

Publication Table

Tobacco Consumption Trends in the US

Caption: This table presents yearly data on various tobacco products in the United States. The table includes information on total cigarette consumption, average per capita cigarette consumption, total domestic and import tobacco consumption, average domestic and import tobacco consumption per capita, and average domestic and import chewing tobacco consumption per capita.

| Cigarette Consumption       |  | Domestic vs. Imports               |                       | Average Domestic vs Imports Per Capita          |   | Chewing Tobacco Consumption                             |   |
|-----------------------------|--|------------------------------------|-----------------------|---|---|---|---|
| Total Cigarette Consumption | Average Per Capita Cigarette Consumption | Total Domestic Tobacco Consumption | Total Tobacco Imports | Average Domestic Tobacco Consumption Per Capita | Average Import Tobacco Consumption Per Capita | Average Domestic Chewing Tobacco Consumption Per Capita | Average Import Chewing Tobacco Consumption Per Capita |
|                             |  |                                    |                       | Consumption Per Capita                          | Consumption Per Capita                        | Consumption Per Capita                                  | Consumption Per Capita                                |
| 43557000000                 | 2076                                     | 888357608356                       | 28395244568           | 325.8870769                                     | 10.46153846                                   | 0.217   | 0   |
| 42672000000                 | 2010                                     | 861456473096                       | 34051515644           | 311.9663077                                     | 12.30769231                                   | 0.233   | 0   |
| 41572400000                 | 1936                                     | 830186997520                       | 46532488445           | 297.3500769                                     | 16.61546154                                   | 0.219   | 0.001   |
| 40032700000                 | 1844                                     | 796501366994                       | 51118156633           | 282.2734615                                     | 18.077  | 0.211   | 0.001   |
| 39765500000                 | 1811                                     | 795675704975                       | 50089679632           | 278.7346923                                     | 17.53853846                                   | 0.196   | 0.001   |
| 38109800000                 | 1717                                     | 779331596380                       | 43295937178           | 270.0412308                                     | 15.00007692                                   | 0.175   | 0.001   |
| 38059400000                 | 1695                                     | 783973762423                       | 39328490610           | 268.5813846                                     | 13.46161538                                   | 0.173   | 0.001   |
| 36159000000                 | 1591                                     | 755487184343                       | 35353467849           | 255.734   | 11.92315385                                   | 0.154   | 0.001   |
| 34642000000                 | 1507                                     | 736032909389                       | 31522700476           | 246.1965385                                     | 10.53861538                                   | 0.144   | 0.001   |
| 31773600000                 | 1367                                     | 680255074393                       | 28556407400           | 225.0413846                                     | 9.461692308                                   | 0.13  | 0.001   |
| 30045100000                 | 1278                                     | 659854717018                       | 27602770512           | 215.8107692                                     | 9.000153846                                   | 0.117   | 0.001   |
| 29276900000                 | 1232                                     | 660902191737                       | 26271496659           | 213.8106154                                     | 8.461769231                                   | 0.104   | 0.001   |
| 28718700000                 | 1196                                     | 650401880980                       | 29818755411           | 208.2728462                                     | 9.615615385                                   | 0.099   | 0.001   |
| 27378500000                 | 1129                                     | 620561603858                       | 34803986152           | 196.8117692                                     | 11.00038462                                   | 0.09  | 0.002   |
| 26268100000                 | 1071                                     | 591790272318                       | 40341508503           | 185.6576923                                     | 12.53892308                                   | 0.087   | 0.003   |
| 26826100000                 | 1083                                     | 597106820812                       | 43112497644           | 185.2730769                                     | 13.23115385                                   | 0.078   | 0.003   |
| 25745400000                 | 1032                                     | 572034166535                       | 43847379260           | 176.2731538                                     | 13.53892308                                   | 0.076   | 0.004   |
| 24716300000                 | 981                                      | 550994167052                       | 44886165763           | 168.1953846                                     | 13.76969231                                   | 0.069   | 0.004   |
| 23531900000                 | 927                                      | 521325017803                       | 51084165673           | 157.9230769                                     | 15.38461538                                   | 0   | 0   |
| 22343300000                 | 876                                      | 490596405687                       | 55424283968           | 144.5299231                                     | 19.91384615                                   | 0.058   | 0.004   |
| 22856500000                 | 890                                      | 492002857858                       | 52478098121           | 145.2880769                                     | 17.83061538                                   | 0.059   | 0.003   |
| 22076300000                 | 855                                      | 471642844369                       | 57223261397           | 138.6916923                                     | 18.80853846                                   | 0.054   | 0.003   |

Importable Table

| Year | Total_Consumptio | Avg_Per_Capita | Total_Domestic | Total_Imports | Per_Capita_Domestic | Per_Capita_Imports | Avg_Domestic_Per_Capi | Avg_Imports_Per_Capita | Avg_Chewing_Tobacco |
|------|------------------|----------------|----------------|---------------|---------------------|--------------------|-----------------------|------------------------|---------------------|
| 2000 | 435,570,000,000  | 2076           | 888357608356   | 28395244568   | 325.8870769         | 10.46153846        | 0.217                 | 0                      | 0                   |
| 2001 | 426,720,000,000  | 2010           | 861456473096   | 34051515644   | 311.9663077         | 12.30769231        | 0.233                 | 0                      | 0.001               |
| 2002 | 415,724,000,000  | 1936           | 830186997520   | 46532488445   | 297.3500769         | 16.61546154        | 0.219                 | 0.001                  | 0.001               |
| 2003 | 400,327,000,000  | 1844           | 796501366994   | 51118156633   | 282.2734615         | 18.077             | 0.211                 | 0.001                  | 0.001               |
| 2004 | 397,655,000,000  | 1811           | 795675704975   | 50089679632   | 278.7346923         | 17.53853846        | 0.196                 | 0.001                  | 0.001               |
| 2005 | 381,098,000,000  | 1717           | 779331596380   | 43295937178   | 270.0412308         | 15.00007692        | 0.175                 | 0.001                  | 0.001               |
| 2006 | 380,594,000,000  | 1695           | 783973762423   | 39328490610   | 268.5813846         | 13.46161538        | 0.173                 | 0.001                  | 0.001               |
| 2007 | 361,590,000,000  | 1591           | 755487184343   | 35353467849   | 255.734             | 11.92315385        | 0.154                 | 0.001                  | 0.001               |
| 2008 | 346,420,000,000  | 1507           | 736032909389   | 31522700476   | 246.1965385         | 10.53861538        | 0.144                 | 0.001                  | 0.001               |
| 2009 | 317,736,000,000  | 1367           | 680255074393   | 28556407400   | 225.0413846         | 9.461692308        | 0.13                  | 0.001                  | 0.001               |
| 2010 | 300,451,000,000  | 1278           | 659854717018   | 27602770512   | 215.8107692         | 9.000153846        | 0.117                 | 0.001                  | 0.001               |
| 2011 | 292,769,000,000  | 1232           | 660902191737   | 26271496659   | 213.8106154         | 8.461769231        | 0.104                 | 0.001                  | 0.001               |
| 2012 | 287,187,000,000  | 1196           | 650401880980   | 29818755411   | 208.2728462         | 9.615615385        | 0.099                 | 0.001                  | 0.001               |
| 2013 | 273,785,000,000  | 1129           | 620561603858   | 34803986152   | 196.8117692         | 11.00038462        | 0.09                  | 0.002                  | 0.002               |
| 2014 | 262,681,000,000  | 1071           | 591790272318   | 40341508503   | 185.6576923         | 12.53892308        | 0.087                 | 0.003                  | 0.003               |
| 2015 | 268,261,000,000  | 1083           | 597106820812   | 43112497644   | 185.2730769         | 13.23115385        | 0.078                 | 0.003                  | 0.003               |
| 2016 | 257,454,000,000  | 1032           | 572034166535   | 43847379260   | 176.2731538         | 13.53892308        | 0.076                 | 0.004                  | 0.004               |
| 2017 | 247,163,000,000  | 981            | 550994167052   | 44886165763   | 168.1953846         | 13.76969231        | 0.069                 | 0.004                  | 0.004               |
| 2018 | 235,190,000,000  | 927            | 521325017803   | 51084165673   | 157.9230769         | 15.38461538        | 0                     | 0                      | 0                   |
| 2019 | 223,433,000,000  | 876            | 490596405687   | 55424283968   | 144.5299231         | 19.91384615        | 0.058                 | 0.004                  | 0.004               |
| 2020 | 228,565,000,000  | 890            | 492002857858   | 52478098121   | 145.2880769         | 17.83061538        | 0.059                 | 0.003                  | 0.003               |
| 2021 | 220,763,000,000  | 855            | 471642844369   | 57223261397   | 138.6916923         | 18.80853846        | 0.054                 | 0.003                  | 0.003               |

Data Manipulation Code from R Markdown:

```
#Step 1 - Install and Add Libraries to coding environment
options(repos = c(CRAN = "https://cloud.r-project.org/"))
#install.packages("dplyr")
#install.packages("reshape2")
library("dplyr")
library("reshape2")

#Step 2 - Load Data into coding environment
tobacco <- read.csv("Tobacco_Consumption.csv")

#Step 3 - Filter data to answer Question 1. How has smoking cigarettes changed over time?
cigarette_data <- tobacco %>% filter(Measure == "Cigarettes")

#Step 4 - Use group_by function to summarize total cigarette consumption by year and remove scientific notation
cigarette_total <- cigarette_data %>%
  group_by(Year) %>%
  summarize(Total_Consumption_of_Cigarettes = sum(Total, na.rm = TRUE))

cigarette_total$Total_Consumption_of_Cigarettes <- format(cigarette_total$Total_Consumption_of_Cigarettes, scientific=FALSE)

#Step 5 - Use group_by function to summarize average cigarette consumption per capita
cigarette_PC <- cigarette_data %>%
  group_by(Year) %>%
  summarize(Avg_Per_Capita_Consumption_of_Cigarettes = mean(Total.Per.Capita, na.rm = TRUE))

#Step 6 - Answer question 2. How have domestic versus imported tobacco products changed over time? Use group_by function to isolate data for Total domestic and imports by year
domestic_import_data <- tobacco %>%
  group_by(Year) %>%
  summarize(Total_Domestic_Tobacco = sum(Domestic, na.rm = TRUE), Total_Imports_Tobacco = sum(Imports, na.rm = TRUE))

#Step 7 - Create table for average per capita consumption
domestic_import_pc <- tobacco %>%
  group_by(Year) %>%
  summarize(Per_Capita_Domestic_Tobacco = mean(Domestic.Per.Capita, na.rm = TRUE), Per_Capita_Imports_Tobacco = mean(Imports.Per.Capita, na.rm = TRUE))

#Step 8 - Combine the Total and Average Per Capita Tables
domestic_import_combine <- left_join(domestic_import_data, domestic_import_pc, by = "Year")

#Step 9 - Answer Question 3 How has chewing tobacco consumption per capita changed over time? Filter the data for chewing tobacco
chewing_data <- tobacco %>%
  filter(Submeasure == "Chewing Tobacco")

#Step 10 - Use group-by function to group the data by year and summarize the average chewing tobacco consumption per capita
chewing_PC <- chewing_data %>%
  group_by(Year) %>%
  summarize(Avg_Domestic_Per_Capita_Chewing_Tobacco = mean(Domestic.Per.Capita, na.rm = TRUE), Avg_Imports_Per_Capita_Chewing_Tobacco = mean(Imports.Per.Capita, na.rm = TRUE))

#Step 11 - Combine the data tables that answered questions into single table
combined_data <- cigarette_total %>%
  left_join(cigarette_PC, by = "Year") %>%
  left_join(domestic_import_combine, by = "Year") %>%
  left_join(chewing_PC, by = "Year")

#Step 12 - Export Importable Table to Excel file
write.csv(combined_data, "Importable_Table.csv", row.names = FALSE)
```