

# War & Bread

## *An Exploratory Data Analysis Project on Commodity Pricing and World Conflict*

### ONE LOAF WAR BREAD

$\frac{1}{2}$ cup cornmeal	$\frac{1}{4}$ cake compressed yeast, mixed with
1 cup boiling water or scalded milk	$\frac{1}{4}$ cup lukewarm water
1 tablespoonful shortening	1 cup rye flour
2 tablespoonfuls molasses	2 cups wheat flour (about)
$\frac{1}{2}$ teaspoonful salt	

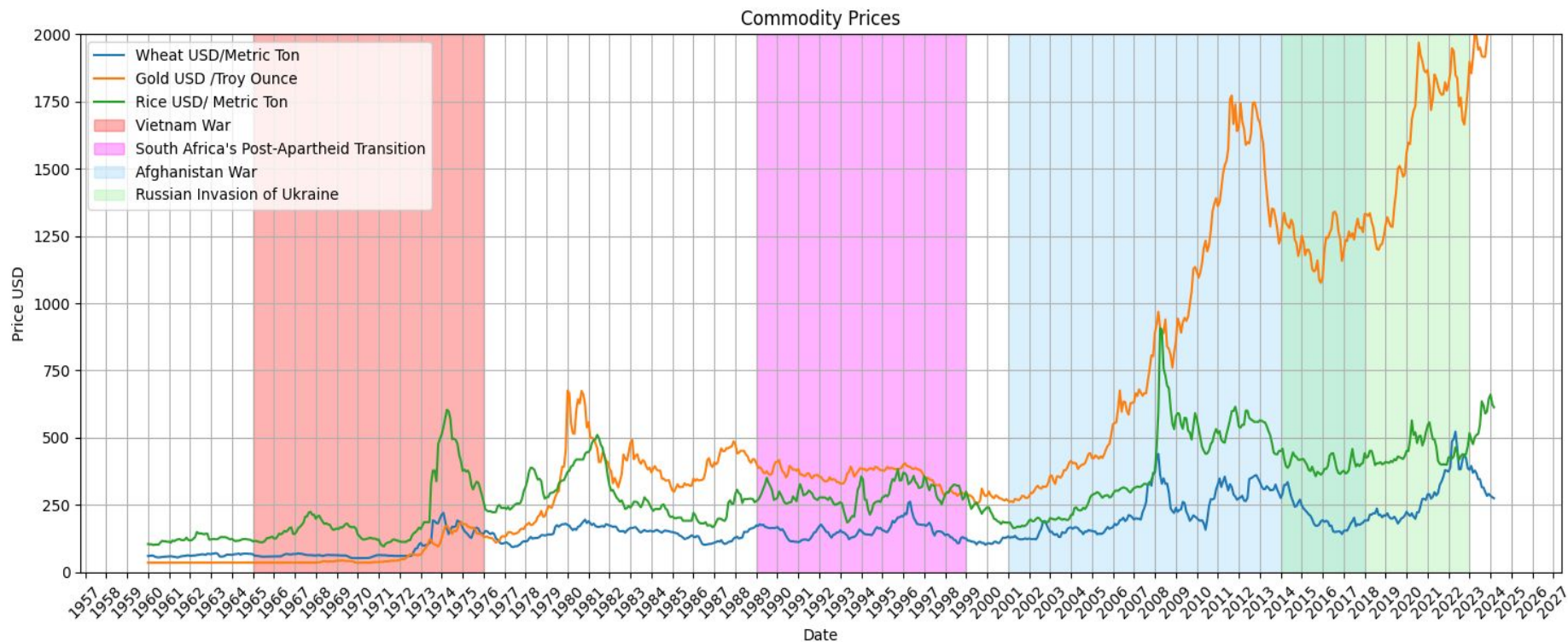
Pour the boiling water over the cornmeal and add the shortening, molasses, and salt. When lukewarm, add the yeast and flour. Mix, knead until smooth, and let rise until doubled in bulk. Shape and set in a greased pan to rise. Bake 50 to 60 minutes.

By: James, Aaron, Jaime, Trinity and Dyllan

# Project Summary & Goals

- **When the Price of Bread Rises, the World Trembles**
- What is the effect of world conflicts on commodity prices and their production levels? Chose conflicts in production areas, and countries who export the commodity.
- Commodities in question: Wheat, Rice, Coffee, Tea, Gold, and Bread Co. Stock Prices.
- EDA used to determine if price or production change in commodities correlate strongly with conflict as the saying goes: “Where goods and services don’t cross borders, armies will.” - Frédéric Bastiat
- Utilizing aggregations, statistical and time series analysis the findings were not as apparent as we thought.

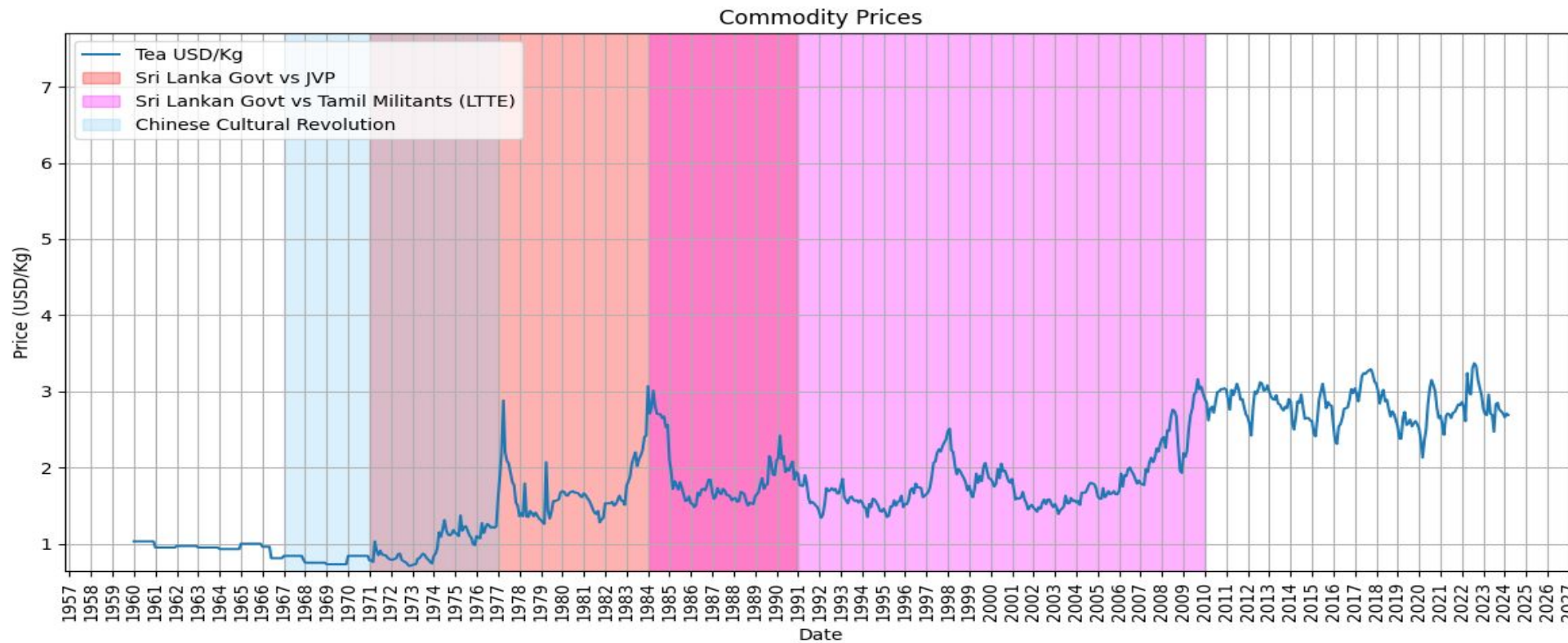
# Wheat, Rice, and Gold Prices



# Coffee Prices

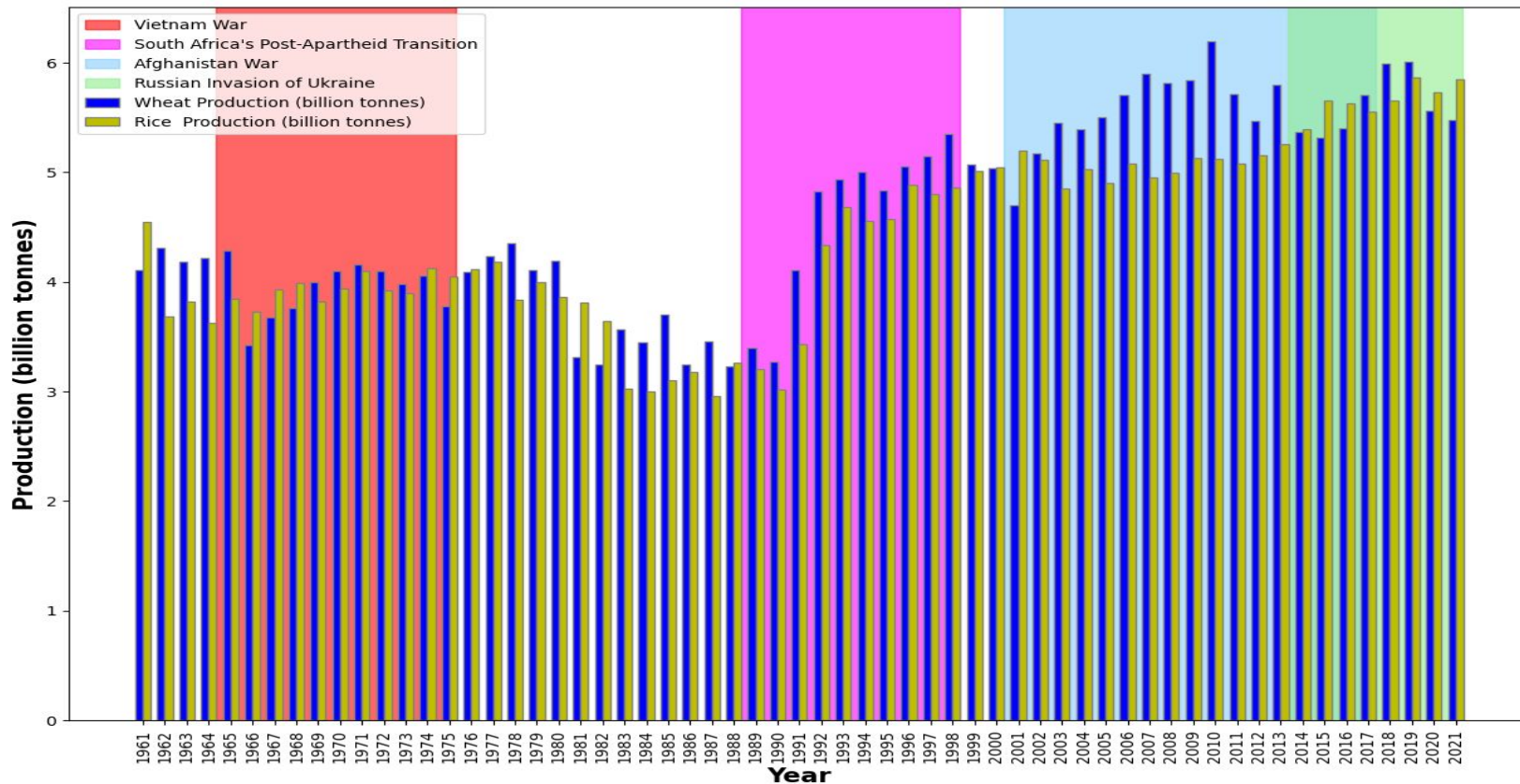


# Tea Prices



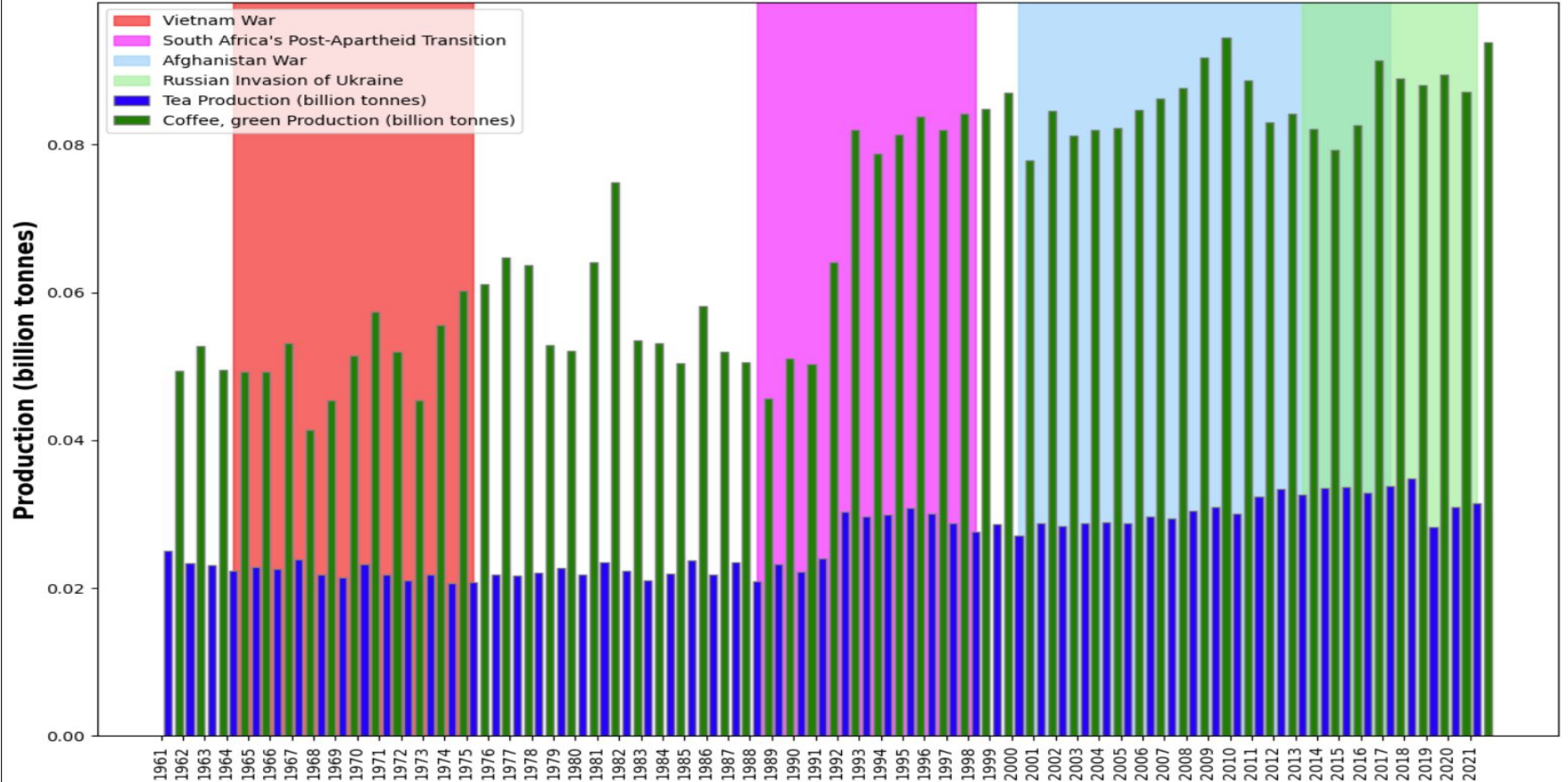
# Wheat & Rice Production

Worldwide Production of Wheat and Rice

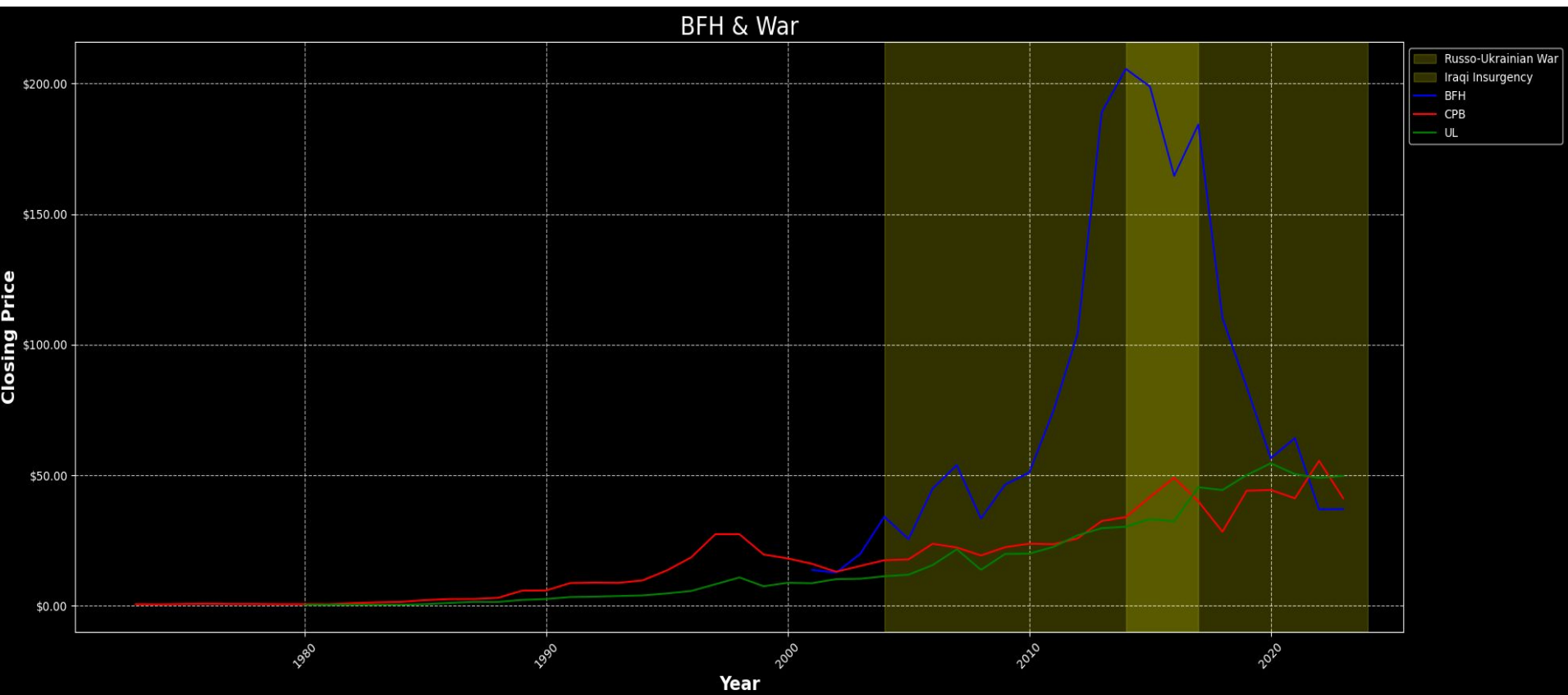


# Coffee and Tea Production

Worldwide Production of Tea and Coffee



# Stock Prices w/ Conflict Years





# Price Correlations

- Wheat & War
  - Correlation Coefficient: 0.1697 Wheat p-value: 0.0000
- Rice & War
  - Correlation Coefficient: 0.1047 Rice p-value: 0.0036
- Gold & War
  - Correlation Coefficient: 0.2480 Gold p-value: 0.0000
- Tea & War
  - Correlation Coefficient: -0.7902 Tea p-value: 0.0000
- Coffee & War
  - Correlation Coefficient: -0.4095 Coffee p-value: 0.0000
- Bread Stock Co. & War
  - Correlation Coefficient: .9878 BFH p-value: 0.00267
- Tea Stock Co. & War
  - Correlation Coefficient: 0.1035 p-value: 0.0000
- Coffee Stock Co. & War
  - Correlation Coefficient: 0.2603 p-value: 0.0000

# Conclusion

- Wheat, rice and gold price changes aren't indicators of a world conflict beginning. There might be other commodities whose fluctuations in price are better indicators of war. Conversely, other types of conflict, like climate disasters or financial policy changes might have more of a significant impact on the price of commodities.
- Coffee and Tea prices are negatively correlated with war. The price of these commodities went down when there was a rise in conflict in the area of production. This may suggest that war is positive for coffee and tea drinkers because the unrest makes the products cheaper.
- Bread stocks are positively correlated with war. Bread Stock prices are a strong indicator of turmoil. These companies do well when the world is not.
- Bread, Coffee, and Tea production levels seem to be uncorrelated with War.

## Further Questions

Dyllan: What would be the effect/correlation of other geopolitical crises like the 2020 Covid Pandemic have on commodity prices?

James: Why is there not as strong of a correlation between wheat and conflict as there is in bread stocks?

James: What was the cost of bread around the world and does that substantiate our findings? If we had more time and available funds we would look at the price of bread world wide and see if there is a strong correlation there as well.