The Supplement to "Common Correlated Effects Estimation of Heterogenous Dynamic Panel Data Models with Weakly Exogenous Regressors"

Alexander Chudik[*]

Federal Reserve Bank of Dallas, CAFE and CIMF

M. Hashem Pesaran[†]

University of Southern California, USA, and Trinity College, Cambridge, UK

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Abstract

This document provides supplemental materials for the paper Chudik and Pesaran (2014) "Common Correlated Effects Estimation of Heterogenous Dynamic Panel Data Models with Weakly Exogenous Regressors". It presents a complete set of Monte Carlo findings for 24 experiments outlined in the paper and additional Monte Carlo results on the estimation of quantiles of the cross-sectional distribution of the parameters and on the sensitivity of the results to different lag orders.

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[*]Federal Reserve Bank of Dallas, 2200 N. Pearl Street, Dallas, Texas. E-mail: alexander.chudik@dal.frb.org. The views expressed in this supplement are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Dallas or the Federal Reserve System.

[†]Department of Economics, University of Southern California, 3620 South Vermont Ave, Los Angeles, California 90089, USA. Email: pesaran@usc.edu; http://www.econ.cam.ac.uk/faculty/pesaran/

1 Introduction

This supplement provides a complete set of Monte Carlo findings in connection to the paper Chudik and Pesaran (2014, hereafter CP). The Monte Carlo design is described in Section 5 of CP, and covers 24 different experiments with or without regressors in the equation for the dependent variable, low or high values of $\phi = E(\phi_i)$, $m = 1, 2$, or 3 common factors, and persistent or serially uncorrelated common factors. We number individual experiments according to the summary table below.

Summary Table: Key parameters of the Monte Carlo Design

	Experiments without regressors $(\beta_{0i} = \beta_{1i} = 0)$			Experiments with regressors $(\beta_{0i} \sim IIDU[0.5,1], \beta_{1i} = -0.5)$			
Experiment	$\phi = E(\phi)$	m	ρ_f	Experiment	$\phi = E(\phi)$	m	ρ_f
1	0.4	1	0	13	0.4	1	0
2	0.4	1	0.6	14	0.4	1	0.6
3	0.4	2	0	15	0.4	2	0
4	0.4	2	0.6	16	0.4	2	0.6
5	0.4	3	0	17	0.4	3	0
6	0.4	3	0.6	18	0.4	3	0.6
7	0.7	1	0	19	0.7	1	0
8	0.7	1	0.6	20	0.7	1	0.6
9	0.7	2	0	21	0.7	2	0
10	0.7	2	0.6	22	0.7	2	0.6
11	0.7	3	0	23	0.7	3	0
12	0.7	3	0.6	24	0.7	3	0.6

Notes: See Monte Carlo section of CP for the detailed description of the design.

In order to present the findings of the individual experiments in a transparent way, we have numbered the result tables below using the same numbers assigned to the experiments in the above summary table, for example, findings from Experiment 1 are summarized in Tables S1.a-S1.b, results from Experiment 2 are summarized in Tables S2.a-S2.b, and so on. For each experiment, we present estimates for the bias ($\times 100$), root mean square error (RMSE, $\times 100$), size ($\times 100$) at 5% nominal level, and power ($\times 100$) for the estimation of ϕ and (if regressors are also present) β_0 with the alternatives $H_1 : \phi = 0.5$ and $H_1 : \phi = 0.8$, associated with the null values of $\phi = 0.4$ and 0.7, respectively, and the alternative of $H_1 : \beta_0 = 0.85$, associated with the null value of $\beta_0 = 0.75$. We report on dynamic CCE mean group estimator, its jackknife and recursive mean adjustment bias corrected versions, Gaussian quasi maximum likelihood estimator (QMLE) by Moon and Weidner (2013), interactive-effects estimator (IFE) by Bai (2009) and mean group (MG) estimator based on Song's (2013) extension of Bai's IFE approach. See Subsection 5.2 of CP on how these estimators are implemented. In addition to these results, we also present results for the estimation of slope coefficients for different choices of the truncation lag order, p_T in Experiment 20 (Tables S20e-f), and results on the estimation of quantiles of the cross sectional distribution of the slope coefficients in Experiment 14 (Table S14e).

Overall, the results presented in this supplement confirm that if the parameter of interest is the average slope of the regressors (β_0) the uncorrected CCEMG estimator proposed in the paper

performs well (in terms of bias, RMSE, size and power). But the situation is very different if the parameter of interest is the mean coefficient of the lagged dependent variable (ϕ). In the case of ϕ the uncorrected CCEMG estimator suffers form the time series bias and tests based on it tend to be over-sized, unless T is sufficiently large relative to N such that $\sqrt{N}/T$ is reasonably small. The jackknife bias-corrected CCEMG estimator proposed in CP, does help in mitigating the time series bias, but it can not fully deal with the size distortion unless T is sufficiently large. Improving on the small sample properties of the CCEMG estimators of ϕ in the heterogeneous panel data models still remains a challenge to be taken on in the future.

Part I

Experiments without Regressors

2 Experiments with low values of ϕ (Experiments 1-6)

Table S1a. Monte Carlo findings for the estimation of ϕ in Experiment 1. (Without regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	0.84	1.63	3.71	4.65	4.95	8.85	8.32	7.52	7.46	7.51
50	0.76	1.74	3.93	4.83	5.07	8.35	7.88	7.15	7.32	7.30
100	0.88	2.00	4.12	4.93	5.33	7.53	7.13	6.65	6.78	6.78
150	0.71	1.92	4.32	4.93	5.40	7.31	6.80	6.61	6.52	6.68
200	0.75	2.12	4.33	4.93	5.36	7.10	6.81	6.53	6.42	6.54
Dynamic CCEMG without bias correction										
40	-7.94	-6.48	-3.14	-1.90	-1.44	9.13	7.81	5.03	4.26	3.99
50	-8.13	-6.37	-3.07	-1.82	-1.36	9.12	7.41	4.62	3.91	3.66
100	-8.23	-6.44	-2.99	-1.98	-1.38	8.76	7.04	3.86	3.13	2.76
150	-8.36	-6.46	-3.07	-2.02	-1.49	8.72	6.83	3.71	2.80	2.44
200	-8.43	-6.70	-3.14	-2.06	-1.46	8.72	6.99	3.60	2.65	2.24
Dynamic CCEMG with RMA bias correction										
40	-4.60	-3.13	-1.14	-0.55	-0.25	6.96	5.68	4.35	3.98	3.96
50	-4.50	-3.35	-1.19	-0.61	-0.35	6.54	5.48	3.87	3.61	3.51
100	-4.74	-3.37	-1.16	-0.51	-0.37	5.85	4.50	2.90	2.54	2.46
150	-5.17	-3.61	-1.28	-0.61	-0.40	6.02	4.44	2.51	2.14	2.06
200	-5.23	-3.60	-1.30	-0.67	-0.44	5.93	4.27	2.22	1.83	1.79
Dynamic CCEMG with jackknife bias correction										
40	1.70	0.69	0.45	0.49	0.20	8.26	6.31	4.53	4.17	3.94
50	1.62	0.91	0.58	0.59	0.32	7.44	5.72	4.01	3.80	3.60
100	1.59	1.06	0.72	0.49	0.35	6.03	4.32	2.88	2.69	2.54
150	1.80	1.08	0.71	0.48	0.26	5.62	3.74	2.46	2.17	2.06
200	1.52	0.85	0.65	0.43	0.28	5.10	3.28	2.15	1.88	1.80
MG based on Song's individual estimates with 3 factors										
40	-6.64	-4.73	-2.29	-1.37	-1.03	8.54	6.78	4.78	4.29	4.13
50	-6.50	-4.89	-2.17	-1.39	-1.07	8.05	6.61	4.23	3.67	3.71
100	-6.86	-5.03	-2.18	-1.38	-1.05	7.71	5.93	3.44	2.92	2.62
150	-7.03	-5.11	-2.24	-1.43	-1.05	7.65	5.71	3.13	2.51	2.31
200	-7.08	-5.16	-2.15	-1.37	-0.94	7.57	5.64	2.82	2.25	1.97
MG based on Song with true number of factors (m=1)										
40	-5.34	-3.98	-2.03	-1.27	-0.98	7.11	5.98	4.62	4.20	4.10
50	-5.12	-4.08	-1.93	-1.30	-1.01	6.68	5.72	4.09	3.63	3.67
100	-5.22	-4.07	-1.99	-1.26	-0.97	6.00	4.99	3.28	2.82	2.57
150	-5.22	-4.15	-2.04	-1.30	-0.98	5.79	4.74	2.96	2.42	2.27
200	-5.15	-4.08	-1.93	-1.26	-0.86	5.57	4.53	2.63	2.16	1.93
Bai's IFE estimator with 3 factors										
40	0.84	2.49	5.65	6.82	7.13	7.71	7.58	8.02	8.72	8.91
50	0.02	2.38	5.54	6.70	6.88	7.16	6.68	7.61	8.38	8.38
100	-1.74	1.05	4.55	5.45	5.99	5.98	4.81	5.89	6.53	6.95
150	-2.66	0.14	4.12	4.94	5.42	5.50	4.08	5.21	5.73	6.12
200	-3.67	-0.51	3.91	4.75	5.34	5.70	3.59	4.75	5.38	5.89
Bai's IFE estimator with true number of factors (m=1)										
40	3.29	4.26	6.35	7.41	7.57	7.48	7.75	8.61	9.28	9.31
50	3.19	4.48	6.54	7.56	7.65	6.81	7.29	8.36	9.08	9.06
100	3.45	4.67	6.85	7.57	7.98	5.52	6.22	7.78	8.40	8.74
150	3.44	4.62	7.02	7.50	7.87	4.98	5.76	7.70	8.09	8.41
200	3.35	4.58	6.91	7.50	7.90	4.64	5.48	7.41	7.95	8.29
Moon and Weidner's QMLE with 3 factors										
40	0.66	2.36	5.61	6.81	7.13	7.89	7.69	8.04	8.77	8.96
50	-0.11	2.27	5.50	6.71	6.88	7.35	6.77	7.64	8.42	8.41
100	-1.94	0.93	4.50	5.39	5.94	6.24	4.91	5.88	6.51	6.92
150	-2.89	0.01	4.07	4.88	5.37	5.73	4.17	5.19	5.70	6.09
200	-3.94	-0.66	3.86	4.71	5.31	5.96	3.71	4.72	5.35	5.86
Moon and Weidner's QMLE with true number of factors (m=1)										
40	3.30	4.27	6.37	7.43	7.60	7.50	7.77	8.64	9.32	9.35
50	3.19	4.49	6.56	7.59	7.68	6.82	7.30	8.39	9.11	9.09
100	3.45	4.68	6.87	7.60	8.01	5.52	6.23	7.80	8.42	8.77
150	3.44	4.63	7.04	7.53	7.90	4.98	5.77	7.72	8.12	8.44
200	3.35	4.59	6.93	7.52	7.93	4.64	5.49	7.43	7.98	8.32

Table S1b. Size and Power of selected estimators of ϕ in Experiment 1.
(Without regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	60.00	63.85	71.00	76.95	81.80	76.60	77.05	79.55	79.40	81.20
50	62.55	65.95	74.65	79.75	83.15	79.85	79.10	78.15	80.30	83.35
100	69.85	71.85	79.80	85.45	90.25	86.10	85.40	85.60	86.95	89.40
150	75.25	75.60	84.45	87.95	92.20	88.95	89.35	87.95	89.30	89.85
200	80.05	78.05	86.70	90.45	92.85	91.90	90.40	89.65	91.05	91.90
	Dynamic CCEMG without bias correction									
40	46.05	36.10	15.15	10.00	8.10	98.45	98.15	93.95	89.60	87.70
50	57.65	41.40	15.90	9.75	8.60	99.50	99.35	96.85	93.80	93.80
100	84.80	69.70	24.05	14.30	10.20	100.00	100.00	100.00	99.95	99.85
150	95.10	85.45	36.30	18.90	12.10	100.00	100.00	100.00	100.00	100.00
200	98.35	94.35	44.85	22.60	15.10	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	19.00	13.95	8.15	7.35	7.15	85.65	83.40	79.90	79.55	76.00
50	22.90	15.70	7.45	7.25	6.70	91.85	91.30	87.95	86.35	86.05
100	38.65	24.60	8.80	7.00	6.35	99.75	99.60	99.10	99.10	99.35
150	55.45	37.35	11.45	6.70	6.95	100.00	99.90	100.00	99.95	99.95
200	66.65	46.55	11.85	6.95	6.10	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	13.80	11.45	7.25	8.00	6.85	32.40	43.35	62.45	67.55	72.95
50	13.75	10.95	7.80	8.65	7.10	37.20	50.05	71.90	75.75	79.60
100	21.15	13.70	7.70	7.35	6.65	55.35	72.45	92.90	96.40	97.40
150	25.25	15.55	9.35	6.85	6.25	64.50	84.20	98.55	99.75	99.95
200	28.40	15.60	8.70	6.95	6.20	73.15	92.20	99.70	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	38.55	25.35	12.95	9.15	8.95	95.65	92.60	88.20	83.70	83.15
50	43.30	32.30	12.00	8.20	8.05	97.60	96.50	94.05	93.00	90.30
100	69.65	51.05	17.80	11.40	8.05	99.95	100.00	99.85	99.55	99.50
150	84.20	67.20	23.90	13.10	10.90	100.00	100.00	100.00	100.00	99.95
200	91.15	76.40	26.15	14.65	10.10	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	31.50	21.40	12.25	8.50	8.60	95.75	93.10	87.60	84.05	82.35
50	34.30	25.40	11.15	8.10	8.35	97.40	96.45	93.10	93.05	90.60
100	53.25	39.20	15.40	10.70	8.00	99.95	100.00	99.85	99.55	99.40
150	68.80	53.35	20.55	12.45	9.80	100.00	100.00	100.00	100.00	100.00
200	79.30	63.40	22.60	13.15	9.30	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	46.30	52.10	70.40	80.15	85.50	70.10	66.50	64.60	65.80	69.05
50	47.65	50.15	72.25	80.85	86.30	77.00	72.00	66.25	68.00	69.90
100	54.00	48.60	75.25	84.90	90.70	91.70	88.90	82.20	81.90	80.75
150	58.00	47.85	76.80	87.70	92.05	97.75	96.00	90.35	88.75	89.30
200	67.40	50.70	80.25	91.35	96.10	99.25	99.05	95.05	93.75	92.15
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	41.35	51.45	70.45	82.75	85.55	57.20	56.90	60.05	60.30	65.85
50	43.15	51.95	76.35	85.15	88.85	61.50	59.10	59.15	63.30	65.05
100	49.65	63.30	89.00	93.90	96.35	74.55	68.00	63.55	66.00	69.10
150	53.95	71.55	94.60	97.55	98.60	82.05	77.55	67.85	69.85	72.15
200	58.50	76.50	97.30	98.50	99.60	88.45	84.50	71.65	71.55	73.90

Table S2a. Monte Carlo findings for the estimation of ϕ in Experiment 2. (Without regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	21.85	23.37	26.31	26.91	27.67	23.74	24.77	27.11	27.51	28.16
50	21.89	23.39	26.35	27.27	27.65	23.61	24.77	27.05	27.80	28.10
100	21.79	23.68	26.46	27.22	27.55	23.43	24.94	27.06	27.64	27.91
150	22.42	23.56	26.55	27.22	27.85	23.94	24.72	27.09	27.61	28.17
200	22.07	23.70	26.54	27.28	27.84	23.54	24.84	27.08	27.64	28.12
Dynamic CCEMG without bias correction										
40	-9.50	-7.54	-3.60	-2.33	-1.58	10.54	8.68	5.34	4.53	4.13
50	-9.87	-7.75	-3.56	-2.22	-1.56	10.68	8.67	4.99	4.09	3.73
100	-10.07	-7.85	-3.70	-2.46	-1.80	10.52	8.34	4.43	3.46	3.01
150	-10.22	-7.97	-3.68	-2.34	-1.72	10.54	8.29	4.23	3.08	2.61
200	-10.28	-8.04	-3.73	-2.42	-1.76	10.52	8.28	4.13	3.00	2.44
Dynamic CCEMG with RMA bias correction										
40	-7.13	-5.13	-1.84	-1.02	-0.68	8.82	7.03	4.49	4.15	3.99
50	-7.29	-5.12	-1.89	-1.20	-0.70	8.75	6.64	4.15	3.79	3.59
100	-7.66	-5.36	-2.06	-1.14	-0.67	8.45	6.19	3.26	2.79	2.50
150	-7.95	-5.60	-2.08	-1.22	-0.82	8.52	6.17	3.01	2.33	2.13
200	-8.07	-5.68	-2.09	-1.21	-0.82	8.54	6.12	2.78	2.11	1.93
Dynamic CCEMG with jackknife bias correction										
40	2.58	1.53	0.84	0.59	0.42	8.77	6.62	4.65	4.26	4.05
50	2.20	1.57	0.89	0.76	0.46	8.20	5.96	4.15	3.83	3.58
100	2.15	1.40	0.90	0.53	0.28	6.48	4.63	2.93	2.69	2.55
150	2.34	1.49	0.95	0.68	0.37	6.03	4.03	2.56	2.27	2.09
200	2.17	1.45	0.94	0.60	0.33	5.70	3.72	2.27	2.00	1.82
MG based on Song's individual estimates with 3 factors										
40	-7.48	-5.33	-1.90	-0.92	-0.51	9.16	7.23	4.55	4.00	3.94
50	-7.65	-5.49	-2.00	-1.30	-0.58	9.04	7.01	4.16	3.81	3.56
100	-8.19	-5.82	-2.42	-1.44	-0.93	8.91	6.61	3.52	2.89	2.69
150	-8.47	-6.15	-2.49	-1.48	-0.97	8.99	6.66	3.26	2.53	2.25
200	-8.63	-6.13	-2.51	-1.50	-1.03	9.07	6.56	3.11	2.32	1.99
MG based on Song with true number of factors (m=1)										
40	-5.40	-4.01	-1.33	-0.48	-0.14	7.12	6.05	4.23	3.90	3.86
50	-5.69	-4.17	-1.49	-0.95	-0.29	7.12	5.77	3.85	3.65	3.48
100	-6.11	-4.67	-2.11	-1.28	-0.79	6.81	5.47	3.29	2.81	2.63
150	-6.22	-4.87	-2.20	-1.35	-0.87	6.70	5.38	3.02	2.45	2.19
200	-6.23	-4.81	-2.22	-1.37	-0.94	6.60	5.23	2.86	2.22	1.93
Bai's IFE estimator with 3 factors										
40	-1.06	1.17	5.24	6.35	7.06	8.31	7.68	8.06	8.54	9.05
50	-2.58	0.53	4.94	6.00	6.54	8.11	6.57	7.30	7.88	8.22
100	-4.84	-1.58	3.49	4.56	5.19	7.75	5.33	5.20	5.80	6.30
150	-6.22	-2.45	3.09	4.38	5.05	8.07	4.89	4.38	5.27	5.81
200	-6.94	-3.04	2.93	4.32	5.00	8.25	4.77	3.95	5.05	5.58
Bai's IFE estimator with true number of factors (m=1)										
40	2.49	3.66	6.77	7.44	8.21	7.29	7.47	9.06	9.34	9.94
50	1.93	3.72	6.78	7.63	8.15	6.45	6.87	8.55	9.10	9.54
100	2.24	3.85	6.78	7.56	8.13	5.09	5.72	7.73	8.37	8.89
150	2.26	3.76	6.84	7.78	8.25	4.53	5.16	7.53	8.33	8.78
200	2.34	3.78	6.95	7.77	8.29	4.10	4.89	7.43	8.21	8.67
Moon and Weidner's QMLE with 3 factors										
40	-1.97	0.51	4.79	5.97	6.67	8.51	7.69	7.81	8.28	8.77
50	-3.39	-0.10	4.53	5.65	6.18	8.45	6.57	7.05	7.64	7.95
100	-5.54	-2.09	3.19	4.29	4.93	8.18	5.52	5.01	5.60	6.09
150	-6.88	-2.90	2.85	4.16	4.84	8.56	5.15	4.22	5.09	5.64
200	-7.51	-3.48	2.71	4.13	4.82	8.70	5.07	3.79	4.88	5.43
Moon and Weidner's QMLE with true number of factors (m=1)										
40	2.28	3.45	6.57	7.24	8.01	7.22	7.36	8.91	9.18	9.77
50	1.75	3.54	6.61	7.46	7.98	6.40	6.77	8.41	8.96	9.40
100	2.10	3.71	6.64	7.43	8.00	5.02	5.62	7.61	8.25	8.77
150	2.12	3.62	6.72	7.66	8.12	4.46	5.06	7.41	8.21	8.66
200	2.21	3.64	6.82	7.65	8.17	4.02	4.78	7.32	8.09	8.55

Table S2b. Size and Power of selected estimators of ϕ in Experiment 2.
(Without regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	97.05	98.90	100.00	100.00	100.00	83.75	89.50	97.75	99.15	99.55
50	98.20	99.25	100.00	100.00	100.00	85.20	90.45	98.95	99.80	99.85
100	98.75	99.80	100.00	100.00	100.00	89.60	93.85	99.50	99.95	99.95
150	99.35	99.75	100.00	100.00	100.00	92.05	95.90	99.60	99.95	100.00
200	99.50	100.00	100.00	100.00	100.00	92.60	95.90	99.65	100.00	100.00
Dynamic CCEMG without bias correction										
40	61.55	46.70	17.15	11.75	9.30	99.40	99.35	95.00	90.45	87.55
50	73.95	57.30	20.80	10.80	8.55	99.70	99.75	98.25	95.75	93.85
100	94.85	84.10	33.40	19.25	13.00	100.00	100.00	100.00	100.00	99.90
150	99.40	95.50	45.95	23.65	15.70	100.00	100.00	100.00	100.00	100.00
200	99.85	98.90	59.15	32.10	18.80	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with RMA bias correction										
40	34.55	24.05	8.55	8.10	7.05	94.50	91.75	84.55	80.55	79.60
50	43.10	27.15	9.50	7.95	7.25	96.85	96.75	91.70	89.80	87.60
100	69.40	49.95	13.55	9.25	6.15	100.00	100.00	99.90	99.60	99.45
150	84.10	66.65	18.90	9.40	7.10	100.00	100.00	100.00	100.00	100.00
200	92.45	79.30	23.50	11.50	7.95	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with jackknife bias correction										
40	16.15	12.80	9.15	7.35	7.35	29.55	39.10	57.90	66.90	69.45
50	16.45	12.30	8.15	8.05	6.50	34.65	42.55	66.30	73.85	78.75
100	20.95	16.20	8.10	7.10	6.20	51.90	67.65	91.50	95.90	97.75
150	28.95	18.10	9.40	7.70	6.90	58.85	80.25	98.15	99.15	99.75
200	32.60	21.05	11.20	7.95	7.15	66.40	86.90	99.30	99.85	100.00
MG based on Song's individual estimates with 3 factors										
40	43.85	28.80	10.45	7.15	6.90	96.10	94.35	85.90	82.20	80.60
50	52.10	36.90	10.45	8.65	8.00	98.80	97.65	93.45	90.90	88.45
100	80.60	59.15	18.50	11.20	8.60	100.00	100.00	99.95	99.60	99.50
150	92.95	78.60	25.50	12.80	8.90	100.00	100.00	100.00	100.00	100.00
200	96.45	86.95	31.90	15.75	10.85	100.00	100.00	100.00	100.00	100.00
MG based on Song with true number of factors (m=1)										
40	28.95	20.30	8.60	6.90	6.80	95.75	92.10	83.50	79.00	78.25
50	37.85	24.40	8.75	7.55	7.25	98.05	97.35	92.25	89.80	86.85
100	64.75	46.30	15.15	10.05	8.00	100.00	100.00	99.80	99.75	99.50
150	81.20	64.50	20.80	11.20	8.30	100.00	100.00	100.00	100.00	100.00
200	89.20	74.60	26.65	13.80	9.25	100.00	100.00	100.00	100.00	100.00
Moon and Weidner's QMLE with 3 factors										
40	50.95	51.60	68.05	76.00	82.70	79.50	74.95	68.80	69.90	71.45
50	54.65	49.15	65.45	76.15	83.00	85.50	80.70	71.30	73.15	73.80
100	68.15	54.10	66.20	77.55	85.15	96.95	95.60	88.65	86.80	86.25
150	79.20	58.75	67.35	84.10	90.90	99.40	99.30	95.90	93.70	91.90
200	86.65	65.45	68.60	86.90	92.50	99.85	99.80	98.15	95.85	94.85
Moon and Weidner's QMLE with true number of factors (m=1)										
40	41.10	49.15	72.15	81.50	85.80	61.65	60.15	59.95	65.15	66.45
50	39.60	47.65	76.50	83.60	89.00	68.90	63.80	59.90	63.10	65.25
100	43.20	57.00	88.15	94.25	96.25	82.10	75.85	65.00	67.05	70.70
150	46.10	61.65	92.70	97.95	98.30	89.30	84.95	70.05	68.80	69.45
200	49.05	67.00	97.65	99.10	99.65	93.15	89.30	74.60	71.65	69.85

Table S3a. Monte Carlo findings for the estimation of ϕ in Experiment 3. (Without regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	0.87	1.90	4.11	4.74	5.05	8.55	8.12	7.55	7.43	7.53
50	0.74	1.69	4.10	4.79	5.20	8.05	7.68	7.29	7.27	7.28
100	1.10	1.97	4.28	4.89	5.31	7.66	6.81	6.65	6.68	6.73
150	0.81	2.02	4.37	4.86	5.31	6.97	6.82	6.52	6.41	6.51
200	0.92	2.42	4.29	4.81	5.35	6.80	6.86	6.38	6.20	6.42
Dynamic CCEMG without bias correction										
40	-6.07	-4.62	-1.94	-1.04	-0.79	7.57	6.30	4.49	3.97	3.79
50	-6.16	-4.81	-2.00	-1.18	-0.77	7.41	6.09	4.05	3.60	3.44
100	-6.38	-4.91	-2.13	-1.31	-0.87	7.04	5.64	3.33	2.78	2.56
150	-6.57	-5.05	-2.24	-1.46	-0.97	7.03	5.53	3.02	2.47	2.23
200	-6.67	-5.11	-2.35	-1.46	-0.99	7.03	5.49	2.94	2.25	2.01
Dynamic CCEMG with RMA bias correction										
40	-2.16	-1.38	-0.19	0.10	0.05	5.69	4.97	4.28	3.95	3.80
50	-2.14	-1.49	-0.27	-0.03	0.07	5.21	4.48	3.72	3.51	3.45
100	-2.40	-1.56	-0.36	-0.13	0.00	4.27	3.50	2.70	2.53	2.47
150	-2.56	-1.64	-0.45	-0.26	-0.08	3.97	3.01	2.19	2.07	2.04
200	-2.64	-1.62	-0.52	-0.23	-0.09	3.81	2.81	1.91	1.79	1.78
Dynamic CCEMG with jackknife bias correction										
40	1.26	0.80	0.79	0.70	0.33	7.93	6.03	4.69	4.16	3.92
50	1.40	0.66	0.72	0.53	0.38	7.13	5.35	4.07	3.72	3.57
100	1.37	0.79	0.64	0.47	0.30	5.74	4.08	2.93	2.67	2.54
150	1.09	0.79	0.58	0.35	0.22	5.23	3.50	2.41	2.18	2.09
200	1.09	0.92	0.51	0.37	0.21	4.74	3.33	2.07	1.90	1.82
MG based on Song's individual estimates with 3 factors										
40	-6.64	-5.15	-2.21	-1.37	-0.88	8.56	6.99	4.75	4.26	4.07
50	-6.80	-5.11	-2.33	-1.35	-1.07	8.31	6.71	4.33	3.82	3.61
100	-6.77	-4.94	-2.14	-1.31	-1.05	7.63	5.85	3.36	2.81	2.63
150	-6.96	-5.11	-2.15	-1.43	-1.05	7.58	5.75	3.05	2.51	2.21
200	-7.15	-5.16	-2.18	-1.43	-0.93	7.65	5.63	2.89	2.29	2.02
MG based on Song with true number of factors (m=2)										
40	-5.90	-4.70	-2.09	-1.33	-0.88	7.78	6.55	4.68	4.22	4.05
50	-5.97	-4.69	-2.24	-1.29	-1.02	7.47	6.28	4.22	3.78	3.59
100	-5.93	-4.50	-2.05	-1.27	-1.01	6.74	5.40	3.28	2.78	2.60
150	-6.00	-4.58	-2.05	-1.38	-1.02	6.58	5.19	2.98	2.49	2.20
200	-6.12	-4.64	-2.08	-1.39	-0.90	6.58	5.10	2.80	2.25	2.00
Bai's IFE estimator with 3 factors										
40	0.54	2.68	5.86	6.86	7.12	7.80	7.37	8.25	8.72	8.86
50	0.22	2.12	5.77	6.50	7.12	7.16	6.60	7.77	8.16	8.56
100	-1.37	1.12	4.73	5.58	6.02	5.81	4.89	6.05	6.60	6.99
150	-2.44	0.33	4.18	5.04	5.46	5.40	4.17	5.21	5.81	6.18
200	-3.06	-0.07	4.00	4.90	5.37	5.39	3.62	4.84	5.54	5.93
Bai's IFE estimator with true number of factors (m=2)										
40	1.87	3.55	6.29	7.16	7.28	7.30	7.43	8.53	8.96	9.03
50	1.67	3.07	6.24	6.80	7.40	6.74	6.64	8.10	8.39	8.81
100	0.80	2.39	5.31	6.07	6.50	5.04	5.03	6.54	7.05	7.44
150	-0.11	1.80	4.68	5.37	5.75	4.11	4.18	5.66	6.12	6.49
200	-0.31	1.59	4.40	5.11	5.54	3.65	3.63	5.20	5.75	6.11
Moon and Weidner's QMLE with 3 factors										
40	0.29	2.56	5.86	6.87	7.13	8.03	7.51	8.30	8.76	8.91
50	0.07	2.02	5.76	6.49	7.12	7.38	6.71	7.81	8.17	8.59
100	-1.65	1.00	4.67	5.54	5.97	6.05	4.95	6.04	6.58	6.96
150	-2.67	0.18	4.12	4.99	5.41	5.62	4.25	5.19	5.78	6.15
200	-3.26	-0.19	3.96	4.87	5.34	5.59	3.73	4.83	5.52	5.91
Moon and Weidner's QMLE with true number of factors (m=2)										
40	1.78	3.51	6.30	7.17	7.30	7.36	7.46	8.57	8.99	9.07
50	1.54	3.01	6.23	6.81	7.41	6.77	6.68	8.12	8.42	8.84
100	0.74	2.34	5.28	6.03	6.47	5.09	5.06	6.53	7.03	7.42
150	-0.18	1.73	4.63	5.33	5.70	4.18	4.20	5.64	6.10	6.45
200	-0.34	1.56	4.36	5.08	5.51	3.71	3.65	5.18	5.73	6.09

Table S3b. Size and Power of selected estimators of ϕ in Experiment 3.

(Without regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	59.25	62.40	73.55	78.85	80.40	75.20	75.40	76.05	78.85	80.95
50	60.95	63.65	74.00	80.35	84.40	79.85	79.00	79.50	80.65	82.20
100	69.30	70.50	81.25	85.65	88.90	85.40	85.55	86.15	87.35	86.40
150	73.80	76.00	84.55	88.60	92.15	89.15	87.90	88.40	89.60	89.25
200	76.75	80.00	85.95	89.60	93.90	90.85	88.95	88.80	92.15	92.70
	Dynamic CCEMG without bias correction									
40	34.30	25.40	12.05	8.15	7.85	97.45	95.65	89.00	85.25	86.10
50	40.95	28.95	11.70	8.40	7.30	99.10	98.85	95.00	93.75	91.35
100	67.00	51.60	16.80	10.90	8.80	100.00	100.00	99.95	99.65	99.90
150	83.55	68.45	23.05	13.85	10.55	100.00	100.00	100.00	100.00	100.00
200	92.25	80.15	30.70	15.75	12.05	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	11.00	9.65	7.75	6.35	5.90	72.10	73.85	73.10	72.60	75.40
50	12.45	8.90	6.90	7.05	6.00	79.20	82.30	83.20	83.50	83.30
100	18.40	11.55	6.85	6.30	6.40	97.20	97.90	98.50	98.40	98.60
150	24.40	14.40	6.95	5.60	6.05	99.90	99.85	99.90	99.90	100.00
200	29.80	16.70	6.25	5.60	6.05	99.95	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	13.75	10.55	8.85	7.25	6.80	35.40	44.35	60.45	66.35	71.45
50	14.45	9.45	8.70	7.70	6.60	39.30	52.80	71.80	76.45	79.75
100	18.70	12.05	8.20	7.20	7.00	58.80	75.85	93.40	96.55	97.50
150	23.70	13.80	8.00	6.65	6.30	70.75	87.85	98.80	99.65	99.85
200	25.90	17.60	8.15	7.20	6.50	77.40	91.70	99.85	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	39.25	29.65	12.90	8.45	7.60	94.00	94.70	88.40	84.10	81.85
50	46.25	32.35	12.85	9.20	8.05	98.10	97.35	94.70	91.25	91.60
100	69.35	50.30	16.65	10.25	9.20	100.00	99.95	99.90	99.65	99.70
150	83.90	65.50	21.75	13.10	8.60	100.00	100.00	100.00	100.00	100.00
200	91.65	76.75	28.25	15.70	11.30	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	35.55	27.40	12.20	8.50	7.80	94.05	94.80	88.40	83.45	82.85
50	39.40	29.30	12.20	9.40	7.60	98.25	97.10	94.70	91.20	91.20
100	62.90	45.10	15.05	10.35	8.30	99.95	99.90	99.95	99.95	99.65
150	77.00	60.15	20.80	12.80	8.65	100.00	100.00	100.00	100.00	99.95
200	86.15	71.85	26.50	15.25	10.95	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	48.20	51.90	72.15	81.85	83.75	71.50	66.70	62.60	66.35	70.20
50	49.40	51.65	73.95	82.05	85.60	75.50	72.55	65.70	68.45	69.25
100	53.80	50.75	76.15	86.00	90.20	91.20	88.10	79.45	79.90	79.65
150	58.70	51.70	77.20	88.70	92.05	97.55	95.50	89.00	89.60	88.50
200	62.05	49.50	80.50	91.35	95.00	98.90	98.25	94.75	92.70	92.20
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	44.20	51.65	73.45	82.10	82.40	64.95	61.95	59.55	64.30	68.05
50	45.15	50.45	75.85	82.30	87.30	70.00	66.55	63.90	65.60	68.65
100	45.35	51.20	80.20	88.50	91.10	86.10	83.50	75.80	76.10	76.45
150	44.05	48.40	80.85	90.45	92.45	95.80	92.40	86.25	86.60	86.45
200	45.90	49.90	84.70	91.55	94.95	98.15	96.65	92.50	91.35	90.70

Table S4a. Monte Carlo findings for the estimation of ϕ in Experiment 4. (Without regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	22.28	23.43	26.33	27.13	27.54	24.03	24.77	27.08	27.68	28.01
50	21.84	23.67	26.24	27.10	27.65	23.45	24.95	26.95	27.62	28.09
100	22.20	23.55	26.41	27.44	27.71	23.69	24.72	26.97	27.83	28.02
150	22.31	23.62	26.67	27.19	27.75	23.72	24.68	27.18	27.56	28.01
200	22.61	23.65	26.55	27.31	27.80	23.99	24.70	27.06	27.64	28.06
	Dynamic CCEMG without bias correction									
40	-9.15	-6.95	-3.00	-1.60	-1.07	10.26	8.14	5.00	4.08	3.95
50	-9.29	-6.98	-2.99	-1.82	-1.07	10.14	7.92	4.65	3.87	3.66
100	-9.60	-7.54	-3.31	-1.90	-1.32	10.05	8.03	4.15	3.08	2.73
150	-9.81	-7.62	-3.36	-2.05	-1.41	10.11	7.95	3.94	2.85	2.37
200	-9.92	-7.76	-3.49	-2.09	-1.44	10.17	8.01	3.90	2.70	2.20
	Dynamic CCEMG with RMA bias correction									
40	-6.50	-4.53	-1.71	-0.79	-0.51	8.49	6.60	4.55	3.98	3.92
50	-6.64	-4.50	-1.72	-1.03	-0.50	8.22	6.20	4.10	3.66	3.62
100	-6.85	-4.98	-1.98	-1.05	-0.69	7.76	5.90	3.29	2.73	2.55
150	-6.94	-5.04	-1.96	-1.14	-0.75	7.59	5.64	2.92	2.34	2.09
200	-7.05	-5.07	-2.04	-1.15	-0.74	7.59	5.58	2.74	2.12	1.87
	Dynamic CCEMG with jackknife bias correction									
40	2.34	1.72	1.18	0.99	0.61	8.82	6.68	4.73	4.20	4.00
50	2.21	1.70	1.14	0.76	0.58	8.15	6.00	4.21	3.77	3.69
100	2.17	1.23	0.94	0.79	0.43	6.75	4.64	3.00	2.73	2.55
150	2.13	1.45	0.98	0.68	0.36	6.00	4.00	2.59	2.25	2.03
200	2.34	1.70	0.93	0.68	0.39	5.75	3.84	2.22	1.98	1.80
	MG based on Song's individual estimates with 3 factors									
40	-6.01	-3.69	-0.25	0.81	1.40	8.16	6.09	4.24	4.04	4.08
50	-6.09	-4.24	-0.30	0.67	1.41	7.89	6.18	3.72	3.51	3.66
100	-7.26	-4.93	-0.90	-0.02	0.50	8.14	5.90	2.79	2.59	2.48
150	-7.95	-5.47	-1.68	-0.62	-0.08	8.55	6.11	2.80	2.21	2.04
200	-8.67	-6.00	-1.99	-1.06	-0.57	9.12	6.48	2.75	2.10	1.88
	MG based on Song with true number of factors (m=2)									
40	-4.84	-2.84	0.11	1.07	1.59	7.02	5.45	4.20	4.08	4.14
50	-4.75	-3.37	0.04	0.90	1.59	6.68	5.43	3.60	3.58	3.76
100	-5.65	-3.90	-0.43	0.38	0.85	6.57	4.98	2.67	2.60	2.57
150	-6.21	-4.34	-1.11	-0.15	0.35	6.83	5.05	2.49	2.13	2.08
200	-6.70	-4.79	-1.41	-0.61	-0.14	7.19	5.34	2.39	1.96	1.85
	Bai's IFE estimator with 3 factors									
40	0.34	3.52	7.68	8.98	9.35	8.46	8.26	9.76	10.54	10.80
50	-0.65	2.55	7.31	8.34	8.93	8.04	7.36	9.08	9.76	10.28
100	-3.59	-0.20	5.09	6.57	7.13	7.07	5.15	6.50	7.54	7.96
150	-5.61	-1.51	4.11	5.60	6.31	7.64	4.71	5.30	6.37	6.96
200	-6.82	-2.43	3.45	5.01	5.70	8.18	4.55	4.51	5.69	6.26
	Bai's IFE estimator with true number of factors (m=2)									
40	2.33	4.53	8.16	9.25	9.70	8.15	8.23	10.12	10.74	11.07
50	1.69	4.00	7.88	8.75	9.49	7.23	7.40	9.46	10.12	10.78
100	-0.25	2.03	6.13	7.37	7.83	5.42	5.19	7.30	8.25	8.61
150	-1.29	1.22	5.39	6.56	7.26	4.59	4.14	6.31	7.19	7.83
200	-1.90	0.73	5.11	6.43	7.07	4.24	3.40	5.78	6.93	7.52
	Moon and Weidner's QMLE with 3 factors									
40	-0.55	2.76	7.27	8.62	9.00	8.57	8.06	9.46	10.25	10.50
50	-1.49	1.85	6.89	8.00	8.59	8.22	7.15	8.77	9.48	10.00
100	-4.40	-0.73	4.74	6.28	6.84	7.50	5.20	6.24	7.30	7.71
150	-6.26	-2.04	3.81	5.31	6.05	8.07	4.90	5.09	6.12	6.73
200	-7.33	-2.91	3.17	4.74	5.45	8.56	4.79	4.30	5.47	6.04
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	1.72	4.08	7.84	8.97	9.41	8.01	8.03	9.89	10.50	10.83
50	1.18	3.59	7.57	8.48	9.22	7.15	7.22	9.21	9.90	10.55
100	-0.66	1.64	5.86	7.13	7.59	5.40	5.01	7.08	8.05	8.39
150	-1.62	0.93	5.19	6.36	7.07	4.64	4.06	6.14	7.01	7.66
200	-2.17	0.50	4.94	6.26	6.92	4.34	3.35	5.63	6.78	7.38

Table S4b. Size and Power of selected estimators of ϕ in Experiment 4.

(Without regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	97.25	99.20	100.00	100.00	100.00	85.15	89.50	97.95	99.35	99.85
50	98.30	99.60	100.00	100.00	100.00	85.70	90.30	98.70	99.80	100.00
100	99.30	99.85	100.00	100.00	100.00	90.15	94.90	99.80	100.00	99.95
150	99.65	99.90	100.00	100.00	100.00	93.30	96.00	99.80	100.00	100.00
200	99.70	99.90	100.00	100.00	100.00	93.40	96.10	99.90	100.00	100.00
Dynamic CCEMG without bias correction										
40	59.70	43.95	16.95	9.85	9.10	99.30	98.85	93.45	88.90	87.35
50	69.75	51.30	18.40	11.15	9.85	100.00	99.90	97.30	95.60	92.45
100	93.85	83.55	31.20	15.50	10.90	100.00	100.00	99.95	99.95	99.95
150	99.30	95.35	41.95	21.15	12.80	100.00	100.00	100.00	100.00	100.00
200	99.95	98.65	55.50	27.40	15.45	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with RMA bias correction										
40	30.20	20.20	10.50	6.90	6.50	91.70	89.30	83.10	80.60	79.10
50	36.75	23.40	9.60	7.10	6.90	96.45	95.05	90.85	89.10	85.90
100	60.55	44.15	14.40	7.85	7.05	99.95	99.80	99.75	99.50	99.15
150	75.55	59.45	17.10	8.80	6.70	100.00	100.00	100.00	100.00	100.00
200	85.20	69.65	22.65	10.70	7.70	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with jackknife bias correction										
40	17.05	12.05	9.10	7.95	6.95	31.55	38.55	56.80	63.70	67.80
50	17.85	11.90	9.00	7.20	7.30	35.40	44.15	65.05	74.50	76.80
100	23.00	16.25	8.15	7.40	6.65	50.05	69.70	91.35	95.45	97.55
150	27.20	17.40	10.10	7.50	6.20	60.70	79.90	97.55	99.10	99.90
200	32.85	21.90	9.70	8.35	6.55	64.85	85.05	99.60	99.95	100.00
MG based on Song's individual estimates with 3 factors										
40	34.10	19.80	8.10	7.95	8.60	92.10	90.05	74.65	68.10	64.40
50	39.50	27.65	7.95	5.60	8.30	96.40	95.00	84.45	79.05	72.90
100	71.35	50.65	9.40	7.35	6.30	99.95	99.90	99.15	98.60	98.05
150	88.80	68.50	17.35	8.35	7.15	100.00	100.00	100.00	100.00	99.90
200	96.10	84.45	24.70	11.10	7.75	100.00	100.00	100.00	100.00	100.00
MG based on Song with true number of factors (m=2)										
40	26.60	15.50	8.15	8.15	9.05	91.55	86.75	72.15	66.45	62.85
50	30.25	20.95	6.65	6.80	8.80	95.10	93.45	82.75	77.70	70.45
100	56.95	37.20	8.70	8.00	8.05	99.85	99.85	98.90	97.85	97.60
150	77.65	54.85	12.40	7.70	7.60	100.00	100.00	99.95	99.95	99.65
200	88.60	71.40	17.60	8.95	7.70	100.00	100.00	100.00	99.95	100.00
Moon and Weidner's QMLE with 3 factors										
40	53.20	55.60	75.70	87.00	90.45	73.30	65.85	61.85	63.35	68.10
50	54.95	53.05	78.60	88.40	90.30	80.15	72.95	63.45	64.30	69.35
100	64.40	52.60	76.00	88.90	94.50	95.45	92.60	79.20	75.40	76.15
150	77.05	57.35	77.15	89.35	95.40	99.25	97.95	90.60	85.65	85.05
200	85.65	62.35	72.55	88.45	94.90	99.95	99.75	96.35	92.45	91.40
Moon and Weidner's QMLE with true number of factors (m=2)										
40	47.60	52.70	78.65	88.60	91.50	66.80	61.70	58.95	63.20	64.85
50	46.90	54.05	81.05	88.75	91.45	71.40	64.30	58.50	61.55	68.55
100	45.80	49.25	81.75	93.05	95.40	90.00	86.10	72.70	70.40	70.85
150	49.10	47.60	85.90	95.10	97.00	97.15	94.90	83.00	79.25	77.40
200	51.55	44.65	87.95	96.95	98.80	99.10	98.30	90.15	83.90	81.35

Table S5a. Monte Carlo findings for the estimation of ϕ in Experiment 5. (Without regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	0.25	2.04	4.22	4.98	5.24	8.84	8.23	7.62	7.60	7.66
50	0.63	2.16	4.09	4.81	5.35	8.18	7.79	7.29	7.23	7.39
100	0.77	2.04	4.01	5.07	5.26	7.47	7.17	6.56	6.75	6.68
150	0.62	2.12	4.01	4.98	5.32	7.43	6.81	6.41	6.49	6.54
200	1.09	1.93	4.14	4.95	5.41	7.21	6.59	6.25	6.44	6.54
	Dynamic CCEMG without bias correction									
40	-5.88	-4.20	-1.71	-0.81	-0.53	7.38	6.03	4.33	3.84	3.89
50	-5.71	-4.34	-1.76	-0.94	-0.46	7.00	5.79	3.91	3.49	3.39
100	-5.99	-4.57	-1.82	-1.00	-0.64	6.65	5.30	3.07	2.59	2.44
150	-5.80	-4.48	-1.87	-0.99	-0.60	6.28	5.01	2.78	2.21	2.06
200	-5.88	-4.49	-1.82	-1.08	-0.55	6.26	4.90	2.54	2.04	1.78
	Dynamic CCEMG with RMA bias correction									
40	-1.95	-1.06	-0.18	0.11	0.11	5.65	4.94	4.22	3.89	3.95
50	-2.00	-1.22	-0.28	-0.03	0.15	5.12	4.44	3.68	3.47	3.45
100	-2.22	-1.51	-0.32	-0.12	-0.05	4.11	3.38	2.61	2.49	2.41
150	-2.02	-1.42	-0.40	-0.12	-0.03	3.59	2.97	2.20	2.03	2.03
200	-2.16	-1.37	-0.37	-0.22	0.01	3.41	2.66	1.92	1.80	1.73
	Dynamic CCEMG with jackknife bias correction									
40	1.06	1.04	0.67	0.67	0.35	7.86	6.18	4.55	4.11	4.05
50	1.19	0.80	0.64	0.52	0.41	7.16	5.47	3.97	3.64	3.55
100	1.13	0.50	0.53	0.39	0.19	5.58	4.04	2.83	2.62	2.46
150	1.18	0.59	0.44	0.40	0.21	5.07	3.53	2.37	2.17	2.08
200	1.13	0.52	0.47	0.28	0.25	4.59	3.16	2.08	1.88	1.78
	MG based on Song's individual estimates with 3 factors									
40	-6.55	-4.95	-2.18	-1.31	-1.03	8.50	6.93	4.58	4.01	4.00
50	-6.53	-5.09	-2.14	-1.32	-1.00	8.12	6.65	4.19	3.72	3.61
100	-6.72	-4.91	-2.27	-1.41	-0.98	7.61	5.82	3.48	2.81	2.66
150	-6.96	-5.07	-2.15	-1.41	-0.99	7.60	5.70	3.07	2.48	2.21
200	-6.97	-5.02	-2.11	-1.35	-1.00	7.47	5.53	2.81	2.21	1.96
	Bai's IFE estimator with 3 factors									
40	0.24	2.93	5.90	7.00	7.18	7.89	7.51	8.23	8.80	8.89
50	0.23	2.25	5.64	6.45	6.90	7.24	6.69	7.55	8.01	8.33
100	-1.37	0.81	4.72	5.56	5.80	5.66	4.81	5.97	6.59	6.71
150	-2.24	0.41	4.22	5.10	5.52	5.39	4.07	5.27	5.83	6.21
200	-2.87	-0.03	4.07	4.97	5.53	5.31	3.70	4.86	5.58	6.08
	Moon and Weidner's QMLE with 3 factors									
40	0.03	2.84	5.87	7.00	7.20	8.16	7.58	8.29	8.85	8.94
50	0.12	2.15	5.60	6.43	6.89	7.43	6.78	7.56	8.04	8.35
100	-1.58	0.66	4.67	5.51	5.75	5.88	4.91	5.97	6.57	6.68
150	-2.43	0.31	4.19	5.06	5.48	5.59	4.15	5.26	5.81	6.18
200	-3.10	-0.13	4.04	4.94	5.50	5.53	3.78	4.85	5.57	6.06

Table S5b. Size and Power of selected estimators of ϕ in Experiment 5.
(Without regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	59.70	61.80	73.80	79.90	82.70	78.70	76.80	76.15	79.05	81.00
50	61.75	64.20	74.55	80.30	82.25	80.05	78.20	79.30	81.30	80.85
100	70.75	73.05	79.35	86.25	88.85	85.60	86.00	86.30	85.00	87.35
150	75.30	75.40	82.45	89.65	91.75	88.70	88.70	89.25	90.25	89.95
200	76.90	77.60	85.35	90.25	92.75	90.85	89.55	90.15	89.65	92.50
	Dynamic CCEMG without bias correction									
40	34.20	21.90	12.30	8.65	9.75	97.10	95.30	89.30	86.80	84.15
50	36.75	26.55	11.15	8.85	7.55	98.75	98.30	94.75	92.80	90.80
100	63.55	48.05	15.95	9.65	8.20	100.00	100.00	99.90	99.95	99.70
150	76.50	60.55	19.20	11.30	7.80	100.00	100.00	100.00	100.00	100.00
200	87.05	72.10	22.70	13.05	9.05	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	12.20	9.20	7.40	6.85	7.60	72.00	71.15	72.85	74.00	74.70
50	12.25	8.90	6.65	5.85	6.70	80.55	80.55	82.30	83.50	82.80
100	17.25	11.60	5.95	6.10	4.75	97.15	98.10	97.80	98.85	98.95
150	19.55	13.45	7.90	6.45	6.00	99.70	99.80	99.80	100.00	100.00
200	24.45	14.85	7.15	6.25	5.95	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	13.95	11.30	8.80	7.55	7.75	35.55	43.20	60.85	66.05	71.75
50	13.95	10.50	8.25	6.55	6.75	41.55	51.20	71.15	77.30	79.20
100	18.25	11.45	7.50	6.70	5.25	60.30	78.65	93.90	97.00	98.65
150	21.95	13.60	8.10	6.50	6.30	70.90	88.90	98.80	99.65	99.85
200	23.80	15.60	8.15	6.90	6.35	79.65	94.05	99.95	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	38.80	28.10	10.25	7.10	8.05	94.80	93.80	88.85	85.20	83.50
50	44.55	32.95	11.35	8.15	7.75	97.35	96.90	94.45	91.65	90.50
100	67.70	49.15	18.55	9.85	8.85	100.00	100.00	99.85	99.65	99.60
150	83.40	66.65	22.10	12.25	9.30	100.00	100.00	99.95	100.00	100.00
200	89.70	74.20	26.55	14.20	9.95	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	48.25	53.00	71.80	81.70	84.45	73.40	66.20	65.25	64.70	69.40
50	49.95	53.05	73.70	82.70	86.90	75.50	71.50	65.85	67.50	70.25
100	52.65	48.15	77.15	86.65	89.50	91.95	90.05	81.15	80.75	81.05
150	58.30	49.35	78.30	89.35	93.25	97.05	96.05	91.20	89.20	88.40
200	63.15	51.35	82.85	92.35	96.10	98.70	98.05	94.25	92.75	91.75

Table S6a. Monte Carlo findings for the estimation of ϕ in Experiment 6. (Without regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	23.38	24.16	27.26	28.16	28.66	24.97	25.58	27.96	28.65	29.09
50	23.21	24.35	27.40	28.32	28.85	24.72	25.52	28.02	28.76	29.24
100	23.76	24.59	27.60	28.38	29.08	25.08	25.66	28.09	28.74	29.36
150	23.39	24.84	27.39	28.37	29.00	24.69	25.88	27.88	28.69	29.26
200	23.41	24.99	27.69	28.48	29.01	24.68	25.95	28.18	28.81	29.26
	Dynamic CCEMG without bias correction									
40	-10.04	-7.73	-2.92	-1.50	-0.84	11.03	8.95	5.00	4.14	3.92
50	-10.01	-7.74	-2.99	-1.61	-0.81	10.85	8.66	4.69	3.82	3.44
100	-10.26	-7.88	-3.19	-1.85	-0.98	10.70	8.35	4.03	3.06	2.61
150	-10.43	-7.81	-3.22	-1.79	-1.08	10.75	8.15	3.83	2.67	2.24
200	-10.35	-7.85	-3.22	-1.74	-1.02	10.59	8.11	3.68	2.44	1.96
	Dynamic CCEMG with RMA bias correction									
40	-8.20	-5.79	-2.05	-1.14	-0.60	9.83	7.65	4.76	4.14	3.95
50	-8.16	-5.92	-2.15	-1.23	-0.63	9.56	7.36	4.36	3.75	3.49
100	-8.50	-6.13	-2.47	-1.57	-0.88	9.27	6.91	3.60	2.95	2.61
150	-8.76	-6.08	-2.50	-1.52	-0.99	9.35	6.68	3.32	2.56	2.23
200	-8.59	-6.15	-2.50	-1.48	-0.96	9.06	6.59	3.13	2.30	1.96
	Dynamic CCEMG with jackknife bias correction									
40	2.16	1.72	1.52	1.17	0.85	9.11	6.82	4.92	4.34	4.07
50	2.41	1.63	1.38	1.06	0.80	8.19	6.14	4.34	3.84	3.57
100	2.42	1.40	1.12	0.71	0.56	6.80	4.70	3.11	2.72	2.56
150	2.23	1.58	1.09	0.78	0.46	6.24	4.29	2.65	2.28	2.10
200	2.14	1.45	1.08	0.80	0.47	5.87	3.91	2.34	2.01	1.81
	MG based on Song's individual estimates with 3 factors									
40	-4.54	-2.07	1.38	2.46	3.09	7.17	5.40	4.45	4.59	5.04
50	-5.07	-2.81	1.19	2.25	2.69	7.21	5.36	3.94	4.18	4.32
100	-6.31	-3.74	0.30	1.41	1.99	7.38	5.03	2.77	2.87	3.21
150	-7.38	-4.71	-0.58	0.62	1.02	8.03	5.50	2.32	2.20	2.34
200	-8.23	-5.46	-1.25	-0.20	0.18	8.75	6.02	2.35	1.92	1.86
	Bai's IFE estimator with 3 factors									
40	2.23	4.79	9.73	10.82	11.45	8.82	9.00	11.44	12.12	12.63
50	1.08	4.37	8.97	10.14	10.83	8.31	8.04	10.50	11.32	11.85
100	-2.70	1.14	6.70	7.98	8.85	6.64	5.44	7.73	8.77	9.54
150	-4.77	-0.50	5.52	7.09	7.81	7.07	4.46	6.46	7.72	8.36
200	-5.74	-1.69	4.75	6.39	7.16	7.27	4.23	5.58	6.92	7.61
	Moon and Weidner's QMLE with 3 factors									
40	1.33	4.06	9.29	10.43	11.08	8.76	8.64	11.09	11.79	12.31
50	0.16	3.64	8.56	9.77	10.48	8.28	7.68	10.17	11.01	11.54
100	-3.53	0.51	6.33	7.66	8.53	6.95	5.31	7.43	8.49	9.26
150	-5.47	-1.09	5.18	6.78	7.53	7.47	4.49	6.18	7.45	8.10
200	-6.31	-2.17	4.44	6.12	6.89	7.64	4.40	5.31	6.68	7.36

Table S6b. Size and Power of selected estimators of ϕ in Experiment 6.

(Without regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	98.50	99.00	99.95	100.00	100.00	85.80	91.95	98.95	99.65	99.90
50	98.50	99.65	100.00	100.00	100.00	88.35	93.50	99.25	99.95	99.90
100	99.70	99.85	100.00	100.00	100.00	93.40	96.35	99.95	100.00	99.95
150	99.90	100.00	100.00	100.00	100.00	93.50	97.50	99.70	100.00	100.00
200	99.75	100.00	100.00	100.00	100.00	96.30	98.05	99.95	100.00	100.00
	Dynamic CCEMG without bias correction									
40	68.15	51.75	17.45	10.85	10.30	99.70	99.40	93.55	89.70	86.80
50	75.80	60.65	19.60	11.25	8.30	100.00	99.85	97.85	95.45	92.85
100	96.25	88.20	31.30	16.55	9.90	100.00	100.00	100.00	100.00	99.80
150	99.40	95.95	42.90	19.70	12.10	100.00	100.00	100.00	100.00	100.00
200	99.85	98.55	51.25	21.40	12.30	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	42.00	29.05	9.90	7.25	7.85	95.45	92.65	84.20	82.40	81.10
50	48.50	34.50	12.20	7.85	6.55	98.15	97.55	91.80	90.50	88.80
100	76.30	59.00	18.25	10.10	7.50	100.00	99.95	99.90	99.85	99.45
150	88.65	71.50	23.65	13.50	8.70	100.00	100.00	100.00	100.00	99.95
200	93.95	83.20	30.15	13.95	8.75	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	16.30	12.30	10.90	9.10	8.40	31.25	38.15	53.90	61.25	66.65
50	16.90	13.15	9.90	7.95	6.75	33.30	44.75	62.95	72.15	77.30
100	25.10	15.25	9.45	7.40	7.15	48.90	65.90	89.60	94.80	96.80
150	29.00	20.10	10.85	7.90	6.65	58.50	76.45	97.60	99.00	99.60
200	33.40	22.05	11.40	9.00	6.20	66.60	85.00	99.50	99.95	100.00
	MG based on Song's individual estimates with 3 factors									
40	26.70	15.30	11.15	13.05	17.70	88.85	80.20	63.00	54.75	45.90
50	32.65	19.35	9.90	13.40	15.60	94.40	90.30	72.65	64.15	60.00
100	61.70	36.10	9.60	11.50	16.60	99.85	99.75	97.20	94.55	92.50
150	84.30	60.10	10.25	9.55	11.65	100.00	100.00	99.95	99.75	99.50
200	93.90	78.10	16.75	10.05	8.30	100.00	100.00	99.90	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	53.80	57.15	84.50	91.95	94.95	68.75	63.70	58.25	64.20	67.55
50	54.55	58.00	84.95	93.00	95.20	74.75	65.75	57.95	60.40	66.75
100	61.05	51.30	86.20	94.15	97.45	94.65	89.25	72.00	67.80	68.40
150	74.75	53.85	84.45	95.10	98.40	98.65	96.40	81.95	75.00	76.20
200	82.45	58.55	85.40	96.85	98.60	99.50	99.15	91.15	85.50	81.20

3 Experiments with high values of ϕ (Experiments 7-12)

Table S7a. Monte Carlo findings for the estimation of ϕ in Experiment 7. (Without regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-2.60	-1.21	1.43	2.48	2.95	6.69	5.74	4.43	4.44	4.47
50	-2.55	-1.29	1.56	2.32	3.02	6.51	5.54	4.23	4.15	4.36
100	-2.47	-1.13	1.66	2.42	2.99	5.99	5.06	4.05	3.87	4.08
150	-2.28	-0.96	1.75	2.58	3.13	5.86	5.02	3.85	3.86	4.07
200	-2.50	-1.03	1.65	2.54	3.07	5.76	4.94	3.76	3.83	3.95
	Dynamic CCEMG without bias correction									
40	-12.13	-9.62	-4.53	-2.86	-1.99	12.63	10.11	5.10	3.55	2.85
50	-12.39	-9.57	-4.45	-2.94	-2.05	12.83	9.97	4.94	3.51	2.73
100	-12.59	-9.73	-4.58	-2.96	-2.17	12.84	9.96	4.81	3.26	2.54
150	-12.58	-9.89	-4.65	-2.97	-2.21	12.77	10.07	4.80	3.17	2.46
200	-12.75	-9.99	-4.69	-3.06	-2.24	12.91	10.13	4.82	3.20	2.41
	Dynamic CCEMG with RMA bias correction									
40	-8.05	-5.65	-2.07	-0.96	-0.59	9.18	6.67	3.21	2.48	2.18
50	-8.18	-5.74	-2.11	-1.18	-0.63	9.14	6.58	3.07	2.30	2.02
100	-8.55	-6.06	-2.25	-1.15	-0.68	9.13	6.52	2.75	1.80	1.53
150	-8.77	-6.18	-2.28	-1.21	-0.79	9.26	6.58	2.64	1.67	1.35
200	-9.07	-6.28	-2.32	-1.29	-0.81	9.50	6.61	2.61	1.63	1.25
	Dynamic CCEMG with jackknife bias correction									
40	2.27	1.43	1.02	0.82	0.52	8.80	5.97	3.30	2.63	2.29
50	2.09	1.38	1.16	0.77	0.51	8.36	5.57	3.07	2.38	2.04
100	2.10	1.59	1.15	0.75	0.40	7.01	4.70	2.34	1.78	1.51
150	1.90	1.55	1.09	0.76	0.43	6.50	4.37	2.07	1.54	1.25
200	1.87	1.55	1.05	0.73	0.39	6.43	4.05	1.86	1.37	1.06
	MG based on Song's individual estimates with 3 factors									
40	-10.48	-7.56	-3.15	-1.95	-1.48	11.49	8.46	4.01	2.96	2.59
50	-10.41	-7.64	-3.12	-2.05	-1.45	11.19	8.32	3.88	2.85	2.39
100	-11.16	-7.81	-3.13	-1.98	-1.41	11.74	8.24	3.52	2.43	1.95
150	-11.93	-7.98	-3.08	-1.95	-1.47	12.41	8.31	3.35	2.28	1.84
200	-12.83	-8.32	-3.16	-1.97	-1.45	13.26	8.63	3.35	2.22	1.73
	MG based on Song with true number of factors (m=1)									
40	-7.58	-5.91	-2.82	-1.81	-1.35	8.28	6.71	3.70	2.82	2.52
50	-7.67	-5.96	-2.77	-1.87	-1.34	8.23	6.52	3.54	2.69	2.31
100	-7.50	-5.96	-2.78	-1.81	-1.32	7.82	6.28	3.18	2.28	1.87
150	-7.50	-5.84	-2.74	-1.80	-1.38	7.71	6.04	3.01	2.13	1.76
200	-7.58	-5.84	-2.80	-1.82	-1.36	7.74	6.00	2.99	2.07	1.65
	Bai's IFE estimator with 3 factors									
40	-2.75	-0.22	3.44	4.48	4.99	6.18	4.37	4.68	5.31	5.68
50	-3.19	-0.35	3.41	4.30	4.92	6.18	4.21	4.48	5.00	5.50
100	-5.00	-1.58	3.08	4.15	4.59	7.13	4.06	3.78	4.55	4.94
150	-7.22	-2.41	2.69	3.84	4.33	8.97	4.33	3.28	4.16	4.59
200	-8.95	-3.72	2.29	3.43	3.96	10.38	5.24	2.84	3.74	4.19
	Bai's IFE estimator with true number of factors (m=1)									
40	-0.72	0.69	3.21	4.23	4.65	4.15	3.91	4.56	5.14	5.45
50	-0.77	0.85	3.47	4.10	4.70	3.78	3.55	4.51	4.88	5.36
100	-0.58	0.84	3.46	4.27	4.69	2.84	2.66	4.06	4.68	5.05
150	-0.50	0.93	3.46	4.29	4.71	2.44	2.27	3.89	4.59	4.96
200	-0.47	0.96	3.46	4.26	4.68	2.08	2.13	3.79	4.49	4.86
	Moon and Weidner's QMLE with 3 factors									
40	-3.19	-0.40	3.45	4.51	5.05	6.70	4.57	4.73	5.35	5.75
50	-3.71	-0.57	3.43	4.34	4.96	6.78	4.43	4.52	5.05	5.55
100	-5.82	-1.92	3.07	4.17	4.61	8.04	4.40	3.78	4.58	4.96
150	-8.46	-2.91	2.65	3.83	4.32	10.08	4.85	3.28	4.16	4.59
200	-10.20	-4.30	2.23	3.40	3.93	11.45	5.83	2.84	3.73	4.16
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	-0.72	0.68	3.22	4.25	4.67	4.16	3.91	4.57	5.16	5.48
50	-0.78	0.85	3.49	4.12	4.73	3.79	3.56	4.53	4.90	5.38
100	-0.58	0.84	3.47	4.29	4.71	2.85	2.66	4.07	4.71	5.08
150	-0.51	0.92	3.47	4.32	4.73	2.44	2.27	3.90	4.61	4.98
200	-0.48	0.96	3.48	4.28	4.70	2.08	2.13	3.80	4.51	4.88

Table S7b. Size and Power of selected estimators of ϕ in Experiment 7.

(Without regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	59.00	57.45	62.10	70.05	76.00	94.60	93.40	95.15	95.65	96.05
50	62.25	61.45	64.45	71.55	79.80	96.10	96.00	96.35	97.10	97.50
100	70.55	71.70	72.65	78.30	84.40	97.40	97.50	98.10	98.85	99.10
150	75.55	75.75	78.50	83.95	87.95	97.80	98.00	98.65	99.55	99.15
200	80.20	77.90	78.95	84.90	89.25	98.85	98.45	98.95	99.40	99.65
	Dynamic CCEMG without bias correction									
40	97.75	94.00	56.25	31.30	18.50	100.00	100.00	100.00	100.00	100.00
50	98.95	96.90	63.10	38.30	21.75	100.00	100.00	100.00	100.00	100.00
100	100.00	99.90	90.50	63.45	43.25	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	97.95	80.75	58.25	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.35	91.30	71.60	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	62.40	48.70	16.10	10.15	7.85	99.85	99.85	99.95	99.90	100.00
50	71.75	58.20	19.75	11.15	8.90	100.00	99.95	100.00	100.00	100.00
100	92.45	85.20	36.20	15.00	9.85	100.00	100.00	100.00	100.00	100.00
150	97.00	92.50	49.15	21.15	12.85	100.00	100.00	100.00	100.00	100.00
200	98.90	97.35	61.00	29.35	15.25	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	21.50	16.80	12.15	9.45	8.10	38.60	53.10	89.35	97.15	99.30
50	25.40	19.40	13.85	9.95	8.55	42.30	60.70	93.60	99.45	99.95
100	33.50	25.40	17.30	12.55	9.45	58.20	77.10	99.60	100.00	100.00
150	38.50	32.85	19.85	14.35	8.95	66.65	84.30	99.95	100.00	100.00
200	45.85	36.20	22.30	15.15	7.70	70.65	88.50	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	88.80	77.75	35.95	19.25	13.85	99.55	99.95	100.00	100.00	100.00
50	93.15	86.30	42.10	23.10	15.45	99.85	100.00	100.00	100.00	100.00
100	99.35	97.85	63.80	37.25	23.85	100.00	100.00	100.00	100.00	100.00
150	100.00	99.95	78.20	48.30	33.25	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	88.20	59.75	39.70	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	82.25	69.00	31.35	17.25	13.35	100.00	100.00	100.00	100.00	100.00
50	89.30	78.45	36.00	20.45	13.85	100.00	100.00	100.00	100.00	100.00
100	98.55	95.65	57.70	32.60	22.45	100.00	100.00	100.00	100.00	100.00
150	99.85	99.20	70.60	43.35	30.20	100.00	100.00	100.00	100.00	100.00
200	99.95	99.90	84.15	54.65	36.70	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	45.75	38.65	63.05	81.45	87.95	95.85	94.65	89.75	89.60	88.80
50	49.55	40.95	68.20	83.50	90.85	98.45	96.80	93.75	93.90	92.70
100	68.05	49.65	75.20	92.55	96.45	100.00	99.85	99.50	99.40	99.50
150	84.10	61.35	76.30	94.70	97.90	100.00	99.95	99.95	100.00	100.00
200	91.20	74.40	73.75	93.70	98.40	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	25.70	29.45	57.10	78.30	84.15	93.80	93.05	90.00	89.30	89.30
50	26.95	29.10	65.05	78.65	86.90	96.85	94.60	92.75	93.20	92.15
100	27.55	32.75	78.30	92.00	96.65	99.50	99.40	98.95	98.60	99.10
150	29.85	32.05	87.05	97.05	99.00	99.85	99.95	99.70	99.95	99.70
200	29.40	38.05	91.60	98.90	99.75	100.00	100.00	100.00	99.95	100.00

Table S8a. Monte Carlo findings for the estimation of ϕ in Experiment 8.
(Without regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	10.82	11.84	14.61	15.45	15.86	12.40	13.02	15.10	15.78	16.12
50	10.66	12.03	14.49	15.44	15.91	12.24	13.16	14.97	15.73	16.14
100	10.89	12.33	14.71	15.43	15.84	12.33	13.28	15.12	15.70	16.04
150	10.99	12.13	14.82	15.55	15.96	12.38	13.15	15.20	15.79	16.14
200	10.94	12.29	14.76	15.67	15.93	12.30	13.28	15.15	15.91	16.10
	Dynamic CCEMG without bias correction									
40	-13.84	-10.65	-4.85	-3.07	-2.13	14.32	11.11	5.40	3.75	2.96
50	-13.89	-10.89	-4.93	-3.18	-2.20	14.28	11.25	5.39	3.74	2.84
100	-14.16	-11.01	-5.10	-3.24	-2.29	14.40	11.22	5.31	3.53	2.63
150	-14.51	-11.16	-5.13	-3.23	-2.38	14.69	11.32	5.27	3.43	2.61
200	-14.64	-11.43	-5.22	-3.29	-2.39	14.79	11.55	5.33	3.44	2.55
	Dynamic CCEMG with RMA bias correction									
40	-10.84	-7.65	-2.87	-1.50	-0.97	11.81	8.52	3.77	2.70	2.36
50	-11.00	-7.86	-2.82	-1.59	-0.98	11.79	8.58	3.63	2.59	2.12
100	-11.75	-8.23	-3.06	-1.69	-1.10	12.27	8.66	3.47	2.21	1.74
150	-11.91	-8.51	-3.15	-1.79	-1.15	12.38	8.84	3.44	2.14	1.59
200	-12.41	-8.73	-3.25	-1.83	-1.21	12.81	9.02	3.47	2.10	1.54
	Dynamic CCEMG with jackknife bias correction									
40	3.31	2.49	1.41	0.96	0.66	9.83	6.80	3.44	2.74	2.34
50	3.47	2.18	1.43	0.91	0.60	9.38	6.06	3.21	2.46	2.07
100	3.39	2.41	1.48	0.97	0.56	8.14	5.30	2.56	1.93	1.54
150	3.03	2.35	1.54	1.02	0.50	7.69	4.94	2.34	1.70	1.30
200	2.82	2.12	1.53	1.02	0.55	7.45	4.74	2.21	1.58	1.15
	MG based on Song's individual estimates with 3 factors									
40	-11.24	-8.02	-3.05	-1.79	-1.23	12.23	8.86	3.97	2.91	2.44
50	-11.67	-8.14	-3.11	-1.74	-1.27	12.49	8.83	3.86	2.68	2.28
100	-12.61	-8.60	-3.32	-2.04	-1.44	13.14	9.03	3.70	2.50	1.98
150	-13.88	-9.03	-3.33	-2.06	-1.45	14.36	9.36	3.59	2.38	1.83
200	-15.05	-9.46	-3.39	-2.09	-1.42	15.46	9.76	3.59	2.32	1.71
	MG based on Song with true number of factors (m=1)									
40	-7.97	-6.03	-2.46	-1.43	-0.93	8.69	6.82	3.48	2.67	2.28
50	-8.09	-6.10	-2.57	-1.41	-1.00	8.67	6.70	3.39	2.47	2.13
100	-8.42	-6.40	-2.86	-1.78	-1.27	8.75	6.70	3.25	2.27	1.84
150	-8.49	-6.56	-2.88	-1.84	-1.28	8.71	6.77	3.15	2.18	1.69
200	-8.50	-6.53	-2.94	-1.86	-1.29	8.67	6.68	3.14	2.10	1.59
	Bai's IFE estimator with 3 factors									
40	-3.87	-0.28	4.58	5.87	6.51	7.94	5.39	5.81	6.63	7.15
50	-4.71	-1.14	4.22	5.42	6.08	8.17	5.32	5.35	6.14	6.66
100	-8.36	-3.70	2.42	3.76	4.52	10.57	5.95	3.58	4.40	4.96
150	-11.09	-5.40	1.46	2.89	3.44	12.66	6.93	2.59	3.42	3.84
200	-13.15	-6.83	0.95	2.49	3.11	14.19	7.94	2.05	2.93	3.39
	Bai's IFE estimator with true number of factors (m=1)									
40	-0.38	1.54	4.85	5.88	6.51	4.61	4.38	5.87	6.64	7.16
50	-0.28	1.45	4.83	5.85	6.41	4.14	3.99	5.71	6.51	6.96
100	-0.21	1.59	4.76	5.76	6.36	3.22	3.31	5.30	6.13	6.64
150	-0.32	1.47	4.92	5.89	6.35	2.81	2.97	5.32	6.14	6.57
200	-0.23	1.51	4.86	5.99	6.39	2.63	2.82	5.17	6.21	6.55
	Moon and Weidner's QMLE with 3 factors									
40	-5.68	-1.34	4.00	5.43	6.06	9.21	5.81	5.38	6.25	6.74
50	-6.56	-2.38	3.67	4.98	5.66	9.55	5.94	4.99	5.79	6.29
100	-10.30	-4.98	1.90	3.33	4.10	12.12	6.91	3.29	4.06	4.59
150	-12.88	-6.57	1.01	2.53	3.09	14.05	7.87	2.41	3.13	3.54
200	-14.66	-8.02	0.55	2.16	2.81	15.42	8.96	1.92	2.66	3.12
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	-0.65	1.30	4.61	5.65	6.28	4.63	4.29	5.67	6.43	6.96
50	-0.52	1.22	4.62	5.64	6.21	4.15	3.90	5.52	6.32	6.77
100	-0.42	1.39	4.58	5.59	6.19	3.22	3.20	5.12	5.96	6.47
150	-0.52	1.27	4.74	5.72	6.18	2.81	2.85	5.14	5.98	6.40
200	-0.43	1.32	4.69	5.82	6.22	2.63	2.68	5.00	6.04	6.39

Table S8b. Size and Power of selected estimators of ϕ in Experiment 8.
(Without regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	89.60	94.55	99.90	100.00	100.00	65.95	67.75	81.90	90.55	94.45
50	89.70	95.55	99.90	100.00	100.00	67.85	69.90	86.00	92.80	95.60
100	93.70	97.80	100.00	100.00	100.00	77.35	78.20	89.35	94.05	97.75
150	94.80	98.10	100.00	100.00	100.00	81.90	82.75	91.80	96.15	98.20
200	96.10	98.60	100.00	100.00	100.00	82.20	84.20	92.50	97.30	99.15
	Dynamic CCEMG without bias correction									
40	99.00	96.55	61.85	34.50	21.75	100.00	100.00	100.00	100.00	100.00
50	99.90	98.90	70.40	43.05	26.00	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	95.35	70.55	45.30	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	99.30	86.25	64.60	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.95	95.15	78.45	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	81.80	68.05	24.60	12.15	9.30	100.00	99.85	100.00	99.90	100.00
50	88.55	77.95	29.70	15.05	8.95	100.00	100.00	100.00	100.00	100.00
100	98.65	96.20	54.45	25.80	15.75	100.00	100.00	100.00	100.00	100.00
150	99.70	98.90	73.05	37.90	21.05	100.00	100.00	100.00	100.00	100.00
200	99.95	99.70	84.45	49.50	28.20	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	24.25	20.10	13.60	11.90	9.35	34.40	44.50	85.10	97.00	99.25
50	27.40	21.60	14.60	11.50	8.15	37.70	51.25	91.75	98.75	99.85
100	37.10	29.70	19.80	14.35	9.65	49.65	67.20	99.15	100.00	100.00
150	43.80	36.70	25.60	18.45	10.25	60.90	76.20	99.90	100.00	100.00
200	50.25	42.05	31.85	20.85	10.95	64.80	83.50	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	90.05	80.95	33.95	19.40	12.30	99.45	99.95	100.00	100.00	99.95
50	95.05	88.20	40.50	20.30	13.50	99.95	100.00	100.00	100.00	100.00
100	99.80	98.85	68.10	37.80	23.75	100.00	100.00	100.00	100.00	100.00
150	100.00	99.95	83.25	51.05	32.80	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	91.90	63.80	39.55	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	83.70	70.75	27.10	15.50	10.35	100.00	100.00	100.00	100.00	99.95
50	90.60	78.55	32.90	17.35	10.85	100.00	100.00	100.00	100.00	100.00
100	99.25	97.40	57.75	32.25	20.75	100.00	100.00	100.00	100.00	100.00
150	100.00	99.45	75.75	45.25	27.30	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	85.40	54.10	34.45	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	57.80	47.75	68.30	87.00	91.95	96.40	93.05	84.20	81.60	78.20
50	64.95	51.85	69.40	85.70	92.10	98.35	97.15	89.15	87.00	87.10
100	86.30	73.80	59.15	79.50	92.20	99.95	99.90	99.60	99.00	98.95
150	95.00	86.00	51.10	77.50	89.15	100.00	100.00	99.95	100.00	99.95
200	98.70	92.65	47.80	77.20	91.80	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	30.85	34.85	71.45	86.80	92.20	91.00	88.95	80.80	76.65	74.90
50	29.95	34.75	76.65	89.80	95.55	94.35	92.90	83.55	82.10	80.80
100	35.25	40.35	88.40	97.65	99.55	99.00	98.05	94.75	92.85	92.75
150	36.45	42.35	94.80	99.25	99.90	99.70	99.35	97.75	96.70	96.00
200	40.45	46.25	97.50	99.95	100.00	99.90	99.70	99.00	98.10	98.10

Table S9a. Monte Carlo findings for the estimation of ϕ in Experiment 9. (Without regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-2.70	-1.32	1.66	2.37	2.92	6.57	5.79	4.33	4.30	4.36
50	-2.68	-1.36	1.44	2.55	2.89	6.44	5.58	4.12	4.23	4.27
100	-2.28	-1.06	1.66	2.51	2.99	6.04	4.95	3.88	3.91	4.02
150	-2.51	-0.92	1.68	2.58	3.03	5.79	4.83	3.81	3.79	3.89
200	-2.46	-0.99	1.78	2.69	3.09	5.67	4.62	3.76	3.86	3.94
	Dynamic CCEMG without bias correction									
40	-9.60	-7.53	-3.40	-2.15	-1.43	10.13	8.10	4.11	3.06	2.47
50	-9.88	-7.72	-3.52	-2.12	-1.53	10.32	8.18	4.08	2.87	2.38
100	-10.10	-7.89	-3.68	-2.34	-1.70	10.35	8.13	3.97	2.70	2.13
150	-10.29	-7.99	-3.77	-2.41	-1.71	10.48	8.16	3.97	2.65	2.01
200	-10.31	-8.11	-3.81	-2.40	-1.74	10.47	8.25	3.96	2.59	1.96
	Dynamic CCEMG with RMA bias correction									
40	-4.41	-3.03	-0.80	-0.27	0.06	6.03	4.57	2.62	2.32	2.11
50	-4.73	-3.21	-0.97	-0.25	-0.05	6.04	4.50	2.44	2.03	1.88
100	-4.92	-3.34	-1.07	-0.49	-0.21	5.71	4.07	1.93	1.51	1.35
150	-5.06	-3.49	-1.18	-0.56	-0.24	5.70	4.05	1.79	1.29	1.12
200	-5.20	-3.60	-1.22	-0.54	-0.25	5.75	4.06	1.68	1.16	0.97
	Dynamic CCEMG with jackknife bias correction									
40	1.66	1.20	1.13	0.87	0.65	7.71	5.42	3.15	2.70	2.34
50	1.29	0.94	0.86	0.86	0.56	7.20	5.03	2.80	2.41	2.09
100	1.38	1.18	0.86	0.63	0.41	6.17	4.14	2.11	1.70	1.47
150	1.52	1.00	0.80	0.61	0.38	5.78	3.67	1.83	1.42	1.23
200	1.50	1.02	0.79	0.63	0.39	5.74	3.53	1.65	1.32	1.07
	MG based on Song's individual estimates with 3 factors									
40	-10.39	-7.54	-3.23	-1.96	-1.46	11.36	8.41	4.12	3.01	2.60
50	-10.50	-7.65	-3.26	-1.94	-1.42	11.36	8.36	3.96	2.76	2.34
100	-11.24	-7.77	-3.18	-2.01	-1.38	11.81	8.20	3.57	2.47	1.92
150	-11.83	-7.99	-3.16	-1.98	-1.42	12.30	8.33	3.43	2.31	1.82
200	-12.18	-8.10	-3.10	-1.94	-1.44	12.63	8.39	3.30	2.18	1.73
	MG based on Song with true number of factors (m=2)									
40	-8.89	-6.82	-3.03	-1.88	-1.44	9.70	7.59	3.93	2.94	2.57
50	-8.93	-6.74	-3.08	-1.87	-1.37	9.64	7.40	3.79	2.71	2.30
100	-9.24	-6.73	-3.02	-1.94	-1.35	9.63	7.07	3.40	2.40	1.89
150	-9.31	-6.81	-3.01	-1.92	-1.38	9.60	7.07	3.29	2.26	1.78
200	-9.34	-6.79	-2.93	-1.88	-1.40	9.62	7.01	3.13	2.13	1.69
	Bai's IFE estimator with 3 factors									
40	-2.72	-0.19	3.42	4.31	4.78	6.06	4.38	4.65	5.20	5.49
50	-3.35	-0.72	3.29	4.36	4.77	6.34	4.23	4.32	5.08	5.35
100	-4.99	-1.32	3.02	4.05	4.50	7.18	3.81	3.70	4.47	4.83
150	-6.48	-2.27	2.76	3.92	4.46	8.37	4.29	3.34	4.24	4.71
200	-8.08	-3.01	2.53	3.80	4.29	9.63	4.67	3.05	4.08	4.50
	Bai's IFE estimator with true number of factors (m=2)									
40	-1.64	0.25	3.37	4.17	4.67	4.79	4.04	4.57	5.10	5.39
50	-1.87	-0.13	3.30	4.29	4.65	4.75	3.81	4.33	5.02	5.26
100	-2.32	-0.13	3.18	4.09	4.54	4.30	2.97	3.82	4.52	4.88
150	-2.99	-0.53	3.08	4.09	4.59	4.54	2.77	3.58	4.38	4.83
200	-3.45	-0.75	3.01	4.09	4.56	4.74	2.69	3.42	4.33	4.75
	Moon and Weidner's QMLE with 3 factors									
40	-3.15	-0.40	3.44	4.35	4.83	6.52	4.58	4.70	5.25	5.54
50	-3.94	-0.92	3.30	4.39	4.82	6.99	4.46	4.36	5.12	5.40
100	-5.85	-1.66	3.01	4.07	4.51	8.06	4.14	3.71	4.49	4.85
150	-7.65	-2.75	2.73	3.92	4.48	9.45	4.73	3.33	4.24	4.73
200	-9.34	-3.52	2.48	3.78	4.28	10.74	5.21	3.03	4.07	4.50
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	-1.81	0.17	3.37	4.20	4.70	4.93	4.12	4.59	5.14	5.42
50	-2.06	-0.23	3.32	4.31	4.68	4.97	3.89	4.36	5.06	5.29
100	-2.68	-0.27	3.18	4.11	4.56	4.61	3.03	3.83	4.54	4.90
150	-3.31	-0.70	3.06	4.09	4.61	4.86	2.87	3.57	4.40	4.85
200	-3.73	-0.95	2.99	4.09	4.57	5.02	2.82	3.41	4.34	4.76

Table S9b. Size and Power of selected estimators of ϕ in Experiment 9.

(Without regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	58.05	58.90	61.15	70.05	76.50	94.70	93.80	95.40	96.05	96.70
50	64.10	61.00	63.00	72.05	76.85	96.10	95.40	96.90	97.10	97.50
100	69.75	67.50	72.50	80.10	84.60	96.95	97.30	97.90	98.90	99.00
150	78.05	73.40	77.10	82.30	86.85	97.85	97.75	98.35	99.30	99.60
200	81.50	77.25	80.20	84.80	89.80	98.85	98.60	99.15	99.40	99.70
	Dynamic CCEMG without bias correction									
40	91.70	82.20	39.95	22.40	13.95	100.00	100.00	100.00	100.00	100.00
50	96.80	90.35	47.15	24.85	16.90	100.00	100.00	100.00	100.00	100.00
100	99.90	99.60	77.35	47.25	30.45	100.00	100.00	100.00	100.00	100.00
150	100.00	99.90	90.75	64.40	40.30	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	96.90	74.95	52.15	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	31.20	23.05	10.15	9.25	7.35	98.55	99.25	99.60	99.85	99.90
50	39.30	29.30	10.80	7.95	7.65	99.70	99.90	100.00	100.00	100.00
100	61.55	46.15	15.55	9.25	6.85	100.00	100.00	100.00	100.00	100.00
150	75.45	62.05	20.55	9.70	6.70	100.00	100.00	100.00	100.00	100.00
200	83.05	72.65	25.15	11.75	6.30	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	20.90	15.25	12.15	12.10	10.10	42.15	58.65	90.60	97.65	99.40
50	21.60	16.05	12.95	11.55	9.30	48.60	67.75	96.00	99.00	99.85
100	30.55	22.60	13.45	11.10	8.50	64.90	83.40	99.85	100.00	100.00
150	35.90	28.10	15.95	11.70	9.25	72.25	91.40	100.00	100.00	100.00
200	42.20	31.95	16.95	13.75	9.00	76.30	94.80	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	88.15	76.85	35.95	21.40	14.70	99.65	99.85	99.95	99.95	100.00
50	93.00	85.70	44.10	22.15	14.30	99.75	100.00	100.00	100.00	100.00
100	99.50	97.65	65.00	37.85	22.40	100.00	100.00	100.00	100.00	100.00
150	100.00	99.95	79.65	49.60	31.15	100.00	100.00	100.00	100.00	100.00
200	100.00	99.95	88.10	58.90	40.30	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	85.95	75.10	33.75	19.50	13.80	99.90	99.95	99.95	99.95	100.00
50	91.00	82.60	41.70	20.75	14.50	99.95	100.00	100.00	100.00	100.00
100	99.30	97.15	61.50	35.60	21.95	100.00	100.00	100.00	100.00	100.00
150	99.95	99.60	76.60	47.35	30.05	100.00	100.00	100.00	100.00	100.00
200	100.00	99.90	85.40	56.00	38.35	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	44.35	39.55	65.45	79.45	86.95	96.95	94.30	90.90	90.70	90.85
50	51.70	40.30	65.95	84.15	89.65	98.50	97.35	95.10	93.85	94.75
100	67.55	48.70	75.10	91.95	97.30	99.95	99.85	99.40	99.35	99.40
150	80.00	58.60	76.15	95.10	98.80	100.00	99.95	99.95	99.95	99.95
200	89.25	67.20	77.05	95.80	98.75	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	34.00	35.05	62.40	78.10	86.30	96.55	94.40	91.35	90.95	91.15
50	38.90	35.00	66.05	82.40	88.80	98.15	97.15	95.05	93.40	94.60
100	48.65	37.30	77.05	91.85	96.75	99.90	99.80	99.25	99.05	99.15
150	57.65	42.35	82.20	95.85	99.05	100.00	99.95	100.00	99.85	100.00
200	66.35	46.80	85.75	97.85	99.45	100.00	100.00	100.00	100.00	100.00

Table S10a. Monte Carlo findings for the estimation of ϕ in Experiment 10.
(Without regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	10.91	12.29	14.65	15.50	15.86	12.40	13.34	15.10	15.77	16.09
50	11.06	12.20	14.83	15.37	15.84	12.51	13.20	15.24	15.66	16.05
100	11.15	12.33	14.71	15.56	16.07	12.50	13.25	15.08	15.80	16.24
150	11.21	12.38	14.78	15.60	15.93	12.45	13.22	15.15	15.82	16.10
200	11.01	12.43	14.84	15.58	15.99	12.28	13.28	15.22	15.80	16.16
	Dynamic CCEMG without bias correction									
40	-12.31	-9.50	-4.11	-2.41	-1.68	12.80	9.96	4.72	3.21	2.67
50	-12.65	-9.63	-4.12	-2.54	-1.69	13.05	10.02	4.64	3.21	2.51
100	-13.10	-10.00	-4.45	-2.76	-1.88	13.32	10.21	4.70	3.08	2.26
150	-13.32	-10.25	-4.57	-2.89	-2.03	13.49	10.40	4.72	3.10	2.28
200	-13.47	-10.37	-4.61	-2.98	-2.06	13.62	10.50	4.74	3.14	2.27
	Dynamic CCEMG with RMA bias correction									
40	-8.55	-5.92	-2.01	-0.96	-0.53	9.66	6.92	3.24	2.45	2.25
50	-8.83	-6.07	-2.03	-1.05	-0.51	9.74	6.95	3.08	2.33	2.01
100	-9.37	-6.49	-2.36	-1.27	-0.68	9.94	6.99	2.88	1.91	1.48
150	-9.66	-6.77	-2.43	-1.37	-0.82	10.15	7.14	2.78	1.82	1.37
200	-9.80	-6.88	-2.49	-1.46	-0.84	10.21	7.20	2.77	1.80	1.29
	Dynamic CCEMG with jackknife bias correction									
40	3.54	2.59	1.61	1.29	0.76	9.37	6.40	3.48	2.82	2.43
50	3.35	2.40	1.66	1.18	0.81	8.79	6.15	3.26	2.59	2.19
100	3.43	2.40	1.57	1.05	0.69	7.94	5.11	2.62	1.92	1.55
150	3.55	2.42	1.53	1.01	0.59	7.72	4.93	2.32	1.67	1.29
200	3.47	2.40	1.56	0.92	0.58	7.55	4.70	2.22	1.50	1.19
	MG based on Song's individual estimates with 3 factors									
40	-10.13	-6.63	-1.66	-0.35	0.24	11.32	7.71	3.03	2.27	2.17
50	-10.59	-7.00	-1.84	-0.47	0.14	11.60	7.91	2.96	2.12	1.83
100	-12.15	-7.97	-2.34	-0.96	-0.38	12.75	8.48	2.92	1.78	1.46
150	-13.60	-8.89	-2.79	-1.46	-0.81	14.10	9.24	3.12	1.93	1.41
200	-14.69	-9.53	-3.18	-1.76	-1.14	15.10	9.83	3.43	2.07	1.52
	MG based on Song with true number of factors (m=2)									
40	-8.16	-5.52	-1.35	-0.14	0.39	9.15	6.54	2.82	2.22	2.17
50	-8.40	-5.79	-1.48	-0.23	0.31	9.28	6.64	2.72	2.07	1.83
100	-9.23	-6.36	-1.85	-0.61	-0.06	9.71	6.83	2.49	1.59	1.40
150	-9.81	-6.90	-2.24	-1.01	-0.42	10.17	7.20	2.63	1.61	1.25
200	-10.44	-7.31	-2.64	-1.37	-0.78	10.73	7.56	2.94	1.78	1.32
	Bai's IFE estimator with 3 factors									
40	-2.26	0.93	5.96	7.34	7.75	7.07	5.37	6.84	7.92	8.24
50	-3.59	0.43	5.60	6.81	7.33	7.68	5.03	6.44	7.36	7.75
100	-7.87	-2.73	3.73	5.12	5.96	10.24	5.52	4.56	5.56	6.30
150	-10.94	-4.96	2.49	3.96	4.62	12.35	6.61	3.35	4.39	4.94
200	-12.57	-6.26	1.65	3.11	3.88	13.62	7.46	2.62	3.52	4.18
	Bai's IFE estimator with true number of factors (m=2)									
40	-0.58	2.08	6.09	7.32	7.69	5.55	4.93	6.88	7.87	8.17
50	-1.18	1.75	5.90	6.97	7.46	5.35	4.61	6.63	7.48	7.86
100	-3.17	-0.02	4.74	5.91	6.69	5.76	3.81	5.36	6.28	6.99
150	-4.66	-1.43	3.73	4.94	5.58	6.37	3.74	4.35	5.32	5.88
200	-5.49	-2.16	3.09	4.21	4.95	6.72	3.75	3.67	4.55	5.20
	Moon and Weidner's QMLE with 3 factors									
40	-4.16	-0.15	5.47	6.92	7.39	8.23	5.46	6.44	7.55	7.91
50	-5.55	-0.64	5.13	6.45	6.99	9.04	5.31	6.05	7.04	7.44
100	-9.90	-4.02	3.23	4.68	5.55	11.81	6.39	4.20	5.17	5.93
150	-12.46	-6.12	2.03	3.55	4.24	13.51	7.47	3.07	4.04	4.60
200	-13.95	-7.32	1.21	2.73	3.53	14.67	8.33	2.39	3.20	3.86
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	-1.56	1.29	5.77	7.04	7.41	5.93	4.75	6.61	7.62	7.91
50	-2.25	1.14	5.56	6.69	7.18	5.91	4.52	6.36	7.23	7.60
100	-4.30	-0.83	4.30	5.57	6.37	6.40	3.95	5.01	5.98	6.70
150	-5.62	-2.11	3.34	4.60	5.25	6.99	4.02	4.04	5.01	5.58
200	-6.21	-2.72	2.74	3.90	4.66	7.24	4.03	3.38	4.26	4.92

Table S10b. Size and Power of selected estimators of ϕ in Experiment 10.
(Without regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	90.75	96.05	99.90	100.00	100.00	63.45	67.25	82.85	91.80	95.70
50	91.55	96.50	99.95	100.00	100.00	69.05	71.55	86.40	91.95	96.45
100	95.40	98.65	100.00	100.00	100.00	76.75	78.40	90.75	95.70	98.95
150	96.70	99.35	100.00	100.00	100.00	80.20	81.20	91.85	97.55	98.80
200	96.60	99.15	100.00	100.00	100.00	82.30	83.90	93.25	97.45	98.75
	Dynamic CCEMG without bias correction									
40	97.45	94.70	49.50	25.50	18.65	100.00	100.00	100.00	100.00	100.00
50	99.50	97.90	59.55	33.30	20.30	100.00	100.00	100.00	100.00	100.00
100	100.00	99.90	88.85	60.55	34.85	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	98.00	78.80	53.05	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.40	89.35	65.90	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	65.80	50.50	18.00	10.45	8.85	99.75	99.90	99.95	99.80	100.00
50	75.65	60.85	20.30	11.95	8.75	100.00	100.00	100.00	99.95	100.00
100	93.95	87.05	37.25	17.15	9.45	100.00	100.00	100.00	100.00	100.00
150	98.10	95.50	53.15	26.15	12.20	100.00	100.00	100.00	100.00	100.00
200	99.35	98.45	64.10	35.05	17.55	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	23.55	19.60	14.90	11.95	10.65	33.80	43.70	85.00	95.55	98.95
50	25.40	20.90	15.60	13.15	11.05	38.05	52.20	91.10	98.20	99.90
100	37.25	28.90	21.85	14.95	10.40	50.30	68.25	99.30	100.00	100.00
150	46.70	36.85	25.80	17.55	11.35	57.25	77.55	100.00	100.00	100.00
200	50.00	42.85	31.95	19.60	11.85	64.60	82.40	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	84.20	68.00	18.65	10.25	9.35	99.65	99.75	100.00	99.85	99.85
50	90.95	78.60	23.60	10.90	6.65	99.80	100.00	100.00	99.95	99.95
100	99.30	96.25	45.95	18.10	10.55	100.00	100.00	100.00	100.00	100.00
150	99.95	99.70	70.05	34.05	17.15	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	87.10	51.80	30.45	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	79.15	60.05	15.90	10.05	9.00	99.80	99.95	99.90	99.75	99.90
50	85.55	70.50	19.70	10.95	8.15	99.85	100.00	100.00	99.95	100.00
100	98.85	92.30	34.85	13.50	9.80	100.00	100.00	100.00	100.00	100.00
150	99.85	98.85	55.55	22.45	12.70	100.00	100.00	100.00	100.00	100.00
200	100.00	99.65	75.40	38.35	21.85	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	56.80	49.20	81.30	94.15	97.20	94.35	89.85	74.75	68.55	69.20
50	62.15	52.35	83.25	94.45	97.60	97.40	93.85	81.35	77.10	75.65
100	85.05	67.30	73.65	93.30	97.90	100.00	99.80	97.50	96.80	94.90
150	95.35	82.85	66.35	89.75	96.20	100.00	100.00	99.80	99.65	99.65
200	98.40	91.50	58.35	85.55	95.75	100.00	100.00	100.00	100.00	99.95
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	43.45	43.55	84.05	95.45	97.30	91.75	87.45	71.95	67.15	66.95
50	45.80	46.85	86.55	95.50	97.95	96.25	91.95	78.35	74.55	72.15
100	64.30	52.40	84.30	96.85	98.95	99.60	99.40	95.05	93.95	89.05
150	78.60	58.80	79.70	96.45	98.55	100.00	100.00	99.00	98.65	98.30
200	86.00	68.05	76.95	95.00	99.25	100.00	100.00	99.85	99.80	99.55

Table S11a. Monte Carlo findings for the estimation of ϕ in Experiment 11.
(Without regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-2.77	-1.35	1.55	2.37	2.88	6.83	5.58	4.45	4.40	4.40
50	-2.76	-1.17	1.51	2.45	2.93	6.60	5.50	4.19	4.27	4.28
100	-2.11	-0.92	1.69	2.57	3.01	5.84	5.21	3.92	4.00	4.05
150	-2.39	-0.95	1.77	2.56	3.04	5.89	4.89	3.82	3.85	3.92
200	-2.66	-1.02	1.80	2.53	3.08	5.95	4.92	3.81	3.79	3.90
	Dynamic CCEMG without bias correction									
40	-9.33	-7.16	-3.25	-1.98	-1.40	9.91	7.72	3.96	2.88	2.49
50	-9.17	-7.27	-3.32	-2.02	-1.40	9.63	7.74	3.89	2.76	2.25
100	-9.34	-7.22	-3.23	-2.00	-1.36	9.59	7.47	3.55	2.40	1.87
150	-9.23	-7.18	-3.27	-2.03	-1.41	9.41	7.35	3.48	2.30	1.76
200	-9.17	-7.20	-3.26	-2.04	-1.41	9.32	7.35	3.42	2.25	1.68
	Dynamic CCEMG with RMA bias correction									
40	-3.97	-2.68	-0.78	-0.29	-0.09	5.67	4.29	2.58	2.22	2.12
50	-3.83	-2.82	-0.88	-0.34	-0.10	5.27	4.17	2.35	2.00	1.83
100	-4.09	-2.75	-0.79	-0.35	-0.07	4.95	3.60	1.81	1.46	1.33
150	-4.01	-2.69	-0.85	-0.37	-0.14	4.74	3.32	1.54	1.22	1.10
200	-3.89	-2.72	-0.84	-0.39	-0.14	4.53	3.26	1.42	1.07	0.96
	Dynamic CCEMG with jackknife bias correction									
40	1.35	0.93	0.79	0.63	0.39	7.43	5.22	3.06	2.50	2.30
50	1.74	0.80	0.66	0.56	0.39	7.16	4.75	2.69	2.25	1.99
100	1.31	0.92	0.77	0.57	0.38	5.91	3.99	2.05	1.68	1.45
150	1.41	0.94	0.71	0.54	0.29	5.52	3.49	1.73	1.37	1.17
200	1.50	0.81	0.69	0.51	0.29	5.29	3.28	1.56	1.24	1.04
	MG based on Song's individual estimates with 3 factors									
40	-10.24	-7.65	-3.10	-2.03	-1.53	11.22	8.50	4.00	3.03	2.61
50	-10.55	-7.55	-3.27	-1.94	-1.52	11.41	8.23	3.98	2.80	2.44
100	-10.92	-7.76	-3.09	-1.97	-1.50	11.48	8.19	3.51	2.44	2.02
150	-11.61	-7.82	-3.11	-1.94	-1.43	12.12	8.16	3.38	2.27	1.81
200	-11.86	-7.89	-3.07	-1.91	-1.42	12.30	8.16	3.27	2.16	1.71
	Bai's IFE estimator with 3 factors									
40	-2.93	-0.32	3.42	4.36	4.92	6.43	4.36	4.66	5.19	5.62
50	-3.19	-0.49	3.26	4.29	4.74	6.28	4.13	4.31	4.99	5.30
100	-4.96	-1.26	3.18	4.17	4.68	7.16	3.84	3.83	4.58	5.00
150	-6.29	-2.04	2.93	4.00	4.48	8.12	4.02	3.44	4.30	4.72
200	-7.48	-2.67	2.76	3.91	4.48	9.06	4.43	3.22	4.16	4.66
	Moon and Weidner's QMLE with 3 factors									
40	-3.48	-0.47	3.45	4.40	4.97	7.01	4.56	4.71	5.23	5.67
50	-3.67	-0.73	3.27	4.32	4.79	6.80	4.35	4.33	5.02	5.35
100	-6.01	-1.60	3.17	4.18	4.70	8.20	4.18	3.85	4.60	5.03
150	-7.47	-2.51	2.91	4.00	4.50	9.21	4.50	3.44	4.30	4.74
200	-8.66	-3.15	2.71	3.90	4.49	10.12	4.93	3.21	4.16	4.67

Table S11b. Size and Power of selected estimators of ϕ in Experiment 11.

(Without regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	60.65	56.40	63.30	68.70	74.45	94.10	95.20	95.40	95.70	96.50
50	63.40	60.40	63.35	73.60	78.20	95.70	94.80	96.25	96.60	97.85
100	70.00	69.95	71.70	78.70	84.30	96.75	96.75	98.05	98.35	99.25
150	77.35	73.90	77.25	80.90	86.90	97.70	97.90	98.50	99.25	99.80
200	79.70	76.95	80.40	83.75	89.30	98.85	98.05	98.60	99.60	99.70
	Dynamic CCEMG without bias correction									
40	89.85	80.15	35.95	19.45	15.45	100.00	100.00	100.00	100.00	100.00
50	94.35	88.10	44.70	23.90	15.15	100.00	100.00	100.00	100.00	100.00
100	99.75	98.80	67.30	39.55	23.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	85.10	52.85	31.65	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	93.50	64.45	40.20	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	27.75	20.75	9.45	8.20	8.05	98.20	99.25	99.65	99.80	99.95
50	31.00	26.05	10.00	7.85	6.80	99.40	99.80	99.95	100.00	100.00
100	52.65	38.40	13.10	7.80	6.70	100.00	100.00	100.00	100.00	100.00
150	60.95	46.85	13.95	9.50	6.45	100.00	100.00	100.00	100.00	100.00
200	69.05	54.45	17.60	8.70	6.35	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	17.75	15.25	12.15	9.55	9.35	44.60	60.90	92.85	98.65	99.45
50	21.05	15.15	9.50	9.25	7.25	47.20	70.05	97.30	99.55	100.00
100	27.65	22.15	12.70	10.85	8.15	65.80	85.65	99.95	100.00	100.00
150	34.50	26.00	14.25	9.40	7.35	73.50	93.30	100.00	100.00	100.00
200	38.80	28.05	15.35	11.55	8.25	78.30	96.25	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	88.70	80.25	34.15	20.60	15.25	99.75	99.90	100.00	99.95	100.00
50	93.40	86.35	43.15	21.35	17.30	99.80	100.00	100.00	100.00	100.00
100	99.50	98.15	63.10	36.15	25.65	100.00	100.00	100.00	100.00	100.00
150	100.00	99.60	79.20	49.30	31.05	100.00	100.00	100.00	100.00	100.00
200	100.00	99.95	87.10	57.70	37.60	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	45.85	38.50	64.65	81.10	88.00	96.65	94.50	90.65	91.50	90.05
50	49.35	39.80	66.25	84.10	90.90	97.95	97.25	94.65	94.55	94.15
100	69.05	49.35	79.05	92.95	97.50	99.95	99.90	99.50	99.05	99.25
150	80.50	56.70	80.30	95.70	98.80	100.00	100.00	100.00	99.85	99.95
200	87.05	66.35	81.45	97.45	99.55	100.00	100.00	100.00	99.95	100.00

Table S12a. Monte Carlo findings for the estimation of ϕ in Experiment 12. (Without regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	11.53	12.90	15.10	16.13	16.42	12.87	13.83	15.49	16.38	16.62
50	11.77	12.83	15.15	16.14	16.43	13.03	13.73	15.54	16.39	16.62
100	11.75	13.25	15.33	16.15	16.45	12.92	14.04	15.66	16.37	16.61
150	11.86	12.81	15.36	16.05	16.46	12.96	13.64	15.68	16.26	16.61
200	11.90	12.89	15.23	16.06	16.45	13.07	13.68	15.53	16.26	16.60
	Dynamic CCEMG without bias correction									
40	-12.84	-9.58	-4.05	-2.19	-1.33	13.35	10.07	4.69	3.06	2.47
50	-12.79	-9.74	-4.05	-2.23	-1.42	13.22	10.15	4.57	2.96	2.35
100	-12.96	-9.78	-4.10	-2.38	-1.56	13.19	10.01	4.36	2.73	2.03
150	-12.98	-9.76	-4.15	-2.44	-1.63	13.14	9.91	4.32	2.68	1.94
200	-12.93	-9.82	-4.19	-2.43	-1.63	13.07	9.94	4.33	2.62	1.89
	Dynamic CCEMG with RMA bias correction									
40	-9.45	-6.21	-2.26	-1.05	-0.45	10.56	7.24	3.44	2.50	2.20
50	-9.43	-6.44	-2.26	-1.10	-0.55	10.36	7.33	3.21	2.35	2.03
100	-9.58	-6.53	-2.33	-1.32	-0.75	10.16	7.05	2.87	1.95	1.57
150	-9.58	-6.47	-2.41	-1.37	-0.83	10.06	6.86	2.77	1.83	1.39
200	-9.62	-6.47	-2.45	-1.38	-0.84	10.05	6.79	2.75	1.74	1.31
	Dynamic CCEMG with jackknife bias correction									
40	3.43	3.11	1.75	1.38	0.98	9.80	6.83	3.59	2.87	2.49
50	3.82	2.72	1.81	1.36	0.84	9.31	6.32	3.36	2.68	2.22
100	3.95	3.01	1.72	1.14	0.65	8.51	5.66	2.70	1.97	1.59
150	3.89	2.98	1.68	1.11	0.59	8.04	5.22	2.41	1.72	1.29
200	3.75	2.85	1.62	1.09	0.57	7.84	5.01	2.24	1.61	1.19
	MG based on Song's individual estimates with 3 factors									
40	-8.99	-5.48	-0.52	0.85	1.46	10.26	6.72	2.62	2.38	2.58
50	-9.58	-5.88	-0.57	0.73	1.35	10.60	6.95	2.39	2.15	2.38
100	-11.50	-7.21	-1.34	0.04	0.66	12.17	7.80	2.17	1.51	1.55
150	-13.01	-8.22	-2.02	-0.60	0.02	13.52	8.65	2.52	1.42	1.27
200	-14.21	-9.04	-2.67	-1.23	-0.56	14.60	9.37	2.99	1.70	1.22
	Bai's IFE estimator with 3 factors									
40	-1.18	2.45	7.13	8.58	9.17	7.01	5.71	7.81	9.05	9.57
50	-2.35	1.66	6.76	8.18	8.65	7.29	5.38	7.45	8.61	9.00
100	-6.85	-1.77	4.80	6.36	6.96	9.60	5.17	5.45	6.70	7.24
150	-9.96	-3.91	3.54	5.05	5.66	11.54	5.89	4.21	5.39	5.91
200	-11.64	-5.61	2.51	4.17	4.88	12.71	6.89	3.20	4.48	5.11
	Moon and Weidner's QMLE with 3 factors									
40	-3.19	1.24	6.66	8.18	8.82	8.01	5.67	7.41	8.69	9.23
50	-4.42	0.40	6.27	7.79	8.30	8.49	5.40	7.03	8.26	8.67
100	-8.96	-3.26	4.26	5.92	6.55	11.11	5.95	5.02	6.31	6.86
150	-11.70	-5.16	3.02	4.62	5.26	12.82	6.76	3.81	5.01	5.54
200	-13.00	-6.64	2.04	3.78	4.52	13.75	7.66	2.88	4.13	4.77

Table S12b. Size and Power of selected estimators of ϕ in Experiment 12.

(Without regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	92.55	97.50	100.00	100.00	100.00	63.30	67.75	85.00	95.10	97.20
50	94.20	97.90	100.00	100.00	100.00	66.30	71.60	87.10	94.80	97.55
100	96.25	99.20	100.00	100.00	100.00	75.15	79.40	92.25	97.70	99.05
150	97.85	99.15	100.00	100.00	100.00	79.15	82.35	94.20	98.75	99.50
200	97.85	99.60	100.00	100.00	100.00	83.35	84.20	94.40	98.55	99.20
	Dynamic CCEMG without bias correction									
40	98.10	94.20	52.20	24.20	16.00	100.00	100.00	100.00	100.00	100.00
50	99.45	97.75	59.65	28.55	18.60	100.00	100.00	100.00	100.00	100.00
100	100.00	99.95	85.70	50.95	29.45	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	95.95	66.95	41.20	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.05	79.55	50.40	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	72.00	54.75	20.40	10.65	8.60	99.75	99.95	99.95	100.00	100.00
50	78.95	64.80	22.35	12.45	9.30	100.00	100.00	100.00	100.00	100.00
100	94.90	85.85	36.90	17.90	11.55	100.00	100.00	100.00	100.00	100.00
150	98.25	93.45	53.75	26.25	13.60	100.00	100.00	100.00	100.00	100.00
200	98.65	97.15	64.65	32.95	18.00	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	24.75	20.80	16.30	13.60	11.00	34.65	40.95	83.85	95.85	98.85
50	28.35	23.40	18.20	14.10	10.95	36.40	49.55	88.80	98.30	99.55
100	39.55	33.70	23.45	15.80	10.65	46.85	62.35	99.35	100.00	100.00
150	46.30	40.20	27.80	18.65	9.55	54.75	71.60	99.95	100.00	100.00
200	52.25	44.60	33.30	22.50	11.75	60.95	78.05	99.95	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	78.10	56.50	13.70	14.05	17.90	99.55	99.60	99.80	99.35	99.15
50	86.25	67.95	14.45	13.95	18.50	99.65	99.95	99.95	99.95	99.70
100	98.90	93.65	25.40	11.65	14.45	100.00	100.00	100.00	100.00	100.00
150	99.95	98.75	49.10	17.55	13.65	100.00	100.00	100.00	100.00	100.00
200	100.00	99.85	75.55	35.90	17.80	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	55.20	54.35	89.70	97.50	99.15	91.05	84.90	66.05	57.90	59.50
50	61.30	55.40	88.95	97.85	99.40	95.35	90.40	70.80	63.75	62.60
100	82.95	67.60	84.35	98.45	99.55	99.80	99.10	94.80	91.05	88.60
150	94.70	80.55	76.75	96.45	99.35	100.00	100.00	99.35	98.95	98.90
200	98.20	89.60	67.05	95.10	99.50	100.00	100.00	100.00	99.95	99.85

Part II

Experiments with Regressors

4   Experiments with low values of ϕ (Experiments 13-18)

Table S13a. Monte Carlo findings for the estimation of ϕ in Experiment 13.
(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	-0.53	0.80	3.63	4.50	5.06	7.33	6.87	7.26	7.71	8.00
50	-0.37	0.85	3.77	4.48	5.10	6.70	6.46	6.82	7.10	7.57
100	-0.22	1.30	3.90	4.90	5.43	5.62	5.41	5.96	6.50	6.87
150	-0.14	1.22	3.99	4.90	5.49	4.92	4.87	5.63	6.15	6.53
200	-0.25	1.04	4.10	5.03	5.47	4.71	4.57	5.57	6.07	6.31
Dynamic CCEMG without bias correction										
40	-9.40	-7.14	-3.03	-1.73	-0.97	10.51	8.29	5.00	4.28	3.96
50	-9.44	-7.33	-3.19	-1.89	-1.21	10.30	8.28	4.69	3.86	3.64
100	-10.10	-7.61	-3.45	-2.02	-1.40	10.56	8.12	4.23	3.18	2.77
150	-10.24	-7.90	-3.61	-2.25	-1.49	10.54	8.25	4.17	2.97	2.42
200	-10.37	-7.94	-3.67	-2.28	-1.62	10.61	8.19	4.08	2.83	2.32
Dynamic CCEMG with RMA bias correction										
40	-6.28	-4.20	-1.57	-0.75	-0.16	8.21	6.38	4.55	4.16	3.83
50	-6.38	-4.33	-1.41	-0.72	-0.32	8.02	6.21	3.89	3.60	3.49
100	-6.73	-4.56	-1.56	-0.88	-0.54	7.62	5.48	3.00	2.66	2.52
150	-6.92	-4.75	-1.84	-0.99	-0.61	7.57	5.44	2.81	2.27	2.08
200	-7.02	-4.92	-1.80	-1.06	-0.60	7.50	5.43	2.58	2.06	1.81
Dynamic CCEMG with jackknife bias correction										
40	3.20	2.16	1.33	1.10	0.92	9.45	6.72	4.81	4.39	4.12
50	3.36	2.14	1.26	0.97	0.71	8.96	6.18	4.25	3.78	3.66
100	2.93	1.96	1.13	0.88	0.56	6.93	4.82	3.04	2.81	2.57
150	2.98	1.76	1.06	0.71	0.54	6.42	4.21	2.67	2.27	2.08
200	3.12	2.13	1.04	0.78	0.44	6.16	3.97	2.32	2.01	1.81
MG based on Song's individual estimates with 3 factors										
40	-8.17	-6.11	-2.52	-1.41	-0.91	9.83	7.93	4.86	4.18	3.94
50	-8.32	-6.03	-2.29	-1.49	-1.11	9.85	7.56	4.40	3.89	3.59
100	-8.56	-6.27	-2.63	-1.58	-1.12	9.30	7.03	3.72	3.02	2.69
150	-8.97	-6.16	-2.62	-1.60	-1.18	9.47	6.70	3.40	2.59	2.31
200	-9.12	-6.52	-2.53	-1.62	-1.17	9.52	6.91	3.12	2.43	2.07
MG based on Song with true number of factors (m=1)										
40	-5.26	-4.03	-1.58	-0.68	-0.27	7.28	6.22	4.46	3.98	3.87
50	-5.54	-4.07	-1.61	-0.95	-0.67	7.13	5.80	4.01	3.76	3.49
100	-5.98	-4.66	-2.22	-1.37	-0.98	6.70	5.48	3.39	2.88	2.63
150	-6.18	-4.66	-2.29	-1.44	-1.07	6.66	5.21	3.09	2.48	2.25
200	-6.29	-4.89	-2.22	-1.47	-1.08	6.68	5.30	2.84	2.31	2.02
Bai's IFE estimator with 3 factors										
40	0.74	3.70	7.01	8.11	8.85	8.32	8.11	9.58	10.33	10.90
50	1.13	3.18	6.73	8.02	8.39	7.55	7.42	8.75	9.80	10.08
100	-0.44	2.51	6.60	7.93	8.43	5.62	5.50	7.79	8.90	9.34
150	-1.12	1.81	6.56	7.70	8.52	4.94	4.71	7.45	8.37	9.09
200	-1.92	1.40	6.44	7.78	8.46	4.83	4.01	7.12	8.28	8.91
Bai's IFE estimator with true number of factors (m=1)										
40	5.16	7.15	11.01	12.11	12.81	10.35	10.91	13.03	13.85	14.41
50	5.96	7.71	11.25	12.34	12.92	10.09	10.75	12.84	13.65	14.21
100	6.67	8.66	11.79	12.90	13.29	9.17	10.31	12.62	13.60	13.99
150	7.05	8.79	11.94	12.89	13.42	8.83	9.97	12.53	13.39	13.87
200	7.22	8.84	12.08	13.09	13.48	8.59	9.78	12.58	13.49	13.82
Moon and Weidner's QMLE with 3 factors										
40	0.79	3.75	7.10	8.17	8.86	8.47	8.18	9.63	10.38	10.87
50	1.09	3.24	6.80	8.06	8.35	7.62	7.51	8.80	9.78	9.96
100	-0.40	2.55	6.68	8.01	8.49	5.69	5.55	7.87	8.98	9.39
150	-1.10	1.90	6.61	7.79	8.60	4.99	4.77	7.49	8.46	9.17
200	-1.88	1.52	6.55	7.85	8.54	4.86	4.09	7.23	8.35	8.98
Moon and Weidner's QMLE with true number of factors (m=1)										
40	5.76	7.93	11.28	12.41	13.03	10.36	11.08	13.17	14.03	14.57
50	6.56	8.16	11.47	12.52	13.06	10.15	10.91	12.97	13.78	14.32
100	6.98	8.85	11.91	13.01	13.37	9.26	10.42	12.72	13.71	14.06
150	7.33	8.98	12.02	12.96	13.49	8.93	10.10	12.61	13.46	13.94
200	7.45	8.99	12.16	13.16	13.54	8.71	9.88	12.65	13.56	13.89

Table S13b. Monte Carlo findings for the estimation of β_0 in Experiment 13.
(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	60.11	59.93	60.34	60.47	60.49	60.46	60.22	60.54	60.62	60.63
50	59.69	60.04	60.26	60.50	60.63	60.01	60.30	60.43	60.63	60.75
100	60.12	60.23	60.38	60.56	60.55	60.35	60.42	60.49	60.65	60.63
150	59.92	60.17	60.33	60.47	60.56	60.14	60.34	60.44	60.54	60.62
200	59.62	60.01	60.28	60.53	60.63	59.83	60.19	60.38	60.59	60.68
	Dynamic CCEMG without bias correction									
40	1.20	0.97	0.48	0.44	0.26	6.01	5.09	3.75	3.30	3.01
50	0.96	0.88	0.43	0.37	0.31	5.24	4.67	3.40	2.95	2.71
100	1.17	0.79	0.46	0.38	0.32	3.79	3.30	2.44	2.18	1.92
150	1.11	0.85	0.45	0.27	0.22	3.20	2.67	1.99	1.73	1.59
200	1.24	0.86	0.48	0.36	0.23	2.86	2.50	1.80	1.48	1.42
	Dynamic CCEMG with RMA bias correction									
40	1.13	0.87	0.62	0.39	0.35	6.58	5.64	3.95	3.42	3.11
50	1.32	1.09	0.44	0.42	0.22	6.23	5.08	3.54	3.06	2.74
100	0.96	0.85	0.46	0.33	0.30	4.27	3.70	2.58	2.15	2.03
150	1.10	0.97	0.50	0.25	0.28	3.56	3.12	2.13	1.76	1.65
200	0.96	0.81	0.38	0.28	0.23	3.05	2.61	1.81	1.55	1.40
	Dynamic CCEMG with jackknife bias correction									
40	0.83	0.52	0.22	0.24	0.04	12.39	8.08	4.51	3.64	3.21
50	0.79	0.47	0.11	0.11	0.12	10.64	7.38	4.11	3.27	2.89
100	0.71	0.32	0.10	0.12	0.14	7.44	5.13	2.95	2.39	2.03
150	0.64	0.54	0.09	0.03	0.00	6.49	4.26	2.36	1.94	1.68
200	0.81	0.34	0.13	0.06	0.01	5.36	3.78	2.11	1.64	1.53
	MG based on Song's individual estimates with 3 factors									
40	0.43	0.34	0.52	0.51	0.44	7.51	6.46	4.14	3.54	3.32
50	0.20	0.22	0.36	0.50	0.45	6.73	5.47	3.73	3.15	2.84
100	0.42	0.44	0.31	0.22	0.28	4.20	3.49	2.51	2.12	1.93
150	0.43	0.31	0.33	0.22	0.25	3.27	2.75	1.98	1.76	1.58
200	0.42	0.38	0.31	0.24	0.15	2.79	2.40	1.69	1.51	1.38
	MG based on Song with true number of factors (m=1)									
40	-2.76	-2.29	-1.64	-1.54	-1.51	8.91	7.21	4.98	4.40	4.02
50	-1.63	-1.57	-1.01	-0.84	-0.90	6.58	6.03	4.08	3.51	3.23
100	0.05	0.01	0.01	-0.05	-0.02	3.70	3.33	2.40	2.07	1.88
150	0.30	0.20	0.21	0.08	0.13	2.87	2.53	1.90	1.71	1.55
200	0.37	0.37	0.24	0.18	0.07	2.54	2.26	1.65	1.47	1.37
	Bai's IFE estimator with 3 factors									
40	5.58	5.10	4.56	4.30	4.27	8.17	7.40	6.26	5.90	5.70
50	5.56	5.32	4.33	4.23	4.19	7.58	7.07	5.80	5.54	5.40
100	5.42	4.97	4.51	4.42	4.40	6.45	5.94	5.25	5.11	5.02
150	5.42	5.11	4.55	4.37	4.28	6.17	5.73	5.06	4.81	4.71
200	5.53	5.09	4.59	4.48	4.33	6.06	5.60	4.98	4.81	4.66
	Bai's IFE estimator with true number of factors (m=1)									
40	9.45	7.96	4.96	4.39	4.15	16.27	14.66	9.31	8.06	7.66
50	8.04	6.75	4.30	3.85	3.82	13.85	11.66	7.47	6.60	6.40
100	6.33	5.27	3.92	3.73	3.67	9.99	8.06	5.43	5.15	4.86
150	5.82	5.02	3.79	3.50	3.42	8.45	6.98	4.75	4.36	4.29
200	5.57	4.71	3.78	3.62	3.44	7.72	6.30	4.57	4.25	4.09
	Moon and Weidner's QMLE with 3 factors									
40	5.11	4.65	4.17	3.92	3.90	7.80	7.08	5.95	5.62	5.41
50	5.14	4.95	3.99	3.91	3.85	7.28	6.79	5.54	5.29	5.12
100	5.11	4.67	4.25	4.18	4.17	6.20	5.70	5.03	4.91	4.82
150	5.14	4.85	4.30	4.15	4.07	5.93	5.50	4.84	4.61	4.52
200	5.27	4.84	4.37	4.27	4.12	5.84	5.38	4.78	4.61	4.47
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	7.42	5.84	4.04	3.50	3.41	13.07	10.86	7.51	6.38	6.32
50	6.44	5.56	3.68	3.29	3.33	11.11	9.55	6.55	5.69	5.75
100	5.65	4.81	3.60	3.42	3.43	8.81	7.41	5.04	4.72	4.68
150	5.29	4.63	3.56	3.28	3.21	7.65	6.51	4.56	4.18	4.11
200	5.13	4.38	3.56	3.41	3.24	7.03	5.83	4.38	4.08	3.92

Table S13c. Size and Power of selected estimators of ϕ in Experiment 13.
(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	54.70	55.55	71.55	77.70	81.35	81.75	82.10	78.55	82.10	82.30
50	54.70	58.65	71.60	79.75	84.05	85.20	82.90	81.85	82.55	83.15
100	60.70	64.10	79.05	84.90	89.80	92.20	89.70	86.60	86.20	87.60
150	64.85	66.75	82.95	89.00	93.20	95.50	93.75	91.90	89.60	91.35
200	67.90	68.85	84.25	90.25	95.55	96.50	95.65	92.70	91.95	92.35
	Dynamic CCEMG without bias correction									
40	60.10	43.15	16.45	10.30	8.95	99.30	98.90	94.00	88.00	85.10
50	69.55	53.15	17.25	10.60	8.80	99.90	99.85	97.70	95.00	93.25
100	93.95	81.65	30.35	15.70	11.05	100.00	100.00	99.95	99.95	99.90
150	98.80	94.25	46.00	22.05	13.20	100.00	100.00	100.00	100.00	100.00
200	99.80	98.80	57.45	27.80	18.20	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	28.05	18.20	9.85	8.40	6.65	90.75	87.90	80.80	79.40	76.75
50	33.15	22.10	8.25	6.45	6.40	95.35	93.35	89.15	87.10	86.15
100	57.55	36.40	10.30	7.75	6.85	99.75	99.95	99.50	99.30	99.30
150	73.05	51.50	15.45	9.15	6.95	100.00	100.00	100.00	100.00	100.00
200	84.35	66.75	18.70	10.45	6.60	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	13.50	10.95	9.50	9.65	7.35	22.25	32.15	53.70	60.70	64.60
50	16.10	10.40	9.70	7.90	7.40	26.05	37.95	63.70	72.50	76.60
100	18.55	14.15	8.95	8.65	6.20	37.90	59.20	89.65	93.75	97.10
150	24.85	17.70	10.95	7.45	6.05	47.00	73.85	97.00	99.25	99.70
200	29.45	20.40	10.20	8.40	6.45	53.45	79.30	99.45	99.95	99.95
	MG based on Song's individual estimates with 3 factors									
40	45.30	32.50	11.25	7.85	6.80	95.55	94.20	88.05	83.35	82.45
50	52.85	38.20	12.95	9.30	7.00	97.30	97.35	93.55	91.65	90.85
100	80.65	64.20	21.10	12.55	8.65	99.95	99.95	99.90	99.50	99.75
150	93.15	78.05	27.15	14.45	11.00	100.00	100.00	100.00	100.00	100.00
200	97.70	89.95	32.30	17.50	11.60	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	28.65	21.10	10.30	6.70	6.20	92.65	90.60	83.45	78.30	77.70
50	34.10	23.30	9.65	9.25	6.85	96.40	95.05	90.85	88.85	89.05
100	61.05	45.20	16.70	11.05	7.75	99.95	99.95	99.90	99.45	99.65
150	78.40	60.85	21.40	12.50	9.70	100.00	100.00	100.00	100.00	100.00
200	88.60	73.95	26.25	16.05	10.85	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	51.35	55.15	75.75	83.20	88.05	70.10	62.60	63.35	67.55	69.35
50	51.80	55.00	76.90	85.45	89.55	70.70	66.65	65.20	66.65	70.05
100	50.80	54.70	87.65	94.55	96.55	88.20	80.40	68.25	68.10	70.55
150	53.00	54.50	90.65	96.95	98.85	94.50	88.75	71.75	69.35	70.10
200	58.35	55.15	93.75	98.80	99.45	97.25	94.60	74.90	71.35	69.85
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	64.10	71.55	88.65	94.05	96.05	49.95	49.65	62.10	68.90	72.65
50	65.30	74.45	91.55	95.90	96.65	51.65	49.55	61.35	68.65	73.80
100	77.60	87.10	98.05	99.70	99.65	54.75	51.70	62.75	72.60	77.10
150	84.40	92.15	99.50	100.00	100.00	56.60	52.40	65.45	74.70	80.95
200	89.35	95.90	99.90	100.00	100.00	58.20	54.50	67.70	77.55	82.50

Table S13d. Size and Power of selected estimators of β_0 in Experiment 13.

(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	7.75	6.60	6.65	6.40	5.95	34.45	42.85	74.35	84.70	91.35
50	6.95	6.55	6.45	6.20	6.15	43.90	52.40	82.55	91.75	95.90
100	5.80	6.05	6.40	6.35	5.25	67.40	82.15	98.15	99.65	99.85
150	7.35	5.40	6.05	6.10	5.10	83.65	93.75	99.95	100.00	99.95
200	7.15	7.95	7.25	5.15	6.30	92.65	97.75	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	6.40	6.35	6.45	6.25	6.50	28.95	40.10	69.55	83.55	89.95
50	7.50	6.50	6.15	6.00	6.55	34.30	43.70	80.25	89.45	95.65
100	5.95	6.50	6.50	5.10	6.00	59.50	74.70	97.40	99.50	99.95
150	7.25	7.30	7.15	5.35	6.20	74.75	87.25	99.60	100.00	100.00
200	6.05	6.40	6.00	5.35	5.45	87.10	96.40	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	6.65	5.55	5.85	5.50	5.05	60.90	86.90	99.90	100.00	100.00
50	4.70	7.10	6.05	5.25	5.25	68.80	91.70	99.95	100.00	100.00
100	4.85	4.90	6.70	5.95	4.85	91.75	99.65	100.00	100.00	100.00
150	6.60	5.50	4.90	5.70	5.35	97.85	99.95	100.00	100.00	100.00
200	4.65	6.00	6.35	5.20	5.75	99.70	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	4.90	4.55	3.00	3.60	4.10	31.00	37.20	60.80	71.25	75.75
50	5.10	4.90	4.80	3.60	3.50	38.60	46.60	73.10	81.35	88.40
100	5.75	6.30	5.55	5.30	5.05	68.20	80.65	97.65	99.25	99.70
150	6.35	5.90	5.75	6.55	5.40	86.65	94.25	99.55	100.00	100.00
200	6.45	6.45	6.00	5.60	5.90	94.55	98.50	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	9.25	7.85	6.65	5.75	6.00	53.00	60.90	79.20	84.80	89.50
50	7.30	6.95	6.55	5.05	5.10	59.00	67.05	85.35	92.55	95.90
100	6.70	6.65	5.15	5.05	5.05	80.70	88.75	99.10	99.75	99.95
150	6.25	5.65	5.70	5.90	5.35	92.85	97.80	99.90	100.00	100.00
200	6.45	6.70	5.30	5.45	6.05	98.00	99.20	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	36.00	37.30	45.30	52.70	57.30	34.45	41.25	62.65	72.15	78.00
50	38.25	42.10	49.95	56.45	61.80	37.45	41.75	67.20	76.90	83.00
100	51.20	53.00	65.55	72.35	78.70	48.80	61.15	83.15	89.75	93.20
150	64.05	66.80	76.85	84.80	86.05	59.70	71.80	91.75	96.55	98.15
200	73.30	74.75	85.35	91.55	91.95	66.25	79.40	95.85	98.95	99.60
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	38.25	37.05	42.30	48.25	53.25	40.40	43.25	61.60	68.50	75.55
50	37.30	38.95	44.50	49.90	55.15	41.15	44.95	64.40	74.90	79.50
100	44.30	45.30	52.35	58.75	65.20	55.40	61.80	82.20	87.55	91.00
150	49.55	52.75	61.50	66.75	69.70	66.70	73.80	90.30	95.65	97.20
200	58.65	57.00	67.30	76.10	76.60	73.65	80.25	95.10	97.90	99.05

Table S14a. Monte Carlo findings for the estimation of ϕ in Experiment 14. (With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	13.12	14.74	17.83	18.80	19.61	15.48	16.72	19.12	19.83	20.55
50	13.08	14.79	18.07	19.25	19.60	15.13	16.50	19.14	20.12	20.41
100	13.42	15.11	18.29	19.53	20.12	15.08	16.43	19.00	20.12	20.64
150	13.95	15.05	18.47	19.67	20.23	15.47	16.20	19.09	20.09	20.61
200	13.47	15.27	18.64	19.71	20.23	14.89	16.38	19.21	20.11	20.57
	Dynamic CCEMG without bias correction									
40	-10.93	-8.25	-3.31	-1.98	-1.18	11.86	9.35	5.12	4.37	3.93
50	-11.12	-8.34	-3.61	-2.02	-1.30	11.88	9.23	5.02	4.05	3.74
100	-11.73	-9.04	-3.99	-2.41	-1.59	12.12	9.44	4.69	3.41	2.88
150	-12.06	-9.25	-4.22	-2.60	-1.76	12.33	9.54	4.68	3.25	2.62
200	-12.13	-9.37	-4.32	-2.68	-1.94	12.35	9.60	4.67	3.17	2.56
	Dynamic CCEMG with RMA bias correction									
40	-8.58	-5.82	-2.20	-0.84	-0.50	10.23	7.63	4.66	3.98	3.91
50	-8.55	-5.97	-2.14	-1.18	-0.57	9.92	7.47	4.24	3.77	3.44
100	-9.08	-6.17	-2.36	-1.25	-0.80	9.81	6.92	3.54	2.73	2.59
150	-9.29	-6.55	-2.40	-1.48	-0.89	9.80	7.06	3.24	2.49	2.22
200	-9.44	-6.75	-2.61	-1.47	-1.01	9.88	7.13	3.24	2.28	2.03
	Dynamic CCEMG with jackknife bias correction									
40	3.82	2.64	1.74	1.21	0.85	9.96	7.18	4.91	4.41	4.09
50	4.02	2.66	1.59	1.19	0.77	9.26	6.62	4.38	3.96	3.79
100	3.91	2.35	1.40	0.97	0.66	7.64	4.96	3.23	2.83	2.62
150	3.73	2.48	1.30	0.90	0.59	6.93	4.64	2.72	2.32	2.15
200	4.04	2.52	1.27	0.88	0.47	6.78	4.41	2.45	2.05	1.83
	MG based on Song's individual estimates with 3 factors									
40	-9.15	-6.77	-2.74	-1.38	-0.90	10.91	8.58	5.11	4.12	4.03
50	-9.48	-7.03	-2.76	-1.50	-0.95	10.81	8.38	4.52	3.84	3.54
100	-10.20	-7.32	-2.85	-1.72	-1.21	10.85	7.98	3.85	3.00	2.75
150	-10.53	-7.56	-2.98	-1.79	-1.27	10.99	8.02	3.69	2.74	2.33
200	-10.85	-7.78	-3.05	-1.85	-1.36	11.21	8.13	3.58	2.55	2.21
	MG based on Song with true number of factors (m=1)									
40	-5.34	-3.95	-1.46	-0.40	-0.01	7.57	6.31	4.55	3.98	3.96
50	-6.03	-4.58	-1.76	-0.79	-0.28	7.61	6.33	4.06	3.60	3.43
100	-7.09	-5.47	-2.36	-1.40	-0.99	7.76	6.17	3.49	2.83	2.65
150	-7.27	-5.70	-2.56	-1.59	-1.11	7.71	6.17	3.33	2.60	2.24
200	-7.43	-5.87	-2.67	-1.67	-1.24	7.76	6.22	3.23	2.41	2.13
	Bai's IFE estimator with 3 factors									
40	-1.62	1.70	6.24	7.74	8.19	8.66	8.08	9.05	9.89	10.18
50	-2.36	1.17	6.29	7.69	8.29	8.21	7.18	8.55	9.59	10.01
100	-3.83	0.16	6.06	7.63	8.31	7.13	5.23	7.43	8.65	9.26
150	-4.90	-0.50	5.74	7.47	8.33	7.20	4.55	6.74	8.16	8.96
200	-5.32	-1.08	5.70	7.36	8.10	7.19	4.18	6.48	7.92	8.59
	Bai's IFE estimator with true number of factors (m=1)									
40	2.58	4.13	7.21	8.44	8.84	8.87	9.10	10.20	10.83	11.15
50	2.16	4.20	7.43	8.45	8.93	7.88	8.47	9.87	10.61	10.93
100	2.07	3.90	7.53	8.75	9.28	5.97	6.51	8.85	9.83	10.29
150	2.28	4.05	7.56	8.75	9.40	5.12	5.88	8.55	9.49	10.10
200	2.39	4.14	7.79	8.92	9.40	4.96	5.70	8.52	9.51	9.95
	Moon and Weidner's QMLE with 3 factors									
40	-2.67	0.94	5.73	7.30	7.73	8.93	7.99	8.68	9.55	9.82
50	-3.34	0.37	5.82	7.23	7.86	8.46	7.04	8.20	9.18	9.62
100	-4.66	-0.57	5.65	7.28	7.99	7.58	5.21	7.06	8.34	8.96
150	-5.74	-1.14	5.38	7.15	8.04	7.71	4.61	6.44	7.87	8.69
200	-6.05	-1.70	5.35	7.05	7.81	7.65	4.31	6.18	7.64	8.32
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	1.87	3.62	6.87	8.08	8.48	8.30	8.56	9.79	10.37	10.74
50	1.83	3.89	7.20	8.23	8.76	7.58	8.08	9.60	10.38	10.77
100	1.99	3.82	7.45	8.67	9.18	5.92	6.45	8.79	9.79	10.21
150	2.24	4.00	7.47	8.66	9.31	5.12	5.88	8.46	9.42	10.02
200	2.36	4.10	7.72	8.83	9.32	5.00	5.68	8.46	9.44	9.87

Table S14b. Monte Carlo findings for the estimation of β_0 in Experiment 14. (With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	51.52	51.31	51.66	51.37	51.49	51.96	51.68	51.88	51.54	51.64
50	50.96	51.08	51.27	51.25	51.33	51.37	51.42	51.47	51.40	51.46
100	51.07	51.13	51.36	51.13	51.35	51.40	51.39	51.52	51.24	51.43
150	51.22	51.11	51.25	51.22	51.32	51.54	51.36	51.38	51.32	51.39
200	50.99	51.28	51.20	51.09	51.20	51.27	51.51	51.32	51.17	51.27
	Dynamic CCEMG without bias correction									
40	1.37	1.14	0.69	0.45	0.18	5.92	5.28	3.70	3.30	3.08
50	1.05	0.82	0.48	0.28	0.27	5.48	4.59	3.37	2.93	2.84
100	1.11	0.92	0.58	0.30	0.23	3.92	3.37	2.45	2.15	1.93
150	1.23	1.05	0.46	0.26	0.28	3.34	2.88	1.98	1.77	1.61
200	1.24	0.97	0.50	0.33	0.26	2.97	2.51	1.77	1.52	1.37
	Dynamic CCEMG with RMA bias correction									
40	1.34	0.91	0.60	0.60	0.36	6.84	5.81	4.05	3.43	3.12
50	1.31	1.11	0.55	0.39	0.49	6.06	4.99	3.56	3.02	2.79
100	1.22	0.99	0.66	0.44	0.24	4.50	3.50	2.53	2.24	1.94
150	1.13	0.96	0.56	0.41	0.37	3.59	3.12	2.14	1.81	1.69
200	1.10	0.97	0.53	0.44	0.32	3.27	2.71	1.84	1.64	1.41
	Dynamic CCEMG with jackknife bias correction									
40	1.60	0.98	0.36	0.20	0.03	12.04	8.25	4.42	3.69	3.29
50	0.85	0.34	0.07	0.11	0.14	11.21	7.32	4.11	3.32	3.03
100	0.58	0.70	0.22	0.00	0.01	7.71	5.42	2.98	2.36	2.07
150	0.97	0.55	0.08	-0.06	0.07	6.49	4.32	2.38	1.99	1.71
200	0.84	0.52	0.08	0.03	0.02	5.65	3.88	2.08	1.68	1.44
	MG based on Song's individual estimates with 3 factors									
40	0.10	0.51	0.42	0.44	0.49	8.13	6.45	4.12	3.60	3.50
50	0.29	0.54	0.31	0.38	0.32	6.81	5.40	3.69	3.12	2.90
100	0.49	0.42	0.30	0.35	0.29	4.21	3.58	2.51	2.22	1.95
150	0.56	0.44	0.35	0.27	0.21	3.34	2.81	2.02	1.73	1.59
200	0.62	0.56	0.37	0.32	0.22	2.81	2.42	1.72	1.53	1.41
	MG based on Song with true number of factors (m=1)									
40	-2.76	-2.08	-1.58	-1.51	-1.41	8.58	7.78	5.09	4.42	4.15
50	-1.67	-1.33	-1.09	-0.85	-0.95	7.50	5.61	4.09	3.36	3.25
100	0.09	0.04	-0.01	0.03	0.04	3.64	3.26	2.40	2.17	1.89
150	0.44	0.30	0.22	0.13	0.09	3.04	2.57	1.95	1.70	1.56
200	0.57	0.52	0.30	0.25	0.15	2.66	2.26	1.69	1.50	1.39
	Bai's IFE estimator with 3 factors									
40	8.37	7.69	6.50	5.78	5.46	10.68	9.79	8.07	7.17	6.88
50	7.68	6.87	5.49	5.13	5.02	9.68	8.67	6.91	6.34	6.16
100	6.41	5.74	4.68	4.25	4.17	7.43	6.71	5.41	4.94	4.79
150	6.12	5.57	4.42	4.15	4.11	6.90	6.21	4.95	4.62	4.54
200	6.04	5.46	4.45	4.14	4.01	6.63	5.96	4.84	4.49	4.34
	Bai's IFE estimator with true number of factors (m=1)									
40	18.23	17.54	16.80	16.45	16.66	21.51	20.38	18.78	18.33	18.40
50	17.36	16.68	16.46	16.58	16.59	20.03	18.95	18.21	18.02	17.89
100	17.39	17.21	16.96	16.86	17.06	19.08	18.61	17.97	17.72	17.81
150	18.03	17.38	17.34	17.37	17.41	19.50	18.61	18.14	17.99	17.94
200	17.45	17.69	17.41	17.38	17.46	18.78	18.78	18.10	17.91	17.91
	Moon and Weidner's QMLE with 3 factors									
40	8.09	7.42	6.25	5.51	5.20	10.50	9.56	7.87	6.95	6.68
50	7.40	6.63	5.23	4.87	4.75	9.46	8.46	6.68	6.14	5.92
100	6.26	5.59	4.55	4.12	4.05	7.32	6.58	5.29	4.83	4.69
150	6.02	5.47	4.34	4.08	4.04	6.82	6.12	4.87	4.56	4.49
200	5.95	5.38	4.39	4.09	3.97	6.56	5.89	4.79	4.45	4.31
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	17.09	16.70	16.36	16.08	16.28	19.93	19.20	18.18	17.75	17.80
50	16.84	16.37	16.16	16.34	16.40	19.40	18.58	17.76	17.69	17.66
100	17.19	17.03	16.86	16.75	17.00	18.88	18.45	17.88	17.62	17.75
150	17.86	17.24	17.25	17.31	17.36	19.34	18.47	18.07	17.93	17.89
200	17.27	17.55	17.32	17.32	17.41	18.60	18.65	18.02	17.85	17.87

Table S14c. Size and Power of selected estimators of ϕ in Experiment 14.

(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	88.00	91.70	98.10	99.65	99.80	60.85	68.50	83.65	89.45	92.10
50	88.75	94.15	99.30	99.90	99.85	63.25	70.20	85.65	92.00	93.80
100	94.85	98.10	99.90	100.00	100.00	71.35	75.95	91.90	96.20	97.80
150	96.70	99.05	100.00	100.00	100.00	77.30	81.00	95.60	98.65	99.45
200	97.15	99.35	100.00	100.00	100.00	78.40	83.15	96.45	99.15	99.65
Dynamic CCEMG without bias correction										
40	72.75	53.85	16.00	10.80	8.90	99.80	99.35	94.15	90.15	88.25
50	80.95	60.75	21.45	12.90	10.00	100.00	99.90	98.00	95.20	92.40
100	98.30	92.60	38.80	19.80	11.90	100.00	100.00	100.00	99.90	99.90
150	99.95	98.60	57.45	28.50	16.75	100.00	100.00	100.00	100.00	100.00
200	100.00	99.70	70.85	37.15	22.10	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with RMA bias correction										
40	42.65	27.85	10.15	6.20	6.90	94.90	92.40	86.25	80.70	78.80
50	49.65	32.65	10.55	8.25	6.35	97.65	96.65	91.90	89.25	89.05
100	79.50	57.80	17.20	8.30	7.20	100.00	100.00	99.85	99.70	99.55
150	91.80	77.40	22.70	11.75	9.20	100.00	100.00	100.00	100.00	100.00
200	95.60	88.95	32.40	14.55	10.55	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with jackknife bias correction										
40	14.15	12.20	9.85	8.65	7.90	20.65	30.10	49.60	59.90	65.00
50	15.40	12.60	9.05	8.15	8.95	21.20	33.70	59.80	69.20	75.00
100	21.70	16.05	10.80	7.80	7.65	34.05	54.95	86.80	93.80	96.25
150	26.85	20.35	10.95	8.65	7.05	42.20	66.00	96.55	99.15	99.50
200	31.90	25.85	11.95	8.60	6.95	48.15	74.15	99.00	99.85	99.95
MG based on Song's individual estimates with 3 factors										
40	51.50	36.20	13.75	7.95	7.15	95.60	94.10	88.20	84.55	81.55
50	62.00	45.45	13.15	9.05	7.05	98.45	98.50	95.65	91.90	89.50
100	90.30	75.70	23.00	11.35	8.95	100.00	100.00	99.95	99.70	99.70
150	97.35	89.50	33.45	16.70	10.60	100.00	100.00	100.00	100.00	100.00
200	99.50	96.20	42.95	20.80	13.60	100.00	100.00	100.00	100.00	100.00
MG based on Song with true number of factors (m=1)										
40	30.45	20.90	10.35	6.55	7.45	91.45	89.00	81.55	76.70	74.85
50	39.85	27.70	10.50	7.15	6.75	96.45	95.85	91.70	88.70	86.00
100	72.45	56.80	17.60	10.45	8.30	100.00	100.00	99.90	99.60	99.55
150	88.60	74.85	26.75	15.10	9.15	100.00	100.00	100.00	100.00	100.00
200	95.45	87.60	34.80	17.10	11.70	99.95	100.00	100.00	100.00	100.00
Moon and Weidner's QMLE with 3 factors										
40	51.95	52.55	71.60	80.20	84.90	81.85	74.10	66.30	67.80	70.55
50	55.15	51.30	74.35	83.35	87.85	85.05	79.20	67.45	69.60	72.35
100	63.80	50.15	81.35	91.85	94.90	96.50	91.50	73.20	70.80	73.05
150	73.00	53.45	84.25	96.10	98.55	99.10	96.55	80.40	74.40	70.95
200	79.65	57.00	89.15	97.60	99.05	99.55	98.80	84.85	77.95	75.15
Moon and Weidner's QMLE with true number of factors (m=1)										
40	46.30	53.35	72.50	81.15	85.55	67.95	63.15	63.80	65.95	68.25
50	46.15	53.50	76.90	83.45	88.70	69.80	67.05	65.35	68.05	72.60
100	49.60	57.30	88.10	94.60	96.45	80.85	76.50	66.55	67.90	70.05
150	50.65	64.35	93.10	98.50	98.95	86.30	80.85	70.95	68.85	70.60
200	54.20	70.75	96.85	99.30	99.55	88.40	84.10	69.30	68.80	71.75

Table S14d. Size and Power of selected estimators of β_0 in Experiment 14.

(With regressors, $\phi = 0.4$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	6.75	7.15	6.85	7.10	6.60	33.35	41.45	74.80	85.20	91.10
50	7.00	6.25	5.05	5.95	7.20	42.55	54.15	82.70	92.45	94.60
100	6.95	6.45	6.10	5.65	5.10	67.05	80.30	98.10	99.65	100.00
150	7.90	7.40	6.30	6.10	5.85	81.55	92.60	99.85	99.95	100.00
200	8.65	7.45	7.00	5.80	5.65	90.80	97.30	99.95	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	6.35	7.65	7.25	6.70	6.45	28.05	40.55	69.55	81.90	90.00
50	6.55	6.25	6.40	6.45	6.55	33.45	44.95	78.75	90.40	94.40
100	7.40	5.80	6.80	7.15	4.70	56.40	74.60	97.45	99.65	100.00
150	7.10	7.95	6.35	6.85	6.50	74.45	88.10	99.80	100.00	100.00
200	8.05	7.25	6.30	7.20	5.50	84.15	94.70	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.55	6.40	5.55	6.55	6.50	62.10	87.15	99.70	99.95	100.00
50	6.40	4.85	5.65	6.45	6.90	68.45	92.00	100.00	100.00	100.00
100	5.00	6.70	6.00	5.20	5.10	90.00	99.75	100.00	100.00	100.00
150	5.85	5.45	4.95	6.45	5.60	97.60	100.00	100.00	100.00	100.00
200	6.20	5.95	5.40	5.00	4.30	99.45	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	4.30	5.15	4.20	4.60	4.20	30.15	37.45	61.55	71.90	75.50
50	5.20	4.50	4.45	4.30	3.75	36.60	48.30	75.50	84.00	87.60
100	5.45	6.00	5.80	5.85	4.85	68.15	79.75	97.05	99.50	99.75
150	6.30	5.55	5.95	5.05	5.20	85.80	93.70	99.70	99.80	100.00
200	6.50	6.80	6.00	6.00	5.85	93.15	98.30	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	8.30	9.05	5.80	6.25	6.45	51.45	56.15	78.15	85.10	88.20
50	8.60	6.75	6.55	4.95	4.90	55.60	66.10	85.55	92.25	95.00
100	5.55	6.45	5.25	5.75	4.90	80.80	89.25	98.10	99.60	99.95
150	7.25	6.25	5.60	5.65	4.85	92.30	96.65	99.95	100.00	100.00
200	7.00	6.55	6.15	6.15	5.70	97.20	99.35	99.95	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	52.70	54.60	62.20	66.15	69.35	29.50	31.20	48.30	59.40	69.50
50	54.00	54.10	57.90	64.80	68.90	30.65	35.05	58.90	70.00	74.65
100	63.15	62.25	69.60	73.15	76.80	37.90	50.40	80.10	90.55	94.10
150	69.85	73.65	76.25	83.15	86.45	48.30	62.05	91.05	97.10	98.15
200	79.70	81.05	86.30	89.55	92.15	56.20	71.60	95.30	99.15	99.60
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	79.80	84.10	93.40	95.40	97.75	49.40	52.15	60.55	65.20	67.85
50	83.70	86.20	95.35	97.90	98.60	51.40	52.65	60.85	68.15	72.45
100	93.75	96.50	99.30	99.55	99.90	63.55	66.20	76.05	80.00	84.20
150	96.80	98.35	99.75	100.00	100.00	72.75	73.35	81.90	87.20	90.80
200	97.85	99.35	99.95	100.00	100.00	74.70	78.50	85.85	90.60	93.80

Table S14e. Estimation of selected quantiles of the distribution of slope coefficients, β_{0i}, in Experiment 14.

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Findings for $\widehat{q}_{\beta_0}$ ($\tau = 0.25$)									
40	-8.76	-6.11	-1.69	-0.54	0.13	12.21	9.48	5.55	4.81	4.32
50	-8.38	-5.76	-1.73	-0.70	-0.05	11.29	8.85	5.23	4.40	4.00
100	-8.80	-5.80	-1.82	-0.67	-0.19	10.41	7.44	3.90	3.11	2.84
150	-8.47	-5.76	-1.75	-0.72	-0.08	9.59	6.99	3.31	2.58	2.32
200	-8.69	-5.76	-1.76	-0.75	-0.16	9.55	6.63	3.00	2.29	2.03
	Findings for $\widehat{q}_{\beta_0}$ ($\tau = 0.75$)									
40	13.14	9.39	4.29	2.61	1.75	15.10	11.14	6.09	4.69	4.02
50	12.98	9.60	4.46	2.64	1.79	14.58	11.10	5.92	4.34	3.89
100	13.28	9.77	4.53	2.86	1.95	14.12	10.48	5.33	3.76	3.04
150	13.12	9.83	4.47	2.97	2.09	13.66	10.36	5.01	3.59	2.82
200	13.15	9.84	4.61	2.85	2.11	13.55	10.20	4.98	3.35	2.67

Table S15a. Monte Carlo findings for the estimation of ϕ in Experiment 15.

(With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	0.53	1.82	4.44	5.26	5.59	8.57	8.14	8.08	8.08	8.19
50	1.03	1.82	4.81	5.43	5.93	8.05	7.65	8.10	7.89	8.10
100	1.08	2.56	4.61	5.61	6.08	7.14	7.00	6.90	7.33	7.48
150	1.18	2.17	4.75	5.73	6.26	6.81	6.56	6.81	7.13	7.40
200	1.17	2.49	4.75	5.71	6.19	6.75	6.58	6.61	6.97	7.17
	Dynamic CCEMG without bias correction									
40	-7.88	-6.02	-2.38	-1.34	-0.70	9.17	7.46	4.57	4.06	3.93
50	-8.01	-6.17	-2.33	-1.35	-0.83	9.04	7.26	4.27	3.77	3.51
100	-8.15	-6.32	-2.71	-1.52	-0.98	8.69	6.93	3.72	2.94	2.63
150	-8.32	-6.46	-2.80	-1.67	-1.03	8.68	6.87	3.50	2.61	2.21
200	-8.47	-6.48	-2.89	-1.74	-1.12	8.77	6.79	3.40	2.46	2.03
	Dynamic CCEMG with RMA bias correction									
40	-4.43	-2.81	-0.60	-0.09	0.29	6.96	5.65	4.14	3.93	3.95
50	-4.62	-3.07	-0.58	-0.13	0.11	6.74	5.26	3.77	3.61	3.47
100	-4.73	-3.20	-1.03	-0.38	-0.12	5.99	4.54	2.85	2.59	2.47
150	-4.84	-3.36	-1.10	-0.56	-0.19	5.74	4.25	2.45	2.12	2.00
200	-4.98	-3.32	-1.19	-0.62	-0.27	5.70	4.06	2.19	1.90	1.74
	Dynamic CCEMG with jackknife bias correction									
40	2.82	1.88	1.49	1.19	1.05	9.14	6.73	4.69	4.26	4.22
50	2.84	1.84	1.51	1.20	0.88	8.40	6.03	4.34	3.94	3.64
100	2.68	1.65	1.04	0.90	0.66	6.66	4.50	3.09	2.85	2.61
150	2.88	1.55	1.02	0.74	0.57	6.09	4.03	2.60	2.27	2.12
200	2.90	1.79	0.90	0.68	0.49	5.87	3.84	2.20	1.98	1.82
	MG based on Song's individual estimates with 3 factors									
40	-7.16	-5.05	-2.26	-1.09	-0.93	8.95	7.08	4.57	4.12	3.95
50	-7.35	-5.16	-2.10	-1.16	-0.86	8.75	6.78	4.16	3.67	3.54
100	-7.28	-5.35	-2.12	-1.24	-0.84	8.08	6.20	3.32	2.79	2.60
150	-7.31	-5.34	-2.15	-1.24	-0.86	7.89	5.89	3.00	2.33	2.19
200	-7.62	-5.42	-2.18	-1.27	-0.87	8.06	5.86	2.89	2.15	1.90
	MG based on Song with true number of factors (m=2)									
40	-6.28	-4.53	-2.09	-1.05	-0.91	7.98	6.55	4.45	4.05	3.93
50	-6.28	-4.59	-2.00	-1.12	-0.84	7.65	6.20	4.09	3.65	3.54
100	-6.21	-4.72	-1.99	-1.18	-0.80	7.00	5.60	3.22	2.75	2.57
150	-6.20	-4.64	-1.99	-1.15	-0.81	6.73	5.20	2.87	2.27	2.15
200	-6.32	-4.73	-2.01	-1.20	-0.81	6.73	5.18	2.76	2.11	1.88
	Bai's IFE estimator with 3 factors									
40	1.16	3.75	7.74	8.51	8.93	8.42	8.46	9.92	10.51	10.79
50	0.99	3.52	7.48	8.29	8.84	7.47	7.56	9.38	9.92	10.32
100	-0.41	2.34	6.62	7.86	8.40	5.80	5.55	7.82	8.80	9.26
150	-1.01	2.11	6.60	7.88	8.54	5.12	4.90	7.45	8.53	9.13
200	-1.20	2.14	6.71	7.94	8.63	4.75	4.40	7.35	8.46	9.07
	Bai's IFE estimator with true number of factors (m=2)									
40	2.77	4.87	8.49	9.24	9.53	8.33	8.75	10.61	11.12	11.34
50	2.88	4.68	8.17	8.83	9.40	7.53	7.95	9.98	10.42	10.84
100	1.99	3.77	7.03	8.19	8.61	5.55	6.09	8.19	9.15	9.47
150	1.66	3.61	6.93	8.00	8.65	4.61	5.44	7.76	8.67	9.26
200	1.66	3.62	6.93	8.03	8.60	4.15	5.03	7.57	8.56	9.07
	Moon and Weidner's QMLE with 3 factors									
40	1.04	3.69	7.70	8.49	8.89	8.65	8.55	9.93	10.52	10.76
50	0.87	3.48	7.45	8.27	8.81	7.64	7.66	9.37	9.92	10.31
100	-0.60	2.27	6.60	7.87	8.41	5.92	5.59	7.81	8.82	9.27
150	-1.16	2.02	6.60	7.89	8.56	5.31	4.95	7.46	8.54	9.15
200	-1.40	2.05	6.69	7.96	8.65	4.90	4.40	7.33	8.48	9.10
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	2.79	4.90	8.51	9.21	9.52	8.48	8.87	10.64	11.09	11.32
50	2.83	4.75	8.16	8.83	9.39	7.58	8.04	9.97	10.44	10.86
100	2.03	3.76	7.02	8.18	8.61	5.65	6.13	8.18	9.14	9.47
150	1.66	3.61	6.94	8.01	8.66	4.66	5.44	7.77	8.68	9.27
200	1.67	3.63	6.95	8.05	8.61	4.18	5.06	7.59	8.58	9.08

Table S15b. Monte Carlo findings for the estimation of β_0 in Experiment 15. (With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	12.01	11.63	11.87	12.17	11.90	15.85	14.87	13.80	13.70	13.25
50	11.45	12.10	11.98	11.92	12.11	15.31	15.27	13.95	13.32	13.21
100	11.47	11.85	11.90	12.04	12.12	15.00	14.62	13.52	13.16	13.09
150	11.96	11.94	11.92	12.15	12.04	15.23	14.60	13.44	13.15	12.82
200	11.58	11.88	11.77	12.00	11.99	15.06	14.56	13.21	12.92	12.75
	Dynamic CCEMG without bias correction									
40	1.07	0.84	0.45	0.44	0.34	5.74	5.16	3.83	3.19	3.11
50	1.01	0.91	0.35	0.31	0.20	5.09	4.74	3.37	2.96	2.73
100	0.78	0.74	0.25	0.20	0.12	3.71	3.31	2.45	2.09	1.92
150	0.69	0.73	0.28	0.19	0.13	3.10	2.71	1.94	1.72	1.61
200	0.91	0.65	0.29	0.21	0.10	2.79	2.43	1.70	1.48	1.37
	Dynamic CCEMG with RMA bias correction									
40	0.78	0.62	0.46	0.46	0.37	6.35	5.57	4.01	3.25	3.15
50	0.84	0.79	0.35	0.32	0.26	5.74	5.01	3.55	3.01	2.79
100	0.67	0.65	0.26	0.26	0.20	4.15	3.54	2.54	2.16	1.98
150	0.50	0.63	0.30	0.24	0.19	3.48	2.88	2.01	1.79	1.64
200	0.77	0.53	0.28	0.26	0.15	3.10	2.58	1.78	1.53	1.41
	Dynamic CCEMG with jackknife bias correction									
40	0.93	0.45	0.29	0.26	0.24	11.68	7.96	4.59	3.51	3.26
50	1.02	0.78	0.11	0.06	0.13	10.51	7.26	4.09	3.27	2.93
100	0.76	0.47	-0.02	0.06	0.02	7.45	5.12	2.94	2.38	2.08
150	0.40	0.54	0.08	0.01	0.04	6.24	4.20	2.35	1.95	1.71
200	0.50	0.39	0.04	0.05	-0.01	5.39	3.67	2.05	1.67	1.47
	MG based on Song's individual estimates with 3 factors									
40	0.87	0.69	0.42	0.26	0.37	6.93	5.79	3.98	3.50	3.32
50	0.92	0.54	0.57	0.39	0.31	6.14	5.14	3.62	3.09	3.00
100	0.96	0.78	0.56	0.43	0.41	4.23	3.33	2.62	2.31	2.16
150	0.84	0.83	0.56	0.44	0.43	3.21	2.77	2.21	1.96	1.90
200	0.91	0.72	0.54	0.46	0.38	2.84	2.44	1.88	1.70	1.63
	MG based on Song with true number of factors (m=2)									
40	0.86	0.78	0.52	0.33	0.43	6.45	5.36	3.87	3.42	3.26
50	1.00	0.63	0.71	0.47	0.35	5.74	4.88	3.54	2.98	2.93
100	1.06	0.78	0.60	0.45	0.47	3.99	3.30	2.53	2.25	2.12
150	0.99	0.86	0.56	0.47	0.49	3.14	2.71	2.14	1.92	1.83
200	1.00	0.78	0.57	0.50	0.39	2.76	2.40	1.82	1.65	1.58
	Bai's IFE estimator with 3 factors									
40	4.46	4.15	3.97	3.95	3.85	7.61	7.11	6.36	5.85	5.88
50	4.36	4.36	3.95	3.96	3.64	7.21	6.83	5.88	5.59	5.36
100	4.54	4.52	4.09	4.19	4.05	6.05	5.89	5.11	5.02	4.86
150	4.65	4.46	4.37	4.45	4.32	5.71	5.36	4.97	4.98	4.84
200	4.85	4.64	4.57	4.48	4.50	5.60	5.27	5.00	4.85	4.83
	Bai's IFE estimator with true number of factors (m=2)									
40	4.29	3.98	3.75	3.78	3.73	7.84	7.31	6.42	5.92	5.95
50	4.30	4.17	3.77	3.73	3.40	7.41	6.84	5.92	5.57	5.32
100	4.32	4.27	3.77	3.88	3.70	6.09	5.84	5.04	4.90	4.71
150	4.31	4.07	3.92	3.95	3.79	5.67	5.29	4.78	4.70	4.54
200	4.35	4.21	4.07	3.88	3.87	5.44	5.16	4.74	4.45	4.41
	Moon and Weidner's QMLE with 3 factors									
40	4.38	4.04	3.84	3.81	3.68	7.64	7.11	6.33	5.78	5.80
50	4.27	4.27	3.81	3.82	3.48	7.22	6.82	5.81	5.51	5.27
100	4.48	4.43	3.98	4.08	3.94	6.05	5.86	5.04	4.94	4.78
150	4.59	4.38	4.27	4.34	4.20	5.68	5.32	4.89	4.88	4.74
200	4.79	4.55	4.46	4.36	4.37	5.57	5.22	4.90	4.75	4.72
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	4.20	3.88	3.62	3.63	3.57	7.85	7.34	6.38	5.86	5.88
50	4.24	4.06	3.64	3.61	3.25	7.45	6.84	5.87	5.53	5.23
100	4.25	4.19	3.65	3.76	3.58	6.10	5.83	4.98	4.83	4.63
150	4.24	3.99	3.81	3.83	3.67	5.67	5.28	4.72	4.63	4.45
200	4.29	4.12	3.97	3.76	3.74	5.43	5.14	4.66	4.36	4.31

Table S15c. Size and Power of selected estimators of ϕ in Experiment 15.

(With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	59.75	60.90	72.25	79.65	84.20	77.35	77.30	76.70	78.55	79.20
50	60.15	63.85	77.30	80.25	85.95	78.40	79.55	77.75	79.85	81.75
100	68.50	70.50	81.50	88.60	90.35	84.80	84.85	85.75	85.15	84.30
150	73.40	73.40	85.20	91.30	95.00	88.55	87.35	88.25	87.40	86.85
200	75.75	78.20	87.60	92.05	95.20	91.15	88.65	90.20	87.80	89.60
	Dynamic CCEMG without bias correction									
40	48.05	34.95	12.80	9.45	8.80	98.30	97.40	91.95	87.70	83.60
50	55.50	42.55	13.90	10.65	8.35	99.70	99.25	95.25	93.00	91.95
100	82.50	66.45	23.40	13.05	10.05	100.00	100.00	100.00	99.85	99.85
150	94.55	84.65	32.75	16.65	10.20	100.00	100.00	100.00	100.00	100.00
200	98.45	92.10	40.75	21.75	11.85	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	18.20	12.80	6.45	6.95	7.05	83.15	79.80	76.00	72.95	72.30
50	22.60	13.65	7.50	7.70	6.55	89.70	89.45	84.00	83.55	82.45
100	38.00	23.90	8.80	6.55	5.65	99.00	99.10	99.15	98.85	99.00
150	49.05	32.30	9.80	6.05	6.45	100.00	100.00	100.00	100.00	99.95
200	60.10	39.15	11.90	6.90	5.75	99.95	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	12.20	10.95	9.10	7.50	8.80	23.40	35.35	53.10	59.20	64.40
50	12.85	11.30	10.55	9.35	7.60	26.15	41.50	62.15	69.00	75.70
100	18.00	12.00	9.20	9.10	7.35	39.70	62.05	90.05	93.65	96.40
150	23.30	15.85	11.15	8.10	7.00	49.80	77.50	97.80	99.30	99.75
200	28.20	19.80	8.50	8.45	6.35	56.25	82.50	99.80	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	39.65	27.35	10.15	7.90	6.70	95.55	92.05	88.45	83.55	82.60
50	48.85	32.15	10.65	7.00	7.35	97.60	96.75	93.65	90.20	89.80
100	72.70	54.90	15.80	9.75	7.70	99.85	100.00	99.85	99.65	99.55
150	86.45	70.55	20.00	10.60	8.40	100.00	100.00	99.95	99.95	100.00
200	94.15	80.65	26.45	12.60	8.10	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	35.85	25.20	9.80	7.70	6.50	95.95	92.30	88.30	83.55	82.70
50	40.95	28.30	10.50	7.00	7.35	97.95	97.00	92.70	90.55	90.20
100	64.05	47.25	14.30	9.15	6.95	99.95	99.95	99.85	99.70	99.55
150	79.45	61.70	18.50	9.40	8.25	100.00	100.00	99.95	99.95	100.00
200	88.45	71.45	24.70	12.00	8.00	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	53.40	56.60	79.45	84.65	89.45	69.90	64.55	62.00	67.00	68.35
50	52.10	56.00	80.55	87.45	91.35	72.15	67.05	61.65	66.35	69.15
100	53.05	55.05	85.15	94.05	96.25	87.55	81.95	66.35	67.40	69.85
150	54.50	58.45	91.70	97.30	99.20	94.50	88.00	71.15	69.85	69.95
200	58.55	59.10	95.10	98.95	99.55	96.70	92.65	74.95	70.55	71.00
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	51.00	55.65	82.10	86.75	91.05	62.75	60.95	59.50	64.00	67.05
50	50.05	56.70	83.35	88.15	92.80	65.10	62.30	59.10	67.10	69.00
100	48.70	59.25	86.95	94.25	96.75	79.60	74.80	64.85	66.15	68.20
150	48.20	62.25	92.45	97.45	98.70	88.75	82.60	70.45	67.45	69.60
200	49.65	66.40	95.70	98.90	99.50	91.90	87.15	72.30	70.25	71.95

Table S15d. Size and Power of selected estimators of β_0 in Experiment 15.
(With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	75.40	78.80	89.00	92.35	94.55	56.65	54.65	58.95	65.00	65.60
50	77.30	82.20	90.30	94.80	97.50	59.20	58.75	64.10	65.00	66.90
100	84.35	87.75	94.60	97.00	98.70	68.35	68.70	72.20	71.30	75.20
150	88.25	90.05	95.65	98.45	99.35	75.35	73.85	76.75	77.20	78.15
200	88.60	91.10	97.15	98.60	99.35	78.45	77.95	76.55	77.90	81.15
	Dynamic CCEMG without bias correction									
40	6.05	6.20	7.60	6.20	6.45	36.00	45.40	75.35	85.00	90.25
50	5.60	6.80	5.60	6.00	5.85	42.40	53.25	83.10	91.85	95.35
100	5.40	5.65	5.75	5.65	5.65	72.95	81.95	98.75	99.85	100.00
150	6.40	5.90	5.10	6.30	5.40	87.25	94.60	100.00	100.00	100.00
200	6.80	6.75	5.90	5.50	4.60	93.20	97.75	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	5.15	6.55	7.25	5.85	6.50	30.30	43.25	70.95	83.80	89.65
50	5.25	6.70	5.95	6.25	6.25	35.55	48.15	80.20	91.15	94.80
100	5.80	5.25	5.65	5.40	6.10	63.80	76.10	97.70	99.60	99.90
150	5.10	5.95	5.25	6.40	5.65	79.55	91.35	99.90	100.00	100.00
200	7.10	6.00	5.60	5.40	4.80	87.85	96.20	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.95	5.80	6.50	4.90	6.35	63.30	87.40	99.90	100.00	100.00
50	5.55	5.70	5.85	5.30	6.45	71.00	93.45	100.00	100.00	100.00
100	5.05	4.85	5.60	6.00	6.20	92.75	99.80	100.00	100.00	100.00
150	5.20	6.10	4.90	6.15	5.50	98.35	100.00	100.00	100.00	100.00
200	5.80	4.60	5.45	4.80	4.85	99.60	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	10.85	9.65	6.45	4.60	5.10	44.55	53.90	71.95	80.25	80.40
50	10.50	10.15	6.95	4.50	4.70	51.20	62.05	78.25	87.40	90.25
100	12.65	8.90	5.75	5.45	4.95	78.10	88.05	97.15	98.20	98.85
150	11.55	11.05	8.05	5.65	4.60	90.15	95.85	99.00	98.85	98.40
200	13.55	11.10	7.65	5.00	4.70	95.70	98.25	99.35	99.10	99.20
	MG based on Song with true number of factors (m=2)									
40	12.45	11.20	7.05	4.80	5.05	50.20	57.95	73.60	82.85	82.70
50	13.65	12.05	7.65	5.15	5.30	57.00	66.65	80.50	88.75	91.70
100	14.70	10.55	7.75	6.45	4.95	82.30	90.20	97.75	99.20	99.00
150	13.95	12.15	8.70	6.90	4.70	92.75	96.80	99.30	99.35	99.15
200	15.50	12.75	8.30	5.25	4.90	97.10	98.80	99.55	99.40	99.55
	Moon and Weidner's QMLE with 3 factors									
40	36.60	40.00	50.65	55.25	59.60	44.35	50.25	64.10	72.85	77.95
50	38.85	43.15	52.50	58.95	61.25	48.05	51.70	68.70	77.50	83.55
100	48.60	53.15	62.85	71.60	76.60	57.90	64.00	83.10	89.05	92.75
150	57.65	60.30	76.55	84.20	86.55	67.30	74.65	90.95	94.80	96.50
200	68.95	70.65	86.10	90.15	93.00	72.15	81.55	95.45	97.65	98.60
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	35.00	38.05	48.80	52.35	58.50	44.70	48.35	62.95	73.25	77.00
50	37.60	40.30	49.50	56.65	58.35	47.15	51.25	68.25	77.40	83.25
100	46.85	50.20	58.20	67.40	71.65	59.10	64.95	82.90	89.25	92.65
150	52.60	55.20	69.35	76.50	78.55	68.45	75.00	90.55	94.60	96.15
200	60.70	62.85	76.60	81.90	83.85	74.15	82.05	94.10	97.60	98.30

Table S16a. Monte Carlo findings for the estimation of ϕ in Experiment 16. (With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	21.98	23.35	26.19	27.41	27.95	23.66	24.63	26.98	28.00	28.45
50	21.59	23.37	26.36	27.44	27.89	23.10	24.61	27.01	27.95	28.36
100	22.44	23.76	26.67	27.65	28.34	23.74	24.81	27.24	28.03	28.65
150	22.51	23.77	26.68	27.98	28.26	23.76	24.81	27.16	28.31	28.53
200	22.16	23.63	26.77	27.83	28.42	23.37	24.61	27.22	28.13	28.68
	Dynamic CCEMG without bias correction									
40	-10.66	-7.93	-3.13	-1.58	-0.68	11.66	9.15	5.12	4.21	3.93
50	-10.83	-8.07	-3.23	-1.66	-0.87	11.64	9.02	4.82	3.84	3.64
100	-11.18	-8.31	-3.43	-1.94	-1.20	11.61	8.79	4.28	3.14	2.66
150	-11.45	-8.67	-3.67	-2.02	-1.37	11.74	8.99	4.23	2.87	2.40
200	-11.64	-8.87	-3.78	-2.23	-1.42	11.86	9.11	4.19	2.85	2.23
	Dynamic CCEMG with RMA bias correction									
40	-8.72	-5.77	-1.98	-0.89	-0.14	10.40	7.66	4.65	4.08	3.89
50	-8.77	-5.88	-2.10	-0.97	-0.38	10.11	7.37	4.29	3.65	3.57
100	-9.14	-6.11	-2.30	-1.28	-0.75	9.89	6.94	3.51	2.83	2.53
150	-9.33	-6.42	-2.45	-1.33	-0.88	9.89	6.97	3.28	2.48	2.18
200	-9.49	-6.56	-2.53	-1.48	-0.87	9.92	7.00	3.17	2.33	1.95
	Dynamic CCEMG with jackknife bias correction									
40	3.94	2.97	1.93	1.54	1.40	10.00	7.26	5.01	4.45	4.24
50	4.11	2.86	1.79	1.50	1.14	9.39	6.51	4.50	4.02	3.82
100	3.96	2.83	1.63	1.17	0.79	7.73	5.33	3.39	2.92	2.60
150	4.10	2.59	1.45	1.11	0.63	7.18	4.69	2.80	2.46	2.17
200	4.12	2.70	1.46	0.99	0.64	6.88	4.53	2.55	2.12	1.89
	MG based on Song's individual estimates with 3 factors									
40	-9.08	-6.33	-2.04	-0.82	-0.32	10.77	8.02	4.56	4.11	3.94
50	-9.02	-6.41	-1.91	-0.94	-0.36	10.26	7.80	4.12	3.61	3.54
100	-9.46	-6.79	-2.29	-1.01	-0.61	10.10	7.49	3.48	2.69	2.56
150	-9.83	-6.89	-2.39	-1.25	-0.75	10.28	7.37	3.21	2.42	2.15
200	-10.30	-7.19	-2.61	-1.37	-0.85	10.64	7.54	3.21	2.24	1.97
	MG based on Song with true number of factors (m=2)									
40	-7.57	-5.41	-1.76	-0.62	-0.14	9.20	7.18	4.39	4.04	3.88
50	-7.54	-5.48	-1.62	-0.79	-0.22	8.80	6.90	3.97	3.57	3.52
100	-7.86	-5.87	-2.04	-0.85	-0.47	8.49	6.57	3.31	2.62	2.51
150	-8.13	-5.91	-2.12	-1.09	-0.61	8.55	6.41	3.00	2.35	2.09
200	-8.39	-6.08	-2.32	-1.19	-0.71	8.72	6.44	2.97	2.13	1.90
	Bai's IFE estimator with 3 factors									
40	1.11	4.22	8.92	10.46	11.25	9.20	9.24	11.08	12.25	12.84
50	-0.23	3.09	8.24	9.77	10.37	8.53	8.02	10.16	11.27	11.80
100	-3.47	0.76	6.81	8.46	9.34	7.21	5.61	8.06	9.38	10.09
150	-5.10	-0.75	6.08	8.07	8.74	7.18	4.69	7.06	8.77	9.36
200	-5.97	-1.34	5.68	7.55	8.46	7.42	4.13	6.43	8.12	8.95
	Bai's IFE estimator with true number of factors (m=2)									
40	3.93	6.01	10.16	11.51	12.10	9.53	9.80	12.25	13.35	13.68
50	2.83	5.21	9.34	10.68	11.22	8.49	8.91	11.23	12.17	12.69
100	0.61	3.45	7.87	9.21	10.00	5.55	5.99	8.95	10.07	10.72
150	0.11	2.83	7.71	9.31	9.93	4.50	4.97	8.46	9.91	10.46
200	-0.12	2.83	7.71	9.28	9.98	3.93	4.50	8.28	9.73	10.42
	Moon and Weidner's QMLE with 3 factors									
40	-0.27	3.31	8.40	9.94	10.80	8.95	8.83	10.68	11.76	12.41
50	-1.40	2.26	7.69	9.31	9.96	8.47	7.59	9.65	10.86	11.44
100	-4.23	0.15	6.46	8.16	9.04	7.52	5.54	7.77	9.11	9.80
150	-5.76	-1.28	5.77	7.80	8.49	7.56	4.73	6.79	8.53	9.12
200	-6.44	-1.76	5.41	7.32	8.23	7.76	4.23	6.19	7.90	8.74
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	2.89	5.33	9.61	10.97	11.66	8.99	9.32	11.73	12.80	13.26
50	2.09	4.49	8.85	10.26	10.79	8.15	8.42	10.77	11.77	12.27
100	0.23	3.14	7.60	8.96	9.77	5.46	5.82	8.70	9.83	10.50
150	-0.15	2.59	7.53	9.15	9.77	4.49	4.82	8.29	9.75	10.30
200	-0.37	2.64	7.56	9.13	9.85	3.91	4.39	8.14	9.59	10.28

Table S16b. Monte Carlo findings for the estimation of β_0 in Experiment 16. (With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	9.94	9.49	9.66	9.61	9.70	14.19	13.18	11.72	11.26	11.02
50	9.95	9.43	9.53	9.87	9.92	13.87	12.86	11.48	11.28	11.12
100	9.85	9.83	9.85	9.80	9.46	13.47	12.63	11.49	11.02	10.45
150	10.15	9.75	9.86	9.86	9.74	13.56	12.58	11.28	10.89	10.59
200	9.62	9.81	9.87	9.95	9.60	13.04	12.49	11.35	10.92	10.40
	Dynamic CCEMG without bias correction									
40	1.00	0.71	0.43	0.09	0.13	5.75	5.10	3.82	3.31	3.08
50	0.79	0.76	0.24	0.24	0.16	5.23	4.57	3.38	3.00	2.77
100	0.95	0.73	0.30	0.15	-0.01	3.78	3.32	2.40	2.10	1.93
150	1.06	0.61	0.28	0.23	0.07	3.26	2.75	1.98	1.78	1.58
200	0.98	0.75	0.29	0.17	0.08	2.80	2.34	1.71	1.48	1.37
	Dynamic CCEMG with RMA bias correction									
40	1.12	0.80	0.58	0.24	0.27	6.59	5.65	4.00	3.44	3.12
50	0.82	0.73	0.42	0.41	0.33	5.89	4.95	3.59	3.10	2.81
100	0.99	0.73	0.45	0.33	0.18	4.25	3.58	2.50	2.18	1.98
150	1.07	0.68	0.41	0.40	0.24	3.66	3.02	2.09	1.84	1.63
200	0.98	0.79	0.43	0.30	0.23	3.12	2.54	1.83	1.56	1.43
	Dynamic CCEMG with jackknife bias correction									
40	1.42	0.54	0.20	0.01	0.06	12.35	8.24	4.62	3.73	3.28
50	0.94	0.45	0.12	0.15	0.12	10.68	7.40	4.05	3.35	2.93
100	0.89	0.52	0.09	0.10	-0.03	7.61	5.17	2.89	2.40	2.09
150	1.22	0.44	0.10	0.11	0.03	6.44	4.42	2.42	1.97	1.70
200	0.95	0.67	0.08	0.01	0.03	5.72	3.73	2.10	1.68	1.49
	MG based on Song's individual estimates with 3 factors									
40	0.98	0.52	0.40	0.39	0.18	7.45	5.95	3.94	3.55	3.33
50	0.77	0.59	0.38	0.38	0.32	6.31	5.35	3.65	3.15	3.00
100	0.77	0.77	0.43	0.39	0.33	4.17	3.58	2.64	2.34	2.21
150	0.91	0.70	0.40	0.41	0.39	3.41	2.93	2.22	1.97	1.88
200	0.96	0.75	0.54	0.44	0.35	2.92	2.50	1.92	1.74	1.78
	MG based on Song with true number of factors (m=2)									
40	0.87	0.69	0.54	0.43	0.27	6.71	5.58	3.89	3.50	3.25
50	0.82	0.67	0.35	0.43	0.34	5.68	4.96	3.52	3.10	2.92
100	0.90	0.84	0.51	0.40	0.41	3.88	3.43	2.54	2.26	2.16
150	0.94	0.78	0.45	0.43	0.43	3.27	2.88	2.12	1.90	1.79
200	1.00	0.77	0.58	0.45	0.34	2.83	2.41	1.86	1.68	1.70
	Bai's IFE estimator with 3 factors									
40	5.28	4.83	4.52	4.19	4.21	7.92	7.46	6.40	5.79	5.87
50	5.05	4.94	4.46	4.55	4.46	7.51	7.04	6.03	5.92	5.74
100	5.53	5.13	4.80	4.50	4.44	6.81	6.26	5.64	5.24	5.15
150	5.62	5.16	4.65	4.56	4.42	6.51	5.94	5.24	5.10	4.90
200	5.66	5.21	4.55	4.44	4.30	6.33	5.80	5.03	4.83	4.67
	Bai's IFE estimator with true number of factors (m=2)									
40	4.94	4.68	4.31	3.95	4.01	7.90	7.48	6.40	5.78	5.83
50	4.88	4.80	4.29	4.41	4.30	7.58	7.03	6.00	5.93	5.71
100	5.40	5.14	4.85	4.59	4.57	6.84	6.41	5.77	5.38	5.31
150	5.57	5.30	4.92	4.89	4.76	6.63	6.22	5.57	5.44	5.28
200	5.71	5.36	4.96	4.94	4.84	6.57	6.11	5.49	5.37	5.24
	Moon and Weidner's QMLE with 3 factors									
40	5.21	4.83	4.53	4.20	4.23	7.88	7.45	6.43	5.81	5.89
50	5.06	4.95	4.47	4.57	4.49	7.55	7.08	6.04	5.94	5.78
100	5.54	5.14	4.81	4.53	4.47	6.83	6.29	5.66	5.27	5.18
150	5.62	5.15	4.66	4.57	4.43	6.54	5.95	5.25	5.11	4.91
200	5.68	5.21	4.56	4.45	4.31	6.36	5.81	5.04	4.84	4.69
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	4.94	4.68	4.32	3.95	4.05	7.94	7.52	6.41	5.77	5.86
50	4.91	4.83	4.33	4.43	4.33	7.62	7.08	6.04	5.96	5.74
100	5.43	5.18	4.91	4.65	4.64	6.89	6.47	5.82	5.45	5.39
150	5.59	5.33	4.98	4.96	4.83	6.68	6.27	5.64	5.51	5.34
200	5.75	5.40	5.02	5.00	4.90	6.64	6.16	5.55	5.43	5.31

Table S16c. Size and Power of selected estimators of ϕ in Experiment 16.
(With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	97.30	99.45	99.95	100.00	100.00	84.35	90.30	97.70	99.60	99.80
50	98.50	99.30	100.00	100.00	100.00	85.85	92.40	99.00	99.85	99.90
100	99.50	99.85	100.00	100.00	100.00	92.05	95.50	99.75	100.00	100.00
150	99.85	99.95	100.00	100.00	100.00	93.95	96.05	99.75	100.00	100.00
200	99.95	99.95	100.00	100.00	100.00	94.15	97.40	99.95	100.00	100.00
Dynamic CCEMG without bias correction										
40	69.65	50.75	18.30	10.70	9.85	99.65	98.90	93.70	89.20	84.45
50	79.70	59.65	19.80	10.90	9.80	99.90	99.90	98.05	95.05	91.70
100	97.25	87.40	32.95	16.45	10.25	100.00	100.00	99.95	100.00	99.75
150	99.65	97.85	48.65	22.35	13.00	100.00	100.00	100.00	100.00	100.00
200	100.00	99.70	61.80	30.95	17.10	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with RMA bias correction										
40	44.25	26.90	10.15	7.10	6.95	95.35	92.15	84.05	79.70	76.55
50	51.00	33.25	10.80	6.80	7.20	98.25	96.60	91.85	88.55	86.10
100	78.85	57.10	16.00	8.85	6.35	99.85	99.90	99.60	99.65	99.35
150	90.40	75.45	22.85	11.45	7.45	100.00	100.00	99.95	100.00	100.00
200	96.85	86.00	30.55	14.40	8.30	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG with jackknife bias correction										
40	14.30	12.35	11.20	8.60	9.15	19.55	27.65	48.30	56.45	62.45
50	15.85	11.50	10.75	8.95	8.00	21.80	32.15	56.20	65.90	72.20
100	22.15	17.95	11.90	9.25	6.45	33.70	49.60	85.30	92.65	96.35
150	29.05	21.40	12.10	10.30	8.00	39.85	64.95	96.00	98.60	99.65
200	34.00	26.40	14.25	10.40	7.30	46.35	72.00	98.85	99.80	100.00
MG based on Song's individual estimates with 3 factors										
40	53.25	34.75	9.40	8.40	6.85	95.95	95.20	86.30	80.10	78.55
50	59.95	40.95	10.05	7.75	7.40	99.00	98.25	92.10	89.50	86.20
100	88.60	70.25	17.50	9.40	6.90	99.90	99.95	99.75	99.60	99.05
150	96.60	83.85	23.60	11.15	8.05	100.00	100.00	100.00	100.00	100.00
200	99.35	94.20	32.80	14.00	8.85	100.00	100.00	100.00	100.00	100.00
MG based on Song with true number of factors (m=2)										
40	44.00	28.40	8.30	7.65	6.50	95.90	94.30	85.15	78.80	77.25
50	50.15	34.35	9.10	8.20	7.45	98.65	97.95	91.50	89.20	85.15
100	79.15	60.35	15.20	8.55	6.65	99.95	100.00	99.65	99.30	99.15
150	92.00	76.05	20.75	10.30	7.55	100.00	100.00	100.00	99.90	100.00
200	97.45	88.45	28.15	12.35	8.25	100.00	100.00	100.00	100.00	100.00
Moon and Weidner's QMLE with 3 factors										
40	53.00	56.05	79.60	89.30	92.00	74.50	68.70	61.50	65.70	71.45
50	56.40	54.65	80.35	90.55	92.65	80.40	72.25	62.35	67.15	70.50
100	64.95	55.05	84.35	94.30	97.85	94.90	89.20	69.90	69.10	68.20
150	76.20	53.65	86.15	96.70	98.40	99.25	96.65	78.60	70.70	72.00
200	82.90	56.15	89.50	98.55	99.20	99.70	98.85	85.75	76.00	73.20
Moon and Weidner's QMLE with true number of factors (m=2)										
40	51.55	59.30	84.60	90.25	94.30	64.75	59.10	61.95	67.70	70.95
50	52.10	57.55	83.95	92.05	93.50	69.95	63.20	62.40	64.70	70.05
100	45.70	55.20	89.10	96.20	98.45	87.25	78.35	63.25	63.10	66.15
150	45.35	56.55	94.40	98.65	99.65	93.35	88.25	64.35	64.40	67.20
200	46.50	59.80	97.60	99.75	99.85	97.05	92.85	67.70	67.40	70.10

Table S16d. Size and Power of selected estimators of β_0 in Experiment 16.
(With regressors, $\phi = 0.4$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	67.90	68.90	81.40	85.25	90.30	48.70	49.65	48.70	54.70	55.25
50	70.35	72.50	82.70	89.40	92.85	53.45	51.55	54.60	54.95	57.30
100	79.35	82.80	90.55	94.85	95.55	62.10	60.90	64.05	66.15	66.25
150	82.45	84.30	92.80	95.75	97.95	70.70	68.80	68.30	68.80	71.50
200	85.55	87.80	94.40	96.80	97.60	71.15	73.10	69.40	73.75	73.15
	Dynamic CCEMG without bias correction									
40	6.00	5.85	6.50	6.65	6.25	35.55	46.10	73.80	87.35	90.75
50	5.60	5.90	5.75	6.80	6.30	43.25	54.30	83.70	92.25	95.70
100	5.40	6.85	5.45	5.50	5.70	69.00	81.85	98.65	99.85	99.95
150	7.20	5.50	5.70	6.60	4.95	85.00	95.30	99.95	100.00	100.00
200	7.30	6.35	6.30	5.20	4.95	93.25	98.05	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	5.80	6.15	6.50	6.65	6.50	29.25	40.05	68.95	84.30	89.55
50	5.75	6.30	7.25	6.50	6.80	35.50	47.60	80.00	90.15	94.85
100	5.40	5.70	5.55	6.05	6.40	58.50	76.15	97.65	99.65	99.85
150	7.45	5.55	6.90	6.80	5.45	74.05	89.85	99.90	100.00	99.95
200	6.60	6.00	6.50	5.95	5.70	86.75	96.45	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.80	5.45	5.70	6.00	7.00	61.70	86.45	99.85	100.00	100.00
50	5.30	5.65	6.40	6.05	5.40	68.20	92.55	100.00	100.00	100.00
100	4.25	5.60	5.35	5.30	5.45	91.70	99.70	100.00	100.00	100.00
150	5.65	5.20	5.60	5.85	5.30	98.25	99.95	100.00	100.00	100.00
200	6.75	5.40	5.60	4.90	5.60	99.50	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	9.75	9.10	6.50	5.70	4.80	43.95	51.75	71.55	78.75	83.50
50	9.95	8.65	7.15	5.50	3.75	50.50	60.25	80.45	86.30	90.30
100	9.35	9.40	5.65	5.50	4.65	75.75	85.30	96.20	98.30	98.25
150	11.25	9.35	7.50	5.60	3.75	88.15	94.10	98.95	98.55	98.15
200	11.75	10.15	7.80	5.15	4.60	94.40	97.15	99.35	98.85	98.45
	MG based on Song with true number of factors (m=2)									
40	11.05	9.95	6.55	5.90	5.40	48.50	55.85	72.15	80.45	84.00
50	11.40	10.70	7.20	6.10	4.75	56.15	64.75	82.85	88.10	91.20
100	11.70	11.00	6.70	5.80	5.30	80.65	87.85	96.90	99.20	98.85
150	13.15	10.80	7.95	5.85	4.10	91.00	95.35	99.15	99.20	98.85
200	13.00	10.35	7.90	5.40	5.15	95.85	98.25	99.40	99.35	98.70
	Moon and Weidner's QMLE with 3 factors									
40	39.00	41.70	51.75	57.60	61.90	37.10	41.60	58.60	70.20	75.20
50	40.95	44.35	53.40	62.00	67.10	41.20	45.70	64.80	70.50	77.15
100	56.90	58.40	71.95	76.85	80.30	46.80	56.70	76.40	86.80	90.15
150	67.05	70.40	80.15	86.05	89.30	54.20	66.55	87.60	93.10	95.80
200	77.05	78.50	86.30	91.25	93.00	59.70	73.85	93.25	97.80	98.40
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	36.25	39.50	47.90	52.55	59.75	36.95	39.80	57.90	69.95	74.85
50	38.35	42.80	50.10	60.15	64.30	39.40	43.70	63.75	69.75	77.00
100	53.20	56.70	70.45	76.20	80.95	47.65	55.20	73.65	84.40	87.40
150	65.85	69.30	81.55	87.65	90.85	53.85	62.65	81.70	88.60	92.80
200	73.55	75.55	88.00	92.80	94.85	59.10	68.30	87.70	93.00	95.90

Table S17a. Monte Carlo findings for the estimation of ϕ in Experiment 17. (With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	6.52	7.49	9.94	10.75	11.33	10.73	10.93	11.95	12.36	12.77
50	6.15	7.91	10.14	10.99	11.21	9.98	10.98	11.92	12.37	12.46
100	6.56	7.80	10.33	11.13	11.76	9.65	10.27	11.51	12.06	12.52
150	6.60	7.95	10.50	11.13	11.59	9.44	10.08	11.47	11.89	12.24
200	6.97	8.05	10.50	11.28	11.60	9.53	10.05	11.48	11.99	12.15
	Dynamic CCEMG without bias correction									
40	-7.16	-5.62	-2.08	-1.09	-0.53	8.54	7.13	4.55	4.04	3.87
50	-7.26	-5.43	-2.13	-1.18	-0.62	8.41	6.72	4.15	3.71	3.51
100	-7.37	-5.64	-2.26	-1.20	-0.62	7.93	6.30	3.38	2.76	2.51
150	-7.39	-5.61	-2.30	-1.32	-0.74	7.79	6.07	3.09	2.43	2.14
200	-7.39	-5.69	-2.32	-1.28	-0.82	7.68	6.03	2.93	2.16	1.88
	Dynamic CCEMG with RMA bias correction									
40	-3.82	-2.67	-0.54	-0.16	0.17	6.66	5.53	4.24	4.00	3.90
50	-3.96	-2.55	-0.64	-0.23	0.09	6.44	5.09	3.77	3.63	3.50
100	-3.99	-2.73	-0.80	-0.30	0.02	5.36	4.24	2.76	2.57	2.48
150	-4.14	-2.70	-0.88	-0.45	-0.13	5.16	3.80	2.34	2.13	2.05
200	-4.14	-2.83	-0.91	-0.42	-0.22	4.97	3.66	2.09	1.83	1.74
	Dynamic CCEMG with jackknife bias correction									
40	2.88	1.70	1.35	0.97	0.81	8.96	6.47	4.77	4.29	4.04
50	2.57	1.74	1.22	0.91	0.74	8.19	6.11	4.20	3.89	3.67
100	2.79	1.51	0.99	0.78	0.65	6.67	4.53	3.01	2.74	2.61
150	2.62	1.45	0.92	0.63	0.50	5.88	3.90	2.54	2.25	2.15
200	2.47	1.30	0.89	0.66	0.38	5.61	3.46	2.26	1.98	1.81
	MG based on Song's individual estimates with 3 factors									
40	-7.30	-5.18	-2.07	-1.13	-0.76	9.09	7.13	4.69	4.04	3.90
50	-7.14	-5.25	-2.13	-1.18	-0.81	8.58	6.73	4.35	3.64	3.51
100	-7.38	-5.31	-1.98	-1.12	-0.78	8.20	6.18	3.26	2.78	2.60
150	-7.46	-5.31	-1.98	-1.14	-0.67	8.03	5.90	2.89	2.33	2.13
200	-7.49	-5.24	-2.06	-1.18	-0.76	7.96	5.72	2.73	2.12	1.90
	Bai's IFE estimator with 3 factors									
40	1.74	3.82	7.94	9.02	9.54	8.40	8.39	10.12	10.91	11.27
50	1.24	3.82	7.65	8.67	9.18	7.74	7.92	9.58	10.30	10.66
100	-0.38	2.37	6.84	7.94	8.61	6.22	5.79	8.00	8.87	9.42
150	-1.53	1.57	6.48	7.66	8.40	5.44	4.80	7.35	8.36	9.01
200	-1.92	1.23	6.54	7.78	8.32	5.28	4.22	7.22	8.29	8.75
	Moon and Weidner's QMLE with 3 factors									
40	1.47	3.65	7.92	9.03	9.57	8.55	8.43	10.16	10.96	11.35
50	1.07	3.70	7.59	8.66	9.13	7.94	7.95	9.56	10.33	10.63
100	-0.55	2.34	6.81	7.92	8.58	6.37	5.86	8.01	8.86	9.40
150	-1.66	1.45	6.46	7.65	8.39	5.65	4.84	7.34	8.35	9.00
200	-2.07	1.14	6.53	7.77	8.31	5.48	4.27	7.21	8.29	8.75

Table S17b. Monte Carlo findings for the estimation of β_0 in Experiment 17. (With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-20.34	-20.15	-20.28	-19.94	-20.10	22.86	22.31	21.58	20.96	20.91
50	-19.92	-20.51	-20.12	-20.04	-19.92	22.27	22.49	21.27	20.91	20.62
100	-19.97	-19.76	-19.98	-19.69	-19.93	22.26	21.42	20.92	20.41	20.53
150	-20.23	-20.19	-19.64	-19.91	-19.73	22.27	21.76	20.56	20.56	20.23
200	-19.67	-20.21	-19.94	-20.08	-19.82	21.89	21.80	20.84	20.68	20.31
	Dynamic CCEMG without bias correction									
40	0.90	0.89	0.32	0.42	0.23	5.82	5.20	3.74	3.38	3.06
50	0.92	0.80	0.31	0.30	0.34	5.34	4.53	3.43	2.87	2.75
100	0.83	0.74	0.29	0.28	0.19	3.85	3.28	2.39	2.12	1.97
150	1.00	0.63	0.37	0.23	0.14	3.26	2.74	1.98	1.75	1.62
200	0.83	0.75	0.34	0.16	0.14	2.67	2.39	1.69	1.49	1.37
	Dynamic CCEMG with RMA bias correction									
40	0.59	0.64	0.24	0.41	0.20	6.48	5.61	3.88	3.44	3.14
50	0.60	0.62	0.25	0.23	0.30	6.02	4.92	3.55	2.98	2.78
100	0.48	0.49	0.15	0.24	0.16	4.25	3.59	2.52	2.17	2.01
150	0.64	0.34	0.28	0.19	0.12	3.58	2.89	2.03	1.80	1.64
200	0.53	0.43	0.25	0.12	0.14	3.00	2.50	1.77	1.54	1.40
	Dynamic CCEMG with jackknife bias correction									
40	0.79	0.75	0.09	0.26	0.08	11.38	8.07	4.54	3.79	3.31
50	0.84	0.56	-0.02	0.03	0.18	10.70	7.32	4.01	3.21	2.94
100	0.58	0.52	-0.02	0.10	0.05	7.42	5.21	2.90	2.34	2.13
150	0.50	0.38	0.11	0.03	0.02	6.26	4.12	2.34	1.95	1.73
200	0.50	0.34	0.06	-0.03	0.04	5.34	3.55	2.02	1.66	1.47
	MG based on Song's individual estimates with 3 factors									
40	0.34	0.26	0.11	-0.08	-0.04	7.23	5.86	4.26	3.96	3.66
50	0.25	0.03	-0.12	-0.22	-0.19	6.20	5.25	3.82	3.38	3.31
100	0.02	0.03	-0.10	-0.28	-0.33	4.01	3.39	2.72	2.49	2.47
150	0.14	0.04	-0.23	-0.24	-0.28	3.23	2.75	2.22	2.19	2.09
200	0.10	-0.01	-0.11	-0.27	-0.34	2.57	2.39	1.85	1.83	1.82
	Bai's IFE estimator with 3 factors									
40	4.67	4.80	4.41	4.76	4.53	7.63	7.29	6.46	6.41	6.16
50	4.97	4.92	4.49	4.70	4.73	7.36	6.98	6.09	6.14	6.04
100	5.05	4.96	4.74	4.75	4.71	6.34	6.11	5.62	5.50	5.38
150	5.20	4.96	4.84	4.69	4.54	6.09	5.76	5.41	5.18	5.03
200	5.09	5.14	4.72	4.58	4.47	5.76	5.72	5.16	4.98	4.83
	Moon and Weidner's QMLE with 3 factors									
40	4.87	4.97	4.61	4.96	4.74	7.75	7.41	6.60	6.58	6.33
50	5.18	5.11	4.69	4.88	4.91	7.53	7.12	6.25	6.28	6.18
100	5.20	5.13	4.91	4.91	4.87	6.47	6.26	5.76	5.64	5.52
150	5.36	5.14	5.00	4.84	4.70	6.23	5.91	5.56	5.33	5.17
200	5.24	5.30	4.88	4.74	4.62	5.90	5.87	5.31	5.13	4.98

Table S17c. Size and Power of selected estimators of ϕ in Experiment 17.

(With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	68.55	72.10	87.95	92.40	94.60	62.20	64.15	68.15	72.50	75.75
50	70.55	76.90	91.05	95.20	96.30	64.50	66.15	69.40	73.45	77.00
100	79.15	84.60	95.35	98.10	99.40	72.20	72.20	72.75	76.45	78.30
150	80.65	87.45	98.05	99.25	99.60	77.85	75.00	73.55	79.35	81.15
200	86.15	89.60	98.45	99.60	99.95	77.40	79.15	79.40	81.15	81.85
	Dynamic CCEMG without bias correction									
40	41.85	32.30	12.85	9.50	8.75	97.40	97.10	89.95	86.10	83.65
50	51.15	36.55	13.40	10.35	8.70	99.20	98.85	95.10	92.90	90.45
100	78.30	61.70	19.40	11.15	9.00	100.00	100.00	100.00	99.75	99.60
150	90.90	76.55	25.25	14.35	10.80	100.00	100.00	100.00	100.00	99.95
200	96.75	86.15	30.60	15.50	10.35	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	16.95	12.10	8.50	6.85	6.20	78.70	80.20	75.80	74.60	72.55
50	19.60	12.20	6.90	6.85	5.95	85.65	86.30	83.95	83.50	82.55
100	28.05	19.80	7.30	6.85	6.50	98.90	98.50	98.95	98.75	98.45
150	39.65	24.60	9.05	6.90	5.65	99.85	99.95	99.90	100.00	99.95
200	46.80	31.85	9.65	6.50	5.20	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	12.05	9.65	9.35	8.15	6.90	22.45	34.70	54.25	61.65	65.10
50	13.45	11.55	9.20	8.30	7.40	26.15	39.55	64.30	71.50	76.40
100	18.45	12.90	8.40	8.05	7.35	38.60	65.25	90.35	95.05	96.40
150	20.75	14.75	10.50	7.85	6.80	50.90	78.95	97.75	99.50	99.85
200	25.70	15.05	10.60	8.10	5.85	59.80	87.30	99.40	99.95	100.00
	MG based on Song's individual estimates with 3 factors									
40	41.00	28.50	11.25	7.00	6.35	95.55	93.00	86.60	82.80	81.70
50	47.30	32.75	12.55	7.50	7.00	98.10	97.40	92.30	89.90	89.75
100	73.35	52.95	14.85	8.65	7.40	99.95	99.95	99.50	99.35	99.15
150	85.85	67.65	18.70	10.75	7.20	100.00	100.00	99.95	100.00	99.95
200	93.95	77.85	23.50	12.35	8.35	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	52.80	56.35	80.30	86.70	89.10	68.00	64.60	61.00	67.30	70.45
50	53.50	59.50	80.10	88.15	91.45	72.45	65.50	63.15	67.75	69.45
100	57.30	57.45	86.40	95.10	97.05	85.85	81.75	68.75	67.50	69.25
150	59.45	55.20	90.35	96.10	98.35	94.35	90.80	72.90	70.85	71.75
200	62.60	55.80	94.85	98.80	99.80	97.45	94.05	75.85	71.45	72.30

Table S17d. Size and Power of selected estimators of β_0 in Experiment 17.

(With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	91.50	94.10	98.75	99.40	99.95	99.30	99.45	99.95	100.00	100.00
50	92.75	95.75	99.10	99.40	99.95	99.30	99.50	100.00	99.95	100.00
100	95.00	97.30	99.85	99.90	100.00	99.65	99.95	100.00	100.00	100.00
150	97.75	98.65	99.75	100.00	100.00	99.65	100.00	100.00	100.00	100.00
200	96.85	98.90	99.80	99.95	100.00	99.55	99.95	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	6.30	6.90	6.15	7.00	6.20	38.10	45.50	76.80	84.80	90.35
50	7.20	5.80	7.50	4.40	6.85	43.60	53.30	84.75	92.85	95.35
100	6.45	6.50	5.55	5.90	6.15	70.75	83.15	98.60	99.75	100.00
150	7.65	6.55	6.30	6.10	6.25	85.60	94.45	99.85	100.00	100.00
200	6.30	6.35	5.80	6.20	5.40	94.60	98.35	99.95	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	5.55	6.60	5.85	7.00	7.10	32.75	42.15	73.85	82.60	89.25
50	6.10	5.90	6.50	4.80	6.10	38.95	49.95	81.85	91.55	95.20
100	5.50	6.20	5.45	5.35	6.00	63.80	78.35	98.15	99.55	100.00
150	7.20	5.30	5.40	6.35	6.15	78.60	92.60	99.70	100.00	100.00
200	5.35	5.15	5.75	6.20	5.75	90.10	97.05	99.95	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	4.45	6.10	6.00	6.80	6.55	61.05	88.25	99.90	100.00	100.00
50	6.15	6.05	5.90	4.70	5.85	69.35	92.70	100.00	100.00	100.00
100	4.40	6.05	5.45	5.30	5.80	92.45	99.65	100.00	100.00	100.00
150	5.25	4.90	5.60	5.65	5.75	97.65	100.00	100.00	100.00	100.00
200	5.35	4.85	5.35	5.00	5.60	99.65	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	9.10	7.30	6.95	6.40	4.80	46.30	54.50	70.10	78.55	80.30
50	8.75	8.60	6.00	5.65	5.65	56.75	62.65	81.95	87.30	88.90
100	8.65	7.90	5.70	4.85	4.00	82.65	89.45	95.90	97.35	96.65
150	10.65	8.40	5.05	4.70	4.15	91.50	95.85	98.15	97.50	97.85
200	8.95	9.35	5.55	5.05	3.00	97.05	98.45	99.15	98.70	98.05
	Moon and Weidner's QMLE with 3 factors									
40	40.45	45.65	54.00	65.90	68.25	39.10	41.95	60.50	65.60	71.65
50	44.50	47.80	58.55	68.65	73.75	40.65	45.80	63.80	70.70	73.85
100	56.20	62.05	74.25	81.90	84.35	52.60	57.00	77.10	83.85	88.10
150	68.35	71.65	86.60	89.50	91.15	60.80	68.00	84.70	91.95	94.40
200	75.20	81.20	90.50	93.75	95.20	69.05	74.50	92.00	96.15	97.90

Table S18a. Monte Carlo findings for the estimation of ϕ in Experiment 18. (With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	25.74	27.09	30.09	31.21	31.58	27.09	28.16	30.68	31.67	31.98
50	25.86	27.55	30.06	31.22	31.77	27.17	28.50	30.60	31.65	32.12
100	26.31	27.72	30.40	31.34	31.70	27.37	28.58	30.84	31.65	31.95
150	26.16	27.50	30.46	31.58	31.94	27.14	28.36	30.87	31.87	32.15
200	26.26	27.65	30.51	31.62	32.21	27.26	28.40	30.89	31.88	32.42
	Dynamic CCEMG without bias correction									
40	-11.29	-8.46	-3.08	-1.41	-0.61	12.26	9.53	5.06	4.12	4.04
50	-11.36	-8.38	-3.34	-1.61	-0.72	12.16	9.26	4.88	3.84	3.56
100	-11.59	-8.71	-3.50	-1.74	-1.09	12.00	9.14	4.32	3.02	2.66
150	-11.64	-8.76	-3.53	-1.88	-1.13	11.94	9.07	4.09	2.75	2.29
200	-11.64	-8.81	-3.62	-1.93	-1.13	11.86	9.05	4.03	2.61	2.07
	Dynamic CCEMG with RMA bias correction									
40	-9.99	-6.82	-2.32	-1.04	-0.42	11.45	8.41	4.78	4.04	4.04
50	-10.02	-6.86	-2.59	-1.32	-0.58	11.26	8.18	4.52	3.79	3.56
100	-10.44	-7.26	-2.84	-1.53	-1.03	11.13	7.94	3.88	2.97	2.66
150	-10.56	-7.34	-2.93	-1.72	-1.09	11.08	7.84	3.62	2.67	2.29
200	-10.56	-7.37	-3.03	-1.77	-1.15	10.95	7.77	3.56	2.51	2.09
	Dynamic CCEMG with jackknife bias correction									
40	4.25	2.99	2.17	1.78	1.37	10.26	7.47	5.08	4.47	4.34
50	4.49	3.12	1.90	1.56	1.21	9.65	6.91	4.52	4.05	3.79
100	3.74	2.77	1.71	1.30	0.73	7.59	5.35	3.36	2.96	2.61
150	3.99	2.78	1.58	1.10	0.67	7.19	4.92	2.83	2.41	2.15
200	4.24	2.60	1.50	1.05	0.62	6.99	4.49	2.54	2.14	1.90
	MG based on Song's individual estimates with 3 factors									
40	-7.94	-4.88	-0.14	0.96	1.54	9.72	6.96	4.17	3.95	4.10
50	-7.86	-5.05	-0.38	0.76	1.32	9.35	6.75	3.77	3.66	3.70
100	-8.79	-5.82	-0.95	0.28	0.73	9.58	6.65	2.83	2.51	2.67
150	-9.28	-6.28	-1.51	-0.30	0.19	9.78	6.84	2.69	2.18	2.03
200	-9.86	-6.76	-1.96	-0.70	-0.21	10.23	7.19	2.78	1.97	1.80
	Bai's IFE estimator with 3 factors									
40	3.53	6.84	12.10	13.38	13.72	10.15	10.65	13.85	14.90	15.14
50	2.25	5.71	10.64	12.14	12.93	9.08	9.59	12.23	13.45	14.11
100	-2.36	1.70	8.34	10.23	10.93	7.01	5.78	9.39	11.01	11.59
150	-4.35	0.05	7.21	9.33	10.14	6.82	4.58	8.01	9.92	10.65
200	-5.25	-0.79	6.52	8.73	9.76	6.74	4.00	7.19	9.19	10.18
	Moon and Weidner's QMLE with 3 factors									
40	2.21	5.83	11.43	12.87	13.18	9.75	10.12	13.26	14.43	14.64
50	0.88	4.70	10.13	11.66	12.49	8.75	8.96	11.79	12.99	13.71
100	-3.20	0.99	7.93	9.91	10.64	7.18	5.48	9.02	10.72	11.33
150	-5.01	-0.42	6.91	9.05	9.88	7.07	4.54	7.75	9.65	10.39
200	-5.70	-1.20	6.25	8.49	9.54	7.01	4.00	6.94	8.97	9.97

Table S18b. Monte Carlo findings for the estimation of β_0 in Experiment 18. (With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-18.62	-18.43	-18.70	-18.50	-18.38	21.16	20.51	19.99	19.45	19.25
50	-18.31	-18.45	-18.29	-18.80	-18.64	20.83	20.42	19.47	19.70	19.41
100	-18.20	-18.56	-18.40	-18.29	-18.42	20.42	20.29	19.32	18.98	18.98
150	-18.10	-18.24	-18.43	-18.45	-18.32	20.18	19.91	19.33	19.04	18.82
200	-17.87	-18.42	-18.44	-18.73	-18.54	19.90	20.08	19.23	19.31	18.99
	Dynamic CCEMG without bias correction									
40	0.98	0.84	0.47	0.38	0.27	6.12	5.22	3.76	3.31	3.12
50	0.93	0.73	0.53	0.34	0.05	5.30	4.67	3.43	2.96	2.71
100	0.92	0.66	0.32	0.18	0.10	3.78	3.39	2.42	2.07	1.94
150	0.83	0.65	0.40	0.12	0.15	3.23	2.76	1.94	1.72	1.61
200	0.90	0.73	0.29	0.13	0.11	2.81	2.47	1.67	1.49	1.36
	Dynamic CCEMG with RMA bias correction									
40	1.01	0.86	0.52	0.46	0.35	6.91	5.63	3.92	3.42	3.18
50	0.73	0.67	0.59	0.45	0.16	6.00	5.15	3.61	3.04	2.72
100	0.93	0.62	0.41	0.28	0.20	4.30	3.63	2.53	2.13	1.99
150	0.81	0.58	0.48	0.24	0.27	3.61	3.03	2.06	1.80	1.65
200	0.87	0.67	0.38	0.25	0.22	3.17	2.67	1.75	1.56	1.40
	Dynamic CCEMG with jackknife bias correction									
40	1.02	0.93	0.22	0.19	0.15	12.39	8.52	4.56	3.76	3.36
50	1.05	0.68	0.29	0.19	-0.06	10.94	7.73	4.21	3.34	2.91
100	1.39	0.45	0.10	-0.01	0.02	7.99	5.34	2.91	2.33	2.10
150	1.01	0.54	0.17	-0.03	0.09	6.52	4.44	2.32	1.95	1.72
200	1.00	0.58	0.03	-0.01	0.05	5.72	3.88	2.01	1.69	1.47
	MG based on Song's individual estimates with 3 factors									
40	0.49	0.24	-0.21	-0.08	0.01	7.73	6.23	4.20	3.77	3.59
50	0.20	0.29	0.02	-0.08	-0.09	6.71	5.55	3.91	3.34	3.12
100	0.38	0.26	-0.02	-0.30	-0.19	4.28	3.67	2.78	2.52	2.44
150	0.27	0.28	-0.12	-0.25	-0.20	3.29	2.88	2.32	2.12	2.10
200	0.35	0.22	-0.07	-0.22	-0.22	2.84	2.47	1.95	1.82	1.80
	Bai's IFE estimator with 3 factors									
40	4.10	4.39	4.04	4.14	4.05	7.12	7.06	6.05	5.87	5.71
50	4.58	4.65	4.28	4.09	3.99	6.87	6.68	5.88	5.52	5.39
100	5.08	4.81	4.54	4.41	4.38	6.28	5.92	5.32	5.10	5.02
150	5.10	4.93	4.69	4.37	4.51	6.01	5.71	5.18	4.86	4.98
200	5.20	5.07	4.60	4.38	4.35	5.86	5.66	5.01	4.76	4.71
	Moon and Weidner's QMLE with 3 factors									
40	4.18	4.51	4.13	4.24	4.12	7.19	7.15	6.10	5.94	5.74
50	4.67	4.75	4.36	4.17	4.08	6.96	6.75	5.92	5.56	5.45
100	5.17	4.88	4.61	4.48	4.46	6.36	5.97	5.38	5.17	5.10
150	5.19	5.01	4.75	4.44	4.57	6.10	5.79	5.24	4.93	5.03
200	5.28	5.15	4.67	4.44	4.41	5.94	5.75	5.07	4.82	4.77

Table S18c. Size and Power of selected estimators of ϕ in Experiment 18.
(With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	99.40	99.85	100.00	100.00	100.00	91.55	95.75	99.70	99.95	99.90
50	99.60	100.00	100.00	100.00	100.00	93.80	97.35	99.85	100.00	100.00
100	100.00	100.00	100.00	100.00	100.00	97.25	98.40	100.00	100.00	100.00
150	99.90	100.00	100.00	100.00	100.00	98.05	99.25	100.00	100.00	100.00
200	100.00	100.00	100.00	100.00	100.00	97.75	99.35	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	73.90	56.55	17.20	10.80	10.25	99.75	99.45	94.00	88.60	82.80
50	82.90	64.40	20.45	11.65	9.45	100.00	99.85	97.80	94.35	91.70
100	98.35	91.30	35.00	14.40	11.10	100.00	100.00	100.00	99.90	99.90
150	99.90	97.75	47.65	20.30	13.05	100.00	100.00	100.00	100.00	100.00
200	100.00	99.75	59.45	26.15	14.70	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	52.75	34.05	11.00	6.95	7.60	96.45	95.40	86.00	81.85	76.65
50	61.30	40.35	12.55	8.05	6.85	99.00	97.95	93.35	89.80	87.20
100	86.60	69.35	21.35	10.00	8.55	100.00	100.00	99.95	99.75	99.85
150	95.00	83.40	29.15	13.70	9.45	100.00	100.00	100.00	100.00	100.00
200	98.05	91.25	40.15	17.70	10.70	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	15.45	13.15	11.15	9.05	9.35	18.70	27.20	45.70	55.00	60.05
50	17.65	14.55	10.30	9.45	8.30	20.05	31.05	56.05	66.20	71.30
100	21.45	17.30	12.00	10.50	6.70	32.40	49.35	84.20	91.75	96.55
150	28.00	21.90	11.40	8.85	6.85	41.35	61.00	95.90	98.80	99.50
200	34.60	25.30	13.85	10.20	7.80	45.50	71.90	98.65	99.70	99.95
	MG based on Song's individual estimates with 3 factors									
40	44.45	24.95	7.50	6.40	7.90	94.50	90.75	73.55	65.95	62.80
50	50.00	32.45	7.90	7.80	8.50	97.50	95.85	83.20	77.70	73.90
100	82.40	58.70	9.55	6.45	8.65	99.95	99.85	98.95	97.80	96.60
150	94.10	77.90	15.10	8.55	6.60	100.00	100.00	99.90	99.85	99.85
200	98.65	90.05	24.25	9.50	7.20	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	57.25	63.35	90.10	95.00	96.05	68.15	61.75	63.30	70.90	74.35
50	58.10	62.10	88.65	94.90	96.60	73.00	67.20	62.75	69.60	73.35
100	61.80	51.50	91.30	98.00	98.90	93.30	86.70	63.20	62.75	68.15
150	74.65	53.20	92.35	98.40	99.70	98.35	95.60	71.35	66.20	66.05
200	79.80	54.85	93.85	99.60	99.90	99.60	98.30	79.85	68.90	68.60

Table S18d. Size and Power of selected estimators of β_0 in Experiment 18.

(With regressors, $\phi = 0.4$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	88.05	91.30	97.50	99.45	99.50	98.35	99.15	100.00	100.00	100.00
50	89.30	92.90	98.55	99.50	99.95	98.55	99.65	100.00	100.00	100.00
100	93.90	96.20	99.65	100.00	100.00	99.35	99.75	100.00	100.00	100.00
150	94.65	96.65	99.65	100.00	100.00	99.80	99.95	100.00	100.00	100.00
200	95.85	98.10	99.95	100.00	100.00	99.75	100.00	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	7.20	6.75	6.25	6.00	7.20	36.15	45.80	73.95	84.75	90.35
50	6.50	5.35	7.25	7.10	5.15	42.45	55.15	82.40	91.75	96.10
100	5.75	6.60	6.65	5.80	5.40	68.75	82.30	98.45	99.90	99.95
150	7.05	6.15	5.15	5.75	6.00	85.45	94.85	99.90	100.00	100.00
200	6.35	7.35	5.45	5.20	5.40	93.70	97.80	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	7.15	6.80	6.10	6.50	6.85	28.90	38.55	69.70	81.05	89.05
50	6.05	7.15	6.40	7.05	5.15	35.55	48.80	77.60	90.25	95.65
100	6.50	6.50	6.70	6.05	5.60	58.10	76.55	97.75	99.70	99.80
150	6.55	6.15	5.55	5.75	5.90	76.20	90.00	99.70	100.00	100.00
200	6.75	7.15	5.35	5.50	5.30	86.30	95.65	99.95	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.90	6.20	5.55	6.50	6.90	59.95	85.85	99.85	100.00	100.00
50	5.10	6.85	5.70	6.85	5.50	66.95	90.30	100.00	100.00	100.00
100	5.75	5.40	5.45	5.30	5.75	91.30	99.30	100.00	100.00	100.00
150	5.05	5.30	5.00	5.35	5.85	97.50	99.95	100.00	100.00	100.00
200	5.55	5.90	4.95	5.30	5.45	99.45	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	8.45	8.55	5.15	4.90	5.05	41.95	50.75	72.65	79.20	80.80
50	8.20	9.10	6.85	5.00	4.50	52.00	59.00	79.50	86.95	89.75
100	9.35	8.55	7.10	5.55	4.85	76.70	84.20	95.65	97.85	97.25
150	8.70	8.25	6.05	5.40	4.75	90.15	94.65	98.30	98.45	97.90
200	9.45	8.30	6.65	4.55	4.05	95.20	97.60	98.60	98.90	98.05
	Moon and Weidner's QMLE with 3 factors									
40	33.45	39.20	48.30	58.05	63.25	41.35	44.25	61.60	68.50	75.90
50	37.15	43.05	53.85	60.50	65.60	40.65	44.90	64.75	75.35	80.60
100	54.05	56.30	70.35	77.85	83.05	49.60	59.00	80.15	88.40	90.95
150	63.35	68.80	83.45	85.70	90.35	59.10	68.40	88.90	94.95	95.45
200	73.65	78.75	88.80	91.30	93.75	67.30	74.70	94.05	97.55	98.70

5 Experiments with high values of ϕ (Experiments 19-24)

Table S19a. Monte Carlo findings for the estimation of ϕ in Experiment 19. (With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-0.14	1.32	4.07	4.95	5.48	4.36	4.29	5.24	5.83	6.16
50	-0.10	1.30	4.20	5.01	5.62	4.26	4.08	5.22	5.78	6.22
100	0.08	1.46	4.35	5.18	5.58	3.52	3.57	5.05	5.65	5.96
150	0.20	1.62	4.38	5.25	5.70	3.35	3.41	4.96	5.64	6.00
200	0.14	1.58	4.33	5.34	5.73	3.19	3.30	4.86	5.69	5.99
	Dynamic CCEMG without bias correction									
40	-13.30	-10.21	-4.57	-2.74	-1.82	13.80	10.68	5.15	3.50	2.74
50	-13.60	-10.36	-4.62	-2.93	-1.93	14.02	10.75	5.13	3.53	2.67
100	-13.85	-10.79	-4.96	-3.12	-2.22	14.08	11.01	5.19	3.43	2.59
150	-13.93	-10.96	-5.00	-3.21	-2.31	14.13	11.11	5.15	3.40	2.55
200	-14.07	-10.88	-5.09	-3.23	-2.38	14.22	11.01	5.21	3.38	2.56
	Dynamic CCEMG with RMA bias correction									
40	-8.96	-6.00	-2.15	-0.92	-0.54	9.99	6.99	3.37	2.42	2.15
50	-9.04	-6.45	-2.22	-1.03	-0.59	9.95	7.22	3.13	2.23	1.95
100	-9.52	-6.66	-2.47	-1.32	-0.72	10.08	7.13	2.95	1.93	1.51
150	-9.84	-6.97	-2.52	-1.40	-0.83	10.29	7.31	2.85	1.84	1.38
200	-10.15	-7.14	-2.64	-1.45	-0.91	10.52	7.42	2.90	1.77	1.31
	Dynamic CCEMG with jackknife bias correction									
40	3.43	2.40	1.70	1.36	1.02	9.60	6.37	3.48	2.84	2.43
50	3.25	2.38	1.68	1.18	0.94	8.88	6.01	3.29	2.59	2.22
100	3.27	2.40	1.44	1.03	0.65	7.53	5.13	2.49	1.95	1.58
150	3.48	2.29	1.46	0.94	0.60	7.25	4.63	2.24	1.62	1.31
200	3.63	2.50	1.43	0.99	0.56	7.09	4.48	2.11	1.54	1.16
	MG based on Song's individual estimates with 3 factors									
40	-12.40	-8.78	-3.46	-2.08	-1.42	13.40	9.67	4.28	3.08	2.59
50	-12.31	-8.81	-3.55	-2.21	-1.46	13.15	9.49	4.23	3.02	2.39
100	-13.20	-9.16	-3.56	-2.24	-1.60	13.69	9.56	3.95	2.67	2.08
150	-14.15	-9.64	-3.63	-2.22	-1.63	14.60	9.97	3.88	2.50	1.98
200	-15.01	-9.98	-3.66	-2.25	-1.63	15.39	10.26	3.84	2.47	1.88
	MG based on Song with true number of factors (m=1)									
40	-8.15	-6.23	-2.63	-1.56	-0.98	9.00	7.00	3.60	2.74	2.36
50	-8.29	-6.51	-2.90	-1.83	-1.16	8.91	7.11	3.67	2.74	2.22
100	-8.70	-6.69	-3.08	-2.01	-1.46	9.00	6.99	3.47	2.47	1.96
150	-8.74	-6.80	-3.19	-2.04	-1.51	8.94	7.00	3.44	2.33	1.87
200	-8.86	-6.92	-3.22	-2.07	-1.52	9.01	7.08	3.40	2.29	1.79
	Bai's IFE estimator with 3 factors									
40	-1.13	1.80	6.20	7.34	7.91	6.28	5.26	7.20	8.09	8.53
50	-1.78	1.52	5.93	6.97	7.75	6.32	4.82	6.82	7.61	8.28
100	-4.49	-0.55	4.75	5.94	6.43	7.21	4.21	5.40	6.39	6.81
150	-6.65	-2.01	4.02	5.37	5.92	8.73	4.47	4.55	5.70	6.20
200	-8.54	-3.17	3.66	5.13	5.64	10.00	5.03	4.10	5.39	5.87
	Bai's IFE estimator with true number of factors (m=1)									
40	1.37	3.15	6.15	7.18	7.69	4.63	5.09	7.08	7.94	8.29
50	1.44	3.12	6.29	7.18	7.79	4.39	4.86	7.09	7.79	8.32
100	1.81	3.31	6.45	7.38	7.80	3.56	4.38	6.90	7.72	8.10
150	1.96	3.48	6.51	7.45	7.93	3.23	4.22	6.85	7.71	8.17
200	2.00	3.53	6.50	7.56	7.93	3.11	4.17	6.76	7.76	8.11
	Moon and Weidner's QMLE with 3 factors									
40	-1.74	1.58	6.23	7.38	7.96	6.77	5.35	7.24	8.13	8.58
50	-2.43	1.28	5.95	7.01	7.77	6.84	4.86	6.85	7.65	8.30
100	-5.29	-0.74	4.76	5.94	6.42	7.99	4.40	5.42	6.39	6.80
150	-7.68	-2.34	4.03	5.37	5.92	9.62	4.86	4.58	5.71	6.20
200	-9.47	-3.58	3.67	5.13	5.65	10.79	5.41	4.12	5.40	5.87
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	1.48	3.23	6.21	7.22	7.73	4.61	5.12	7.13	7.98	8.34
50	1.52	3.17	6.34	7.21	7.83	4.41	4.89	7.12	7.82	8.36
100	1.85	3.35	6.48	7.42	7.83	3.58	4.41	6.93	7.75	8.13
150	2.00	3.52	6.54	7.48	7.96	3.25	4.25	6.88	7.74	8.19
200	2.04	3.56	6.53	7.58	7.96	3.13	4.20	6.79	7.79	8.14

Table S19b. Monte Carlo findings for the estimation of β_0 in Experiment 19. (With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	60.73	60.75	60.66	60.86	60.56	61.05	61.02	60.82	60.99	60.67
50	60.78	60.81	60.85	60.85	60.69	61.08	61.06	60.99	60.96	60.80
100	60.74	60.45	60.68	60.78	60.77	60.97	60.63	60.78	60.85	60.83
150	60.37	60.70	60.74	60.71	60.76	60.58	60.86	60.83	60.77	60.82
200	60.73	60.62	60.75	60.72	60.70	60.93	60.79	60.83	60.77	60.74
	Dynamic CCEMG without bias correction									
40	0.60	0.37	0.32	0.23	0.11	5.98	5.14	3.75	3.38	3.09
50	0.31	0.57	0.37	0.37	0.31	5.29	4.71	3.40	2.94	2.76
100	0.32	0.28	0.23	0.20	0.15	3.82	3.23	2.39	2.10	2.01
150	0.26	0.35	0.22	0.25	0.15	3.07	2.69	1.95	1.75	1.57
200	0.31	0.26	0.22	0.19	0.18	2.68	2.28	1.75	1.50	1.39
	Dynamic CCEMG with RMA bias correction									
40	0.61	0.46	0.46	0.31	0.41	6.51	5.73	3.96	3.50	3.15
50	0.42	0.41	0.39	0.39	0.28	6.04	4.96	3.55	2.99	2.78
100	0.41	0.23	0.18	0.24	0.25	4.14	3.56	2.46	2.16	2.04
150	0.31	0.33	0.14	0.22	0.22	3.48	2.91	2.04	1.76	1.65
200	0.27	0.23	0.28	0.16	0.13	2.99	2.47	1.76	1.53	1.42
	Dynamic CCEMG with jackknife bias correction									
40	0.93	0.57	0.33	0.16	0.03	12.11	8.10	4.60	3.87	3.31
50	0.75	0.60	0.39	0.24	0.20	10.90	7.35	4.12	3.39	3.03
100	0.76	0.38	0.17	0.19	0.09	7.79	5.28	2.92	2.41	2.17
150	0.64	0.39	0.19	0.20	0.09	6.29	4.38	2.42	1.95	1.70
200	0.77	0.38	0.16	0.11	0.09	5.51	3.60	2.14	1.72	1.50
	MG based on Song's individual estimates with 3 factors									
40	-0.06	0.07	0.36	0.41	0.29	7.85	6.80	4.13	3.69	3.38
50	-0.72	0.02	0.28	0.36	0.27	7.04	5.54	3.62	3.17	2.90
100	-0.40	-0.01	0.21	0.14	0.17	4.33	3.62	2.47	2.15	2.01
150	-0.34	-0.05	0.15	0.09	0.12	3.37	2.75	1.97	1.74	1.64
200	-0.24	-0.13	0.07	0.10	0.09	2.71	2.38	1.70	1.51	1.34
	MG based on Song with true number of factors (m=1)									
40	-3.21	-2.39	-1.78	-1.52	-1.69	9.81	6.77	4.99	4.30	4.16
50	-2.42	-1.74	-1.12	-0.97	-1.00	7.65	5.94	3.96	3.49	3.30
100	-0.68	-0.35	-0.14	-0.18	-0.14	3.74	3.40	2.47	2.15	1.98
150	-0.30	-0.14	0.02	-0.03	-0.01	2.93	2.58	1.93	1.71	1.61
200	-0.09	-0.10	0.01	0.05	0.00	2.42	2.22	1.63	1.48	1.33
	Bai's IFE estimator with 3 factors									
40	5.93	5.76	5.21	5.17	4.96	7.94	7.51	6.39	6.25	5.98
50	5.81	5.74	5.48	5.31	5.20	7.52	7.19	6.44	6.10	5.99
100	5.74	5.55	5.36	5.31	5.37	6.65	6.30	5.88	5.73	5.76
150	5.65	5.66	5.54	5.53	5.44	6.25	6.18	5.87	5.80	5.69
200	5.61	5.63	5.54	5.55	5.47	6.09	6.01	5.79	5.76	5.67
	Bai's IFE estimator with true number of factors (m=1)									
40	7.50	6.79	5.76	5.48	5.31	11.66	10.30	8.00	7.06	6.83
50	6.48	6.18	5.59	5.39	5.31	9.34	8.30	6.75	6.38	6.37
100	5.96	5.64	5.32	5.27	5.27	6.91	6.45	5.88	5.73	5.71
150	5.79	5.75	5.45	5.39	5.31	6.45	6.32	5.82	5.69	5.58
200	5.75	5.69	5.39	5.40	5.32	6.26	6.11	5.68	5.65	5.55
	Moon and Weidner's QMLE with 3 factors									
40	5.50	5.33	4.84	4.81	4.61	7.65	7.18	6.09	5.95	5.69
50	5.44	5.35	5.14	4.99	4.88	7.24	6.87	6.15	5.82	5.72
100	5.45	5.27	5.09	5.05	5.12	6.41	6.05	5.63	5.49	5.52
150	5.42	5.39	5.29	5.30	5.22	6.05	5.94	5.64	5.58	5.47
200	5.41	5.38	5.30	5.33	5.26	5.92	5.79	5.57	5.55	5.46
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	6.14	5.61	4.98	4.89	4.71	8.85	7.75	6.32	6.13	5.82
50	5.66	5.55	5.15	4.98	4.88	7.66	7.25	6.23	5.89	5.77
100	5.64	5.34	5.05	5.01	5.02	6.64	6.19	5.63	5.50	5.48
150	5.52	5.48	5.21	5.16	5.09	6.21	6.08	5.60	5.48	5.37
200	5.49	5.45	5.17	5.19	5.12	6.02	5.89	5.48	5.44	5.35

Table S19c. Size and Power of selected estimators of ϕ in Experiment 19.

(With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	44.20	48.20	76.20	86.25	92.65	95.60	93.40	90.70	89.60	90.30
50	47.65	51.70	80.75	89.35	94.60	96.20	94.70	92.60	91.10	91.40
100	53.45	59.45	89.85	97.00	98.60	98.85	98.15	96.35	96.20	96.20
150	60.65	64.90	93.05	98.80	99.70	99.30	98.80	98.60	98.00	97.30
200	62.25	65.60	94.35	98.95	100.00	99.65	99.00	98.90	98.35	98.45
	Dynamic CCEMG without bias correction									
40	98.20	94.60	56.25	29.50	18.25	100.00	100.00	100.00	100.00	100.00
50	99.40	98.40	64.85	39.95	21.60	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	93.70	66.45	44.70	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	98.85	83.90	62.60	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.70	93.85	75.45	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	67.15	50.25	18.05	9.50	7.95	99.90	99.85	100.00	99.95	100.00
50	75.05	65.45	20.60	9.70	7.10	99.95	100.00	100.00	100.00	100.00
100	94.65	88.20	39.05	17.65	9.70	100.00	100.00	100.00	100.00	100.00
150	98.70	96.60	55.20	27.15	14.20	100.00	100.00	100.00	100.00	100.00
200	99.70	99.05	69.60	33.60	17.25	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	19.70	16.20	14.30	13.55	10.50	28.40	44.10	84.25	95.95	99.30
50	20.65	19.40	16.65	13.30	11.15	31.85	49.10	91.10	98.40	99.80
100	29.00	27.00	19.05	15.80	10.25	45.35	67.05	99.20	100.00	100.00
150	37.55	31.90	24.00	16.10	10.40	52.95	78.10	99.95	100.00	100.00
200	41.65	38.95	26.90	20.65	11.50	58.70	81.90	99.95	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	90.45	82.40	38.35	21.10	14.35	99.75	99.90	100.00	100.00	99.90
50	94.10	88.50	46.10	24.70	15.40	99.90	99.95	100.00	100.00	100.00
100	99.85	98.60	70.35	42.70	26.85	100.00	100.00	100.00	100.00	100.00
150	99.95	99.85	86.45	56.35	36.80	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	94.60	69.20	45.85	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	80.50	68.30	27.10	15.65	11.10	99.60	100.00	99.95	100.00	99.90
50	89.00	80.05	36.45	20.75	12.90	99.80	100.00	100.00	99.95	100.00
100	99.45	96.50	61.15	38.10	23.75	100.00	100.00	100.00	100.00	100.00
150	99.95	99.65	79.85	51.55	32.90	100.00	100.00	100.00	100.00	100.00
200	100.00	99.95	90.30	63.55	41.40	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	47.70	51.25	85.15	93.80	96.75	90.20	84.85	70.75	67.95	67.55
50	51.20	50.80	86.05	95.20	98.35	94.80	89.50	74.20	72.15	70.35
100	67.55	54.55	88.05	97.15	99.25	99.70	98.75	93.05	89.95	89.55
150	81.00	64.75	88.65	98.60	99.95	100.00	99.90	98.35	96.75	96.00
200	90.50	73.25	90.05	99.15	100.00	100.00	100.00	99.50	99.00	98.30
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	32.95	47.50	84.55	93.15	96.45	83.40	78.95	67.70	65.80	65.55
50	36.85	51.00	88.60	95.35	97.85	87.90	83.25	70.80	70.55	68.70
100	40.65	62.10	97.50	99.60	99.85	95.90	92.95	81.40	76.45	75.50
150	46.10	72.55	99.35	99.95	100.00	98.30	96.90	86.10	81.10	80.65
200	51.15	78.75	99.85	100.00	100.00	98.85	97.95	90.10	83.40	82.65

Table S19d. Size and Power of selected estimators of β_0 in Experiment 19.

(With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	6.05	6.45	6.90	7.20	6.45	38.30	50.15	75.90	85.20	91.30
50	6.30	6.00	5.80	6.15	6.00	47.90	55.90	83.05	91.60	95.00
100	6.00	4.60	5.95	5.65	6.60	75.35	85.55	98.60	99.90	99.85
150	5.85	5.40	5.10	5.75	4.95	89.85	95.30	99.90	100.00	100.00
200	5.25	4.70	6.00	5.60	5.65	95.20	99.15	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	6.25	6.75	6.45	6.85	5.85	31.70	43.10	69.55	82.30	88.65
50	6.85	5.25	6.15	6.30	6.25	38.65	49.85	80.00	90.90	94.00
100	5.05	4.50	5.40	5.65	6.15	64.30	79.60	97.95	99.75	99.80
150	5.80	5.75	5.15	5.25	5.55	81.15	91.70	99.95	99.90	100.00
200	5.50	4.70	5.10	4.90	5.50	89.60	97.60	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	6.10	6.20	6.20	6.95	5.60	6.35	8.65	17.90	27.25	33.15
50	5.75	5.80	6.05	6.55	6.80	6.85	9.90	19.70	29.00	38.70
100	6.20	5.50	6.30	5.30	6.55	9.85	15.00	37.60	52.95	65.80
150	5.20	5.60	5.25	5.90	5.05	10.70	18.95	52.45	70.65	82.85
200	5.95	4.75	5.55	5.40	5.45	11.80	21.80	64.25	82.85	91.05
	MG based on Song's individual estimates with 3 factors									
40	4.05	5.25	3.75	4.15	3.75	31.85	40.45	61.90	71.15	78.55
50	4.90	5.00	4.85	4.10	4.60	43.30	49.80	74.50	84.05	88.10
100	5.65	5.00	5.20	5.30	5.15	74.00	83.05	97.00	99.55	99.85
150	5.90	5.55	5.40	5.70	5.95	89.30	95.05	99.80	100.00	100.00
200	4.90	5.75	5.70	6.70	4.95	96.05	99.10	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	9.10	8.50	6.55	6.95	5.70	54.05	61.35	79.15	85.65	90.20
50	8.95	7.55	6.80	5.85	5.15	62.60	67.10	86.60	92.70	95.65
100	5.80	6.65	5.10	5.95	5.60	85.60	91.40	98.90	99.85	100.00
150	6.10	6.20	5.65	6.45	6.20	95.50	97.80	99.95	100.00	100.00
200	6.25	6.25	5.45	6.65	5.35	99.20	99.80	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	38.00	42.85	53.40	65.10	66.10	33.45	37.70	58.45	68.00	75.35
50	43.35	47.20	63.05	70.35	74.00	36.50	39.45	60.15	72.10	77.65
100	57.20	63.45	80.75	87.75	92.10	47.80	55.90	80.10	87.65	90.80
150	69.95	77.10	91.85	96.85	97.50	59.10	66.50	87.50	92.90	96.80
200	78.25	84.40	96.50	98.70	99.55	66.85	75.30	93.55	96.60	98.10
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	37.85	37.85	50.80	60.45	63.50	27.95	33.25	50.80	62.65	69.95
50	36.60	42.35	57.80	66.45	70.05	30.85	34.60	55.45	68.15	73.90
100	54.90	59.10	77.55	86.05	89.30	42.40	51.55	75.70	86.50	89.85
150	66.75	75.10	88.55	95.25	96.55	56.05	63.10	85.30	92.50	96.45
200	77.35	83.90	94.75	97.80	98.85	64.15	71.95	92.20	96.25	98.25

Table S20a. Monte Carlo findings for the estimation of ϕ in Experiment 20. (With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	5.77	6.97	9.58	10.48	10.96	7.38	8.07	10.07	10.85	11.27
50	6.01	7.19	9.67	10.71	11.12	7.45	8.19	10.14	11.03	11.39
100	5.95	7.30	9.85	10.75	11.27	7.20	8.11	10.22	10.99	11.46
150	6.01	7.20	9.86	10.86	11.25	7.14	8.02	10.19	11.07	11.42
200	6.08	7.38	9.92	10.95	11.26	7.19	8.13	10.21	11.15	11.41
	Dynamic CCEMG without bias correction									
40	-14.78	-11.33	-4.89	-2.88	-1.97	15.26	11.78	5.44	3.62	2.92
50	-15.04	-11.44	-4.95	-3.00	-1.89	15.43	11.79	5.40	3.59	2.71
100	-15.56	-11.93	-5.33	-3.22	-2.24	15.78	12.14	5.56	3.50	2.62
150	-15.76	-12.22	-5.43	-3.37	-2.42	15.94	12.37	5.58	3.56	2.65
200	-16.01	-12.30	-5.53	-3.47	-2.53	16.16	12.42	5.65	3.61	2.70
	Dynamic CCEMG with RMA bias correction									
40	-11.60	-8.05	-2.68	-1.36	-0.72	12.52	8.84	3.68	2.59	2.29
50	-11.87	-8.17	-2.84	-1.41	-0.78	12.64	8.86	3.66	2.50	2.08
100	-12.59	-8.84	-3.22	-1.75	-1.10	13.08	9.22	3.62	2.29	1.78
150	-13.14	-9.10	-3.37	-1.86	-1.16	13.54	9.39	3.63	2.19	1.63
200	-13.40	-9.36	-3.44	-1.95	-1.23	13.76	9.62	3.65	2.21	1.56
	Dynamic CCEMG with jackknife bias correction									
40	4.83	3.48	2.01	1.56	1.14	10.56	7.37	3.77	3.02	2.57
50	4.80	3.30	2.09	1.48	0.95	10.02	6.55	3.57	2.71	2.33
100	4.51	3.34	1.88	1.24	0.77	8.71	5.74	2.82	2.04	1.63
150	4.46	3.25	1.84	1.18	0.70	8.20	5.50	2.54	1.77	1.37
200	4.76	3.25	1.83	1.17	0.67	8.15	5.16	2.44	1.67	1.24
	MG based on Song's individual estimates with 3 factors									
40	-13.48	-9.54	-3.55	-2.14	-1.36	14.43	10.41	4.39	3.11	2.51
50	-13.79	-9.72	-3.76	-2.16	-1.51	14.57	10.39	4.46	2.95	2.42
100	-15.19	-10.36	-3.88	-2.36	-1.64	15.66	10.77	4.23	2.77	2.13
150	-16.37	-10.91	-3.94	-2.38	-1.70	16.76	11.23	4.18	2.67	2.03
200	-17.48	-11.30	-3.99	-2.46	-1.70	17.82	11.57	4.15	2.67	1.95
	MG based on Song with true number of factors (m=1)									
40	-8.70	-6.50	-2.55	-1.42	-0.72	9.58	7.38	3.59	2.67	2.27
50	-8.86	-6.82	-2.87	-1.60	-1.07	9.53	7.48	3.68	2.53	2.18
100	-9.69	-7.45	-3.30	-2.06	-1.46	9.99	7.76	3.68	2.50	1.98
150	-9.91	-7.61	-3.41	-2.16	-1.54	10.12	7.81	3.66	2.46	1.89
200	-10.00	-7.65	-3.48	-2.25	-1.58	10.17	7.79	3.65	2.47	1.84
	Bai's IFE estimator with 3 factors									
40	-2.97	1.04	6.30	7.79	8.44	8.25	6.04	7.56	8.63	9.19
50	-4.61	-0.03	5.75	7.12	7.86	8.64	5.74	6.91	7.91	8.47
100	-8.17	-2.89	3.87	5.43	6.16	10.52	5.65	4.69	5.90	6.54
150	-10.45	-4.58	3.51	5.15	5.83	12.08	6.33	4.08	5.49	6.10
200	-12.44	-5.66	3.30	5.01	5.73	13.52	7.08	3.82	5.29	5.95
	Bai's IFE estimator with true number of factors (m=1)									
40	2.14	4.15	7.91	9.16	9.88	5.72	6.26	8.74	9.83	10.47
50	2.07	4.19	8.14	9.47	9.98	5.12	6.01	8.91	10.04	10.49
100	2.05	4.32	8.13	9.39	10.13	4.36	5.51	8.61	9.72	10.43
150	2.21	4.21	8.21	9.53	10.08	4.06	5.22	8.56	9.80	10.31
200	2.21	4.33	8.27	9.60	10.08	3.96	5.22	8.58	9.83	10.27
	Moon and Weidner's QMLE with 3 factors									
40	-5.00	-0.19	5.68	7.25	7.92	9.41	6.14	7.08	8.18	8.75
50	-6.59	-1.33	5.15	6.58	7.38	10.06	6.09	6.44	7.45	8.06
100	-10.08	-4.22	3.41	5.05	5.78	12.01	6.62	4.36	5.56	6.19
150	-12.46	-5.83	3.11	4.80	5.51	13.70	7.39	3.78	5.17	5.80
200	-14.13	-6.94	2.88	4.68	5.43	14.91	8.16	3.50	4.98	5.67
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	1.85	3.90	7.70	8.96	9.70	5.61	6.09	8.56	9.65	10.31
50	1.76	3.96	7.96	9.30	9.81	4.99	5.85	8.74	9.89	10.33
100	1.83	4.14	7.97	9.25	9.99	4.23	5.34	8.46	9.58	10.29
150	2.03	4.05	8.07	9.40	9.96	3.97	5.08	8.42	9.67	10.18
200	2.01	4.16	8.14	9.46	9.95	3.84	5.06	8.43	9.69	10.14

Table S20b. Monte Carlo findings for the estimation of β_0 in Experiment 20. (With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	55.37	55.70	55.58	55.46	55.59	55.86	56.09	55.79	55.63	55.71
50	55.28	55.46	55.66	55.58	55.36	55.70	55.82	55.86	55.73	55.48
100	55.11	55.20	55.15	55.21	55.50	55.49	55.50	55.30	55.32	55.59
150	55.42	55.01	55.38	55.21	55.38	55.77	55.30	55.54	55.30	55.46
200	55.30	55.36	55.38	55.51	55.40	55.65	55.62	55.51	55.60	55.47
	Dynamic CCEMG without bias correction									
40	0.44	0.19	0.24	0.16	0.09	6.69	5.67	4.00	3.35	3.05
50	0.23	0.13	0.45	0.18	0.33	6.07	5.11	3.54	2.97	2.79
100	0.20	0.29	0.11	0.18	0.12	4.51	3.58	2.52	2.20	1.96
150	0.13	0.25	0.22	0.22	0.06	3.58	3.01	2.13	1.79	1.64
200	0.11	0.34	0.18	0.22	0.07	3.10	2.58	1.79	1.56	1.42
	Dynamic CCEMG with RMA bias correction									
40	0.54	0.67	0.47	0.41	0.43	6.64	5.72	3.92	3.55	3.13
50	0.19	0.48	0.53	0.32	0.27	5.87	5.05	3.47	3.03	2.87
100	0.34	0.52	0.21	0.27	0.28	4.11	3.64	2.52	2.22	2.03
150	0.37	0.45	0.28	0.25	0.21	3.55	2.97	2.05	1.73	1.64
200	0.35	0.29	0.34	0.24	0.21	3.03	2.48	1.82	1.58	1.40
	Dynamic CCEMG with jackknife bias correction									
40	0.81	0.55	0.30	0.25	0.35	12.24	8.14	4.59	3.64	3.28
50	0.89	0.51	0.33	0.27	0.09	10.98	7.40	4.10	3.36	2.95
100	0.74	0.48	0.13	0.07	0.15	7.79	5.30	3.00	2.44	2.09
150	0.80	0.37	0.19	0.13	0.06	6.37	4.37	2.44	1.93	1.75
200	0.55	0.35	0.15	0.07	0.05	5.38	3.66	2.14	1.70	1.52
	MG based on Song's individual estimates with 3 factors									
40	-0.23	0.05	0.12	0.42	0.51	8.35	6.35	4.30	3.66	3.31
50	-0.45	0.01	0.14	0.26	0.31	7.13	5.31	3.65	3.22	2.89
100	-0.32	-0.04	0.17	0.03	0.21	4.26	3.53	2.41	2.19	1.98
150	-0.12	0.04	0.15	0.08	0.16	3.34	2.76	2.00	1.71	1.61
200	-0.15	0.09	0.05	0.10	0.10	2.73	2.41	1.75	1.49	1.36
	MG based on Song with true number of factors (m=1)									
40	-2.93	-2.28	-1.97	-1.53	-1.44	9.72	7.31	5.29	4.25	4.01
50	-2.55	-1.48	-1.20	-0.93	-0.92	8.05	5.47	4.08	3.41	3.29
100	-0.50	-0.34	-0.12	-0.25	-0.07	3.57	3.29	2.34	2.15	1.94
150	-0.19	-0.07	0.00	-0.05	0.03	2.87	2.51	1.95	1.69	1.57
200	-0.05	0.05	-0.03	0.03	0.03	2.46	2.23	1.71	1.46	1.35
	Bai's IFE estimator with 3 factors									
40	7.41	7.09	6.69	6.54	6.56	9.26	8.66	7.75	7.41	7.35
50	7.12	6.79	6.57	6.40	6.23	8.69	8.13	7.42	7.14	6.89
100	6.66	6.36	5.85	5.71	5.67	7.50	7.06	6.33	6.11	6.04
150	6.54	6.15	5.77	5.56	5.55	7.13	6.64	6.12	5.84	5.80
200	6.56	6.05	5.65	5.60	5.51	7.02	6.42	5.91	5.81	5.70
	Bai's IFE estimator with true number of factors (m=1)									
40	10.36	9.57	8.39	8.04	8.03	13.58	12.14	10.01	9.33	9.24
50	9.68	8.94	8.25	7.93	7.80	12.01	10.70	9.41	8.66	8.63
100	9.17	8.71	8.10	7.92	7.97	10.32	9.55	8.56	8.30	8.29
150	9.22	8.76	8.26	8.02	8.01	10.02	9.45	8.63	8.29	8.24
200	9.39	8.81	8.26	8.21	8.04	10.12	9.37	8.53	8.42	8.21
	Moon and Weidner's QMLE with 3 factors									
40	7.20	6.86	6.51	6.37	6.39	9.12	8.47	7.59	7.26	7.19
50	6.91	6.57	6.38	6.23	6.07	8.53	7.94	7.25	6.99	6.75
100	6.51	6.21	5.72	5.59	5.57	7.37	6.92	6.20	6.00	5.94
150	6.43	6.05	5.68	5.49	5.48	7.04	6.55	6.03	5.76	5.74
200	6.46	5.97	5.58	5.55	5.46	6.94	6.35	5.84	5.76	5.66
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	9.37	8.85	7.93	7.66	7.61	11.63	10.70	9.09	8.63	8.38
50	9.22	8.60	7.96	7.77	7.57	11.18	10.12	8.82	8.52	8.21
100	9.09	8.66	8.05	7.88	7.92	10.26	9.53	8.53	8.27	8.25
150	9.17	8.73	8.24	8.01	7.99	10.00	9.44	8.63	8.28	8.23
200	9.38	8.80	8.25	8.21	8.03	10.16	9.40	8.54	8.43	8.21

Table S20c. Size and Power of selected estimators of ϕ in Experiment 20.
(With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	76.80	85.45	98.85	99.70	100.00	69.20	64.20	62.60	64.15	70.75
50	80.00	88.95	99.55	100.00	100.00	70.25	66.85	64.15	65.60	70.65
100	85.05	94.25	99.80	100.00	100.00	79.40	76.85	70.55	74.10	77.40
150	88.20	94.95	99.95	100.00	100.00	83.15	80.65	73.60	76.25	81.10
200	90.40	97.50	100.00	100.00	100.00	84.00	82.80	78.05	81.70	82.55
	Dynamic CCEMG without bias correction									
40	99.15	97.55	61.90	33.55	21.15	100.00	100.00	100.00	100.00	100.00
50	99.95	99.35	71.25	40.30	22.55	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	96.25	68.90	45.75	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	99.25	87.70	66.60	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.95	95.75	80.55	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	83.30	71.35	23.10	11.55	8.95	99.95	100.00	100.00	100.00	99.90
50	89.75	78.65	29.80	13.95	9.90	100.00	100.00	100.00	100.00	100.00
100	99.10	98.05	57.40	26.50	15.20	100.00	100.00	100.00	100.00	100.00
150	100.00	99.75	75.85	38.15	21.95	100.00	100.00	100.00	100.00	100.00
200	99.95	99.90	87.50	52.60	28.40	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	21.35	21.25	16.70	15.30	12.25	24.15	35.25	79.90	94.50	98.50
50	25.20	21.90	19.50	15.05	12.00	25.70	39.45	85.40	97.50	99.40
100	35.20	31.00	23.50	17.65	11.40	39.65	56.65	98.25	100.00	100.00
150	41.20	38.75	30.25	19.50	12.05	47.65	67.00	99.95	100.00	100.00
200	48.50	43.70	36.50	23.45	14.15	51.25	73.25	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	92.25	86.70	39.25	20.50	13.05	99.45	99.80	100.00	100.00	100.00
50	97.10	93.60	48.75	23.75	15.15	99.95	100.00	99.95	100.00	100.00
100	99.95	99.75	76.60	45.30	28.70	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	90.95	61.45	39.90	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	97.05	74.75	48.60	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=1)									
40	84.15	71.95	28.00	13.80	10.05	99.70	99.70	99.90	100.00	99.75
50	90.40	81.45	36.15	17.25	12.45	99.75	99.95	100.00	100.00	100.00
100	99.65	98.65	67.25	38.55	24.85	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	83.90	55.05	34.20	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	94.00	69.90	44.20	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	63.20	53.80	78.25	91.45	95.15	92.40	86.30	75.20	70.55	69.65
50	68.35	56.75	78.75	92.20	96.50	96.60	92.25	79.90	77.40	74.20
100	86.15	70.45	74.50	94.70	98.30	99.75	99.70	96.10	94.75	93.05
150	95.70	81.05	78.85	97.20	99.55	100.00	99.80	99.45	98.25	97.60
200	98.15	87.80	80.95	98.35	99.85	100.00	100.00	99.95	99.45	98.60
	Moon and Weidner's QMLE with true number of factors (m=1)									
40	42.15	54.40	92.40	97.30	98.65	77.70	73.10	58.75	58.85	62.80
50	42.40	55.90	93.85	98.90	99.15	84.60	76.30	60.50	60.00	63.00
100	46.55	69.15	98.90	99.95	99.95	93.40	87.30	68.70	61.45	64.90
150	52.70	76.05	99.85	100.00	100.00	95.40	91.30	70.60	65.35	66.10
200	53.45	80.05	100.00	100.00	100.00	96.35	93.90	73.40	68.25	68.00

Table S20d. Size and Power of selected estimators of β_0 in Experiment 20. (With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
Fixed Effects estimates										
40	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
50	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Dynamic CCEMG without bias correction										
40	5.45	5.60	6.10	5.95	5.65	30.70	42.65	72.25	84.10	90.40
50	5.40	6.40	5.70	4.65	5.80	37.95	51.90	79.05	91.35	94.50
100	6.15	4.85	6.05	5.95	5.35	62.05	78.00	97.85	99.70	99.85
150	5.00	6.20	5.75	5.95	5.75	79.20	89.90	99.70	99.95	100.00
200	5.15	5.15	4.85	5.50	5.55	89.90	96.75	99.95	100.00	100.00
Dynamic CCEMG with RMA bias correction										
40	6.50	7.35	6.30	7.55	6.75	31.30	42.25	71.45	81.70	88.90
50	5.10	6.35	5.90	5.90	7.20	39.60	49.75	78.90	90.85	94.15
100	5.00	5.95	6.05	6.55	6.35	64.05	77.15	97.55	99.55	99.95
150	6.10	6.05	5.50	5.25	5.65	80.20	90.65	99.95	100.00	100.00
200	5.90	5.65	5.60	6.20	5.45	89.45	97.05	100.00	100.00	100.00
Dynamic CCEMG with jackknife bias correction										
40	5.95	5.40	5.20	5.20	6.90	6.40	9.05	18.05	24.25	29.65
50	5.70	5.85	6.25	5.80	6.90	7.00	9.80	19.65	29.50	37.65
100	5.70	5.10	5.70	6.10	5.90	8.20	13.20	38.75	54.90	65.05
150	4.90	4.90	5.35	5.35	6.25	9.90	19.25	51.95	71.10	82.35
200	4.70	4.20	5.85	5.35	5.05	11.60	23.20	64.30	83.45	91.40
MG based on Song's individual estimates with 3 factors										
40	5.40	5.35	4.45	3.85	4.05	34.15	42.45	63.00	72.55	76.40
50	5.00	4.90	4.45	4.75	3.90	41.35	53.55	76.00	83.20	88.50
100	4.95	4.95	4.60	5.70	4.90	71.85	82.45	97.50	99.35	99.70
150	5.60	5.00	5.75	4.85	5.25	88.40	95.65	100.00	100.00	100.00
200	5.85	6.05	6.00	5.25	5.40	95.65	98.60	100.00	100.00	100.00
MG based on Song with true number of factors (m=1)										
40	9.30	8.35	7.30	5.30	5.30	52.40	60.30	80.10	86.25	89.45
50	9.65	7.55	6.40	5.45	5.45	62.20	69.70	87.05	92.05	95.85
100	6.30	6.20	4.35	5.60	5.00	85.65	90.60	99.10	99.80	99.90
150	6.65	5.65	5.65	5.00	5.20	95.75	98.05	100.00	100.00	100.00
200	5.45	5.40	6.25	5.20	5.35	98.60	99.65	100.00	100.00	100.00
Moon and Weidner's QMLE with 3 factors										
40	50.70	54.85	68.80	77.60	83.40	25.25	28.00	42.70	49.25	55.90
50	52.20	56.95	73.80	81.15	85.80	28.30	31.45	45.55	55.35	64.90
100	68.60	72.95	86.60	91.70	94.60	35.80	44.45	70.60	81.20	85.75
150	79.60	82.80	93.35	97.35	98.50	46.45	55.55	81.65	91.80	94.60
200	88.20	89.85	97.40	99.00	99.30	50.25	66.30	89.25	95.25	98.30
Moon and Weidner's QMLE with true number of factors (m=1)										
40	56.00	60.40	74.90	80.55	87.35	20.45	21.85	28.95	36.35	39.50
50	59.10	64.70	81.30	87.15	91.15	25.05	23.45	29.70	38.15	45.10
100	80.50	85.00	95.90	97.55	99.35	26.40	27.30	34.70	45.55	49.25
150	91.05	93.50	99.10	99.85	99.90	29.55	32.30	42.40	49.10	55.90
200	95.65	97.45	99.85	100.00	100.00	33.40	35.75	44.50	52.15	58.80

Table S20e. Estimation of ϕ and β_0 in the benchmark Experiment 20 for different choices for p_T.

(With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
						Estimation of ϕ				
	Jacknife corrected dynamic CCEMG with $p_T = \lceil 0.75T^{1/3} \rceil$									
40	10.46	6.69	2.78	2.21	1.31	13.43	8.87	4.12	3.34	2.62
50	10.37	6.55	2.84	2.14	1.12	12.99	8.29	3.97	3.08	2.39
100	9.92	6.54	2.60	1.90	0.95	11.93	7.76	3.29	2.48	1.71
150	9.91	6.44	2.58	1.84	0.89	11.71	7.58	3.08	2.24	1.47
200	10.12	6.42	2.55	1.82	0.84	11.73	7.39	2.98	2.17	1.33
	Jacknife corrected dynamic CCEMG with $p_T = \lceil T^{1/3} \rceil$									
40	4.83	3.48	2.01	1.56	1.14	10.56	7.37	3.77	3.02	2.57
50	4.80	3.30	2.09	1.48	0.95	10.02	6.55	3.57	2.71	2.33
100	4.51	3.34	1.88	1.24	0.77	8.71	5.74	2.82	2.04	1.63
150	4.46	3.25	1.84	1.18	0.70	8.20	5.50	2.54	1.77	1.37
200	4.76	3.25	1.83	1.17	0.67	8.15	5.16	2.44	1.67	1.24
	Jacknife corrected dynamic CCEMG with $p_T = \lceil 1.25T^{1/3} \rceil$									
40	-2.20	-0.35	1.23	1.23	0.79	10.87	7.22	3.57	2.91	2.48
50	-1.97	-0.57	1.30	1.14	0.59	10.27	6.34	3.27	2.59	2.26
100	-2.45	-0.46	1.12	0.93	0.44	8.88	5.27	2.45	1.90	1.54
150	-2.36	-0.46	1.08	0.86	0.35	8.20	4.96	2.15	1.59	1.26
200	-2.03	-0.44	1.08	0.85	0.33	7.89	4.56	2.01	1.49	1.12
						Estimation of β_0				
	Uncorrected dynamic CCEMG with $p_T = \lceil 0.75T^{1/3} \rceil$									
40	0.40	0.18	0.22	0.15	0.09	6.09	5.49	3.90	3.31	3.04
50	0.16	0.13	0.43	0.17	0.32	5.66	4.85	3.48	2.93	2.77
100	0.16	0.29	0.12	0.18	0.12	4.16	3.39	2.47	2.15	1.96
150	0.19	0.26	0.20	0.20	0.06	3.30	2.86	2.09	1.76	1.63
200	0.14	0.30	0.17	0.20	0.06	2.83	2.43	1.75	1.54	1.40
	Uncorrected dynamic CCEMG with $p_T = \lceil T^{1/3} \rceil$									
40	0.44	0.19	0.24	0.16	0.09	6.69	5.67	4.00	3.35	3.05
50	0.23	0.13	0.45	0.18	0.33	6.07	5.11	3.54	2.97	2.79
100	0.20	0.29	0.11	0.18	0.12	4.51	3.58	2.52	2.20	1.96
150	0.13	0.25	0.22	0.22	0.06	3.58	3.01	2.13	1.79	1.64
200	0.11	0.34	0.18	0.22	0.07	3.10	2.58	1.79	1.56	1.42
	Uncorrected dynamic CCEMG with $p_T = \lceil 1.25T^{1/3} \rceil$									
40	0.34	0.24	0.26	0.16	0.10	7.48	6.02	4.06	3.39	3.08
50	0.19	0.12	0.45	0.19	0.33	6.82	5.46	3.64	2.99	2.81
100	0.26	0.24	0.13	0.19	0.12	4.97	3.86	2.56	2.22	1.99
150	0.12	0.26	0.20	0.23	0.07	3.99	3.19	2.16	1.81	1.66
200	0.10	0.34	0.19	0.23	0.08	3.41	2.76	1.83	1.58	1.43

Table S20f. Size and Power of estimating ϕ in Experiment 20 for different choices for p_T.

(With regressors, $\phi = 0.7$, $m = 1$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Estimation of ϕ									
	Jacknife corrected dynamic CCEMG with $p_T = \lceil 0.75T^{1/3} \rceil$									
40	43.00	38.50	23.60	21.50	13.30	16.65	22.30	76.10	92.05	98.30
50	49.75	42.65	28.40	22.80	13.65	17.60	23.05	81.60	96.30	99.50
100	63.60	60.20	36.60	30.10	13.70	26.00	35.25	97.65	100.00	100.00
150	73.35	69.35	48.90	36.25	15.55	32.40	44.25	99.80	100.00	100.00
200	79.75	76.00	55.80	44.25	17.70	37.65	49.55	100.00	100.00	100.00
	Jacknife corrected dynamic CCEMG with $p_T = \lceil T^{1/3} \rceil$									
40	21.35	21.25	16.70	15.30	12.25	24.15	35.25	79.90	94.50	98.50
50	25.20	21.90	19.50	15.05	12.00	25.70	39.45	85.40	97.50	99.40
100	35.20	31.00	23.50	17.65	11.40	39.65	56.65	98.25	100.00	100.00
150	41.20	38.75	30.25	19.50	12.05	47.65	67.00	99.95	100.00	100.00
200	48.50	43.70	36.50	23.45	14.15	51.25	73.25	100.00	100.00	100.00
	Jacknife corrected dynamic CCEMG with $p_T = \lceil 1.25T^{1/3} \rceil$									
40	18.30	17.30	12.10	12.55	10.35	42.05	51.50	83.90	95.20	98.60
50	20.30	15.80	13.60	12.85	10.40	46.15	58.20	88.40	97.95	99.60
100	30.45	21.60	14.60	13.30	8.50	64.80	77.15	99.00	100.00	100.00
150	35.95	27.75	18.30	13.90	7.95	73.60	84.60	100.00	100.00	100.00
200	40.50	32.15	21.85	16.55	8.95	76.60	89.40	100.00	100.00	100.00
	Estimation of β_0									
	Uncorrected dynamic CCEMG with $p_T = \lceil 0.75T^{1/3} \rceil$									
40	5.50	6.40	5.80	6.20	5.75	34.70	46.60	73.55	85.85	90.80
50	6.15	5.95	5.55	5.10	5.85	44.15	56.95	80.90	92.05	95.00
100	6.15	5.70	6.00	6.10	5.75	69.30	83.30	98.25	99.80	99.85
150	5.85	6.00	5.70	5.50	5.75	85.55	93.05	99.75	100.00	100.00
200	4.95	5.25	5.25	5.15	5.10	93.50	98.00	100.00	100.00	100.00
	Uncorrected dynamic CCEMG with $p_T = \lceil T^{1/3} \rceil$									
40	5.45	5.60	6.10	5.95	5.65	30.70	42.65	72.25	84.10	90.40
50	5.40	6.40	5.70	4.65	5.80	37.95	51.90	79.05	91.35	94.50
100	6.15	4.85	6.05	5.95	5.35	62.05	78.00	97.85	99.70	99.85
150	5.00	6.20	5.75	5.95	5.75	79.20	89.90	99.70	99.95	100.00
200	5.15	5.15	4.85	5.50	5.55	89.90	96.75	99.95	100.00	100.00
	Uncorrected dynamic CCEMG with $p_T = \lceil 1.25T^{1/3} \rceil$									
40	5.45	5.50	6.20	5.90	5.80	26.25	38.30	70.45	83.10	89.35
50	6.15	6.70	5.80	4.80	5.50	31.95	46.10	78.25	90.50	94.25
100	5.95	5.75	5.85	6.15	5.85	52.65	72.95	97.75	99.65	99.75
150	5.70	6.10	5.85	5.85	5.20	70.40	86.70	99.70	99.95	100.00
200	4.90	5.70	5.05	5.75	5.45	82.95	94.10	99.95	100.00	100.00

Table S21a. Monte Carlo findings for the estimation of ϕ in Experiment 21.
(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-1.67	-0.12	2.73	3.71	4.28	6.18	5.35	4.98	5.24	5.52
50	-1.54	-0.18	2.99	3.72	4.41	6.06	5.06	4.99	5.11	5.42
100	-1.57	-0.01	2.95	3.99	4.59	5.36	4.62	4.62	4.93	5.29
150	-1.53	-0.02	2.99	4.08	4.53	5.23	4.30	4.44	4.92	5.16
200	-1.43	0.14	2.95	4.13	4.64	5.11	4.28	4.28	4.85	5.18
	Dynamic CCEMG without bias correction									
40	-11.00	-8.45	-3.68	-2.16	-1.42	11.56	8.98	4.39	3.04	2.49
50	-11.17	-8.53	-3.68	-2.29	-1.43	11.60	8.93	4.22	3.03	2.38
100	-11.19	-8.70	-3.93	-2.38	-1.63	11.42	8.91	4.21	2.75	2.09
150	-11.35	-8.79	-3.96	-2.42	-1.69	11.53	8.95	4.14	2.66	2.01
200	-11.50	-8.79	-3.98	-2.46	-1.69	11.64	8.92	4.12	2.64	1.92
	Dynamic CCEMG with RMA bias correction									
40	-6.29	-4.18	-1.15	-0.30	0.12	7.72	5.44	2.82	2.24	2.10
50	-6.41	-4.27	-1.18	-0.48	0.07	7.54	5.29	2.51	2.12	1.94
100	-6.56	-4.54	-1.53	-0.68	-0.27	7.22	5.12	2.24	1.58	1.35
150	-6.74	-4.67	-1.58	-0.75	-0.36	7.24	5.11	2.06	1.39	1.17
200	-6.98	-4.68	-1.62	-0.82	-0.38	7.41	5.06	1.99	1.31	1.02
	Dynamic CCEMG with jackknife bias correction									
40	3.15	2.14	1.63	1.40	1.12	8.97	5.92	3.47	2.81	2.50
50	2.77	2.06	1.66	1.23	1.04	8.16	5.46	3.17	2.59	2.29
100	2.65	1.92	1.25	0.99	0.69	6.79	4.50	2.36	1.86	1.56
150	2.83	1.78	1.21	0.94	0.60	6.44	3.99	2.05	1.61	1.31
200	2.59	1.90	1.17	0.86	0.58	6.12	3.91	1.92	1.42	1.15
	MG based on Song's individual estimates with 3 factors									
40	-10.68	-7.78	-3.12	-1.88	-1.26	11.70	8.65	4.02	2.94	2.44
50	-10.83	-7.85	-3.07	-1.92	-1.22	11.62	8.53	3.80	2.78	2.22
100	-11.41	-8.06	-3.07	-1.91	-1.27	11.89	8.46	3.45	2.39	1.85
150	-12.13	-8.21	-3.10	-1.89	-1.36	12.54	8.50	3.36	2.22	1.75
200	-12.65	-8.45	-3.19	-1.91	-1.33	13.04	8.71	3.40	2.15	1.63
	MG based on Song with true number of factors (m=2)									
40	-8.98	-6.76	-2.92	-1.77	-1.24	9.81	7.54	3.86	2.84	2.42
50	-9.17	-6.86	-2.88	-1.85	-1.18	9.83	7.48	3.62	2.72	2.18
100	-9.31	-6.89	-2.88	-1.83	-1.20	9.65	7.24	3.27	2.32	1.80
150	-9.46	-6.91	-2.91	-1.80	-1.31	9.74	7.15	3.17	2.13	1.70
200	-9.53	-6.97	-2.96	-1.81	-1.27	9.77	7.16	3.17	2.06	1.58
	Bai's IFE estimator with 3 factors									
40	-1.13	1.79	5.82	6.85	7.58	6.04	5.34	6.78	7.62	8.21
50	-1.59	1.41	5.76	6.82	7.42	5.94	4.70	6.59	7.47	7.96
100	-3.18	0.47	5.33	6.56	7.20	6.25	4.02	5.87	6.93	7.52
150	-5.16	-0.48	5.00	6.20	6.88	7.66	3.85	5.43	6.51	7.12
200	-6.56	-1.28	4.63	5.91	6.50	8.61	4.00	5.01	6.17	6.70
	Bai's IFE estimator with true number of factors (m=2)									
40	0.00	2.34	5.69	6.63	7.37	4.99	4.97	6.63	7.39	8.02
50	-0.12	2.02	5.77	6.69	7.28	4.59	4.41	6.59	7.33	7.83
100	-0.65	1.72	5.54	6.71	7.32	3.96	3.63	6.03	7.07	7.63
150	-1.17	1.45	5.52	6.66	7.25	3.97	3.29	5.90	6.93	7.48
200	-1.61	1.29	5.53	6.78	7.30	3.95	3.16	5.83	6.99	7.46
	Moon and Weidner's QMLE with 3 factors									
40	-1.65	1.58	5.83	6.84	7.57	6.46	5.37	6.80	7.59	8.20
50	-2.21	1.20	5.76	6.82	7.44	6.46	4.80	6.60	7.47	7.96
100	-4.00	0.10	5.31	6.56	7.20	7.15	4.26	5.86	6.94	7.52
150	-6.12	-0.91	4.98	6.18	6.87	8.51	4.27	5.42	6.49	7.12
200	-7.76	-1.67	4.62	5.90	6.48	9.62	4.36	5.01	6.16	6.69
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	-0.15	2.26	5.70	6.63	7.38	5.07	4.99	6.64	7.39	8.02
50	-0.28	2.01	5.77	6.69	7.29	4.70	4.44	6.60	7.34	7.84
100	-0.84	1.61	5.54	6.71	7.32	4.12	3.67	6.04	7.08	7.63
150	-1.38	1.34	5.51	6.66	7.25	4.13	3.30	5.89	6.93	7.48
200	-1.75	1.20	5.52	6.77	7.30	4.07	3.18	5.83	6.98	7.47

Table S21b. Monte Carlo findings for the estimation of β_0 in Experiment 21.

(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	11.41	11.50	11.72	11.83	11.61	15.34	14.82	13.77	13.37	12.84
50	11.31	11.92	11.61	11.65	11.75	15.16	15.07	13.51	13.02	12.91
100	11.97	11.83	11.80	11.95	11.74	15.48	14.58	13.45	13.08	12.68
150	11.38	11.63	11.76	11.66	11.93	14.93	14.54	13.21	12.71	12.74
200	11.69	11.62	11.44	11.55	11.70	14.97	14.32	12.98	12.57	12.46
	Dynamic CCEMG without bias correction									
40	0.36	0.34	0.24	0.41	0.35	5.98	5.16	3.79	3.33	2.99
50	0.24	0.16	0.32	0.29	0.29	5.21	4.64	3.36	2.99	2.75
100	0.31	0.37	0.24	0.12	0.25	3.73	3.28	2.44	2.13	1.93
150	0.22	0.17	0.19	0.10	0.14	3.06	2.71	1.97	1.74	1.56
200	0.25	0.25	0.15	0.15	0.13	2.69	2.32	1.69	1.49	1.38
	Dynamic CCEMG with RMA bias correction									
40	0.32	0.40	0.18	0.37	0.32	6.73	5.61	3.94	3.44	3.02
50	0.15	0.11	0.30	0.27	0.26	5.79	5.06	3.51	3.08	2.79
100	0.20	0.35	0.19	0.12	0.23	4.22	3.55	2.52	2.19	1.96
150	0.13	0.13	0.14	0.09	0.13	3.51	2.94	2.04	1.80	1.59
200	0.22	0.16	0.11	0.12	0.12	3.02	2.49	1.75	1.52	1.41
	Dynamic CCEMG with jackknife bias correction									
40	0.56	0.65	0.21	0.38	0.28	11.94	8.24	4.66	3.80	3.19
50	0.56	0.40	0.39	0.26	0.21	10.95	7.34	4.10	3.41	2.94
100	0.62	0.48	0.23	0.10	0.22	7.59	5.20	2.88	2.38	2.08
150	0.66	0.48	0.12	0.07	0.10	6.16	4.23	2.39	2.00	1.70
200	0.56	0.31	0.14	0.13	0.07	5.34	3.67	2.05	1.70	1.50
	MG based on Song's individual estimates with 3 factors									
40	0.54	0.30	0.34	0.18	0.23	6.92	5.80	4.03	3.55	3.30
50	0.51	0.25	0.46	0.32	0.22	6.24	5.01	3.48	3.20	2.95
100	0.54	0.46	0.33	0.26	0.37	3.87	3.48	2.59	2.32	2.20
150	0.58	0.43	0.32	0.36	0.35	3.19	2.85	2.08	1.93	1.81
200	0.41	0.46	0.44	0.36	0.35	2.64	2.45	1.88	1.68	1.73
	MG based on Song with true number of factors (m=2)									
40	0.67	0.37	0.40	0.23	0.29	6.18	5.22	3.84	3.51	3.27
50	0.57	0.41	0.49	0.41	0.28	5.69	4.76	3.38	3.18	2.88
100	0.63	0.55	0.39	0.31	0.38	3.79	3.43	2.51	2.27	2.11
150	0.62	0.51	0.36	0.39	0.40	3.07	2.71	2.03	1.84	1.77
200	0.51	0.52	0.49	0.38	0.38	2.58	2.39	1.84	1.62	1.68
	Bai's IFE estimator with 3 factors									
40	4.75	4.74	4.56	4.85	4.81	7.52	7.14	6.30	6.26	6.08
50	4.80	4.64	4.79	4.78	4.82	7.18	6.66	6.15	5.98	5.90
100	4.94	5.11	5.17	5.04	5.26	6.20	6.13	5.82	5.59	5.76
150	4.97	5.09	5.31	5.25	5.34	5.81	5.78	5.70	5.58	5.63
200	5.01	5.18	5.35	5.43	5.50	5.64	5.65	5.63	5.67	5.70
	Bai's IFE estimator with true number of factors (m=2)									
40	4.72	4.69	4.49	4.79	4.68	7.67	7.25	6.42	6.31	6.03
50	4.88	4.67	4.72	4.68	4.71	7.33	6.80	6.18	6.01	5.91
100	4.88	5.01	5.02	4.91	5.11	6.23	6.14	5.75	5.54	5.65
150	5.04	4.99	5.21	5.13	5.21	5.92	5.76	5.66	5.49	5.53
200	5.09	5.11	5.26	5.31	5.38	5.74	5.63	5.57	5.58	5.61
	Moon and Weidner's QMLE with 3 factors									
40	4.60	4.61	4.44	4.70	4.65	7.48	7.11	6.24	6.17	5.97
50	4.67	4.55	4.68	4.65	4.68	7.15	6.65	6.09	5.90	5.80
100	4.84	5.02	5.08	4.93	5.14	6.16	6.10	5.75	5.49	5.65
150	4.89	5.01	5.21	5.14	5.22	5.77	5.73	5.62	5.47	5.52
200	4.88	5.09	5.26	5.32	5.37	5.57	5.59	5.55	5.56	5.58
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	4.61	4.59	4.36	4.65	4.54	7.66	7.25	6.36	6.24	5.93
50	4.80	4.57	4.61	4.56	4.58	7.34	6.80	6.12	5.93	5.82
100	4.81	4.93	4.93	4.80	4.98	6.22	6.12	5.69	5.44	5.54
150	4.98	4.90	5.12	5.02	5.10	5.91	5.71	5.58	5.39	5.43
200	5.01	5.03	5.16	5.19	5.26	5.70	5.57	5.48	5.47	5.49

Table S21c. Size and Power of selected estimators of ϕ in Experiment 21.

(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	55.85	55.75	67.10	77.20	82.85	92.10	91.85	91.40	91.75	92.00
50	60.00	57.70	70.75	79.90	87.20	93.75	94.75	92.00	92.90	93.55
100	67.05	66.40	79.00	87.10	93.70	97.25	97.15	96.85	96.10	97.10
150	72.75	70.20	81.30	91.05	95.20	97.60	98.05	97.60	97.70	97.75
200	76.90	73.90	83.10	92.75	96.70	97.85	98.10	97.95	97.80	98.20
	Dynamic CCEMG without bias correction									
40	94.75	88.30	43.75	22.50	14.35	100.00	100.00	100.00	100.00	100.00
50	98.00	94.25	50.25	29.70	16.20	100.00	100.00	100.00	100.00	100.00
100	100.00	99.90	81.45	47.60	30.20	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	93.80	66.15	41.20	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	98.00	77.80	50.60	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	17.00	15.75	14.90	13.60	11.45	29.45	44.80	85.70	96.30	98.90
50	19.70	16.15	16.30	14.70	11.75	32.95	51.85	92.15	98.45	99.50
100	26.25	22.90	16.40	13.10	10.20	49.50	73.40	99.55	100.00	100.00
150	32.85	25.90	20.30	16.65	10.85	57.50	84.90	100.00	100.00	100.00
200	36.30	32.10	23.40	17.30	10.85	65.90	88.20	99.95	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	46.05	32.40	11.85	7.45	7.70	98.95	99.60	99.65	99.65	100.00
50	52.55	36.60	11.60	9.35	7.90	99.85	99.80	100.00	100.00	100.00
100	78.25	63.20	20.85	9.25	7.15	100.00	100.00	100.00	100.00	100.00
150	88.85	78.95	28.90	13.05	8.10	100.00	100.00	100.00	100.00	100.00
200	94.85	86.25	35.95	15.95	7.90	100.00	100.00	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	86.25	76.80	34.70	19.60	12.30	99.35	100.00	100.00	100.00	100.00
50	93.95	86.05	38.90	22.40	12.75	99.70	99.90	100.00	100.00	100.00
100	99.50	98.45	61.00	35.25	20.30	100.00	100.00	100.00	100.00	100.00
150	99.95	99.85	78.30	44.85	29.10	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	89.35	56.45	34.20	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	83.60	72.95	32.40	18.20	12.20	99.70	100.00	100.00	100.00	100.00
50	91.95	82.45	36.45	21.10	12.20	99.85	99.95	100.00	100.00	100.00
100	99.45	97.40	56.95	33.55	19.30	100.00	100.00	100.00	100.00	100.00
150	100.00	99.50	75.60	41.60	27.05	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	85.10	52.80	32.55	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	46.40	49.95	83.95	92.60	96.90	90.45	83.35	72.25	71.45	69.10
50	47.85	49.75	87.20	95.05	97.60	94.95	90.00	77.30	73.00	74.10
100	62.60	54.25	93.00	98.90	99.80	99.40	98.35	90.25	85.90	83.35
150	74.60	59.40	94.80	99.45	100.00	99.95	100.00	96.25	93.55	90.65
200	83.65	65.45	96.30	99.70	100.00	100.00	100.00	98.70	97.15	94.70
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	38.05	46.80	83.80	91.40	96.15	89.90	83.75	73.75	72.60	69.00
50	38.75	44.60	86.35	94.60	97.70	93.45	89.65	77.10	74.85	73.10
100	45.30	51.40	94.75	99.00	99.75	99.30	97.85	89.40	83.85	82.60
150	52.40	55.40	97.40	99.65	99.90	99.70	99.55	93.95	89.35	87.10
200	56.75	61.65	98.30	99.85	100.00	99.95	99.75	96.25	92.85	90.20

Table S21d. Size and Power of selected estimators of β_0 in Experiment 21.

(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	74.90	77.30	87.75	92.55	95.75	56.00	56.20	61.55	64.35	63.90
50	77.30	80.20	90.25	94.25	97.10	59.45	61.95	63.25	64.95	67.25
100	84.20	87.20	94.00	97.20	98.65	71.15	69.40	73.65	73.20	74.45
150	86.60	90.30	96.10	98.50	99.20	75.90	75.40	75.20	76.70	78.25
200	89.00	92.10	96.45	98.60	99.30	78.35	78.25	79.65	79.65	80.80
	Dynamic CCEMG without bias correction									
40	6.15	5.80	6.10	7.15	6.30	40.15	50.05	76.65	84.15	91.05
50	5.00	6.10	5.50	6.50	6.25	48.00	58.60	83.45	91.40	95.25
100	5.85	4.85	6.30	5.85	5.45	75.40	85.10	98.55	99.75	99.95
150	5.05	5.95	5.50	5.75	4.70	88.95	95.65	99.95	100.00	100.00
200	5.70	5.20	4.90	5.40	5.05	95.65	98.95	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	6.10	6.30	6.10	7.40	6.30	34.00	42.85	73.35	82.40	90.35
50	5.25	6.10	5.45	6.30	6.25	40.15	51.90	80.40	90.55	95.00
100	4.90	5.20	5.90	6.05	5.30	66.35	80.00	97.75	99.55	99.95
150	5.70	5.45	5.40	5.40	4.60	82.25	92.45	99.90	100.00	100.00
200	5.15	5.10	5.35	5.00	5.30	90.90	97.65	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	4.85	5.95	6.50	7.10	6.25	6.55	9.05	20.30	24.60	28.85
50	5.95	5.35	5.95	7.15	5.70	8.15	10.75	20.60	29.25	36.95
100	5.70	4.75	5.00	5.80	5.15	9.50	13.95	37.35	55.15	63.60
150	4.40	4.75	5.30	4.55	5.10	10.50	18.65	54.35	70.90	83.85
200	5.10	4.80	5.10	5.15	5.15	12.30	24.85	65.30	83.10	91.95
	MG based on Song's individual estimates with 3 factors									
40	10.15	10.65	5.75	5.50	4.80	46.50	55.25	72.15	80.40	82.50
50	11.20	9.20	5.95	5.35	4.50	54.45	63.30	81.35	86.60	90.85
100	10.15	10.10	6.90	5.00	3.90	81.10	87.20	96.80	98.60	98.25
150	12.20	10.30	6.45	4.55	4.55	91.35	95.95	99.30	99.05	99.00
200	11.20	11.55	6.70	5.25	5.05	97.95	98.45	99.50	99.10	98.65
	MG based on Song with true number of factors (m=2)									
40	11.65	11.25	6.70	6.30	4.90	51.95	59.65	74.35	81.15	82.95
50	13.05	10.35	6.25	5.55	4.10	59.55	68.65	84.20	87.85	92.00
100	11.60	11.85	7.30	5.45	4.55	85.25	89.65	97.90	98.95	99.05
150	12.45	11.60	6.75	4.95	4.70	94.50	97.50	99.55	99.45	99.05
200	12.85	12.55	7.60	5.45	5.65	98.20	99.20	99.25	99.55	98.85
	Moon and Weidner's QMLE with 3 factors									
40	39.15	42.45	54.75	63.00	68.40	42.10	46.05	61.80	68.95	74.05
50	42.30	45.00	58.85	67.40	72.30	45.10	49.65	64.20	73.20	78.25
100	54.70	59.95	79.05	84.45	90.00	55.70	60.95	77.70	86.90	89.15
150	63.60	71.55	91.20	94.50	97.70	65.10	70.50	86.60	94.10	95.65
200	70.85	81.35	96.10	98.55	99.30	74.55	78.55	92.95	96.40	98.55
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	37.75	40.80	52.60	61.70	65.90	41.30	44.95	60.20	67.25	74.25
50	42.10	44.05	56.10	64.65	69.65	42.70	47.70	62.60	71.75	77.65
100	51.85	58.60	75.65	82.30	88.50	56.20	60.05	78.05	86.30	88.90
150	63.90	69.75	88.35	93.10	96.10	63.40	70.05	85.60	93.95	95.80
200	73.80	78.50	94.75	97.30	98.55	71.90	78.45	92.60	95.85	98.20

Table S22a. Monte Carlo findings for the estimation of ϕ in Experiment 22. (With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	10.82	12.16	14.76	15.67	16.10	12.16	13.08	15.16	15.93	16.30
50	10.86	12.16	14.84	15.75	16.18	12.10	13.05	15.20	16.01	16.37
100	11.21	12.30	15.10	15.82	16.23	12.30	13.11	15.42	16.02	16.40
150	11.04	12.50	14.94	15.90	16.16	12.14	13.25	15.26	16.09	16.29
200	11.12	12.56	14.95	15.88	16.26	12.18	13.30	15.25	16.07	16.40
	Dynamic CCEMG without bias correction									
40	-13.41	-10.19	-4.03	-2.28	-1.38	13.89	10.67	4.68	3.17	2.52
50	-13.53	-10.26	-4.03	-2.34	-1.40	13.92	10.68	4.55	3.02	2.38
100	-13.91	-10.55	-4.35	-2.54	-1.65	14.13	10.76	4.61	2.91	2.11
150	-14.06	-10.63	-4.50	-2.62	-1.74	14.23	10.79	4.67	2.86	2.04
200	-14.26	-10.81	-4.52	-2.73	-1.82	14.41	10.93	4.66	2.90	2.05
	Dynamic CCEMG with RMA bias correction									
40	-10.05	-6.93	-2.04	-0.92	-0.27	11.04	7.92	3.30	2.49	2.19
50	-10.22	-6.91	-2.05	-1.03	-0.32	11.07	7.77	3.08	2.25	2.00
100	-10.72	-7.35	-2.48	-1.31	-0.69	11.25	7.81	3.00	1.98	1.52
150	-10.96	-7.53	-2.66	-1.43	-0.79	11.41	7.90	3.00	1.88	1.37
200	-11.29	-7.73	-2.71	-1.52	-0.88	11.68	8.03	2.98	1.85	1.31
	Dynamic CCEMG with jackknife bias correction									
40	5.53	3.69	2.50	1.82	1.35	10.89	7.19	4.02	3.11	2.66
50	5.27	3.70	2.53	1.73	1.30	9.97	6.85	3.77	2.82	2.43
100	4.97	3.32	2.19	1.45	0.94	8.89	5.69	3.03	2.20	1.69
150	5.15	3.61	1.99	1.39	0.85	8.55	5.60	2.67	1.94	1.44
200	5.11	3.58	2.12	1.32	0.81	8.40	5.41	2.66	1.75	1.29
	MG based on Song's individual estimates with 3 factors									
40	-12.32	-8.72	-2.93	-1.54	-0.87	13.30	9.57	3.84	2.68	2.23
50	-12.72	-8.81	-3.07	-1.59	-0.91	13.51	9.48	3.78	2.53	2.07
100	-13.93	-9.43	-3.17	-1.78	-1.11	14.41	9.81	3.53	2.29	1.75
150	-14.79	-9.83	-3.36	-1.78	-1.20	15.18	10.14	3.62	2.13	1.61
200	-15.90	-10.31	-3.37	-1.93	-1.24	16.24	10.58	3.57	2.18	1.56
	MG based on Song with true number of factors (m=2)									
40	-10.22	-7.45	-2.60	-1.33	-0.71	11.07	8.24	3.55	2.54	2.18
50	-10.51	-7.50	-2.78	-1.40	-0.78	11.19	8.11	3.51	2.40	2.00
100	-11.03	-7.87	-2.88	-1.61	-0.99	11.40	8.20	3.27	2.14	1.67
150	-11.27	-8.01	-3.05	-1.61	-1.06	11.55	8.24	3.32	1.98	1.51
200	-11.64	-8.27	-3.04	-1.75	-1.09	11.88	8.47	3.24	2.02	1.44
	Bai's IFE estimator with 3 factors									
40	-0.85	3.21	8.41	9.64	10.29	7.36	6.70	9.25	10.25	10.79
50	-2.01	1.87	7.75	9.06	9.75	7.67	5.91	8.52	9.61	10.22
100	-6.94	-1.63	5.26	6.84	7.46	9.77	5.32	5.98	7.28	7.81
150	-9.92	-3.99	4.08	5.83	6.57	11.67	6.16	4.74	6.19	6.85
200	-11.83	-5.28	3.42	5.19	5.94	12.87	6.71	4.00	5.48	6.18
	Bai's IFE estimator with true number of factors (m=2)									
40	1.61	4.38	8.77	9.85	10.57	6.01	6.68	9.51	10.42	11.06
50	0.85	3.52	8.42	9.63	10.28	5.99	5.97	9.08	10.14	10.70
100	-1.98	1.43	6.39	7.74	8.30	5.50	4.43	7.01	8.15	8.65
150	-3.32	-0.15	5.34	6.82	7.45	5.49	3.60	5.84	7.15	7.71
200	-4.01	-0.59	4.97	6.39	7.06	5.63	3.09	5.36	6.62	7.25
	Moon and Weidner's QMLE with 3 factors									
40	-2.91	1.79	7.92	9.26	9.96	8.24	6.43	8.87	9.92	10.49
50	-3.93	0.61	7.31	8.67	9.43	8.64	5.86	8.15	9.26	9.93
100	-8.97	-2.85	4.83	6.47	7.13	11.17	5.87	5.63	6.94	7.51
150	-11.63	-5.19	3.68	5.52	6.28	12.90	6.96	4.43	5.91	6.58
200	-12.98	-6.23	3.07	4.90	5.68	13.75	7.40	3.72	5.21	5.93
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	0.70	3.75	8.45	9.59	10.32	6.11	6.45	9.25	10.19	10.83
50	-0.13	2.75	8.07	9.33	10.01	6.07	5.70	8.77	9.87	10.45
100	-2.86	0.73	5.95	7.41	7.99	5.85	4.22	6.60	7.84	8.36
150	-3.97	-0.66	5.06	6.56	7.19	5.85	3.61	5.58	6.89	7.46
200	-4.60	-0.96	4.73	6.18	6.85	5.97	3.17	5.13	6.43	7.05

Table S22b. Monte Carlo findings for the estimation of β_0 in Experiment 22. (With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	12.08	11.82	11.81	11.83	11.68	16.07	15.05	13.75	13.29	12.91
50	11.63	12.03	12.00	11.70	12.14	15.46	15.15	13.77	13.00	13.15
100	11.66	11.58	11.99	11.92	11.73	15.02	14.58	13.48	12.96	12.62
150	11.59	11.75	11.91	11.91	11.84	15.24	14.43	13.35	12.88	12.64
200	11.89	12.23	12.12	11.81	11.89	15.27	14.91	13.52	12.80	12.61
	Dynamic CCEMG without bias correction									
40	0.13	0.35	0.28	0.14	0.13	5.99	5.15	3.82	3.39	3.03
50	0.18	0.20	0.33	0.19	0.19	5.44	4.66	3.38	2.93	2.70
100	0.21	0.28	0.08	0.07	0.05	3.75	3.37	2.42	2.09	1.91
150	0.10	0.00	0.15	-0.02	0.08	3.01	2.83	1.94	1.69	1.59
200	0.10	0.13	-0.02	0.08	0.04	2.66	2.33	1.76	1.51	1.37
	Dynamic CCEMG with RMA bias correction									
40	0.18	0.50	0.35	0.16	0.16	6.74	5.56	3.95	3.46	3.08
50	0.22	0.22	0.41	0.26	0.26	6.03	5.11	3.55	2.98	2.76
100	0.19	0.35	0.15	0.13	0.09	4.21	3.60	2.54	2.14	1.97
150	0.14	0.08	0.21	0.05	0.12	3.48	3.07	2.04	1.74	1.63
200	0.12	0.21	0.02	0.13	0.11	3.04	2.54	1.82	1.58	1.40
	Dynamic CCEMG with jackknife bias correction									
40	0.84	0.71	0.38	0.15	0.11	12.08	8.33	4.65	3.83	3.27
50	0.71	0.26	0.34	0.25	0.24	10.85	7.48	4.22	3.29	2.91
100	0.68	0.69	0.15	0.10	0.05	7.88	5.38	2.94	2.36	2.11
150	0.37	0.32	0.20	0.02	0.07	6.46	4.57	2.35	1.91	1.72
200	0.48	0.41	-0.01	0.12	0.07	5.69	3.85	2.14	1.74	1.47
	MG based on Song's individual estimates with 3 factors									
40	0.18	0.43	0.27	0.15	0.32	7.52	6.00	4.14	3.60	3.31
50	0.47	0.20	0.23	0.22	0.14	6.43	5.32	3.61	3.26	2.95
100	0.31	0.47	0.24	0.33	0.18	4.14	3.72	2.63	2.37	2.17
150	0.45	0.32	0.34	0.25	0.14	3.32	2.86	2.12	1.96	1.86
200	0.43	0.33	0.20	0.24	0.23	2.77	2.45	1.83	1.72	1.77
	MG based on Song with true number of factors (m=2)									
40	0.44	0.49	0.35	0.23	0.39	6.88	5.41	3.93	3.54	3.27
50	0.51	0.38	0.31	0.20	0.17	5.83	5.06	3.50	3.15	2.90
100	0.29	0.53	0.31	0.39	0.23	3.87	3.54	2.55	2.30	2.11
150	0.55	0.41	0.36	0.29	0.18	3.12	2.76	2.05	1.91	1.83
200	0.44	0.37	0.24	0.28	0.26	2.63	2.40	1.81	1.66	1.68
	Bai's IFE estimator with 3 factors									
40	5.19	5.29	5.17	5.02	4.89	7.71	7.27	6.56	6.29	6.02
50	5.26	5.04	5.16	5.11	5.09	7.25	6.84	6.36	6.06	5.97
100	5.28	5.54	5.46	5.48	5.52	6.40	6.44	6.07	5.95	5.94
150	5.32	5.35	5.61	5.53	5.62	6.15	6.03	5.99	5.83	5.89
200	5.24	5.36	5.39	5.60	5.56	5.86	5.84	5.70	5.84	5.76
	Bai's IFE estimator with true number of factors (m=2)									
40	5.14	5.22	5.06	4.93	4.77	7.80	7.39	6.52	6.24	5.98
50	5.31	4.99	5.06	4.99	4.95	7.39	6.85	6.33	6.02	5.88
100	5.40	5.56	5.40	5.41	5.44	6.56	6.54	6.04	5.92	5.91
150	5.50	5.47	5.70	5.66	5.78	6.38	6.20	6.12	6.00	6.08
200	5.49	5.57	5.62	5.88	5.90	6.18	6.14	5.98	6.16	6.13
	Moon and Weidner's QMLE with 3 factors									
40	5.06	5.28	5.17	5.03	4.90	7.69	7.29	6.57	6.30	6.03
50	5.18	5.01	5.18	5.12	5.11	7.23	6.83	6.38	6.07	5.99
100	5.22	5.51	5.48	5.52	5.56	6.38	6.42	6.09	5.98	5.98
150	5.23	5.32	5.62	5.54	5.64	6.08	6.00	6.00	5.85	5.91
200	5.18	5.33	5.40	5.60	5.56	5.84	5.82	5.70	5.84	5.77
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	5.14	5.20	5.05	4.91	4.76	7.85	7.40	6.53	6.23	5.98
50	5.28	4.95	5.06	4.99	4.95	7.40	6.85	6.35	6.03	5.89
100	5.37	5.58	5.43	5.45	5.49	6.56	6.56	6.08	5.96	5.96
150	5.49	5.46	5.74	5.71	5.84	6.40	6.22	6.16	6.05	6.13
200	5.49	5.58	5.66	5.92	5.95	6.20	6.16	6.02	6.20	6.18

Table S22c. Size and Power of selected estimators of ϕ in Experiment 22.
(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	91.20	96.75	100.00	100.00	100.00	60.75	64.80	84.10	92.90	96.75
50	92.60	97.10	99.95	100.00	100.00	63.20	67.55	86.65	94.50	97.65
100	97.10	99.05	100.00	100.00	100.00	74.40	76.15	91.60	97.50	99.15
150	97.65	99.40	100.00	100.00	100.00	78.50	79.75	92.80	98.35	99.65
200	97.55	99.55	100.00	100.00	100.00	81.35	82.20	94.10	98.50	99.65
	Dynamic CCEMG without bias correction									
40	98.90	95.85	49.75	27.05	16.75	100.00	100.00	100.00	100.00	100.00
50	99.50	97.70	57.80	29.40	18.50	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	88.75	54.30	30.90	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	97.65	70.55	45.45	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	99.50	85.45	57.40	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	74.20	58.25	17.75	9.60	8.90	100.00	100.00	100.00	99.95	99.95
50	82.55	66.25	19.70	10.30	8.65	99.95	99.90	99.95	100.00	100.00
100	97.35	90.80	40.40	18.65	10.05	100.00	100.00	100.00	100.00	100.00
150	99.20	97.30	59.20	27.65	13.70	100.00	100.00	100.00	100.00	100.00
200	99.70	99.10	71.00	36.35	18.10	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	23.15	20.15	20.45	17.55	14.25	23.25	33.70	76.45	93.30	98.30
50	24.65	22.70	23.15	17.30	15.40	24.05	37.90	83.55	97.95	99.10
100	35.15	31.05	29.60	21.40	12.80	36.35	57.90	98.70	100.00	100.00
150	45.65	40.45	32.85	24.90	15.55	42.30	64.55	99.75	100.00	100.00
200	49.55	46.35	43.80	28.60	15.60	48.40	70.60	99.95	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	91.35	83.60	30.60	14.40	8.90	99.75	99.90	100.00	100.00	100.00
50	95.40	89.85	37.50	17.95	11.15	99.90	99.95	100.00	100.00	100.00
100	99.85	99.25	63.10	31.90	16.85	100.00	100.00	100.00	100.00	100.00
150	100.00	99.95	83.50	41.65	23.75	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	90.60	57.05	30.20	100.00	100.00	100.00	100.00	100.00
	MG based on Song with true number of factors (m=2)									
40	88.70	78.20	27.35	13.10	9.10	99.55	100.00	100.00	100.00	100.00
50	94.15	85.85	32.45	15.30	9.00	99.85	99.95	100.00	100.00	100.00
100	99.80	98.60	56.45	27.70	15.15	100.00	100.00	100.00	100.00	100.00
150	100.00	99.90	77.30	36.30	20.85	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	86.10	50.50	25.35	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	57.25	60.05	91.90	97.85	99.40	89.00	79.30	60.05	60.80	63.55
50	64.20	58.70	92.25	97.90	99.30	92.65	86.80	65.10	63.30	64.05
100	82.90	66.90	86.00	97.80	99.55	99.70	98.75	91.55	86.10	83.70
150	94.30	78.35	83.35	98.20	99.90	99.95	99.90	98.00	94.70	92.45
200	98.05	87.85	80.70	98.80	99.85	100.00	100.00	99.65	99.00	98.25
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	48.95	61.80	93.50	98.20	99.35	81.75	73.40	55.80	59.15	63.65
50	53.40	59.00	94.25	98.60	99.60	87.20	80.55	58.25	59.65	62.90
100	62.80	55.85	91.90	99.25	99.90	98.35	95.50	83.20	78.45	75.90
150	70.75	55.35	94.60	99.85	100.00	99.65	99.25	93.95	90.00	86.85
200	77.95	54.15	95.85	100.00	100.00	99.95	99.80	98.45	94.65	93.40

Table S22d. Size and Power of selected estimators of β_0 in Experiment 22.
(With regressors, $\phi = 0.7$, $m = 2$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	73.50	76.05	87.25	92.50	93.50	52.35	51.15	53.40	58.65	60.00
50	73.45	80.20	88.70	94.20	96.60	53.85	55.60	58.10	59.95	63.55
100	81.90	84.15	93.80	97.50	98.45	64.80	67.85	66.45	67.45	69.60
150	85.35	87.75	95.15	98.30	98.95	72.75	70.70	73.00	72.40	74.80
200	87.10	90.35	96.90	98.55	99.30	74.25	75.70	76.70	76.80	78.20
	Dynamic CCEMG without bias correction									
40	6.00	5.80	7.10	7.05	5.60	41.60	48.70	73.60	86.15	91.55
50	6.15	5.95	6.15	5.65	5.20	49.25	57.15	84.55	92.60	95.75
100	5.10	6.40	5.90	4.60	5.15	75.60	85.00	98.45	99.60	100.00
150	5.30	6.30	5.35	4.95	5.60	90.05	95.65	99.85	100.00	100.00
200	5.10	5.40	6.05	5.45	5.85	96.50	99.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	6.35	5.50	6.45	6.90	5.60	32.55	42.60	71.90	84.80	91.00
50	5.40	5.80	6.70	5.30	5.45	39.95	51.25	79.30	91.20	94.70
100	5.15	6.25	5.70	4.55	5.40	66.05	78.25	97.55	99.60	100.00
150	5.45	6.85	5.70	5.00	5.60	81.30	92.30	99.65	100.00	100.00
200	5.75	5.25	6.25	6.05	5.85	91.05	97.40	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.50	6.40	6.75	7.45	6.10	6.55	8.75	18.25	26.95	31.90
50	5.40	5.25	6.15	5.45	5.70	6.90	9.95	20.15	31.25	36.55
100	4.90	5.05	5.90	4.80	5.40	8.40	12.95	36.40	54.10	66.00
150	5.75	6.90	4.75	4.60	5.55	11.95	20.40	52.15	73.50	82.65
200	5.20	5.55	6.45	5.45	5.40	13.35	23.25	67.10	82.35	91.75
	MG based on Song's individual estimates with 3 factors									
40	9.75	7.80	6.50	5.75	5.20	45.30	50.95	71.55	79.75	82.75
50	8.65	8.40	6.20	6.25	4.25	51.85	62.55	80.80	87.50	91.10
100	10.00	10.10	6.95	5.40	4.45	78.55	85.30	96.30	97.85	98.90
150	10.65	9.35	6.20	5.25	4.20	90.20	94.85	98.60	98.95	98.70
200	11.00	9.85	6.40	5.20	4.85	96.20	98.30	99.55	98.85	98.75
	MG based on Song with true number of factors (m=2)									
40	11.75	8.70	7.10	6.15	5.20	50.45	56.65	73.80	80.55	84.10
50	11.75	9.60	6.25	6.20	4.75	57.15	66.15	82.50	89.40	91.95
100	10.40	10.85	7.35	5.40	4.60	83.75	88.50	97.15	98.55	99.00
150	11.00	10.20	7.15	5.95	4.85	93.20	96.40	98.90	99.20	98.95
200	12.45	11.60	7.05	5.25	5.00	97.65	99.00	99.60	99.45	99.00
	Moon and Weidner's QMLE with 3 factors									
40	38.90	44.85	57.15	66.30	71.25	37.35	38.40	53.85	64.45	71.30
50	40.70	45.20	61.90	70.10	76.50	38.95	44.85	57.75	68.10	74.80
100	55.80	65.55	81.65	90.10	93.30	50.00	53.05	72.05	80.95	84.55
150	65.70	73.10	92.55	96.90	98.35	58.85	65.65	81.60	90.95	93.85
200	74.20	83.85	95.50	98.90	99.65	70.25	75.30	90.70	94.25	97.15
	Moon and Weidner's QMLE with true number of factors (m=2)									
40	37.95	42.55	54.90	63.55	67.55	34.45	37.30	52.85	63.75	70.90
50	40.40	41.90	59.00	67.55	72.95	36.45	43.55	58.10	67.75	75.65
100	56.55	64.80	80.10	88.50	92.20	47.40	49.80	71.25	80.35	84.70
150	67.90	72.80	91.70	96.05	98.15	55.30	61.95	78.30	87.55	90.45
200	76.25	82.40	95.25	98.20	99.75	65.20	69.50	85.55	89.70	93.35

Table S23a. Monte Carlo findings for the estimation of ϕ in Experiment 23.

(With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	0.71	2.09	5.03	6.05	6.44	5.66	5.62	6.47	7.10	7.29
50	0.88	2.24	5.21	6.30	6.55	5.62	5.36	6.49	7.15	7.28
100	0.80	2.35	5.30	6.32	6.88	4.88	4.97	6.25	6.92	7.36
150	0.84	2.56	5.44	6.33	6.93	4.88	4.92	6.26	6.85	7.34
200	1.06	2.52	5.50	6.44	6.84	4.72	4.86	6.23	6.90	7.19
	Dynamic CCEMG without bias correction									
40	-10.31	-8.01	-3.48	-1.97	-1.32	10.85	8.57	4.20	2.95	2.44
50	-10.43	-7.96	-3.44	-1.97	-1.39	10.87	8.40	4.03	2.78	2.29
100	-10.41	-7.95	-3.49	-2.12	-1.42	10.65	8.18	3.80	2.53	1.94
150	-10.40	-7.97	-3.55	-2.13	-1.43	10.56	8.14	3.76	2.40	1.80
200	-10.43	-8.00	-3.56	-2.13	-1.50	10.57	8.12	3.71	2.34	1.76
	Dynamic CCEMG with RMA bias correction									
40	-5.39	-3.66	-1.02	-0.27	0.04	6.78	5.10	2.73	2.30	2.13
50	-5.49	-3.65	-0.98	-0.29	-0.08	6.69	4.82	2.45	2.06	1.87
100	-5.47	-3.61	-1.12	-0.50	-0.16	6.22	4.29	1.97	1.54	1.36
150	-5.46	-3.69	-1.20	-0.53	-0.19	6.02	4.22	1.80	1.27	1.14
200	-5.57	-3.68	-1.20	-0.54	-0.27	6.05	4.08	1.68	1.17	1.00
	Dynamic CCEMG with jackknife bias correction									
40	3.52	2.25	1.48	1.18	0.87	8.85	5.90	3.38	2.78	2.42
50	3.14	2.13	1.44	1.10	0.70	8.10	5.47	3.03	2.52	2.07
100	3.05	2.06	1.21	0.85	0.59	6.81	4.39	2.27	1.78	1.53
150	2.97	1.95	1.09	0.79	0.53	6.27	3.99	1.96	1.51	1.29
200	3.02	1.90	1.04	0.80	0.46	6.08	3.78	1.78	1.38	1.12
	MG based on Song's individual estimates with 3 factors									
40	-11.05	-7.86	-3.10	-1.91	-1.37	12.01	8.69	3.97	2.96	2.55
50	-11.09	-7.89	-3.05	-1.93	-1.28	11.92	8.60	3.79	2.78	2.31
100	-11.46	-7.98	-3.13	-1.81	-1.30	11.96	8.38	3.51	2.33	1.87
150	-12.07	-8.24	-3.11	-1.84	-1.28	12.49	8.55	3.38	2.18	1.69
200	-12.42	-8.40	-3.04	-1.87	-1.31	12.82	8.67	3.24	2.12	1.61
	Bai's IFE estimator with 3 factors									
40	-1.09	1.56	5.53	6.73	6.98	5.77	4.95	6.57	7.48	7.64
50	-1.56	1.51	5.52	6.76	7.02	5.65	4.60	6.37	7.40	7.59
100	-3.22	0.65	5.36	6.42	7.04	6.31	3.87	5.84	6.79	7.35
150	-5.01	-0.19	5.24	6.46	7.00	7.60	3.89	5.62	6.71	7.22
200	-6.29	-0.92	5.10	6.45	6.92	8.51	3.99	5.41	6.65	7.10
	Moon and Weidner's QMLE with 3 factors									
40	-1.52	1.43	5.54	6.75	7.00	6.28	5.05	6.59	7.50	7.66
50	-2.00	1.29	5.52	6.78	7.02	6.13	4.68	6.38	7.43	7.57
100	-4.12	0.39	5.35	6.44	7.06	7.22	4.06	5.84	6.82	7.37
150	-6.01	-0.58	5.24	6.46	7.02	8.55	4.20	5.63	6.72	7.24
200	-7.53	-1.37	5.11	6.47	6.94	9.58	4.41	5.43	6.67	7.12

Table S23b. Monte Carlo findings for the estimation of β_0 in Experiment 23. (With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-20.53	-20.40	-20.62	-20.60	-20.63	23.07	22.51	21.78	21.52	21.37
50	-20.91	-20.72	-20.57	-20.54	-20.36	23.30	22.55	21.67	21.38	21.11
100	-20.28	-20.78	-20.34	-20.56	-20.59	22.34	22.50	21.25	21.25	21.14
150	-20.58	-20.54	-20.55	-20.38	-20.43	22.59	22.21	21.45	21.00	20.91
200	-20.53	-20.50	-20.69	-20.61	-20.38	22.55	22.02	21.55	21.23	20.84
	Dynamic CCEMG without bias correction									
40	0.39	0.29	0.27	0.36	0.25	5.80	5.10	3.79	3.34	3.02
50	0.41	0.31	0.29	0.27	0.40	5.17	4.58	3.34	2.97	2.84
100	0.09	0.15	0.20	0.15	0.18	3.61	3.26	2.30	2.08	1.95
150	0.16	0.25	0.21	0.15	0.11	3.04	2.68	1.98	1.73	1.57
200	0.24	0.16	0.22	0.19	0.10	2.57	2.39	1.69	1.47	1.42
	Dynamic CCEMG with RMA bias correction									
40	0.09	-0.02	0.08	0.29	0.19	6.37	5.49	3.92	3.45	3.07
50	0.07	0.05	0.16	0.16	0.31	5.93	4.97	3.53	3.08	2.88
100	-0.17	-0.17	0.10	0.06	0.11	4.06	3.55	2.42	2.14	1.98
150	-0.10	-0.03	0.10	0.10	0.04	3.51	2.95	2.08	1.77	1.59
200	-0.02	-0.11	0.11	0.12	0.04	2.98	2.62	1.77	1.52	1.43
	Dynamic CCEMG with jackknife bias correction									
40	0.39	0.23	0.07	0.28	0.20	12.05	8.13	4.51	3.76	3.26
50	0.60	0.64	0.24	0.15	0.33	10.49	7.53	4.05	3.33	3.05
100	0.29	0.29	0.17	0.10	0.14	7.75	5.11	2.88	2.34	2.10
150	0.53	0.20	0.23	0.11	0.04	6.27	4.25	2.45	1.95	1.69
200	0.53	0.22	0.21	0.14	0.05	5.32	3.80	2.10	1.70	1.51
	MG based on Song's individual estimates with 3 factors									
40	-0.24	-0.17	-0.15	-0.19	-0.22	7.29	5.93	4.26	3.90	3.74
50	-0.04	-0.33	-0.20	-0.11	-0.25	6.25	5.33	3.85	3.47	3.30
100	-0.36	-0.15	-0.34	-0.24	-0.36	4.10	3.56	2.82	2.49	2.44
150	-0.32	-0.15	-0.35	-0.41	-0.37	3.26	2.85	2.24	2.11	2.06
200	-0.15	-0.17	-0.35	-0.33	-0.44	2.80	2.47	1.99	1.84	1.85
	Bai's IFE estimator with 3 factors									
40	5.03	5.05	5.19	5.39	5.10	7.38	7.16	6.70	6.59	6.29
50	5.30	5.24	5.21	5.33	5.43	7.23	6.80	6.40	6.31	6.39
100	5.12	5.07	5.24	5.27	5.27	6.16	6.01	5.81	5.78	5.75
150	5.04	5.25	5.36	5.29	5.20	5.81	5.87	5.75	5.64	5.51
200	5.16	5.27	5.33	5.31	5.25	5.70	5.72	5.63	5.55	5.49
	Moon and Weidner's QMLE with 3 factors									
40	5.21	5.24	5.39	5.59	5.29	7.53	7.31	6.85	6.75	6.44
50	5.46	5.42	5.39	5.52	5.61	7.36	6.95	6.54	6.46	6.54
100	5.20	5.23	5.41	5.44	5.44	6.24	6.14	5.96	5.93	5.89
150	5.10	5.39	5.52	5.45	5.36	5.87	6.00	5.90	5.79	5.67
200	5.20	5.39	5.51	5.48	5.43	5.75	5.83	5.79	5.71	5.65

Table S23c. Size and Power of selected estimators of ϕ in Experiment 23.

(With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	**50**	**100**	**150**	**200**	**40**	**50**	**100**	**150**	**200**
	Fixed Effects estimates									
40	51.05	57.85	79.50	90.15	92.80	87.30	84.55	81.55	80.45	79.60
50	56.55	59.70	83.55	93.00	94.30	87.50	86.75	84.10	81.45	82.05
100	62.50	68.15	89.55	97.30	99.15	93.60	92.85	89.00	87.25	87.10
150	69.45	74.35	92.95	98.70	99.20	94.40	93.95	91.60	90.65	90.35
200	73.55	77.20	95.30	98.80	99.90	95.95	95.15	92.30	91.35	91.45
	Dynamic CCEMG without bias correction									
40	93.25	84.80	38.85	20.65	13.45	100.00	100.00	100.00	100.00	100.00
50	96.75	91.50	46.60	24.25	15.80	100.00	100.00	100.00	100.00	100.00
100	99.90	99.55	73.05	41.75	24.35	100.00	100.00	100.00	100.00	100.00
150	100.00	99.95	88.90	56.65	32.95	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	95.45	65.20	43.65	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	36.85	26.95	10.40	7.60	7.90	99.00	99.40	99.95	99.85	100.00
50	44.50	32.40	10.85	7.60	6.55	99.55	99.65	99.95	100.00	100.00
100	66.20	50.35	15.55	9.00	7.75	100.00	100.00	100.00	100.00	100.00
150	78.95	63.15	20.35	8.50	7.45	100.00	100.00	100.00	100.00	100.00
200	86.65	73.80	25.20	11.05	7.30	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	18.30	16.10	14.00	13.15	11.20	27.80	44.80	87.25	96.90	99.50
50	19.30	16.50	14.15	11.85	8.80	31.65	52.40	93.80	98.50	99.95
100	26.85	22.40	15.75	12.30	10.40	46.65	74.25	99.85	100.00	100.00
150	31.80	27.05	18.90	13.35	11.00	56.75	84.55	100.00	100.00	100.00
200	39.45	32.30	20.80	15.20	10.75	62.40	90.05	100.00	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	89.45	80.30	33.35	19.20	13.65	99.85	99.95	100.00	99.95	100.00
50	93.80	85.70	39.30	21.55	14.70	99.95	100.00	100.00	100.00	100.00
100	99.55	98.35	62.65	32.90	20.85	100.00	100.00	100.00	100.00	100.00
150	100.00	99.90	77.50	42.60	25.85	100.00	100.00	100.00	100.00	100.00
200	100.00	99.95	87.25	55.40	35.40	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	44.30	46.65	81.35	92.80	95.70	92.05	86.35	75.90	71.95	74.55
50	46.00	49.60	85.60	94.85	96.70	95.30	91.35	78.85	74.20	76.10
100	60.25	53.45	94.25	99.20	99.90	99.60	98.60	90.90	86.15	84.90
150	72.60	60.70	97.20	99.85	100.00	99.95	100.00	95.80	92.05	89.20
200	80.60	65.35	97.90	99.95	100.00	100.00	99.95	98.05	95.15	93.90

Table S23d. Size and Power of selected estimators of β_0 in Experiment 23.
(With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	91.80	94.70	99.05	99.80	100.00	98.85	99.55	99.95	99.95	100.00
50	94.05	96.00	99.50	99.85	99.95	99.20	99.75	100.00	100.00	100.00
100	96.35	98.05	99.75	100.00	99.95	99.65	99.80	100.00	100.00	100.00
150	97.50	98.65	99.95	99.95	100.00	99.70	100.00	100.00	100.00	100.00
200	97.95	98.70	99.85	100.00	100.00	99.70	100.00	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	5.55	6.15	6.40	6.35	5.70	40.60	48.60	75.70	84.65	91.00
50	5.45	5.95	4.95	6.30	7.10	47.50	56.90	82.75	92.65	94.85
100	4.25	5.65	5.05	4.90	5.85	77.85	86.05	99.00	99.65	100.00
150	5.50	5.30	5.85	5.60	4.45	89.85	95.70	99.85	100.00	100.00
200	4.65	6.50	5.60	4.95	5.85	96.80	98.80	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	4.80	6.00	6.10	6.45	5.95	34.55	44.95	73.40	82.90	90.30
50	5.30	5.75	5.95	6.55	6.35	40.55	53.10	81.05	91.40	94.40
100	4.75	5.60	5.10	4.75	5.05	69.30	82.85	98.70	99.60	100.00
150	5.95	4.80	5.40	5.75	4.50	84.05	92.45	99.85	99.95	100.00
200	5.10	5.70	4.85	4.90	5.95	91.80	97.80	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.65	5.60	6.20	6.80	5.85	7.40	9.40	19.45	24.90	31.50
50	6.00	6.45	5.25	5.80	6.80	7.00	9.80	21.50	30.55	35.50
100	5.95	4.85	5.20	5.25	5.60	10.60	14.90	37.50	55.55	64.75
150	5.10	5.30	6.40	5.45	4.40	11.30	20.50	51.80	71.25	82.80
200	4.25	5.55	5.10	5.45	5.60	13.55	26.25	63.35	82.85	92.15
	MG based on Song's individual estimates with 3 factors									
40	9.60	9.30	6.65	5.35	5.40	50.20	55.80	73.25	77.60	82.25
50	9.05	8.65	6.20	5.30	4.50	55.55	66.20	81.45	85.55	89.55
100	8.35	9.50	5.55	5.10	4.45	83.95	88.90	96.15	97.50	97.00
150	10.85	8.60	6.60	6.20	4.65	93.80	96.30	98.65	98.45	97.95
200	10.90	9.15	6.60	4.90	4.50	97.05	98.00	98.95	98.55	98.80
	Moon and Weidner's QMLE with 3 factors									
40	43.00	47.55	62.10	72.35	75.30	36.65	41.55	54.95	60.45	68.80
50	46.50	50.80	66.95	76.55	80.40	39.50	42.55	57.90	66.55	69.45
100	57.80	64.65	84.60	90.75	93.60	52.25	58.90	75.35	82.60	86.80
150	67.45	77.15	92.05	96.35	98.10	65.70	68.50	84.20	90.90	94.65
200	77.45	85.60	96.60	99.00	99.00	71.70	76.45	91.20	95.95	97.45

Table S24a. Monte Carlo findings for the estimation of ϕ in Experiment 24. (With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	12.74	14.11	16.51	17.45	17.82	13.78	14.84	16.84	17.65	17.99
50	12.98	14.19	16.63	17.44	17.89	13.99	14.91	16.93	17.65	18.04
100	12.97	14.23	16.84	17.58	17.91	13.87	14.88	17.09	17.74	18.04
150	12.96	14.25	16.88	17.56	18.08	13.87	14.89	17.12	17.72	18.19
200	13.04	14.22	16.92	17.65	17.96	13.88	14.81	17.15	17.81	18.08
	Dynamic CCEMG without bias correction									
40	-13.70	-10.29	-4.07	-2.06	-1.14	14.21	10.74	4.72	3.02	2.36
50	-13.89	-10.28	-4.03	-2.23	-1.33	14.32	10.65	4.57	2.98	2.29
100	-14.05	-10.45	-4.20	-2.43	-1.46	14.26	10.66	4.48	2.82	1.96
150	-14.08	-10.58	-4.24	-2.43	-1.50	14.25	10.73	4.43	2.69	1.87
200	-14.10	-10.58	-4.26	-2.48	-1.58	14.23	10.70	4.40	2.67	1.84
	Dynamic CCEMG with RMA bias correction									
40	-10.69	-7.13	-2.31	-0.92	-0.25	11.77	8.06	3.47	2.51	2.15
50	-10.86	-7.15	-2.25	-1.12	-0.49	11.75	7.92	3.24	2.42	1.99
100	-11.14	-7.35	-2.49	-1.41	-0.68	11.64	7.82	3.02	2.07	1.53
150	-11.18	-7.52	-2.57	-1.43	-0.77	11.62	7.87	2.95	1.89	1.38
200	-11.15	-7.49	-2.62	-1.50	-0.85	11.50	7.78	2.90	1.84	1.31
	Dynamic CCEMG with jackknife bias correction									
40	6.43	4.64	2.56	1.98	1.44	11.46	7.90	3.98	3.22	2.65
50	6.07	4.58	2.63	1.76	1.15	10.68	7.21	3.93	2.95	2.32
100	5.76	4.25	2.42	1.45	0.98	9.32	6.43	3.18	2.18	1.70
150	5.73	4.26	2.29	1.42	0.88	8.96	6.10	2.89	1.95	1.47
200	5.90	4.05	2.21	1.39	0.80	9.02	5.71	2.70	1.81	1.29
	MG based on Song's individual estimates with 3 factors									
40	-11.51	-7.64	-1.67	-0.28	0.42	12.52	8.60	3.06	2.26	2.12
50	-11.91	-7.89	-1.81	-0.33	0.27	12.81	8.67	2.91	2.02	1.92
100	-13.53	-8.76	-2.36	-0.74	-0.16	14.06	9.19	2.91	1.63	1.40
150	-14.62	-9.57	-2.73	-1.20	-0.55	15.03	9.90	3.08	1.72	1.27
200	-15.78	-10.11	-3.10	-1.53	-0.82	16.11	10.38	3.35	1.87	1.31
	Bai's IFE estimator with 3 factors									
40	0.96	4.13	9.30	10.62	11.23	7.06	6.85	9.93	11.09	11.60
50	-0.67	3.43	8.77	10.15	10.76	7.01	6.13	9.37	10.56	11.11
100	-5.66	-0.01	6.80	8.27	9.04	9.08	5.30	7.34	8.60	9.31
150	-9.07	-2.60	5.41	7.14	7.85	11.03	5.52	5.93	7.44	8.08
200	-10.94	-4.20	4.52	6.36	7.12	12.12	6.12	5.03	6.62	7.33
	Moon and Weidner's QMLE with 3 factors									
40	-1.06	2.95	8.97	10.38	11.00	7.77	6.44	9.65	10.87	11.39
50	-2.66	2.40	8.44	9.90	10.52	7.97	5.90	9.09	10.33	10.89
100	-7.78	-1.40	6.40	7.95	8.74	10.39	5.53	6.98	8.30	9.02
150	-10.66	-3.86	5.02	6.84	7.56	12.07	6.10	5.60	7.17	7.80
200	-12.17	-5.18	4.17	6.09	6.87	12.98	6.70	4.72	6.36	7.09

Table S24b. Monte Carlo findings for the estimation of β_0 in Experiment 24.
(With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Bias (x100)					RMSE (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	-17.40	-17.66	-17.68	-17.79	-17.43	20.37	20.13	19.18	18.84	18.37
50	-17.55	-17.80	-17.71	-17.89	-17.61	20.33	20.10	18.96	18.85	18.35
100	-17.53	-17.64	-17.52	-17.55	-17.55	20.14	19.65	18.64	18.28	18.20
150	-17.61	-17.65	-17.55	-17.60	-17.65	19.95	19.57	18.53	18.34	18.19
200	-17.52	-17.75	-17.54	-17.56	-17.65	19.77	19.66	18.46	18.24	18.15
	Dynamic CCEMG without bias correction									
40	0.33	0.24	0.27	0.32	0.32	5.89	5.22	3.83	3.42	3.16
50	0.14	0.27	0.16	0.10	0.17	5.43	4.77	3.49	2.95	2.69
100	0.24	0.04	0.14	0.13	0.09	3.83	3.32	2.38	2.14	1.95
150	0.04	-0.03	0.11	0.05	0.05	3.10	2.66	1.95	1.76	1.58
200	-0.10	0.10	0.10	0.09	0.04	2.62	2.38	1.68	1.48	1.38
	Dynamic CCEMG with RMA bias correction									
40	0.24	0.22	0.25	0.30	0.29	6.57	5.57	3.98	3.51	3.19
50	0.00	0.17	0.15	0.05	0.15	6.04	5.20	3.61	3.04	2.75
100	0.07	-0.01	0.10	0.11	0.08	4.29	3.60	2.47	2.22	1.99
150	-0.04	-0.09	0.05	0.03	0.04	3.51	2.92	2.03	1.80	1.60
200	-0.25	-0.04	0.08	0.06	0.04	3.00	2.57	1.77	1.51	1.41
	Dynamic CCEMG with jackknife bias correction									
40	0.66	0.58	0.28	0.31	0.34	12.37	8.43	4.66	3.87	3.34
50	0.43	0.76	0.26	0.09	0.19	11.22	7.65	4.27	3.35	2.91
100	0.72	0.45	0.19	0.14	0.09	7.85	5.59	2.89	2.42	2.12
150	0.43	0.25	0.15	0.05	0.06	6.34	4.38	2.42	1.97	1.70
200	0.49	0.35	0.21	0.10	0.07	5.61	3.83	2.10	1.66	1.48
	MG based on Song's individual estimates with 3 factors									
40	0.12	-0.09	-0.17	-0.16	-0.04	7.54	6.07	4.23	3.78	3.45
50	0.10	-0.18	-0.25	-0.13	-0.20	6.56	5.47	3.92	3.49	3.20
100	-0.11	-0.29	-0.26	-0.30	-0.33	4.19	3.69	2.73	2.57	2.39
150	-0.23	-0.15	-0.36	-0.33	-0.30	3.28	2.88	2.33	2.13	2.12
200	-0.20	-0.23	-0.24	-0.34	-0.32	2.79	2.40	1.97	1.87	1.84
	Bai's IFE estimator with 3 factors									
40	5.08	5.07	5.24	5.24	5.21	7.49	7.10	6.57	6.38	6.31
50	5.00	5.22	5.25	5.23	5.23	7.11	6.82	6.38	6.15	6.02
100	5.17	5.20	5.48	5.44	5.40	6.28	6.11	6.02	5.89	5.82
150	4.96	5.27	5.48	5.46	5.49	5.77	5.87	5.84	5.79	5.76
200	4.84	5.24	5.52	5.49	5.43	5.48	5.74	5.79	5.73	5.64
	Moon and Weidner's QMLE with 3 factors									
40	5.02	5.09	5.33	5.32	5.29	7.47	7.12	6.64	6.45	6.38
50	4.98	5.27	5.33	5.31	5.29	7.11	6.84	6.45	6.21	6.08
100	5.14	5.20	5.53	5.50	5.45	6.27	6.12	6.07	5.94	5.87
150	4.91	5.28	5.52	5.51	5.54	5.72	5.88	5.89	5.83	5.80
200	4.82	5.26	5.55	5.53	5.47	5.47	5.76	5.83	5.77	5.68

Table S24c. Size and Power of selected estimators of ϕ in Experiment 24.

(With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	96.30	98.85	100.00	100.00	100.00	62.80	73.20	92.85	97.80	99.05
50	97.20	99.30	100.00	100.00	100.00	66.40	75.25	94.95	97.90	99.75
100	98.95	99.65	100.00	100.00	100.00	75.10	81.70	97.05	99.65	99.80
150	99.20	99.85	100.00	100.00	100.00	79.50	83.40	98.20	99.70	99.95
200	99.25	99.90	100.00	100.00	100.00	82.65	86.40	98.90	99.80	99.95
	Dynamic CCEMG without bias correction									
40	98.70	96.25	50.00	23.70	14.35	100.00	100.00	100.00	100.00	100.00
50	99.50	98.15	57.55	28.40	17.05	100.00	100.00	100.00	100.00	100.00
100	100.00	100.00	86.45	50.25	27.00	100.00	100.00	100.00	100.00	100.00
150	100.00	100.00	95.90	65.90	36.80	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	98.80	78.50	48.85	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	76.45	60.20	19.60	11.30	8.00	99.80	99.95	99.90	99.95	100.00
50	84.90	68.60	21.90	13.10	8.80	100.00	100.00	100.00	100.00	100.00
100	97.65	91.50	40.85	21.30	10.20	100.00	100.00	100.00	100.00	100.00
150	99.30	97.10	56.05	27.10	13.15	100.00	100.00	100.00	100.00	100.00
200	99.80	98.95	68.25	35.70	18.30	100.00	100.00	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	24.70	23.25	19.50	18.25	13.50	19.55	28.25	77.15	92.65	98.10
50	27.20	25.85	24.85	18.50	13.30	22.40	30.15	81.00	96.60	99.65
100	37.45	35.65	32.95	19.75	13.15	32.95	48.40	97.55	100.00	100.00
150	45.20	45.80	38.85	25.80	15.80	39.30	57.15	99.80	100.00	100.00
200	52.50	49.50	45.90	30.00	15.75	46.65	66.10	99.90	100.00	100.00
	MG based on Song's individual estimates with 3 factors									
40	88.35	74.95	18.00	8.55	9.75	99.45	99.90	100.00	100.00	99.95
50	93.20	83.25	21.10	9.45	9.25	99.70	100.00	100.00	99.95	100.00
100	99.85	98.15	45.65	13.20	8.50	100.00	100.00	100.00	100.00	100.00
150	100.00	99.85	66.45	26.65	12.30	100.00	100.00	100.00	100.00	100.00
200	100.00	100.00	84.95	42.40	19.70	100.00	100.00	100.00	100.00	100.00
	Moon and Weidner's QMLE with 3 factors									
40	56.70	61.00	96.00	99.50	99.85	82.70	73.75	54.00	57.85	63.05
50	62.35	60.95	96.45	99.60	99.90	89.70	81.15	58.25	58.10	62.80
100	80.70	66.80	95.35	99.70	100.00	99.20	97.10	79.50	71.65	69.45
150	91.45	76.25	92.55	99.50	99.95	99.95	99.50	94.20	87.65	83.15
200	97.00	83.50	91.15	99.90	100.00	100.00	100.00	98.00	95.30	91.75

Table S24d. Size and Power of selected estimators of β_0 in Experiment 24. (With regressors, $\phi = 0.7$, $m = 3$ and $\rho_f = 0.6$).

(N,T)	Size (x100)					Power (x100)				
	40	50	100	150	200	40	50	100	150	200
	Fixed Effects estimates									
40	84.95	88.65	96.85	99.15	99.10	97.35	98.75	99.85	99.95	100.00
50	87.20	90.80	98.45	99.55	99.85	97.95	99.10	100.00	100.00	100.00
100	91.50	95.40	98.80	99.90	99.85	99.40	99.70	100.00	100.00	100.00
150	94.70	96.10	99.70	99.95	99.95	99.50	99.70	100.00	100.00	100.00
200	95.95	97.10	99.75	100.00	100.00	99.70	99.80	100.00	100.00	100.00
	Dynamic CCEMG without bias correction									
40	5.45	6.70	5.85	6.85	6.65	39.20	49.90	74.95	84.25	89.35
50	6.35	6.80	6.05	6.45	5.90	48.00	56.60	83.45	92.75	95.45
100	5.90	5.90	5.50	5.90	5.30	75.10	86.85	98.95	99.80	99.95
150	5.60	5.35	4.90	6.15	5.00	89.80	96.45	99.95	100.00	100.00
200	4.55	5.45	5.45	4.95	5.20	97.10	98.50	100.00	100.00	100.00
	Dynamic CCEMG with RMA bias correction									
40	5.05	6.00	5.70	6.55	6.85	33.70	44.55	72.00	82.45	88.10
50	5.65	6.30	6.40	6.40	5.70	40.15	51.60	80.95	91.80	95.40
100	5.80	5.25	5.15	5.80	5.60	66.00	80.95	98.30	99.70	99.90
150	5.85	5.15	5.40	5.80	4.90	83.30	93.75	99.85	100.00	100.00
200	4.85	5.80	5.20	4.65	5.05	93.05	97.45	100.00	100.00	100.00
	Dynamic CCEMG with jackknife bias correction									
40	5.25	5.10	5.45	7.05	6.95	6.75	8.75	18.40	24.35	28.35
50	5.75	6.00	6.45	5.85	5.50	7.50	9.10	21.40	31.25	36.40
100	5.15	5.45	5.30	5.70	5.75	8.45	14.60	36.00	53.00	64.65
150	5.15	4.65	5.55	5.30	5.05	10.15	18.40	53.15	73.40	82.75
200	4.95	4.80	4.95	4.50	4.80	11.90	23.40	62.60	82.55	91.60
	MG based on Song's individual estimates with 3 factors									
40	8.45	8.20	5.55	5.90	4.40	43.15	53.45	72.50	80.30	82.60
50	8.10	8.10	5.95	5.50	4.45	52.60	61.15	80.75	86.35	89.55
100	9.00	8.50	5.75	6.25	3.85	79.90	86.85	96.75	97.50	97.40
150	8.50	8.35	6.15	5.05	4.50	92.65	95.40	97.95	98.05	97.35
200	8.95	7.50	5.70	5.15	4.15	96.75	98.35	98.40	98.85	98.40
	Moon and Weidner's QMLE with 3 factors									
40	38.55	42.55	57.95	67.35	74.40	35.25	39.40	53.45	62.00	68.55
50	42.55	46.90	63.90	73.85	78.35	38.85	41.25	56.80	66.00	72.80
100	53.85	62.70	84.75	90.15	93.65	53.25	56.85	72.35	82.40	87.25
150	63.60	75.20	92.90	96.00	98.15	65.10	67.35	84.50	90.05	93.95
200	71.30	81.85	96.90	98.65	99.55	74.30	76.10	89.65	95.05	97.35

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