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Article

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Supplement to “Uncertainty measures from partially rounded probabilistic forecast surveys”

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APPENDIX

Table A.1 presents the correlation between the rounding status of FED-SPF participants and their industry classification. Table A.2 shows differences in the MSE across surveys and variables. Tables A.3–A.7 report the results from panel regressions for all outcome variables in the ECB-SPF and the FED-SPF, pooled over the horizon dimension. The estimates for the inflation rate forecasts in the ECB-SPF are presented in Table 4 in the main article. Figure A.1 shows average uncertainty based on the variances from the beta distributions. Figures A.2 and A.3 present the misalignment ratios from equation (18) based on the variances from the beta distributions. Figures A.4–A.5 depict the estimates of β_h over h for each outcome variable that result when either the employed number of bins, $K_{i,t,h}$, or the individual ex ante variance, $\sigma_{i,t,h}^2$, are used as the dependent variable in the model from equation (23). Forecasters are classified as nonrounders based on either $D_{i,t,h}^{\text{most}}$ (first row), $D_{i,t,h}^{\text{all}}$ (second row), or $D_{i,t,h}^{\text{m10}}$ (third row). Figure A.6 presents the estimates for the variances from the beta distributions, $\sigma_{B,i,t,h}^2$, based on either $D_{i,t,h}^{\text{any}}$ (first row) or $D_{i,t,h}^{\text{m5}}$ (second row). Figures A.7 and A.8 show the estimates of β_h when $|e_{i,t,h}|$ or $e_{i,t,h}^2$ are considered as the dependent variable in equation (23). Detailed estimates for the regressions underlying the results in Figures A.4–A.8 including standard errors and goodness-of-fit statistics will be provided upon request.

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TABLE A.1. Industry classification and nonrounders in the FED-SPF

Variable	Scheme	Industry classification		
		$D^{\text{financial}}$	$D^{\text{nonfinancial}}$	D^{other}
Inflation	D^{any}	-0.08	0.10	-0.05
	D^{most}	-0.11	0.12	-0.04
	D^{all}	-0.09	0.10	-0.03
	D^{m5}	0.03	-0.04	0.02
	D^{m10}	0.05	-0.07	0.06
GDP growth	D^{any}	-0.07	0.10	-0.06
	D^{most}	-0.09	0.11	-0.05
	D^{all}	-0.08	0.10	-0.03
	D^{m5}	0.03	-0.03	-0.01
	D^{m10}	0.06	-0.08	0.05
Unemployment	D^{any}	-0.10	0.12	-0.05
	D^{most}	-0.12	0.13	-0.05
	D^{all}	-0.13	0.14	-0.04
	D^{m5}	-0.04	0.03	0.01
	D^{m10}	0.06	-0.09	0.09

Note: This table presents the bivariate correlations between the industry classifications in the FED-SPF and the categorizations for nonrounders for a pooled sample of observations across all forecasters, time periods and forecast horizons. The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts, which are available since 2010Q1 for our purposes.

TABLE A.2. Pooled MSE for the ECB-SPF and the FED-SPF

	Inflation	GDP growth	Unemployment
		Full sample MSE	
ECB-SPF	0.46	1.59	0.48
FED-SPF	0.41	1.28	0.26
		Excluding 2009	
ECB-SPF	0.37	0.77	0.37
FED-SPF	0.36	0.79	0.26

Note: For each outcome variable, this table presents the mean squared forecast errors (MSE) for a pooled sample of observations across all survey participants, time instances and forecast horizons. The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF which are available since 2010Q1 for our purposes. In the bottom panel, we exclude all predictions for the year 2009 from the calculation of the MSE.

TABLE A.3. Pooled regressions for average deviations of real GDP growth histogram characteristics in the ECB-SPF

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$K_{i,t,h}$		$\sigma_{i,t,h}^2$		$\sigma_{B,i,t,h}^2$		$ e_{i,t,h} $		$e_{i,t,h}^2$	
$D_{i,t,h}^{m5}$	4.19 (0.22)	2.45 (0.20)	0.22 (0.02)	-0.02 (0.03)	0.18 (0.02)	-0.04 (0.03)	0.11 (0.03)	0.12 (0.04)	0.44 (0.13)	0.47 (0.17)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=2}$	-0.28 (0.26)	0.03 (0.21)	0.02 (0.03)	0.06 (0.03)	0.02 (0.02)	0.05 (0.02)	-0.03 (0.05)	-0.03 (0.05)	-0.20 (0.26)	-0.20 (0.27)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=3}$	-0.22 (0.27)	0.17 (0.22)	0.10 (0.03)	0.15 (0.03)	0.10 (0.03)	0.14 (0.03)	-0.03 (0.05)	-0.05 (0.05)	-0.23 (0.28)	-0.26 (0.29)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=4}$	-0.33 (0.24)	0.12 (0.21)	0.12 (0.03)	0.19 (0.03)	0.11 (0.03)	0.18 (0.03)	-0.01 (0.06)	-0.02 (0.06)	-0.13 (0.32)	-0.15 (0.32)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=5}$	0.22 (0.22)	0.55 (0.20)	0.25 (0.03)	0.30 (0.03)	0.23 (0.03)	0.28 (0.03)	-0.14 (0.06)	-0.15 (0.06)	-0.56 (0.26)	-0.58 (0.26)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=6}$	0.32 (0.24)	0.65 (0.21)	0.30 (0.04)	0.34 (0.04)	0.28 (0.04)	0.32 (0.04)	-0.20 (0.06)	-0.21 (0.07)	-0.81 (0.33)	-0.82 (0.33)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=7}$	0.30 (0.26)	0.67 (0.23)	0.36 (0.04)	0.41 (0.04)	0.34 (0.04)	0.39 (0.04)	-0.21 (0.06)	-0.23 (0.06)	-0.75 (0.32)	-0.80 (0.33)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=8}$	-0.14 (0.25)	0.41 (0.22)	0.29 (0.04)	0.38 (0.04)	0.27 (0.04)	0.36 (0.04)	-0.21 (0.06)	-0.23 (0.06)	-0.87 (0.31)	-0.92 (0.32)
Constant	2.93 (0.23)	3.75 (0.35)	0.11 (0.03)	0.13 (0.04)	0.08 (0.02)	0.12 (0.04)	0.34 (0.04)	0.47 (0.05)	-0.00 (0.15)	0.18 (0.13)
Observations	7529	7529	7529	7529	7529	7529	7529	7529	7529	7529
Horizon-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forecaster-FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
\bar{R}^2	0.54	0.72	0.38	0.62	0.37	0.61	0.62	0.62	0.53	0.53

Note: This table presents the differences in the real GDP growth histogram characteristics reported by nonrounders and rounders in the ECB-SPF. The explanatory variable $D_{i,t,h}^{m5}$ denotes the preferred integer-based categorization from Section 4. Each regression includes horizon- and time-fixed effects. The even-numbered columns additionally include forecaster-fixed effects. Coefficients are estimated via OLS. Newey and West (1987) standard errors are reported in parentheses. The sample period is 1999Q1–2017Q4.

TABLE A.4. Pooled regressions for average deviations of unemployment histogram characteristics in the ECB-SPF

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$K_{i,t,h}$		$\sigma_{i,t,h}^2$		$\sigma_{B,i,t,h}^2$		$ e_{i,t,h} $		$e_{i,t,h}^2$	
$D_{i,t,h}^{m5}$	4.04 (0.31)	2.15 (0.28)	0.22 (0.03)	0.12 (0.03)	0.18 (0.03)	0.08 (0.02)	0.01 (0.02)	-0.00 (0.02)	0.03 (0.03)	0.04 (0.04)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=2}$	-0.20 (0.34)	0.33 (0.27)	-0.01 (0.03)	0.02 (0.02)	-0.00 (0.03)	0.03 (0.02)	-0.01 (0.03)	-0.00 (0.03)	-0.01 (0.05)	-0.00 (0.05)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=3}$	-0.05 (0.38)	0.47 (0.30)	0.00 (0.03)	0.04 (0.03)	0.01 (0.03)	0.05 (0.02)	0.02 (0.03)	0.03 (0.03)	0.01 (0.06)	0.01 (0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=4}$	0.55 (0.37)	1.24 (0.31)	0.06 (0.03)	0.10 (0.03)	0.06 (0.03)	0.10 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.04 (0.06)	-0.05 (0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=5}$	0.68 (0.33)	1.24 (0.28)	0.10 (0.03)	0.13 (0.02)	0.10 (0.03)	0.13 (0.02)	-0.01 (0.03)	-0.01 (0.03)	-0.04 (0.05)	-0.04 (0.05)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=6}$	0.95 (0.38)	1.59 (0.32)	0.13 (0.04)	0.18 (0.03)	0.14 (0.03)	0.18 (0.03)	0.01 (0.04)	0.02 (0.04)	-0.03 (0.07)	-0.03 (0.07)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=7}$	0.97 (0.41)	1.60 (0.34)	0.17 (0.04)	0.20 (0.04)	0.17 (0.04)	0.20 (0.03)	0.05 (0.04)	0.05 (0.04)	0.07 (0.08)	0.07 (0.08)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=8}$	0.84 (0.40)	1.80 (0.34)	0.18 (0.04)	0.23 (0.04)	0.18 (0.04)	0.23 (0.03)	-0.04 (0.04)	-0.04 (0.04)	-0.12 (0.08)	-0.13 (0.08)
Constant	3.01 (0.45)	1.85 (0.40)	0.11 (0.05)	-0.05 (0.03)	0.09 (0.04)	-0.05 (0.03)	0.14 (0.02)	0.01 (0.02)	0.02 (0.01)	-0.04 (0.03)
Observations	7147	7147	7147	7147	7147	7147	7147	7147	7147	7147
Horizon-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forecaster-FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
\bar{R}^2	0.47	0.67	0.31	0.55	0.31	0.54	0.54	0.55	0.48	0.48

Note: This table presents the differences in the unemployment histogram characteristics reported by nonrounders and rounders in the ECB-SPF. The explanatory variable $D_{i,t,h}^{m5}$ denotes the preferred integer-based categorization from Section 4. Each regression includes horizon- and time-fixed effects. The even-numbered columns additionally include forecaster-fixed effects. Coefficients are estimated via OLS. Newey and West (1987) standard errors are reported in parentheses. The sample period is 1999Q1–2017Q4.

TABLE A.5. Pooled regressions for average deviations of inflation histogram characteristics in the FED-SPF

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$K_{i,t,h}$		$\sigma_{i,t,h}^2$		$\sigma_{B,i,t,h}^2$		$ e_{i,t,h} $		$e_{i,t,h}^2$	
$D_{i,t,h}^{m5}$	2.38 (0.25)	0.90 (0.18)	0.23 (0.07)	-0.13 (0.06)	0.12 (0.05)	-0.13 (0.05)	0.06 (0.04)	0.04 (0.03)	0.08 (0.06)	-0.02 (0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=2}$	0.39 (0.29)	0.32 (0.20)	0.31 (0.11)	0.25 (0.07)	0.23 (0.09)	0.17 (0.07)	0.01 (0.04)	0.01 (0.03)	0.03 (0.07)	0.05 (0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=3}$	0.14 (0.29)	0.19 (0.21)	0.13 (0.09)	0.17 (0.07)	0.09 (0.07)	0.13 (0.06)	-0.02 (0.05)	-0.03 (0.04)	0.01 (0.09)	-0.01 (0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=4}$	0.54 (0.29)	0.56 (0.22)	0.22 (0.10)	0.26 (0.07)	0.11 (0.07)	0.17 (0.06)	-0.04 (0.05)	-0.04 (0.04)	-0.01 (0.08)	-0.00 (0.08)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=5}$	0.50 (0.25)	0.47 (0.19)	0.28 (0.08)	0.27 (0.07)	0.20 (0.07)	0.20 (0.06)	-0.01 (0.05)	-0.03 (0.05)	0.04 (0.09)	0.02 (0.08)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=6}$	0.97 (0.29)	0.68 (0.21)	0.57 (0.12)	0.44 (0.08)	0.43 (0.10)	0.34 (0.07)	0.03 (0.05)	0.03 (0.05)	0.17 (0.12)	0.19 (0.10)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=7}$	0.67 (0.29)	0.77 (0.22)	0.41 (0.10)	0.44 (0.08)	0.31 (0.08)	0.33 (0.07)	-0.03 (0.06)	-0.05 (0.05)	0.06 (0.13)	0.04 (0.10)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=8}$	0.85 (0.30)	0.95 (0.22)	0.48 (0.11)	0.54 (0.08)	0.36 (0.09)	0.41 (0.07)	-0.04 (0.06)	-0.03 (0.05)	0.07 (0.14)	0.10 (0.13)
Constant	2.73 (0.26)	0.69 (0.35)	0.25 (0.07)	0.22 (0.09)	0.16 (0.05)	0.16 (0.07)	0.14 (0.05)	-0.00 (0.06)	-0.11 (0.06)	-0.19 (0.08)
Observations	5188	5188	5188	5188	5188	5188	5188	5188	5188	5188
Horizon-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forecaster-FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
\bar{R}^2	0.38	0.70	0.21	0.61	0.16	0.58	0.21	0.35	0.14	0.36

Note: This table presents the differences in the inflation histogram characteristics reported by nonrounders and rounders in the FED-SPF. The explanatory variable $D_{i,t,h}^{m5}$ denotes the preferred integer-based categorization from Section 4. Each regression includes horizon- and time-fixed effects. The even-numbered columns additionally include forecaster-fixed effects. Coefficients are estimated via OLS. Newey and West (1987) standard errors are reported in parentheses. The sample period is 1999Q1–2017Q4.

TABLE A.6. Pooled regressions for average deviations of real GDP growth histogram characteristics in the FED-SPF

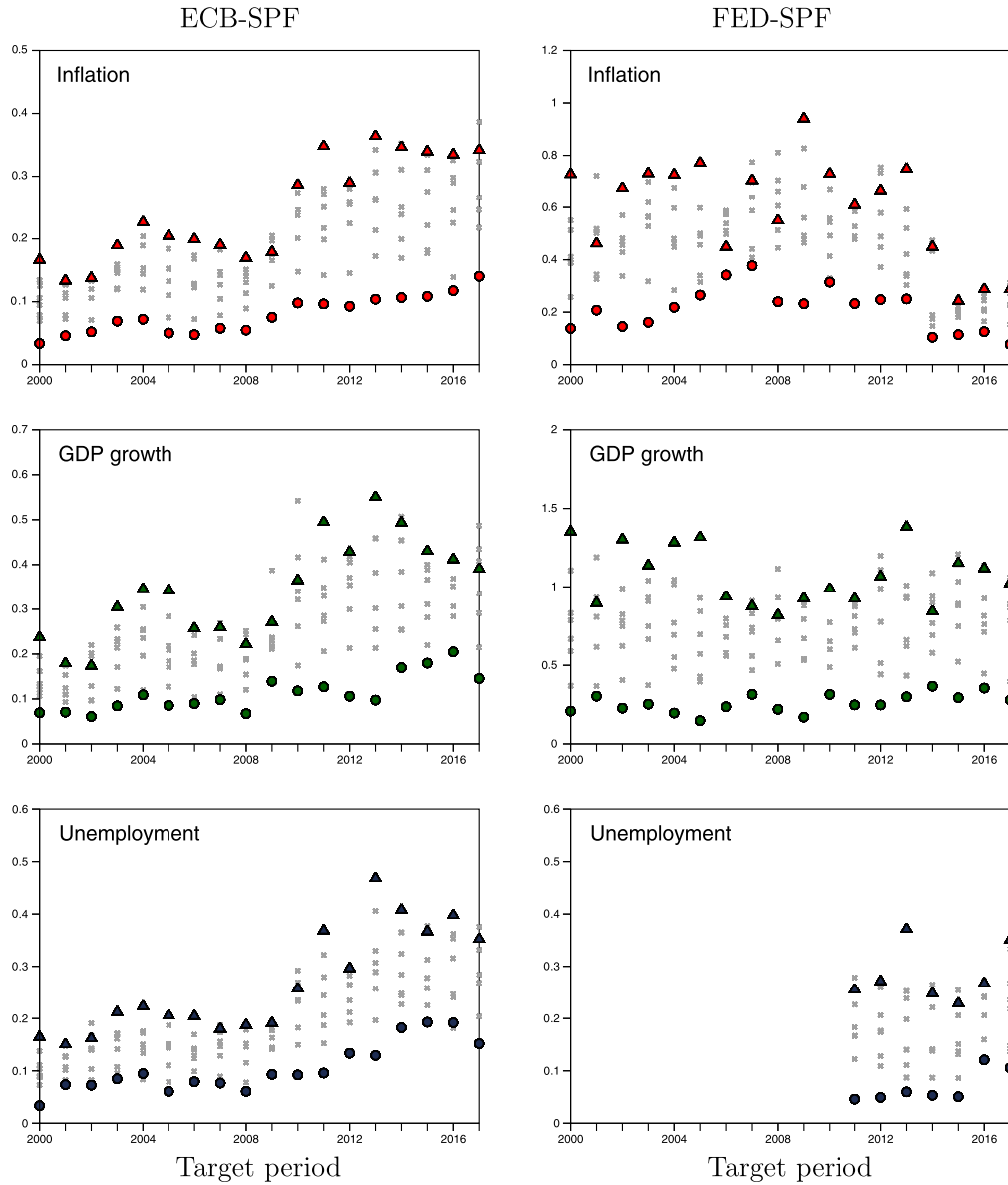
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$K_{i,t,h}$		$\sigma_{i,t,h}^2$		$\sigma_{B,i,t,h}^2$		$ e_{i,t,h} $		$e_{i,t,h}^2$	
$D_{i,t,h}^{m5}$	2.27 (0.23)	0.64 (0.19)	0.28 (0.06)	-0.24 (0.07)	0.14 (0.04)	-0.26 (0.06)	0.01 (0.03)	-0.01 (0.04)	-0.00 (0.10)	-0.03 (0.12)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=2}$	1.01 (0.27)	0.84 (0.22)	0.46 (0.12)	0.37 (0.09)	0.37 (0.10)	0.30 (0.08)	0.03 (0.06)	0.01 (0.05)	0.14 (0.19)	0.09 (0.20)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=3}$	1.21 (0.28)	1.18 (0.22)	0.52 (0.11)	0.53 (0.09)	0.40 (0.09)	0.42 (0.08)	0.02 (0.06)	0.03 (0.06)	0.04 (0.24)	0.06 (0.24)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=4}$	1.21 (0.27)	1.13 (0.22)	0.56 (0.11)	0.46 (0.09)	0.41 (0.10)	0.34 (0.08)	0.10 (0.07)	0.10 (0.08)	0.55 (0.33)	0.55 (0.33)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=5}$	1.32 (0.26)	1.39 (0.22)	0.67 (0.10)	0.64 (0.09)	0.51 (0.09)	0.48 (0.08)	-0.09 (0.06)	-0.09 (0.06)	-0.30 (0.18)	-0.31 (0.19)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=6}$	1.58 (0.27)	1.45 (0.23)	0.85 (0.13)	0.75 (0.10)	0.69 (0.12)	0.62 (0.09)	-0.09 (0.07)	-0.10 (0.07)	-0.37 (0.22)	-0.40 (0.22)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=7}$	1.33 (0.28)	1.38 (0.23)	0.78 (0.12)	0.77 (0.10)	0.60 (0.11)	0.59 (0.09)	0.04 (0.07)	0.05 (0.07)	0.25 (0.31)	0.30 (0.32)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=8}$	1.24 (0.28)	1.22 (0.23)	0.93 (0.14)	0.88 (0.11)	0.76 (0.13)	0.72 (0.10)	-0.04 (0.08)	-0.04 (0.08)	-0.02 (0.34)	-0.05 (0.35)
Constant	2.62 (0.29)	4.54 (0.49)	0.33 (0.14)	1.65 (0.19)	0.27 (0.12)	1.16 (0.19)	1.60 (0.08)	3.50 (0.09)	3.74 (0.33)	9.61 (0.37)
Observations	5368	5368	5368	5368	5368	5368	5368	5368	5368	5368
Horizon-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forecaster-FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
\bar{R}^2	0.44	0.72	0.24	0.63	0.19	0.58	0.52	0.52	0.46	0.46

Note: This table presents the differences in the real GDP growth histogram characteristics reported by nonrounders and rounders in the FED-SPF. The explanatory variable $D_{i,t,h}^{m5}$ denotes the preferred integer-based categorization from Section 4. Each regression includes horizon- and time-fixed effects. The even-numbered columns additionally include forecaster-fixed effects. Coefficients are estimated via OLS. Newey and West (1987) standard errors are reported in parentheses. The sample period is 1999Q1–2017Q4.

TABLE A.7. Pooled regressions for average deviations of unemployment histogram characteristics in the FED-SPF

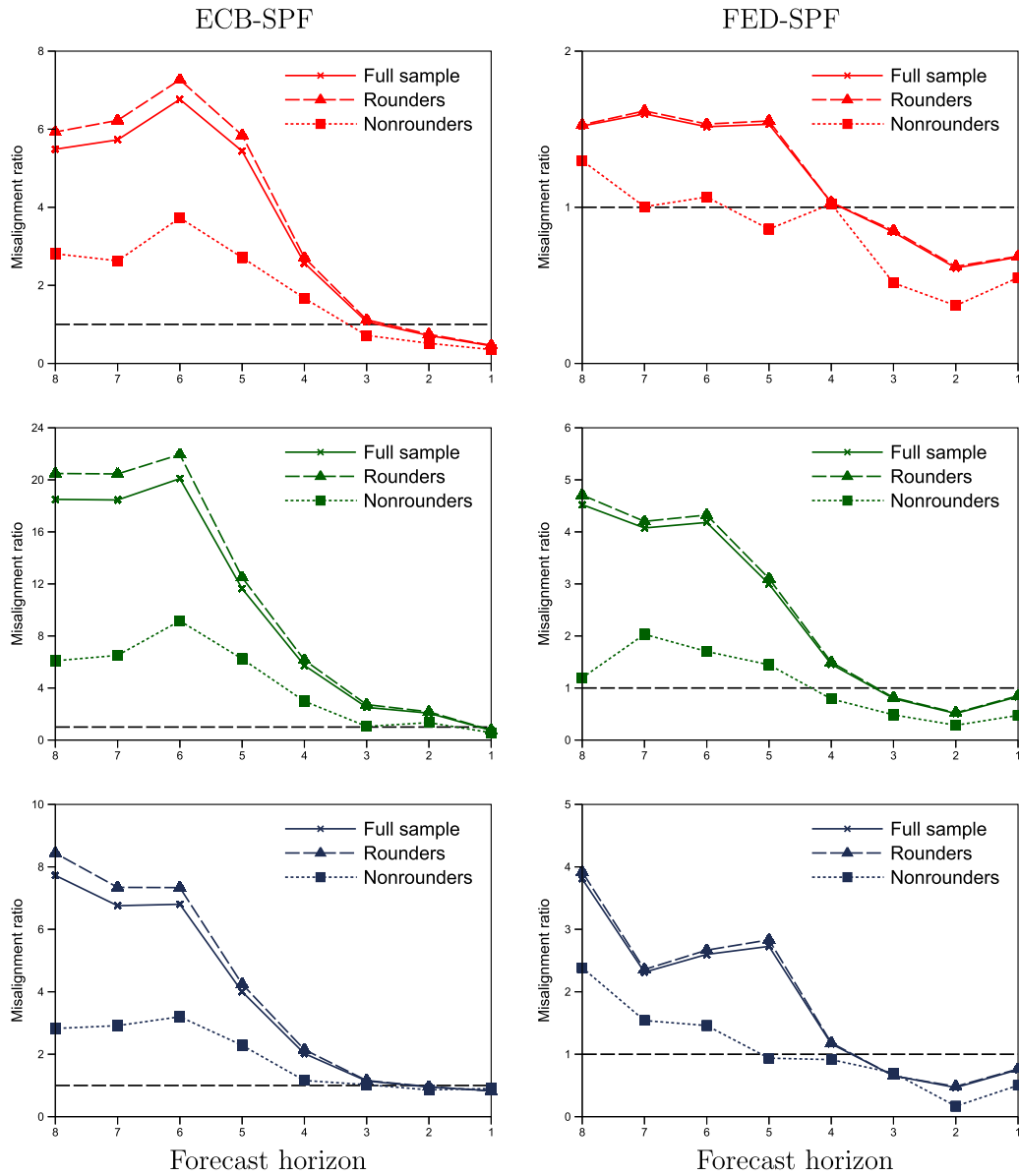
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	$K_{i,t,h}$		$\sigma_{i,t,h}^2$		$\sigma_{B,i,t,h}^2$		$ e_{i,t,h} $		$e_{i,t,h}^2$	
$D_{i,t,h}^{m5}$	1.89	0.98	0.11	0.04	0.05	-0.00	0.02	-0.01	0.03	-0.02
	(0.31)	(0.29)	(0.04)	(0.04)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.04)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=2}$	-0.04	-0.18	-0.01	-0.00	-0.00	0.01	-0.05	-0.05	-0.05	-0.05
	(0.38)	(0.29)	(0.05)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.04)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=3}$	0.40	0.32	0.09	0.10	0.06	0.07	0.04	0.04	0.03	0.03
	(0.38)	(0.32)	(0.06)	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=4}$	0.89	0.63	0.09	0.07	0.05	0.04	-0.00	-0.01	-0.03	-0.05
	(0.37)	(0.32)	(0.05)	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.05)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=5}$	0.83	0.51	0.13	0.11	0.08	0.07	0.01	-0.00	0.00	-0.01
	(0.34)	(0.29)	(0.05)	(0.04)	(0.03)	(0.03)	(0.05)	(0.05)	(0.05)	(0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=6}$	1.31	0.94	0.16	0.14	0.10	0.09	0.06	0.04	0.09	0.06
	(0.38)	(0.33)	(0.07)	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)	(0.07)	(0.06)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=7}$	1.11	1.01	0.16	0.15	0.13	0.13	0.09	0.09	0.15	0.15
	(0.40)	(0.34)	(0.06)	(0.05)	(0.04)	(0.04)	(0.06)	(0.06)	(0.10)	(0.09)
$D_{i,t,h}^{m5} \times D_{i,t,h}^{h=8}$	1.55	1.22	0.22	0.21	0.15	0.15	-0.01	-0.02	-0.00	-0.01
	(0.41)	(0.36)	(0.08)	(0.06)	(0.05)	(0.04)	(0.06)	(0.06)	(0.09)	(0.09)
Constant	2.76	1.32	0.07	-0.17	0.05	-0.04	0.03	-0.01	-0.08	-0.14
	(0.26)	(0.18)	(0.04)	(0.02)	(0.02)	(0.02)	(0.05)	(0.02)	(0.06)	(0.01)
Observations	2056	2056	2056	2056	2056	2056	2056	2056	2056	2056
Horizon-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time-FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forecaster-FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
\bar{R}^2	0.43	0.70	0.22	0.57	0.20	0.54	0.41	0.47	0.26	0.33

Note: This table presents the differences in the unemployment histogram characteristics reported by nonrounders and rounders in the FED-SPF. The explanatory variable $D_{i,t,h}^{m5}$ denotes the preferred integer-based categorization from Section 4. Each regression includes horizon- and time-fixed effects. The even-numbered columns additionally include forecaster-fixed effects. Coefficients are estimated via OLS. Newey and West (1987) standard errors are reported in parentheses. The sample period is 2010Q1–2017Q4.



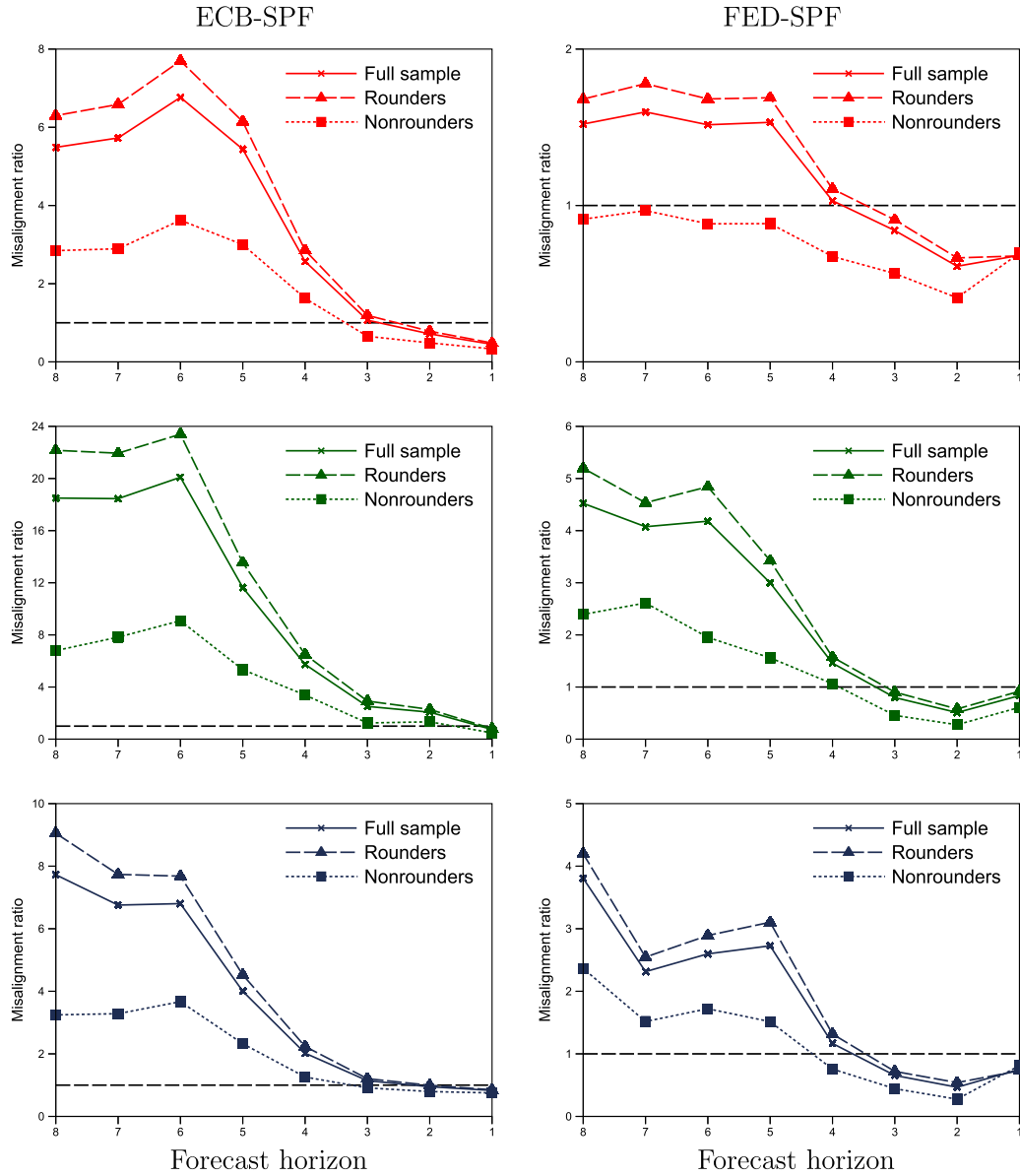
Notes: The graphs depict the time series of the cross-sectional average across the h -step-ahead variances from the individual beta distributions for **inflation** (first row), **output growth** (second row), and **unemployment** (third row) in the Euro area and the U.S., that is, $\sigma_{B,t,h}^2$. Triangles “ \triangle ” and bullets “ \bullet ” indicate the eight- and one-step-ahead average variances, respectively. Crosses “ \times ” indicate the average variances for the intermediate forecast horizons. The horizontal axis depicts the target year. The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.1. Average ex ante uncertainty based on beta distributions.



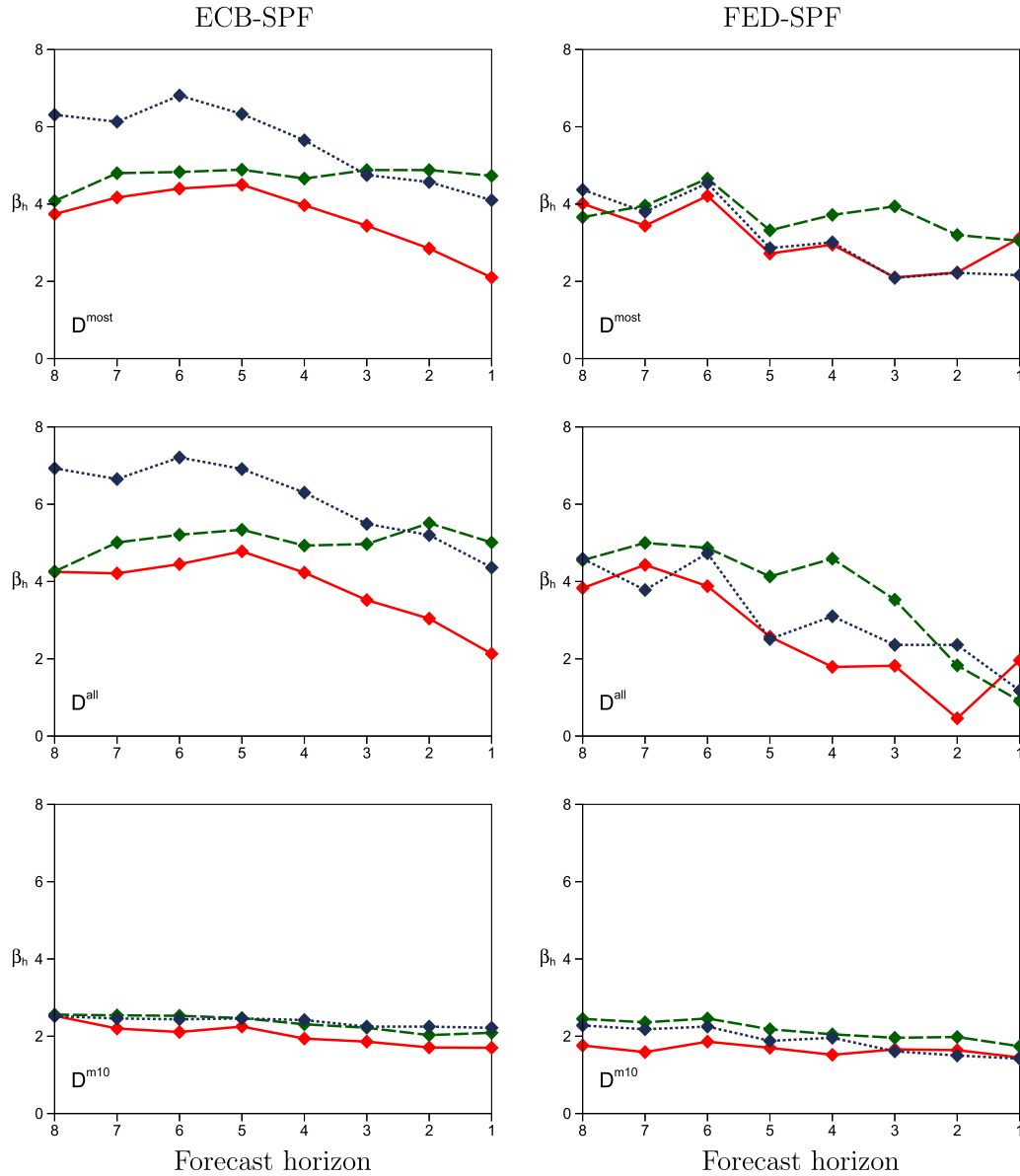
Notes: Each plot depicts the misalignment ratio m_h from equation (18) for inflation (first row), output growth (second row), and unemployment (third row) in the ECB- (first column) and FED-SPF (second column). In addition to the average ratio for the entire cross-section (solid line), each plot depicts separate ratios for rounders (dashed line) and nonrounders (dotted line). Nonrounders are classified by means of $D_{i,t,h}^{any}$. The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.2. Variance misalignment in the SPF data based on beta distributions (decimal-based categorization).



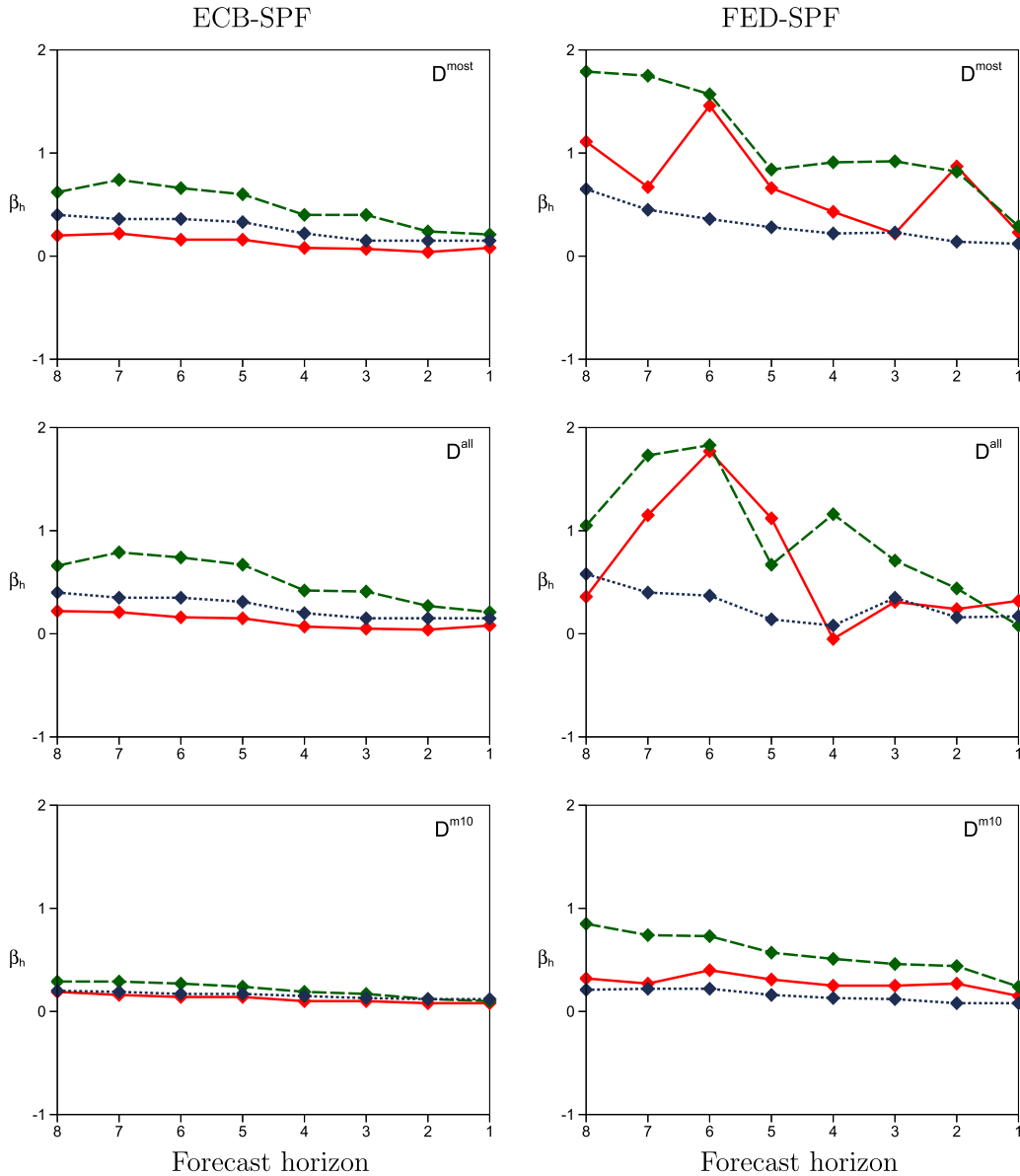
Notes: Each plot depicts the misalignment ratio m_h from equation (18) for inflation (first row), output growth (second row), and unemployment (third row) in the ECB- (first column) and FED-SPF (second column). In addition to the average ratio for the entire cross-section (solid line), each plot depicts separate ratios for rounders (dashed line) and nonrounders (dotted line). Nonrounders are classified by means of $D_{i,t,h}^{m5}$. The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.3. Variance misalignment in the SPF data based on beta distributions (integer-based categorization).



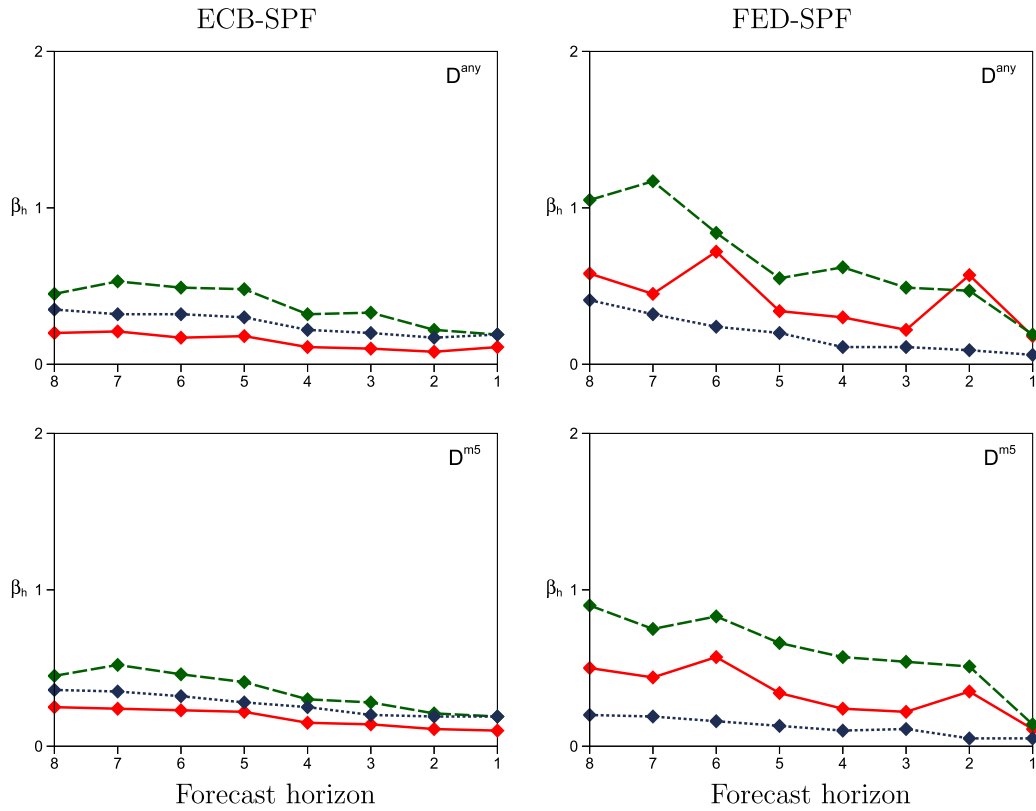
Notes: For each forecast horizon, the graphs depict the difference in the number of bins used by non-rounders and rounders. In particular, each marker denotes an estimate of the slope coefficient, β_h , based on the h -step-ahead predictions for inflation (solid), output growth (dashed), and unemployment (dotted) when $K_{i,t,h}$ is considered as the dependent variable in equation (23). The explanatory variable $D_{i,t,h}^{\mathcal{R}} \in \{D_{i,t,h}^{\text{most}}, D_{i,t,h}^{\text{all}}, D_{i,t,h}^{\text{m10}}\}$ denotes one of the decimal- or integer-based categorizations from Section 4 that are not considered in the main text. Each regression includes time-fixed effects. Coefficients are estimated via OLS. We apply the variance-covariance estimator of Newey and West (1987). The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.4. Average deviations in the number of bins used by nonrounders and rounders (other categorizations).



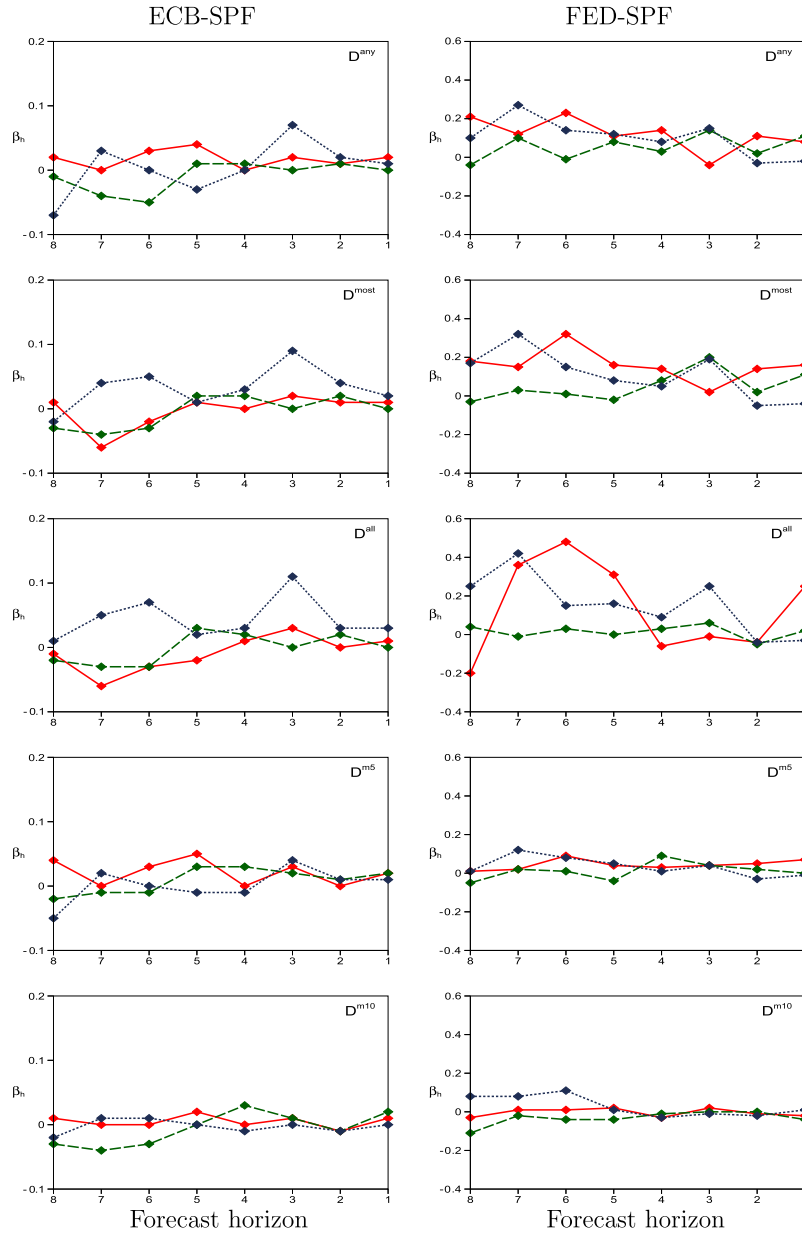
Notes: For each forecast horizon, the graphs depict the difference in the ex ante variances reported by nonrounders and rounders. In particular, each marker denotes an estimate of the slope coefficient, β_h , based on the h -step-ahead predictions for inflation (solid), output growth (dashed), and unemployment (dotted) when $\sigma_{i,t,h}^2$ is considered as the dependent variable in equation (23). The explanatory variable $D_{i,t,h}^{\mathcal{R}} \in \{D_{i,t,h}^{\text{most}}, D_{i,t,h}^{\text{all}}, D_{i,t,h}^{\text{m10}}\}$ denotes one of the decimal- or integer-based categorizations from Section 4 that are not considered in the main text. Each regression includes time-fixed effects. Coefficients are estimated via OLS. We apply the variance-covariance estimator of Newey and West (1987). The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.5. Average deviations in the variances reported by nonrounders and rounders (other categorizations).



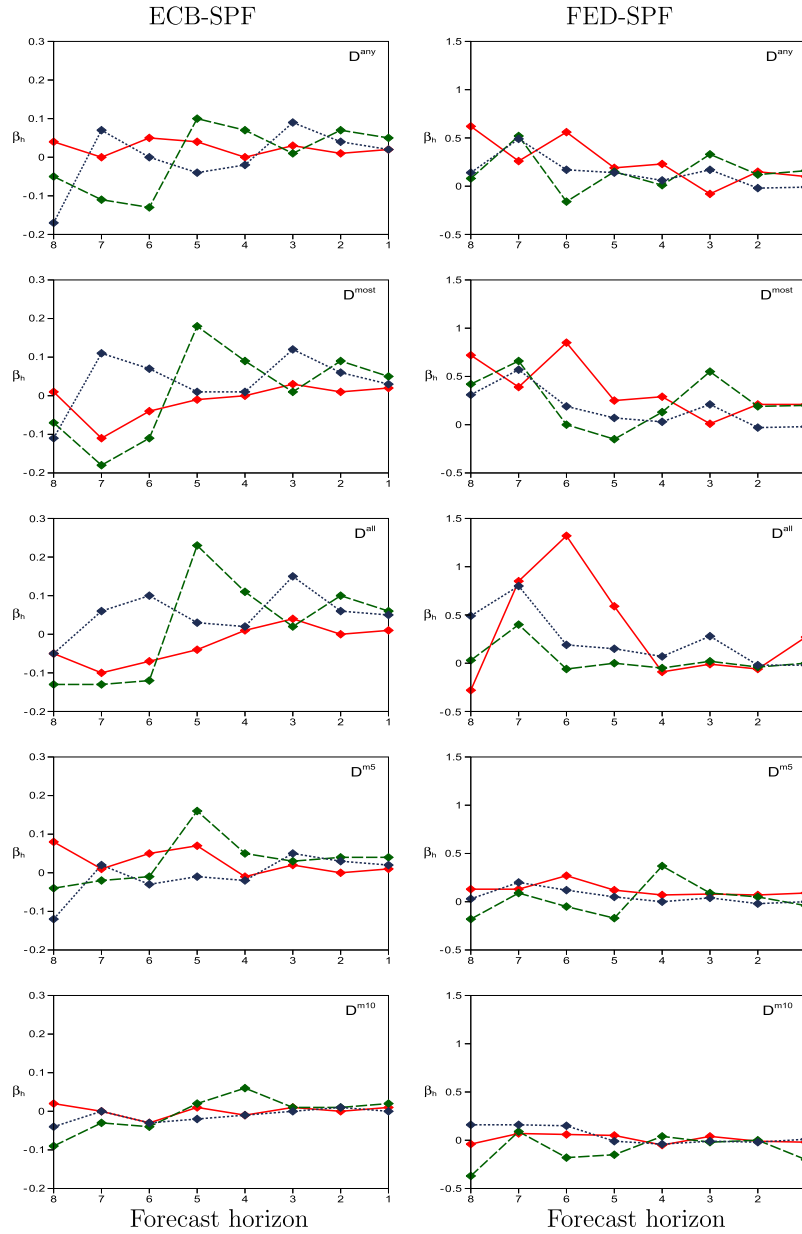
Notes: For each forecast horizon, the graphs depict the difference in the ex ante variances based on the beta distributions reported by nonrounders and rounders. In particular, each marker denotes an estimate of the slope coefficient, β_h , based on the h -step-ahead predictions for inflation (solid), output growth (dashed), and unemployment (dotted) when $\sigma_{B,i,t,h}^2$ is considered as the dependent variable in equation (23). The explanatory variable $D_{i,t,h}^R \in \{D_{i,t,h}^{any}, D_{i,t,h}^{m5}\}$ denotes either the preferred decimal- (first row) or integer-based (second row) categorization from Section 4. Each regression includes time-fixed effects. Coefficients are estimated via OLS. We apply the variance-covariance estimator of Newey and West (1987). The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.6. Average deviations in the variances from beta distributions reported by non-rounders and rounders.



Notes: For each forecast horizon, the graphs depict the difference in the ex post absolute forecast errors of nonrounders and rounders. In particular, each marker denotes an estimate of the slope coefficient, β_h , based on the h -step-ahead predictions for inflation (solid), output growth (dashed), and unemployment (dotted) when $|e_{i,t,h}|$ is considered as the dependent variable in equation (23). The explanatory variable $D_{i,t,h}^R \in \{D_{i,t,h}^{\text{any}}, D_{i,t,h}^{\text{most}}, D_{i,t,h}^{\text{all}}, D_{i,t,h}^{\text{m5}}, D_{i,t,h}^{\text{m10}}\}$ denotes one of the decimal- or integer-based categorizations from Section 4. Each regression includes time-fixed effects. Coefficients are estimated via OLS. We apply the variance-covariance estimator of Newey and West (1987). The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.7. Average deviations in the absolute forecast errors of nonrounders and rounders.



Notes: For each forecast horizon, the graphs depict the difference in the ex post squared forecast errors of nonrounders and rounders. In particular, each marker denotes an estimate of the slope coefficient, β_h , based on the h -step-ahead predictions for inflation (solid), output growth (dashed), and unemployment (dotted) when $e_{i,t,h}^2$ is considered as the dependent variable in equation (23). The explanatory variable $D_{i,t,h}^{\mathcal{R}} \in \{D_{i,t,h}^{\text{any}}, D_{i,t,h}^{\text{most}}, D_{i,t,h}^{\text{all}}, D_{i,t,h}^{\text{m5}}, D_{i,t,h}^{\text{m10}}\}$ denotes one of the decimal- or integer-based categorizations from Section 4. Each regression includes time-fixed effects. Coefficients are estimated via OLS. We apply the variance-covariance estimator of Newey and West (1987). The sample period is 1999Q1–2017Q4, except for the unemployment rate forecasts from the FED-SPF, which are available since 2010Q1 for our purposes.

FIGURE A.8. Average deviations in the squared forecast errors of nonrounders and rounders.

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