

**Group 9:**

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Barbara Lorenzo

**CAP4744-2253-4279 - Data Visualization**

**Spring 2025 - Professor Norge**

## **Project 2 - Border Crossing Entry Data**

### **1. Dataset Selection:**

- <https://catalog.data.gov/dataset/border-crossing-entry-data-683ae>
- The Border Crossing Entry Data, maintained by the Bureau of Transportation Statistics (BTS), offers comprehensive statistics on inbound crossings at U.S. land ports along the Canadian and Mexican borders. This dataset encompasses various transportation modes, including trucks, trains, buses, personal vehicles, and pedestrian traffic, detailing the number of vehicles, containers, passengers, or pedestrians entering the United States. The data is collected by U.S. Customs and Border Protection (CBP) at ports of entry and is updated monthly. It's important to note that this dataset focuses solely on inbound crossings; CBP does not gather comparable data on outbound movements.

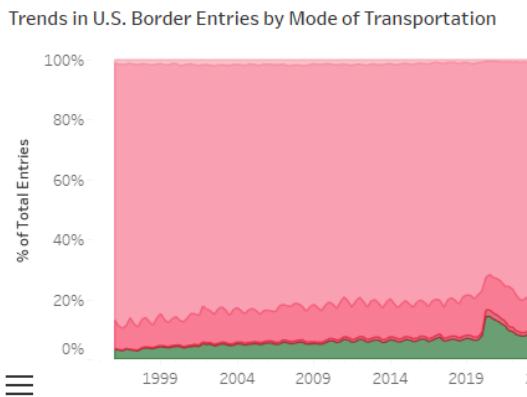
### **2. Research Question and Rationale:**

- The dataset for this analysis was chosen because it provides detailed insights into border crossing volumes across various entry points in the U.S. The data includes historical trends, seasonal variations, and the impact of external factors such as trade policies and global events. By leveraging this dataset, we can generate valuable insights for policymakers, businesses, and local authorities to optimize border operations and assess the effectiveness of past policies.
- As part of our analysis we aim to investigate the following:
  - **Economic & Policy Implications**
    - **Impact of Trade Policies:** How have tariffs, trade agreements (e.g., NAFTA/USMCA), or border control policies affected the volume of truck crossings over time?
    - **COVID-19 and Travel Restrictions:** What was the impact of COVID-19 lockdowns and travel restrictions on border crossings? How long did it take for crossings to recover post-pandemic?
    - **Effect of Immigration Policies:** How do changes in immigration laws or border security policies (e.g., Title 42, changes in asylum policies) impact the number of crossings?

- **Traffic & Volume Analysis**

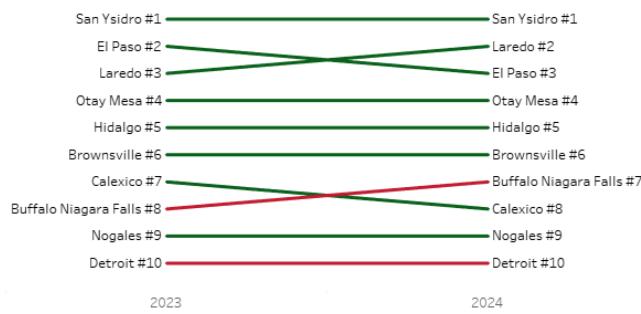
- **Seasonal Trends:** What are the seasonal patterns in border crossings?  
Are there specific months where border traffic significantly increases or decreases?
- **Annual Trends:** How has border crossing volume changed over the years? Are there notable increases or decreases related to policy changes, economic conditions, or global events (e.g., COVID-19)?
- **Comparison Across Borders:** How does traffic compare between the northern (U.S.-Canada) and southern (U.S.-Mexico) borders?

#### 4. Data Visualization:



**Area chart:** This area chart visualizes the percentage distribution of border crossings by transportation mode over time. The dominant category is cars, consistently making up the majority of crossings. Other categories, such as foot traffic, buses, trains, and trucks, remain relatively small but exhibit some variation, particularly an increase in foot traffic and truck crossings around 2020-2022, likely influenced by policy changes or global events like COVID-19.

Changes in U.S. Border Crossing Rankings



**Bump chart:** This bump chart visualizes the ranking of the busiest U.S. border crossings from 2023 to 2024, distinguishing between the U.S.-Mexico border (green) and the U.S.-Canada border (red). San Ysidro remains the top crossing, while Laredo and El Paso have switched rankings. Notably, Buffalo Niagara Falls has risen in rank, surpassing Calexico, indicating increased activity at that northern border crossing.

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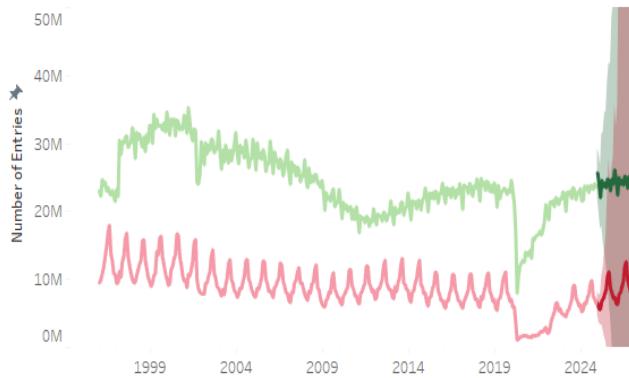
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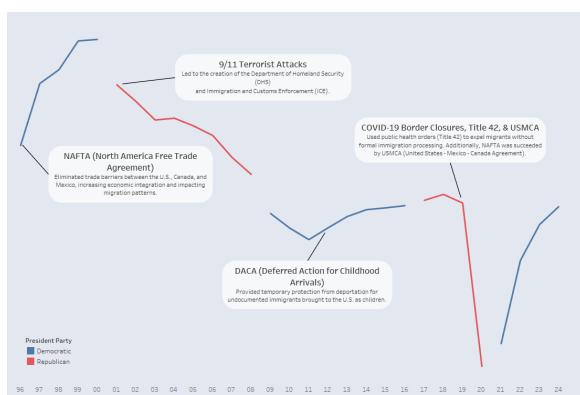
Historical and Forecasted Trends in U.S. Border Entries



**Line chart with forecast:** This line chart visualizes border crossing trends over time for the U.S.-Mexico and U.S.-Canada borders, with a forecast projection. The green lines represent U.S.-Mexico crossings, which have historically been higher, while the red lines represent U.S.-Canada crossings with distinct seasonal patterns. The forecasted section shows a widening confidence interval, indicating uncertainty in future crossing volumes.



**Map with port activity represented by size:** This dynamic map visualizes and animates border crossing activity along the U.S.-Canada and U.S.-Mexico borders, with red circles indicating northern border crossings and green circles representing southern border crossings. The size of the circles suggests varying levels of traffic, with higher volumes concentrated at major entry points, particularly along the U.S.-Mexico border.



**Line chart with presidential party clusters:** The line chart shows U.S. border crossing trends over time, segmented by presidential party (Democratic in blue, Republican in red). Key events such as 9/11, DACA, and COVID-19-related border closures significantly impacted crossing volumes, with notable declines following security and public health policies.

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## **5. Dashboard Creation:**

- The U.S. Border Crossings - Canada and Mexico dashboard was designed with a modern, clean interface using a design from Fiverr, ensuring an intuitive user experience. The map visuals were customized using Mapbox, allowing for enhanced styling options and clearer geographic distinctions. One of the key interactive features includes a time-lapse animation on the map, showcasing how port activity has evolved over time. Additionally, a navigation menu was integrated using Tableau's navigation buttons, allowing users to seamlessly switch between different sections. A unique, interactive filter was implemented for Mexico and Canada, using country-shaped buttons that dynamically adjust the displayed data when selected. While the dashboard provides a comprehensive analysis of border activity, it is important to note that the data is static and cannot be refreshed, ensuring consistency in historical trend analysis. These features collectively create an engaging, data-rich experience for users analyzing border trends.

## **6. Conclusions:**

Our analysis of U.S. border crossing data has revealed significant trends influenced by economic policies, immigration laws, and global events.

- **Impact of Trade & Immigration Policies:** Trade agreements such as NAFTA (1994) and its successor, USMCA (2020), have contributed to an overall increase in border traffic, particularly in commercial truck crossings, reflecting the deep economic ties between the U.S., Canada, and Mexico. However, COVID-19 lockdowns and travel restrictions in 2020 led to a dramatic decline in crossings, with traffic taking nearly two years to return to pre-pandemic levels. Immigration policies, such as Title 42, temporarily reduced asylum-seeking entries while increasing repeat crossings, as migrants were quickly expelled and attempted re-entry multiple times. Meanwhile, asylum restrictions and stricter border enforcement policies impacted the volume of pedestrian crossings, shifting migration routes and methods over time.

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- **Leadership and political ideology:** From a political standpoint, our analysis of border crossings under Democratic vs. Republican administrations suggests a distinct pattern: crossings tend to increase or remain stable under Democratic presidents, while they decline during Republican presidencies. This trend aligns with broader policy approaches—Democratic administrations have historically emphasized pathways for immigration and trade facilitation, whereas Republican administrations have focused on heightened border security and stricter enforcement. Regarding traffic patterns, we observed seasonal fluctuations, with crossings typically peaking in the warmer months and declining in winter. And typically the calendar school year here in the US runs from about August to late April/early May which is also a big factor in these patterns. Annual trends showed that crossings in the U.S.-Mexico border consistently outnumber those at the U.S.-Canada border, although certain northern border crossings, such as the popular and tourist favorite Buffalo Niagara Falls, have seen rising activity in recent years.
  
- Overall, our project provides valuable insights into how border crossings reflect broader economic, political, and global trends. The U.S.-Mexico border remains the busiest, particularly at crossings like San Ysidro and Laredo, while the U.S.-Canada border sees fluctuating traffic influenced by economic agreements and visa policies. By visualizing these trends through our Tableau dashboard, we offer policymakers and stakeholders a data-driven approach to understanding border activity, assessing policy impacts, and preparing for future shifts in trade and migration patterns.