

The Unintended Consequences of Energy Reduction*

How an Act of Environmental Protection Led to the Deaths of Many

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February 11, 2024

Abstract

First sentence. Second sentence. Third sentence. Fourth sentence.

1 Introduction

The 2011 Fukushima disaster changed the relationship Japanese citizens had with nuclear energy. From the 160,000 Fukushima residents that had to evacuate the city to the citizens who may not have been affected directly, the public as a whole turned their backs against the entire industry [science direct].

Before the accident, nuclear energy made up 25% of Japan's energy market. After the accident, the market share stayed under 1.7% until 2016. The Democratic Party of Japan itself took initiative and implemented a new energy policy to "phase out nuclear power," [intchopen] despite formerly having close ties to the industry in attempts to reduce CO2 pollution. [enpolicy one year later]

Fossil fuels grew to dominate Japan's energy market as many reactors were shut down. In 2011 itself, oil usage rose by around 85% while natural gas increased by 25%. [enpolicy one year later]

This change had a huge impact on the price and consumption of electricity. Relative to the mean price of electricity in 2011, by 2013 the price of electricity had increased to over 10% and almost reached an increase of 20% by 2014. Concurrently, electricity consumption itself kept decreasing year after year as it became less affordable. [figure 1]

A good reason for this market shift is that most of the fossil fuels that Japan utilizes are exported from other countries, which makes them expensive. [enpolicy one year later] The lack of nuclear power also reduced more affordable options for consumers.

The trend of increasing electricity prices and decreasing electricity consumption may persist into the future. The current government of Japan reversed the nuclear energy policy, but low public demand for nuclear energy still persists. Thus the prices will stay high as people continue to consume fossil fuels. There are also barriers to nuclear power that help to persist this trend. One barrier is the Nuclear Regulation Authority which created tougher safety regulations for reactors. Another are injunctions that citizens can bring forth to prevent the operation of nuclear reactors. After the Fukushima tragedy many courts in Japan may grant these injunctions for safety reasons. [intchopen]

You can and should cross-reference sections and sub-sections. We use R Core Team (2023) and Wickham et al. (2019).

The remainder of this paper is structured as follows. Section 2...

*Code and data are available at: [LINK](#).

Relative Energy Consumption and Price

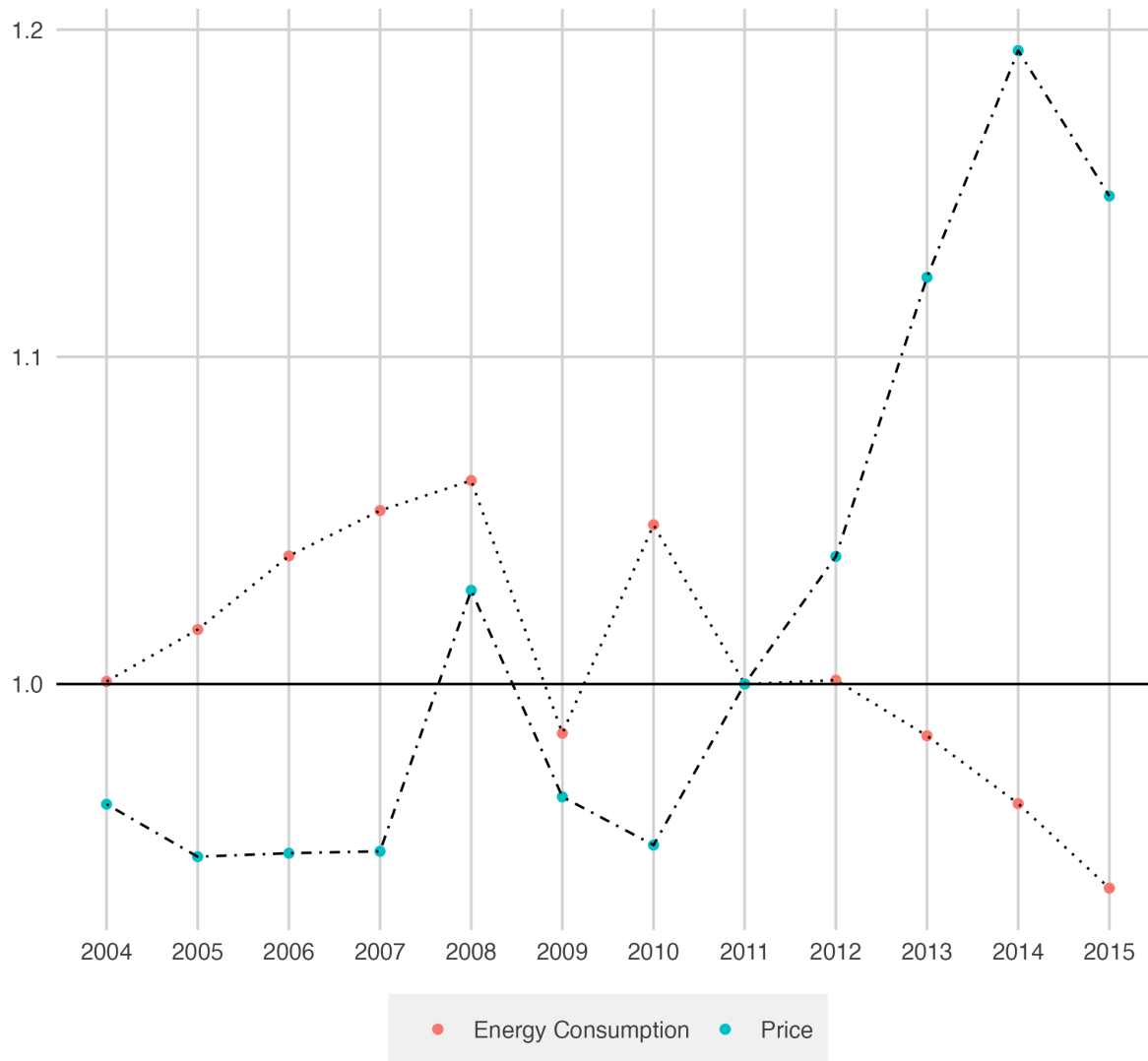


FIGURE 1

Figure 1: Figure 1

2 Data

Some of our data is of penguins ([?@fig-bills](#)), from Horst, Hill, and Gorman (2020).

Talk more about it.

And also planes ([?@fig-planes](#)). (You can change the height and width, but don't worry about doing that until you have finished every other aspect of the paper - Quarto will try to make it look nice and the defaults usually work well once you have enough text.)

Talk way more about it.

3 Model

The goal of our modelling strategy is twofold. Firstly,...

Here we briefly describe the Bayesian analysis model used to investigate... Background details and diagnostics are included in [Appendix B](#).

4 Results

Our results are summarized in [?@tbl-modelresults](#).

5 Discussion

5.1 First discussion point

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

Appendix

A Additional data details

B Model details

B.1 Posterior predictive check

In `?@fig-ppcheckandposteriorvsprior-1` we implement a posterior predictive check. This shows...

In `?@fig-ppcheckandposteriorvsprior-2` we compare the posterior with the prior. This shows...

B.2 Diagnostics

`?@fig-stanareyouokay-1` is a trace plot. It shows... This suggests...

`?@fig-stanareyouokay-2` is a Rhat plot. It shows... This suggests...

References

- Horst, Allison Marie, Alison Presmanes Hill, and Kristen B Gorman. 2020. *Palmerpenguins: Palmer Archipelago (Antarctica) Penguin Data*. <https://doi.org/10.5281/zenodo.3960218>.
- R Core Team. 2023. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemond, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.