-8	67	429
2016	31.93	30	10	100	10.30	50	11	372	7	-15	75	504
2017	32.35	30	10	100	10.45	38	10	446	3	-7	67	551
2018	32.57	30	10	100	10.21	40	11	478	7	-9	73	596
2019	33.08	30	10	100	10.88	50	8	524	9	-9	62	644
2020	32.65	30	10	95	10.38	32	11	390	20	-12	45	487
2021	33.19	30	10	75	9.68	36	10	381	12	-22	31	460
2022	34.30	30	10	100	10.37	39	13	359	6	-18	54	457
2023	36.10	30	10	100	11.90	57	14	361	2	-29	48	468
2024	37.06	35	10	100	11.81	62	11	290	3	-18	81	436

Firms by cumulative years of voluntary disclosure



Descriptive statistics for DPT by industry

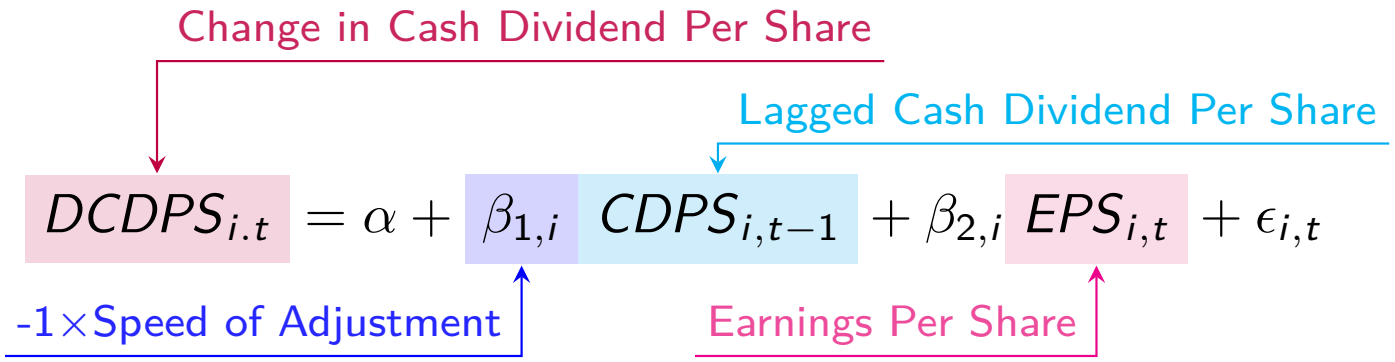
Industry	Mean	Med	Min	Max	SD	Up	Mean Up	Down	Mean Down	Firms	Obs.
Wholesale Trade	31.15	30	10	100	10.65	76	11	11	-13	116	919
Information & Comm.	31.81	30	5	100	10.41	54	10	4	-20	131	835
Services	34.33	30	10	100	13.67	66	13	16	-14	137	755
Electric Appliances	31.33	30	10	100	9.39	42	11	10	-12	86	710
Machinery	31.09	30	15	95	7.64	37	9	9	-18	78	628
...											
Real Estate	27.59	30	15	50	7.19	15	8	1	-5	52	255
Other Products	29.93	30	20	50	9.32	10	11	2	-10	31	214
Banks	32.24	30	10	81	9.93	16	14	5	-20	40	205
Securities & Commodity	40.16	40	20	60	10.83	14	18	3	-15	17	185
...											
Transport Equipment	26.70	30	10	100	10.49	5	12	2	-5	23	125
...											
Non-ferrous Metals	27.82	25	20	50	8.44	6	8	2	-18	11	71
Marine Transportation	23.85	20	20	50	6.11	5	5	2	-12	7	65
...											
Insurance	37.92	40	20	50	9.66	3	12	0		6	24
Mining	30.71	30	30	40	2.67	0		0		4	14
Pulp & Paper	22.73	20	20	30	4.67	0		0		2	11
Air Transportation	31.11	35	20	35	6.51	2	8	0		1	9
Oil & Coal Products	83.33	100	50	100	28.87	0		1	-50	1	3
Fishery, Agri. & Forestry	30.00	30	30	30		0		0		1	1

Median firm-level characteristics by target level

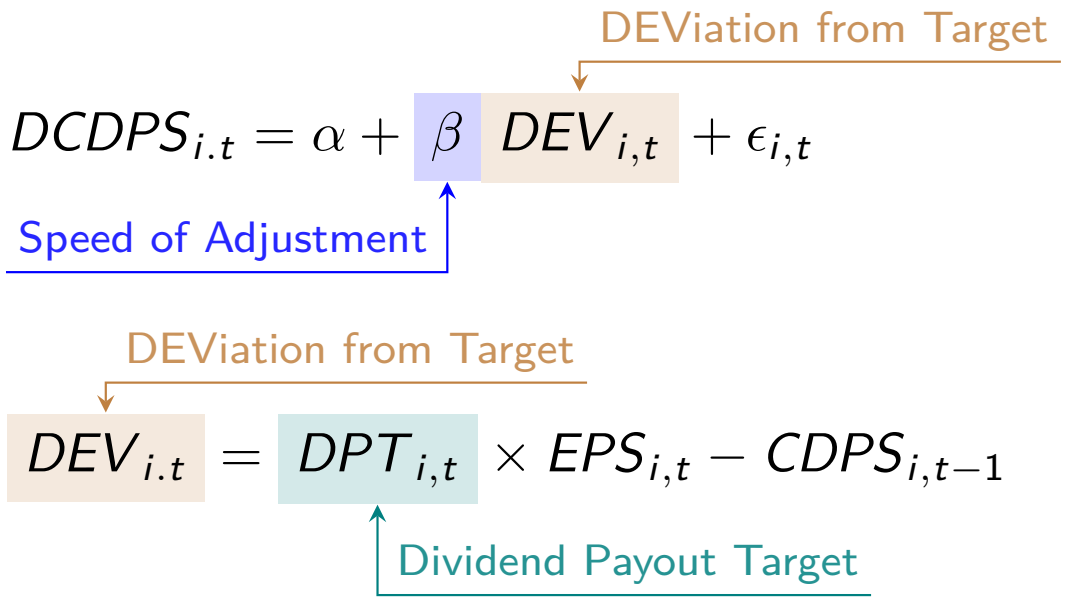
	Target					
	20%	**25%**	**30%**	**35%**	**40%**	**50%**
SIZE	11.430	11.497	11.611	11.670	11.537	11.249
MTB	1.198	1.042	1.090	1.295	1.267	1.423
ROA	0.064	0.059	0.063	0.071	0.071	0.077
ROE	0.088	0.075	0.076	0.076	0.077	0.080
AG	0.048	0.035	0.040	0.049	0.042	0.039
LEV	0.160	0.117	0.107	0.067	0.048	0.026
NIVTA	0.021	0.016	0.017	0.017	0.016	0.018
CFVTA	0.032	0.025	0.027	0.025	0.026	0.032
PE	15.481	15.326	16.715	17.918	19.313	20.583
PS	0.624	0.522	0.694	0.913	0.976	1.292
AGE	52.375	62.792	61.500	56.500	62.583	58.708
DPR	0.221	0.251	0.306	0.360	0.410	0.495

Dividend smoothing models

- Lintner (1956) partial adjustment:



- Leary and Michaely (2011) incorporates the target directly:



Questions

- Do voluntary DPT disclosers smooth their dividends to the same extent as non-disclosers?
- Do firms with $DPT_{i,t} \times EPS_{i,t} - CDPS_{i,t-1} < 0$, negative $DEV_{i.t}$, smooth more (within), smooth more than (between) those with a positive $DEV_{i.t}$? (3929 obs., 880 firms)
- It is common for Japanese firms to pay dividends when earnings are negative, $EPS_{i,t} < 0$, even for several consecutive years. Do firms with negative earnings smooth more (within), more than those with positive earnings (between)? (432 obs., 283 firms)
- For some firms, $DPT_{i,t} < DPR_{i,t-1}$, the current target is below the lagged realised payout ratio. Do these firms smooth more (within), more than those with a target above the lagged realised (between)? (3446 obs., 855 firms)

Econometric approach

- Random effects within-between regression (REWB) developed from the work of Mundlak (1978).

Within estimate

Between estimate

$$y_{i,t} = \alpha + \beta_W (x_{i,t} - \bar{x}_i) + \beta_B \bar{x}_i + \delta_B z_i + \mu_i + \epsilon_{i,t}$$

Between estimate (time invariant var.)

Random intercept

- REWB is more general model than RE or FE, and allows for joint estimation of within- and between-firm effects.
- "REWB helps avoid the **RE versus FE false dichotomy** often discussed by scholars. Practitioners should consider estimating an REWB model to determine whether there are separate within and between effects to uncover." (Jordan and Philips, 2022)

Pooled OLS estimates

	Dependent Variable: DCDPS				
Model:	(1)	(2)	(3)	(4)	(5)
DEV	0.767***				
	(0.053)				
LAGCDPS		−0.722***	−0.574***	−0.613***	−0.598***
		(0.052)	(0.064)	(0.060)	(0.065)
EPS		0.197***	0.125***	0.142***	0.134***
		(0.016)	(0.014)	(0.015)	(0.015)
Intercept	14.10***	15.90***	8.73***	10.5 ***	10.40***
	(3.93)	(3.34)	(1.82)	(1.58)	(1.69)
Firms	1131	1131	2314	2458	2562
Obs.	7317	7317	22954	30271	32926
R^2	0.81784	0.76021	0.63097	0.66377	0.64544
Adj. R^2	0.81781	0.76014	0.63094	0.66375	0.64542
Sample	Target & payer	Target & payer	No target & payer	All payers	All firms

Random effects within-between estimates

	Dependent variable: DCDPS							
Model:	(6)		(7)		(8)		(9)	
	Within	Between	Within	Between	Within	Between	Within	Between
DEV	0.683***	0.794***	0.575***	0.478***	0.713***	0.811***	0.783***	0.750***
	(0.012)	(0.004)	(0.024)	(0.013)	(0.012)	(0.004)	(0.015)	(0.007)
DEV:DEVSIGN			0.143***	0.382***				
			(0.026)	(0.014)				
DEV:EPSSIGN					−0.720***	−0.420***		
					(0.052)	(0.036)		
DEV:PRTD							−0.206***	0.077***
							(0.020)	(0.010)
Intercept		11.588		11.726		11.284		9.479
		(8.636)		(9.071)		(8.358)		(7.911)
Industry		*Y*		*Y*		*Y*		*Y*
Firms		962		962		962		939
Obs.		7321		7321		7321		6793
AIC		97849		97148		97296		91001
BIC		98083		97396		97545		91247
Marg. R^2		0.824		0.838		0.837		0.829
Cond. R^2		0.837		0.856		0.850		0.835

Conclusion (i)

- Most frequent DPT is 30%, with a range of $\pm$20pp.
- Average DPT has increased since 2006.
- Most firms do not change their target, but more increase than decrease, decreases greater during macroeconomic uncertainty.
- The number of firms disclosing targets increased after the corporate governance code was announced, but decreased with COVID19.
- Substantial variation across industries.
- Firms stating higher targets tend to have higher market valuation multiples and lower leverage.
- Median realised dividend payout ratios are close to target.

Conclusion (ii)

- Disclosing firms smooth dividends less than non-disclosers.
- Smoothing asymmetry:
  - Deviation from target: **Firms with negative DEV smooth less, and smooth less than those with positive DEV.**
  - Profit versus loss: **Within firm those with negative earnings smooth completely, and between firm they smooth more than those with positive earnings.**
  - DPT versus realised DPR: **Within firm, smoothing is greater when the realised DPR exceeds target. Between firm, the effect is small.**

Limitations and further work

- Limitations:
  - Improve text analysis data collection.
  - Small and disjointed sample of disclosers, uneven industry disclosure.
  - Panel estimation of SoA versus aggregation from firm-level.
  - And many more...
- Further work:
  - Relationship of DPT disclosure with governance, disclosure as a signal of governance.
  - Does disclosure signal future corporate and stock performance?
  - ...

Thank you

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