

# Dividend changes, reference points and stock market reactions

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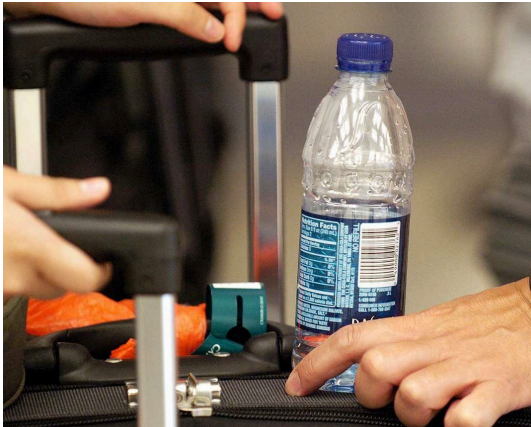
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# MOTIVATIONS

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- Dividend changes
  - A distribution of earnings, often quarterly, to shareholders
  - Sticky, reactions to dividend changes
- Reference points: a person assesses the outcome by its contrast to a reference point
  - Expectation (Abeler et al., 2011, *AER*; Kőszegi & Rabin, 2006, *QJE*)
  - Past experiences (Bordalo et al., 2020, *QJE*)

# MOTIVATIONS



**Figure 1:** Past experience

# MOTIVATIONS

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- The intensity of reference points: the extent to which a reference point has embedded in the mind of investors (Baker et al., 2016, *RFS*)
- The impact of intensity: the potency to cause strong market reactions once the reference point is missed
  - Empirical testings lack rigor
  - The variation of the impact?

## RESEARCH QUESTIONS

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- Does the intensity of reference point really matter?
- Does firms' own strategy affect market reactions (intensity)?
- Does the impact of intensity remain unchanged?

## FINDINGS

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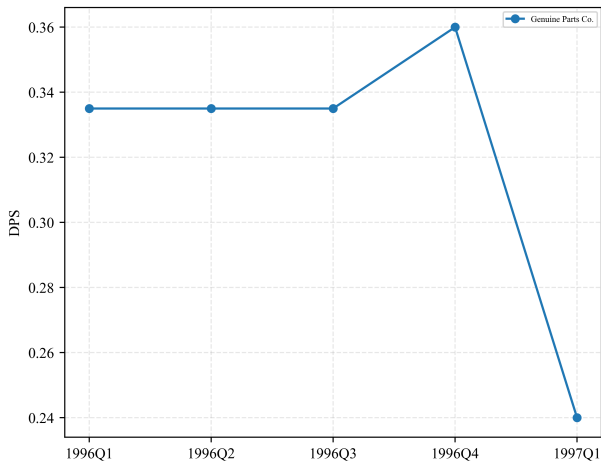
- The results from Baker et al. (2016, *RFS*) are robust: market reactions are strong when dividends miss the reference point
- The intensity matters for dividend cuts
- Firms own strategy can affect market reactions
- The impact of intensity is not fixed
  - Recessions
  - Peers in the market
- Fictitious cuts (Alderson et al., 2021, *JCF*)

## DATA AND VARIABLES CONSTRUCTION

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- Quarterly dividends in the US, 1961 - 2020
- Reference point: the dividend level in the previous quarter
- Intensity: repetitions of that level in the past

## DATA AND VARIABLES CONSTRUCTION



**Figure 2:** Dividends paid by Genuine Parts Co.



## EMPIRICAL RESULTS

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- *Car3* measures the market reaction: the three-day cumulative abnormal return surrounding a dividend declaration day.
- Use the difference in the DPS between two consecutive quarterly dividend payments to determine *Cut*, *Increase* and *Stable*

## DATA AND VARIABLES CONSTRUCTION

	(1) N	(2) mean	(3) sd	(4) min	(5) max
<i>Car3</i>	220,801	0.00226	0.0391	-0.109	0.128
<i>DPSCChange</i>	220,801	0.00291	0.155	-24.25	24.25
<i>Intensity</i>	220,801	6.276	7.689	1	106

**Table 1:** Descriptive statistics

Is the intensity from Baker et al. (2016, *RFS*) a good measure of the strength?

- Whether the measure has an impact on analyst forecasts?
- the DPS forecast for this quarter compared to the DPS from previous quarter: Different forecast, Increase forecast, Decrease forecast

## EMPIRICAL RESULTS

	(1) <i>Different forecast</i>	(2) <i>Decrease forecast</i>	(3) <i>Increase forecast</i>
<i>Intensity</i>	-0.03667*** (-6.21)	-0.07589*** (-6.93)	-0.00808 (-1.52)
<i>LnAge</i>	-0.12499*** (-2.73)	-0.03470 (-0.62)	-0.20643*** (-3.67)
<i>ROA</i>	0.36421 (1.29)	0.51416* (1.80)	-0.00540 (-0.01)
<i>MTB</i>	0.17889*** (6.65)	0.21995*** (7.03)	0.05240 (1.64)
<i>LnAT</i>	0.39322*** (18.07)	0.34765*** (13.13)	0.36709*** (14.94)
<i>Liabilities</i>	-0.11291 (-0.89)	-0.17652 (-1.03)	0.06769 (0.47)
<i>Constant</i>	-4.80011*** (-11.65)	-5.21225*** (-10.90)	-5.39923*** (-13.72)
<i>Observations</i>	57,797	57,797	57,797
<i>Year FE</i>	YES	YES	YES
<i>Industry FE</i>	YES	YES	YES

**Table 2:** Analyst forecasts given different intensities

## EMPIRICAL RESULTS

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Cut</i>	-0.01947*** (-18.63)	-0.01072*** (-9.03)	-0.01067*** (-8.97)
<i>Increase</i>	0.00947*** (33.17)	0.00833*** (21.29)	0.00829*** (21.18)
<i>Intensity</i>	-0.00001 (-0.80)	0.00000 (0.06)	-0.00000 (-0.08)
<i>Intensity</i> × <i>Cut</i>		-0.00157*** (-10.78)	-0.00157*** (-10.76)
<i>Intensity</i> × <i>Increase</i>		0.00023*** (4.25)	0.00024*** (4.32)
Constant	0.00437*** (10.31)	0.00456 (1.50)	0.00282 (0.89)
Observations	220,801	220,801	220,801
R-squared	0.011	0.014	0.015
Controls	YES	YES	YES
Industry FE	NO	NO	YES
Year FE	NO	YES	YES

**Table 3:** Impact of intensity

## EMPIRICAL RESULTS

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Increase</i>	0.00908*** (28.24)	0.00907*** (28.20)	0.00903*** (28.09)
<i>Cut</i>	-0.03604*** (-22.35)	-0.03597*** (-22.29)	-0.03618*** (-22.45)
<i>Four quarters</i>	0.00059*** (2.74)	0.00058*** (2.70)	0.00058*** (2.60)
<i>Cut</i> × <i>Four quarters</i>	0.03082*** (12.44)	0.03084*** (12.45)	0.03089*** (12.46)
Constant	0.00428*** (9.18)	0.00210* (1.86)	0.00200 (1.32)
Observations	176,564	176,564	176,564
R-squared	0.015	0.016	0.017
Controls	YES	YES	YES
Industry FE	NO	YES	YES
Year FE	NO	NO	YES

**Table 4:** Broken streaks

## EMPIRICAL RESULTS

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Intensity</i>	-0.00189*** (-11.36)	-0.00172*** (-9.99)	-0.00166*** (-9.74)
<i>Recession</i>	-0.00807 (-1.58)	-0.00733 (-1.44)	-0.00657 (-1.29)
<i>Intensity</i> × <i>Recession</i>	0.00135*** (3.89)	0.00128*** (3.67)	0.00122*** (3.49)
Constant	-0.02427*** (-145.97)	-0.02463*** (-8.13)	-0.02676*** (-3.03)
Observations	3,237	3,237	3,237
R-squared	0.098	0.104	0.123
Controls	NO	YES	YES
Industry FE	NO	NO	YES
Year FE	YES	YES	YES

**Table 5:** Intensity in recessions

The timing of cuts:

- Quarterly dividend cuts are sorted by declaration dates
- Upper quintile is considered early cuts (*Early*)



## EMPIRICAL RESULTS

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Intensity</i>	-0.00129*** (-7.44)	-0.00115*** (-6.72)	-0.00109*** (-6.34)
<i>Early</i>	0.00549 (1.62)	0.00692** (2.06)	0.00643* (1.87)
<i>Intensity</i> × <i>Early</i>	-0.00109*** (-2.68)	-0.00106*** (-2.70)	-0.00109*** (-2.75)
Constant	-0.03259*** (-6.65)	-0.03111*** (-7.09)	-0.02939*** (-2.99)
Observations	2,610	2,610	2,610
R-squared	0.059	0.107	0.131
Controls	YES	YES	YES
Industry FE	NO	NO	YES
Year FE	NO	YES	YES

**Table 6:** The order of dividend cuts

## ROBUSTNESS

	(1) Car3	(2) Car3	(3) Car3
<i>Cut</i>	-0.03608*** (-22.38)	-0.03601*** (-22.31)	-0.03622*** (-22.47)
<i>Four quarters</i>	0.00060*** (2.75)	0.00059*** (2.71)	0.00059*** (2.62)
<i>Cut</i> × <i>Four quarters</i>	0.02558*** (8.85)	0.02559*** (8.86)	0.02564*** (8.84)
Constant	0.00431*** (9.24)	0.00218* (1.94)	0.00203 (1.34)
Observations	176,351	176,351	176,351
R-squared	0.015	0.016	0.018
Controls	YES	YES	YES
Industry FE	NO	YES	YES
Year FE	NO	NO	YES

**Table 7:** Broken streaks

# CONCLUSIONS

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Main takeaways:

- We find a negative relation between reference point intensity and reactions to dividend cuts
- Firms' own strategies, recessions, and cuts from peers weaken the impact of intensity

## REFERENCES

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-  Abeler, J., Falk, A., Goette, L., & Huffman, D. (2011, *AER*). Reference points and effort provision. *American Economic Review*, 101(2), 470–92.
-  Alderson, M. J., Betker, B. L., & Halford, J. T. (2021, *JCF*). Fictitious dividend cuts in the crsp data. *Journal of Corporate Finance*, 71, 102103.
-  Baker, M., Mendel, B., & Wurgler, J. (2016, *RFS*). Dividends as reference points: A behavioral signaling approach. *The Review of Financial Studies*, 29(3), 697–738.
-  Bordalo, P., Gennaioli, N., Shleifer, A., et al. (2020, *QJE*). Memory, attention, and choice. *The Quarterly Journal of Economics*, 135(3), 1399–1442.

## REFERENCES

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Kőszegi, B., & Rabin, M. (2006, *QJE*). A model of reference-dependent preferences. *The Quarterly Journal of Economics*, 121(4), 1133–1165.

# Empirical results

	(1) N	(2) mean	(3) sd	(4) min	(5) max
<i>Car3</i>	220,801	0.00226	0.0391	-0.109	0.128
<i>DPSCChange</i>	220,801	0.00291	0.155	-24.25	24.25
<i>Intensity</i>	220,801	6.276	7.689	1	106
<i>Cut</i>	220,801	0.0148	0.121	0	1
<i>Stable</i>	220,801	0.850	0.357	0	1
<i>Increase</i>	220,801	0.135	0.342	0	1
<i>Recession</i>	219,255	0.155	0.362	0	1
<i>Four quarters</i>	176,564	0.491	0.500	0	1
<i>LnAge</i>	220,801	2.622	0.822	0.693	4.585
<i>ROA</i>	220,801	0.0668	0.0618	-1.380	4.833
<i>MTB</i>	220,801	1.570	1.018	0.217	18.15
<i>LnAT</i>	220,801	6.091	2.019	0.353	13.59
<i>Liabilities</i>	220,801	0.493	0.190	0.00267	7.712

**Table 8:** Descriptive statistics

# Empirical results

	(1) N	(2) mean	(3) sd	(4) min	(5) max
<i>Car3</i>	3,272	-0.0181	0.0556	-0.109	0.128
<i>DPSCChange</i>	3,272	-0.231	0.860	-24.25	-1.00e-05
<i>Intensity</i>	3,272	5.683	7.336	1	75
<i>Recession</i>	3,237	0.217	0.412	0	1
<i>Four quarters</i>	2,066	0.298	0.458	0	1
<i>LnAge</i>	3,272	2.567	0.834	0.693	4.511
<i>ROA</i>	3,272	0.0569	0.0839	-0.853	0.825
<i>MTB</i>	3,272	1.545	1.229	0.369	18.15
<i>LnAT</i>	3,272	5.842	2.072	0.549	13.59
<i>Liabilities</i>	3,272	0.497	0.198	0.0149	2.609

**Table 9:** Descriptive statistics

## Empirical results

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>	(4) <i>Car3</i>
<i>Small negative</i>	0.00881*** (3.31)	0.00881*** (3.30)		
<i>Large negative</i>	-0.02543*** (-18.39)		-0.02543*** (-18.38)	
<i>Positive</i>	0.00250*** (27.35)			0.00250*** (27.35)
<i>Positive</i> × <i>DPSChange</i>	0.00889*** (5.63)			
<i>Large negative</i> × <i>DPSChange</i>	-0.00681*** (-5.55)			
<i>Small negative</i> × <i>DPSChange</i>	0.65955*** (7.32)			
<i>DPSChange</i>		0.65955*** (7.32)	-0.00681*** (-5.54)	0.00889*** (5.63)
Observations	220,801	1,164	2,108	217,529
R-squared	0.009	0.068	0.156	0.005

**Table 10:** Market reactions on dividend changes



# Empirical results

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Increase</i>	0.00921*** (28.07)	0.00920*** (28.03)	0.00917*** (27.94)
<i>Cut</i>	-0.03742*** (-21.89)	-0.03736*** (-21.83)	-0.03759*** (-21.99)
<i>Five quarters</i>	0.00027 (1.24)	0.00028 (1.26)	0.00021 (0.93)
<i>Cut × Five quarters</i>	0.02876*** (10.95)	0.02879*** (10.96)	0.02893*** (10.98)
Constant	0.00433*** (9.01)	0.00180 (1.43)	0.00118 (0.55)
Observations	165,202	165,202	165,202
R-squared	0.015	0.016	0.018
Controls	YES	YES	YES
Industry FE	NO	YES	YES
Year FE	NO	NO	YES

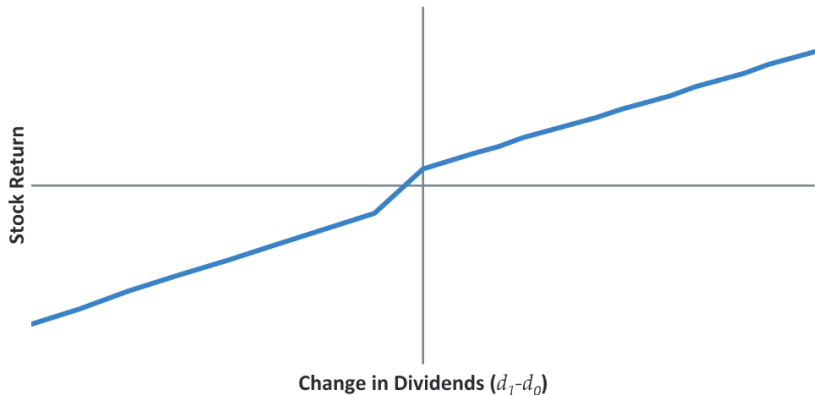
**Table 11:** Broken streaks

# Empirical results

	(1) <i>Car3</i>	(2) <i>Car3</i>	(3) <i>Car3</i>
<i>Increase</i>	0.00926*** (27.90)	0.00924*** (27.88)	0.00922*** (27.80)
<i>Cut</i>	-0.03770*** (-20.57)	-0.03763*** (-20.51)	-0.03781*** (-20.65)
<i>Six quarters</i>	0.00005 (0.23)	0.00006 (0.27)	-0.00001 (-0.05)
<i>Cut</i> × <i>Six quarters</i>	0.02533*** (9.20)	0.02534*** (9.20)	0.02540*** (9.20)
Constant	0.00422*** (8.49)	0.00238* (1.79)	0.01068* (1.86)
Observations	154,854	154,854	154,854
R-squared	0.015	0.016	0.018
Controls	YES	YES	YES
Industry FE	NO	YES	YES
Year FE	NO	NO	YES

**Table 12:** Broken streaks

## Reference dependent reactions



**Figure 3:** Market reactions for cuts (Baker et al., 2016, *RFS*)