16_Belarus

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1 How has the relationship between female and male per capita consumption evolved in Belarus between 2000 and 2020?

1.1 Abstract

Using World Bank World Development Indicators (WDI), this study examines the evolution of gendered alcohol consumption in Belarus between 2000 and 2020. Over this twenty-year period, male per capita consumption consistently exceeded female consumption by a large margin, with men drinking roughly four times more on average. While both series displayed only modest fluctuations—forming a slight inverted U-shape with a rise between 2006 and 2012 followed by a decline—male consumption exhibited sharper swings, suggesting a higher sensitivity to economic or social changes. This persistent gender gap underscores the importance of considering cultural, behavioral, and policy dimensions in understanding consumption dynamics, as aggregate measures alone can obscure meaningful intra-population disparities.

1.2 1. Question

How has the relationship between female and male per capita consumption evolved in Belarus between 2000 and 2020?

- **Female proxy**: Female alcohol consumption per capita
- **Male proxy**: Male alcohol consumption per capita

1.3 2. Data

- **Source**: World Bank World Development Indicators (WDI)
- **Indicators**:
  - Alcohol consumption, per capita (female, liters of pure alcohol)
  - Alcohol consumption, per capita (male, liters of pure alcohol)
- **Coverage**: Belarus, 2000–2020
- **Notes**: National-level data only

1.4 3. Method

1. Filtered dataset for Belarus.
2. **Selected relevant columns**: Year, Indicator Name, Value.
3. Pivoted female and male alcohol consumption indicators into separate columns and sorted by year.
4. Produced a dual-axis line graph comparing male vs. female consumption trajectories.

(Analysis is descriptive; no causal inference applied.)

1.5 4. Results

- **Female per capita consumption**: Remained relatively stable at low levels across the period, showing only slight variation.
- **Male per capita consumption**: Consistently four times higher than female levels, with sharper mid-period increases (2006–2012) followed by a decline, producing an inverted U-shaped pattern.
- **Comparison**: While both sexes experienced modest shifts, male consumption proved more volatile, suggesting greater responsiveness to external shocks or social dynamics.

(Figure 1. Male vs Female Alcohol Consumption in Belarus, 2000–2020)

(Table 1. Pivoted dataset)

1.6 5. Interpretation

- Belarus shows a persistent gender gap in alcohol consumption, with male levels substantially higher and more variable.
- The sharper fluctuations among men indicate that male drinking behaviors may be more closely tied to economic, social, or policy shifts, while female consumption patterns remain more stable.
- This highlights the importance of examining gendered consumption dynamics when assessing public health, social behavior, and long-term development trends.

1.7 6. Limitations

- The analysis is limited to two indicators; other relevant dimensions (e.g., health outcomes, income levels, rural-urban divides) are not captured.
- National averages obscure regional or demographic variations in consumption.
- The descriptive method does not explore causal mechanisms behind the observed patterns.

1.8 7. Next Steps / Extensions

- Investigate correlations between alcohol consumption and health outcomes, such as life expectancy or disease prevalence.
- Explore socioeconomic, regional, or cultural factors shaping the gender gap in drinking behaviors.
- Compare Belarus with other post-Soviet countries to evaluate whether similar gendered consumption patterns emerge.
- Assess the potential impact of policy interventions (e.g., taxation, regulation, awareness campaigns) on narrowing the male–female consumption gap.

[1]:
```
# How has the relationship between female and male per capita consumption␣
↪evolved in Belarus between 2000 and 2020?

import pandas as pd
import matplotlib.pyplot as plt
import os
```

```
# Folders
data_raw_folder = "data_raw/"
data_clean_folder = "data_clean/"
figures_folder = "figures/"

# Load CSV
filename = "health_blr_filtered.csv"  # Filtered dataset with only relevant rows
df = pd.read_csv(os.path.join(data_raw_folder, filename))

# Keep only needed columns
df = df[["Year", "Indicator Name", "Value"]]

# Convert Year and Value to numeric, drop invalid rows
df["Year"] = pd.to_numeric(df["Year"], errors="coerce")
df["Value"] = pd.to_numeric(df["Value"], errors="coerce")
df = df.dropna(subset=["Year", "Value"])

# Pivot indicators into separate columns
df_pivot = df.pivot(index="Year", columns="Indicator Name", values="Value").
 ↪reset_index()
df_pivot = df_pivot.sort_values("Year")

print("Pivoted Belarus dataset:")
display(df_pivot)

# Interpolate missing values for smooth plotting (optional)
df_plot = df_pivot.interpolate(method='linear')

# Plot the two indicators
plt.figure(figsize=(10,6))
plt.plot(df_plot["Year"], df_plot["Total alcohol consumption per capita, female␣
 ↪(liters of pure alcohol, projected estimates, female 15+ years of age)"],
        marker='o', linestyle='-', label="Total female alcohol consumption per␣
 ↪capita")
plt.plot(df_plot["Year"], df_plot["Total alcohol consumption per capita, male␣
 ↪(liters of pure alcohol, projected estimates, male 15+ years of age)"],
        marker='o', linestyle='-', label="Total male alcohol consumption per␣
 ↪capita")

plt.title("Belarus: Total Female vs Total Male Alcohol Consumption (Liters of␣
 ↪pure alcohol) (2000-2020)")
plt.xlabel("Year")
plt.ylabel("Liters")
plt.legend()
plt.grid(True)
```

```
plt.tight_layout()
plt.savefig(os.path.join(figures_folder,␣
 ↪"belarus_total_female_vs_total_male_alcohol_consumption.png"))
plt.show()

# Save cleaned CSV
df_pivot.to_csv(os.path.join(data_clean_folder,␣
 ↪"belarus_total_female_vs_total_male_alcohol_consumption"), index=False)
```

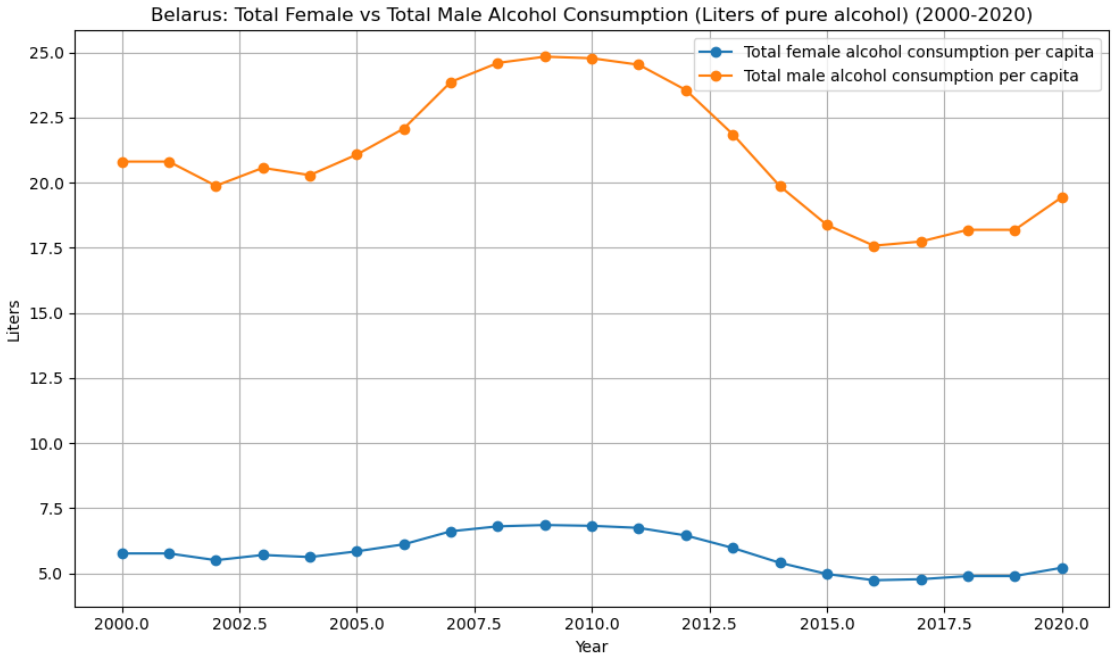
```
Pivoted Belarus dataset:
```

Indicator Name	Year
0	2000
1	2001
2	2002
3	2003
4	2004
5	2005
6	2006
7	2007
8	2008
9	2009
10	2010
11	2011
12	2012
13	2013
14	2014
15	2015
16	2016
17	2017
18	2018
19	2019
20	2020

Indicator Name	Total alcohol consumption per capita, female (liters of pure alcohol, projected estimates, female 15+ years of age)
0	5.76
1	5.76
2	5.50
3	5.70
4	5.62
5	5.84
6	6.11
7	6.61
8	6.80
9	6.85
10	6.82
11	6.74

```
12                                                                  6.45
13                                                                  5.97
14                                                                  5.40
15                                                                  4.97
16                                                                  4.73
17                                                                  4.77
18                                                                  4.89
19                                                                  4.89
20                                                                  5.21

Indicator Name  Total alcohol consumption per capita, male (liters of pure␣
 ↪alcohol, projected estimates, male 15+ years of age)
0                                                                  20.81
1                                                                  20.81
2                                                                  19.88
3                                                                  20.57
4                                                                  20.29
5                                                                  21.08
6                                                                  22.08
7                                                                  23.87
8                                                                  24.60
9                                                                  24.84
10                                                                 24.78
11                                                                 24.53
12                                                                 23.56
13                                                                 21.86
14                                                                 19.87
15                                                                 18.38
16                                                                 17.58
17                                                                 17.74
18                                                                 18.19
19                                                                 18.19
20                                                                 19.44
```


Belarus: Total Female vs Total Male Alcohol Consumption (Liters of pure alcohol) (2000-2020)
Total female alcohol consumption per capita
Total male alcohol consumption per capita
Liters
Year
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2000.0
2002.5
2005.0
2007.5
2010.0
2012.5
2015.0
2017.5
2020.0