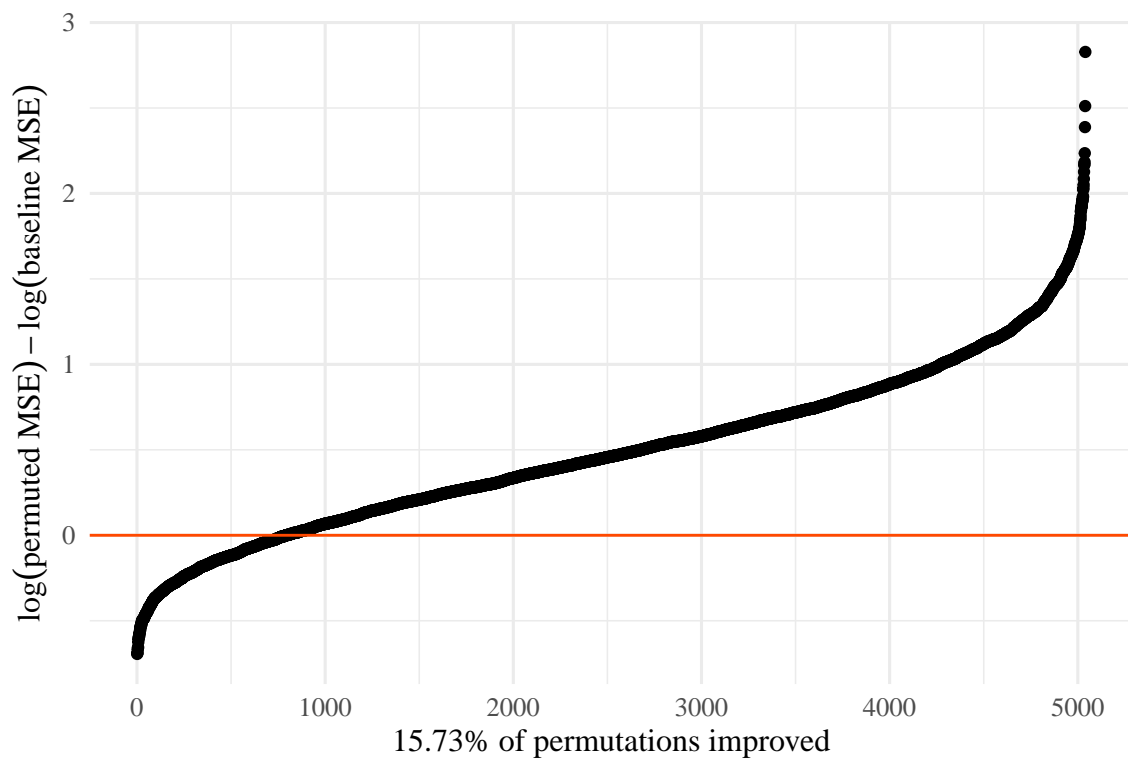


# Processing for Figures in Paper

*DJM*

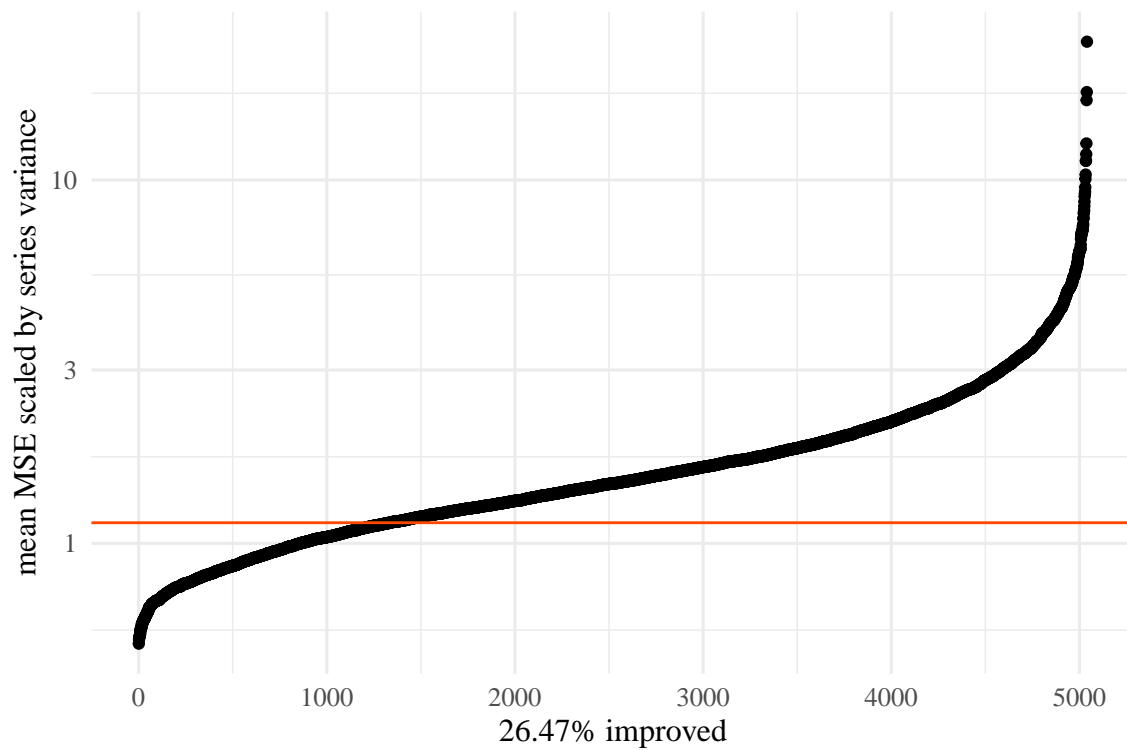
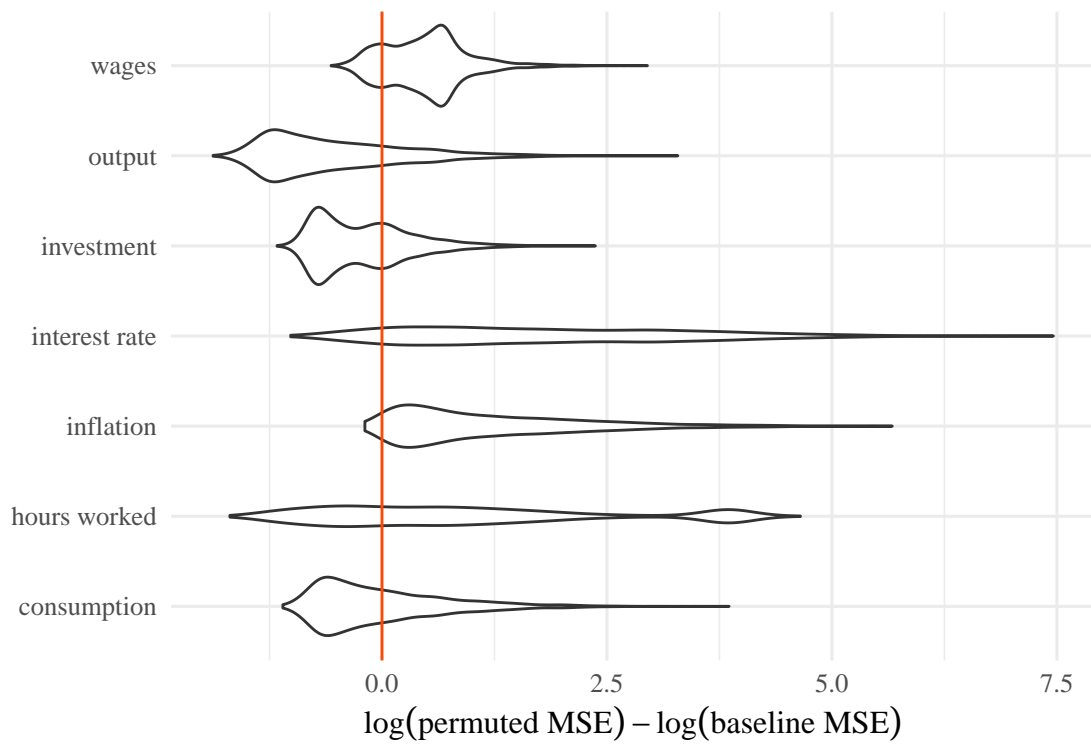
9/25/2019

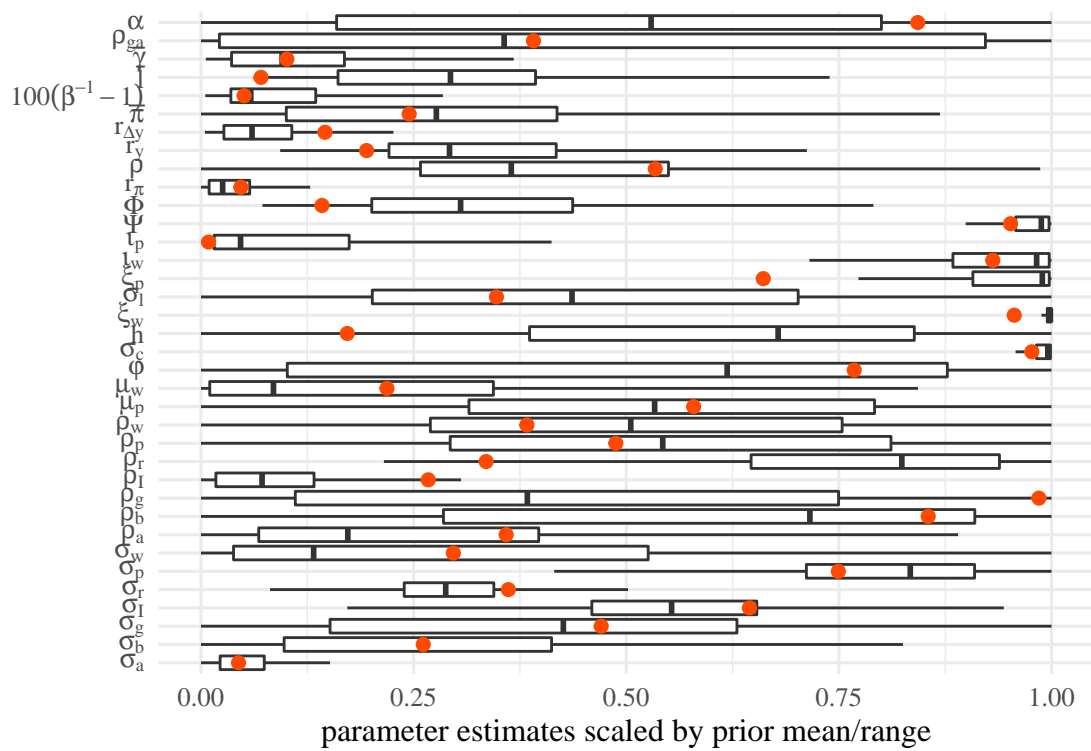
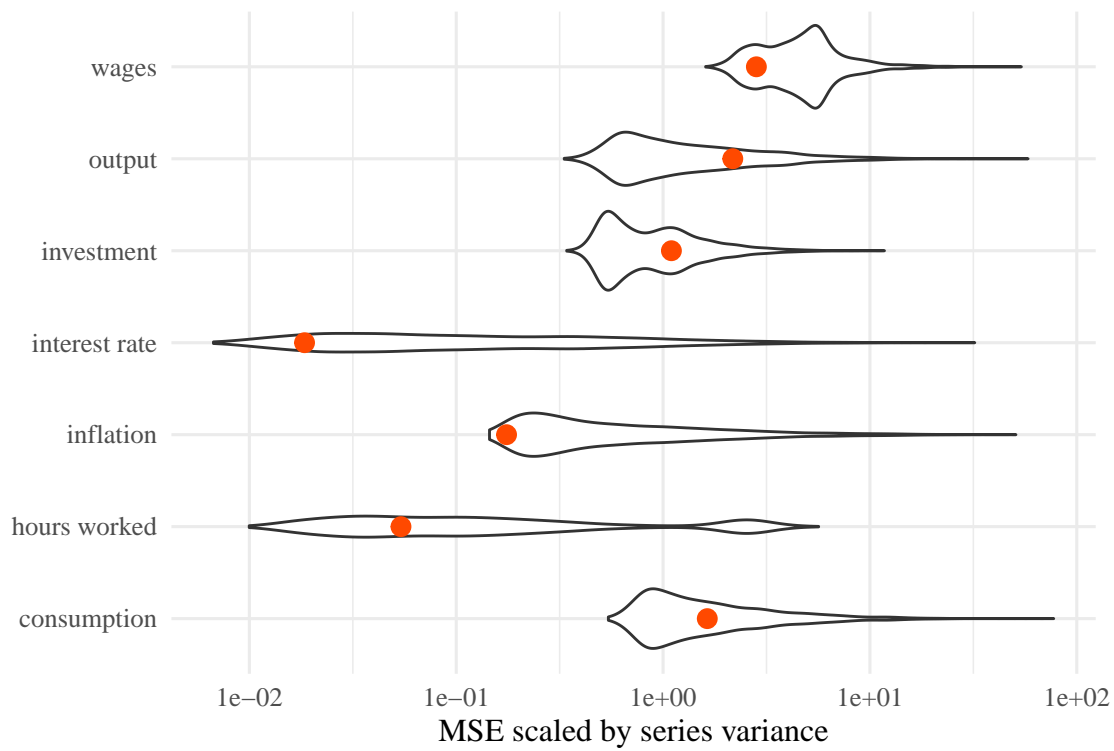
## Series flipping

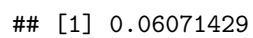


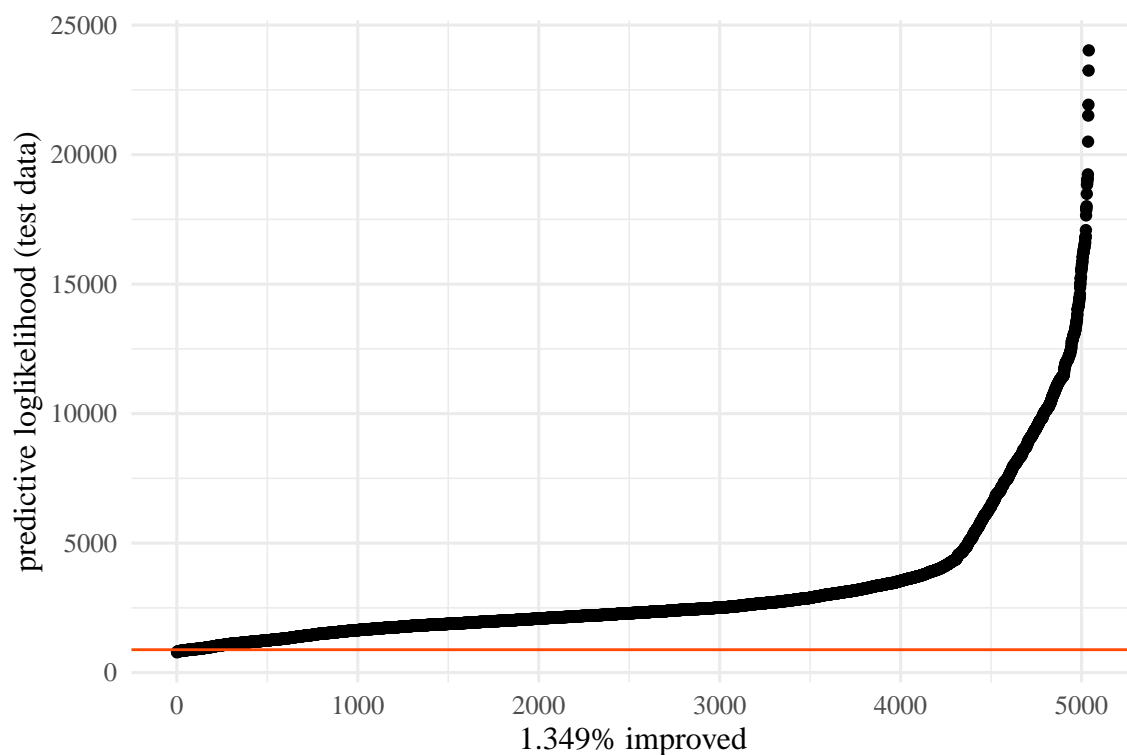
## [1] 0.9739158

## [1] 0.7492347









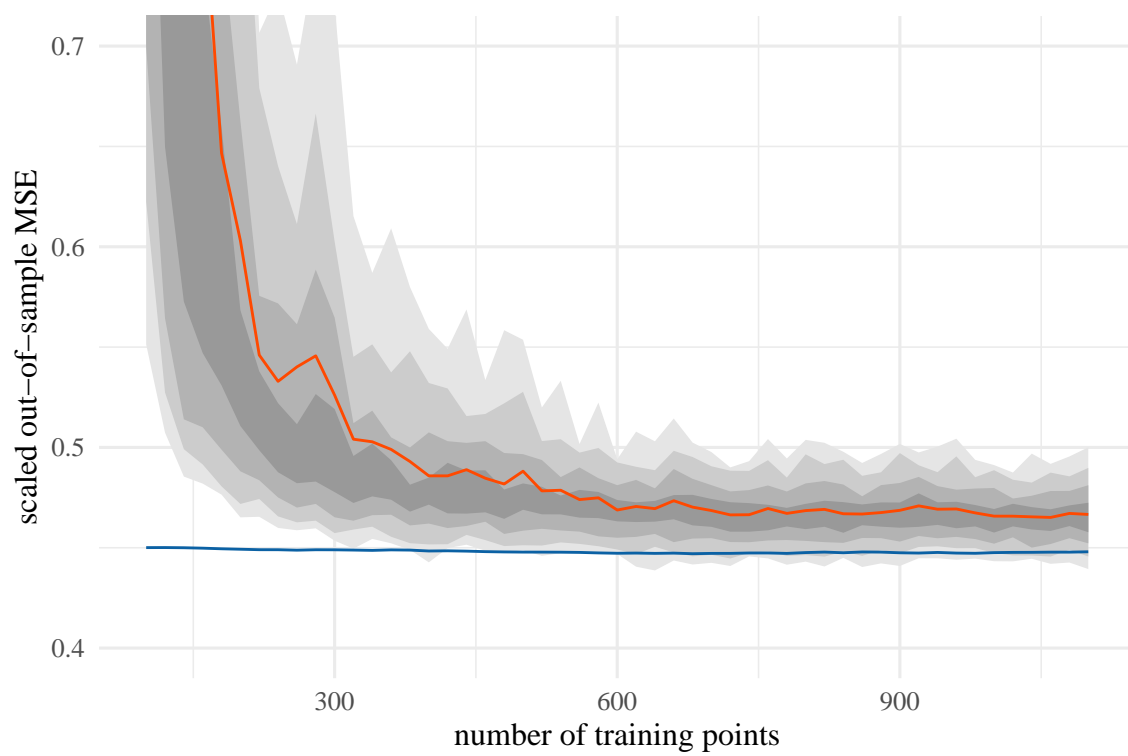
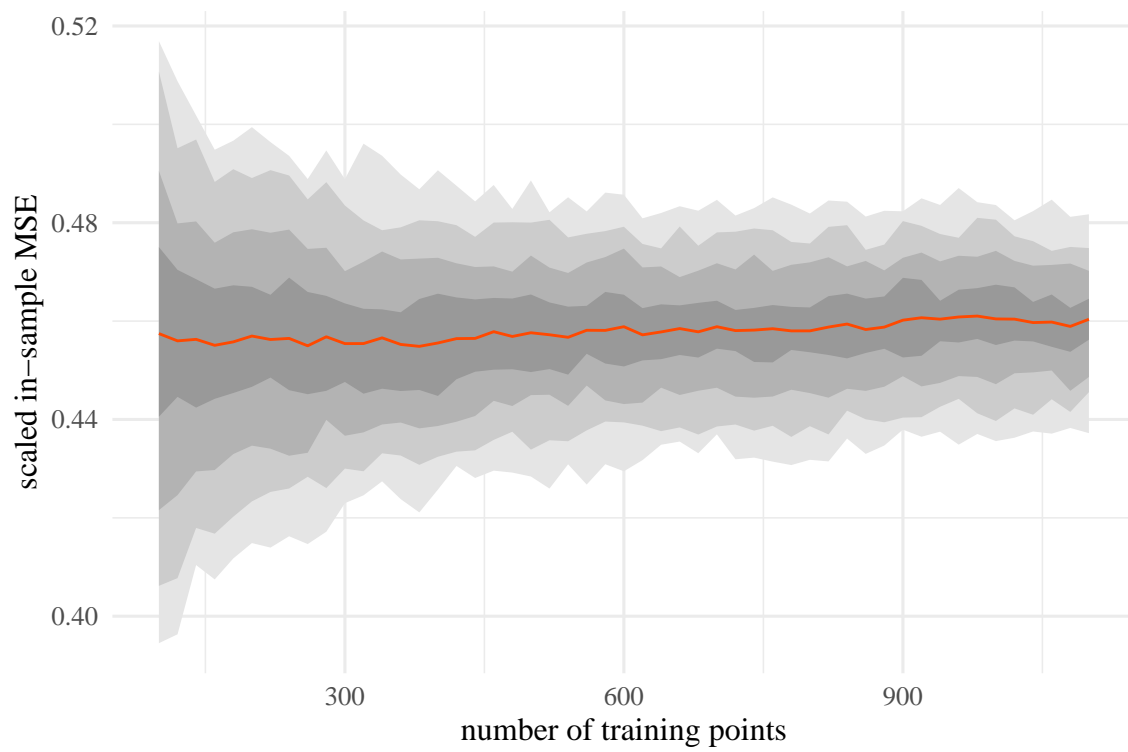
## [1] 0.03472222

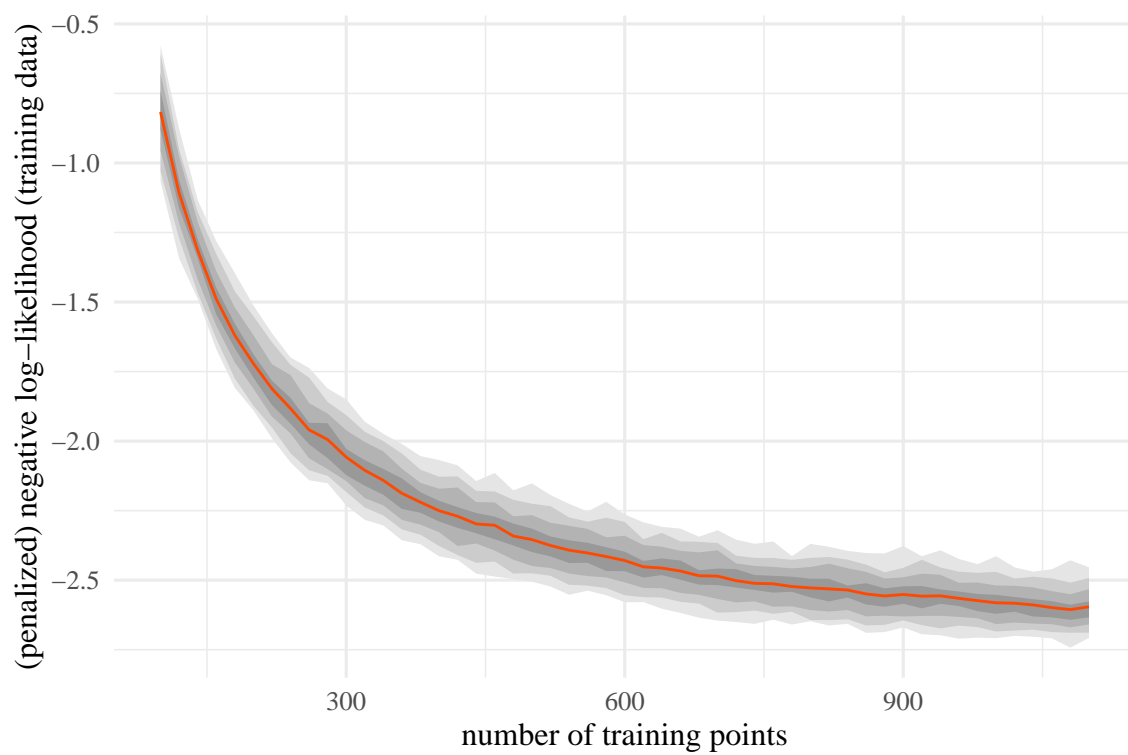
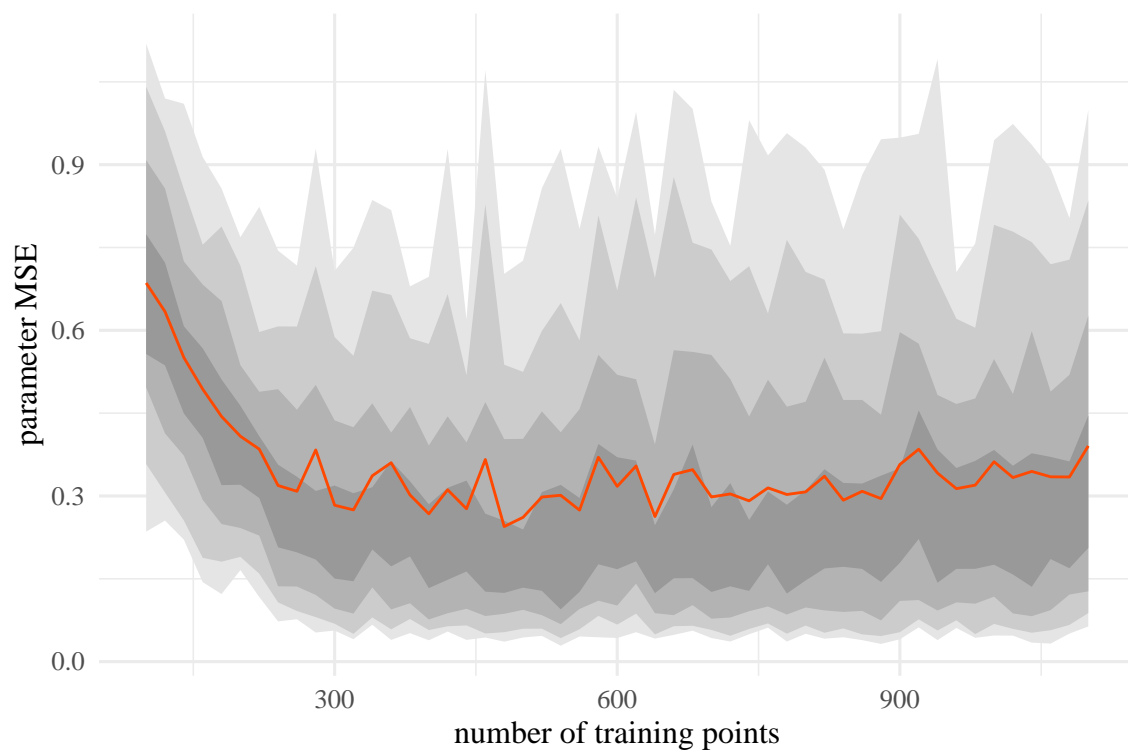
hours worked	interest rate	inflation	output	consumption	investment	wages	# different
investment	hours worked	interest rate	wages	inflation	output	consumption	7
hours worked	investment	interest rate	wages	inflation	consumption	output	6
interest rate	hours worked	investment	output	consumption	inflation	wages	4
hours worked	interest rate	consumption	wages	inflation	output	investment	5
hours worked	interest rate	wages	output	inflation	consumption	investment	4
inflation	hours worked	interest rate	output	consumption	investment	wages	3
consumption	hours worked	output	wages	interest rate	investment	inflation	6
hours worked	investment	inflation	consumption	interest rate	output	wages	4
hours worked	investment	interest rate	wages	inflation	output	consumption	6
hours worked	investment	inflation	wages	interest rate	consumption	output	5
hours worked	investment	consumption	wages	interest rate	output	inflation	6
hours worked	interest rate	wages	consumption	inflation	output	investment	5
hours worked	output	inflation	wages	interest rate	consumption	investment	5
inflation	hours worked	interest rate	wages	consumption	investment	output	5
hours worked	investment	interest rate	output	inflation	consumption	wages	4
hours worked	inflation	investment	wages	interest rate	consumption	output	6
inflation	hours worked	interest rate	consumption	investment	output	wages	6
hours worked	inflation	interest rate	consumption	output	investment	wages	4
consumption	hours worked	interest rate	wages	output	inflation	investment	7
hours worked	consumption	investment	wages	interest rate	inflation	output	6

hours worked	interest rate	inflation	output	consumption	investment	wages	# different
hours worked	output	inflation	wages	interest rate	consumption	investment	5
hours worked	interest rate	consumption	wages	inflation	output	investment	5
inflation	interest rate	hours worked	wages	output	investment	consumption	5
output	hours worked	interest rate	wages	inflation	consumption	investment	7
hours worked	investment	consumption	wages	interest rate	output	inflation	6
investment	interest rate	hours worked	wages	inflation	consumption	output	6
interest rate	hours worked	investment	output	consumption	inflation	wages	4
inflation	hours worked	investment	wages	output	interest rate	consumption	7
interest rate	hours worked	output	wages	consumption	investment	inflation	5
hours worked	interest rate	wages	consumption	inflation	investment	output	4
hours worked	inflation	consumption	wages	output	investment	interest rate	5
investment	hours worked	interest rate	wages	inflation	output	consumption	7
hours worked	interest rate	wages	output	inflation	consumption	investment	4
hours worked	consumption	inflation	output	interest rate	investment	wages	2
interest rate	hours worked	investment	wages	consumption	inflation	output	6
hours worked	investment	inflation	wages	interest rate	consumption	output	5
hours worked	inflation	investment	output	interest rate	consumption	wages	4
hours worked	interest rate	output	wages	inflation	investment	consumption	4
hours worked	interest rate	wages	consumption	inflation	output	investment	5
consumption	hours worked	interest rate	wages	output	inflation	investment	7

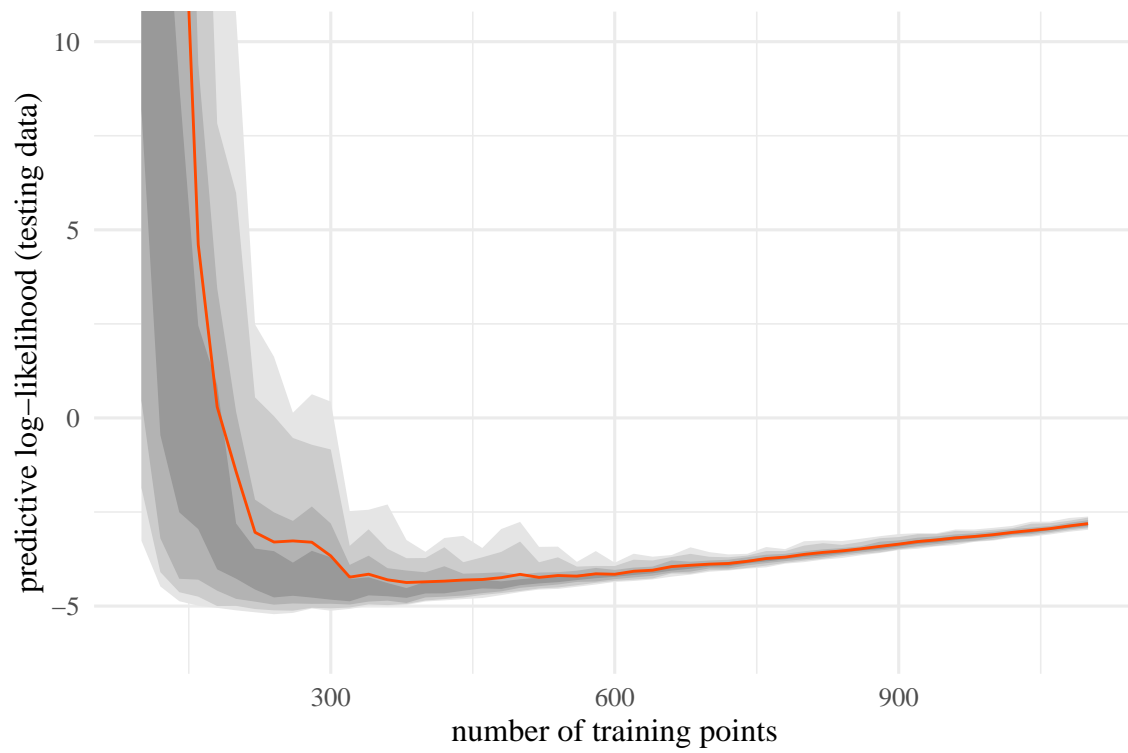
hours worked	interest rate	inflation	output	consumption	investment	wages	# different
hours worked	interest rate	inflation	investment	output	wages	consumption	4
hours worked	interest rate	inflation	wages	output	consumption	investment	4
hours worked	interest rate	inflation	output	wages	consumption	investment	3
hours worked	interest rate	inflation	consumption	wages	output	investment	4
inflation	hours worked	interest rate	output	investment	consumption	wages	5
hours worked	inflation	interest rate	wages	output	investment	consumption	5
hours worked	interest rate	inflation	wages	investment	consumption	output	4
inflation	hours worked	interest rate	wages	output	investment	consumption	6
inflation	interest rate	hours worked	consumption	wages	output	investment	6
interest rate	hours worked	inflation	output	investment	wages	consumption	5
interest rate	hours worked	inflation	wages	output	consumption	investment	6
interest rate	hours worked	inflation	consumption	investment	output	wages	5
interest rate	inflation	hours worked	output	wages	consumption	investment	6
interest rate	hours worked	inflation	investment	wages	output	consumption	6
inflation	interest rate	hours worked	output	wages	investment	consumption	4
inflation	interest rate	hours worked	consumption	investment	output	wages	5
hours worked	inflation	interest rate	output	consumption	investment	wages	2
interest rate	hours worked	inflation	investment	output	wages	consumption	6
interest rate	inflation	hours worked	consumption	wages	output	investment	7
hours worked	inflation	interest rate	consumption	wages	output	investment	6

## Simulate and estimate

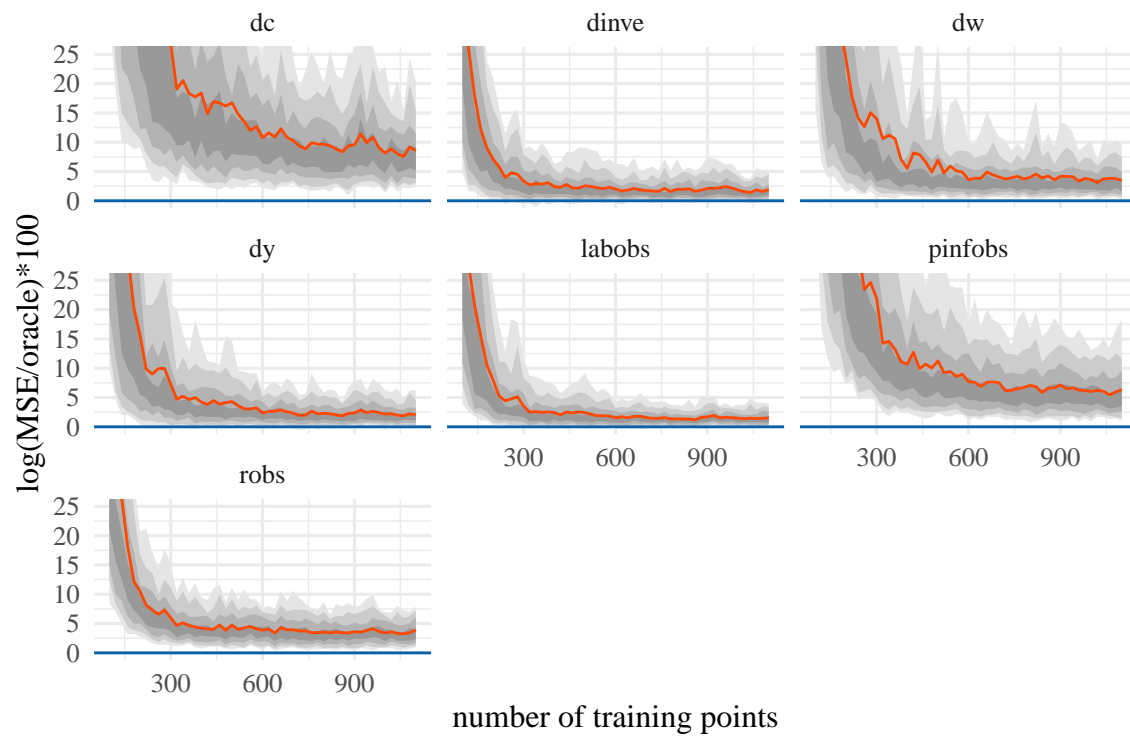


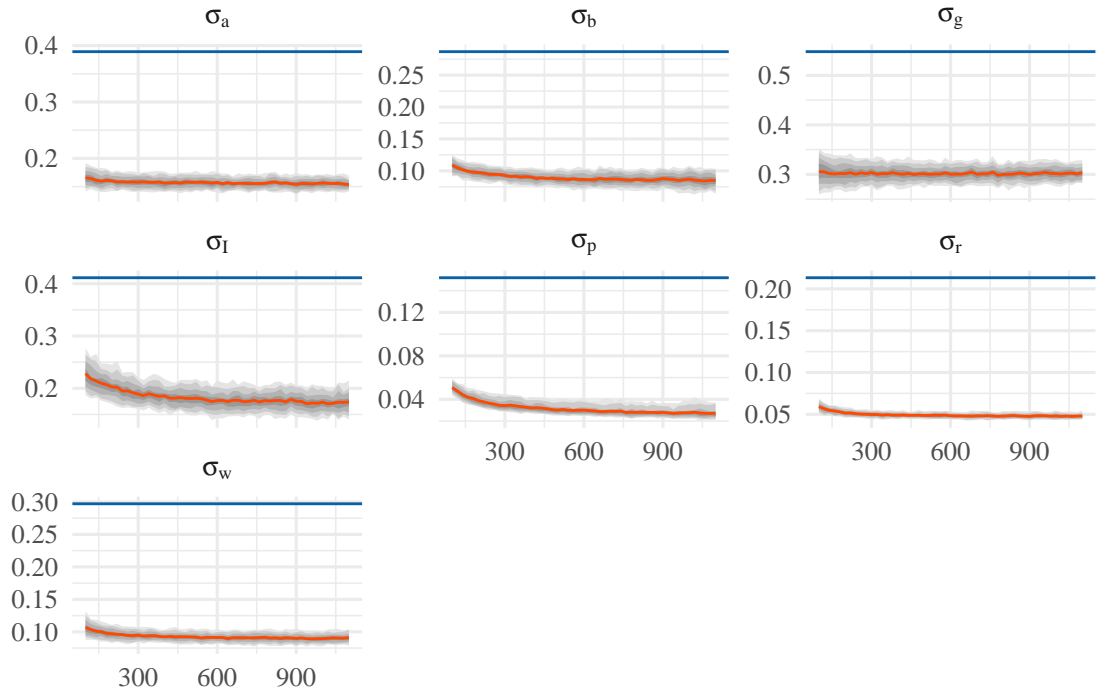




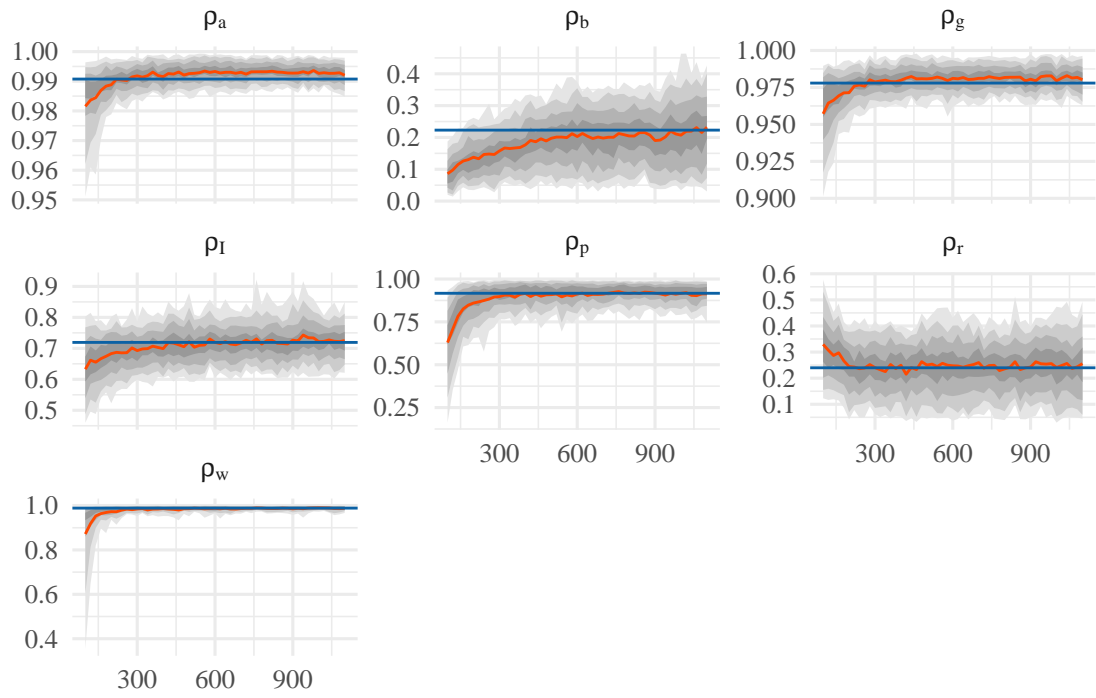


### Series errors

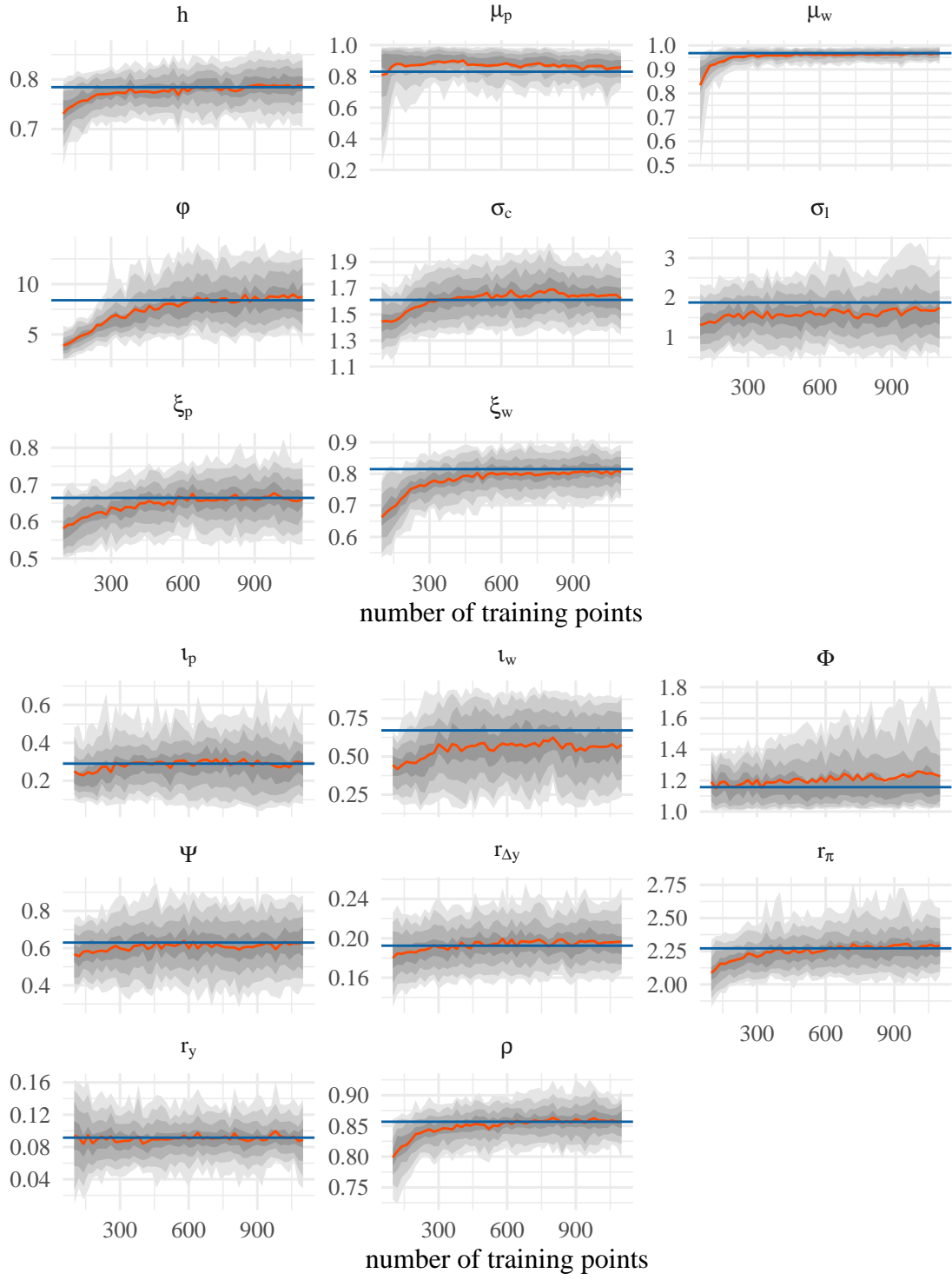


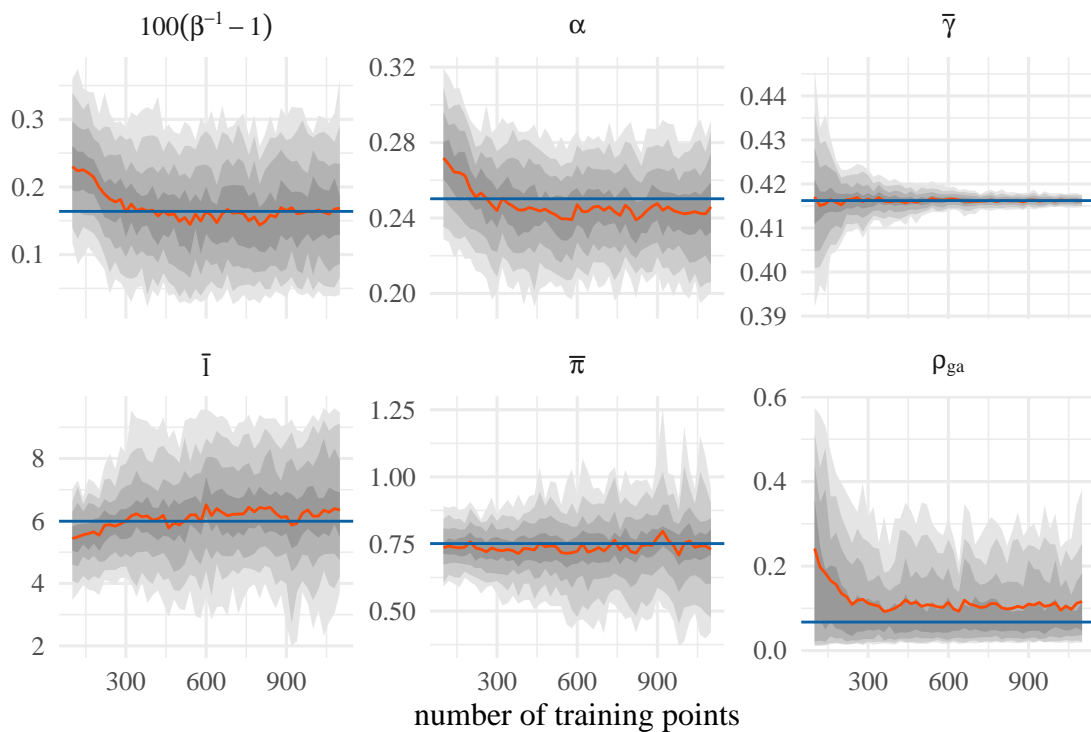


number of training points



number of training points





## Waldman roundup

In order of decreasing priority (balancing ease of implementation against impact):

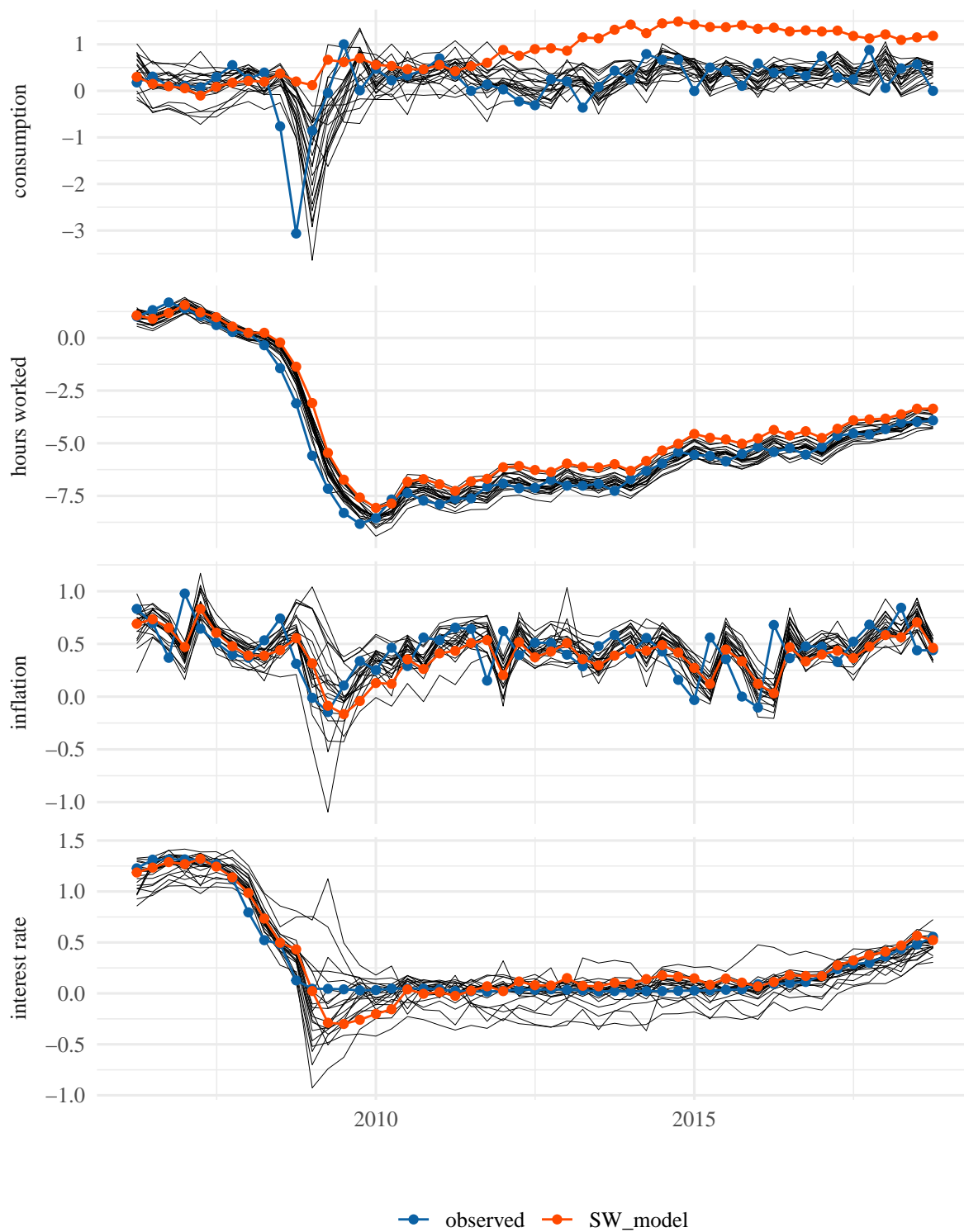
1. Suggestion 3.4: check whether the best permuted models swap hours worked for “another flow variable”.
2. Suggestion 2.2: pick some of the best permutations and plot their predictions along with those of the baseline, un-permuted model.
3. Suggestion 3.3: a detailed examination of the best permuted model.
4. Suggestion 1.4: do the “deep” parameters co-vary with the policy parameters?
5. Suggestion 1.3: look at out-of-sample forecasts under a different policy rule.
6. Suggestion 3.1:  $p$ -value for how much the SW model is beaten by its permutations.

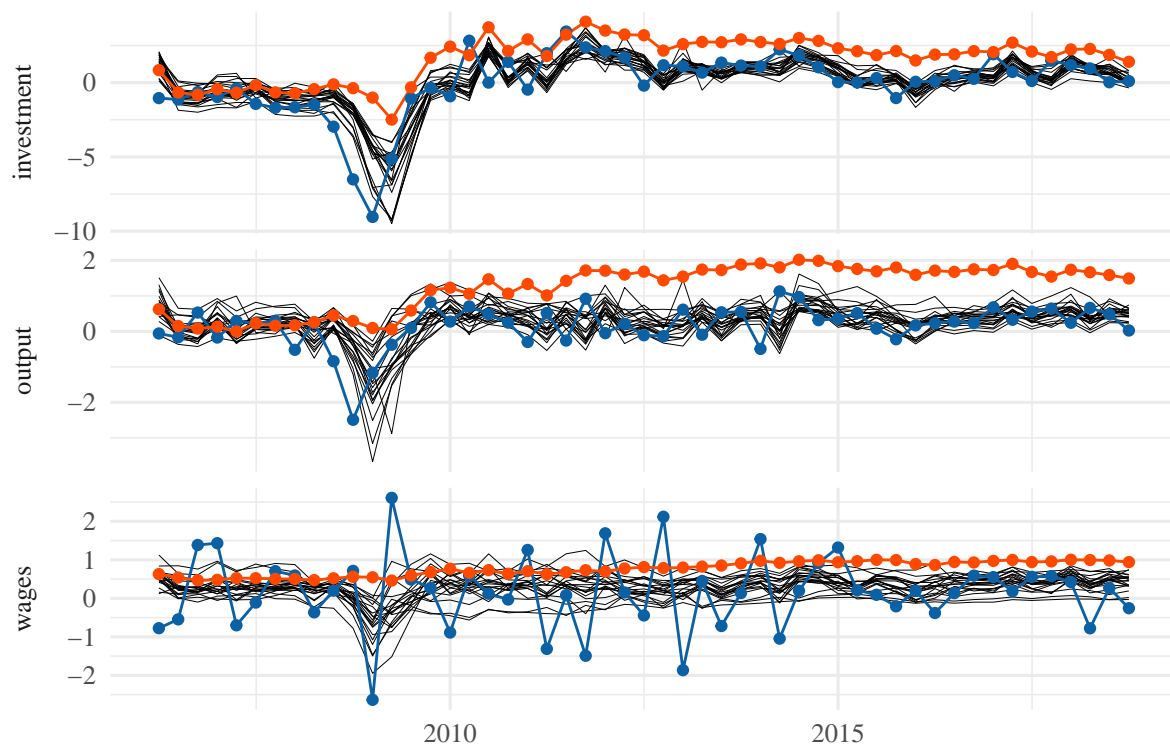
## Does the best (permuted) model swap hours worked?

Not particularly. Mainly rearranging the big 4 (output, consumption, investment, wages). Hours worked seems, perhaps, most stable (see tables above).

## Plot some predictions along with the best model

The following plots show the top 20 flips based on “average percent improvement” (this is a post-hoc measure). Blue-dotted is observed data while red is the SW model.





—●— observed —●— SW\_model