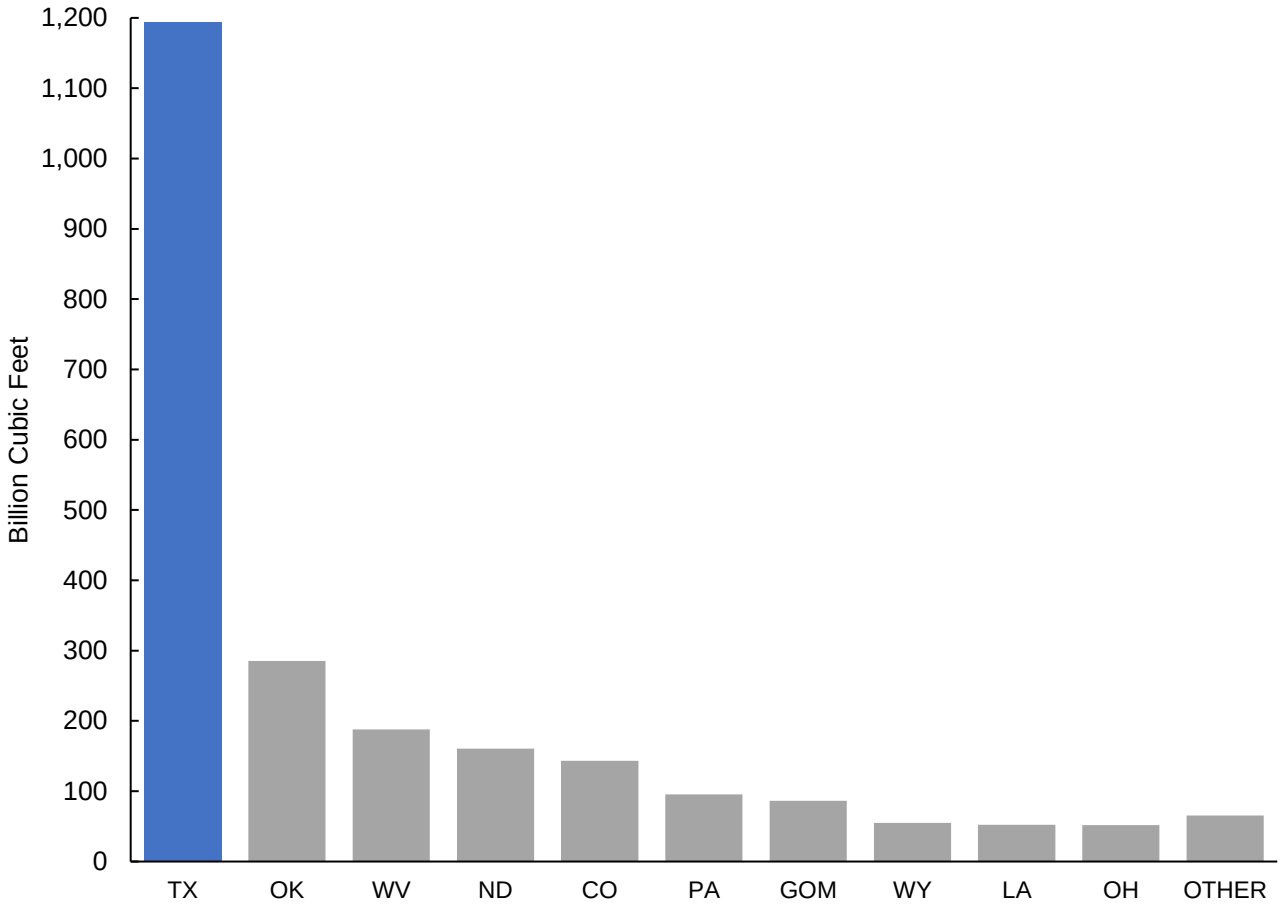
Visualizing Amounts

Figure 1. Natural Gas Production by State, 2019



Source: *Author's elaboration with data from the Energy Information Administration*

Remarks: OTHER refers to Alaska, Kansas, Utah, California, Kentucky, Alabama, Montana, Michigan, Florida, Arkansas, Virginia, Idaho, Illinois, Tennessee, Mississippi, and South Dakota; GOM stands for Gulf of Mexico.

The relevant points of this data visualization are:

- The main purpose of Figure 1 is to visualize amounts comparing the natural gas production by State in 2019.
- As indicated in this figure, natural gas production varied in magnitude across the producers' States.
- The top five natural gas producers were Texas, Oklahoma, West Virginia, North Dakota, and Colorado
- Texas was the largest natural gas producer in 2019; its production was 1.19 trillion cubic feet.
- The size of Texas natural gas production compared to the rest of the producer's states allows Texas to have market power nationwide.
- Market power is the capacity of a State to affect the natural gas price if a shock in any of its determinants is presented.
- Utah and North Dakota produced between 196 and 851 billion cubic feet of natural gas.
- The rest of the states produced less than 100 billion cubic feet.

I used natural gas production data by state in 2019 from the Energy Information Administration (EIA) at the website (https://www.eia.gov/dnav/ng/hist/n9050tx2M.htm).

I displayed the amounts of natural gas production using a bar-chart approach.

I presented in Table 1 the six Tufte's principles recommended for a data visualization along with a description of each principle. Additionally, I indicated which of these principles I used when creating Figure 1 and explained their applications.

Table1. Tufte's Principles applied in Figure 1

Tufte's Principles	Figure1	Detailed description	Application
Show comparisons	✓	Making comparisons is helpful in identifying magnitude visually	This plot is comparing the natural gas production by state in 2019
Show causality	**NA**	The data visualization could have as major goal to show causality. How a variable cause another visually could provide a first insight in identifying causation	NA
Use multivariate data	✓	Use multiple variables to accomplish the goal of the data visualization	This data visualization uses state as categorical variable and natural gas production in cubic feet as continuous variable
Completetly integrate text, images, and numbers	✓	Integrate relevant notes, remarks, and images to better inform your audience about the information you want to communicate	This map integrates labels, to denote the natural gas production by state.
Establish credibility	✓	One form to establish credibility is to include the data source and also start from the origin or allow the reader to identify the scale you are using	The source is included at the end of the map and it is mentioned at the description of the data visualization
Focus content	✓	Use space efficiently and avoid *chartjunk* by including relevant data to communicate your idea and stress on your main goal of your data visualization.	For visualization purposes, I combined the natural gas production of states whose production was smaller than the rest of the states. I needed to add a remark defining what states are comprised under the Other category.