	0Q	6Q	12Q	18Q	24Q	30Q
NL-PF-5%	1.90	1.96	1.99	2.12	2.09	2.08
PW-IF-0%	1.53	1.63	1.71	2.01	1.99	1.91
Lin-KF-0%	1.49	1.62	1.89	2.10	2.30	2.24
Lin-KF-5%	1.88	2.01	2.11	2.27	2.28	2.28

Table 1: Sum of the NRMSE across the estimated parameters. Columns denote the ZLB duration in the data.

Ptr	Truth	NL-PF-5%		PW-IF-0%		Lin-KF-5%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	151.1 (134.2, 165.8) [0.52]	188.4 (174.7, 202.7) [0.89]	142.6 (121.1, 157.3) [0.44]	183.4 (169.2, 198.5) [0.84]	151.4 (134.0, 165.7) [0.52]	191.6 (175.3, 204.1) [0.92]
h	0.8	0.66 (0.62, 0.70) [0.18]	0.68 (0.64, 0.71) [0.16]	0.64 (0.61, 0.67) [0.20]	0.63 (0.60, 0.67) [0.21]	0.66 (0.62, 0.69) [0.18]	0.67 (0.63, 0.70) [0.17]
ρ_s	0.8	0.76 (0.72, 0.80) [0.06]	0.81 (0.78, 0.84) [0.03]	0.76 (0.73, 0.81) [0.05]	0.82 (0.79, 0.86) [0.04]	0.76 (0.72, 0.80) [0.06]	0.82 (0.78, 0.86) [0.04]
ρ_i	0.8	0.79 (0.75, 0.82) [0.03]	0.80 (0.75, 0.84) [0.03]	0.76 (0.71, 0.79) [0.06]	0.77 (0.73, 0.81) [0.05]	0.79 (0.75, 0.82) [0.03]	0.84 (0.80, 0.88) [0.06]
σ_g	0.005	0.0032 (0.0023, 0.0039) [0.37]	0.0040 (0.0030, 0.0052) [0.23]	0.0051 (0.0044, 0.0058) [0.09]	0.0059 (0.0050, 0.0069) [0.22]	0.0032 (0.0023, 0.0039) [0.36]	0.0043 (0.0030, 0.0057) [0.20]
σ_s	0.005	0.0052 (0.0040, 0.0066) [0.15]	0.0050 (0.0039, 0.0062) [0.13]	0.0051 (0.0042, 0.0063) [0.13]	0.0046 (0.0036, 0.0056) [0.15]	0.0053 (0.0040, 0.0067) [0.15]	0.0047 (0.0037, 0.0061) [0.15]
σ_i	0.002	0.0017 (0.0014, 0.0020) [0.17]	0.0015 (0.0013, 0.0019) [0.24]	0.0020 (0.0018, 0.0023) [0.08]	0.0020 (0.0019, 0.0024) [0.09]	0.0017 (0.0015, 0.0020) [0.16]	0.0016 (0.0014, 0.0019) [0.20]
ϕ_π	2.0	2.04 (1.88, 2.19) [0.06]	2.13 (1.94, 2.31) [0.09]	2.01 (1.84, 2.16) [0.06]	1.96 (1.77, 2.14) [0.06]	2.04 (1.88, 2.20) [0.06]	1.73 (1.52, 1.91) [0.15]
ϕ_y	0.5	0.35 (0.21, 0.54) [0.36]	0.42 (0.27, 0.62) [0.28]	0.32 (0.17, 0.48) [0.41]	0.44 (0.27, 0.61) [0.25]	0.35 (0.22, 0.54) [0.35]	0.32 (0.17, 0.47) [0.40]

Table 2: Average, $(5, 95)$ percentiles and [NRMSE] of the mean parameter estimates.

Ptr	Truth	NL-PF-5%		Lin-KF-5%		Lin-KF-0%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	152.6 (134.2, 165.8) [0.52]	187.4 (174.7, 202.7) [0.89]	153.8 (134.0, 165.7) [0.52]	191.3 (175.3, 204.1) [0.92]	144.7 (125.9, 157.7) [0.44]	184.4 (168.5, 201.1) [0.88]
h	0.8	0.66 (0.62, 0.70) [0.18]	0.68 (0.64, 0.71) [0.16]	0.66 (0.62, 0.69) [0.18]	0.67 (0.63, 0.70) [0.17]	0.64 (0.61, 0.68) [0.20]	0.63 (0.60, 0.67) [0.21]
ρ_s	0.8	0.76 (0.72, 0.80) [0.06]	0.81 (0.78, 0.84) [0.03]	0.76 (0.72, 0.80) [0.06]	0.82 (0.78, 0.86) [0.04]	0.76 (0.72, 0.80) [0.06]	0.83 (0.80, 0.85) [0.04]
ρ_i	0.8	0.78 (0.75, 0.82) [0.03]	0.80 (0.75, 0.84) [0.03]	0.78 (0.75, 0.82) [0.03]	0.84 (0.80, 0.88) [0.06]	0.76 (0.73, 0.79) [0.06]	0.81 (0.77, 0.85) [0.03]
σ_g	0.005	0.0032 (0.0023, 0.0039) [0.37]	0.0040 (0.0030, 0.0052) [0.23]	0.0032 (0.0023, 0.0039) [0.36]	0.0043 (0.0030, 0.0057) [0.20]	0.0050 (0.0043, 0.0054) [0.07]	0.0059 (0.0051, 0.0068) [0.21]
σ_s	0.005	0.0051 (0.0040, 0.0066) [0.15]	0.0051 (0.0039, 0.0062) [0.13]	0.0052 (0.0040, 0.0067) [0.15]	0.0047 (0.0037, 0.0061) [0.15]	0.0050 (0.0043, 0.0064) [0.14]	0.0045 (0.0036, 0.0052) [0.15]
σ_i	0.002	0.0017 (0.0014, 0.0020) [0.17]	0.0015 (0.0013, 0.0019) [0.24]	0.0017 (0.0015, 0.0020) [0.16]	0.0016 (0.0014, 0.0019) [0.20]	0.0020 (0.0018, 0.0022) [0.07]	0.0019 (0.0017, 0.0022) [0.08]
ϕ_π	2.0	2.05 (1.88, 2.19) [0.06]	2.12 (1.94, 2.31) [0.09]	2.06 (1.88, 2.20) [0.06]	1.74 (1.52, 1.91) [0.15]	2.03 (1.85, 2.15) [0.06]	1.68 (1.46, 1.89) [0.17]
ϕ_y	0.5	0.33 (0.21, 0.54) [0.36]	0.40 (0.27, 0.62) [0.28]	0.34 (0.22, 0.54) [0.35]	0.31 (0.17, 0.47) [0.40]	0.33 (0.18, 0.48) [0.40]	0.27 (0.17, 0.44) [0.47]
Σ		[1.90]	[2.08]	[1.88]	[2.28]	[1.49]	[2.24]

Table 3: Median, $(5\%, 95\%)$ credible sets and $[\text{NRMSE}]$ of the posterior mean parameter estimates.

Ptr	Truth	NL-PF-5%		PW-IF-0%		PW-IF-0%-Sticky Wages	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	151.1 (134.2, 165.8) [0.52]	188.4 (174.7, 202.7) [0.89]	142.6 (121.1, 157.3) [0.44]	183.4 (169.2, 198.5) [0.84]	100.1 (76.9, 119.6) [0.13]	129.8 (105.5, 152.3) [0.33]
h	0.8	0.66 (0.62, 0.70) [0.18]	0.68 (0.64, 0.71) [0.16]	0.64 (0.61, 0.67) [0.20]	0.63 (0.60, 0.67) [0.21]	0.82 (0.78, 0.86) [0.04]	0.80 (0.77, 0.85) [0.03]
ρ_s	0.8	0.76 (0.72, 0.80) [0.06]	0.81 (0.78, 0.84) [0.03]	0.76 (0.73, 0.81) [0.05]	0.82 (0.79, 0.86) [0.04]	0.82 (0.76, 0.86) [0.04]	0.84 (0.80, 0.88) [0.06]
ρ_i	0.8	0.79 (0.75, 0.82) [0.03]	0.80 (0.75, 0.84) [0.03]	0.76 (0.71, 0.79) [0.06]	0.77 (0.73, 0.81) [0.05]	0.80 (0.77, 0.83) [0.02]	0.80 (0.77, 0.84) [0.03]
σ_g	0.005	0.0032 (0.0023, 0.0039) [0.37]	0.0040 (0.0030, 0.0052) [0.23]	0.0051 (0.0044, 0.0058) [0.09]	0.0059 (0.0050, 0.0069) [0.22]	0.0038 (0.0031, 0.0044) [0.24]	0.0047 (0.0039, 0.0055) [0.12]
σ_s	0.005	0.0052 (0.0040, 0.0066) [0.15]	0.0050 (0.0039, 0.0062) [0.13]	0.0051 (0.0042, 0.0063) [0.13]	0.0046 (0.0036, 0.0056) [0.15]	0.0085 (0.0056, 0.0134) [0.81]	0.0074 (0.0050, 0.0107) [0.60]
σ_i	0.002	0.0017 (0.0014, 0.0020) [0.17]	0.0015 (0.0013, 0.0019) [0.24]	0.0020 (0.0018, 0.0023) [0.08]	0.0020 (0.0019, 0.0024) [0.09]	0.0020 (0.0018, 0.0022) [0.08]	0.0020 (0.0018, 0.0023) [0.08]
ϕ_π	2.0	2.04 (1.88, 2.19) [0.06]	2.13 (1.94, 2.31) [0.09]	2.01 (1.84, 2.16) [0.06]	1.96 (1.77, 2.14) [0.06]	1.91 (1.74, 2.04) [0.07]	1.81 (1.63, 1.99) [0.11]
ϕ_y	0.5	0.35 (0.21, 0.54) [0.36]	0.42 (0.27, 0.62) [0.28]	0.32 (0.17, 0.48) [0.41]	0.44 (0.27, 0.61) [0.25]	0.40 (0.24, 0.58) [0.28]	0.50 (0.33, 0.73) [0.23]
Σ		[1.90]	[2.08]	[1.53]	[1.91]	[1.71]	[1.59]

Table 4: Average, $(5, 95)$ percentiles and [NRMSE] of the mean parameter estimates.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
Piecewise Linear, Inversion Filter, ME 0%							
φ_p	100	144.6 (121.1, 157.3) [0.438]	153.0 (131.3, 170.7) [0.539]	163.1 (140.8, 185.5) [0.661]	171.3 (153.9, 202.0) [0.761]	180.8 (165.3, 204.1) [0.839]	182.2 (169.2, 198.5) [0.841]
h	0.8	0.64 (0.61, 0.67) [0.200]	0.64 (0.61, 0.68) [0.202]	0.63 (0.60, 0.67) [0.211]	0.64 (0.61, 0.67) [0.208]	0.63 (0.59, 0.67) [0.211]	0.63 (0.60, 0.67) [0.215]
ρ_s	0.8	0.76 (0.73, 0.81) [0.054]	0.77 (0.73, 0.81) [0.043]	0.81 (0.76, 0.83) [0.029]	0.81 (0.78, 0.85) [0.034]	0.82 (0.80, 0.85) [0.033]	0.82 (0.79, 0.86) [0.035]
ρ_i	0.8	0.76 (0.71, 0.79) [0.061]	0.76 (0.71, 0.80) [0.068]	0.76 (0.73, 0.79) [0.056]	0.76 (0.68, 0.80) [0.064]	0.76 (0.72, 0.81) [0.058]	0.76 (0.73, 0.81) [0.050]
σ_g	0.005	0.0051 (0.0044, 0.0058) [0.091]	0.0053 (0.0048, 0.0068) [0.129]	0.0056 (0.0047, 0.0066) [0.194]	0.0057 (0.0051, 0.0079) [0.243]	0.0058 (0.0051, 0.0074) [0.245]	0.0059 (0.0050, 0.0069) [0.217]
σ_s	0.005	0.0050 (0.0042, 0.0063) [0.133]	0.0050 (0.0041, 0.0063) [0.139]	0.0048 (0.0039, 0.0058) [0.133]	0.0048 (0.0031, 0.0058) [0.182]	0.0044 (0.0037, 0.0053) [0.150]	0.0045 (0.0036, 0.0056) [0.147]
σ_i	0.002	0.0020 (0.0018, 0.0023) [0.082]	0.0020 (0.0018, 0.0023) [0.073]	0.0021 (0.0018, 0.0022) [0.067]	0.0020 (0.0018, 0.0024) [0.095]	0.0020 (0.0018, 0.0023) [0.081]	0.0020 (0.0019, 0.0024) [0.091]
ϕ_π	2.0	2.03 (1.84, 2.16) [0.058]	1.95 (1.77, 2.16) [0.070]	2.01 (1.78, 2.16) [0.058]	1.98 (1.73, 2.23) [0.076]	1.95 (1.69, 2.19) [0.081]	1.95 (1.77, 2.14) [0.063]
ϕ_y	0.5	0.33 (0.17, 0.48) [0.409]	0.33 (0.18, 0.53) [0.371]	0.39 (0.24, 0.56) [0.297]	0.37 (0.20, 0.52) [0.349]	0.40 (0.21, 0.62) [0.288]	0.44 (0.27, 0.61) [0.248]
Σ		[1.53]	[1.63]	[1.71]	[2.01]	[1.99]	[1.91]
Piecewise Linear, Inversion Filter, ME 0%, Sticky Wages							
φ_p	100	103.1 (76.9, 119.6) [0.130]	105.0 (83.2, 122.4) [0.125]	115.9 (87.7, 143.5) [0.212]	123.5 (103.5, 147.1) [0.276]	130.0 (105.3, 144.4) [0.313]	129.8 (105.5, 152.3) [0.327]
h	0.8	0.83 (0.78, 0.86) [0.040]	0.83 (0.77, 0.86) [0.043]	0.80 (0.75, 0.85) [0.038]	0.80 (0.77, 0.84) [0.032]	0.80 (0.75, 0.85) [0.032]	0.80 (0.77, 0.85) [0.033]
ρ_s	0.8	0.82 (0.76, 0.86) [0.040]	0.81 (0.75, 0.86) [0.039]	0.84 (0.78, 0.88) [0.055]	0.84 (0.80, 0.88) [0.059]	0.85 (0.80, 0.87) [0.058]	0.84 (0.80, 0.88) [0.057]
ρ_i	0.8	0.81 (0.77, 0.83) [0.023]	0.80 (0.75, 0.83) [0.034]	0.80 (0.76, 0.82) [0.024]	0.80 (0.71, 0.84) [0.037]	0.80 (0.75, 0.84) [0.036]	0.80 (0.77, 0.84) [0.032]
σ_g	0.005	0.0039 (0.0031, 0.0044) [0.243]	0.0040 (0.0033, 0.0052) [0.219]	0.0043 (0.0035, 0.0051) [0.186]	0.0044 (0.0039, 0.0061) [0.155]	0.0046 (0.0038, 0.0061) [0.149]	0.0047 (0.0039, 0.0055) [0.116]
σ_s	0.005	0.0079 (0.0056, 0.0134) [0.809]	0.0082 (0.0056, 0.0135) [0.848]	0.0069 (0.0045, 0.0114) [0.632]	0.0069 (0.0047, 0.0103) [0.595]	0.0066 (0.0044, 0.0101) [0.479]	0.0069 (0.0050, 0.0107) [0.601]
σ_i	0.002	0.0019 (0.0018, 0.0022) [0.077]	0.0020 (0.0018, 0.0022) [0.068]	0.0020 (0.0018, 0.0021) [0.059]	0.0020 (0.0017, 0.0023) [0.086]	0.0020 (0.0018, 0.0022) [0.078]	0.0019 (0.0018, 0.0023) [0.080]
ϕ_π	2.0	1.92 (1.74, 2.04) [0.068]	1.86 (1.67, 2.02) [0.096]	1.84 (1.70, 2.00) [0.094]	1.84 (1.59, 2.07) [0.111]	1.80 (1.54, 2.04) [0.130]	1.79 (1.63, 1.99) [0.114]
ϕ_y	0.5	0.40 (0.24, 0.58) [0.277]	0.41 (0.23, 0.62) [0.284]	0.46 (0.30, 0.66) [0.243]	0.44 (0.28, 0.62) [0.262]	0.49 (0.24, 0.70) [0.253]	0.49 (0.33, 0.73) [0.229]
Σ		[1.71]	[1.76]	[1.54]	[1.61]	[1.53]	[1.59]

Table 5: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
				Linear, Kalman Filter, ME 0%			
φ_p	100	144.7 (125.9, 157.7) [0.442]	152.8 (134.2, 168.4) [0.544]	164.2 (147.0, 196.6) [0.688]	175.1 (157.1, 204.9) [0.788]	184.6 (165.6, 204.5) [0.872]	184.4 (168.5, 201.1) [0.876]
h	0.8	0.64 (0.61, 0.68) [0.198]	0.64 (0.60, 0.68) [0.200]	0.64 (0.60, 0.67) [0.205]	0.64 (0.62, 0.67) [0.201]	0.64 (0.60, 0.67) [0.205]	0.63 (0.60, 0.67) [0.214]
ρ_s	0.8	0.76 (0.72, 0.80) [0.059]	0.78 (0.74, 0.80) [0.042]	0.80 (0.76, 0.83) [0.026]	0.81 (0.76, 0.84) [0.029]	0.82 (0.80, 0.85) [0.033]	0.83 (0.80, 0.85) [0.036]
ρ_i	0.8	0.76 (0.73, 0.79) [0.056]	0.77 (0.72, 0.80) [0.054]	0.78 (0.75, 0.81) [0.036]	0.79 (0.74, 0.84) [0.035]	0.79 (0.77, 0.85) [0.031]	0.81 (0.77, 0.85) [0.034]
σ_g	0.005	0.0050 (0.0043, 0.0054) [0.074]	0.0051 (0.0045, 0.0058) [0.083]	0.0054 (0.0048, 0.0066) [0.158]	0.0057 (0.0051, 0.0067) [0.171]	0.0059 (0.0049, 0.0071) [0.231]	0.0059 (0.0051, 0.0068) [0.214]
σ_s	0.005	0.0050 (0.0043, 0.0064) [0.138]	0.0049 (0.0042, 0.0062) [0.143]	0.0049 (0.0040, 0.0058) [0.115]	0.0048 (0.0035, 0.0059) [0.150]	0.0044 (0.0038, 0.0053) [0.149]	0.0045 (0.0036, 0.0052) [0.151]
σ_i	0.002	0.0020 (0.0018, 0.0022) [0.073]	0.0020 (0.0018, 0.0022) [0.071]	0.0020 (0.0018, 0.0023) [0.075]	0.0020 (0.0016, 0.0022) [0.077]	0.0019 (0.0017, 0.0022) [0.078]	0.0019 (0.0017, 0.0022) [0.076]
ϕ_π	2.0	2.03 (1.85, 2.15) [0.056]	1.95 (1.71, 2.17) [0.073]	1.85 (1.60, 2.07) [0.099]	1.78 (1.51, 2.04) [0.137]	1.65 (1.42, 1.92) [0.188]	1.68 (1.46, 1.89) [0.171]
ϕ_y	0.5	0.33 (0.18, 0.48) [0.395]	0.32 (0.20, 0.52) [0.406]	0.28 (0.11, 0.48) [0.484]	0.26 (0.14, 0.43) [0.512]	0.24 (0.15, 0.37) [0.515]	0.27 (0.17, 0.44) [0.465]
Σ		[1.49]	[1.62]	[1.89]	[2.10]	[2.30]	[2.24]
				Linear, Kalman Filter, ME 0%, Sticky Wages			
φ_p	100	99.2 (71.6, 117.7) [0.137]	100.8 (76.1, 121.2) [0.122]	109.1 (82.9, 131.2) [0.170]	119.8 (100.4, 139.5) [0.241]	127.0 (98.2, 146.0) [0.291]	126.8 (102.2, 146.5) [0.298]
h	0.8	0.83 (0.79, 0.86) [0.045]	0.83 (0.79, 0.87) [0.047]	0.82 (0.78, 0.85) [0.038]	0.82 (0.79, 0.85) [0.038]	0.82 (0.78, 0.84) [0.031]	0.82 (0.78, 0.86) [0.036]
ρ_s	0.8	0.81 (0.75, 0.85) [0.039]	0.81 (0.75, 0.84) [0.035]	0.82 (0.77, 0.86) [0.039]	0.82 (0.79, 0.87) [0.042]	0.84 (0.80, 0.85) [0.045]	0.83 (0.79, 0.86) [0.045]
ρ_i	0.8	0.80 (0.78, 0.83) [0.022]	0.81 (0.76, 0.84) [0.031]	0.81 (0.77, 0.84) [0.029]	0.82 (0.77, 0.87) [0.042]	0.82 (0.79, 0.87) [0.043]	0.84 (0.79, 0.88) [0.051]
σ_g	0.005	0.0037 (0.0031, 0.0041) [0.272]	0.0038 (0.0033, 0.0044) [0.247]	0.0042 (0.0033, 0.0049) [0.197]	0.0043 (0.0037, 0.0050) [0.147]	0.0046 (0.0038, 0.0055) [0.135]	0.0047 (0.0039, 0.0054) [0.112]
σ_s	0.005	0.0084 (0.0057, 0.0137) [0.917]	0.0087 (0.0062, 0.0135) [0.946]	0.0085 (0.0060, 0.0114) [0.774]	0.0082 (0.0057, 0.0122) [0.808]	0.0077 (0.0057, 0.0103) [0.630]	0.0086 (0.0060, 0.0125) [0.807]
σ_i	0.002	0.0019 (0.0017, 0.0022) [0.075]	0.0019 (0.0017, 0.0022) [0.077]	0.0020 (0.0017, 0.0022) [0.072]	0.0019 (0.0016, 0.0021) [0.089]	0.0019 (0.0017, 0.0021) [0.089]	0.0018 (0.0017, 0.0021) [0.094]
ϕ_π	2.0	1.90 (1.73, 2.04) [0.069]	1.86 (1.62, 2.07) [0.097]	1.77 (1.57, 1.95) [0.129]	1.73 (1.48, 1.93) [0.162]	1.59 (1.39, 1.81) [0.211]	1.61 (1.45, 1.80) [0.200]
ϕ_y	0.5	0.39 (0.23, 0.57) [0.291]	0.36 (0.23, 0.53) [0.327]	0.30 (0.15, 0.53) [0.440]	0.27 (0.17, 0.47) [0.468]	0.25 (0.16, 0.43) [0.487]	0.28 (0.18, 0.47) [0.454]
Σ		[1.87]	[1.93]	[1.89]	[2.04]	[1.96]	[2.10]

Table 6: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
				Linear, Kalman Filter, ME 5%			
φ_p	100	153.8 (134.0, 165.7) [0.523]	160.6 (142.0, 179.5) [0.621]	171.7 (153.7, 198.6) [0.760]	184.4 (163.0, 208.5) [0.841]	193.7 (172.1, 210.9) [0.918]	191.3 (175.3, 204.1) [0.920]
h	0.8	0.66 (0.62, 0.69) [0.177]	0.66 (0.61, 0.71) [0.176]	0.67 (0.62, 0.71) [0.169]	0.67 (0.63, 0.70) [0.166]	0.68 (0.64, 0.71) [0.160]	0.67 (0.63, 0.70) [0.168]
ρ_s	0.8	0.76 (0.72, 0.80) [0.058]	0.78 (0.74, 0.81) [0.039]	0.80 (0.75, 0.83) [0.027]	0.81 (0.78, 0.85) [0.034]	0.82 (0.79, 0.85) [0.033]	0.82 (0.78, 0.86) [0.040]
ρ_i	0.8	0.78 (0.75, 0.82) [0.031]	0.80 (0.75, 0.83) [0.036]	0.81 (0.78, 0.84) [0.029]	0.82 (0.78, 0.86) [0.045]	0.83 (0.80, 0.88) [0.053]	0.84 (0.80, 0.88) [0.058]
σ_g	0.005	0.0032 (0.0023, 0.0039) [0.362]	0.0032 (0.0025, 0.0041) [0.363]	0.0036 (0.0027, 0.0045) [0.308]	0.0040 (0.0029, 0.0052) [0.240]	0.0042 (0.0029, 0.0054) [0.222]	0.0043 (0.0030, 0.0057) [0.204]
σ_s	0.005	0.0052 (0.0040, 0.0067) [0.153]	0.0051 (0.0042, 0.0068) [0.149]	0.0052 (0.0041, 0.0062) [0.140]	0.0049 (0.0033, 0.0063) [0.177]	0.0047 (0.0039, 0.0059) [0.119]	0.0047 (0.0037, 0.0061) [0.146]
σ_i	0.002	0.0017 (0.0015, 0.0020) [0.164]	0.0016 (0.0014, 0.0019) [0.197]	0.0017 (0.0014, 0.0020) [0.172]	0.0016 (0.0012, 0.0019) [0.217]	0.0016 (0.0014, 0.0020) [0.194]	0.0016 (0.0014, 0.0019) [0.196]
ϕ_π	2.0	2.06 (1.88, 2.20) [0.061]	1.99 (1.72, 2.21) [0.073]	1.89 (1.67, 2.09) [0.083]	1.83 (1.62, 2.09) [0.114]	1.69 (1.52, 1.93) [0.155]	1.74 (1.52, 1.91) [0.149]
ϕ_y	0.5	0.34 (0.22, 0.54) [0.353]	0.34 (0.21, 0.56) [0.356]	0.33 (0.14, 0.54) [0.420]	0.30 (0.18, 0.50) [0.430]	0.30 (0.19, 0.45) [0.422]	0.31 (0.17, 0.47) [0.398]
Σ		[1.88]	[2.01]	[2.11]	[2.27]	[2.28]	[2.28]
				Linear, Kalman Filter, ME 5%, Sticky Wages			
φ_p	100	110.6 (89.9, 126.2) [0.142]	111.0 (96.0, 128.0) [0.155]	118.7 (96.3, 136.8) [0.221]	128.0 (110.7, 146.8) [0.299]	133.6 (111.5, 153.1) [0.349]	135.7 (112.9, 151.0) [0.362]
h	0.8	0.83 (0.78, 0.87) [0.048]	0.83 (0.78, 0.87) [0.052]	0.83 (0.78, 0.87) [0.050]	0.83 (0.78, 0.86) [0.049]	0.83 (0.80, 0.87) [0.051]	0.84 (0.79, 0.87) [0.055]
ρ_s	0.8	0.83 (0.76, 0.87) [0.046]	0.83 (0.77, 0.87) [0.043]	0.83 (0.79, 0.87) [0.048]	0.83 (0.79, 0.89) [0.051]	0.84 (0.79, 0.86) [0.051]	0.83 (0.77, 0.87) [0.051]
ρ_i	0.8	0.82 (0.80, 0.85) [0.037]	0.83 (0.79, 0.86) [0.045]	0.84 (0.81, 0.86) [0.051]	0.85 (0.81, 0.88) [0.068]	0.85 (0.82, 0.89) [0.074]	0.86 (0.82, 0.89) [0.078]
σ_g	0.005	0.0026 (0.0018, 0.0032) [0.477]	0.0026 (0.0020, 0.0036) [0.479]	0.0028 (0.0020, 0.0035) [0.451]	0.0031 (0.0023, 0.0043) [0.394]	0.0031 (0.0023, 0.0039) [0.386]	0.0033 (0.0023, 0.0043) [0.368]
σ_s	0.005	0.0074 (0.0049, 0.0128) [0.805]	0.0078 (0.0053, 0.0136) [0.855]	0.0082 (0.0055, 0.0118) [0.881]	0.0079 (0.0048, 0.0123) [0.825]	0.0078 (0.0056, 0.0126) [0.876]	0.0088 (0.0057, 0.0162) [1.047]
σ_i	0.002	0.0017 (0.0014, 0.0019) [0.191]	0.0016 (0.0013, 0.0019) [0.223]	0.0016 (0.0014, 0.0019) [0.200]	0.0015 (0.0012, 0.0018) [0.243]	0.0016 (0.0013, 0.0019) [0.222]	0.0016 (0.0014, 0.0019) [0.227]
ϕ_π	2.0	1.92 (1.76, 2.07) [0.062]	1.89 (1.65, 2.12) [0.090]	1.80 (1.60, 1.96) [0.115]	1.76 (1.54, 1.97) [0.142]	1.62 (1.45, 1.84) [0.187]	1.64 (1.47, 1.82) [0.183]
ϕ_y	0.5	0.43 (0.29, 0.64) [0.241]	0.43 (0.28, 0.64) [0.258]	0.37 (0.19, 0.59) [0.359]	0.34 (0.22, 0.57) [0.364]	0.31 (0.20, 0.50) [0.394]	0.33 (0.19, 0.54) [0.375]
Σ		[2.05]	[2.20]	[2.38]	[2.43]	[2.59]	[2.75]

Table 7: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	No Misspecification: DGP and Estimation Use Small-Scale Model					
		NL-PF-5%		PW-IF-0%		Lin-KF-5%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	96.8 (81.6, 109.9) [0.09]	109.8 (89.5, 130.3) [0.15]	94.3 (81.8, 108.3) [0.11]	110.6 (95.3, 125.1) [0.15]	103.7 (92.6, 118.4) [0.09]	128.5 (111.2, 145.3) [0.30]
h	0.8	0.79 (0.76, 0.82) [0.02]	0.79 (0.77, 0.82) [0.02]	0.79 (0.75, 0.82) [0.02]	0.79 (0.77, 0.82) [0.02]	0.80 (0.76, 0.83) [0.02]	0.79 (0.76, 0.82) [0.03]
ρ_s	0.8	0.80 (0.76, 0.83) [0.03]	0.83 (0.78, 0.86) [0.04]	0.81 (0.76, 0.85) [0.04]	0.84 (0.80, 0.87) [0.06]	0.82 (0.77, 0.86) [0.05]	0.87 (0.83, 0.91) [0.10]
ρ_i	0.8	0.82 (0.79, 0.84) [0.03]	0.82 (0.78, 0.85) [0.03]	0.79 (0.77, 0.82) [0.02]	0.79 (0.74, 0.82) [0.03]	0.82 (0.79, 0.84) [0.03]	0.86 (0.83, 0.88) [0.08]
σ_g	0.005	0.0037 (0.0029, 0.0046) [0.27]	0.0035 (0.0025, 0.0045) [0.33]	0.0051 (0.0044, 0.0056) [0.08]	0.0052 (0.0043, 0.0061) [0.11]	0.0038 (0.0029, 0.0046) [0.26]	0.0034 (0.0026, 0.0044) [0.33]
σ_s	0.005	0.0047 (0.0035, 0.0058) [0.19]	0.0043 (0.0032, 0.0058) [0.22]	0.0049 (0.0039, 0.0060) [0.16]	0.0046 (0.0034, 0.0057) [0.17]	0.0047 (0.0034, 0.0059) [0.21]	0.0036 (0.0027, 0.0046) [0.32]
σ_i	0.002	0.0016 (0.0013, 0.0020) [0.20]	0.0014 (0.0010, 0.0018) [0.31]	0.0020 (0.0017, 0.0022) [0.07]	0.0019 (0.0016, 0.0022) [0.10]	0.0016 (0.0013, 0.0019) [0.20]	0.0015 (0.0012, 0.0017) [0.27]
ϕ_π	2.0	2.00 (1.81, 2.21) [0.06]	2.01 (1.82, 2.20) [0.06]	1.95 (1.74, 2.14) [0.06]	1.80 (1.58, 2.06) [0.12]	1.97 (1.76, 2.18) [0.07]	1.62 (1.42, 1.86) [0.20]
ϕ_y	0.5	0.45 (0.29, 0.61) [0.22]	0.48 (0.28, 0.61) [0.18]	0.46 (0.30, 0.63) [0.21]	0.52 (0.32, 0.73) [0.23]	0.46 (0.31, 0.63) [0.22]	0.50 (0.34, 0.66) [0.19]
Σ		[1.12]	[1.35]	[0.78]	[0.99]	[1.14]	[1.82]

Table 8: Average, $(5, 95)$ percentiles and [NRMSE] of the mean parameter estimates.

Ptr	Truth	NL-PF-5%		Lin-KF-0%		Lin-KF-5%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	97.5 (81.6, 109.9) [0.09]	108.6 (89.5, 130.3) [0.15]	92.6 (82.1, 107.2) [0.11]	121.4 (101.3, 136.9) [0.23]	104.2 (92.6, 118.4) [0.09]	129.2 (111.2, 145.3) [0.30]
h	0.8	0.79 (0.76, 0.82) [0.02]	0.79 (0.77, 0.82) [0.02]	0.79 (0.75, 0.82) [0.02]	0.79 (0.77, 0.82) [0.02]	0.80 (0.76, 0.83) [0.02]	0.79 (0.76, 0.82) [0.03]
ρ_s	0.8	0.80 (0.76, 0.83) [0.03]	0.83 (0.78, 0.86) [0.04]	0.81 (0.76, 0.84) [0.04]	0.85 (0.81, 0.88) [0.07]	0.82 (0.77, 0.86) [0.05]	0.88 (0.83, 0.91) [0.10]
ρ_i	0.8	0.82 (0.79, 0.84) [0.03]	0.82 (0.78, 0.85) [0.03]	0.79 (0.76, 0.82) [0.02]	0.83 (0.81, 0.86) [0.05]	0.82 (0.79, 0.84) [0.03]	0.86 (0.83, 0.88) [0.08]
σ_g	0.005	0.0037 (0.0029, 0.0046) [0.27]	0.0034 (0.0025, 0.0045) [0.33]	0.0049 (0.0045, 0.0056) [0.08]	0.0050 (0.0041, 0.0057) [0.09]	0.0038 (0.0029, 0.0046) [0.26]	0.0034 (0.0026, 0.0044) [0.33]
σ_s	0.005	0.0046 (0.0035, 0.0058) [0.19]	0.0042 (0.0032, 0.0058) [0.22]	0.0050 (0.0039, 0.0060) [0.16]	0.0043 (0.0031, 0.0052) [0.21]	0.0045 (0.0034, 0.0059) [0.21]	0.0036 (0.0027, 0.0046) [0.32]
σ_i	0.002	0.0016 (0.0013, 0.0020) [0.20]	0.0014 (0.0010, 0.0018) [0.31]	0.0020 (0.0017, 0.0022) [0.07]	0.0019 (0.0016, 0.0021) [0.10]	0.0016 (0.0013, 0.0019) [0.20]	0.0015 (0.0012, 0.0017) [0.27]
ϕ_π	2.0	2.00 (1.81, 2.21) [0.06]	2.01 (1.82, 2.20) [0.06]	1.95 (1.72, 2.16) [0.07]	1.61 (1.42, 1.84) [0.20]	1.99 (1.76, 2.18) [0.07]	1.61 (1.42, 1.86) [0.20]
ϕ_y	0.5	0.45 (0.29, 0.61) [0.22]	0.48 (0.28, 0.61) [0.18]	0.46 (0.32, 0.63) [0.21]	0.47 (0.32, 0.66) [0.21]	0.46 (0.31, 0.63) [0.22]	0.50 (0.34, 0.66) [0.19]
Σ		[1.12]	[1.35]	[0.78]	[1.18]	[1.14]	[1.82]
N		50	50	50	50	50	50

Table 9: No Misspecification in the DGP. Median, $(5\%, 95\%)$ credible sets and [NRMSE] of the posterior mean parameter estimates.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
No misspecification, Global, Particle Filter, ME 5%							
φ_p	100	97.5 (81.6, 109.9) [0.088]	98.2 (85.3, 114.6) [0.098]	102.6 (85.1, 114.9) [0.087]	105.2 (93.2, 122.3) [0.105]	112.1 (91.1, 128.5) [0.151]	108.6 (89.5, 130.3) [0.148]
h	0.8	0.79 (0.76, 0.82) [0.024]	0.79 (0.75, 0.83) [0.030]	0.80 (0.76, 0.83) [0.027]	0.80 (0.77, 0.82) [0.023]	0.80 (0.77, 0.82) [0.022]	0.79 (0.77, 0.82) [0.024]
ρ_s	0.8	0.80 (0.76, 0.83) [0.033]	0.80 (0.77, 0.83) [0.027]	0.82 (0.76, 0.85) [0.034]	0.82 (0.79, 0.85) [0.035]	0.83 (0.79, 0.85) [0.041]	0.83 (0.78, 0.86) [0.045]
ρ_i	0.8	0.82 (0.79, 0.84) [0.030]	0.82 (0.78, 0.84) [0.030]	0.82 (0.78, 0.84) [0.033]	0.82 (0.79, 0.85) [0.036]	0.83 (0.80, 0.85) [0.040]	0.82 (0.78, 0.85) [0.035]
σ_g	0.005	0.0037 (0.0029, 0.0046) [0.271]	0.0035 (0.0025, 0.0046) [0.316]	0.0036 (0.0026, 0.0047) [0.310]	0.0034 (0.0025, 0.0042) [0.343]	0.0035 (0.0024, 0.0043) [0.337]	0.0034 (0.0025, 0.0045) [0.326]
σ_s	0.005	0.0046 (0.0035, 0.0058) [0.188]	0.0047 (0.0036, 0.0058) [0.143]	0.0046 (0.0034, 0.0064) [0.186]	0.0044 (0.0032, 0.0056) [0.175]	0.0042 (0.0032, 0.0056) [0.191]	0.0042 (0.0032, 0.0058) [0.217]
σ_i	0.002	0.0016 (0.0013, 0.0020) [0.201]	0.0016 (0.0013, 0.0019) [0.216]	0.0015 (0.0013, 0.0017) [0.241]	0.0015 (0.0013, 0.0018) [0.265]	0.0015 (0.0012, 0.0018) [0.268]	0.0014 (0.0010, 0.0018) [0.312]
ϕ_π	2.0	2.00 (1.81, 2.21) [0.061]	2.02 (1.82, 2.28) [0.070]	2.09 (1.90, 2.29) [0.076]	2.03 (1.84, 2.26) [0.062]	2.05 (1.85, 2.19) [0.055]	2.01 (1.82, 2.20) [0.055]
ϕ_y	0.5	0.45 (0.29, 0.61) [0.224]	0.49 (0.34, 0.64) [0.192]	0.49 (0.37, 0.70) [0.189]	0.53 (0.38, 0.70) [0.224]	0.51 (0.37, 0.67) [0.171]	0.48 (0.28, 0.61) [0.184]
Σ		[1.12]	[1.12]	[1.18]	[1.27]	[1.28]	[1.35]
N		50	50	50	50	44	50
No misspecification, Piecewise Linear, Inversion Filter, ME 0%							
φ_p	100	93.9 (81.8, 108.3) [0.105]	96.5 (81.8, 114.7) [0.115]	98.8 (88.6, 116.6) [0.095]	107.8 (92.7, 119.2) [0.114]	108.4 (90.5, 123.0) [0.136]	110.3 (95.3, 125.1) [0.148]
h	0.8	0.79 (0.75, 0.82) [0.024]	0.79 (0.76, 0.82) [0.026]	0.79 (0.76, 0.82) [0.022]	0.79 (0.76, 0.83) [0.025]	0.80 (0.76, 0.82) [0.020]	0.79 (0.77, 0.82) [0.021]
ρ_s	0.8	0.81 (0.76, 0.85) [0.037]	0.81 (0.77, 0.86) [0.034]	0.82 (0.75, 0.86) [0.043]	0.83 (0.79, 0.86) [0.046]	0.83 (0.80, 0.86) [0.046]	0.83 (0.80, 0.87) [0.056]
ρ_i	0.8	0.80 (0.77, 0.82) [0.023]	0.80 (0.75, 0.82) [0.029]	0.79 (0.75, 0.82) [0.029]	0.80 (0.77, 0.83) [0.023]	0.79 (0.76, 0.83) [0.028]	0.79 (0.74, 0.82) [0.032]
σ_g	0.005	0.0050 (0.0044, 0.0056) [0.082]	0.0049 (0.0043, 0.0060) [0.101]	0.0050 (0.0043, 0.0059) [0.101]	0.0051 (0.0044, 0.0060) [0.090]	0.0051 (0.0041, 0.0058) [0.093]	0.0051 (0.0043, 0.0061) [0.110]
σ_s	0.005	0.0049 (0.0039, 0.0060) [0.165]	0.0050 (0.0042, 0.0062) [0.128]	0.0049 (0.0040, 0.0072) [0.178]	0.0046 (0.0038, 0.0060) [0.155]	0.0047 (0.0039, 0.0058) [0.136]	0.0047 (0.0034, 0.0057) [0.168]
σ_i	0.002	0.0020 (0.0017, 0.0022) [0.069]	0.0020 (0.0018, 0.0023) [0.072]	0.0020 (0.0018, 0.0023) [0.073]	0.0020 (0.0017, 0.0023) [0.083]	0.0021 (0.0018, 0.0023) [0.085]	0.0020 (0.0016, 0.0022) [0.098]
ϕ_π	2.0	1.97 (1.74, 2.14) [0.064]	1.94 (1.59, 2.16) [0.087]	1.94 (1.71, 2.14) [0.073]	1.88 (1.65, 2.09) [0.085]	1.87 (1.61, 2.07) [0.097]	1.81 (1.58, 2.06) [0.123]
ϕ_y	0.5	0.46 (0.30, 0.63) [0.212]	0.50 (0.33, 0.65) [0.199]	0.52 (0.35, 0.73) [0.244]	0.55 (0.39, 0.75) [0.238]	0.54 (0.37, 0.72) [0.247]	0.52 (0.32, 0.73) [0.228]
Σ		[0.78]	[0.79]	[0.86]	[0.86]	[0.89]	[0.99]
N		50	50	50	50	50	50

Table 10: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters. Σ is the sum of NRMSE.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
No misspecification, Level Linear, Kalman Filter, ME 0%							
φ_p	100	92.6 (82.1, 107.2) [0.108]	96.5 (80.5, 116.2) [0.118]	104.1 (83.5, 121.6) [0.119]	110.1 (92.4, 125.1) [0.140]	112.2 (95.2, 131.4) [0.175]	121.4 (101.3, 136.9) [0.226]
h	0.8	0.79 (0.75, 0.82) [0.023]	0.79 (0.76, 0.82) [0.026]	0.79 (0.76, 0.82) [0.022]	0.79 (0.75, 0.82) [0.025]	0.80 (0.77, 0.82) [0.020]	0.79 (0.77, 0.82) [0.021]
ρ_s	0.8	0.81 (0.76, 0.84) [0.036]	0.81 (0.77, 0.85) [0.033]	0.83 (0.76, 0.87) [0.047]	0.84 (0.80, 0.87) [0.051]	0.84 (0.81, 0.87) [0.058]	0.85 (0.81, 0.88) [0.072]
ρ_i	0.8	0.79 (0.76, 0.82) [0.022]	0.81 (0.77, 0.83) [0.024]	0.81 (0.77, 0.84) [0.028]	0.82 (0.79, 0.85) [0.034]	0.83 (0.80, 0.87) [0.047]	0.83 (0.81, 0.86) [0.050]
σ_g	0.005	0.0049 (0.0045, 0.0056) [0.079]	0.0048 (0.0042, 0.0060) [0.098]	0.0050 (0.0043, 0.0058) [0.091]	0.0050 (0.0043, 0.0056) [0.078]	0.0050 (0.0041, 0.0057) [0.087]	0.0050 (0.0041, 0.0057) [0.092]
σ_s	0.005	0.0050 (0.0039, 0.0060) [0.161]	0.0049 (0.0041, 0.0061) [0.121]	0.0047 (0.0038, 0.0067) [0.172]	0.0045 (0.0037, 0.0061) [0.168]	0.0044 (0.0037, 0.0054) [0.156]	0.0043 (0.0031, 0.0052) [0.208]
σ_i	0.002	0.0020 (0.0017, 0.0022) [0.069]	0.0019 (0.0018, 0.0022) [0.071]	0.0020 (0.0018, 0.0022) [0.070]	0.0019 (0.0017, 0.0021) [0.089]	0.0020 (0.0017, 0.0021) [0.080]	0.0019 (0.0016, 0.0021) [0.104]
ϕ_π	2.0	1.95 (1.72, 2.16) [0.066]	1.94 (1.66, 2.13) [0.078]	1.89 (1.65, 2.09) [0.093]	1.77 (1.58, 2.00) [0.136]	1.71 (1.58, 1.91) [0.151]	1.61 (1.42, 1.84) [0.204]
ϕ_y	0.5	0.46 (0.32, 0.63) [0.213]	0.49 (0.31, 0.66) [0.212]	0.50 (0.33, 0.66) [0.202]	0.49 (0.39, 0.68) [0.198]	0.49 (0.32, 0.63) [0.197]	0.47 (0.32, 0.66) [0.207]
Σ		[0.78]	[0.78]	[0.84]	[0.92]	[0.97]	[1.18]
N		50	50	50	50	50	50
No misspecification, Level Linear, Kalman Filter, ME 5%							
φ_p	100	104.2 (92.6, 118.4) [0.092]	107.1 (92.8, 123.6) [0.122]	113.7 (96.6, 133.1) [0.171]	119.2 (103.7, 135.6) [0.219]	123.3 (106.4, 145.2) [0.269]	129.2 (111.2, 145.3) [0.304]
h	0.8	0.80 (0.76, 0.83) [0.023]	0.80 (0.75, 0.83) [0.028]	0.80 (0.76, 0.83) [0.025]	0.79 (0.77, 0.82) [0.023]	0.79 (0.77, 0.82) [0.022]	0.79 (0.76, 0.82) [0.025]
ρ_s	0.8	0.82 (0.77, 0.86) [0.046]	0.83 (0.80, 0.88) [0.051]	0.84 (0.79, 0.88) [0.065]	0.85 (0.82, 0.90) [0.070]	0.86 (0.83, 0.90) [0.081]	0.88 (0.83, 0.91) [0.097]
ρ_i	0.8	0.82 (0.79, 0.84) [0.029]	0.82 (0.79, 0.85) [0.037]	0.83 (0.79, 0.86) [0.049]	0.84 (0.81, 0.87) [0.057]	0.85 (0.82, 0.89) [0.073]	0.86 (0.83, 0.88) [0.076]
σ_g	0.005	0.0038 (0.0029, 0.0046) [0.262]	0.0035 (0.0025, 0.0047) [0.308]	0.0037 (0.0026, 0.0045) [0.302]	0.0035 (0.0025, 0.0043) [0.334]	0.0035 (0.0025, 0.0042) [0.333]	0.0034 (0.0026, 0.0044) [0.329]
σ_s	0.005	0.0045 (0.0034, 0.0059) [0.206]	0.0047 (0.0034, 0.0056) [0.162]	0.0043 (0.0032, 0.0059) [0.205]	0.0041 (0.0030, 0.0051) [0.217]	0.0038 (0.0028, 0.0051) [0.259]	0.0036 (0.0027, 0.0046) [0.325]
σ_i	0.002	0.0016 (0.0013, 0.0019) [0.199]	0.0016 (0.0013, 0.0019) [0.224]	0.0016 (0.0014, 0.0019) [0.226]	0.0015 (0.0013, 0.0018) [0.254]	0.0015 (0.0013, 0.0018) [0.245]	0.0015 (0.0012, 0.0017) [0.272]
ϕ_π	2.0	1.99 (1.76, 2.18) [0.068]	1.96 (1.72, 2.19) [0.077]	1.92 (1.66, 2.13) [0.086]	1.78 (1.56, 2.02) [0.132]	1.73 (1.59, 1.90) [0.144]	1.61 (1.42, 1.86) [0.199]
ϕ_y	0.5	0.46 (0.31, 0.63) [0.219]	0.48 (0.32, 0.62) [0.202]	0.50 (0.35, 0.68) [0.195]	0.53 (0.38, 0.68) [0.201]	0.49 (0.33, 0.67) [0.203]	0.50 (0.34, 0.66) [0.191]
Σ		[1.14]	[1.21]	[1.33]	[1.51]	[1.63]	[1.82]
N		50	50	50	50	50	50

Table 11: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters. Σ is the sum of NRMSE.

Ptr	Truth	NL-PF-5%			PW-IF-0%		
		0Q	30Q	5x6Q	0Q	30Q	5x6Q
φ_p	100	152.6 (134.2, 165.8) [0.52]	187.4 (174.7, 202.7) [0.89]	173.8 (160.0, 185.3) [0.75]	144.6 (121.1, 157.3) [0.44]	182.2 (169.2, 198.5) [0.84]	170.6 (158.5, 184.1) [0.71]
h	0.8	0.66 (0.62, 0.70) [0.18]	0.68 (0.64, 0.71) [0.16]	0.67 (0.64, 0.71) [0.16]	0.64 (0.61, 0.67) [0.20]	0.63 (0.60, 0.67) [0.21]	0.64 (0.61, 0.67) [0.20]
ρ_s	0.8	0.76 (0.72, 0.80) [0.06]	0.81 (0.78, 0.84) [0.03]	0.79 (0.75, 0.81) [0.03]	0.76 (0.73, 0.81) [0.05]	0.82 (0.79, 0.86) [0.04]	0.79 (0.76, 0.81) [0.03]
ρ_i	0.8	0.78 (0.75, 0.82) [0.03]	0.80 (0.75, 0.84) [0.03]	0.80 (0.76, 0.83) [0.02]	0.76 (0.71, 0.79) [0.06]	0.76 (0.73, 0.81) [0.05]	0.76 (0.72, 0.80) [0.06]
σ_g	0.005	0.0032 (0.0023, 0.0039) [0.37]	0.0040 (0.0030, 0.0052) [0.23]	0.0029 (0.0019, 0.0039) [0.43]	0.0051 (0.0044, 0.0058) [0.09]	0.0059 (0.0050, 0.0069) [0.22]	0.0054 (0.0049, 0.0063) [0.12]
σ_s	0.005	0.0051 (0.0040, 0.0066) [0.15]	0.0051 (0.0039, 0.0062) [0.13]	0.0056 (0.0047, 0.0074) [0.23]	0.0050 (0.0042, 0.0063) [0.13]	0.0045 (0.0036, 0.0056) [0.15]	0.0053 (0.0045, 0.0064) [0.14]
σ_i	0.002	0.0017 (0.0014, 0.0020) [0.17]	0.0015 (0.0013, 0.0019) [0.24]	0.0016 (0.0013, 0.0020) [0.23]	0.0020 (0.0018, 0.0023) [0.08]	0.0020 (0.0019, 0.0024) [0.09]	0.0020 (0.0018, 0.0023) [0.08]
ϕ_π	2.0	2.05 (1.88, 2.19) [0.06]	2.12 (1.94, 2.31) [0.09]	2.11 (1.92, 2.39) [0.10]	2.03 (1.84, 2.16) [0.06]	1.95 (1.77, 2.14) [0.06]	1.85 (1.60, 2.10) [0.11]
ϕ_y	0.5	0.33 (0.21, 0.54) [0.36]	0.40 (0.27, 0.62) [0.28]	0.44 (0.31, 0.59) [0.20]	0.33 (0.17, 0.48) [0.41]	0.44 (0.27, 0.61) [0.25]	0.38 (0.26, 0.54) [0.30]
Σ		[1.90]	[2.08]	[2.16]	[1.53]	[1.91]	[1.74]

Table 12: Median, $(5\%, 95\%)$ credible sets and [NRMSE] of the posterior mean parameter estimates.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
				Piecewise Linear, Inversion Filter, ME 0%			
φ_p	100	144.6 (121.1, 157.3) [0.438]	153.0 (131.3, 170.7) [0.539]	163.1 (140.8, 185.5) [0.661]	171.3 (153.9, 202.0) [0.761]	180.8 (165.3, 204.1) [0.839]	182.2 (169.2, 198.5) [0.841]
h	0.8	0.640 (0.611, 0.673) [0.200]	0.641 (0.606, 0.676) [0.202]	0.634 (0.596, 0.667) [0.211]	0.637 (0.611, 0.672) [0.208]	0.633 (0.586, 0.670) [0.211]	0.629 (0.596, 0.672) [0.215]
ρ_s	0.8	0.763 (0.728, 0.808) [0.054]	0.774 (0.733, 0.809) [0.043]	0.806 (0.755, 0.833) [0.029]	0.814 (0.783, 0.847) [0.034]	0.821 (0.799, 0.847) [0.033]	0.821 (0.785, 0.856) [0.035]
ρ_i	0.8	0.755 (0.712, 0.790) [0.061]	0.756 (0.706, 0.798) [0.068]	0.757 (0.727, 0.786) [0.056]	0.762 (0.683, 0.800) [0.064]	0.763 (0.724, 0.806) [0.058]	0.763 (0.733, 0.808) [0.050]
σ_g	0.0050	0.0051 (0.0044, 0.0058) [0.091]	0.0053 (0.0048, 0.0068) [0.129]	0.0056 (0.0047, 0.0066) [0.194]	0.0057 (0.0051, 0.0079) [0.243]	0.0058 (0.0051, 0.0074) [0.245]	0.0059 (0.0050, 0.0069) [0.217]
σ_s	0.0050	0.0050 (0.0042, 0.0063) [0.133]	0.0050 (0.0041, 0.0063) [0.139]	0.0048 (0.0039, 0.0058) [0.133]	0.0048 (0.0031, 0.0058) [0.182]	0.0044 (0.0037, 0.0053) [0.150]	0.0045 (0.0036, 0.0056) [0.147]
σ_i	0.0020	0.0020 (0.0018, 0.0023) [0.082]	0.0020 (0.0018, 0.0023) [0.073]	0.0021 (0.0018, 0.0022) [0.067]	0.0020 (0.0018, 0.0024) [0.095]	0.0020 (0.0018, 0.0023) [0.081]	0.0020 (0.0019, 0.0024) [0.091]
ϕ_π	2.0	2.026 (1.840, 2.155) [0.058]	1.954 (1.768, 2.158) [0.070]	2.010 (1.785, 2.164) [0.058]	1.978 (1.732, 2.225) [0.076]	1.953 (1.690, 2.190) [0.081]	1.946 (1.771, 2.138) [0.063]
ϕ_y	0.5	0.332 (0.175, 0.480) [0.409]	0.331 (0.177, 0.534) [0.371]	0.390 (0.236, 0.559) [0.297]	0.368 (0.202, 0.521) [0.349]	0.396 (0.209, 0.620) [0.288]	0.436 (0.273, 0.610) [0.248]
				Global, Particle Filter, ME 5%			
φ_p	100	152.6 (134.2, 165.8) [0.520]	160.5 (143.2, 179.3) [0.619]	170.6 (153.8, 193.4) [0.732]	180.2 (161.3, 201.4) [0.814]	187.6 (167.0, 204.5) [0.878]	187.4 (174.7, 202.7) [0.888]
h	0.8	0.661 (0.618, 0.695) [0.177]	0.662 (0.611, 0.710) [0.173]	0.670 (0.619, 0.706) [0.169]	0.678 (0.631, 0.707) [0.161]	0.682 (0.637, 0.716) [0.153]	0.676 (0.644, 0.714) [0.157]
ρ_s	0.8	0.759 (0.718, 0.797) [0.062]	0.773 (0.741, 0.807) [0.044]	0.795 (0.751, 0.823) [0.028]	0.801 (0.768, 0.840) [0.031]	0.808 (0.780, 0.834) [0.023]	0.809 (0.783, 0.843) [0.028]
ρ_i	0.8	0.783 (0.751, 0.823) [0.032]	0.797 (0.746, 0.825) [0.039]	0.795 (0.768, 0.825) [0.023]	0.808 (0.759, 0.829) [0.028]	0.806 (0.757, 0.842) [0.033]	0.804 (0.753, 0.838) [0.031]
σ_g	0.0050	0.0032 (0.0023, 0.0039) [0.367]	0.0031 (0.0023, 0.0041) [0.381]	0.0034 (0.0024, 0.0044) [0.341]	0.0037 (0.0027, 0.0049) [0.287]	0.0038 (0.0027, 0.0047) [0.275]	0.0040 (0.0030, 0.0052) [0.230]
σ_s	0.0050	0.0051 (0.0040, 0.0066) [0.147]	0.0051 (0.0042, 0.0068) [0.146]	0.0050 (0.0040, 0.0060) [0.134]	0.0052 (0.0034, 0.0064) [0.184]	0.0050 (0.0041, 0.0064) [0.121]	0.0051 (0.0039, 0.0062) [0.135]
σ_i	0.0020	0.0017 (0.0014, 0.0020) [0.165]	0.0017 (0.0014, 0.0019) [0.183]	0.0016 (0.0014, 0.0019) [0.209]	0.0016 (0.0013, 0.0019) [0.241]	0.0015 (0.0013, 0.0018) [0.252]	0.0015 (0.0013, 0.0019) [0.244]
ϕ_π	2.0	2.048 (1.876, 2.191) [0.064]	2.073 (1.867, 2.243) [0.072]	2.122 (1.936, 2.329) [0.084]	2.119 (1.899, 2.407) [0.095]	2.120 (1.844, 2.332) [0.086]	2.116 (1.939, 2.309) [0.088]
ϕ_y	0.5	0.330 (0.212, 0.543) [0.360]	0.377 (0.222, 0.615) [0.308]	0.403 (0.267, 0.602) [0.271]	0.395 (0.256, 0.536) [0.273]	0.403 (0.261, 0.608) [0.268]	0.403 (0.275, 0.617) [0.283]

Table 13: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
				Level Linear, Kalman Filter, ME 5%			
φ_p	100	153.8 (134.0, 165.7) [0.523]	160.6 (142.0, 179.5) [0.621]	171.7 (153.7, 198.6) [0.760]	184.4 (163.0, 208.5) [0.841]	193.7 (172.1, 210.9) [0.918]	191.3 (175.3, 204.1) [0.920]
h	0.8	0.662 (0.618, 0.692) [0.177]	0.659 (0.609, 0.707) [0.176]	0.671 (0.617, 0.714) [0.169]	0.670 (0.626, 0.705) [0.166]	0.677 (0.635, 0.710) [0.160]	0.668 (0.629, 0.703) [0.168]
ρ_s	0.8	0.762 (0.716, 0.801) [0.058]	0.779 (0.740, 0.812) [0.039]	0.800 (0.753, 0.826) [0.027]	0.807 (0.779, 0.846) [0.034]	0.820 (0.792, 0.847) [0.033]	0.823 (0.784, 0.856) [0.040]
ρ_i	0.8	0.785 (0.752, 0.823) [0.031]	0.801 (0.745, 0.830) [0.036]	0.812 (0.777, 0.841) [0.029]	0.825 (0.779, 0.862) [0.045]	0.832 (0.800, 0.879) [0.053]	0.843 (0.799, 0.875) [0.058]
σ_g	0.0050	0.0032 (0.0023, 0.0039) [0.362]	0.0032 (0.0025, 0.0041) [0.363]	0.0036 (0.0027, 0.0045) [0.308]	0.0040 (0.0029, 0.0052) [0.240]	0.0042 (0.0029, 0.0054) [0.222]	0.0043 (0.0030, 0.0057) [0.204]
σ_s	0.0050	0.0052 (0.0040, 0.0067) [0.153]	0.0051 (0.0042, 0.0068) [0.149]	0.0052 (0.0041, 0.0062) [0.140]	0.0049 (0.0033, 0.0063) [0.177]	0.0047 (0.0039, 0.0059) [0.119]	0.0047 (0.0037, 0.0061) [0.146]
σ_i	0.0020	0.0017 (0.0015, 0.0020) [0.164]	0.0016 (0.0014, 0.0019) [0.197]	0.0017 (0.0014, 0.0020) [0.172]	0.0016 (0.0012, 0.0019) [0.217]	0.0016 (0.0014, 0.0020) [0.194]	0.0016 (0.0014, 0.0019) [0.196]
ϕ_π	2.0	2.059 (1.876, 2.204) [0.061]	1.992 (1.720, 2.211) [0.073]	1.886 (1.670, 2.087) [0.083]	1.834 (1.615, 2.088) [0.114]	1.692 (1.524, 1.925) [0.155]	1.739 (1.521, 1.913) [0.149]
ϕ_y	0.5	0.341 (0.219, 0.539) [0.353]	0.341 (0.205, 0.555) [0.356]	0.328 (0.140, 0.539) [0.420]	0.296 (0.180, 0.498) [0.430]	0.296 (0.195, 0.452) [0.422]	0.309 (0.167, 0.467) [0.398]
				Global, Particle Filter, ME 5%			
φ_p	100	152.6 (134.2, 165.8) [0.520]	160.5 (143.2, 179.3) [0.619]	170.6 (153.8, 193.4) [0.732]	180.2 (161.3, 201.4) [0.814]	187.6 (167.0, 204.5) [0.878]	187.4 (174.7, 202.7) [0.888]
h	0.8	0.661 (0.618, 0.695) [0.177]	0.662 (0.611, 0.710) [0.173]	0.670 (0.619, 0.706) [0.169]	0.678 (0.631, 0.707) [0.161]	0.682 (0.637, 0.716) [0.153]	0.676 (0.644, 0.714) [0.157]
ρ_s	0.8	0.759 (0.718, 0.797) [0.062]	0.773 (0.741, 0.807) [0.044]	0.795 (0.751, 0.823) [0.028]	0.801 (0.768, 0.840) [0.031]	0.808 (0.780, 0.834) [0.023]	0.809 (0.783, 0.843) [0.028]
ρ_i	0.8	0.783 (0.751, 0.823) [0.032]	0.797 (0.746, 0.825) [0.039]	0.795 (0.768, 0.825) [0.023]	0.808 (0.759, 0.829) [0.028]	0.806 (0.757, 0.842) [0.033]	0.804 (0.753, 0.838) [0.031]
σ_g	0.0050	0.0032 (0.0023, 0.0039) [0.367]	0.0031 (0.0023, 0.0041) [0.381]	0.0034 (0.0024, 0.0044) [0.341]	0.0037 (0.0027, 0.0049) [0.287]	0.0038 (0.0027, 0.0047) [0.275]	0.0040 (0.0030, 0.0052) [0.230]
σ_s	0.0050	0.0051 (0.0040, 0.0066) [0.147]	0.0051 (0.0042, 0.0068) [0.146]	0.0050 (0.0040, 0.0060) [0.134]	0.0052 (0.0034, 0.0064) [0.184]	0.0050 (0.0041, 0.0064) [0.121]	0.0051 (0.0039, 0.0062) [0.135]
σ_i	0.0020	0.0017 (0.0014, 0.0020) [0.165]	0.0017 (0.0014, 0.0019) [0.183]	0.0016 (0.0014, 0.0019) [0.209]	0.0016 (0.0013, 0.0019) [0.241]	0.0015 (0.0013, 0.0018) [0.252]	0.0015 (0.0013, 0.0019) [0.244]
ϕ_π	2.0	2.048 (1.876, 2.191) [0.064]	2.073 (1.867, 2.243) [0.072]	2.122 (1.936, 2.329) [0.084]	2.119 (1.899, 2.407) [0.095]	2.120 (1.844, 2.332) [0.086]	2.116 (1.939, 2.309) [0.088]
ϕ_y	0.5	0.330 (0.212, 0.543) [0.360]	0.377 (0.222, 0.615) [0.308]	0.403 (0.267, 0.602) [0.271]	0.395 (0.256, 0.536) [0.273]	0.403 (0.261, 0.608) [0.268]	0.403 (0.275, 0.617) [0.283]

Table 14: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
				Piecewise Linear, Inversion Filter, ME 0%			
φ_p	100	144.6 (121.1, 157.3) [0.438]	153.0 (131.3, 170.7) [0.539]	163.1 (140.8, 185.5) [0.661]	171.3 (153.9, 202.0) [0.761]	180.8 (165.3, 204.1) [0.839]	182.2 (169.2, 198.5) [0.841]
h	0.8	0.640 (0.611, 0.673) [0.200]	0.641 (0.606, 0.676) [0.202]	0.634 (0.596, 0.667) [0.211]	0.637 (0.611, 0.672) [0.208]	0.633 (0.586, 0.670) [0.211]	0.629 (0.596, 0.672) [0.215]
ρ_s	0.8	0.763 (0.728, 0.808) [0.054]	0.774 (0.733, 0.809) [0.043]	0.806 (0.755, 0.833) [0.029]	0.814 (0.783, 0.847) [0.034]	0.821 (0.799, 0.847) [0.033]	0.821 (0.785, 0.856) [0.035]
ρ_i	0.8	0.755 (0.712, 0.790) [0.061]	0.756 (0.706, 0.798) [0.068]	0.757 (0.727, 0.786) [0.056]	0.762 (0.683, 0.800) [0.064]	0.763 (0.724, 0.806) [0.058]	0.763 (0.733, 0.808) [0.050]
σ_g	0.0050	0.0051 (0.0044, 0.0058) [0.091]	0.0053 (0.0048, 0.0068) [0.129]	0.0056 (0.0047, 0.0066) [0.194]	0.0057 (0.0051, 0.0079) [0.243]	0.0058 (0.0051, 0.0074) [0.245]	0.0059 (0.0050, 0.0069) [0.217]
σ_s	0.0050	0.0050 (0.0042, 0.0063) [0.133]	0.0050 (0.0041, 0.0063) [0.139]	0.0048 (0.0039, 0.0058) [0.133]	0.0048 (0.0031, 0.0058) [0.182]	0.0044 (0.0037, 0.0053) [0.150]	0.0045 (0.0036, 0.0056) [0.147]
σ_i	0.0020	0.0020 (0.0018, 0.0023) [0.082]	0.0020 (0.0018, 0.0023) [0.073]	0.0021 (0.0018, 0.0022) [0.067]	0.0020 (0.0018, 0.0024) [0.095]	0.0020 (0.0018, 0.0023) [0.081]	0.0020 (0.0019, 0.0024) [0.091]
ϕ_π	2.0	2.026 (1.840, 2.155) [0.058]	1.954 (1.768, 2.158) [0.070]	2.010 (1.785, 2.164) [0.058]	1.978 (1.732, 2.225) [0.076]	1.953 (1.690, 2.190) [0.081]	1.946 (1.771, 2.138) [0.063]
ϕ_y	0.5	0.332 (0.175, 0.480) [0.409]	0.331 (0.177, 0.534) [0.371]	0.390 (0.236, 0.559) [0.297]	0.368 (0.202, 0.521) [0.349]	0.396 (0.209, 0.620) [0.288]	0.436 (0.273, 0.610) [0.248]
				Level Linear, Kalman Filter, ME 0%			
φ_p	100	144.7 (125.9, 157.7) [0.442]	152.8 (134.2, 168.4) [0.544]	164.2 (147.0, 196.6) [0.688]	175.1 (157.1, 204.9) [0.788]	184.6 (165.6, 204.5) [0.872]	184.4 (168.5, 201.1) [0.876]
h	0.8	0.641 (0.612, 0.676) [0.198]	0.639 (0.603, 0.684) [0.200]	0.640 (0.601, 0.674) [0.205]	0.641 (0.616, 0.673) [0.201]	0.636 (0.596, 0.673) [0.205]	0.630 (0.596, 0.672) [0.214]
ρ_s	0.8	0.760 (0.720, 0.800) [0.059]	0.777 (0.738, 0.805) [0.042]	0.797 (0.758, 0.830) [0.026]	0.808 (0.764, 0.843) [0.029]	0.818 (0.796, 0.848) [0.033]	0.825 (0.795, 0.851) [0.036]
ρ_i	0.8	0.760 (0.727, 0.787) [0.056]	0.769 (0.716, 0.801) [0.054]	0.779 (0.750, 0.809) [0.036]	0.789 (0.736, 0.840) [0.035]	0.789 (0.766, 0.847) [0.031]	0.809 (0.767, 0.852) [0.034]
σ_g	0.0050	0.0050 (0.0043, 0.0054) [0.074]	0.0051 (0.0045, 0.0058) [0.083]	0.0054 (0.0048, 0.0066) [0.158]	0.0057 (0.0051, 0.0067) [0.171]	0.0059 (0.0049, 0.0071) [0.231]	0.0059 (0.0051, 0.0068) [0.214]
σ_s	0.0050	0.0050 (0.0043, 0.0064) [0.138]	0.0049 (0.0042, 0.0062) [0.143]	0.0049 (0.0040, 0.0058) [0.115]	0.0048 (0.0035, 0.0059) [0.150]	0.0044 (0.0038, 0.0053) [0.149]	0.0045 (0.0036, 0.0052) [0.151]
σ_i	0.0020	0.0020 (0.0018, 0.0022) [0.073]	0.0020 (0.0018, 0.0022) [0.071]	0.0020 (0.0018, 0.0023) [0.075]	0.0020 (0.0016, 0.0022) [0.077]	0.0019 (0.0017, 0.0022) [0.078]	0.0019 (0.0017, 0.0022) [0.076]
ϕ_π	2.0	2.027 (1.845, 2.154) [0.056]	1.951 (1.712, 2.168) [0.073]	1.848 (1.604, 2.071) [0.099]	1.778 (1.511, 2.039) [0.137]	1.646 (1.419, 1.917) [0.188]	1.678 (1.464, 1.886) [0.171]
ϕ_y	0.5	0.330 (0.179, 0.478) [0.395]	0.316 (0.198, 0.523) [0.406]	0.280 (0.112, 0.479) [0.484]	0.257 (0.140, 0.430) [0.512]	0.239 (0.150, 0.374) [0.515]	0.271 (0.169, 0.437) [0.465]

Table 15: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters.

Ptr	Truth	0Q	6Q	12Q	18Q	24Q	30Q
No misspecification, Piecewise Linear, Inversion Filter, ME 0%							
φ_p	100	93.9 (81.8, 108.3) [0.105]	96.5 (81.8, 114.7) [0.115]	98.8 (88.6, 116.6) [0.095]	107.8 (92.7, 119.2) [0.114]	108.4 (90.5, 123.0) [0.136]	110.3 (95.3, 125.1) [0.148]
h	0.8	0.793 (0.755, 0.816) [0.024]	0.793 (0.761, 0.824) [0.026]	0.793 (0.765, 0.821) [0.022]	0.793 (0.760, 0.825) [0.025]	0.798 (0.765, 0.816) [0.020]	0.794 (0.770, 0.820) [0.021]
ρ_s	0.8	0.808 (0.758, 0.849) [0.037]	0.811 (0.773, 0.856) [0.034]	0.819 (0.755, 0.861) [0.043]	0.830 (0.788, 0.863) [0.046]	0.833 (0.797, 0.862) [0.046]	0.835 (0.798, 0.874) [0.056]
ρ_i	0.8	0.795 (0.766, 0.822) [0.023]	0.798 (0.753, 0.820) [0.029]	0.791 (0.754, 0.818) [0.029]	0.796 (0.766, 0.825) [0.023]	0.791 (0.762, 0.828) [0.028]	0.791 (0.735, 0.818) [0.032]
σ_g	0.0050	0.0050 (0.0044, 0.0056) [0.082]	0.0049 (0.0043, 0.0060) [0.101]	0.0050 (0.0043, 0.0059) [0.101]	0.0051 (0.0044, 0.0060) [0.090]	0.0051 (0.0041, 0.0058) [0.093]	0.0051 (0.0043, 0.0061) [0.110]
σ_s	0.0050	0.0049 (0.0039, 0.0060) [0.165]	0.0050 (0.0042, 0.0062) [0.128]	0.0049 (0.0040, 0.0072) [0.178]	0.0046 (0.0038, 0.0060) [0.155]	0.0047 (0.0039, 0.0058) [0.136]	0.0047 (0.0034, 0.0057) [0.168]
σ_i	0.0020	0.0020 (0.0017, 0.0022) [0.069]	0.0020 (0.0018, 0.0023) [0.072]	0.0020 (0.0018, 0.0023) [0.073]	0.0020 (0.0017, 0.0023) [0.083]	0.0021 (0.0018, 0.0023) [0.085]	0.0020 (0.0016, 0.0022) [0.098]
ϕ_π	2.0	1.968 (1.738, 2.142) [0.064]	1.938 (1.588, 2.158) [0.087]	1.941 (1.709, 2.144) [0.073]	1.885 (1.649, 2.085) [0.085]	1.874 (1.614, 2.069) [0.097]	1.811 (1.582, 2.063) [0.123]
ϕ_y	0.5	0.460 (0.296, 0.631) [0.212]	0.504 (0.329, 0.648) [0.199]	0.523 (0.353, 0.729) [0.244]	0.550 (0.392, 0.749) [0.238]	0.538 (0.373, 0.718) [0.247]	0.520 (0.317, 0.729) [0.228]
Σ		[0.782]	[0.792]	[0.856]	[0.860]	[0.889]	[0.985]
No misspecification, Level Linear, Kalman Filter, ME 0%							
φ_p	100	92.6 (82.1, 107.2) [0.108]	96.5 (80.5, 116.2) [0.118]	104.1 (83.5, 121.6) [0.119]	110.1 (92.4, 125.1) [0.140]	112.2 (95.2, 131.4) [0.175]	121.4 (101.3, 136.9) [0.226]
h	0.8	0.793 (0.754, 0.816) [0.023]	0.793 (0.761, 0.824) [0.026]	0.793 (0.764, 0.822) [0.022]	0.794 (0.755, 0.822) [0.025]	0.795 (0.768, 0.817) [0.020]	0.792 (0.770, 0.815) [0.021]
ρ_s	0.8	0.808 (0.756, 0.836) [0.036]	0.811 (0.774, 0.852) [0.033]	0.827 (0.764, 0.867) [0.047]	0.836 (0.798, 0.874) [0.051]	0.841 (0.810, 0.869) [0.058]	0.853 (0.813, 0.883) [0.072]
ρ_i	0.8	0.795 (0.764, 0.821) [0.022]	0.807 (0.768, 0.829) [0.024]	0.813 (0.771, 0.841) [0.028]	0.820 (0.795, 0.853) [0.034]	0.828 (0.804, 0.865) [0.047]	0.834 (0.806, 0.863) [0.050]
σ_g	0.0050	0.0049 (0.0045, 0.0056) [0.079]	0.0048 (0.0042, 0.0060) [0.098]	0.0050 (0.0043, 0.0058) [0.091]	0.0050 (0.0043, 0.0056) [0.078]	0.0050 (0.0041, 0.0057) [0.087]	0.0050 (0.0041, 0.0057) [0.092]
σ_s	0.0050	0.0050 (0.0039, 0.0060) [0.161]	0.0049 (0.0041, 0.0061) [0.121]	0.0047 (0.0038, 0.0067) [0.172]	0.0045 (0.0037, 0.0061) [0.168]	0.0044 (0.0037, 0.0054) [0.156]	0.0043 (0.0031, 0.0052) [0.208]
σ_i	0.0020	0.0020 (0.0017, 0.0022) [0.069]	0.0019 (0.0018, 0.0022) [0.071]	0.0020 (0.0018, 0.0022) [0.070]	0.0019 (0.0017, 0.0021) [0.089]	0.0020 (0.0017, 0.0021) [0.080]	0.0019 (0.0016, 0.0021) [0.104]
ϕ_π	2.0	1.954 (1.722, 2.158) [0.066]	1.936 (1.660, 2.130) [0.078]	1.889 (1.651, 2.090) [0.093]	1.767 (1.578, 2.002) [0.136]	1.707 (1.583, 1.912) [0.151]	1.605 (1.417, 1.841) [0.204]
ϕ_y	0.5	0.463 (0.324, 0.635) [0.213]	0.486 (0.309, 0.656) [0.212]	0.504 (0.328, 0.656) [0.202]	0.490 (0.390, 0.681) [0.198]	0.486 (0.322, 0.625) [0.197]	0.469 (0.316, 0.658) [0.207]
Σ		[0.778]	[0.782]	[0.845]	[0.919]	[0.972]	[1.184]

Table 16: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters. Σ is the sum of NRMSE.

Ptr	Truth	NL-PF-2%		PW-IF-0%		Lin-KF-2%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	151.8 (133.5, 165.3) [0.513]	192.4 (176.5, 207.1) [0.925]	144.6 (121.1, 157.3) [0.438]	182.2 (169.2, 198.5) [0.841]	152.5 (133.3, 165.3) [0.514]	194.3 (177.8, 209.3) [0.957]
h	0.8	0.656 (0.617, 0.685) [0.182]	0.667 (0.641, 0.707) [0.167]	0.640 (0.611, 0.673) [0.200]	0.629 (0.596, 0.672) [0.215]	0.656 (0.619, 0.687) [0.183]	0.656 (0.624, 0.697) [0.181]
ρ_s	0.8	0.757 (0.715, 0.795) [0.064]	0.807 (0.782, 0.839) [0.025]	0.763 (0.728, 0.808) [0.054]	0.821 (0.785, 0.856) [0.035]	0.760 (0.717, 0.798) [0.059]	0.821 (0.788, 0.853) [0.036]
ρ_i	0.8	0.766 (0.732, 0.801) [0.048]	0.790 (0.748, 0.831) [0.034]	0.755 (0.712, 0.790) [0.061]	0.763 (0.733, 0.808) [0.050]	0.770 (0.734, 0.801) [0.045]	0.829 (0.776, 0.862) [0.044]
σ_g	0.0050	0.0038 (0.0031, 0.0043) [0.253]	0.0042 (0.0035, 0.0052) [0.176]	0.0051 (0.0044, 0.0058) [0.091]	0.0059 (0.0050, 0.0069) [0.217]	0.0038 (0.0031, 0.0043) [0.252]	0.0045 (0.0036, 0.0058) [0.152]
σ_s	0.0050	0.0051 (0.0039, 0.0065) [0.147]	0.0051 (0.0040, 0.0061) [0.130]	0.0050 (0.0042, 0.0063) [0.133]	0.0045 (0.0036, 0.0056) [0.147]	0.0052 (0.0041, 0.0065) [0.153]	0.0048 (0.0038, 0.0058) [0.132]
σ_i	0.0020	0.0019 (0.0017, 0.0021) [0.102]	0.0017 (0.0016, 0.0021) [0.142]	0.0020 (0.0018, 0.0023) [0.082]	0.0020 (0.0019, 0.0024) [0.091]	0.0019 (0.0017, 0.0021) [0.101]	0.0017 (0.0016, 0.0020) [0.137]
ϕ_π	2.0	2.024 (1.837, 2.161) [0.061]	2.127 (1.956, 2.309) [0.089]	2.026 (1.840, 2.155) [0.058]	1.946 (1.771, 2.138) [0.063]	2.033 (1.856, 2.175) [0.058]	1.701 (1.512, 1.909) [0.162]
ϕ_y	0.5	0.308 (0.182, 0.481) [0.418]	0.377 (0.243, 0.596) [0.319]	0.332 (0.175, 0.480) [0.409]	0.436 (0.273, 0.610) [0.248]	0.308 (0.182, 0.490) [0.407]	0.265 (0.144, 0.395) [0.480]
Σ		[1.788]	[2.007]	[1.527]	[1.906]	[1.772]	[2.280]

Table 17: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters. Σ is the sum of the NRMSE.

Ptr	Truth	NL-PF-10%		PW-IF-0%		Lin-KF-10%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	150.2 (132.6, 163.8) [0.503]	182.3 (168.6, 197.3) [0.831]	144.6 (121.1, 157.3) [0.438]	182.2 (169.2, 198.5) [0.841]	151.4 (133.8, 162.1) [0.506]	184.9 (172.1, 201.7) [0.863]
h	0.8	0.665 (0.614, 0.696) [0.174]	0.683 (0.645, 0.720) [0.149]	0.640 (0.611, 0.673) [0.200]	0.629 (0.596, 0.672) [0.215]	0.667 (0.613, 0.693) [0.173]	0.676 (0.638, 0.711) [0.157]
ρ_s	0.8	0.760 (0.718, 0.791) [0.060]	0.810 (0.786, 0.850) [0.031]	0.763 (0.728, 0.808) [0.054]	0.821 (0.785, 0.856) [0.035]	0.763 (0.718, 0.798) [0.057]	0.824 (0.786, 0.859) [0.044]
ρ_i	0.8	0.806 (0.770, 0.838) [0.027]	0.811 (0.761, 0.846) [0.033]	0.755 (0.712, 0.790) [0.061]	0.763 (0.733, 0.808) [0.050]	0.804 (0.771, 0.837) [0.026]	0.855 (0.817, 0.887) [0.071]
σ_g	0.0050	0.0027 (0.0020, 0.0035) [0.463]	0.0039 (0.0025, 0.0050) [0.282]	0.0051 (0.0044, 0.0058) [0.091]	0.0059 (0.0050, 0.0069) [0.217]	0.0028 (0.0020, 0.0036) [0.456]	0.0041 (0.0025, 0.0057) [0.263]
σ_s	0.0050	0.0050 (0.0041, 0.0065) [0.139]	0.0050 (0.0037, 0.0061) [0.145]	0.0050 (0.0042, 0.0063) [0.133]	0.0045 (0.0036, 0.0056) [0.147]	0.0051 (0.0041, 0.0065) [0.142]	0.0047 (0.0036, 0.0060) [0.165]
σ_i	0.0020	0.0016 (0.0012, 0.0018) [0.246]	0.0013 (0.0011, 0.0017) [0.342]	0.0020 (0.0018, 0.0023) [0.082]	0.0020 (0.0019, 0.0024) [0.091]	0.0016 (0.0012, 0.0018) [0.243]	0.0015 (0.0013, 0.0018) [0.250]
ϕ_π	2.0	2.072 (1.894, 2.214) [0.066]	2.100 (1.922, 2.282) [0.082]	2.026 (1.840, 2.155) [0.058]	1.946 (1.771, 2.138) [0.063]	2.074 (1.897, 2.224) [0.064]	1.752 (1.572, 1.917) [0.139]
ϕ_y	0.5	0.405 (0.263, 0.588) [0.270]	0.452 (0.303, 0.659) [0.235]	0.332 (0.175, 0.480) [0.409]	0.436 (0.273, 0.610) [0.248]	0.408 (0.269, 0.585) [0.267]	0.369 (0.224, 0.549) [0.295]
Σ		[1.948]	[2.130]	[1.527]	[1.906]	[1.936]	[2.248]

Table 18: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of the mean posterior estimated parameters. Σ is the sum of the NRMSE.

Ptr	Truth	NL-PF-2%		NL-PF-5%		NL-PF-10%	
		0Q	30Q	0Q	30Q	0Q	30Q
φ_p	100	150.2 (133.5, 165.3) [0.51]	192.0 (176.5, 207.1) [0.93]	151.1 (134.2, 165.8) [0.52]	188.4 (174.7, 202.7) [0.89]	149.5 (132.6, 163.8) [0.50]	182.7 (168.6, 197.3) [0.83]
h	0.8	0.66 (0.62, 0.69) [0.18]	0.67 (0.64, 0.71) [0.17]	0.66 (0.62, 0.70) [0.18]	0.68 (0.64, 0.71) [0.16]	0.66 (0.61, 0.70) [0.17]	0.68 (0.65, 0.72) [0.15]
ρ_s	0.8	0.76 (0.71, 0.79) [0.06]	0.81 (0.78, 0.84) [0.03]	0.76 (0.72, 0.80) [0.06]	0.81 (0.78, 0.84) [0.03]	0.76 (0.72, 0.79) [0.06]	0.81 (0.79, 0.85) [0.03]
ρ_i	0.8	0.77 (0.73, 0.80) [0.05]	0.79 (0.75, 0.83) [0.03]	0.79 (0.75, 0.82) [0.03]	0.80 (0.75, 0.84) [0.03]	0.80 (0.77, 0.84) [0.03]	0.81 (0.76, 0.85) [0.03]
σ_g	0.005	0.0038 (0.0031, 0.0043) [0.25]	0.0043 (0.0035, 0.0052) [0.18]	0.0032 (0.0023, 0.0039) [0.37]	0.0040 (0.0030, 0.0052) [0.23]	0.0027 (0.0020, 0.0035) [0.46]	0.0038 (0.0025, 0.0050) [0.28]
σ_s	0.005	0.0052 (0.0039, 0.0065) [0.15]	0.0051 (0.0040, 0.0061) [0.13]	0.0052 (0.0040, 0.0066) [0.15]	0.0050 (0.0039, 0.0062) [0.13]	0.0051 (0.0041, 0.0065) [0.14]	0.0049 (0.0037, 0.0061) [0.14]
σ_i	0.002	0.0019 (0.0017, 0.0021) [0.10]	0.0018 (0.0016, 0.0021) [0.14]	0.0017 (0.0014, 0.0020) [0.17]	0.0015 (0.0013, 0.0019) [0.24]	0.0015 (0.0012, 0.0018) [0.25]	0.0013 (0.0011, 0.0017) [0.34]
ϕ_π	2.0	2.01 (1.84, 2.16) [0.06]	2.14 (1.96, 2.31) [0.09]	2.04 (1.88, 2.19) [0.06]	2.13 (1.94, 2.31) [0.09]	2.06 (1.89, 2.21) [0.07]	2.12 (1.92, 2.28) [0.08]
ϕ_y	0.5	0.31 (0.18, 0.48) [0.42]	0.39 (0.24, 0.60) [0.32]	0.35 (0.21, 0.54) [0.36]	0.42 (0.27, 0.62) [0.28]	0.41 (0.26, 0.59) [0.27]	0.46 (0.30, 0.66) [0.24]
Σ		[1.79]	[2.01]	[1.90]	[2.08]	[1.95]	[2.13]

Table 19: Average, $(5, 95)$ percentiles and [NRMSE] of the mean parameter estimates. Σ is sum of the NRMSE.

	0Q	6Q	12Q	18Q	24Q	30Q
Level Linear, Kalman Filter, ME 0% (1 core)						
Seconds per draw	0.002 (0.002, 0.004)	0.002 (0.001, 0.003)	0.002 (0.001, 0.003)	0.002 (0.001, 0.003)	0.002 (0.001, 0.003)	0.002 (0.001, 0.003)
Hours per dataset	0.052 (0.044, 0.089)	0.048 (0.022, 0.067)	0.051 (0.022, 0.067)	0.049 (0.022, 0.067)	0.050 (0.022, 0.067)	0.049 (0.022, 0.067)
Piecewise Linear, Inversion Filter, ME 0% (1 core)						
Seconds per draw	0.035 (0.031, 0.040)	0.040 (0.035, 0.046)	0.063 (0.044, 0.084)	0.059 (0.039, 0.080)	0.092 (0.055, 0.141)	0.096 (0.051, 0.135)
Hours per dataset	0.781 (0.689, 0.889)	0.885 (0.778, 1.022)	1.389 (0.978, 1.866)	1.312 (0.867, 1.778)	2.041 (1.222, 3.133)	2.137 (1.133, 3.000)
Global, Particle Filter, ME 5% (16 cores)						
Seconds per draw	6.7 (6.1, 7.9)	7.2 (6.5, 8.5)	7.8 (6.7, 8.9)	8.0 (7.0, 9.2)	8.2 (7.1, 9.4)	8.4 (7.5, 9.5)
Hours per dataset	148.8 (134.9, 176.5)	161.0 (143.8, 189.3)	173.0 (148.0, 196.7)	178.6 (155.2, 204.3)	182.8 (157.6, 208.2)	186.4 (167.6, 210.7)

Table 20: Mean, $(5\%, 95\%)$ quantiles of estimation times.

Ptr	Truth	NL-PF-5%		PW-IF-0%		Lin-KF-0%	
		0Q	30Q	0Q	30Q	0Q	30Q
mean(y^g)	0.058	0.026 (0.021, 0.035) [0.031]	0.034 (0.027, 0.043) [0.024]	0.023 (0.018, 0.030) [0.035]	0.030 (0.022, 0.038) [0.028]	0.024 (0.018, 0.032) [0.035]	0.038 (0.030, 0.056) [0.020]
mean(π)	1.388	2.073 (2.029, 2.091) [0.681]	1.969 (1.870, 2.021) [0.577]	2.139 (2.134, 2.143) [0.751]	2.134 (2.126, 2.141) [0.745]	2.142 (2.137, 2.147) [0.754]	2.144 (2.137, 2.153) [0.757]
mean(i)	2.259	3.139 (3.075, 3.166) [0.873]	2.983 (2.836, 3.065) [0.719]	3.277 (3.264, 3.308) [1.021]	3.315 (3.291, 3.350) [1.058]	3.267 (3.259, 3.275) [1.007]	3.267 (3.254, 3.284) [1.008]
std(y^g)	3.265	2.377 (2.184, 2.692) [0.875]	2.741 (2.452, 3.044) [0.557]	2.487 (2.265, 2.793) [0.774]	2.844 (2.558, 3.133) [0.452]	2.479 (2.247, 2.763) [0.787]	3.255 (2.945, 3.704) [0.222]
std(π)	1.578	1.022 (0.900, 1.145) [0.559]	1.263 (1.142, 1.406) [0.318]	1.065 (0.949, 1.188) [0.515]	1.281 (1.178, 1.438) [0.293]	1.057 (0.943, 1.177) [0.526]	1.388 (1.245, 1.559) [0.209]
std(i)	1.964	1.444 (1.310, 1.678) [0.515]	1.786 (1.687, 1.906) [0.185]	1.579 (1.456, 1.832) [0.388]	1.902 (1.758, 2.136) [0.110]	1.580 (1.466, 1.899) [0.382]	1.703 (1.571, 1.884) [0.270]
skew(y^g)	−0.280	0.087 (0.077, 0.099) [0.368]	0.085 (0.069, 0.102) [0.366]	0.052 (0.046, 0.059) [0.332]	0.054 (0.044, 0.064) [0.334]	0.052 (0.044, 0.060) [0.332]	0.066 (0.059, 0.077) [0.347]
skew(π)	−0.343	0.036 (−0.024, 0.063) [0.373]	−0.098 (−0.162, −0.014) [0.253]	0.012 (−0.007, 0.021) [0.354]	−0.018 (−0.066, 0.002) [0.322]	0.021 (0.013, 0.025) [0.363]	0.026 (0.017, 0.033) [0.369]
skew(i)	0.547	0.081 (0.050, 0.151) [0.460]	0.205 (0.148, 0.287) [0.338]	0.111 (0.078, 0.190) [0.431]	0.211 (0.164, 0.297) [0.331]	0.029 (0.022, 0.036) [0.518]	0.027 (0.022, 0.034) [0.520]
AC(y^g)	0.567	0.362 (0.333, 0.399) [0.203]	0.421 (0.381, 0.443) [0.150]	0.367 (0.333, 0.399) [0.200]	0.401 (0.362, 0.421) [0.172]	0.363 (0.331, 0.396) [0.204]	0.405 (0.365, 0.430) [0.165]
AC(π)	0.845	0.675 (0.640, 0.712) [0.170]	0.734 (0.708, 0.755) [0.111]	0.681 (0.651, 0.722) [0.164]	0.753 (0.732, 0.772) [0.093]	0.677 (0.649, 0.714) [0.167]	0.739 (0.718, 0.759) [0.107]
AC(i)	0.904	0.854 (0.813, 0.881) [0.056]	0.902 (0.879, 0.924) [0.013]	0.838 (0.801, 0.858) [0.070]	0.881 (0.851, 0.897) [0.030]	0.837 (0.801, 0.861) [0.070]	0.875 (0.853, 0.891) [0.031]

Table 21: Median, $(5\%, 95\%)$ credible sets and $[NRMSE]$ of moments.