

Online Annex to Drehmann and Yetman: “Which credit gap is better at predicting financial crises? A comparison of univariate filters”

Graphs

Graphs OA1.1-1.4: AUCs for different measures of the linear projection gap based on (separate estimation per economy and GDP normalisation), (panel estimation and per capita normalisation) and (separate estimation per economy and per capita normalisation); related to Section 5 and Graph 1 in the paper.

Graph OA2: Projection GDP gaps for the US for lags 28 and 29 from panel estimation vs (separate) country-specific estimation (illustration of the end point problem discussed in Section 5)

Graphs OA3.1-3.4: Graphs of credit gaps by economy (underlying data used to generate Graph 3)

Graph OA4.1: AUCs for different measures of the credit gap, 1985q1-2000q4 (full version of the upper panel of Graph 4 from the paper)

Graph OA4.2: AUCs for different measures of the credit gap, 2001q1-2017q3 (full version of the lower panel of Graph 4 from the paper)

Graph OA5.1: AUCs for different measures of the credit gap, advanced economies (full version of upper panel of Graph 5 from the paper)

Graph OA5.2: AUCs for different measures of the credit gap, emerging market economies (full version of the lower panel of Graph 5 from the paper)

Graph OA6.1: AUCs for different measures of the credit gap, economies with crises in GFC (full version of upper panel of Graph 6 from the paper)

Graph OA6.2: AUCs for different measures of the credit gap, economies without crises in GFC (full version of lower panel of Graph 6 from the paper)

Graph OA7: AUCs for different measures of the credit gap, Projection GDP gap based on lags 20-23 (full version of Graph 7 from the paper)

Tables

Table OA1: Cyclical properties of different gaps

Table OA2.1-2.4: AUCs for different measures of the projection gap (corresponds to Graphs OA1.1-1.4 in this annex)

Table OA3: AUCs for different measures of the credit gap (corresponds to Graph 3 in the paper)

Table OA4.1: AUCs for different measures of the credit gap, 1985q1-2000q4 (corresponds to upper panel of Graph 4 in the paper and Graph OA4.1 in this annex)

Table OA4.2: AUCs for different measures of the credit gap, 2001q1-2017q3 (corresponds to lower panel of Graph 4 in the paper and Graph OA4.2 in this annex)

Table OA5.1: AUCs for different measures of the credit gap, advanced economies (corresponds to upper panel of Graph 5 in the paper and Graph OA5.1 in this annex)

Table OA5.2: AUCs for different measures of the credit gap, emerging market economies (corresponds to lower panel of Graph 5 in the paper and Graph OA5.2 in this annex)

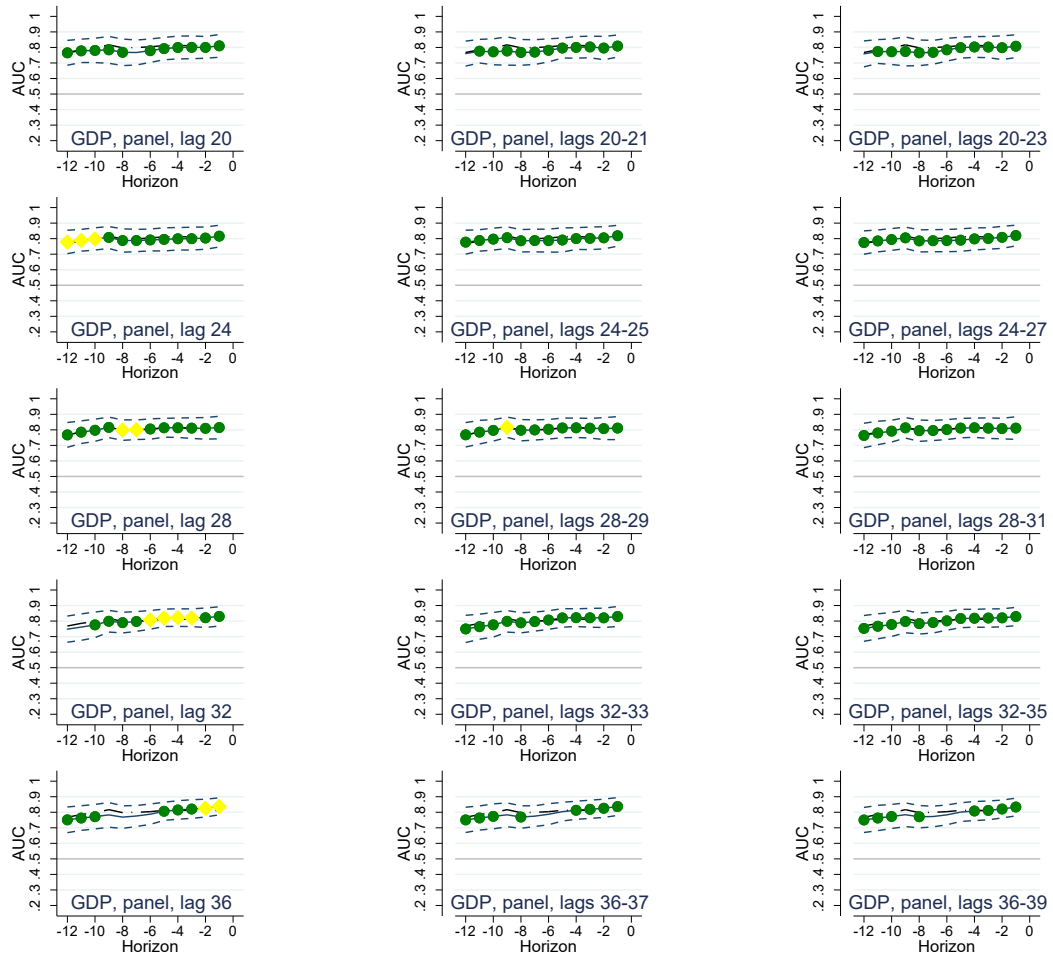
Table OA6.1: AUCs for different measures of the credit gap, economies with crises in GFC (corresponds to upper panel of Graph 6 in the paper and Graph OA6.1 in this annex)

Table OA6.2: AUCs for different measures of the credit gap, economies without crises in GFC (corresponds to lower panel of Graph 6 in the paper and Graph OA6.2 in this annex)

Table OA7: AUCs for different measures of the credit gap, with projection gaps are based on lags 20-23 (corresponds to Graph 7 in the paper and Graph OA7 in this annex)

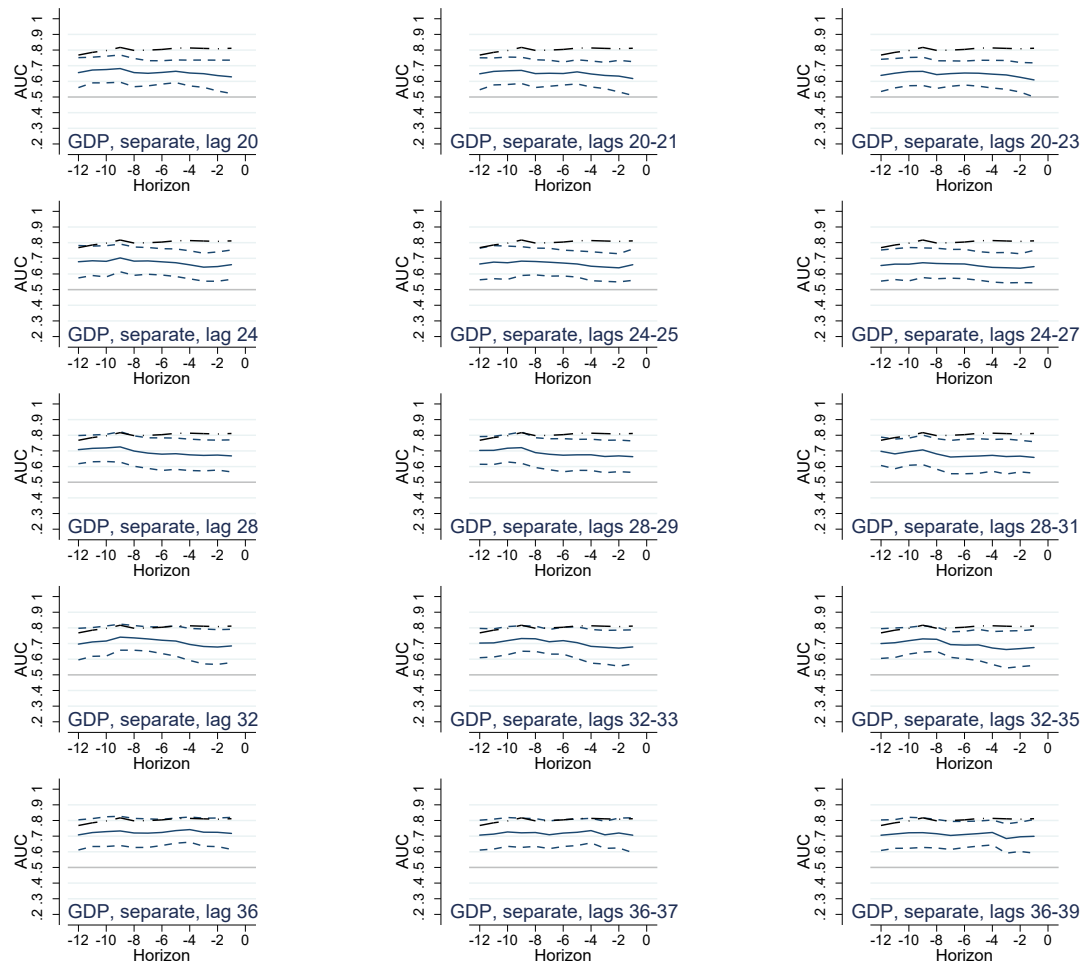
Annex graphs

Graph OA1.1: AUCs for different measures of the linear projection gap based on separate estimation per economy and GDP normalisation



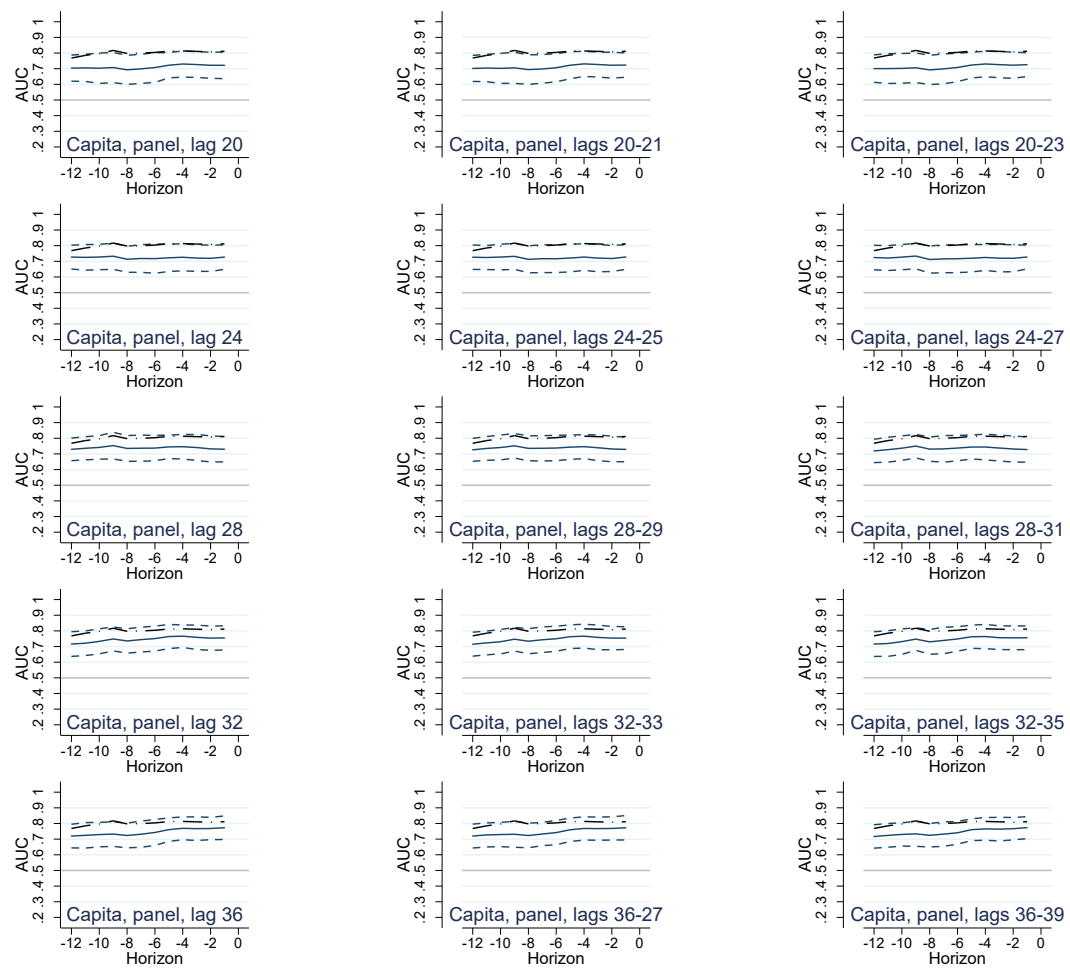
Note: AUCs for different forecast horizons based on separate estimation per economy and GDP normalisation. A dot-dash line indicates the results for panel estimation and GDP normalisation with lags 28-29, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Yellow diamond: highest AUC across the 60 specifications at that given forecast horizon. Green dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA1.2: AUCs for different measures of the linear projection gap based on separate estimation per economy and GDP normalisation



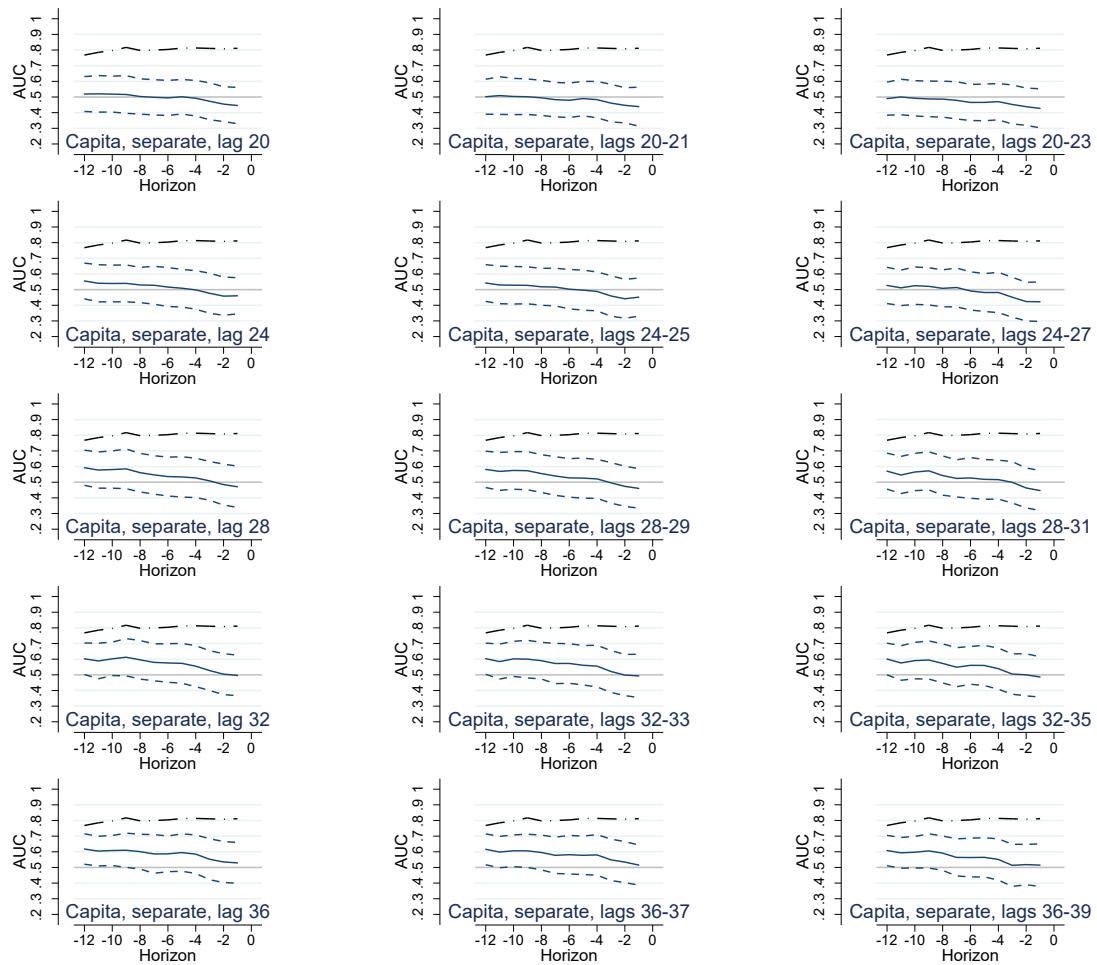
Note: AUCs for different forecast horizons based on separate estimation per economy and GDP normalisation. A dot-dash line indicates the results for panel estimation and GDP normalisation with lags 28-29, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Yellow diamond: highest AUC across the 60 specifications at that given forecast horizon. Green dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA1.3: AUCs for different measures of the linear projection gap based on panel estimation and per capita normalisation



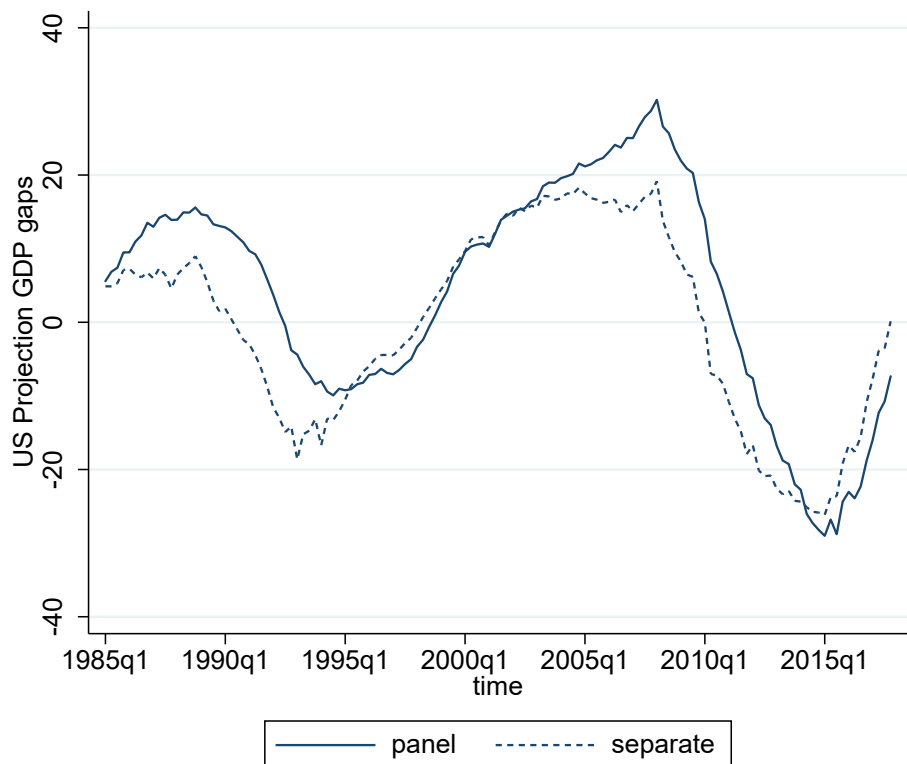
Note: AUCs for different forecast horizons based on panel estimation and per capita normalisation. A dot-dash line indicates the results for panel estimation and GDP normalisation with lags 28-29, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Yellow diamond: highest AUC across the 60 specifications at that given forecast horizon. Green dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA1.4: AUCs for different measures of the linear projection gap based on separate estimation per economy and per capita normalisation

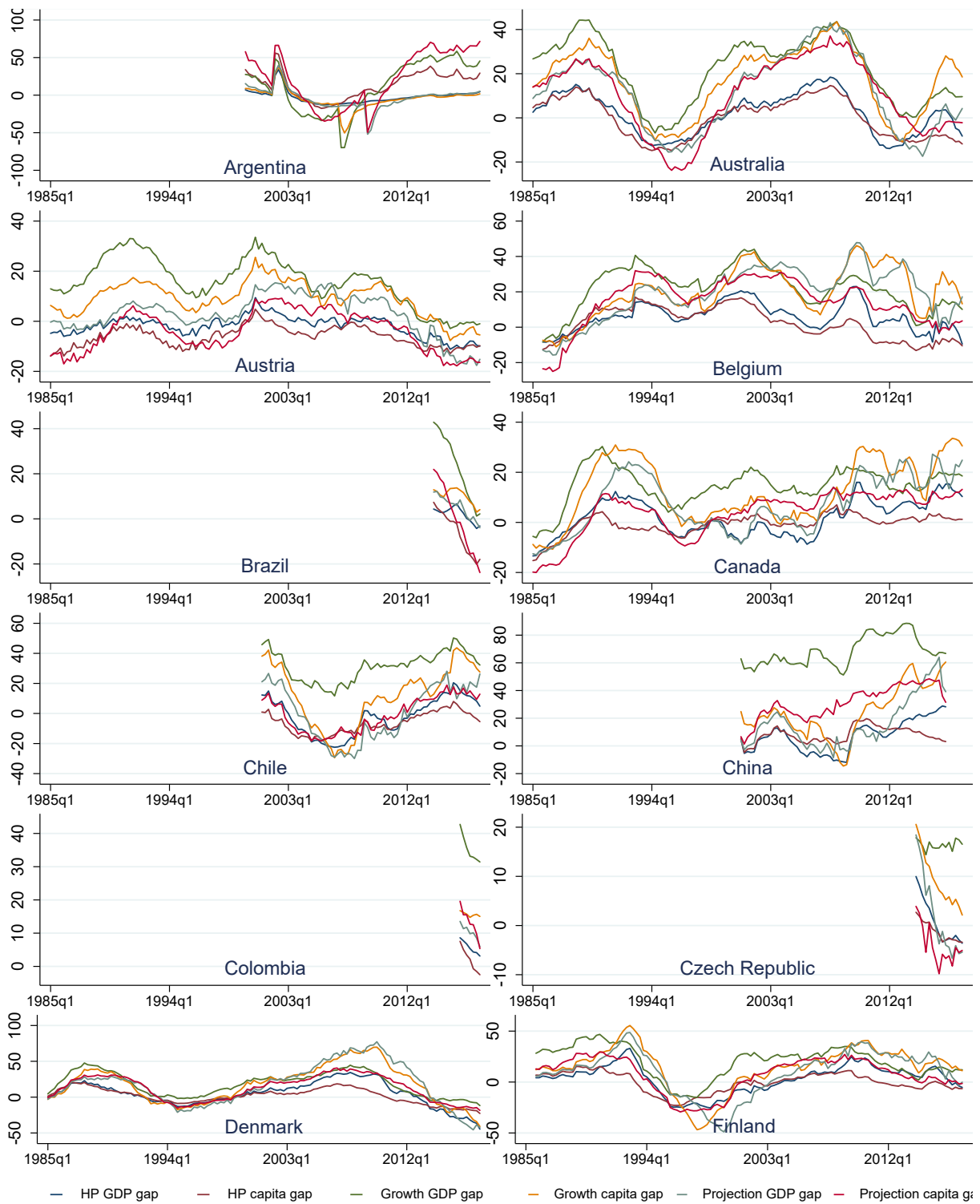


Note: AUCs for different forecast horizons based on separate estimation per economy and per capita normalisation. A dot-dash line indicates the results for panel estimation and GDP normalisation with lags 28-29, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Yellow diamond: highest AUC across the 60 specifications at that given forecast horizon. Green dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

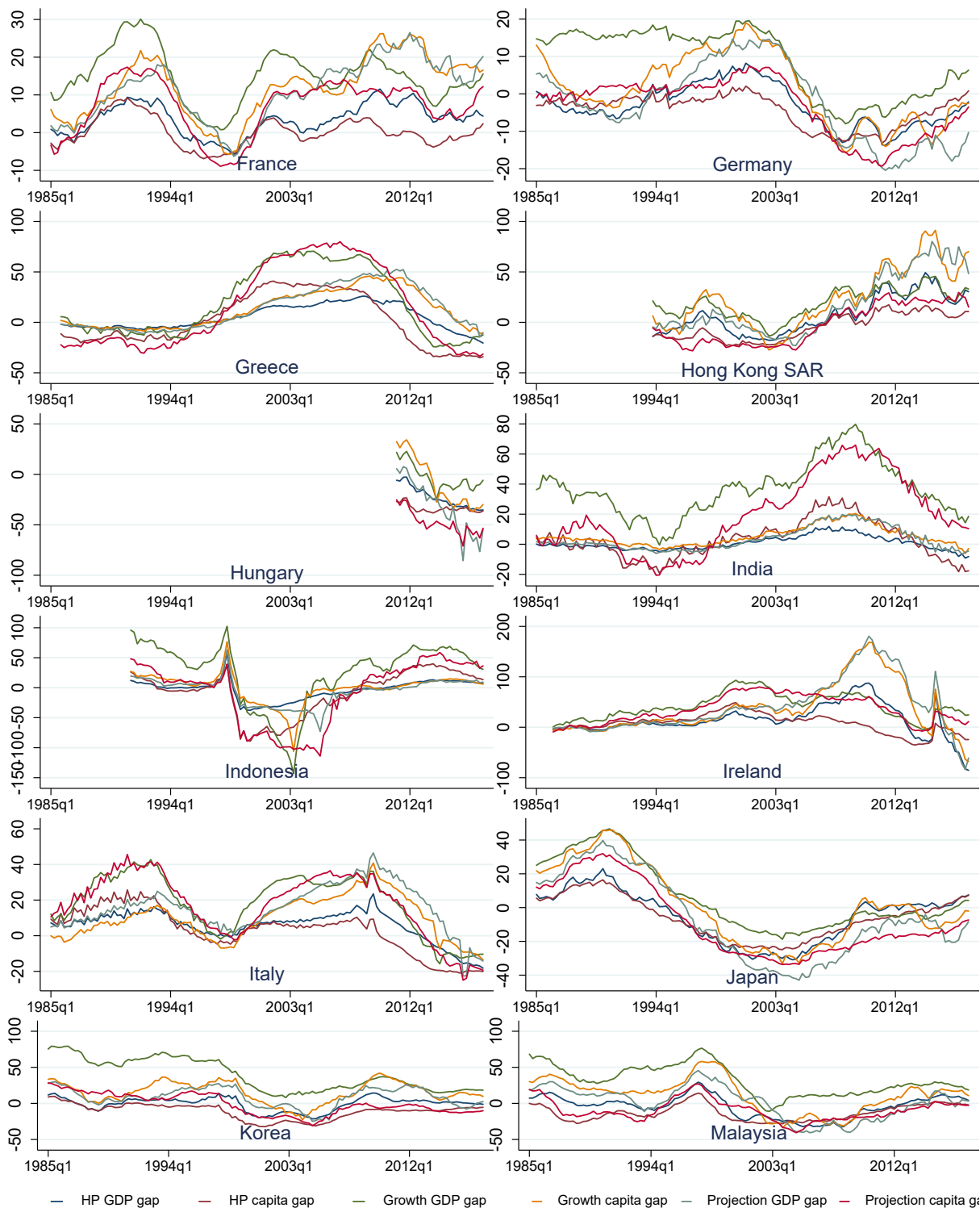
Graph OA2: Projection GDP gaps for the US for lags 28 and 29 from panel estimation vs (separate) country-specific estimation



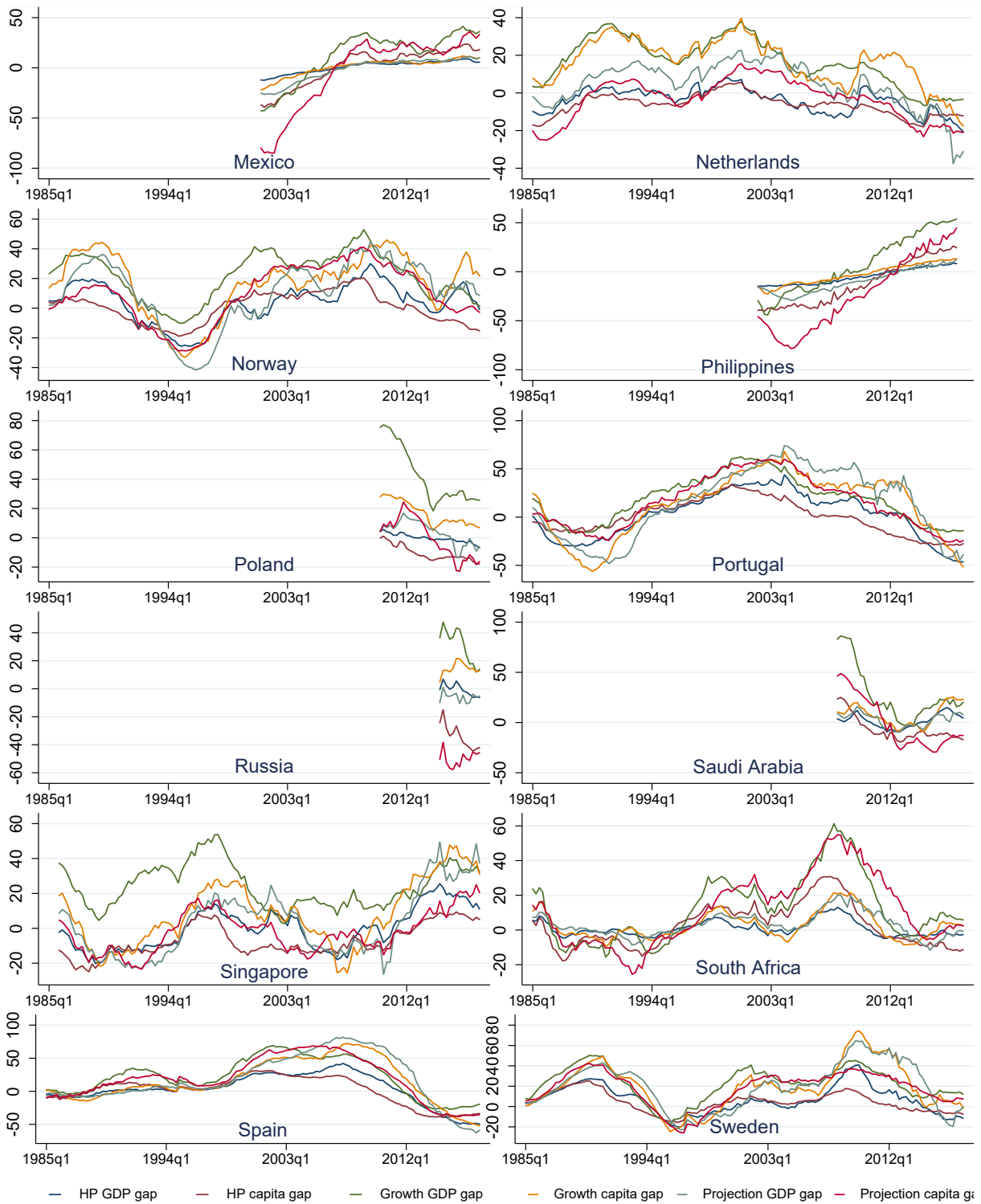
Graph OA3.1: Graphs of credit gaps by economy



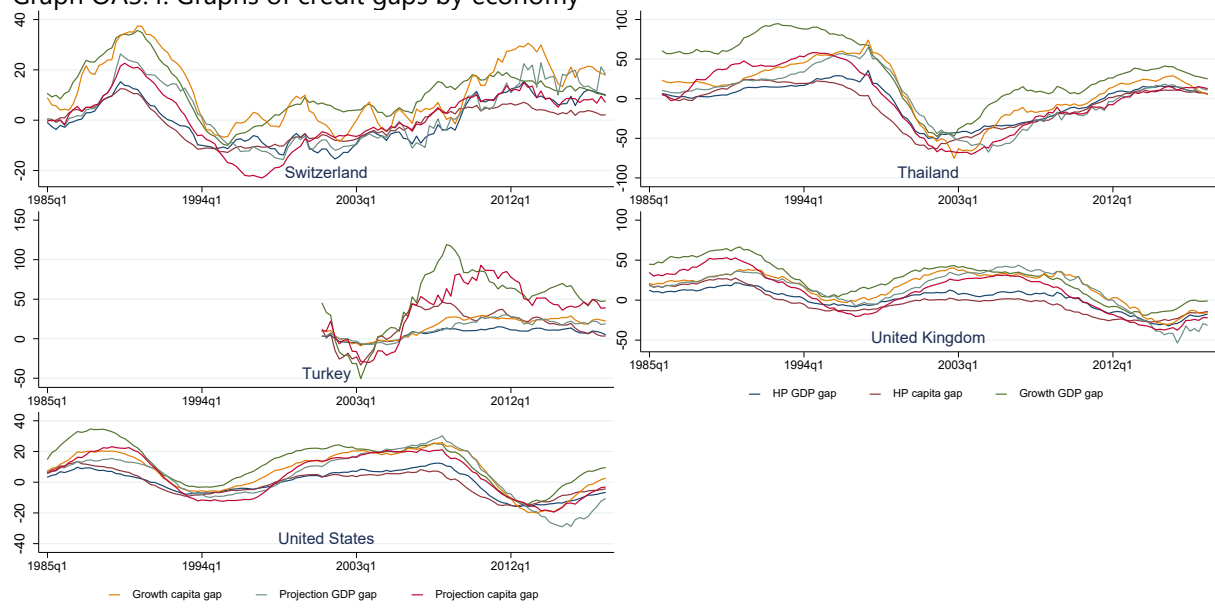
Graph OA3.2: Graphs of credit gaps by economy



Graph OA3.3: Graphs of credit gaps by economy

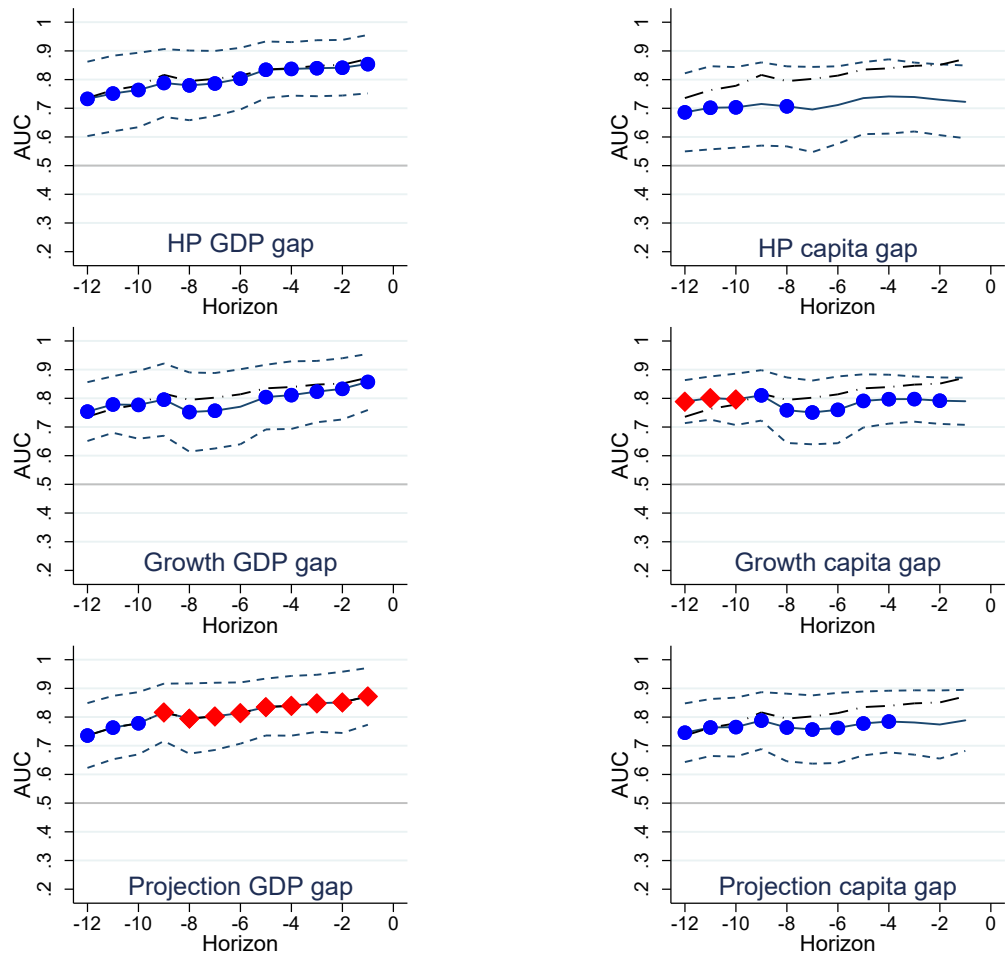


Graph OA3.4: Graphs of credit gaps by economy



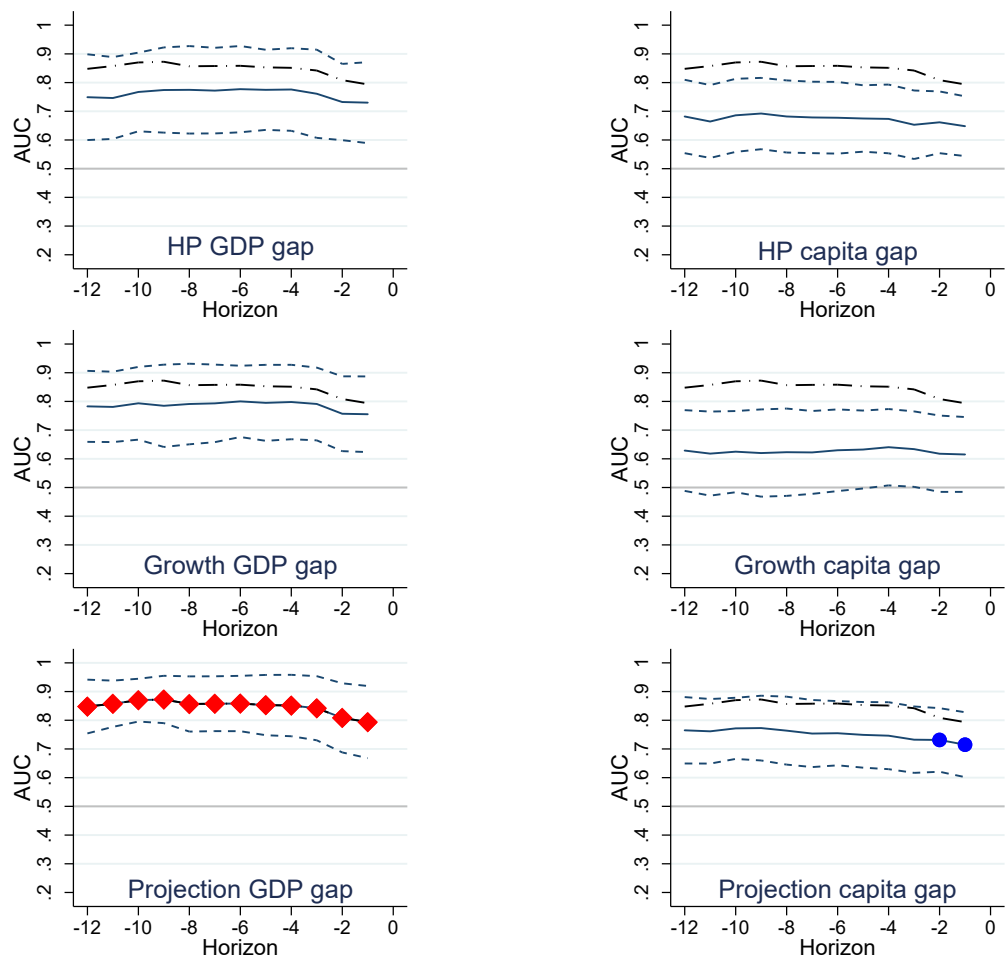
Note: Gaps are only used once there are 15 years of credit-to-GDP ratios to reliably estimate the trend. Hence, samples are very short for some EMEs.

Graph OA4.1: AUCs for different measures of the credit gap, 1985q1-2000q4 (full version of upper panel of Graph 4 from the paper)



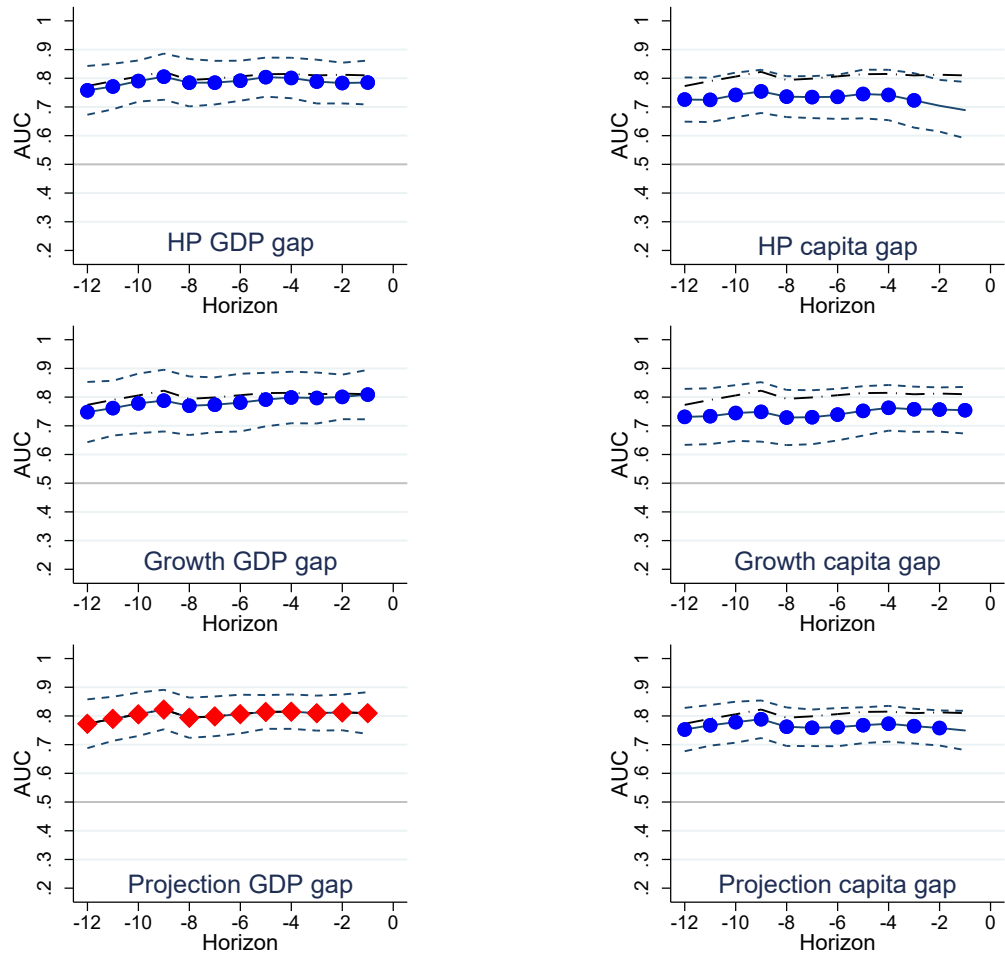
Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA4.2: AUCs for different measures of the credit gap, 2001q1-2017q3 (full version of lower panel of Graph 4 from the paper)



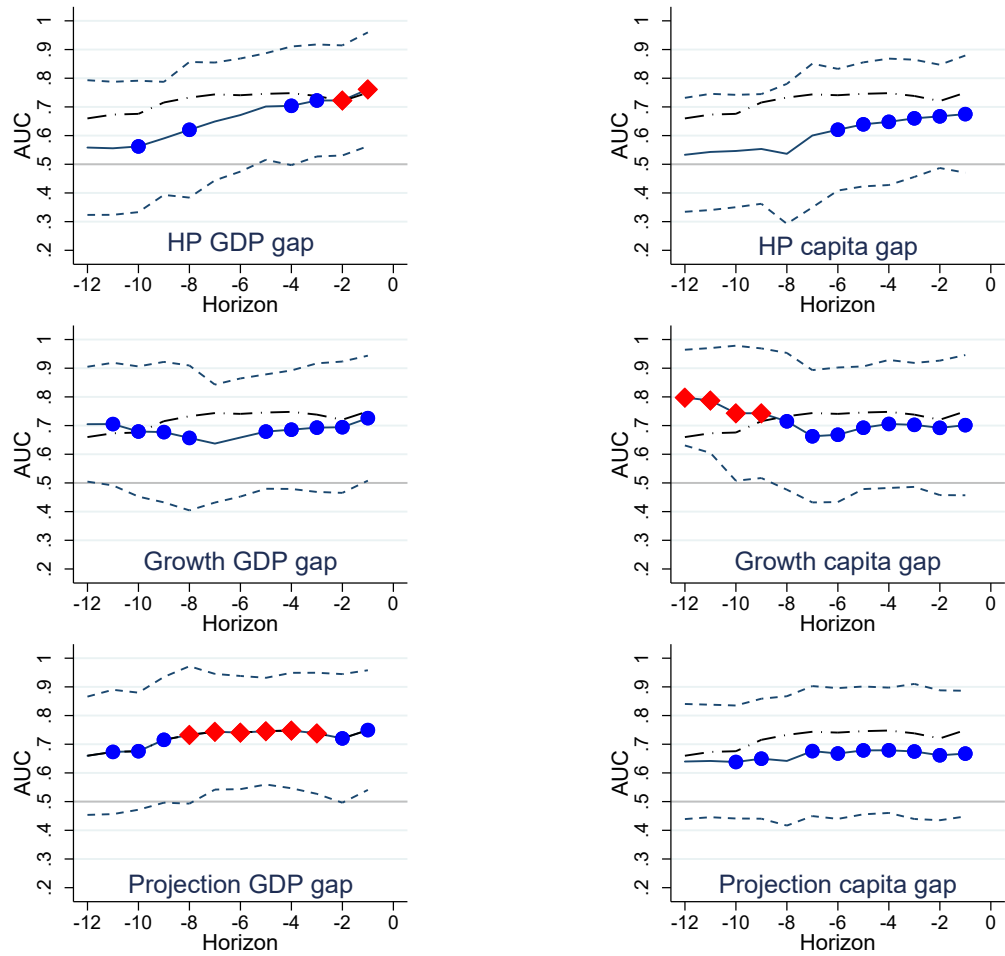
Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA5.1: AUCs for different measures of the credit gap, advanced economies (full version of the upper panel of Graph 5 from the paper)



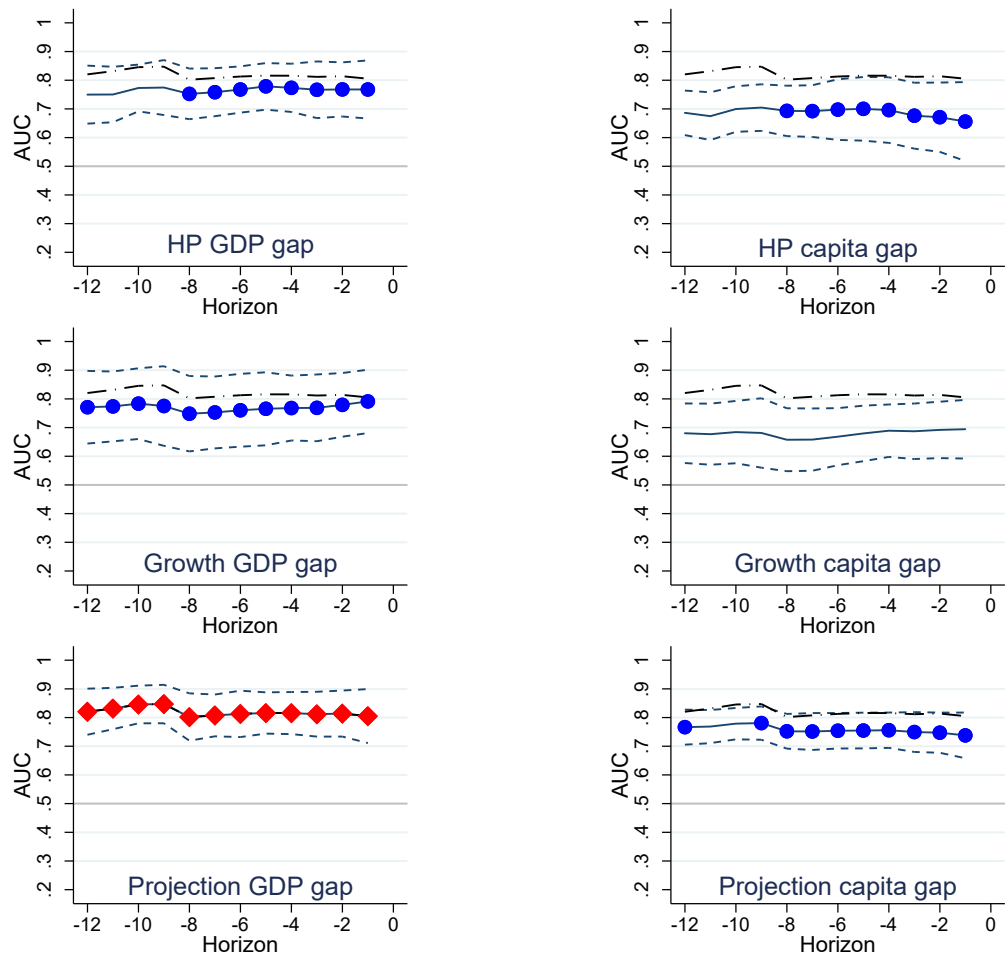
Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA5.2: AUCs for different measures of the credit gap, emerging economies (full version of the lower panel of Graph 5 from the paper)



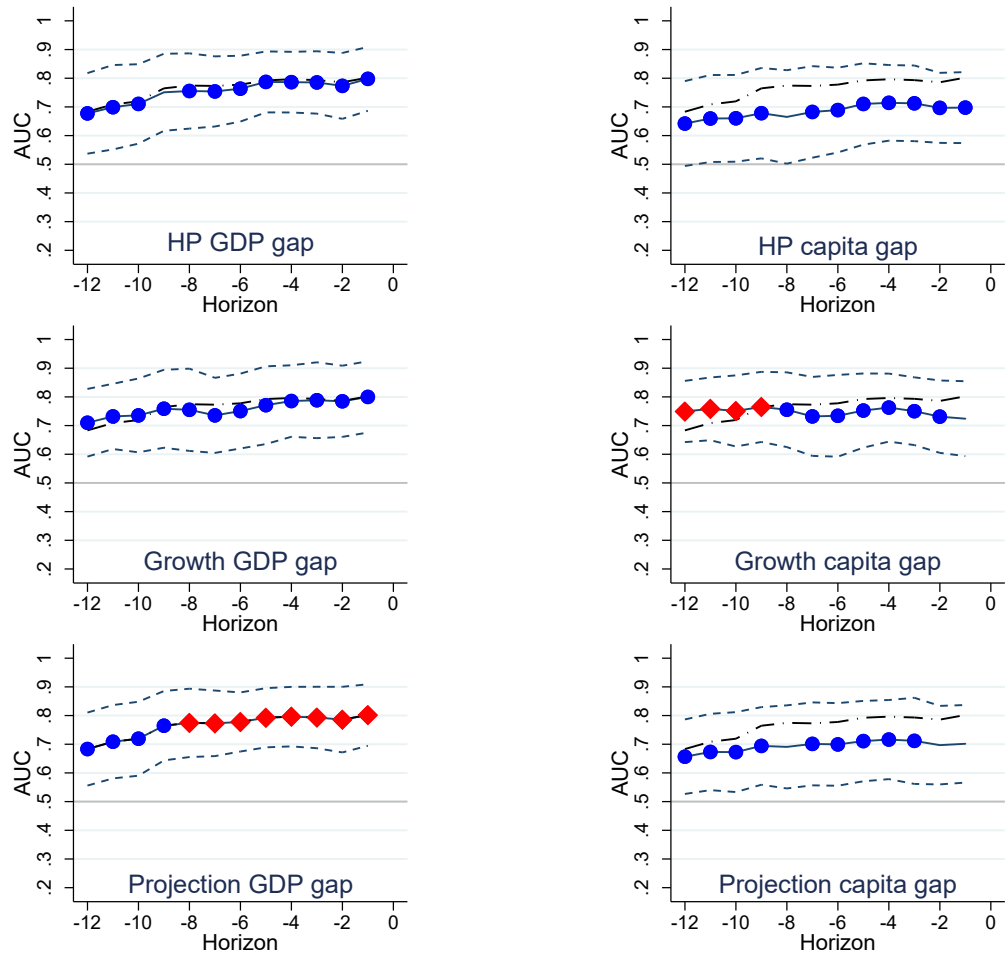
Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA6.1: AUCs for different measures of the credit gap, economies with crises in GFC (full version of the upper panel of Graph 6 from the paper)



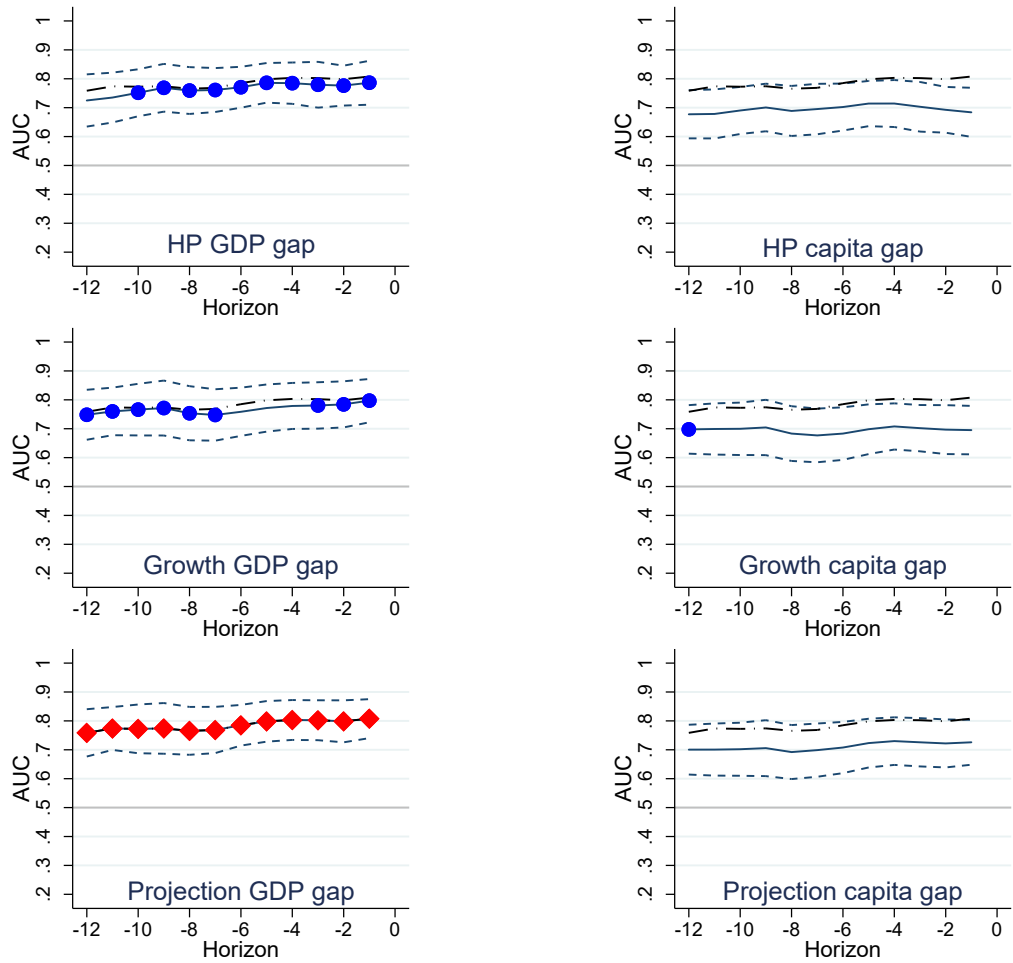
Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA6.2: AUCs for different measures of the credit gap, economies without crises in GFC (full version of the lower panel of Graph 6 from the paper)



Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Graph OA7: AUCs for different measures of the credit gap, Projection GDP gap based on lags 20-23 (full version of Graph 7 from the paper)



Note: AUCs for different forecast horizons. A dot-dash line indicates the results for the projection GDP graph, for ease of comparison. Horizon: quarters before crises. Solid line: point estimates; dashed lines: 95% confidence intervals. Red diamond: highest AUC across the six specifications at that given forecast horizon. Blue dot: AUC is not statistically different from the highest AUC at this horizon at 95% confidence level, based on bootstrapped critical values using 1000 replications.

Annex tables

Table OA1: Cyclical properties of different gaps

	Booms				Cycles			
	Mean	Min	Max	Obs	Mean	Min	Max	Obs
HP and growth gaps								
HP GDP gap	9.2	2	43	211	16.7	5	51	192
HP capita gap	8.6	2	43	208	16.4	5	60	193
Growth GDP gap	9.0	2	42	219	16.2	5	47	201
Growth capita gap	8.7	2	33	204	17.6	5	58	186
Projections gaps (preferred specification in bold)								
Panel, GDP, lag 20	9.1	2	42	211	16.6	5	52	196
Panel, GDP, lags 20-21	8.0	2	27	236	15.2	5	53	219
Panel, GDP, lags 20-23	7.8	2	37	249	14.8	5	50	230
Panel, GDP, lag 24	9.3	2	43	206	17.1	5	64	189
Panel, GDP, lags 24-25	8.5	2	43	224	16.4	5	53	207
Panel, GDP, lags 24-27	7.9	2	43	252	14.9	5	52	233
Panel, GDP, lag 28	8.9	2	44	217	16.3	5	60	199
Panel, GDP, lags 28-29	8.7	2	44	227	16.2	5	60	208
Panel, GDP, lags 28-31	8.4	2	49	236	15.4	5	60	216
Panel, GDP, lag 32	10.1	2	59	196	17.2	5	73	178
Panel, GDP, lags 32-33	9.2	2	59	209	17.0	5	65	193
Panel, GDP, lags 32-35	8.8	2	49	223	16.1	5	81	207
Panel, GDP, lag 36	9.9	2	59	204	17.1	5	82	185
Panel, GDP, lags 36-37	9.7	2	59	207	16.9	5	83	187
Panel, GDP, lags 36-39	9.5	2	60	213	16.7	5	74	196
Panel, Capita, lag 20	8.9	2	38	203	17.5	5	58	186
Panel, Capita, lags 20-21	8.9	2	41	205	17.1	5	61	185
Panel, Capita, lags 20-23	8.5	2	38	222	16.7	5	55	201
Panel, Capita, lag 24	8.4	2	42	209	16.8	5	57	190
Panel, Capita, lags 24-25	8.9	2	42	203	17.3	5	56	182
Panel, Capita, lags 24-27	8.3	2	42	226	16.1	5	53	206
Panel, Capita, lag 28	8.9	2	59	205	17.7	5	67	186
Panel, Capita, lags 28-29	9.5	2	59	199	18.5	5	68	180
Panel, Capita, lags 28-31	8.7	2	55	221	16.8	5	62	201
Panel, Capita, lag 32	10.0	2	52	182	18.6	5	68	162
Panel, Capita, lags 32-33	9.7	2	40	193	18.0	5	68	174
Panel, Capita, lags 32-35	9.0	2	46	203	17.4	5	78	184
Panel, Capita, lag 36	10.1	2	55	183	18.5	5	77	165
Panel, Capita, lags 36-37	9.9	2	55	193	17.5	5	68	177
Panel, Capita, lags 36-39	10.2	2	55	190	18.5	5	73	174

Table OA1: Cyclical properties of different gaps (continued)

	Booms				Cycles			
	Mean	Min	Max	Obs	Mean	Min	Max	Obs
Separate, GDP, lag 20	8.3	2	38	228	15.6	5	61	212
Separate, GDP, lags 20-21	7.8	2	33	245	15.0	5	53	225
Separate, GDP, lags 20-23	6.8	2	32	270	13.5	5	45	252
Separate, GDP, lag 24	9.1	2	49	207	17.6	5	61	189
Separate, GDP, lags 24-25	7.3	2	31	255	14.4	5	51	238
Separate, GDP, lags 24-27	7.2	2	28	269	14.0	5	50	250
Separate, GDP, lag 28	8.8	2	42	218	16.0	5	61	203
Separate, GDP, lags 28-29	7.8	2	41	245	15.0	5	58	229
Separate, GDP, lags 28-31	7.3	2	37	258	14.2	5	53	243
Separate, GDP, lag 32	8.9	2	50	215	16.4	5	62	198
Separate, GDP, lags 32-33	7.9	2	44	242	14.8	5	62	225
Separate, GDP, lags 32-35	7.4	2	36	264	13.9	5	51	247
Separate, GDP, lag 36	8.6	2	44	225	15.9	5	52	206
Separate, GDP, lags 36-37	7.9	2	42	253	14.4	5	46	236
Separate, GDP, lags 36-39	7.6	2	41	262	14.2	5	50	246
Separate, Capita, lag 20	9.0	2	59	203	16.7	5	60	187
Separate, Capita, lags 20-21	8.2	2	41	232	16.1	5	53	215
Separate, Capita, lags 20-23	7.7	2	35	247	15.5	5	44	227
Separate, Capita, lag 24	8.7	2	42	202	17.5	5	68	186
Separate, Capita, lags 24-25	8.3	2	41	221	16.7	5	59	205
Separate, Capita, lags 24-27	7.5	2	42	250	14.9	5	49	232
Separate, Capita, lag 28	9.0	2	47	198	16.9	5	60	185
Separate, Capita, lags 28-29	8.0	2	47	225	15.6	5	71	210
Separate, Capita, lags 28-31	7.5	2	46	245	14.7	5	52	230
Separate, Capita, lag 32	8.6	2	46	208	17.1	5	60	195
Separate, Capita, lags 32-33	8.0	2	53	222	15.9	5	59	209
Separate, Capita, lags 32-35	7.6	2	47	250	14.4	5	53	236
Separate, Capita, lag 36	8.9	2	54	209	16.5	5	60	197
Separate, Capita, lags 36-37	8.3	2	53	222	15.9	5	59	209
Separate, Capita, lags 36-39	7.9	2	51	239	15.1	5	58	226

Note: Cycle statistics are based on a turning point analysis following the methodology of Harding and Pagan (2002).

Table OA2.1: AUCs for different measures of the projection gap (underlying data for Graph OA1.1)

Horizon		1	2	3	4	5	6	7	8	9	10	11	12
Panel, GDP, lag 20	AUC	0.81	0.80	0.80	0.80	0.79	0.78	0.77	0.77	0.78	0.78	0.78	0.77
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.74	0.73	0.73	0.73	0.72	0.70	0.69	0.68	0.70	0.70	0.70	0.69
	Sig top	0.17	0.19	0.20	0.17	0.12	0.12	0.04	0.09	0.12	0.10	0.24	0.14
Panel, GDP, lags 20-21	AUC	0.81	0.80	0.80	0.80	0.80	0.78	0.77	0.77	0.78	0.77	0.78	0.76
	std	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.05	0.04	0.04	0.04
	AUC low	0.74	0.72	0.73	0.73	0.73	0.71	0.69	0.69	0.69	0.69	0.70	0.68
	Sig top	0.16	0.17	0.20	0.22	0.17	0.12	0.05	0.11	0.10	0.06	0.18	0.04
Panel, GDP, lags 20-23	AUC	0.81	0.80	0.80	0.80	0.80	0.79	0.77	0.77	0.77	0.77	0.77	0.76
	std	0.04	0.04	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.04	0.04
	AUC low	0.73	0.72	0.73	0.74	0.73	0.71	0.69	0.68	0.68	0.69	0.70	0.68
	Sig top	0.13	0.19	0.19	0.25	0.17	0.15	0.05	0.08	0.08	0.06	0.11	0.04
Panel, GDP, lag 24	AUC	0.82	0.80	0.80	0.80	0.80	0.79	0.79	0.79	0.81	0.80	0.79	0.78
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.75	0.73	0.73	0.73	0.72	0.72	0.72	0.71	0.74	0.73	0.72	0.70
	Sig top	0.21	0.21	0.14	0.15	0.17	0.27	0.11	0.24	0.39			
Panel, GDP, lags 24-25	AUC	0.82	0.81	0.80	0.80	0.79	0.79	0.79	0.79	0.81	0.80	0.79	0.78
	std	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.75	0.73	0.73	0.73	0.71	0.71	0.72	0.71	0.74	0.73	0.72	0.70
	Sig top	0.27	0.19	0.17	0.15	0.15	0.23	0.12	0.15	0.35	0.50	0.50	0.34
Panel, GDP, lags 24-27	AUC	0.82	0.81	0.80	0.80	0.79	0.79	0.79	0.79	0.81	0.79	0.79	0.78
	std	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.75	0.74	0.73	0.73	0.72	0.72	0.72	0.71	0.74	0.72	0.71	0.70
	Sig top	0.26	0.23	0.14	0.13	0.12	0.22	0.08	0.13	0.25	0.24	0.19	0.38
Panel, GDP, lag 28	AUC	0.81	0.81	0.81	0.81	0.81	0.81	0.80	0.80	0.82	0.80	0.79	0.77
	std	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	AUC low	0.74	0.74	0.74	0.75	0.75	0.74	0.74	0.73	0.75	0.73	0.71	0.69
	Sig top	0.18	0.28	0.20	0.25	0.38	0.79			0.45	0.94	0.60	0.31
Panel, GDP, lags 28-29	AUC	0.81	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.82	0.80	0.79	0.77
	std	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	AUC low	0.74	0.74	0.75	0.75	0.75	0.74	0.73	0.73	0.75	0.73	0.71	0.69
	Sig top	0.15	0.24	0.15	0.24	0.32	0.65	0.22	0.55		0.86	0.64	0.32
Panel, GDP, lags 28-31	AUC	0.81	0.81	0.81	0.81	0.81	0.80	0.80	0.79	0.81	0.79	0.78	0.76
	std	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04	0.04
	AUC low	0.74	0.74	0.74	0.75	0.75	0.74	0.73	0.73	0.75	0.72	0.70	0.69
	Sig top	0.14	0.21	0.17	0.22	0.23	0.46	0.14	0.34	0.33	0.55	0.31	0.20
Panel, GDP, lag 24	AUC	0.83	0.82	0.82	0.82	0.82	0.81	0.80	0.79	0.80	0.78	0.76	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
	AUC low	0.77	0.76	0.76	0.77	0.77	0.75	0.73	0.72	0.73	0.69	0.68	0.66
	Sig top	0.33	0.55					0.69	0.35	0.08	0.10	0.04	0.05
Panel, GDP, lags 24-25	AUC	0.83	0.82	0.82	0.82	0.82	0.81	0.80	0.79	0.80	0.78	0.76	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
	AUC low	0.77	0.76	0.76	0.76	0.76	0.75	0.74	0.72	0.73	0.70	0.68	0.66
	Sig top	0.30	0.46	0.89	0.71	0.57	0.67	0.63	0.34	0.05	0.10	0.05	0.08
Panel, GDP, lags 24-27	AUC	0.83	0.82	0.82	0.82	0.82	0.80	0.79	0.78	0.80	0.78	0.77	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04
	AUC low	0.77	0.76	0.76	0.76	0.76	0.74	0.72	0.72	0.73	0.70	0.69	0.67
	Sig top	0.21	0.41	0.53	0.18	0.31	0.20	0.24	0.14	0.06	0.15	0.11	0.13
Panel, GDP, lag 28	AUC	0.84	0.83	0.82	0.81	0.81	0.79	0.78	0.77	0.78	0.77	0.76	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
	AUC low	0.78	0.77	0.76	0.76	0.75	0.72	0.71	0.70	0.70	0.69	0.68	0.67
	Sig top			0.95	0.33	0.07	0.00	0.03	0.03	0.02	0.14	0.15	0.16
Panel, GDP, lags 28-29	AUC	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.77	0.78	0.77	0.76	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
	AUC low	0.78	0.77	0.76	0.75	0.74	0.72	0.71	0.70	0.71	0.69	0.69	0.67
	Sig top	0.33	0.61	0.78	0.28	0.03	0.00	0.04	0.05	0.03	0.19	0.15	0.16
Panel, GDP, lags 28-31	AUC	0.83	0.82	0.81	0.81	0.80	0.78	0.77	0.77	0.78	0.77	0.76	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
	AUC low	0.78	0.76	0.75	0.75	0.74	0.72	0.71	0.70	0.71	0.70	0.68	0.67
	Sig top	0.34	0.25	0.23	0.10	0.02	0.01	0.04	0.08	0.04	0.18	0.15	0.13

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC (across all cases in Tables OA2.1-2.4) at horizon *h*.

Table OA2.2: AUCs for different measures of the projection gap (underlying data for Graph OA1.2)

Horizon		1	2	3	4	5	6	7	8	9	10	11	12
Panel, capita, lag 20	AUC	0.72	0.72	0.73	0.73	0.72	0.71	0.70	0.69	0.71	0.70	0.71	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04
	AUC low	0.64	0.64	0.64	0.65	0.64	0.61	0.61	0.60	0.61	0.61	0.62	0.62
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Panel, capita, lags 20-21	AUC	0.72	0.72	0.73	0.73	0.72	0.71	0.70	0.69	0.71	0.70	0.70	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.04
	AUC low	0.65	0.64	0.65	0.65	0.64	0.62	0.61	0.60	0.61	0.61	0.62	0.62
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Panel, capita, lags 20-23	AUC	0.73	0.72	0.73	0.73	0.72	0.71	0.70	0.69	0.71	0.70	0.70	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04
	AUC low	0.65	0.64	0.64	0.65	0.64	0.62	0.60	0.60	0.61	0.61	0.61	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Panel, capita, lag 24	AUC	0.73	0.72	0.72	0.73	0.72	0.72	0.72	0.71	0.73	0.73	0.73	0.73
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.64	0.64	0.64	0.63	0.62	0.63	0.63	0.65	0.65	0.64	0.65
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
Panel, capita, lags 24-25	AUC	0.73	0.72	0.72	0.73	0.72	0.72	0.72	0.71	0.73	0.73	0.72	0.73
	std	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.63	0.63	0.64	0.63	0.63	0.63	0.63	0.65	0.65	0.65	0.65
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
Panel, capita, lags 24-27	AUC	0.73	0.72	0.72	0.72	0.72	0.72	0.72	0.71	0.73	0.73	0.72	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.63	0.63	0.64	0.63	0.63	0.63	0.62	0.65	0.65	0.64	0.65
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Panel, capita, lag 28	AUC	0.73	0.73	0.74	0.75	0.75	0.74	0.74	0.74	0.75	0.74	0.74	0.73
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.65	0.66	0.67	0.67	0.66	0.65	0.65	0.67	0.67	0.66	0.66
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02
Panel, capita, lags 28-29	AUC	0.73	0.73	0.74	0.75	0.74	0.74	0.74	0.74	0.75	0.74	0.74	0.73
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.65	0.66	0.67	0.67	0.66	0.66	0.66	0.67	0.66	0.66	0.65
	Sig top	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.03
Panel, capita, lags 28-31	AUC	0.73	0.73	0.74	0.74	0.74	0.74	0.73	0.73	0.75	0.74	0.73	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.65	0.65	0.66	0.67	0.66	0.65	0.65	0.67	0.66	0.65	0.64
	Sig top	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Panel, capita, lag 24	AUC	0.76	0.75	0.76	0.77	0.76	0.75	0.74	0.74	0.75	0.73	0.72	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.68	0.68	0.68	0.69	0.69	0.67	0.67	0.66	0.67	0.65	0.64	0.64
	Sig top	0.00	0.00	0.01	0.03	0.03	0.03	0.03	0.01	0.00	0.00	0.00	0.01
Panel, capita, lags 24-25	AUC	0.75	0.75	0.76	0.77	0.76	0.75	0.74	0.73	0.75	0.73	0.72	0.71
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.68	0.68	0.68	0.69	0.69	0.67	0.66	0.65	0.67	0.65	0.65	0.64
	Sig top	0.00	0.00	0.02	0.03	0.02	0.02	0.03	0.01	0.00	0.00	0.00	0.00
Panel, capita, lags 24-27	AUC	0.76	0.76	0.76	0.76	0.76	0.75	0.74	0.73	0.75	0.73	0.72	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.68	0.68	0.68	0.69	0.69	0.67	0.65	0.65	0.68	0.65	0.64	0.64
	Sig top	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.01
Panel, capita, lag 28	AUC	0.77	0.77	0.77	0.77	0.76	0.74	0.73	0.72	0.73	0.73	0.72	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.70	0.70	0.69	0.70	0.69	0.66	0.65	0.64	0.65	0.65	0.64	0.64
	Sig top	0.01	0.01	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.02
Panel, capita, lags 28-29	AUC	0.77	0.77	0.77	0.77	0.76	0.74	0.73	0.72	0.73	0.73	0.73	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.69	0.69	0.69	0.69	0.69	0.66	0.66	0.64	0.65	0.65	0.65	0.64
	Sig top	0.01	0.01	0.04	0.03	0.02	0.01	0.01	0.00	0.00	0.00	0.01	0.02
Panel, capita, lags 28-31	AUC	0.77	0.77	0.76	0.77	0.76	0.74	0.73	0.72	0.73	0.73	0.72	0.72
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.70	0.70	0.69	0.69	0.69	0.67	0.65	0.65	0.65	0.66	0.65	0.64
	Sig top	0.01	0.01	0.03	0.02	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC (across all cases in Tables OA2.1-2.4) at horizon *h*.

Table OA2.3: AUCs for different measures of the projection gap (underlying data for Graph OA1.3)

Horizon		1	2	3	4	5	6	7	8	9	10	11	12
Separate, GDP, lag 20	AUC	0.63	0.64	0.65	0.65	0.66	0.66	0.65	0.66	0.68	0.68	0.67	0.66
	std	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.05
	AUC low	0.52	0.54	0.56	0.57	0.59	0.58	0.57	0.57	0.59	0.59	0.59	0.56
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, GDP, lags 20-21	AUC	0.62	0.63	0.64	0.65	0.66	0.65	0.65	0.65	0.67	0.67	0.66	0.65
	std	0.06	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.05
	AUC low	0.51	0.53	0.55	0.56	0.58	0.58	0.57	0.56	0.59	0.58	0.58	0.55
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, GDP, lags 20-23	AUC	0.61	0.63	0.64	0.65	0.65	0.65	0.65	0.64	0.66	0.66	0.65	0.64
	std	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
	AUC low	0.50	0.53	0.55	0.56	0.57	0.58	0.57	0.55	0.57	0.57	0.56	0.54
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, GDP, lag 24	AUC	0.66	0.65	0.64	0.66	0.67	0.68	0.68	0.68	0.70	0.68	0.68	0.68
	std	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
	AUC low	0.57	0.55	0.55	0.57	0.58	0.59	0.60	0.59	0.61	0.58	0.59	0.57
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Separate, GDP, lags 24-25	AUC	0.66	0.64	0.64	0.65	0.66	0.67	0.68	0.68	0.68	0.67	0.68	0.66
	std	0.05	0.05	0.05	0.05	0.04	0.04	0.05	0.04	0.05	0.05	0.05	0.05
	AUC low	0.56	0.55	0.55	0.56	0.58	0.59	0.59	0.59	0.59	0.57	0.57	0.56
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Separate, GDP, lags 24-27	AUC	0.65	0.64	0.64	0.64	0.65	0.66	0.66	0.67	0.67	0.66	0.66	0.65
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.54	0.54	0.54	0.55	0.56	0.57	0.57	0.57	0.58	0.56	0.56	0.55
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00
Separate, GDP, lag 28	AUC	0.67	0.67	0.67	0.68	0.68	0.68	0.69	0.70	0.73	0.72	0.72	0.71
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.05
	AUC low	0.57	0.58	0.57	0.57	0.58	0.58	0.59	0.60	0.63	0.63	0.63	0.62
	Sig top	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01
Separate, GDP, lags 28-29	AUC	0.66	0.67	0.66	0.68	0.67	0.67	0.68	0.69	0.72	0.72	0.70	0.70
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05
	AUC low	0.56	0.57	0.56	0.58	0.58	0.57	0.58	0.59	0.62	0.63	0.61	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.00
Separate, GDP, lags 28-31	AUC	0.66	0.67	0.66	0.67	0.67	0.66	0.66	0.68	0.71	0.70	0.68	0.70
	std	0.05	0.05	0.06	0.05	0.06	0.06	0.05	0.05	0.05	0.04	0.05	0.05
	AUC low	0.56	0.57	0.55	0.57	0.56	0.55	0.55	0.58	0.61	0.61	0.59	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Separate, GDP, lag 24	AUC	0.68	0.68	0.68	0.69	0.72	0.72	0.73	0.74	0.74	0.72	0.71	0.70
	std	0.05	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.05
	AUC low	0.58	0.57	0.57	0.59	0.62	0.64	0.65	0.66	0.66	0.62	0.62	0.60
	Sig top	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Separate, GDP, lags 24-25	AUC	0.68	0.67	0.68	0.68	0.71	0.72	0.71	0.73	0.73	0.72	0.70	0.70
	std	0.06	0.06	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.05
	AUC low	0.57	0.56	0.57	0.57	0.60	0.63	0.63	0.65	0.65	0.63	0.61	0.61
	Sig top	0.00	0.00	0.01	0.00	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Separate, GDP, lags 24-27	AUC	0.67	0.67	0.66	0.67	0.69	0.69	0.69	0.73	0.73	0.72	0.71	0.70
	std	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.05
	AUC low	0.56	0.55	0.54	0.57	0.59	0.60	0.61	0.65	0.65	0.63	0.61	0.60
	Sig top	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Separate, GDP, lag 28	AUC	0.72	0.72	0.73	0.74	0.74	0.72	0.72	0.72	0.73	0.73	0.72	0.71
	std	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.62	0.63	0.64	0.66	0.66	0.64	0.63	0.63	0.64	0.63	0.63	0.61
	Sig top	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.02	0.01	0.03	0.02	0.03
Separate, GDP, lags 28-29	AUC	0.71	0.72	0.71	0.74	0.72	0.72	0.71	0.72	0.72	0.73	0.71	0.71
	std	0.06	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.59	0.62	0.62	0.66	0.64	0.63	0.62	0.63	0.63	0.63	0.62	0.61
	Sig top	0.01	0.00	0.00	0.00	0.00	0.01	0.01	0.03	0.00	0.02	0.02	0.04
Separate, GDP, lags 28-31	AUC	0.70	0.70	0.68	0.72	0.72	0.71	0.70	0.72	0.72	0.72	0.71	0.71
	std	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.59	0.60	0.59	0.64	0.64	0.63	0.61	0.62	0.63	0.62	0.62	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.02	0.03

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC (across all cases in Tables OA2.1-2.4) at horizon *h*.

Table OA2.4: AUCs for different measures of the projection gap (underlying data for Graph OA1.4)

Horizon		1	2	3	4	5	6	7	8	9	10	11	12
Separate, capita, lag 20	AUC	0.45	0.45	0.47	0.49	0.50	0.49	0.50	0.50	0.52	0.52	0.52	0.52
	std	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.33	0.34	0.36	0.38	0.39	0.38	0.39	0.39	0.40	0.40	0.40	0.41
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 20-21	AUC	0.44	0.45	0.46	0.48	0.49	0.48	0.48	0.49	0.50	0.50	0.51	0.50
	std	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.31	0.33	0.34	0.37	0.38	0.37	0.37	0.38	0.39	0.39	0.39	0.39
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 20-23	AUC	0.43	0.44	0.45	0.47	0.47	0.47	0.48	0.49	0.49	0.49	0.50	0.49
	std	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05
	AUC low	0.30	0.32	0.33	0.35	0.35	0.35	0.36	0.37	0.37	0.38	0.39	0.38
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lag 24	AUC	0.46	0.46	0.48	0.50	0.51	0.52	0.53	0.53	0.54	0.54	0.54	0.56
	std	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.35	0.34	0.35	0.38	0.39	0.39	0.41	0.42	0.42	0.42	0.42	0.44
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 24-25	AUC	0.45	0.44	0.46	0.49	0.50	0.50	0.52	0.52	0.53	0.53	0.53	0.54
	std	0.06	0.06	0.07	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.33	0.32	0.33	0.36	0.37	0.38	0.40	0.40	0.41	0.41	0.41	0.42
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 24-27	AUC	0.42	0.42	0.45	0.48	0.48	0.49	0.51	0.51	0.52	0.53	0.51	0.53
	std	0.06	0.06	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.30	0.30	0.32	0.35	0.36	0.37	0.39	0.39	0.40	0.41	0.40	0.41
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lag 28	AUC	0.47	0.48	0.51	0.53	0.53	0.54	0.55	0.56	0.59	0.58	0.58	0.59
	std	0.07	0.07	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.34	0.35	0.38	0.40	0.41	0.41	0.42	0.44	0.46	0.46	0.46	0.48
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 28-29	AUC	0.46	0.47	0.50	0.52	0.53	0.53	0.54	0.56	0.57	0.58	0.57	0.58
	std	0.06	0.07	0.07	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.33	0.35	0.37	0.40	0.40	0.40	0.42	0.43	0.45	0.46	0.45	0.47
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 28-31	AUC	0.45	0.46	0.50	0.52	0.52	0.53	0.52	0.54	0.57	0.57	0.55	0.57
	std	0.07	0.06	0.07	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.06
	AUC low	0.32	0.34	0.37	0.39	0.39	0.40	0.41	0.42	0.45	0.45	0.43	0.46
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lag 24	AUC	0.50	0.50	0.53	0.56	0.57	0.58	0.58	0.60	0.61	0.60	0.59	0.60
	std	0.07	0.07	0.06	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.06	0.05
	AUC low	0.37	0.37	0.40	0.42	0.45	0.45	0.46	0.47	0.49	0.50	0.47	0.50
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 24-25	AUC	0.49	0.50	0.52	0.56	0.56	0.57	0.57	0.59	0.60	0.60	0.58	0.60
	std	0.07	0.07	0.07	0.07	0.06	0.06	0.07	0.06	0.06	0.06	0.06	0.05
	AUC low	0.35	0.37	0.39	0.42	0.44	0.45	0.44	0.47	0.48	0.49	0.47	0.50
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 24-27	AUC	0.49	0.50	0.50	0.54	0.56	0.56	0.55	0.57	0.59	0.59	0.58	0.60
	std	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05
	AUC low	0.36	0.37	0.38	0.41	0.43	0.44	0.42	0.45	0.47	0.47	0.47	0.50
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lag 28	AUC	0.53	0.54	0.55	0.59	0.60	0.59	0.59	0.60	0.61	0.61	0.60	0.62
	std	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
	AUC low	0.40	0.40	0.42	0.46	0.48	0.47	0.46	0.49	0.50	0.51	0.51	0.52
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 28-29	AUC	0.52	0.53	0.55	0.58	0.58	0.58	0.58	0.60	0.61	0.61	0.60	0.62
	std	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
	AUC low	0.39	0.40	0.42	0.45	0.45	0.46	0.46	0.48	0.50	0.51	0.50	0.52
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Separate, capita, lags 28-31	AUC	0.51	0.52	0.51	0.55	0.56	0.56	0.56	0.59	0.61	0.60	0.59	0.61
	std	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
	AUC low	0.38	0.39	0.38	0.42	0.44	0.44	0.45	0.48	0.50	0.50	0.50	0.51
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC (across all cases in Tables OA2.1-2.4) at horizon *h*.

Table OA3: AUCs for different measures of the credit gap (underlying data for Graph 3)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.79	0.78	0.78	0.78	0.79	0.77	0.76	0.76	0.77	0.75	0.73	0.72
	std	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05
	AUC low	0.71	0.71	0.70	0.71	0.72	0.70	0.69	0.68	0.69	0.67	0.65	0.63
	Sig top	0.21	0.10	0.12	0.10	0.13	0.06	0.06	0.08	0.05	0.07	0.06	0.07
HP capita gap	AUC	0.68	0.69	0.70	0.71	0.71	0.70	0.70	0.69	0.70	0.69	0.68	0.68
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.60	0.61	0.62	0.63	0.64	0.62	0.61	0.60	0.62	0.61	0.59	0.59
	Sig top	0.00	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Growth GDP gap	AUC	0.80	0.78	0.78	0.78	0.77	0.76	0.75	0.75	0.77	0.77	0.76	0.75
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04
	AUC low	0.72	0.70	0.70	0.70	0.69	0.68	0.66	0.66	0.68	0.68	0.68	0.66
	Sig top	0.25	0.09	0.05	0.02	0.02	0.01	0.01	0.03	0.08	0.19	0.25	0.33
Growth capita gap	AUC	0.70	0.70	0.70	0.71	0.70	0.68	0.68	0.68	0.70	0.70	0.70	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04
	AUC low	0.61	0.61	0.62	0.63	0.61	0.59	0.58	0.59	0.61	0.61	0.61	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.07
Projection GDP gap	AUC	0.81	0.81	0.81	0.81	0.81	0.80	0.80	0.80	0.82	0.80	0.79	0.77
	std	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	AUC low	0.74	0.74	0.74	0.75	0.75	0.74	0.73	0.73	0.75	0.73	0.71	0.69
	Sig top												
Projection capita gap	AUC	0.73	0.73	0.74	0.75	0.74	0.74	0.74	0.74	0.75	0.74	0.74	0.73
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.65	0.65	0.66	0.67	0.66	0.66	0.66	0.66	0.67	0.67	0.66	0.65
	Sig top	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.02	0.05

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA4.1: AUCs for different measures of the credit gap, 1985q1-2000q4 (underlying data for upper panel of Graph 4 and Graph OA4.1)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.85	0.84	0.84	0.84	0.83	0.80	0.79	0.78	0.79	0.76	0.75	0.73
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.07
	AUC low	0.75	0.74	0.74	0.74	0.74	0.70	0.67	0.66	0.67	0.63	0.62	0.60
	Sig top	0.54	0.72	0.70	0.92	0.97	0.64	0.58	0.63	0.34	0.55	0.41	0.38
HP capita gap	AUC	0.72	0.73	0.74	0.74	0.74	0.71	0.70	0.71	0.71	0.70	0.70	0.69
	std	0.06	0.06	0.06	0.07	0.06	0.07	0.08	0.07	0.07	0.07	0.07	0.07
	AUC low	0.60	0.61	0.62	0.61	0.61	0.58	0.55	0.57	0.57	0.56	0.56	0.55
	Sig top	0.01	0.02	0.01	0.05	0.03	0.04	0.03	0.08	0.02	0.10	0.13	0.13
Growth GDP gap	AUC	0.86	0.83	0.82	0.81	0.80	0.77	0.76	0.75	0.80	0.78	0.78	0.75
	std	0.05	0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.06	0.06	0.05	0.05
	AUC low	0.76	0.73	0.72	0.69	0.69	0.64	0.63	0.61	0.67	0.66	0.68	0.65
	Sig top	0.39	0.37	0.26	0.19	0.13	0.05	0.07	0.07	0.37	0.65	0.60	0.47
Growth capita gap	AUC	0.79	0.79	0.80	0.80	0.79	0.76	0.75	0.76	0.81	0.80	0.80	0.79
	std	0.04	0.04	0.04	0.04	0.05	0.06	0.06	0.06	0.04	0.05	0.04	0.04
	AUC low	0.71	0.71	0.72	0.71	0.70	0.64	0.64	0.64	0.72	0.71	0.73	0.71
	Sig top	0.03	0.12	0.17	0.16	0.16	0.06	0.07	0.23	0.87			
Projection GDP gap	AUC	0.87	0.85	0.85	0.84	0.83	0.81	0.80	0.79	0.82	0.78	0.76	0.74
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.05	0.06	0.06	0.06
	AUC low	0.77	0.74	0.75	0.74	0.74	0.71	0.69	0.67	0.72	0.67	0.65	0.62
	Sig top									0.66	0.43	0.28	
Projection capita gap	AUC	0.79	0.77	0.78	0.78	0.78	0.76	0.76	0.76	0.79	0.77	0.76	0.75
	std	0.05	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.05
	AUC low	0.68	0.66	0.67	0.68	0.67	0.64	0.64	0.65	0.69	0.66	0.66	0.64
	Sig top	0.01	0.01	0.03	0.09	0.08	0.14	0.15	0.34	0.36	0.44	0.37	0.33

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA4.2: AUCs for different measures of the credit gap, 2001q1-2017q3 (underlying data for lower panel of Graph 4 and Graph OA4.2)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.73	0.73	0.76	0.78	0.77	0.78	0.77	0.77	0.77	0.77	0.75	0.75
	std	0.07	0.07	0.08	0.07	0.07	0.08	0.08	0.08	0.08	0.07	0.07	0.08
	AUC low	0.59	0.60	0.61	0.63	0.64	0.63	0.62	0.62	0.63	0.63	0.60	0.60
	Sig top	0.02	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
HP capita gap	AUC	0.65	0.66	0.65	0.67	0.67	0.68	0.68	0.68	0.69	0.69	0.66	0.68
	std	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07
	AUC low	0.54	0.55	0.53	0.55	0.56	0.55	0.55	0.56	0.57	0.56	0.54	0.55
	Sig top	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth GDP gap	AUC	0.76	0.76	0.79	0.80	0.80	0.80	0.79	0.79	0.78	0.79	0.78	0.78
	std	0.07	0.07	0.06	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.06	0.06
	AUC low	0.62	0.63	0.66	0.67	0.66	0.68	0.66	0.65	0.64	0.67	0.66	0.66
	Sig top	0.03	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.00	0.00	0.00
Growth capita gap	AUC	0.62	0.62	0.63	0.64	0.63	0.63	0.62	0.62	0.62	0.62	0.62	0.63
	std	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.07	0.07	0.07
	AUC low	0.48	0.48	0.50	0.51	0.50	0.49	0.48	0.47	0.47	0.48	0.47	0.49
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Projection GDP gap	AUC	0.79	0.81	0.84	0.85	0.85	0.86	0.86	0.86	0.87	0.87	0.86	0.85
	std	0.06	0.06	0.06	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05
	AUC low	0.67	0.69	0.73	0.74	0.75	0.76	0.76	0.76	0.79	0.80	0.78	0.75
	Sig top												
Projection capita gap	AUC	0.71	0.73	0.73	0.75	0.75	0.75	0.75	0.76	0.77	0.77	0.76	0.77
	std	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.06	0.06
	AUC low	0.60	0.62	0.62	0.63	0.63	0.64	0.64	0.65	0.66	0.67	0.65	0.65
	Sig top	0.06	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA5.1: AUCs for different measures of the credit gap, advanced economies (underlying data for upper panel of Graph 5 and Graph OA5.1)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.79	0.78	0.79	0.80	0.80	0.79	0.78	0.78	0.81	0.79	0.77	0.76
	std	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.71	0.71	0.71	0.73	0.74	0.72	0.71	0.70	0.73	0.72	0.69	0.67
	Sig top	0.34	0.29	0.44	0.57	0.65	0.50	0.55	0.72	0.56	0.57	0.54	0.60
HP capita gap	AUC	0.69	0.70	0.72	0.74	0.75	0.74	0.73	0.74	0.75	0.74	0.72	0.73
	std	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.59	0.61	0.63	0.65	0.66	0.66	0.66	0.66	0.68	0.66	0.65	0.65
	Sig top	0.04	0.05	0.11	0.17	0.18	0.15	0.14	0.19	0.11	0.15	0.17	0.28
Growth GDP gap	AUC	0.81	0.80	0.80	0.80	0.79	0.78	0.77	0.77	0.79	0.78	0.76	0.75
	std	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.72	0.72	0.71	0.71	0.70	0.68	0.68	0.67	0.68	0.67	0.67	0.64
	Sig top	0.93	0.48	0.51	0.44	0.32	0.27	0.29	0.35	0.26	0.32	0.30	0.28
Growth capita gap	AUC	0.75	0.76	0.76	0.76	0.75	0.74	0.73	0.73	0.75	0.74	0.73	0.73
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	AUC low	0.67	0.68	0.68	0.68	0.67	0.65	0.64	0.63	0.64	0.65	0.64	0.63
	Sig top	0.09	0.10	0.13	0.12	0.06	0.06	0.07	0.07	0.10	0.17	0.20	0.33
Projection GDP gap	AUC	0.81	0.81	0.81	0.82	0.81	0.81	0.80	0.79	0.82	0.81	0.79	0.77
	std	0.04	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.74	0.75	0.75	0.76	0.76	0.74	0.73	0.72	0.75	0.73	0.71	0.69
	Sig top												
Projection capita gap	AUC	0.75	0.76	0.76	0.77	0.77	0.76	0.76	0.76	0.79	0.78	0.77	0.75
	std	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04
	AUC low	0.68	0.70	0.70	0.71	0.71	0.69	0.70	0.70	0.72	0.71	0.70	0.68
	Sig top	0.04	0.07	0.14	0.16	0.13	0.13	0.18	0.26	0.21	0.30	0.37	0.39

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA5.2: AUCs for different measures of the credit gap, emerging market economies (underlying data for lower panel of Graph 5 and Graph OA5.2)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.76	0.72	0.72	0.70	0.70	0.67	0.65	0.62	0.59	0.56	0.56	0.56
	std	0.10	0.10	0.10	0.11	0.09	0.10	0.10	0.12	0.10	0.12	0.12	0.12
	AUC low	0.56	0.53	0.53	0.50	0.52	0.47	0.44	0.38	0.39	0.33	0.32	0.32
	Sig top			0.40	0.12	0.04	0.04	0.04	0.06	0.04	0.07	0.01	0.01
HP capita gap	AUC	0.67	0.67	0.66	0.65	0.64	0.62	0.60	0.54	0.55	0.55	0.54	0.53
	std	0.10	0.09	0.10	0.11	0.11	0.11	0.13	0.12	0.10	0.10	0.10	0.10
	AUC low	0.47	0.49	0.46	0.43	0.42	0.41	0.35	0.29	0.36	0.35	0.34	0.33
	Sig top	0.33	0.46	0.29	0.10	0.10	0.05	0.03	0.00	0.01	0.01	0.00	0.00
Growth GDP gap	AUC	0.73	0.69	0.69	0.69	0.68	0.66	0.64	0.66	0.68	0.68	0.71	0.70
	std	0.11	0.12	0.11	0.11	0.10	0.11	0.10	0.13	0.12	0.12	0.11	0.10
	AUC low	0.51	0.47	0.47	0.48	0.48	0.45	0.43	0.40	0.43	0.45	0.49	0.50
	Sig top	0.28	0.38	0.10	0.06	0.05	0.01	0.01	0.05	0.13	0.14	0.06	0.04
Growth capita gap	AUC	0.70	0.69	0.70	0.71	0.69	0.67	0.66	0.71	0.74	0.74	0.79	0.80
	std	0.12	0.12	0.11	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.09	0.09
	AUC low	0.46	0.46	0.49	0.48	0.48	0.43	0.43	0.48	0.52	0.51	0.60	0.63
	Sig top	0.30	0.62	0.56	0.45	0.39	0.18	0.16	0.63				
Projection GDP gap	AUC	0.75	0.72	0.74	0.75	0.75	0.74	0.74	0.73	0.72	0.68	0.67	0.66
	std	0.11	0.11	0.11	0.10	0.09	0.10	0.10	0.12	0.11	0.10	0.11	0.11
	AUC low	0.54	0.50	0.53	0.55	0.56	0.54	0.54	0.49	0.50	0.47	0.46	0.45
	Sig top	0.72	0.94							0.48	0.31	0.07	0.04
Projection capita gap	AUC	0.67	0.66	0.67	0.68	0.68	0.67	0.68	0.64	0.65	0.64	0.64	0.64
	std	0.11	0.12	0.12	0.11	0.11	0.12	0.12	0.12	0.11	0.10	0.10	0.10
	AUC low	0.45	0.44	0.44	0.46	0.46	0.44	0.45	0.42	0.44	0.44	0.45	0.44
	Sig top	0.19	0.36	0.26	0.18	0.21	0.14	0.14	0.05	0.09	0.10	0.02	0.02

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA6.1: AUCs for different measures of the credit gap, economies with crises in GFC (underlying data for upper panel of Graph 6 and Graph OA6.1)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.77	0.77	0.77	0.77	0.78	0.77	0.76	0.75	0.77	0.77	0.75	0.75
	std	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.05	0.04	0.05	0.05
	AUC low	0.67	0.67	0.67	0.69	0.70	0.69	0.67	0.66	0.68	0.69	0.65	0.65
	Sig top	0.18	0.14	0.15	0.15	0.15	0.07	0.06	0.07	0.02	0.01	0.01	0.02
HP capita gap	AUC	0.66	0.67	0.68	0.70	0.70	0.70	0.69	0.69	0.70	0.70	0.67	0.69
	std	0.07	0.06	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.04
	AUC low	0.52	0.55	0.56	0.58	0.59	0.59	0.60	0.61	0.62	0.62	0.59	0.61
	Sig top	0.09	0.06	0.06	0.10	0.09	0.08	0.05	0.06	0.00	0.00	0.00	0.00
Growth GDP gap	AUC	0.79	0.78	0.77	0.77	0.77	0.76	0.75	0.75	0.78	0.78	0.77	0.77
	std	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.06	0.06	0.06
	AUC low	0.68	0.67	0.65	0.66	0.64	0.63	0.63	0.62	0.64	0.66	0.65	0.64
	Sig top	0.39	0.11	0.09	0.08	0.12	0.13	0.13	0.13	0.12	0.11	0.14	0.12
Growth capita gap	AUC	0.69	0.69	0.69	0.69	0.68	0.67	0.66	0.66	0.68	0.68	0.68	0.68
	std	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.05	0.05
	AUC low	0.59	0.59	0.59	0.60	0.58	0.57	0.55	0.55	0.56	0.58	0.57	0.58
	Sig top	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Projection GDP gap	AUC	0.81	0.81	0.81	0.82	0.82	0.81	0.81	0.80	0.85	0.85	0.83	0.82
	std	0.05	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.04	0.04
	AUC low	0.71	0.73	0.73	0.74	0.74	0.73	0.73	0.72	0.78	0.78	0.76	0.74
	Sig top												
Projection capita gap	AUC	0.74	0.75	0.75	0.76	0.75	0.75	0.75	0.75	0.78	0.78	0.77	0.77
	std	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	AUC low	0.66	0.68	0.68	0.69	0.69	0.69	0.69	0.69	0.72	0.72	0.71	0.71
	Sig top	0.18	0.14	0.18	0.18	0.16	0.15	0.17	0.20	0.07	0.05	0.05	0.09

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA6.2: AUCs for different measures of the credit gap, economies without crises in GFC (underlying data for lower panel of Graph 6 and Graph OA6.2)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.80	0.77	0.79	0.79	0.79	0.76	0.75	0.76	0.75	0.71	0.70	0.68
	std	0.06	0.06	0.06	0.05	0.05	0.06	0.06	0.07	0.07	0.07	0.08	0.07
	AUC low	0.69	0.66	0.68	0.68	0.68	0.65	0.63	0.62	0.62	0.57	0.55	0.54
	Sig top	0.90	0.63	0.70	0.61	0.80	0.57	0.53	0.64	0.03	0.13	0.20	0.34
HP capita gap	AUC	0.70	0.70	0.71	0.71	0.71	0.69	0.68	0.67	0.68	0.66	0.66	0.64
	std	0.06	0.06	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	AUC low	0.57	0.57	0.58	0.58	0.57	0.54	0.52	0.50	0.52	0.51	0.51	0.49
	Sig top	0.07	0.09	0.09	0.06	0.07	0.08	0.08	0.03				
Growth GDP gap	AUC	0.80	0.78	0.79	0.79	0.77	0.75	0.74	0.76	0.76	0.74	0.73	0.71
	std	0.06	0.06	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06
	AUC low	0.68	0.66	0.66	0.66	0.64	0.62	0.60	0.61	0.62	0.61	0.62	0.59
	Sig top	0.92	0.95	0.82	0.61	0.38	0.27	0.20	0.52	0.07	0.14	0.22	0.26
Growth capita gap	AUC	0.72	0.73	0.75	0.76	0.75	0.73	0.73	0.76	0.77	0.75	0.76	0.75
	std	0.07	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.05
	AUC low	0.59	0.60	0.63	0.64	0.62	0.59	0.59	0.63	0.64	0.63	0.65	0.64
	Sig top	0.04	0.20	0.28	0.40	0.38	0.36	0.37	0.68	0.12	0.15	0.16	0.13
Projection GDP gap	AUC	0.80	0.79	0.79	0.80	0.79	0.78	0.77	0.77	0.76	0.72	0.71	0.68
	std	0.05	0.06	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.07	0.07	0.06
	AUC low	0.69	0.67	0.69	0.69	0.69	0.67	0.66	0.66	0.64	0.59	0.58	0.56
	Sig top									0.09	0.25	0.39	0.46
Projection capita gap	AUC	0.70	0.70	0.71	0.72	0.71	0.70	0.70	0.69	0.69	0.67	0.67	0.66
	std	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	AUC low	0.57	0.56	0.56	0.58	0.57	0.56	0.56	0.55	0.56	0.53	0.54	0.53
	Sig top	0.02	0.04	0.08	0.06	0.07	0.09	0.10	0.04	0.70	0.76	0.75	0.73

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Table OA7: AUCs for different measures of the credit gap, with projection gaps based on lags 20-23 (underlying data for Graph 7 and Graph OA7)

		Horizon											
		1	2	3	4	5	6	7	8	9	10	11	12
HP GDP gap	AUC	0.79	0.78	0.78	0.78	0.79	0.77	0.76	0.76	0.77	0.75	0.73	0.72
	std	0.04	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.05
	AUC low	0.71	0.71	0.70	0.71	0.72	0.70	0.69	0.68	0.69	0.67	0.65	0.63
	Sig top	0.10	0.13	0.16	0.19	0.38	0.41	0.60	0.69	0.77	0.21	0.04	0.03
HP capita gap	AUC	0.68	0.69	0.70	0.71	0.71	0.70	0.70	0.69	0.70	0.69	0.68	0.68
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.60	0.61	0.62	0.63	0.64	0.62	0.61	0.60	0.62	0.61	0.59	0.59
	Sig top	0.00	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.01	0.00	0.00	0.00
Growth GDP gap	AUC	0.80	0.78	0.78	0.78	0.77	0.76	0.75	0.75	0.77	0.77	0.76	0.75
	std	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.04	0.04
	AUC low	0.72	0.70	0.70	0.70	0.69	0.68	0.66	0.66	0.68	0.68	0.68	0.66
	Sig top	0.45	0.30	0.11	0.03	0.02	0.03	0.11	0.35	0.85	0.67	0.29	0.47
Growth capita gap	AUC	0.70	0.70	0.70	0.71	0.70	0.68	0.68	0.68	0.70	0.70	0.70	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04
	AUC low	0.61	0.61	0.62	0.63	0.61	0.59	0.58	0.59	0.61	0.61	0.61	0.61
	Sig top	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.03	0.03	0.07
Projection GDP gap	AUC	0.81	0.80	0.80	0.80	0.80	0.79	0.77	0.77	0.77	0.77	0.77	0.76
	std	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	AUC low	0.74	0.73	0.73	0.73	0.73	0.71	0.69	0.68	0.69	0.69	0.70	0.68
	Sig top												
Projection capita gap	AUC	0.73	0.72	0.73	0.73	0.72	0.71	0.70	0.69	0.71	0.70	0.70	0.70
	std	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.04
	AUC low	0.65	0.64	0.64	0.65	0.64	0.62	0.61	0.60	0.61	0.61	0.61	0.61
	Sig top	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.02

Note: AUC – area under the ROC curve; sig – bootstrapped standard deviation of the AUC; AUC low – lower value of the 95% confidence bands; sig top – p-value for significance test of whether AUC is different to the highest AUC at horizon h .

Annex references

Harding, D and A Pagan (2002): “Dissecting the cycle: a methodological investigation,” *Journal of Monetary Economics* 49(2), 365–81.