

An analysis of the gasoline price scenario and its correlation with the current political and economic situation

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Abbreviated abstract: Fuel prices are analyzed in various perspectives and widely discussed in the media, often connected with politics and foreign impacts, such as the price of BRENT and the US dollar. In this regard, this article presents analyzes of several variables over the last years and the impacts on prices of regular gasoline. The results point to a direct relation with the international price and the US dollar, corroborating the price policy of international oil companies. However, there are also variations in the political and economic scenario which converge towards an increase in the value of derivatives, and consequently, an increase in profit for oil companies and the refining industry in Brazil.

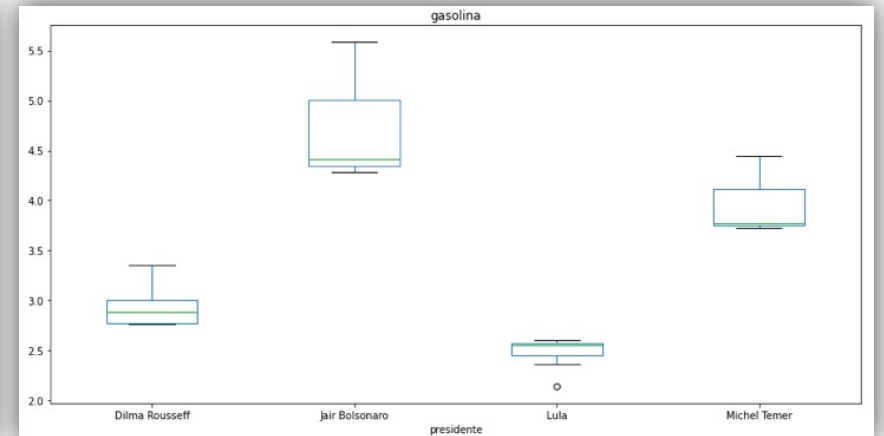
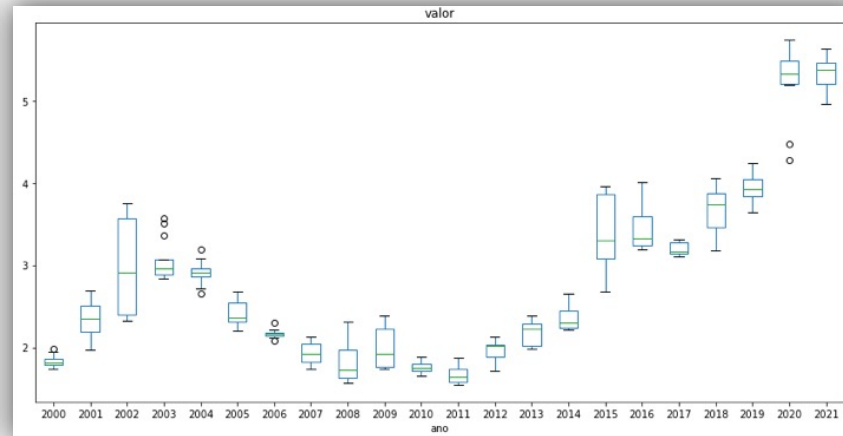
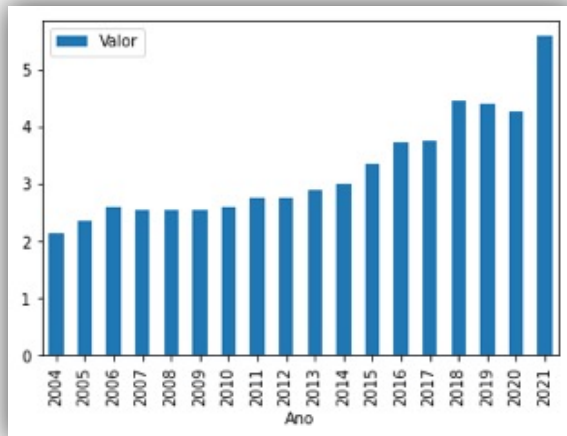
Problem and Data

- History of Petróleo Brasileiro S.A. – PETROBRAS
- Significant increase in the value of gasoline at gas stations
- Political instability of recent years
- Value of PETR4 and PETROBRAS account balance
- Consumer Price Index

	ano	gasolina	dolar	ipca	petrobras	acoes
count	18.00	18.00	18.00	18.00	18.00	18.00
mean	2012.50	3.24	2.86	5.40	236208.78	18.08
std	5.34	0.93	1.13	1.69	96264.19	6.24
min	2004.00	2.14	1.67	2.91	0.00	7.74
25%	2008.25	2.56	1.97	4.26	213445.00	13.82
50%	2012.50	2.83	2.39	5.62	269281.50	18.38
75%	2016.75	3.76	3.44	6.03	297607.50	23.04
max	2021.00	5.59	5.34	10.19	337260.00	26.83

Analysis

- Python computer programming language with Pandas
- **Method:** Descriptive analysis and Pearson correlation coefficient between datasets
- **Variables:** year, price of gasoline, US dollar exchange rate, national consumer price index, price of PETR4, presidents of Brazil



Results

- Strong correlation between the price of gasoline and the exchange rate for the period
- Strong correlation with the economic model applied by the President of the Republic
- Low coupling with PETROBRAS billing and/or share value
- Greater price variation in the last two governments
- Low variation and correlation of PETROBRAS revenue

