

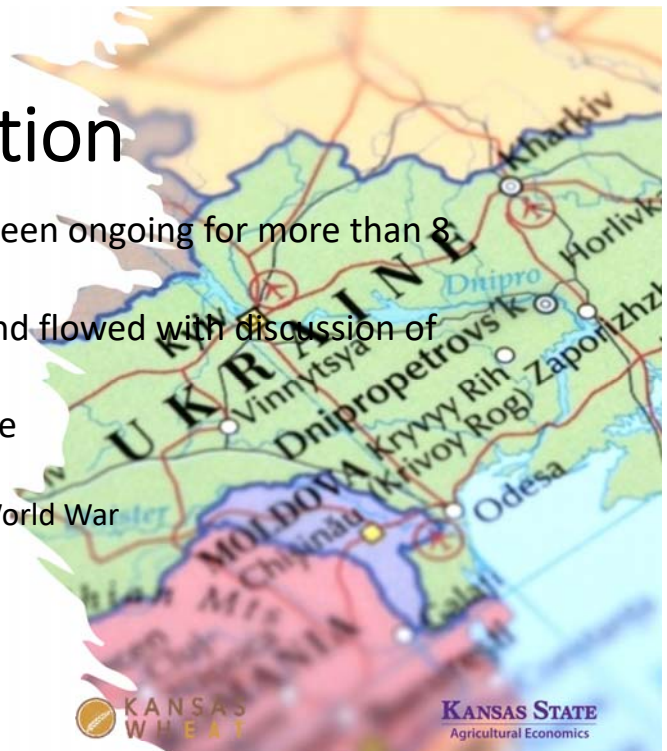
# Wheat and Conflict

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## Introduction

- The Ukraine – Russia conflict has been ongoing for more than 8 months
- Certainly, the conflict has ebbed and flowed with discussion of escalation
- The bombing of the Crimean bridge
  - Talk of nuclear escalation
  - Some wonder about a possible 3<sup>rd</sup> World War



# Economic Warfare

- Many conflicts have a significant economic component
  - Embargos
  - Banking transaction limits
  - Blockades and other trade restrictions
- Food has also been intertwined with conflict
  - Used to affect popular sentiment
  - Used to affect the efficiency of warfare



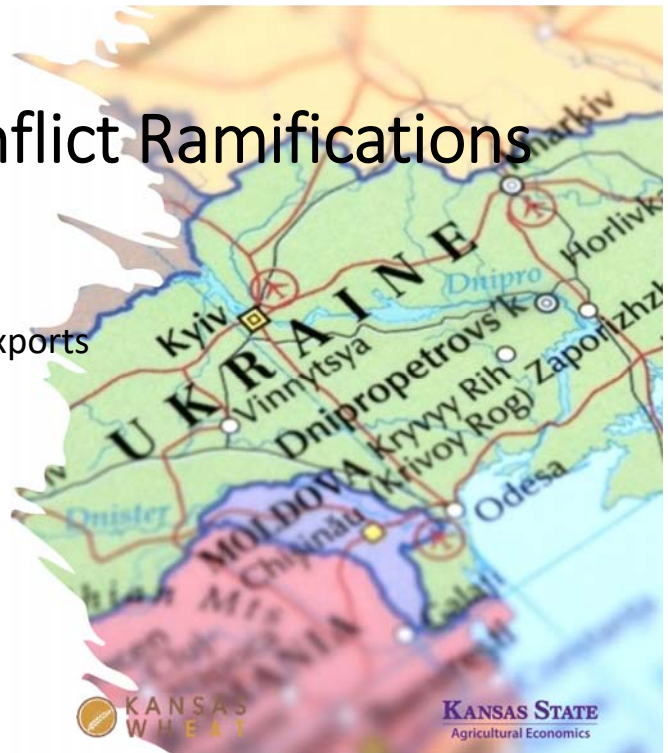
# Food and Warfare

- World War I
  - Economic blockades
- World War II
  - Desire to acquire agricultural land to provide food for the population
- Soviet Union – Afghanistan
  - U.S. wheat embargo
- Possibility to inflict hunger and sometimes starvation



# Ukraine Russia Conflict Ramifications

- 30% of the world's wheat exports
- 15% of the world's corn exports
- 60% of the world's sunflower oil exports



# Economic Warfare History

- Increased efficiency in transportation enhance the ability for economic warfare
- World output doubled from 1800 to 1913
  - According to Kuznets, trade increased by a factor of 11
- Between 1868 and 1902 the cost of shipping wheat fell by 75% according to Lambert
- Comparative advantage allowed the specialization of the production of commodities and then trade
- Moving wheat from the U.S. or Odessa to Britain became feasible
- Supply chains became long and subject to disruption





# Food Scarcity

- According to the FAO, the average food supply quantity in 2019 was 65.94 kilograms per capita
- A reduction of 10 million metric tonnes would affect wheat availability for 151,653,000 people



# Price effects of the current conflict



# World War I

- Divergent geographic boundaries
- Which map?

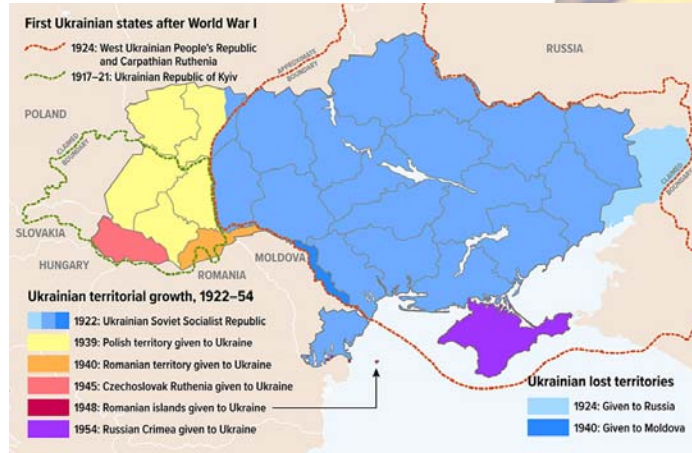


# Geographical Disagreement

- Ukraine Map in 1914 (left)
  - Crimea
  - Territory Northeast of the Black Sea
- Russian Map
  - Those territories are also viewed as part of Russia
- Ukraine as a nation state traced to about 1918
  - Before 1918, land part of various empires
  - Ukrainian language traced to 1816
- Overlaying the divergent national borders is that a significant portion of wheat production currently produced in the Russian Federation would be in Ukraine's version of the map



# Ukrainian Map



University of Rochester Map

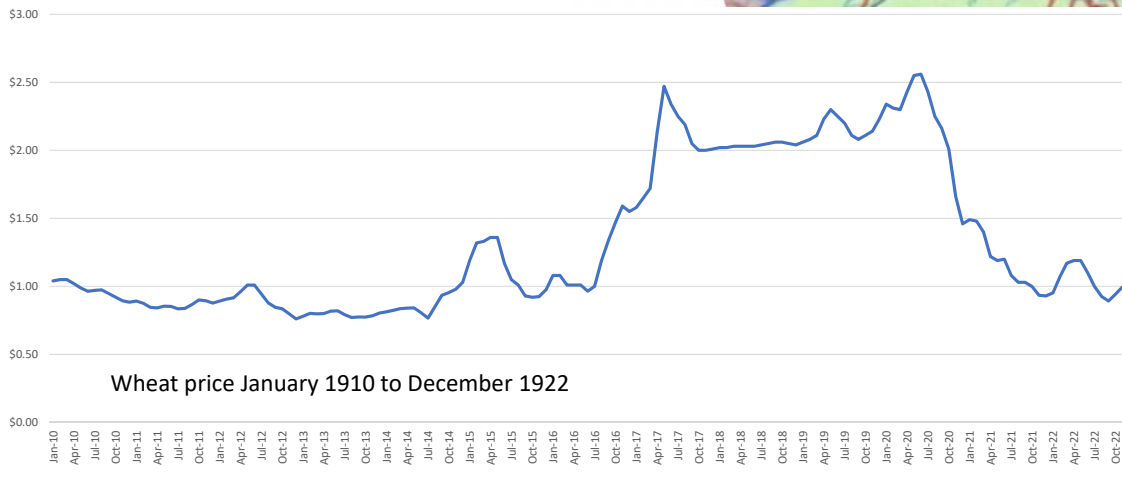


# World War I

- June 28, 1914, assassination of the Archduke of Austria
  - War declared August 4<sup>th</sup>, 1914
- Shortage of bread in U.K. was a major issue
  - Secured meat and sugar
  - Not wheat due to 7 major suppliers
    - Argentina, Australia, Canada, India, Romania, Russia, U.S.
    - Ukraine would be within Russia
- 90% of wheat exported by these seven nations



# Wheat Price Effects



# Wheat Price Comments

- From 1884 to 1913, average price was \$0.73 per bushel
  - Standard deviation \$0.14 per bushel
- In May 1914, price was \$0.84
- By April 1915, price increased to \$1.36 per bushel, 69%
  - Turkey closed transport routes eliminating wheat from Romania and Russia
  - Canada suffered a drought, also a freeze closed shipping
  - Australia had almost a complete failure
  - Argentina export availability decreased 10%
  - India embargoed exports





# The Turkish Straits

## Bosphorus

Minimum width – 2,300 feet

Length – 19 miles

## Dardanelles

Minimum width – 0.75 miles

Length – 38 miles



# Wheat Price Comments

- After April 1915, price fell of \$1.00 per bushel and remained until July 1916
- From then until a month before the U.S. entered the war, prices increased to \$1.72 per bushel (March 1917)
- Prices increase to \$2.47 over the next two months
- Imposition of a price floor guarantee of \$2.00 per bushel
- Prices high until June 1920
- Price increase immediately after the restraints were removed and decreased back to a \$1.00 per bushel by July 1921



# Lessons Learned

- Lack of preparation for food supplies was devastating
  - Especially wheat
- Weather and other forces confounded the issue
- Blockades and embargos were exacerbated by banking issues and weather



# World War II

- September 1, 1939 – Invasion of Poland by Germany
  - Britain and France declare war of Germany
- U.S. became involved December 7, 1941
- War ended in Japan September 2, 1945, and in Europe May 7, 1945
- World War I England, France Russia, U.S., Italy, and Japan aligned
- World War II Germany was aligned with Italy and Japan
- Supply routes were more difficult in World War II than World War I
- World War I focused more on staples; i.e. wheat
- World War II focused more on dairy, poultry, fruits and vegetables



# World War II

- One of Germany's objectives was to obtain additional agricultural land to feed the German population
  - Germany and Japan were both concerned they did not have agricultural resources to feed their population
  - Germany and Japan embraced self-sufficiency instead of trade
- Herbert Backe convinced Hitler to divert Ukrainian grain from Soviet cities to Germany
  - "Hunger" plan
  - Eliminate the Soviet urban population via starvation
  - Hope the Ukraine could produce enough feed to army and supplement Germany



## "The Hunger Plan"

- German farmers moved to Ukraine to farm the land
- Food to be limited in Kiev and Kharkov in 1941
- Food not to be brought into the cities in 1942
- 7 million tonnes of Ukrainian grain moved to Germany in 1942
- Backe's plan failed due to resistance of moving German farmers into Ukraine
- Germany able to better feed their population in World War II compared to World War I
  - Change flour quality by increasing the amount of bran in flour

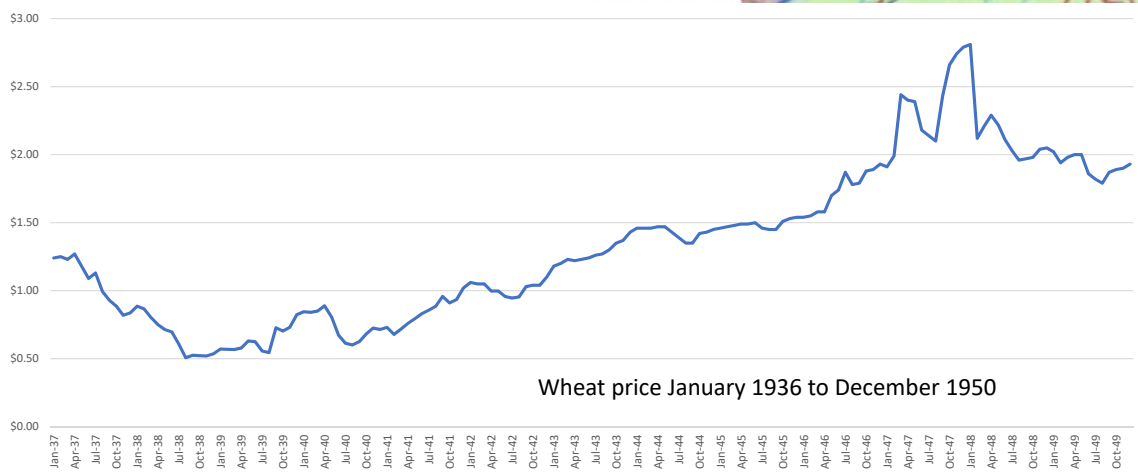


# World War II

- In 1944, Ukraine was no longer under German control, the situation deteriorated in Germany
- Only the U.S. ended in a healthy economic state compared to other combatant countries with the U.S. producing the highest yields



# Wheat Prices



# Wheat Price Discussion

- Between February 1939 and April 1940, wheat prices increased by 56%
- From April 1940 until August 1940, wheat prices fell by 30% due to excellent 1940 U.S. crop
- From February 1941 to the end of the war, wheat prices doubled
- From the end of the war until January 1948, wheat prices doubled again due to a failed crop in Ukraine and Russia
- Production also limited due to the destruction of infrastructure and productive capacity of agriculture

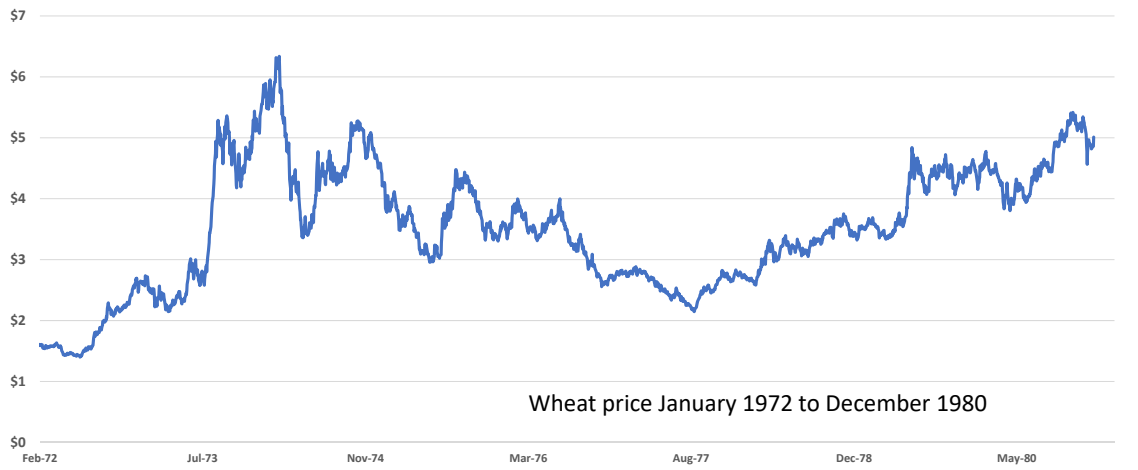


# Epilogue World War I and World War II

- Wheat and other agricultural commodities were important factors
  - Exacerbated the conflicts
  - Ultimately pressure to end conflict when nutritional needs were not being met
  - The rich agricultural areas around Ukraine were important



# Wheat Prices around U.S. Embargo



## Relation to the Current Situation

- Damage to the ports and the ability to ship commodity
  - Port at Mariupol destroyed
  - Ports of Berdjansk, Kherson, and Skadovsk occupied
- The amount of land planted in Ukraine
- Labor, fuel, agricultural inputs, storage, and transportation are critical moving forward
- Blockades and extension of the 120-day shipping window
- Rail infrastructure



# Relation to the Current Situation

- Expansion of conflict
  - Crimea bridge to Russia
  - Escalation of intensity (use of Nuclear weapons)
  - Turkey's role in flow of commodity
- Food was at the core of previous conflicts
- Price effects extending beyond the end of the conflict
  - Most severe impacts were after the end of conflict
- Ramifications once the Ukraine Russia war end?
- Ukrainian soils being central is not new



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Questions???

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