Internet Appendix for

"Ambiguity Aversion and Beating Benchmarks: Does it create a pattern?"

Adam Kolasinski, Xu Li, Mark Soliman, Qian Xin

This appendix presents additional analyses and robustness checks lending support to results presented in Kolasinski A, Li X, Soliman M, Xin Q (2022).

IA.1 Discrete jumps in the CAR/Earnings relation under alternative bandwidths

In subsection A of Section IV in the paper, we estimate the discrete jumps in the CAR/Earnings relation on a sample restricted to a plus or minus one cent band around each benchmark. Table IA1 below shows that the results are not sensitive to alternative bandwidths such as two or three cents.

IA.2 Discrete jumps in the CAR/Earnings relation with higher-order polynomial terms of UE

Table IA2 below shows that the results are robust to alternative specifications that additionally control for higher-order polynomial terms of *UE*.

IA.3 Discrete jumps in the CAR/Earnings relation using OLS estimations

In subsection A of Section IV in the paper, we estimate the discrete jumps in the CAR/Earnings relation using the weighted least squares (WLS) approach because it is more appropriate in the case of short-run event study where there exists considerable heterogeneity in the observations. Nonetheless, Table IA3 below shows that our results are robust if the ordinary least squares approach is adopted to estimate the regressions.

IA.4 Computing discretionary accruals using the cash flow method

We also run our main tests on earnings management of suspect firms by computing discretionary accruals using the cash flow statement data rather than balance sheet data. The results

are, tabulated in Table IA4, qualitatively similar to those reported in Table 3 of the paper.

IA.5 Dropping unexpected earnings in the test of earnings management of suspect firms

In our main regressions of discretionary accruals on suspect earnings, we include the level of unexpected earnings (*UE*) as a control variable in our regressions. Since accruals are part of earnings, the dependent variable in this regression plausibly has a causal effect on this control variable, potentially biasing our tests. We therefore re-run these regressions without unexpected earnings as a control. The results, in Table IA5 below, are similar to those reported in Table 3 of the paper.

Table IA1. Discrete Jumps in the CAR/Earnings Relation under Alternative Bandwidths

Panel A. Regressions with the Band of Two Cents			
Neighborhood	(Actual EPS − Minimum) $\in [-0.02, 0.02]$	(Actual EPS − Mean) $\in [-0.02, 0.02]$	(Actual EPS − Maximum) $\in [-0.02, 0.02]$
Dep. Var:	*CAR*	*CAR*	*CAR*
Column:	(1)	(2)	(3)
MBE_{MIN} (b_1)	0.0126***		
	(8.6621)		
MBE_{MEAN} (b_2)		0.0073***	
		(5.9193)	
MBE_{MAX} (b_3)			0.0050***
			(4.6758)
UE	0.8409***	4.3012***	4.8955***
	(2.7706)	(6.1328)	(9.2140)
Controls	YES	YES	YES
Year-Qtr Fes	YES	YES	YES
Firm Fes	YES	YES	YES
N	18,672	32,391	34,743
Adj. R^2	0.1356	0.0971	0.0918
Joint Tests			
	$H_0: b_1 = b_2 = b_3; H_A: b_1 \neq b_2 \neq b_3$	P=0.000	
	$H_0: b_1 = b_3; H_A: b_1 \neq b_3$	P=0.000	
Panel B. Regressions with the Band of Three Cents			
Neighborhood	(Actual EPS − Minimum) $\in [-0.03, 0.03]$	(Actual EPS − Mean) $\in [-0.03, 0.03]$	(Actual EPS − Maximum) $\in [-0.03, 0.03]$
Dep. Var:	*CAR*	*CAR*	*CAR*
Column:	(1)	(2)	(3)
MBE_{MIN} (b_1)	0.0150***		
	(11.4314)		
MBE_{MEAN} (b_2)		0.0091***	
		(7.7298)	
MBE_{MAX} (b_3)			0.0064***
			(6.4743)
UE	0.9097***	3.3309***	4.5987***
	(3.6434)	(5.7648)	(11.3957)
Controls	YES	YES	YES
Year-Qtr Fes	YES	YES	YES
Firm Fes	YES	YES	YES

N	22,621	37,080	41,723
Adj. R^2	0.1316	0.0904	0.0932
Joint Tests			
	H_0: $b_1 = b_2 = b_3$; H_A: $b_1 \neq b_2 \neq b_3$	P=0.000	
	H_0: $b_1 = b_3$; H_A: $b_1 \neq b_3$	P=0.000	

This table shows results of tests of whether there is a discrete jump in the functional relation between earnings announcement return and unexpected earnings precisely at the minimum, consensus, and maximum analyst forecasts. Weighted least squares (WLS) is employed to estimate the regressions. Panel A (B) presents results of the regression model (3) in the paper except that it limits the sample to firm-quarters whose actual earnings are within two (three) cents of the respective forecasts. Specifically, in Panel A (B), the sample in column (1) is restricted to firm-quarters whose actual earnings are below the consensus forecast and within two (three) cents of the minimum analyst forecast. The sample in column (2) is restricted to firm-quarters whose actual earnings are between the minimum and maximum forecasts and within two (three) cents of the consensus forecast. The sample in column (3) is restricted to firm-quarters whose actual earnings are above the consensus forecast and within two (three) cents of the maximum forecast. $MBE_{MIN/MEAN/MAX}$ is an indicator variable equal to 1 if the actual earnings meet or beat the minimum/mean/maximum analyst forecast. F-tests are performed to determine the statistical equality between coefficients of interest. All the control variables are included but not reported in the table. Variable definitions are provided in the Appendix B in the paper. Robust t-statistics, based on standard errors clustered by firm and calendar quarter, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table IA2. Discrete Jumps in the CAR/Earnings Relation with Higher-Order Polynomial Terms of *UE*

Neighborhood	(Actual EPS − Minimum) ∈ [−0.01, 0.01]	(Actual EPS − Mean) ∈ [−0.01, 0.01]	(Actual EPS − Maximum) ∈ [−0.01, 0.01]
Dep. Var:	*CAR*	*CAR*	*CAR*
Column:	(1)	(2)	(3)
Panel A. Controlling for the Quadratic Term of *UE*			
MBE_{MIN} (b_1)	0.0089***		
	(4.9105)		
MBE_{MEAN} (b_2)		0.0054***	
		(3.9514)	
MBE_{MAX} (b_3)			0.0034***
			(2.8405)
UE	0.9438*	6.2240***	5.6290***
	(1.8576)	(5.0198)	(7.3926)
UE^2	5.0740	207.0293	-29.4875***
	(0.7609)	(0.6144)	(-3.0758)
Controls	YES	YES	YES
Year-Qtr Fes	YES	YES	YES
Firm Fes	YES	YES	YES
N	13,050	24,784	24,952
Adj. R^2	0.1492	0.1042	0.0977
Joint Tests			
	H_0: $b_1 = b_2 = b_3$; H_A: $b_1 \neq b_2 \neq b_3$	P=0.032	
	H_0: $b_1 = b_3$; H_A: $b_1 \neq b_3$	P=0.009	
Panel B. Controlling for the Quadratic and Cubic Terms of *UE*			
MBE_{MIN} (b_1)	0.0088***		
	(4.8940)		
MBE_{MEAN} (b_2)		0.0033**	
		(2.2610)	
MBE_{MAX} (b_3)			0.0028**
			(2.3808)
UE	0.9145*	9.6490***	7.4731***
	(1.7875)	(6.1782)	(8.6321)
UE^2	-10.4822	334.0669	17.0454*
	(-0.3459)	(1.0804)	(1.7847)
UE^3	-414.5083	-171884.2765***	-7,818.5798***
	(-0.5148)	(-3.9536)	(-5.3675)
Controls	YES	YES	YES

Year-Qtr Fes	YES	YES	YES
Firm Fes	YES	YES	YES
N	13,050	24,784	24,952
Adj. R^2	0.1492	0.1051	0.1002
Joint Tests			
	H_0: $b_1 = b_2 = b_3$; H_A: $b_1 \neq b_2 \neq b_3$	P=0.013	
	H_0: $b_1 = b_3$; H_A: $b_1 \neq b_3$	P=0.004	

This table shows results of tests of whether there is a discrete jump in the functional relation between earnings announcement return and unexpected earnings precisely at the minimum, consensus, and maximum analyst forecasts. Weighted least squares (WLS) is employed to estimate the regressions. Panel A presents results of the regression model (3) in the paper except that it additionally controls for the quadratic term of *UE* and Panel B for both the quadratic and cubic terms of *UE*. The sample in column (1) is restricted to firm-quarters whose actual earnings are below the consensus forecast and within one cent of the minimum analyst forecast. The sample in column (2) is restricted to firm-quarters whose actual earnings are between the minimum and maximum forecasts and within one cent of the consensus forecast. The sample in column (3) is restricted to firm-quarters whose actual earnings are above the consensus forecast and within one cent of the maximum forecast. $MBE_{MIN/MEAN/MAX}$ is an indicator variable equal to 1 if the actual earnings meet or beat the minimum/mean/maximum analyst forecast. F-tests are performed to determine the statistical equality between coefficients of interest. All the control variables are included but not reported in the table. Variable definitions are provided in the Appendix B in the paper. Robust t-statistics, based on standard errors clustered by firm and calendar quarter, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table IA3. Discrete Jumps in the CAR/Earnings Relation using OLS Regressions

Neighborhood	(Actual EPS − Minimum) ∈ [−0.01, 0.01]	(Actual EPS − Mean) ∈ [−0.01, 0.01]	(Actual EPS − Maximum) ∈ [−0.01, 0.01]
Dep. Var:	*CAR*	*CAR*	*CAR*
Column:	(1)	(2)	(3)
MBE_{MIN} (b_1)	0.0084***		
	(5.0955)		
MBE_{MEAN} (b_2)		0.0070***	
		(4.9586)	
MBE_{MAX} (b_3)			0.0043***
			(3.5748)
UE	0.7329**	5.1151***	4.7137***
	(2.2421)	(5.2037)	(6.1660)
Controls	YES	YES	YES
Year-Qtr Fes	YES	YES	YES
Firm Fes	YES	YES	YES
N	13,050	24,784	24,952
Adj. R^2	0.0888	0.0735	0.0580
Joint Tests			
	H_0: $b_1 = b_2 = b_3$; H_A: $b_1 \neq b_2 \neq b_3$	P=0.099	
	H_0: $b_1 = b_3$; H_A: $b_1 \neq b_3$	P=0.052	

This table shows results of tests of whether there is a discrete jump in the functional relation between earnings announcement return and unexpected earnings precisely at the minimum, consensus, and maximum analyst forecasts. OLS is employed to estimate the regressions. The sample in column (1) is restricted to firm-quarters whose actual earnings are below the consensus forecast and within one cent of the minimum analyst forecast. The sample in column (2) is restricted to firm-quarters whose actual earnings are between the minimum and maximum forecasts and within one cent of the consensus forecast. The sample in column (3) is restricted to firm-quarters whose actual earnings are above the consensus forecast and within one cent of the maximum forecast. $MBE_{MIN/MEAN/MAX}$ is an indicator variable equal to 1 if the actual earnings meet or beat the minimum/mean/maximum analyst forecast. F-tests are performed to determine the statistical equality between coefficients of interest. All the control variables are included but not reported in the table. Variable definitions are provided in the Appendix B in the paper. Robust t-statistics, based on standard errors clustered by firm and calendar quarter, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table IA4. Robustness of Discretionary Accruals Tests using Cash Flow Method

Dep. Var:	*DA*
SUSPECT_MIN (b_1)	0.0030***
	(7.2349)
SUSPECT_MEAN (b_2)	0.0014***
	(4.4639)
SUSPECT_MAX (b_3)	0.0001
	(0.3397)
Test for $b_1 = b_2 = b_3$	P=0.000
Test for $b_1 = b_2$	P=0.000
Test for $b_1 = b_3$	P=0.000
Test for $b_2 = b_3$	P=0.001
Controls	YES
Year-Qtr FEs	YES
Firm FEs	YES
N	99,574
Adj. R^2	0.1003

This table presents results for the tests of whether discretionary accruals are higher for suspect firms. Discretionary accruals are computed from the accrual model where total accruals are defined using cash flow methods. Variable definitions are provided in the Appendix B in the paper. All the control variables are included but not reported in the table. Robust t-statistics, based on standard errors clustered by firm and quarter, are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Table IA5. Discretionary Accruals Tests without Controlling for *UE*

Dep. Var:	*DA*
$SUSPECT_{MIN}$ (b_1)	0.0021***
	(5.6688)
$SUSPECT_{MEAN}$ (b_2)	0.0008***
	(2.7891)
$SUSPECT_{MAX}$ (b_3)	0.0004
	(1.4368)
Test for $b_1 = b_2 = b_3$	P=0.000
Test for $b_1 = b_2$	P=0.001
Test for $b_1 = b_3$	P=0.000
Test for $b_2 = b_3$	P=0.266
Controls	YES
Year-Qtr FEs	YES
Firm FEs	YES
N	108,447
Adj. R^2	0.0692

This table presents results for robustness tests of earnings management of suspect firms without controlling for *UE*. All other control variables are included but not reported in the table. Variable definitions are provided in the Appendix B in the paper. Robust t-statistics are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.