

APPENDIX

Table A1. Common factor estimation ( $T=50, c=0.1, d=0.75, A=0.1$ )

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.101	0.278	0.147	0.278	0.177
0.9	0.101	0.276	0.306	0.276	0.443
Correlation across categories $\rho_s=0.75$					
0	0.346	0.421	0.359	0.421	0.353
0.9	0.346	0.422	0.431	0.422	0.438

Notes. See notes of Table 1.

Table A2. Common factor estimation ( $T=50, c=0.1, d=0.75, A=0.75$ )

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.097	0.357	0.424	0.357	0.447
0.9	0.097	0.352	0.569	0.352	0.668
Correlation across categories $\rho_s=0.75$					
0	0.378	0.563	0.678	0.563	0.699
0.9	0.379	0.560	0.770	0.560	0.771

Notes. See notes of Table 1.

Table A3. Common factor estimation ( $T=50, c=0.75, d=0.75, A=0.1$ )

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.169	0.265	0.302	0.272	0.363
0.9	0.172	0.265	0.492	0.263	0.599
Correlation across categories $\rho_s=0.75$					
0	0.503	0.506	0.537	0.508	0.532
0.9	0.503	0.505	0.586	0.510	0.593

Notes. See notes of Table 1.

Table A4. Common factor estimation ( $T=50, c=0.75, d=0.75, A=0.75$ )

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.251	0.470	0.547	0.482	0.595
0.9	0.251	0.461	0.734	0.496	0.859
Correlation across categories $\rho_s=0.75$					
0	0.751	0.820	0.920	0.843	0.910
0.9	0.749	0.819	0.998	0.845	0.997

Notes. See notes of Table 1.

Table A5. Common factor estimation ( $T=150$ ,  $c=0.1$ ,  $d=0.1$ ,  $A=0.1$ )

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.095	0.175	0.108	0.176	0.135
0.9	0.094	0.176	0.163	0.175	0.352
Correlation across categories $\rho_s=0.75$					
0	0.350	0.376	0.341	0.375	0.334
0.9	0.350	0.377	0.372	0.375	0.367

Notes. See notes of Table 1.

Table A6. Common factor estimation ( $T=150$ ,  $c=0.75$ ,  $d=0.75$ ,  $A=0.1$ )

Correlation within categories $\rho_l$	Same number of series in each category			Oversampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation error term Series of <i>SSDFM</i> : $\rho_s=0$					
0	0.092	0.168	0.217	0.168	0.311
0.9	0.092	0.169	0.382	0.169	0.665
Correlation across categories $\rho_s=0.75$					
0	0.409	0.427	0.535	0.427	0.529
0.9	0.409	0.428	0.577	0.429	0.580

Notes. See notes of Table 1.

Table A7. Common factor estimation ( $T=50, c=0.1, d=0.1, A=0.1$ ).

Correlation within categories $\rho_l$	Same number of series in each category		Over sampling one category	
	$\hat{r}$	$MSE^d$	$\hat{r}$	$MSE^d$
Correlation across categories $\rho_s=0$				
0	6.54	0.118	6.60	0.133
0.9	3.34	0.218	3.32	0.253
Correlation across categories $\rho_s=0.75$				
0	1.45	0.322	1.40	0.320
0.9	3.93	0.356	3.92	0.358

Notes. The number of common factors is selected as in Bai and Ng (2002). The values of  $\hat{r}$  are the averaged number of estimated number of factors across replications. See notes of Table 1.

Table A8. Common factor estimation ( $T=50, c=0.1, d=0.1, A=0.75$ ).

Correlation within categories $\rho_l$	Same number of series in each category		Over sampling one category	
	$\hat{r}$	$MSE^d$	$\hat{r}$	$MSE^d$
Correlation across categories $\rho_s=0$				
0	4.23	0.397	4.28	0.407
0.9	2.08	0.481	2.08	0.530
Correlation across categories $\rho_s=0.75$				
0	2.92	0.648	2.92	0.642
0.9	2.57	0.710	2.57	0.704

Notes. See notes of Tables 1 and A7.

Table A9. Common factor estimation ( $T=50$ ,  $c=0.1$ ,  $d=0.1$ ,  $A=0.1$ ) when 20% of the series end at T-2 and 40% of the series end at T-1.

Correlation within categories $\rho_l$	Same number of series in each category			Over sampling one category	
	$MSE_p^a$	$MSE_r^a$	$MSE^d$	$MSE_r^a$	$MSE^d$
Correlation across categories $\rho_s=0$					
0	0.107	0.197	0.132	0.157	0.159
0.1	0.106	0.197	0.133	0.159	0.161
0.5	0.107	0.199	0.146	0.174	0.176
0.9	0.139	0.236	0.197	0.326	0.323
Correlation across categories $\rho_s=0.1$					
0	0.122	0.209	0.146	0.165	0.167
0.1	0.122	0.209	0.148	0.167	0.169
0.5	0.121	0.210	0.161	0.181	0.184
0.9	0.122	0.208	0.208	0.310	0.316
Correlation across categories $\rho_s=0.5$					
0	0.223	0.285	0.242	0.235	0.240
0.1	0.222	0.283	0.243	0.235	0.241
0.5	0.223	0.289	0.253	0.249	0.251
0.9	0.226	0.291	0.289	0.309	0.312
Correlation across categories $\rho_s=0.75$					
0	0.345	0.380	0.351	0.343	0.345
0.1	0.338	0.369	0.352	0.334	0.346
0.5	0.345	0.382	0.359	0.351	0.353
0.9	0.346	0.380	0.385	0.377	0.383

Notes. See notes of Table 1.

Table A10. Forecasting accuracy ( $T=50, c=0.1, d=0.75, A=0.1$ )

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category			Oversampling one category	
		$MSFE_p^a$	$MSFE_r^a$	$MSFE^d$	$MSFE_r^a$	$MSFE^d$
Correlation across categories $\rho_s = 0$						
0	0	1.184	1.257	1.229	1.255	1.251
	0.3	1.190	1.265	1.236	1.263	1.257
	0.8	1.194	1.274	1.228	1.273	1.250
0.9	0	1.184	1.409	1.407	1.409	1.491
	0.3	1.190	1.415	1.417	1.415	1.500
	0.8	1.194	1.431	1.421	1.431	1.505
Correlation across categories $\rho_s = 0.5$						
0	0	1.270	1.416	1.306	1.415	1.305
	0.3	1.277	1.422	1.314	1.420	1.312
	0.8	1.277	1.434	1.305	1.425	1.304
0.9	0	1.270	1.439	1.456	1.434	1.484
	0.3	1.277	1.446	1.466	1.442	1.493
	0.8	1.277	1.457	1.471	1.455	1.496

Notes. See notes of Table 4.

Table A11. Forecasting accuracy ( $T=50, c=0.1, d=0.75, A=0.75$ )

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category			Oversampling one category	
		$MSFE_p^a$	$MSFE_r^a$	$MSFE^d$	$MSFE_r^a$	$MSFE^d$
Correlation across categories $\rho_s = 0$						
0	0	1.327	1.572	1.407	1.582	1.421
	0.3	1.335	1.579	1.378	1.586	1.391
	0.8	1.343	1.597	1.331	1.596	1.348
0.9	0	1.327	1.590	1.588	1.580	1.645
	0.3	1.335	1.587	1.559	1.574	1.614
	0.8	1.343	1.591	1.530	1.580	1.617
Correlation across categories $\rho_s = 0.5$						
0	0	1.509	1.603	1.474	1.617	1.475
	0.3	1.493	1.589	1.444	1.600	1.444
	0.8	1.532	1.631	1.418	1.644	1.417
0.9	0	1.509	1.598	1.557	1.597	1.561
	0.3	1.493	1.573	1.521	1.579	1.526
	0.8	1.532	1.624	1.536	1.644	1.551

Notes. See notes of Table 4.

Table A12. Forecasting accuracy ( $T=150, c=0.1, d=0.1, A=0.1$ )

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category			Oversampling one category	
		$MSFE_p^a$	$MSFE_r^a$	$MSFE^d$	$MSFE_r^a$	$MSFE^d$
Correlation across categories $\rho_s=0$						
0	0	1.083	1.169	1.082	1.165	1.114
	0.3	1.086	1.174	1.082	1.171	1.113
	0.8	1.087	1.178	1.079	1.176	1.111
0.9	0	1.096	1.182	1.184	1.184	1.392
	0.3	1.099	1.186	1.182	1.189	1.391
	0.8	1.098	1.189	1.180	1.192	1.393
Correlation across categories $\rho_s=0.5$						
0	0	1.209	1.274	1.157	1.267	1.159
	0.3	1.213	1.279	1.155	1.273	1.157
	0.8	1.213	1.281	1.149	1.276	1.152
0.9	0	1.209	1.277	1.277	1.276	1.293
	0.3	1.213	1.282	1.274	1.281	1.291
	0.8	1.213	1.287	1.271	1.286	1.290

Notes. See notes of Table 4.

Table A13. Forecasting accuracy ( $T=150, c=0.1, d=0.1, A=0.75$ )

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category			Oversampling one category	
		$MSFE_p^a$	$MSFE_r^a$	$MSFE^d$	$MSFE_r^a$	$MSFE^d$
Correlation across categories $\rho_s=0$						
0	0	1.019	1.101	1.142	1.117	1.169
	0.3	1.021	1.101	1.137	1.118	1.162
	0.8	1.028	1.107	1.143	1.123	1.167
0.9	0	1.088	1.179	1.232	1.182	1.307
	0.3	1.091	1.185	1.226	1.187	1.296
	0.8	1.098	1.195	1.237	1.195	1.309
Correlation across categories $\rho_s=0.5$						
0	0	1.228	1.300	1.256	1.297	1.253
	0.3	1.231	1.303	1.248	1.301	1.244
	0.8	1.237	1.317	1.260	1.314	1.256
0.9	0	1.228	1.305	1.335	1.303	1.346
	0.3	1.231	1.312	1.325	1.310	1.335
	0.8	1.237	1.322	1.346	1.320	1.355

Notes. See notes of Table 4.

Table A14. Forecasting accuracy ( $T=50, c=0.1, d=0.1, A=0.1$ ).

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category	Oversampling one category
		$MSFE^d$	$MSFE^d$
Correlation across categories $\rho_s=0$			
0	0	1.301	1.302
	0.3	1.311	1.316
	0.8	1.307	1.308
0.9	0	1.404	1.422
	0.3	1.409	1.432
	0.8	1.408	1.432
Correlation across categories $\rho_s=0.5$			
0	0	1.394	1.404
	0.3	1.402	1.413
	0.8	1.412	1.489
0.9	0	1.396	1.412
	0.3	1.398	1.420
	0.8	1.382	1.421

Notes. The number of common factors is selected as in Bai and Ng (2002). See notes of Table 4.

Table A15. Forecasting accuracy ( $T=150, c=0.1, d=0.1, A=0.75$ ).

Correlation within categories $\rho_l$	Persistency of the target series $\gamma$	Same number of series in each category	Oversampling one category
		$MSFE^d$	$MSFE^d$
Correlation across categories $\rho_s=0$			
0	0	1.491	1.446
	0.3	1.470	1.423
	0.8	1.448	1.395
0.9	0	2.023	1.608
	0.3	1.986	1.586
	0.8	1.931	1.556
Correlation across categories $\rho_s=0.5$			
0	0	1.632	1.540
	0.3	1.609	1.518
	0.8	1.595	1.513
0.9	0	1.928	1.610
	0.3	1.881	1.589
	0.8	1.857	1.584

Notes. See notes of Tables 4 and A14.