

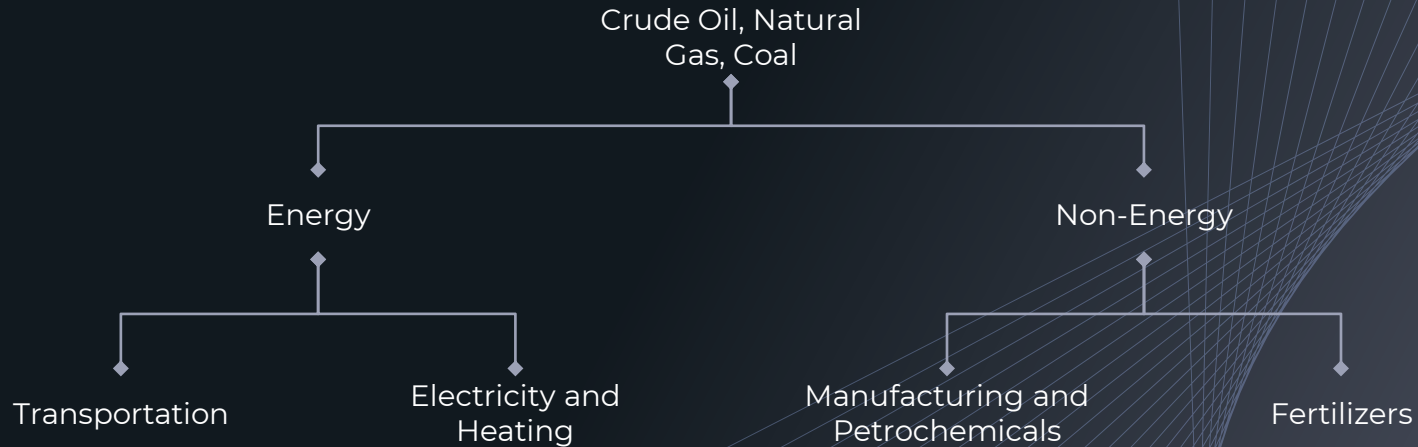
A photograph of an oil pumpjack in a desert landscape at sunset. The sky is a vibrant orange and yellow, with the sun low on the horizon, creating a strong lens flare. The pumpjack is a large, grey metal structure with a long arm and a counterweight. In the background, there are some distant oil rigs and a flat horizon line.

Oil and Gas consumption and prices

Long-term forecasting

Ironhack-Berlin
31.07.2020

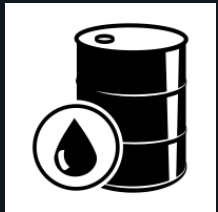
Fossil fuel products and uses



1.

Factors impacting Oil & Gas prices

.....and how?



Demand



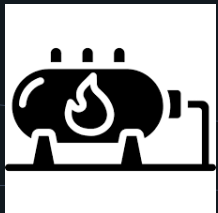
Global market changes



Supply



Governmental regulations



Gas storage

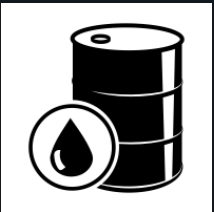


Financial forecasts



Weather forecast





Demand



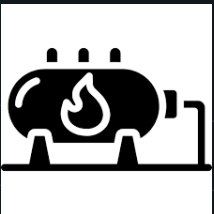
Global market changes



Supply



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Financial forecasts



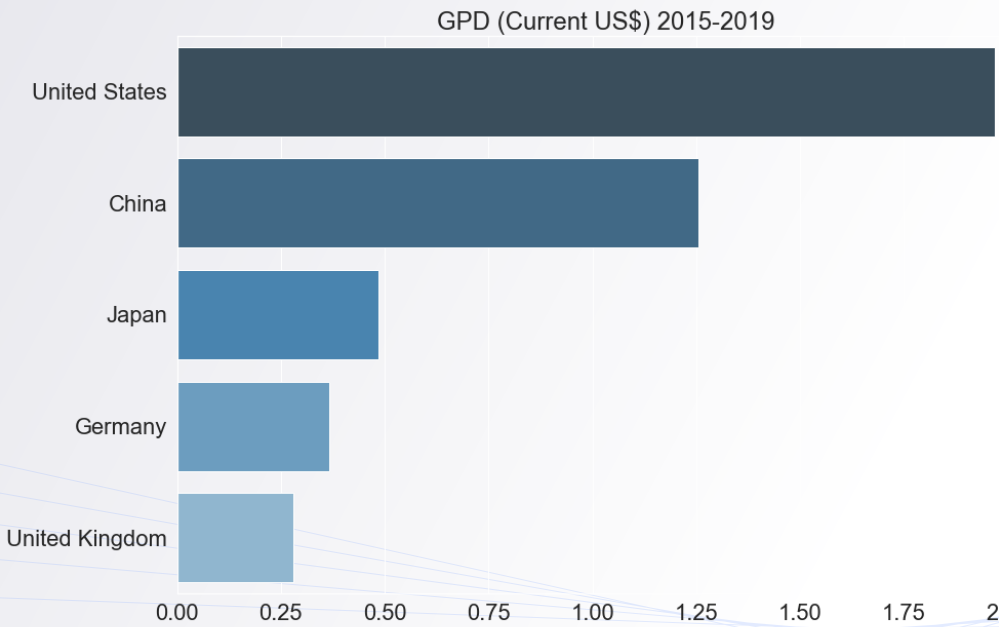
Weather forecast



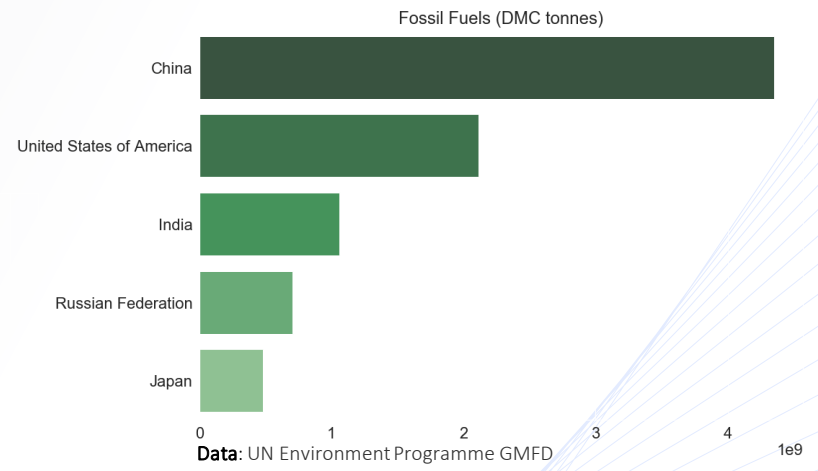
2.

Who has the power?

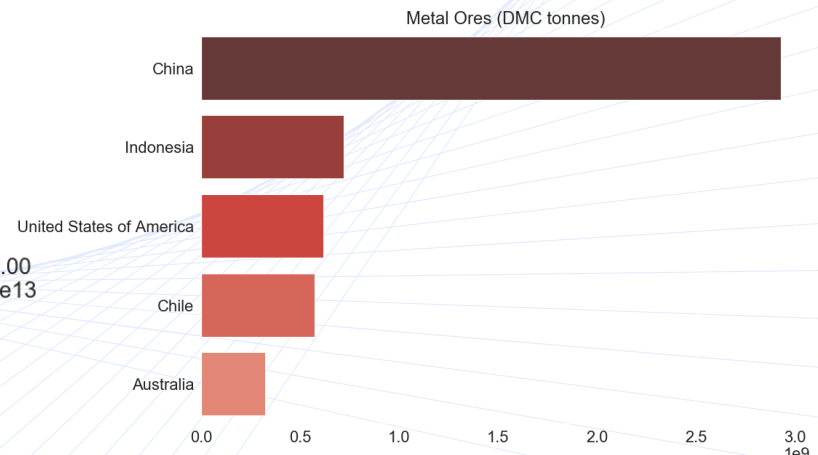
.....and how much?



Data: The WorldBank IBRD IDA



Data: UN Environment Programme GMFD



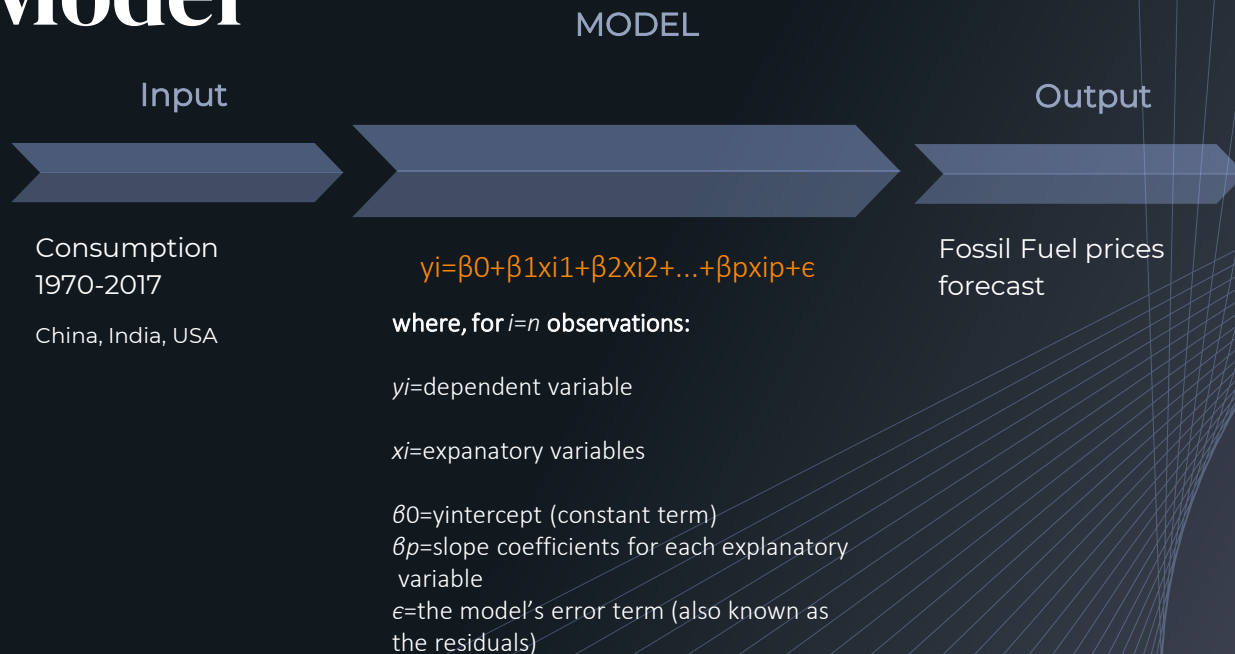
Data: UN Environment Programme GMFD

3.

Is the impact of
consumption
measurable?

.....and statistically significant?

Multi-linear regression (MLR) Model



$$R^2=0.789$$

That explains a lot!

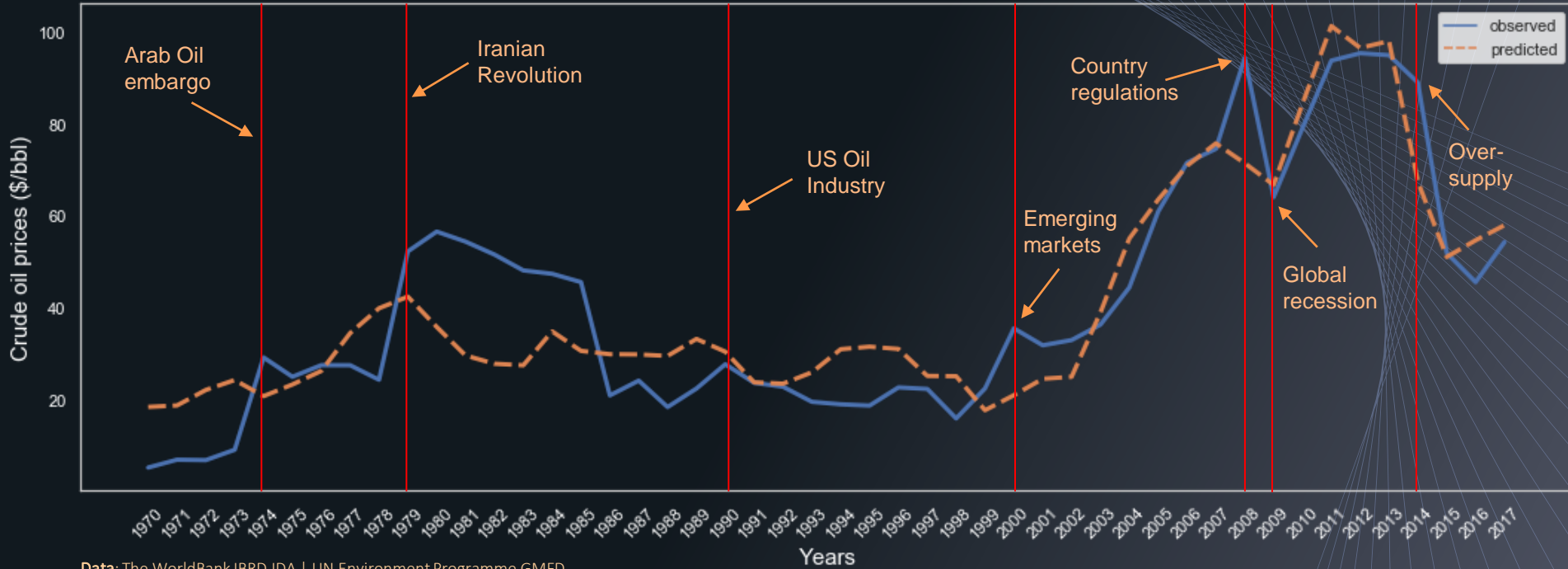
$$\text{p-value} < 0.05$$

And it is statistically significant

~ 80 %

Success!

Running the MLR model



Data: The WorldBank IBRD IDA | UN Environment Programme GMFD

Why is this important?

Oil & Gas Companies

- Exploration and Production campaigns
- R&D

Renewable Energy

- Estimating the Economic feasibility of Renewable energy and their technologies

Key takeaways:

Demand

Plays a KEY role in the Fossil Fuel prices.

China, US, and India

Are responsible for ~80% of the Oil & Gas prices.

Forecasting:

Estimating production can be the key to predicting long term Oil & Gas prices.

Thanks!

For detailed EDA and the models please refer to:

<https://github.com/IbtisamBeik/Data-analysis.git>

Resources

- UN Environment Programme International Resource Panel Global Material Flows Database (<https://www.resourcepanel.org/global-material-flows-database>)
- The WorldBank IBRD IDA: <https://databank.worldbank.org/source/world-development-indicators>
- The WorldBank IBRD IDA (The Pink Sheet): <https://www.worldbank.org/en/research/commodity-markets>
- <https://www.appenergy.com/2017/01/23/10-factors-that-affect-the-cost-of-energy>

4.

Is the past a key to the future ?

.....Inversed uniformitarianism!

Running an Autoregressive model on time series

