Supplement for Half-Panel Jackknife Fixed Effects Estimation of Panels with Weakly Exogenous Regressors*

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Abstract

This supplement provides complete set of tables of the Monte Carlo simulation results for the above paper.

1 Data generating process

Observations on y_{it} and x_{it} are generated *jointly* by

$$y_{it} = \mu_i + \delta_t + \lambda_y y_{i,t-1} + (1 - \lambda_y)\beta x_{it} + u_{it}, \tag{1}$$

and

$$x_{it} = (1 - \lambda_x)\mu_{ix} + (1 - \lambda_x)\kappa_x y_{i,t-1} + \lambda_x x_{i,t-1} + v_{it}, \tag{2}$$

for $i = 1, 2, \ldots, N$ and $t = -99, -98, \ldots, 0, 1, 2, \ldots, T$, using $y_{i,-100} = x_{i,-100} = 0$ as the starting values. The first 100 time observations ($t = -99, -98, \ldots, 0$) are discarded. The fixed effects and the idiosyncratic errors are generated as:

$$\mu_{ix} \sim IID\mathcal{N}(1,1), \qquad \mu_i = \mu_{ix} + \eta_{yi}, \qquad \eta_{yi} \sim IID\mathcal{N}(1,1), \tag{3}$$

$$v_{it} \sim IID\mathcal{N}\left(0, \sigma_{vi}^2\right), \quad \sigma_{vi}^2 = 0.5 + 0.25\eta_{vi}^2, \quad \eta_{vi}^2 \sim IID\chi^2(2), \tag{4}$$

$$u_{it} \sim IID\mathcal{N}\left(0, \sigma_{ui}^2\right), \quad \sigma_{ui}^2 = 0.5 + 0.25\eta_{ui}^2, \quad \eta_{ui}^2 \sim IID\chi^2(2). \tag{5}$$

This set up allows the fixed effects in the y_{it} and x_{it} equations to be correlated, which in turn induces correlation between μ_i and x_{it}. For the time effects, δ_t, we consider three possibilities: no time effects, linear time effects, and quadratic time effects, namely

$$\delta_t = 0,\ 0.025t, \text{ or } 0.025t - 0.001t^2. \tag{6}$$

We consider three values for λ_y, representing a "static" panel regression with $\lambda_y = 0$, and two dynamic panel regressions with a moderate and high values for $\lambda_y \neq 0$:

$$\lambda_y = 0,\ 0.4, \quad \text{or} \quad 0.8. \tag{7}$$

*The views expressed in this paper are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Dallas.

We also consider three values for the feedback coefficient, κ_x (no feedbacks, a low degree of feedbacks, and a medium degree of feedbacks):

$$\kappa_x = 0,\ 0.2, \quad \text{or} \quad 0.4. \tag{8}$$

Throughout we set $\beta = 0.5$ and $\lambda_x = 0.25$.

In total, we conducted 27 experiments covering all combinations of δ_t, λ_y and κ_x. All experiments were carried out for all $N \in \{30, 60, 100, 200, 500, 1000\}$ and $T \in \{30, 60, 100, 200\}$ combinations, with the number of replications set to $R = 2,000$.

2 Experiments without lags of the dependent variable

In the case where $\lambda_y = 0$, *i.e.*, experiments 1 – 9, the parameter of interest, β (= 0.5), is estimated using the following four estimators:

1. **FE estimator** $\hat{\beta}_{FE}$. In experiments without time effects ($\delta_t = 0$), the FE estimator is based on the panel regression

$$y_{it} = \mu_i + \beta x_{it} + e_{it}. \tag{9}$$

When $\delta_t = 0.025t$ or $0.025t - 0.001t^2$, the FE estimator is based on

$$y_{it} = \mu_i + gt + \beta x_{it} + e_{it}. \tag{10}$$

Note that when $\delta_t = 0.025t - 0.001t^2$, the panel regression model (10) is mis-specified.

2. **Half-panel jackknife FE estimator** $\tilde{\beta}_{FE}$.

3. **FE-TE estimator** $\hat{\beta}_{FE-TE}$ is based on

$$y_{it} = \mu_i + \delta_t + \beta x_{it} + e_{it}. \tag{11}$$

4. **Half-panel jackknife FE-TE estimator** $\tilde{\beta}_{FE-TE}$.

3 Experiments with lagged dependent variables

In these experiments $\lambda_y = 0.4$ or 0.8, *i.e.*, experiments 10 – 27, and the parameter of interest is given by the long-run coefficient, $\beta = -b/\phi$, where b and ϕ are estimated using the following dynamic panel regressions:

1. **FE estimator** $\hat{\beta}_{FE}$. When $\delta_t = 0$, $\hat{\beta}_{FE}$ is based on

$$\Delta y_{it} = \mu_i + \phi y_{i,t-1} + b x_{it} + e_{it}, \tag{12}$$

and when $\delta_t = 0.025t$ or $0.025t - 0.001t^2$, $\hat{\beta}_{FE}$ is based on:

$$\Delta y_{it} = \mu_i + gt + \phi y_{i,t-1} + b x_{it} + e_{it}. \tag{13}$$

As before, we note that when $\delta_t = 0.025t - 0.001t^2$, the model (13) is mis-specified. β is estimated by

$$\hat{\beta}_{FE} = -\frac{\widehat{b}_{FE}}{\widehat{\phi}_{FE}}. \tag{14}$$

The estimator for the asymptotic variance of $\hat{\beta}_{FE}$ is obtained by the delta method:

$$\widehat{AsyVar}\left(\hat{\beta}_{FE}\right) = \left(\frac{\widehat{b}_{FE}}{\widehat{\phi}_{FE}^2}, -\frac{1}{\widehat{\phi}_{FE}}\right) \widehat{AsyVar}\begin{pmatrix} \widehat{\phi}_{FE} \\ \widehat{b}_{FE} \end{pmatrix} \left(\frac{\widehat{b}_{FE}}{\widehat{\phi}_{FE}^2}, -\frac{1}{\widehat{\phi}_{FE}}\right)'. \tag{15}$$

2. **Half-panel jackknife FE estimator** $\tilde{\beta}_{FE}$. We first compute the half-panel bias-corrected FE estimators $\tilde{\phi}_{FE}$ and $\tilde{b}_{FE}$ based on $\widehat{\phi}_{FE}$ and $\widehat{b}_{FE}$. $\tilde{\beta}_{FE}$ is obtained as

$$\tilde{\beta}_{FE} = -\frac{\tilde{b}_{FE}}{\tilde{\phi}_{FE}},$$

and the estimator for the asymptotic variance of $\tilde{\beta}_{FE}$ is obtained by the delta method similar to (15).

3. **FE-TE estimator** $\hat{\beta}_{FE-TE}$ is based on

$$\Delta y_{it} = \mu_i + \delta_t + \phi y_{i,t-1} + b x_{it} + e_{it}. \tag{16}$$

As in the case of $\hat{\beta}_{FE}$, $\hat{\beta}_{FE-TE} = -\widehat{b}_{FE-TE}/\widehat{\phi}_{FE-TE}$ and its asymptotic variance is obtained by the delta method, as in (15).

4. **Half-panel jackknife FE-TE estimator** $\tilde{\beta}_{FE-TE}$ is computed in the same way as $\tilde{\beta}_{FE}$, but FE-TE estimators are used instead of the FE estimators.

4 Experiments with unbalanced panels

We also consider unbalanced panels by dropping $[T/5]$ observations from the beginning and from the end of the sample period for units $i = 1, 2, ..., [N/4]$, and $[T/3]$ observations from the beginning and from the end of the sample periods for units $i = [N/4] + 1, [N/4] + 2, ..., [N/2]$, where $[a]$ denotes the integer part of a.

5 Experiments with $N = 48$ and $T = 12$

We also consider the case when N and T are only respectively 48 and 12, as in the empirical illustration (Section 6.2). We repeat experiment 9 ($\delta_t = 0.025t - 0.001t^2$, $\kappa_x = 0.4$ and $\lambda_y = 0$) with $N \in \{30, 48, 60, 100, 200, 500, 1000\}$ and $T \in \{12, 30, 60, 100, 200\}$. The results are reported in Table A.55.

6 Monte Carlo Results

The following table summarizes individual experiments and makes it easier to navigate through the Monte Carlo tables and figures reported in this supplement.

List of Experiments

	DGP parameters			Labeling of tables and figures			
				Balanced Panel		Unbalanced Panel	
Exp.	δ_t	κ_x	λ_y	Tables	Figures	Tables	Figures
	Experiments without lagged dependent variable						
1	0	0	0	A.1	A.1	A.28	A.28
2	0	0.2	0	A.2	A.2	A.29	A.29
3	0	0.4	0	A.3	A.3	A.30	A.30
4	$0.025t$	0	0	A.4	A.4	A.31	A.31
5	$0.025t$	0.2	0	A.5	A.5	A.32	A.32
6	$0.025t$	0.4	0	A.6	A.6	A.33	A.33
7	$0.025t - 0.001t^2$	0	0	A.7	A.7	A.34	A.34
8	$0.025t - 0.001t^2$	0.2	0	A.8	A.8	A.35	A.35
9	$0.025t - 0.001t^2$	0.4	0	A.9	A.9	A.36	A.36
	Experiments with lagged dependent variable						
10	0	0	0.4	A.10.1-2	A.10	A.37.1-2	A.37
11	0	0.2	0.4	A.11.1-2	A.11	A.38.1-2	A.38
12	0	0.4	0.4	A.12.1-2	A.12	A.39.1-2	A.39
13	$0.025t$	0	0.4	A.13.1-2	A.13	A.40.1-2	A.40
14	$0.025t$	0.2	0.4	A.14.1-2	A.14	A.41.1-2	A.41
15	$0.025t$	0.4	0.4	A.15.1-2	A.15	A.42.1-2	A.42
16	$0.025t - 0.001t^2$	0	0.4	A.16.1-2	A.16	A.43.1-2	A.43
17	$0.025t - 0.001t^2$	0.2	0.4	A.17.1-2	A.17	A.44.1-2	A.44
18	$0.025t - 0.001t^2$	0.4	0.4	A.18.1-2	A.18	A.45.1-2	A.45
19	0	0	0.8	A.19.1-2	A.19	A.46.1-2	A.46
20	0	0.2	0.8	A.20.1-2	A.20	A.47.1-2	A.47
21	0	0.4	0.8	A.21.1-2	A.21	A.48.1-2	A.48
22	$0.025t$	0	0.8	A.22.1-2	A.22	A.49.1-2	A.49
23	$0.025t$	0.2	0.8	A.23.1-2	A.23	A.50.1-2	A.50
24	$0.025t$	0.4	0.8	A.24.1-2	A.24	A.51.1-2	A.51
25	$0.025t - 0.001t^2$	0	0.8	A.25.1-2	A.25	A.52.1-2	A.52
26	$0.025t - 0.001t^2$	0.2	0.8	A.26.1-2	A.26	A.53.1-2	A.53
27	$0.025t - 0.001t^2$	0.4	0.8	A.27.1-2	A.27	A.54.1-2	A.54

Table A.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 1)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	0.05	0.06	0.07	-0.01	3.39	2.37	1.76	1.27	5.45	5.80	4.65	5.10
60	0.02	0.01	0.00	-0.04	2.35	1.65	1.24	0.91	5.95	5.70	4.20	5.50
100	0.03	0.01	0.01	-0.02	1.81	1.27	0.96	0.69	5.80	5.10	4.60	5.40
200	0.02	0.00	0.00	-0.01	1.25	0.90	0.68	0.49	5.10	5.20	4.80	5.00
500	0.02	0.01	0.01	0.00	0.80	0.57	0.44	0.30	5.10	5.30	4.80	5.25
1000	0.00	0.00	0.00	-0.01	0.59	0.41	0.31	0.22	5.75	5.45	5.20	5.40
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.01	0.05	0.07	-0.02	3.46	2.39	1.78	1.28	3.90	4.75	4.30	5.35
60	-0.02	0.01	0.00	-0.04	2.41	1.67	1.25	0.92	4.45	4.65	3.90	5.50
100	0.01	0.01	0.00	-0.02	1.85	1.28	0.97	0.70	4.70	3.90	4.70	5.35
200	0.00	0.00	0.00	-0.01	1.30	0.91	0.69	0.49	4.30	4.60	4.45	5.00
500	0.01	0.01	0.01	0.00	0.83	0.58	0.44	0.31	3.75	4.45	4.25	4.75
1000	0.00	0.00	0.00	-0.01	0.61	0.41	0.31	0.22	5.45	5.15	4.85	5.00
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.02	0.04	0.07	-0.02	3.43	2.40	1.79	1.29	6.30	6.15	5.70	5.40
60	0.00	0.00	-0.01	-0.04	2.37	1.66	1.25	0.91	6.15	5.60	4.40	5.75
100	0.03	0.01	0.00	-0.02	1.82	1.28	0.96	0.70	5.50	5.40	4.75	5.60
200	0.02	0.00	0.00	-0.01	1.26	0.90	0.68	0.49	5.15	5.25	4.80	5.00
500	0.02	0.01	0.01	0.00	0.80	0.58	0.44	0.30	5.00	5.45	4.90	5.10
1000	0.00	0.00	0.00	-0.01	0.59	0.41	0.31	0.22	5.95	5.40	5.40	5.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.52	2.42	1.81	1.29	4.50	5.35	4.95	5.60
60	-0.03	0.00	-0.01	-0.04	2.44	1.68	1.26	0.92	4.60	4.80	3.90	5.90
100	0.01	0.01	0.00	-0.02	1.87	1.28	0.97	0.70	4.80	4.10	4.95	5.30
200	0.00	0.00	0.00	-0.01	1.30	0.91	0.69	0.49	4.35	4.55	4.50	5.10
500	0.01	0.01	0.01	0.00	0.83	0.58	0.44	0.31	3.95	4.65	4.25	4.90
1000	0.00	0.00	0.00	-0.01	0.61	0.41	0.31	0.22	5.35	5.00	4.75	5.10

Notes: DGP is given by $\Delta y_{it} = \mu_i + \delta_t - (1-\lambda_y) y_{i,t-1} + (1-\lambda_y)\beta x_{it} + u_{it}$, where $x_{it} = (1-\lambda_x)\mu_{ix} + (1-\lambda_x)\kappa_x y_{i,t-1} + \lambda_x x_{i,t-1} + v_{it}$, $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0$, $\mu_i = \mu_{ix} + \eta_{yi}$, $\eta_{yi} \sim IID\mathcal{N}(1,1)$, $u_{it} \sim IID\mathcal{N}(0, \sigma^2_{yi})$, $\sigma^2_{ui} = 0.5 + 0.25\eta^2_{ui}$, $\eta^2_{ui} \sim IID\chi^2(2)$, $\lambda_x = 0.25$, $\kappa_x = 0$, $\mu_{ix} \sim IID\mathcal{N}(1,1)$, $v_{it} \sim IID\mathcal{N}(0, \sigma^2_{vi})$, $\sigma^2_{vi} = 0.5 + 0.25\eta^2_{vi}$, $\eta^2_{vi} \sim IID\chi^2(2)$. $R = 2000$. FE and half-panel jackknifed FE are based on equation (9): $y_{it} = \mu_i + \beta x_{it} + u_{it}$. FE-TE and half-panel jackknifed FE-TE are based on equation (11): $y_{it} = \mu_i + \delta_t + \beta x_{it} + u_{it}$.

Figure A.1: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 1)

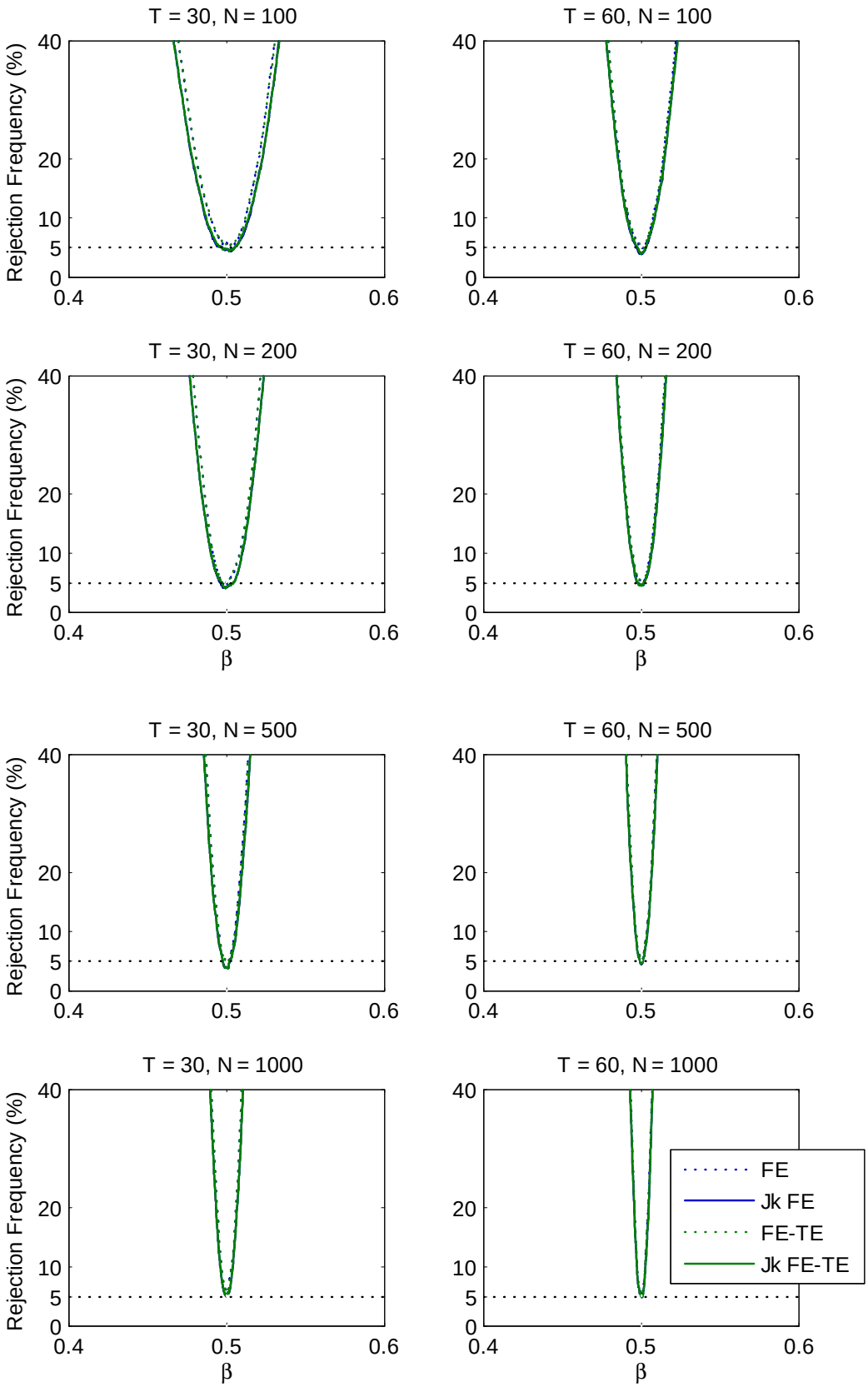

Table A.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 2)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-0.64	-0.29	-0.13	-0.11	3.37	2.33	1.72	1.24	6.25	5.90	5.00	5.35
60	-0.66	-0.32	-0.20	-0.14	2.37	1.64	1.21	0.89	6.35	6.00	4.70	5.95
100	-0.64	-0.32	-0.19	-0.12	1.87	1.28	0.95	0.69	6.50	6.40	5.45	5.90
200	-0.65	-0.33	-0.19	-0.11	1.38	0.93	0.69	0.48	7.75	6.75	5.45	5.80
500	-0.64	-0.31	-0.19	-0.10	1.01	0.64	0.47	0.31	13.65	9.75	8.25	6.35
1000	-0.66	-0.32	-0.19	-0.10	0.87	0.51	0.36	0.24	23.15	14.80	9.70	7.80
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.00	0.05	0.06	-0.02	3.40	2.35	1.73	1.24	4.15	5.30	4.60	5.10
60	-0.01	0.01	0.00	-0.04	2.36	1.63	1.21	0.89	3.80	4.70	3.55	5.45
100	0.02	0.01	0.00	-0.02	1.81	1.25	0.95	0.68	4.30	4.05	4.90	5.75
200	0.01	0.00	0.00	-0.01	1.27	0.88	0.67	0.48	3.90	4.70	4.30	5.40
500	0.03	0.02	0.01	0.00	0.81	0.57	0.43	0.30	3.65	5.05	4.40	4.65
1000	0.02	0.01	0.00	-0.01	0.59	0.41	0.30	0.21	5.25	5.10	4.80	5.55
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.67	-0.30	-0.14	-0.12	3.42	2.37	1.75	1.26	6.65	6.15	5.75	5.60
60	-0.67	-0.33	-0.21	-0.14	2.40	1.65	1.22	0.89	6.95	6.15	5.15	6.00
100	-0.64	-0.32	-0.19	-0.12	1.88	1.28	0.96	0.69	6.50	6.45	5.55	5.80
200	-0.65	-0.33	-0.19	-0.11	1.38	0.93	0.69	0.48	8.15	6.70	5.15	5.90
500	-0.64	-0.31	-0.19	-0.10	1.01	0.64	0.47	0.31	13.75	9.80	8.20	6.60
1000	-0.66	-0.32	-0.19	-0.10	0.87	0.51	0.36	0.24	23.20	14.85	9.75	7.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.46	2.38	1.76	1.26	4.25	5.40	5.05	5.30
60	-0.02	0.00	-0.01	-0.04	2.39	1.64	1.22	0.89	4.15	5.25	4.05	5.40
100	0.02	0.01	0.00	-0.02	1.82	1.25	0.95	0.68	4.60	3.95	5.10	5.80
200	0.02	0.00	0.00	-0.01	1.27	0.88	0.67	0.48	3.90	4.70	4.40	5.25
500	0.03	0.02	0.01	0.00	0.81	0.57	0.43	0.30	3.95	4.90	4.65	4.90
1000	0.02	0.01	0.00	-0.01	0.59	0.41	0.30	0.21	5.20	4.95	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0$, and $\kappa_x = 0.2$. For the rest of the settings, see the notes for Table A.1.

Figure A.2: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 2)

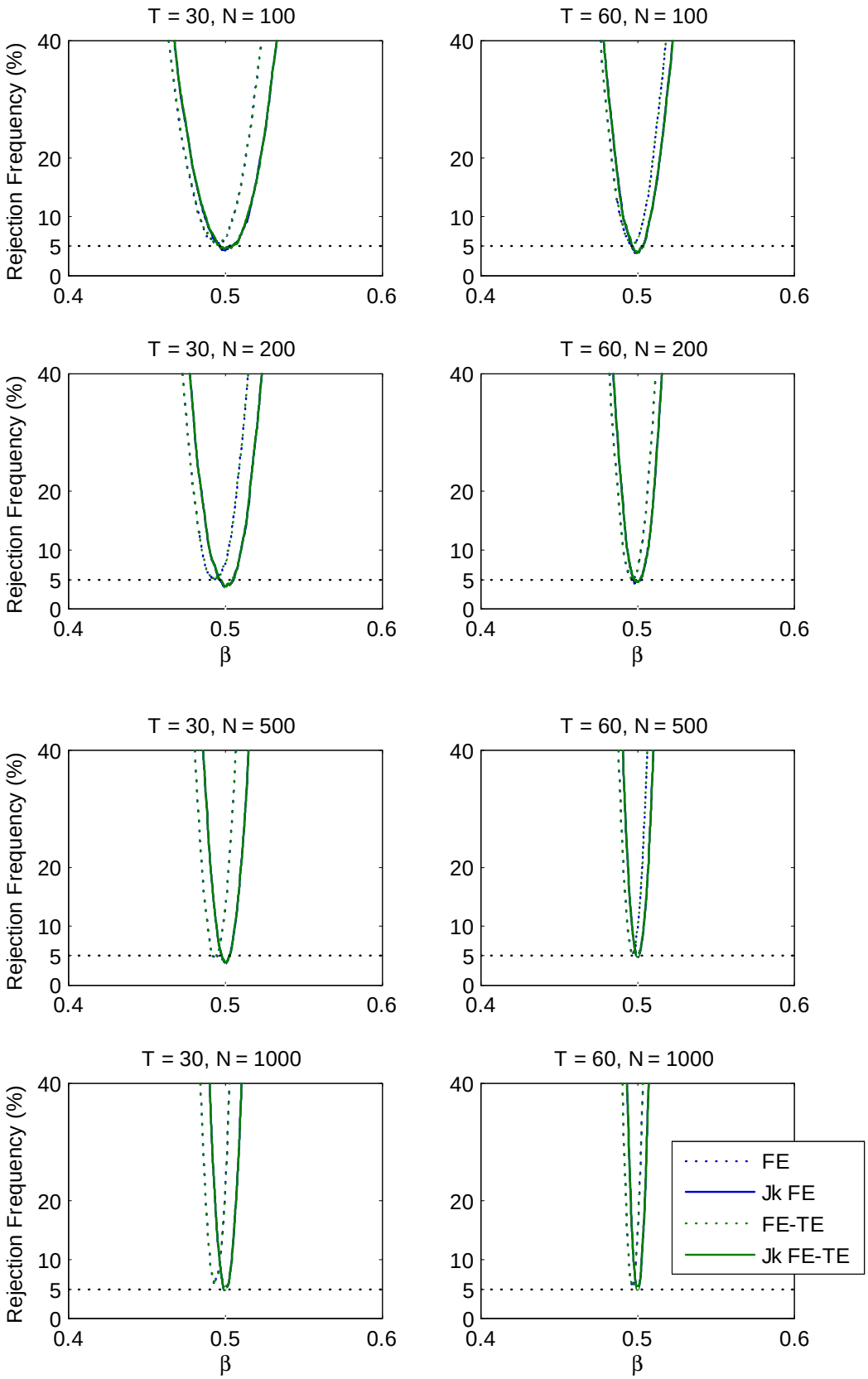

Table A.3: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 3)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-1.33	-0.63	-0.34	-0.21	3.42	2.30	1.67	1.19	8.05	6.85	5.10	5.80
60	-1.33	-0.66	-0.40	-0.23	2.54	1.66	1.20	0.86	9.85	7.80	5.50	6.95
100	-1.30	-0.65	-0.39	-0.21	2.12	1.35	0.97	0.67	12.00	9.35	7.20	7.10
200	-1.31	-0.66	-0.39	-0.20	1.75	1.05	0.73	0.49	19.70	12.90	8.85	7.85
500	-1.30	-0.64	-0.38	-0.19	1.49	0.83	0.56	0.34	40.35	23.00	16.65	10.40
1000	-1.31	-0.65	-0.38	-0.20	1.42	0.75	0.48	0.28	70.40	42.85	28.35	16.50
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.01	0.05	0.06	-0.01	3.27	2.25	1.65	1.18	4.15	5.15	4.50	4.75
60	0.01	0.02	0.00	-0.03	2.28	1.55	1.14	0.84	3.85	4.45	3.85	5.80
100	0.05	0.02	0.01	-0.02	1.75	1.20	0.90	0.65	4.20	4.00	5.35	5.80
200	0.04	0.01	0.01	-0.01	1.22	0.83	0.63	0.45	3.40	4.60	4.40	5.35
500	0.07	0.02	0.02	0.00	0.78	0.54	0.41	0.28	4.15	5.10	4.95	4.65
1000	0.05	0.01	0.01	0.00	0.57	0.39	0.29	0.20	5.00	5.25	5.15	5.40
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-1.35	-0.64	-0.35	-0.22	3.48	2.33	1.69	1.20	8.50	7.00	5.50	5.60
60	-1.34	-0.67	-0.41	-0.23	2.56	1.67	1.21	0.86	10.85	8.45	6.10	7.15
100	-1.30	-0.65	-0.39	-0.21	2.13	1.35	0.97	0.68	12.15	9.40	7.20	7.15
200	-1.31	-0.66	-0.39	-0.20	1.75	1.05	0.74	0.49	19.90	12.70	9.00	7.80
500	-1.30	-0.64	-0.38	-0.19	1.49	0.83	0.56	0.34	40.85	22.90	16.80	10.50
1000	-1.31	-0.65	-0.39	-0.20	1.42	0.75	0.48	0.28	70.35	42.65	28.60	16.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.01	0.04	0.05	-0.02	3.33	2.28	1.67	1.19	4.30	5.30	4.90	5.35
60	0.00	0.01	-0.01	-0.04	2.30	1.56	1.15	0.84	4.20	4.85	3.75	5.25
100	0.05	0.02	0.01	-0.02	1.75	1.20	0.91	0.65	4.85	4.15	5.15	5.60
200	0.04	0.01	0.01	-0.01	1.23	0.83	0.63	0.45	3.85	4.50	4.50	5.20
500	0.07	0.02	0.01	0.00	0.79	0.55	0.41	0.28	4.15	5.20	4.90	4.80
1000	0.05	0.01	0.01	0.00	0.57	0.39	0.29	0.20	5.15	5.20	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0$, and $\kappa_x = 0.4$. For the rest of the settings, see the notes for Table A.1.

Figure A.3: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 3)

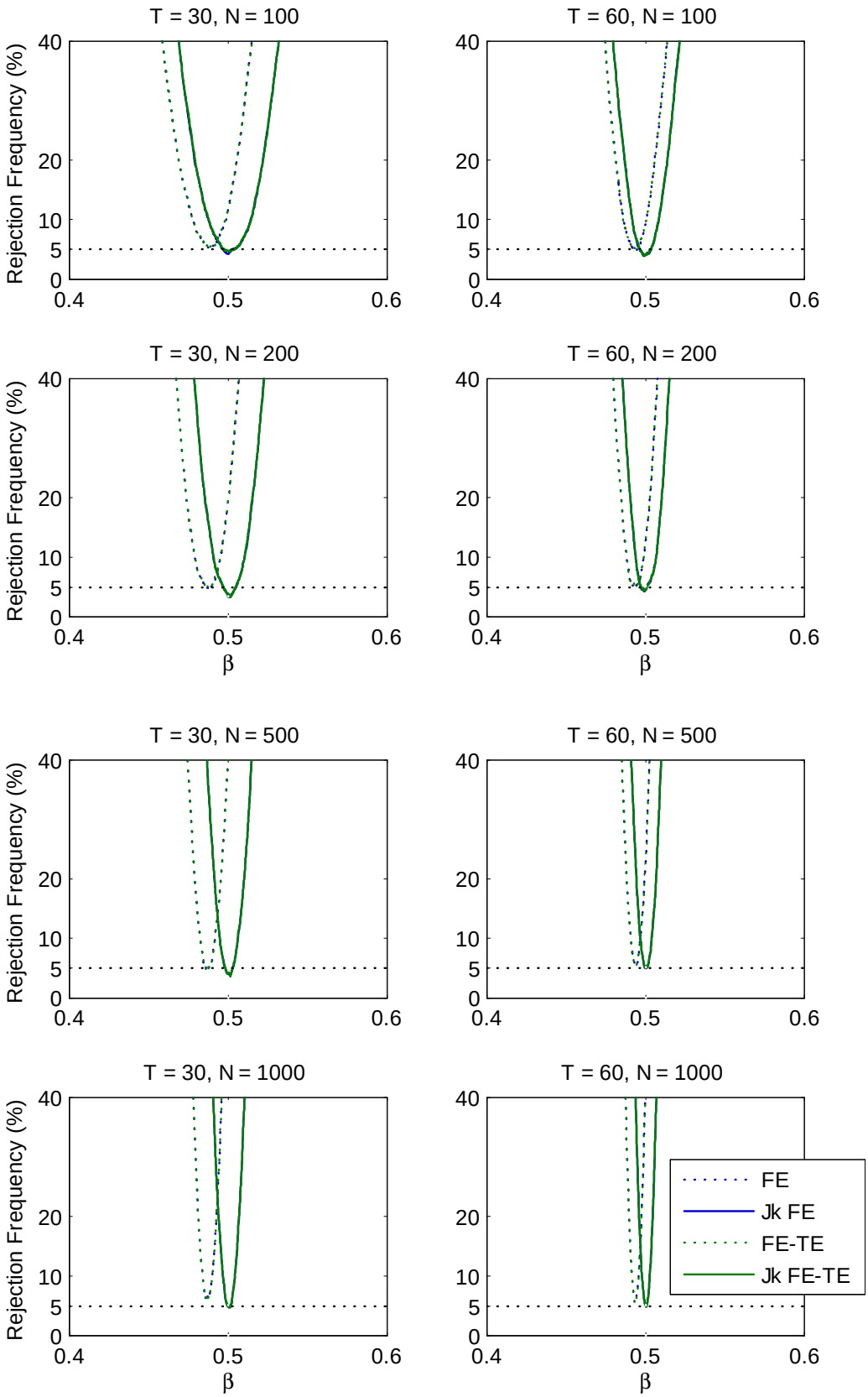

Table A.4: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 4)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	0.04	0.06	0.08	-0.01	3.39	2.37	1.76	1.27	5.50	5.75	4.70	5.25
60	0.01	0.01	0.00	-0.04	2.35	1.65	1.24	0.91	5.95	5.65	4.20	5.55
100	0.03	0.01	0.01	-0.02	1.81	1.27	0.96	0.69	5.65	4.95	4.60	5.40
200	0.02	0.00	0.00	-0.01	1.25	0.90	0.68	0.49	5.15	5.15	4.85	5.00
500	0.02	0.01	0.01	0.00	0.80	0.57	0.44	0.30	5.05	5.30	4.75	5.20
1000	0.00	0.00	0.00	-0.01	0.59	0.41	0.31	0.22	5.90	5.45	5.20	5.40
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.00	0.05	0.07	-0.02	3.47	2.40	1.78	1.28	3.95	4.75	4.20	5.35
60	-0.02	0.01	0.00	-0.04	2.42	1.67	1.25	0.92	4.35	4.70	3.95	5.45
100	0.01	0.01	0.00	-0.02	1.85	1.28	0.97	0.70	4.55	4.05	4.80	5.25
200	0.00	0.00	0.00	-0.01	1.30	0.91	0.69	0.49	4.40	4.50	4.50	4.95
500	0.01	0.01	0.01	0.00	0.83	0.58	0.44	0.31	3.80	4.45	4.20	4.85
1000	0.00	0.00	0.00	-0.01	0.61	0.41	0.31	0.22	5.40	5.05	4.80	4.95
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.02	0.04	0.07	-0.02	3.43	2.40	1.79	1.29	6.30	6.15	5.70	5.40
60	0.00	0.00	-0.01	-0.04	2.37	1.66	1.25	0.91	6.15	5.60	4.40	5.75
100	0.03	0.01	0.00	-0.02	1.82	1.28	0.96	0.70	5.50	5.40	4.75	5.60
200	0.02	0.00	0.00	-0.01	1.26	0.90	0.68	0.49	5.15	5.25	4.80	5.00
500	0.02	0.01	0.01	0.00	0.80	0.58	0.44	0.30	5.00	5.45	4.90	5.10
1000	0.00	0.00	0.00	-0.01	0.59	0.41	0.31	0.22	5.95	5.40	5.40	5.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.52	2.42	1.81	1.29	4.50	5.35	4.95	5.60
60	-0.03	0.00	-0.01	-0.04	2.44	1.68	1.26	0.92	4.60	4.80	3.90	5.90
100	0.01	0.01	0.00	-0.02	1.87	1.28	0.97	0.70	4.80	4.10	4.95	5.30
200	0.00	0.00	0.00	-0.01	1.30	0.91	0.69	0.49	4.35	4.55	4.50	5.10
500	0.01	0.01	0.01	0.00	0.83	0.58	0.44	0.31	3.95	4.65	4.25	4.90
1000	0.00	0.00	0.00	-0.01	0.61	0.41	0.31	0.22	5.35	5.00	4.75	5.10

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t$, and $\kappa_x = 0$. FE and half-panel jackknife FE are based on equation (10): $y_{it} = \mu_i + gt + \beta x_{it} + u_{it}$. FE-TE and half-panel jackknife FE-TE are based on equation (11): $y_{it} = \mu_i + \delta_t + \beta x_{it} + u_{it}$. For the rest of the settings, see the notes for Table A.1.

Figure A.4: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 4)

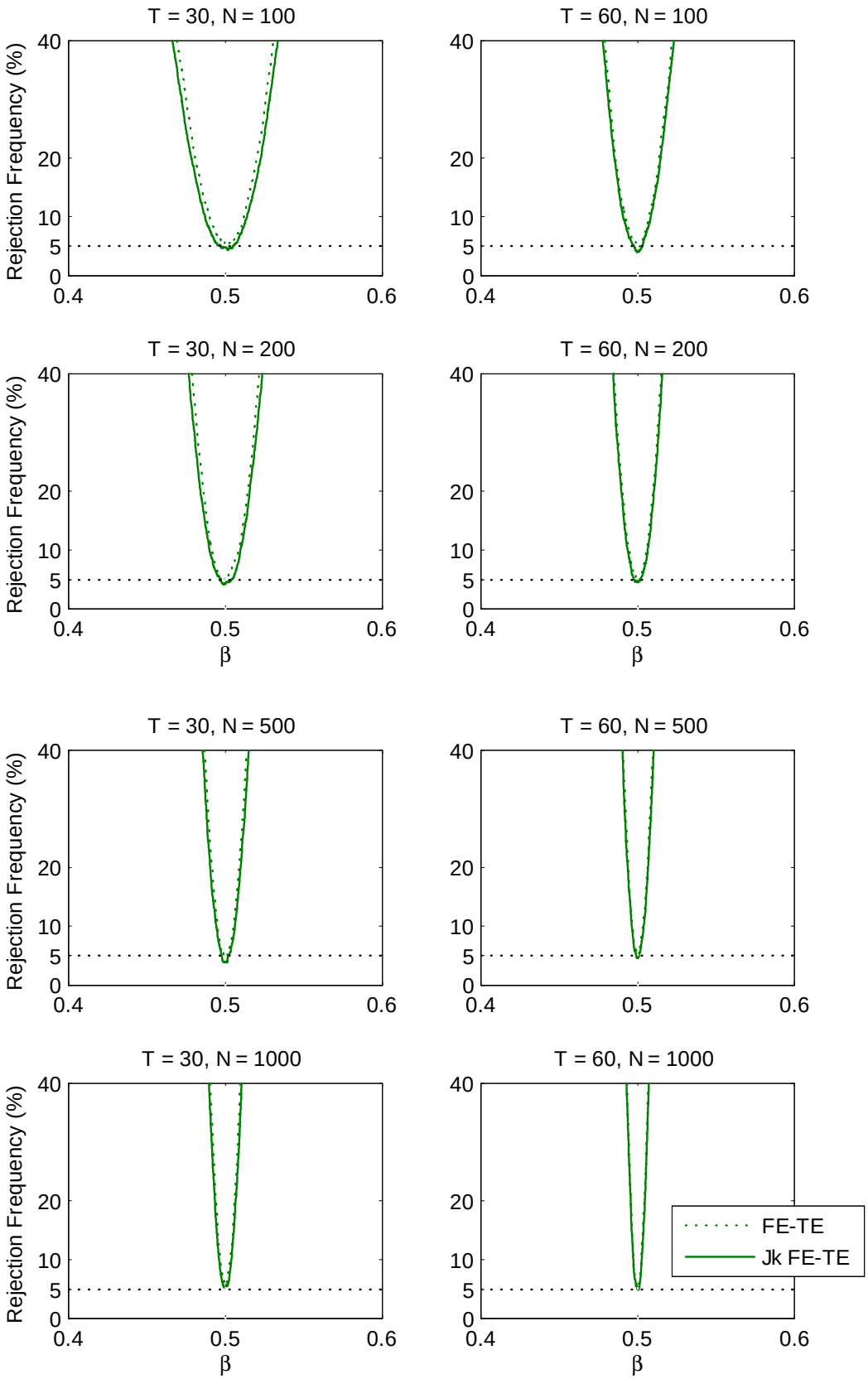

Table A.5: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 5)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-0.66	-0.30	-0.14	-0.12	3.38	2.34	1.72	1.24	6.25	5.95	4.90	5.35
60	-0.67	-0.33	-0.20	-0.14	2.38	1.64	1.22	0.89	6.50	6.10	4.65	6.15
100	-0.65	-0.32	-0.19	-0.12	1.88	1.28	0.95	0.69	6.45	6.40	5.60	5.90
200	-0.65	-0.33	-0.19	-0.11	1.38	0.93	0.69	0.48	7.90	6.75	5.40	5.80
500	-0.64	-0.31	-0.19	-0.10	1.01	0.64	0.47	0.31	13.65	9.80	8.25	6.35
1000	-0.66	-0.33	-0.19	-0.10	0.87	0.51	0.36	0.24	23.15	14.70	9.65	7.80
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.00	0.05	0.07	-0.02	3.41	2.36	1.73	1.24	4.25	5.20	4.55	5.00
60	-0.02	0.01	0.00	-0.04	2.37	1.63	1.21	0.89	4.10	4.75	3.70	5.65
100	0.02	0.01	0.00	-0.02	1.82	1.25	0.95	0.68	4.50	3.95	4.90	5.70
200	0.01	0.00	0.00	-0.01	1.27	0.88	0.67	0.48	3.85	4.55	4.25	5.35
500	0.03	0.02	0.01	0.00	0.81	0.57	0.43	0.30	3.65	4.95	4.50	4.65
1000	0.02	0.01	0.00	-0.01	0.59	0.41	0.30	0.21	5.30	5.00	4.95	5.60
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.67	-0.30	-0.14	-0.12	3.42	2.37	1.75	1.26	6.65	6.15	5.75	5.60
60	-0.67	-0.33	-0.21	-0.14	2.40	1.65	1.22	0.89	6.95	6.15	5.15	6.00
100	-0.64	-0.32	-0.19	-0.12	1.88	1.28	0.96	0.69	6.50	6.45	5.55	5.80
200	-0.65	-0.33	-0.19	-0.11	1.38	0.93	0.69	0.48	8.15	6.70	5.15	5.90
500	-0.64	-0.31	-0.19	-0.10	1.01	0.64	0.47	0.31	13.75	9.80	8.20	6.60
1000	-0.66	-0.32	-0.19	-0.10	0.87	0.51	0.36	0.24	23.20	14.85	9.75	7.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.46	2.38	1.76	1.26	4.25	5.40	5.05	5.30
60	-0.02	0.00	-0.01	-0.04	2.39	1.64	1.22	0.89	4.15	5.25	4.05	5.40
100	0.02	0.01	0.00	-0.02	1.82	1.25	0.95	0.68	4.60	3.95	5.10	5.80
200	0.02	0.00	0.00	-0.01	1.27	0.88	0.67	0.48	3.90	4.70	4.40	5.25
500	0.03	0.02	0.01	0.00	0.81	0.57	0.43	0.30	3.95	4.90	4.65	4.90
1000	0.02	0.01	0.00	-0.01	0.59	0.41	0.30	0.21	5.20	4.95	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.

Figure A.5: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 5)

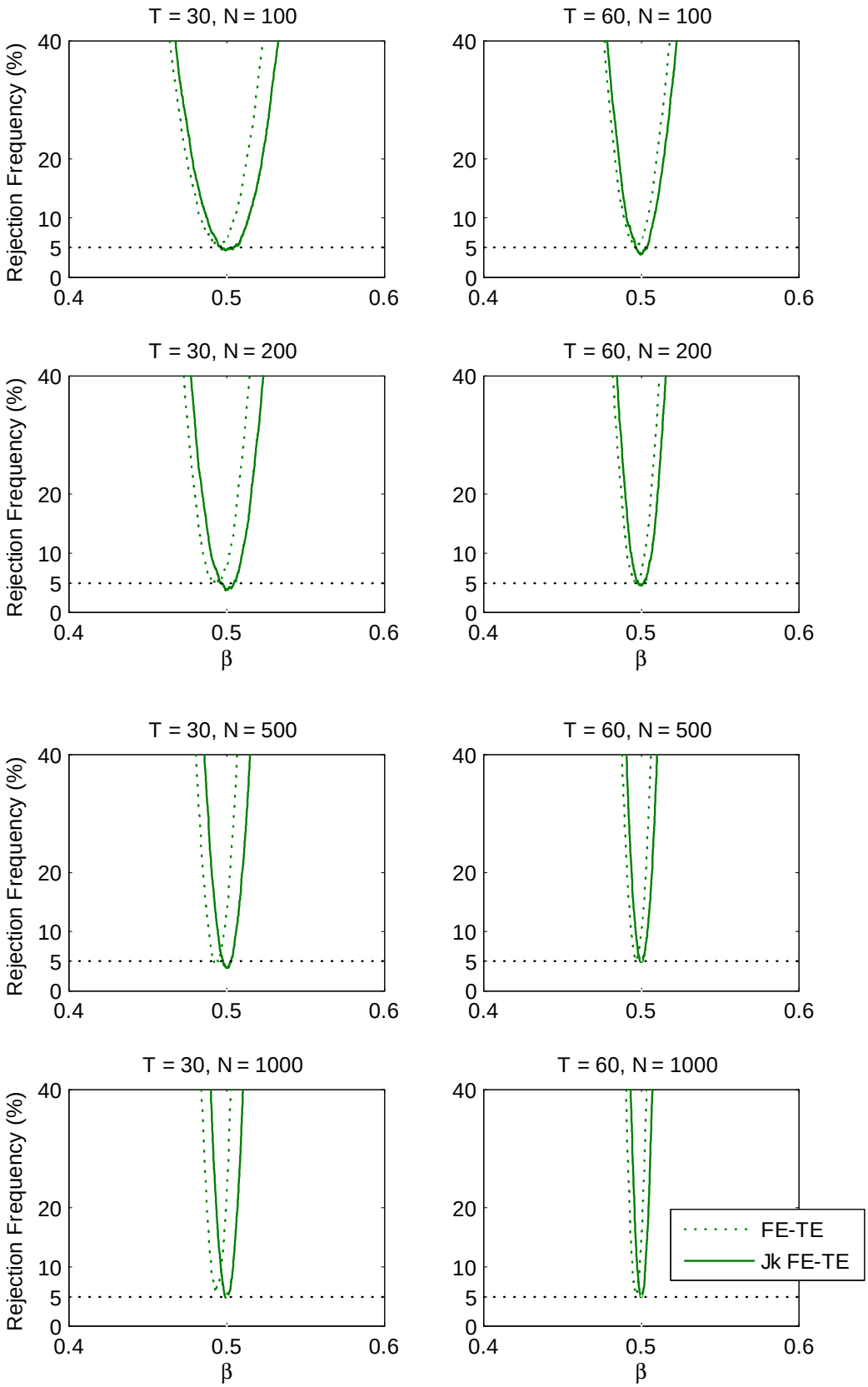

Table A.6: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 6)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-1.37	-0.65	-0.35	-0.22	3.44	2.31	1.67	1.19	8.15	7.10	5.40	5.75
60	-1.35	-0.67	-0.40	-0.23	2.55	1.67	1.20	0.86	10.15	8.05	5.60	6.85
100	-1.31	-0.66	-0.39	-0.21	2.13	1.35	0.97	0.68	12.10	9.40	7.15	7.10
200	-1.31	-0.66	-0.39	-0.20	1.75	1.05	0.74	0.49	19.95	13.05	8.80	7.95
500	-1.30	-0.64	-0.38	-0.19	1.50	0.83	0.56	0.34	40.65	23.05	16.75	10.45
1000	-1.31	-0.65	-0.39	-0.20	1.42	0.75	0.48	0.28	70.40	42.90	28.45	16.55
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.01	0.05	0.06	-0.01	3.29	2.26	1.65	1.18	4.00	5.30	4.65	4.75
60	0.00	0.02	0.00	-0.03	2.28	1.56	1.14	0.84	4.05	4.85	3.75	5.70
100	0.05	0.02	0.01	-0.02	1.75	1.20	0.90	0.65	4.45	4.20	5.30	5.75
200	0.04	0.01	0.01	-0.01	1.23	0.83	0.63	0.45	3.60	4.55	4.45	5.25
500	0.07	0.02	0.02	0.00	0.78	0.54	0.41	0.28	4.15	5.20	4.95	4.65
1000	0.05	0.01	0.01	0.00	0.57	0.39	0.29	0.20	5.05	5.20	5.15	5.50
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-1.35	-0.64	-0.35	-0.22	3.48	2.33	1.69	1.20	8.50	7.00	5.50	5.60
60	-1.34	-0.67	-0.41	-0.23	2.56	1.67	1.21	0.86	10.85	8.45	6.10	7.15
100	-1.30	-0.65	-0.39	-0.21	2.13	1.35	0.97	0.68	12.15	9.40	7.20	7.15
200	-1.31	-0.66	-0.39	-0.20	1.75	1.05	0.74	0.49	19.90	12.70	9.00	7.80
500	-1.30	-0.64	-0.38	-0.19	1.49	0.83	0.56	0.34	40.85	22.90	16.80	10.50
1000	-1.31	-0.65	-0.39	-0.20	1.42	0.75	0.48	0.28	70.35	42.65	28.60	16.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.01	0.04	0.05	-0.02	3.33	2.28	1.67	1.19	4.30	5.30	4.90	5.35
60	0.00	0.01	-0.01	-0.04	2.30	1.56	1.15	0.84	4.20	4.85	3.75	5.25
100	0.05	0.02	0.01	-0.02	1.75	1.20	0.91	0.65	4.85	4.15	5.15	5.60
200	0.04	0.01	0.01	-0.01	1.23	0.83	0.63	0.45	3.85	4.50	4.50	5.20
500	0.07	0.02	0.01	0.00	0.79	0.55	0.41	0.28	4.15	5.20	4.90	4.80
1000	0.05	0.01	0.01	0.00	0.57	0.39	0.29	0.20	5.15	5.20	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.

Figure A.6: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 6)

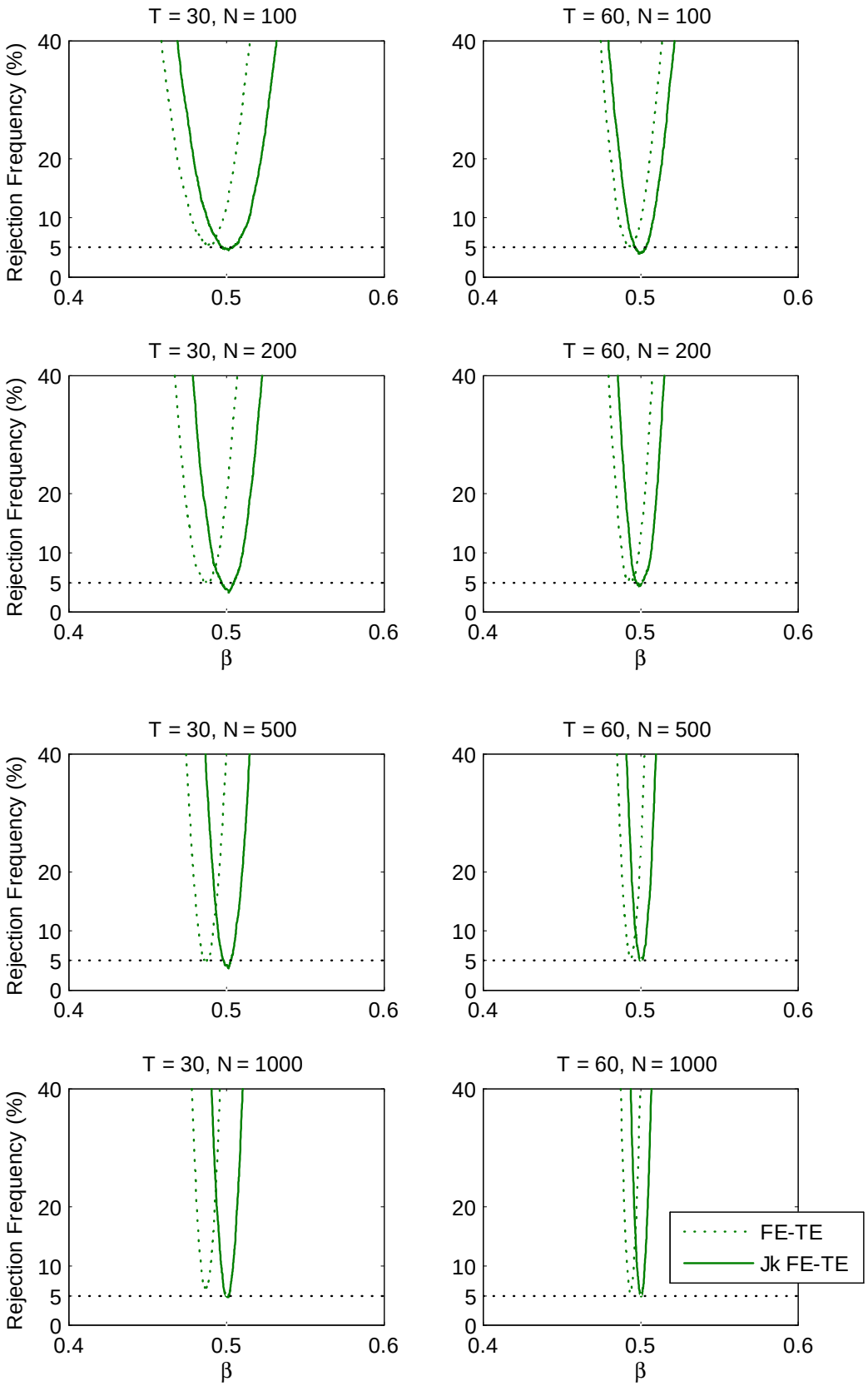

Table A.7: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 7)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	0.04	0.05	0.04	-0.16	3.40	2.50	2.45	4.98	6.00	6.70	7.30	11.75
60	0.01	0.01	0.00	-0.13	2.36	1.75	1.75	3.53	5.85	6.05	7.70	12.40
100	0.03	0.01	-0.01	-0.09	1.81	1.34	1.33	2.70	5.70	5.50	6.40	12.15
200	0.01	0.00	0.02	0.00	1.26	0.95	0.96	1.91	5.35	5.40	7.60	12.10
500	0.02	0.01	0.01	0.01	0.81	0.60	0.61	1.22	5.10	5.55	7.65	11.45
1000	0.00	0.00	0.00	0.02	0.59	0.43	0.43	0.86	6.35	6.20	8.30	11.60
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	-0.01	0.04	-0.01	-0.28	3.51	2.85	3.77	9.49	4.60	9.35	22.90	39.95
60	-0.02	0.00	-0.02	-0.21	2.45	2.01	2.73	6.70	4.45	9.25	25.45	39.70
100	0.01	0.01	-0.03	-0.14	1.88	1.52	2.05	5.15	4.80	8.30	23.50	41.05
200	0.00	0.00	0.03	0.00	1.32	1.09	1.48	3.65	4.25	8.75	25.00	39.55
500	0.01	0.01	0.01	0.02	0.84	0.69	0.95	2.34	4.00	8.80	24.45	41.50
1000	0.00	0.00	-0.01	0.06	0.62	0.49	0.65	1.64	5.65	9.80	23.80	41.60
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.02	0.04	0.07	-0.02	3.43	2.40	1.79	1.29	6.30	6.15	5.70	5.40
60	0.00	0.00	-0.01	-0.04	2.37	1.66	1.25	0.91	6.15	5.60	4.40	5.75
100	0.03	0.01	0.00	-0.02	1.82	1.28	0.96	0.70	5.50	5.40	4.75	5.60
200	0.02	0.00	0.00	-0.01	1.26	0.90	0.68	0.49	5.15	5.25	4.80	5.00
500	0.02	0.01	0.01	0.00	0.80	0.58	0.44	0.30	5.00	5.45	4.90	5.10
1000	0.00	0.00	0.00	-0.01	0.59	0.41	0.31	0.22	5.95	5.40	5.40	5.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.52	2.42	1.81	1.29	4.50	5.35	4.95	5.60
60	-0.03	0.00	-0.01	-0.04	2.44	1.68	1.26	0.92	4.60	4.80	3.90	5.90
100	0.01	0.01	0.00	-0.02	1.87	1.28	0.97	0.70	4.80	4.10	4.95	5.30
200	0.00	0.00	0.00	-0.01	1.30	0.91	0.69	0.49	4.35	4.55	4.50	5.10
500	0.01	0.01	0.01	0.00	0.83	0.58	0.44	0.31	3.95	4.65	4.25	4.90
1000	0.00	0.00	0.00	-0.01	0.61	0.41	0.31	0.22	5.35	5.00	4.75	5.10

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.

Figure A.7: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 7)

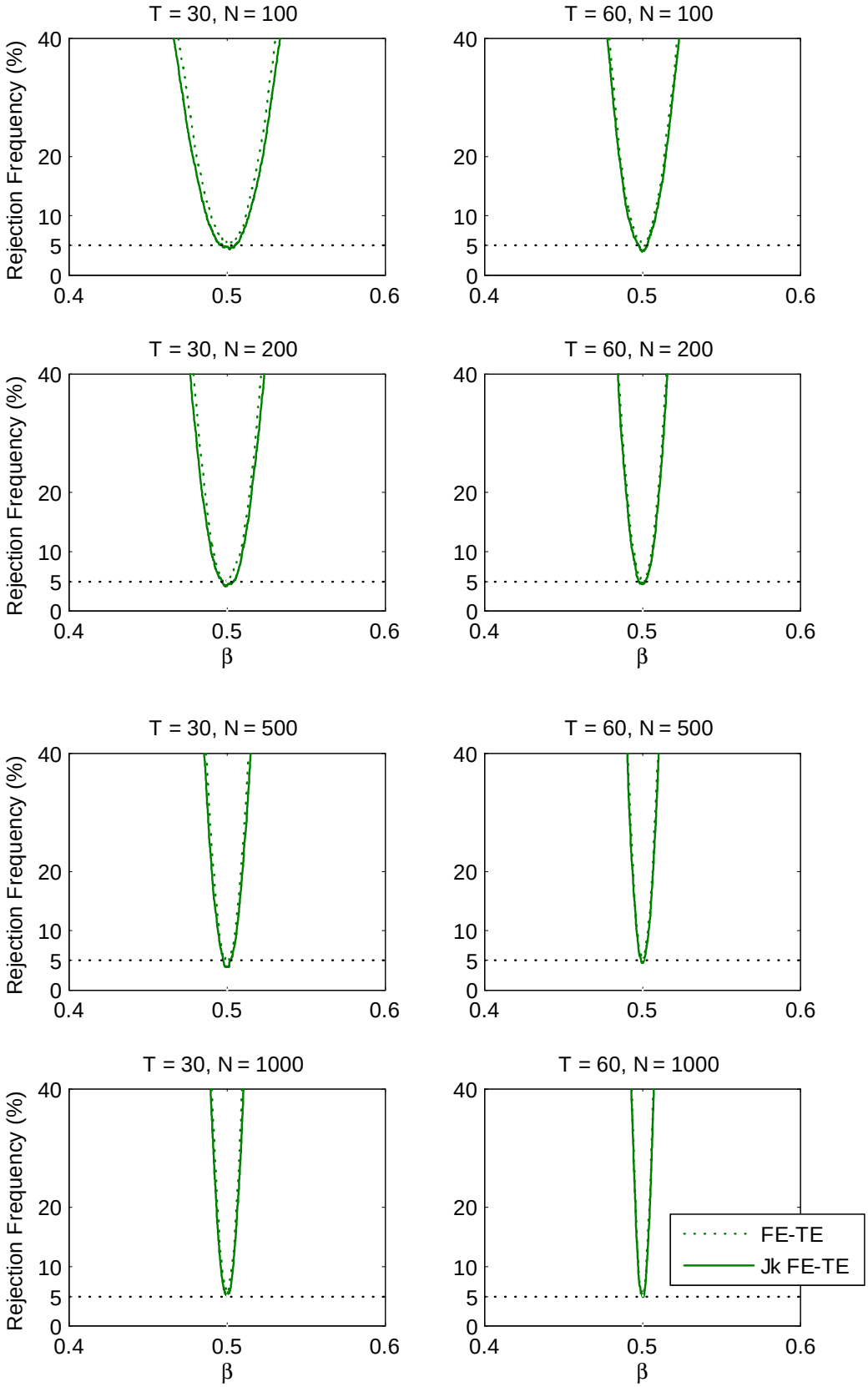

Table A.8: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 8)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-0.58	1.15	10.66	126.29	3.38	2.72	10.96	126.56	6.45	10.00	99.55	100.00
60	-0.58	1.11	10.59	125.96	2.36	2.04	10.75	126.09	6.25	12.10	100.00	100.00
100	-0.55	1.12	10.57	125.79	1.85	1.73	10.66	125.87	5.95	15.10	100.00	100.00
200	-0.56	1.11	10.58	125.68	1.34	1.45	10.63	125.72	7.15	24.85	100.00	100.00
500	-0.55	1.13	10.57	125.71	0.96	1.27	10.59	125.72	11.55	52.65	100.00	100.00
1000	-0.57	1.11	10.56	125.69	0.81	1.19	10.57	125.70	18.40	78.40	100.00	100.00
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.17	2.85	20.95	241.98	3.47	4.04	21.35	242.48	5.05	26.05	100.00	100.00
60	0.16	2.79	20.87	241.37	2.41	3.44	21.09	241.61	4.50	39.20	100.00	100.00
100	0.21	2.80	20.82	241.05	1.85	3.19	20.95	241.20	5.00	55.40	100.00	100.00
200	0.19	2.80	20.85	240.81	1.30	3.00	20.91	240.89	4.25	80.75	100.00	100.00
500	0.21	2.81	20.83	240.85	0.85	2.89	20.86	240.88	4.85	99.00	100.00	100.00
1000	0.20	2.79	20.80	240.83	0.64	2.84	20.81	240.84	6.50	100.00	100.00	100.00
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.67	-0.30	-0.14	-0.12	3.42	2.37	1.75	1.26	6.65	6.15	5.75	5.60
60	-0.67	-0.33	-0.21	-0.14	2.40	1.65	1.22	0.89	6.95	6.15	5.15	6.00
100	-0.64	-0.32	-0.19	-0.12	1.88	1.28	0.96	0.69	6.50	6.45	5.55	5.80
200	-0.65	-0.33	-0.19	-0.11	1.38	0.93	0.69	0.48	8.15	6.70	5.15	5.90
500	-0.64	-0.31	-0.19	-0.10	1.01	0.64	0.47	0.31	13.75	9.80	8.20	6.60
1000	-0.66	-0.32	-0.19	-0.10	0.87	0.51	0.36	0.24	23.20	14.85	9.75	7.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.02	0.04	0.06	-0.02	3.46	2.38	1.76	1.26	4.25	5.40	5.05	5.30
60	-0.02	0.00	-0.01	-0.04	2.39	1.64	1.22	0.89	4.15	5.25	4.05	5.40
100	0.02	0.01	0.00	-0.02	1.82	1.25	0.95	0.68	4.60	3.95	5.10	5.80
200	0.02	0.00	0.00	-0.01	1.27	0.88	0.67	0.48	3.90	4.70	4.40	5.25
500	0.03	0.02	0.01	0.00	0.81	0.57	0.43	0.30	3.95	4.90	4.65	4.90
1000	0.02	0.01	0.00	-0.01	0.59	0.41	0.30	0.21	5.20	4.95	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.

Figure A.8: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 8)

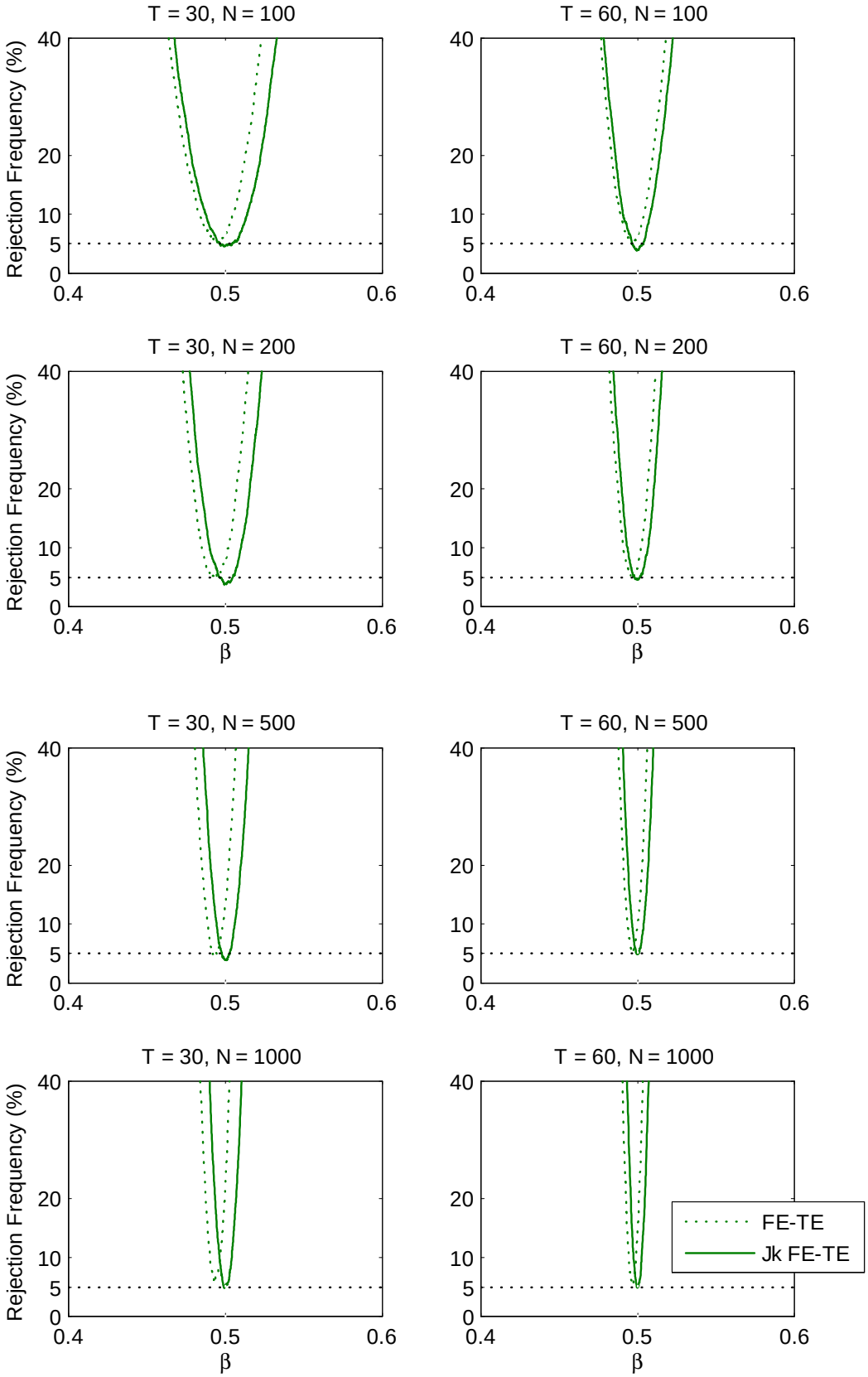

Table A.9: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 9)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-1.19	2.22	19.52	126.98	3.39	3.24	19.69	127.04	7.70	19.85	100.00	100.00
60	-1.16	2.18	19.44	126.86	2.47	2.72	19.52	126.89	9.15	30.45	100.00	100.00
100	-1.13	2.20	19.41	126.79	2.02	2.53	19.47	126.81	10.05	46.85	100.00	100.00
200	-1.13	2.19	19.41	126.73	1.62	2.36	19.44	126.74	15.60	74.15	100.00	100.00
500	-1.11	2.21	19.42	126.75	1.34	2.28	19.43	126.76	31.85	97.70	100.00	100.00
1000	-1.13	2.20	19.40	126.74	1.25	2.24	19.40	126.74	57.35	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.36	5.60	38.39	234.48	3.38	6.28	38.63	234.58	5.35	66.35	100.00	100.00
60	0.37	5.52	38.28	234.32	2.35	5.87	38.41	234.36	4.75	88.10	100.00	100.00
100	0.42	5.53	38.22	234.20	1.82	5.74	38.29	234.23	5.15	97.65	100.00	100.00
200	0.40	5.53	38.22	234.08	1.30	5.63	38.26	234.09	5.20	100.00	100.00	100.00
500	0.43	5.54	38.21	234.11	0.90	5.58	38.23	234.11	6.95	100.00	100.00	100.00
1000	0.41	5.53	38.18	234.10	0.71	5.55	38.19	234.10	11.30	100.00	100.00	100.00
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-1.35	-0.64	-0.35	-0.22	3.48	2.33	1.69	1.20	8.50	7.00	5.50	5.60
60	-1.34	-0.67	-0.41	-0.23	2.56	1.67	1.21	0.86	10.85	8.45	6.10	7.15
100	-1.30	-0.65	-0.39	-0.21	2.13	1.35	0.97	0.68	12.15	9.40	7.20	7.15
200	-1.31	-0.66	-0.39	-0.20	1.75	1.05	0.74	0.49	19.90	12.70	9.00	7.80
500	-1.30	-0.64	-0.38	-0.19	1.49	0.83	0.56	0.34	40.85	22.90	16.80	10.50
1000	-1.31	-0.65	-0.39	-0.20	1.42	0.75	0.48	0.28	70.35	42.65	28.60	16.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-0.01	0.04	0.05	-0.02	3.33	2.28	1.67	1.19	4.30	5.30	4.90	5.35
60	0.00	0.01	-0.01	-0.04	2.30	1.56	1.15	0.84	4.20	4.85	3.75	5.25
100	0.05	0.02	0.01	-0.02	1.75	1.20	0.91	0.65	4.85	4.15	5.15	5.60
200	0.04	0.01	0.01	-0.01	1.23	0.83	0.63	0.45	3.85	4.50	4.50	5.20
500	0.07	0.02	0.01	0.00	0.79	0.55	0.41	0.28	4.15	5.20	4.90	4.80
1000	0.05	0.01	0.01	0.00	0.57	0.39	0.29	0.20	5.15	5.20	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.

Figure A.9: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 9)

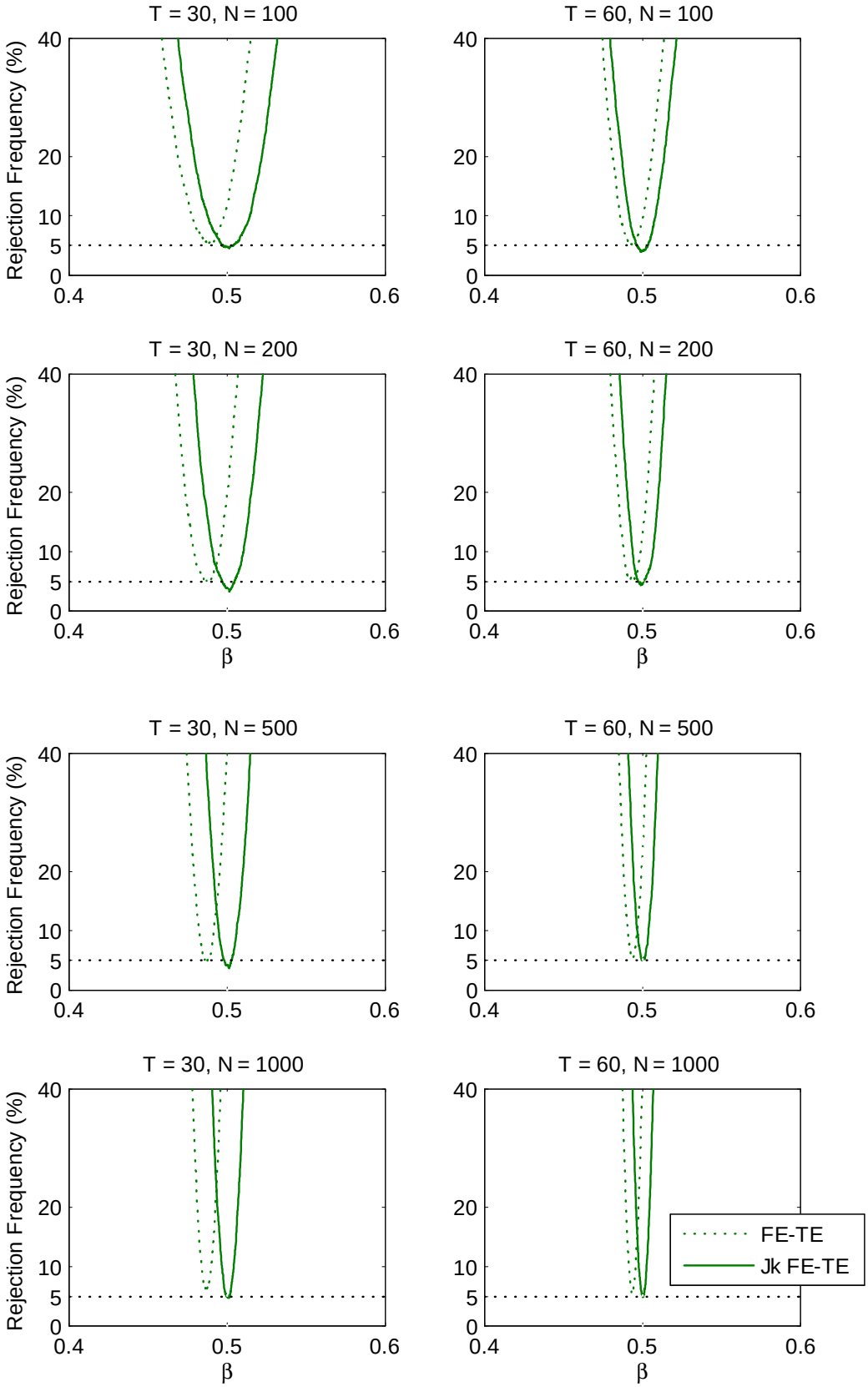

Table A.10.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-2.84	-1.37	-0.76	-0.46	6.50	4.43	3.25	2.33	10.70	8.25	6.00	5.75
60	-2.91	-1.46	-0.88	-0.50	4.95	3.25	2.35	1.69	13.90	9.60	6.35	7.50
100	-2.88	-1.45	-0.87	-0.47	4.23	2.67	1.92	1.33	16.50	11.50	8.50	7.40
200	-2.91	-1.47	-0.87	-0.45	3.61	2.14	1.49	0.98	28.80	16.10	10.75	8.70
500	-2.90	-1.44	-0.86	-0.44	3.20	1.76	1.16	0.70	57.75	31.10	20.65	12.90
1000	-2.93	-1.46	-0.87	-0.45	3.10	1.63	1.03	0.59	85.65	55.15	36.55	20.40
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.44	-2.21	-1.32	-0.66	5.54	3.21	2.22	1.41	27.70	16.95	12.05	9.35
60	-4.37	-2.19	-1.31	-0.65	4.96	2.74	1.80	1.09	46.00	27.75	18.80	11.35
100	-4.32	-2.16	-1.29	-0.64	4.69	2.51	1.62	0.94	67.30	41.70	27.40	16.20
200	-4.32	-2.15	-1.28	-0.64	4.50	2.31	1.45	0.80	92.90	68.80	45.50	25.70
500	-4.29	-2.12	-1.26	-0.63	4.36	2.19	1.33	0.70	100.00	96.90	83.00	54.45
1000	-4.30	-2.12	-1.27	-0.63	4.34	2.16	1.30	0.67	100.00	100.00	98.20	84.45
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.31	0.21	0.17	0.04	3.44	2.38	1.78	1.27	5.80	6.15	4.85	5.15
60	0.28	0.17	0.10	0.01	2.40	1.67	1.26	0.91	6.80	5.85	4.20	5.85
100	0.29	0.16	0.10	0.03	1.85	1.29	0.97	0.70	5.75	5.40	4.85	5.55
200	0.28	0.15	0.10	0.04	1.30	0.92	0.69	0.49	4.90	6.00	5.25	5.40
500	0.28	0.16	0.10	0.05	0.86	0.60	0.45	0.31	6.50	6.65	4.70	4.90
1000	0.26	0.15	0.10	0.04	0.65	0.44	0.33	0.22	8.45	7.20	6.60	6.10
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.57	0.26	0.17	0.00	6.62	4.46	3.26	2.32	4.45	5.20	4.45	4.65
60	0.46	0.15	0.04	-0.05	4.60	3.07	2.25	1.65	4.10	4.70	3.80	5.60
100	0.51	0.14	0.05	-0.02	3.53	2.36	1.78	1.27	4.85	4.15	5.30	5.70
200	0.46	0.11	0.05	0.00	2.49	1.64	1.25	0.89	4.60	4.70	4.50	5.20
500	0.50	0.14	0.06	0.01	1.64	1.08	0.81	0.55	5.05	5.45	5.10	4.75
1000	0.45	0.12	0.05	0.00	1.23	0.78	0.57	0.40	6.60	5.70	5.25	5.50
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.08	0.02	0.00	0.00	3.74	2.45	1.84	1.27	6.55	4.85	5.30	5.20
60	0.11	0.02	-0.01	0.00	2.68	1.74	1.28	0.90	6.00	5.05	5.40	5.35
100	0.16	0.03	0.01	0.00	2.05	1.37	1.02	0.70	5.90	5.65	5.65	5.25
200	0.15	0.03	0.02	0.00	1.45	0.92	0.70	0.49	5.40	4.45	4.85	4.80
500	0.19	0.05	0.03	0.01	0.93	0.59	0.43	0.30	5.90	4.85	4.70	4.95
1000	0.17	0.05	0.02	0.01	0.67	0.43	0.32	0.22	7.25	5.15	5.05	4.90
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.19	0.10	0.08	-0.01	3.50	2.40	1.78	1.28	4.20	5.45	4.20	5.05
60	0.17	0.06	0.02	-0.04	2.45	1.67	1.26	0.92	5.20	5.05	3.90	5.55
100	0.19	0.05	0.02	-0.02	1.89	1.29	0.97	0.70	4.80	4.45	4.65	5.50
200	0.19	0.05	0.02	0.00	1.33	0.91	0.69	0.49	4.45	4.95	4.45	4.75
500	0.20	0.06	0.02	0.00	0.87	0.58	0.44	0.31	5.00	4.70	4.20	4.80
1000	0.18	0.04	0.02	0.00	0.64	0.42	0.31	0.22	6.45	5.20	5.20	5.25

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0$, and $\kappa_x = 0$. FE and half-panel jackknife FE are based on equation (12): $\Delta y_{it} = \mu_i + \phi y_{i,t-1} + b x_{it} + e_{it}$. FE-TE and half-panel jackknife FE-TE are based on equation (16): $\Delta y_{it} = \mu_i + \delta_t + \phi y_{i,t-1} + b x_{it} + e_{it}$. For the rest of the settings, see the notes for Table A.1.

Table A.10.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-2.88	-1.40	-0.78	-0.47	6.60	4.49	3.29	2.36	11.55	8.35	6.30	5.95
60	-2.93	-1.48	-0.90	-0.51	4.99	3.27	2.37	1.70	14.05	10.15	7.15	7.55
100	-2.88	-1.45	-0.87	-0.47	4.24	2.68	1.93	1.34	16.75	11.35	8.50	7.25
200	-2.91	-1.47	-0.87	-0.45	3.61	2.14	1.49	0.98	28.75	16.05	11.00	8.85
500	-2.90	-1.44	-0.86	-0.44	3.21	1.76	1.16	0.70	58.05	31.00	20.75	13.00
1000	-2.93	-1.46	-0.87	-0.45	3.10	1.63	1.03	0.59	85.60	54.85	36.40	20.55
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.45	-2.22	-1.33	-0.66	5.57	3.23	2.25	1.43	28.40	17.50	13.20	9.90
60	-4.37	-2.19	-1.31	-0.64	4.96	2.74	1.80	1.10	46.25	28.00	19.05	11.85
100	-4.32	-2.15	-1.28	-0.64	4.69	2.51	1.62	0.94	67.65	41.70	27.20	15.85
200	-4.32	-2.15	-1.28	-0.63	4.51	2.31	1.45	0.80	93.15	68.65	45.80	25.90
500	-4.29	-2.12	-1.26	-0.63	4.37	2.19	1.33	0.70	100.00	97.00	82.80	54.70
1000	-4.30	-2.12	-1.27	-0.63	4.34	2.16	1.30	0.67	100.00	100.00	98.25	84.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.28	0.20	0.17	0.03	3.48	2.42	1.81	1.29	6.40	6.55	5.40	5.55
60	0.27	0.16	0.09	0.01	2.42	1.68	1.27	0.92	6.60	5.80	4.80	6.10
100	0.29	0.16	0.10	0.03	1.86	1.29	0.97	0.70	6.10	5.55	5.05	5.45
200	0.28	0.16	0.10	0.04	1.30	0.92	0.69	0.49	5.50	5.75	5.40	5.40
500	0.28	0.16	0.10	0.05	0.86	0.60	0.45	0.31	6.55	6.50	4.70	5.10
1000	0.26	0.15	0.10	0.04	0.65	0.44	0.33	0.22	8.40	7.10	6.45	6.15
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.23	0.16	-0.01	6.74	4.52	3.30	2.35	4.55	5.50	4.90	5.40
60	0.43	0.14	0.02	-0.06	4.64	3.09	2.27	1.65	4.75	4.60	3.65	5.50
100	0.51	0.14	0.05	-0.02	3.55	2.37	1.79	1.27	5.05	4.35	5.25	5.65
200	0.47	0.12	0.05	0.00	2.50	1.65	1.25	0.89	4.80	4.85	4.80	5.15
500	0.50	0.14	0.06	0.01	1.65	1.09	0.82	0.55	5.10	5.50	5.00	4.75
1000	0.45	0.12	0.05	0.00	1.23	0.78	0.57	0.40	6.60	5.60	5.25	5.45
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.08	0.01	-0.01	-0.01	3.79	2.48	1.87	1.30	7.05	5.60	6.10	5.70
60	0.11	0.02	0.00	0.00	2.68	1.74	1.29	0.90	6.15	5.00	5.55	5.40
100	0.16	0.03	0.02	0.01	2.06	1.37	1.02	0.70	5.95	5.55	5.85	5.35
200	0.15	0.03	0.02	0.00	1.45	0.92	0.71	0.49	5.60	4.95	4.75	4.80
500	0.19	0.05	0.03	0.01	0.93	0.59	0.43	0.30	6.00	4.95	5.00	4.80
1000	0.17	0.05	0.02	0.01	0.67	0.43	0.32	0.22	7.20	5.15	5.15	4.90
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.16	0.09	0.08	-0.01	3.56	2.43	1.81	1.30	4.90	5.75	4.80	5.15
60	0.15	0.05	0.01	-0.04	2.48	1.69	1.27	0.93	5.15	4.90	4.10	5.95
100	0.19	0.05	0.01	-0.02	1.90	1.29	0.98	0.70	4.90	4.50	4.70	5.25
200	0.19	0.05	0.02	0.00	1.34	0.91	0.69	0.49	4.50	4.95	4.60	5.10
500	0.20	0.06	0.02	0.00	0.87	0.58	0.44	0.31	5.05	4.60	4.20	4.75
1000	0.18	0.04	0.02	0.00	0.64	0.42	0.31	0.22	6.40	5.30	5.30	5.20

Notes: See the notes for Table A.10.1.

Figure A.10: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10)

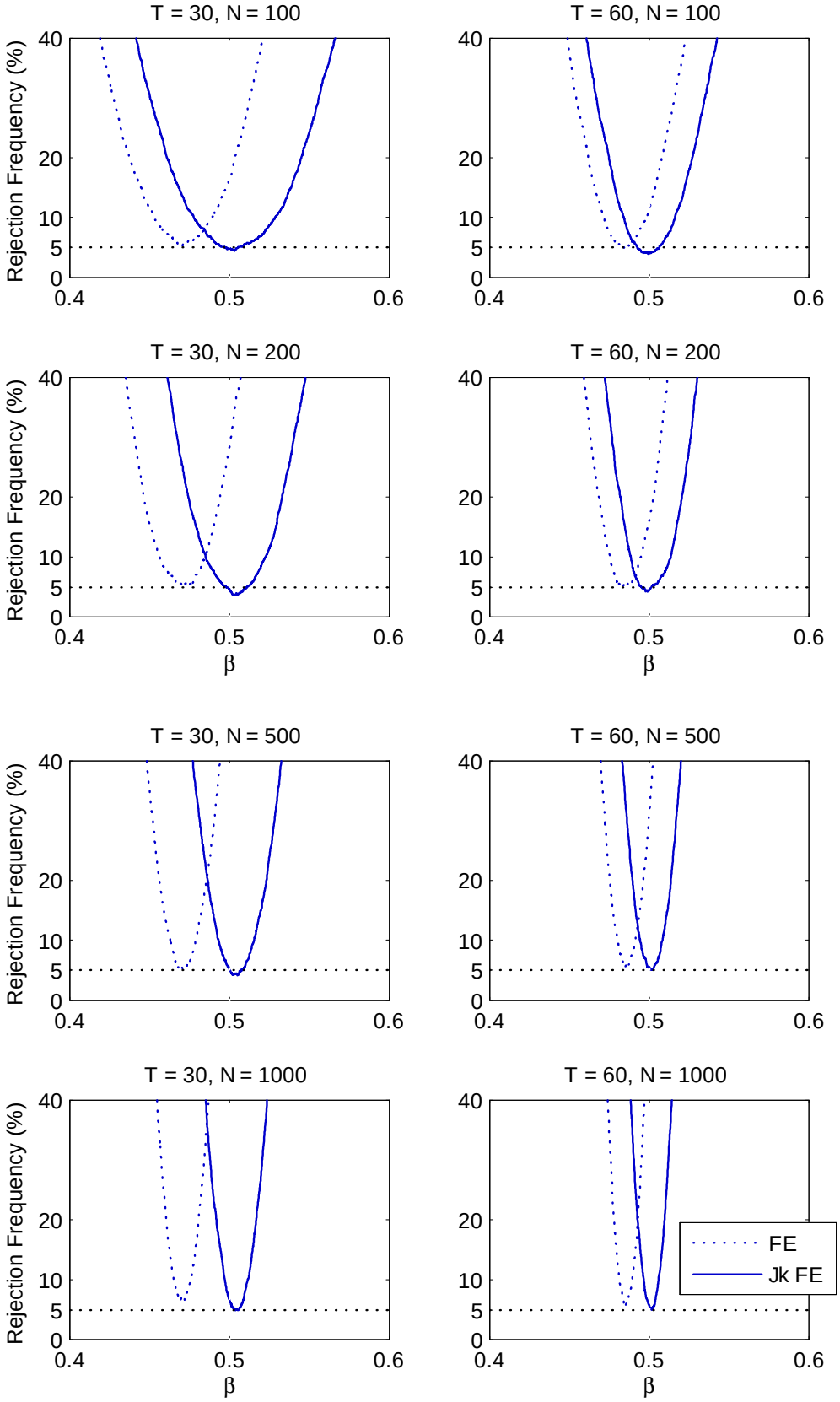

Table A.11.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-3.36	-1.64	-0.92	-0.53	6.39	4.24	3.07	2.18	13.50	9.15	6.45	6.10
60	-3.39	-1.70	-1.03	-0.57	5.04	3.18	2.26	1.60	17.30	11.50	7.45	7.60
100	-3.34	-1.68	-1.01	-0.54	4.40	2.68	1.88	1.27	23.30	15.10	10.20	8.35
200	-3.36	-1.70	-1.01	-0.52	3.90	2.23	1.50	0.96	40.20	21.65	14.00	10.20
500	-3.34	-1.66	-1.00	-0.50	3.58	1.91	1.23	0.71	75.80	44.75	28.95	16.50
1000	-3.38	-1.68	-1.01	-0.51	3.50	1.81	1.13	0.63	95.35	73.15	52.25	29.50
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.71	-2.35	-1.41	-0.69	5.76	3.29	2.27	1.43	29.00	17.75	13.15	9.20
60	-4.63	-2.32	-1.39	-0.68	5.19	2.85	1.86	1.11	50.45	30.00	19.95	12.05
100	-4.58	-2.28	-1.36	-0.67	4.93	2.62	1.67	0.96	72.10	44.85	28.95	17.05
200	-4.57	-2.27	-1.35	-0.67	4.75	2.43	1.51	0.82	95.15	74.00	50.30	28.15
500	-4.54	-2.24	-1.34	-0.67	4.61	2.31	1.40	0.73	100.00	98.40	87.60	59.25
1000	-4.55	-2.24	-1.34	-0.67	4.59	2.28	1.37	0.70	100.00	100.00	98.90	87.30
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.13	0.13	0.13	0.02	3.43	2.38	1.78	1.27	5.85	6.05	4.80	4.95
60	0.10	0.09	0.06	-0.01	2.38	1.66	1.25	0.91	5.90	5.65	4.35	6.00
100	0.12	0.09	0.06	0.01	1.83	1.28	0.97	0.70	5.55	5.15	4.70	5.40
200	0.11	0.08	0.05	0.02	1.28	0.91	0.69	0.49	5.15	5.55	5.05	5.20
500	0.11	0.08	0.06	0.03	0.82	0.58	0.44	0.31	5.55	5.95	4.50	5.15
1000	0.09	0.07	0.05	0.02	0.60	0.41	0.32	0.22	6.70	6.00	6.15	5.65
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.56	0.24	0.16	0.00	6.23	4.16	3.03	2.15	4.35	5.05	4.45	4.70
60	0.48	0.16	0.05	-0.04	4.34	2.87	2.09	1.53	4.40	4.40	3.70	5.90
100	0.55	0.15	0.06	-0.02	3.33	2.21	1.65	1.18	4.85	4.15	5.35	5.50
200	0.52	0.13	0.06	0.00	2.37	1.53	1.16	0.82	4.80	4.15	4.45	5.15
500	0.55	0.15	0.07	0.01	1.58	1.01	0.76	0.51	5.55	5.65	4.90	4.50
1000	0.51	0.13	0.05	0.00	1.19	0.73	0.53	0.37	7.50	5.80	5.60	5.30
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.09	0.01	-0.01	0.00	3.79	2.45	1.84	1.28	6.50	5.30	5.40	5.50
60	0.11	0.02	0.00	0.01	2.73	1.75	1.29	0.91	6.65	5.10	5.80	5.40
100	0.17	0.03	0.02	0.01	2.08	1.38	1.02	0.70	6.15	5.30	5.60	5.50
200	0.17	0.04	0.02	0.01	1.47	0.93	0.71	0.49	6.15	4.65	4.80	4.70
500	0.20	0.05	0.03	0.01	0.95	0.59	0.43	0.31	5.95	4.95	4.65	4.75
1000	0.18	0.05	0.02	0.01	0.68	0.43	0.32	0.22	7.30	5.25	4.95	4.65
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.21	0.11	0.09	-0.01	3.51	2.40	1.79	1.28	4.55	5.40	4.20	5.05
60	0.19	0.07	0.02	-0.03	2.46	1.68	1.26	0.92	5.10	5.00	3.95	5.90
100	0.22	0.06	0.02	-0.02	1.89	1.29	0.98	0.70	4.70	4.05	4.60	5.35
200	0.21	0.05	0.02	0.00	1.34	0.91	0.69	0.49	4.80	4.85	4.25	4.50
500	0.23	0.06	0.03	0.00	0.88	0.58	0.44	0.31	5.00	4.50	4.40	4.80
1000	0.21	0.05	0.02	0.00	0.65	0.42	0.31	0.22	6.30	5.30	5.10	5.20

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.10.1. For the rest of the settings, see the notes for Table A.1.

Table A.11.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.40	-1.66	-0.94	-0.54	6.48	4.30	3.11	2.20	14.05	9.50	6.45	6.15
60	-3.41	-1.72	-1.04	-0.57	5.07	3.20	2.28	1.61	17.35	11.65	7.50	8.40
100	-3.34	-1.68	-1.01	-0.54	4.41	2.68	1.89	1.28	23.15	15.15	10.15	8.45
200	-3.36	-1.69	-1.01	-0.52	3.91	2.23	1.51	0.96	39.30	21.60	13.95	10.00
500	-3.34	-1.67	-1.00	-0.51	3.58	1.92	1.23	0.71	75.45	44.55	29.00	16.35
1000	-3.38	-1.68	-1.01	-0.51	3.50	1.81	1.13	0.63	95.40	72.75	52.60	29.50
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.71	-2.35	-1.41	-0.69	5.79	3.32	2.29	1.45	29.25	18.55	14.05	10.05
60	-4.63	-2.32	-1.38	-0.67	5.19	2.85	1.86	1.11	50.55	30.45	20.10	12.20
100	-4.58	-2.28	-1.36	-0.67	4.93	2.61	1.67	0.96	72.05	45.15	29.40	17.05
200	-4.57	-2.27	-1.35	-0.67	4.75	2.43	1.51	0.82	95.00	74.25	50.10	28.50
500	-4.54	-2.24	-1.34	-0.67	4.61	2.31	1.40	0.73	100.00	98.45	87.65	59.55
1000	-4.55	-2.24	-1.34	-0.67	4.59	2.28	1.37	0.70	100.00	100.00	98.90	87.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	0.11	0.11	0.12	0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.45	5.45
60	0.09	0.08	0.05	-0.02	2.41	1.67	1.26	0.92	6.40	5.65	4.45	5.75
100	0.12	0.08	0.05	0.01	1.84	1.29	0.97	0.70	6.00	5.50	4.90	5.10
200	0.11	0.08	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.40	5.10	5.15
500	0.11	0.08	0.06	0.03	0.82	0.58	0.44	0.31	5.70	6.05	4.35	5.15
1000	0.09	0.07	0.05	0.02	0.60	0.42	0.31	0.22	6.65	6.25	5.75	5.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.52	0.22	0.15	0.00	6.35	4.22	3.07	2.18	4.65	5.50	4.75	5.15
60	0.46	0.15	0.03	-0.05	4.38	2.88	2.11	1.53	4.95	4.65	4.05	5.50
100	0.55	0.15	0.06	-0.02	3.35	2.21	1.66	1.18	5.05	4.25	5.35	5.65
200	0.52	0.13	0.06	0.00	2.37	1.54	1.16	0.82	4.85	4.75	4.50	5.05
500	0.55	0.15	0.07	0.01	1.58	1.02	0.76	0.51	5.60	5.85	5.15	4.70
1000	0.51	0.13	0.05	0.00	1.19	0.73	0.53	0.37	7.75	5.70	5.40	5.25
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.09	0.01	-0.01	0.00	3.84	2.49	1.88	1.30	6.80	5.70	5.55	5.65
60	0.12	0.02	0.00	0.01	2.73	1.76	1.30	0.91	6.55	5.35	5.75	5.60
100	0.17	0.04	0.02	0.01	2.09	1.38	1.02	0.70	6.10	5.75	5.60	5.20
200	0.17	0.04	0.02	0.01	1.48	0.93	0.71	0.49	6.20	4.70	4.70	4.90
500	0.20	0.05	0.03	0.01	0.95	0.59	0.43	0.31	6.00	4.65	4.80	5.00
1000	0.18	0.05	0.02	0.01	0.68	0.43	0.32	0.22	7.30	5.25	5.00	4.75
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	0.18	0.09	0.08	-0.01	3.57	2.43	1.81	1.30	5.00	5.85	4.80	5.10
60	0.17	0.06	0.01	-0.04	2.49	1.69	1.27	0.93	5.25	5.00	4.15	5.90
100	0.22	0.06	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.45	4.80	5.10
200	0.22	0.06	0.02	0.00	1.35	0.91	0.69	0.49	4.70	4.80	4.55	4.90
500	0.22	0.06	0.03	0.00	0.88	0.59	0.44	0.31	5.15	4.40	4.25	4.80
1000	0.21	0.05	0.02	0.00	0.65	0.42	0.31	0.22	6.70	5.40	5.10	5.20

Notes: See the notes for Table A.11.1.

Figure A.11: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11)

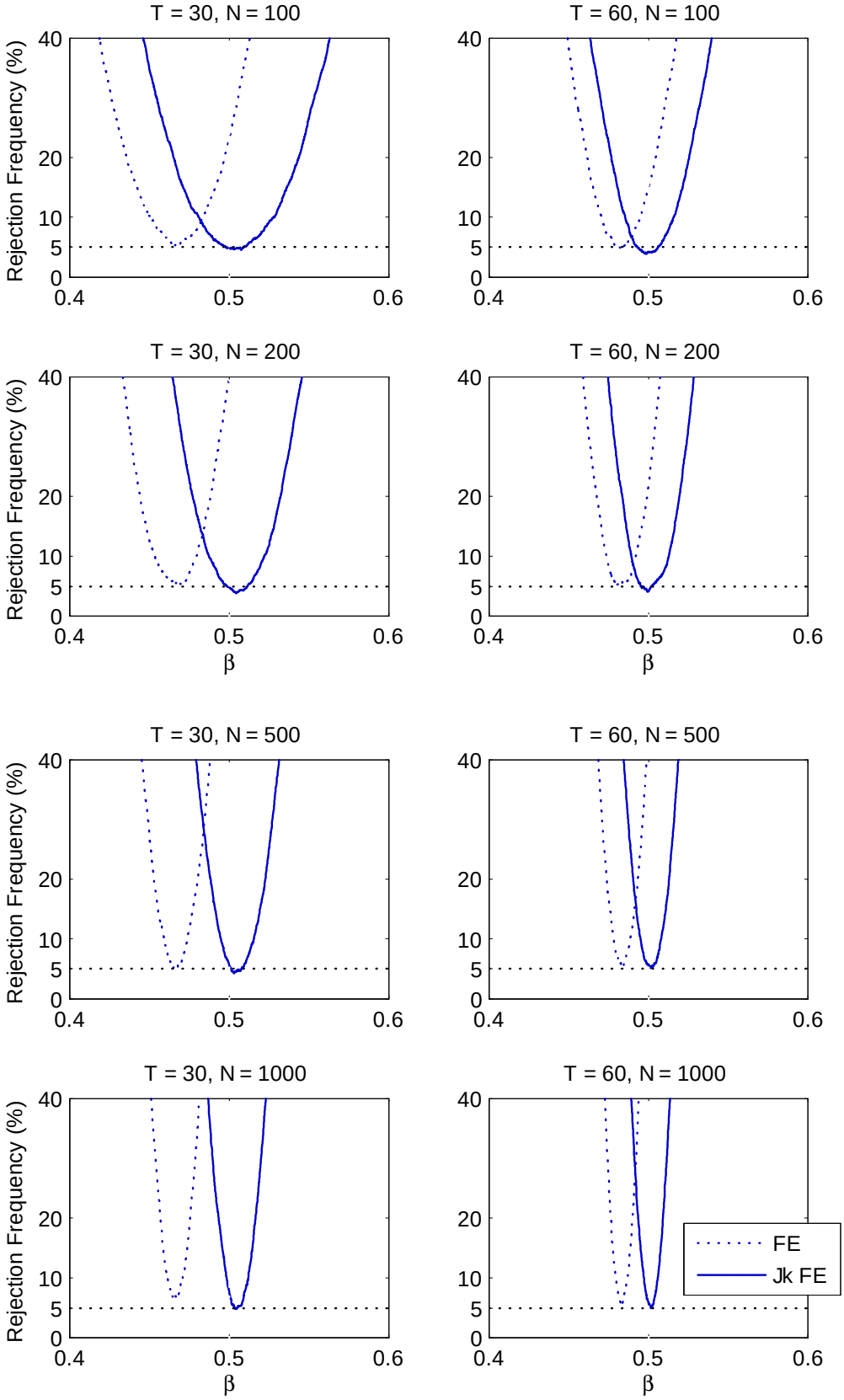

Table A.12.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-3.87	-1.89	-1.07	-0.60	6.33	4.07	2.90	2.02	15.35	10.40	7.20	6.35
60	-3.86	-1.93	-1.16	-0.63	5.18	3.14	2.18	1.50	23.00	13.65	8.95	8.10
100	-3.79	-1.91	-1.14	-0.60	4.62	2.70	1.85	1.22	32.40	18.85	11.90	9.50
200	-3.80	-1.91	-1.14	-0.58	4.22	2.33	1.53	0.94	55.00	30.45	18.80	12.15
500	-3.78	-1.88	-1.13	-0.57	3.96	2.07	1.31	0.73	89.75	60.45	39.80	22.65
1000	-3.81	-1.90	-1.14	-0.58	3.90	2.00	1.23	0.66	99.55	87.75	69.20	42.25
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.95	-2.47	-1.48	-0.72	6.00	3.41	2.35	1.47	30.55	18.30	13.50	9.60
60	-4.86	-2.43	-1.45	-0.70	5.43	2.96	1.93	1.15	51.85	31.75	19.75	12.40
100	-4.80	-2.39	-1.42	-0.70	5.15	2.72	1.73	0.99	73.75	45.85	29.40	17.00
200	-4.79	-2.37	-1.41	-0.70	4.96	2.53	1.57	0.85	95.75	75.85	52.25	28.80
500	-4.75	-2.35	-1.40	-0.70	4.83	2.41	1.46	0.76	100.00	98.65	88.60	61.75
1000	-4.76	-2.34	-1.40	-0.69	4.80	2.38	1.43	0.73	100.00	100.00	99.05	88.30
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	-0.06	0.04	0.08	-0.01	3.43	2.37	1.77	1.27	6.00	6.10	4.85	5.05
60	-0.09	0.00	0.01	-0.03	2.38	1.66	1.25	0.91	5.60	5.25	4.25	6.05
100	-0.06	0.00	0.01	-0.02	1.82	1.28	0.96	0.70	5.50	5.10	4.70	5.20
200	-0.07	-0.01	0.01	0.00	1.27	0.90	0.68	0.49	5.55	5.00	4.70	4.80
500	-0.07	0.00	0.01	0.00	0.82	0.58	0.44	0.31	5.65	5.55	4.75	5.15
1000	-0.09	-0.01	0.00	0.00	0.60	0.41	0.31	0.22	6.40	5.35	5.40	5.40
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.57	0.24	0.15	0.01	5.85	3.85	2.80	1.97	4.40	4.95	4.40	4.50
60	0.51	0.17	0.05	-0.04	4.09	2.66	1.93	1.40	4.85	4.10	3.75	5.40
100	0.61	0.17	0.07	-0.01	3.14	2.04	1.53	1.08	4.60	3.90	5.10	5.60
200	0.58	0.15	0.07	0.01	2.25	1.42	1.07	0.76	5.10	4.25	4.45	5.20
500	0.62	0.17	0.07	0.01	1.52	0.94	0.70	0.47	6.45	5.60	5.00	4.55
1000	0.58	0.16	0.06	0.01	1.17	0.68	0.49	0.34	9.30	6.15	5.55	4.95
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.09	0.01	-0.02	0.01	3.92	2.51	1.89	1.31	6.90	5.10	5.50	5.15
60	0.13	0.03	0.00	0.02	2.82	1.80	1.33	0.93	6.80	5.40	5.25	5.50
100	0.19	0.04	0.02	0.01	2.16	1.41	1.04	0.72	6.05	5.55	5.50	5.45
200	0.19	0.05	0.03	0.01	1.53	0.96	0.73	0.50	6.50	5.15	5.00	4.95
500	0.22	0.06	0.03	0.01	0.98	0.61	0.44	0.31	6.60	4.55	4.45	5.05
1000	0.20	0.06	0.02	0.01	0.71	0.44	0.33	0.22	7.45	5.20	5.05	4.65
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.23	0.12	0.09	0.00	3.52	2.40	1.78	1.28	4.55	5.25	4.20	5.00
60	0.21	0.08	0.03	-0.03	2.47	1.67	1.26	0.92	4.85	5.05	4.10	5.80
100	0.25	0.08	0.03	-0.01	1.90	1.29	0.98	0.70	4.85	4.10	4.55	5.35
200	0.25	0.07	0.03	0.00	1.35	0.91	0.69	0.49	4.65	4.90	4.40	4.65
500	0.26	0.07	0.03	0.00	0.89	0.59	0.44	0.31	5.60	4.60	4.40	4.85
1000	0.24	0.06	0.02	0.00	0.66	0.42	0.31	0.22	6.75	5.45	5.15	5.10

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.10.1. For the rest of the settings, see the notes for Table A.1.

Table A.12.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.90	-1.91	-1.09	-0.61	6.42	4.12	2.94	2.05	16.75	10.90	7.55	6.40
60	-3.87	-1.95	-1.17	-0.64	5.21	3.16	2.20	1.51	23.20	13.80	9.15	8.75
100	-3.79	-1.90	-1.14	-0.60	4.63	2.70	1.85	1.22	32.40	18.95	12.30	9.60
200	-3.79	-1.91	-1.13	-0.58	4.22	2.33	1.53	0.94	54.65	30.85	19.15	11.95
500	-3.78	-1.88	-1.13	-0.57	3.96	2.07	1.31	0.73	89.80	60.70	39.70	22.75
1000	-3.81	-1.90	-1.14	-0.58	3.90	2.00	1.23	0.66	99.55	87.70	69.20	41.95
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.94	-2.47	-1.49	-0.72	6.02	3.44	2.37	1.49	31.45	18.85	14.35	9.70
60	-4.85	-2.42	-1.44	-0.69	5.42	2.96	1.93	1.15	52.35	31.20	20.70	12.60
100	-4.80	-2.38	-1.42	-0.69	5.15	2.72	1.73	0.99	72.75	45.90	29.30	16.75
200	-4.79	-2.37	-1.41	-0.70	4.97	2.53	1.57	0.86	95.80	75.10	52.35	28.85
500	-4.75	-2.35	-1.40	-0.70	4.83	2.41	1.46	0.76	100.00	98.70	88.70	61.90
1000	-4.76	-2.34	-1.40	-0.69	4.80	2.38	1.43	0.73	100.00	100.00	99.20	88.50
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	-0.08	0.03	0.07	-0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.55	5.40
60	-0.10	-0.01	0.00	-0.04	2.41	1.67	1.26	0.92	6.10	5.50	4.30	5.95
100	-0.06	0.00	0.01	-0.02	1.84	1.28	0.97	0.70	5.80	5.10	5.05	5.10
200	-0.07	-0.01	0.01	0.00	1.28	0.91	0.69	0.49	5.50	4.95	4.75	5.00
500	-0.07	0.00	0.01	0.00	0.82	0.58	0.44	0.31	5.90	5.45	4.85	5.35
1000	-0.09	-0.01	0.00	0.00	0.60	0.41	0.31	0.22	6.50	5.40	5.35	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.22	0.14	0.00	5.96	3.91	2.84	2.00	4.95	5.50	4.65	4.80
60	0.49	0.16	0.04	-0.04	4.12	2.67	1.94	1.41	5.40	4.40	4.20	5.35
100	0.60	0.17	0.07	-0.01	3.16	2.05	1.53	1.08	4.95	4.05	5.30	5.65
200	0.58	0.16	0.07	0.01	2.26	1.42	1.07	0.76	5.15	4.55	4.40	5.10
500	0.62	0.17	0.07	0.01	1.52	0.95	0.70	0.47	6.35	5.70	5.20	4.95
1000	0.57	0.16	0.06	0.01	1.17	0.68	0.49	0.34	9.35	6.20	5.50	5.00
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.10	0.01	-0.02	0.01	3.96	2.55	1.92	1.33	6.85	5.85	5.45	5.75
60	0.13	0.03	0.01	0.02	2.83	1.81	1.34	0.94	6.85	5.55	5.60	5.50
100	0.19	0.04	0.03	0.02	2.17	1.42	1.05	0.72	6.15	5.95	5.65	5.55
200	0.18	0.05	0.03	0.01	1.53	0.96	0.73	0.51	6.65	5.05	5.00	5.25
500	0.22	0.06	0.03	0.01	0.98	0.61	0.44	0.31	6.60	4.65	4.50	4.85
1000	0.20	0.06	0.02	0.01	0.71	0.44	0.33	0.22	7.35	5.30	4.95	4.70
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	0.21	0.10	0.08	-0.01	3.58	2.43	1.81	1.30	5.05	5.60	4.95	5.15
60	0.20	0.07	0.01	-0.04	2.49	1.69	1.27	0.93	5.05	4.80	4.10	5.90
100	0.25	0.08	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.15	4.80	5.10
200	0.25	0.07	0.03	0.00	1.36	0.91	0.69	0.49	4.80	4.70	4.55	4.80
500	0.26	0.07	0.03	0.00	0.89	0.59	0.44	0.31	5.45	4.50	4.30	4.90
1000	0.24	0.06	0.02	0.00	0.66	0.42	0.31	0.22	6.75	5.50	5.05	5.05

Notes: See the notes for Table A.12.1.

Figure A.12: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12)

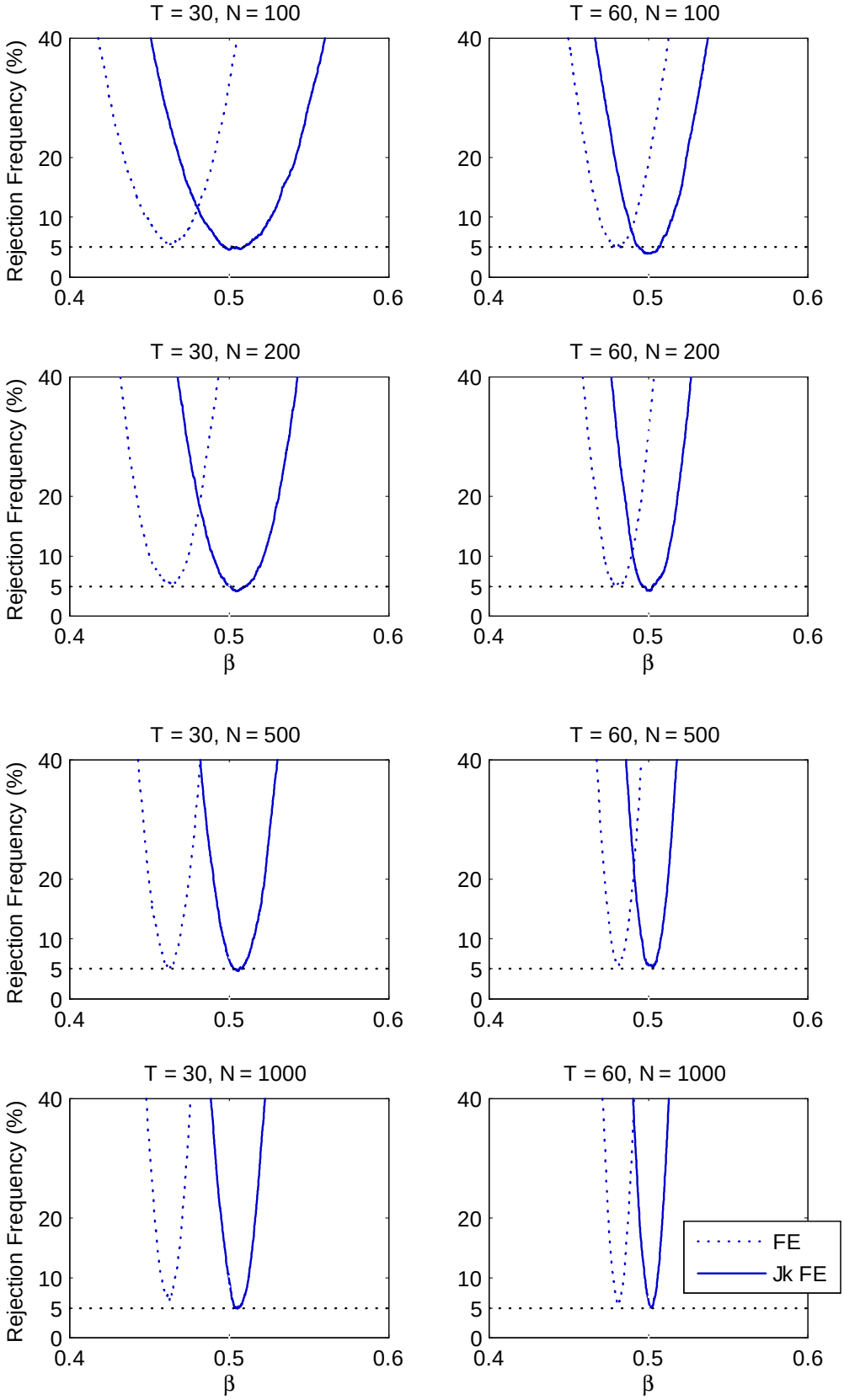

Table A.13.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-2.94	-1.42	-0.79	-0.48	6.53	4.45	3.25	2.33	11.10	8.50	6.05	5.75
60	-2.96	-1.49	-0.90	-0.51	4.98	3.26	2.36	1.69	14.10	9.85	6.55	7.45
100	-2.91	-1.47	-0.88	-0.48	4.24	2.68	1.93	1.34	16.70	11.40	8.45	7.50
200	-2.92	-1.48	-0.88	-0.45	3.62	2.15	1.49	0.98	29.00	16.30	10.90	8.75
500	-2.90	-1.44	-0.86	-0.44	3.21	1.76	1.16	0.70	58.00	31.15	20.60	13.00
1000	-2.93	-1.46	-0.87	-0.45	3.10	1.63	1.03	0.59	85.70	55.25	36.45	20.45
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.58	-2.28	-1.37	-0.68	5.65	3.26	2.25	1.42	28.80	17.90	12.45	9.40
60	-4.44	-2.23	-1.33	-0.66	5.02	2.77	1.82	1.10	47.05	28.25	19.30	11.60
100	-4.37	-2.18	-1.30	-0.65	4.73	2.53	1.63	0.94	68.55	42.35	27.60	16.40
200	-4.34	-2.16	-1.28	-0.64	4.52	2.32	1.45	0.80	93.25	69.00	45.90	25.90
500	-4.30	-2.12	-1.26	-0.63	4.37	2.19	1.33	0.70	100.00	97.05	83.00	54.65
1000	-4.30	-2.12	-1.27	-0.63	4.34	2.16	1.30	0.67	100.00	100.00	98.25	84.55
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.31	0.21	0.18	0.04	3.44	2.39	1.78	1.27	5.85	6.00	4.80	5.15
60	0.28	0.17	0.11	0.01	2.40	1.67	1.26	0.91	6.70	6.05	4.15	5.95
100	0.29	0.17	0.11	0.03	1.85	1.29	0.97	0.70	5.60	5.55	4.80	5.60
200	0.28	0.15	0.10	0.04	1.30	0.92	0.69	0.49	4.80	5.95	5.25	5.50
500	0.28	0.16	0.10	0.05	0.86	0.60	0.45	0.31	6.55	6.65	4.65	4.90
1000	0.26	0.15	0.10	0.04	0.65	0.44	0.33	0.22	8.40	7.20	6.60	6.10
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.57	0.26	0.18	0.00	6.67	4.48	3.26	2.32	4.70	5.45	4.50	4.75
60	0.45	0.16	0.04	-0.05	4.61	3.08	2.25	1.65	4.45	4.70	3.75	5.65
100	0.50	0.14	0.05	-0.02	3.53	2.36	1.78	1.27	5.00	4.15	5.40	5.55
200	0.46	0.11	0.05	0.00	2.50	1.64	1.25	0.89	4.70	4.55	4.35	5.20
500	0.50	0.14	0.06	0.01	1.64	1.08	0.81	0.55	5.15	5.40	5.15	4.75
1000	0.45	0.12	0.05	0.00	1.23	0.78	0.57	0.40	6.50	5.75	5.30	5.55
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.07	0.02	0.00	0.00	3.76	2.46	1.85	1.27	6.45	5.30	5.30	5.45
60	0.09	0.02	-0.01	0.00	2.68	1.74	1.28	0.90	5.90	4.80	5.30	5.40
100	0.15	0.03	0.01	0.00	2.05	1.37	1.02	0.70	5.85	5.45	5.55	5.25
200	0.15	0.03	0.02	0.00	1.45	0.92	0.70	0.49	5.60	4.45	4.90	4.80
500	0.19	0.05	0.03	0.01	0.93	0.59	0.43	0.30	5.85	5.05	4.65	4.95
1000	0.17	0.05	0.02	0.01	0.67	0.43	0.32	0.22	7.35	5.20	5.10	4.85
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.19	0.10	0.08	-0.01	3.52	2.41	1.78	1.28	4.30	5.25	4.15	5.15
60	0.17	0.06	0.02	-0.03	2.46	1.68	1.26	0.92	5.25	5.10	3.85	5.60
100	0.19	0.06	0.02	-0.02	1.89	1.29	0.98	0.70	4.95	4.30	4.70	5.45
200	0.19	0.05	0.02	0.00	1.33	0.91	0.69	0.49	4.50	4.85	4.45	5.00
500	0.20	0.06	0.02	0.00	0.87	0.58	0.44	0.31	5.05	4.60	4.30	4.75
1000	0.18	0.04	0.02	0.00	0.64	0.42	0.31	0.22	6.40	5.25	5.20	5.20

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t$, and $\kappa_x = 0$. FE and half-panel Jackknifed FE are based on equation (13): $\Delta y_{it} = \mu_i + gt + \phi y_{i,t-1} + bx_{it} + e_{it}$. FE-TE and half-panel Jackknifed FE-TE are based on equation (16): $\Delta y_{it} = \mu_i + \delta_t + \phi y_{i,t-1} + bx_{it} + e_{it}$. For the rest of the settings, see the notes for Table A.1.

Table A.13.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-2.88	-1.40	-0.78	-0.47	6.60	4.49	3.29	2.36	11.55	8.35	6.30	5.95
60	-2.93	-1.48	-0.90	-0.51	4.99	3.27	2.37	1.70	14.05	10.15	7.15	7.55
100	-2.88	-1.45	-0.87	-0.47	4.24	2.68	1.93	1.34	16.75	11.35	8.50	7.25
200	-2.91	-1.47	-0.87	-0.45	3.61	2.14	1.49	0.98	28.75	16.05	11.00	8.85
500	-2.90	-1.44	-0.86	-0.44	3.21	1.76	1.16	0.70	58.05	31.00	20.75	13.00
1000	-2.93	-1.46	-0.87	-0.45	3.10	1.63	1.03	0.59	85.60	54.85	36.40	20.55
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.45	-2.22	-1.33	-0.66	5.57	3.23	2.25	1.43	28.40	17.50	13.20	9.90
60	-4.37	-2.19	-1.31	-0.64	4.96	2.74	1.80	1.10	46.25	28.00	19.05	11.85
100	-4.32	-2.15	-1.28	-0.64	4.69	2.51	1.62	0.94	67.65	41.70	27.20	15.85
200	-4.32	-2.15	-1.28	-0.63	4.51	2.31	1.45	0.80	93.15	68.65	45.80	25.90
500	-4.29	-2.12	-1.26	-0.63	4.37	2.19	1.33	0.70	100.00	97.00	82.80	54.70
1000	-4.30	-2.12	-1.27	-0.63	4.34	2.16	1.30	0.67	100.00	100.00	98.25	84.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.28	0.20	0.17	0.03	3.48	2.42	1.81	1.29	6.40	6.55	5.40	5.55
60	0.27	0.16	0.09	0.01	2.42	1.68	1.27	0.92	6.60	5.80	4.80	6.10
100	0.29	0.16	0.10	0.03	1.86	1.29	0.97	0.70	6.10	5.55	5.05	5.45
200	0.28	0.16	0.10	0.04	1.30	0.92	0.69	0.49	5.50	5.75	5.40	5.40
500	0.28	0.16	0.10	0.05	0.86	0.60	0.45	0.31	6.55	6.50	4.70	5.10
1000	0.26	0.15	0.10	0.04	0.65	0.44	0.33	0.22	8.40	7.10	6.45	6.15
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.23	0.16	-0.01	6.74	4.52	3.30	2.35	4.55	5.50	4.90	5.40
60	0.43	0.14	0.02	-0.06	4.64	3.09	2.27	1.65	4.75	4.60	3.65	5.50
100	0.51	0.14	0.05	-0.02	3.55	2.37	1.79	1.27	5.05	4.35	5.25	5.65
200	0.47	0.12	0.05	0.00	2.50	1.65	1.25	0.89	4.80	4.85	4.80	5.15
500	0.50	0.14	0.06	0.01	1.65	1.09	0.82	0.55	5.10	5.50	5.00	4.75
1000	0.45	0.12	0.05	0.00	1.23	0.78	0.57	0.40	6.60	5.60	5.25	5.45
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.08	0.01	-0.01	-0.01	3.79	2.48	1.87	1.30	7.05	5.60	6.10	5.70
60	0.11	0.02	0.00	0.00	2.68	1.74	1.29	0.90	6.15	5.00	5.55	5.40
100	0.16	0.03	0.02	0.01	2.06	1.37	1.02	0.70	5.95	5.55	5.85	5.35
200	0.15	0.03	0.02	0.00	1.45	0.92	0.71	0.49	5.60	4.95	4.75	4.80
500	0.19	0.05	0.03	0.01	0.93	0.59	0.43	0.30	6.00	4.95	5.00	4.80
1000	0.17	0.05	0.02	0.01	0.67	0.43	0.32	0.22	7.20	5.15	5.15	4.90
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.16	0.09	0.08	-0.01	3.56	2.43	1.81	1.30	4.90	5.75	4.80	5.15
60	0.15	0.05	0.01	-0.04	2.48	1.69	1.27	0.93	5.15	4.90	4.10	5.95
100	0.19	0.05	0.01	-0.02	1.90	1.29	0.98	0.70	4.90	4.50	4.70	5.25
200	0.19	0.05	0.02	0.00	1.34	0.91	0.69	0.49	4.50	4.95	4.60	5.10
500	0.20	0.06	0.02	0.00	0.87	0.58	0.44	0.31	5.05	4.60	4.20	4.75
1000	0.18	0.04	0.02	0.00	0.64	0.42	0.31	0.22	6.40	5.30	5.30	5.20

Notes: See the notes for Table A.13.1.

Figure A.13: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13)

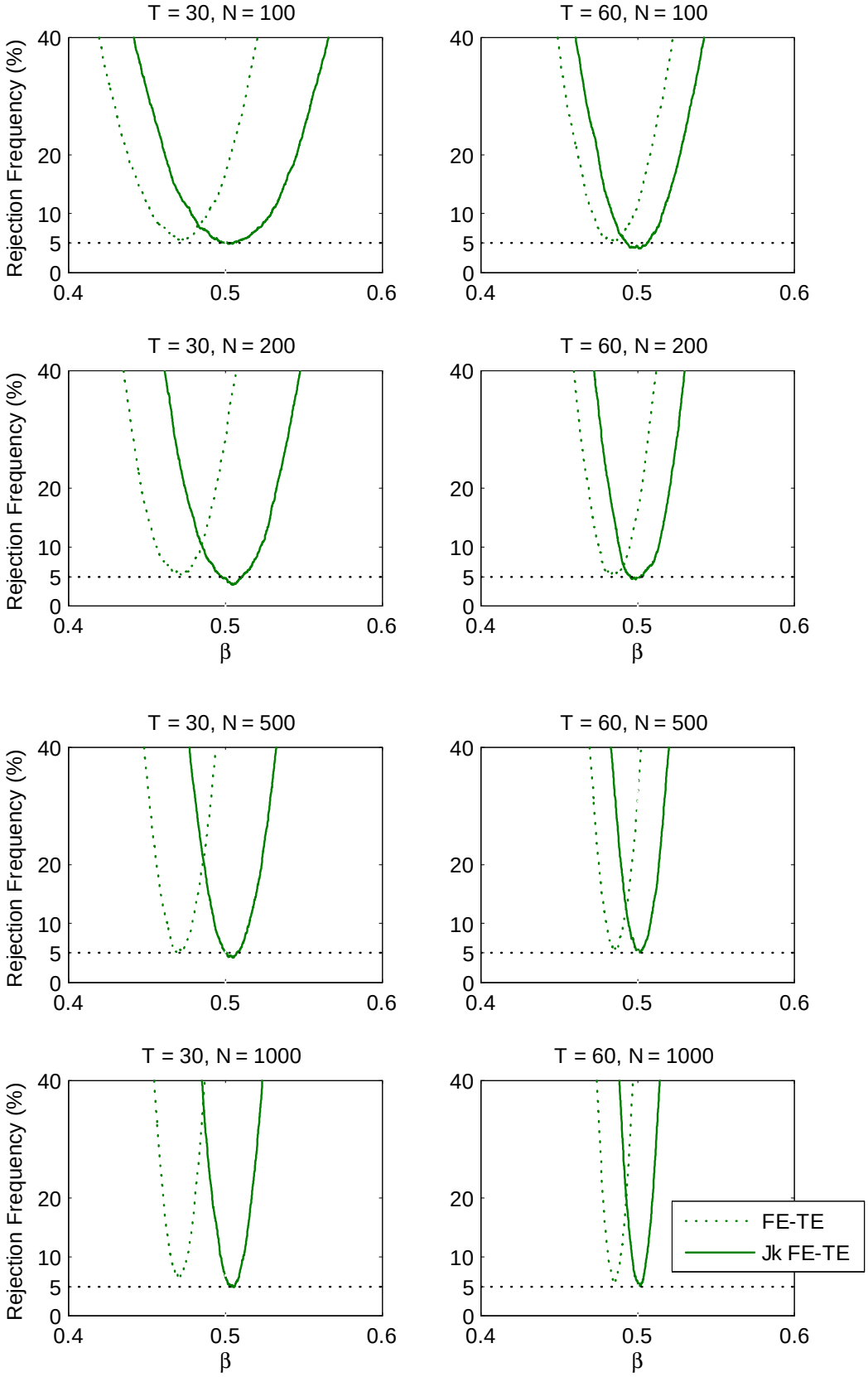

Table A.14.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-3.47	-1.69	-0.95	-0.55	6.44	4.27	3.08	2.18	13.55	9.55	6.30	6.05
60	-3.45	-1.73	-1.04	-0.58	5.08	3.20	2.27	1.60	17.45	11.65	7.45	7.60
100	-3.38	-1.70	-1.01	-0.54	4.43	2.69	1.88	1.28	23.65	15.15	10.05	8.40
200	-3.38	-1.70	-1.01	-0.52	3.92	2.23	1.51	0.96	40.50	21.80	14.15	10.15
500	-3.35	-1.67	-1.00	-0.51	3.58	1.92	1.23	0.71	76.05	44.95	29.05	16.50
1000	-3.38	-1.68	-1.01	-0.51	3.51	1.81	1.13	0.63	95.35	73.25	52.45	29.50
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.85	-2.42	-1.45	-0.71	5.88	3.35	2.30	1.44	30.40	19.10	14.00	9.35
60	-4.71	-2.36	-1.41	-0.69	5.26	2.88	1.88	1.12	51.75	30.90	20.65	12.30
100	-4.63	-2.30	-1.37	-0.68	4.97	2.63	1.68	0.96	73.05	45.25	29.60	17.25
200	-4.59	-2.28	-1.36	-0.67	4.77	2.44	1.52	0.83	95.25	74.45	50.90	28.45
500	-4.55	-2.25	-1.34	-0.67	4.62	2.31	1.40	0.73	100.00	98.45	87.70	59.75
1000	-4.55	-2.24	-1.34	-0.67	4.59	2.28	1.38	0.70	100.00	100.00	98.90	87.35
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.13	0.13	0.13	0.02	3.44	2.39	1.78	1.27	5.80	6.10	4.75	5.05
60	0.10	0.09	0.06	-0.01	2.39	1.66	1.25	0.91	6.15	5.65	4.30	5.95
100	0.12	0.09	0.06	0.01	1.83	1.28	0.97	0.70	5.60	5.30	4.70	5.40
200	0.11	0.08	0.06	0.02	1.28	0.91	0.69	0.49	5.25	5.55	5.05	5.20
500	0.11	0.08	0.06	0.03	0.82	0.58	0.44	0.31	5.60	5.90	4.45	5.15
1000	0.09	0.07	0.05	0.02	0.60	0.41	0.32	0.22	6.70	6.00	6.05	5.60
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.56	0.25	0.17	0.00	6.28	4.18	3.03	2.15	4.85	5.30	4.25	4.65
60	0.47	0.16	0.04	-0.04	4.35	2.87	2.09	1.53	4.60	4.40	3.80	6.05
100	0.55	0.15	0.06	-0.02	3.33	2.21	1.66	1.18	5.05	4.05	5.30	5.65
200	0.52	0.13	0.06	0.00	2.37	1.53	1.16	0.82	4.95	4.15	4.50	5.25
500	0.55	0.15	0.07	0.01	1.58	1.01	0.76	0.51	5.70	5.65	5.00	4.45
1000	0.51	0.13	0.05	0.00	1.19	0.73	0.53	0.37	7.65	5.85	5.55	5.25
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.07	0.01	-0.01	0.00	3.80	2.46	1.85	1.28	6.45	5.00	5.50	5.45
60	0.10	0.02	0.00	0.01	2.72	1.75	1.29	0.91	6.30	5.20	5.60	5.45
100	0.16	0.03	0.02	0.01	2.08	1.37	1.02	0.70	6.05	5.15	5.60	5.45
200	0.17	0.04	0.02	0.01	1.47	0.93	0.71	0.49	6.10	4.75	4.95	4.80
500	0.20	0.05	0.03	0.01	0.95	0.59	0.43	0.31	5.85	4.65	4.60	4.80
1000	0.18	0.05	0.02	0.01	0.68	0.43	0.32	0.22	7.15	5.30	4.95	4.65
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.22	0.11	0.09	-0.01	3.53	2.41	1.79	1.28	4.30	5.30	4.10	5.05
60	0.19	0.07	0.02	-0.03	2.47	1.68	1.26	0.92	5.15	4.90	3.95	5.90
100	0.22	0.07	0.02	-0.02	1.90	1.29	0.98	0.70	4.90	4.30	4.80	5.20
200	0.21	0.06	0.02	0.00	1.34	0.91	0.69	0.49	4.60	4.90	4.25	4.60
500	0.23	0.06	0.03	0.00	0.88	0.58	0.44	0.31	5.20	4.55	4.35	4.85
1000	0.21	0.05	0.02	0.00	0.65	0.42	0.31	0.22	6.40	5.35	5.15	5.20

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.14.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.40	-1.66	-0.94	-0.54	6.48	4.30	3.11	2.20	14.05	9.50	6.45	6.15
60	-3.41	-1.72	-1.04	-0.57	5.07	3.20	2.28	1.61	17.35	11.65	7.50	8.40
100	-3.34	-1.68	-1.01	-0.54	4.41	2.68	1.89	1.28	23.15	15.15	10.15	8.45
200	-3.36	-1.69	-1.01	-0.52	3.91	2.23	1.51	0.96	39.30	21.60	13.95	10.00
500	-3.34	-1.67	-1.00	-0.51	3.58	1.92	1.23	0.71	75.45	44.55	29.00	16.35
1000	-3.38	-1.68	-1.01	-0.51	3.50	1.81	1.13	0.63	95.40	72.75	52.60	29.50
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.71	-2.35	-1.41	-0.69	5.79	3.32	2.29	1.45	29.25	18.55	14.05	10.05
60	-4.63	-2.32	-1.38	-0.67	5.19	2.85	1.86	1.11	50.55	30.45	20.10	12.20
100	-4.58	-2.28	-1.36	-0.67	4.93	2.61	1.67	0.96	72.05	45.15	29.40	17.05
200	-4.57	-2.27	-1.35	-0.67	4.75	2.43	1.51	0.82	95.00	74.25	50.10	28.50
500	-4.54	-2.24	-1.34	-0.67	4.61	2.31	1.40	0.73	100.00	98.45	87.65	59.55
1000	-4.55	-2.24	-1.34	-0.67	4.59	2.28	1.37	0.70	100.00	100.00	98.90	87.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	0.11	0.11	0.12	0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.45	5.45
60	0.09	0.08	0.05	-0.02	2.41	1.67	1.26	0.92	6.40	5.65	4.45	5.75
100	0.12	0.08	0.05	0.01	1.84	1.29	0.97	0.70	6.00	5.50	4.90	5.10
200	0.11	0.08	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.40	5.10	5.15
500	0.11	0.08	0.06	0.03	0.82	0.58	0.44	0.31	5.70	6.05	4.35	5.15
1000	0.09	0.07	0.05	0.02	0.60	0.42	0.31	0.22	6.65	6.25	5.75	5.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.52	0.22	0.15	0.00	6.35	4.22	3.07	2.18	4.65	5.50	4.75	5.15
60	0.46	0.15	0.03	-0.05	4.38	2.88	2.11	1.53	4.95	4.65	4.05	5.50
100	0.55	0.15	0.06	-0.02	3.35	2.21	1.66	1.18	5.05	4.25	5.35	5.65
200	0.52	0.13	0.06	0.00	2.37	1.54	1.16	0.82	4.85	4.75	4.50	5.05
500	0.55	0.15	0.07	0.01	1.58	1.02	0.76	0.51	5.60	5.85	5.15	4.70
1000	0.51	0.13	0.05	0.00	1.19	0.73	0.53	0.37	7.75	5.70	5.40	5.25
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.09	0.01	-0.01	0.00	3.84	2.49	1.88	1.30	6.80	5.70	5.55	5.65
60	0.12	0.02	0.00	0.01	2.73	1.76	1.30	0.91	6.55	5.35	5.75	5.60
100	0.17	0.04	0.02	0.01	2.09	1.38	1.02	0.70	6.10	5.75	5.60	5.20
200	0.17	0.04	0.02	0.01	1.48	0.93	0.71	0.49	6.20	4.70	4.70	4.90
500	0.20	0.05	0.03	0.01	0.95	0.59	0.43	0.31	6.00	4.65	4.80	5.00
1000	0.18	0.05	0.02	0.01	0.68	0.43	0.32	0.22	7.30	5.25	5.00	4.75
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.3$											
30	0.18	0.09	0.08	-0.01	3.57	2.43	1.81	1.30	5.00	5.85	4.80	5.10
60	0.17	0.06	0.01	-0.04	2.49	1.69	1.27	0.93	5.25	5.00	4.15	5.90
100	0.22	0.06	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.45	4.80	5.10
200	0.22	0.06	0.02	0.00	1.35	0.91	0.69	0.49	4.70	4.80	4.55	4.90
500	0.22	0.06	0.03	0.00	0.88	0.59	0.44	0.31	5.15	4.40	4.25	4.80
1000	0.21	0.05	0.02	0.00	0.65	0.42	0.31	0.22	6.70	5.40	5.10	5.20

Notes: See the notes for Table A.14.1.

Figure A.14: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14)

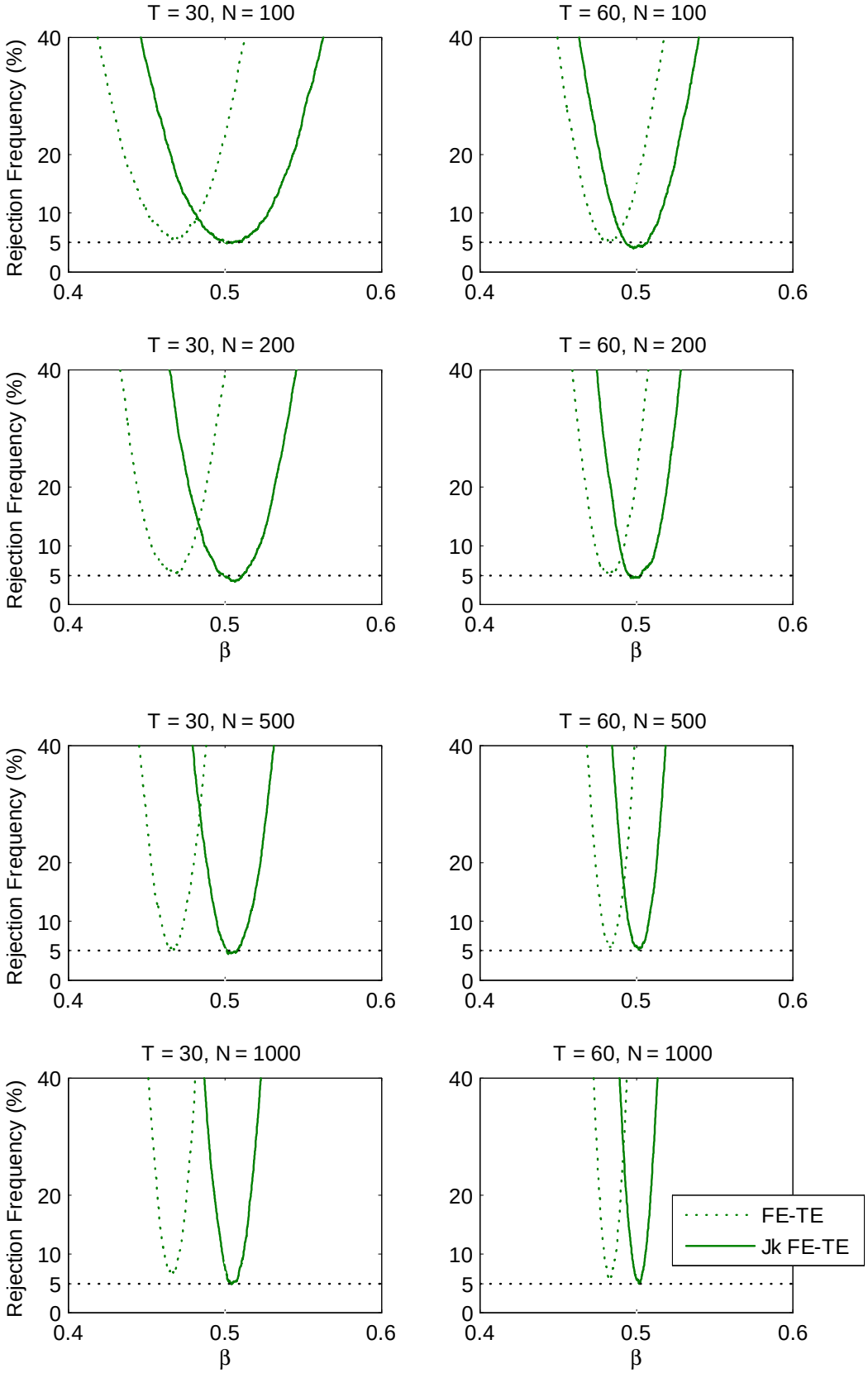

Table A.15.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-3.98	-1.95	-1.11	-0.62	6.40	4.10	2.91	2.03	15.90	10.85	7.05	6.60
60	-3.92	-1.96	-1.18	-0.64	5.22	3.16	2.19	1.51	23.80	13.80	9.35	8.15
100	-3.83	-1.92	-1.15	-0.61	4.65	2.71	1.85	1.22	33.00	19.20	11.85	9.55
200	-3.81	-1.92	-1.14	-0.58	4.23	2.33	1.53	0.94	55.50	30.85	18.90	12.25
500	-3.78	-1.89	-1.13	-0.57	3.96	2.08	1.31	0.73	89.95	60.50	40.00	22.75
1000	-3.81	-1.90	-1.14	-0.58	3.91	2.00	1.23	0.66	99.55	87.75	69.20	42.25
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-5.09	-2.54	-1.53	-0.74	6.12	3.47	2.38	1.48	32.00	19.30	14.35	9.75
60	-4.93	-2.47	-1.47	-0.71	5.49	2.99	1.95	1.16	53.45	32.65	20.60	12.90
100	-4.85	-2.41	-1.43	-0.70	5.19	2.74	1.75	0.99	74.35	46.75	29.70	17.10
200	-4.81	-2.38	-1.42	-0.70	4.98	2.54	1.58	0.86	95.85	76.25	52.65	28.90
500	-4.76	-2.35	-1.40	-0.70	4.84	2.42	1.46	0.76	100.00	98.70	88.75	62.00
1000	-4.76	-2.35	-1.40	-0.69	4.80	2.38	1.44	0.73	100.00	100.00	99.05	88.30
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	-0.07	0.04	0.08	-0.01	3.44	2.38	1.77	1.27	5.95	6.05	4.85	5.00
60	-0.09	0.00	0.01	-0.03	2.39	1.66	1.25	0.91	5.70	5.20	4.30	6.05
100	-0.07	0.00	0.01	-0.02	1.82	1.28	0.97	0.70	5.55	5.10	4.90	5.20
200	-0.07	-0.01	0.01	0.00	1.27	0.90	0.68	0.49	5.60	4.95	4.70	4.80
500	-0.07	0.00	0.01	0.00	0.82	0.58	0.44	0.31	5.60	5.50	4.75	5.25
1000	-0.09	-0.01	0.00	0.00	0.60	0.41	0.31	0.22	6.55	5.30	5.40	5.40
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	0.56	0.24	0.16	0.01	5.90	3.87	2.80	1.97	4.90	5.15	4.30	4.40
60	0.50	0.18	0.05	-0.04	4.10	2.66	1.93	1.40	4.95	4.20	3.85	5.55
100	0.60	0.17	0.07	-0.01	3.14	2.04	1.53	1.08	5.00	3.85	5.15	5.60
200	0.58	0.16	0.07	0.01	2.26	1.42	1.07	0.76	5.10	4.30	4.45	5.20
500	0.62	0.17	0.08	0.01	1.52	0.94	0.70	0.47	6.50	5.65	5.05	4.55
1000	0.58	0.16	0.06	0.01	1.17	0.68	0.49	0.34	9.45	6.20	5.55	5.15
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.08	0.01	-0.02	0.01	3.92	2.53	1.90	1.31	7.15	4.95	5.20	5.20
60	0.11	0.03	0.00	0.02	2.82	1.80	1.34	0.93	6.75	5.35	5.35	5.45
100	0.18	0.04	0.02	0.01	2.16	1.41	1.04	0.72	6.30	5.50	5.50	5.45
200	0.18	0.05	0.03	0.01	1.53	0.96	0.73	0.50	6.50	5.35	5.10	5.00
500	0.22	0.06	0.03	0.01	0.98	0.61	0.44	0.31	6.50	4.70	4.45	5.05
1000	0.20	0.06	0.02	0.01	0.71	0.44	0.33	0.22	7.30	5.35	5.10	4.70
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.24	0.12	0.09	0.00	3.54	2.41	1.79	1.28	4.40	5.15	4.10	4.85
60	0.22	0.08	0.03	-0.03	2.48	1.68	1.26	0.92	5.25	5.10	3.95	5.85
100	0.25	0.08	0.03	-0.02	1.90	1.29	0.98	0.70	5.00	4.15	4.65	5.15
200	0.25	0.07	0.03	0.00	1.35	0.91	0.69	0.49	4.75	4.75	4.40	4.60
500	0.26	0.07	0.03	0.00	0.89	0.59	0.44	0.31	5.65	4.55	4.45	4.75
1000	0.24	0.06	0.02	0.00	0.66	0.42	0.31	0.22	6.80	5.35	5.10	5.15

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.15.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.90	-1.91	-1.09	-0.61	6.42	4.12	2.94	2.05	16.75	10.90	7.55	6.40
60	-3.87	-1.95	-1.17	-0.64	5.21	3.16	2.20	1.51	23.20	13.80	9.15	8.75
100	-3.79	-1.90	-1.14	-0.60	4.63	2.70	1.85	1.22	32.40	18.95	12.30	9.60
200	-3.79	-1.91	-1.13	-0.58	4.22	2.33	1.53	0.94	54.65	30.85	19.15	11.95
500	-3.78	-1.88	-1.13	-0.57	3.96	2.07	1.31	0.73	89.80	60.70	39.70	22.75
1000	-3.81	-1.90	-1.14	-0.58	3.90	2.00	1.23	0.66	99.55	87.70	69.20	41.95
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.94	-2.47	-1.49	-0.72	6.02	3.44	2.37	1.49	31.45	18.85	14.35	9.70
60	-4.85	-2.42	-1.44	-0.69	5.42	2.96	1.93	1.15	52.35	31.20	20.70	12.60
100	-4.80	-2.38	-1.42	-0.69	5.15	2.72	1.73	0.99	72.75	45.90	29.30	16.75
200	-4.79	-2.37	-1.41	-0.70	4.97	2.53	1.57	0.86	95.80	75.10	52.35	28.85
500	-4.75	-2.35	-1.40	-0.70	4.83	2.41	1.46	0.76	100.00	98.70	88.70	61.90
1000	-4.76	-2.34	-1.40	-0.69	4.80	2.38	1.43	0.73	100.00	100.00	99.20	88.50
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	-0.08	0.03	0.07	-0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.55	5.40
60	-0.10	-0.01	0.00	-0.04	2.41	1.67	1.26	0.92	6.10	5.50	4.30	5.95
100	-0.06	0.00	0.01	-0.02	1.84	1.28	0.97	0.70	5.80	5.10	5.05	5.10
200	-0.07	-0.01	0.01	0.00	1.28	0.91	0.69	0.49	5.50	4.95	4.75	5.00
500	-0.07	0.00	0.01	0.00	0.82	0.58	0.44	0.31	5.90	5.45	4.85	5.35
1000	-0.09	-0.01	0.00	0.00	0.60	0.41	0.31	0.22	6.50	5.40	5.35	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.22	0.14	0.00	5.96	3.91	2.84	2.00	4.95	5.50	4.65	4.80
60	0.49	0.16	0.04	-0.04	4.12	2.67	1.94	1.41	5.40	4.40	4.20	5.35
100	0.60	0.17	0.07	-0.01	3.16	2.05	1.53	1.08	4.95	4.05	5.30	5.65
200	0.58	0.16	0.07	0.01	2.26	1.42	1.07	0.76	5.15	4.55	4.40	5.10
500	0.62	0.17	0.07	0.01	1.52	0.95	0.70	0.47	6.35	5.70	5.20	4.95
1000	0.57	0.16	0.06	0.01	1.17	0.68	0.49	0.34	9.35	6.20	5.50	5.00
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.10	0.01	-0.02	0.01	3.96	2.55	1.92	1.33	6.85	5.85	5.45	5.75
60	0.13	0.03	0.01	0.02	2.83	1.81	1.34	0.94	6.85	5.55	5.60	5.50
100	0.19	0.04	0.03	0.02	2.17	1.42	1.05	0.72	6.15	5.95	5.65	5.55
200	0.18	0.05	0.03	0.01	1.53	0.96	0.73	0.51	6.65	5.05	5.00	5.25
500	0.22	0.06	0.03	0.01	0.98	0.61	0.44	0.31	6.60	4.65	4.50	4.85
1000	0.20	0.06	0.02	0.01	0.71	0.44	0.33	0.22	7.35	5.30	4.95	4.70
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.21	0.10	0.08	-0.01	3.58	2.43	1.81	1.30	5.05	5.60	4.95	5.15
60	0.20	0.07	0.01	-0.04	2.49	1.69	1.27	0.93	5.05	4.80	4.10	5.90
100	0.25	0.08	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.15	4.80	5.10
200	0.25	0.07	0.03	0.00	1.36	0.91	0.69	0.49	4.80	4.70	4.55	4.80
500	0.26	0.07	0.03	0.00	0.89	0.59	0.44	0.31	5.45	4.50	4.30	4.90
1000	0.24	0.06	0.02	0.00	0.66	0.42	0.31	0.22	6.75	5.50	5.05	5.05

Notes: See the notes for Table A.15.1.

Figure A.15: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15)

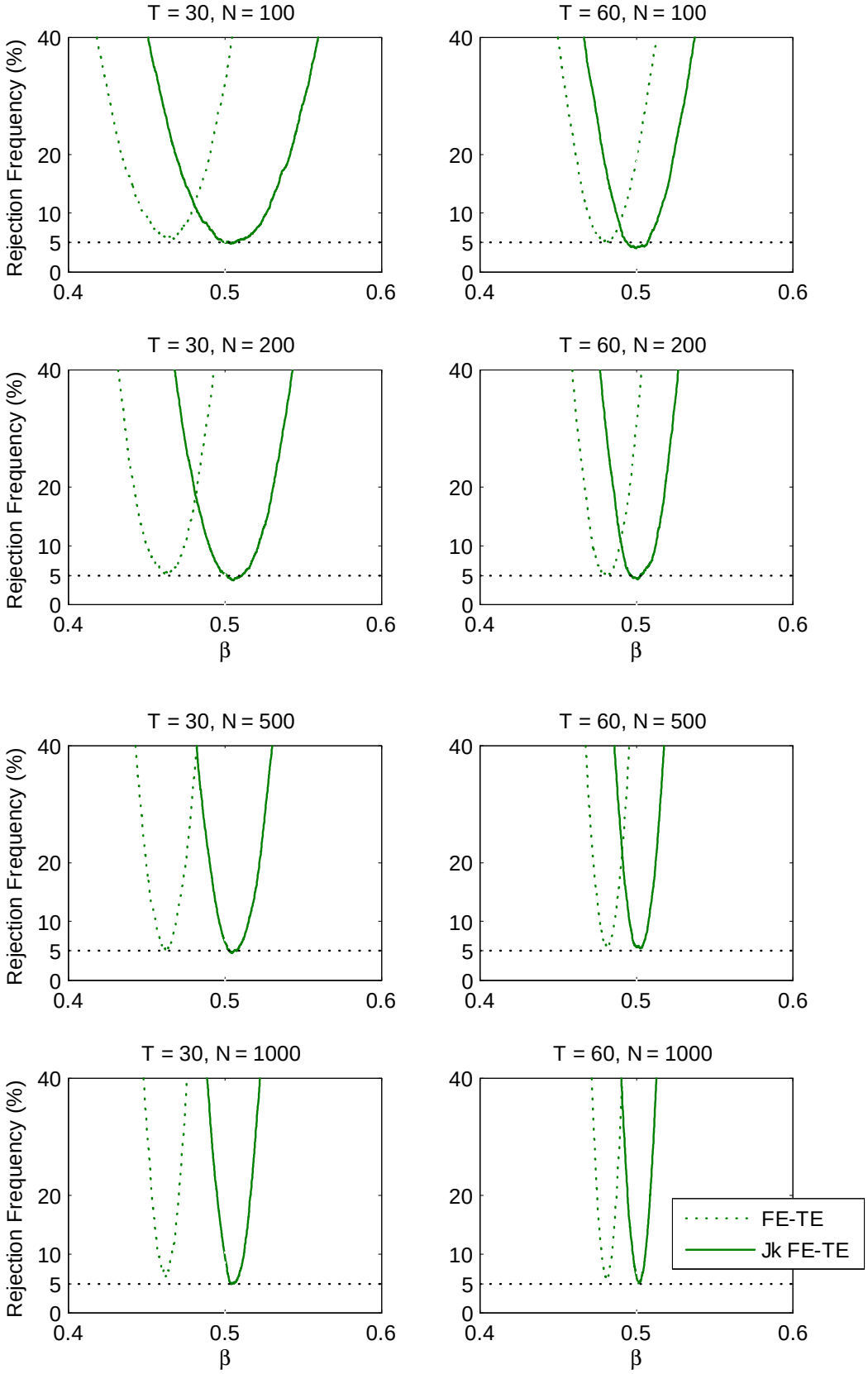

Table A.16.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-2.52	5.13	49.09	791.37	6.44	7.19	49.79	795.79	9.80	19.05	100.00	100.00
60	-2.54	5.01	48.75	787.42	4.78	6.10	49.12	789.55	11.95	29.85	100.00	100.00
100	-2.49	5.03	48.72	786.44	3.99	5.71	48.94	787.74	13.75	48.60	100.00	100.00
200	-2.51	5.03	48.72	785.52	3.31	5.36	48.83	786.16	21.90	77.35	100.00	100.00
500	-2.48	5.06	48.70	785.29	2.85	5.20	48.75	785.56	44.55	98.65	100.00	100.00
1000	-2.52	5.03	48.66	784.87	2.71	5.11	48.68	785.00	73.15	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-3.92	6.20	32.05	56.95	5.14	6.63	32.09	56.95	23.15	79.55	100.00	100.00
60	-3.79	6.21	32.06	56.95	4.45	6.43	32.08	56.95	36.55	97.25	100.00	100.00
100	-3.72	6.26	32.06	56.95	4.13	6.39	32.07	56.95	54.00	99.70	100.00	100.00
200	-3.69	6.28	32.07	56.95	3.90	6.35	32.08	56.95	82.85	100.00	100.00	100.00
500	-3.65	6.31	32.08	56.95	3.74	6.34	32.08	56.95	99.65	100.00	100.00	100.00
1000	-3.65	6.31	32.07	56.95	3.70	6.32	32.08	56.95	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.27	-0.39	-2.38	-4.55	3.44	2.49	3.08	4.76	5.75	6.75	21.50	86.45
60	0.24	-0.44	-2.44	-4.59	2.40	1.78	2.82	4.70	6.15	6.40	41.70	99.05
100	0.25	-0.44	-2.44	-4.56	1.85	1.39	2.67	4.63	5.95	6.65	60.25	100.00
200	0.24	-0.45	-2.44	-4.55	1.30	1.04	2.56	4.59	4.90	8.30	88.15	100.00
500	0.24	-0.44	-2.45	-4.55	0.85	0.74	2.50	4.57	6.40	13.15	99.80	100.00
1000	0.22	-0.45	-2.45	-4.55	0.63	0.62	2.47	4.56	8.00	20.50	100.00	100.00
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	1.53	16.57	-3090.03	-157.24	7.08	18.25	105245.72	157.52	5.15	70.70	41.15	100.00
60	1.41	16.18	-2179.72	-156.92	4.96	17.04	31338.45	157.07	5.15	92.75	52.70	100.00
100	1.46	16.12	803354.53	-156.99	3.90	16.63	35912659.89	157.08	6.20	99.00	65.70	100.00
200	1.41	16.07	-1528.88	-156.99	2.90	16.33	6748.75	157.04	6.85	100.00	82.25	100.00
500	1.45	16.07	-1317.69	-157.01	2.18	16.18	2371.05	157.03	13.30	100.00	98.30	100.00
1000	1.40	16.02	-1226.09	-157.01	1.84	16.07	1267.99	157.02	21.75	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	1.33	16.33	62.36	81.83	4.05	16.64	62.42	81.84	8.45	99.95	100.00	100.00
60	1.35	16.24	62.35	81.83	3.03	16.40	62.38	81.84	10.50	100.00	100.00	100.00
100	1.40	16.24	62.30	81.84	2.50	16.34	62.32	81.84	11.65	100.00	100.00	100.00
200	1.40	16.26	62.29	81.83	2.02	16.31	62.30	81.83	17.65	100.00	100.00	100.00
500	1.44	16.27	62.28	81.83	1.71	16.29	62.29	81.83	38.30	100.00	100.00	100.00
1000	1.42	16.26	62.27	81.83	1.57	16.27	62.27	81.83	60.25	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.11	-1.07	-4.72	-6.64	3.54	2.94	5.37	6.85	4.85	9.80	55.40	90.20
60	0.09	-1.11	-4.78	-6.68	2.49	2.23	5.12	6.80	4.70	12.10	79.75	99.75
100	0.12	-1.11	-4.77	-6.65	1.90	1.84	4.98	6.72	4.75	15.75	95.45	100.00
200	0.11	-1.12	-4.75	-6.65	1.34	1.53	4.86	6.69	4.35	23.25	99.75	100.00
500	0.12	-1.12	-4.77	-6.65	0.86	1.30	4.82	6.66	4.70	45.00	100.00	100.00
1000	0.10	-1.13	-4.77	-6.64	0.63	1.22	4.79	6.65	6.55	72.70	100.00	100.00

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.16.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-2.88	-1.40	-0.78	-0.47	6.60	4.49	3.29	2.36	11.55	8.35	6.30	5.95
60	-2.93	-1.48	-0.90	-0.51	4.99	3.27	2.37	1.70	14.05	10.15	7.15	7.55
100	-2.88	-1.45	-0.87	-0.47	4.24	2.68	1.93	1.34	16.75	11.35	8.50	7.25
200	-2.91	-1.47	-0.87	-0.45	3.61	2.14	1.49	0.98	28.75	16.05	11.00	8.85
500	-2.90	-1.44	-0.86	-0.44	3.21	1.76	1.16	0.70	58.05	31.00	20.75	13.00
1000	-2.93	-1.46	-0.87	-0.45	3.10	1.63	1.03	0.59	85.60	54.85	36.40	20.55
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.45	-2.22	-1.33	-0.66	5.57	3.23	2.25	1.43	28.40	17.50	13.20	9.90
60	-4.37	-2.19	-1.31	-0.64	4.96	2.74	1.80	1.10	46.25	28.00	19.05	11.85
100	-4.32	-2.15	-1.28	-0.64	4.69	2.51	1.62	0.94	67.65	41.70	27.20	15.85
200	-4.32	-2.15	-1.28	-0.63	4.51	2.31	1.45	0.80	93.15	68.65	45.80	25.90
500	-4.29	-2.12	-1.26	-0.63	4.37	2.19	1.33	0.70	100.00	97.00	82.80	54.70
1000	-4.30	-2.12	-1.27	-0.63	4.34	2.16	1.30	0.67	100.00	100.00	98.25	84.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.28	0.20	0.17	0.03	3.48	2.42	1.81	1.29	6.40	6.55	5.40	5.55
60	0.27	0.16	0.09	0.01	2.42	1.68	1.27	0.92	6.60	5.80	4.80	6.10
100	0.29	0.16	0.10	0.03	1.86	1.29	0.97	0.70	6.10	5.55	5.05	5.45
200	0.28	0.16	0.10	0.04	1.30	0.92	0.69	0.49	5.50	5.75	5.40	5.40
500	0.28	0.16	0.10	0.05	0.86	0.60	0.45	0.31	6.55	6.50	4.70	5.10
1000	0.26	0.15	0.10	0.04	0.65	0.44	0.33	0.22	8.40	7.10	6.45	6.15
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.23	0.16	-0.01	6.74	4.52	3.30	2.35	4.55	5.50	4.90	5.40
60	0.43	0.14	0.02	-0.06	4.64	3.09	2.27	1.65	4.75	4.60	3.65	5.50
100	0.51	0.14	0.05	-0.02	3.55	2.37	1.79	1.27	5.05	4.35	5.25	5.65
200	0.47	0.12	0.05	0.00	2.50	1.65	1.25	0.89	4.80	4.85	4.80	5.15
500	0.50	0.14	0.06	0.01	1.65	1.09	0.82	0.55	5.10	5.50	5.00	4.75
1000	0.45	0.12	0.05	0.00	1.23	0.78	0.57	0.40	6.60	5.60	5.25	5.45
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.08	0.01	-0.01	-0.01	3.79	2.48	1.87	1.30	7.05	5.60	6.10	5.70
60	0.11	0.02	0.00	0.00	2.68	1.74	1.29	0.90	6.15	5.00	5.55	5.40
100	0.16	0.03	0.02	0.01	2.06	1.37	1.02	0.70	5.95	5.55	5.85	5.35
200	0.15	0.03	0.02	0.00	1.45	0.92	0.71	0.49	5.60	4.95	4.75	4.80
500	0.19	0.05	0.03	0.01	0.93	0.59	0.43	0.30	6.00	4.95	5.00	4.80
1000	0.17	0.05	0.02	0.01	0.67	0.43	0.32	0.22	7.20	5.15	5.15	4.90
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.16	0.09	0.08	-0.01	3.56	2.43	1.81	1.30	4.90	5.75	4.80	5.15
60	0.15	0.05	0.01	-0.04	2.48	1.69	1.27	0.93	5.15	4.90	4.10	5.95
100	0.19	0.05	0.01	-0.02	1.90	1.29	0.98	0.70	4.90	4.50	4.70	5.25
200	0.19	0.05	0.02	0.00	1.34	0.91	0.69	0.49	4.50	4.95	4.60	5.10
500	0.20	0.06	0.02	0.00	0.87	0.58	0.44	0.31	5.05	4.60	4.20	4.75
1000	0.18	0.04	0.02	0.00	0.64	0.42	0.31	0.22	6.40	5.30	5.30	5.20

Notes: See the notes for Table A.16.1.

Figure A.16: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16)

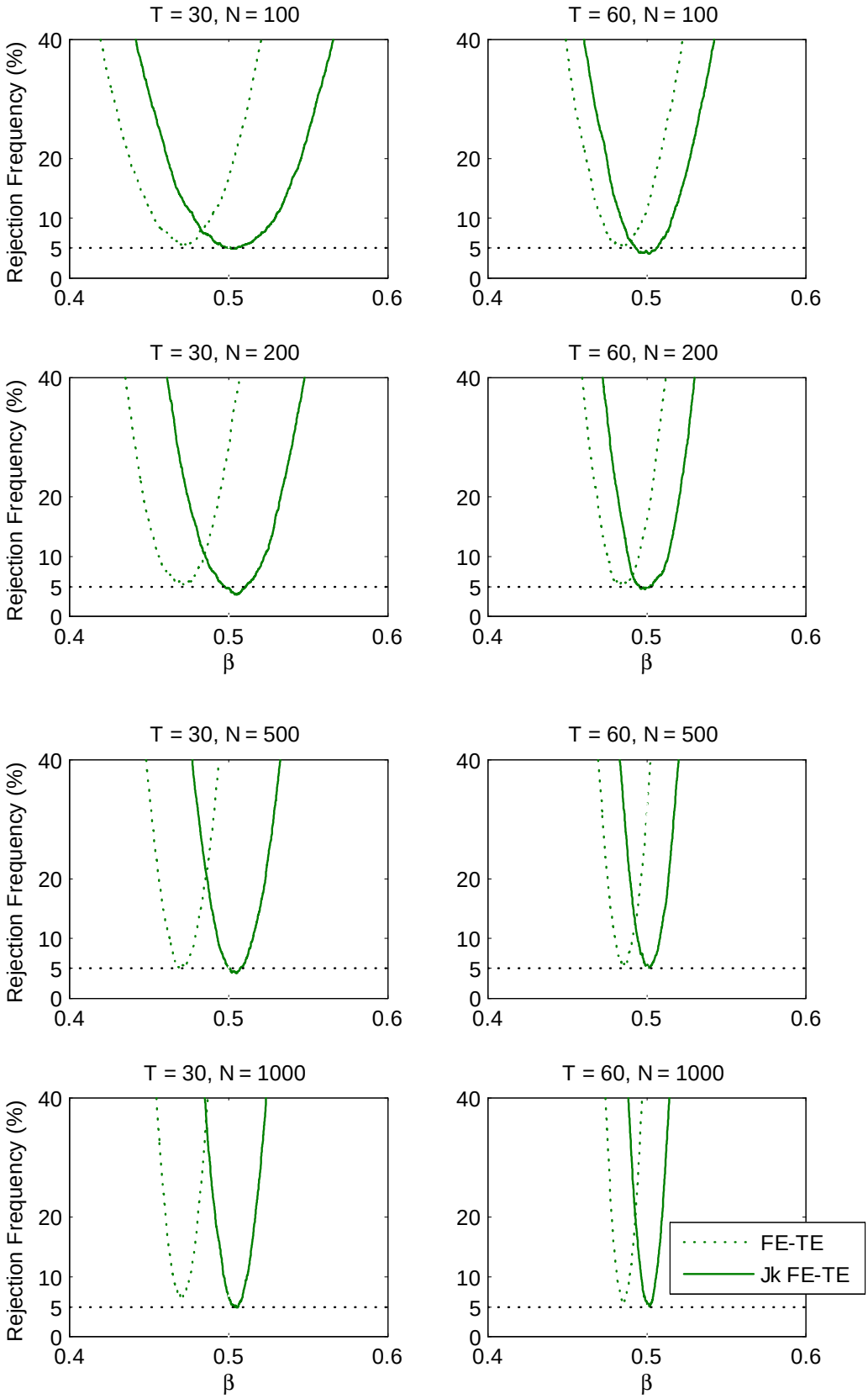

Table A.17.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-2.98	5.80	50.26	300.94	6.26	7.43	50.70	301.11	11.40	27.15	100.00	100.00
60	-2.96	5.70	50.02	300.75	4.79	6.55	50.25	300.83	14.85	45.85	100.00	100.00
100	-2.88	5.74	50.00	300.73	4.09	6.26	50.14	300.78	18.50	65.45	100.00	100.00
200	-2.89	5.74	50.01	300.67	3.52	6.00	50.08	300.69	31.15	91.15	100.00	100.00
500	-2.86	5.78	50.00	300.69	3.14	5.88	50.02	300.70	61.65	99.85	100.00	100.00
1000	-2.89	5.75	49.96	300.65	3.04	5.81	49.98	300.66	88.40	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.15	6.43	31.08	52.04	5.31	6.84	31.11	52.04	24.75	82.55	100.00	100.00
60	-4.00	6.44	31.10	52.05	4.64	6.66	31.12	52.06	40.65	98.00	100.00	100.00
100	-3.93	6.49	31.10	52.05	4.32	6.62	31.11	52.05	59.05	99.80	100.00	100.00
200	-3.89	6.52	31.11	52.05	4.10	6.58	31.12	52.05	86.50	100.00	100.00	100.00
500	-3.85	6.55	31.13	52.05	3.94	6.57	31.13	52.05	99.90	100.00	100.00	100.00
1000	-3.85	6.55	31.12	52.05	3.90	6.56	31.12	52.05	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.11	-0.14	-1.04	-2.08	3.44	2.46	2.21	2.53	5.85	6.50	7.90	27.95
60	0.09	-0.18	-1.12	-2.14	2.39	1.73	1.79	2.37	6.15	5.90	12.80	51.40
100	0.11	-0.18	-1.11	-2.11	1.83	1.33	1.55	2.26	5.50	5.40	18.35	74.55
200	0.10	-0.19	-1.12	-2.11	1.28	0.95	1.35	2.19	5.15	5.55	31.25	95.90
500	0.10	-0.19	-1.13	-2.11	0.82	0.62	1.23	2.14	5.60	6.75	65.10	100.00
1000	0.08	-0.20	-1.13	-2.11	0.60	0.47	1.18	2.13	7.05	8.25	90.40	100.00
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	1.69	19.12	-308.12	-259.14	6.75	20.47	125896.25	260.14	5.60	84.60	22.75	100.00
60	1.60	18.73	125.59	-257.81	4.77	19.41	72651.91	258.34	5.95	97.95	23.05	100.00
100	1.68	18.66	-757.19	-257.75	3.80	19.07	59270.53	258.07	7.40	99.95	24.25	100.00
200	1.64	18.62	-2377.62	-257.58	2.90	18.83	74901.15	257.74	8.65	100.00	25.25	100.00
500	1.68	18.61	-7398.97	-257.54	2.27	18.69	146744.47	257.60	18.05	100.00	27.20	100.00
1000	1.63	18.56	-9136.83	-257.49	1.98	18.60	427001.44	257.53	31.10	100.00	30.85	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	1.42	17.00	60.34	72.97	4.13	17.31	60.40	72.98	8.40	99.95	100.00	100.00
60	1.45	16.92	60.34	72.99	3.13	17.08	60.36	72.99	10.80	100.00	100.00	100.00
100	1.51	16.91	60.29	72.98	2.59	17.01	60.31	72.99	13.20	100.00	100.00	100.00
200	1.51	16.94	60.28	72.98	2.12	16.99	60.29	72.98	20.00	100.00	100.00	100.00
500	1.55	16.95	60.27	72.97	1.81	16.97	60.27	72.97	42.85	100.00	100.00	100.00
1000	1.53	16.94	60.26	72.97	1.67	16.95	60.26	72.97	66.70	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.18	-0.41	-2.12	-3.05	3.56	2.76	3.30	3.48	4.50	7.70	18.35	26.00
60	0.17	-0.45	-2.20	-3.11	2.50	1.98	2.86	3.35	4.95	8.80	31.25	54.35
100	0.20	-0.45	-2.20	-3.08	1.91	1.54	2.61	3.23	4.90	8.20	43.85	79.25
200	0.19	-0.47	-2.19	-3.09	1.35	1.14	2.41	3.17	4.65	9.90	68.30	98.35
500	0.20	-0.47	-2.21	-3.09	0.88	0.81	2.30	3.12	5.30	14.20	95.95	100.00
1000	0.18	-0.48	-2.21	-3.09	0.65	0.67	2.26	3.10	7.10	21.95	99.95	100.00

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.17.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.40	-1.66	-0.94	-0.54	6.48	4.30	3.11	2.20	14.05	9.50	6.45	6.15
60	-3.41	-1.72	-1.04	-0.57	5.07	3.20	2.28	1.61	17.35	11.65	7.50	8.40
100	-3.34	-1.68	-1.01	-0.54	4.41	2.68	1.89	1.28	23.15	15.15	10.15	8.45
200	-3.36	-1.69	-1.01	-0.52	3.91	2.23	1.51	0.96	39.30	21.60	13.95	10.00
500	-3.34	-1.67	-1.00	-0.51	3.58	1.92	1.23	0.71	75.45	44.55	29.00	16.35
1000	-3.38	-1.68	-1.01	-0.51	3.50	1.81	1.13	0.63	95.40	72.75	52.60	29.50
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.71	-2.35	-1.41	-0.69	5.79	3.32	2.29	1.45	29.25	18.55	14.05	10.05
60	-4.63	-2.32	-1.38	-0.67	5.19	2.85	1.86	1.11	50.55	30.45	20.10	12.20
100	-4.58	-2.28	-1.36	-0.67	4.93	2.61	1.67	0.96	72.05	45.15	29.40	17.05
200	-4.57	-2.27	-1.35	-0.67	4.75	2.43	1.51	0.82	95.00	74.25	50.10	28.50
500	-4.54	-2.24	-1.34	-0.67	4.61	2.31	1.40	0.73	100.00	98.45	87.65	59.55
1000	-4.55	-2.24	-1.34	-0.67	4.59	2.28	1.37	0.70	100.00	100.00	98.90	87.45
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.11	0.11	0.12	0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.45	5.45
60	0.09	0.08	0.05	-0.02	2.41	1.67	1.26	0.92	6.40	5.65	4.45	5.75
100	0.12	0.08	0.05	0.01	1.84	1.29	0.97	0.70	6.00	5.50	4.90	5.10
200	0.11	0.08	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.40	5.10	5.15
500	0.11	0.08	0.06	0.03	0.82	0.58	0.44	0.31	5.70	6.05	4.35	5.15
1000	0.09	0.07	0.05	0.02	0.60	0.42	0.31	0.22	6.65	6.25	5.75	5.75
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.52	0.22	0.15	0.00	6.35	4.22	3.07	2.18	4.65	5.50	4.75	5.15
60	0.46	0.15	0.03	-0.05	4.38	2.88	2.11	1.53	4.95	4.65	4.05	5.50
100	0.55	0.15	0.06	-0.02	3.35	2.21	1.66	1.18	5.05	4.25	5.35	5.65
200	0.52	0.13	0.06	0.00	2.37	1.54	1.16	0.82	4.85	4.75	4.50	5.05
500	0.55	0.15	0.07	0.01	1.58	1.02	0.76	0.51	5.60	5.85	5.15	4.70
1000	0.51	0.13	0.05	0.00	1.19	0.73	0.53	0.37	7.75	5.70	5.40	5.25
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.09	0.01	-0.01	0.00	3.84	2.49	1.88	1.30	6.80	5.70	5.55	5.65
60	0.12	0.02	0.00	0.01	2.73	1.76	1.30	0.91	6.55	5.35	5.75	5.60
100	0.17	0.04	0.02	0.01	2.09	1.38	1.02	0.70	6.10	5.75	5.60	5.20
200	0.17	0.04	0.02	0.01	1.48	0.93	0.71	0.49	6.20	4.70	4.70	4.90
500	0.20	0.05	0.03	0.01	0.95	0.59	0.43	0.31	6.00	4.65	4.80	5.00
1000	0.18	0.05	0.02	0.01	0.68	0.43	0.32	0.22	7.30	5.25	5.00	4.75
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.18	0.09	0.08	-0.01	3.57	2.43	1.81	1.30	5.00	5.85	4.80	5.10
60	0.17	0.06	0.01	-0.04	2.49	1.69	1.27	0.93	5.25	5.00	4.15	5.90
100	0.22	0.06	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.45	4.80	5.10
200	0.22	0.06	0.02	0.00	1.35	0.91	0.69	0.49	4.70	4.80	4.55	4.90
500	0.22	0.06	0.03	0.00	0.88	0.59	0.44	0.31	5.15	4.40	4.25	4.80
1000	0.21	0.05	0.02	0.00	0.65	0.42	0.31	0.22	6.70	5.40	5.10	5.20

Notes: See the notes for Table A.17.1.

Figure A.17: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17)

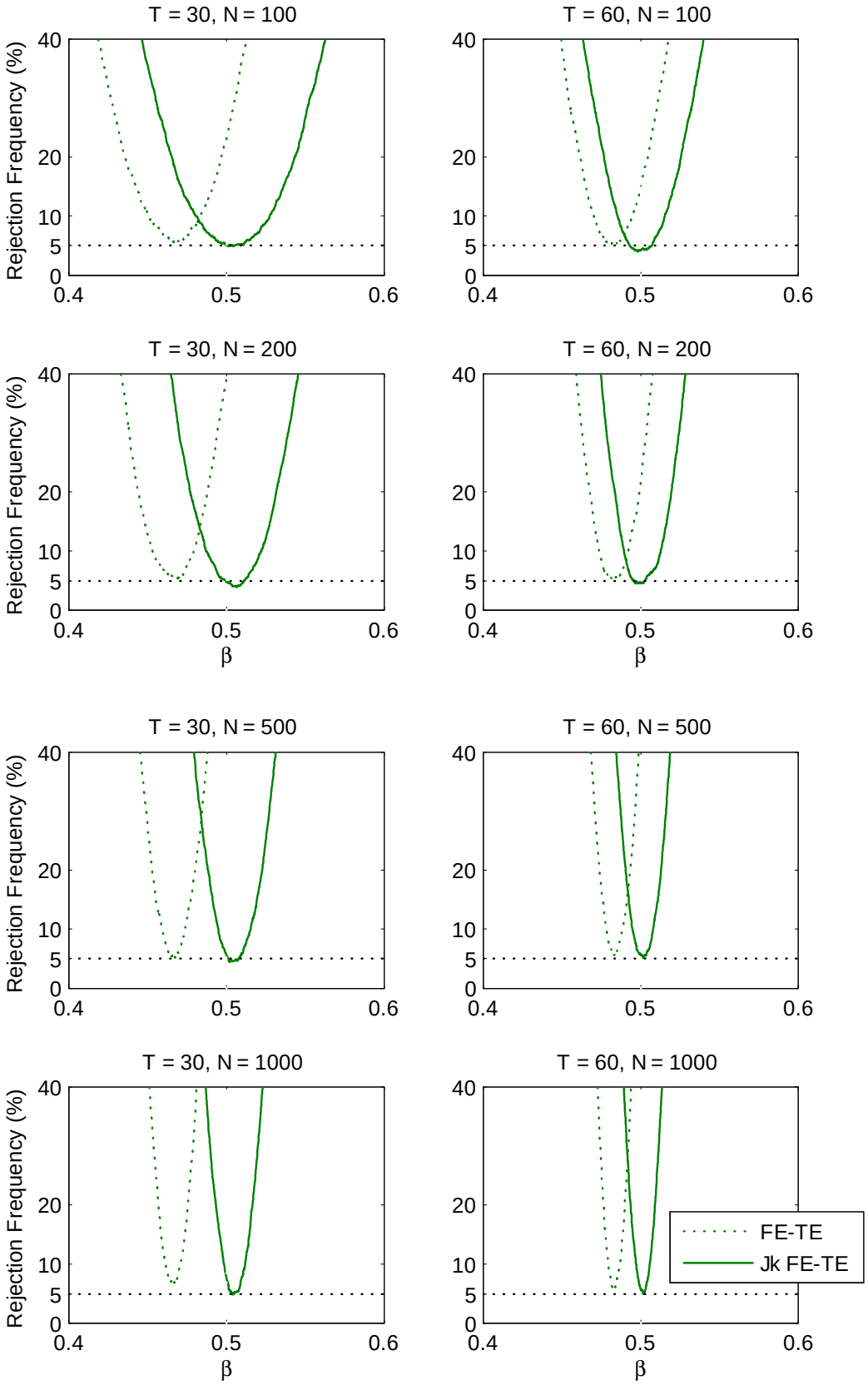

Table A.18.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-3.42	6.38	48.33	167.31	6.13	7.64	48.58	167.33	13.75	36.75	100.00	100.00
60	-3.36	6.31	48.16	167.27	4.84	6.95	48.29	167.28	18.00	60.90	100.00	100.00
100	-3.26	6.36	48.15	167.26	4.22	6.74	48.23	167.27	25.25	81.65	100.00	100.00
200	-3.25	6.37	48.16	167.24	3.74	6.56	48.20	167.25	42.65	98.15	100.00	100.00
500	-3.22	6.40	48.15	167.25	3.43	6.48	48.17	167.25	78.55	100.00	100.00	100.00
1000	-3.24	6.38	48.13	167.24	3.36	6.42	48.14	167.24	96.40	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.34	6.54	29.31	46.25	5.51	6.96	29.35	46.25	24.95	81.85	100.00	100.00
60	-4.18	6.57	29.35	46.27	4.83	6.79	29.37	46.27	41.40	97.65	100.00	100.00
100	-4.10	6.62	29.35	46.26	4.50	6.74	29.37	46.26	60.65	99.85	100.00	100.00
200	-4.06	6.65	29.37	46.26	4.27	6.71	29.37	46.26	87.65	100.00	100.00	100.00
500	-4.02	6.68	29.38	46.26	4.10	6.70	29.38	46.26	99.90	100.00	100.00	100.00
1000	-4.02	6.67	29.37	46.26	4.06	6.69	29.38	46.26	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	-0.05	0.13	0.16	-0.11	3.44	2.45	1.95	1.46	6.10	6.20	5.00	5.00
60	-0.07	0.08	0.08	-0.17	2.39	1.72	1.40	1.07	5.80	5.75	4.50	5.30
100	-0.05	0.08	0.08	-0.15	1.83	1.32	1.08	0.83	5.75	5.25	4.35	6.00
200	-0.05	0.07	0.07	-0.16	1.28	0.93	0.77	0.60	5.55	5.45	5.35	6.05
500	-0.05	0.07	0.06	-0.16	0.82	0.59	0.49	0.39	5.70	5.30	5.45	8.50
1000	-0.07	0.06	0.05	-0.16	0.60	0.42	0.34	0.30	6.55	5.90	5.40	10.65
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	1.88	21.37	2069.45	-1124.19	6.43	22.46	68163.06	2334.83	5.95	94.60	50.50	90.05
60	1.81	20.99	606.02	-1049.33	4.61	21.53	11466.34	1093.71	6.95	99.70	70.05	99.55
100	1.91	20.91	1092.30	-1024.70	3.74	21.24	5040.90	1045.91	8.65	100.00	85.95	100.00
200	1.88	20.88	974.57	-1006.88	2.94	21.04	1361.11	1016.38	12.05	100.00	97.70	100.00
500	1.93	20.86	898.05	-998.06	2.41	20.93	920.89	1001.69	26.25	100.00	100.00	100.00
1000	1.88	20.82	875.31	-994.51	2.16	20.85	884.36	996.31	44.25	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	1.52	17.42	56.75	63.13	4.28	17.72	56.81	63.14	8.80	99.95	100.00	100.00
60	1.55	17.34	56.77	63.16	3.26	17.50	56.79	63.16	10.85	100.00	100.00	100.00
100	1.61	17.33	56.72	63.16	2.71	17.43	56.74	63.16	14.35	100.00	100.00	100.00
200	1.62	17.36	56.70	63.15	2.24	17.41	56.71	63.15	21.25	100.00	100.00	100.00
500	1.66	17.37	56.70	63.15	1.92	17.38	56.70	63.15	45.80	100.00	100.00	100.00
1000	1.64	17.36	56.69	63.15	1.78	17.37	56.69	63.15	70.20	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.27	0.28	0.19	-0.30	3.58	2.74	2.51	1.73	4.80	8.30	7.55	2.55
60	0.25	0.23	0.10	-0.37	2.51	1.94	1.82	1.30	5.00	7.15	9.00	3.00
100	0.29	0.22	0.10	-0.35	1.93	1.48	1.40	1.03	5.35	6.95	7.55	3.85
200	0.28	0.21	0.09	-0.36	1.37	1.06	1.00	0.78	5.05	7.70	8.65	4.90
500	0.29	0.21	0.07	-0.36	0.91	0.69	0.63	0.56	6.45	7.95	8.55	8.00
1000	0.27	0.19	0.07	-0.36	0.69	0.51	0.44	0.47	8.05	9.70	9.00	15.30

Notes: $\beta = 0.5$, $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.18.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-3.90	-1.91	-1.09	-0.61	6.42	4.12	2.94	2.05	16.75	10.90	7.55	6.40
60	-3.87	-1.95	-1.17	-0.64	5.21	3.16	2.20	1.51	23.20	13.80	9.15	8.75
100	-3.79	-1.90	-1.14	-0.60	4.63	2.70	1.85	1.22	32.40	18.95	12.30	9.60
200	-3.79	-1.91	-1.13	-0.58	4.22	2.33	1.53	0.94	54.65	30.85	19.15	11.95
500	-3.78	-1.88	-1.13	-0.57	3.96	2.07	1.31	0.73	89.80	60.70	39.70	22.75
1000	-3.81	-1.90	-1.14	-0.58	3.90	2.00	1.23	0.66	99.55	87.70	69.20	41.95
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	-4.94	-2.47	-1.49	-0.72	6.02	3.44	2.37	1.49	31.45	18.85	14.35	9.70
60	-4.85	-2.42	-1.44	-0.69	5.42	2.96	1.93	1.15	52.35	31.20	20.70	12.60
100	-4.80	-2.38	-1.42	-0.69	5.15	2.72	1.73	0.99	72.75	45.90	29.30	16.75
200	-4.79	-2.37	-1.41	-0.70	4.97	2.53	1.57	0.86	95.80	75.10	52.35	28.85
500	-4.75	-2.35	-1.40	-0.70	4.83	2.41	1.46	0.76	100.00	98.70	88.70	61.90
1000	-4.76	-2.34	-1.40	-0.69	4.80	2.38	1.43	0.73	100.00	100.00	99.20	88.50
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	-0.08	0.03	0.07	-0.01	3.48	2.41	1.80	1.29	6.60	6.55	5.55	5.40
60	-0.10	-0.01	0.00	-0.04	2.41	1.67	1.26	0.92	6.10	5.50	4.30	5.95
100	-0.06	0.00	0.01	-0.02	1.84	1.28	0.97	0.70	5.80	5.10	5.05	5.10
200	-0.07	-0.01	0.01	0.00	1.28	0.91	0.69	0.49	5.50	4.95	4.75	5.00
500	-0.07	0.00	0.01	0.00	0.82	0.58	0.44	0.31	5.90	5.45	4.85	5.35
1000	-0.09	-0.01	0.00	0.00	0.60	0.41	0.31	0.22	6.50	5.40	5.35	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	0.53	0.22	0.14	0.00	5.96	3.91	2.84	2.00	4.95	5.50	4.65	4.80
60	0.49	0.16	0.04	-0.04	4.12	2.67	1.94	1.41	5.40	4.40	4.20	5.35
100	0.60	0.17	0.07	-0.01	3.16	2.05	1.53	1.08	4.95	4.05	5.30	5.65
200	0.58	0.16	0.07	0.01	2.26	1.42	1.07	0.76	5.15	4.55	4.40	5.10
500	0.62	0.17	0.07	0.01	1.52	0.95	0.70	0.47	6.35	5.70	5.20	4.95
1000	0.57	0.16	0.06	0.01	1.17	0.68	0.49	0.34	9.35	6.20	5.50	5.00
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30	0.10	0.01	-0.02	0.01	3.96	2.55	1.92	1.33	6.85	5.85	5.45	5.75
60	0.13	0.03	0.01	0.02	2.83	1.81	1.34	0.94	6.85	5.55	5.60	5.50
100	0.19	0.04	0.03	0.02	2.17	1.42	1.05	0.72	6.15	5.95	5.65	5.55
200	0.18	0.05	0.03	0.01	1.53	0.96	0.73	0.51	6.65	5.05	5.00	5.25
500	0.22	0.06	0.03	0.01	0.98	0.61	0.44	0.31	6.60	4.65	4.50	4.85
1000	0.20	0.06	0.02	0.01	0.71	0.44	0.33	0.22	7.35	5.30	4.95	4.70
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30	0.21	0.10	0.08	-0.01	3.58	2.43	1.81	1.30	5.05	5.60	4.95	5.15
60	0.20	0.07	0.01	-0.04	2.49	1.69	1.27	0.93	5.05	4.80	4.10	5.90
100	0.25	0.08	0.02	-0.02	1.91	1.29	0.98	0.70	4.85	4.15	4.80	5.10
200	0.25	0.07	0.03	0.00	1.36	0.91	0.69	0.49	4.80	4.70	4.55	4.80
500	0.26	0.07	0.03	0.00	0.89	0.59	0.44	0.31	5.45	4.50	4.30	4.90
1000	0.24	0.06	0.02	0.00	0.66	0.42	0.31	0.22	6.75	5.50	5.05	5.05

Notes: See the notes for Table A.18.1.

Figure A.18: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18)

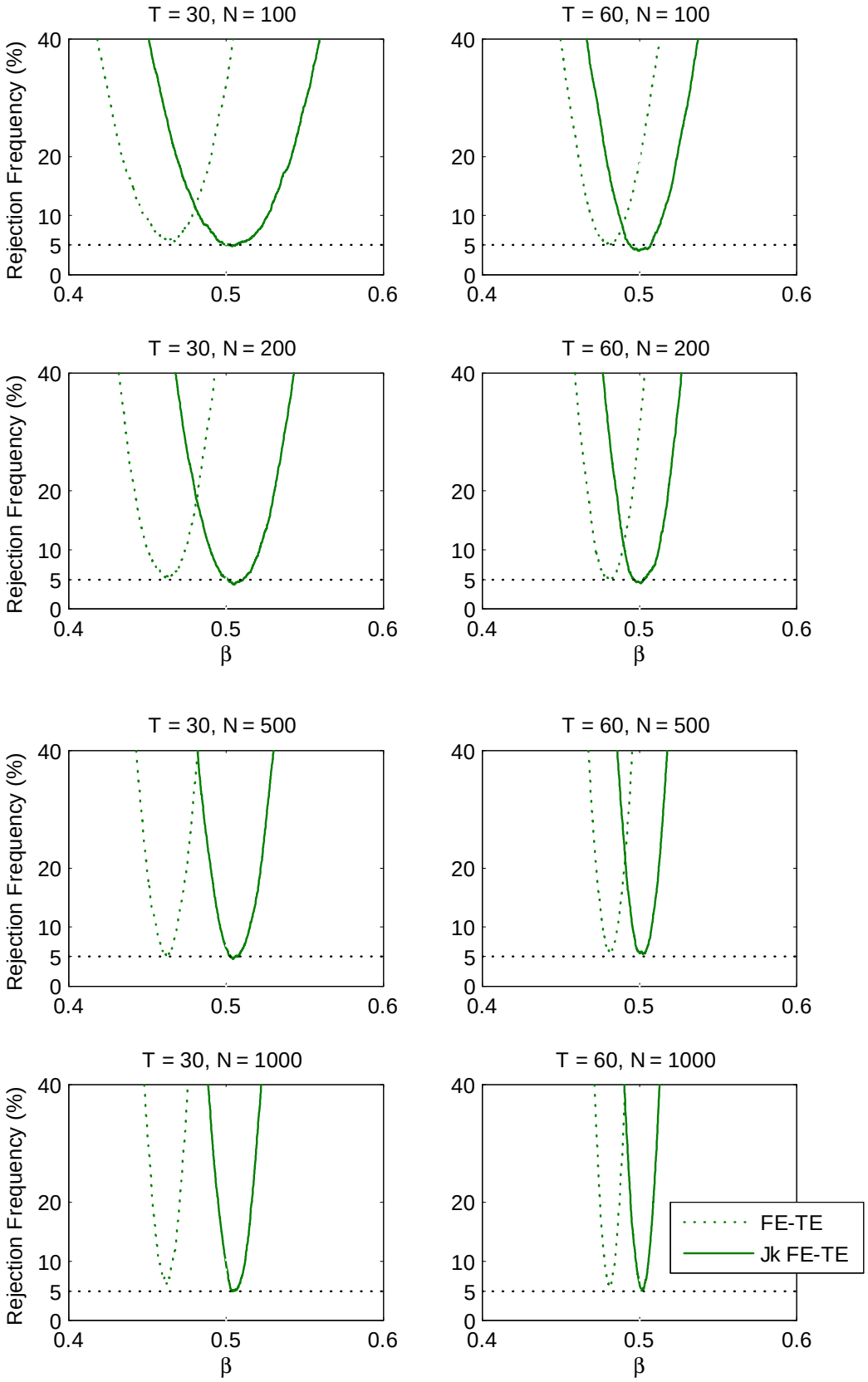

Table A.19.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-12.08	-6.32	-3.69	-2.08	18.19	12.62	9.36	6.72	20.90	12.00	8.30	6.55
60	-12.23	-6.53	-4.03	-2.23	15.42	9.96	7.17	5.06	31.05	16.90	10.70	9.05
100	-12.13	-6.52	-3.99	-2.13	14.09	8.72	6.11	4.10	43.30	23.50	14.40	10.70
200	-12.15	-6.53	-3.99	-2.07	13.13	7.69	5.16	3.21	68.45	37.55	23.05	14.40
500	-12.12	-6.48	-3.98	-2.04	12.54	6.99	4.51	2.56	97.25	71.00	47.30	25.80
1000	-12.21	-6.53	-4.01	-2.07	12.44	6.79	4.28	2.35	99.95	94.15	76.60	48.45
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-6.91	-3.29	-1.92	-0.93	7.43	3.74	2.33	1.29	77.30	50.40	33.45	18.25
60	-6.80	-3.24	-1.89	-0.92	7.08	3.48	2.09	1.12	96.40	77.55	56.95	33.05
100	-6.70	-3.20	-1.86	-0.91	6.86	3.34	1.99	1.03	99.80	93.15	77.05	48.90
200	-6.66	-3.16	-1.84	-0.90	6.74	3.23	1.91	0.97	100.00	99.95	96.65	76.25
500	-6.62	-3.15	-1.84	-0.91	6.65	3.18	1.87	0.93	100.00	100.00	100.00	98.85
1000	-6.63	-3.15	-1.85	-0.90	6.65	3.16	1.86	0.92	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.09	0.11	0.12	0.01	3.43	2.39	1.77	1.27	6.25	5.85	4.70	5.25
60	0.07	0.07	0.05	-0.01	2.39	1.66	1.25	0.91	6.25	5.85	4.10	5.75
100	0.08	0.07	0.05	0.00	1.82	1.28	0.97	0.70	5.60	5.35	4.85	5.55
200	0.07	0.06	0.05	0.02	1.28	0.91	0.69	0.49	5.40	5.40	5.20	5.35
500	0.08	0.07	0.05	0.02	0.82	0.58	0.44	0.31	5.60	5.90	4.65	4.85
1000	0.06	0.06	0.05	0.02	0.60	0.41	0.31	0.22	6.90	6.15	6.05	5.75
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	5.19	2.00	1.02	0.18	25.41	13.97	9.83	6.81	4.15	4.55	3.95	4.55
60	3.82	1.51	0.55	-0.02	16.25	9.57	6.79	4.85	4.00	4.65	3.55	5.80
100	3.77	1.32	0.54	0.05	12.48	7.33	5.31	3.72	4.80	4.05	5.20	5.40
200	3.47	1.23	0.54	0.10	8.96	5.20	3.76	2.61	6.05	4.85	4.90	4.85
500	3.47	1.23	0.52	0.12	6.29	3.50	2.47	1.64	9.65	6.55	5.45	4.75
1000	3.25	1.16	0.46	0.09	5.03	2.61	1.76	1.17	15.60	8.85	6.00	5.45
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.64	0.31	0.12	0.05	3.89	2.14	1.48	0.95	8.90	7.60	5.95	5.55
60	0.66	0.32	0.13	0.04	2.83	1.55	1.03	0.68	11.15	7.10	5.30	6.05
100	0.77	0.31	0.14	0.04	2.22	1.22	0.81	0.52	10.60	7.95	6.15	5.90
200	0.78	0.33	0.15	0.04	1.68	0.88	0.58	0.37	13.40	7.90	6.45	6.15
500	0.83	0.32	0.14	0.04	1.23	0.60	0.37	0.23	20.55	11.75	7.10	4.65
1000	0.80	0.33	0.13	0.04	1.04	0.49	0.28	0.16	30.45	17.05	8.80	5.55
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.19	0.11	0.09	-0.01	3.60	2.42	1.79	1.28	4.70	5.30	4.25	5.20
60	0.19	0.08	0.02	-0.03	2.53	1.69	1.26	0.92	5.35	5.00	4.15	5.70
100	0.22	0.07	0.02	-0.02	1.94	1.30	0.98	0.70	5.15	4.40	4.90	5.55
200	0.21	0.06	0.03	0.00	1.38	0.92	0.69	0.49	5.50	4.95	4.60	4.80
500	0.23	0.07	0.03	0.00	0.90	0.59	0.45	0.31	5.95	4.95	4.45	4.60
1000	0.21	0.06	0.03	0.00	0.67	0.42	0.32	0.22	7.15	5.55	5.35	5.25

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0$, and $\kappa_x = 0$. For the regression equations, see the notes for Table A.10.1. For the rest of the settings, see the notes for Table A.1.

Table A.19.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-12.16	-6.38	-3.74	-2.10	18.41	12.77	9.47	6.82	21.55	12.55	8.45	7.15
60	-12.27	-6.58	-4.08	-2.25	15.50	10.02	7.23	5.09	31.10	17.40	11.00	9.80
100	-12.13	-6.52	-4.00	-2.14	14.10	8.72	6.13	4.11	44.20	23.05	14.90	10.35
200	-12.14	-6.53	-3.98	-2.07	13.13	7.69	5.16	3.21	68.25	36.90	23.30	14.10
500	-12.12	-6.48	-3.98	-2.05	12.54	6.99	4.51	2.56	97.20	70.95	47.35	25.75
1000	-12.21	-6.53	-4.01	-2.07	12.44	6.79	4.28	2.35	99.95	94.20	76.50	48.35
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-6.91	-3.30	-1.93	-0.93	7.44	3.75	2.34	1.30	77.05	51.65	33.80	19.35
60	-6.80	-3.24	-1.89	-0.92	7.07	3.48	2.09	1.12	96.55	77.80	56.30	32.90
100	-6.70	-3.20	-1.86	-0.91	6.86	3.34	1.99	1.03	99.80	93.15	76.75	48.90
200	-6.66	-3.17	-1.84	-0.90	6.74	3.23	1.91	0.97	100.00	99.95	96.45	76.30
500	-6.62	-3.15	-1.84	-0.91	6.65	3.18	1.87	0.93	100.00	100.00	100.00	98.70
1000	-6.63	-3.15	-1.85	-0.90	6.65	3.16	1.86	0.92	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	0.06	0.10	0.11	0.01	3.48	2.42	1.80	1.29	6.40	6.25	5.60	5.30
60	0.06	0.06	0.04	-0.02	2.41	1.68	1.26	0.92	6.75	5.80	4.50	6.05
100	0.08	0.07	0.05	0.00	1.84	1.28	0.97	0.70	5.75	5.65	4.95	5.55
200	0.08	0.06	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.45	5.00	5.40
500	0.07	0.07	0.05	0.02	0.82	0.58	0.44	0.31	5.55	5.70	4.80	5.15
1000	0.06	0.06	0.05	0.02	0.60	0.41	0.31	0.22	7.05	6.00	6.00	5.70
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	5.17	1.94	0.98	0.17	26.20	14.17	9.97	6.92	4.45	4.75	4.40	5.00
60	3.75	1.46	0.50	-0.05	16.39	9.62	6.84	4.87	4.65	4.80	3.85	5.55
100	3.76	1.32	0.54	0.04	12.53	7.35	5.33	3.73	4.95	4.15	5.60	5.40
200	3.47	1.24	0.55	0.10	8.98	5.21	3.77	2.61	6.00	5.30	4.80	4.90
500	3.46	1.23	0.51	0.11	6.29	3.51	2.47	1.64	9.75	6.45	5.40	4.85
1000	3.25	1.16	0.46	0.09	5.03	2.62	1.76	1.17	15.75	8.90	6.00	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.64	0.30	0.12	0.05	3.94	2.18	1.50	0.97	10.15	8.20	6.35	6.10
60	0.66	0.32	0.13	0.04	2.84	1.56	1.04	0.68	10.90	7.45	6.05	6.15
100	0.76	0.31	0.14	0.04	2.23	1.23	0.82	0.52	10.60	8.00	6.55	6.20
200	0.78	0.33	0.15	0.04	1.69	0.88	0.59	0.37	13.35	8.20	6.95	6.15
500	0.83	0.32	0.14	0.04	1.23	0.60	0.37	0.23	20.70	11.75	7.20	4.85
1000	0.80	0.33	0.13	0.04	1.04	0.49	0.28	0.16	30.80	17.15	8.55	5.40
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	0.16	0.10	0.08	-0.01	3.66	2.46	1.82	1.30	5.40	5.75	4.80	5.35
60	0.17	0.07	0.01	-0.04	2.56	1.70	1.27	0.92	6.05	5.15	4.10	5.95
100	0.22	0.07	0.02	-0.02	1.96	1.30	0.98	0.70	5.20	4.55	4.65	5.30
200	0.21	0.06	0.03	0.00	1.39	0.92	0.69	0.49	5.50	5.15	4.65	5.15
500	0.23	0.07	0.03	0.00	0.90	0.59	0.45	0.31	5.95	4.90	4.30	4.90
1000	0.21	0.06	0.03	0.00	0.67	0.42	0.32	0.22	7.25	5.65	5.55	5.30

Notes: See the notes for Table A.19.1.

Figure A.19: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19)

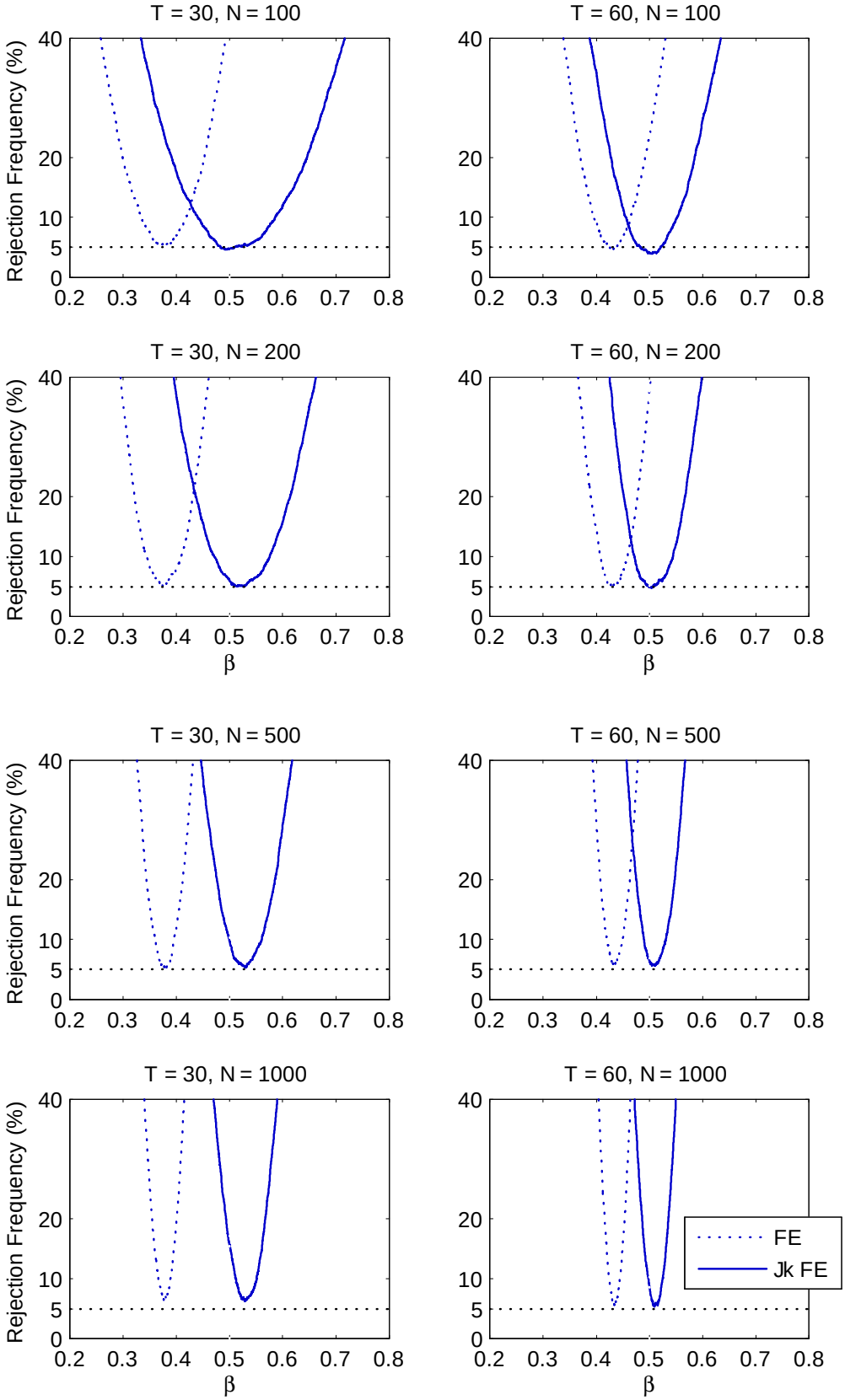

Table A.20.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-13.44	-7.12	-4.20	-2.32	18.41	12.29	8.93	6.28	23.75	13.10	8.55	6.75
60	-13.41	-7.20	-4.44	-2.42	16.00	9.99	7.02	4.81	39.25	19.70	12.65	9.65
100	-13.24	-7.15	-4.38	-2.32	14.81	8.91	6.10	3.95	54.35	28.80	17.60	12.15
200	-13.20	-7.12	-4.35	-2.25	13.98	8.04	5.29	3.18	82.75	48.65	30.80	17.25
500	-13.14	-7.06	-4.34	-2.23	13.47	7.46	4.75	2.63	99.55	84.75	62.30	33.95
1000	-13.22	-7.10	-4.37	-2.25	13.40	7.31	4.57	2.46	100.00	99.05	89.45	62.15
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.09	-3.38	-1.98	-0.94	7.60	3.80	2.37	1.30	78.85	52.65	34.50	19.25
60	-6.97	-3.32	-1.93	-0.93	7.24	3.55	2.13	1.13	97.10	79.05	58.25	33.10
100	-6.87	-3.27	-1.90	-0.92	7.03	3.42	2.03	1.05	99.75	93.45	78.95	50.35
200	-6.83	-3.24	-1.88	-0.92	6.91	3.31	1.95	0.98	100.00	99.90	97.10	77.45
500	-6.79	-3.23	-1.88	-0.92	6.82	3.25	1.91	0.95	100.00	100.00	100.00	98.95
1000	-6.80	-3.22	-1.88	-0.92	6.81	3.23	1.90	0.93	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.13	0.01	0.06	-0.02	3.43	2.38	1.77	1.27	6.05	6.00	4.80	5.25
60	-0.15	-0.03	-0.01	-0.04	2.39	1.66	1.25	0.91	6.20	5.65	4.25	5.90
100	-0.13	-0.03	-0.01	-0.02	1.82	1.28	0.96	0.70	5.65	5.00	4.70	5.35
200	-0.13	-0.04	-0.01	-0.01	1.28	0.91	0.68	0.49	5.70	5.30	4.90	5.00
500	-0.13	-0.03	-0.01	-0.01	0.82	0.58	0.44	0.30	5.90	5.70	5.15	5.20
1000	-0.15	-0.04	-0.01	-0.01	0.61	0.41	0.31	0.22	7.45	5.70	5.45	5.45
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	4.36	1.81	0.91	0.14	23.27	12.87	9.03	6.23	3.80	4.75	4.50	4.65
60	3.37	1.48	0.54	-0.02	15.16	8.88	6.25	4.44	4.70	4.75	3.95	5.90
100	3.42	1.33	0.56	0.06	11.64	6.81	4.90	3.41	5.20	4.75	4.85	5.45
200	3.22	1.29	0.58	0.11	8.40	4.87	3.47	2.39	6.40	5.75	5.25	4.75
500	3.26	1.29	0.55	0.13	5.90	3.30	2.29	1.50	10.55	7.20	5.45	4.85
1000	3.07	1.24	0.50	0.11	4.73	2.49	1.64	1.07	16.50	10.10	6.10	5.45
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.62	0.33	0.13	0.05	3.94	2.16	1.49	0.96	9.85	7.40	6.30	5.30
60	0.65	0.35	0.15	0.05	2.86	1.58	1.05	0.69	10.70	7.30	5.80	5.95
100	0.74	0.33	0.15	0.05	2.25	1.25	0.82	0.53	11.30	8.60	6.45	5.85
200	0.76	0.36	0.17	0.05	1.70	0.90	0.60	0.37	13.60	9.30	7.05	6.30
500	0.81	0.34	0.15	0.04	1.22	0.62	0.38	0.24	20.35	12.05	7.65	5.60
1000	0.79	0.35	0.14	0.04	1.03	0.51	0.29	0.17	30.45	19.75	9.05	5.85
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.16	0.12	0.09	-0.01	3.61	2.42	1.79	1.28	4.95	5.50	4.15	4.90
60	0.16	0.08	0.02	-0.03	2.54	1.69	1.26	0.92	5.60	4.95	4.00	5.65
100	0.19	0.08	0.03	-0.02	1.95	1.30	0.98	0.70	5.45	4.25	4.85	5.40
200	0.19	0.07	0.03	0.00	1.38	0.92	0.69	0.49	5.35	4.95	4.25	4.70
500	0.20	0.08	0.03	0.00	0.90	0.59	0.45	0.31	5.75	4.85	4.40	4.85
1000	0.19	0.07	0.03	0.00	0.66	0.42	0.32	0.22	6.80	5.75	5.45	5.25

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.10.1. For the rest of the settings, see the notes for Table A.1.

Table A.20.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-13.52	-7.18	-4.24	-2.34	18.61	12.44	9.04	6.37	24.05	14.00	9.05	7.30
60	-13.45	-7.24	-4.48	-2.44	16.07	10.04	7.08	4.85	38.75	19.75	12.80	10.35
100	-13.24	-7.15	-4.39	-2.33	14.82	8.92	6.12	3.96	54.30	28.80	17.35	12.25
200	-13.19	-7.12	-4.35	-2.25	13.98	8.04	5.29	3.18	82.90	48.70	30.35	16.90
500	-13.15	-7.06	-4.34	-2.23	13.48	7.47	4.76	2.64	99.50	84.75	62.45	34.10
1000	-13.22	-7.10	-4.37	-2.25	13.40	7.31	4.57	2.46	100.00	99.10	89.35	62.05
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.08	-3.38	-1.98	-0.94	7.60	3.82	2.38	1.31	78.65	52.85	35.15	20.05
60	-6.97	-3.31	-1.92	-0.93	7.24	3.55	2.13	1.13	97.00	79.10	57.50	33.05
100	-6.87	-3.27	-1.90	-0.92	7.03	3.42	2.03	1.05	99.75	93.50	78.90	50.00
200	-6.83	-3.24	-1.88	-0.92	6.91	3.31	1.95	0.98	100.00	99.85	96.90	77.75
500	-6.79	-3.22	-1.88	-0.92	6.82	3.25	1.91	0.95	100.00	100.00	100.00	98.90
1000	-6.80	-3.22	-1.88	-0.92	6.81	3.23	1.90	0.93	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.15	0.00	0.05	-0.02	3.48	2.41	1.80	1.29	6.75	6.35	5.60	5.30
60	-0.16	-0.04	-0.02	-0.05	2.42	1.67	1.26	0.92	6.95	6.00	4.50	5.90
100	-0.13	-0.03	-0.01	-0.03	1.84	1.28	0.97	0.70	5.65	5.25	5.00	5.35
200	-0.13	-0.04	-0.01	-0.01	1.28	0.91	0.69	0.49	5.70	5.30	4.65	4.95
500	-0.13	-0.03	-0.01	-0.01	0.82	0.58	0.44	0.31	6.00	5.60	5.00	5.25
1000	-0.15	-0.04	-0.01	-0.01	0.61	0.41	0.31	0.22	7.50	5.60	5.50	5.55
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	4.33	1.75	0.87	0.13	23.96	13.06	9.16	6.33	4.35	5.05	4.75	5.05
60	3.30	1.44	0.49	-0.04	15.30	8.92	6.30	4.47	5.25	4.80	4.30	5.60
100	3.42	1.34	0.55	0.05	11.70	6.83	4.92	3.42	5.35	4.60	5.05	5.35
200	3.23	1.30	0.58	0.11	8.43	4.88	3.48	2.40	6.85	5.80	5.05	4.70
500	3.25	1.29	0.55	0.12	5.90	3.30	2.29	1.50	10.55	7.15	5.60	5.00
1000	3.07	1.24	0.50	0.10	4.73	2.50	1.64	1.07	16.60	10.20	6.05	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.63	0.32	0.12	0.06	3.99	2.20	1.51	0.97	10.50	8.45	7.20	5.90
60	0.65	0.35	0.15	0.05	2.87	1.59	1.05	0.69	10.85	7.50	6.65	6.40
100	0.74	0.33	0.16	0.05	2.26	1.25	0.83	0.53	11.45	8.70	6.90	6.30
200	0.76	0.36	0.17	0.05	1.70	0.91	0.60	0.37	13.95	9.60	7.20	6.50
500	0.81	0.34	0.15	0.04	1.22	0.62	0.38	0.24	20.40	12.00	7.55	5.85
1000	0.79	0.35	0.14	0.04	1.03	0.51	0.29	0.17	30.25	19.80	9.05	5.80
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.13	0.11	0.09	-0.01	3.67	2.46	1.82	1.30	5.50	5.70	4.90	5.30
60	0.14	0.07	0.01	-0.04	2.57	1.70	1.27	0.92	5.90	5.05	4.30	6.00
100	0.19	0.08	0.02	-0.02	1.96	1.30	0.98	0.70	5.40	4.35	4.90	5.20
200	0.19	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.55	5.00	4.60	4.90
500	0.20	0.08	0.03	0.00	0.90	0.59	0.45	0.31	5.65	4.85	4.20	4.85
1000	0.19	0.07	0.03	0.00	0.66	0.42	0.32	0.22	7.05	5.80	5.35	5.25

Notes: See the notes for Table A.20.1.

Figure A.20: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20)

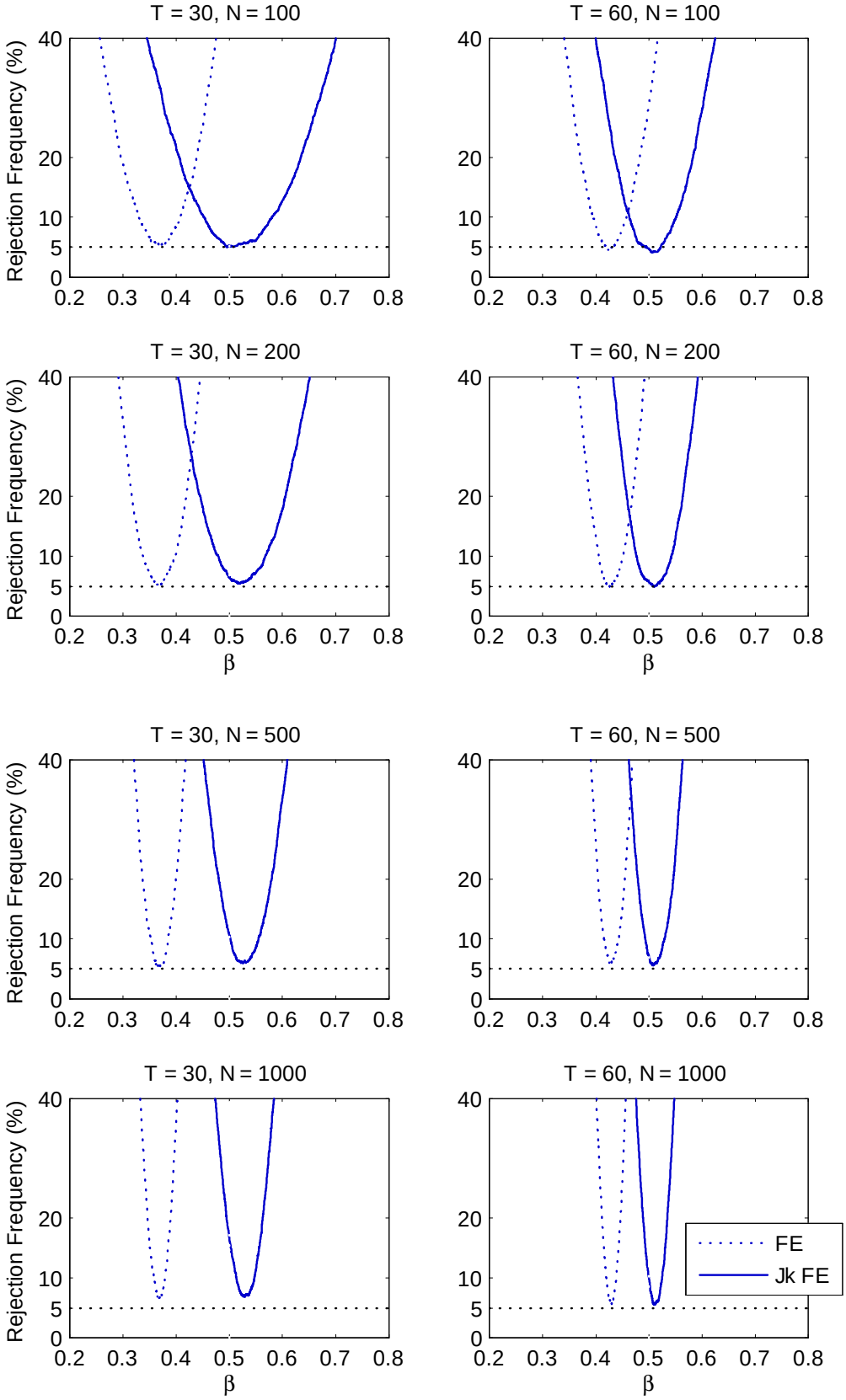

Table A.21.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21)

	Bias (×100)				RMSE (×100)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-14.67	-7.83	-4.65	-2.52	18.75	12.06	8.55	5.86	27.60	14.90	9.85	7.30
60	-14.49	-7.80	-4.80	-2.59	16.60	10.05	6.90	4.57	47.20	24.05	14.40	11.15
100	-14.25	-7.72	-4.72	-2.48	15.52	9.13	6.10	3.81	66.75	36.30	22.00	14.05
200	-14.16	-7.66	-4.67	-2.41	14.79	8.39	5.42	3.16	92.55	61.10	39.35	21.70
500	-14.09	-7.60	-4.67	-2.39	14.35	7.91	4.99	2.71	100.00	94.80	76.00	45.25
1000	-14.15	-7.63	-4.69	-2.40	14.30	7.78	4.85	2.57	100.00	99.90	96.95	76.30
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.21	-3.43	-2.01	-0.95	7.76	3.90	2.44	1.35	75.50	48.45	33.20	17.20
60	-7.08	-3.36	-1.95	-0.93	7.38	3.61	2.18	1.16	95.45	75.35	54.20	29.60
100	-6.99	-3.32	-1.92	-0.93	7.17	3.48	2.07	1.07	99.60	91.25	74.50	44.00
200	-6.94	-3.28	-1.90	-0.92	7.03	3.36	1.98	1.00	100.00	99.70	95.20	72.65
500	-6.90	-3.27	-1.90	-0.93	6.94	3.30	1.93	0.96	100.00	100.00	100.00	97.80
1000	-6.91	-3.26	-1.90	-0.93	6.93	3.28	1.92	0.94	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.34	-0.10	0.00	-0.05	3.43	2.37	1.77	1.27	6.15	5.80	4.85	4.90
60	-0.36	-0.13	-0.07	-0.07	2.41	1.66	1.25	0.91	5.90	5.50	4.25	5.90
100	-0.34	-0.13	-0.07	-0.05	1.85	1.28	0.96	0.70	5.90	5.30	5.00	5.10
200	-0.34	-0.14	-0.07	-0.04	1.32	0.91	0.69	0.49	6.40	5.10	4.85	5.00
500	-0.34	-0.13	-0.07	-0.04	0.88	0.59	0.44	0.31	7.15	5.90	5.45	5.55
1000	-0.35	-0.14	-0.07	-0.04	0.69	0.43	0.32	0.22	11.15	6.95	5.90	5.55
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	3.60	1.67	0.83	0.12	21.40	11.84	8.24	5.64	4.40	5.05	4.75	4.40
60	2.91	1.48	0.55	-0.01	14.12	8.20	5.71	4.03	5.75	4.80	4.25	5.80
100	3.05	1.36	0.59	0.07	10.82	6.30	4.48	3.09	5.90	5.20	4.55	5.35
200	2.92	1.35	0.63	0.13	7.84	4.54	3.19	2.17	7.40	6.55	5.40	4.90
500	2.99	1.35	0.60	0.14	5.47	3.10	2.11	1.37	11.45	8.75	6.20	4.95
1000	2.83	1.32	0.56	0.13	4.39	2.39	1.53	0.98	17.10	11.75	6.65	5.35
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.61	0.35	0.13	0.06	4.08	2.27	1.57	1.02	9.85	6.95	6.15	5.15
60	0.64	0.37	0.16	0.06	2.95	1.66	1.11	0.74	10.40	7.45	6.20	6.55
100	0.73	0.36	0.17	0.06	2.32	1.31	0.87	0.56	11.25	9.20	7.00	5.60
200	0.75	0.38	0.18	0.05	1.74	0.96	0.63	0.40	13.00	10.20	7.25	6.35
500	0.79	0.37	0.17	0.05	1.23	0.66	0.41	0.25	19.10	12.75	7.95	6.05
1000	0.77	0.38	0.16	0.05	1.03	0.55	0.31	0.18	27.95	21.25	9.55	5.90
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.11	0.12	0.10	0.00	3.62	2.42	1.79	1.27	5.00	5.70	4.20	4.85
60	0.12	0.09	0.03	-0.03	2.55	1.69	1.26	0.92	5.75	5.20	4.15	6.05
100	0.16	0.08	0.03	-0.01	1.95	1.30	0.98	0.70	5.50	4.10	4.80	5.25
200	0.15	0.07	0.03	0.00	1.38	0.92	0.69	0.49	5.45	4.90	4.25	4.50
500	0.17	0.08	0.04	0.01	0.89	0.59	0.44	0.31	5.75	5.05	4.25	4.80
1000	0.15	0.07	0.03	0.00	0.66	0.42	0.31	0.22	7.20	5.60	5.25	5.10

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.10.1. For the rest of the settings, see the notes for Table A.1.

Table A.21.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-14.75	-7.89	-4.69	-2.54	18.93	12.20	8.65	5.94	28.05	15.55	9.90	7.35
60	-14.52	-7.84	-4.84	-2.61	16.66	10.11	6.96	4.60	47.20	24.00	14.95	11.55
100	-14.25	-7.72	-4.73	-2.49	15.53	9.14	6.12	3.82	66.50	35.80	21.75	14.00
200	-14.15	-7.66	-4.67	-2.41	14.79	8.39	5.42	3.16	92.30	61.25	39.45	21.95
500	-14.09	-7.60	-4.67	-2.39	14.35	7.91	4.99	2.71	100.00	94.85	75.80	45.20
1000	-14.15	-7.63	-4.69	-2.40	14.30	7.78	4.85	2.57	100.00	99.90	96.95	76.45
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.20	-3.43	-2.01	-0.95	7.76	3.91	2.46	1.36	76.00	49.20	33.40	18.10
60	-7.08	-3.35	-1.94	-0.93	7.37	3.61	2.18	1.16	95.50	75.10	53.85	29.70
100	-6.99	-3.32	-1.92	-0.92	7.17	3.48	2.06	1.06	99.55	91.20	74.60	44.50
200	-6.94	-3.28	-1.90	-0.92	7.03	3.36	1.98	1.00	100.00	99.65	95.45	72.65
500	-6.90	-3.27	-1.90	-0.93	6.94	3.30	1.93	0.96	100.00	100.00	100.00	97.90
1000	-6.91	-3.26	-1.90	-0.93	6.93	3.28	1.92	0.94	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.37	-0.11	-0.01	-0.05	3.48	2.41	1.79	1.29	6.70	6.40	5.40	5.60
60	-0.37	-0.14	-0.08	-0.08	2.44	1.68	1.26	0.92	6.90	5.95	4.45	6.10
100	-0.34	-0.13	-0.07	-0.06	1.86	1.28	0.97	0.70	5.80	5.30	5.05	5.15
200	-0.33	-0.14	-0.07	-0.04	1.32	0.91	0.69	0.49	6.65	5.10	5.05	4.85
500	-0.34	-0.13	-0.07	-0.04	0.88	0.59	0.44	0.31	7.45	6.15	5.60	5.55
1000	-0.35	-0.14	-0.07	-0.04	0.69	0.43	0.32	0.22	11.35	6.70	5.90	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	3.55	1.61	0.79	0.10	21.99	12.02	8.36	5.73	4.95	5.40	5.30	4.90
60	2.85	1.44	0.51	-0.03	14.27	8.24	5.76	4.05	5.80	5.05	4.50	5.75
100	3.04	1.36	0.58	0.07	10.88	6.32	4.50	3.10	6.15	5.20	4.95	5.60
200	2.93	1.36	0.63	0.13	7.86	4.55	3.20	2.17	7.30	6.15	5.25	4.65
500	2.99	1.35	0.60	0.14	5.47	3.11	2.12	1.37	11.50	8.55	6.20	5.15
1000	2.83	1.32	0.56	0.12	4.39	2.39	1.53	0.98	17.35	12.05	6.75	5.50
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.62	0.35	0.13	0.06	4.13	2.31	1.60	1.04	10.70	7.90	7.15	5.90
60	0.65	0.38	0.17	0.07	2.97	1.67	1.12	0.74	10.60	8.10	6.70	6.80
100	0.72	0.36	0.18	0.06	2.34	1.32	0.88	0.56	11.75	8.80	7.15	5.75
200	0.75	0.38	0.18	0.05	1.75	0.96	0.64	0.40	13.20	10.65	7.00	6.45
500	0.79	0.37	0.17	0.05	1.24	0.66	0.41	0.25	19.25	12.40	7.90	6.25
1000	0.77	0.38	0.16	0.05	1.03	0.55	0.31	0.18	27.90	20.95	9.45	5.85
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.09	0.11	0.09	-0.01	3.68	2.45	1.82	1.29	5.25	5.65	4.85	5.30
60	0.10	0.08	0.02	-0.04	2.57	1.70	1.27	0.92	6.25	5.45	4.40	6.10
100	0.16	0.08	0.03	-0.02	1.97	1.30	0.98	0.70	5.65	4.30	4.90	5.15
200	0.16	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.35	4.90	4.45	4.60
500	0.17	0.08	0.03	0.01	0.89	0.59	0.45	0.31	5.75	4.90	4.15	4.95
1000	0.15	0.07	0.03	0.00	0.66	0.42	0.31	0.22	7.25	5.85	5.25	5.20

Notes: See the notes for Table A.21.1.

Figure A.21: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21)

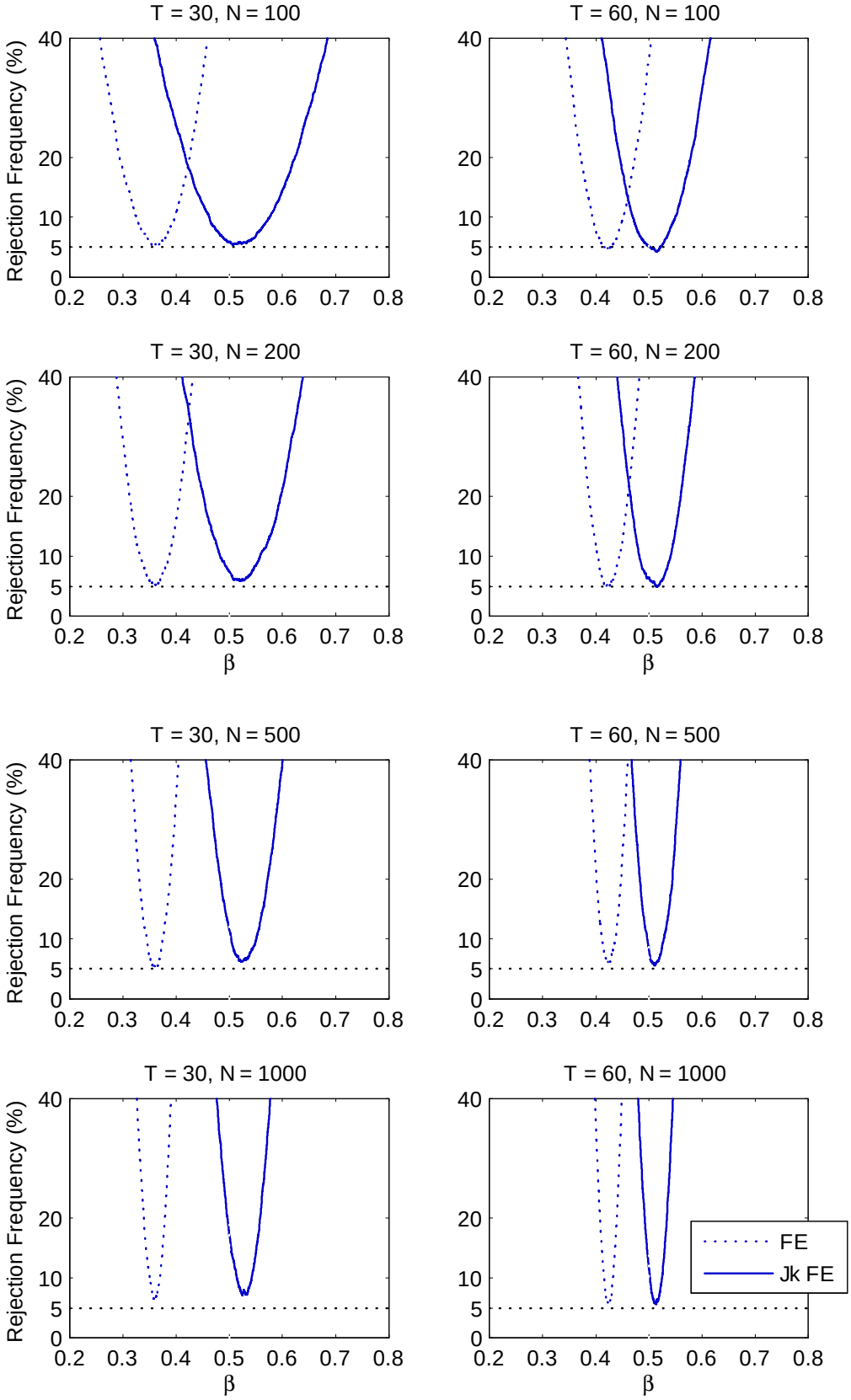

Table A.22.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N, T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-12.37	-6.51	-3.81	-2.15	18.31	12.69	9.38	6.74	21.50	12.80	8.70	6.65
60	-12.40	-6.63	-4.09	-2.26	15.53	10.02	7.21	5.07	31.45	17.20	11.20	9.25
100	-12.23	-6.58	-4.03	-2.15	14.16	8.75	6.13	4.11	44.15	23.70	14.45	10.90
200	-12.20	-6.56	-4.00	-2.08	13.17	7.71	5.17	3.22	68.70	37.65	23.30	14.45
500	-12.14	-6.49	-3.99	-2.05	12.55	7.00	4.51	2.56	97.30	71.10	47.55	25.85
1000	-12.22	-6.53	-4.01	-2.07	12.44	6.79	4.28	2.35	99.95	94.15	76.70	48.55
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.11	-3.40	-1.99	-0.96	7.61	3.83	2.38	1.31	79.55	52.90	35.50	19.00
60	-6.90	-3.29	-1.92	-0.94	7.17	3.52	2.12	1.13	96.75	78.70	58.55	33.80
100	-6.76	-3.23	-1.88	-0.92	6.92	3.37	2.01	1.04	99.80	93.30	77.65	49.60
200	-6.68	-3.18	-1.85	-0.91	6.77	3.25	1.92	0.97	100.00	99.95	96.80	76.60
500	-6.63	-3.16	-1.85	-0.91	6.66	3.18	1.87	0.93	100.00	100.00	100.00	98.85
1000	-6.63	-3.15	-1.85	-0.91	6.65	3.17	1.86	0.92	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.08	0.11	0.12	0.01	3.43	2.39	1.77	1.27	6.20	5.95	4.75	5.50
60	0.06	0.07	0.05	-0.01	2.39	1.67	1.25	0.91	6.25	5.80	4.20	5.80
100	0.08	0.07	0.05	0.00	1.82	1.28	0.97	0.70	5.90	5.25	4.85	5.55
200	0.07	0.06	0.05	0.02	1.28	0.91	0.69	0.49	5.30	5.50	5.20	5.35
500	0.08	0.07	0.05	0.02	0.82	0.58	0.44	0.31	5.65	5.80	4.65	4.90
1000	0.06	0.06	0.05	0.02	0.60	0.41	0.31	0.22	6.95	6.20	6.05	5.80
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	5.16	2.00	1.04	0.19	26.00	14.03	9.85	6.82	4.40	4.60	4.25	4.55
60	3.74	1.52	0.55	-0.02	16.26	9.60	6.79	4.85	4.40	4.70	3.60	5.90
100	3.72	1.33	0.55	0.04	12.46	7.34	5.32	3.73	5.20	4.05	5.60	5.40
200	3.45	1.24	0.55	0.10	8.98	5.20	3.76	2.61	6.25	4.70	4.75	4.80
500	3.46	1.23	0.52	0.12	6.29	3.50	2.47	1.64	9.85	6.30	5.35	4.80
1000	3.25	1.16	0.46	0.09	5.03	2.61	1.76	1.17	15.70	8.65	6.10	5.50
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.59	0.31	0.12	0.05	3.89	2.16	1.49	0.95	9.25	7.60	6.35	5.55
60	0.63	0.32	0.13	0.04	2.82	1.56	1.03	0.68	10.35	7.45	5.60	6.00
100	0.75	0.31	0.14	0.04	2.21	1.22	0.81	0.52	10.60	7.90	6.20	5.80
200	0.78	0.33	0.15	0.04	1.68	0.88	0.58	0.37	13.00	7.90	6.50	6.05
500	0.82	0.32	0.14	0.04	1.22	0.60	0.37	0.23	20.55	11.60	7.20	4.85
1000	0.80	0.33	0.13	0.04	1.04	0.49	0.28	0.16	30.80	17.10	8.75	5.45
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.20	0.12	0.09	-0.01	3.63	2.44	1.79	1.28	4.75	5.10	4.25	5.30
60	0.19	0.08	0.02	-0.03	2.54	1.69	1.26	0.92	5.50	5.15	4.10	5.60
100	0.22	0.07	0.02	-0.02	1.95	1.30	0.98	0.70	5.30	4.15	4.75	5.45
200	0.21	0.06	0.03	0.00	1.38	0.92	0.69	0.49	5.60	5.00	4.70	4.75
500	0.23	0.07	0.03	0.00	0.90	0.59	0.45	0.31	5.95	4.90	4.45	4.80
1000	0.21	0.06	0.03	0.00	0.67	0.42	0.32	0.22	7.20	5.50	5.45	5.20

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t$, and $\kappa_x = 0$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.22.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-12.16	-6.38	-3.74	-2.10	18.41	12.77	9.47	6.82	21.55	12.55	8.45	7.15
60	-12.27	-6.58	-4.08	-2.25	15.50	10.02	7.23	5.09	31.10	17.40	11.00	9.80
100	-12.13	-6.52	-4.00	-2.14	14.10	8.72	6.13	4.11	44.20	23.05	14.90	10.35
200	-12.14	-6.53	-3.98	-2.07	13.13	7.69	5.16	3.21	68.25	36.90	23.30	14.10
500	-12.12	-6.48	-3.98	-2.05	12.54	6.99	4.51	2.56	97.20	70.95	47.35	25.75
1000	-12.21	-6.53	-4.01	-2.07	12.44	6.79	4.28	2.35	99.95	94.20	76.50	48.35
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-6.91	-3.30	-1.93	-0.93	7.44	3.75	2.34	1.30	77.05	51.65	33.80	19.35
60	-6.80	-3.24	-1.89	-0.92	7.07	3.48	2.09	1.12	96.55	77.80	56.30	32.90
100	-6.70	-3.20	-1.86	-0.91	6.86	3.34	1.99	1.03	99.80	93.15	76.75	48.90
200	-6.66	-3.17	-1.84	-0.90	6.74	3.23	1.91	0.97	100.00	99.95	96.45	76.30
500	-6.62	-3.15	-1.84	-0.91	6.65	3.18	1.87	0.93	100.00	100.00	100.00	98.70
1000	-6.63	-3.15	-1.85	-0.90	6.65	3.16	1.86	0.92	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	0.06	0.10	0.11	0.01	3.48	2.42	1.80	1.29	6.40	6.25	5.60	5.30
60	0.06	0.06	0.04	-0.02	2.41	1.68	1.26	0.92	6.75	5.80	4.50	6.05
100	0.08	0.07	0.05	0.00	1.84	1.28	0.97	0.70	5.75	5.65	4.95	5.55
200	0.08	0.06	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.45	5.00	5.40
500	0.07	0.07	0.05	0.02	0.82	0.58	0.44	0.31	5.55	5.70	4.80	5.15
1000	0.06	0.06	0.05	0.02	0.60	0.41	0.31	0.22	7.05	6.00	6.00	5.70
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	5.17	1.94	0.98	0.17	26.20	14.17	9.97	6.92	4.45	4.75	4.40	5.00
60	3.75	1.46	0.50	-0.05	16.39	9.62	6.84	4.87	4.65	4.80	3.85	5.55
100	3.76	1.32	0.54	0.04	12.53	7.35	5.33	3.73	4.95	4.15	5.60	5.40
200	3.47	1.24	0.55	0.10	8.98	5.21	3.77	2.61	6.00	5.30	4.80	4.90
500	3.46	1.23	0.51	0.11	6.29	3.51	2.47	1.64	9.75	6.45	5.40	4.85
1000	3.25	1.16	0.46	0.09	5.03	2.62	1.76	1.17	15.75	8.90	6.00	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.64	0.30	0.12	0.05	3.94	2.18	1.50	0.97	10.15	8.20	6.35	6.10
60	0.66	0.32	0.13	0.04	2.84	1.56	1.04	0.68	10.90	7.45	6.05	6.15
100	0.76	0.31	0.14	0.04	2.23	1.23	0.82	0.52	10.60	8.00	6.55	6.20
200	0.78	0.33	0.15	0.04	1.69	0.88	0.59	0.37	13.35	8.20	6.95	6.15
500	0.83	0.32	0.14	0.04	1.23	0.60	0.37	0.23	20.70	11.75	7.20	4.85
1000	0.80	0.33	0.13	0.04	1.04	0.49	0.28	0.16	30.80	17.15	8.55	5.40
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	0.16	0.10	0.08	-0.01	3.66	2.46	1.82	1.30	5.40	5.75	4.80	5.35
60	0.17	0.07	0.01	-0.04	2.56	1.70	1.27	0.92	6.05	5.15	4.10	5.95
100	0.22	0.07	0.02	-0.02	1.96	1.30	0.98	0.70	5.20	4.55	4.65	5.30
200	0.21	0.06	0.03	0.00	1.39	0.92	0.69	0.49	5.50	5.15	4.65	5.15
500	0.23	0.07	0.03	0.00	0.90	0.59	0.45	0.31	5.95	4.90	4.30	4.90
1000	0.21	0.06	0.03	0.00	0.67	0.42	0.32	0.22	7.25	5.65	5.55	5.30

Notes: See the notes for Table A.22.1.

Figure A.22: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22)

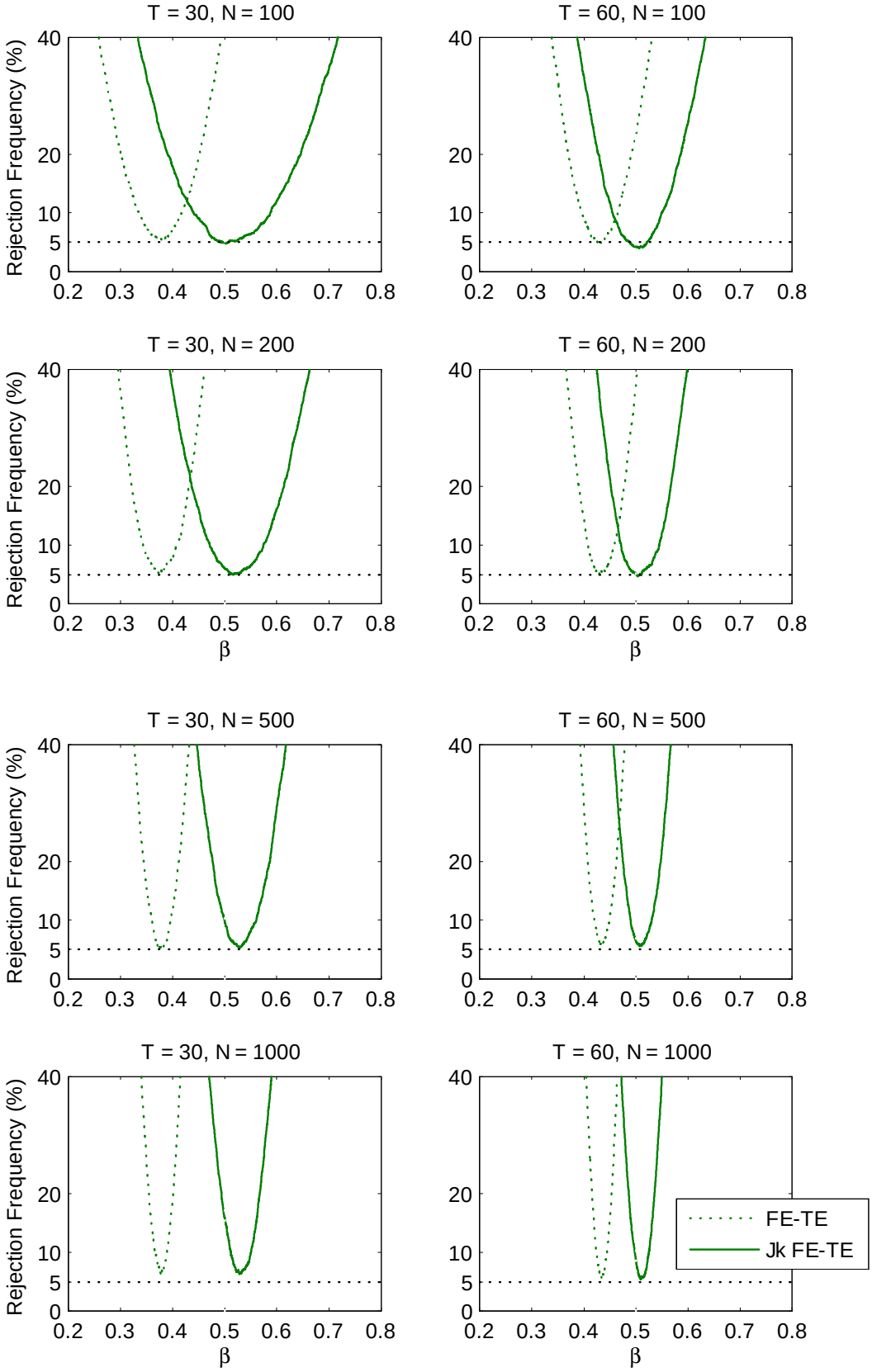

Table A.23.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-13.74	-7.32	-4.33	-2.39	18.58	12.39	8.97	6.30	25.05	13.90	8.90	6.90
60	-13.58	-7.30	-4.50	-2.46	16.12	10.05	7.06	4.83	40.15	19.95	12.90	9.90
100	-13.33	-7.21	-4.41	-2.34	14.88	8.95	6.12	3.96	54.95	29.30	17.80	12.40
200	-13.24	-7.15	-4.37	-2.26	14.02	8.07	5.30	3.19	83.30	49.15	31.00	17.35
500	-13.16	-7.07	-4.35	-2.23	13.49	7.47	4.76	2.64	99.55	84.85	62.45	34.05
1000	-13.23	-7.11	-4.37	-2.25	13.41	7.31	4.58	2.47	100.00	99.05	89.55	62.20
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.29	-3.48	-2.04	-0.97	7.78	3.90	2.42	1.32	80.55	55.15	36.50	20.10
60	-7.07	-3.37	-1.96	-0.95	7.34	3.59	2.16	1.14	97.50	80.00	59.70	33.75
100	-6.93	-3.30	-1.92	-0.93	7.09	3.45	2.05	1.05	99.75	93.90	79.85	50.90
200	-6.86	-3.25	-1.89	-0.92	6.94	3.32	1.96	0.99	100.00	99.95	97.20	77.95
500	-6.80	-3.23	-1.89	-0.92	6.83	3.26	1.91	0.95	100.00	100.00	100.00	98.95
1000	-6.80	-3.22	-1.89	-0.92	6.82	3.24	1.90	0.93	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.14	0.01	0.06	-0.02	3.43	2.38	1.77	1.27	6.15	6.00	4.65	5.25
60	-0.15	-0.03	-0.01	-0.04	2.40	1.66	1.25	0.91	6.35	5.80	4.35	5.85
100	-0.13	-0.03	-0.01	-0.02	1.83	1.28	0.96	0.70	5.60	4.95	4.75	5.35
200	-0.13	-0.04	-0.01	-0.01	1.28	0.91	0.68	0.49	5.70	5.20	4.85	5.00
500	-0.13	-0.03	-0.01	-0.01	0.82	0.58	0.44	0.30	5.90	5.70	5.05	5.15
1000	-0.15	-0.04	-0.01	-0.01	0.61	0.41	0.31	0.22	7.40	5.70	5.50	5.50
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	4.27	1.80	0.93	0.15	23.60	12.93	9.05	6.23	4.10	5.05	4.60	4.65
60	3.27	1.49	0.54	-0.02	15.16	8.90	6.25	4.44	4.95	4.80	3.90	5.95
100	3.37	1.33	0.57	0.05	11.62	6.82	4.90	3.41	5.05	4.65	5.10	5.45
200	3.20	1.29	0.58	0.11	8.42	4.87	3.47	2.39	6.95	5.70	5.30	4.75
500	3.25	1.29	0.56	0.13	5.89	3.30	2.29	1.50	10.65	7.00	5.50	4.90
1000	3.07	1.24	0.50	0.11	4.73	2.49	1.64	1.08	16.45	10.15	6.05	5.50
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.57	0.32	0.13	0.06	3.94	2.18	1.50	0.96	9.55	7.50	6.85	5.55
60	0.61	0.35	0.14	0.05	2.86	1.58	1.05	0.69	10.15	7.30	6.25	5.80
100	0.73	0.33	0.16	0.05	2.24	1.25	0.83	0.53	11.20	8.65	6.35	5.70
200	0.76	0.35	0.17	0.05	1.70	0.90	0.60	0.37	13.45	9.50	6.95	6.45
500	0.80	0.34	0.15	0.04	1.22	0.62	0.38	0.24	20.30	12.25	7.55	5.80
1000	0.78	0.35	0.14	0.04	1.03	0.51	0.29	0.17	30.15	19.90	9.30	6.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.16	0.12	0.10	-0.01	3.63	2.44	1.79	1.28	4.70	5.20	4.15	5.00
60	0.16	0.08	0.03	-0.03	2.55	1.69	1.26	0.92	5.75	5.25	3.85	5.60
100	0.19	0.08	0.03	-0.02	1.95	1.30	0.98	0.70	5.50	4.20	4.90	5.35
200	0.19	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.50	5.10	4.35	4.60
500	0.20	0.08	0.03	0.00	0.90	0.59	0.45	0.31	5.75	4.80	4.35	4.90
1000	0.19	0.07	0.03	0.00	0.66	0.42	0.32	0.22	7.00	5.70	5.40	5.30

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.23.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-13.52	-7.18	-4.24	-2.34	18.61	12.44	9.04	6.37	24.05	14.00	9.05	7.30
60	-13.45	-7.24	-4.48	-2.44	16.07	10.04	7.08	4.85	38.75	19.75	12.80	10.35
100	-13.24	-7.15	-4.39	-2.33	14.82	8.92	6.12	3.96	54.30	28.80	17.35	12.25
200	-13.19	-7.12	-4.35	-2.25	13.98	8.04	5.29	3.18	82.90	48.70	30.35	16.90
500	-13.15	-7.06	-4.34	-2.23	13.48	7.47	4.76	2.64	99.50	84.75	62.45	34.10
1000	-13.22	-7.10	-4.37	-2.25	13.40	7.31	4.57	2.46	100.00	99.10	89.35	62.05
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.08	-3.38	-1.98	-0.94	7.60	3.82	2.38	1.31	78.65	52.85	35.15	20.05
60	-6.97	-3.31	-1.92	-0.93	7.24	3.55	2.13	1.13	97.00	79.10	57.50	33.05
100	-6.87	-3.27	-1.90	-0.92	7.03	3.42	2.03	1.05	99.75	93.50	78.90	50.00
200	-6.83	-3.24	-1.88	-0.92	6.91	3.31	1.95	0.98	100.00	99.85	96.90	77.75
500	-6.79	-3.22	-1.88	-0.92	6.82	3.25	1.91	0.95	100.00	100.00	100.00	98.90
1000	-6.80	-3.22	-1.88	-0.92	6.81	3.23	1.90	0.93	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	-0.15	0.00	0.05	-0.02	3.48	2.41	1.80	1.29	6.75	6.35	5.60	5.30
60	-0.16	-0.04	-0.02	-0.05	2.42	1.67	1.26	0.92	6.95	6.00	4.50	5.90
100	-0.13	-0.03	-0.01	-0.03	1.84	1.28	0.97	0.70	5.65	5.25	5.00	5.35
200	-0.13	-0.04	-0.01	-0.01	1.28	0.91	0.69	0.49	5.70	5.30	4.65	4.95
500	-0.13	-0.03	-0.01	-0.01	0.82	0.58	0.44	0.31	6.00	5.60	5.00	5.25
1000	-0.15	-0.04	-0.01	-0.01	0.61	0.41	0.31	0.22	7.50	5.60	5.50	5.55
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	4.33	1.75	0.87	0.13	23.96	13.06	9.16	6.33	4.35	5.05	4.75	5.05
60	3.30	1.44	0.49	-0.04	15.30	8.92	6.30	4.47	5.25	4.80	4.30	5.60
100	3.42	1.34	0.55	0.05	11.70	6.83	4.92	3.42	5.35	4.60	5.05	5.35
200	3.23	1.30	0.58	0.11	8.43	4.88	3.48	2.40	6.85	5.80	5.05	4.70
500	3.25	1.29	0.55	0.12	5.90	3.30	2.29	1.50	10.55	7.15	5.60	5.00
1000	3.07	1.24	0.50	0.10	4.73	2.50	1.64	1.07	16.60	10.20	6.05	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.63	0.32	0.12	0.06	3.99	2.20	1.51	0.97	10.50	8.45	7.20	5.90
60	0.65	0.35	0.15	0.05	2.87	1.59	1.05	0.69	10.85	7.50	6.65	6.40
100	0.74	0.33	0.16	0.05	2.26	1.25	0.83	0.53	11.45	8.70	6.90	6.30
200	0.76	0.36	0.17	0.05	1.70	0.91	0.60	0.37	13.95	9.60	7.20	6.50
500	0.81	0.34	0.15	0.04	1.22	0.62	0.38	0.24	20.40	12.00	7.55	5.85
1000	0.79	0.35	0.14	0.04	1.03	0.51	0.29	0.17	30.25	19.80	9.05	5.80
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\,\beta = 0.1$											
30	0.13	0.11	0.09	-0.01	3.67	2.46	1.82	1.30	5.50	5.70	4.90	5.30
60	0.14	0.07	0.01	-0.04	2.57	1.70	1.27	0.92	5.90	5.05	4.30	6.00
100	0.19	0.08	0.02	-0.02	1.96	1.30	0.98	0.70	5.40	4.35	4.90	5.20
200	0.19	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.55	5.00	4.60	4.90
500	0.20	0.08	0.03	0.00	0.90	0.59	0.45	0.31	5.65	4.85	4.20	4.85
1000	0.19	0.07	0.03	0.00	0.66	0.42	0.32	0.22	7.05	5.80	5.35	5.25

Notes: See the notes for Table A.23.1.

Figure A.23: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23)

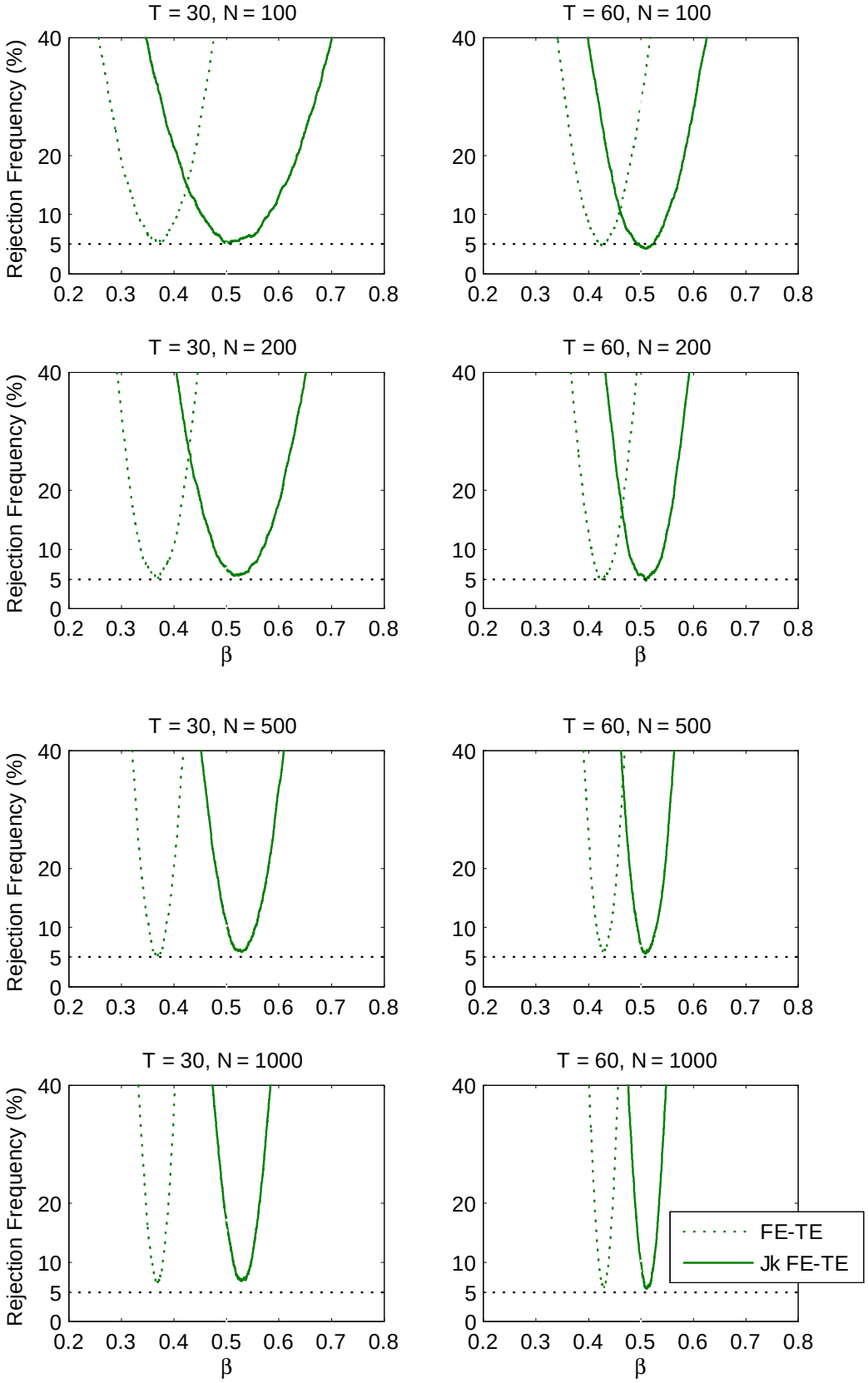

Table A.24.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-14.97	-8.04	-4.78	-2.60	18.95	12.18	8.61	5.89	29.00	15.95	10.10	7.35
60	-14.65	-7.91	-4.87	-2.63	16.73	10.13	6.95	4.59	47.90	24.65	14.80	11.35
100	-14.35	-7.78	-4.76	-2.51	15.60	9.18	6.13	3.83	67.65	36.65	22.50	14.15
200	-14.21	-7.69	-4.70	-2.42	14.84	8.42	5.44	3.17	92.55	61.80	39.80	21.95
500	-14.10	-7.61	-4.67	-2.39	14.37	7.92	4.99	2.71	100.00	94.80	76.10	45.45
1000	-14.16	-7.63	-4.69	-2.41	14.30	7.79	4.85	2.57	100.00	99.90	96.95	76.50
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.40	-3.53	-2.07	-0.98	7.95	4.00	2.50	1.37	77.55	51.15	34.75	17.95
60	-7.19	-3.41	-1.98	-0.95	7.48	3.66	2.21	1.17	96.05	76.50	55.20	30.45
100	-7.05	-3.35	-1.94	-0.93	7.23	3.51	2.08	1.07	99.65	91.70	75.25	44.50
200	-6.97	-3.29	-1.91	-0.93	7.06	3.37	1.99	1.00	100.00	99.70	95.40	73.15
500	-6.91	-3.27	-1.91	-0.93	6.95	3.31	1.93	0.96	100.00	100.00	100.00	97.80
1000	-6.91	-3.26	-1.90	-0.93	6.93	3.28	1.92	0.94	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.36	-0.10	-0.01	-0.05	3.43	2.38	1.77	1.27	6.30	5.90	4.75	5.05
60	-0.37	-0.13	-0.07	-0.07	2.42	1.66	1.25	0.91	6.10	5.40	4.30	5.90
100	-0.34	-0.14	-0.07	-0.05	1.85	1.28	0.96	0.70	5.75	5.20	5.10	5.10
200	-0.34	-0.14	-0.07	-0.04	1.32	0.91	0.69	0.49	6.35	5.15	4.85	5.05
500	-0.34	-0.13	-0.07	-0.04	0.88	0.59	0.44	0.31	7.30	5.85	5.50	5.55
1000	-0.35	-0.14	-0.07	-0.04	0.69	0.43	0.32	0.22	11.10	6.95	5.90	5.60
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	3.46	1.64	0.85	0.12	21.61	11.88	8.26	5.64	4.45	5.05	4.60	4.45
60	2.80	1.48	0.55	-0.01	14.12	8.21	5.71	4.03	5.65	4.85	4.10	5.75
100	2.99	1.35	0.60	0.07	10.80	6.31	4.49	3.09	5.80	5.20	4.60	5.45
200	2.90	1.36	0.63	0.13	7.85	4.55	3.19	2.17	7.65	6.55	5.50	4.80
500	2.98	1.35	0.60	0.14	5.47	3.10	2.11	1.37	11.40	8.45	6.20	4.95
1000	2.82	1.31	0.56	0.13	4.39	2.38	1.53	0.98	17.20	12.05	6.65	5.30
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.56	0.34	0.13	0.06	4.08	2.29	1.58	1.02	9.50	7.15	6.50	5.60
60	0.61	0.37	0.16	0.06	2.95	1.66	1.12	0.74	10.55	7.70	6.15	6.70
100	0.71	0.36	0.17	0.06	2.32	1.31	0.88	0.56	11.25	9.05	7.00	5.80
200	0.74	0.38	0.18	0.05	1.74	0.96	0.63	0.40	12.80	10.30	6.95	6.20
500	0.78	0.37	0.17	0.05	1.23	0.66	0.41	0.25	19.20	12.55	7.70	6.30
1000	0.77	0.38	0.16	0.05	1.03	0.55	0.31	0.18	28.05	21.15	9.50	5.70
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.11	0.12	0.10	0.00	3.64	2.43	1.79	1.28	4.90	5.60	4.05	4.95
60	0.11	0.09	0.03	-0.03	2.55	1.69	1.26	0.92	6.15	5.25	4.10	6.00
100	0.16	0.08	0.03	-0.01	1.95	1.30	0.98	0.70	5.25	4.30	4.75	5.20
200	0.15	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.65	4.85	4.35	4.45
500	0.17	0.08	0.04	0.01	0.89	0.59	0.44	0.31	5.70	4.95	4.20	4.85
1000	0.15	0.07	0.03	0.00	0.66	0.42	0.31	0.22	7.40	5.70	5.25	5.10

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.24.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-14.75	-7.89	-4.69	-2.54	18.93	12.20	8.65	5.94	28.05	15.55	9.90	7.35
60	-14.52	-7.84	-4.84	-2.61	16.66	10.11	6.96	4.60	47.20	24.00	14.95	11.55
100	-14.25	-7.72	-4.73	-2.49	15.53	9.14	6.12	3.82	66.50	35.80	21.75	14.00
200	-14.15	-7.66	-4.67	-2.41	14.79	8.39	5.42	3.16	92.30	61.25	39.45	21.95
500	-14.09	-7.60	-4.67	-2.39	14.35	7.91	4.99	2.71	100.00	94.85	75.80	45.20
1000	-14.15	-7.63	-4.69	-2.40	14.30	7.78	4.85	2.57	100.00	99.90	96.95	76.45
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.20	-3.43	-2.01	-0.95	7.76	3.91	2.46	1.36	76.00	49.20	33.40	18.10
60	-7.08	-3.35	-1.94	-0.93	7.37	3.61	2.18	1.16	95.50	75.10	53.85	29.70
100	-6.99	-3.32	-1.92	-0.92	7.17	3.48	2.06	1.06	99.55	91.20	74.60	44.50
200	-6.94	-3.28	-1.90	-0.92	7.03	3.36	1.98	1.00	100.00	99.65	95.45	72.65
500	-6.90	-3.27	-1.90	-0.93	6.94	3.30	1.93	0.96	100.00	100.00	100.00	97.90
1000	-6.91	-3.26	-1.90	-0.93	6.93	3.28	1.92	0.94	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.37	-0.11	-0.01	-0.05	3.48	2.41	1.79	1.29	6.70	6.40	5.40	5.60
60	-0.37	-0.14	-0.08	-0.08	2.44	1.68	1.26	0.92	6.90	5.95	4.45	6.10
100	-0.34	-0.13	-0.07	-0.06	1.86	1.28	0.97	0.70	5.80	5.30	5.05	5.15
200	-0.33	-0.14	-0.07	-0.04	1.32	0.91	0.69	0.49	6.65	5.10	5.05	4.85
500	-0.34	-0.13	-0.07	-0.04	0.88	0.59	0.44	0.31	7.45	6.15	5.60	5.55
1000	-0.35	-0.14	-0.07	-0.04	0.69	0.43	0.32	0.22	11.35	6.70	5.90	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	3.55	1.61	0.79	0.10	21.99	12.02	8.36	5.73	4.95	5.40	5.30	4.90
60	2.85	1.44	0.51	-0.03	14.27	8.24	5.76	4.05	5.80	5.05	4.50	5.75
100	3.04	1.36	0.58	0.07	10.88	6.32	4.50	3.10	6.15	5.20	4.95	5.60
200	2.93	1.36	0.63	0.13	7.86	4.55	3.20	2.17	7.30	6.15	5.25	4.65
500	2.99	1.35	0.60	0.14	5.47	3.11	2.12	1.37	11.50	8.55	6.20	5.15
1000	2.83	1.32	0.56	0.12	4.39	2.39	1.53	0.98	17.35	12.05	6.75	5.50
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.62	0.35	0.13	0.06	4.13	2.31	1.60	1.04	10.70	7.90	7.15	5.90
60	0.65	0.38	0.17	0.07	2.97	1.67	1.12	0.74	10.60	8.10	6.70	6.80
100	0.72	0.36	0.18	0.06	2.34	1.32	0.88	0.56	11.75	8.80	7.15	5.75
200	0.75	0.38	0.18	0.05	1.75	0.96	0.64	0.40	13.20	10.65	7.00	6.45
500	0.79	0.37	0.17	0.05	1.24	0.66	0.41	0.25	19.25	12.40	7.90	6.25
1000	0.77	0.38	0.16	0.05	1.03	0.55	0.31	0.18	27.90	20.95	9.45	5.85
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.09	0.11	0.09	-0.01	3.68	2.45	1.82	1.29	5.25	5.65	4.85	5.30
60	0.10	0.08	0.02	-0.04	2.57	1.70	1.27	0.92	6.25	5.45	4.40	6.10
100	0.16	0.08	0.03	-0.02	1.97	1.30	0.98	0.70	5.65	4.30	4.90	5.15
200	0.16	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.35	4.90	4.45	4.60
500	0.17	0.08	0.03	0.01	0.89	0.59	0.45	0.31	5.75	4.90	4.15	4.95
1000	0.15	0.07	0.03	0.00	0.66	0.42	0.31	0.22	7.25	5.85	5.25	5.20

Notes: See the notes for Table A.24.1.

Figure A.24: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24)

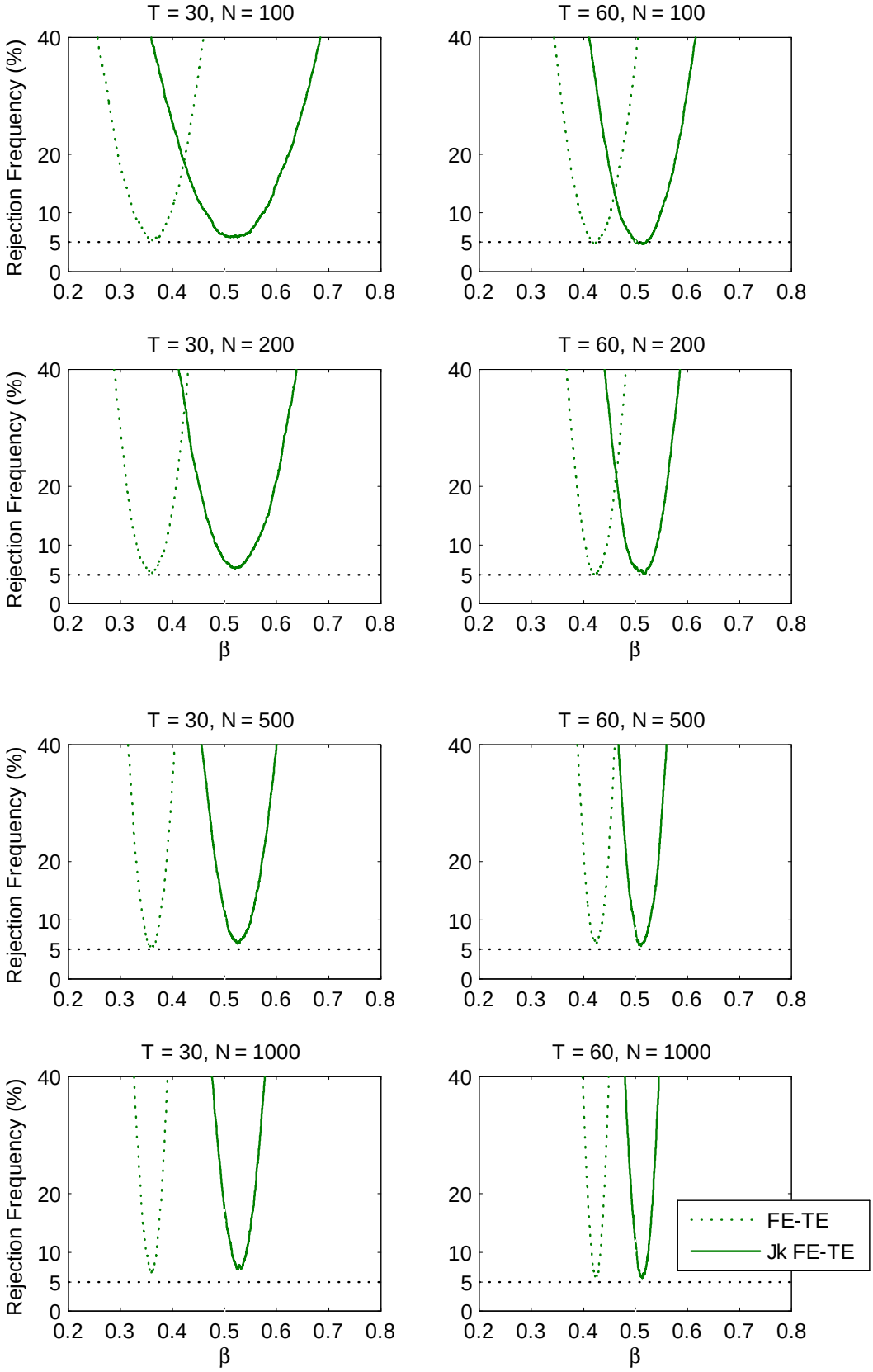

Table A.25.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-10.37	24.81	235.76	3817.13	17.68	31.49	243.56	3912.86	16.65	23.90	97.95	96.45
60	-10.41	24.21	232.29	3762.09	14.35	27.65	236.27	3806.54	22.60	43.90	100.00	100.00
100	-10.24	24.27	231.91	3750.67	12.71	26.39	234.32	3776.37	30.65	65.55	100.00	100.00
200	-10.23	24.23	231.52	3737.86	11.49	25.29	232.70	3750.52	50.60	91.45	100.00	100.00
500	-10.17	24.33	231.22	3732.97	10.71	24.77	231.71	3738.17	85.60	99.95	100.00	100.00
1000	-10.25	24.23	231.04	3726.56	10.55	24.45	231.29	3729.04	98.80	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-5.72	6.60	16.57	19.75	6.31	6.72	16.57	19.75	62.40	99.85	100.00	100.00
60	-5.53	6.62	16.58	19.75	5.84	6.69	16.58	19.75	89.00	100.00	100.00	100.00
100	-5.40	6.66	16.58	19.75	5.58	6.69	16.58	19.75	97.90	100.00	100.00	100.00
200	-5.33	6.68	16.58	19.75	5.42	6.70	16.58	19.75	100.00	100.00	100.00	100.00
500	-5.28	6.70	16.58	19.75	5.31	6.71	16.58	19.75	100.00	100.00	100.00	100.00
1000	-5.28	6.70	16.58	19.75	5.30	6.70	16.58	19.75	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.07	-0.06	-0.31	-0.55	3.44	2.43	1.85	1.41	6.00	5.75	5.10	6.10
60	0.05	-0.11	-0.39	-0.58	2.40	1.70	1.35	1.10	6.45	5.40	5.50	9.55
100	0.07	-0.11	-0.38	-0.55	1.83	1.31	1.07	0.91	5.75	5.30	5.60	11.05
200	0.06	-0.13	-0.39	-0.55	1.28	0.93	0.81	0.74	5.25	5.25	7.25	18.90
500	0.06	-0.12	-0.39	-0.54	0.82	0.60	0.60	0.63	5.65	5.90	14.50	38.55
1000	0.05	-0.13	-0.39	-0.54	0.60	0.44	0.51	0.59	7.00	6.75	22.70	66.75
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	15.10	-1036.19	-138.05	-370.41	41.02	65192.08	139.74	374.28	3.05	10.40	100.00	100.00
60	12.41	-3909.86	-137.08	-368.56	23.29	135986.17	137.91	370.57	5.90	19.85	100.00	100.00
100	12.14	1066.01	-137.41	-368.99	18.96	29220.16	137.93	370.20	9.80	32.40	100.00	100.00
200	11.62	753.07	-137.53	-368.99	15.36	20443.13	137.79	369.57	19.55	51.90	100.00	100.00
500	11.58	845.06	-137.46	-369.07	13.18	2681.88	137.56	369.30	46.55	84.60	100.00	100.00
1000	11.31	788.78	-137.50	-368.91	12.23	1077.82	137.55	369.03	75.55	97.40	100.00	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	3.22	18.90	30.72	22.93	5.06	19.05	30.74	22.93	22.40	100.00	100.00	100.00
60	3.23	18.77	30.68	22.92	4.24	18.85	30.69	22.92	32.65	100.00	100.00	100.00
100	3.32	18.71	30.64	22.92	3.92	18.75	30.64	22.92	47.95	100.00	100.00	100.00
200	3.34	18.70	30.60	22.92	3.66	18.72	30.60	22.92	73.20	100.00	100.00	100.00
500	3.38	18.68	30.59	22.92	3.50	18.69	30.59	22.92	97.95	100.00	100.00	100.00
1000	3.36	18.67	30.58	22.92	3.43	18.68	30.58	22.92	100.00	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.17	-0.21	-0.66	-0.70	3.67	2.66	2.15	1.49	5.25	6.95	4.15	4.95
60	0.17	-0.28	-0.74	-0.73	2.57	1.88	1.63	1.20	5.50	6.20	6.20	9.05
100	0.20	-0.28	-0.73	-0.70	1.97	1.46	1.35	1.02	5.70	6.70	8.75	11.10
200	0.19	-0.30	-0.74	-0.70	1.39	1.05	1.09	0.87	5.25	6.70	13.10	21.25
500	0.20	-0.29	-0.75	-0.69	0.91	0.71	0.91	0.76	6.20	9.45	28.50	48.55
1000	0.18	-0.30	-0.74	-0.69	0.67	0.55	0.82	0.73	7.75	12.40	51.05	80.00

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.25.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-12.16	-6.38	-3.74	-2.10	18.41	12.77	9.47	6.82	21.55	12.55	8.45	7.15
60	-12.27	-6.58	-4.08	-2.25	15.50	10.02	7.23	5.09	31.10	17.40	11.00	9.80
100	-12.13	-6.52	-4.00	-2.14	14.10	8.72	6.13	4.11	44.20	23.05	14.90	10.35
200	-12.14	-6.53	-3.98	-2.07	13.13	7.69	5.16	3.21	68.25	36.90	23.30	14.10
500	-12.12	-6.48	-3.98	-2.05	12.54	6.99	4.51	2.56	97.20	70.95	47.35	25.75
1000	-12.21	-6.53	-4.01	-2.07	12.44	6.79	4.28	2.35	99.95	94.20	76.50	48.35
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-6.91	-3.30	-1.93	-0.93	7.44	3.75	2.34	1.30	77.05	51.65	33.80	19.35
60	-6.80	-3.24	-1.89	-0.92	7.07	3.48	2.09	1.12	96.55	77.80	56.30	32.90
100	-6.70	-3.20	-1.86	-0.91	6.86	3.34	1.99	1.03	99.80	93.15	76.75	48.90
200	-6.66	-3.17	-1.84	-0.90	6.74	3.23	1.91	0.97	100.00	99.95	96.45	76.30
500	-6.62	-3.15	-1.84	-0.91	6.65	3.18	1.87	0.93	100.00	100.00	100.00	98.70
1000	-6.63	-3.15	-1.85	-0.90	6.65	3.16	1.86	0.92	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.06	0.10	0.11	0.01	3.48	2.42	1.80	1.29	6.40	6.25	5.60	5.30
60	0.06	0.06	0.04	-0.02	2.41	1.68	1.26	0.92	6.75	5.80	4.50	6.05
100	0.08	0.07	0.05	0.00	1.84	1.28	0.97	0.70	5.75	5.65	4.95	5.55
200	0.08	0.06	0.05	0.02	1.28	0.91	0.69	0.49	5.45	5.45	5.00	5.40
500	0.07	0.07	0.05	0.02	0.82	0.58	0.44	0.31	5.55	5.70	4.80	5.15
1000	0.06	0.06	0.05	0.02	0.60	0.41	0.31	0.22	7.05	6.00	6.00	5.70
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	5.17	1.94	0.98	0.17	26.20	14.17	9.97	6.92	4.45	4.75	4.40	5.00
60	3.75	1.46	0.50	-0.05	16.39	9.62	6.84	4.87	4.65	4.80	3.85	5.55
100	3.76	1.32	0.54	0.04	12.53	7.35	5.33	3.73	4.95	4.15	5.60	5.40
200	3.47	1.24	0.55	0.10	8.98	5.21	3.77	2.61	6.00	5.30	4.80	4.90
500	3.46	1.23	0.51	0.11	6.29	3.51	2.47	1.64	9.75	6.45	5.40	4.85
1000	3.25	1.16	0.46	0.09	5.03	2.62	1.76	1.17	15.75	8.90	6.00	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.64	0.30	0.12	0.05	3.94	2.18	1.50	0.97	10.15	8.20	6.35	6.10
60	0.66	0.32	0.13	0.04	2.84	1.56	1.04	0.68	10.90	7.45	6.05	6.15
100	0.76	0.31	0.14	0.04	2.23	1.23	0.82	0.52	10.60	8.00	6.55	6.20
200	0.78	0.33	0.15	0.04	1.69	0.88	0.59	0.37	13.35	8.20	6.95	6.15
500	0.83	0.32	0.14	0.04	1.23	0.60	0.37	0.23	20.70	11.75	7.20	4.85
1000	0.80	0.33	0.13	0.04	1.04	0.49	0.28	0.16	30.80	17.15	8.55	5.40
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.16	0.10	0.08	-0.01	3.66	2.46	1.82	1.30	5.40	5.75	4.80	5.35
60	0.17	0.07	0.01	-0.04	2.56	1.70	1.27	0.92	6.05	5.15	4.10	5.95
100	0.22	0.07	0.02	-0.02	1.96	1.30	0.98	0.70	5.20	4.55	4.65	5.30
200	0.21	0.06	0.03	0.00	1.39	0.92	0.69	0.49	5.50	5.15	4.65	5.15
500	0.23	0.07	0.03	0.00	0.90	0.59	0.45	0.31	5.95	4.90	4.30	4.90
1000	0.21	0.06	0.03	0.00	0.67	0.42	0.32	0.22	7.25	5.65	5.55	5.30

Notes: See the notes for Table A.25.1.

Figure A.25: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25)

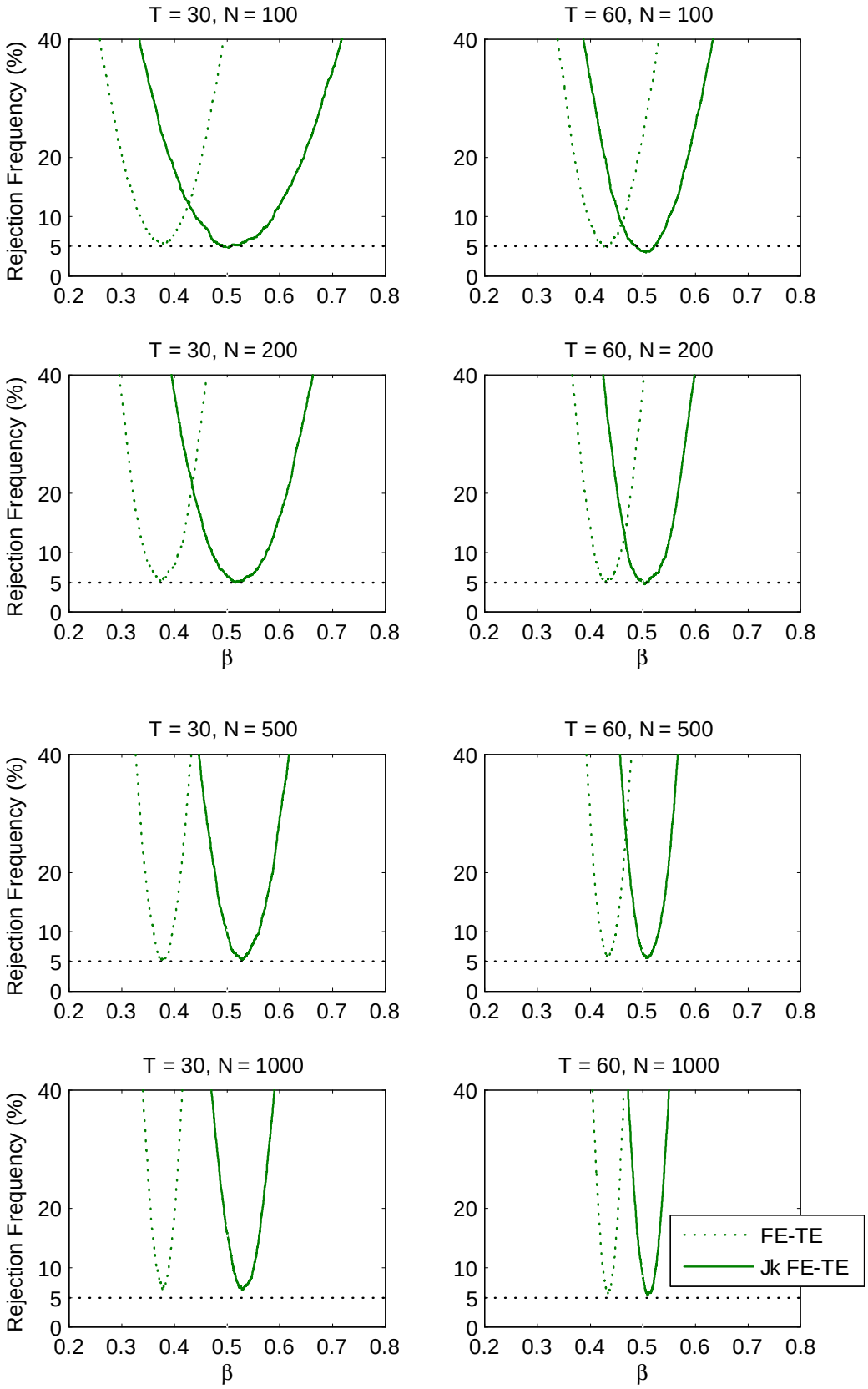

Table A.26.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-11.47	24.96	161.26	404.36	17.53	29.91	163.33	404.47	17.80	35.55	99.80	100.00
60	-11.31	24.73	160.80	404.63	14.56	27.22	161.85	404.69	26.50	59.15	100.00	100.00
100	-11.06	24.88	161.01	404.82	13.08	26.40	161.64	404.85	37.60	79.75	100.00	100.00
200	-10.99	24.94	161.16	404.91	12.01	25.69	161.47	404.92	62.80	97.45	100.00	100.00
500	-10.89	25.06	161.20	404.99	11.33	25.38	161.33	404.99	94.35	100.00	100.00	100.00
1000	-10.96	24.99	161.19	404.96	11.20	25.15	161.25	404.96	99.90	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-5.79	6.42	15.16	17.78	6.37	6.54	15.17	17.78	64.70	99.75	100.00	100.00
60	-5.59	6.45	15.18	17.79	5.90	6.51	15.19	17.79	89.35	100.00	100.00	100.00
100	-5.47	6.48	15.18	17.78	5.65	6.51	15.18	17.78	98.30	100.00	100.00	100.00
200	-5.40	6.50	15.19	17.78	5.49	6.52	15.19	17.78	100.00	100.00	100.00	100.00
500	-5.34	6.52	15.19	17.78	5.38	6.52	15.19	17.78	100.00	100.00	100.00	100.00
1000	-5.35	6.52	15.19	17.78	5.37	6.52	15.19	17.78	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.10	0.18	0.26	0.10	3.44	2.43	1.84	1.31	6.20	5.85	4.90	5.00
60	-0.11	0.13	0.17	0.07	2.40	1.70	1.30	0.93	6.30	5.55	4.40	4.80
100	-0.09	0.13	0.18	0.09	1.83	1.31	1.02	0.73	5.45	5.45	4.95	5.10
200	-0.09	0.11	0.17	0.10	1.28	0.93	0.73	0.52	5.55	5.40	5.55	4.70
500	-0.09	0.12	0.16	0.10	0.82	0.60	0.48	0.33	5.85	5.55	5.55	5.80
1000	-0.11	0.11	0.16	0.10	0.61	0.43	0.36	0.25	7.00	6.25	8.55	6.85
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	15.21	-1048.44	-185.23	-96.94	34.79	48036.57	189.29	80743.06	4.35	18.40	100.00	8.00
60	13.17	314.32	-182.24	-1714.20	22.79	14695.56	184.15	126591.34	9.20	34.10	100.00	27.55
100	13.03	-82.50	-182.38	-1130.27	18.96	28381.66	183.56	73846.16	14.15	46.65	100.00	49.45
200	12.62	982.68	-182.25	-3462.28	15.82	5426.85	182.83	7282.11	27.50	68.25	100.00	82.05
500	12.63	706.54	-181.92	-3132.91	13.95	2065.08	182.16	8581.54	60.90	94.40	100.00	99.45
1000	12.38	633.60	-181.93	-2853.75	13.14	674.61	182.04	2906.82	87.15	99.60	100.00	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	3.40	18.60	27.90	20.37	5.20	18.75	27.92	20.38	24.80	100.00	100.00	100.00
60	3.41	18.48	27.87	20.38	4.40	18.55	27.88	20.38	34.90	100.00	100.00	100.00
100	3.49	18.41	27.83	20.37	4.08	18.46	27.84	20.37	51.25	100.00	100.00	100.00
200	3.51	18.41	27.80	20.37	3.82	18.43	27.80	20.37	76.65	100.00	100.00	100.00
500	3.55	18.39	27.79	20.37	3.67	18.39	27.79	20.37	98.95	100.00	100.00	100.00
1000	3.53	18.38	27.78	20.37	3.60	18.38	27.78	20.37	100.00	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.23	0.43	0.36	0.05	3.68	2.68	2.05	1.32	5.30	6.95	3.85	3.20
60	0.24	0.36	0.27	0.01	2.59	1.90	1.46	0.95	5.55	6.50	3.70	3.00
100	0.27	0.36	0.27	0.04	1.99	1.47	1.16	0.74	5.70	6.65	3.85	3.75
200	0.26	0.33	0.26	0.05	1.41	1.06	0.83	0.52	5.70	7.40	5.05	3.25
500	0.28	0.34	0.25	0.05	0.93	0.72	0.57	0.33	6.90	8.40	5.75	3.70
1000	0.26	0.33	0.26	0.05	0.70	0.56	0.44	0.23	8.30	13.00	9.30	3.50

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0.2$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.26.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-13.52	-7.18	-4.24	-2.34	18.61	12.44	9.04	6.37	24.05	14.00	9.05	7.30
60	-13.45	-7.24	-4.48	-2.44	16.07	10.04	7.08	4.85	38.75	19.75	12.80	10.35
100	-13.24	-7.15	-4.39	-2.33	14.82	8.92	6.12	3.96	54.30	28.80	17.35	12.25
200	-13.19	-7.12	-4.35	-2.25	13.98	8.04	5.29	3.18	82.90	48.70	30.35	16.90
500	-13.15	-7.06	-4.34	-2.23	13.48	7.47	4.76	2.64	99.50	84.75	62.45	34.10
1000	-13.22	-7.10	-4.37	-2.25	13.40	7.31	4.57	2.46	100.00	99.10	89.35	62.05
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.08	-3.38	-1.98	-0.94	7.60	3.82	2.38	1.31	78.65	52.85	35.15	20.05
60	-6.97	-3.31	-1.92	-0.93	7.24	3.55	2.13	1.13	97.00	79.10	57.50	33.05
100	-6.87	-3.27	-1.90	-0.92	7.03	3.42	2.03	1.05	99.75	93.50	78.90	50.00
200	-6.83	-3.24	-1.88	-0.92	6.91	3.31	1.95	0.98	100.00	99.85	96.90	77.75
500	-6.79	-3.22	-1.88	-0.92	6.82	3.25	1.91	0.95	100.00	100.00	100.00	98.90
1000	-6.80	-3.22	-1.88	-0.92	6.81	3.23	1.90	0.93	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.15	0.00	0.05	-0.02	3.48	2.41	1.80	1.29	6.75	6.35	5.60	5.30
60	-0.16	-0.04	-0.02	-0.05	2.42	1.67	1.26	0.92	6.95	6.00	4.50	5.90
100	-0.13	-0.03	-0.01	-0.03	1.84	1.28	0.97	0.70	5.65	5.25	5.00	5.35
200	-0.13	-0.04	-0.01	-0.01	1.28	0.91	0.69	0.49	5.70	5.30	4.65	4.95
500	-0.13	-0.03	-0.01	-0.01	0.82	0.58	0.44	0.31	6.00	5.60	5.00	5.25
1000	-0.15	-0.04	-0.01	-0.01	0.61	0.41	0.31	0.22	7.50	5.60	5.50	5.55
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	4.33	1.75	0.87	0.13	23.96	13.06	9.16	6.33	4.35	5.05	4.75	5.05
60	3.30	1.44	0.49	-0.04	15.30	8.92	6.30	4.47	5.25	4.80	4.30	5.60
100	3.42	1.34	0.55	0.05	11.70	6.83	4.92	3.42	5.35	4.60	5.05	5.35
200	3.23	1.30	0.58	0.11	8.43	4.88	3.48	2.40	6.85	5.80	5.05	4.70
500	3.25	1.29	0.55	0.12	5.90	3.30	2.29	1.50	10.55	7.15	5.60	5.00
1000	3.07	1.24	0.50	0.10	4.73	2.50	1.64	1.07	16.60	10.20	6.05	5.40
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.63	0.32	0.12	0.06	3.99	2.20	1.51	0.97	10.50	8.45	7.20	5.90
60	0.65	0.35	0.15	0.05	2.87	1.59	1.05	0.69	10.85	7.50	6.65	6.40
100	0.74	0.33	0.16	0.05	2.26	1.25	0.83	0.53	11.45	8.70	6.90	6.30
200	0.76	0.36	0.17	0.05	1.70	0.91	0.60	0.37	13.95	9.60	7.20	6.50
500	0.81	0.34	0.15	0.04	1.22	0.62	0.38	0.24	20.40	12.00	7.55	5.85
1000	0.79	0.35	0.14	0.04	1.03	0.51	0.29	0.17	30.25	19.80	9.05	5.80
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.13	0.11	0.09	-0.01	3.67	2.46	1.82	1.30	5.50	5.70	4.90	5.30
60	0.14	0.07	0.01	-0.04	2.57	1.70	1.27	0.92	5.90	5.05	4.30	6.00
100	0.19	0.08	0.02	-0.02	1.96	1.30	0.98	0.70	5.40	4.35	4.90	5.20
200	0.19	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.55	5.00	4.60	4.90
500	0.20	0.08	0.03	0.00	0.90	0.59	0.45	0.31	5.65	4.85	4.20	4.85
1000	0.19	0.07	0.03	0.00	0.66	0.42	0.32	0.22	7.05	5.80	5.35	5.25

Notes: See the notes for Table A.26.1.

Figure A.26: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26)

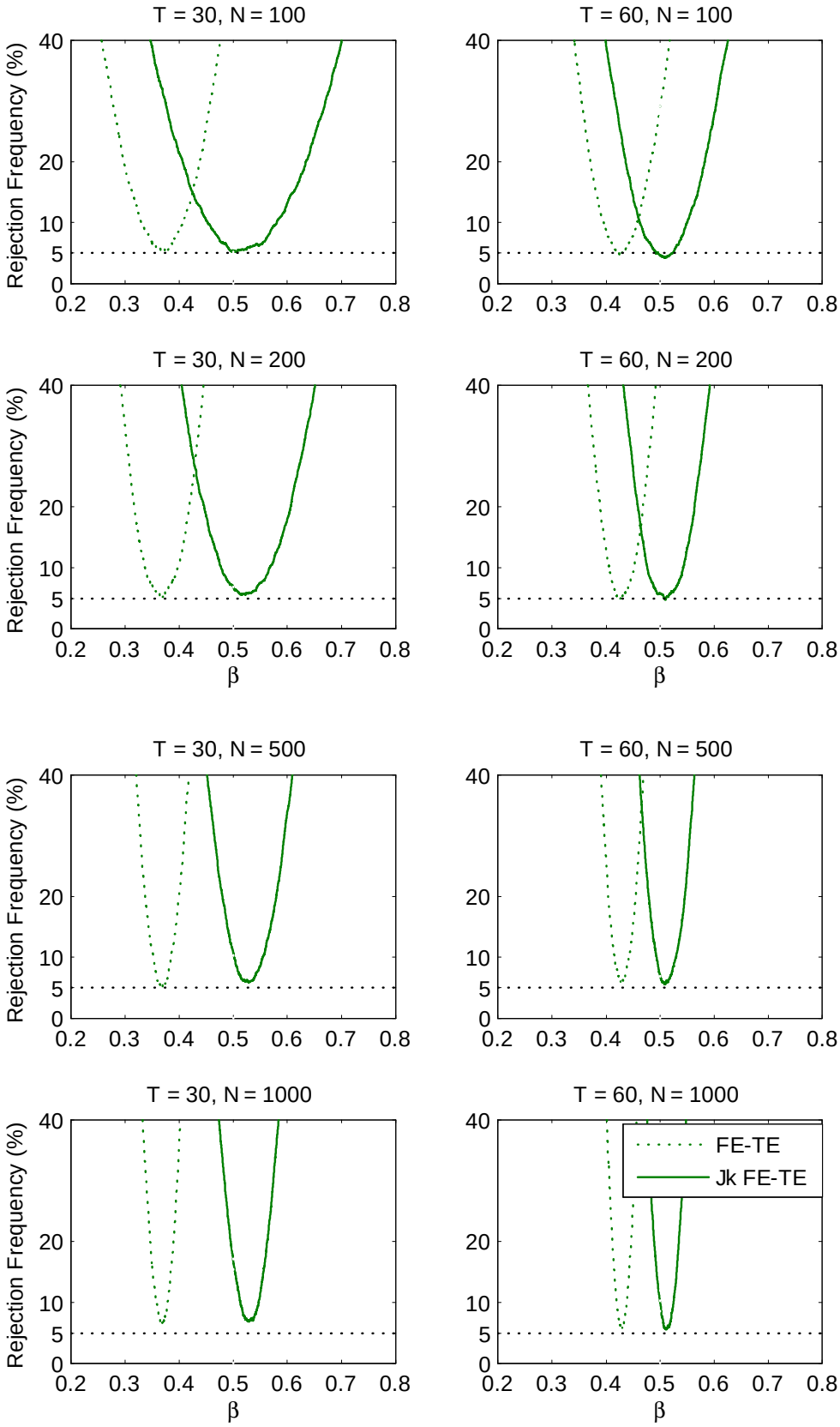

Table A.27.1: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27)

	Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30	-12.38	24.47	114.27	191.03	17.45	27.98	114.91	191.05	19.35	47.50	100.00	100.00
60	-12.04	24.50	114.28	191.10	14.75	26.23	114.60	191.10	32.30	73.20	100.00	100.00
100	-11.73	24.70	114.45	191.13	13.39	25.74	114.64	191.14	45.65	89.95	100.00	100.00
200	-11.61	24.82	114.59	191.15	12.44	25.33	114.68	191.15	74.15	99.70	100.00	100.00
500	-11.49	24.95	114.64	191.17	11.85	25.17	114.68	191.17	98.55	100.00	100.00	100.00
1000	-11.55	24.91	114.64	191.16	11.74	25.02	114.66	191.16	100.00	100.00	100.00	100.00
	FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-5.78	6.09	13.51	15.60	6.42	6.26	13.53	15.61	59.85	98.15	100.00	100.00
60	-5.59	6.14	13.55	15.61	5.92	6.22	13.56	15.62	85.45	100.00	100.00	100.00
100	-5.47	6.16	13.54	15.60	5.67	6.21	13.55	15.61	96.55	100.00	100.00	100.00
200	-5.40	6.19	13.55	15.60	5.51	6.21	13.56	15.60	100.00	100.00	100.00	100.00
500	-5.35	6.20	13.56	15.60	5.39	6.21	13.56	15.60	100.00	100.00	100.00	100.00
1000	-5.34	6.20	13.56	15.60	5.37	6.21	13.56	15.60	100.00	100.00	100.00	100.00
	FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.25	0.41	0.72	0.62	3.43	2.44	1.95	1.44	5.90	6.30	6.60	7.75
60	-0.26	0.36	0.63	0.58	2.41	1.73	1.44	1.10	6.40	5.90	7.65	9.55
100	-0.24	0.36	0.63	0.60	1.84	1.35	1.18	0.94	5.45	5.90	9.40	13.90
200	-0.24	0.34	0.62	0.61	1.30	0.98	0.94	0.79	6.20	6.90	14.05	22.95
500	-0.24	0.35	0.61	0.61	0.85	0.68	0.76	0.69	6.55	9.40	28.30	48.40
1000	-0.25	0.34	0.61	0.61	0.65	0.53	0.69	0.65	8.65	13.35	47.20	76.70
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$											
30	15.79	739.93	-325.78	416.99	32.58	29724.30	366.49	424.84	6.85	31.90	96.30	99.45
60	14.13	442.07	-302.85	409.14	22.55	6807.75	313.74	411.89	12.45	48.95	99.95	100.00
100	14.06	534.26	-299.68	405.23	19.15	9369.29	305.41	406.67	20.00	64.75	100.00	100.00
200	13.73	574.02	-296.88	402.59	16.43	2123.28	299.58	403.21	36.40	87.20	100.00	100.00
500	13.77	474.45	-294.67	401.11	14.86	513.08	295.72	401.35	75.65	99.50	100.00	100.00
1000	13.56	450.78	-294.20	400.89	14.17	460.89	294.71	401.02	95.50	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	3.60	17.96	24.62	17.65	5.42	18.12	24.65	17.65	25.25	100.00	100.00	100.00
60	3.61	17.86	24.62	17.66	4.60	17.93	24.64	17.66	35.90	100.00	100.00	100.00
100	3.67	17.79	24.58	17.65	4.28	17.83	24.59	17.65	52.60	100.00	100.00	100.00
200	3.69	17.78	24.55	17.65	4.01	17.80	24.56	17.65	77.20	100.00	100.00	100.00
500	3.73	17.75	24.54	17.64	3.85	17.76	24.55	17.64	99.05	100.00	100.00	100.00
1000	3.72	17.74	24.54	17.64	3.78	17.75	24.54	17.64	100.00	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.31	1.05	1.16	0.62	3.70	2.83	2.31	1.45	5.25	8.20	7.15	5.25
60	0.31	0.97	1.07	0.58	2.61	2.09	1.78	1.11	5.65	9.20	9.55	7.95
100	0.35	0.96	1.07	0.61	2.01	1.72	1.55	0.95	5.85	11.45	14.15	11.20
200	0.34	0.93	1.06	0.61	1.43	1.37	1.32	0.80	6.05	16.35	22.85	18.80
500	0.35	0.94	1.05	0.61	0.96	1.13	1.16	0.69	7.55	34.35	50.85	42.55
1000	0.34	0.93	1.05	0.61	0.73	1.03	1.11	0.66	9.90	55.40	81.80	71.25

Notes: $\beta = 0.5$, $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$, and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.13.1. For the rest of the settings, see the notes for Table A.1.

Table A.27.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27, continued)

	Bias (×100)				RMSE (×100)				Size (%)			
(N,T)	30	60	100	200	30	60	100	200	30	60	100	200
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30	-14.75	-7.89	-4.69	-2.54	18.93	12.20	8.65	5.94	28.05	15.55	9.90	7.35
60	-14.52	-7.84	-4.84	-2.61	16.66	10.11	6.96	4.60	47.20	24.00	14.95	11.55
100	-14.25	-7.72	-4.73	-2.49	15.53	9.14	6.12	3.82	66.50	35.80	21.75	14.00
200	-14.15	-7.66	-4.67	-2.41	14.79	8.39	5.42	3.16	92.30	61.25	39.45	21.95
500	-14.09	-7.60	-4.67	-2.39	14.35	7.91	4.99	2.71	100.00	94.85	75.80	45.20
1000	-14.15	-7.63	-4.69	-2.40	14.30	7.78	4.85	2.57	100.00	99.90	96.95	76.45
	FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	-7.20	-3.43	-2.01	-0.95	7.76	3.91	2.46	1.36	76.00	49.20	33.40	18.10
60	-7.08	-3.35	-1.94	-0.93	7.37	3.61	2.18	1.16	95.50	75.10	53.85	29.70
100	-6.99	-3.32	-1.92	-0.92	7.17	3.48	2.06	1.06	99.55	91.20	74.60	44.50
200	-6.94	-3.28	-1.90	-0.92	7.03	3.36	1.98	1.00	100.00	99.65	95.45	72.65
500	-6.90	-3.27	-1.90	-0.93	6.94	3.30	1.93	0.96	100.00	100.00	100.00	97.90
1000	-6.91	-3.26	-1.90	-0.93	6.93	3.28	1.92	0.94	100.00	100.00	100.00	100.00
	FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	-0.37	-0.11	-0.01	-0.05	3.48	2.41	1.79	1.29	6.70	6.40	5.40	5.60
60	-0.37	-0.14	-0.08	-0.08	2.44	1.68	1.26	0.92	6.90	5.95	4.45	6.10
100	-0.34	-0.13	-0.07	-0.06	1.86	1.28	0.97	0.70	5.80	5.30	5.05	5.15
200	-0.33	-0.14	-0.07	-0.04	1.32	0.91	0.69	0.49	6.65	5.10	5.05	4.85
500	-0.34	-0.13	-0.07	-0.04	0.88	0.59	0.44	0.31	7.45	6.15	5.60	5.55
1000	-0.35	-0.14	-0.07	-0.04	0.69	0.43	0.32	0.22	11.35	6.70	5.90	5.45
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$											
30	3.55	1.61	0.79	0.10	21.99	12.02	8.36	5.73	4.95	5.40	5.30	4.90
60	2.85	1.44	0.51	-0.03	14.27	8.24	5.76	4.05	5.80	5.05	4.50	5.75
100	3.04	1.36	0.58	0.07	10.88	6.32	4.50	3.10	6.15	5.20	4.95	5.60
200	2.93	1.36	0.63	0.13	7.86	4.55	3.20	2.17	7.30	6.15	5.25	4.65
500	2.99	1.35	0.60	0.14	5.47	3.11	2.12	1.37	11.50	8.55	6.20	5.15
1000	2.83	1.32	0.56	0.12	4.39	2.39	1.53	0.98	17.35	12.05	6.75	5.50
	Half-panel Jackknife FE-TE $\overline{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30	0.62	0.35	0.13	0.06	4.13	2.31	1.60	1.04	10.70	7.90	7.15	5.90
60	0.65	0.38	0.17	0.07	2.97	1.67	1.12	0.74	10.60	8.10	6.70	6.80
100	0.72	0.36	0.18	0.06	2.34	1.32	0.88	0.56	11.75	8.80	7.15	5.75
200	0.75	0.38	0.18	0.05	1.75	0.96	0.64	0.40	13.20	10.65	7.00	6.45
500	0.79	0.37	0.17	0.05	1.24	0.66	0.41	0.25	19.25	12.40	7.90	6.25
1000	0.77	0.38	0.16	0.05	1.03	0.55	0.31	0.18	27.90	20.95	9.45	5.85
	Half-panel Jackknife FE-TE $\overline{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30	0.09	0.11	0.09	-0.01	3.68	2.45	1.82	1.29	5.25	5.65	4.85	5.30
60	0.10	0.08	0.02	-0.04	2.57	1.70	1.27	0.92	6.25	5.45	4.40	6.10
100	0.16	0.08	0.03	-0.02	1.97	1.30	0.98	0.70	5.65	4.30	4.90	5.15
200	0.16	0.07	0.03	0.00	1.39	0.92	0.69	0.49	5.35	4.90	4.45	4.60
500	0.17	0.08	0.03	0.01	0.89	0.59	0.45	0.31	5.75	4.90	4.15	4.95
1000	0.15	0.07	0.03	0.00	0.66	0.42	0.31	0.22	7.25	5.85	5.25	5.20

Notes: See the notes for Table A.27.1.

Figure A.27: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27)

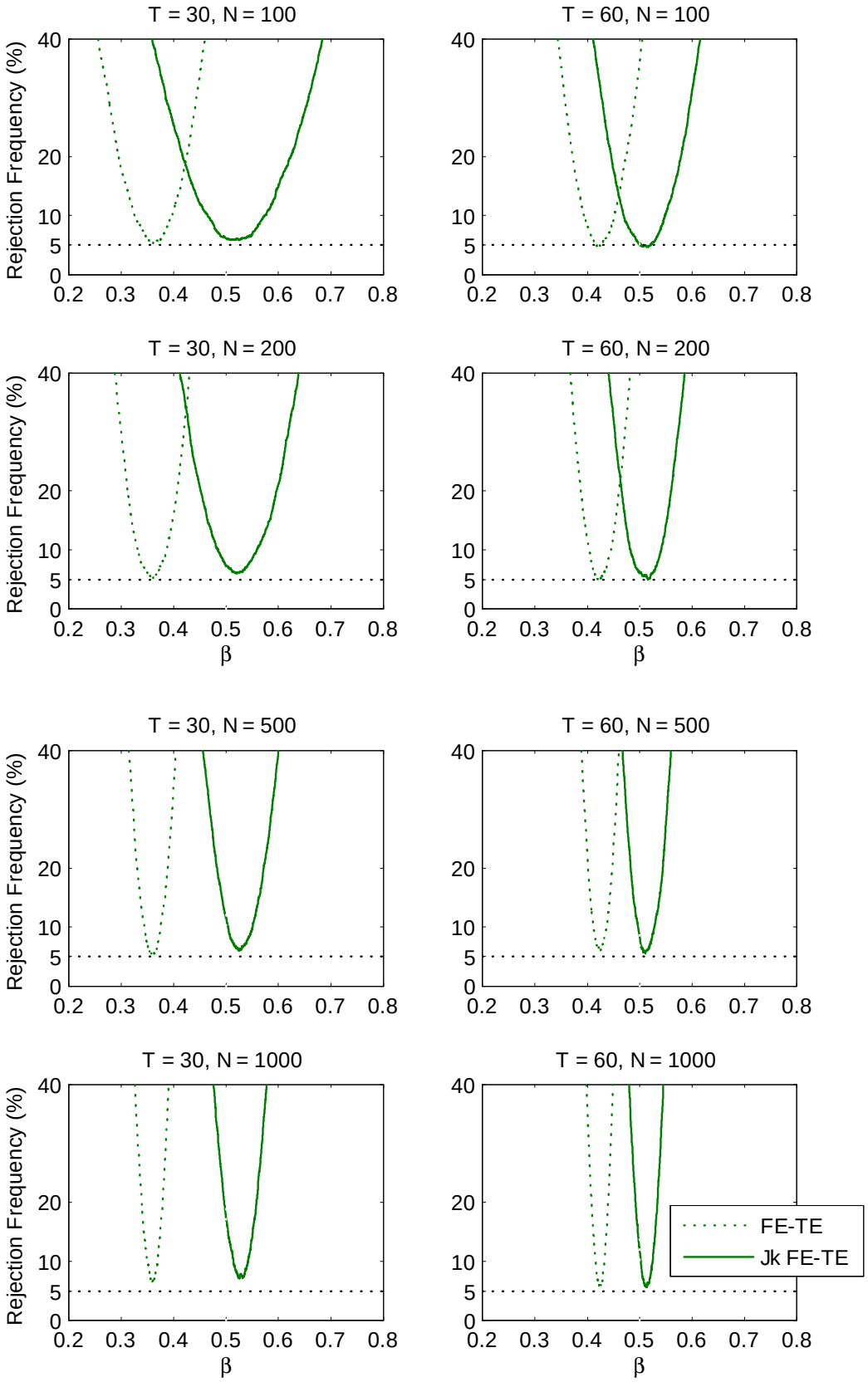

Table A.28: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 1, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		0.02	0.05	0.04	-0.04	3.96	2.80	2.11	1.49	5.90	5.90	5.20	5.25
60		-0.02	0.04	-0.02	-0.04	2.76	1.95	1.48	1.05	6.05	5.70	5.30	5.70
100		0.01	0.03	0.02	-0.02	2.14	1.52	1.13	0.81	5.55	5.60	5.15	5.05
200		0.00	0.02	0.00	-0.01	1.48	1.06	0.80	0.57	5.35	5.50	4.75	5.50
500		0.01	0.03	0.01	0.00	0.96	0.68	0.51	0.35	5.50	5.30	4.80	4.50
1000		-0.01	0.00	0.00	-0.01	0.68	0.48	0.37	0.26	5.95	5.60	5.70	5.90
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.02	0.05	0.03	-0.05	4.12	2.84	2.13	1.50	4.75	5.25	4.25	5.15
60		-0.04	0.03	-0.03	-0.04	2.86	1.97	1.50	1.06	3.80	4.80	5.05	5.40
100		-0.01	0.03	0.01	-0.02	2.23	1.54	1.15	0.81	4.10	4.75	4.45	4.95
200		-0.02	0.02	0.00	-0.01	1.56	1.07	0.81	0.58	4.15	4.50	4.00	5.30
500		0.00	0.03	0.01	0.00	1.00	0.69	0.52	0.35	3.80	4.50	4.35	4.20
1000		-0.01	-0.01	0.00	-0.01	0.72	0.49	0.37	0.26	4.80	4.65	5.45	5.75
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.01	0.04	0.03	-0.05	4.07	2.86	2.16	1.53	6.75	6.45	5.65	5.95
60		-0.04	0.03	-0.03	-0.04	2.79	1.96	1.49	1.07	6.60	5.25	5.65	5.45
100		0.02	0.04	0.02	-0.02	2.16	1.52	1.14	0.81	5.45	6.15	5.40	5.25
200		0.00	0.02	0.00	-0.01	1.49	1.06	0.80	0.57	5.35	5.25	5.25	5.50
500		0.01	0.03	0.01	0.00	0.96	0.68	0.51	0.35	5.50	5.45	4.65	4.70
1000		0.01	0.00	0.00	0.00	0.69	0.47	0.36	0.25	6.05	5.35	5.00	5.30
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.04	0.04	0.03	-0.05	4.25	2.89	2.18	1.54	5.25	5.75	4.90	5.85
60		-0.06	0.02	-0.04	-0.05	2.89	1.98	1.51	1.08	4.25	4.70	5.30	5.35
100		-0.01	0.03	0.01	-0.02	2.25	1.55	1.15	0.82	4.35	5.25	5.05	4.85
200		-0.02	0.02	0.00	-0.01	1.57	1.08	0.81	0.58	4.30	4.55	4.15	5.40
500		0.00	0.03	0.01	0.00	1.00	0.69	0.52	0.35	4.05	4.70	4.45	4.30
1000		0.01	0.00	0.00	0.00	0.72	0.48	0.36	0.26	4.45	5.10	4.55	4.85

Notes: See the notes for Table A.1.

Figure A.28: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 1, unbalanced panel)

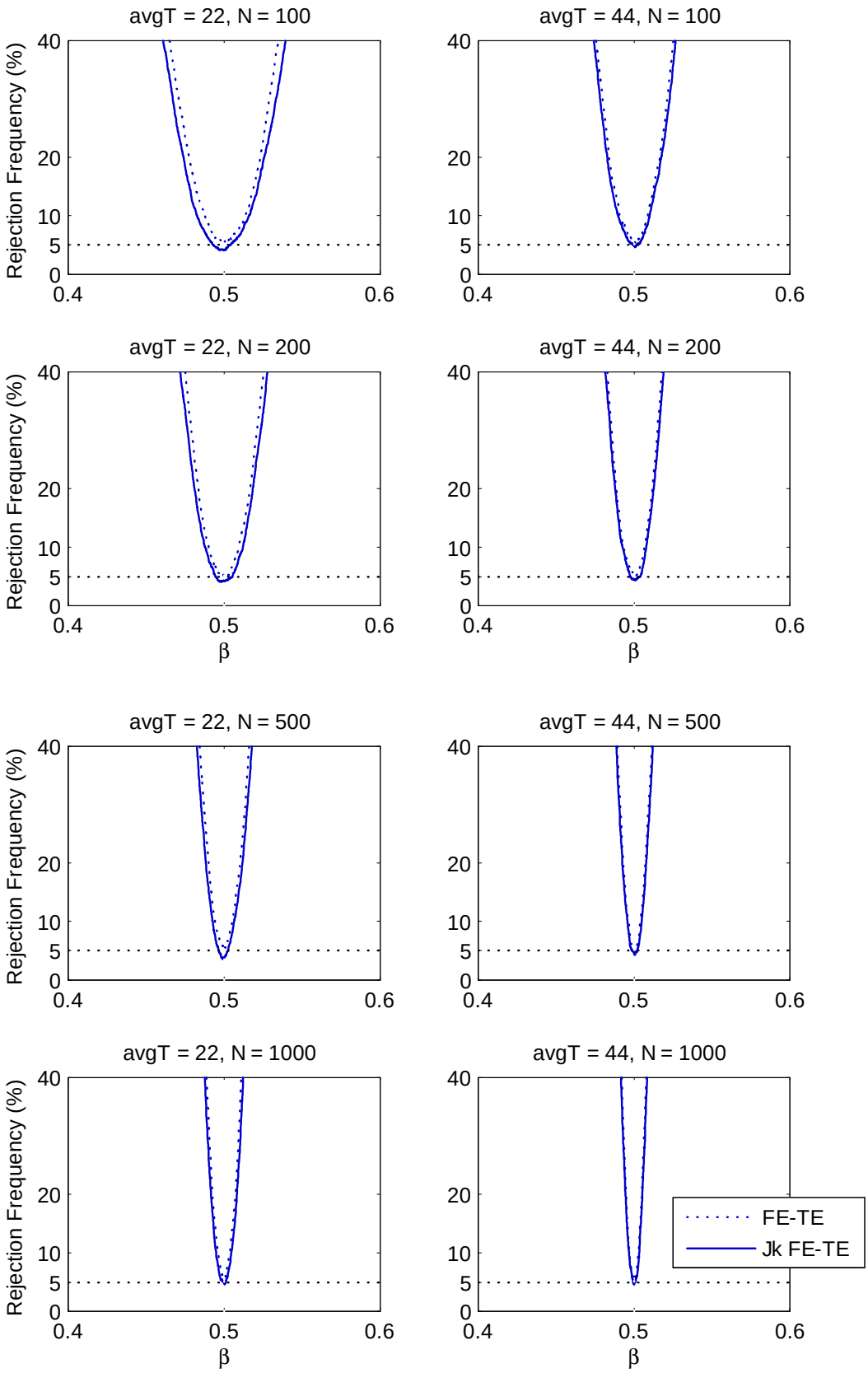

Table A.29: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 2, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-0.91	-0.41	-0.25	-0.18	3.98	2.77	2.07	1.46	6.30	6.65	5.40	5.45
60		-0.93	-0.42	-0.29	-0.17	2.84	1.93	1.46	1.03	7.00	6.30	5.80	5.60
100		-0.89	-0.41	-0.25	-0.15	2.26	1.54	1.13	0.80	7.60	6.65	5.45	5.10
200		-0.90	-0.43	-0.27	-0.14	1.70	1.11	0.82	0.57	9.20	7.20	5.80	6.55
500		-0.88	-0.42	-0.25	-0.14	1.28	0.78	0.56	0.37	17.20	10.85	9.25	6.60
1000		-0.90	-0.45	-0.26	-0.14	1.12	0.65	0.45	0.29	27.95	17.40	12.50	9.55
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.07	0.04	0.02	-0.04	4.06	2.78	2.08	1.46	4.35	5.00	4.30	5.20
60		-0.05	0.02	-0.03	-0.04	2.82	1.92	1.45	1.03	3.85	4.40	5.00	5.45
100		-0.01	0.03	0.01	-0.02	2.19	1.51	1.12	0.79	4.30	4.65	4.55	5.35
200		-0.04	0.02	0.00	-0.01	1.54	1.04	0.78	0.56	4.05	4.40	4.05	5.30
500		0.00	0.03	0.01	0.00	0.98	0.67	0.51	0.34	3.85	4.70	4.75	4.65
1000		-0.02	0.00	0.00	-0.01	0.71	0.48	0.36	0.25	4.65	5.15	5.30	5.60
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.93	-0.43	-0.26	-0.19	4.09	2.83	2.11	1.50	7.65	7.25	6.05	6.35
60		-0.95	-0.43	-0.30	-0.18	2.88	1.95	1.47	1.04	8.00	5.60	6.35	5.85
100		-0.89	-0.41	-0.25	-0.15	2.28	1.55	1.14	0.80	7.80	7.00	6.05	5.85
200		-0.90	-0.43	-0.27	-0.14	1.71	1.11	0.82	0.57	9.35	6.70	5.90	6.55
500		-0.88	-0.42	-0.25	-0.14	1.29	0.78	0.56	0.37	17.10	10.75	8.95	6.75
1000		-0.88	-0.44	-0.27	-0.13	1.11	0.64	0.44	0.28	28.30	17.70	12.60	8.40
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.08	0.03	0.02	-0.05	4.19	2.84	2.12	1.49	4.95	6.00	5.00	5.65
60		-0.08	0.01	-0.04	-0.04	2.85	1.92	1.46	1.04	4.50	4.65	5.05	5.25
100		-0.02	0.03	0.01	-0.02	2.21	1.52	1.13	0.79	4.05	4.80	5.15	5.30
200		-0.04	0.02	0.00	-0.01	1.54	1.04	0.78	0.56	4.35	4.40	4.05	5.20
500		0.00	0.03	0.01	0.00	0.99	0.68	0.51	0.34	4.10	4.60	4.75	4.85
1000		0.00	0.00	0.00	0.00	0.71	0.47	0.35	0.25	4.00	4.55	4.45	4.95

Notes: See the notes for Table A.2.

Figure A.29: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 2, unbalanced panel)

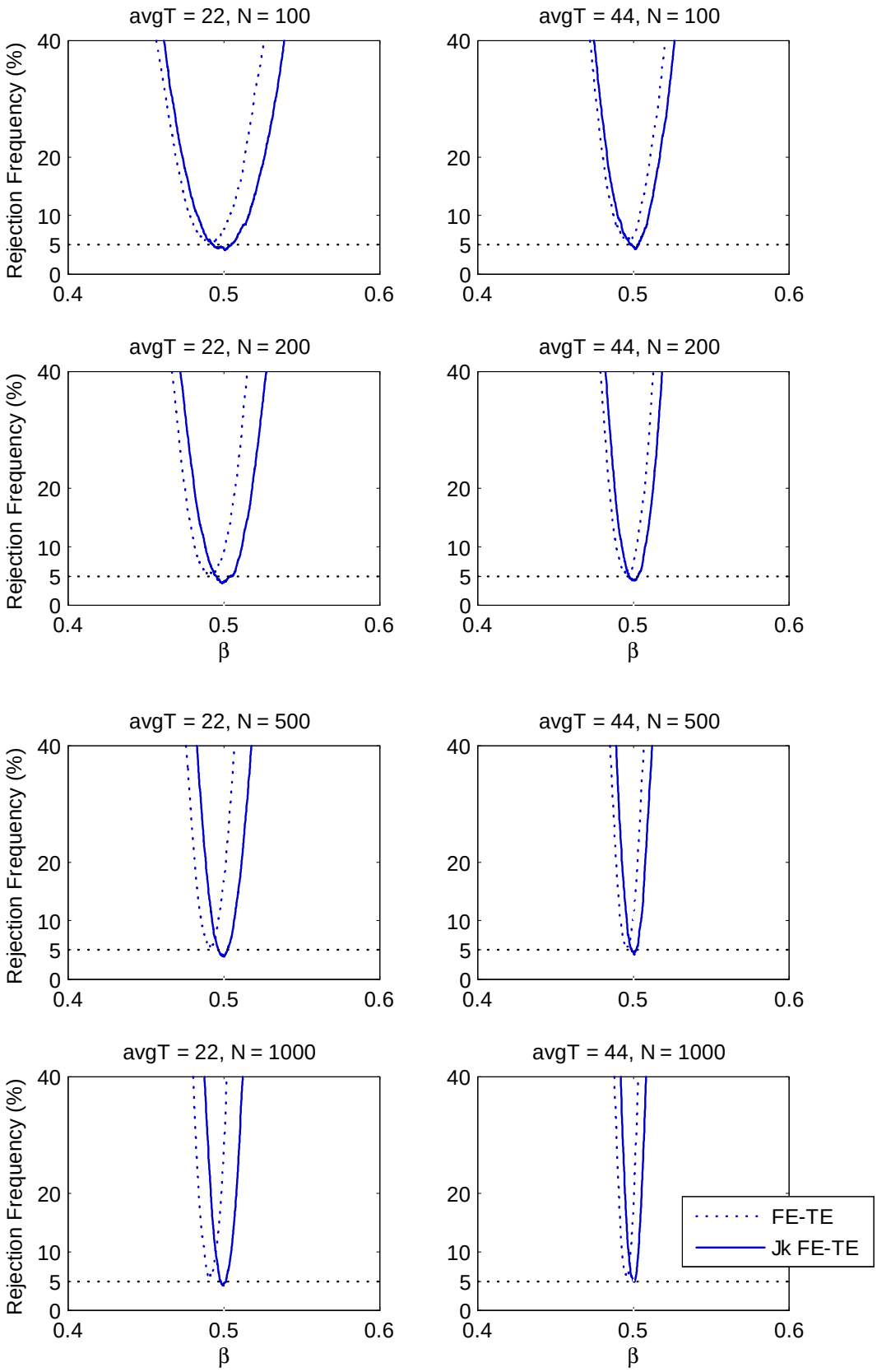

Table A.30: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 3, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-1.84	-0.88	-0.53	-0.31	4.14	2.76	2.02	1.41	9.05	7.70	5.45	5.75
60		-1.84	-0.88	-0.56	-0.30	3.15	1.99	1.46	1.00	11.80	7.85	6.60	6.95
100		-1.78	-0.86	-0.51	-0.27	2.67	1.65	1.17	0.79	15.40	11.15	7.80	6.45
200		-1.79	-0.87	-0.53	-0.27	2.26	1.30	0.90	0.59	25.60	14.15	10.95	8.50
500		-1.76	-0.86	-0.51	-0.27	1.97	1.06	0.70	0.42	50.75	30.50	20.15	12.25
1000		-1.78	-0.89	-0.53	-0.27	1.89	0.99	0.63	0.36	82.00	54.30	37.05	21.30
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.10	0.03	0.01	-0.04	3.94	2.67	1.98	1.38	4.35	5.40	4.75	4.75
60		-0.06	0.01	-0.03	-0.04	2.73	1.82	1.37	0.97	4.05	4.30	4.55	5.05
100		-0.02	0.03	0.01	-0.01	2.12	1.45	1.07	0.75	4.20	4.65	4.90	5.10
200		-0.05	0.02	0.00	-0.01	1.49	0.99	0.74	0.53	3.90	4.05	3.85	5.05
500		0.00	0.03	0.02	0.00	0.96	0.65	0.48	0.32	3.85	4.40	4.85	4.80
1000		-0.03	0.00	0.00	-0.01	0.68	0.46	0.35	0.24	3.85	5.10	5.20	5.20
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-1.88	-0.90	-0.54	-0.32	4.25	2.82	2.06	1.44	10.00	8.40	6.60	6.30
60		-1.86	-0.89	-0.57	-0.30	3.19	2.00	1.47	1.01	12.65	8.55	7.10	6.95
100		-1.78	-0.86	-0.52	-0.28	2.68	1.66	1.18	0.79	15.95	11.20	8.05	6.55
200		-1.79	-0.87	-0.53	-0.27	2.27	1.30	0.90	0.59	25.10	14.30	11.30	8.50
500		-1.76	-0.86	-0.51	-0.27	1.98	1.06	0.70	0.42	51.10	30.70	20.25	11.80
1000		-1.76	-0.88	-0.53	-0.26	1.87	0.98	0.62	0.35	80.20	53.45	35.35	20.45
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.11	0.02	0.01	-0.04	4.07	2.72	2.02	1.42	4.85	5.95	5.15	5.55
60		-0.09	0.01	-0.03	-0.04	2.77	1.83	1.39	0.98	4.15	4.25	4.75	5.55
100		-0.02	0.03	0.01	-0.01	2.13	1.45	1.08	0.75	4.20	4.55	4.70	5.10
200		-0.05	0.02	0.00	-0.01	1.49	0.99	0.74	0.53	4.05	4.10	3.95	5.00
500		0.00	0.03	0.02	0.00	0.96	0.65	0.49	0.32	4.10	4.75	4.90	4.90
1000		-0.01	0.01	0.00	0.00	0.68	0.45	0.33	0.23	4.35	5.05	4.55	4.90

Notes: See the notes for Table A.3.

Figure A.30: Rejection frequency (%) at 5% nominal level with $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 3, unbalanced panel)

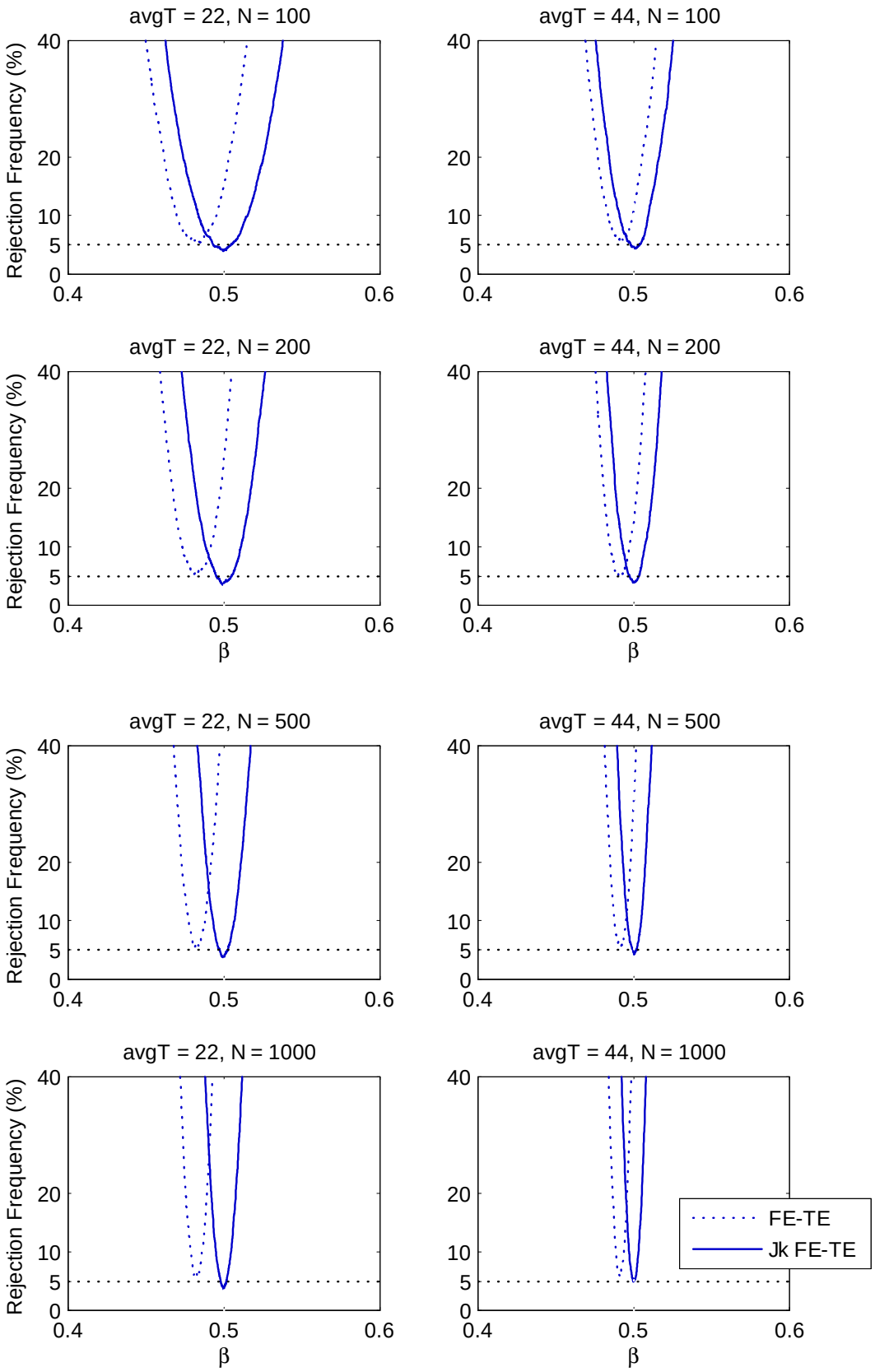

Table A.31: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 4, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		0.02	0.05	0.04	-0.04	3.96	2.80	2.11	1.49	5.95	5.80	5.20	5.30
60		-0.02	0.04	-0.02	-0.04	2.76	1.95	1.48	1.05	5.90	5.60	5.45	5.55
100		0.01	0.03	0.02	-0.02	2.14	1.52	1.13	0.81	5.60	5.50	5.10	5.10
200		0.00	0.02	0.00	-0.01	1.48	1.06	0.80	0.57	5.30	5.45	4.65	5.45
500		0.01	0.03	0.01	0.00	0.96	0.68	0.51	0.35	5.45	5.30	4.90	4.50
1000		-0.01	0.00	0.00	-0.01	0.68	0.48	0.37	0.26	5.85	5.55	5.70	5.85
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.02	0.04	0.04	-0.05	4.14	2.84	2.13	1.50	4.75	5.20	4.50	5.00
60		-0.04	0.03	-0.03	-0.04	2.86	1.97	1.50	1.06	4.10	4.95	5.00	5.60
100		-0.01	0.03	0.01	-0.02	2.23	1.54	1.15	0.81	4.05	4.75	4.55	5.00
200		-0.01	0.02	0.00	-0.01	1.57	1.07	0.81	0.58	4.30	4.35	3.95	5.25
500		0.00	0.03	0.01	0.00	1.00	0.69	0.52	0.35	3.80	4.55	4.45	4.20
1000		-0.01	-0.01	0.00	-0.01	0.72	0.49	0.37	0.26	4.75	4.65	5.45	5.70
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.01	0.04	0.03	-0.05	4.07	2.86	2.16	1.53	6.75	6.45	5.65	5.95
60		-0.04	0.03	-0.03	-0.04	2.79	1.96	1.49	1.07	6.60	5.25	5.65	5.45
100		0.02	0.04	0.02	-0.02	2.16	1.52	1.14	0.81	5.45	6.15	5.40	5.25
200		0.00	0.02	0.00	-0.01	1.49	1.06	0.80	0.57	5.35	5.25	5.25	5.50
500		0.01	0.03	0.01	0.00	0.96	0.68	0.51	0.35	5.50	5.45	4.65	4.70
1000		0.01	0.00	0.00	0.00	0.69	0.47	0.36	0.25	6.05	5.35	5.00	5.30
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.04	0.04	0.03	-0.05	4.25	2.89	2.18	1.54	5.25	5.75	4.90	5.85
60		-0.06	0.02	-0.04	-0.05	2.89	1.98	1.51	1.08	4.25	4.70	5.30	5.35
100		-0.01	0.03	0.01	-0.02	2.25	1.55	1.15	0.82	4.35	5.25	5.05	4.85
200		-0.02	0.02	0.00	-0.01	1.57	1.08	0.81	0.58	4.30	4.55	4.15	5.40
500		0.00	0.03	0.01	0.00	1.00	0.69	0.52	0.35	4.05	4.70	4.45	4.30
1000		0.01	0.00	0.00	0.00	0.72	0.48	0.36	0.26	4.45	5.10	4.55	4.85

Notes: See the notes for Table A.4.

Figure A.31: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 4, unbalanced panel)

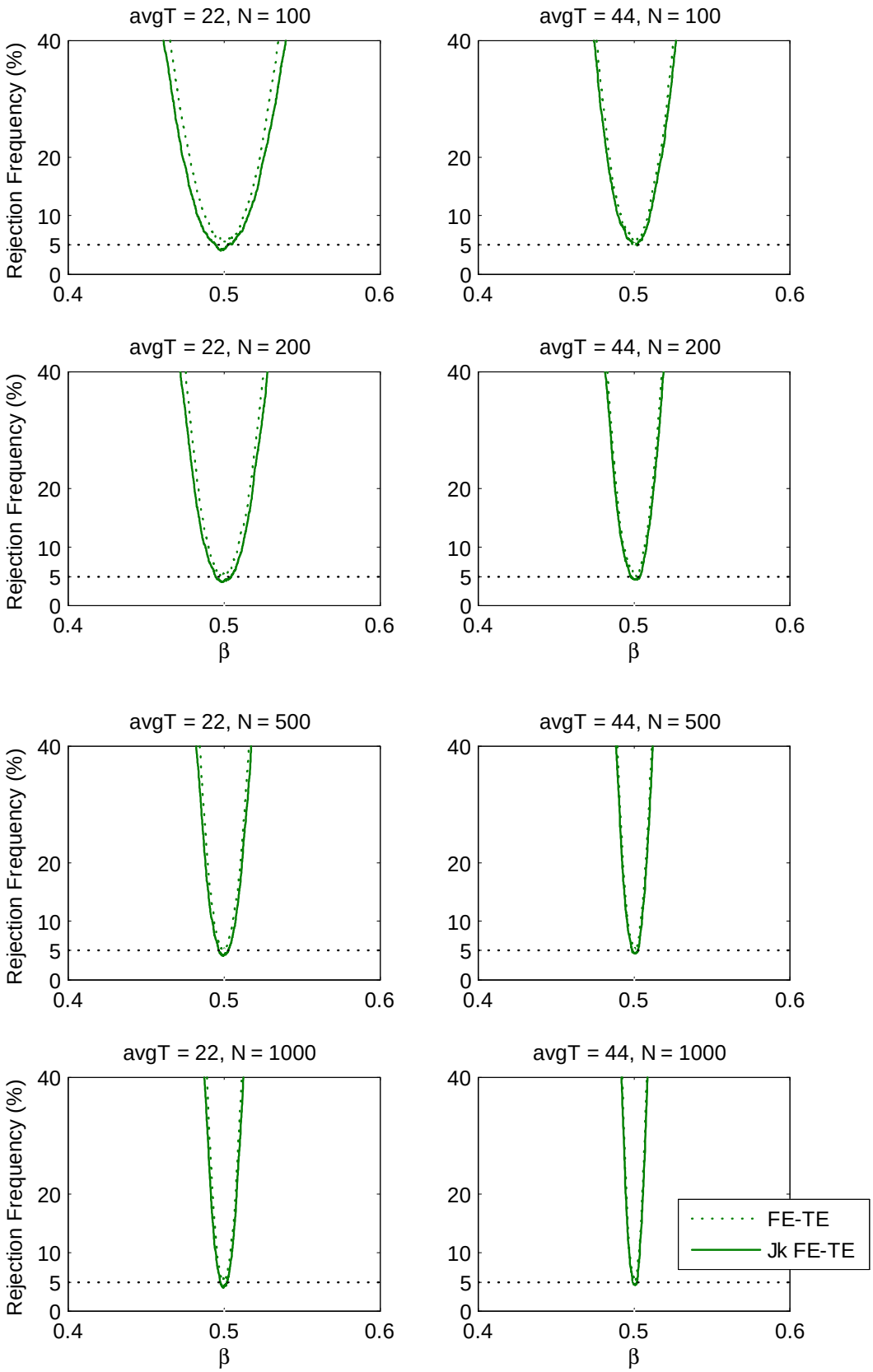

Table A.32: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 5, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-0.94	-0.43	-0.26	-0.18	3.99	2.78	2.07	1.46	6.35	6.55	5.45	5.45
60		-0.95	-0.43	-0.30	-0.18	2.85	1.94	1.46	1.03	7.05	6.40	5.80	5.55
100		-0.90	-0.42	-0.25	-0.15	2.27	1.54	1.13	0.80	7.75	6.65	5.60	5.10
200		-0.90	-0.43	-0.27	-0.14	1.70	1.11	0.82	0.57	9.05	7.10	5.85	6.55
500		-0.88	-0.42	-0.25	-0.14	1.28	0.78	0.56	0.37	17.15	10.95	9.30	6.60
1000		-0.90	-0.45	-0.26	-0.14	1.12	0.65	0.45	0.29	28.10	17.35	12.55	9.45
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.06	0.03	0.02	-0.04	4.08	2.79	2.08	1.46	4.35	4.85	4.30	5.05
60		-0.06	0.02	-0.03	-0.04	2.82	1.92	1.45	1.03	3.90	4.55	4.85	5.45
100		-0.02	0.03	0.01	-0.02	2.20	1.51	1.12	0.79	4.35	4.75	4.55	5.35
200		-0.03	0.02	0.00	-0.01	1.54	1.04	0.78	0.56	4.25	4.40	4.15	5.30
500		0.00	0.03	0.01	0.00	0.99	0.67	0.51	0.34	3.90	4.65	4.70	4.70
1000		-0.02	0.00	0.00	-0.01	0.71	0.48	0.36	0.25	4.60	5.30	5.25	5.55
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.93	-0.43	-0.26	-0.19	4.09	2.83	2.11	1.50	7.65	7.25	6.05	6.35
60		-0.95	-0.43	-0.30	-0.18	2.88	1.95	1.47	1.04	8.00	5.60	6.35	5.85
100		-0.89	-0.41	-0.25	-0.15	2.28	1.55	1.14	0.80	7.80	7.00	6.05	5.85
200		-0.90	-0.43	-0.27	-0.14	1.71	1.11	0.82	0.57	9.35	6.70	5.90	6.55
500		-0.88	-0.42	-0.25	-0.14	1.29	0.78	0.56	0.37	17.10	10.75	8.95	6.75
1000		-0.88	-0.44	-0.27	-0.13	1.11	0.64	0.44	0.28	28.30	17.70	12.60	8.40
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.08	0.03	0.02	-0.05	4.19	2.84	2.12	1.49	4.95	6.00	5.00	5.65
60		-0.08	0.01	-0.04	-0.04	2.85	1.92	1.46	1.04	4.50	4.65	5.05	5.25
100		-0.02	0.03	0.01	-0.02	2.21	1.52	1.13	0.79	4.05	4.80	5.15	5.30
200		-0.04	0.02	0.00	-0.01	1.54	1.04	0.78	0.56	4.35	4.40	4.05	5.20
500		0.00	0.03	0.01	0.00	0.99	0.68	0.51	0.34	4.10	4.60	4.75	4.85
1000		0.00	0.00	0.00	0.00	0.71	0.47	0.35	0.25	4.00	4.55	4.45	4.95

Notes: See the notes for Table A.5.

Figure A.32: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 5, unbalanced panel)

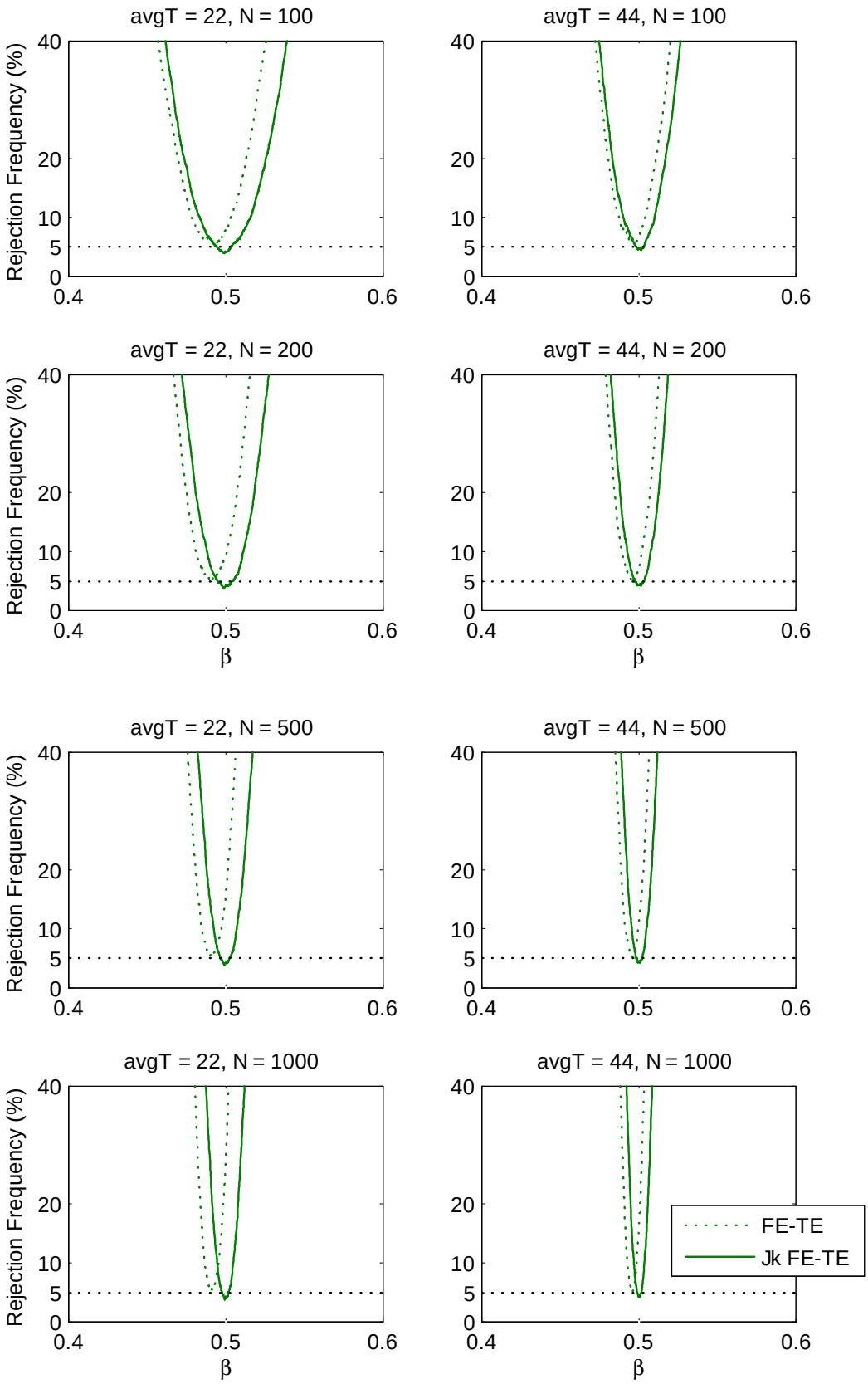

Table A.33: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 6, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-1.90	-0.91	-0.55	-0.32	4.17	2.77	2.03	1.41	9.25	8.00	5.55	5.90
60		-1.87	-0.89	-0.57	-0.30	3.17	2.00	1.46	1.00	12.10	8.00	6.75	7.00
100		-1.80	-0.87	-0.52	-0.28	2.68	1.66	1.17	0.79	15.60	11.20	7.95	6.65
200		-1.80	-0.87	-0.53	-0.27	2.27	1.30	0.90	0.59	25.80	14.25	10.90	8.45
500		-1.76	-0.86	-0.51	-0.27	1.98	1.06	0.70	0.42	51.15	30.75	20.20	12.20
1000		-1.78	-0.89	-0.53	-0.27	1.89	0.99	0.63	0.36	82.05	54.30	37.15	21.25
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.09	0.03	0.02	-0.03	3.96	2.68	1.98	1.38	3.95	5.05	4.40	4.90
60		-0.07	0.01	-0.03	-0.03	2.74	1.83	1.37	0.97	4.00	4.60	4.30	5.00
100		-0.02	0.03	0.01	-0.01	2.12	1.45	1.07	0.75	4.15	4.70	4.75	4.95
200		-0.04	0.02	0.00	-0.01	1.50	0.99	0.74	0.53	4.00	4.00	3.85	4.90
500		0.00	0.03	0.02	0.00	0.96	0.65	0.48	0.32	3.90	4.50	4.85	4.70
1000		-0.03	0.00	0.00	-0.01	0.68	0.46	0.35	0.24	3.90	5.20	5.25	5.20
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-1.88	-0.90	-0.54	-0.32	4.25	2.82	2.06	1.44	10.00	8.40	6.60	6.30
60		-1.86	-0.89	-0.57	-0.30	3.19	2.00	1.47	1.01	12.65	8.55	7.10	6.95
100		-1.78	-0.86	-0.52	-0.28	2.68	1.66	1.18	0.79	15.95	11.20	8.05	6.55
200		-1.79	-0.87	-0.53	-0.27	2.27	1.30	0.90	0.59	25.10	14.30	11.30	8.50
500		-1.76	-0.86	-0.51	-0.27	1.98	1.06	0.70	0.42	51.10	30.70	20.25	11.80
1000		-1.76	-0.88	-0.53	-0.26	1.87	0.98	0.62	0.35	80.20	53.45	35.35	20.45
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.11	0.02	0.01	-0.04	4.07	2.72	2.02	1.42	4.85	5.95	5.15	5.55
60		-0.09	0.01	-0.03	-0.04	2.77	1.83	1.39	0.98	4.15	4.25	4.75	5.55
100		-0.02	0.03	0.01	-0.01	2.13	1.45	1.08	0.75	4.20	4.55	4.70	5.10
200		-0.05	0.02	0.00	-0.01	1.49	0.99	0.74	0.53	4.05	4.10	3.95	5.00
500		0.00	0.03	0.02	0.00	0.96	0.65	0.49	0.32	4.10	4.75	4.90	4.90
1000		-0.01	0.01	0.00	0.00	0.68	0.45	0.33	0.23	4.35	5.05	4.55	4.90

Notes: See the notes for Table A.6.

Figure A.33: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 6, unbalanced panel)

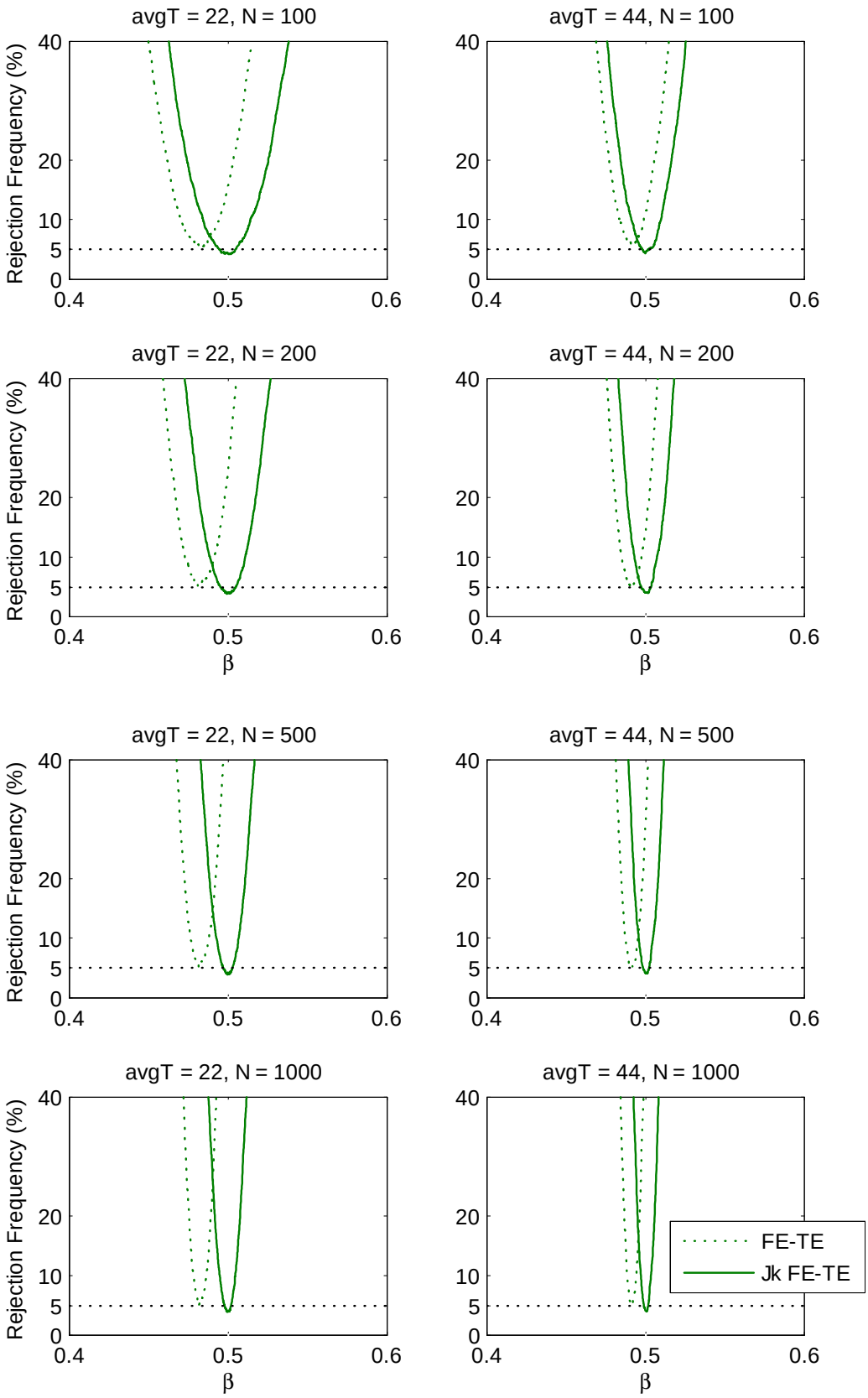

Table A.34: Bias ($\times 100$), RMSE ($\times 100$) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 7, unbalanced panel)

		Bias ($\times 100$)				RMSE ($\times 100$)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		0.01	0.03	0.00	-0.24	3.97	2.90	2.73	5.06	5.80	5.70	7.65	12.50
60		-0.02	0.04	-0.02	-0.06	2.77	2.03	1.92	3.47	5.65	5.90	8.00	11.30
100		0.01	0.03	0.00	0.01	2.15	1.57	1.44	2.71	5.60	6.05	6.85	11.55
200		0.00	0.03	0.03	0.04	1.49	1.10	1.06	1.92	5.35	5.95	8.00	12.15
500		0.01	0.03	0.01	0.00	0.97	0.70	0.66	1.22	5.50	5.60	7.30	11.55
1000		-0.01	0.00	-0.01	0.02	0.69	0.50	0.46	0.86	6.40	5.90	7.15	11.95
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		-0.04	0.02	-0.04	-0.42	4.17	3.19	3.95	9.49	4.90	7.45	20.55	41.25
60		-0.04	0.02	-0.02	-0.08	2.90	2.26	2.80	6.50	3.90	7.45	21.40	40.00
100		-0.01	0.03	-0.03	0.04	2.26	1.73	2.08	5.09	4.50	7.10	19.30	38.75
200		-0.02	0.02	0.05	0.07	1.58	1.23	1.57	3.61	4.25	7.30	20.65	38.65
500		0.00	0.03	0.01	0.01	1.01	0.78	0.95	2.29	4.20	6.80	20.25	39.25
1000		-0.01	-0.01	-0.01	0.06	0.73	0.55	0.67	1.61	5.40	7.30	19.45	41.30
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.01	0.04	0.03	-0.05	4.07	2.86	2.16	1.53	6.75	6.45	5.65	5.95
60		-0.04	0.03	-0.03	-0.04	2.79	1.96	1.49	1.07	6.60	5.25	5.65	5.45
100		0.02	0.04	0.02	-0.02	2.16	1.52	1.14	0.81	5.45	6.15	5.40	5.25
200		0.00	0.02	0.00	-0.01	1.49	1.06	0.80	0.57	5.35	5.25	5.25	5.50
500		0.01	0.03	0.01	0.00	0.96	0.68	0.51	0.35	5.50	5.45	4.65	4.70
1000		0.01	0.00	0.00	0.00	0.69	0.47	0.36	0.25	6.05	5.35	5.00	5.30
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.04	0.04	0.03	-0.05	4.25	2.89	2.18	1.54	5.25	5.75	4.90	5.85
60		-0.06	0.02	-0.04	-0.05	2.89	1.98	1.51	1.08	4.25	4.70	5.30	5.35
100		-0.01	0.03	0.01	-0.02	2.25	1.55	1.15	0.82	4.35	5.25	5.05	4.85
200		-0.02	0.02	0.00	-0.01	1.57	1.08	0.81	0.58	4.30	4.55	4.15	5.40
500		0.00	0.03	0.01	0.00	1.00	0.69	0.52	0.35	4.05	4.70	4.45	4.30
1000		0.01	0.00	0.00	0.00	0.72	0.48	0.36	0.26	4.45	5.10	4.55	4.85

Notes: See the notes for Table A.7.

Figure A.34: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 7, unbalanced panel)

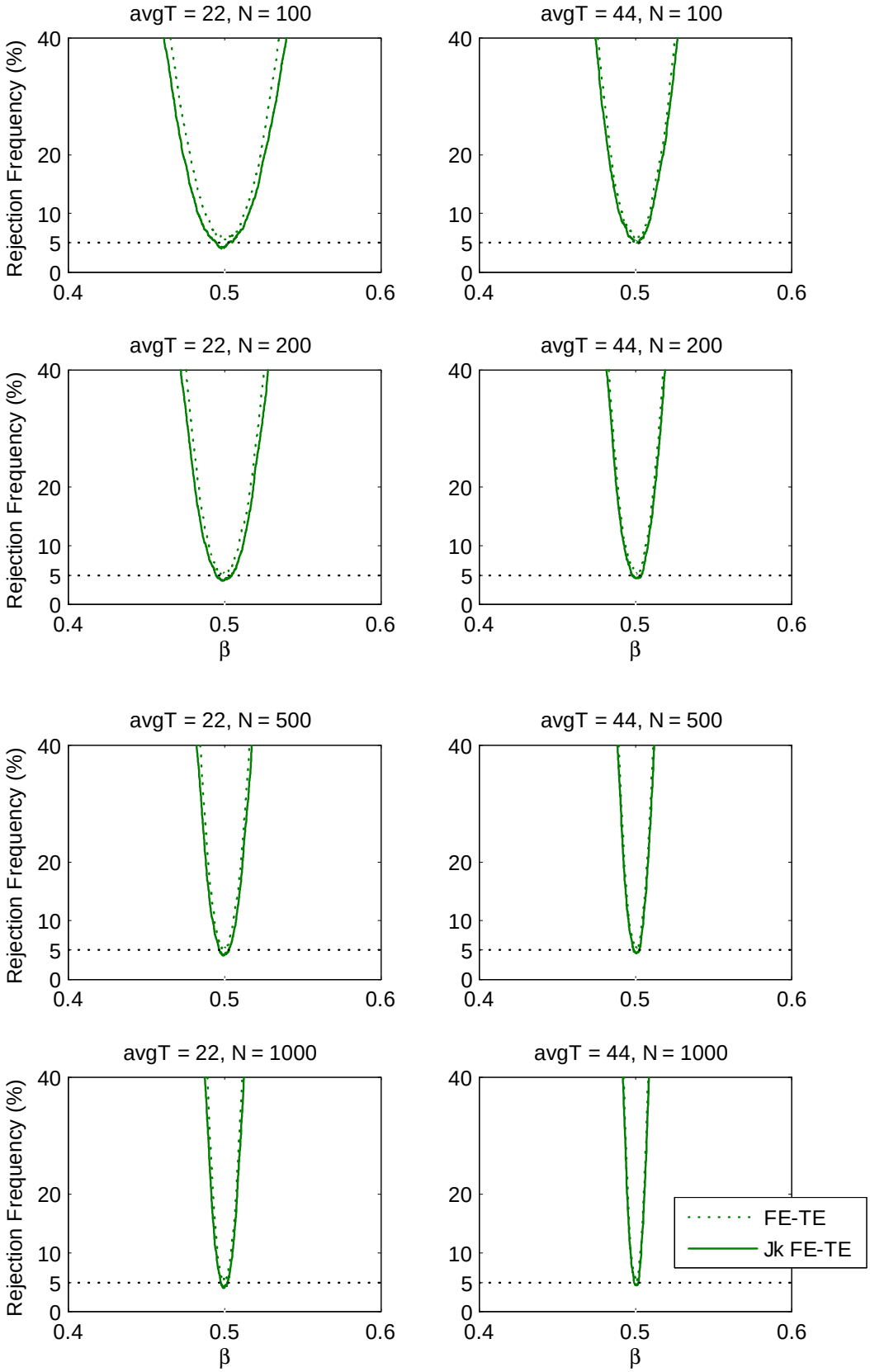

Table A.35: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 8, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-0.88	0.60	7.52	97.89	3.99	2.92	8.02	98.19	6.20	6.70	85.15	100.00
60		-0.88	0.60	7.47	97.44	2.84	2.06	7.72	97.59	7.20	7.30	98.50	100.00
100		-0.83	0.62	7.47	97.29	2.25	1.66	7.62	97.38	7.35	8.90	100.00	100.00
200		-0.84	0.61	7.49	97.15	1.67	1.23	7.56	97.20	8.60	9.10	100.00	100.00
500		-0.81	0.62	7.48	97.18	1.24	0.93	7.51	97.20	15.80	16.40	100.00	100.00
1000		-0.83	0.59	7.45	97.13	1.07	0.76	7.47	97.14	24.60	25.45	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.05	2.02	14.90	185.80	4.12	3.78	15.48	186.36	4.75	13.60	99.45	100.00
60		0.07	1.99	14.83	184.91	2.85	3.00	15.13	185.18	3.90	20.25	99.95	100.00
100		0.11	2.01	14.78	184.63	2.22	2.65	14.95	184.80	4.90	26.55	100.00	100.00
200		0.09	2.01	14.85	184.33	1.56	2.35	14.94	184.42	4.30	45.80	100.00	100.00
500		0.13	2.01	14.81	184.40	1.01	2.16	14.85	184.44	4.45	78.55	100.00	100.00
1000		0.11	1.98	14.77	184.32	0.72	2.05	14.78	184.34	4.60	96.60	100.00	100.00
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.93	-0.43	-0.26	-0.19	4.09	2.83	2.11	1.50	7.65	7.25	6.05	6.35
60		-0.95	-0.43	-0.30	-0.18	2.88	1.95	1.47	1.04	8.00	5.60	6.35	5.85
100		-0.89	-0.41	-0.25	-0.15	2.28	1.55	1.14	0.80	7.80	7.00	6.05	5.85
200		-0.90	-0.43	-0.27	-0.14	1.71	1.11	0.82	0.57	9.35	6.70	5.90	6.55
500		-0.88	-0.42	-0.25	-0.14	1.29	0.78	0.56	0.37	17.10	10.75	8.95	6.75
1000		-0.88	-0.44	-0.27	-0.13	1.11	0.64	0.44	0.28	28.30	17.70	12.60	8.40
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.08	0.03	0.02	-0.05	4.19	2.84	2.12	1.49	4.95	6.00	5.00	5.65
60		-0.08	0.01	-0.04	-0.04	2.85	1.92	1.46	1.04	4.50	4.65	5.05	5.25
100		-0.02	0.03	0.01	-0.02	2.21	1.52	1.13	0.79	4.05	4.80	5.15	5.30
200		-0.04	0.02	0.00	-0.01	1.54	1.04	0.78	0.56	4.35	4.40	4.05	5.20
500		0.00	0.03	0.01	0.00	0.99	0.68	0.51	0.34	4.10	4.60	4.75	4.85
1000		0.00	0.00	0.00	0.00	0.71	0.47	0.35	0.25	4.00	4.55	4.45	4.95

Notes: See the notes for Table A.8.

Figure A.35: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 8, unbalanced panel)

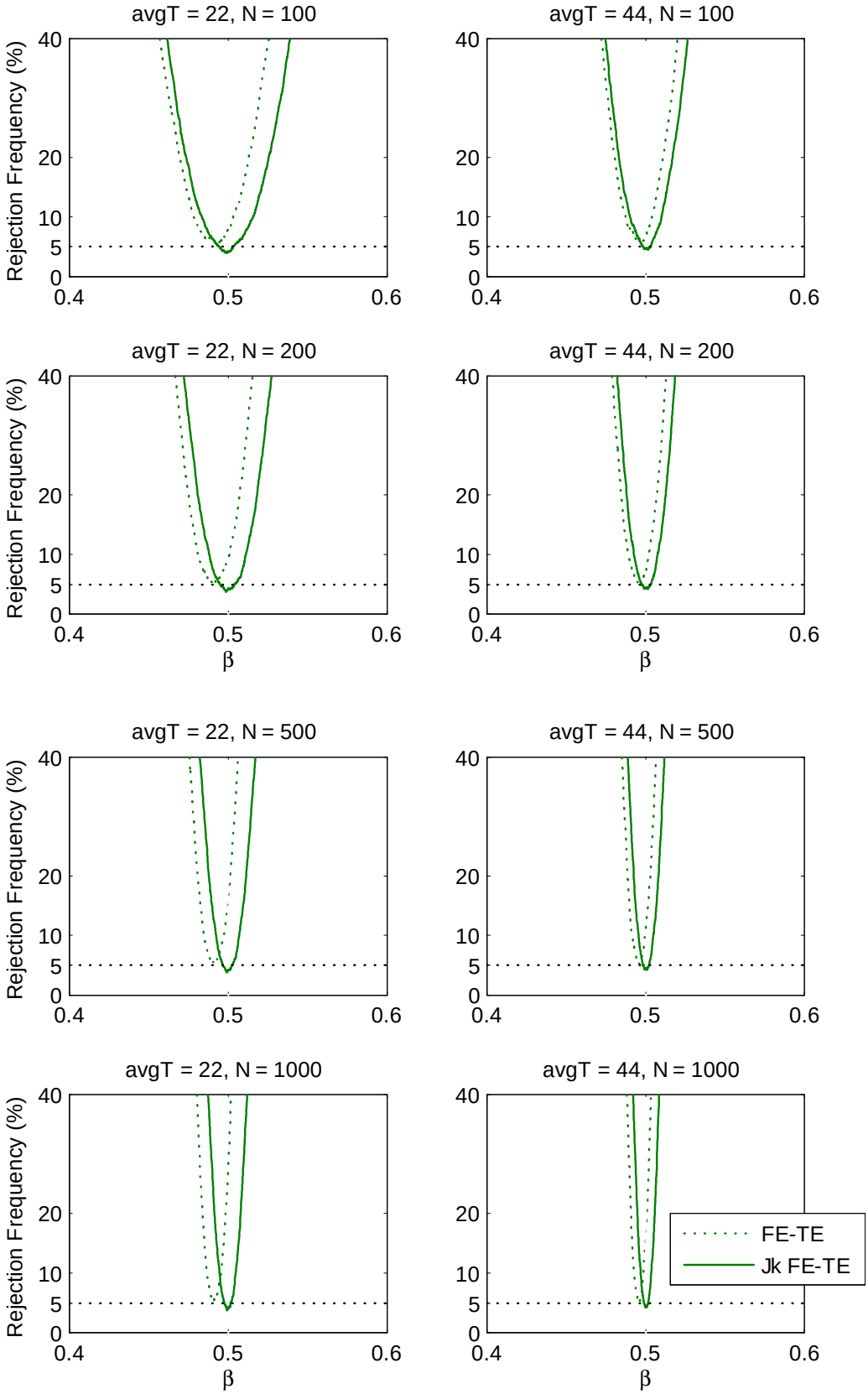

Table A.36: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 9, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-1.77	1.16	14.12	110.72	4.12	2.98	14.37	110.81	8.75	8.85	100.00	100.00
60		-1.73	1.16	14.05	110.43	3.09	2.20	14.18	110.48	11.30	10.90	100.00	100.00
100		-1.66	1.20	14.04	110.35	2.59	1.89	14.12	110.38	13.95	15.70	100.00	100.00
200		-1.66	1.20	14.05	110.28	2.16	1.56	14.09	110.29	22.40	24.55	100.00	100.00
500		-1.63	1.20	14.05	110.32	1.86	1.37	14.07	110.33	46.10	50.45	100.00	100.00
1000		-1.65	1.17	14.02	110.28	1.77	1.26	14.02	110.29	76.05	74.60	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.16	3.98	27.99	203.00	4.01	5.08	28.32	203.15	5.05	34.10	100.00	100.00
60		0.20	3.95	27.86	202.45	2.77	4.52	28.03	202.52	4.35	53.75	100.00	100.00
100		0.25	3.98	27.78	202.31	2.16	4.33	27.88	202.35	4.75	73.60	100.00	100.00
200		0.22	3.97	27.83	202.15	1.52	4.14	27.88	202.17	4.25	94.95	100.00	100.00
500		0.26	3.98	27.81	202.24	1.01	4.05	27.83	202.25	4.90	99.95	100.00	100.00
1000		0.24	3.94	27.75	202.19	0.73	3.98	27.76	202.19	5.75	100.00	100.00	100.00
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-1.88	-0.90	-0.54	-0.32	4.25	2.82	2.06	1.44	10.00	8.40	6.60	6.30
60		-1.86	-0.89	-0.57	-0.30	3.19	2.00	1.47	1.01	12.65	8.55	7.10	6.95
100		-1.78	-0.86	-0.52	-0.28	2.68	1.66	1.18	0.79	15.95	11.20	8.05	6.55
200		-1.79	-0.87	-0.53	-0.27	2.27	1.30	0.90	0.59	25.10	14.30	11.30	8.50
500		-1.76	-0.86	-0.51	-0.27	1.98	1.06	0.70	0.42	51.10	30.70	20.25	11.80
1000		-1.76	-0.88	-0.53	-0.26	1.87	0.98	0.62	0.35	80.20	53.45	35.35	20.45
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-0.11	0.02	0.01	-0.04	4.07	2.72	2.02	1.42	4.85	5.95	5.15	5.55
60		-0.09	0.01	-0.03	-0.04	2.77	1.83	1.39	0.98	4.15	4.25	4.75	5.55
100		-0.02	0.03	0.01	-0.01	2.13	1.45	1.08	0.75	4.20	4.55	4.70	5.10
200		-0.05	0.02	0.00	-0.01	1.49	0.99	0.74	0.53	4.05	4.10	3.95	5.00
500		0.00	0.03	0.02	0.00	0.96	0.65	0.49	0.32	4.10	4.75	4.90	4.90
1000		-0.01	0.01	0.00	0.00	0.68	0.45	0.33	0.23	4.35	5.05	4.55	4.90

Notes: See the notes for Table A.9.

Figure A.36: Rejection frequency (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 9, unbalanced panel)

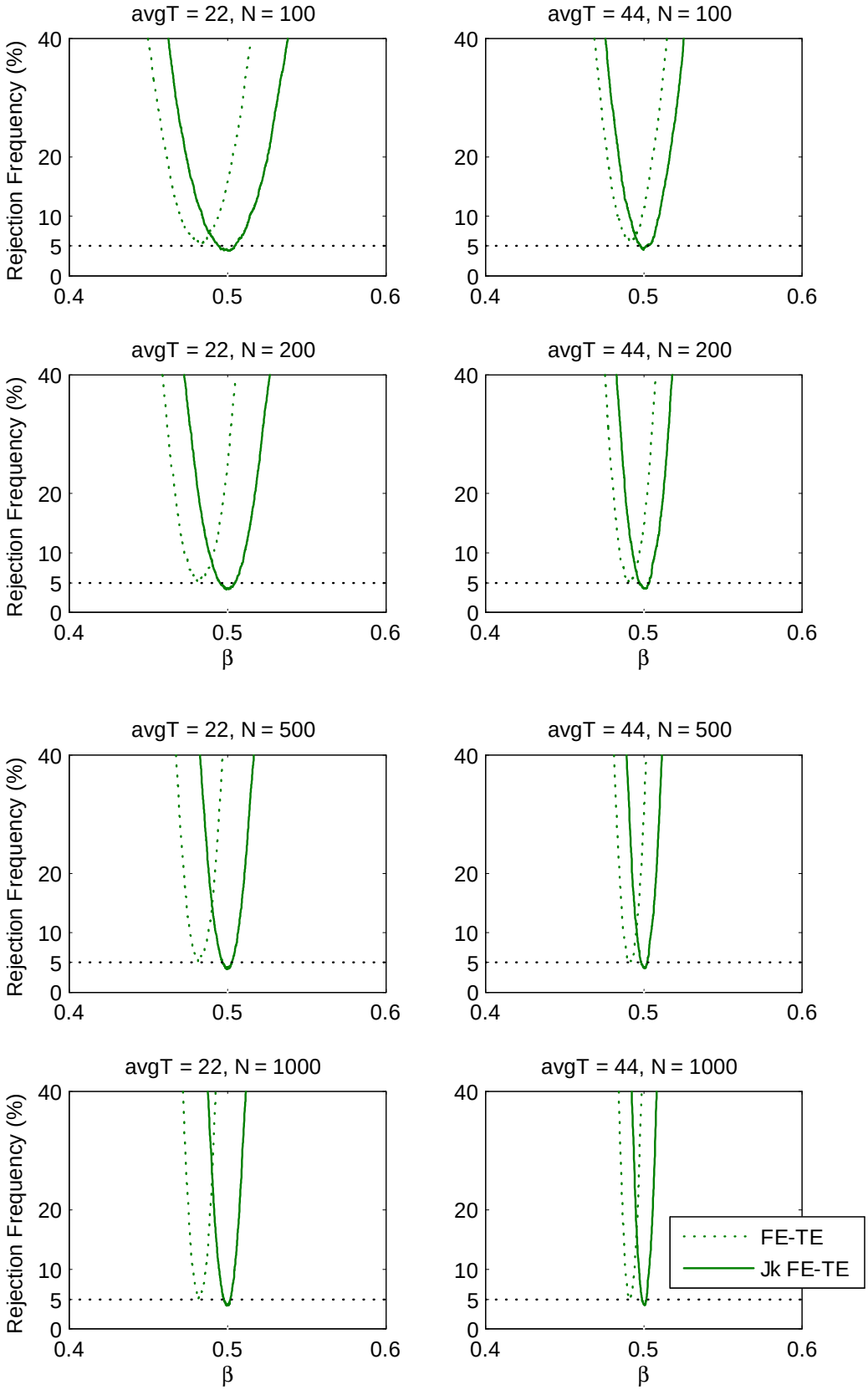

Table A.37.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-3.91	-1.91	-1.17	-0.66	7.78	5.29	3.92	2.74	12.95	9.60	6.70	6.40
60		-3.98	-1.94	-1.23	-0.66	6.09	3.88	2.86	1.97	16.90	10.45	7.75	7.30
100		-3.91	-1.92	-1.16	-0.61	5.30	3.28	2.33	1.57	22.35	14.80	10.20	7.75
200		-3.94	-1.94	-1.19	-0.61	4.67	2.66	1.83	1.19	39.75	19.65	14.75	10.15
500		-3.90	-1.93	-1.16	-0.60	4.23	2.26	1.48	0.87	70.80	40.65	26.70	16.00
1000		-3.95	-1.99	-1.19	-0.61	4.11	2.16	1.35	0.77	94.40	68.80	48.50	27.40
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.07	-3.02	-1.85	-0.88	7.27	4.07	2.77	1.71	36.10	20.50	14.75	9.85
60		-5.92	-2.98	-1.77	-0.86	6.53	3.53	2.30	1.33	59.35	34.35	23.15	12.55
100		-5.85	-2.90	-1.74	-0.86	6.23	3.27	2.09	1.16	78.90	50.70	34.20	18.60
200		-5.86	-2.90	-1.74	-0.87	6.05	3.07	1.91	1.03	97.35	80.55	59.35	32.50
500		-5.79	-2.88	-1.71	-0.87	5.87	2.95	1.78	0.93	100.00	99.30	92.05	68.75
1000		-5.80	-2.89	-1.72	-0.86	5.84	2.93	1.76	0.90	100.00	100.00	99.85	92.45
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.33	0.25	0.17	0.03	4.03	2.83	2.13	1.50	6.35	5.70	5.35	5.20
60		0.29	0.24	0.11	0.03	2.82	1.98	1.50	1.06	6.35	5.95	5.75	5.60
100		0.32	0.23	0.15	0.05	2.18	1.54	1.15	0.81	5.95	6.30	4.90	5.40
200		0.32	0.22	0.13	0.06	1.54	1.09	0.82	0.58	5.85	6.35	5.10	5.60
500		0.32	0.22	0.14	0.07	1.02	0.72	0.53	0.36	6.55	6.75	5.70	5.35
1000		0.30	0.19	0.13	0.06	0.75	0.52	0.39	0.27	9.00	7.65	6.80	6.40
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.63	0.31	0.11	-0.03	8.04	5.31	3.91	2.72	4.80	5.40	4.60	4.85
60		0.55	0.23	0.02	-0.04	5.58	3.62	2.70	1.90	4.60	4.40	4.55	5.00
100		0.59	0.23	0.09	0.00	4.31	2.88	2.13	1.48	4.20	4.80	4.85	5.05
200		0.49	0.21	0.07	0.00	3.05	1.97	1.46	1.05	4.80	4.45	3.90	4.80
500		0.56	0.21	0.09	0.01	2.01	1.30	0.96	0.64	5.25	5.00	5.00	4.55
1000		0.49	0.15	0.06	0.00	1.45	0.93	0.69	0.47	5.90	5.40	5.25	5.45
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.19	-0.04	-0.06	0.02	4.59	2.92	2.17	1.50	6.30	5.65	5.10	5.10
60		-0.07	-0.03	-0.01	0.01	3.25	2.05	1.54	1.04	6.00	5.65	5.25	5.35
100		-0.01	0.02	0.01	0.01	2.47	1.62	1.22	0.80	5.50	5.75	5.15	4.60
200		-0.06	0.03	0.01	0.00	1.75	1.10	0.83	0.57	5.65	5.10	4.95	4.85
500		0.01	0.02	0.02	0.00	1.12	0.70	0.52	0.36	6.05	4.85	4.50	4.75
1000		-0.03	0.02	0.01	0.00	0.78	0.51	0.38	0.26	5.70	5.10	5.90	4.65
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.30	0.14	0.06	-0.04	4.21	2.85	2.14	1.51	5.20	5.25	4.25	4.85
60		0.28	0.12	0.00	-0.04	2.94	1.99	1.51	1.07	4.60	4.75	5.15	5.45
100		0.31	0.11	0.04	-0.01	2.30	1.55	1.15	0.82	4.70	5.45	4.50	5.00
200		0.30	0.10	0.03	0.00	1.63	1.09	0.82	0.58	4.95	4.75	4.60	5.10
500		0.32	0.11	0.04	0.00	1.06	0.70	0.52	0.35	4.95	5.20	4.45	4.55
1000		0.30	0.08	0.03	0.00	0.79	0.50	0.38	0.26	7.05	5.50	5.45	5.75

Notes: See the notes for Table A.10.1.

Table A.37.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-3.97	-1.95	-1.19	-0.68	7.96	5.40	3.99	2.81	14.30	10.65	7.30	6.70
60		-4.03	-1.97	-1.25	-0.66	6.17	3.91	2.89	1.99	17.75	10.95	8.25	7.40
100		-3.92	-1.92	-1.16	-0.62	5.33	3.29	2.35	1.57	22.85	14.85	10.10	7.35
200		-3.95	-1.95	-1.19	-0.61	4.68	2.66	1.84	1.19	39.10	19.65	14.25	10.00
500		-3.91	-1.94	-1.16	-0.60	4.24	2.26	1.49	0.87	72.05	41.05	27.10	16.80
1000		-3.96	-2.00	-1.19	-0.61	4.12	2.16	1.36	0.77	93.75	66.85	47.35	27.55
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.14	-3.06	-1.88	-0.90	7.38	4.14	2.83	1.76	37.00	22.10	16.10	11.10
60		-5.96	-2.99	-1.77	-0.87	6.58	3.55	2.31	1.34	60.40	34.40	24.10	13.35
100		-5.87	-2.92	-1.74	-0.86	6.26	3.28	2.10	1.17	79.25	51.65	34.85	19.10
200		-5.87	-2.91	-1.74	-0.87	6.06	3.08	1.92	1.04	97.40	81.15	58.95	33.25
500		-5.80	-2.89	-1.71	-0.87	5.88	2.96	1.79	0.94	100.00	99.50	93.10	70.00
1000		-5.81	-2.90	-1.72	-0.86	5.85	2.94	1.77	0.91	100.00	100.00	99.95	93.40
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.33	0.25	0.17	0.02	4.14	2.89	2.18	1.54	7.25	6.50	5.85	6.05
60		0.27	0.23	0.10	0.02	2.85	1.99	1.51	1.07	6.90	6.20	6.00	5.30
100		0.32	0.23	0.14	0.05	2.20	1.55	1.15	0.81	6.40	6.40	5.55	5.30
200		0.32	0.22	0.13	0.06	1.54	1.09	0.82	0.58	5.90	6.50	5.50	5.90
500		0.32	0.22	0.14	0.07	1.02	0.72	0.53	0.36	6.20	6.95	5.75	6.10
1000		0.30	0.19	0.13	0.06	0.75	0.52	0.39	0.27	7.50	8.40	6.40	6.20
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.64	0.29	0.11	-0.04	8.31	5.41	3.99	2.79	5.60	5.75	5.05	5.30
60		0.52	0.21	0.02	-0.04	5.65	3.63	2.73	1.92	4.75	4.25	5.00	5.30
100		0.59	0.24	0.09	0.00	4.34	2.89	2.14	1.48	4.60	4.65	4.90	5.20
200		0.49	0.21	0.07	0.00	3.06	1.97	1.46	1.05	4.95	4.40	4.15	5.00
500		0.56	0.21	0.09	0.01	2.02	1.30	0.96	0.64	5.30	4.50	4.20	5.00
1000		0.49	0.15	0.06	0.00	1.46	0.93	0.69	0.47	5.85	4.75	4.25	5.00
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.18	-0.04	-0.07	0.01	4.70	2.99	2.21	1.55	7.10	6.75	6.00	6.65
60		-0.08	-0.02	0.00	0.01	3.28	2.07	1.56	1.05	5.85	5.80	5.30	5.70
100		-0.02	0.01	0.01	0.01	2.48	1.63	1.23	0.81	6.05	5.80	5.55	4.95
200		-0.07	0.02	0.01	0.00	1.75	1.11	0.83	0.57	5.90	5.05	4.85	4.80
500		0.00	0.01	0.02	0.00	1.12	0.71	0.52	0.36	5.70	5.05	4.90	4.80
1000		-0.04	0.01	0.01	0.00	0.78	0.52	0.38	0.26	5.80	5.00	4.95	4.80
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.13	0.06	-0.04	4.35	2.91	2.19	1.54	5.80	5.85	5.10	5.75
60		0.26	0.11	0.00	-0.04	2.97	2.00	1.52	1.08	4.60	5.10	5.60	5.55
100		0.31	0.11	0.04	-0.01	2.32	1.56	1.16	0.82	4.75	5.65	4.95	5.15
200		0.30	0.11	0.03	0.00	1.63	1.09	0.82	0.58	4.85	4.80	4.40	5.25
500		0.32	0.12	0.04	0.00	1.06	0.70	0.52	0.35	5.20	5.15	4.55	5.25
1000		0.30	0.09	0.03	0.00	0.79	0.50	0.38	0.26	6.40	5.40	4.80	5.25

Notes: See the notes for Table A.10.1.

Figure A.37: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 10, unbalanced panel)

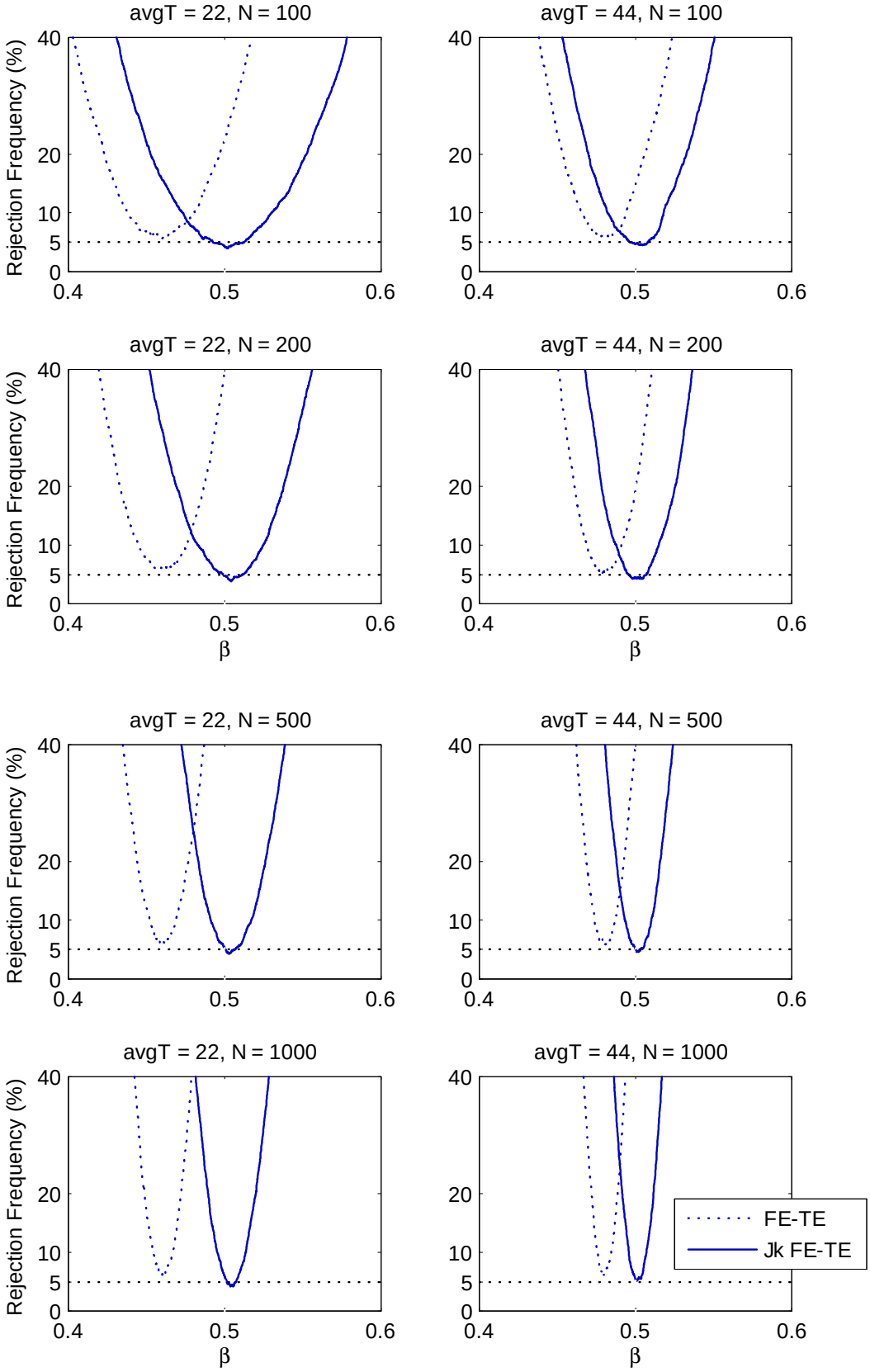

Table A.38.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.58	-2.26	-1.38	-0.75	7.76	5.10	3.74	2.58	15.80	10.25	7.60	6.95
60		-4.59	-2.26	-1.42	-0.75	6.28	3.85	2.78	1.87	21.25	12.80	9.00	8.30
100		-4.49	-2.23	-1.34	-0.70	5.59	3.32	2.31	1.51	30.75	19.00	12.45	8.60
200		-4.51	-2.24	-1.37	-0.70	5.08	2.81	1.88	1.18	51.50	27.85	18.70	12.10
500		-4.47	-2.23	-1.34	-0.69	4.72	2.49	1.59	0.90	86.25	55.00	36.70	22.15
1000		-4.52	-2.28	-1.37	-0.70	4.64	2.41	1.50	0.82	99.25	85.65	64.75	39.50
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.41	-3.20	-1.96	-0.92	7.55	4.19	2.84	1.73	39.10	22.50	15.60	9.80
60		-6.25	-3.15	-1.86	-0.91	6.84	3.68	2.38	1.36	63.35	37.55	25.05	13.80
100		-6.17	-3.07	-1.84	-0.90	6.54	3.41	2.17	1.20	83.20	55.05	37.30	19.90
200		-6.18	-3.06	-1.84	-0.92	6.36	3.23	2.00	1.07	98.40	84.85	63.70	36.90
500		-6.11	-3.05	-1.81	-0.91	6.19	3.11	1.88	0.98	100.00	99.60	94.90	73.30
1000		-6.12	-3.05	-1.82	-0.91	6.16	3.08	1.86	0.94	100.00	100.00	99.95	95.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.10	0.14	0.10	-0.01	4.02	2.82	2.13	1.50	6.00	5.90	5.05	5.20
60		0.06	0.13	0.04	-0.01	2.81	1.97	1.49	1.06	6.30	6.00	5.75	5.50
100		0.09	0.12	0.08	0.02	2.16	1.53	1.14	0.81	6.10	5.75	5.05	5.30
200		0.09	0.11	0.07	0.03	1.51	1.07	0.81	0.58	5.65	5.85	5.20	5.45
500		0.10	0.11	0.07	0.03	0.98	0.69	0.52	0.36	6.35	5.50	5.15	5.05
1000		0.07	0.08	0.06	0.03	0.69	0.49	0.38	0.26	6.25	6.45	5.80	6.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.51	0.28	0.09	-0.02	7.60	4.96	3.65	2.52	4.85	5.70	4.85	4.85
60		0.49	0.22	0.03	-0.04	5.28	3.38	2.51	1.77	4.95	4.25	4.35	5.15
100		0.55	0.23	0.10	0.00	4.07	2.68	1.98	1.37	4.70	4.80	4.85	4.95
200		0.46	0.22	0.08	0.00	2.89	1.84	1.36	0.97	5.00	4.35	4.05	4.95
500		0.53	0.21	0.10	0.01	1.90	1.22	0.89	0.59	5.25	5.50	5.20	4.35
1000		0.46	0.16	0.07	0.00	1.37	0.87	0.64	0.43	6.10	5.60	5.40	5.45
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.25	-0.05	-0.07	0.03	4.65	2.94	2.18	1.51	6.90	5.50	5.25	5.50
60		-0.12	-0.04	0.00	0.02	3.30	2.08	1.55	1.05	6.15	5.70	5.00	5.30
100		-0.05	0.01	0.01	0.01	2.50	1.63	1.23	0.81	6.00	5.35	5.45	4.80
200		-0.10	0.02	0.01	0.00	1.78	1.12	0.84	0.57	6.05	5.45	5.35	4.95
500		-0.03	0.01	0.02	0.00	1.13	0.70	0.52	0.36	5.60	4.45	4.45	4.95
1000		-0.07	0.02	0.01	0.00	0.80	0.52	0.38	0.26	5.95	4.75	5.90	4.85
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.24	2.86	2.14	1.51	5.25	5.25	4.30	5.05
60		0.28	0.13	0.01	-0.04	2.95	1.99	1.51	1.07	4.75	5.00	5.05	5.50
100		0.32	0.12	0.04	-0.01	2.31	1.56	1.15	0.82	4.75	5.40	4.50	4.90
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.85	4.70	4.35	5.10
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	4.90	5.10	4.35	4.40
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	7.45	5.70	5.30	5.70

Notes: See the notes for Table A.11.1.

Table A.38.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	$\text{avg}T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-4.64	-2.30	-1.40	-0.77	7.92	5.21	3.81	2.64	16.70	11.80	8.45	7.20
60		-4.64	-2.29	-1.44	-0.76	6.36	3.88	2.80	1.89	21.65	13.75	9.25	8.45
100		-4.50	-2.23	-1.35	-0.71	5.62	3.33	2.32	1.51	30.90	18.40	12.95	8.30
200		-4.52	-2.25	-1.37	-0.70	5.09	2.81	1.89	1.18	51.55	28.00	18.70	12.20
500		-4.48	-2.24	-1.34	-0.69	4.73	2.49	1.60	0.90	87.15	56.45	37.60	22.50
1000		-4.53	-2.29	-1.37	-0.70	4.65	2.41	1.51	0.82	99.10	85.25	65.25	39.20
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.49	-3.24	-1.99	-0.94	7.67	4.27	2.90	1.78	39.40	23.60	16.70	11.00
60		-6.29	-3.16	-1.87	-0.91	6.88	3.70	2.39	1.38	63.90	38.90	26.10	14.20
100		-6.20	-3.09	-1.84	-0.90	6.57	3.43	2.18	1.20	83.35	55.65	38.00	20.80
200		-6.19	-3.07	-1.84	-0.92	6.38	3.24	2.01	1.08	98.50	85.05	63.50	37.40
500		-6.12	-3.06	-1.81	-0.91	6.21	3.12	1.89	0.99	100.00	99.70	95.65	73.40
1000		-6.13	-3.06	-1.82	-0.91	6.18	3.09	1.87	0.95	100.00	100.00	99.95	95.45
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.09	0.13	0.10	-0.01	4.14	2.88	2.17	1.54	7.40	6.60	5.70	5.95
60		0.04	0.12	0.04	-0.01	2.84	1.98	1.50	1.07	6.85	5.85	6.00	5.40
100		0.10	0.13	0.08	0.02	2.19	1.54	1.15	0.81	6.10	6.20	5.65	5.40
200		0.09	0.12	0.07	0.03	1.51	1.08	0.81	0.58	5.65	6.10	5.30	5.80
500		0.10	0.12	0.07	0.03	0.98	0.70	0.52	0.36	5.55	6.35	5.45	5.75
1000		0.07	0.09	0.06	0.03	0.69	0.50	0.38	0.26	5.60	6.60	5.45	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.52	0.26	0.09	-0.03	7.85	5.05	3.72	2.59	5.45	5.90	5.25	5.20
60		0.45	0.20	0.02	-0.04	5.34	3.39	2.54	1.79	5.25	4.10	4.65	5.35
100		0.55	0.24	0.10	0.00	4.09	2.69	1.99	1.38	4.65	4.40	5.10	5.10
200		0.46	0.22	0.08	0.01	2.89	1.85	1.36	0.98	4.90	4.65	4.35	4.95
500		0.53	0.21	0.10	0.01	1.90	1.23	0.89	0.60	5.45	4.60	4.30	4.85
1000		0.46	0.16	0.07	0.00	1.37	0.88	0.64	0.44	6.15	4.80	4.30	4.90
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.23	-0.05	-0.07	0.02	4.76	3.01	2.23	1.56	7.45	6.75	5.80	6.55
60		-0.12	-0.03	0.00	0.02	3.33	2.10	1.57	1.06	5.80	6.30	5.65	5.40
100		-0.06	0.01	0.01	0.02	2.52	1.64	1.23	0.81	6.10	5.80	5.65	4.95
200		-0.11	0.02	0.01	0.00	1.78	1.12	0.84	0.57	5.85	5.50	5.40	5.20
500		-0.04	0.01	0.02	0.00	1.13	0.70	0.52	0.36	6.00	5.55	5.30	5.30
1000		-0.08	0.02	0.01	0.00	0.80	0.52	0.38	0.26	6.45	5.45	5.35	5.30
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.37	2.91	2.19	1.54	5.95	5.90	5.10	5.60
60		0.26	0.12	0.00	-0.04	2.98	2.00	1.52	1.08	4.80	5.00	5.55	5.65
100		0.32	0.12	0.04	-0.01	2.33	1.56	1.16	0.82	4.65	5.40	4.90	5.10
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.75	4.75	4.30	5.05
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	5.35	5.20	4.35	5.10
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	6.85	5.85	4.45	5.10

Notes: See the notes for Table A.11.1.

Figure A.38: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 11, unbalanced panel)

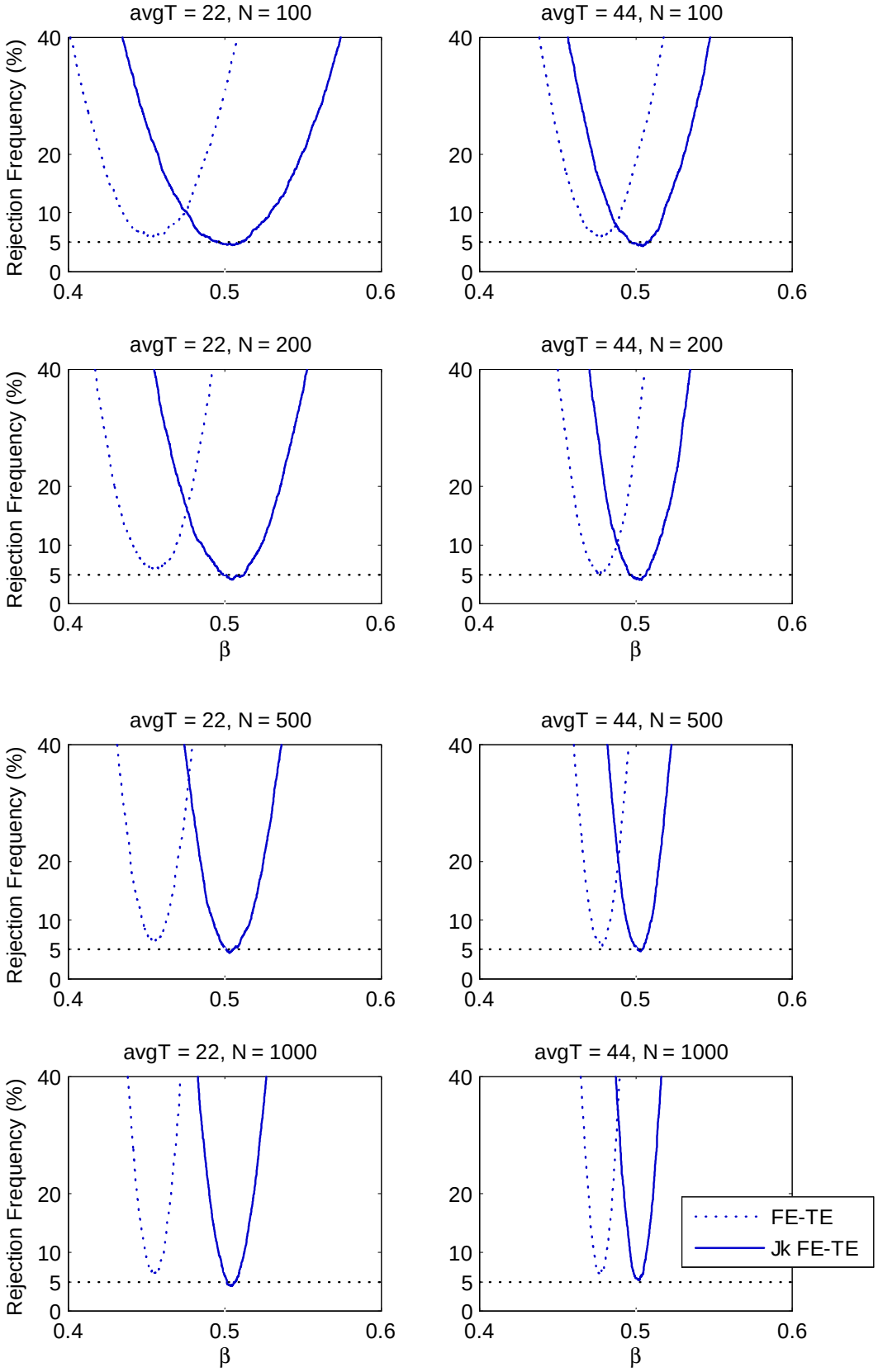

Table A.39.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.58	-2.26	-1.38	-0.75	7.76	5.10	3.74	2.58	15.80	10.25	7.60	6.95
60		-4.59	-2.26	-1.42	-0.75	6.28	3.85	2.78	1.87	21.25	12.80	9.00	8.30
100		-4.49	-2.23	-1.34	-0.70	5.59	3.32	2.31	1.51	30.75	19.00	12.45	8.60
200		-4.51	-2.24	-1.37	-0.70	5.08	2.81	1.88	1.18	51.50	27.85	18.70	12.10
500		-4.47	-2.23	-1.34	-0.69	4.72	2.49	1.59	0.90	86.25	55.00	36.70	22.15
1000		-4.52	-2.28	-1.37	-0.70	4.64	2.41	1.50	0.82	99.25	85.65	64.75	39.50
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.41	-3.20	-1.96	-0.92	7.55	4.19	2.84	1.73	39.10	22.50	15.60	9.80
60		-6.25	-3.15	-1.86	-0.91	6.84	3.68	2.38	1.36	63.35	37.55	25.05	13.80
100		-6.17	-3.07	-1.84	-0.90	6.54	3.41	2.17	1.20	83.20	55.05	37.30	19.90
200		-6.18	-3.06	-1.84	-0.92	6.36	3.23	2.00	1.07	98.40	84.85	63.70	36.90
500		-6.11	-3.05	-1.81	-0.91	6.19	3.11	1.88	0.98	100.00	99.60	94.90	73.30
1000		-6.12	-3.05	-1.82	-0.91	6.16	3.08	1.86	0.94	100.00	100.00	99.95	95.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.10	0.14	0.10	-0.01	4.02	2.82	2.13	1.50	6.00	5.90	5.05	5.20
60		0.06	0.13	0.04	-0.01	2.81	1.97	1.49	1.06	6.30	6.00	5.75	5.50
100		0.09	0.12	0.08	0.02	2.16	1.53	1.14	0.81	6.10	5.75	5.05	5.30
200		0.09	0.11	0.07	0.03	1.51	1.07	0.81	0.58	5.65	5.85	5.20	5.45
500		0.10	0.11	0.07	0.03	0.98	0.69	0.52	0.36	6.35	5.50	5.15	5.05
1000		0.07	0.08	0.06	0.03	0.69	0.49	0.38	0.26	6.25	6.45	5.80	6.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.51	0.28	0.09	-0.02	7.60	4.96	3.65	2.52	4.85	5.70	4.85	4.85
60		0.49	0.22	0.03	-0.04	5.28	3.38	2.51	1.77	4.95	4.25	4.35	5.15
100		0.55	0.23	0.10	0.00	4.07	2.68	1.98	1.37	4.70	4.80	4.85	4.95
200		0.46	0.22	0.08	0.00	2.89	1.84	1.36	0.97	5.00	4.35	4.05	4.95
500		0.53	0.21	0.10	0.01	1.90	1.22	0.89	0.59	5.25	5.50	5.20	4.35
1000		0.46	0.16	0.07	0.00	1.37	0.87	0.64	0.43	6.10	5.60	5.40	5.45
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.25	-0.05	-0.07	0.03	4.65	2.94	2.18	1.51	6.90	5.50	5.25	5.50
60		-0.12	-0.04	0.00	0.02	3.30	2.08	1.55	1.05	6.15	5.70	5.00	5.30
100		-0.05	0.01	0.01	0.01	2.50	1.63	1.23	0.81	6.00	5.35	5.45	4.80
200		-0.10	0.02	0.01	0.00	1.78	1.12	0.84	0.57	6.05	5.45	5.35	4.95
500		-0.03	0.01	0.02	0.00	1.13	0.70	0.52	0.36	5.60	4.45	4.45	4.95
1000		-0.07	0.02	0.01	0.00	0.80	0.52	0.38	0.26	5.95	4.75	5.90	4.85
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.24	2.86	2.14	1.51	5.25	5.25	4.30	5.05
60		0.28	0.13	0.01	-0.04	2.95	1.99	1.51	1.07	4.75	5.00	5.05	5.50
100		0.32	0.12	0.04	-0.01	2.31	1.56	1.15	0.82	4.75	5.40	4.50	4.90
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.85	4.70	4.35	5.10
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	4.90	5.10	4.35	4.40
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	7.45	5.70	5.30	5.70

Notes: See the notes for Table A.12.1.

Table A.39.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-4.64	-2.30	-1.40	-0.77	7.92	5.21	3.81	2.64	16.70	11.80	8.45	7.20
60		-4.64	-2.29	-1.44	-0.76	6.36	3.88	2.80	1.89	21.65	13.75	9.25	8.45
100		-4.50	-2.23	-1.35	-0.71	5.62	3.33	2.32	1.51	30.90	18.40	12.95	8.30
200		-4.52	-2.25	-1.37	-0.70	5.09	2.81	1.89	1.18	51.55	28.00	18.70	12.20
500		-4.48	-2.24	-1.34	-0.69	4.73	2.49	1.60	0.90	87.15	56.45	37.60	22.50
1000		-4.53	-2.29	-1.37	-0.70	4.65	2.41	1.51	0.82	99.10	85.25	65.25	39.20
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.49	-3.24	-1.99	-0.94	7.67	4.27	2.90	1.78	39.40	23.60	16.70	11.00
60		-6.29	-3.16	-1.87	-0.91	6.88	3.70	2.39	1.38	63.90	38.90	26.10	14.20
100		-6.20	-3.09	-1.84	-0.90	6.57	3.43	2.18	1.20	83.35	55.65	38.00	20.80
200		-6.19	-3.07	-1.84	-0.92	6.38	3.24	2.01	1.08	98.50	85.05	63.50	37.40
500		-6.12	-3.06	-1.81	-0.91	6.21	3.12	1.89	0.99	100.00	99.70	95.65	73.40
1000		-6.13	-3.06	-1.82	-0.91	6.18	3.09	1.87	0.95	100.00	100.00	99.95	95.45
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.09	0.13	0.10	-0.01	4.14	2.88	2.17	1.54	7.40	6.60	5.70	5.95
60		0.04	0.12	0.04	-0.01	2.84	1.98	1.50	1.07	6.85	5.85	6.00	5.40
100		0.10	0.13	0.08	0.02	2.19	1.54	1.15	0.81	6.10	6.20	5.65	5.40
200		0.09	0.12	0.07	0.03	1.51	1.08	0.81	0.58	5.65	6.10	5.30	5.80
500		0.10	0.12	0.07	0.03	0.98	0.70	0.52	0.36	5.55	6.35	5.45	5.75
1000		0.07	0.09	0.06	0.03	0.69	0.50	0.38	0.26	5.60	6.60	5.45	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.52	0.26	0.09	-0.03	7.85	5.05	3.72	2.59	5.45	5.90	5.25	5.20
60		0.45	0.20	0.02	-0.04	5.34	3.39	2.54	1.79	5.25	4.10	4.65	5.35
100		0.55	0.24	0.10	0.00	4.09	2.69	1.99	1.38	4.65	4.40	5.10	5.10
200		0.46	0.22	0.08	0.01	2.89	1.85	1.36	0.98	4.90	4.65	4.35	4.95
500		0.53	0.21	0.10	0.01	1.90	1.23	0.89	0.60	5.45	4.60	4.30	4.85
1000		0.46	0.16	0.07	0.00	1.37	0.88	0.64	0.44	6.15	4.80	4.30	4.90
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.23	-0.05	-0.07	0.02	4.76	3.01	2.23	1.56	7.45	6.75	5.80	6.55
60		-0.12	-0.03	0.00	0.02	3.33	2.10	1.57	1.06	5.80	6.30	5.65	5.40
100		-0.06	0.01	0.01	0.02	2.52	1.64	1.23	0.81	6.10	5.80	5.65	4.95
200		-0.11	0.02	0.01	0.00	1.78	1.12	0.84	0.57	5.85	5.50	5.40	5.20
500		-0.04	0.01	0.02	0.00	1.13	0.70	0.52	0.36	6.00	5.55	5.30	5.30
1000		-0.08	0.02	0.01	0.00	0.80	0.52	0.38	0.26	6.45	5.45	5.35	5.30
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.37	2.91	2.19	1.54	5.95	5.90	5.10	5.60
60		0.26	0.12	0.00	-0.04	2.98	2.00	1.52	1.08	4.80	5.00	5.55	5.65
100		0.32	0.12	0.04	-0.01	2.33	1.56	1.16	0.82	4.65	5.40	4.90	5.10
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.75	4.75	4.30	5.05
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	5.35	5.20	4.35	5.10
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	6.85	5.85	4.45	5.10

Notes: See the notes for Table A.12.1.

Figure A.39: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 12, unbalanced panel)

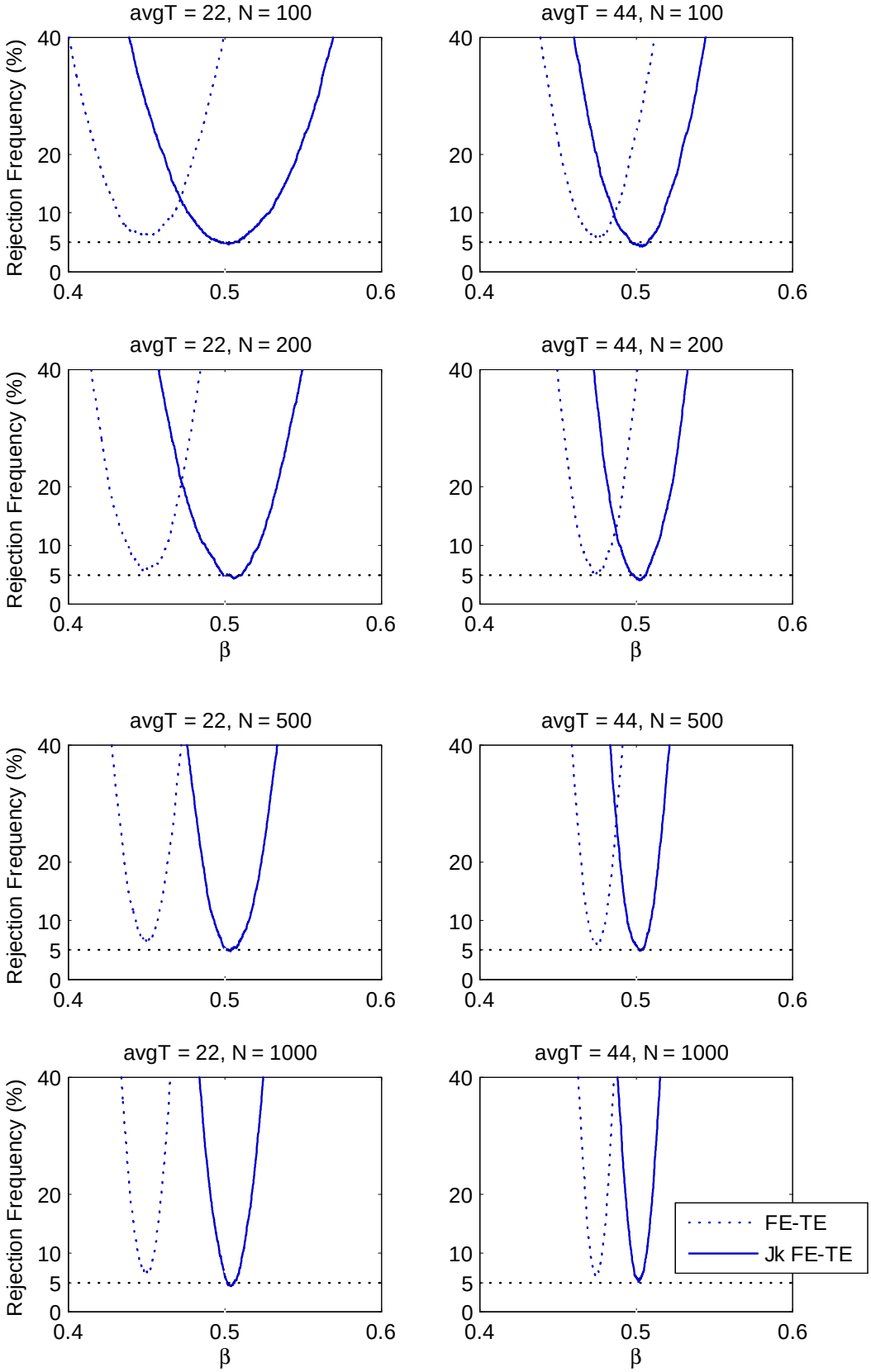

Table A.40.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.03	-1.98	-1.21	-0.68	7.83	5.31	3.93	2.75	13.25	9.85	6.70	6.65
60		-4.05	-1.97	-1.25	-0.67	6.14	3.90	2.87	1.97	17.05	10.80	7.80	7.25
100		-3.95	-1.94	-1.17	-0.62	5.33	3.29	2.34	1.57	22.95	14.85	10.45	7.80
200		-3.96	-1.96	-1.20	-0.61	4.68	2.67	1.84	1.19	40.00	20.10	14.75	10.20
500		-3.91	-1.93	-1.16	-0.60	4.24	2.27	1.48	0.87	70.85	40.85	26.70	16.05
1000		-3.95	-1.99	-1.19	-0.61	4.12	2.16	1.36	0.77	94.45	68.75	48.65	27.50
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.25	-3.11	-1.90	-0.91	7.42	4.14	2.81	1.73	38.20	21.00	15.40	10.20
60		-6.02	-3.02	-1.80	-0.88	6.62	3.57	2.32	1.34	61.10	35.25	23.60	12.85
100		-5.91	-2.93	-1.76	-0.87	6.29	3.29	2.11	1.17	79.65	51.55	34.45	18.80
200		-5.88	-2.92	-1.75	-0.87	6.08	3.09	1.92	1.04	97.45	81.00	59.60	32.85
500		-5.80	-2.88	-1.71	-0.87	5.88	2.96	1.78	0.94	100.00	99.30	92.10	69.10
1000		-5.81	-2.89	-1.72	-0.86	5.85	2.93	1.76	0.90	100.00	100.00	99.85	92.45
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.34	0.25	0.17	0.03	4.04	2.84	2.13	1.50	6.10	5.75	5.45	5.25
60		0.29	0.24	0.11	0.03	2.82	1.98	1.50	1.06	6.30	6.10	5.65	5.60
100		0.32	0.23	0.15	0.05	2.18	1.54	1.15	0.81	5.80	6.45	4.95	5.50
200		0.32	0.22	0.13	0.06	1.54	1.09	0.82	0.58	5.85	6.40	5.15	5.65
500		0.32	0.22	0.14	0.07	1.02	0.72	0.53	0.36	6.65	6.75	5.75	5.35
1000		0.30	0.19	0.13	0.06	0.75	0.52	0.39	0.27	8.95	7.65	6.80	6.45
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.69	0.31	0.13	-0.02	8.11	5.33	3.92	2.72	4.75	5.40	4.45	4.90
60		0.55	0.23	0.02	-0.04	5.60	3.63	2.71	1.91	4.80	4.55	4.15	5.20
100		0.59	0.23	0.09	0.00	4.32	2.88	2.13	1.48	4.40	4.90	4.70	5.00
200		0.50	0.21	0.07	0.00	3.07	1.97	1.46	1.05	5.05	4.50	3.85	4.80
500		0.56	0.21	0.09	0.01	2.01	1.30	0.96	0.64	5.10	5.15	5.05	4.55
1000		0.49	0.15	0.06	0.00	1.45	0.93	0.69	0.47	6.00	5.40	5.15	5.30
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.16	-0.03	-0.06	0.02	4.60	2.93	2.17	1.51	6.70	5.85	5.30	5.40
60		-0.08	-0.02	-0.01	0.01	3.26	2.05	1.54	1.04	5.70	5.50	5.05	5.25
100		-0.02	0.01	0.01	0.01	2.47	1.62	1.22	0.80	5.45	5.85	5.30	4.65
200		-0.06	0.02	0.01	0.00	1.75	1.10	0.83	0.57	5.80	5.10	4.90	4.75
500		0.01	0.02	0.03	0.00	1.12	0.70	0.52	0.36	5.75	4.75	4.40	4.65
1000		-0.03	0.02	0.01	0.00	0.78	0.51	0.38	0.26	5.55	5.10	5.90	4.55
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.32	0.13	0.07	-0.04	4.24	2.86	2.14	1.51	5.35	5.10	4.25	4.90
60		0.29	0.12	0.00	-0.04	2.94	1.99	1.51	1.07	4.55	4.85	5.10	5.50
100		0.31	0.11	0.04	-0.01	2.30	1.56	1.15	0.82	4.35	5.35	4.50	5.10
200		0.31	0.10	0.03	0.00	1.63	1.09	0.82	0.58	4.80	4.55	4.65	5.05
500		0.32	0.11	0.04	0.00	1.07	0.70	0.52	0.36	4.95	5.10	4.60	4.55
1000		0.30	0.08	0.03	0.00	0.79	0.50	0.38	0.26	7.15	5.45	5.45	5.65

Notes: See the notes for Table A.13.1.

Table A.40.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-3.97	-1.95	-1.19	-0.68	7.96	5.40	3.99	2.81	14.30	10.65	7.30	6.70
60		-4.03	-1.97	-1.25	-0.66	6.17	3.91	2.89	1.99	17.75	10.95	8.25	7.40
100		-3.92	-1.92	-1.16	-0.62	5.33	3.29	2.35	1.57	22.85	14.85	10.10	7.35
200		-3.95	-1.95	-1.19	-0.61	4.68	2.66	1.84	1.19	39.10	19.65	14.25	10.00
500		-3.91	-1.94	-1.16	-0.60	4.24	2.26	1.49	0.87	72.05	41.05	27.10	16.80
1000		-3.96	-2.00	-1.19	-0.61	4.12	2.16	1.36	0.77	93.75	66.85	47.35	27.55
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.14	-3.06	-1.88	-0.90	7.38	4.14	2.83	1.76	37.00	22.10	16.10	11.10
60		-5.96	-2.99	-1.77	-0.87	6.58	3.55	2.31	1.34	60.40	34.40	24.10	13.35
100		-5.87	-2.92	-1.74	-0.86	6.26	3.28	2.10	1.17	79.25	51.65	34.85	19.10
200		-5.87	-2.91	-1.74	-0.87	6.06	3.08	1.92	1.04	97.40	81.15	58.95	33.25
500		-5.80	-2.89	-1.71	-0.87	5.88	2.96	1.79	0.94	100.00	99.50	93.10	70.00
1000		-5.81	-2.90	-1.72	-0.86	5.85	2.94	1.77	0.91	100.00	100.00	99.95	93.40
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.33	0.25	0.17	0.02	4.14	2.89	2.18	1.54	7.25	6.50	5.85	6.05
60		0.27	0.23	0.10	0.02	2.85	1.99	1.51	1.07	6.90	6.20	6.00	5.30
100		0.32	0.23	0.14	0.05	2.20	1.55	1.15	0.81	6.40	6.40	5.55	5.30
200		0.32	0.22	0.13	0.06	1.54	1.09	0.82	0.58	5.90	6.50	5.50	5.90
500		0.32	0.22	0.14	0.07	1.02	0.72	0.53	0.36	6.20	6.95	5.75	6.10
1000		0.30	0.19	0.13	0.06	0.75	0.52	0.39	0.27	7.50	8.40	6.40	6.20
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.64	0.29	0.11	-0.04	8.31	5.41	3.99	2.79	5.60	5.75	5.05	5.30
60		0.52	0.21	0.02	-0.04	5.65	3.63	2.73	1.92	4.75	4.25	5.00	5.30
100		0.59	0.24	0.09	0.00	4.34	2.89	2.14	1.48	4.60	4.65	4.90	5.20
200		0.49	0.21	0.07	0.00	3.06	1.97	1.46	1.05	4.95	4.40	4.15	5.00
500		0.56	0.21	0.09	0.01	2.02	1.30	0.96	0.64	5.30	4.50	4.20	5.00
1000		0.49	0.15	0.06	0.00	1.46	0.93	0.69	0.47	5.85	4.75	4.25	5.00
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.18	-0.04	-0.07	0.01	4.70	2.99	2.21	1.55	7.10	6.75	6.00	6.65
60		-0.08	-0.02	0.00	0.01	3.28	2.07	1.56	1.05	5.85	5.80	5.30	5.70
100		-0.02	0.01	0.01	0.01	2.48	1.63	1.23	0.81	6.05	5.80	5.55	4.95
200		-0.07	0.02	0.01	0.00	1.75	1.11	0.83	0.57	5.90	5.05	4.85	4.80
500		0.00	0.01	0.02	0.00	1.12	0.71	0.52	0.36	5.70	5.05	4.90	4.80
1000		-0.04	0.01	0.01	0.00	0.78	0.52	0.38	0.26	5.80	5.00	4.95	4.80
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.13	0.06	-0.04	4.35	2.91	2.19	1.54	5.80	5.85	5.10	5.75
60		0.26	0.11	0.00	-0.04	2.97	2.00	1.52	1.08	4.60	5.10	5.60	5.55
100		0.31	0.11	0.04	-0.01	2.32	1.56	1.16	0.82	4.75	5.65	4.95	5.15
200		0.30	0.11	0.03	0.00	1.63	1.09	0.82	0.58	4.85	4.80	4.40	5.25
500		0.32	0.12	0.04	0.00	1.06	0.70	0.52	0.35	5.20	5.15	4.55	5.25
1000		0.30	0.09	0.03	0.00	0.79	0.50	0.38	0.26	6.40	5.40	4.80	5.25

Notes: See the notes for Table A.13.1.

Figure A.40: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 13, unbalanced panel)

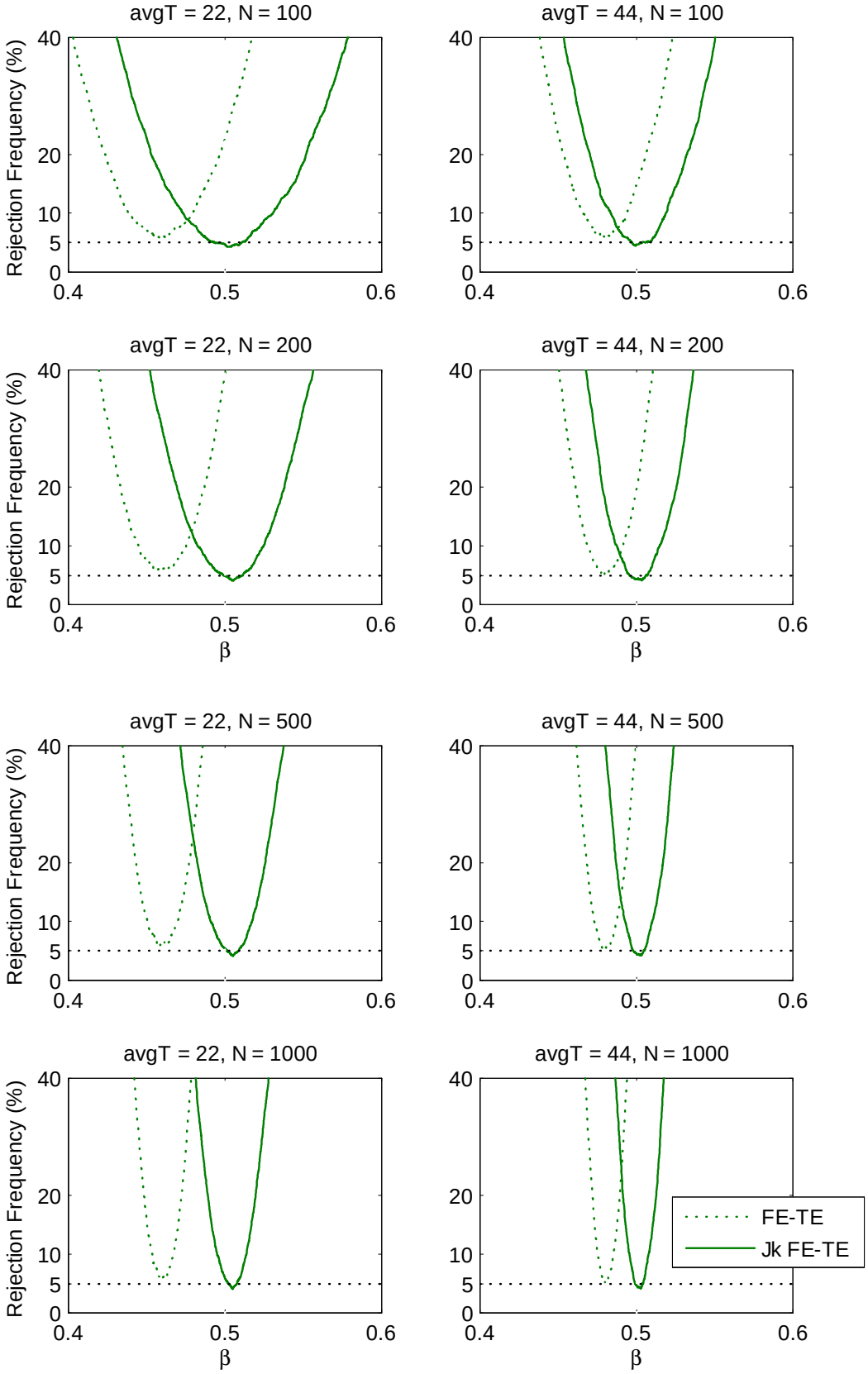

Table A.41.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.71	-2.34	-1.42	-0.78	7.83	5.14	3.76	2.59	16.45	10.65	7.80	6.90
60		-4.67	-2.30	-1.45	-0.76	6.34	3.87	2.79	1.88	21.60	13.00	9.05	8.40
100		-4.54	-2.25	-1.36	-0.71	5.63	3.33	2.32	1.51	31.25	19.30	12.65	8.60
200		-4.53	-2.26	-1.38	-0.70	5.10	2.82	1.89	1.18	51.85	27.95	18.75	12.25
500		-4.48	-2.24	-1.35	-0.69	4.73	2.49	1.59	0.91	86.55	55.20	36.90	22.20
1000		-4.52	-2.28	-1.37	-0.70	4.64	2.41	1.50	0.82	99.30	85.65	64.75	39.65
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.61	-3.30	-2.02	-0.95	7.72	4.27	2.89	1.75	40.70	23.45	16.25	10.40
60		-6.36	-3.20	-1.89	-0.92	6.93	3.72	2.40	1.37	65.50	38.50	25.75	14.35
100		-6.24	-3.10	-1.86	-0.91	6.60	3.44	2.19	1.20	84.15	55.95	37.90	20.25
200		-6.21	-3.08	-1.84	-0.92	6.39	3.25	2.01	1.08	98.60	85.15	64.05	37.20
500		-6.12	-3.05	-1.81	-0.92	6.20	3.12	1.88	0.98	100.00	99.60	95.10	73.60
1000		-6.13	-3.05	-1.82	-0.91	6.17	3.09	1.86	0.94	100.00	100.00	99.95	95.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.09	0.14	0.11	-0.01	4.03	2.83	2.13	1.50	6.05	6.05	5.25	5.30
60		0.05	0.13	0.04	0.00	2.81	1.97	1.49	1.06	6.05	6.10	5.70	5.45
100		0.09	0.12	0.08	0.02	2.17	1.53	1.14	0.81	6.00	5.85	4.95	5.35
200		0.09	0.11	0.07	0.03	1.51	1.07	0.81	0.58	5.65	5.90	5.15	5.50
500		0.09	0.11	0.07	0.03	0.98	0.69	0.52	0.36	6.40	5.50	5.10	5.05
1000		0.07	0.08	0.06	0.03	0.69	0.49	0.38	0.26	6.25	6.35	5.80	5.90
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.56	0.28	0.11	-0.02	7.66	4.98	3.66	2.52	4.85	5.40	4.60	4.90
60		0.48	0.23	0.02	-0.03	5.30	3.39	2.52	1.77	4.95	4.40	4.30	5.20
100		0.55	0.23	0.10	0.00	4.07	2.69	1.98	1.37	4.40	5.00	4.55	5.10
200		0.47	0.21	0.08	0.01	2.90	1.84	1.36	0.97	5.30	4.45	3.95	4.90
500		0.53	0.21	0.10	0.01	1.90	1.22	0.89	0.59	5.20	5.45	5.05	4.35
1000		0.46	0.16	0.07	0.00	1.37	0.87	0.64	0.43	6.10	5.70	5.25	5.50
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.22	-0.04	-0.07	0.03	4.66	2.95	2.18	1.51	6.75	5.80	5.40	5.80
60		-0.13	-0.03	0.00	0.02	3.31	2.08	1.56	1.05	6.10	5.45	5.00	5.10
100		-0.06	0.01	0.01	0.01	2.51	1.63	1.23	0.81	5.75	5.40	5.40	4.75
200		-0.10	0.02	0.01	0.00	1.78	1.12	0.84	0.57	5.95	5.30	5.45	4.80
500		-0.03	0.01	0.02	0.00	1.13	0.70	0.52	0.36	5.50	4.50	4.50	4.90
1000		-0.07	0.02	0.01	0.00	0.80	0.52	0.38	0.26	5.90	4.65	5.95	4.95
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.31	0.14	0.08	-0.04	4.26	2.87	2.14	1.51	5.25	5.00	4.35	5.05
60		0.29	0.13	0.01	-0.03	2.95	1.99	1.51	1.07	4.65	5.15	4.95	5.55
100		0.32	0.12	0.05	-0.01	2.31	1.56	1.15	0.82	4.45	5.30	4.60	4.85
200		0.32	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.70	4.60	4.35	4.95
500		0.33	0.12	0.05	0.01	1.07	0.70	0.52	0.36	4.80	5.20	4.35	4.50
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	7.40	5.70	5.20	5.75

Notes: See the notes for Table A.14.1.

Table A.41.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-4.64	-2.30	-1.40	-0.77	7.92	5.21	3.81	2.64	16.70	11.80	8.45	7.20
60		-4.64	-2.29	-1.44	-0.76	6.36	3.88	2.80	1.89	21.65	13.75	9.25	8.45
100		-4.50	-2.23	-1.35	-0.71	5.62	3.33	2.32	1.51	30.90	18.40	12.95	8.30
200		-4.52	-2.25	-1.37	-0.70	5.09	2.81	1.89	1.18	51.55	28.00	18.70	12.20
500		-4.48	-2.24	-1.34	-0.69	4.73	2.49	1.60	0.90	87.15	56.45	37.60	22.50
1000		-4.53	-2.29	-1.37	-0.70	4.65	2.41	1.51	0.82	99.10	85.25	65.25	39.20
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.49	-3.24	-1.99	-0.94	7.67	4.27	2.90	1.78	39.40	23.60	16.70	11.00
60		-6.29	-3.16	-1.87	-0.91	6.88	3.70	2.39	1.38	63.90	38.90	26.10	14.20
100		-6.20	-3.09	-1.84	-0.90	6.57	3.43	2.18	1.20	83.35	55.65	38.00	20.80
200		-6.19	-3.07	-1.84	-0.92	6.38	3.24	2.01	1.08	98.50	85.05	63.50	37.40
500		-6.12	-3.06	-1.81	-0.91	6.21	3.12	1.89	0.99	100.00	99.70	95.65	73.40
1000		-6.13	-3.06	-1.82	-0.91	6.18	3.09	1.87	0.95	100.00	100.00	99.95	95.45
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.09	0.13	0.10	-0.01	4.14	2.88	2.17	1.54	7.40	6.60	5.70	5.95
60		0.04	0.12	0.04	-0.01	2.84	1.98	1.50	1.07	6.85	5.85	6.00	5.40
100		0.10	0.13	0.08	0.02	2.19	1.54	1.15	0.81	6.10	6.20	5.65	5.40
200		0.09	0.12	0.07	0.03	1.51	1.08	0.81	0.58	5.65	6.10	5.30	5.80
500		0.10	0.12	0.07	0.03	0.98	0.70	0.52	0.36	5.55	6.35	5.45	5.75
1000		0.07	0.09	0.06	0.03	0.69	0.50	0.38	0.26	5.60	6.60	5.45	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.52	0.26	0.09	-0.03	7.85	5.05	3.72	2.59	5.45	5.90	5.25	5.20
60		0.45	0.20	0.02	-0.04	5.34	3.39	2.54	1.79	5.25	4.10	4.65	5.35
100		0.55	0.24	0.10	0.00	4.09	2.69	1.99	1.38	4.65	4.40	5.10	5.10
200		0.46	0.22	0.08	0.01	2.89	1.85	1.36	0.98	4.90	4.65	4.35	4.95
500		0.53	0.21	0.10	0.01	1.90	1.23	0.89	0.60	5.45	4.60	4.30	4.85
1000		0.46	0.16	0.07	0.00	1.37	0.88	0.64	0.44	6.15	4.80	4.30	4.90
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.23	-0.05	-0.07	0.02	4.76	3.01	2.23	1.56	7.45	6.75	5.80	6.55
60		-0.12	-0.03	0.00	0.02	3.33	2.10	1.57	1.06	5.80	6.30	5.65	5.40
100		-0.06	0.01	0.01	0.02	2.52	1.64	1.23	0.81	6.10	5.80	5.65	4.95
200		-0.11	0.02	0.01	0.00	1.78	1.12	0.84	0.57	5.85	5.50	5.40	5.20
500		-0.04	0.01	0.02	0.00	1.13	0.70	0.52	0.36	6.00	5.55	5.30	5.30
1000		-0.08	0.02	0.01	0.00	0.80	0.52	0.38	0.26	6.45	5.45	5.35	5.30
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.37	2.91	2.19	1.54	5.95	5.90	5.10	5.60
60		0.26	0.12	0.00	-0.04	2.98	2.00	1.52	1.08	4.80	5.00	5.55	5.65
100		0.32	0.12	0.04	-0.01	2.33	1.56	1.16	0.82	4.65	5.40	4.90	5.10
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.75	4.75	4.30	5.05
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	5.35	5.20	4.35	5.10
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	6.85	5.85	4.45	5.10

Notes: See the notes for Table A.14.1.

Figure A.41: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 14, unbalanced panel)

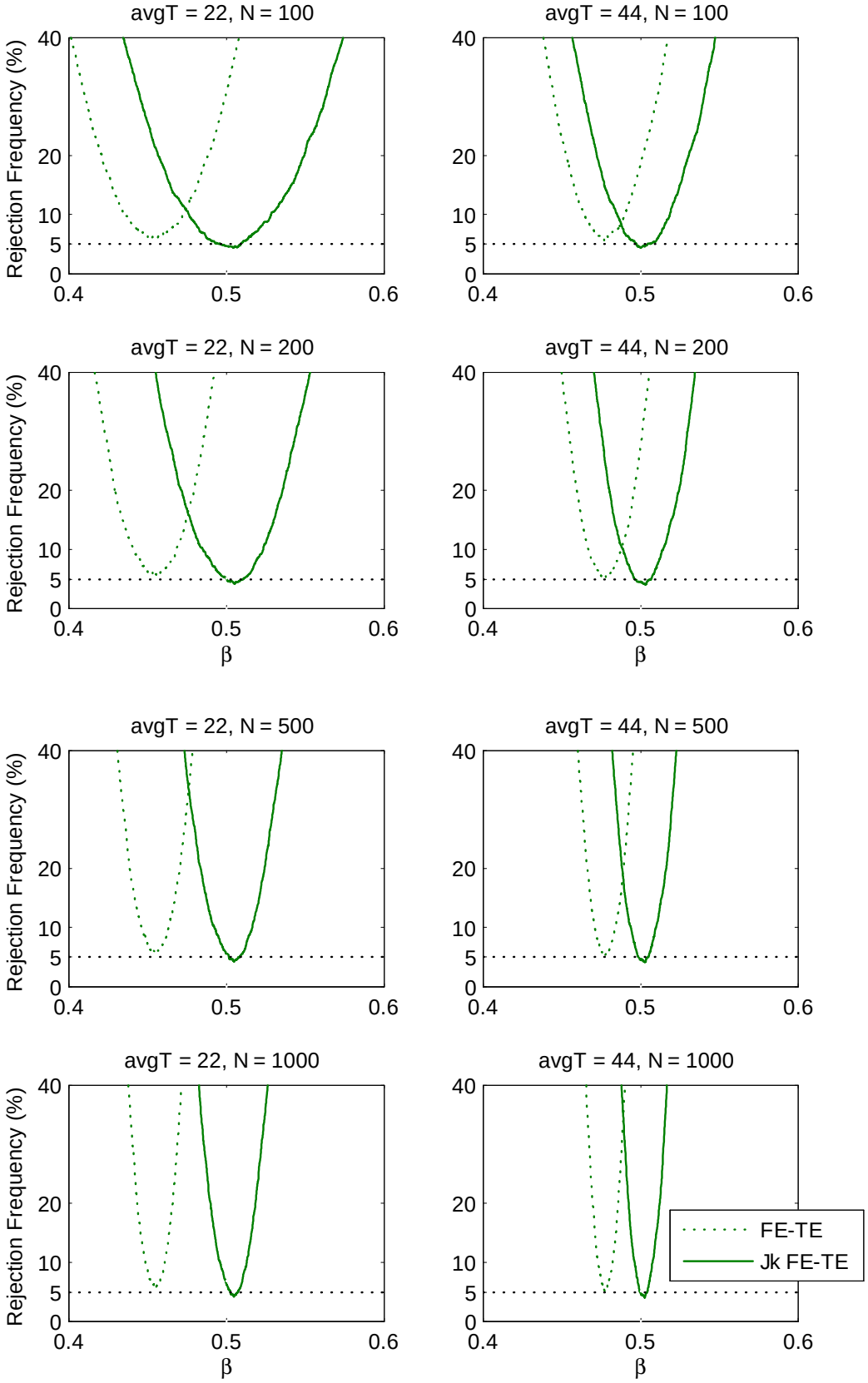

Table A.42.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-5.36	-2.68	-1.63	-0.87	7.90	5.00	3.59	2.42	20.05	12.40	9.05	7.70
60		-5.25	-2.62	-1.63	-0.85	6.59	3.88	2.72	1.79	27.90	16.40	10.70	8.60
100		-5.10	-2.55	-1.54	-0.80	5.96	3.41	2.31	1.46	41.30	24.15	15.30	10.20
200		-5.08	-2.54	-1.55	-0.79	5.52	2.98	1.95	1.17	67.45	38.30	25.25	15.95
500		-5.02	-2.53	-1.52	-0.78	5.21	2.72	1.71	0.95	95.75	73.45	51.15	30.65
1000		-5.06	-2.57	-1.54	-0.79	5.16	2.67	1.64	0.88	99.90	95.40	81.10	53.70
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.90	-3.45	-2.11	-0.99	8.02	4.43	2.99	1.80	41.50	24.25	16.70	10.65
60		-6.63	-3.35	-1.97	-0.96	7.22	3.88	2.49	1.42	66.35	40.55	25.70	14.55
100		-6.51	-3.25	-1.94	-0.95	6.87	3.58	2.27	1.25	84.45	57.50	38.55	20.40
200		-6.48	-3.22	-1.92	-0.96	6.66	3.39	2.09	1.12	98.55	85.85	65.50	38.95
500		-6.39	-3.19	-1.90	-0.95	6.47	3.26	1.96	1.02	100.00	99.70	95.85	74.70
1000		-6.39	-3.18	-1.90	-0.95	6.43	3.22	1.94	0.98	100.00	100.00	99.95	95.30
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		-0.17	0.01	0.03	-0.04	4.04	2.82	2.13	1.50	6.25	6.25	5.20	4.85
60		-0.20	0.01	-0.03	-0.04	2.81	1.96	1.49	1.06	6.10	5.95	5.80	5.45
100		-0.15	0.01	0.02	-0.01	2.17	1.52	1.14	0.81	6.00	5.95	5.20	5.30
200		-0.15	0.00	0.00	0.00	1.52	1.07	0.81	0.58	5.70	5.70	5.25	5.80
500		-0.14	0.00	0.01	0.00	0.99	0.68	0.51	0.35	6.70	5.75	5.10	5.25
1000		-0.16	-0.03	0.00	-0.01	0.71	0.48	0.37	0.26	6.85	5.45	5.75	5.90
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		0.44	0.25	0.10	-0.02	7.22	4.63	3.38	2.32	4.85	5.20	4.60	4.65
60		0.41	0.22	0.03	-0.03	4.99	3.15	2.32	1.63	5.20	4.05	4.45	5.05
100		0.51	0.23	0.10	0.00	3.83	2.49	1.84	1.26	4.90	4.75	4.65	4.95
200		0.43	0.22	0.09	0.01	2.73	1.72	1.26	0.89	5.40	4.35	3.90	5.10
500		0.50	0.22	0.10	0.01	1.79	1.13	0.83	0.55	5.40	5.90	5.15	4.30
1000		0.43	0.17	0.07	0.01	1.29	0.81	0.59	0.40	6.10	5.95	5.45	5.30
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.28	-0.06	-0.07	0.04	4.80	3.03	2.25	1.56	6.70	5.80	5.20	5.40
60		-0.17	-0.04	0.00	0.03	3.42	2.15	1.61	1.09	6.35	5.80	5.75	5.35
100		-0.10	0.00	0.01	0.02	2.59	1.68	1.25	0.83	6.15	5.80	6.05	5.00
200		-0.14	0.02	0.02	0.00	1.84	1.16	0.87	0.59	6.10	5.30	5.50	5.15
500		-0.07	0.01	0.02	0.00	1.16	0.72	0.53	0.37	5.60	4.15	4.65	4.55
1000		-0.11	0.02	0.01	0.01	0.83	0.53	0.39	0.27	5.90	4.90	5.75	5.10
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.30	0.15	0.08	-0.03	4.28	2.87	2.14	1.51	5.20	5.20	4.35	4.90
60		0.28	0.14	0.01	-0.03	2.96	1.99	1.50	1.07	4.70	5.20	5.00	5.60
100		0.33	0.13	0.05	-0.01	2.32	1.56	1.15	0.82	4.45	5.05	4.70	4.90
200		0.32	0.12	0.04	0.00	1.65	1.09	0.82	0.58	4.85	4.85	4.55	5.00
500		0.33	0.13	0.05	0.01	1.08	0.70	0.52	0.36	5.00	5.10	4.30	4.70
1000		0.31	0.09	0.04	0.00	0.80	0.50	0.38	0.26	7.60	5.75	5.05	5.80

Notes: See the notes for Table A.15.1.

Table A.42.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-5.28	-2.64	-1.61	-0.86	7.96	5.05	3.63	2.47	20.40	13.45	9.20	7.65
60		-5.22	-2.60	-1.62	-0.84	6.60	3.88	2.73	1.80	28.45	16.35	11.30	9.30
100		-5.06	-2.53	-1.53	-0.79	5.94	3.40	2.32	1.46	41.45	23.55	15.85	10.15
200		-5.07	-2.53	-1.55	-0.79	5.51	2.97	1.95	1.18	67.30	38.70	25.55	15.70
500		-5.02	-2.52	-1.53	-0.78	5.21	2.72	1.71	0.96	96.85	73.90	52.90	29.80
1000		-5.07	-2.56	-1.55	-0.79	5.16	2.66	1.64	0.89	99.95	96.10	82.40	53.10
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.79	-3.40	-2.08	-0.97	7.97	4.42	3.00	1.83	41.25	24.30	17.30	11.00
60		-6.56	-3.31	-1.95	-0.95	7.16	3.86	2.48	1.42	64.45	39.55	26.00	14.80
100		-6.47	-3.23	-1.93	-0.94	6.84	3.57	2.26	1.24	83.80	56.80	37.95	20.15
200		-6.46	-3.21	-1.92	-0.96	6.64	3.38	2.09	1.12	98.55	85.45	65.00	38.95
500		-6.39	-3.19	-1.90	-0.96	6.46	3.26	1.97	1.03	100.00	99.75	95.75	74.20
1000		-6.41	-3.19	-1.91	-0.96	6.44	3.23	1.95	0.99	100.00	100.00	99.95	95.60
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		-0.17	0.01	0.03	-0.04	4.15	2.88	2.17	1.53	7.25	6.60	6.00	5.85
60		-0.21	0.00	-0.03	-0.04	2.84	1.97	1.50	1.07	6.85	5.70	6.10	5.65
100		-0.14	0.01	0.01	-0.02	2.19	1.53	1.15	0.81	6.00	6.20	5.80	5.35
200		-0.14	0.00	0.00	0.00	1.52	1.07	0.81	0.58	5.80	5.85	5.15	5.80
500		-0.14	0.00	0.01	0.00	0.99	0.68	0.51	0.35	5.70	5.90	5.20	5.80
1000		-0.16	-0.03	0.00	-0.01	0.71	0.48	0.37	0.26	5.85	5.90	5.20	5.75
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.39	0.24	0.08	-0.03	7.39	4.70	3.45	2.38	5.45	5.80	5.15	5.20
60		0.38	0.20	0.02	-0.03	5.04	3.14	2.34	1.64	5.30	4.25	4.45	5.50
100		0.50	0.23	0.10	0.00	3.85	2.50	1.85	1.27	4.75	4.50	5.05	4.85
200		0.43	0.23	0.09	0.01	2.73	1.72	1.26	0.90	5.25	4.70	4.20	5.20
500		0.50	0.23	0.10	0.01	1.80	1.13	0.83	0.56	5.65	4.65	4.20	5.10
1000		0.43	0.18	0.07	0.01	1.30	0.81	0.59	0.41	6.70	4.95	4.50	5.10
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.29	-0.07	-0.08	0.03	4.91	3.10	2.29	1.60	7.60	6.85	5.80	6.35
60		-0.16	-0.04	0.01	0.03	3.44	2.18	1.62	1.10	6.45	6.20	6.15	5.50
100		-0.10	0.00	0.02	0.02	2.61	1.69	1.26	0.83	6.80	6.05	5.80	5.15
200		-0.14	0.01	0.01	0.00	1.85	1.16	0.87	0.59	6.60	5.35	5.45	5.20
500		-0.07	0.00	0.01	0.00	1.17	0.72	0.53	0.37	6.65	5.35	5.40	5.20
1000		-0.11	0.01	0.00	0.01	0.84	0.53	0.39	0.27	6.80	5.40	5.45	5.20
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.27	0.14	0.07	-0.04	4.39	2.91	2.19	1.54	5.90	6.00	5.35	5.50
60		0.26	0.13	0.00	-0.04	2.99	2.00	1.52	1.08	5.00	5.20	5.60	5.75
100		0.32	0.13	0.05	-0.01	2.34	1.56	1.16	0.82	4.90	5.45	4.85	5.15
200		0.31	0.12	0.04	0.00	1.65	1.09	0.82	0.58	4.70	4.75	4.60	5.00
500		0.33	0.12	0.05	0.01	1.09	0.70	0.52	0.36	5.60	5.20	4.65	5.00
1000		0.31	0.09	0.04	0.00	0.81	0.50	0.38	0.26	7.15	6.05	4.65	5.05

Notes: See the notes for Table A.15.1.

Figure A.42: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 15, unbalanced panel)

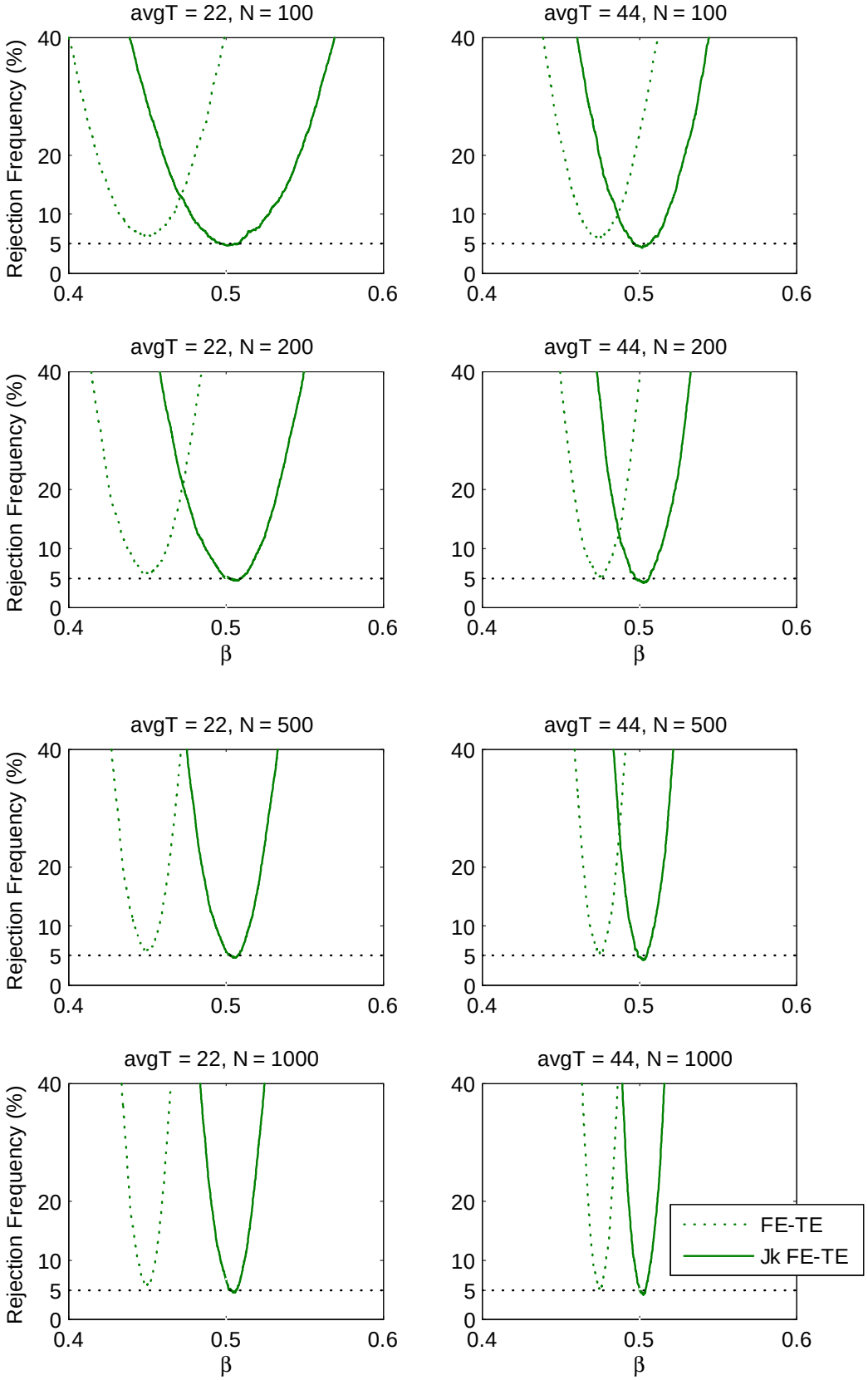

Table A.43.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-3.74	2.71	34.46	564.18	7.75	6.25	35.38	568.01	12.45	7.90	99.35	100.00
60		-3.74	2.68	34.18	559.74	5.97	4.67	34.66	561.62	15.20	10.40	100.00	100.00
100		-3.65	2.73	34.19	558.80	5.13	4.07	34.47	559.93	20.35	16.35	100.00	100.00
200		-3.66	2.72	34.21	557.96	4.44	3.42	34.35	558.52	34.75	26.85	100.00	100.00
500		-3.61	2.73	34.18	557.78	3.97	3.05	34.24	557.99	63.05	55.00	100.00	100.00
1000		-3.65	2.67	34.12	557.29	3.83	2.83	34.14	557.40	89.80	81.60	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-5.75	3.31	26.67	55.80	7.02	4.33	26.74	55.80	32.30	27.80	100.00	100.00
60		-5.53	3.36	26.68	55.79	6.18	3.88	26.71	55.79	53.35	45.35	100.00	100.00
100		-5.42	3.45	26.66	55.78	5.83	3.77	26.68	55.78	73.05	67.75	100.00	100.00
200		-5.40	3.48	26.69	55.78	5.61	3.63	26.70	55.78	95.15	92.85	100.00	100.00
500		-5.32	3.51	26.70	55.78	5.41	3.57	26.70	55.78	100.00	99.90	100.00	100.00
1000		-5.32	3.49	26.68	55.78	5.37	3.53	26.68	55.78	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.30	-0.19	-1.93	-4.40	4.04	2.87	3.03	4.71	6.45	5.30	13.60	71.35
60		0.27	-0.19	-1.99	-4.43	2.82	2.02	2.57	4.59	6.35	5.80	23.50	94.80
100		0.29	-0.20	-1.96	-4.39	2.19	1.57	2.32	4.49	5.75	5.75	33.80	99.70
200		0.29	-0.21	-1.96	-4.39	1.54	1.11	2.16	4.44	5.85	6.20	59.70	100.00
500		0.29	-0.21	-1.97	-4.39	1.02	0.73	2.05	4.41	6.75	6.40	93.55	100.00
1000		0.27	-0.24	-1.97	-4.39	0.74	0.55	2.02	4.40	8.15	8.45	99.70	100.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		1.40	11.59	471.57	-164.81	8.44	13.99	3656.33	165.22	5.05	37.50	83.15	100.00
60		1.28	11.30	372.26	-164.86	5.86	12.54	811.49	165.09	4.70	61.50	97.70	100.00
100		1.31	11.29	323.51	-165.02	4.58	12.06	341.29	165.15	5.15	83.00	99.90	100.00
200		1.20	11.25	312.16	-164.97	3.32	11.62	319.79	165.03	5.80	98.65	100.00	100.00
500		1.26	11.22	303.14	-165.00	2.36	11.38	305.68	165.02	8.60	100.00	100.00	100.00
1000		1.20	11.12	299.83	-164.96	1.85	11.20	301.10	164.97	13.10	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		0.78	12.17	52.73	80.53	4.77	12.69	52.83	80.53	7.20	96.45	100.00	100.00
60		0.84	12.09	52.61	80.47	3.40	12.37	52.67	80.47	7.45	99.90	100.00	100.00
100		0.91	12.14	52.52	80.47	2.66	12.31	52.56	80.48	7.55	100.00	100.00	100.00
200		0.86	12.17	52.55	80.46	1.98	12.25	52.56	80.46	8.80	100.00	100.00	100.00
500		0.93	12.16	52.52	80.46	1.46	12.19	52.53	80.46	14.75	100.00	100.00	100.00
1000		0.90	12.14	52.49	80.47	1.20	12.16	52.50	80.47	22.90	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.25	-0.70	-3.87	-6.49	4.26	3.19	4.87	6.81	5.70	7.10	35.55	80.10
60		0.24	-0.71	-3.92	-6.53	2.97	2.31	4.44	6.70	4.75	7.80	57.90	98.00
100		0.27	-0.72	-3.89	-6.47	2.32	1.83	4.20	6.57	5.10	8.60	76.80	100.00
200		0.26	-0.73	-3.87	-6.48	1.63	1.40	4.05	6.53	4.90	11.85	94.70	100.00
500		0.27	-0.72	-3.89	-6.47	1.06	1.05	3.95	6.49	4.90	19.60	100.00	100.00
1000		0.25	-0.75	-3.89	-6.47	0.78	0.93	3.93	6.48	7.00	33.30	100.00	100.00

Notes: See the notes for Table A.16.1.

Table A.43.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-3.97	-1.95	-1.19	-0.68	7.96	5.40	3.99	2.81	14.30	10.65	7.30	6.70
60		-4.03	-1.97	-1.25	-0.66	6.17	3.91	2.89	1.99	17.75	10.95	8.25	7.40
100		-3.92	-1.92	-1.16	-0.62	5.33	3.29	2.35	1.57	22.85	14.85	10.10	7.35
200		-3.95	-1.95	-1.19	-0.61	4.68	2.66	1.84	1.19	39.10	19.65	14.25	10.00
500		-3.91	-1.94	-1.16	-0.60	4.24	2.26	1.49	0.87	72.05	41.05	27.10	16.80
1000		-3.96	-2.00	-1.19	-0.61	4.12	2.16	1.36	0.77	93.75	66.85	47.35	27.55
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.14	-3.06	-1.88	-0.90	7.38	4.14	2.83	1.76	37.00	22.10	16.10	11.10
60		-5.96	-2.99	-1.77	-0.87	6.58	3.55	2.31	1.34	60.40	34.40	24.10	13.35
100		-5.87	-2.92	-1.74	-0.86	6.26	3.28	2.10	1.17	79.25	51.65	34.85	19.10
200		-5.87	-2.91	-1.74	-0.87	6.06	3.08	1.92	1.04	97.40	81.15	58.95	33.25
500		-5.80	-2.89	-1.71	-0.87	5.88	2.96	1.79	0.94	100.00	99.50	93.10	70.00
1000		-5.81	-2.90	-1.72	-0.86	5.85	2.94	1.77	0.91	100.00	100.00	99.95	93.40
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.33	0.25	0.17	0.02	4.14	2.89	2.18	1.54	7.25	6.50	5.85	6.05
60		0.27	0.23	0.10	0.02	2.85	1.99	1.51	1.07	6.90	6.20	6.00	5.30
100		0.32	0.23	0.14	0.05	2.20	1.55	1.15	0.81	6.40	6.40	5.55	5.30
200		0.32	0.22	0.13	0.06	1.54	1.09	0.82	0.58	5.90	6.50	5.50	5.90
500		0.32	0.22	0.14	0.07	1.02	0.72	0.53	0.36	6.20	6.95	5.75	6.10
1000		0.30	0.19	0.13	0.06	0.75	0.52	0.39	0.27	7.50	8.40	6.40	6.20
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.64	0.29	0.11	-0.04	8.31	5.41	3.99	2.79	5.60	5.75	5.05	5.30
60		0.52	0.21	0.02	-0.04	5.65	3.63	2.73	1.92	4.75	4.25	5.00	5.30
100		0.59	0.24	0.09	0.00	4.34	2.89	2.14	1.48	4.60	4.65	4.90	5.20
200		0.49	0.21	0.07	0.00	3.06	1.97	1.46	1.05	4.95	4.40	4.15	5.00
500		0.56	0.21	0.09	0.01	2.02	1.30	0.96	0.64	5.30	4.50	4.20	5.00
1000		0.49	0.15	0.06	0.00	1.46	0.93	0.69	0.47	5.85	4.75	4.25	5.00
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.18	-0.04	-0.07	0.01	4.70	2.99	2.21	1.55	7.10	6.75	6.00	6.65
60		-0.08	-0.02	0.00	0.01	3.28	2.07	1.56	1.05	5.85	5.80	5.30	5.70
100		-0.02	0.01	0.01	0.01	2.48	1.63	1.23	0.81	6.05	5.80	5.55	4.95
200		-0.07	0.02	0.01	0.00	1.75	1.11	0.83	0.57	5.90	5.05	4.85	4.80
500		0.00	0.01	0.02	0.00	1.12	0.71	0.52	0.36	5.70	5.05	4.90	4.80
1000		-0.04	0.01	0.01	0.00	0.78	0.52	0.38	0.26	5.80	5.00	4.95	4.80
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.13	0.06	-0.04	4.35	2.91	2.19	1.54	5.80	5.85	5.10	5.75
60		0.26	0.11	0.00	-0.04	2.97	2.00	1.52	1.08	4.60	5.10	5.60	5.55
100		0.31	0.11	0.04	-0.01	2.32	1.56	1.16	0.82	4.75	5.65	4.95	5.15
200		0.30	0.11	0.03	0.00	1.63	1.09	0.82	0.58	4.85	4.80	4.40	5.25
500		0.32	0.12	0.04	0.00	1.06	0.70	0.52	0.35	5.20	5.15	4.55	5.25
1000		0.30	0.09	0.03	0.00	0.79	0.50	0.38	0.26	6.40	5.40	4.80	5.25

Notes: See the notes for Table A.16.1.

Figure A.43: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 16, unbalanced panel)

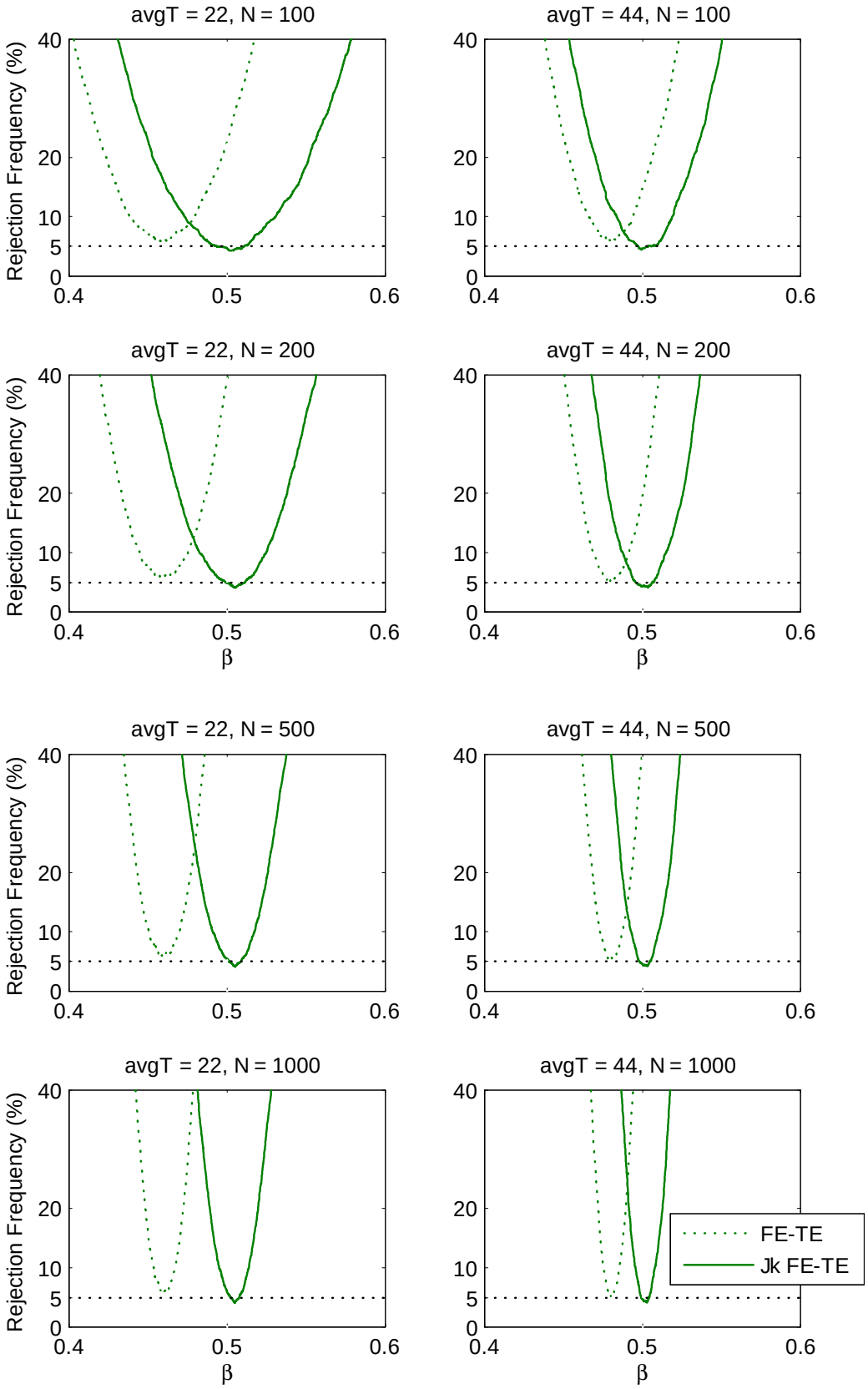

Table A.44.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.37	3.07	36.50	265.54	7.68	6.05	37.13	265.81	14.75	10.20	99.95	100.00
60		-4.30	3.06	36.28	264.99	6.10	4.68	36.61	265.12	18.90	14.65	100.00	100.00
100		-4.18	3.14	36.31	264.91	5.36	4.20	36.50	264.99	27.00	22.10	100.00	100.00
200		-4.18	3.14	36.33	264.83	4.79	3.67	36.42	264.87	46.20	38.50	100.00	100.00
500		-4.12	3.15	36.31	264.88	4.40	3.39	36.35	264.89	79.55	73.75	100.00	100.00
1000		-4.16	3.09	36.25	264.79	4.30	3.22	36.27	264.80	97.85	94.65	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.07	3.47	26.21	51.12	7.28	4.43	26.28	51.12	35.05	29.35	100.00	100.00
60		-5.82	3.51	26.23	51.12	6.45	4.02	26.26	51.12	57.60	48.95	100.00	100.00
100		-5.71	3.62	26.21	51.11	6.10	3.91	26.23	51.11	77.90	71.80	100.00	100.00
200		-5.68	3.65	26.24	51.11	5.88	3.79	26.25	51.11	96.50	94.60	100.00	100.00
500		-5.60	3.67	26.24	51.11	5.69	3.73	26.25	51.11	100.00	99.90	100.00	100.00
1000		-5.60	3.66	26.23	51.11	5.64	3.69	26.23	51.11	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.08	-0.04	-0.81	-1.99	4.03	2.87	2.47	2.60	6.10	5.15	6.45	19.70
60		0.05	-0.04	-0.88	-2.03	2.82	2.01	1.85	2.36	6.00	5.65	8.10	38.80
100		0.09	-0.05	-0.85	-1.99	2.17	1.55	1.50	2.20	6.15	5.55	10.80	54.50
200		0.09	-0.06	-0.86	-2.00	1.51	1.09	1.25	2.11	5.60	5.60	16.45	85.10
500		0.09	-0.06	-0.87	-2.00	0.98	0.70	1.03	2.04	6.35	5.35	34.75	99.70
1000		0.07	-0.09	-0.88	-2.00	0.70	0.50	0.96	2.02	6.35	5.95	59.90	100.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		1.41	13.41	360.30	-276.85	8.02	15.36	870.15	278.40	5.45	52.60	92.35	100.00
60		1.34	13.12	315.15	-276.27	5.59	14.12	336.67	277.12	5.15	78.60	99.65	100.00
100		1.40	13.11	299.80	-276.29	4.39	13.73	309.45	276.80	5.85	94.65	100.00	100.00
200		1.30	13.09	292.90	-275.87	3.21	13.37	297.37	276.11	6.85	99.80	100.00	100.00
500		1.36	13.04	287.11	-275.84	2.33	13.17	288.65	275.94	10.40	100.00	100.00	100.00
1000		1.30	12.95	284.88	-275.66	1.86	13.02	285.66	275.71	17.20	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		0.80	12.78	51.76	72.03	4.84	13.28	51.85	72.03	7.65	97.40	100.00	100.00
60		0.87	12.69	51.65	71.98	3.47	12.96	51.70	71.99	7.80	99.95	100.00	100.00
100		0.95	12.74	51.56	71.98	2.71	12.90	51.59	71.98	8.10	100.00	100.00	100.00
200		0.90	12.78	51.57	71.97	2.02	12.85	51.59	71.98	9.30	100.00	100.00	100.00
500		0.96	12.76	51.55	71.97	1.49	12.79	51.56	71.97	15.80	100.00	100.00	100.00
1000		0.93	12.75	51.53	71.98	1.24	12.76	51.53	71.98	23.90	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.28	-0.19	-1.67	-2.96	4.29	3.12	3.38	3.58	5.55	6.45	14.10	22.20
60		0.29	-0.21	-1.75	-3.02	2.98	2.21	2.71	3.36	4.95	6.25	20.80	46.05
100		0.32	-0.22	-1.73	-2.97	2.34	1.70	2.34	3.18	5.10	6.75	25.80	65.85
200		0.30	-0.23	-1.72	-2.99	1.65	1.22	2.08	3.10	5.05	6.90	43.40	93.65
500		0.32	-0.23	-1.73	-2.98	1.08	0.79	1.87	3.02	5.20	7.70	76.70	100.00
1000		0.30	-0.26	-1.74	-2.98	0.80	0.60	1.81	3.00	7.55	10.00	95.55	100.00

Notes: See the notes for Table A.17.1.

Table A.44.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-4.64	-2.30	-1.40	-0.77	7.92	5.21	3.81	2.64	16.70	11.80	8.45	7.20
60		-4.64	-2.29	-1.44	-0.76	6.36	3.88	2.80	1.89	21.65	13.75	9.25	8.45
100		-4.50	-2.23	-1.35	-0.71	5.62	3.33	2.32	1.51	30.90	18.40	12.95	8.30
200		-4.52	-2.25	-1.37	-0.70	5.09	2.81	1.89	1.18	51.55	28.00	18.70	12.20
500		-4.48	-2.24	-1.34	-0.69	4.73	2.49	1.60	0.90	87.15	56.45	37.60	22.50
1000		-4.53	-2.29	-1.37	-0.70	4.65	2.41	1.51	0.82	99.10	85.25	65.25	39.20
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.49	-3.24	-1.99	-0.94	7.67	4.27	2.90	1.78	39.40	23.60	16.70	11.00
60		-6.29	-3.16	-1.87	-0.91	6.88	3.70	2.39	1.38	63.90	38.90	26.10	14.20
100		-6.20	-3.09	-1.84	-0.90	6.57	3.43	2.18	1.20	83.35	55.65	38.00	20.80
200		-6.19	-3.07	-1.84	-0.92	6.38	3.24	2.01	1.08	98.50	85.05	63.50	37.40
500		-6.12	-3.06	-1.81	-0.91	6.21	3.12	1.89	0.99	100.00	99.70	95.65	73.40
1000		-6.13	-3.06	-1.82	-0.91	6.18	3.09	1.87	0.95	100.00	100.00	99.95	95.45
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.09	0.13	0.10	-0.01	4.14	2.88	2.17	1.54	7.40	6.60	5.70	5.95
60		0.04	0.12	0.04	-0.01	2.84	1.98	1.50	1.07	6.85	5.85	6.00	5.40
100		0.10	0.13	0.08	0.02	2.19	1.54	1.15	0.81	6.10	6.20	5.65	5.40
200		0.09	0.12	0.07	0.03	1.51	1.08	0.81	0.58	5.65	6.10	5.30	5.80
500		0.10	0.12	0.07	0.03	0.98	0.70	0.52	0.36	5.55	6.35	5.45	5.75
1000		0.07	0.09	0.06	0.03	0.69	0.50	0.38	0.26	5.60	6.60	5.45	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.52	0.26	0.09	-0.03	7.85	5.05	3.72	2.59	5.45	5.90	5.25	5.20
60		0.45	0.20	0.02	-0.04	5.34	3.39	2.54	1.79	5.25	4.10	4.65	5.35
100		0.55	0.24	0.10	0.00	4.09	2.69	1.99	1.38	4.65	4.40	5.10	5.10
200		0.46	0.22	0.08	0.01	2.89	1.85	1.36	0.98	4.90	4.65	4.35	4.95
500		0.53	0.21	0.10	0.01	1.90	1.23	0.89	0.60	5.45	4.60	4.30	4.85
1000		0.46	0.16	0.07	0.00	1.37	0.88	0.64	0.44	6.15	4.80	4.30	4.90
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.23	-0.05	-0.07	0.02	4.76	3.01	2.23	1.56	7.45	6.75	5.80	6.55
60		-0.12	-0.03	0.00	0.02	3.33	2.10	1.57	1.06	5.80	6.30	5.65	5.40
100		-0.06	0.01	0.01	0.02	2.52	1.64	1.23	0.81	6.10	5.80	5.65	4.95
200		-0.11	0.02	0.01	0.00	1.78	1.12	0.84	0.57	5.85	5.50	5.40	5.20
500		-0.04	0.01	0.02	0.00	1.13	0.70	0.52	0.36	6.00	5.55	5.30	5.30
1000		-0.08	0.02	0.01	0.00	0.80	0.52	0.38	0.26	6.45	5.45	5.35	5.30
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.29	0.14	0.07	-0.04	4.37	2.91	2.19	1.54	5.95	5.90	5.10	5.60
60		0.26	0.12	0.00	-0.04	2.98	2.00	1.52	1.08	4.80	5.00	5.55	5.65
100		0.32	0.12	0.04	-0.01	2.33	1.56	1.16	0.82	4.65	5.40	4.90	5.10
200		0.31	0.11	0.04	0.00	1.64	1.09	0.82	0.58	4.75	4.75	4.30	5.05
500		0.33	0.12	0.04	0.01	1.07	0.70	0.52	0.36	5.35	5.20	4.35	5.10
1000		0.31	0.09	0.03	0.00	0.80	0.50	0.38	0.26	6.85	5.85	4.45	5.10

Notes: See the notes for Table A.17.1.

Figure A.44: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 17, unbalanced panel)

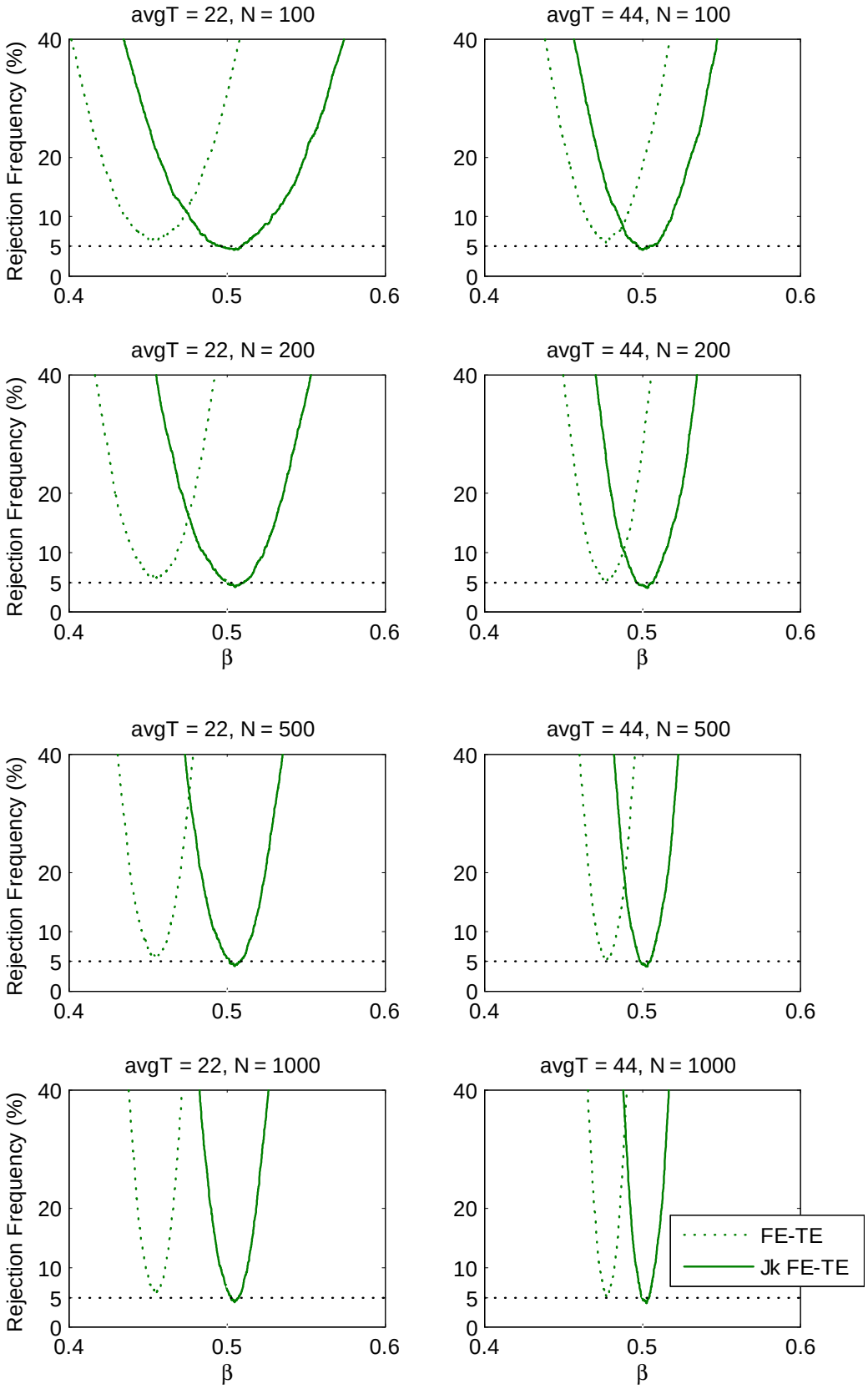

Table A.45.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-4.95	3.41	36.57	156.99	7.68	5.86	36.96	157.03	17.20	13.15	100.00	100.00
60		-4.83	3.42	36.40	156.83	6.28	4.71	36.61	156.85	24.75	20.70	100.00	100.00
100		-4.68	3.51	36.43	156.80	5.62	4.34	36.56	156.81	36.05	30.85	100.00	100.00
200		-4.67	3.53	36.45	156.77	5.15	3.94	36.51	156.78	58.80	54.00	100.00	100.00
500		-4.61	3.54	36.44	156.80	4.82	3.72	36.47	156.80	92.15	88.25	100.00	100.00
1000		-4.64	3.48	36.40	156.77	4.75	3.58	36.41	156.77	99.90	99.25	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.33	3.57	25.08	45.53	7.54	4.54	25.15	45.53	36.80	29.30	100.00	100.00
60		-6.06	3.62	25.11	45.54	6.70	4.14	25.15	45.55	58.10	49.60	100.00	100.00
100		-5.94	3.72	25.09	45.52	6.33	4.03	25.11	45.53	78.85	72.60	100.00	100.00
200		-5.91	3.76	25.12	45.53	6.11	3.91	25.13	45.53	97.10	94.95	100.00	100.00
500		-5.83	3.78	25.12	45.53	5.91	3.84	25.13	45.53	100.00	99.90	100.00	100.00
1000		-5.83	3.78	25.12	45.53	5.87	3.81	25.12	45.53	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		-0.16	0.12	0.22	-0.04	4.04	2.86	2.34	1.71	6.35	5.20	5.75	5.05
60		-0.17	0.11	0.14	-0.10	2.82	2.01	1.63	1.22	6.25	5.60	5.65	4.80
100		-0.13	0.11	0.17	-0.06	2.18	1.55	1.25	0.95	5.75	5.75	5.05	5.65
200		-0.13	0.10	0.15	-0.07	1.52	1.09	0.91	0.68	5.65	5.85	6.05	6.95
500		-0.12	0.10	0.15	-0.07	0.99	0.70	0.58	0.42	6.70	5.40	5.70	5.40
1000		-0.14	0.07	0.14	-0.08	0.71	0.49	0.42	0.31	6.95	6.05	6.80	6.55
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		1.43	15.12	136.85	-1283.45	7.60	16.70	5844.08	8538.55	5.20	68.60	98.65	59.05
60		1.41	14.83	244.64	-1511.99	5.31	15.64	251.41	2133.35	5.70	91.50	100.00	89.45
100		1.50	14.83	238.33	-1374.06	4.20	15.32	242.18	1476.16	6.40	98.95	100.00	98.30
200		1.41	14.81	235.28	-1302.76	3.11	15.04	237.16	1329.32	7.25	100.00	100.00	100.00
500		1.47	14.76	232.56	-1279.45	2.31	14.86	233.24	1289.08	13.25	100.00	100.00	100.00
1000		1.41	14.67	231.48	-1267.79	1.89	14.72	231.83	1272.54	21.50	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		0.82	13.23	49.45	62.49	4.99	13.74	49.54	62.50	7.45	97.35	100.00	100.00
60		0.90	13.14	49.36	62.47	3.58	13.41	49.41	62.47	8.00	100.00	100.00	100.00
100		0.98	13.19	49.27	62.46	2.81	13.34	49.30	62.46	8.40	100.00	100.00	100.00
200		0.93	13.22	49.27	62.46	2.09	13.30	49.29	62.46	9.80	100.00	100.00	100.00
500		1.00	13.20	49.25	62.45	1.54	13.23	49.26	62.45	16.10	100.00	100.00	100.00
1000		0.97	13.20	49.24	62.46	1.28	13.21	49.24	62.46	24.60	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.32	0.34	0.34	-0.25	4.31	3.13	2.93	2.02	5.60	6.65	8.55	3.35
60		0.33	0.32	0.24	-0.32	3.00	2.22	2.06	1.50	5.15	6.40	8.75	3.60
100		0.37	0.31	0.26	-0.28	2.36	1.72	1.59	1.17	5.25	7.10	8.75	4.75
200		0.35	0.30	0.26	-0.30	1.67	1.23	1.19	0.85	5.20	6.90	10.75	6.05
500		0.36	0.30	0.24	-0.29	1.10	0.82	0.74	0.57	5.80	8.60	9.90	6.00
1000		0.34	0.27	0.23	-0.30	0.82	0.60	0.56	0.46	8.30	9.75	12.20	9.70

Notes: See the notes for Table A.18.1.

Table A.45.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-5.28	-2.64	-1.61	-0.86	7.96	5.05	3.63	2.47	20.40	13.45	9.20	7.65
60		-5.22	-2.60	-1.62	-0.84	6.60	3.88	2.73	1.80	28.45	16.35	11.30	9.30
100		-5.06	-2.53	-1.53	-0.79	5.94	3.40	2.32	1.46	41.45	23.55	15.85	10.15
200		-5.07	-2.53	-1.55	-0.79	5.51	2.97	1.95	1.18	67.30	38.70	25.55	15.70
500		-5.02	-2.52	-1.53	-0.78	5.21	2.72	1.71	0.96	96.85	73.90	52.90	29.80
1000		-5.07	-2.56	-1.55	-0.79	5.16	2.66	1.64	0.89	99.95	96.10	82.40	53.10
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-6.79	-3.40	-2.08	-0.97	7.97	4.42	3.00	1.83	41.25	24.30	17.30	11.00
60		-6.56	-3.31	-1.95	-0.95	7.16	3.86	2.48	1.42	64.45	39.55	26.00	14.80
100		-6.47	-3.23	-1.93	-0.94	6.84	3.57	2.26	1.24	83.80	56.80	37.95	20.15
200		-6.46	-3.21	-1.92	-0.96	6.64	3.38	2.09	1.12	98.55	85.45	65.00	38.95
500		-6.39	-3.19	-1.90	-0.96	6.46	3.26	1.97	1.03	100.00	99.75	95.75	74.20
1000		-6.41	-3.19	-1.91	-0.96	6.44	3.23	1.95	0.99	100.00	100.00	99.95	95.60
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		-0.17	0.01	0.03	-0.04	4.15	2.88	2.17	1.53	7.25	6.60	6.00	5.85
60		-0.21	0.00	-0.03	-0.04	2.84	1.97	1.50	1.07	6.85	5.70	6.10	5.65
100		-0.14	0.01	0.01	-0.02	2.19	1.53	1.15	0.81	6.00	6.20	5.80	5.35
200		-0.14	0.00	0.00	0.00	1.52	1.07	0.81	0.58	5.80	5.85	5.15	5.80
500		-0.14	0.00	0.01	0.00	0.99	0.68	0.51	0.35	5.70	5.90	5.20	5.80
1000		-0.16	-0.03	0.00	-0.01	0.71	0.48	0.37	0.26	5.85	5.90	5.20	5.75
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		0.39	0.24	0.08	-0.03	7.39	4.70	3.45	2.38	5.45	5.80	5.15	5.20
60		0.38	0.20	0.02	-0.03	5.04	3.14	2.34	1.64	5.30	4.25	4.45	5.50
100		0.50	0.23	0.10	0.00	3.85	2.50	1.85	1.27	4.75	4.50	5.05	4.85
200		0.43	0.23	0.09	0.01	2.73	1.72	1.26	0.90	5.25	4.70	4.20	5.20
500		0.50	0.23	0.10	0.01	1.80	1.13	0.83	0.56	5.65	4.65	4.20	5.10
1000		0.43	0.18	0.07	0.01	1.30	0.81	0.59	0.41	6.70	4.95	4.50	5.10
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.6$											
30		-0.29	-0.07	-0.08	0.03	4.91	3.10	2.29	1.60	7.60	6.85	5.80	6.35
60		-0.16	-0.04	0.01	0.03	3.44	2.18	1.62	1.10	6.45	6.20	6.15	5.50
100		-0.10	0.00	0.02	0.02	2.61	1.69	1.26	0.83	6.80	6.05	5.80	5.15
200		-0.14	0.01	0.01	0.00	1.85	1.16	0.87	0.59	6.60	5.35	5.45	5.20
500		-0.07	0.00	0.01	0.00	1.17	0.72	0.53	0.37	6.65	5.35	5.40	5.20
1000		-0.11	0.01	0.00	0.01	0.84	0.53	0.39	0.27	6.80	5.40	5.45	5.20
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.3$											
30		0.27	0.14	0.07	-0.04	4.39	2.91	2.19	1.54	5.90	6.00	5.35	5.50
60		0.26	0.13	0.00	-0.04	2.99	2.00	1.52	1.08	5.00	5.20	5.60	5.75
100		0.32	0.13	0.05	-0.01	2.34	1.56	1.16	0.82	4.90	5.45	4.85	5.15
200		0.31	0.12	0.04	0.00	1.65	1.09	0.82	0.58	4.70	4.75	4.60	5.00
500		0.33	0.12	0.05	0.01	1.09	0.70	0.52	0.36	5.60	5.20	4.65	5.00
1000		0.31	0.09	0.04	0.00	0.81	0.50	0.38	0.26	7.15	6.05	4.65	5.05

Notes: See the notes for Table A.18.1.

Figure A.45: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.4$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 18, unbalanced panel)

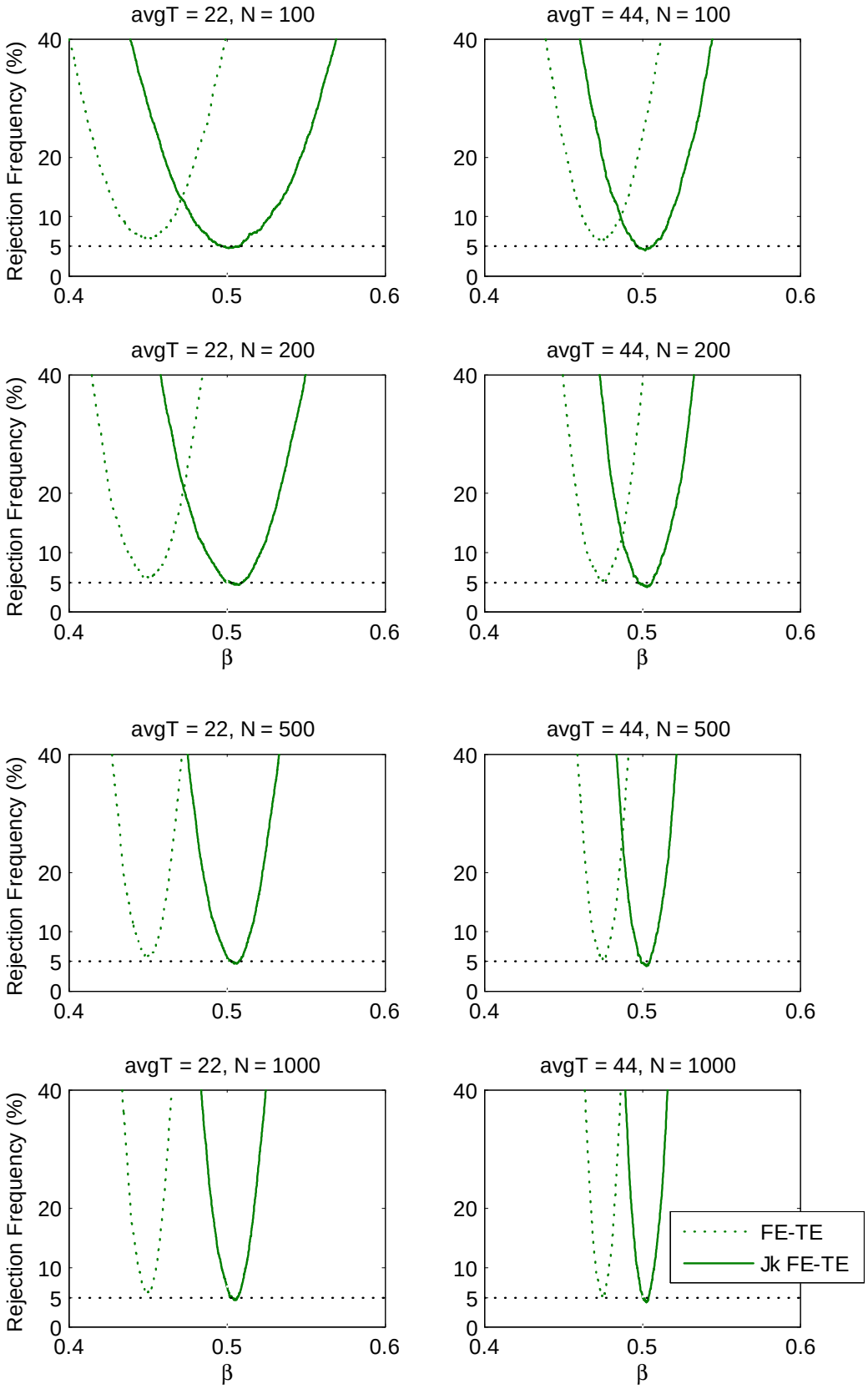

Table A.46.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-15.04	-8.33	-5.31	-2.92	21.13	14.87	11.26	7.95	25.00	14.60	11.00	7.25
60		-15.13	-8.36	-5.44	-2.93	18.26	11.88	8.77	5.97	36.80	19.95	13.00	9.90
100		-14.95	-8.32	-5.23	-2.79	16.89	10.62	7.48	4.89	52.30	28.45	17.85	11.15
200		-14.95	-8.32	-5.29	-2.77	15.94	9.50	6.48	3.97	78.60	46.50	30.05	17.60
500		-14.91	-8.34	-5.25	-2.77	15.34	8.85	5.78	3.27	98.75	81.80	59.95	34.15
1000		-15.04	-8.48	-5.32	-2.80	15.25	8.73	5.59	3.07	100.00	98.05	87.75	60.55
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.15	-4.47	-2.68	-1.27	9.76	4.95	3.11	1.64	84.75	61.75	44.25	23.80
60		-8.91	-4.36	-2.56	-1.25	9.23	4.61	2.78	1.45	98.05	86.55	68.25	40.25
100		-8.76	-4.29	-2.53	-1.23	8.95	4.44	2.67	1.36	99.85	97.35	86.40	60.20
200		-8.72	-4.24	-2.50	-1.23	8.81	4.32	2.58	1.30	100.00	100.00	98.90	86.00
500		-8.65	-4.24	-2.50	-1.24	8.69	4.27	2.52	1.26	100.00	100.00	100.00	99.80
1000		-8.68	-4.24	-2.50	-1.23	8.70	4.25	2.52	1.24	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.03	0.11	0.09	-0.01	4.02	2.83	2.12	1.50	6.05	6.10	5.05	5.20
60		0.01	0.11	0.03	-0.01	2.80	1.97	1.49	1.06	6.45	5.95	5.40	5.80
100		0.04	0.10	0.07	0.02	2.16	1.53	1.14	0.81	6.20	5.70	4.90	5.35
200		0.04	0.09	0.06	0.02	1.51	1.07	0.81	0.58	5.45	6.00	5.05	5.35
500		0.04	0.09	0.06	0.03	0.97	0.69	0.52	0.35	6.15	5.40	5.55	4.75
1000		0.02	0.06	0.05	0.02	0.69	0.49	0.37	0.26	6.25	6.65	6.10	5.90
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		5.24	2.05	0.85	0.13	35.60	16.89	11.88	8.04	5.05	5.30	4.55	4.70
60		3.04	1.58	0.51	0.02	19.29	11.44	8.21	5.68	4.60	4.35	4.40	5.15
100		2.81	1.36	0.69	0.12	14.78	8.89	6.41	4.38	4.85	4.20	4.85	5.10
200		2.17	1.32	0.61	0.14	10.15	6.23	4.45	3.09	5.05	5.15	4.65	5.45
500		2.14	1.17	0.59	0.12	6.68	4.13	2.92	1.89	6.75	6.30	5.25	4.45
1000		1.79	0.99	0.48	0.10	4.80	2.98	2.10	1.38	7.25	7.10	6.20	5.55
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.11	0.13	0.03	0.06	4.81	2.66	1.82	1.14	10.00	7.25	6.75	5.70
60		0.04	0.18	0.11	0.05	3.44	1.90	1.29	0.81	9.70	6.95	6.35	5.90
100		0.17	0.18	0.13	0.05	2.65	1.47	1.03	0.62	9.95	7.40	6.55	4.80
200		0.15	0.23	0.14	0.04	1.89	1.05	0.71	0.43	10.15	7.90	6.60	5.60
500		0.21	0.19	0.12	0.03	1.17	0.67	0.45	0.28	8.35	8.50	6.75	5.30
1000		0.15	0.19	0.10	0.04	0.85	0.50	0.32	0.20	10.25	10.00	7.10	5.20
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.21	0.14	0.07	-0.04	4.36	2.90	2.15	1.51	5.55	5.55	4.50	5.20
60		0.24	0.13	0.01	-0.03	3.04	2.01	1.51	1.07	5.05	5.00	5.35	5.50
100		0.28	0.13	0.05	-0.01	2.37	1.58	1.16	0.82	5.70	5.50	4.45	5.00
200		0.26	0.12	0.04	0.00	1.69	1.10	0.82	0.58	5.75	4.90	4.50	5.30
500		0.28	0.13	0.05	0.01	1.09	0.71	0.53	0.35	5.40	5.40	4.65	4.30
1000		0.26	0.09	0.04	0.00	0.80	0.51	0.38	0.26	7.85	5.95	5.80	5.85

Notes: See the notes for Table A.19.1.

Table A.46.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-15.18	-8.44	-5.38	-2.99	21.48	15.14	11.46	8.13	26.40	16.10	11.25	8.30
60		-15.25	-8.45	-5.49	-2.95	18.42	11.96	8.85	6.04	37.35	20.95	13.15	10.40
100		-14.98	-8.34	-5.26	-2.81	16.94	10.64	7.52	4.91	52.85	28.25	17.90	11.55
200		-14.98	-8.33	-5.30	-2.78	15.96	9.51	6.49	3.99	79.20	46.60	30.45	18.15
500		-14.94	-8.35	-5.26	-2.78	15.36	8.86	5.79	3.29	99.00	82.45	60.55	34.90
1000		-15.07	-8.49	-5.33	-2.81	15.27	8.74	5.60	3.09	100.00	98.30	87.45	59.65
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.26	-4.53	-2.72	-1.29	9.90	5.03	3.16	1.67	85.45	62.70	46.55	26.10
60		-8.96	-4.39	-2.57	-1.26	9.29	4.64	2.79	1.47	98.25	87.00	68.95	40.75
100		-8.79	-4.30	-2.53	-1.24	8.98	4.46	2.68	1.37	99.85	97.45	86.60	60.20
200		-8.73	-4.25	-2.51	-1.24	8.83	4.33	2.58	1.30	100.00	100.00	98.95	86.45
500		-8.66	-4.25	-2.51	-1.25	8.71	4.28	2.52	1.26	100.00	100.00	100.00	100.00
1000		-8.69	-4.25	-2.51	-1.24	8.72	4.26	2.52	1.24	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.02	0.11	0.09	-0.02	4.14	2.89	2.17	1.53	7.10	6.60	5.70	6.15
60		-0.01	0.10	0.03	-0.01	2.84	1.98	1.50	1.07	7.15	5.95	5.95	5.65
100		0.04	0.10	0.07	0.01	2.18	1.54	1.15	0.81	6.55	6.10	5.20	5.50
200		0.04	0.09	0.06	0.03	1.52	1.07	0.81	0.58	6.00	5.85	5.30	5.65
500		0.04	0.09	0.06	0.04	0.98	0.69	0.52	0.35	5.75	6.35	5.00	5.65
1000		0.02	0.06	0.05	0.03	0.70	0.49	0.37	0.26	5.60	6.25	5.25	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		5.95	2.07	0.87	0.10	46.74	17.26	12.12	8.24	5.20	6.15	5.50	5.15
60		2.91	1.53	0.49	0.01	19.49	11.48	8.30	5.74	4.80	4.65	4.80	5.20
100		2.77	1.37	0.69	0.12	14.84	8.92	6.45	4.40	5.00	4.50	5.30	5.10
200		2.17	1.32	0.61	0.14	10.17	6.23	4.47	3.11	5.35	5.40	4.85	5.65
500		2.14	1.17	0.59	0.12	6.70	4.13	2.94	1.91	6.00	5.25	4.55	5.65
1000		1.79	0.99	0.48	0.10	4.82	2.98	2.12	1.40	7.15	6.60	5.00	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.10	0.14	0.04	0.06	4.94	2.74	1.86	1.16	11.05	8.30	7.55	6.50
60		0.03	0.18	0.11	0.04	3.48	1.93	1.30	0.82	10.60	7.40	7.00	6.40
100		0.16	0.18	0.13	0.05	2.66	1.48	1.03	0.62	10.10	7.30	6.90	5.15
200		0.14	0.23	0.13	0.04	1.90	1.05	0.71	0.44	10.30	8.05	6.60	5.50
500		0.22	0.19	0.11	0.03	1.18	0.67	0.45	0.28	10.25	8.75	7.50	5.65
1000		0.16	0.19	0.09	0.04	0.86	0.50	0.32	0.20	10.50	10.40	9.05	6.05
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.21	0.13	0.07	-0.04	4.50	2.96	2.20	1.54	6.45	6.20	5.15	5.85
60		0.22	0.12	0.00	-0.04	3.07	2.03	1.52	1.08	5.70	5.30	5.70	5.65
100		0.28	0.13	0.05	-0.01	2.40	1.59	1.16	0.82	5.50	5.70	5.10	5.05
200		0.27	0.12	0.04	0.00	1.70	1.10	0.82	0.58	5.85	5.00	4.60	5.30
500		0.29	0.13	0.05	0.01	1.10	0.71	0.53	0.35	6.60	5.15	4.50	5.35
1000		0.27	0.09	0.04	0.00	0.81	0.51	0.38	0.26	7.20	5.60	4.65	5.40

Notes: See the notes for Table A.19.1.

Figure A.46: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0$ (Experiment 19, unbalanced panel)

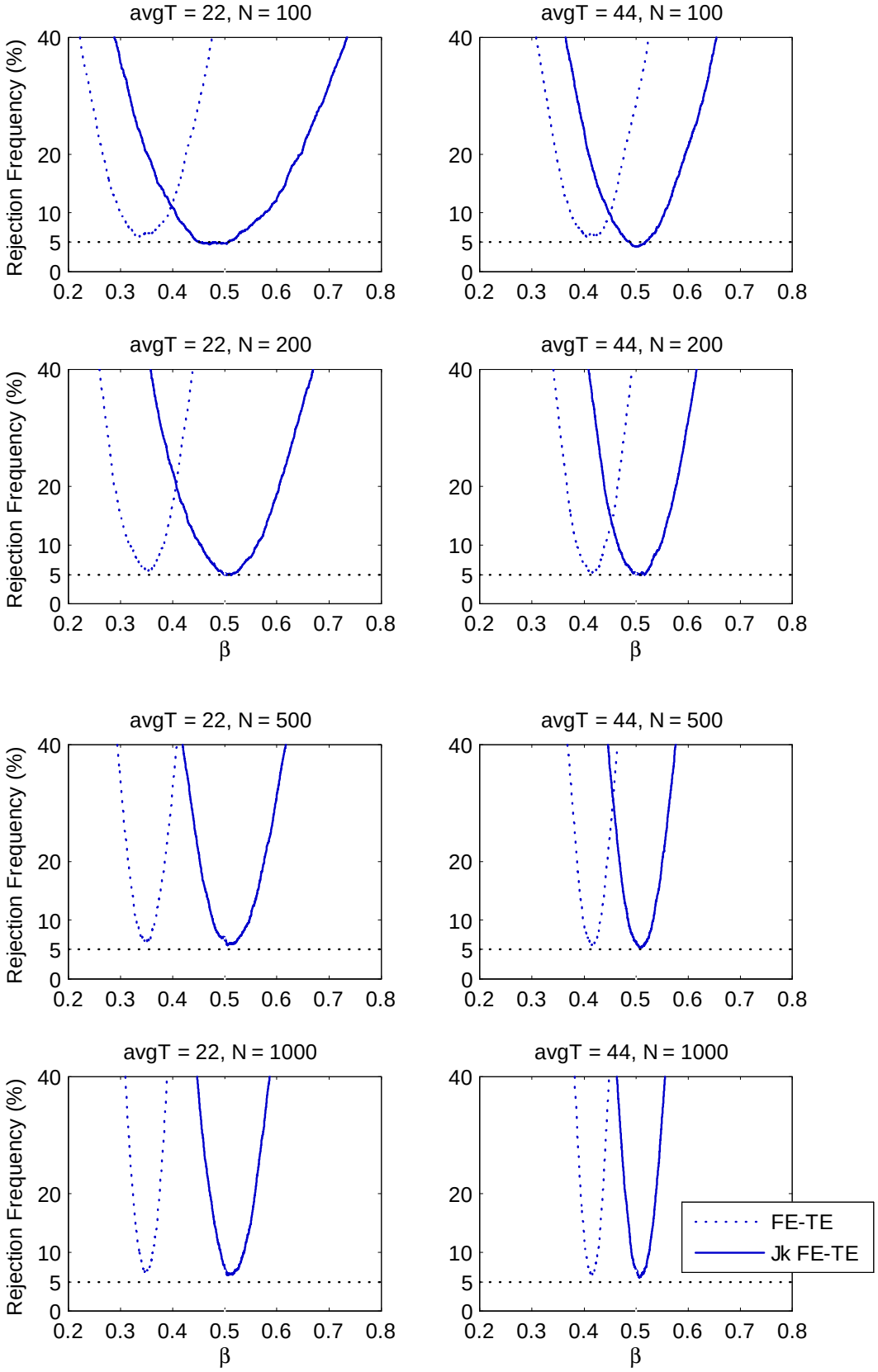

Table A.47.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-16.48	-9.29	-5.94	-3.24	21.51	14.67	10.89	7.51	27.95	16.60	12.10	7.35
60		-16.35	-9.17	-5.95	-3.19	18.94	12.03	8.68	5.75	45.05	24.65	15.65	10.85
100		-16.09	-9.08	-5.72	-3.05	17.68	10.93	7.54	4.78	62.80	34.25	21.85	13.75
200		-16.03	-9.03	-5.75	-3.01	16.83	9.97	6.70	3.99	87.75	58.10	38.10	22.20
500		-15.96	-9.03	-5.71	-3.00	16.31	9.44	6.13	3.41	99.85	92.90	74.35	46.05
1000		-16.07	-9.15	-5.76	-3.03	16.25	9.35	5.98	3.25	100.00	99.85	95.75	74.65
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.32	-4.56	-2.74	-1.28	9.92	5.04	3.16	1.66	85.30	62.45	46.00	24.40
60		-9.08	-4.45	-2.60	-1.26	9.40	4.70	2.83	1.47	98.45	87.45	68.80	41.10
100		-8.93	-4.38	-2.58	-1.25	9.12	4.53	2.72	1.38	99.85	97.60	87.35	60.70
200		-8.88	-4.33	-2.55	-1.25	8.98	4.40	2.62	1.32	100.00	100.00	99.20	87.45
500		-8.82	-4.33	-2.55	-1.26	8.86	4.36	2.57	1.28	100.00	100.00	100.00	99.80
1000		-8.84	-4.32	-2.55	-1.25	8.87	4.34	2.56	1.26	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.22	-0.02	0.01	-0.05	4.03	2.82	2.12	1.50	6.20	6.20	5.05	5.10
60		-0.24	-0.02	-0.05	-0.05	2.81	1.97	1.49	1.06	6.10	6.05	5.55	5.80
100		-0.20	-0.03	-0.01	-0.02	2.16	1.52	1.14	0.81	5.85	6.20	5.20	5.15
200		-0.19	-0.04	-0.02	-0.01	1.53	1.07	0.81	0.58	6.00	5.70	5.25	5.50
500		-0.19	-0.03	-0.01	-0.01	0.99	0.68	0.52	0.35	6.85	5.55	5.10	4.75
1000		-0.22	-0.07	-0.03	-0.02	0.72	0.49	0.37	0.26	7.80	6.00	5.90	6.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		3.69	1.59	0.64	0.06	32.04	15.61	10.93	7.37	5.00	5.25	4.50	4.75
60		2.11	1.33	0.43	0.00	17.90	10.58	7.56	5.22	5.05	4.80	4.35	5.10
100		2.05	1.15	0.63	0.11	13.71	8.21	5.91	4.01	5.75	4.50	4.90	5.20
200		1.55	1.18	0.58	0.14	9.42	5.78	4.11	2.84	5.60	5.75	4.60	5.30
500		1.56	1.05	0.56	0.13	6.13	3.82	2.69	1.74	6.60	6.40	5.85	4.55
1000		1.25	0.89	0.46	0.11	4.37	2.75	1.94	1.27	7.05	7.15	6.55	5.75
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.13	0.13	0.03	0.07	4.87	2.69	1.84	1.15	10.05	6.95	6.70	5.70
60		0.00	0.18	0.12	0.06	3.48	1.94	1.31	0.82	9.75	7.30	6.35	6.40
100		0.12	0.17	0.13	0.05	2.70	1.50	1.04	0.62	10.60	8.20	7.35	5.40
200		0.10	0.23	0.14	0.04	1.93	1.07	0.73	0.44	10.40	7.90	6.90	5.45
500		0.16	0.18	0.12	0.04	1.18	0.67	0.45	0.28	8.45	8.50	6.45	5.70
1000		0.11	0.19	0.11	0.04	0.85	0.51	0.33	0.20	10.55	10.05	7.95	5.50
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.12	0.13	0.07	-0.03	4.37	2.90	2.15	1.51	5.70	5.25	4.80	5.05
60		0.15	0.12	0.01	-0.03	3.04	2.01	1.51	1.07	5.35	5.20	5.35	5.50
100		0.19	0.11	0.05	-0.01	2.37	1.58	1.16	0.82	5.35	5.40	4.65	4.90
200		0.18	0.10	0.04	0.00	1.69	1.10	0.82	0.58	5.65	5.00	4.45	5.25
500		0.20	0.11	0.05	0.01	1.07	0.71	0.53	0.35	5.20	5.30	4.60	4.40
1000		0.18	0.08	0.04	0.00	0.79	0.51	0.38	0.26	7.15	5.75	5.40	6.00

Notes: See the notes for Table A.20.1.

Table A.47.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-16.63	-9.42	-6.01	-3.31	21.83	14.92	11.08	7.67	29.65	17.20	12.70	8.75
60		-16.47	-9.26	-6.00	-3.22	19.10	12.12	8.76	5.81	45.40	24.80	16.60	11.85
100		-16.12	-9.10	-5.75	-3.07	17.73	10.96	7.58	4.80	63.75	34.35	21.95	13.45
200		-16.05	-9.04	-5.76	-3.02	16.86	9.98	6.72	4.00	88.05	58.20	38.15	21.90
500		-15.98	-9.04	-5.72	-3.01	16.34	9.45	6.15	3.42	99.75	93.00	75.50	45.50
1000		-16.09	-9.16	-5.77	-3.04	16.28	9.36	6.00	3.26	100.00	99.70	96.40	74.80
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.43	-4.62	-2.77	-1.30	10.06	5.12	3.21	1.69	85.80	63.40	47.05	26.40
60		-9.13	-4.48	-2.61	-1.27	9.45	4.73	2.84	1.48	98.45	87.85	69.45	41.55
100		-8.96	-4.40	-2.58	-1.25	9.16	4.55	2.73	1.38	99.90	97.85	87.85	60.70
200		-8.90	-4.34	-2.56	-1.26	9.00	4.41	2.63	1.32	100.00	100.00	99.25	87.60
500		-8.84	-4.34	-2.56	-1.27	8.88	4.37	2.58	1.28	100.00	100.00	100.00	99.95
1000		-8.86	-4.33	-2.56	-1.26	8.89	4.35	2.57	1.26	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.23	-0.03	0.01	-0.06	4.14	2.88	2.17	1.53	7.05	6.80	5.80	5.90
60		-0.25	-0.03	-0.05	-0.05	2.85	1.98	1.50	1.07	7.05	5.65	5.85	5.70
100		-0.20	-0.03	-0.01	-0.03	2.19	1.53	1.15	0.81	6.00	6.25	5.70	5.40
200		-0.19	-0.03	-0.02	-0.01	1.53	1.07	0.81	0.58	6.05	5.65	5.25	5.60
500		-0.19	-0.02	-0.01	-0.01	0.99	0.68	0.52	0.35	6.35	5.55	5.20	5.55
1000		-0.22	-0.05	-0.03	-0.02	0.72	0.49	0.37	0.26	6.95	5.45	5.30	5.60
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		4.21	1.60	0.65	0.03	40.14	15.96	11.16	7.56	5.10	5.75	5.70	5.40
60		1.98	1.29	0.41	-0.01	18.10	10.62	7.65	5.28	5.45	4.90	4.90	5.25
100		2.00	1.16	0.63	0.11	13.77	8.24	5.95	4.03	5.70	4.85	5.25	5.10
200		1.55	1.19	0.58	0.14	9.45	5.79	4.13	2.85	5.75	5.60	4.90	5.40
500		1.56	1.06	0.56	0.13	6.16	3.83	2.71	1.75	6.15	5.90	5.10	5.55
1000		1.25	0.90	0.46	0.11	4.40	2.76	1.96	1.28	7.15	6.70	5.40	5.55
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.13	0.14	0.04	0.07	5.01	2.78	1.88	1.18	11.15	8.10	8.25	6.70
60		-0.01	0.19	0.13	0.06	3.52	1.97	1.32	0.83	11.05	7.75	7.10	6.80
100		0.11	0.17	0.13	0.06	2.72	1.51	1.04	0.63	10.55	8.20	7.80	5.30
200		0.10	0.23	0.14	0.04	1.94	1.07	0.73	0.44	10.40	8.20	7.10	5.65
500		0.16	0.18	0.12	0.04	1.19	0.67	0.45	0.28	10.30	9.00	8.00	5.90
1000		0.11	0.19	0.11	0.04	0.86	0.51	0.33	0.20	10.70	10.75	9.10	6.10
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.11	0.12	0.07	-0.04	4.51	2.96	2.20	1.54	6.20	6.45	5.20	5.65
60		0.13	0.11	0.00	-0.04	3.08	2.03	1.52	1.08	5.60	5.40	5.75	5.85
100		0.19	0.11	0.04	-0.01	2.39	1.58	1.16	0.82	5.55	5.60	5.20	5.00
200		0.18	0.10	0.04	0.00	1.69	1.10	0.82	0.58	5.50	5.10	4.40	5.15
500		0.20	0.11	0.05	0.01	1.07	0.71	0.53	0.35	6.05	5.25	4.65	5.10
1000		0.18	0.08	0.04	0.00	0.79	0.51	0.38	0.26	6.50	5.75	4.80	5.10

Notes: See the notes for Table A.20.1.

Figure A.47: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.2$ (Experiment 20, unbalanced panel)

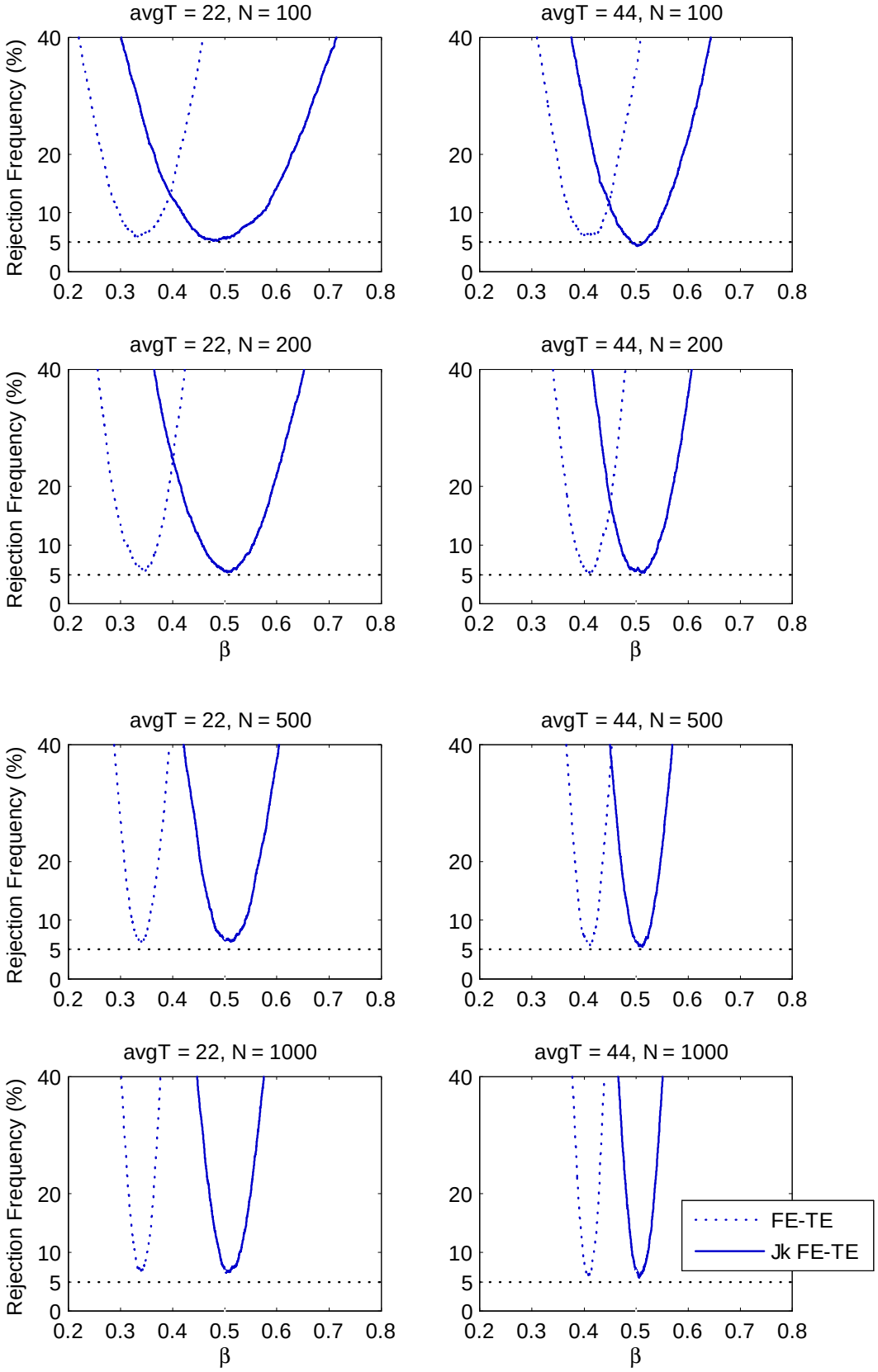

Table A.48.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-17.75	-10.13	-6.48	-3.51	21.97	14.56	10.57	7.09	32.55	18.75	13.05	8.10
60		-17.43	-9.88	-6.41	-3.42	19.61	12.21	8.62	5.54	54.60	29.70	18.80	13.15
100		-17.10	-9.76	-6.16	-3.27	18.42	11.25	7.62	4.68	74.15	43.25	27.70	16.30
200		-16.98	-9.66	-6.15	-3.23	17.65	10.42	6.92	4.00	95.00	71.65	49.90	28.30
500		-16.89	-9.65	-6.12	-3.21	17.18	9.98	6.45	3.53	99.95	97.45	86.75	58.60
1000		-17.00	-9.75	-6.16	-3.23	17.14	9.91	6.33	3.40	100.00	100.00	98.85	87.35
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.42	-4.61	-2.77	-1.29	10.06	5.14	3.24	1.71	82.60	58.15	41.70	22.40
60		-9.17	-4.50	-2.62	-1.26	9.52	4.78	2.88	1.50	97.45	83.65	63.30	37.00
100		-9.03	-4.43	-2.60	-1.26	9.24	4.60	2.76	1.40	99.85	96.55	83.90	55.75
200		-8.98	-4.37	-2.57	-1.26	9.09	4.46	2.65	1.33	100.00	100.00	98.10	83.95
500		-8.92	-4.37	-2.57	-1.27	8.96	4.41	2.60	1.30	100.00	100.00	100.00	99.70
1000		-8.94	-4.36	-2.57	-1.26	8.96	4.38	2.59	1.27	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.47	-0.15	-0.07	-0.09	4.04	2.82	2.12	1.50	6.55	6.35	5.45	4.85
60		-0.48	-0.15	-0.13	-0.09	2.84	1.97	1.49	1.06	6.40	5.95	5.55	5.85
100		-0.43	-0.16	-0.09	-0.06	2.19	1.53	1.14	0.81	6.15	6.00	5.60	5.30
200		-0.42	-0.16	-0.10	-0.05	1.57	1.08	0.81	0.58	7.20	5.60	5.60	5.80
500		-0.43	-0.16	-0.09	-0.05	1.06	0.70	0.52	0.36	9.10	6.20	5.60	5.35
1000		-0.45	-0.19	-0.10	-0.06	0.82	0.52	0.38	0.27	11.95	7.90	7.10	6.30
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		2.41	1.20	0.46	0.02	29.18	14.44	10.01	6.70	4.95	5.10	4.60	4.85
60		1.29	1.12	0.37	-0.01	16.70	9.76	6.92	4.76	5.30	4.95	4.65	4.95
100		1.34	0.96	0.58	0.10	12.74	7.56	5.41	3.65	6.40	5.05	5.30	5.35
200		0.97	1.06	0.56	0.14	8.77	5.35	3.77	2.58	6.10	6.25	5.05	5.45
500		1.01	0.93	0.53	0.14	5.63	3.52	2.47	1.59	6.90	6.65	5.65	4.70
1000		0.73	0.80	0.44	0.13	4.00	2.53	1.78	1.15	7.40	7.25	6.55	5.75
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.13	0.14	0.04	0.09	5.03	2.82	1.94	1.22	10.20	7.40	6.90	6.30
60		0.00	0.19	0.14	0.07	3.59	2.04	1.39	0.88	10.30	7.60	6.80	6.60
100		0.10	0.18	0.14	0.06	2.81	1.58	1.09	0.66	10.50	8.95	7.80	5.95
200		0.09	0.24	0.15	0.05	2.00	1.12	0.77	0.47	10.50	7.70	6.45	5.65
500		0.14	0.19	0.13	0.04	1.21	0.70	0.48	0.30	8.30	7.95	6.20	6.00
1000		0.10	0.21	0.12	0.05	0.88	0.53	0.35	0.21	10.20	10.50	7.60	6.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.02	0.10	0.06	-0.03	4.38	2.90	2.15	1.50	5.85	5.45	4.75	4.95
60		0.06	0.10	0.00	-0.03	3.04	2.01	1.51	1.07	5.05	5.25	5.55	5.60
100		0.10	0.09	0.04	-0.01	2.37	1.57	1.16	0.82	5.30	5.30	4.85	4.90
200		0.09	0.08	0.03	0.00	1.68	1.10	0.82	0.58	5.60	4.75	4.80	5.00
500		0.11	0.09	0.04	0.01	1.06	0.71	0.53	0.35	4.95	5.10	4.45	4.60
1000		0.09	0.05	0.03	0.00	0.77	0.50	0.38	0.26	6.90	5.50	5.30	5.95

Notes: See the notes for Table A.21.1.

Table A.48.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-17.92	-10.27	-6.57	-3.58	22.27	14.80	10.76	7.24	33.80	18.95	13.80	8.95
60		-17.55	-9.97	-6.46	-3.45	19.75	12.30	8.70	5.60	55.10	30.05	19.35	14.05
100		-17.14	-9.78	-6.19	-3.29	18.48	11.28	7.66	4.70	74.00	43.95	28.00	16.75
200		-17.00	-9.67	-6.16	-3.23	17.67	10.43	6.93	4.01	95.15	71.50	49.70	28.10
500		-16.91	-9.66	-6.13	-3.21	17.10	9.99	6.46	3.54	100.00	98.30	87.65	58.60
1000		-17.02	-9.76	-6.16	-3.23	17.16	9.92	6.34	3.41	100.00	100.00	99.45	88.15
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.53	-4.67	-2.80	-1.30	10.20	5.22	3.28	1.74	83.00	59.30	42.50	23.85
60		-9.22	-4.52	-2.63	-1.27	9.57	4.81	2.89	1.51	97.75	84.20	64.00	37.40
100		-9.07	-4.45	-2.61	-1.26	9.27	4.62	2.77	1.41	99.85	96.45	84.30	55.90
200		-9.00	-4.38	-2.58	-1.27	9.11	4.47	2.66	1.34	100.00	100.00	98.40	84.20
500		-8.94	-4.38	-2.58	-1.28	8.98	4.42	2.61	1.31	100.00	100.00	100.00	99.70
1000		-8.96	-4.37	-2.58	-1.27	8.98	4.39	2.60	1.28	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.48	-0.16	-0.07	-0.10	4.15	2.88	2.16	1.53	7.35	7.15	6.00	5.80
60		-0.50	-0.16	-0.13	-0.09	2.87	1.98	1.51	1.08	7.55	5.95	6.20	6.00
100		-0.43	-0.16	-0.09	-0.07	2.21	1.53	1.15	0.81	6.40	6.30	5.90	5.10
200		-0.42	-0.16	-0.10	-0.05	1.57	1.08	0.82	0.58	6.90	5.45	5.35	5.65
500		-0.43	-0.16	-0.09	-0.05	1.06	0.70	0.53	0.36	8.45	5.75	5.60	5.90
1000		-0.45	-0.19	-0.10	-0.06	0.82	0.52	0.39	0.27	11.00	6.80	6.15	6.00
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		2.83	1.20	0.47	-0.01	34.79	14.77	10.22	6.87	5.00	5.90	5.55	5.30
60		1.16	1.08	0.35	-0.02	16.91	9.80	7.00	4.81	5.85	5.05	5.00	5.25
100		1.29	0.96	0.58	0.10	12.80	7.58	5.45	3.66	6.35	5.35	5.35	5.20
200		0.97	1.06	0.56	0.14	8.80	5.35	3.79	2.59	6.20	6.00	4.95	5.40
500		1.01	0.93	0.53	0.14	5.66	3.52	2.49	1.60	6.45	6.05	5.30	5.40
1000		0.73	0.80	0.44	0.13	4.03	2.53	1.80	1.16	6.80	6.90	6.30	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.12	0.15	0.04	0.09	5.18	2.90	1.98	1.26	11.55	8.70	8.05	6.75
60		-0.01	0.20	0.14	0.07	3.63	2.08	1.40	0.88	11.20	8.50	7.25	7.35
100		0.08	0.17	0.14	0.07	2.83	1.59	1.09	0.67	11.15	9.10	7.55	6.20
200		0.08	0.23	0.15	0.05	2.01	1.13	0.77	0.47	10.65	8.20	6.75	5.55
500		0.15	0.18	0.13	0.04	1.22	0.71	0.48	0.30	10.60	8.95	7.75	5.80
1000		0.11	0.20	0.12	0.05	0.89	0.54	0.35	0.21	10.85	10.40	9.00	6.50
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.01	0.09	0.06	-0.04	4.52	2.96	2.20	1.54	6.40	6.35	5.30	5.45
60		0.03	0.09	-0.01	-0.04	3.08	2.02	1.52	1.08	5.80	5.50	5.70	5.60
100		0.10	0.09	0.04	-0.01	2.39	1.58	1.16	0.82	5.65	5.95	5.30	5.20
200		0.09	0.08	0.04	0.00	1.69	1.10	0.82	0.58	5.50	4.85	4.60	5.00
500		0.11	0.09	0.05	0.01	1.07	0.71	0.53	0.35	5.35	5.20	4.90	5.00
1000		0.09	0.05	0.04	0.00	0.78	0.50	0.38	0.26	5.70	5.60	4.95	5.05

Notes: See the notes for Table A.21.1.

Figure A.48: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0$ and $\kappa_x = 0.4$ (Experiment 21, unbalanced panel)

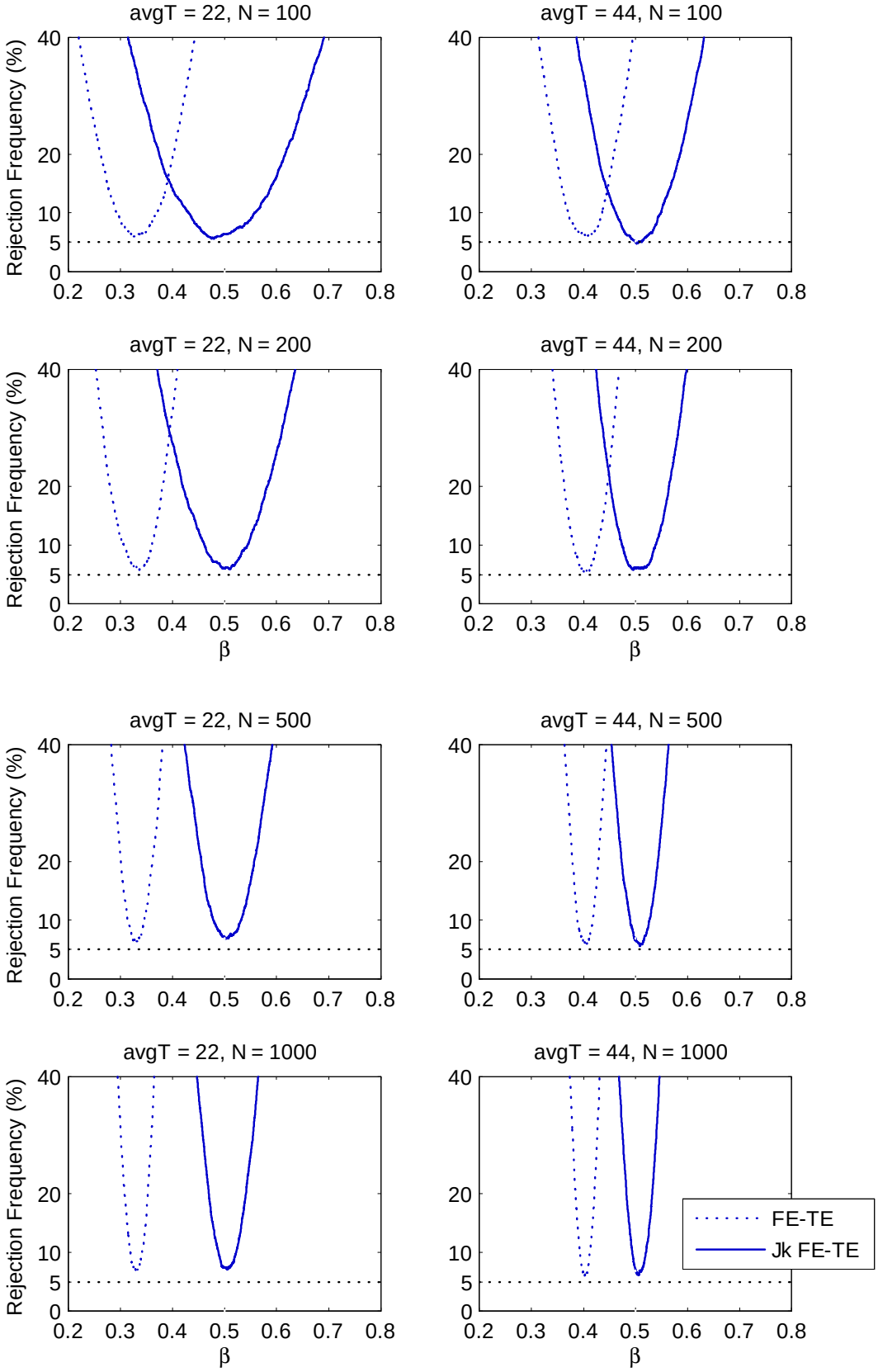

Table A.49.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-15.41	-8.59	-5.47	-3.02	21.31	14.98	11.31	7.97	25.85	15.60	11.10	7.45
60		-15.34	-8.49	-5.53	-2.97	18.41	11.96	8.82	5.99	37.80	20.30	13.15	10.05
100		-15.07	-8.40	-5.28	-2.82	16.98	10.67	7.51	4.90	52.90	29.00	18.10	11.30
200		-15.01	-8.36	-5.32	-2.78	15.99	9.53	6.50	3.98	79.15	46.95	30.30	17.75
500		-14.93	-8.35	-5.26	-2.77	15.36	8.87	5.79	3.28	98.95	82.05	60.10	34.20
1000		-15.05	-8.48	-5.32	-2.80	15.26	8.74	5.59	3.08	100.00	98.05	87.85	60.60
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.45	-4.61	-2.77	-1.31	10.05	5.09	3.19	1.68	86.40	63.65	46.50	24.55
60		-9.07	-4.43	-2.60	-1.27	9.38	4.68	2.82	1.47	98.30	87.55	69.90	41.90
100		-8.85	-4.33	-2.55	-1.25	9.04	4.49	2.69	1.37	99.85	97.65	86.90	61.10
200		-8.76	-4.26	-2.52	-1.24	8.86	4.34	2.59	1.30	100.00	100.00	98.95	86.55
500		-8.67	-4.25	-2.50	-1.24	8.71	4.28	2.53	1.27	100.00	100.00	100.00	99.80
1000		-8.69	-4.24	-2.50	-1.23	8.71	4.26	2.52	1.25	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.03	0.11	0.09	-0.01	4.03	2.84	2.13	1.50	6.15	6.00	5.40	5.15
60		0.00	0.11	0.03	-0.01	2.80	1.97	1.49	1.06	6.45	5.85	5.60	5.65
100		0.04	0.10	0.07	0.02	2.16	1.53	1.14	0.81	6.15	5.80	4.85	5.35
200		0.04	0.09	0.06	0.03	1.51	1.07	0.81	0.58	5.60	6.00	5.05	5.40
500		0.04	0.09	0.06	0.03	0.97	0.69	0.52	0.35	6.15	5.30	5.55	4.75
1000		0.02	0.06	0.05	0.02	0.69	0.49	0.37	0.26	6.20	6.60	6.05	5.90
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		5.62	2.09	0.91	0.14	40.38	16.99	11.88	8.06	5.00	5.20	4.60	4.70
60		2.95	1.62	0.51	0.03	19.34	11.48	8.23	5.69	4.70	4.45	4.30	5.15
100		2.77	1.37	0.71	0.13	14.74	8.92	6.42	4.38	4.70	4.40	4.85	5.05
200		2.20	1.31	0.61	0.14	10.20	6.23	4.45	3.09	5.35	5.35	4.80	5.40
500		2.14	1.18	0.59	0.13	6.67	4.13	2.92	1.89	6.85	6.40	5.45	4.50
1000		1.80	1.00	0.49	0.10	4.80	2.98	2.10	1.38	7.30	7.00	6.20	5.50
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.10	0.15	0.04	0.06	4.87	2.69	1.83	1.14	10.00	7.35	6.70	5.70
60		0.01	0.19	0.11	0.05	3.46	1.91	1.29	0.81	10.20	6.95	6.15	5.70
100		0.16	0.18	0.13	0.05	2.65	1.47	1.03	0.62	10.00	7.30	6.85	4.85
200		0.14	0.23	0.14	0.04	1.90	1.05	0.71	0.43	10.25	7.80	6.50	5.50
500		0.21	0.19	0.12	0.03	1.17	0.67	0.45	0.28	8.05	8.35	6.90	5.35
1000		0.15	0.19	0.10	0.04	0.85	0.50	0.32	0.20	10.25	10.25	7.05	5.15
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.23	0.14	0.08	-0.04	4.39	2.91	2.15	1.51	5.55	5.50	4.60	5.00
60		0.24	0.14	0.01	-0.03	3.04	2.02	1.51	1.07	5.40	5.30	5.05	5.60
100		0.28	0.13	0.05	-0.01	2.38	1.58	1.16	0.82	5.65	5.65	4.60	4.85
200		0.27	0.12	0.04	0.00	1.70	1.10	0.82	0.58	5.60	4.95	4.60	5.25
500		0.28	0.13	0.05	0.01	1.09	0.71	0.53	0.35	5.20	5.25	4.75	4.35
1000		0.26	0.09	0.04	0.00	0.80	0.51	0.38	0.26	8.05	5.95	5.80	5.80

Notes: See the notes for Table A.22.1.

Table A.49.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-15.18	-8.44	-5.38	-2.99	21.48	15.14	11.46	8.13	26.40	16.10	11.25	8.30
60		-15.25	-8.45	-5.49	-2.95	18.42	11.96	8.85	6.04	37.35	20.95	13.15	10.40
100		-14.98	-8.34	-5.26	-2.81	16.94	10.64	7.52	4.91	52.85	28.25	17.90	11.55
200		-14.98	-8.33	-5.30	-2.78	15.96	9.51	6.49	3.99	79.20	46.60	30.45	18.15
500		-14.94	-8.35	-5.26	-2.78	15.36	8.86	5.79	3.29	99.00	82.45	60.55	34.90
1000		-15.07	-8.49	-5.33	-2.81	15.27	8.74	5.60	3.09	100.00	98.30	87.45	59.65
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.26	-4.53	-2.72	-1.29	9.90	5.03	3.16	1.67	85.45	62.70	46.55	26.10
60		-8.96	-4.39	-2.57	-1.26	9.29	4.64	2.79	1.47	98.25	87.00	68.95	40.75
100		-8.79	-4.30	-2.53	-1.24	8.98	4.46	2.68	1.37	99.85	97.45	86.60	60.20
200		-8.73	-4.25	-2.51	-1.24	8.83	4.33	2.58	1.30	100.00	100.00	98.95	86.45
500		-8.66	-4.25	-2.51	-1.25	8.71	4.28	2.52	1.26	100.00	100.00	100.00	100.00
1000		-8.69	-4.25	-2.51	-1.24	8.72	4.26	2.52	1.24	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.02	0.11	0.09	-0.02	4.14	2.89	2.17	1.53	7.10	6.60	5.70	6.15
60		-0.01	0.10	0.03	-0.01	2.84	1.98	1.50	1.07	7.15	5.95	5.95	5.65
100		0.04	0.10	0.07	0.01	2.18	1.54	1.15	0.81	6.55	6.10	5.20	5.50
200		0.04	0.09	0.06	0.03	1.52	1.07	0.81	0.58	6.00	5.85	5.30	5.65
500		0.04	0.09	0.06	0.04	0.98	0.69	0.52	0.35	5.75	6.35	5.00	5.65
1000		0.02	0.06	0.05	0.03	0.70	0.49	0.37	0.26	5.60	6.25	5.25	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		5.95	2.07	0.87	0.10	46.74	17.26	12.12	8.24	5.20	6.15	5.50	5.15
60		2.91	1.53	0.49	0.01	19.49	11.48	8.30	5.74	4.80	4.65	4.80	5.20
100		2.77	1.37	0.69	0.12	14.84	8.92	6.45	4.40	5.00	4.50	5.30	5.10
200		2.17	1.32	0.61	0.14	10.17	6.23	4.47	3.11	5.35	5.40	4.85	5.65
500		2.14	1.17	0.59	0.12	6.70	4.13	2.94	1.91	6.00	5.25	4.55	5.65
1000		1.79	0.99	0.48	0.10	4.82	2.98	2.12	1.40	7.15	6.60	5.00	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.10	0.14	0.04	0.06	4.94	2.74	1.86	1.16	11.05	8.30	7.55	6.50
60		0.03	0.18	0.11	0.04	3.48	1.93	1.30	0.82	10.60	7.40	7.00	6.40
100		0.16	0.18	0.13	0.05	2.66	1.48	1.03	0.62	10.10	7.30	6.90	5.15
200		0.14	0.23	0.13	0.04	1.90	1.05	0.71	0.44	10.30	8.05	6.60	5.50
500		0.22	0.19	0.11	0.03	1.18	0.67	0.45	0.28	10.25	8.75	7.50	5.65
1000		0.16	0.19	0.09	0.04	0.86	0.50	0.32	0.20	10.50	10.40	9.05	6.05
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.21	0.13	0.07	-0.04	4.50	2.96	2.20	1.54	6.45	6.20	5.15	5.85
60		0.22	0.12	0.00	-0.04	3.07	2.03	1.52	1.08	5.70	5.30	5.70	5.65
100		0.28	0.13	0.05	-0.01	2.40	1.59	1.16	0.82	5.50	5.70	5.10	5.05
200		0.27	0.12	0.04	0.00	1.70	1.10	0.82	0.58	5.85	5.00	4.60	5.30
500		0.29	0.13	0.05	0.01	1.10	0.71	0.53	0.35	6.60	5.15	4.50	5.35
1000		0.27	0.09	0.04	0.00	0.81	0.51	0.38	0.26	7.20	5.60	4.65	5.40

Notes: See the notes for Table A.22.1.

Figure A.49: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0$ (Experiment 22, unbalanced panel)

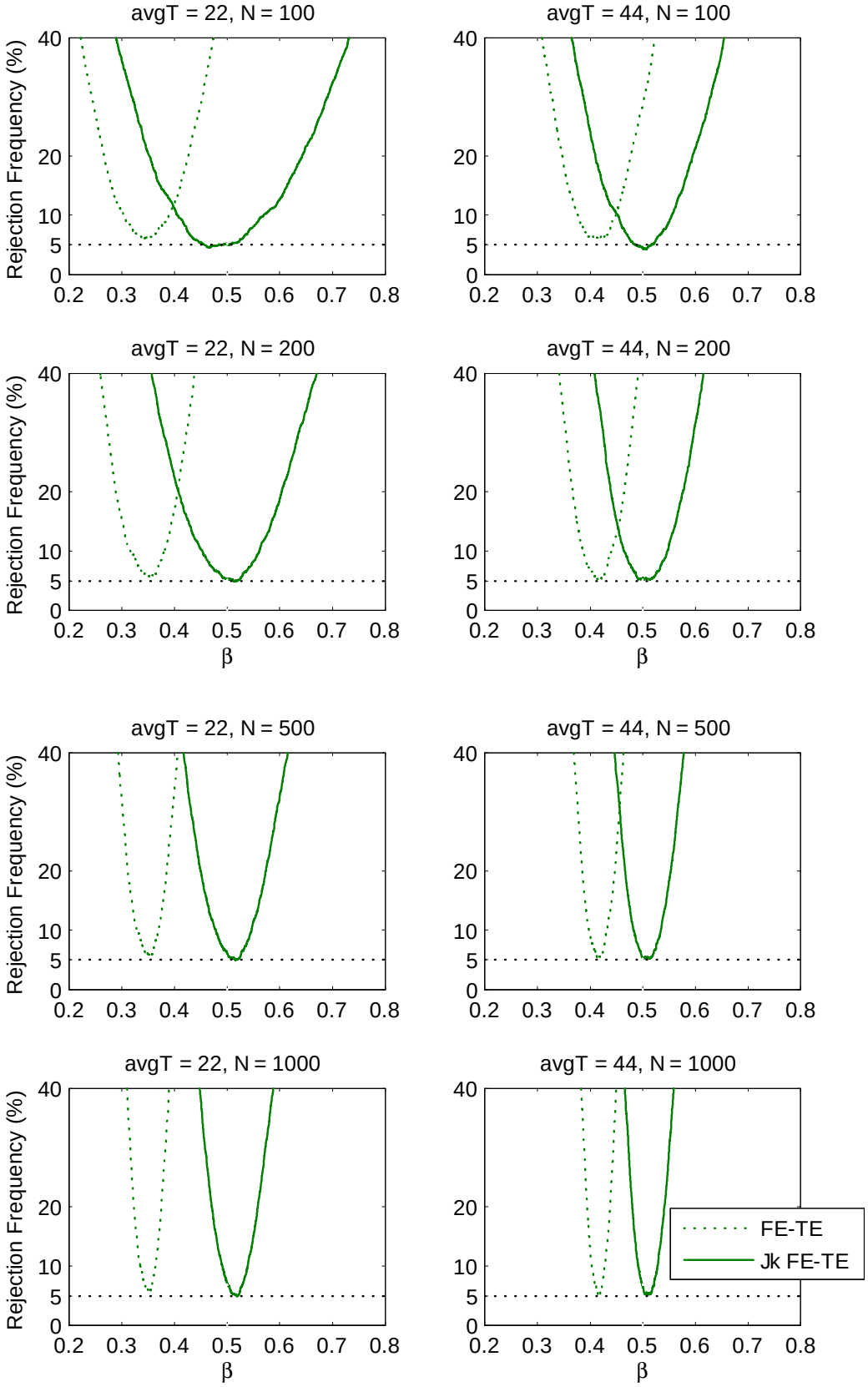

Table A.50.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-16.86	-9.56	-6.11	-3.34	21.73	14.81	10.96	7.54	29.40	17.10	12.40	7.90
60		-16.57	-9.30	-6.05	-3.24	19.10	12.13	8.74	5.77	46.00	25.15	16.00	11.25
100		-16.21	-9.16	-5.77	-3.08	17.78	11.00	7.58	4.80	63.65	34.70	22.00	13.85
200		-16.08	-9.07	-5.78	-3.03	16.89	10.01	6.73	4.00	88.05	58.70	38.25	22.25
500		-15.98	-9.05	-5.72	-3.01	16.33	9.46	6.14	3.41	99.90	93.00	74.40	46.15
1000		-16.08	-9.16	-5.77	-3.03	16.26	9.36	5.98	3.25	100.00	99.85	95.75	74.75
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.62	-4.71	-2.83	-1.33	10.22	5.18	3.24	1.69	86.55	64.45	47.65	25.80
60		-9.23	-4.53	-2.65	-1.28	9.55	4.77	2.87	1.49	98.65	88.25	70.35	41.90
100		-9.03	-4.43	-2.60	-1.27	9.21	4.58	2.74	1.39	99.90	97.75	88.00	61.50
200		-8.93	-4.35	-2.57	-1.26	9.03	4.43	2.64	1.32	100.00	100.00	99.25	87.60
500		-8.84	-4.34	-2.55	-1.26	8.88	4.37	2.58	1.29	100.00	100.00	100.00	99.80
1000		-8.85	-4.32	-2.55	-1.25	8.87	4.34	2.57	1.27	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.23	-0.03	0.01	-0.05	4.04	2.83	2.12	1.50	6.25	6.35	5.05	5.05
60		-0.25	-0.02	-0.05	-0.05	2.81	1.97	1.49	1.06	6.25	6.10	5.65	5.70
100		-0.20	-0.03	-0.01	-0.02	2.17	1.53	1.14	0.81	5.80	5.95	5.20	5.20
200		-0.19	-0.04	-0.02	-0.01	1.53	1.07	0.81	0.58	5.90	5.65	5.20	5.45
500		-0.19	-0.03	-0.01	-0.01	0.99	0.68	0.52	0.35	7.05	5.55	5.20	4.70
1000		-0.22	-0.07	-0.03	-0.02	0.72	0.49	0.37	0.26	7.75	5.95	5.90	6.00
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		3.86	1.62	0.69	0.07	33.86	15.70	10.94	7.39	5.15	5.35	4.55	4.75
60		2.00	1.37	0.43	0.01	17.94	10.61	7.58	5.23	5.05	4.85	4.65	5.20
100		2.00	1.15	0.65	0.11	13.68	8.24	5.92	4.02	5.55	4.70	4.90	5.20
200		1.57	1.17	0.59	0.14	9.47	5.79	4.11	2.84	5.80	5.75	4.70	5.25
500		1.56	1.05	0.56	0.13	6.12	3.82	2.69	1.74	6.80	6.45	5.75	4.50
1000		1.25	0.89	0.46	0.11	4.37	2.75	1.94	1.27	7.05	7.00	6.45	5.70
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.14	0.15	0.04	0.08	4.93	2.72	1.85	1.15	10.30	7.15	7.20	5.90
60		-0.03	0.19	0.12	0.06	3.50	1.95	1.32	0.82	10.90	7.55	6.90	6.45
100		0.11	0.17	0.14	0.05	2.70	1.50	1.04	0.62	10.50	8.35	7.65	5.50
200		0.10	0.23	0.14	0.04	1.93	1.07	0.73	0.44	10.45	7.95	7.25	5.55
500		0.16	0.18	0.12	0.04	1.18	0.67	0.45	0.28	8.55	8.10	6.45	5.85
1000		0.11	0.19	0.11	0.04	0.85	0.51	0.33	0.20	10.45	9.75	7.75	5.55
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.13	0.12	0.08	-0.03	4.40	2.91	2.15	1.51	5.70	5.40	4.85	4.95
60		0.15	0.12	0.01	-0.03	3.05	2.02	1.51	1.07	5.30	5.30	5.40	5.60
100		0.19	0.11	0.05	-0.01	2.38	1.58	1.16	0.82	5.55	5.35	4.75	5.05
200		0.19	0.10	0.04	0.00	1.69	1.10	0.82	0.58	5.45	4.90	4.60	5.10
500		0.20	0.11	0.05	0.01	1.07	0.71	0.53	0.35	5.05	5.35	4.60	4.30
1000		0.18	0.08	0.04	0.00	0.79	0.51	0.38	0.26	7.10	5.70	5.50	5.95

Notes: See the notes for Table A.23.1.

Table A.50.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-16.63	-9.42	-6.01	-3.31	21.83	14.92	11.08	7.67	29.65	17.20	12.70	8.75
60		-16.47	-9.26	-6.00	-3.22	19.10	12.12	8.76	5.81	45.40	24.80	16.60	11.85
100		-16.12	-9.10	-5.75	-3.07	17.73	10.96	7.58	4.80	63.75	34.35	21.95	13.45
200		-16.05	-9.04	-5.76	-3.02	16.86	9.98	6.72	4.00	88.05	58.20	38.15	21.90
500		-15.98	-9.04	-5.72	-3.01	16.34	9.45	6.15	3.42	99.75	93.00	75.50	45.50
1000		-16.09	-9.16	-5.77	-3.04	16.28	9.36	6.00	3.26	100.00	99.70	96.40	74.80
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.43	-4.62	-2.77	-1.30	10.06	5.12	3.21	1.69	85.80	63.40	47.05	26.40
60		-9.13	-4.48	-2.61	-1.27	9.45	4.73	2.84	1.48	98.45	87.85	69.45	41.55
100		-8.96	-4.40	-2.58	-1.25	9.16	4.55	2.73	1.38	99.90	97.85	87.85	60.70
200		-8.90	-4.34	-2.56	-1.26	9.00	4.41	2.63	1.32	100.00	100.00	99.25	87.60
500		-8.84	-4.34	-2.56	-1.27	8.88	4.37	2.58	1.28	100.00	100.00	100.00	99.95
1000		-8.86	-4.33	-2.56	-1.26	8.89	4.35	2.57	1.26	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.23	-0.03	0.01	-0.06	4.14	2.88	2.17	1.53	7.05	6.80	5.80	5.90
60		-0.25	-0.03	-0.05	-0.05	2.85	1.98	1.50	1.07	7.05	5.65	5.85	5.70
100		-0.20	-0.03	-0.01	-0.03	2.19	1.53	1.15	0.81	6.00	6.25	5.70	5.40
200		-0.19	-0.03	-0.02	-0.01	1.53	1.07	0.81	0.58	6.05	5.65	5.25	5.60
500		-0.19	-0.02	-0.01	-0.01	0.99	0.68	0.52	0.35	6.35	5.55	5.20	5.55
1000		-0.22	-0.05	-0.03	-0.02	0.72	0.49	0.37	0.26	6.95	5.45	5.30	5.60
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		4.21	1.60	0.65	0.03	40.14	15.96	11.16	7.56	5.10	5.75	5.70	5.40
60		1.98	1.29	0.41	-0.01	18.10	10.62	7.65	5.28	5.45	4.90	4.90	5.25
100		2.00	1.16	0.63	0.11	13.77	8.24	5.95	4.03	5.70	4.85	5.25	5.10
200		1.55	1.19	0.58	0.14	9.45	5.79	4.13	2.85	5.75	5.60	4.90	5.40
500		1.56	1.06	0.56	0.13	6.16	3.83	2.71	1.75	6.15	5.90	5.10	5.55
1000		1.25	0.90	0.46	0.11	4.40	2.76	1.96	1.28	7.15	6.70	5.40	5.55
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.13	0.14	0.04	0.07	5.01	2.78	1.88	1.18	11.15	8.10	8.25	6.70
60		-0.01	0.19	0.13	0.06	3.52	1.97	1.32	0.83	11.05	7.75	7.10	6.80
100		0.11	0.17	0.13	0.06	2.72	1.51	1.04	0.63	10.55	8.20	7.80	5.30
200		0.10	0.23	0.14	0.04	1.94	1.07	0.73	0.44	10.40	8.20	7.10	5.65
500		0.16	0.18	0.12	0.04	1.19	0.67	0.45	0.28	10.30	9.00	8.00	5.90
1000		0.11	0.19	0.11	0.04	0.86	0.51	0.33	0.20	10.70	10.75	9.10	6.10
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.11	0.12	0.07	-0.04	4.51	2.96	2.20	1.54	6.20	6.45	5.20	5.65
60		0.13	0.11	0.00	-0.04	3.08	2.03	1.52	1.08	5.60	5.40	5.75	5.85
100		0.19	0.11	0.04	-0.01	2.39	1.58	1.16	0.82	5.55	5.60	5.20	5.00
200		0.18	0.10	0.04	0.00	1.69	1.10	0.82	0.58	5.50	5.10	4.40	5.15
500		0.20	0.11	0.05	0.01	1.07	0.71	0.53	0.35	6.05	5.25	4.65	5.10
1000		0.18	0.08	0.04	0.00	0.79	0.51	0.38	0.26	6.50	5.75	4.80	5.10

Notes: See the notes for Table A.23.1.

Figure A.50: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.2$ (Experiment 23, unbalanced panel)

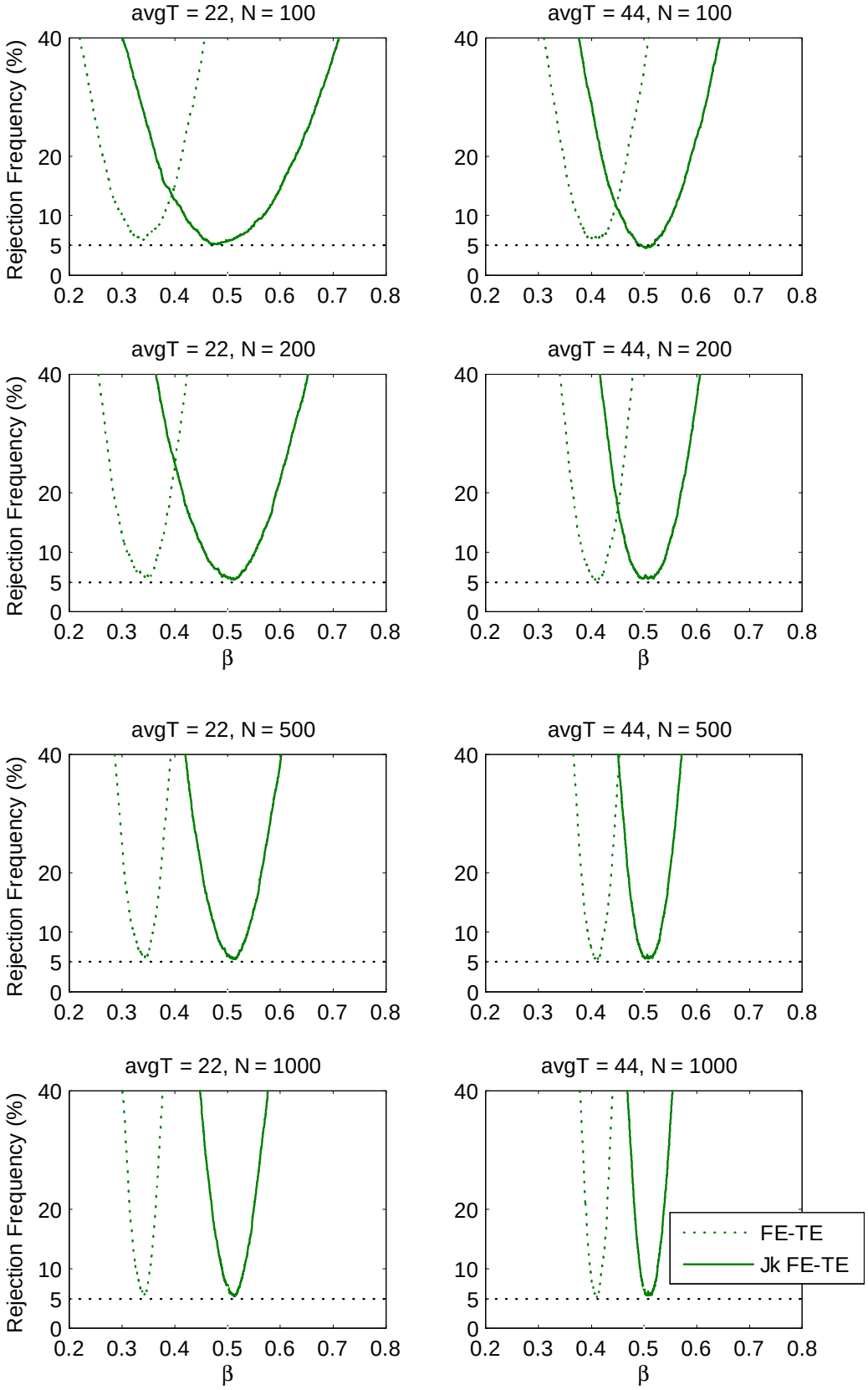

Table A.51.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-18.14	-10.42	-6.67	-3.61	22.23	14.73	10.67	7.13	34.05	19.10	13.45	8.55
60		-17.65	-10.02	-6.50	-3.47	19.78	12.32	8.69	5.57	56.00	30.80	19.35	13.50
100		-17.23	-9.85	-6.21	-3.30	18.54	11.32	7.66	4.70	74.70	44.05	28.20	16.45
200		-17.04	-9.71	-6.18	-3.24	17.71	10.46	6.94	4.01	94.95	72.05	50.50	28.45
500		-16.92	-9.67	-6.13	-3.22	17.21	9.99	6.46	3.54	99.95	97.50	87.00	58.75
1000		-17.01	-9.76	-6.17	-3.23	17.15	9.92	6.34	3.40	100.00	100.00	98.90	87.35
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.72	-4.76	-2.86	-1.33	10.36	5.28	3.31	1.75	84.45	60.85	43.70	23.40
60		-9.33	-4.58	-2.67	-1.29	9.67	4.86	2.92	1.52	97.70	85.15	64.70	37.80
100		-9.13	-4.48	-2.63	-1.27	9.33	4.65	2.78	1.41	99.85	96.80	84.45	56.40
200		-9.03	-4.40	-2.59	-1.27	9.14	4.48	2.67	1.34	100.00	100.00	98.15	84.25
500		-8.93	-4.38	-2.58	-1.27	8.98	4.42	2.61	1.30	100.00	100.00	100.00	99.70
1000		-8.95	-4.36	-2.57	-1.26	8.97	4.38	2.59	1.27	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.49	-0.17	-0.08	-0.09	4.05	2.82	2.12	1.50	6.35	6.35	5.35	4.90
60		-0.49	-0.16	-0.13	-0.09	2.84	1.97	1.49	1.06	6.40	6.05	5.65	5.95
100		-0.44	-0.16	-0.09	-0.06	2.20	1.53	1.14	0.81	6.15	5.95	5.70	5.35
200		-0.43	-0.16	-0.10	-0.05	1.57	1.08	0.81	0.58	7.05	5.60	5.55	5.85
500		-0.43	-0.16	-0.09	-0.05	1.06	0.70	0.52	0.36	9.10	6.15	5.55	5.40
1000		-0.45	-0.19	-0.10	-0.06	0.82	0.52	0.38	0.27	11.95	7.90	7.10	6.35
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		2.51	1.22	0.51	0.03	30.00	14.52	10.01	6.72	4.90	5.45	4.70	5.10
60		1.17	1.15	0.37	0.00	16.76	9.79	6.94	4.76	5.50	5.05	4.55	5.05
100		1.29	0.96	0.60	0.11	12.71	7.59	5.42	3.65	6.40	5.35	5.20	5.25
200		0.98	1.05	0.56	0.14	8.81	5.35	3.77	2.58	6.05	6.10	5.05	5.35
500		1.00	0.93	0.53	0.14	5.63	3.52	2.47	1.59	7.15	6.75	5.90	4.60
1000		0.73	0.80	0.45	0.13	4.00	2.53	1.78	1.15	7.45	7.25	6.70	5.70
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.14	0.15	0.04	0.09	5.10	2.84	1.94	1.23	10.40	7.40	6.85	6.25
60		-0.04	0.20	0.14	0.07	3.61	2.05	1.39	0.88	10.85	8.15	7.15	6.70
100		0.08	0.17	0.14	0.06	2.81	1.58	1.09	0.66	10.50	8.55	7.60	5.95
200		0.08	0.24	0.15	0.05	2.00	1.12	0.77	0.47	10.85	8.05	6.65	5.55
500		0.14	0.19	0.13	0.04	1.21	0.70	0.48	0.30	8.50	7.75	6.25	5.85
1000		0.10	0.21	0.12	0.05	0.88	0.53	0.35	0.21	10.15	10.35	7.65	5.95
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.02	0.10	0.07	-0.03	4.41	2.91	2.15	1.51	5.85	5.30	4.80	5.10
60		0.05	0.10	0.00	-0.03	3.05	2.02	1.51	1.07	5.00	5.20	5.45	5.65
100		0.10	0.09	0.04	-0.01	2.38	1.58	1.16	0.82	5.40	5.20	4.90	4.95
200		0.10	0.08	0.03	0.00	1.69	1.10	0.82	0.58	5.65	4.75	4.65	5.05
500		0.11	0.09	0.04	0.01	1.06	0.71	0.53	0.35	4.95	5.00	4.45	4.55
1000		0.09	0.05	0.03	0.00	0.77	0.50	0.38	0.26	6.90	5.45	5.45	5.95

Notes: See the notes for Table A.24.1.

Table A.51.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	$\max T$	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	$\min T$	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-17.92	-10.27	-6.57	-3.58	22.27	14.80	10.76	7.24	33.80	18.95	13.80	8.95
60		-17.55	-9.97	-6.46	-3.45	19.75	12.30	8.70	5.60	55.10	30.05	19.35	14.05
100		-17.14	-9.78	-6.19	-3.29	18.48	11.28	7.66	4.70	74.00	43.95	28.00	16.75
200		-17.00	-9.67	-6.16	-3.23	17.67	10.43	6.93	4.01	95.15	71.50	49.70	28.10
500		-16.91	-9.66	-6.13	-3.21	17.10	9.99	6.46	3.54	100.00	98.30	87.65	58.60
1000		-17.02	-9.76	-6.16	-3.23	17.16	9.92	6.34	3.41	100.00	100.00	99.45	88.15
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.53	-4.67	-2.80	-1.30	10.20	5.22	3.28	1.74	83.00	59.30	42.50	23.85
60		-9.22	-4.52	-2.63	-1.27	9.57	4.81	2.89	1.51	97.75	84.20	64.00	37.40
100		-9.07	-4.45	-2.61	-1.26	9.27	4.62	2.77	1.41	99.85	96.45	84.30	55.90
200		-9.00	-4.38	-2.58	-1.27	9.11	4.47	2.66	1.34	100.00	100.00	98.40	84.20
500		-8.94	-4.38	-2.58	-1.28	8.98	4.42	2.61	1.31	100.00	100.00	100.00	99.70
1000		-8.96	-4.37	-2.58	-1.27	8.98	4.39	2.60	1.28	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.48	-0.16	-0.07	-0.10	4.15	2.88	2.16	1.53	7.35	7.15	6.00	5.80
60		-0.50	-0.16	-0.13	-0.09	2.87	1.98	1.51	1.08	7.55	5.95	6.20	6.00
100		-0.43	-0.16	-0.09	-0.07	2.21	1.53	1.15	0.81	6.40	6.30	5.90	5.10
200		-0.42	-0.16	-0.10	-0.05	1.57	1.08	0.82	0.58	6.90	5.45	5.35	5.65
500		-0.43	-0.16	-0.09	-0.05	1.06	0.70	0.53	0.36	8.45	5.75	5.60	5.90
1000		-0.45	-0.19	-0.10	-0.06	0.82	0.52	0.39	0.27	11.00	6.80	6.15	6.00
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		2.83	1.20	0.47	-0.01	34.79	14.77	10.22	6.87	5.00	5.90	5.55	5.30
60		1.16	1.08	0.35	-0.02	16.91	9.80	7.00	4.81	5.85	5.05	5.00	5.25
100		1.29	0.96	0.58	0.10	12.80	7.58	5.45	3.66	6.35	5.35	5.35	5.20
200		0.97	1.06	0.56	0.14	8.80	5.35	3.79	2.59	6.20	6.00	4.95	5.40
500		1.01	0.93	0.53	0.14	5.66	3.52	2.49	1.60	6.45	6.05	5.30	5.40
1000		0.73	0.80	0.44	0.13	4.03	2.53	1.80	1.16	6.80	6.90	6.30	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.12	0.15	0.04	0.09	5.18	2.90	1.98	1.26	11.55	8.70	8.05	6.75
60		-0.01	0.20	0.14	0.07	3.63	2.08	1.40	0.88	11.20	8.50	7.25	7.35
100		0.08	0.17	0.14	0.07	2.83	1.59	1.09	0.67	11.15	9.10	7.55	6.20
200		0.08	0.23	0.15	0.05	2.01	1.13	0.77	0.47	10.65	8.20	6.75	5.55
500		0.15	0.18	0.13	0.04	1.22	0.71	0.48	0.30	10.60	8.95	7.75	5.80
1000		0.11	0.20	0.12	0.05	0.89	0.54	0.35	0.21	10.85	10.40	9.00	6.50
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.01	0.09	0.06	-0.04	4.52	2.96	2.20	1.54	6.40	6.35	5.30	5.45
60		0.03	0.09	-0.01	-0.04	3.08	2.02	1.52	1.08	5.80	5.50	5.70	5.60
100		0.10	0.09	0.04	-0.01	2.39	1.58	1.16	0.82	5.65	5.95	5.30	5.20
200		0.09	0.08	0.04	0.00	1.69	1.10	0.82	0.58	5.50	4.85	4.60	5.00
500		0.11	0.09	0.05	0.01	1.07	0.71	0.53	0.35	5.35	5.20	4.90	5.00
1000		0.09	0.05	0.04	0.00	0.78	0.50	0.38	0.26	5.70	5.60	4.95	5.05

Notes: See the notes for Table A.24.1.

Figure A.51: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t$ and $\kappa_x = 0.4$ (Experiment 24, unbalanced panel)

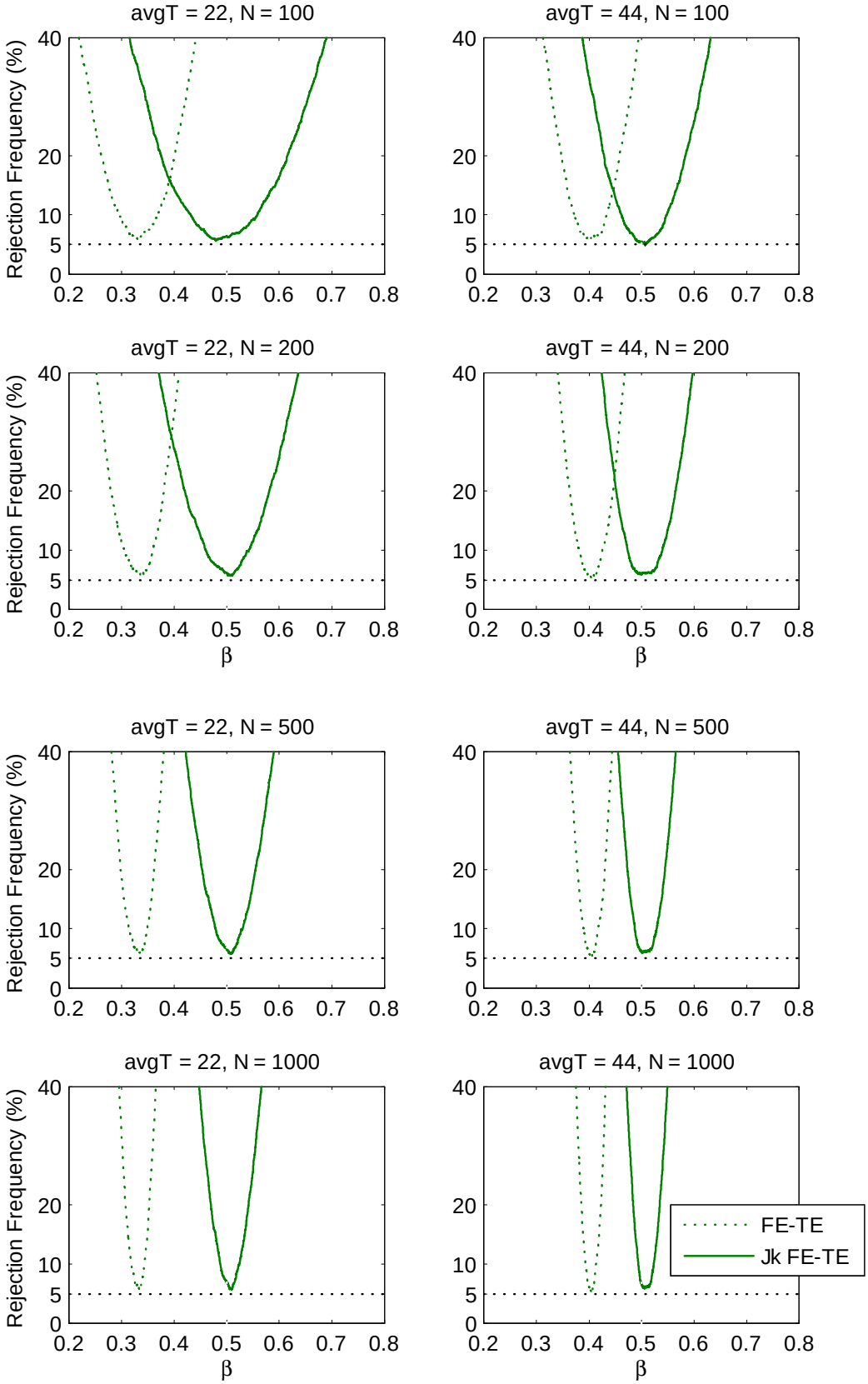

Table A.52.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-13.99	13.84	165.33	2728.18	20.80	23.91	173.79	2809.37	21.50	9.25	88.90	94.15
60		-13.90	13.62	162.66	2680.39	17.49	19.04	166.96	2718.46	31.15	16.65	99.55	100.00
100		-13.64	13.78	162.99	2665.58	15.90	17.31	165.48	2686.72	42.25	25.80	100.00	100.00
200		-13.60	13.77	162.57	2653.90	14.76	15.53	163.82	2664.54	68.00	48.90	100.00	100.00
500		-13.52	13.77	162.38	2649.70	14.03	14.55	162.88	2653.88	95.50	84.50	100.00	100.00
1000		-13.63	13.54	162.08	2643.15	13.88	13.94	162.34	2645.20	99.90	98.85	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-8.26	4.19	15.43	19.65	8.93	4.52	15.44	19.65	77.50	73.55	100.00	100.00
60		-7.91	4.25	15.43	19.65	8.25	4.41	15.44	19.65	96.30	94.00	100.00	100.00
100		-7.71	4.32	15.43	19.65	7.91	4.42	15.43	19.65	99.45	99.35	100.00	100.00
200		-7.63	4.37	15.44	19.65	7.73	4.41	15.44	19.65	100.00	100.00	100.00	100.00
500		-7.54	4.37	15.44	19.65	7.59	4.39	15.44	19.65	100.00	100.00	100.00	100.00
1000		-7.56	4.37	15.44	19.65	7.58	4.38	15.44	19.65	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.01	-0.02	-0.28	-0.55	4.03	2.86	2.22	1.63	6.25	5.50	4.80	5.85
60		0.00	-0.03	-0.35	-0.56	2.81	1.99	1.57	1.22	6.30	5.20	4.90	7.90
100		0.03	-0.03	-0.31	-0.52	2.17	1.54	1.22	0.98	6.25	5.85	5.50	9.10
200		0.04	-0.04	-0.33	-0.52	1.52	1.08	0.90	0.79	5.65	5.85	6.55	13.35
500		0.04	-0.04	-0.32	-0.52	0.98	0.69	0.62	0.63	6.30	5.50	9.35	26.65
1000		0.02	-0.07	-0.33	-0.52	0.69	0.49	0.50	0.58	6.50	5.75	14.10	49.05
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		17.07	-147.21	-151.14	-371.46	150.54	17306.07	154.31	376.78	3.55	6.55	100.00	100.00
60		9.80	52.01	-150.29	-370.94	24.91	11402.41	151.79	373.72	3.55	36.90	100.00	100.00
100		9.37	351.48	-151.32	-371.71	19.59	3203.28	152.27	373.35	5.20	77.50	100.00	100.00
200		8.41	219.95	-151.19	-371.24	14.33	243.92	151.66	372.02	10.00	98.50	100.00	100.00
500		8.28	201.70	-151.22	-371.50	11.07	208.66	151.40	371.81	21.20	100.00	100.00	100.00
1000		7.88	195.61	-151.23	-371.06	9.44	198.69	151.32	371.22	36.60	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		2.09	16.20	29.53	22.92	5.42	16.45	29.56	22.92	15.55	100.00	100.00	100.00
60		2.14	16.04	29.39	22.91	4.07	16.18	29.41	22.91	18.00	100.00	100.00	100.00
100		2.27	15.98	29.32	22.91	3.52	16.06	29.33	22.91	23.05	100.00	100.00	100.00
200		2.24	16.00	29.29	22.90	2.95	16.03	29.29	22.90	34.20	100.00	100.00	100.00
500		2.30	15.95	29.27	22.90	2.57	15.96	29.27	22.90	63.50	100.00	100.00	100.00
1000		2.25	15.93	29.26	22.90	2.40	15.94	29.26	22.90	86.15	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.21	-0.10	-0.58	-0.72	4.43	3.10	2.52	1.72	6.10	6.40	4.70	5.25
60		0.24	-0.13	-0.68	-0.73	3.08	2.16	1.83	1.33	5.40	5.30	5.20	8.10
100		0.27	-0.13	-0.62	-0.68	2.41	1.68	1.47	1.10	6.20	6.35	7.15	9.40
200		0.25	-0.15	-0.63	-0.69	1.71	1.19	1.15	0.92	5.80	5.80	10.45	16.10
500		0.27	-0.14	-0.63	-0.68	1.10	0.77	0.87	0.77	5.80	6.15	17.25	36.15
1000		0.25	-0.17	-0.64	-0.68	0.81	0.56	0.76	0.73	7.85	7.75	31.50	65.80

Notes: See the notes for Table A.25.1.

Table A.52.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-15.18	-8.44	-5.38	-2.99	21.48	15.14	11.46	8.13	26.40	16.10	11.25	8.30
60		-15.25	-8.45	-5.49	-2.95	18.42	11.96	8.85	6.04	37.35	20.95	13.15	10.40
100		-14.98	-8.34	-5.26	-2.81	16.94	10.64	7.52	4.91	52.85	28.25	17.90	11.55
200		-14.98	-8.33	-5.30	-2.78	15.96	9.51	6.49	3.99	79.20	46.60	30.45	18.15
500		-14.94	-8.35	-5.26	-2.78	15.36	8.86	5.79	3.29	99.00	82.45	60.55	34.90
1000		-15.07	-8.49	-5.33	-2.81	15.27	8.74	5.60	3.09	100.00	98.30	87.45	59.65
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.26	-4.53	-2.72	-1.29	9.90	5.03	3.16	1.67	85.45	62.70	46.55	26.10
60		-8.96	-4.39	-2.57	-1.26	9.29	4.64	2.79	1.47	98.25	87.00	68.95	40.75
100		-8.79	-4.30	-2.53	-1.24	8.98	4.46	2.68	1.37	99.85	97.45	86.60	60.20
200		-8.73	-4.25	-2.51	-1.24	8.83	4.33	2.58	1.30	100.00	100.00	98.95	86.45
500		-8.66	-4.25	-2.51	-1.25	8.71	4.28	2.52	1.26	100.00	100.00	100.00	100.00
1000		-8.69	-4.25	-2.51	-1.24	8.72	4.26	2.52	1.24	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.02	0.11	0.09	-0.02	4.14	2.89	2.17	1.53	7.10	6.60	5.70	6.15
60		-0.01	0.10	0.03	-0.01	2.84	1.98	1.50	1.07	7.15	5.95	5.95	5.65
100		0.04	0.10	0.07	0.01	2.18	1.54	1.15	0.81	6.55	6.10	5.20	5.50
200		0.04	0.09	0.06	0.03	1.52	1.07	0.81	0.58	6.00	5.85	5.30	5.65
500		0.04	0.09	0.06	0.04	0.98	0.69	0.52	0.35	5.75	6.35	5.00	5.65
1000		0.02	0.06	0.05	0.03	0.70	0.49	0.37	0.26	5.60	6.25	5.25	5.80
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		5.95	2.07	0.87	0.10	46.74	17.26	12.12	8.24	5.20	6.15	5.50	5.15
60		2.91	1.53	0.49	0.01	19.49	11.48	8.30	5.74	4.80	4.65	4.80	5.20
100		2.77	1.37	0.69	0.12	14.84	8.92	6.45	4.40	5.00	4.50	5.30	5.10
200		2.17	1.32	0.61	0.14	10.17	6.23	4.47	3.11	5.35	5.40	4.85	5.65
500		2.14	1.17	0.59	0.12	6.70	4.13	2.94	1.91	6.00	5.25	4.55	5.65
1000		1.79	0.99	0.48	0.10	4.82	2.98	2.12	1.40	7.15	6.60	5.00	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.10	0.14	0.04	0.06	4.94	2.74	1.86	1.16	11.05	8.30	7.55	6.50
60		0.03	0.18	0.11	0.04	3.48	1.93	1.30	0.82	10.60	7.40	7.00	6.40
100		0.16	0.18	0.13	0.05	2.66	1.48	1.03	0.62	10.10	7.30	6.90	5.15
200		0.14	0.23	0.13	0.04	1.90	1.05	0.71	0.44	10.30	8.05	6.60	5.50
500		0.22	0.19	0.11	0.03	1.18	0.67	0.45	0.28	10.25	8.75	7.50	5.65
1000		0.16	0.19	0.09	0.04	0.86	0.50	0.32	0.20	10.50	10.40	9.05	6.05
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.21	0.13	0.07	-0.04	4.50	2.96	2.20	1.54	6.45	6.20	5.15	5.85
60		0.22	0.12	0.00	-0.04	3.07	2.03	1.52	1.08	5.70	5.30	5.70	5.65
100		0.28	0.13	0.05	-0.01	2.40	1.59	1.16	0.82	5.50	5.70	5.10	5.05
200		0.27	0.12	0.04	0.00	1.70	1.10	0.82	0.58	5.85	5.00	4.60	5.30
500		0.29	0.13	0.05	0.01	1.10	0.71	0.53	0.35	6.60	5.15	4.50	5.35
1000		0.27	0.09	0.04	0.00	0.81	0.51	0.38	0.26	7.20	5.60	4.65	5.40

Notes: See the notes for Table A.25.1.

Figure A.52: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0$ (Experiment 25, unbalanced panel)

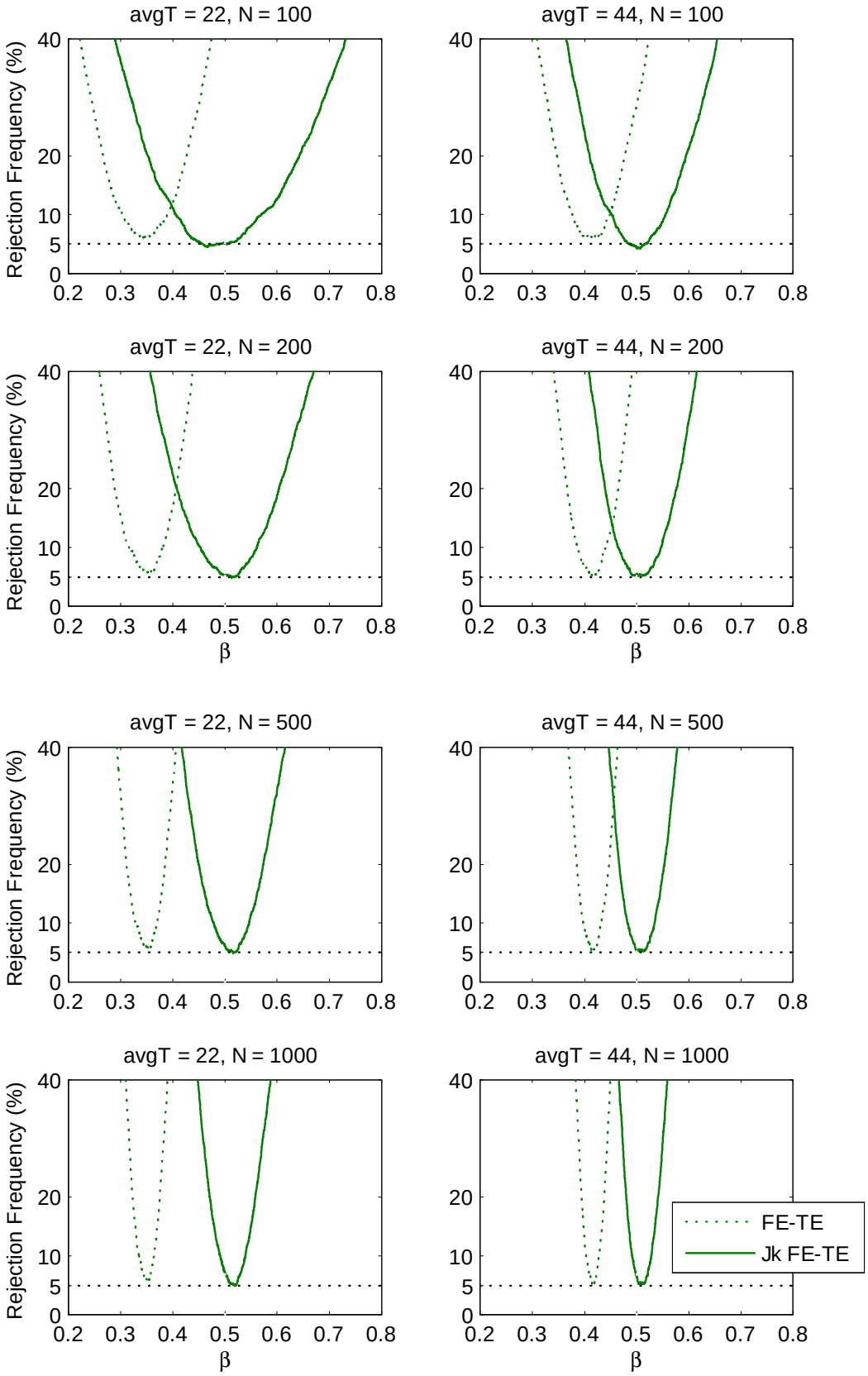

Table A.53.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-15.22	14.20	126.40	388.36	20.92	22.29	129.51	388.59	23.95	14.15	96.70	100.00
60		-14.90	14.32	126.03	388.70	17.90	18.52	127.58	388.81	35.75	25.05	99.90	100.00
100		-14.54	14.58	126.63	388.87	16.42	17.25	127.52	388.93	51.60	37.20	100.00	100.00
200		-14.44	14.67	126.71	388.96	15.40	15.98	127.16	388.99	78.60	63.20	100.00	100.00
500		-14.32	14.71	126.77	389.07	14.75	15.29	126.95	389.09	98.80	94.55	100.00	100.00
1000		-14.42	14.52	126.67	389.00	14.63	14.81	126.77	389.01	100.00	99.80	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-8.33	4.16	14.21	17.70	8.98	4.48	14.23	17.70	78.15	73.55	100.00	100.00
60		-7.97	4.22	14.23	17.70	8.31	4.38	14.24	17.70	96.20	94.45	100.00	100.00
100		-7.78	4.29	14.22	17.69	7.98	4.38	14.22	17.69	99.55	99.40	100.00	100.00
200		-7.69	4.33	14.23	17.69	7.80	4.38	14.24	17.69	100.00	100.00	100.00	100.00
500		-7.61	4.34	14.23	17.69	7.65	4.36	14.23	17.69	100.00	100.00	100.00	100.00
1000		-7.62	4.34	14.23	17.69	7.64	4.35	14.23	17.69	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.20	0.16	0.26	0.11	4.04	2.85	2.21	1.54	6.20	5.25	5.35	4.90
60		-0.20	0.15	0.17	0.09	2.82	2.00	1.54	1.09	6.50	5.35	5.40	4.70
100		-0.16	0.15	0.22	0.13	2.17	1.55	1.20	0.85	6.25	6.40	4.90	5.80
200		-0.16	0.13	0.20	0.13	1.52	1.09	0.86	0.61	6.00	6.00	5.75	5.35
500		-0.15	0.13	0.20	0.13	0.99	0.70	0.57	0.39	7.25	5.70	6.55	5.15
1000		-0.18	0.10	0.19	0.13	0.71	0.50	0.43	0.29	7.50	6.40	8.65	7.55
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		13.60	558.86	-207.44	-2352.18	55.65	9875.96	216.08	71211.99	3.55	22.15	100.00	3.40
60		9.81	144.95	-203.12	-9061.98	23.73	6910.30	207.00	197517.28	4.60	60.50	100.00	18.15
100		9.57	222.02	-204.13	-3749.18	18.91	1304.54	206.47	34040.67	7.25	86.80	100.00	32.35
200		8.76	229.87	-203.15	17407.54	14.06	250.34	204.28	915090.09	13.10	99.05	100.00	65.65
500		8.67	212.10	-202.79	-5553.69	11.10	217.87	203.23	103352.52	27.05	100.00	100.00	97.05
1000		8.31	206.77	-202.66	-2975.10	9.66	209.37	202.88	3064.93	45.85	100.00	100.00	99.90
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		2.25	16.18	27.01	20.38	5.53	16.43	27.05	20.38	16.05	100.00	100.00	100.00
60		2.29	16.03	26.91	20.37	4.18	16.16	26.92	20.37	18.75	100.00	100.00	100.00
100		2.40	15.96	26.83	20.36	3.65	16.03	26.84	20.36	24.90	100.00	100.00	100.00
200		2.38	15.97	26.80	20.36	3.08	16.00	26.80	20.36	36.25	100.00	100.00	100.00
500		2.43	15.92	26.78	20.36	2.70	15.93	26.78	20.36	67.75	100.00	100.00	100.00
1000		2.39	15.90	26.77	20.36	2.53	15.91	26.77	20.36	89.95	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.19	0.45	0.39	0.03	4.44	3.13	2.46	1.55	6.40	6.25	4.45	3.50
60		0.23	0.41	0.29	0.02	3.08	2.20	1.71	1.11	5.80	6.10	4.45	3.50
100		0.27	0.41	0.34	0.06	2.42	1.73	1.36	0.86	6.15	6.70	4.95	3.95
200		0.25	0.39	0.32	0.05	1.71	1.25	1.00	0.61	5.80	6.85	5.85	4.30
500		0.27	0.40	0.32	0.06	1.11	0.85	0.67	0.38	5.80	9.40	7.05	3.45
1000		0.25	0.37	0.32	0.06	0.82	0.65	0.53	0.28	7.70	11.60	11.50	3.65

Notes: See the notes for Table A.26.1.

Table A.53.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-16.63	-9.42	-6.01	-3.31	21.83	14.92	11.08	7.67	29.65	17.20	12.70	8.75
60		-16.47	-9.26	-6.00	-3.22	19.10	12.12	8.76	5.81	45.40	24.80	16.60	11.85
100		-16.12	-9.10	-5.75	-3.07	17.73	10.96	7.58	4.80	63.75	34.35	21.95	13.45
200		-16.05	-9.04	-5.76	-3.02	16.86	9.98	6.72	4.00	88.05	58.20	38.15	21.90
500		-15.98	-9.04	-5.72	-3.01	16.34	9.45	6.15	3.42	99.75	93.00	75.50	45.50
1000		-16.09	-9.16	-5.77	-3.04	16.28	9.36	6.00	3.26	100.00	99.70	96.40	74.80
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.43	-4.62	-2.77	-1.30	10.06	5.12	3.21	1.69	85.80	63.40	47.05	26.40
60		-9.13	-4.48	-2.61	-1.27	9.45	4.73	2.84	1.48	98.45	87.85	69.45	41.55
100		-8.96	-4.40	-2.58	-1.25	9.16	4.55	2.73	1.38	99.90	97.85	87.85	60.70
200		-8.90	-4.34	-2.56	-1.26	9.00	4.41	2.63	1.32	100.00	100.00	99.25	87.60
500		-8.84	-4.34	-2.56	-1.27	8.88	4.37	2.58	1.28	100.00	100.00	100.00	99.95
1000		-8.86	-4.33	-2.56	-1.26	8.89	4.35	2.57	1.26	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.23	-0.03	0.01	-0.06	4.14	2.88	2.17	1.53	7.05	6.80	5.80	5.90
60		-0.25	-0.03	-0.05	-0.05	2.85	1.98	1.50	1.07	7.05	5.65	5.85	5.70
100		-0.20	-0.03	-0.01	-0.03	2.19	1.53	1.15	0.81	6.00	6.25	5.70	5.40
200		-0.19	-0.03	-0.02	-0.01	1.53	1.07	0.81	0.58	6.05	5.65	5.25	5.60
500		-0.19	-0.02	-0.01	-0.01	0.99	0.68	0.52	0.35	6.35	5.55	5.20	5.55
1000		-0.22	-0.05	-0.03	-0.02	0.72	0.49	0.37	0.26	6.95	5.45	5.30	5.60
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		4.21	1.60	0.65	0.03	40.14	15.96	11.16	7.56	5.10	5.75	5.70	5.40
60		1.98	1.29	0.41	-0.01	18.10	10.62	7.65	5.28	5.45	4.90	4.90	5.25
100		2.00	1.16	0.63	0.11	13.77	8.24	5.95	4.03	5.70	4.85	5.25	5.10
200		1.55	1.19	0.58	0.14	9.45	5.79	4.13	2.85	5.75	5.60	4.90	5.40
500		1.56	1.06	0.56	0.13	6.16	3.83	2.71	1.75	6.15	5.90	5.10	5.55
1000		1.25	0.90	0.46	0.11	4.40	2.76	1.96	1.28	7.15	6.70	5.40	5.55
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.13	0.14	0.04	0.07	5.01	2.78	1.88	1.18	11.15	8.10	8.25	6.70
60		-0.01	0.19	0.13	0.06	3.52	1.97	1.32	0.83	11.05	7.75	7.10	6.80
100		0.11	0.17	0.13	0.06	2.72	1.51	1.04	0.63	10.55	8.20	7.80	5.30
200		0.10	0.23	0.14	0.04	1.94	1.07	0.73	0.44	10.40	8.20	7.10	5.65
500		0.16	0.18	0.12	0.04	1.19	0.67	0.45	0.28	10.30	9.00	8.00	5.90
1000		0.11	0.19	0.11	0.04	0.86	0.51	0.33	0.20	10.70	10.75	9.10	6.10
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.11	0.12	0.07	-0.04	4.51	2.96	2.20	1.54	6.20	6.45	5.20	5.65
60		0.13	0.11	0.00	-0.04	3.08	2.03	1.52	1.08	5.60	5.40	5.75	5.85
100		0.19	0.11	0.04	-0.01	2.39	1.58	1.16	0.82	5.55	5.60	5.20	5.00
200		0.18	0.10	0.04	0.00	1.69	1.10	0.82	0.58	5.50	5.10	4.40	5.15
500		0.20	0.11	0.05	0.01	1.07	0.71	0.53	0.35	6.05	5.25	4.65	5.10
1000		0.18	0.08	0.04	0.00	0.79	0.51	0.38	0.26	6.50	5.75	4.80	5.10

Notes: See the notes for Table A.26.1.

Figure A.53: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.2$ (Experiment 26, unbalanced panel)

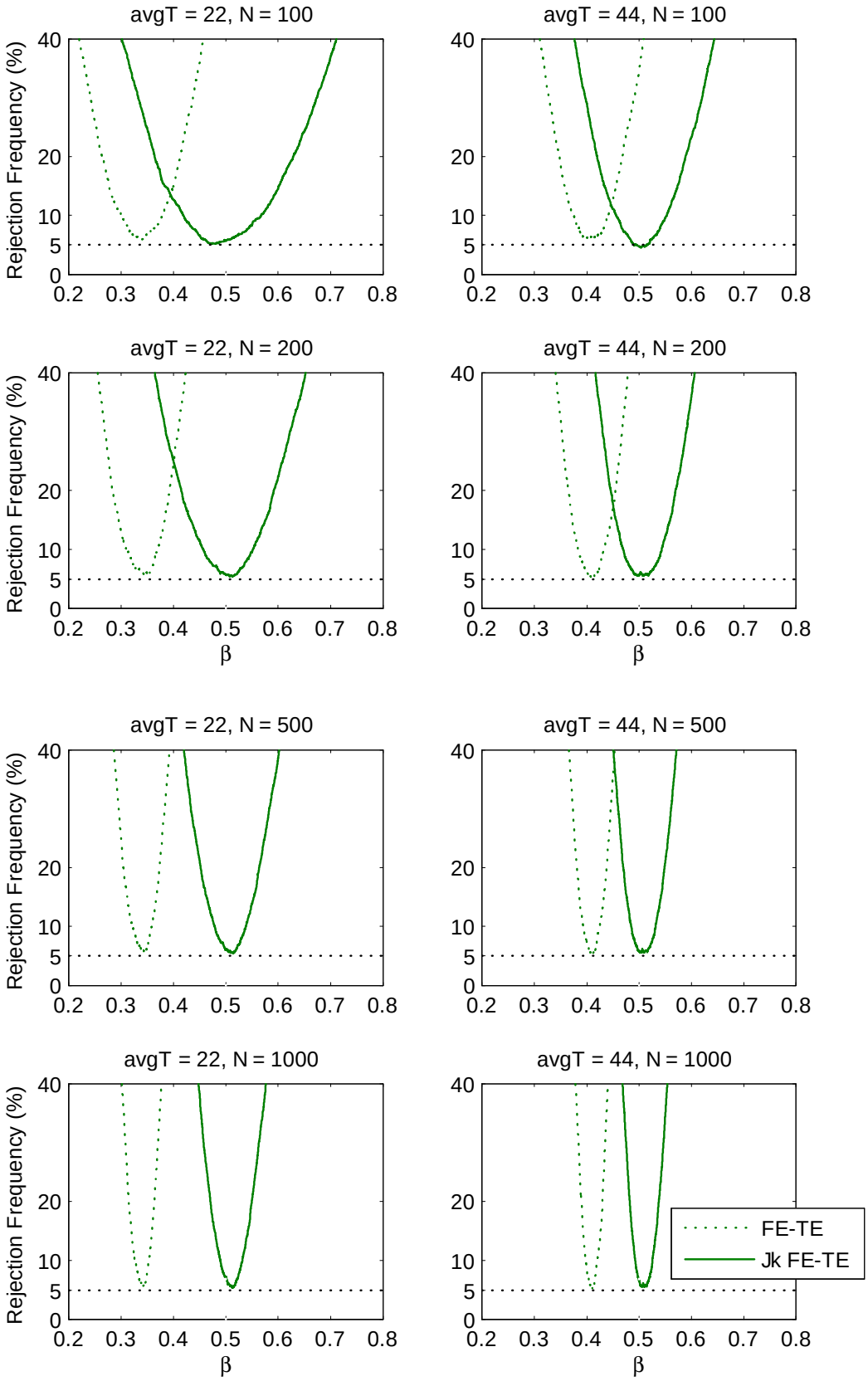

Table A.54.1: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27, unbalanced panel)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE $\widehat{\beta}_{FE}$: $\beta = 0.5$											
30		-16.23	14.38	96.36	187.62	21.07	20.66	97.55	187.65	26.25	21.85	98.85	100.00
60		-15.70	14.74	96.48	187.70	18.25	17.87	97.05	187.71	42.55	34.20	100.00	100.00
100		-15.28	15.06	96.92	187.73	16.86	17.01	97.24	187.74	61.20	50.85	100.00	100.00
200		-15.11	15.23	97.06	187.75	15.91	16.16	97.22	187.76	86.50	77.85	100.00	100.00
500		-14.97	15.29	97.13	187.78	15.32	15.70	97.19	187.78	99.90	99.25	100.00	100.00
1000		-15.05	15.14	97.09	187.76	15.23	15.35	97.13	187.76	100.00	100.00	100.00	100.00
		FE $\widehat{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-8.30	4.04	12.74	15.53	9.01	4.43	12.78	15.55	73.20	63.65	100.00	100.00
60		-7.94	4.10	12.78	15.54	8.32	4.30	12.80	15.55	93.90	89.00	100.00	100.00
100		-7.76	4.16	12.76	15.53	7.99	4.28	12.77	15.53	99.20	98.60	100.00	100.00
200		-7.68	4.21	12.78	15.53	7.80	4.27	12.78	15.53	100.00	100.00	100.00	100.00
500		-7.59	4.21	12.78	15.53	7.64	4.23	12.78	15.53	100.00	100.00	100.00	100.00
1000		-7.60	4.22	12.78	15.53	7.62	4.23	12.78	15.53	100.00	100.00	100.00	100.00
		FE $\widehat{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.40	0.34	0.70	0.62	4.04	2.86	2.30	1.65	6.10	5.50	6.10	7.05
60		-0.39	0.33	0.61	0.60	2.83	2.01	1.64	1.24	6.20	5.70	7.15	8.40
100		-0.34	0.32	0.66	0.64	2.19	1.57	1.35	1.05	6.10	6.60	8.35	12.25
200		-0.33	0.31	0.63	0.64	1.55	1.12	1.05	0.87	6.30	6.30	11.85	18.60
500		-0.33	0.31	0.63	0.64	1.03	0.75	0.83	0.74	8.25	8.45	21.60	40.00
1000		-0.35	0.28	0.63	0.63	0.78	0.56	0.73	0.69	10.00	9.45	38.60	66.55
		Half-panel Jackknife FE $\widetilde{\beta}_{FE}$: $\beta = 0.5$											
30		11.84	375.89	-344.22	455.05	80.24	8802.12	2279.84	1353.74	3.55	41.15	73.55	98.25
60		10.15	319.49	-357.62	412.15	22.88	3110.60	568.17	416.93	6.50	74.35	96.75	99.90
100		10.02	-502.74	-358.09	405.87	18.45	34272.75	373.69	407.95	9.70	91.55	99.90	100.00
200		9.32	220.14	-348.09	402.64	14.00	234.96	354.60	403.52	17.05	99.50	100.00	100.00
500		9.26	205.23	-343.58	400.39	11.33	209.37	346.00	400.72	35.40	100.00	100.00	100.00
1000		8.94	201.21	-342.07	400.40	10.08	203.14	343.27	400.57	58.00	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{\phi}_{FE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		2.47	15.90	24.02	17.66	5.75	16.16	24.07	17.67	16.85	100.00	100.00	100.00
60		2.48	15.75	23.95	17.66	4.38	15.88	23.97	17.66	19.25	100.00	100.00	100.00
100		2.58	15.67	23.87	17.64	3.84	15.75	23.88	17.64	25.50	100.00	100.00	100.00
200		2.56	15.67	23.84	17.64	3.26	15.72	23.85	17.64	38.30	100.00	100.00	100.00
500		2.61	15.62	23.82	17.64	2.87	15.64	23.83	17.64	70.90	100.00	100.00	100.00
1000		2.58	15.62	23.82	17.64	2.72	15.62	23.82	17.64	92.20	100.00	100.00	100.00
		Half-panel Jackknife FE $\widetilde{b}_{FE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.19	0.99	1.18	0.60	4.46	3.24	2.68	1.66	6.45	6.85	7.10	5.70
60		0.24	0.94	1.06	0.58	3.09	2.36	1.98	1.25	5.75	8.10	8.10	6.50
100		0.28	0.93	1.11	0.62	2.43	1.92	1.72	1.06	6.50	9.65	12.20	9.40
200		0.26	0.91	1.09	0.62	1.72	1.49	1.43	0.86	5.70	12.80	19.30	14.80
500		0.28	0.91	1.09	0.63	1.11	1.18	1.23	0.73	6.00	24.90	42.85	33.15
1000		0.26	0.88	1.08	0.62	0.82	1.03	1.16	0.67	8.15	41.55	72.80	60.25

Notes: See the notes for Table A.27.1.

Table A.54.2: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27, unbalanced panel, continued)

		Bias (×100)				RMSE (×100)				Size (%)			
	max T	30	60	100	200	30	60	100	200	30	60	100	200
	avg$T$	22	44	73.5	147	22	44	73.5	147	22	44	73.5	147
N	min T	10	20	34	68	10	20	34	68	10	20	34	68
		FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$											
30		-17.92	-10.27	-6.57	-3.58	22.27	14.80	10.76	7.24	33.80	18.95	13.80	8.95
60		-17.55	-9.97	-6.46	-3.45	19.75	12.30	8.70	5.60	55.10	30.05	19.35	14.05
100		-17.14	-9.78	-6.19	-3.29	18.48	11.28	7.66	4.70	74.00	43.95	28.00	16.75
200		-17.00	-9.67	-6.16	-3.23	17.67	10.43	6.93	4.01	95.15	71.50	49.70	28.10
500		-16.91	-9.66	-6.13	-3.21	17.10	9.99	6.46	3.54	100.00	98.30	87.65	58.60
1000		-17.02	-9.76	-6.16	-3.23	17.16	9.92	6.34	3.41	100.00	100.00	99.45	88.15
		FE-TE $\widehat{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-9.53	-4.67	-2.80	-1.30	10.20	5.22	3.28	1.74	83.00	59.30	42.50	23.85
60		-9.22	-4.52	-2.63	-1.27	9.57	4.81	2.89	1.51	97.75	84.20	64.00	37.40
100		-9.07	-4.45	-2.61	-1.26	9.27	4.62	2.77	1.41	99.85	96.45	84.30	55.90
200		-9.00	-4.38	-2.58	-1.27	9.11	4.47	2.66	1.34	100.00	100.00	98.40	84.20
500		-8.94	-4.38	-2.58	-1.28	8.98	4.42	2.61	1.31	100.00	100.00	100.00	99.70
1000		-8.96	-4.37	-2.58	-1.27	8.98	4.39	2.60	1.28	100.00	100.00	100.00	100.00
		FE-TE $\widehat{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		-0.48	-0.16	-0.07	-0.10	4.15	2.88	2.16	1.53	7.35	7.15	6.00	5.80
60		-0.50	-0.16	-0.13	-0.09	2.87	1.98	1.51	1.08	7.55	5.95	6.20	6.00
100		-0.43	-0.16	-0.09	-0.07	2.21	1.53	1.15	0.81	6.40	6.30	5.90	5.10
200		-0.42	-0.16	-0.10	-0.05	1.57	1.08	0.82	0.58	6.90	5.45	5.35	5.65
500		-0.43	-0.16	-0.09	-0.05	1.06	0.70	0.53	0.36	8.45	5.75	5.60	5.90
1000		-0.45	-0.19	-0.10	-0.06	0.82	0.52	0.39	0.27	11.00	6.80	6.15	6.00
		Half-panel Jackknife FE-TE $\widetilde{\beta}_{FE-TE}$: $\beta = 0.5$											
30		2.83	1.20	0.47	-0.01	34.79	14.77	10.22	6.87	5.00	5.90	5.55	5.30
60		1.16	1.08	0.35	-0.02	16.91	9.80	7.00	4.81	5.85	5.05	5.00	5.25
100		1.29	0.96	0.58	0.10	12.80	7.58	5.45	3.66	6.35	5.35	5.35	5.20
200		0.97	1.06	0.56	0.14	8.80	5.35	3.79	2.59	6.20	6.00	4.95	5.40
500		1.01	0.93	0.53	0.14	5.66	3.52	2.49	1.60	6.45	6.05	5.30	5.40
1000		0.73	0.80	0.44	0.13	4.03	2.53	1.80	1.16	6.80	6.90	6.30	5.35
		Half-panel Jackknife FE-TE $\widetilde{\phi}_{FE-TE}$: $\phi = -(1-\lambda_y) = -0.2$											
30		-0.12	0.15	0.04	0.09	5.18	2.90	1.98	1.26	11.55	8.70	8.05	6.75
60		-0.01	0.20	0.14	0.07	3.63	2.08	1.40	0.88	11.20	8.50	7.25	7.35
100		0.08	0.17	0.14	0.07	2.83	1.59	1.09	0.67	11.15	9.10	7.55	6.20
200		0.08	0.23	0.15	0.05	2.01	1.13	0.77	0.47	10.65	8.20	6.75	5.55
500		0.15	0.18	0.13	0.04	1.22	0.71	0.48	0.30	10.60	8.95	7.75	5.80
1000		0.11	0.20	0.12	0.05	0.89	0.54	0.35	0.21	10.85	10.40	9.00	6.50
		Half-panel Jackknife FE-TE $\widetilde{b}_{FE-TE}$: $b = (1-\lambda_y)\beta = 0.1$											
30		0.01	0.09	0.06	-0.04	4.52	2.96	2.20	1.54	6.40	6.35	5.30	5.45
60		0.03	0.09	-0.01	-0.04	3.08	2.02	1.52	1.08	5.80	5.50	5.70	5.60
100		0.10	0.09	0.04	-0.01	2.39	1.58	1.16	0.82	5.65	5.95	5.30	5.20
200		0.09	0.08	0.04	0.00	1.69	1.10	0.82	0.58	5.50	4.85	4.60	5.00
500		0.11	0.09	0.05	0.01	1.07	0.71	0.53	0.35	5.35	5.20	4.90	5.00
1000		0.09	0.05	0.04	0.00	0.78	0.50	0.38	0.26	5.70	5.60	4.95	5.05

Notes: See the notes for Table A.27.1.

Figure A.54: Rejection frequency (%) at 5% nominal level with $\lambda_y = 0.8$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$ (Experiment 27, unbalanced panel)

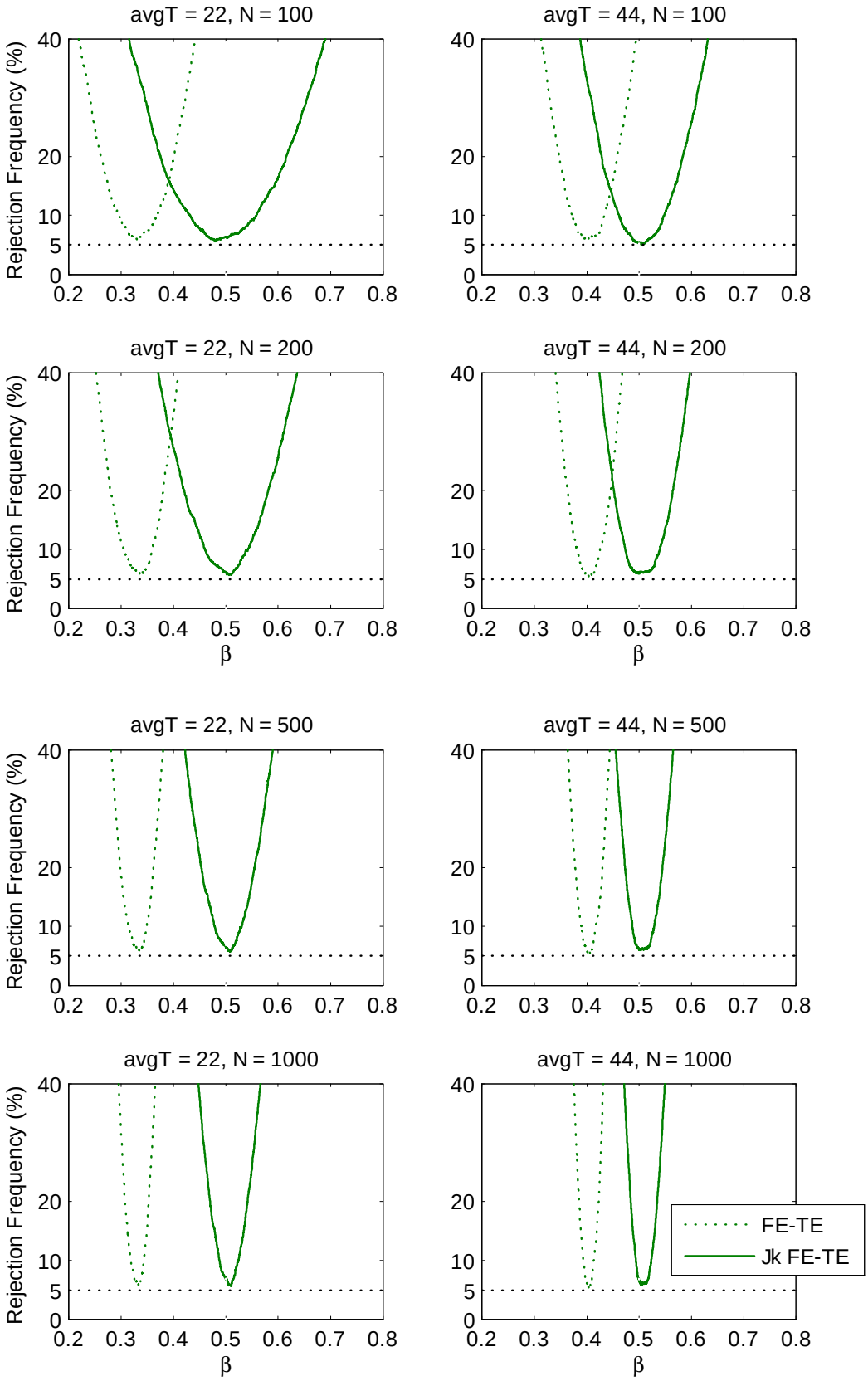

Table A.55: Bias (×100), RMSE (×100) and Size (%) at 5% nominal level with $\delta_t = 0.025t - 0.001t^2$, $\kappa_x = 0.4$ (Experiment 9), $N \in \{30, 48, 60, 100, 200, 500, 1000\}$ and $T \in \{12, 30, 60, 100, 200\}$

	Bias (×100)					RMSE (×100)					Size (%)				
(N,T)	12	30	60	100	200	12	30	60	100	200	12	30	60	100	200
	FE $\widehat{\beta}_{FE}$: $\beta = 0.5$														
30	-3.51	-1.19	2.22	19.52	126.98	6.27	3.39	3.24	19.69	127.04	11.65	7.70	19.85	100.00	100.00
48	-3.53	-1.18	2.19	19.46	126.88	5.36	2.75	2.86	19.56	126.91	14.85	9.05	27.00	100.00	100.00
60	-3.43	-1.16	2.18	19.44	126.86	4.95	2.47	2.72	19.52	126.89	16.85	9.15	30.45	100.00	100.00
100	-3.42	-1.13	2.20	19.41	126.79	4.42	2.02	2.53	19.47	126.81	24.85	10.05	46.85	100.00	100.00
200	-3.36	-1.13	2.19	19.41	126.73	3.90	1.62	2.36	19.44	126.74	42.65	15.60	74.15	100.00	100.00
500	-3.35	-1.11	2.21	19.42	126.75	3.58	1.34	2.28	19.43	126.76	79.15	31.85	97.70	100.00	100.00
1000	-3.36	-1.13	2.20	19.40	126.74	3.47	1.25	2.24	19.40	126.74	97.05	57.35	100.00	100.00	100.00
	Half-panel Jackknife FE $\overline{\beta}_{FE}$: $\beta = 0.5$														
30	0.21	0.36	5.60	38.39	234.48	5.84	3.38	6.28	38.63	234.58	4.20	5.35	66.35	100.00	100.00
48	0.14	0.36	5.56	38.32	234.34	4.51	2.68	5.98	38.47	234.39	3.80	5.25	82.10	100.00	100.00
60	0.24	0.37	5.52	38.28	234.32	4.05	2.35	5.87	38.41	234.36	3.80	4.75	88.10	100.00	100.00
100	0.20	0.42	5.53	38.22	234.20	3.15	1.82	5.74	38.29	234.23	4.00	5.15	97.65	100.00	100.00
200	0.22	0.40	5.53	38.22	234.08	2.26	1.30	5.63	38.26	234.09	4.25	5.20	100.00	100.00	100.00
500	0.22	0.43	5.54	38.21	234.11	1.44	0.90	5.58	38.23	234.11	4.25	6.95	100.00	100.00	100.00
1000	0.20	0.41	5.53	38.18	234.10	1.04	0.71	5.55	38.19	234.10	4.65	11.30	100.00	100.00	100.00
	FE-TE $\widehat{\beta}_{FE-TE}$: $\beta = 0.5$														
30	-3.46	-1.35	-0.64	-0.35	-0.22	6.29	3.48	2.33	1.69	1.20	12.00	8.50	7.00	5.50	5.60
48	-3.49	-1.35	-0.67	-0.40	-0.23	5.37	2.84	1.87	1.35	0.98	15.55	10.25	8.00	5.70	7.50
60	-3.39	-1.34	-0.67	-0.41	-0.23	4.95	2.56	1.67	1.21	0.86	17.05	10.85	8.45	6.10	7.15
100	-3.39	-1.30	-0.65	-0.39	-0.21	4.40	2.13	1.35	0.97	0.68	24.55	12.15	9.40	7.20	7.15
200	-3.35	-1.31	-0.66	-0.39	-0.20	3.90	1.75	1.05	0.74	0.49	42.35	19.90	12.70	9.00	7.80
500	-3.34	-1.30	-0.64	-0.38	-0.19	3.58	1.49	0.83	0.56	0.34	79.25	40.85	22.90	16.80	10.50
1000	-3.36	-1.31	-0.65	-0.39	-0.20	3.48	1.42	0.75	0.48	0.28	97.00	70.35	42.65	28.60	16.40
	Half-panel Jackknife FE-TE $\overline{\beta}_{FE-TE}$: $\beta = 0.5$														
30	0.21	-0.01	0.04	0.05	-0.02	5.90	3.33	2.28	1.67	1.19	4.75	4.30	5.30	4.90	5.35
48	0.15	-0.01	0.01	0.00	-0.03	4.57	2.63	1.78	1.31	0.96	3.85	4.75	5.20	4.40	6.20
60	0.25	0.00	0.01	-0.01	-0.04	4,09	2.30	1.56	1.15	0.84	4.00	4.20	4.85	3.75	5.25
100	0.21	0.05	0.02	0.01	-0.02	3.16	1.75	1.20	0.91	0.65	4.05	4.85	4.15	5.15	5.60
200	0.22	0.04	0.01	0.01	-0.01	2.27	1.23	0.83	0.63	0.45	4.35	3.85	4.50	4.50	5.20
500	0.21	0.07	0.02	0.01	0.00	1.45	0.79	0.55	0.41	0.28	4.25	4.15	5.20	4.90	4.80
1000	0.19	0.05	0.01	0.01	0.00	1.04	0.57	0.39	0.29	0.20	4.70	5.15	5.20	4.90	5.50

Notes: $\beta = 0.5$, $\lambda_y = 0$, $\delta_t = 0.025t - 0.001t^2$ and $\kappa_x = 0.4$. For the regression equations, see the notes for Table A.4. For the rest of the settings, see the notes for Table A.1.