

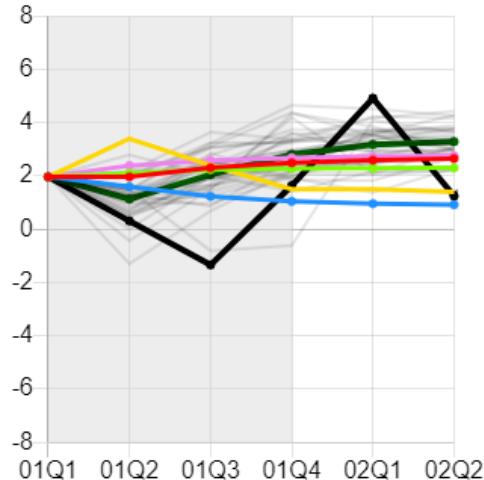
A comparison of the US GDP growth forecast results

1. Comparison of forecasts in the 2001 recession (2001:I – 2001:IV)
 - a. Pre-crisis models
 - b. Post-crisis models
 - c. Structural models versus time-series models
2. Comparison of forecasts in the 2008/09 recession (2008:III – 2009:II)
 - a. Pre-crisis models
 - b. Post-crisis models
 - c. Structural models versus time-series models
3. Comparison of forecasts in the current recession (2020:I – 2020:II)
 - a. Pre-crisis models
 - b. Post-crisis models
 - c. Structural models versus time-series models
4. Comparison of forecasts from the original DNGS15 model and a modified DNGS15 model with less nominal rigidities
5. Comparison of forecasts from models with and without current-quarter labor market observations
6. Comparison of forecasts from models estimated based on rolling-window and expanding-window specifications

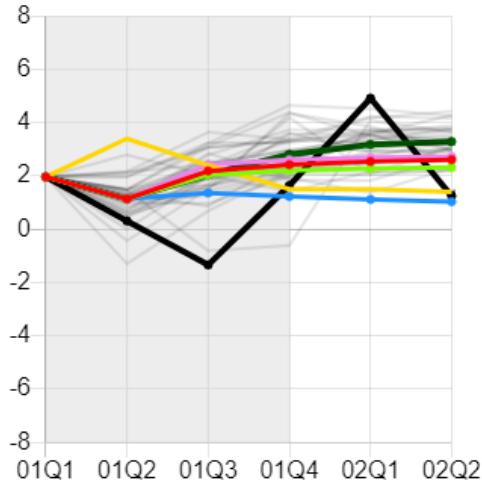
- Comparison of forecasts in 2001:I – 2001:IV
- Pre-crisis models

■ DS04 ■ FRBEDO08 ■ Fair ■ SW07 ■ WW11 ■ SPFIndividual ■ SPFMean ■ Actual

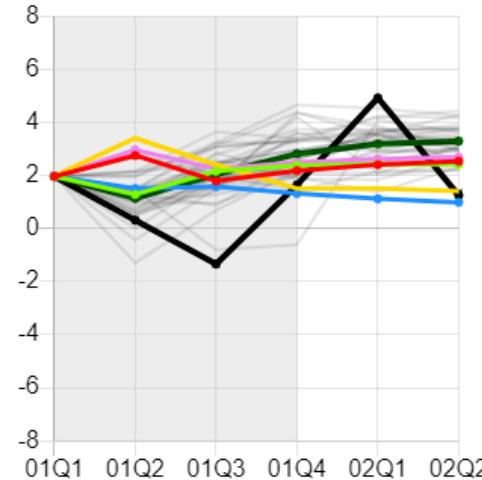
Balanced panel



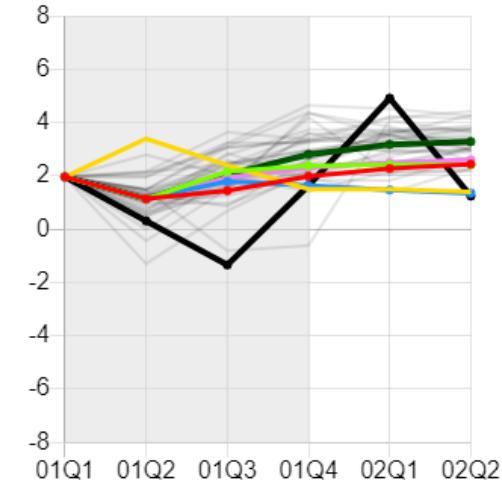
Conditioning on SPF nowcast



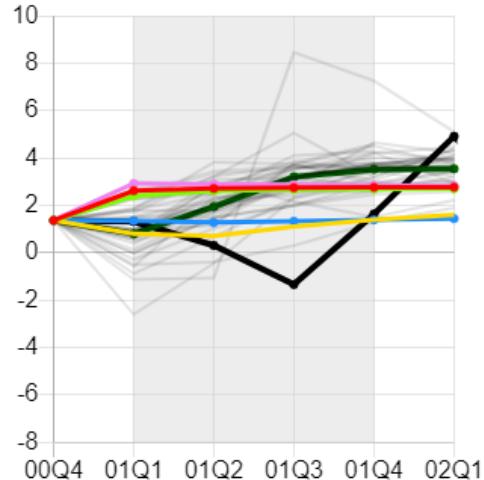
Conditioning on current-quarter observations



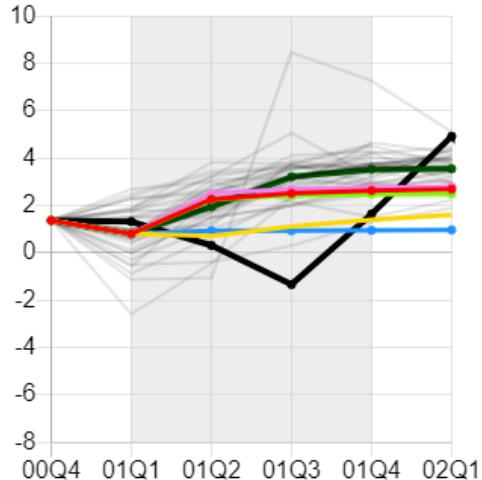
Full conditioning



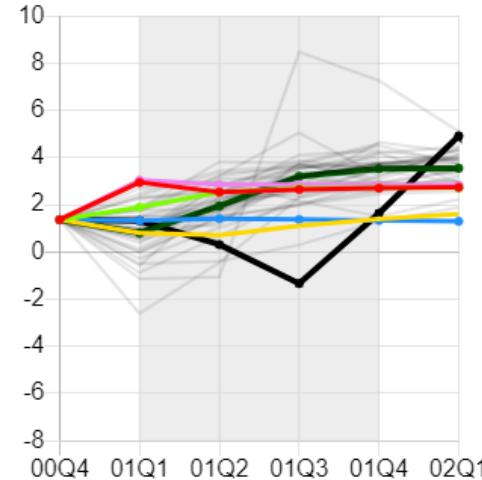
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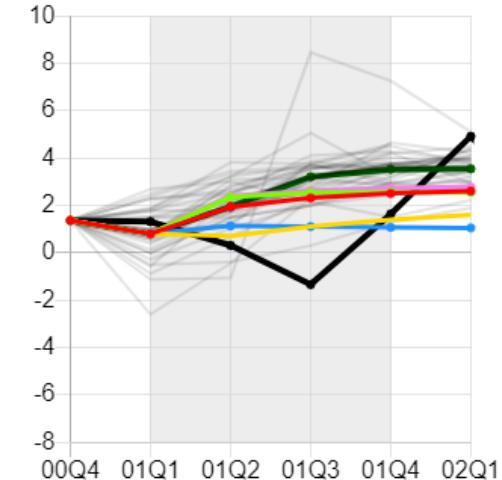
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning

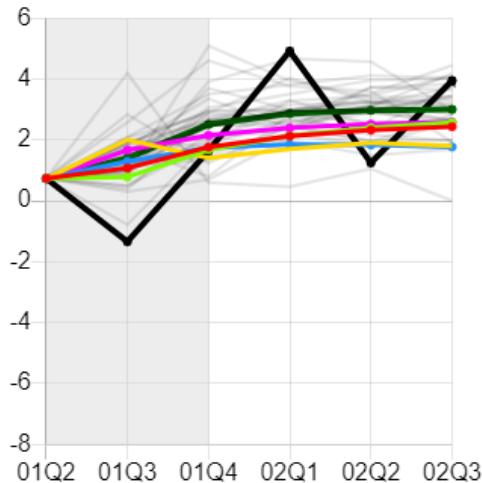


Forecast start 2001Q1

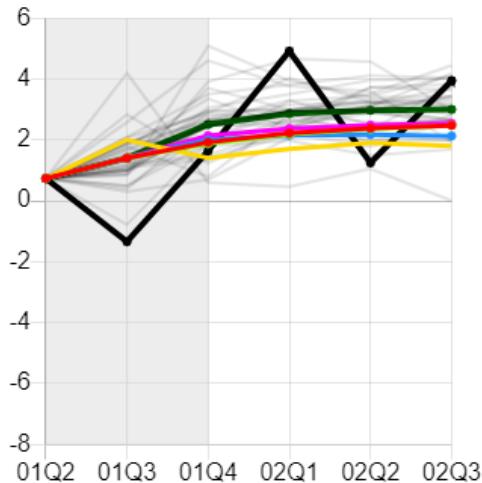
■ DS04 ■ FRBEDO08 ■ Fair ■ SW07 ■ WW11 ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2001Q3

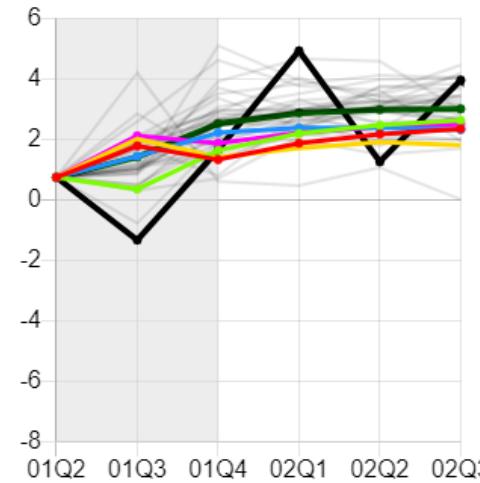
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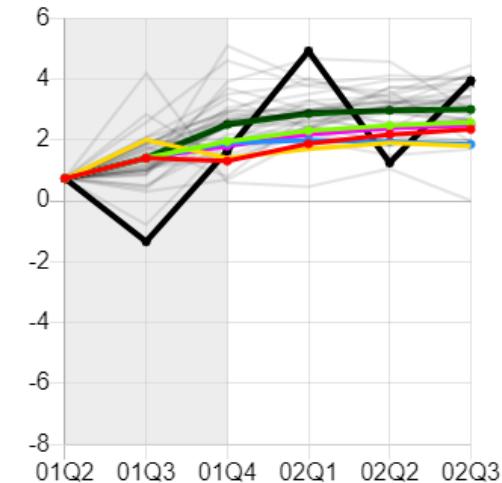
Conditioning on SPF nowcast



Conditioning on current-quarter observations

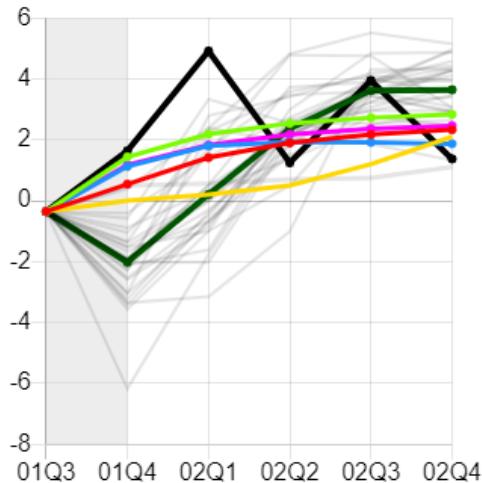


Full conditioning

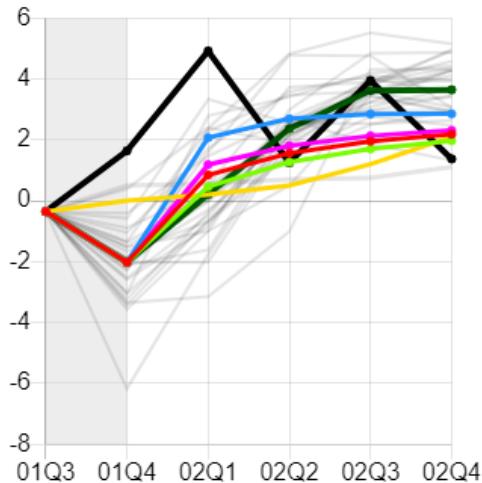


Forecast start 2001Q4

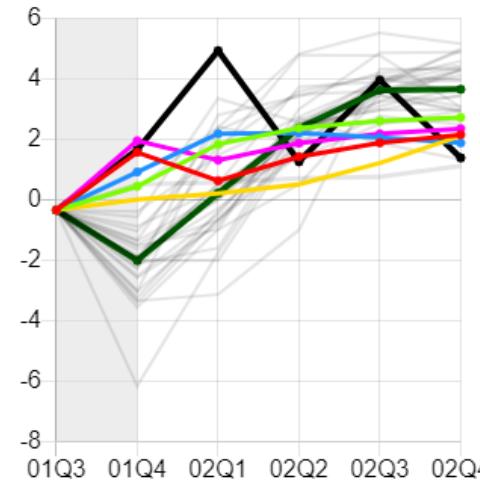
Balanced panel



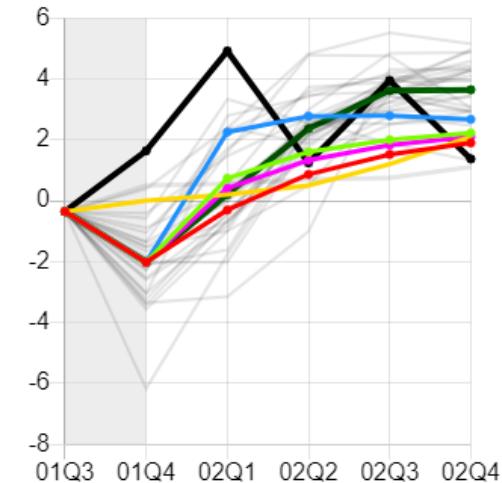
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning

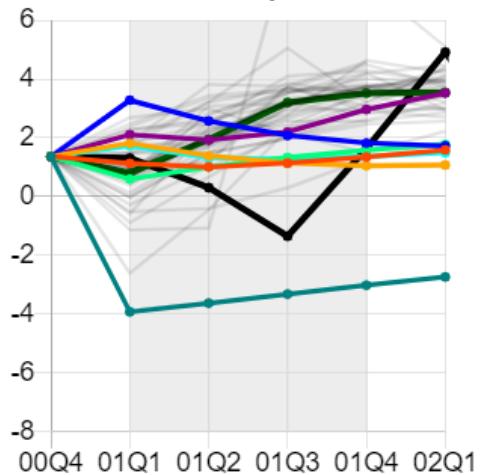


- Comparison of forecasts in 2001:I – 2001:IV
- Post-crisis models

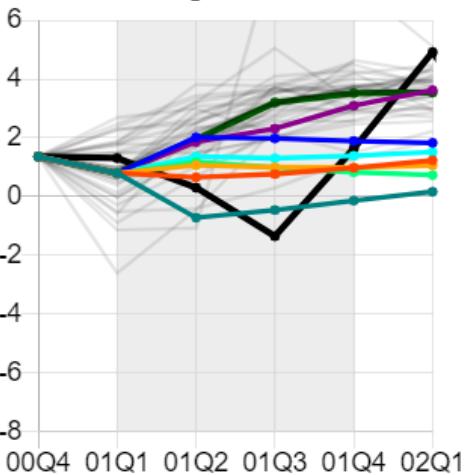
A16 CMR14 DNGS15 KR15_FF KR15_HH NKBGG QPM08 SPFIndividual SPFMean Actual

Forecast start 2001Q1

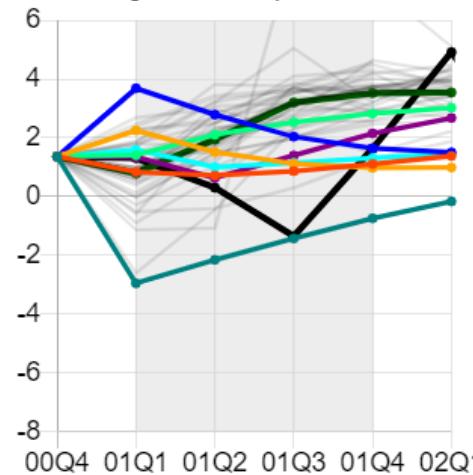
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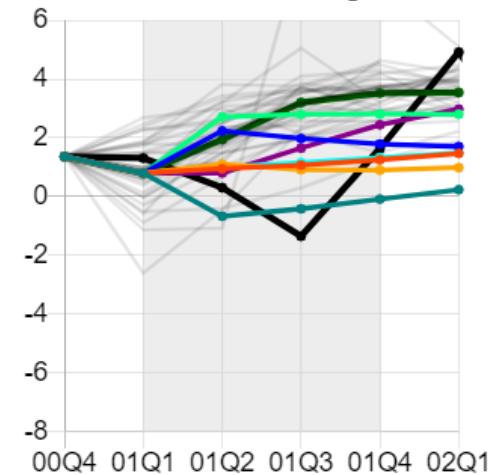
Conditioning on SPF nowcast



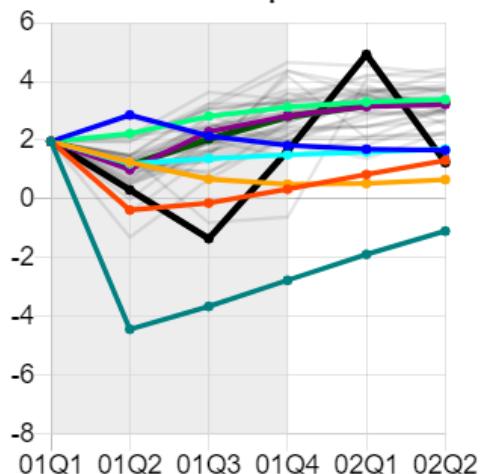
Conditioning on current-quarter observations



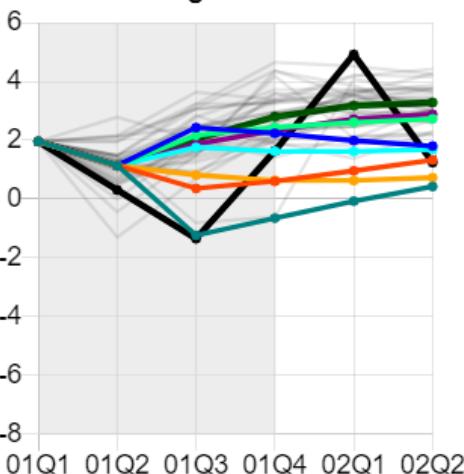
Full conditioning



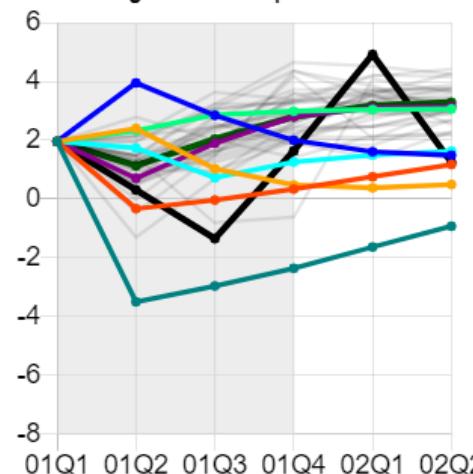
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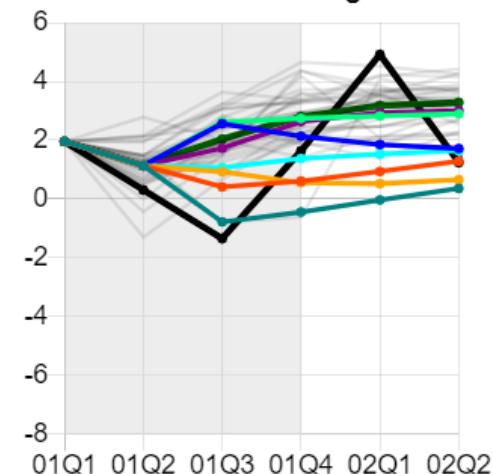
Conditioning on SPF nowcast



Conditioning on current-quarter observations

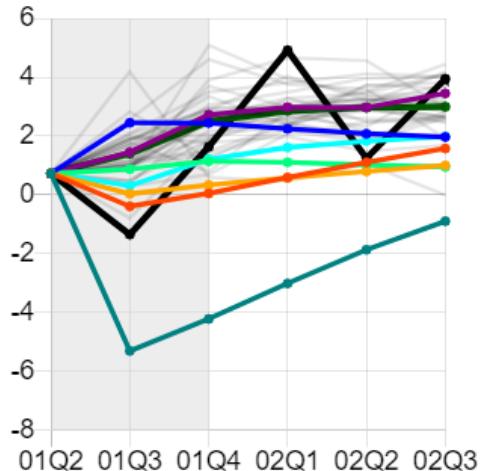


Full conditioning

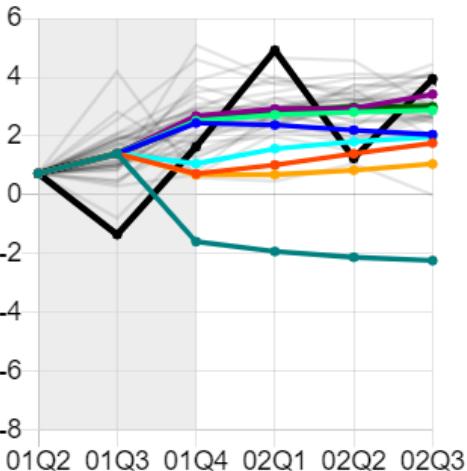




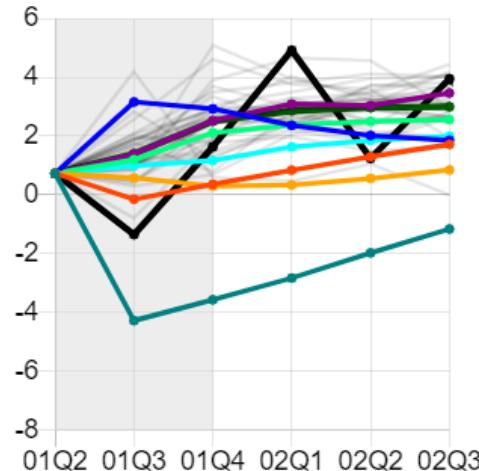
Forecast start 2001Q3



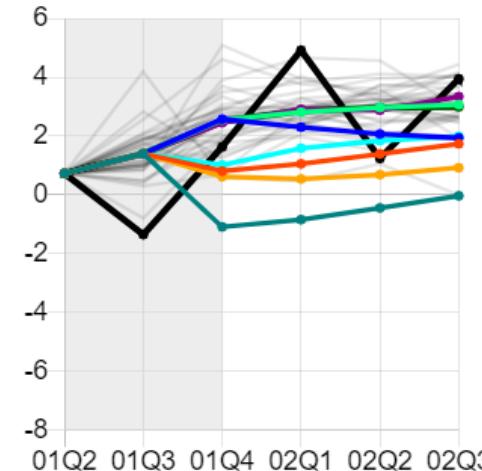
Conditioning on SPF nowcast



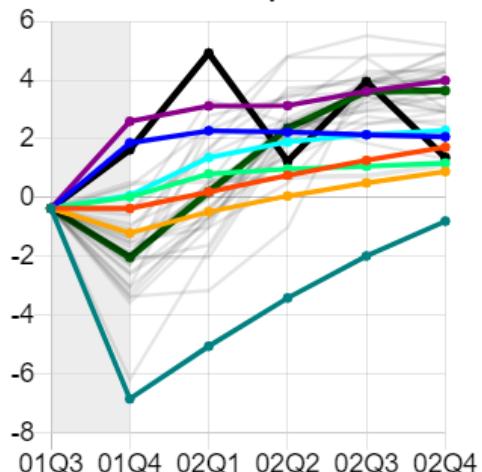
Conditioning on current-quarter observations



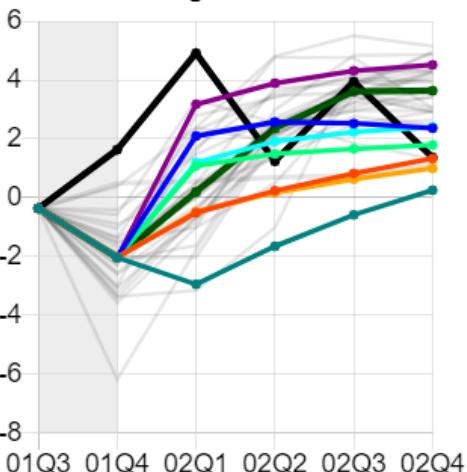
Full conditioning



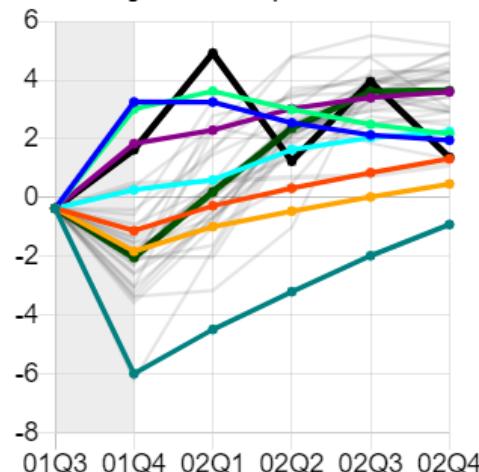
Balanced panel



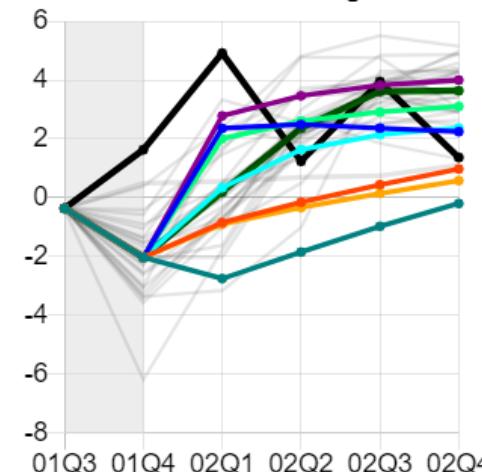
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning

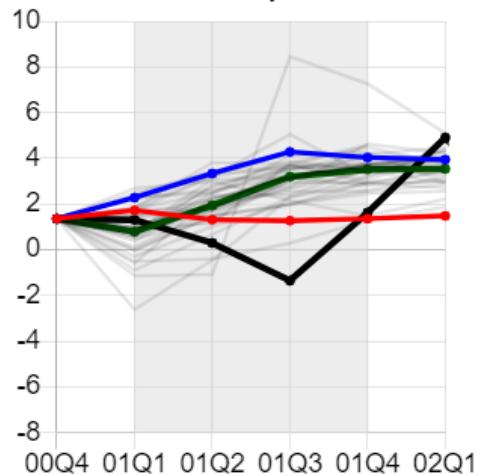


- Comparison of forecasts in 2001:I – 2001:IV
- Structural models versus time-series models

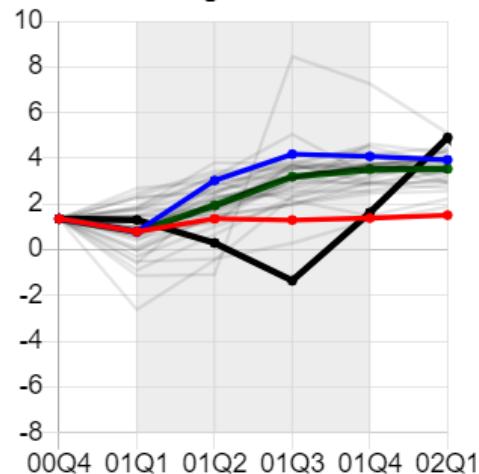
■ NKBGG ■ GLP5v ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2001Q1

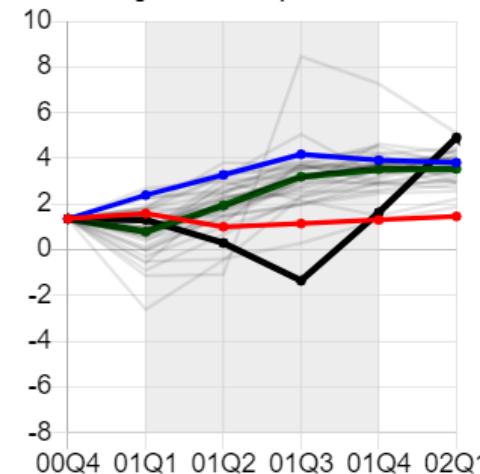
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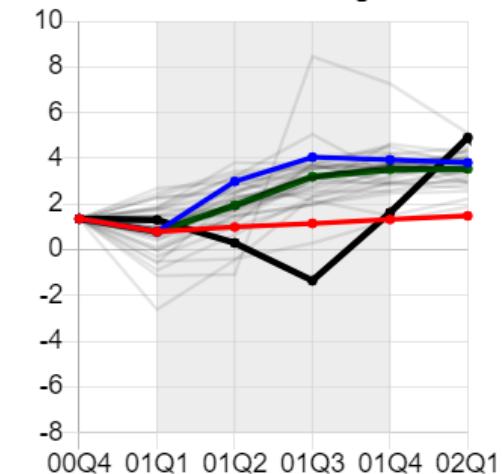
Conditioning on SPF nowcast



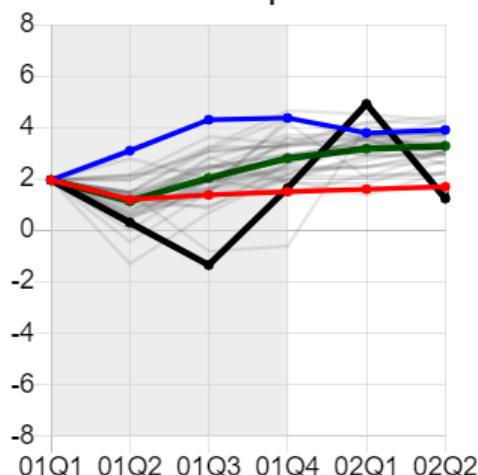
Conditioning on current-quarter observations



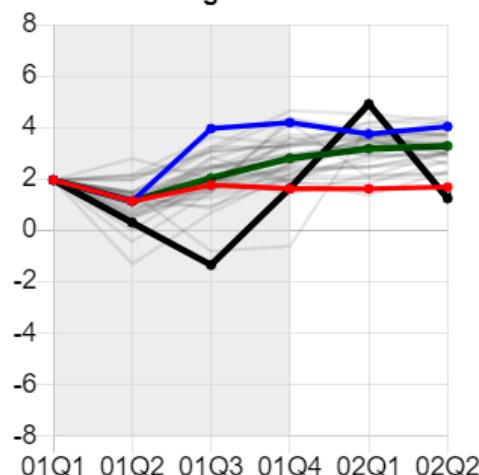
Full conditioning



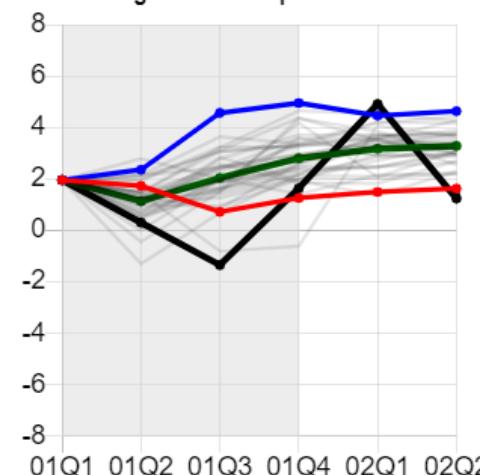
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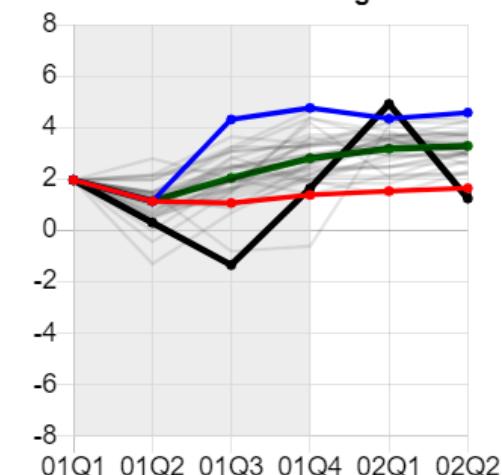
Conditioning on SPF nowcast



Conditioning on current-quarter observations



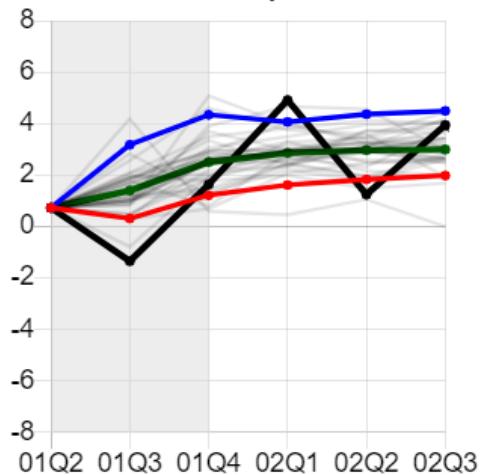
Full conditioning



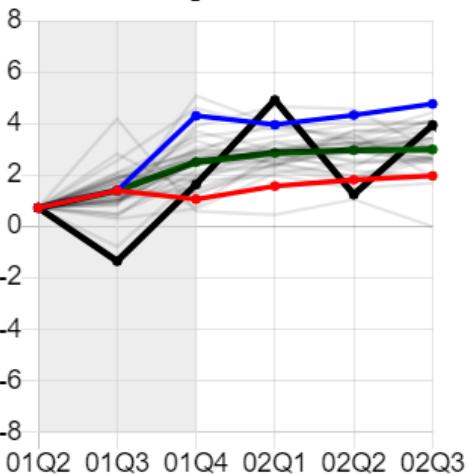
■ NKBGG ■ GLP5v ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2001Q3

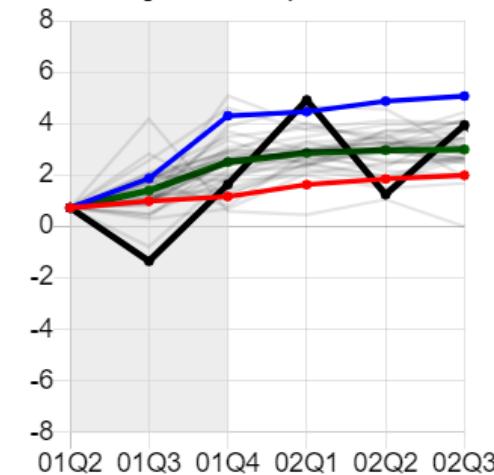
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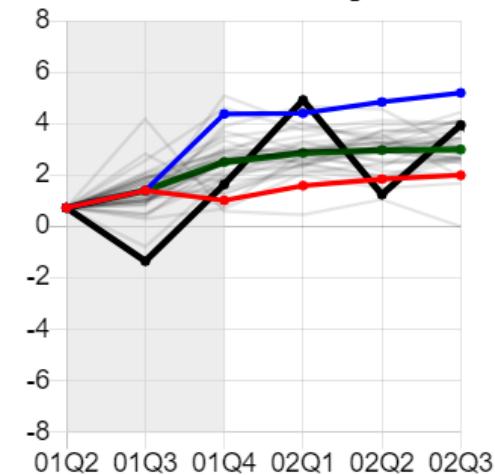
Conditioning on SPF nowcast



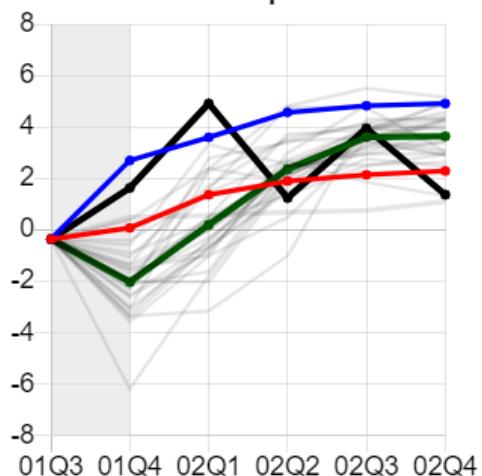
Conditioning on current-quarter observations



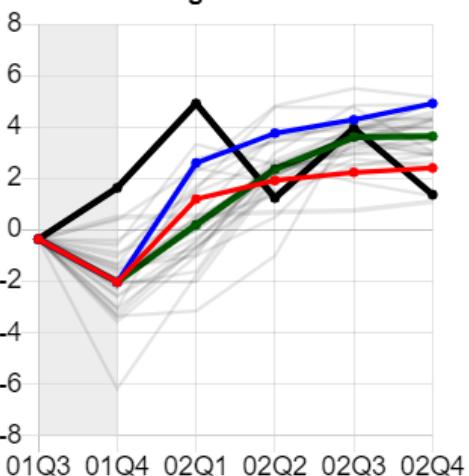
Full conditioning



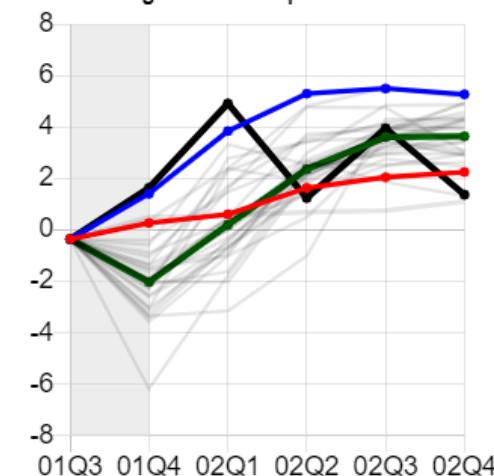
Balanced panel



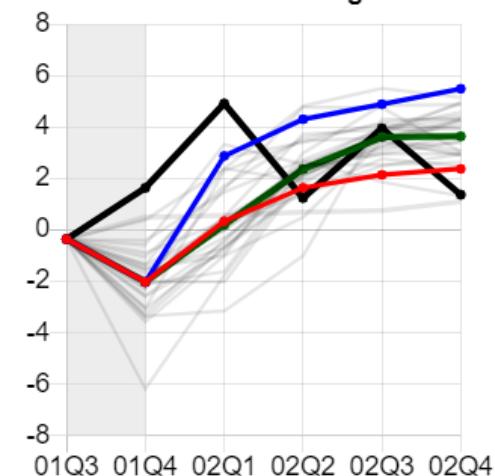
Conditioning on SPF nowcast



Conditioning on current-quarter observations



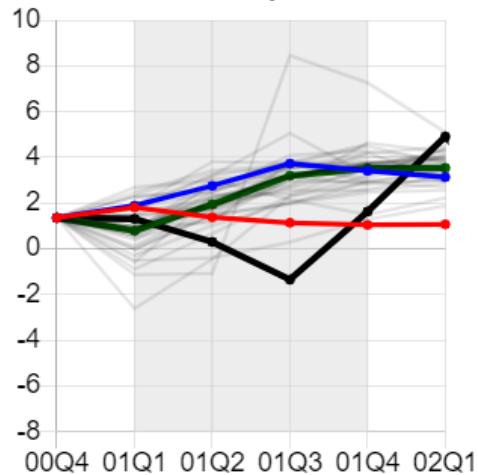
Full conditioning



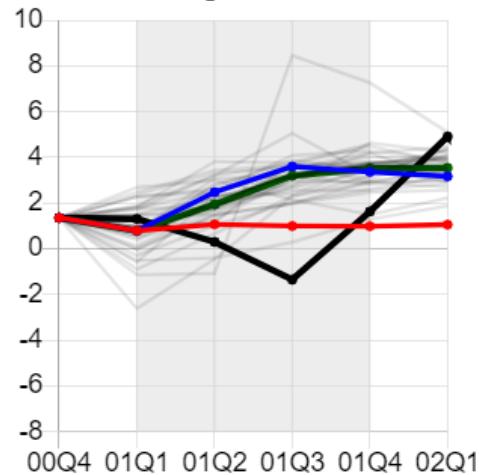
DNGS15 GLP8v SPFIndividual SPFMean Actual

Forecast start 2001Q1

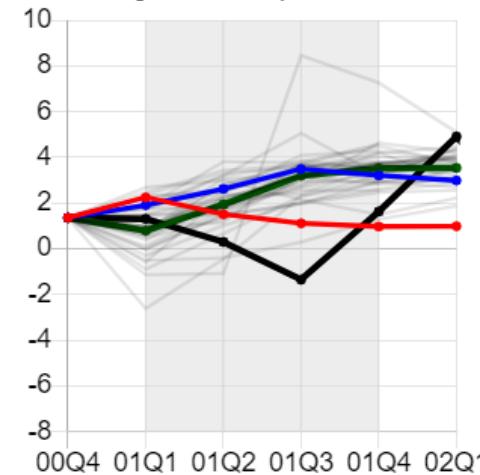
Balanced panel



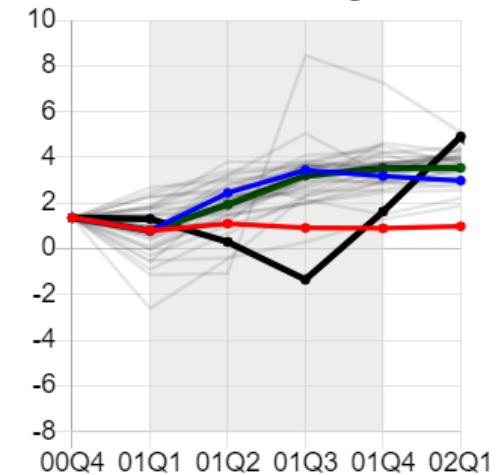
Conditioning on SPF nowcast



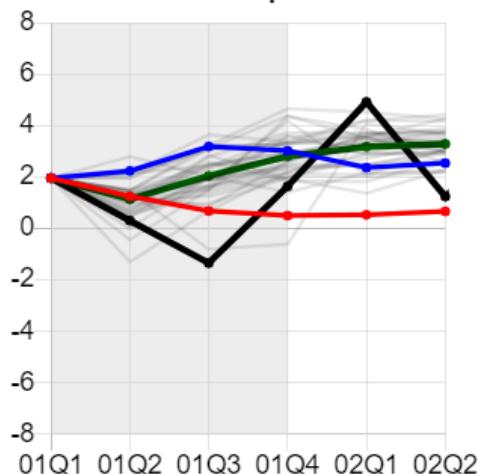
Conditioning on current-quarter observations



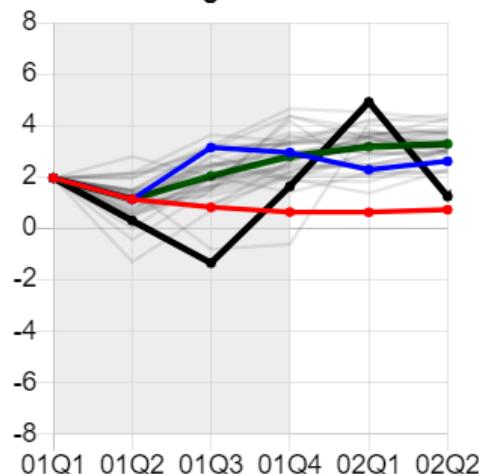
Full conditioning



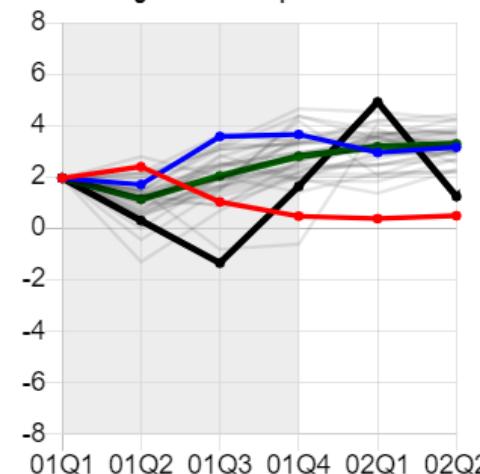
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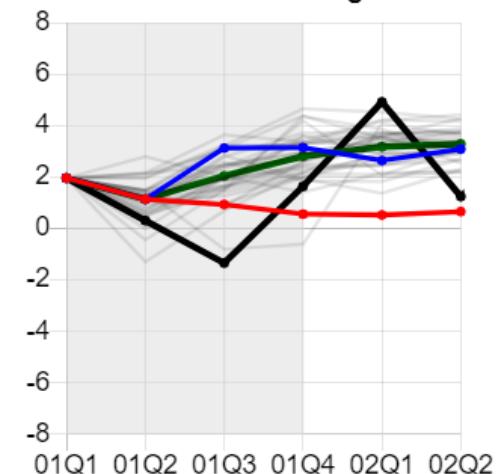
Conditioning on SPF nowcast



Conditioning on current-quarter observations



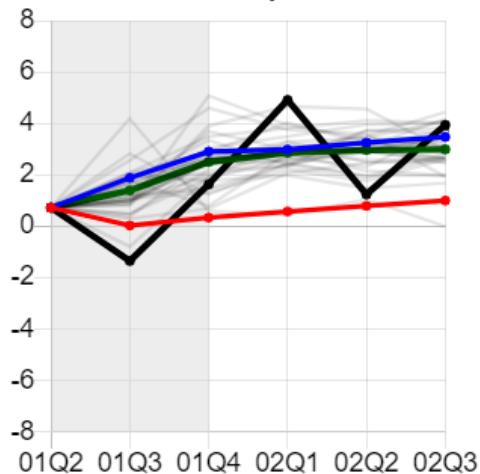
Full conditioning



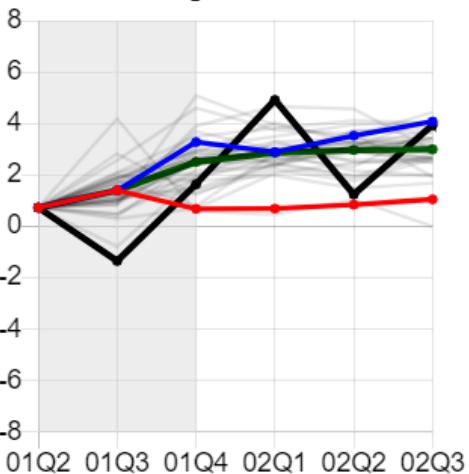
DNGS15 GLP8v SPFIndividual SPFMean Actual

Forecast start 2001Q3

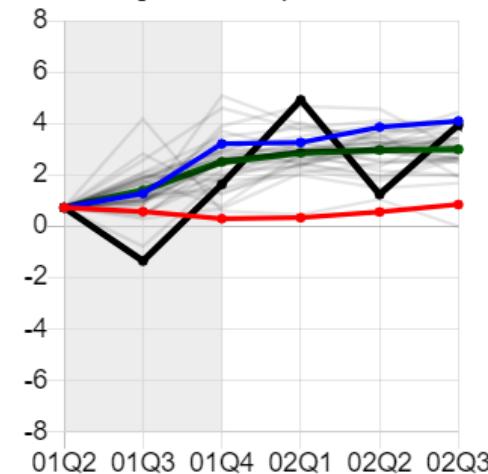
Balanced panel



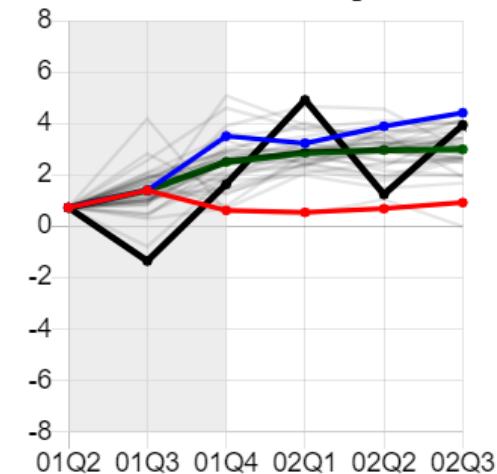
Conditioning on SPF nowcast



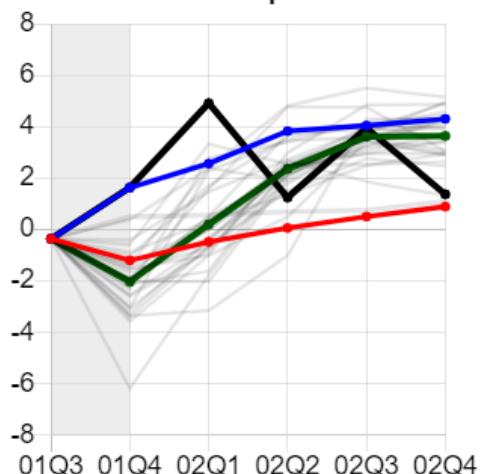
Conditioning on current-quarter observations



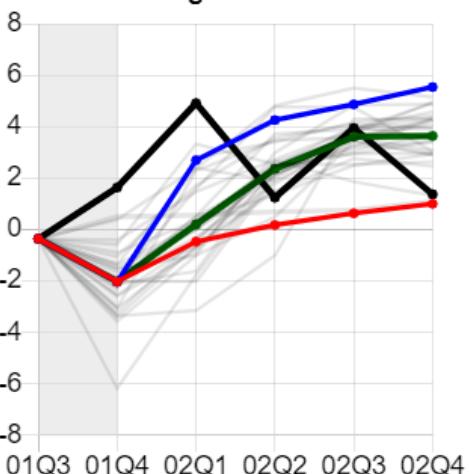
Full conditioning



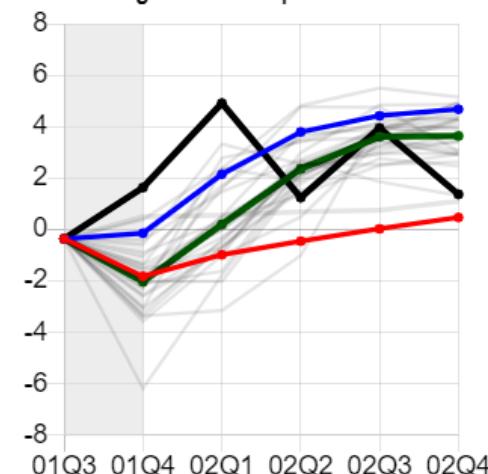
Balanced panel



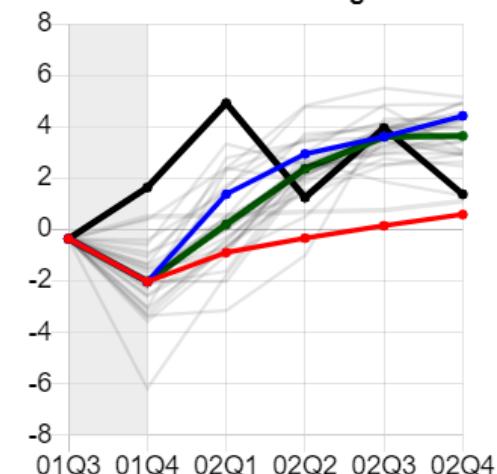
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning



- **Comparison of relative* RMSEs in 2001:I – 2001:IV**

* RMSEs are reported relative to those of the RMSE of the mean SPF forecast, for which absolute RMSEs are reported in the last column.

Source	DS04				WW11				SW07				FRBEDO				NKBGG				
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	
Forecast Horizon	0	0.72	0.91		0.86	1.00			0.64	0.66			0.64	0.50			0.53	0.66			
	1	0.92	0.94	0.95	1.01	0.93	0.95	0.94	0.98	0.68	0.66	0.69	0.69	0.83	0.97	0.85	0.96	0.76	0.82	0.80	0.86
	2	0.97	0.91	0.96	0.91	0.97	0.93	0.97	0.93	0.79	0.74	0.74	0.78	0.97	0.89	0.96	0.91	0.81	0.82	0.79	0.80
	3	1.07	1.11	1.14	1.22	1.04	1.07	1.08	1.15	1.45	1.33	1.42	1.20	1.06	1.20	1.05	1.13	1.23	1.21	1.28	1.25
	4	0.90	0.89	0.89	0.89	0.89	0.89	0.88	0.87	1.19	1.32	1.15	1.32	0.91	0.89	0.90	0.89	1.17	1.17	1.17	1.17

Source	QPM				DNGS15				KR15_FF				KR15_HH				CMR14				
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	
Forecast Horizon	0	0.67	0.59		0.71	0.98			0.71	1.38			0.71	0.76			0.50	0.66			
	1	0.74	0.67	0.70	0.63	0.99	0.97	1.08	1.05	0.99	1.21	1.10	1.21	1.00	1.21	0.71	1.21	0.85	0.95	0.91	1.00
	2	0.88	0.95	0.75	0.83	1.00	0.96	1.07	1.01	0.91	0.83	0.98	0.86	0.88	0.67	0.99	0.93	0.99	0.89	0.93	0.93
	3	0.91	1.02	0.86	0.87	1.81	1.76	1.95	1.89	1.19	1.04	1.11	1.07	1.12	1.24	0.83	1.03	1.57	1.63	1.68	1.71
	4	1.03	1.10	1.07	1.08	1.41	1.40	1.48	1.45	1.07	1.08	1.12	1.10	1.41	1.28	0.95	0.92	1.18	1.23	1.20	1.18

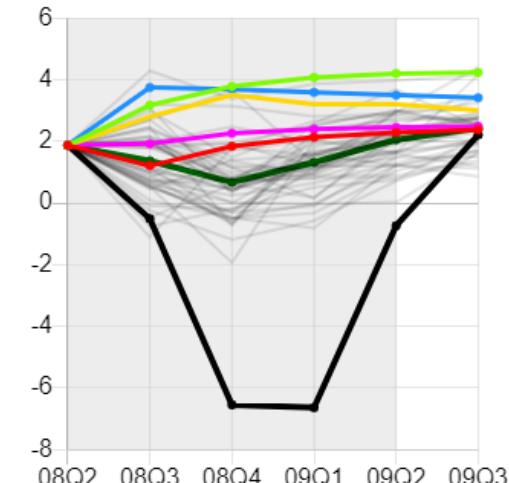
Source	A16				3vBVAR				5vBVAR				8vBVAR				Fair	SPFM	
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV			
Forecast Horizon	0	2.50	2.13		1.43	1.16			1.18	0.85			0.81	0.75			1.04	2.34	
	1	2.04	1.40	1.83	1.35	1.12	1.08	1.19	1.14	1.16	1.14	1.19	1.17	0.95	0.94	1.03	1.05	0.99	3.05
	2	1.98	1.49	1.86	1.32	1.31	1.27	1.42	1.31	1.36	1.27	1.45	1.33	1.18	1.20	1.16	1.06	0.78	2.62
	3	3.41	2.49	3.12	2.37	1.38	1.32	1.50	1.39	1.35	1.33	1.48	1.42	1.19	1.29	1.18	1.23	1.43	1.55
	4	2.76	2.27	2.26	1.84	1.34	1.41	1.61	1.55	1.31	1.35	1.55	1.60	1.06	1.36	1.23	1.17	1.16	1.74

- Comparison of forecasts in 2008:III – 2009:II
- Pre-crisis models

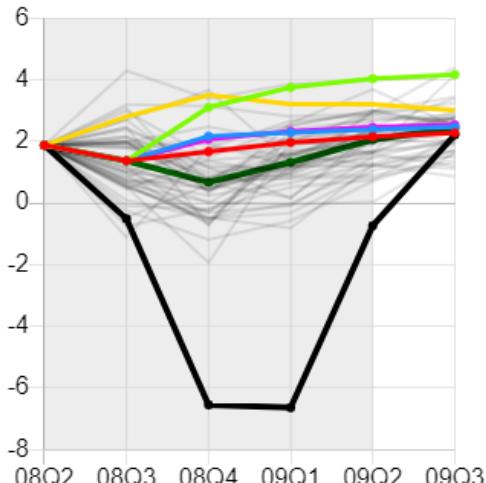
■ DS04 ■ FRBEDO08 ■ Fair ■ SW07 ■ WW11 ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2008Q3

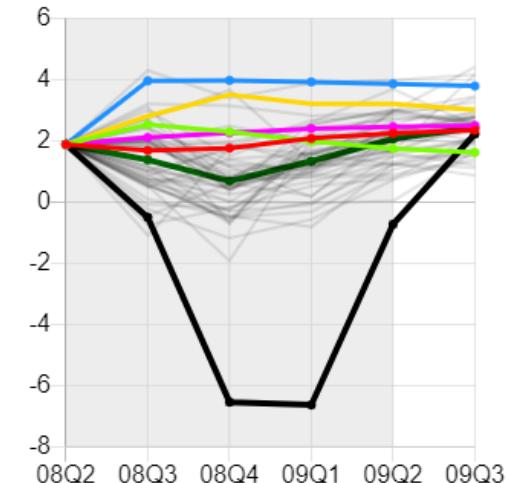
Balanced panel



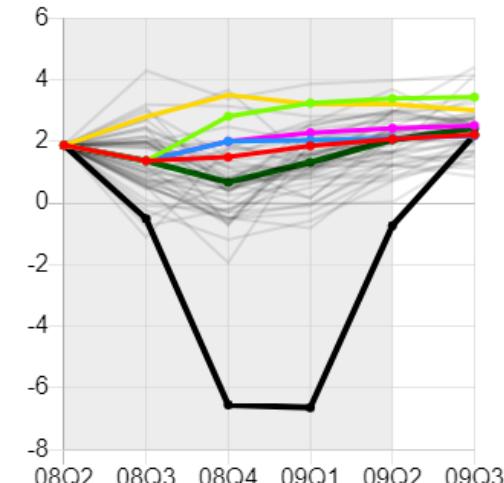
Conditioning on SPF nowcast



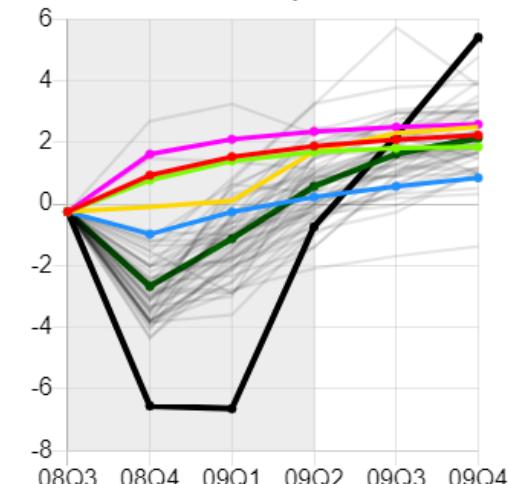
Conditioning on current-quarter observations



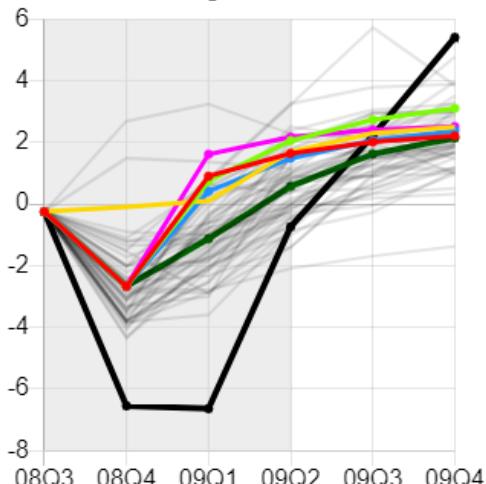
Full conditioning



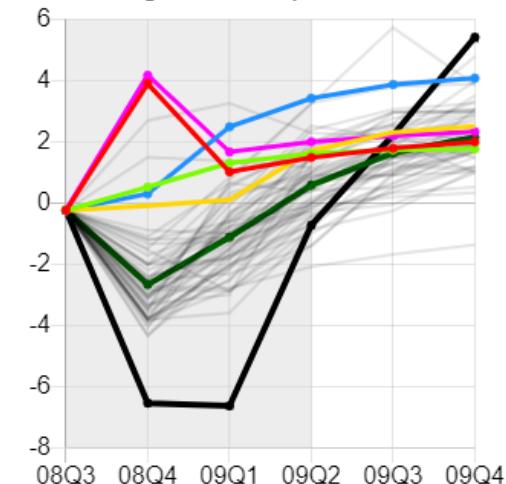
Balanced panel



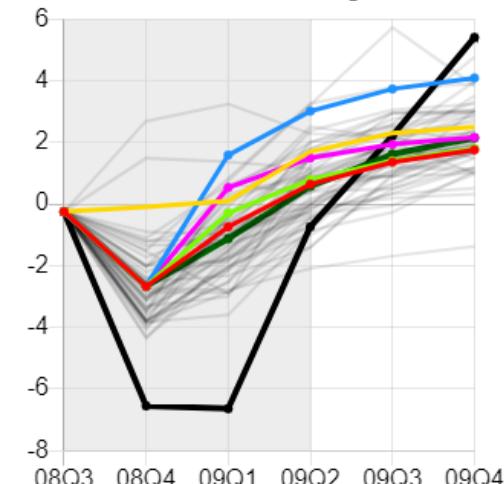
Conditioning on SPF nowcast



Conditioning on current-quarter observations



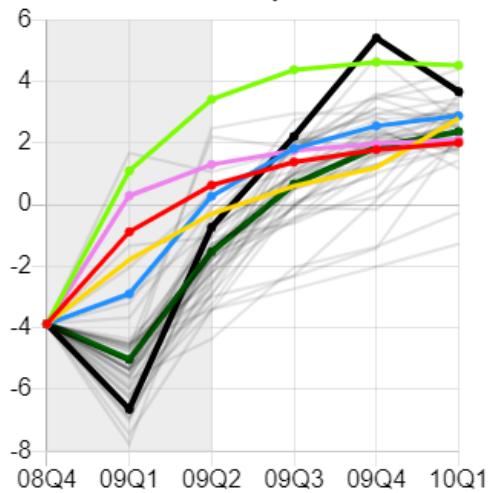
Full conditioning



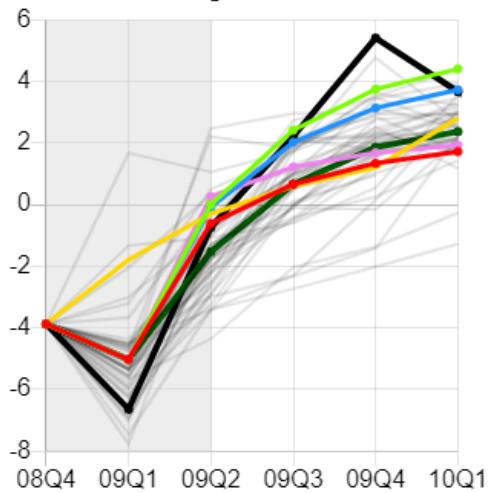
DS04 FRBEDO08 Fair SW07 WW11 SPFIndividual SPFMean Actual

Forecast start 2009Q1

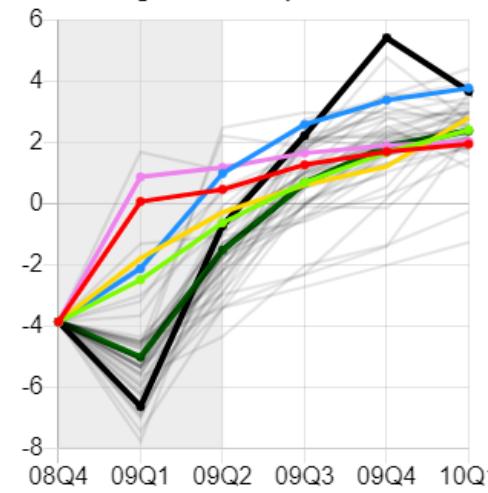
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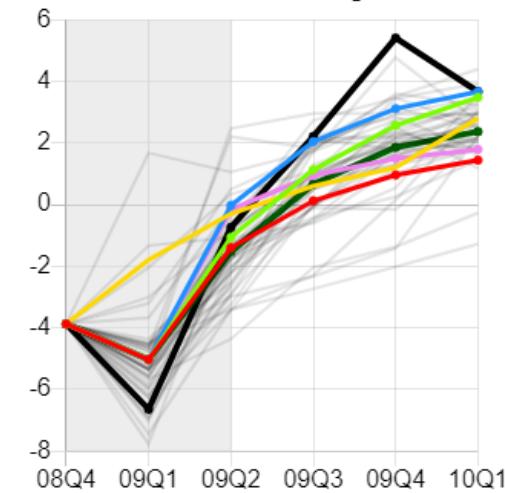
Conditioning on SPF nowcast



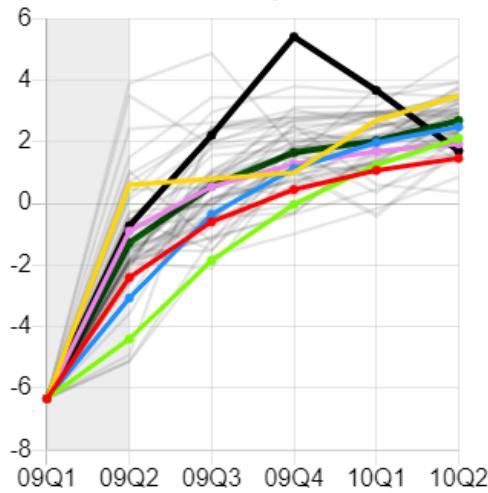
Conditioning on current-quarter observations



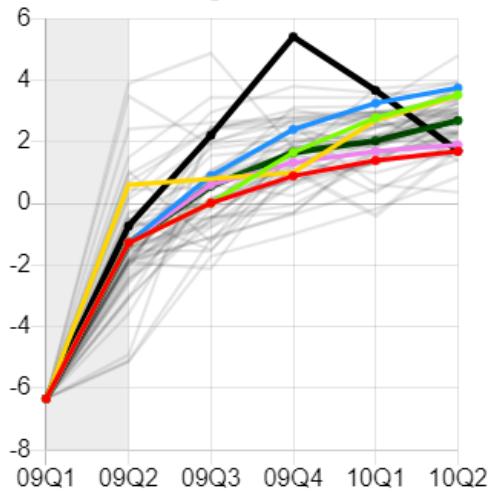
Full conditioning



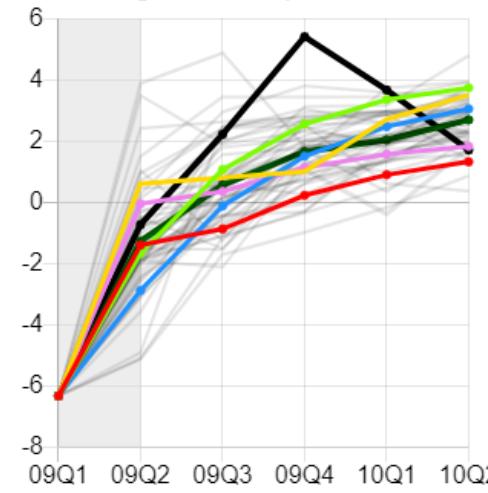
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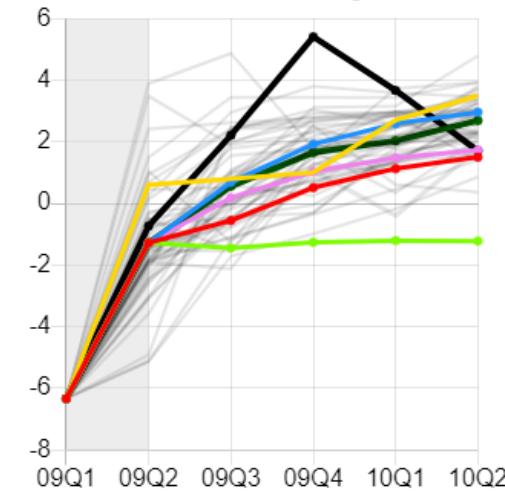
Conditioning on SPF nowcast



Conditioning on current-quarter observations

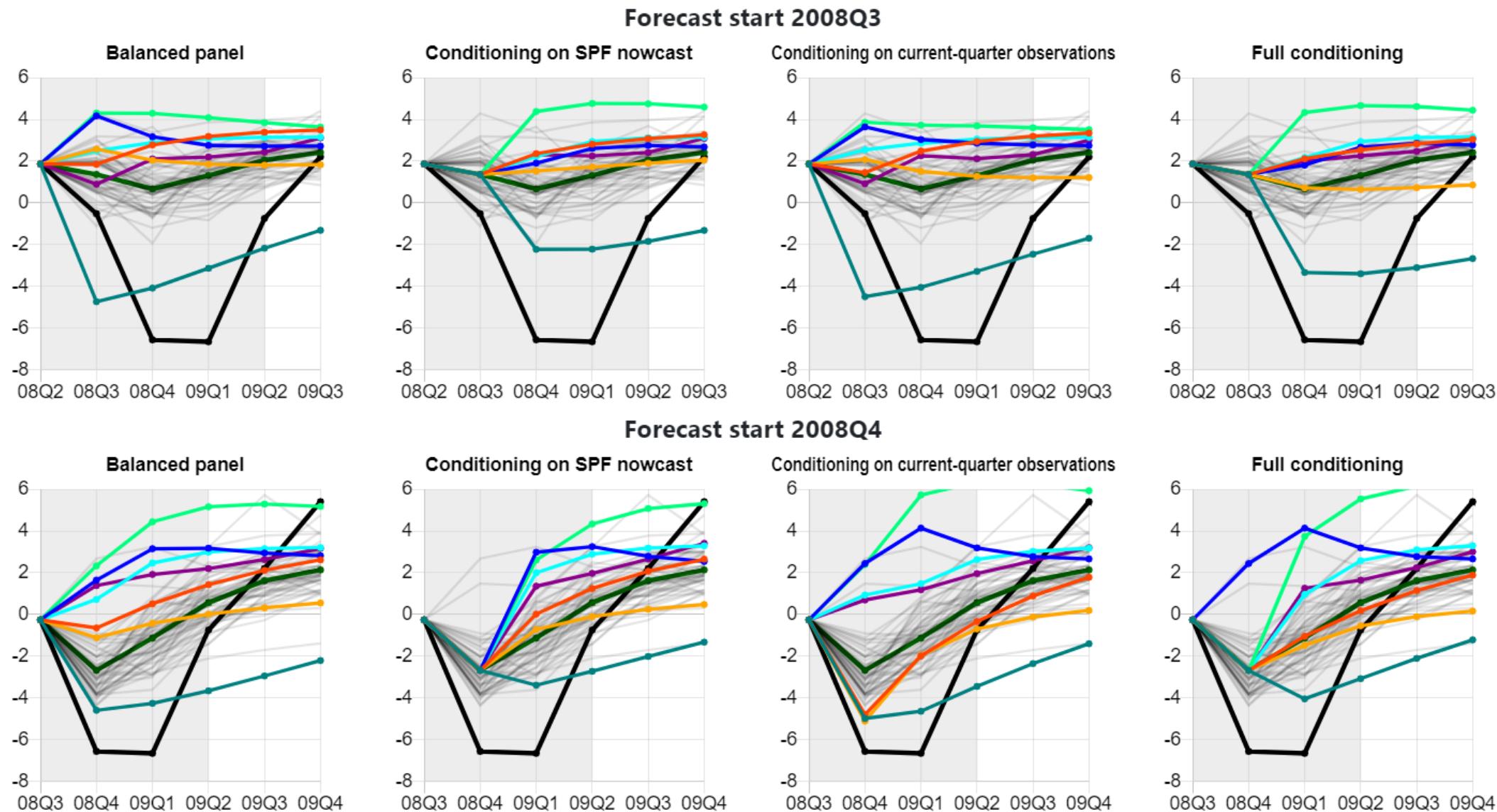


Full conditioning



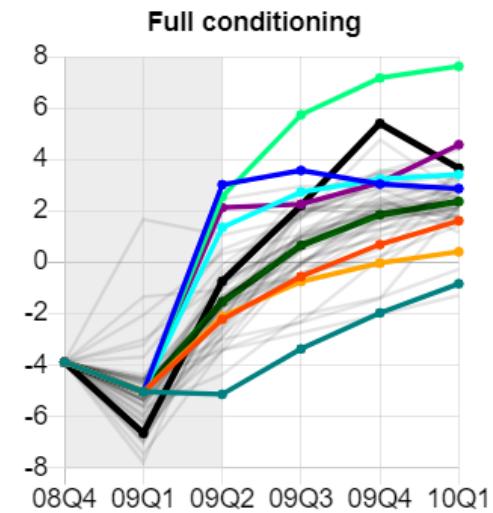
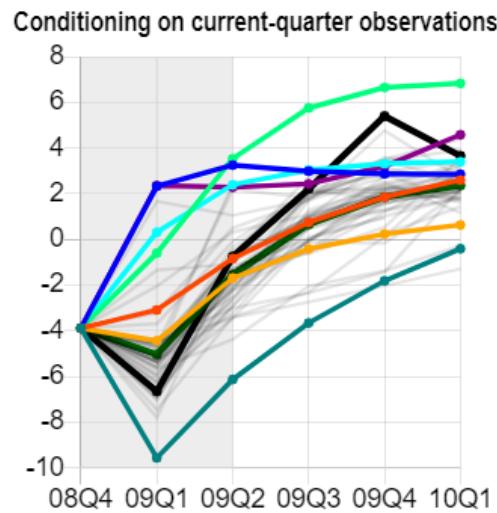
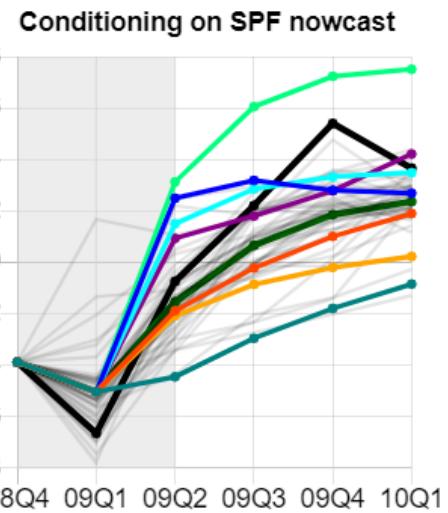
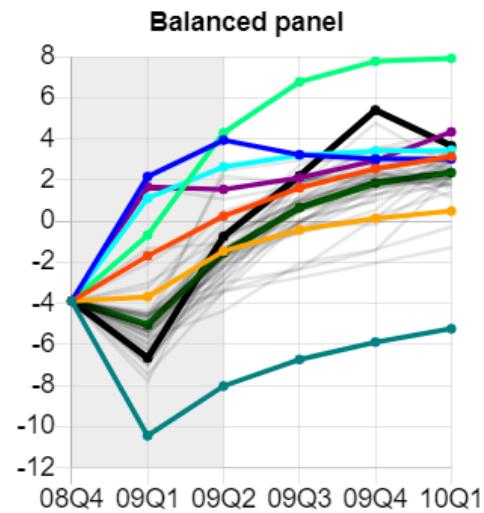
- Comparison of forecasts in 2008:III – 2009:II
- Post-crisis models

A16 CMR14 DNGS15 KR15_FF KR15_HH NKBGG QPM08 SPFIndividual SPFMean Actual

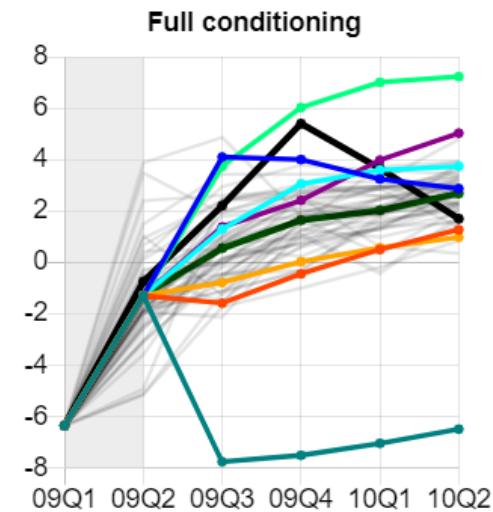
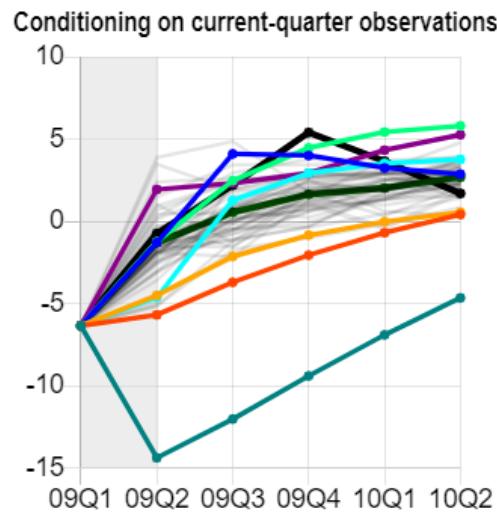
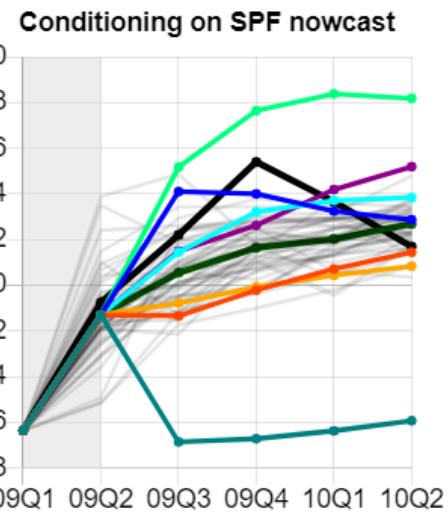
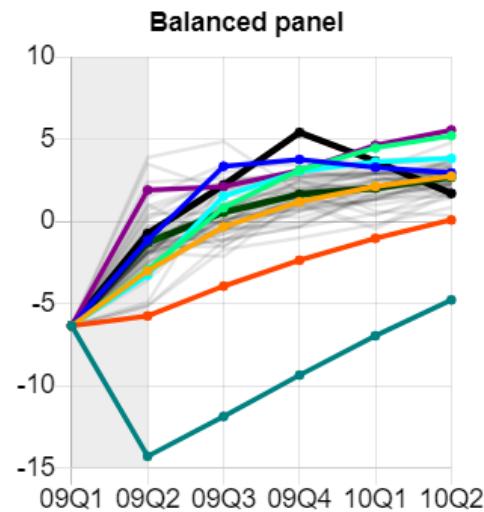




Forecast start 2009Q1



Forecast start 2009Q2

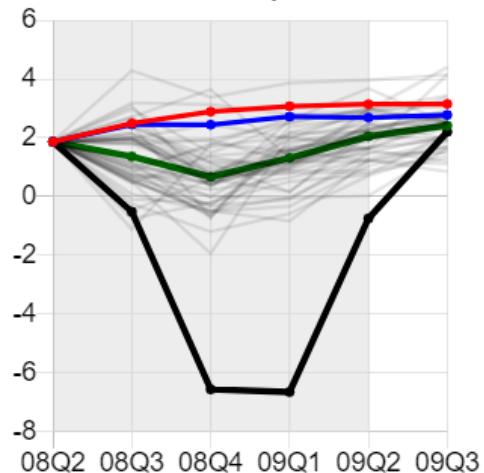


- Comparison of forecasts in 2008:III – 2009:II
- Structural models versus time-series models

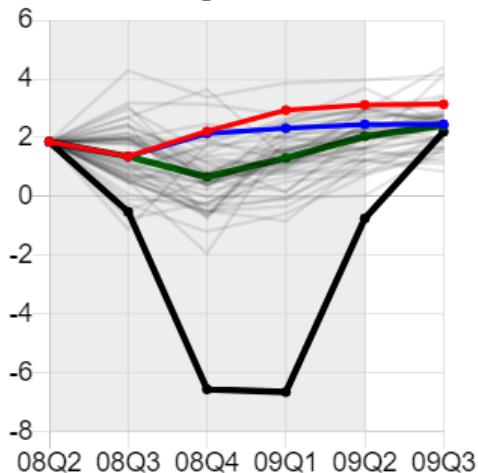
■ NKBGG ■ GLP5v ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2008Q3

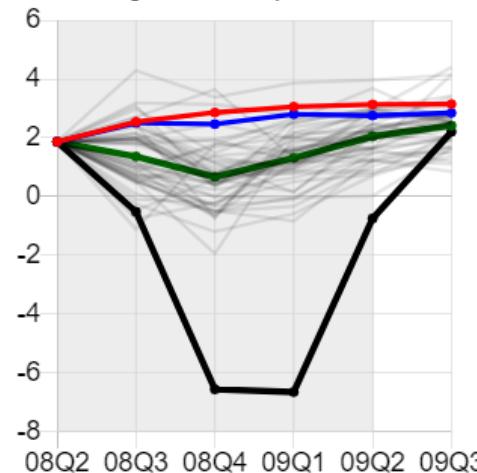
Balanced panel



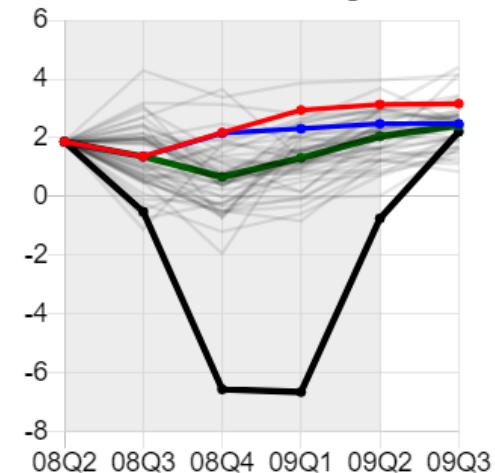
Conditioning on SPF nowcast



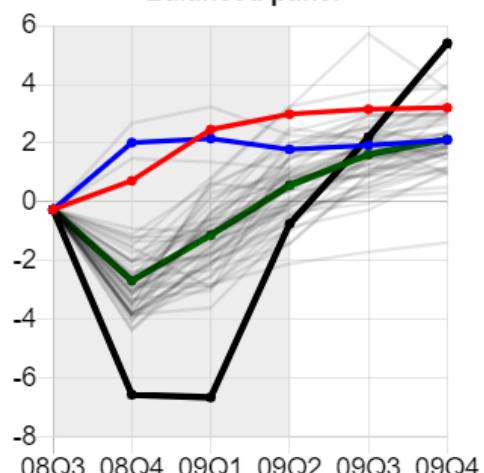
Conditioning on current-quarter observations



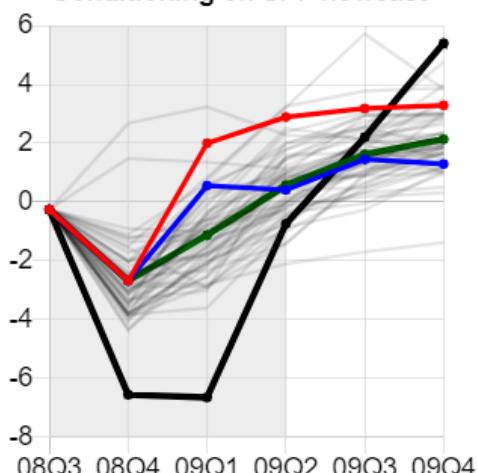
Full conditioning



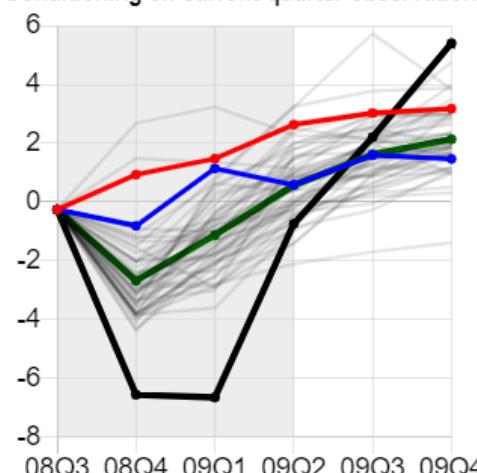
Balanced panel



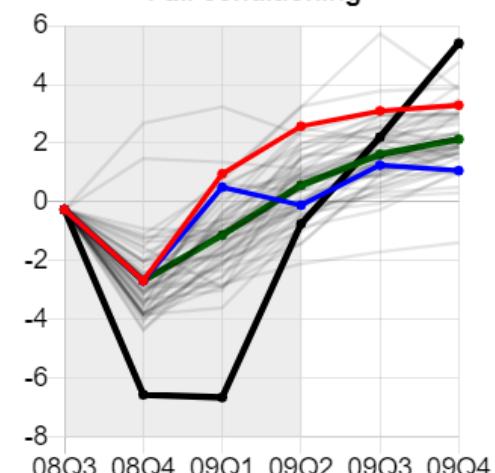
Conditioning on SPF nowcast



Conditioning on current-quarter observations



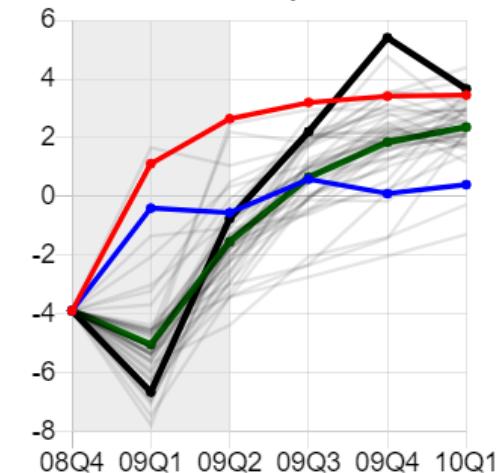
Full conditioning



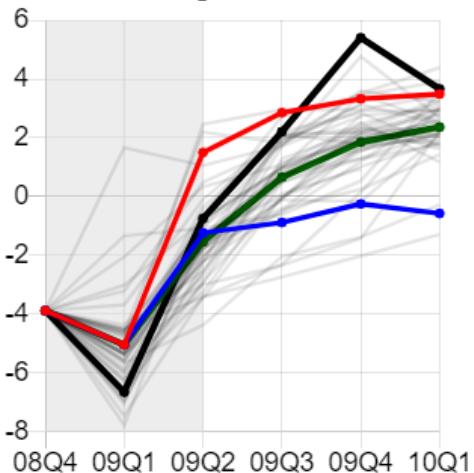
■ NKBGG ■ GLP5v ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2009Q1

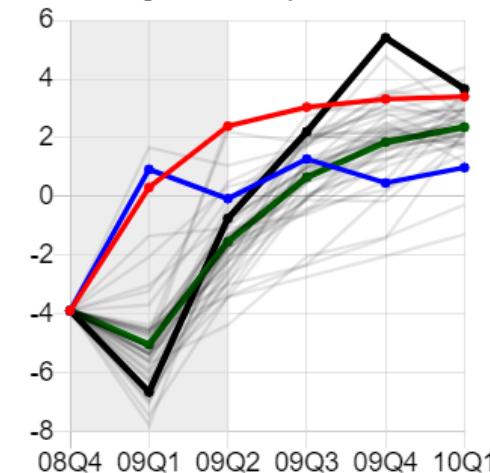
Balanced panel



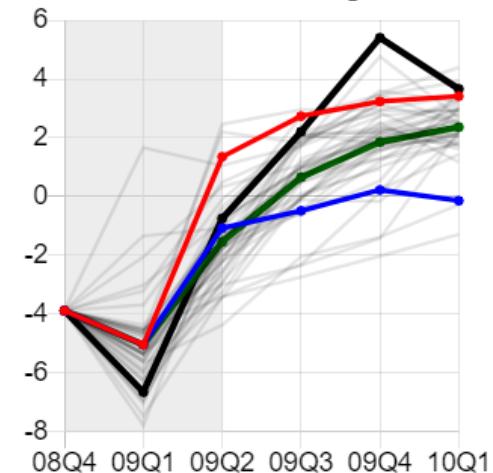
Conditioning on SPF nowcast



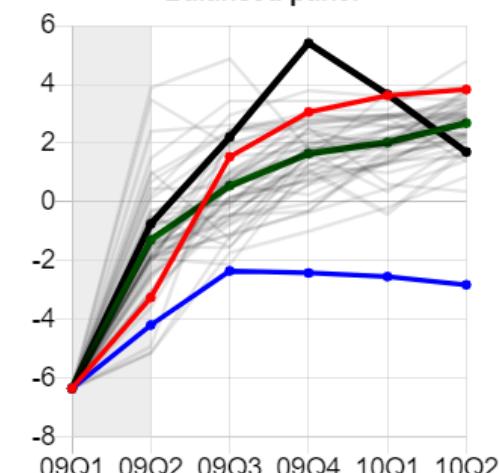
Conditioning on current-quarter observations



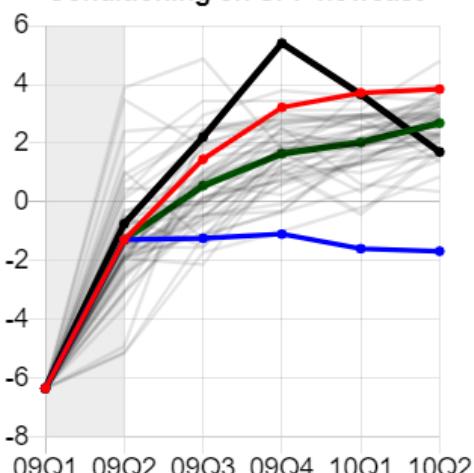
Full conditioning



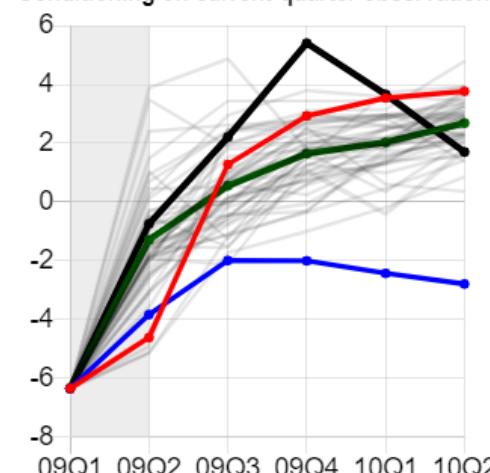
Balanced panel



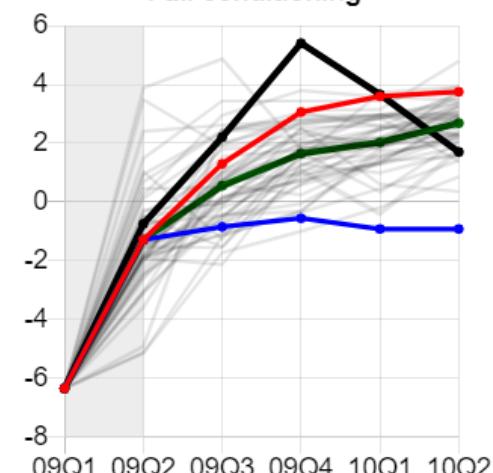
Conditioning on SPF nowcast



Conditioning on current-quarter observations



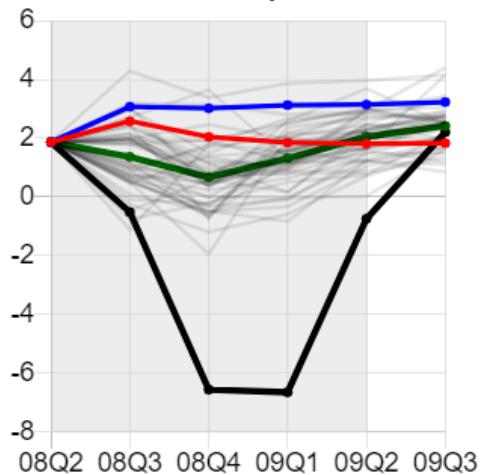
Full conditioning



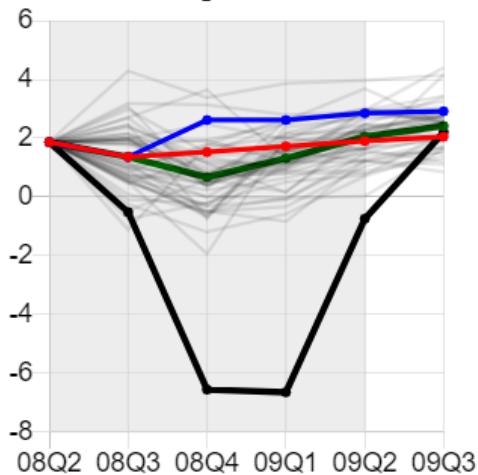
DNGS15 GLP8v SPFIndividual SPFMean Actual

Forecast start 2008Q3

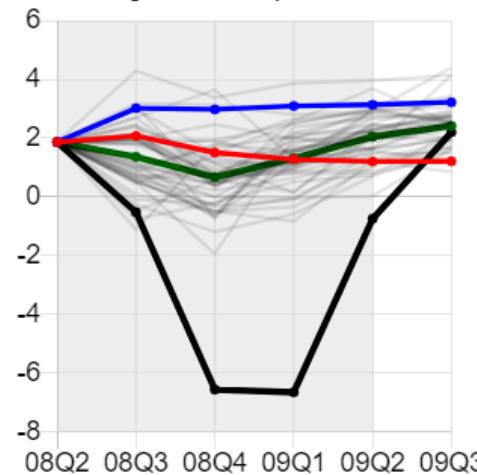
Balanced panel



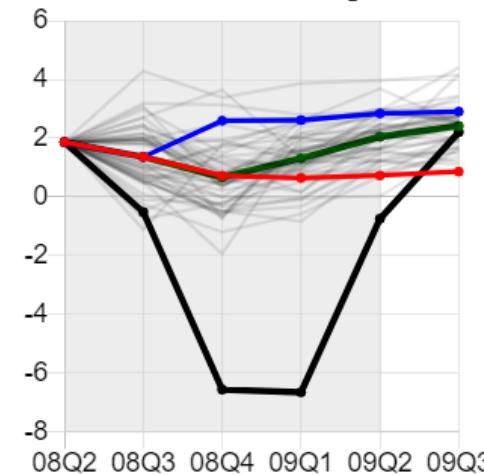
Conditioning on SPF nowcast



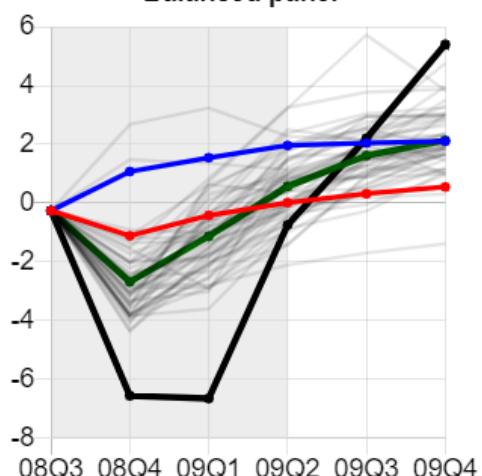
Conditioning on current-quarter observations



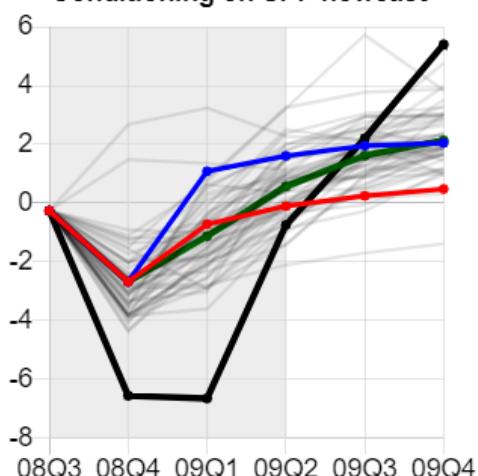
Full conditioning



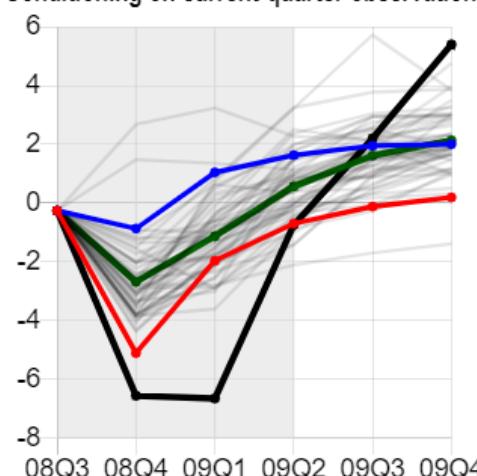
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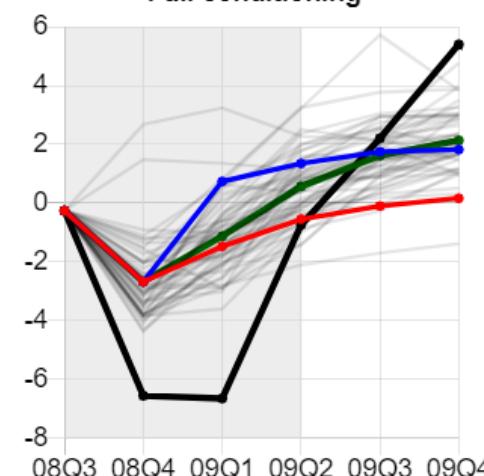
Conditioning on SPF nowcast



Conditioning on current-quarter observations



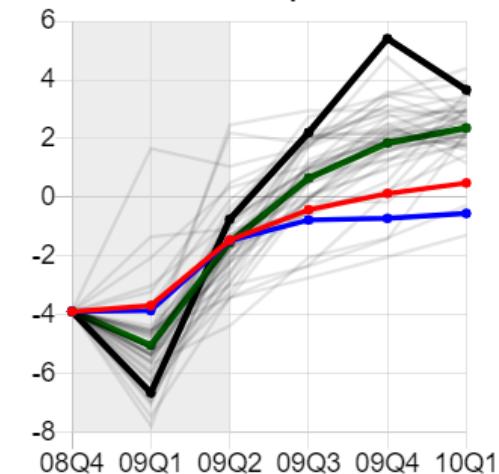
Full conditioning



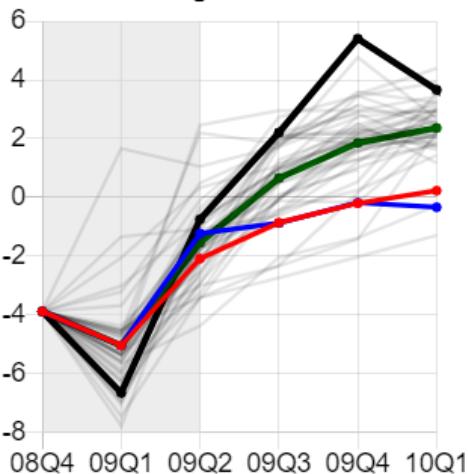
DNGS15 GLP8v SPFIndividual SPFMean Actual

Forecast start 2009Q1

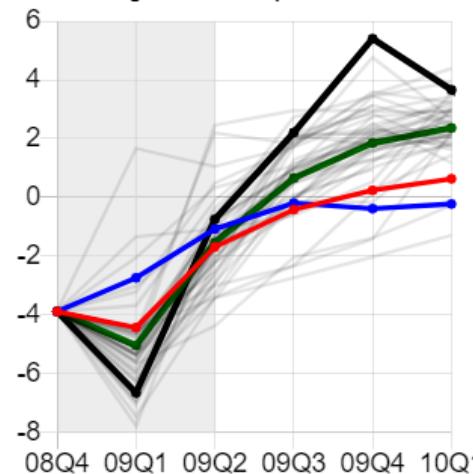
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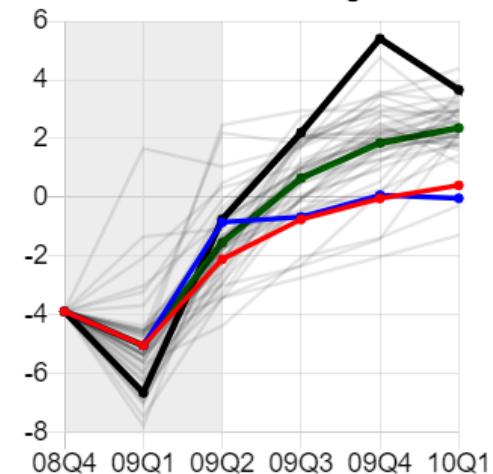
Conditioning on SPF nowcast



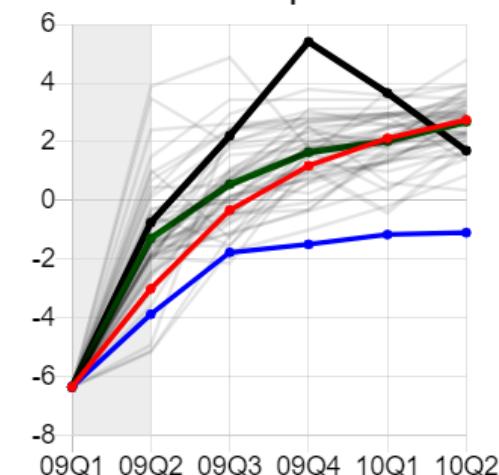
Conditioning on current-quarter observations



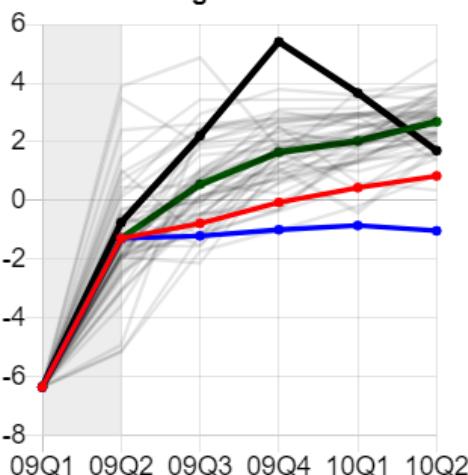
Full conditioning



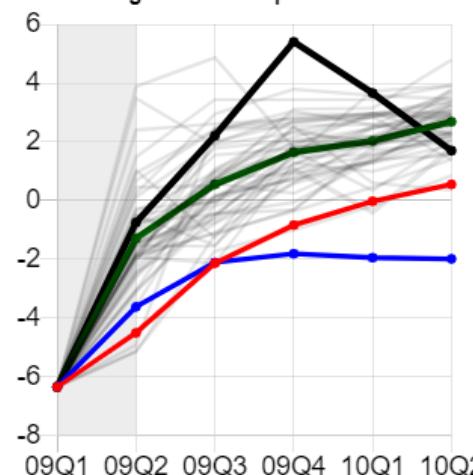
Balanced panel



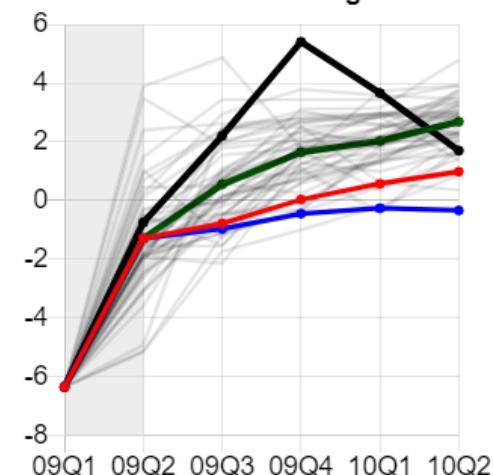
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning



- **Comparison of relative* RMSEs in 2008:III – 2009:II**

* RMSEs are reported relative to those of the RMSE of the mean SPF forecast, for which absolute RMSEs are reported in the last column.

Source	DS04				WW11				SW07				FRBEDO08				NKBGG				
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	
Forecast Horizon	0	2.10	2.72		2.37	2.88			1.79	2.07			2.56	1.90			2.45	2.45			
	1	1.31	1.23	1.27	1.12	1.37	1.30	1.34	1.23	1.34	1.22	1.53	1.29	1.55	1.34	1.29	1.28	1.46	1.35	1.39	1.27
	2	1.16	1.12	1.15	1.12	1.15	1.14	1.15	1.14	1.23	1.07	1.33	1.12	1.38	1.26	1.05	1.34	1.19	1.16	1.17	1.15
	3	1.11	1.13	1.14	1.22	1.05	1.09	1.08	1.14	1.16	0.80	1.12	0.85	1.15	1.07	0.94	1.45	0.92	0.93	0.93	0.94
	4	0.98	1.02	1.06	1.17	0.89	0.93	0.96	1.03	1.33	1.00	0.67	0.50	1.15	0.99	1.21	1.31	0.88	0.86	0.87	0.85

Source	QPM08				DNGS15				KR15_FF				KR15_HH				CMR14				
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	
Forecast Horizon	0	2.57	2.58		1.57	1.14			1.98	2.89			1.98	2.52			2.05	1.43			
	1	1.34	1.30	1.31	1.30	1.18	1.14	1.11	1.03	1.54	1.13	1.56	1.43	1.62	1.13	1.53	1.13	1.44	1.27	1.27	1.20
	2	1.06	1.08	1.05	1.07	1.09	1.16	1.15	1.05	1.21	1.04	1.21	1.09	1.45	1.28	1.40	1.33	1.41	1.27	1.35	1.25
	3	0.86	0.86	0.80	0.82	1.31	1.50	1.45	1.41	0.87	0.86	0.92	0.83	1.21	1.48	1.27	1.40	1.42	1.35	1.44	1.40
	4	1.26	1.14	1.19	1.18	1.61	1.66	1.70	1.74	0.83	0.88	0.88	0.87	1.43	2.19	1.38	1.87	0.96	0.94	1.13	1.14

Source	A16				GLP3v				GLP5v				GLP8v				Fair	SPFM	
Scenario	NoExt	SPF	CQ	FV															
Forecast Horizon	0	3.20	3.15		2.58	2.61			2.49	2.25			2.03	1.79			1.91	2.32	
	1	1.75	1.21	1.68	1.26	1.38	1.26	1.37	1.26	1.44	1.28	1.36	1.26	1.43	1.35	1.40	1.31	1.32	4.64
	2	1.97	1.55	1.82	1.62	1.28	1.19	1.23	1.16	1.39	1.28	1.34	1.23	1.40	1.32	1.39	1.27	1.24	4.52
	3	3.39	2.71	2.83	2.87	1.47	1.42	1.39	1.33	1.83	1.73	1.78	1.59	1.80	1.66	1.85	1.56	1.21	2.42
	4	3.78	3.19	2.98	3.40	1.22	1.51	1.17	1.46	1.78	1.86	1.80	1.73	1.67	1.62	1.76	1.52	0.99	1.83

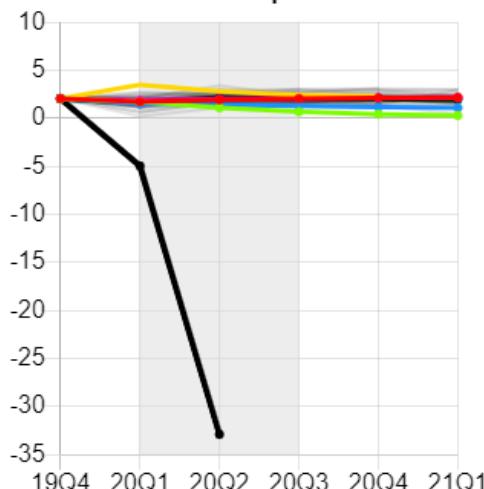
- **Comparison of forecasts in 2020:I – 2020:II***
- **Pre-crisis models**

* The actual GDP growth in 2020:I – 2020:II are collected as of July 30, 2020.

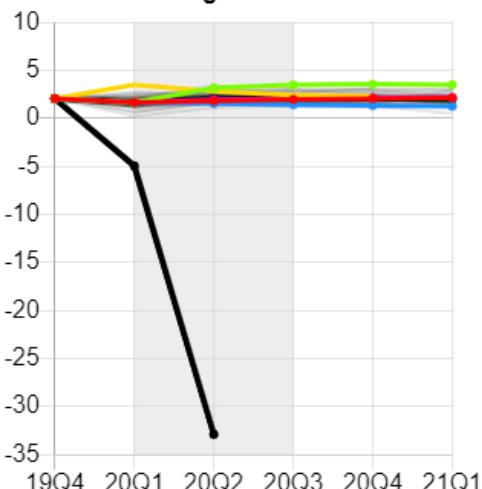
■ DS04 ■ FRBEDO08 ■ Fair ■ SW07 ■ WW11 ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2020Q1

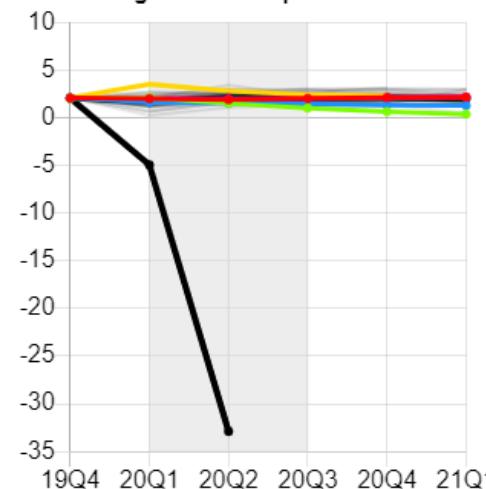
Balanced panel



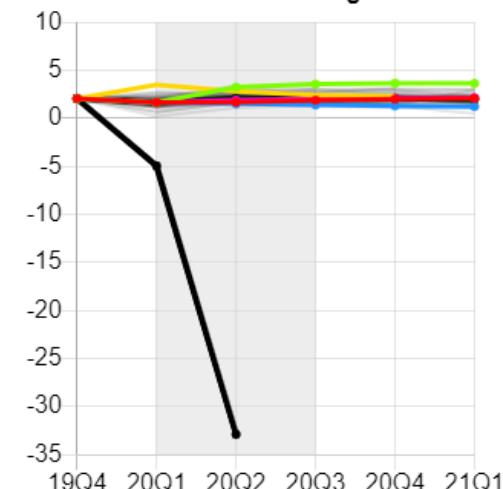
Conditioning on SPF nowcast



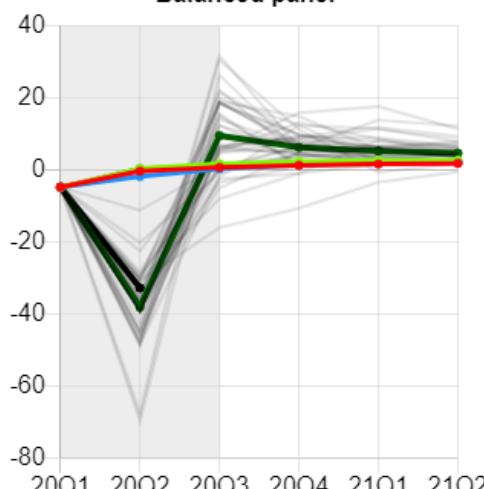
Conditioning on current-quarter observations



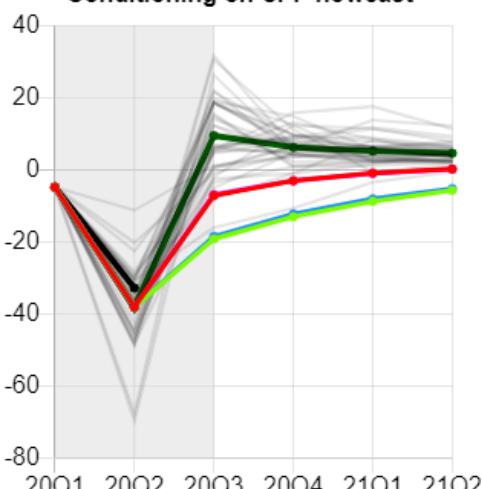
Full conditioning



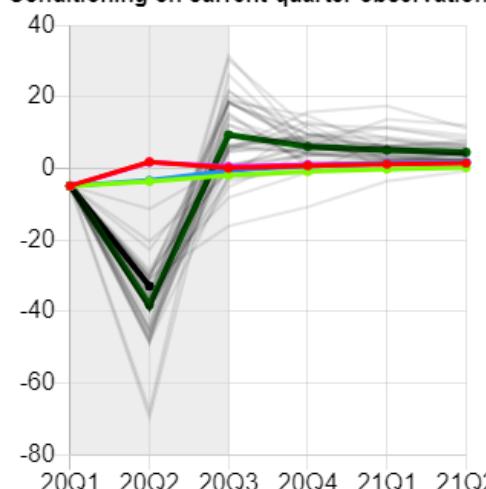
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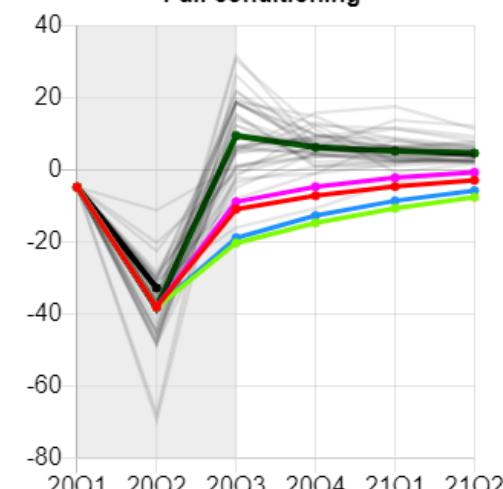
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning

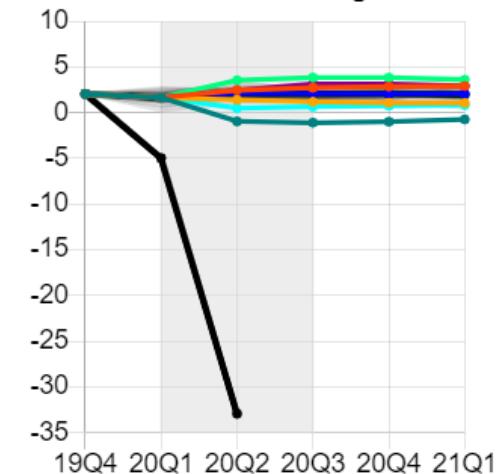
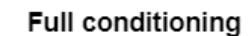
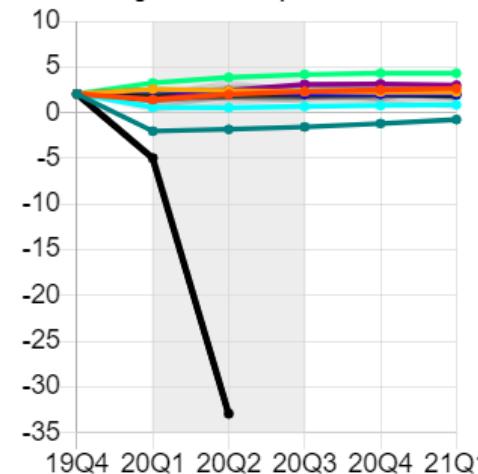
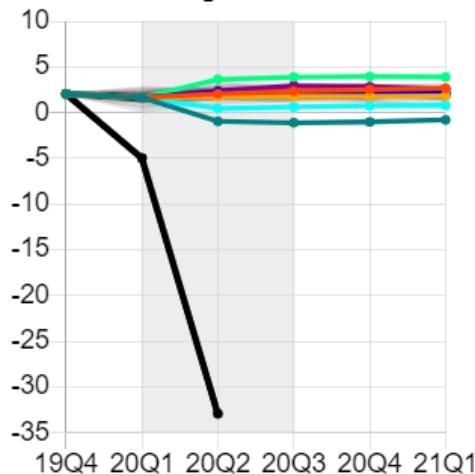
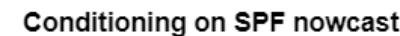
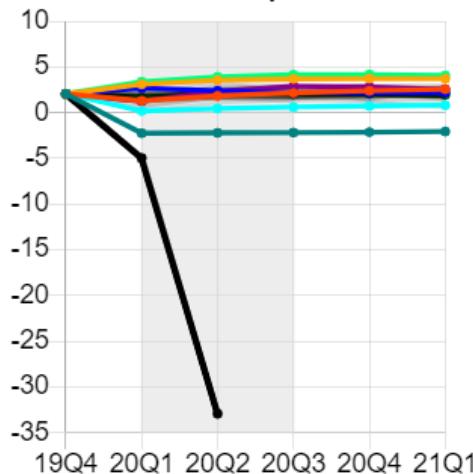


- Comparison of forecasts in 2020:I – 2020:II*
- Post-crisis models

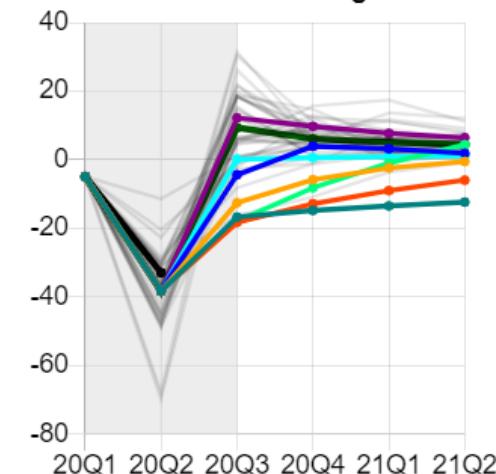
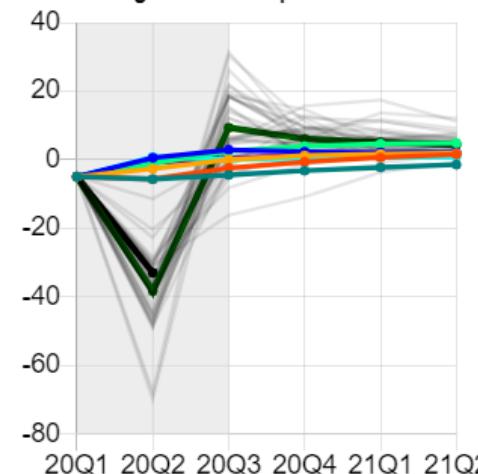
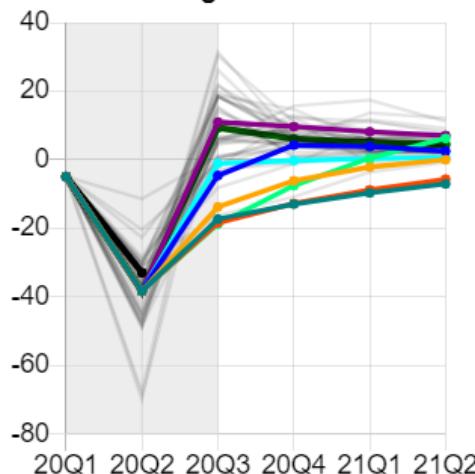
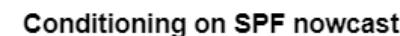
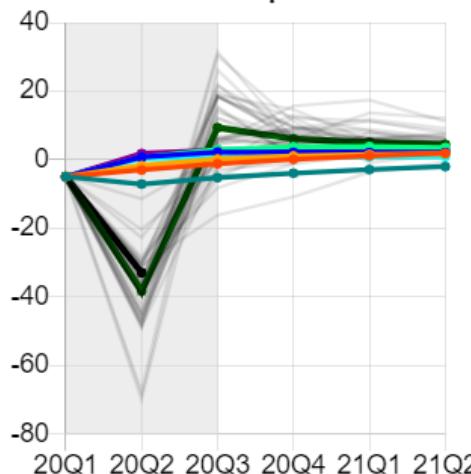
* The actual GDP growth in 2020:I – 2020:II are collected as of July 30, 2020.



Forecast start 2020Q1



Forecast start 2020Q2



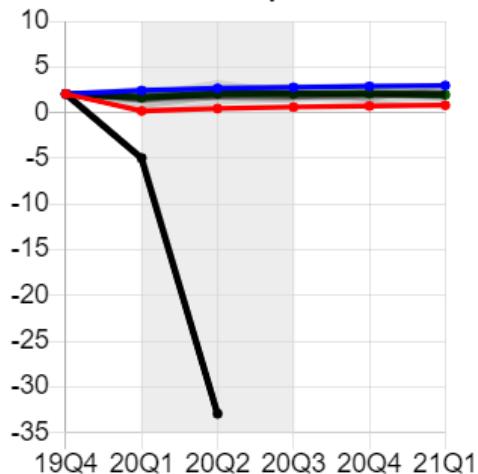
- Comparison of forecasts in 2020:I – 2020:II*
- Structural models versus time-series models

* The actual GDP growth in 2020:I – 2020:II are collected as of July 30, 2020.

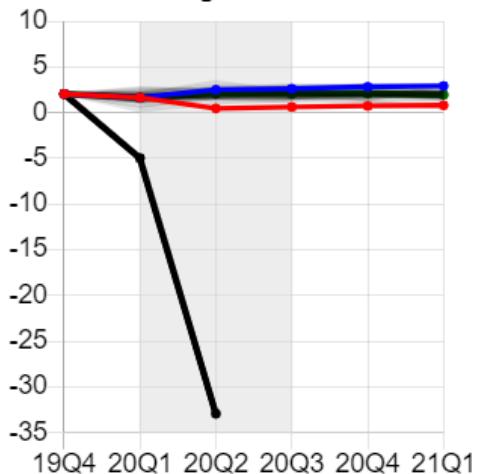
■ NKBGG ■ GLP5v ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2020Q1

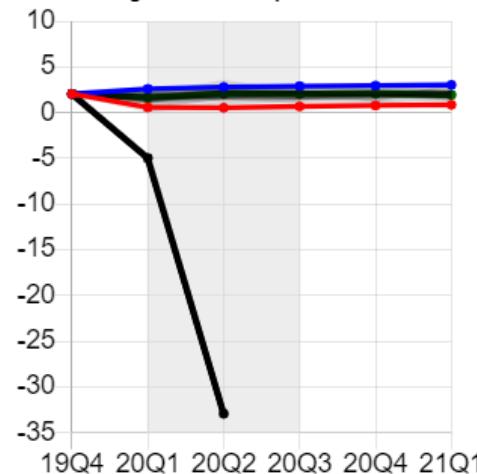
Balanced panel



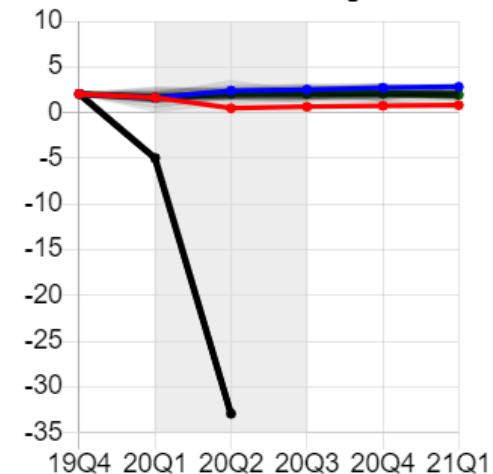
Conditioning on SPF nowcast



Conditioning on current-quarter observations

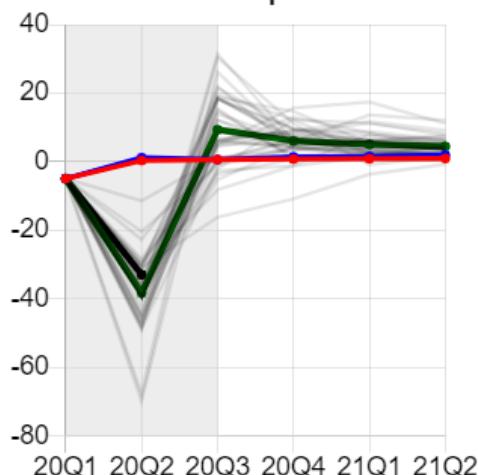


Full conditioning

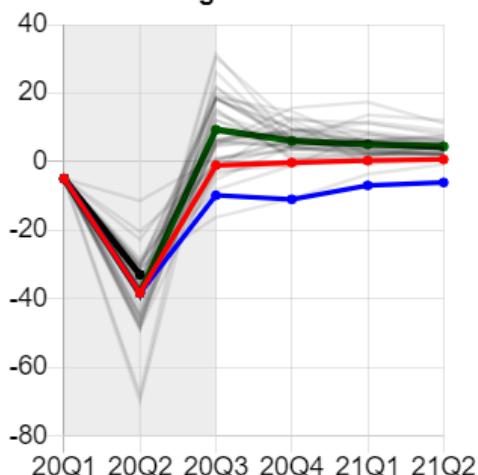


Forecast start 2020Q2

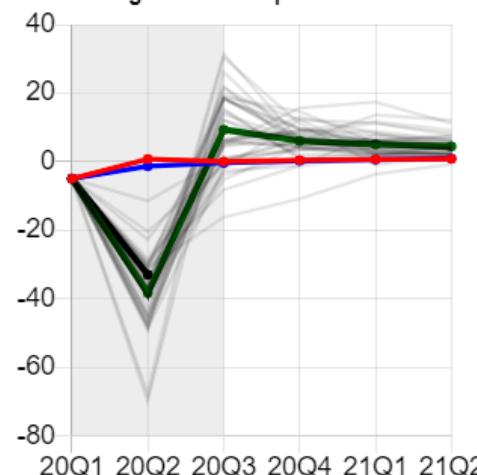
Balanced panel



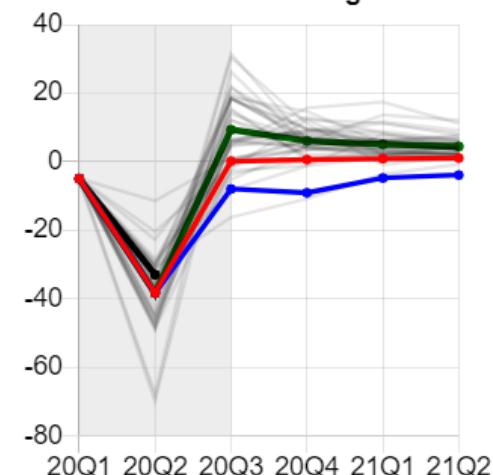
Conditioning on SPF nowcast



Conditioning on current-quarter observations



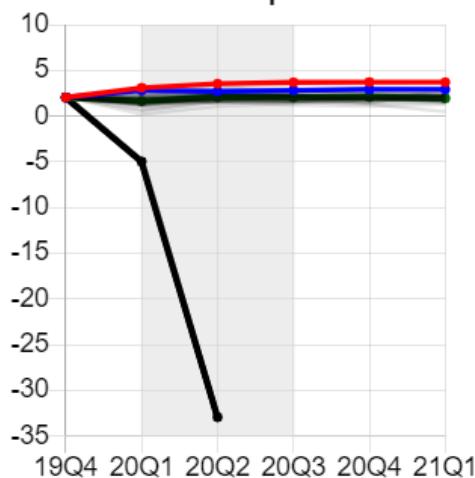
Full conditioning



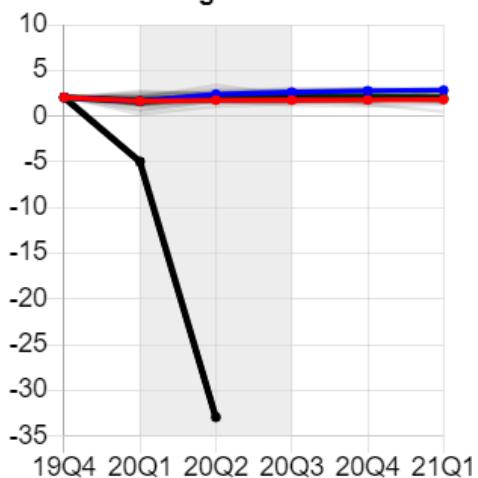
DNGS15 GLP8v SPFIndividual SPFMean Actual

Forecast start 2020Q1

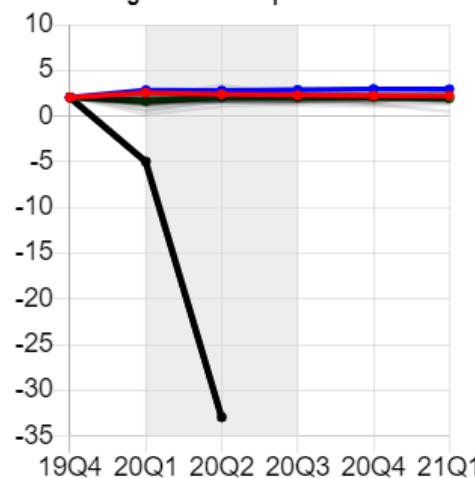
Balanced panel



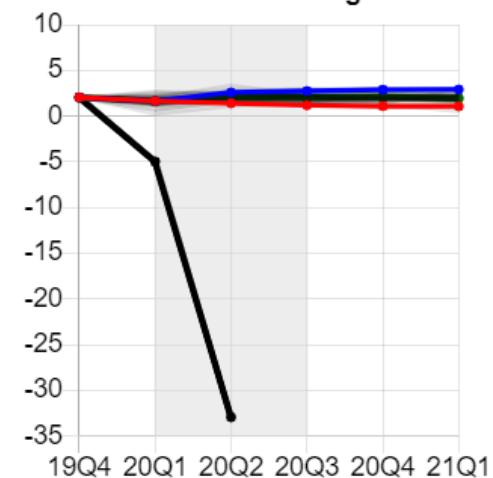
Conditioning on SPF nowcast



Conditioning on current-quarter observations

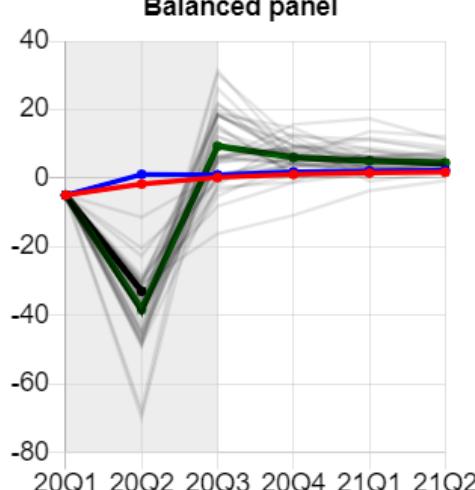


Full conditioning

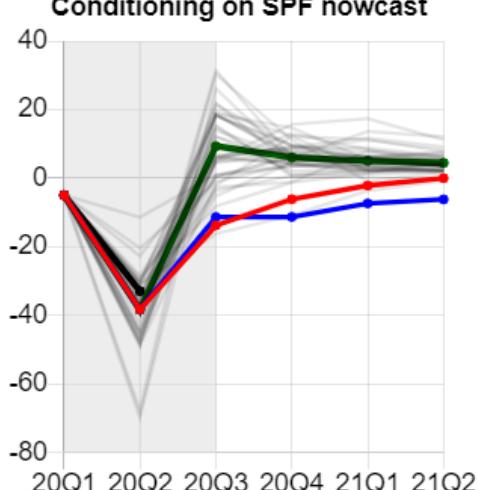


Forecast start 2020Q2

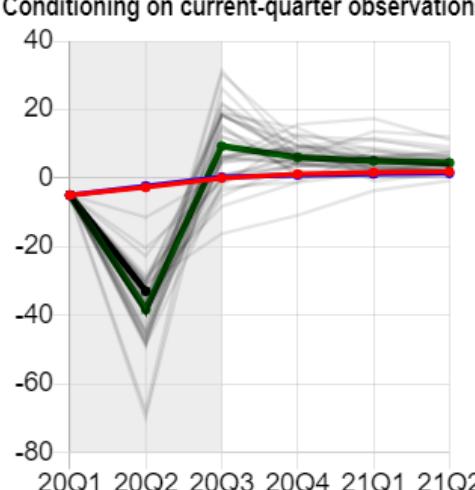
Balanced panel



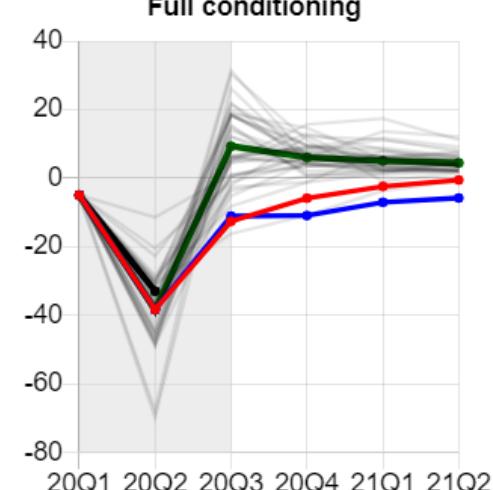
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning



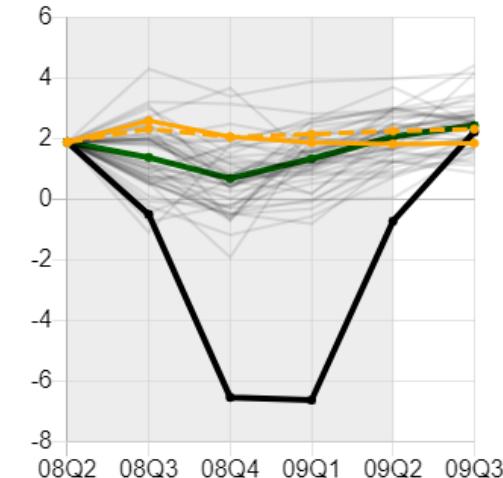
- Comparison of forecast and relative* RMSEs from the original DNGS15 model and a modified DNGS15 model with less nominal rigidities
- Forecast period: 2008:III – 2009: II

* RMSEs are reported relative to those of the RMSE of the mean SPF forecast, for which absolute RMSEs are reported in the last column.

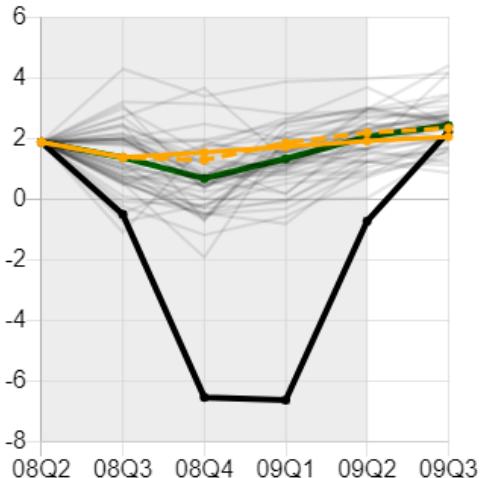
DNGS15 DNGS15_nofa SPFIndividual SPFMean Actual

Forecast start 2008Q3

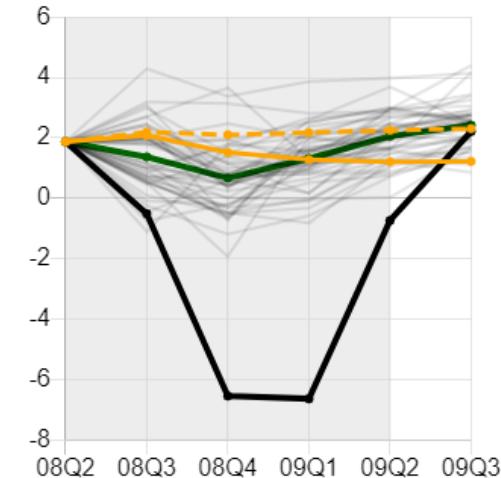
Balanced panel



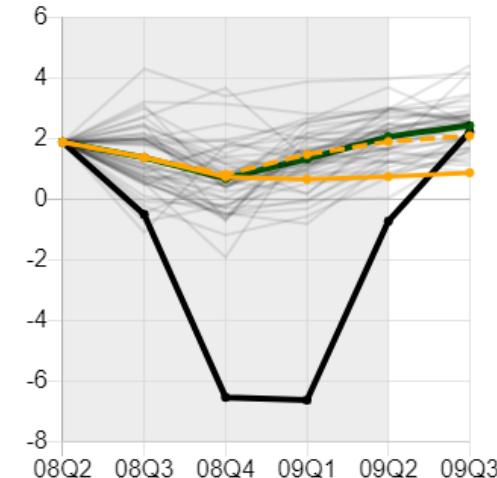
Conditioning on SPF nowcast



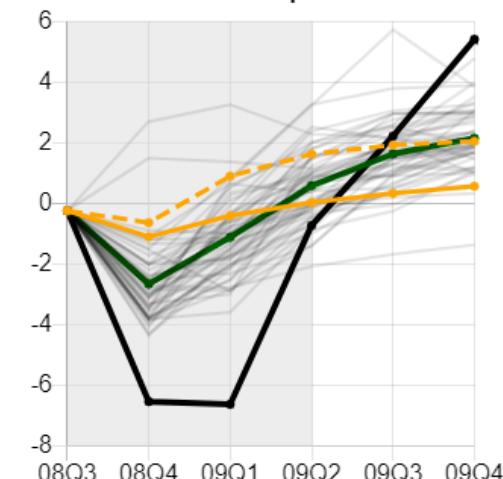
Conditioning on current-quarter observations



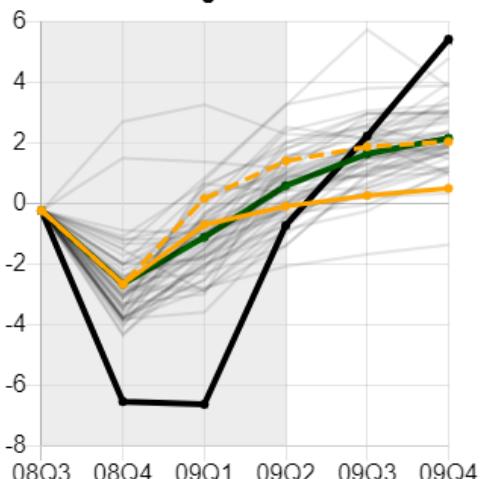
Full conditioning



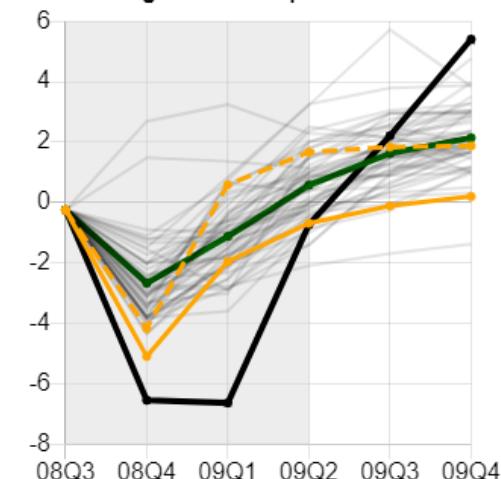
Balanced panel



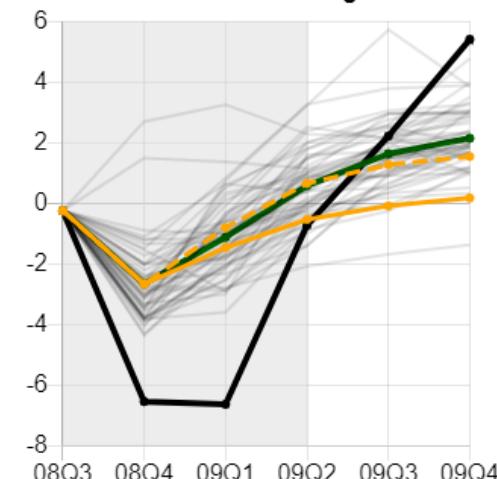
Conditioning on SPF nowcast



Conditioning on current-quarter observations



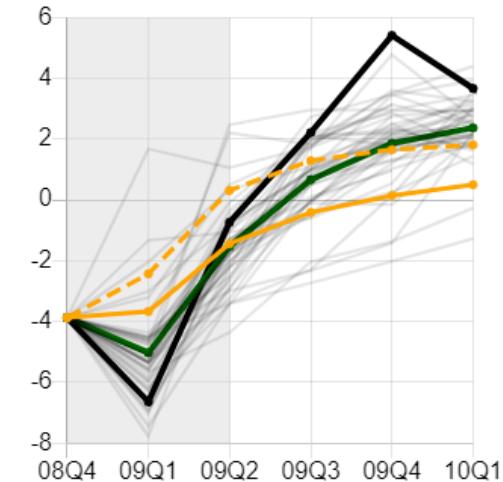
Full conditioning



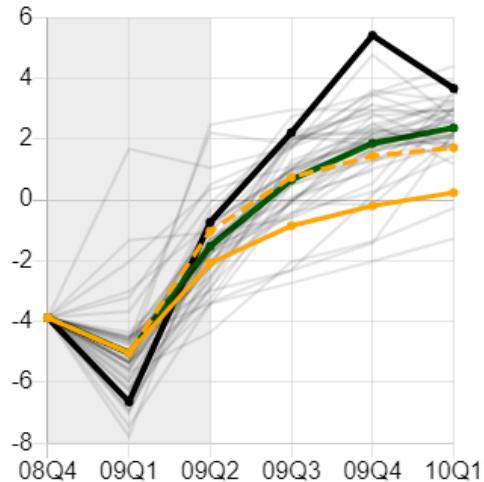
DNGS15 DNGS15_nofa SPFIndividual SPFMean Actual

Forecast start 2009Q1

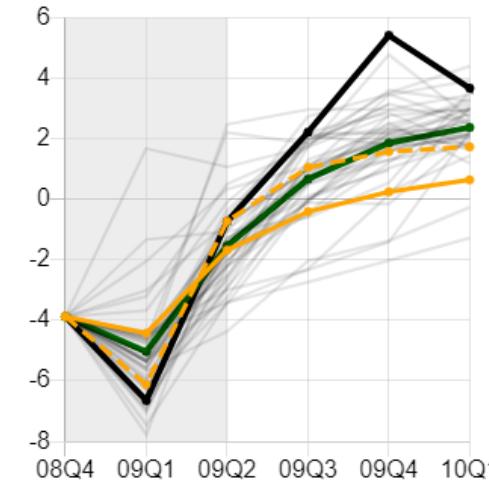
Balanced panel



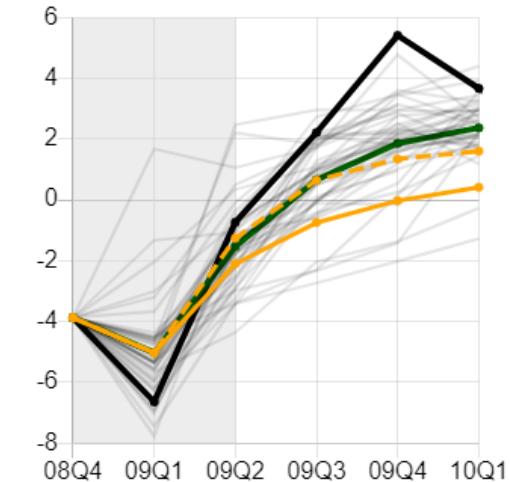
Conditioning on SPF nowcast



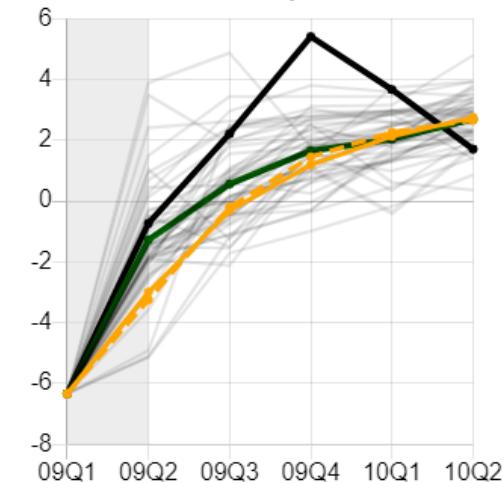
Conditioning on current-quarter observations



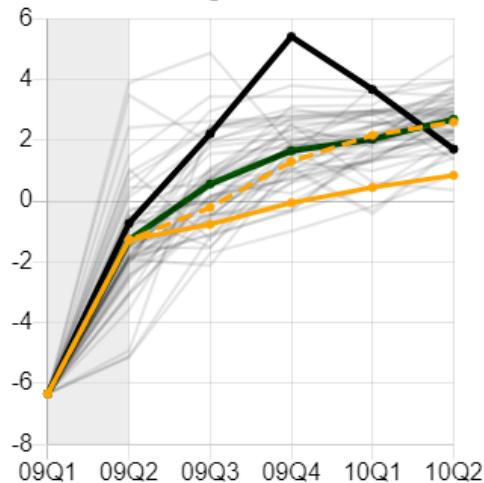
Full conditioning



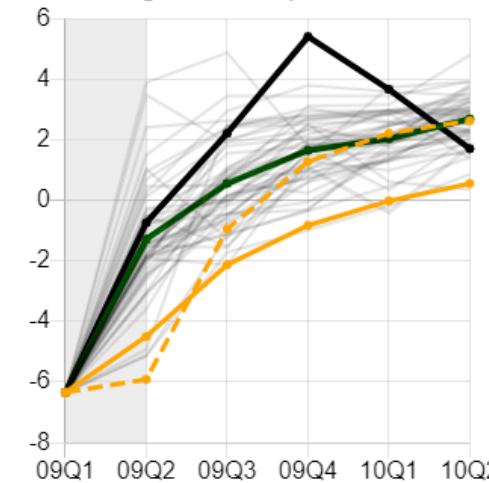
Balanced panel



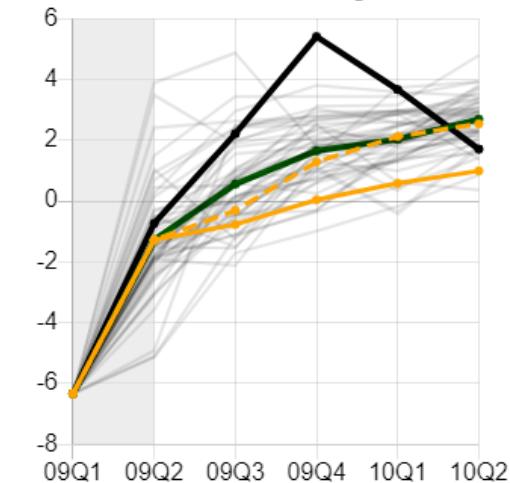
Conditioning on SPF nowcast



Conditioning on current-quarter observations



Full conditioning



Source Scenario	DNGS15				DNGS15_nofa				SPFM	
	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV		
Forecast Horizon	0	1.57		1.14	1.76		1.36		2.32	
	1	1.18	1.14	1.11	1.03	1.26	1.15	1.26	1.05	4.64
	2	1.09	1.16	1.15	1.05	1.10	1.08	1.12	1.03	4.52
	3	1.31	1.50	1.45	1.41	1.03	1.07	1.05	1.07	2.42
	4	1.61	1.66	1.70	1.74	1.08	1.10	1.13	1.22	1.83

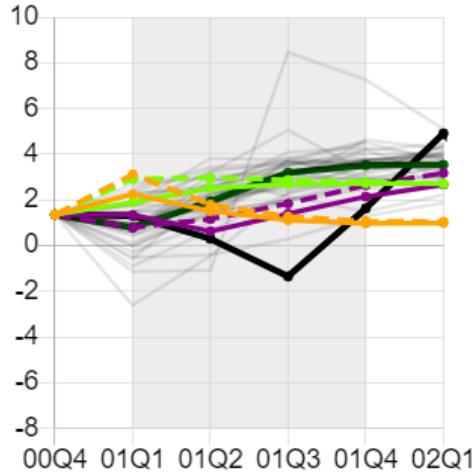
- Comparison of forecast and relative* RMSEs from models with and without current-quarter labor-market observations
- Models: DNGS15, QPM08, FRBEDO08
- Forecast period: 2001:I – 2001: IV, 2008: III – 2009: IV, 2020: I – 2020: II

* RMSEs are reported relative to those of the RMSE of the mean SPF forecast, for which absolute RMSEs are reported in the last column.

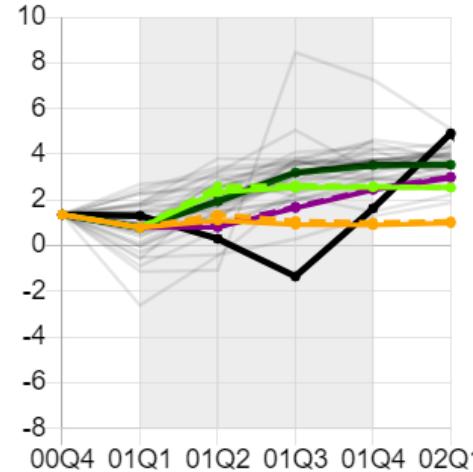
DNGS15 DNGS15_cql FRBEDO08 FRBEDO08_cql QPM08 QPM08_cql SPFIndividual SPFMean Actual

Forecast start 2001Q1

Conditioning on current-quarter observations

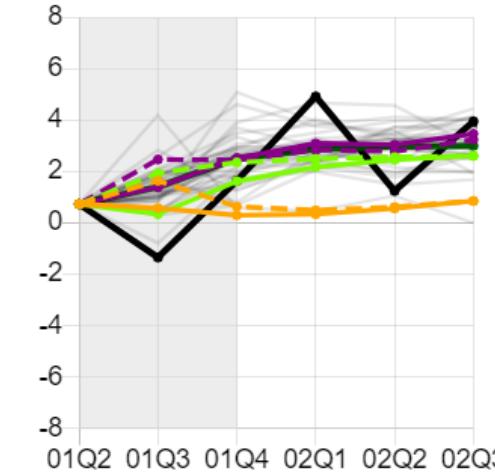


Full conditioning

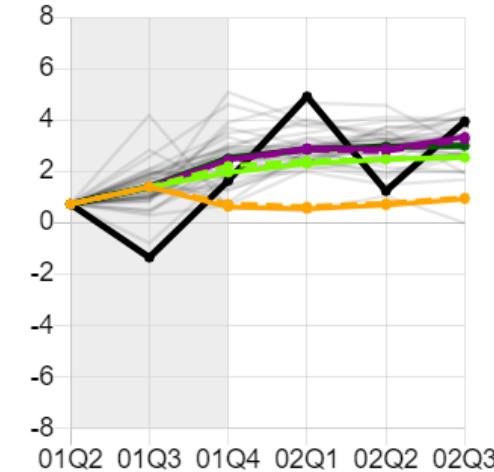


Forecast start 2001Q3

Conditioning on current-quarter observations

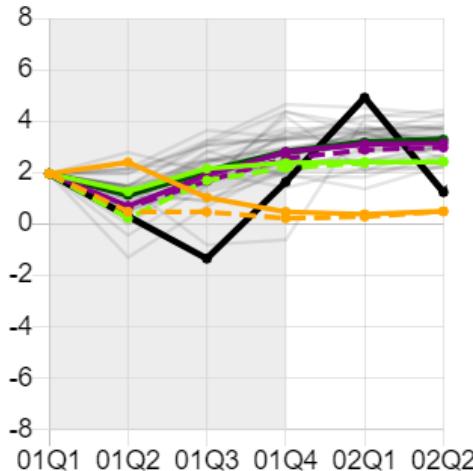


Full conditioning

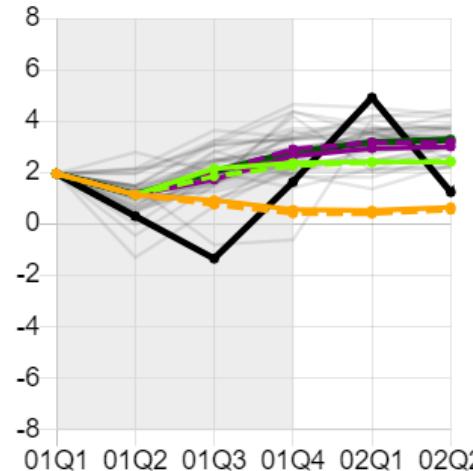


Forecast start 2001Q2

Conditioning on current-quarter observations

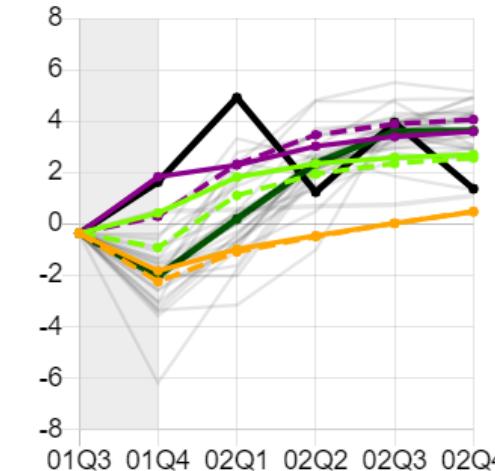


Full conditioning

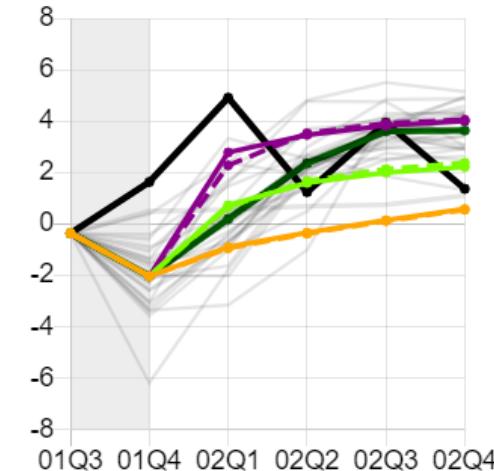


Forecast start 2001Q4

Conditioning on current-quarter observations



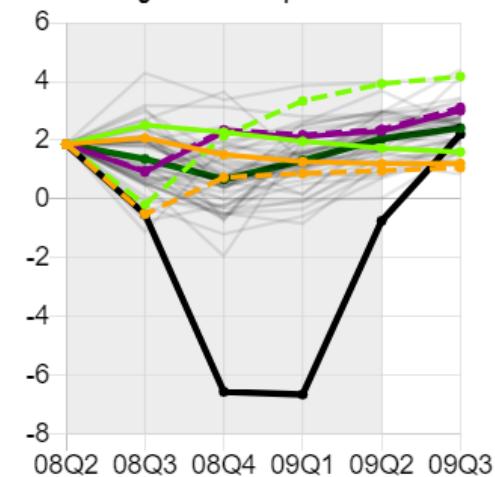
Full conditioning



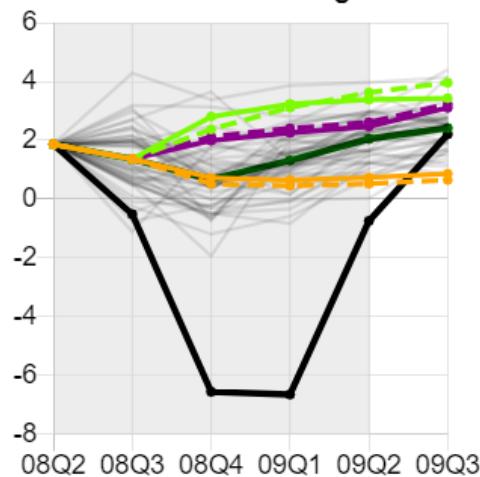
■ DNGS15 ■ DNGS15_cql ■ FRBEDO08 ■ FRBEDO08_cql ■ QPM08 ■ QPM08_cql ■ SPFIndividual ■ SPFMean ■ Actual

Forecast start 2008Q3

Conditioning on current-quarter observations

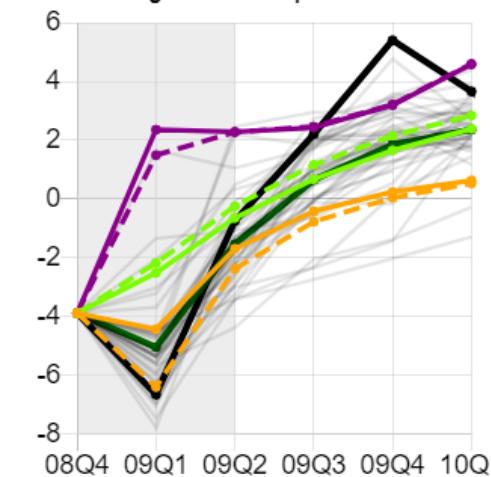


Full conditioning

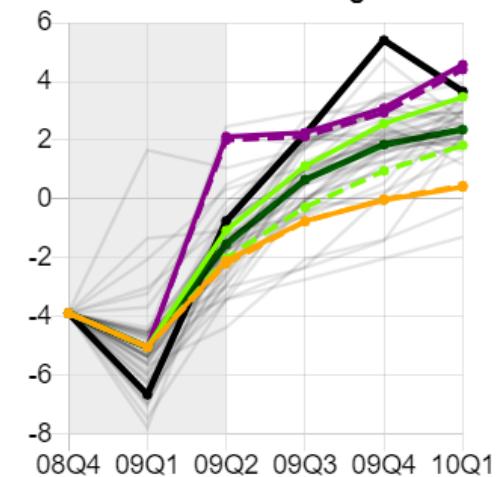


Forecast start 2009Q1

Conditioning on current-quarter observations

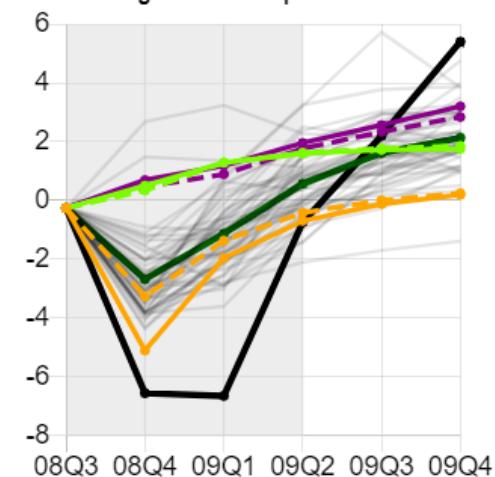


Full conditioning

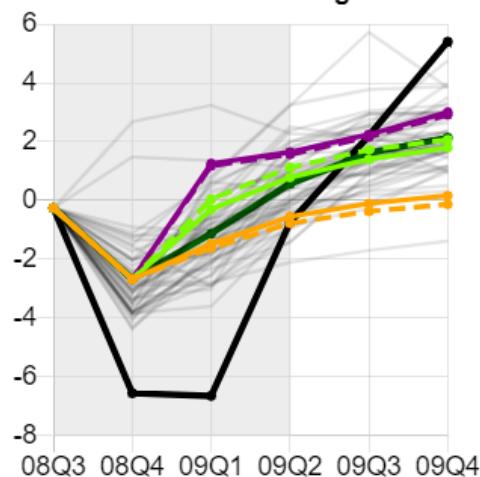


Forecast start 2008Q4

Conditioning on current-quarter observations

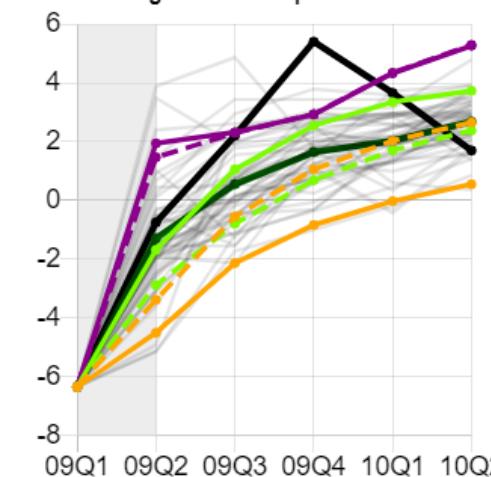


Full conditioning

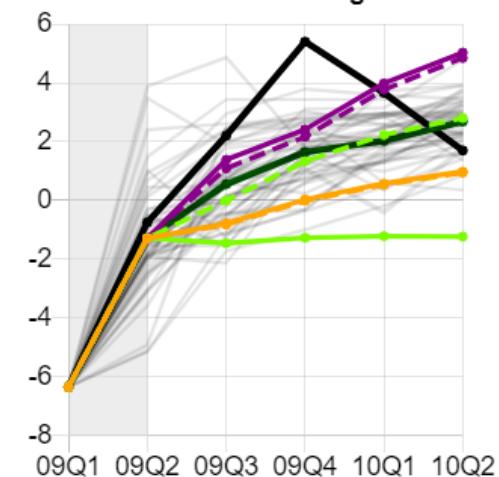


Forecast start 2009Q2

Conditioning on current-quarter observations



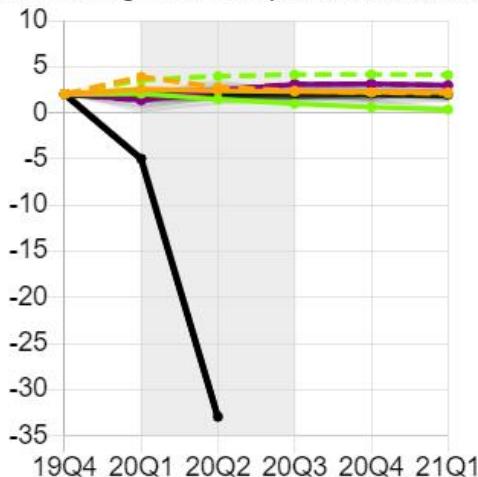
Full conditioning



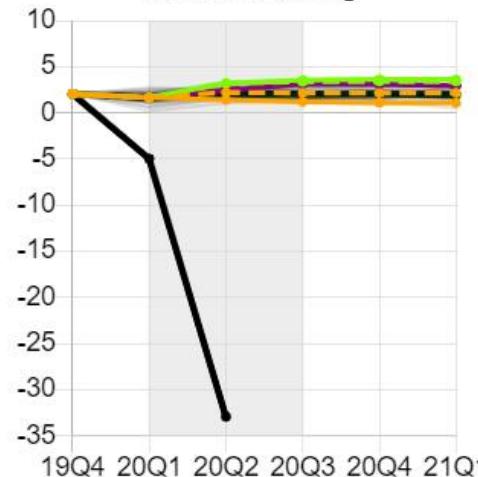
DNGS15 DNGS15_cql FRBEDO08 FRBEDO08_cql QPM08 QPM08_cql SPFIndividual SPFMean Actual

Forecast start 2020Q1

Conditioning on current-quarter observations

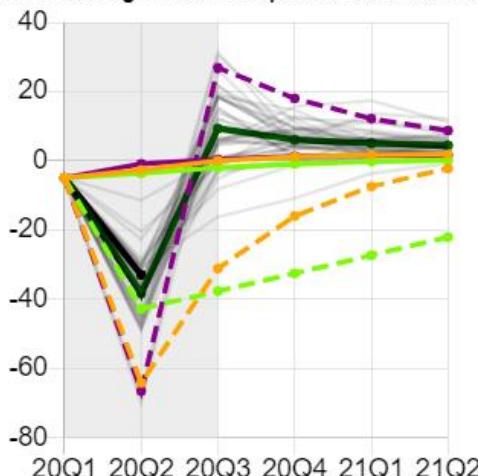


Full conditioning

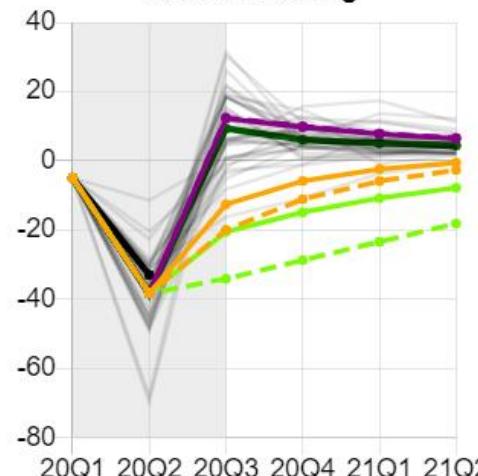


Forecast start 2020Q2

Conditioning on current-quarter observations



Full conditioning



Forecast period: 2001:I - 2001:IV

Source	DNGS15		DNGS15_cql		QPM08		QPM08_cql		FRBEDO08		FRBEDO08_cql		SPFM	
Scenario	CQ	FV	CQ	FV	CQ	FV	CQ	FV	CQ	FV	CQ	FV		
Forecast Horizon	0	0.98		1.11		0.66		0.87		0.98		0.95		2.34
	1	1.08	1.05	1.07	1.05	0.69	0.69	0.68	0.72	1.08	1.05	0.92	0.96	3.05
	2	1.07	1.01	1.07	1.02	0.74	0.78	0.86	0.86	1.07	1.01	0.94	0.91	2.62
	3	1.95	1.89	1.97	1.92	1.42	1.20	0.88	0.80	1.95	1.89	1.12	1.12	1.55
	4	1.48	1.45	1.46	1.43	1.15	1.32	1.07	1.11	1.48	1.45	0.89	0.91	1.74

Forecast period: 2008:III - 2009:IV

Source	DNGS15		DNGS15_cql		QPM08		QPM08_cql		FRBEDO08		FRBEDO08_cql		SPFM	
Scenario	CQ	FV	CQ	FV	CQ	FV	CQ	FV	CQ	FV	CQ	FV		
Forecast Horizon	0	1.14		0.91		2.07		2.39		0.98		1.83		2.32
	1	1.11	1.03	1.03	1.00	1.53	1.29	1.30	1.30	1.08	1.05	1.31	1.23	4.64
	2	1.15	1.05	1.02	1.04	1.33	1.12	1.05	1.09	1.07	1.01	1.25	1.22	4.52
	3	1.45	1.41	1.29	1.42	1.12	0.85	0.80	0.86	1.95	1.89	1.25	1.33	2.42
	4	1.70	1.74	1.70	1.81	0.67	0.50	1.26	1.15	1.48	1.45	1.15	1.19	1.83

- Comparison of forecast and relative* RMSEs from models estimated based on rolling-window* and expanding-window* specifications
- Models: DNGS15, SW07
- Forecast period: 2001:I – 2001: IV, 2008: III – 2009: IV, 2020: I – 2020: II

* RMSEs are reported relative to those of the RMSE of the mean SPF forecast, for which absolute RMSEs are reported in the last column.

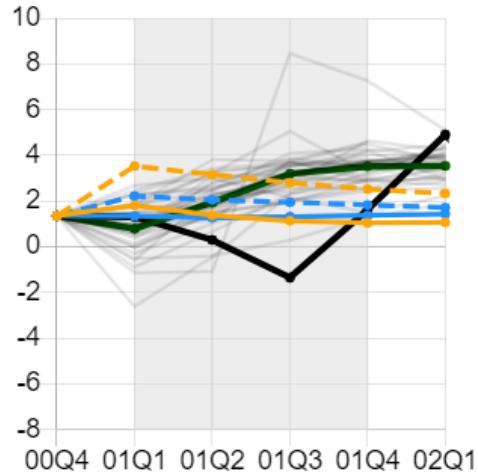
* In the rolling window specification, the size of each sample is fixed to 100

* In the expanding window specification, the start of the in-sample period is fixed to 1964:I

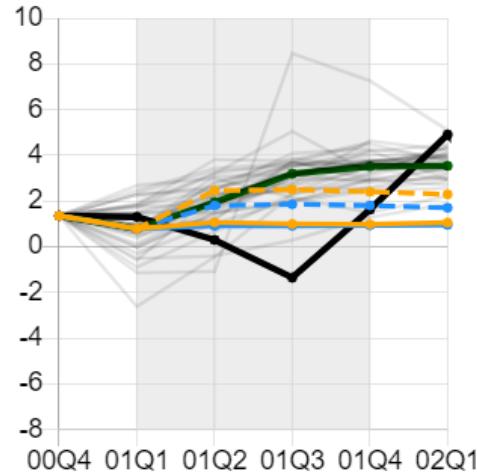
DNGS15 DNGS15_ew SW07 SW07_ew SPFIndividual SPFMean Actual

Forecast start 2001Q1

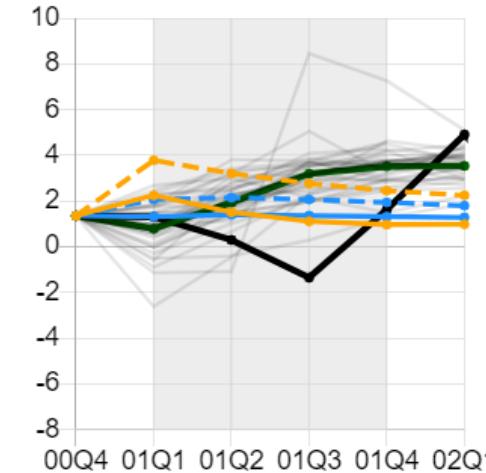
Balanced panel



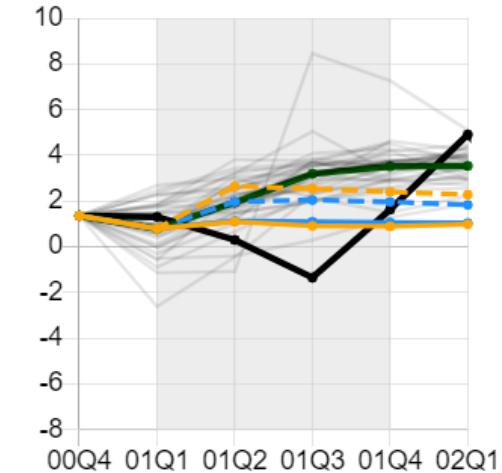
Conditioning on SPF nowcast



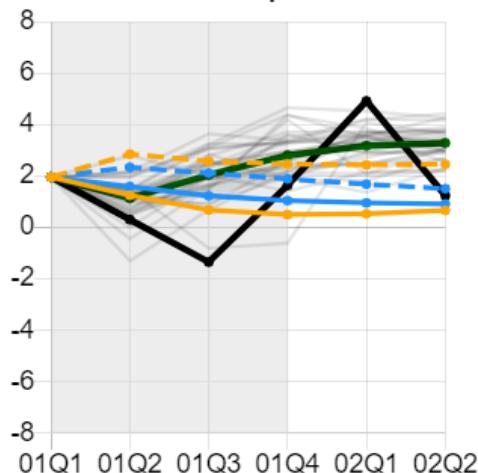
Conditioning on current-quarter observations



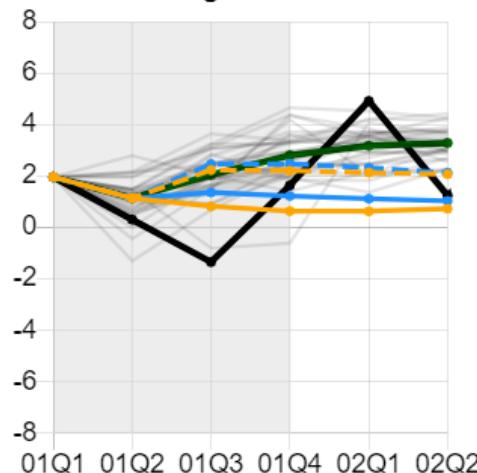
Full conditioning



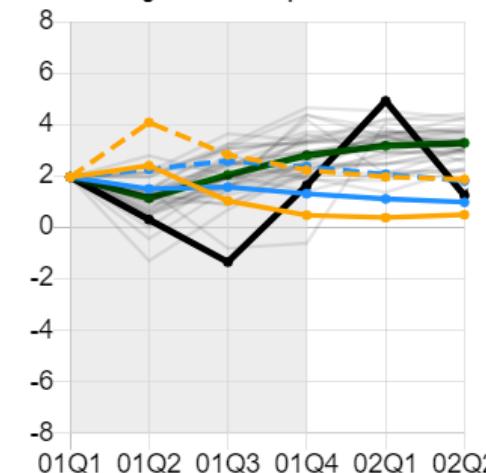
Balanced panel



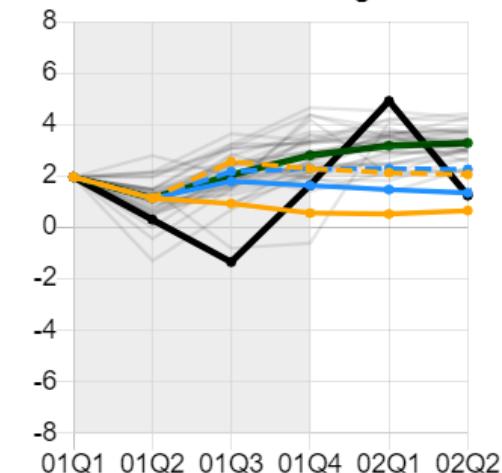
Conditioning on SPF nowcast



Conditioning on current-quarter observations



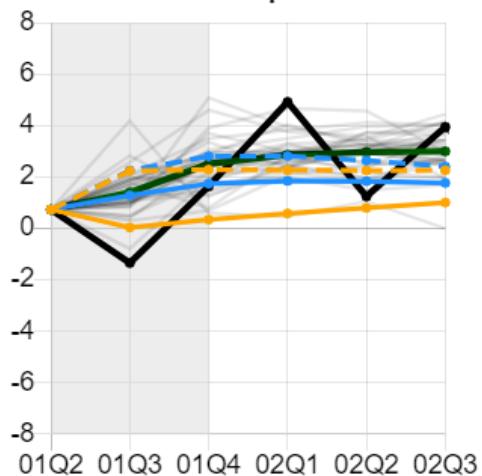
Full conditioning



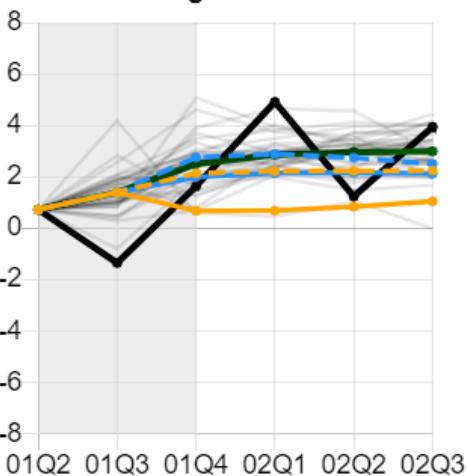
DNGS15 DNGS15_ew SW07 SW07_ew SPFIndividual SPFMean Actual

Forecast start 2001Q3

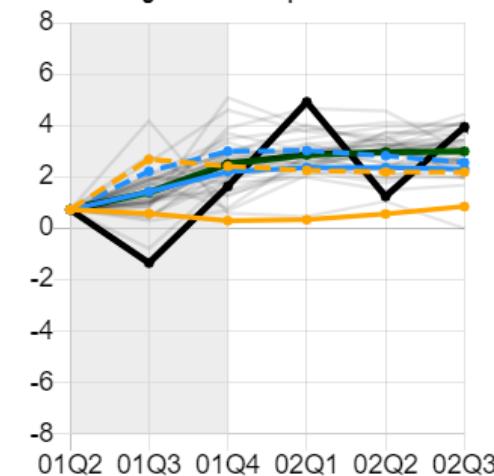
Balanced panel



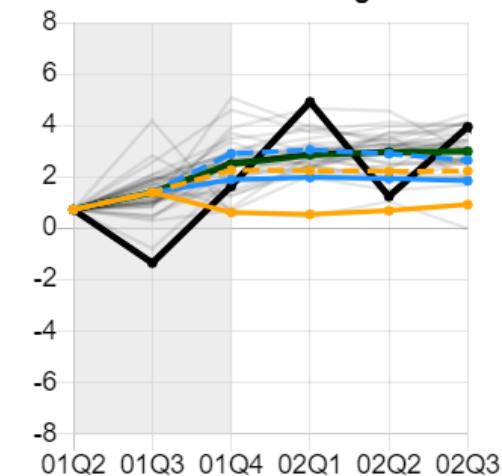
Conditioning on SPF nowcast



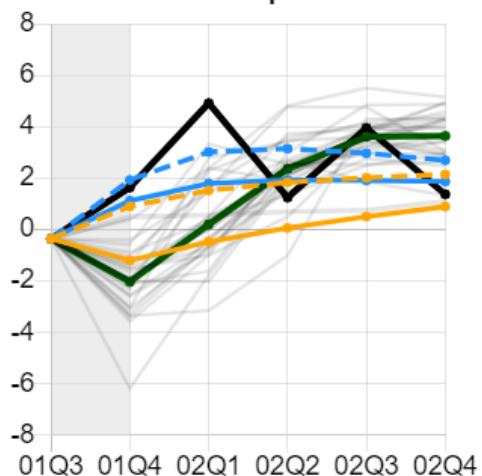
Conditioning on current-quarter observations



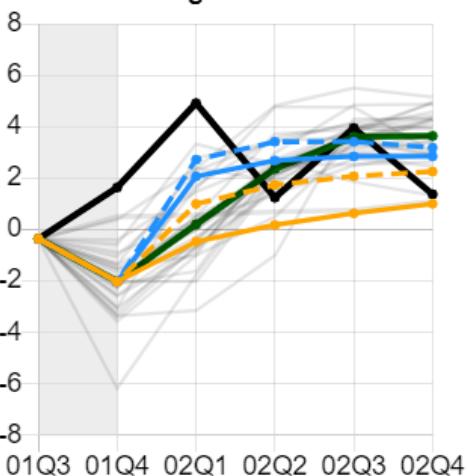
Full conditioning



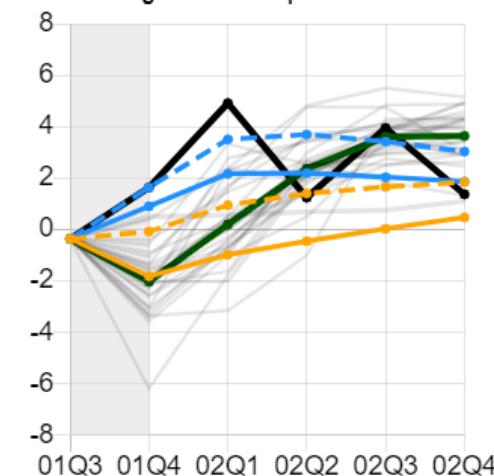
Balanced panel



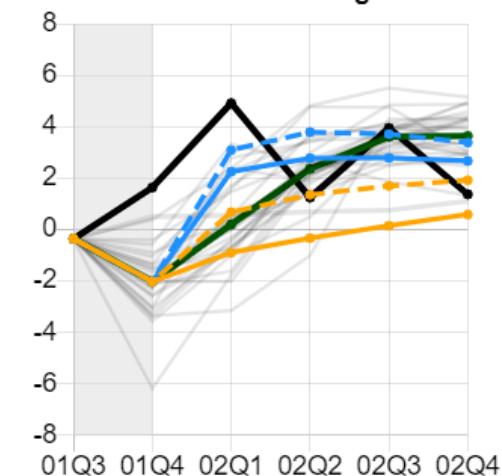
Conditioning on SPF nowcast



Conditioning on current-quarter observations



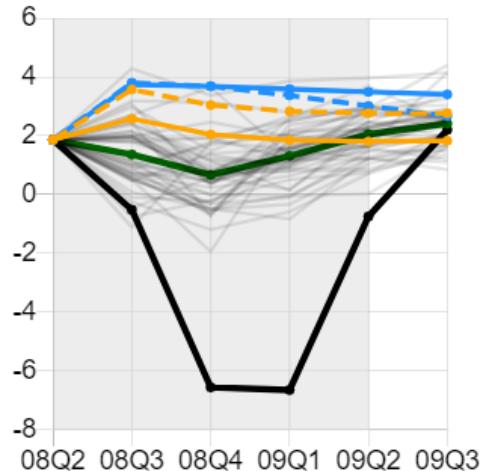
Full conditioning



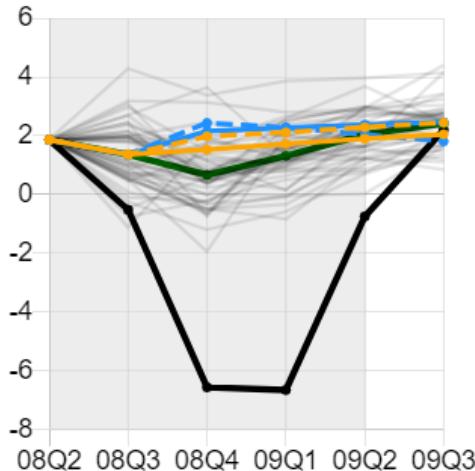
DNGS15 DNGS15_ew SW07 SW07_ew SPFIndividual SPFMean Actual

Forecast start 2008Q3

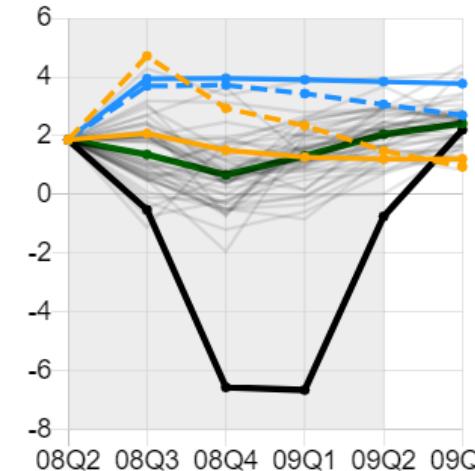
Balanced panel



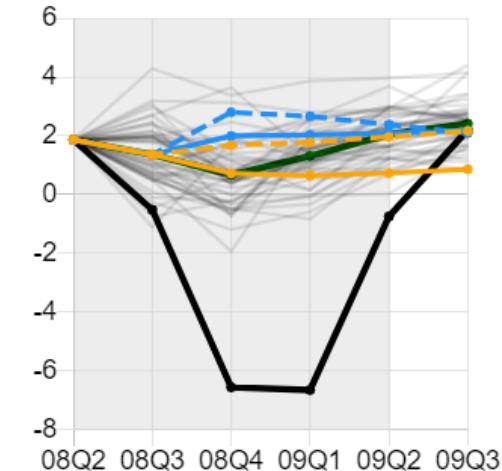
Conditioning on SPF nowcast



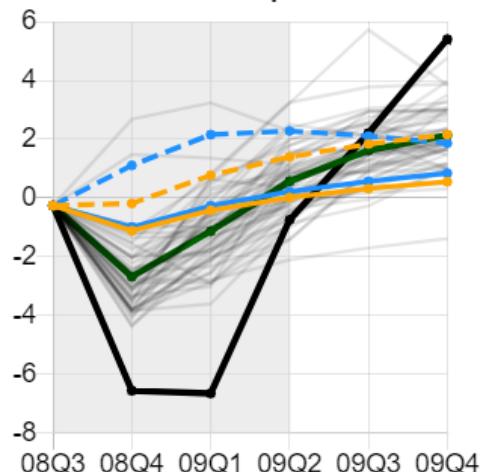
Conditioning on current-quarter observations



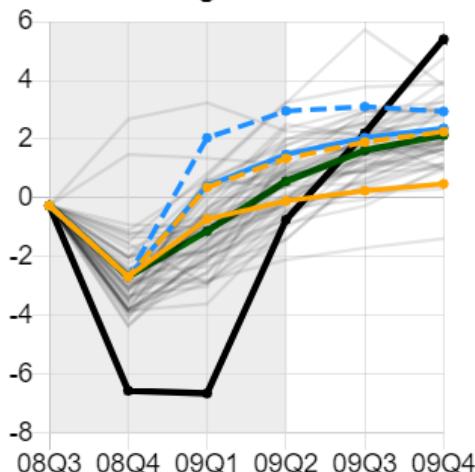
Full conditioning



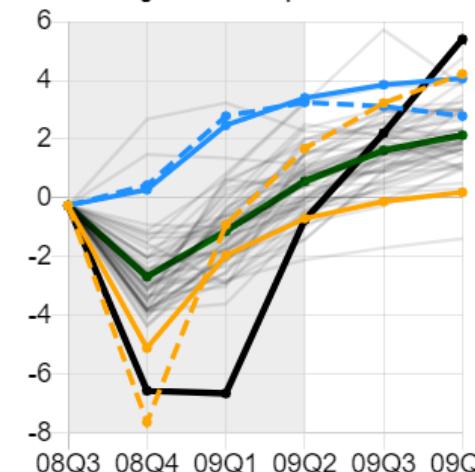
Balanced panel



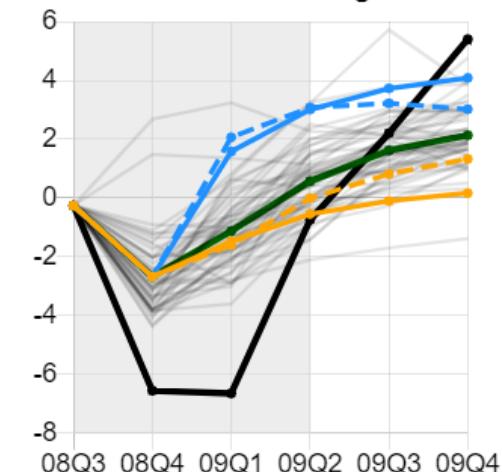
Conditioning on SPF nowcast



Conditioning on current-quarter observations



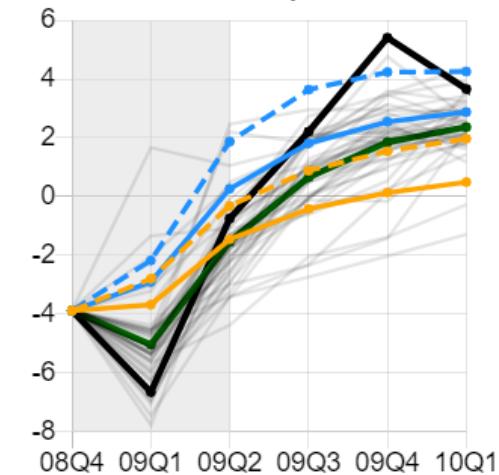
Full conditioning



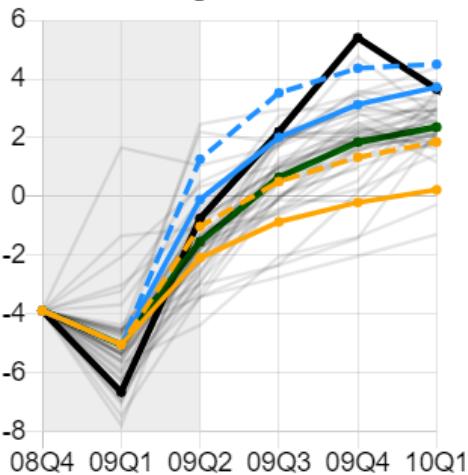
DNGS15 DNGS15_ew SW07 SW07_ew SPFIndividual SPFMean Actual

Forecast start 2009Q1

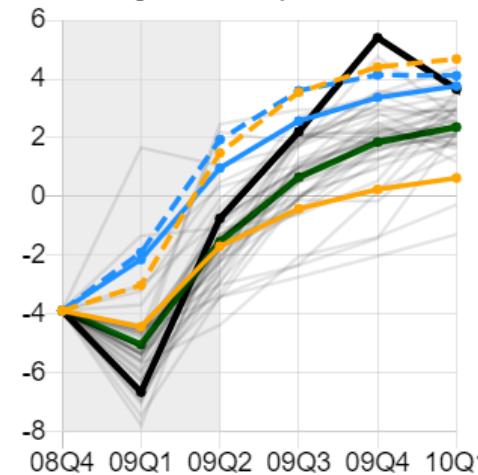
Balanced panel



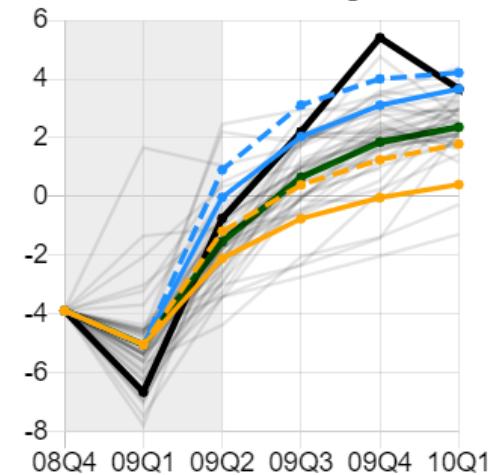
Conditioning on SPF nowcast



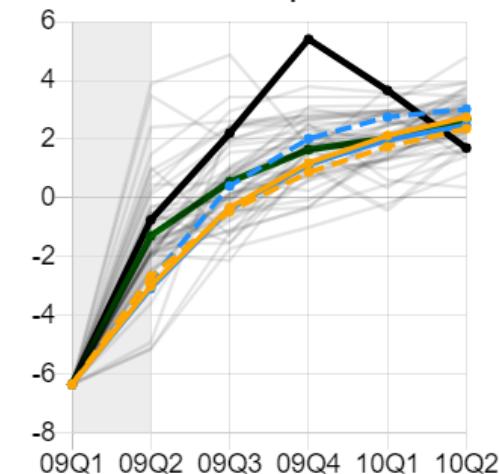
Conditioning on current-quarter observations



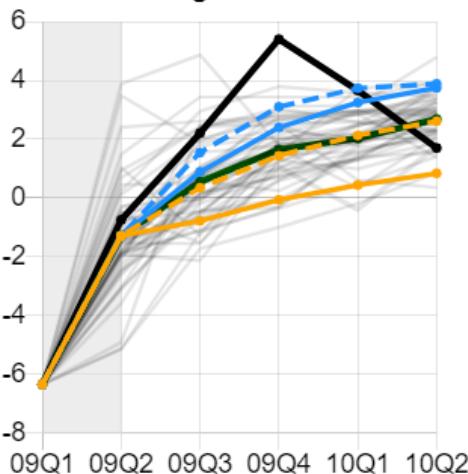
Full conditioning



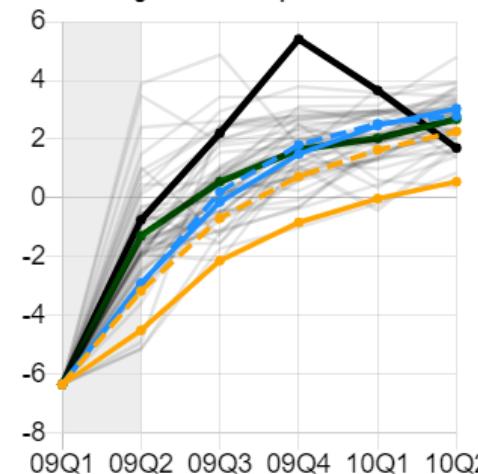
Balanced panel



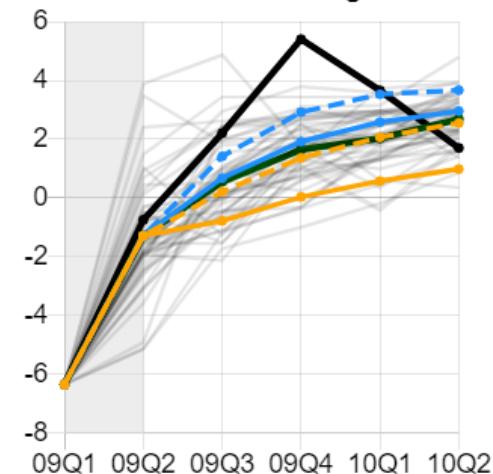
Conditioning on SPF nowcast



Conditioning on current-quarter observations

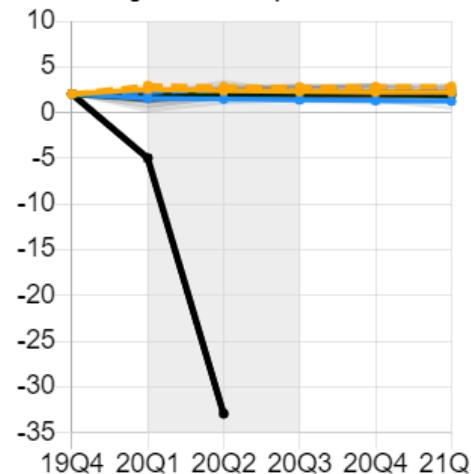
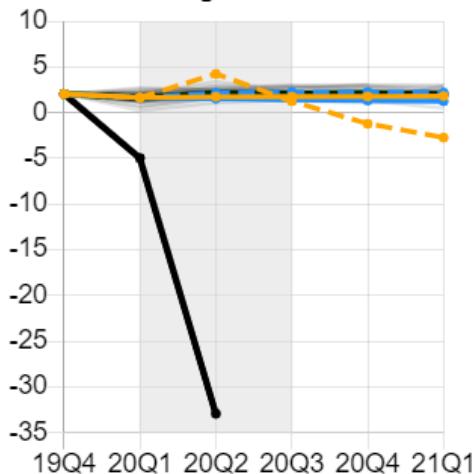
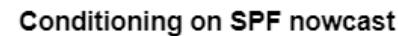
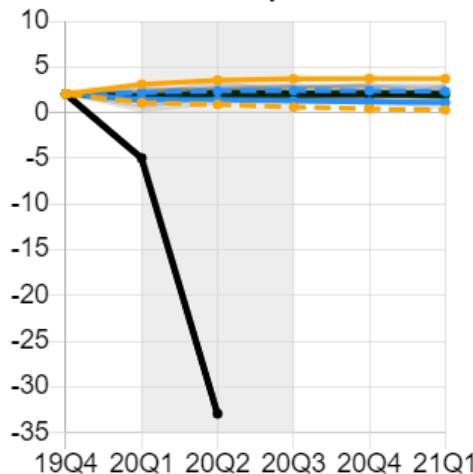


Full conditioning

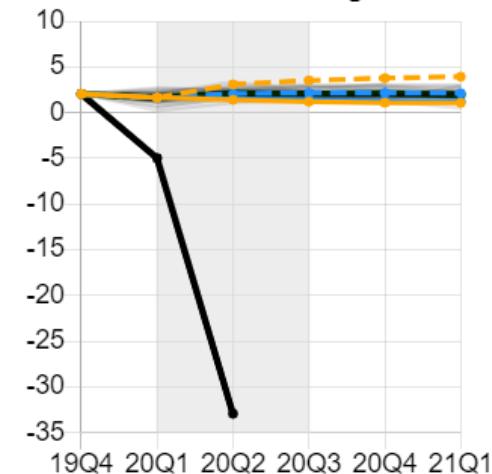




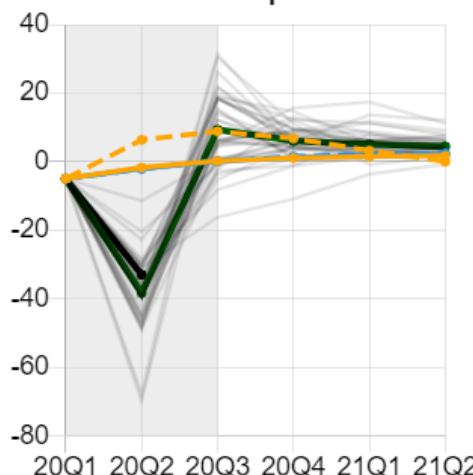
Forecast start 2020Q1



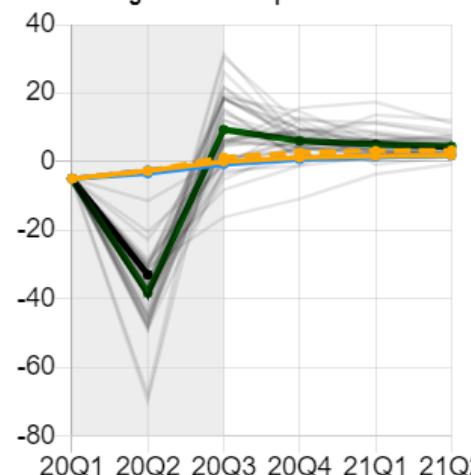
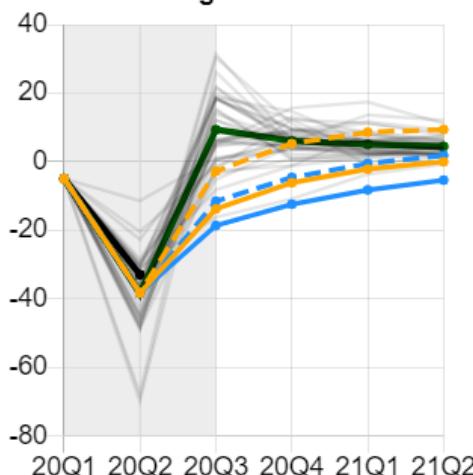
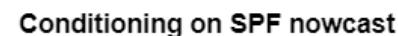
Full conditioning



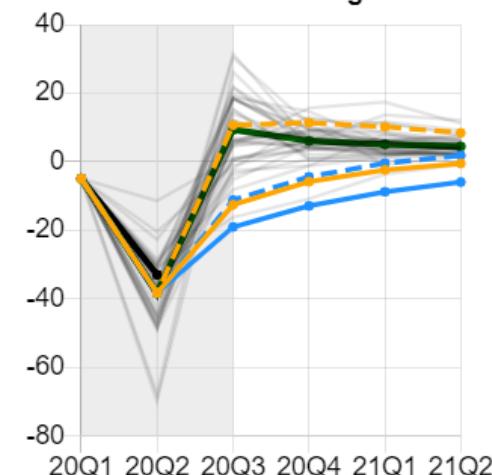
Balanced panel



Forecast start 2020Q2



Full conditioning



Forecast period: 2001:I - 2001:IV

Source	DNGS15				DNGS15_ew				SW07				SW07_ew				SPFM	
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV		
Forecast Horizon	0	0.71	0.98		1.06	1.34			0.64	0.66			0.91	0.88			2.34	
	1	0.99	0.97	1.08	1.05	0.98	0.94	1.07	1.03	0.68	0.66	0.69	0.69	0.73	0.78	0.78	0.74	3.05
	2	1.00	0.96	1.07	1.01	0.96	0.91	0.94	0.91	0.79	0.74	0.74	0.78	0.83	0.85	0.89	0.89	2.62
	3	1.81	1.76	1.95	1.89	1.10	1.15	1.27	1.22	1.45	1.33	1.42	1.20	1.18	0.98	1.07	1.01	1.55
	4	1.41	1.40	1.48	1.45	0.98	0.96	0.94	0.95	1.19	1.32	1.15	1.32	1.09	1.16	1.10	1.16	1.74

Forecast period: 2008:III - 2009:IV

Source	DNGS15				DNGS15_ew				SW07				SW07_ew				SPFM	
Scenario	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV	NoExt	SPF	CQ	FV		
Forecast Horizon	0	1.57	1.14		1.88	1.49			1.79	2.07			2.18	2.09			2.32	
	1	1.18	1.14	1.11	1.03	1.34	1.21	1.26	1.07	1.34	1.22	1.53	1.29	1.50	1.37	1.55	1.39	4.64
	2	1.09	1.16	1.15	1.05	1.20	1.11	1.16	1.06	1.23	1.07	1.33	1.12	1.23	1.11	1.27	1.15	4.52
	3	1.31	1.50	1.45	1.41	1.15	1.10	0.69	1.11	1.16	0.80	1.12	0.85	0.84	0.64	0.88	0.74	2.42
	4	1.61	1.66	1.70	1.74	1.03	1.03	0.57	1.25	1.33	1.00	0.67	0.50	1.05	0.93	0.80	0.86	1.83