Machine Learning vs Traditional Techniques
Forecasting South African GDP
## Lisa-Cheree Martin

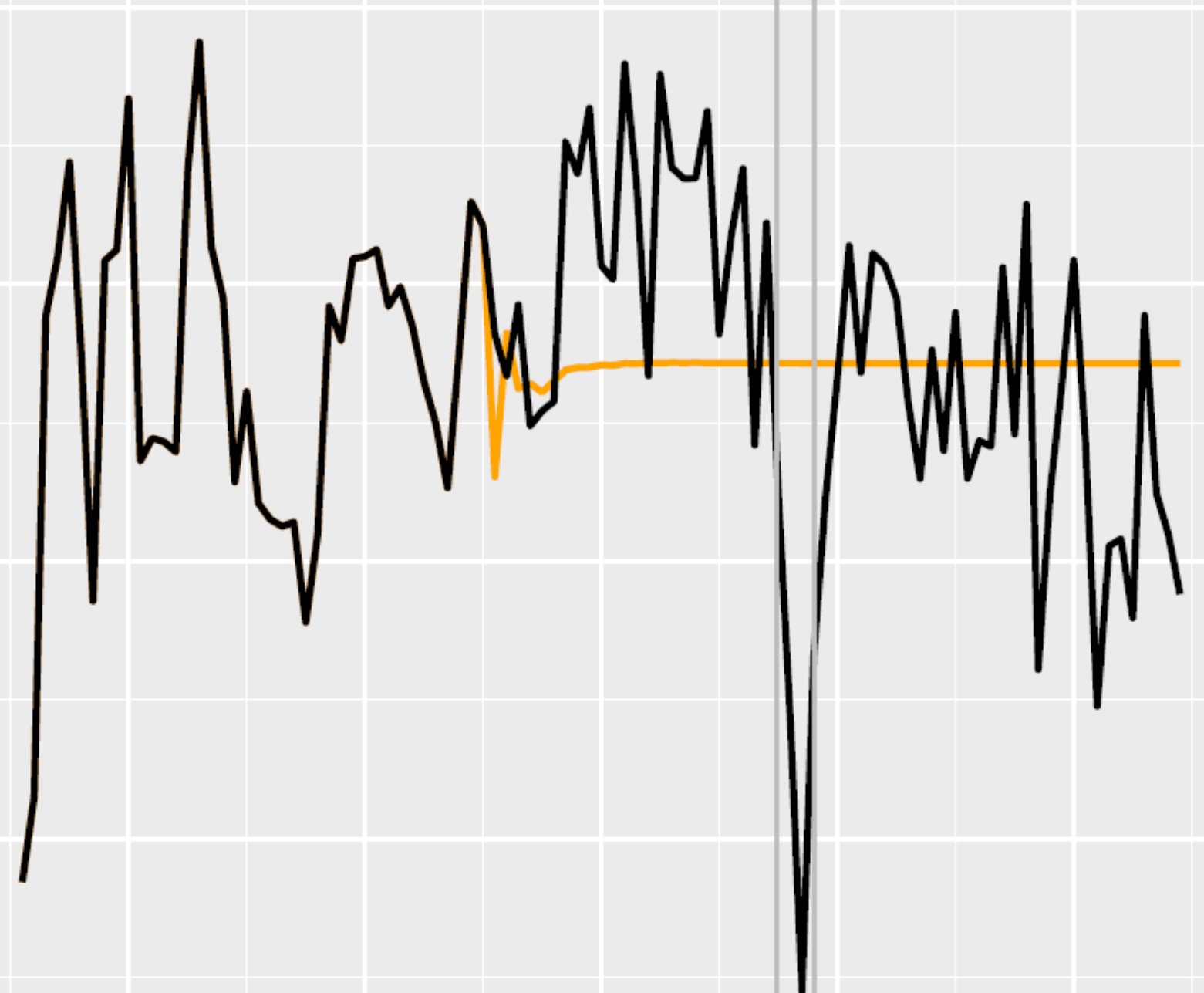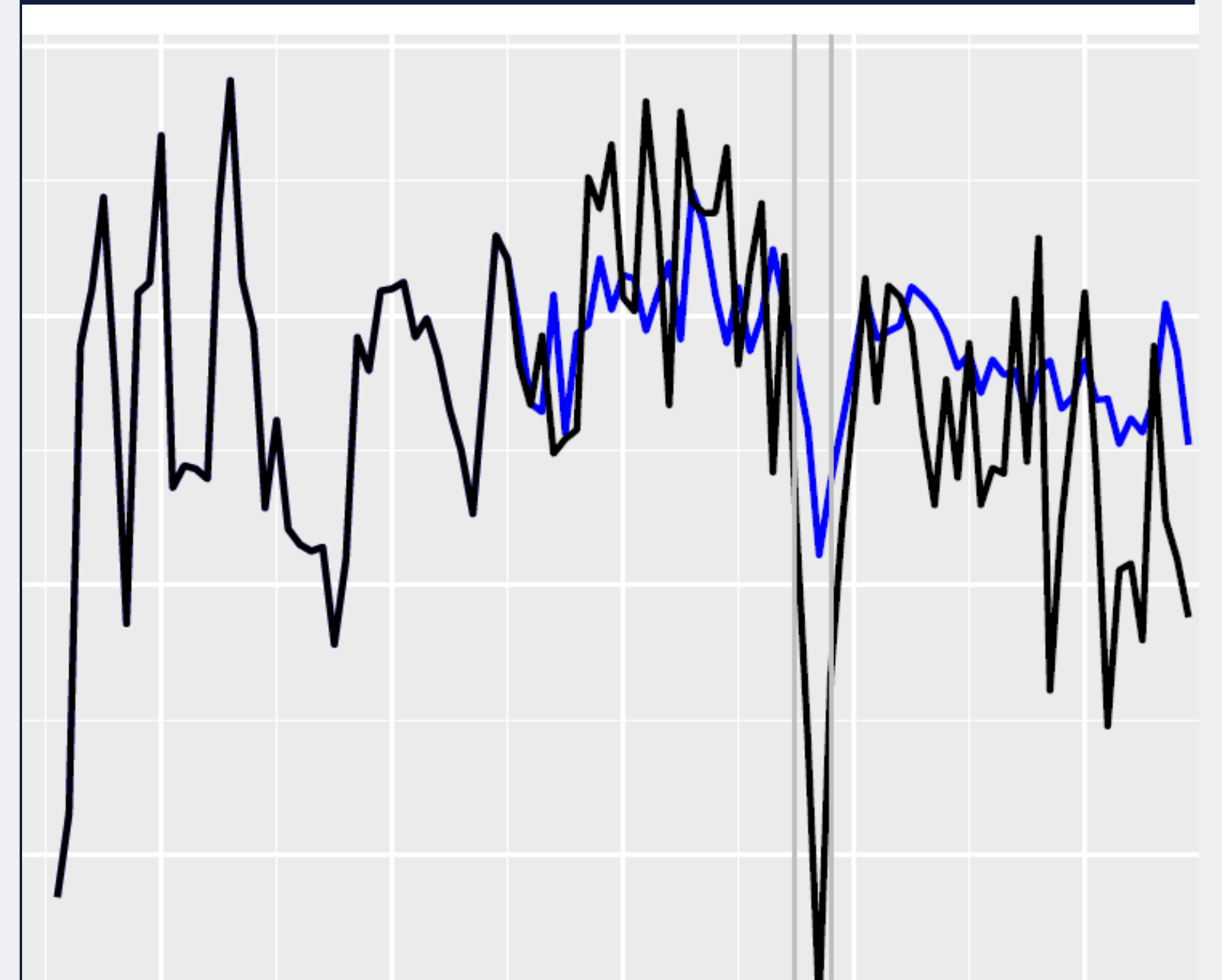| Variables	GDPPred	GDP	HRDI	CPI	gold	oil	wage	comm	ppi	repo	m3	man	tot	tertiary	govt
GDPPred	1.00														
GDP	0.57	1.00													
HRDI	0.31	0.27	1.00												
CPI	-0.16	-0.17	-0.23	1.00											
gold	0.29	0.11	-0.03	-0.04	1.00										
oil	0.31	0.33	-0.01	0.09	0.23	1.00									
wage	0.00	0.04	-0.02	0.24	-0.07	0.05	1.00								
comm	0.39	0.38	0.04	0.11	0.32	0.94	0.10	1.00							
ppi	0.02	0.16	0.01	0.46	-0.12	0.27	0.05	0.26	1.00						
repo	-0.12	-0.13	-0.09	0.36	-0.19	-0.05	0.16	-0.09	0.12	1.00					
m3	0.17	0.32	0.12	0.03	0.09	0.04	-0.00	0.08	0.19		1.00				
man	0.16	0.03	0.09	0.03	-0.05	0.10	0.14	0.09	0.01	-0.15	0.01	1.00			
tot	0.02	0.01	0.02	-0.22	0.25	-0.15	-0.10	-0.06	-0.40	-0.09	0.07	-0.19	1.00		
tertiary	0.38	0.52	0.25	-0.16	0.19	0.17	-0.05	0.17	-0.03	0.01	0.41	-0.01	0.10	1.00	
govt	0.11	0.00	-0.02	-0.03	0.04	-0.02	0.09	0.00	-0.41	0.01	0.16	0.02	0.23	0.19	1.00

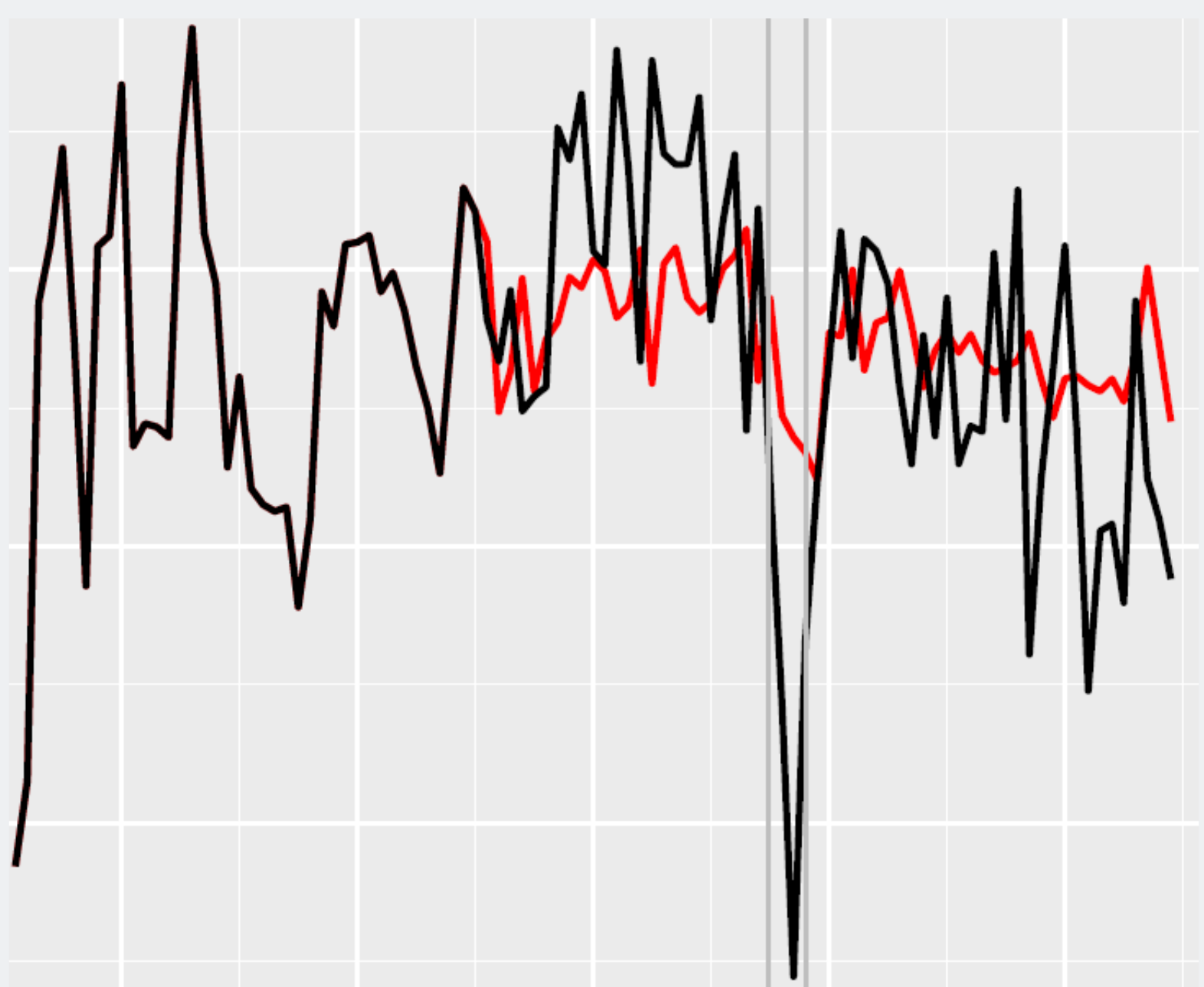## FORECASTING RESULTS
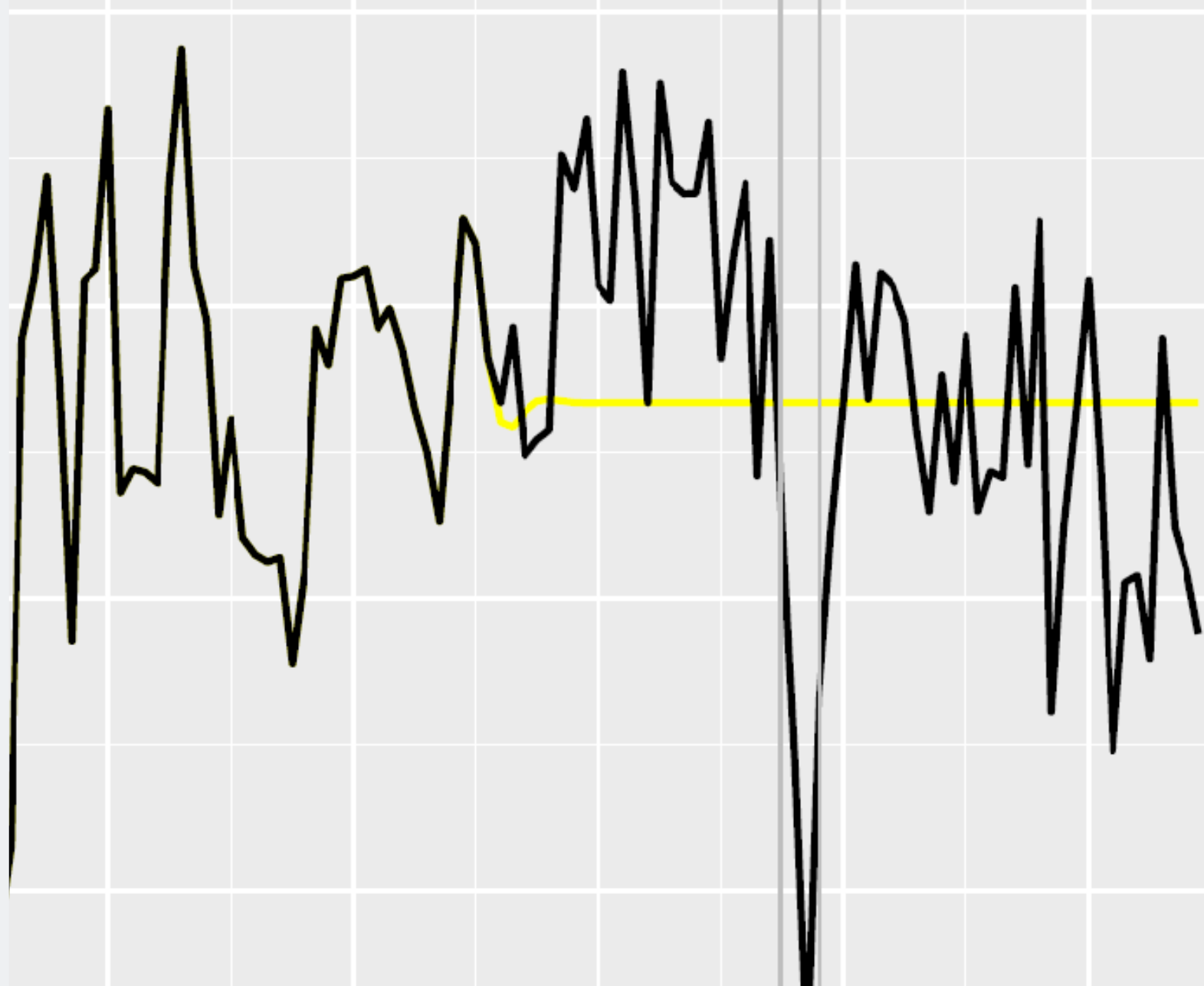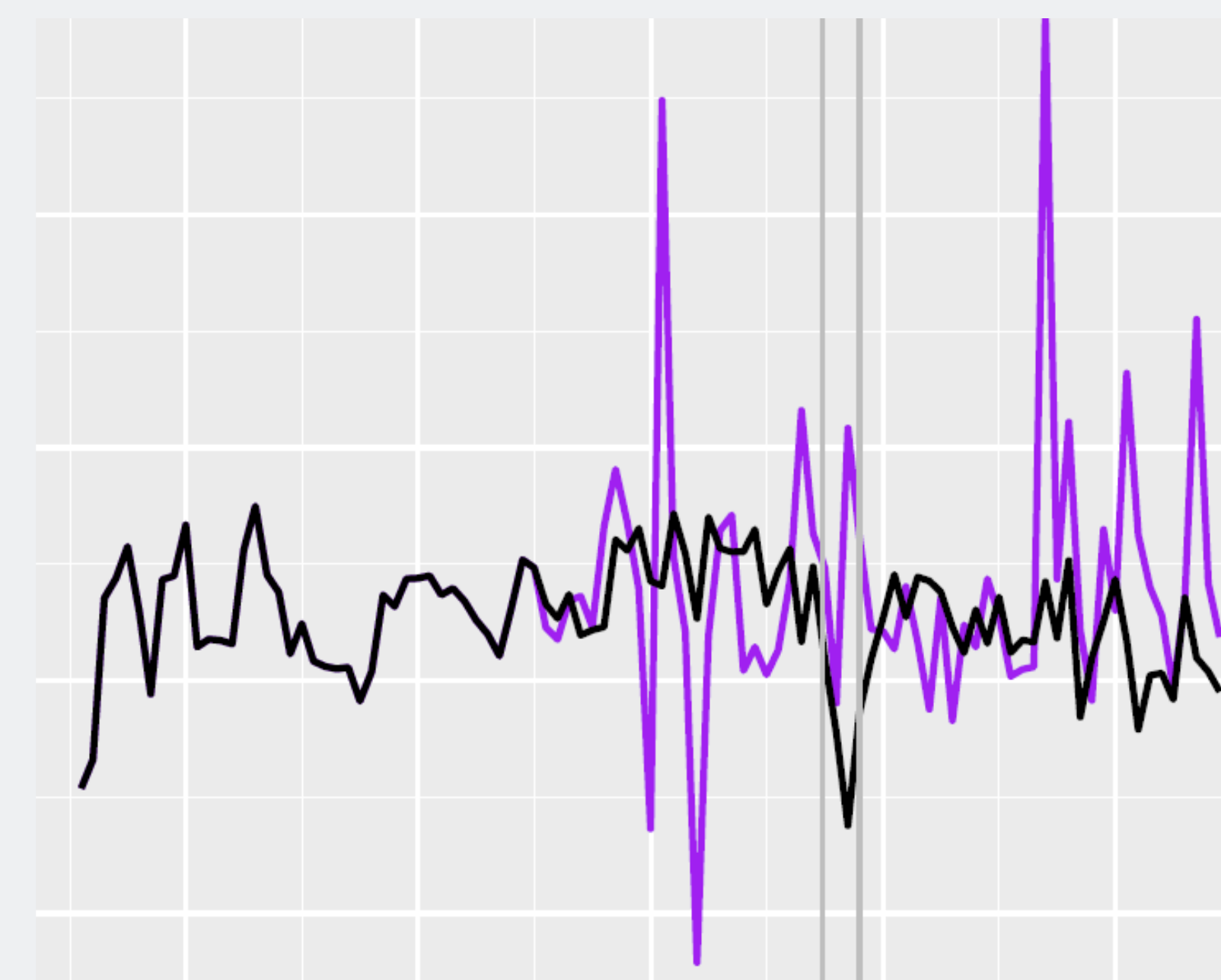

Autoregressive (2) · Vector Autoregressive (1) · Elastic-net · Random Forest · Support Vector Machine · Recurrent Neural Network
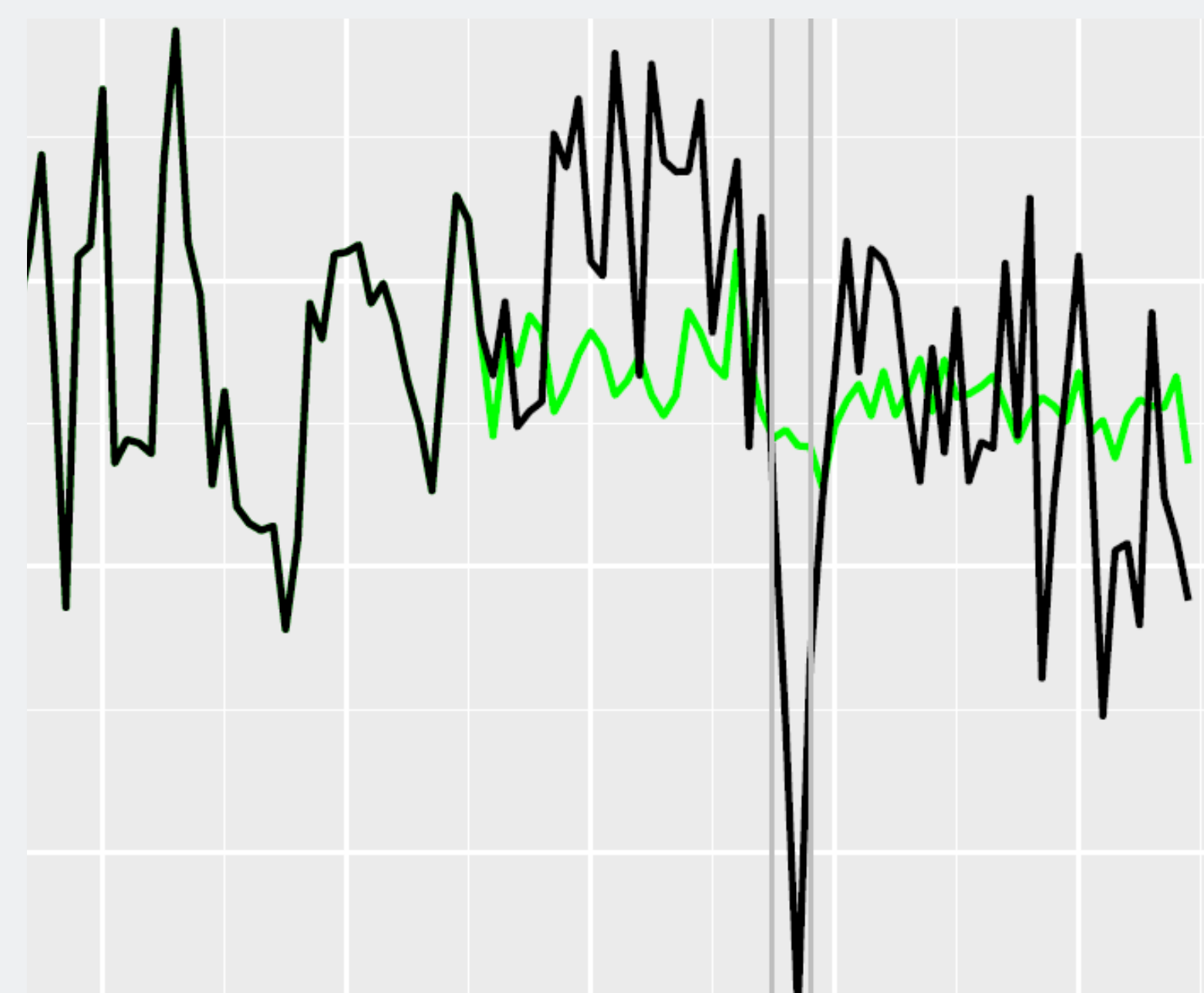
Pre-crisis Period

	RMSE	SD	Corr
AR(1)	0.61	0.04	0.03
VAR(1)	0.59	0.04	0.03
Elastic-net	0.45	0.21	0.22
Random Forest	0.53	0.19	-0.02
SVM	0.61	0.15	-0.01
RNN	1.61	1.60	0.05

Post-crisis Period

	RMSE	SD	Corr
AR(1)	0.49	0.01	0.11
VAR(1)	0.51	0.00	0.11
Elastic-net	0.51	0.17	0.49
Random Forest	0.49	0.16	0.23
SVM	0.46	0.10	0.21
RNN	1.56	1.49	0.17

Full Testing Period

	RMSE	SD	Corr
AR(1)	0.64	0.00	0.01
VAR(1)	0.65	0.02	0.01
Elastic-net	0.55	0.24	0.66
Random Forest	0.58	0.21	0.48
SVM	0.60	0.15	0.42
RNN	1.66	1.52	0.02