

Peer review for Mateusz Softys and Jan Sawicki. “Dependency of gas prices to electricity in EU.”

1. Problem formulation [0-4 pts]:

- is the problem clearly stated [1 pt] **1pkt**
- what is the point of creating model, are potential use cases defined [1 pt] **1pkt**
- where do data comes from, what does it contain [1 pt] **1pkt**
- is preprocessing step clearly described [1 pt] **1pkt**

The introduction is clearly stated. Everything is presented as expected.

2. Model [0-4 pts]

- are two different models specified [1 pt] **1pkt**
- are difference between two models explained [1 pt] **1pkt**
- is the difference in the models justified (e.g. does adding additional parameter makes sense?) [1 pt] **1pkt**
- are models sufficiently described (what are formulas, what are parameters, what data are required) [1 pt]

1pkt

Difference between models are told as well as, it is explained how adding additional parameters may change the result and it makes sense. Also, we do not receive any information about what data is needed for the model to actually work.

3. Priors [0-4 pts]

- Is it explained why particular priors for parameters were selected [1 pt] **Opt**
- Have prior predictive checks been done for parameters (are parameters simulated from priors make sense) [1 pt] **Opt**
- Have prior predictive checks been done for measurements (are measurements simulated from priors make sense) [1 pt] **Opt**
- How prior parameters were selected [1 pt] **0.5pt**

It is not explained why particular priors were selected. No prior simulation was performed. It is told how the priors were selected but the numbers are not explained at all which is why half of the point is given.

4. Posterior analysis (model 1) [0-4 pts]

- were there any issues with the sampling? if there were what kind of ideas for mitigation were used [1 pt] **1pt**
- are the samples from posterior predictive distribution analyzed [1 pt] **1pt**
- are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided) **1pt**
- have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values) [1 pt] **Opt**

There are histograms of parameters presented, however there are no summaries and they are not at all commented.

5. Posterior analysis (model 2) [0-4 pts]

- were there any issues with the sampling? if there were what kind of ideas for mitigation were used [1 pt] **1pt**
- are the samples from posterior predictive distribution analyzed [1 pt] **1pt**
- are the data consistent with posterior predictive samples and is it sufficiently commented (if they are not then is the justification provided) **1pt**
- have parameter marginal distributions been analyzed (histograms of individual parameters plus summaries, are they diffuse or concentrated, what can we say about values) [1 pt] **Opt**

There are histograms of parameters presented, however there are no summaries and they are not at all commented.

6. Model comparison [0-4 pts]

- Have models been compared using information criteria [1 pt] **Opt**
- Have result for WAIC been discussed (is there a clear winner, or is there an overlap, were there any warnings) [1 pt] **Opt**

- Have result for PSIS-LOO been discussed (is there a clear winner, or is there an overlap, were there any warnings) [1 pt] **Opt**
- Was the model comparison discussed? Do authors agree with information criteria? Why in your opinion one model better than another [1 pt] **Opt**

No model comparison was presented

Total score: 60%

Marked by Agata Swatowska and Filip Żmijewski