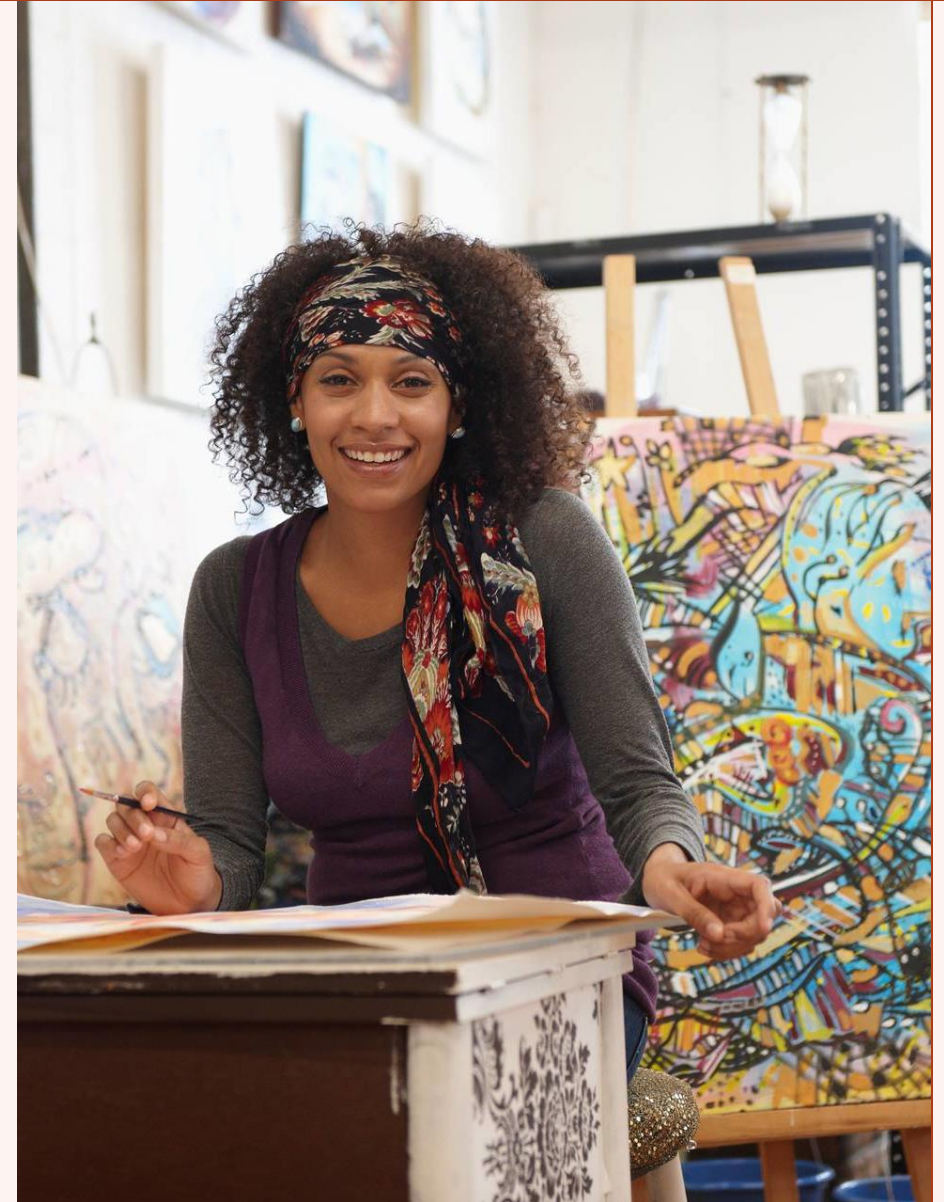




TRANSBORDER FREIGHT DATA ANALYSIS REPORT

- Project Objectives
- Methodological Framework
- Data Understanding
- Data Preparation
- Recommendations

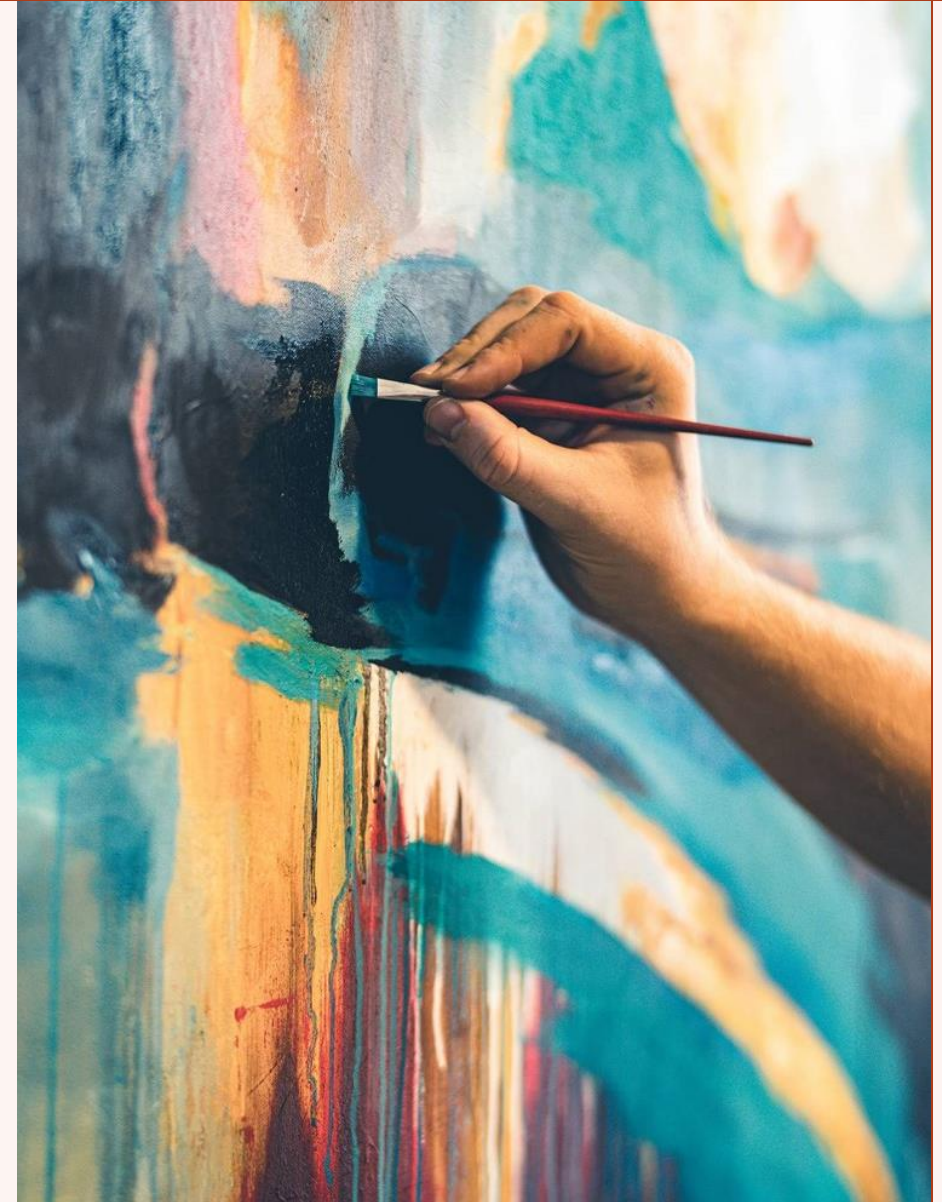




Transportation systems are crucial for modern economies, enabling the movement of goods, services, and people.

The Bureau of Transportation Statistics (BTS) provides essential data for informed decision-making in transportation.

- Uncover freight movement patterns and trends.
- Identify operational inefficiencies and propose optimizations.
- Analyze the environmental impact of freight transportation.
- Assess safety and risk in freight movements.
- Evaluate the impact of economic disruptions on freight.
- Provide data-driven recommendations for improving transportation systems



- Utilizing the CRISP-DM Framework: Business Understanding, Data Understanding, Data Preparation, Modeling, Evaluation, and Deployment.
- Focus on structured, iterative approaches to drive valuable insights.

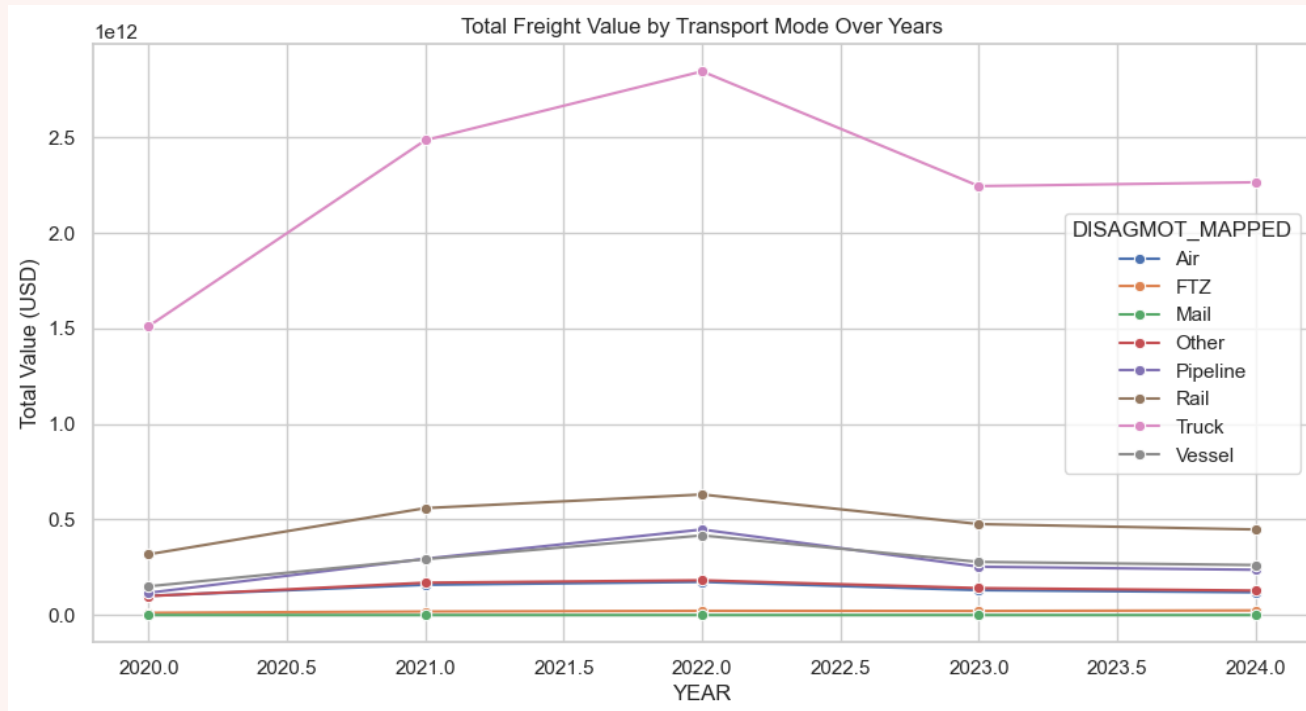


- Datasets cover freight data from 2020 to 2024.
- Key metrics include transport modes, freight volume and weight, costs, and geographic data.
- Slide 6: Data Preparation



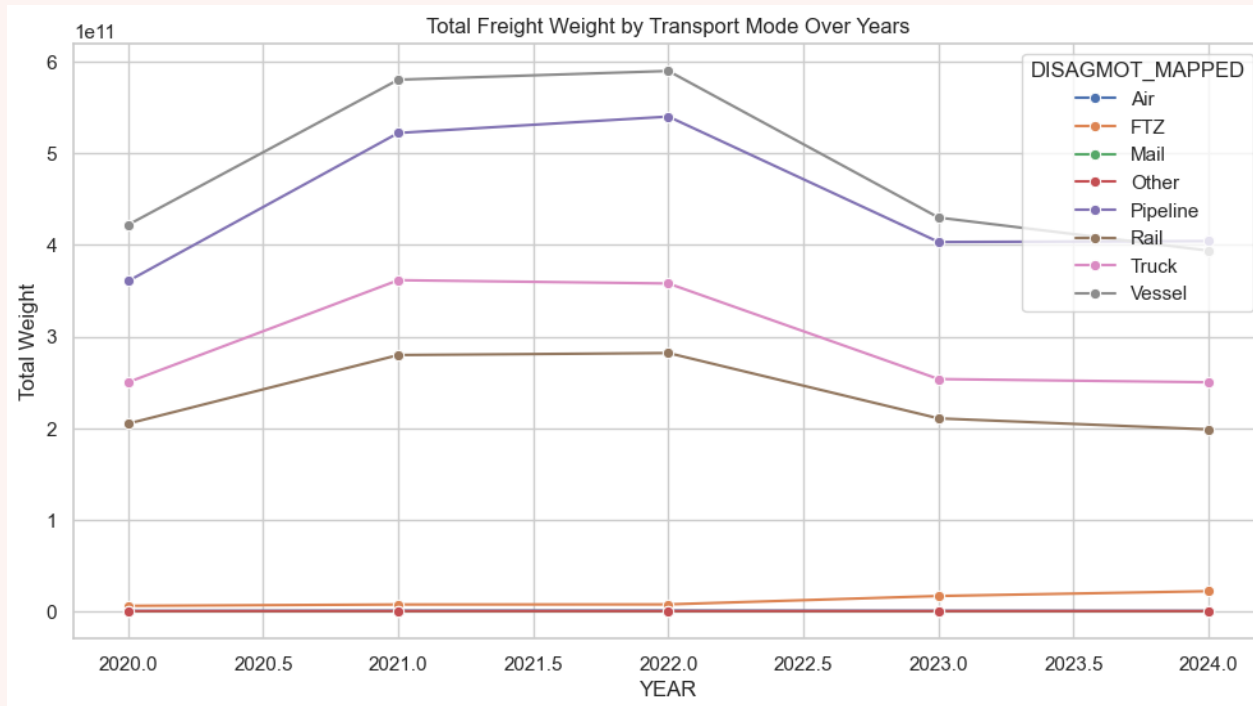
- Steps include handling missing values, converting data types, and deriving new variables.
- Ensuring data integrity and suitability for analysis.





Truck Transport shows a significant increase in freight value, peaking around 2023.

Other modes like Air, Rail, and Vessel show stable values.



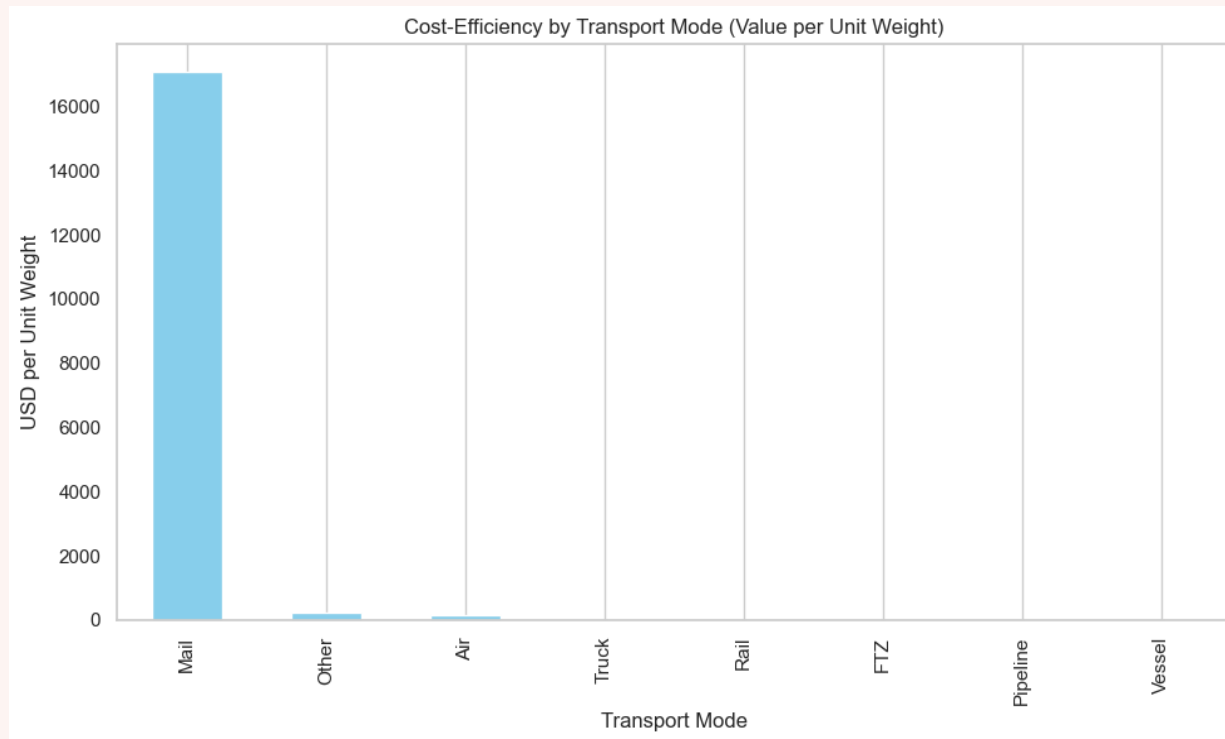
Vessel and pipeline transports
carry the most weight.

Truck and rail transports
carry high-value but lightweight
cargo.



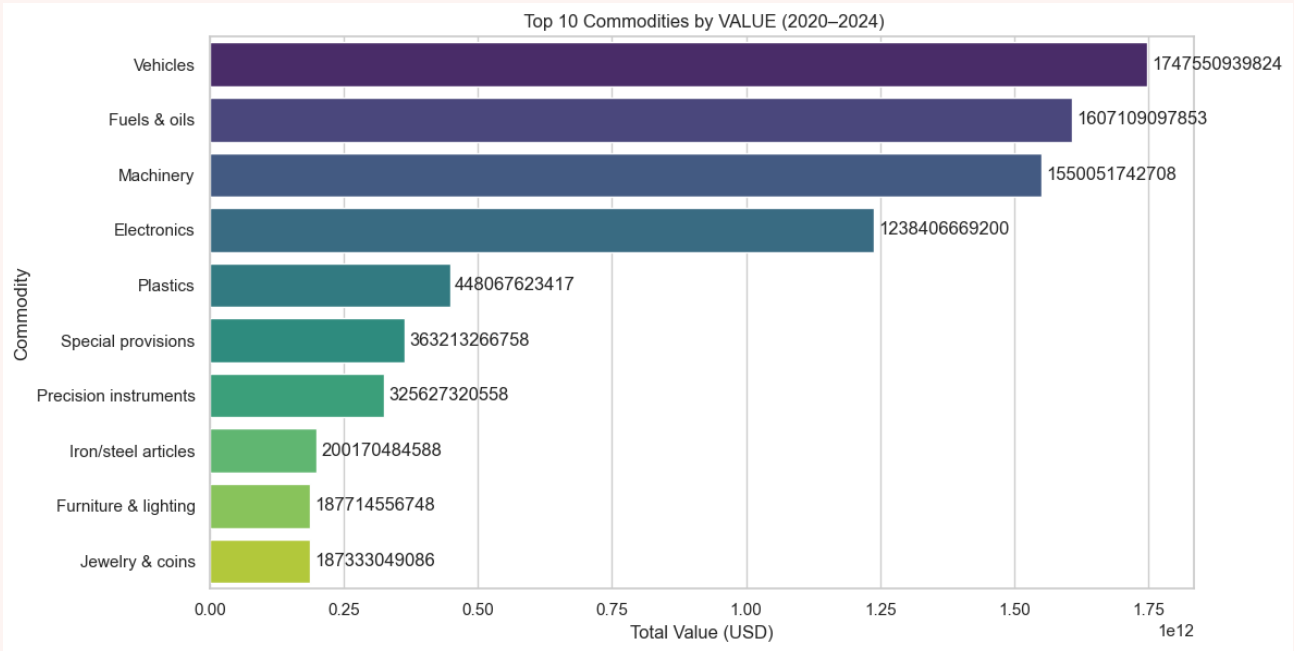
Seasonal patterns observed, particularly in Pipeline and Vessel transport.

FTZ transport shows less variability.



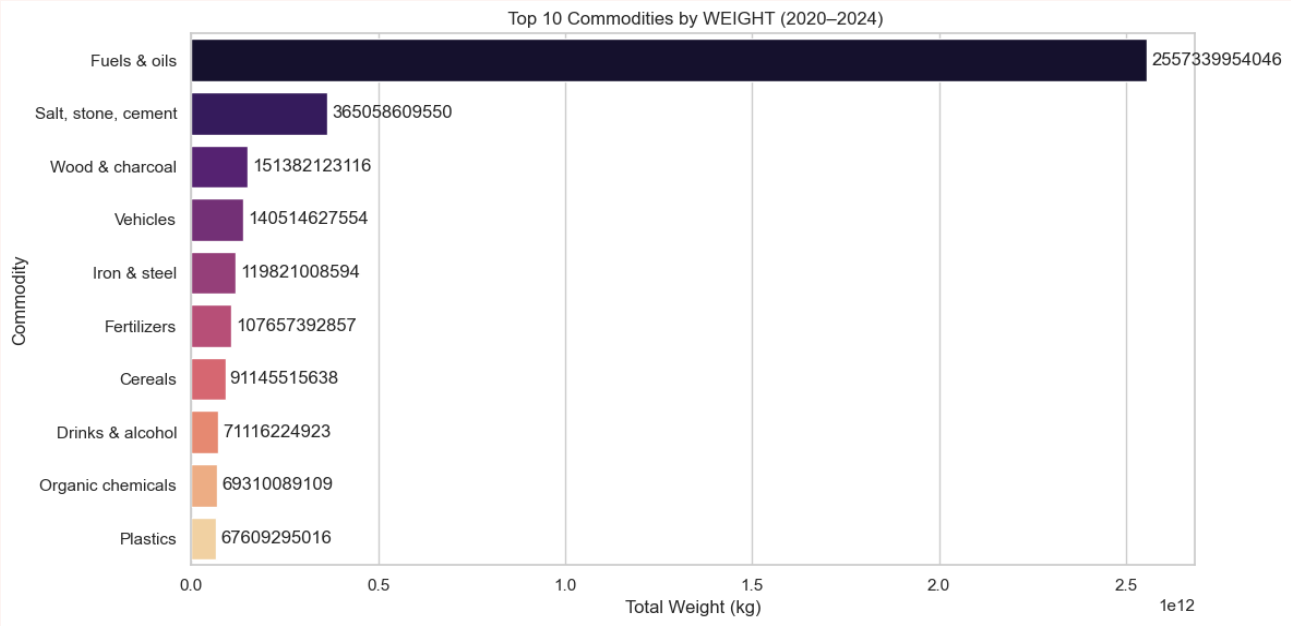
Mail transport has a high value per unit weight.

Other modes have lower values per unit weight, used for bulkier, lower-value goods.



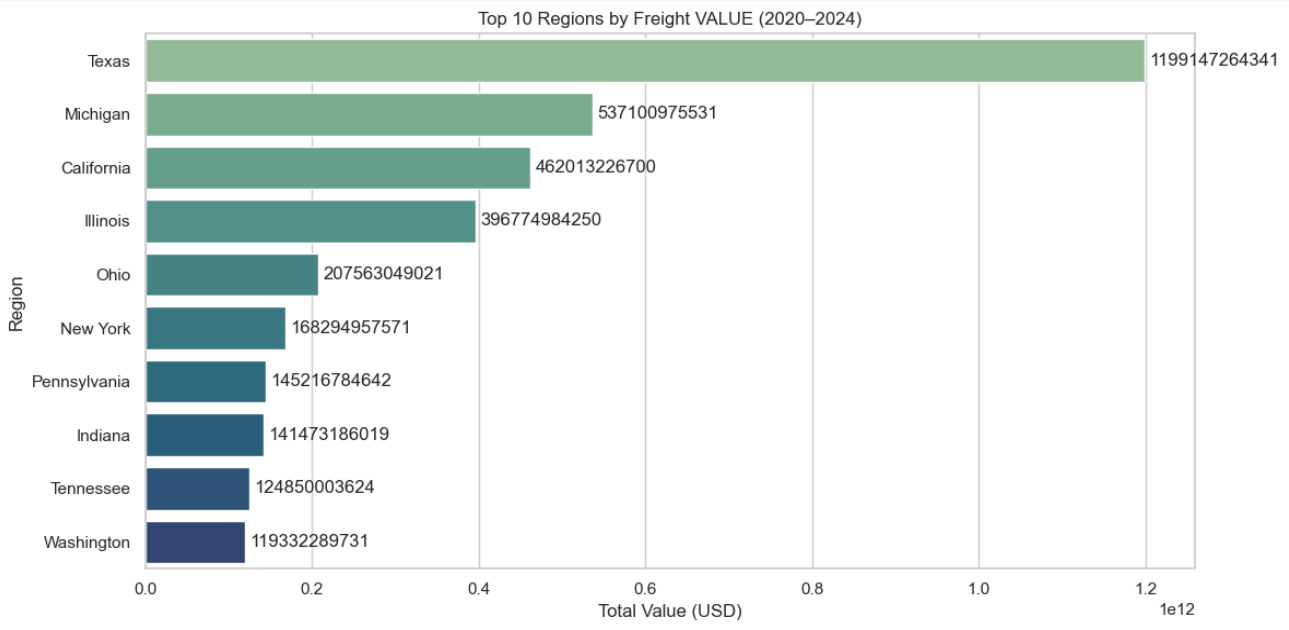
Vehicles are the highest-valued commodity.

Electronics and machinery are also high-value items.



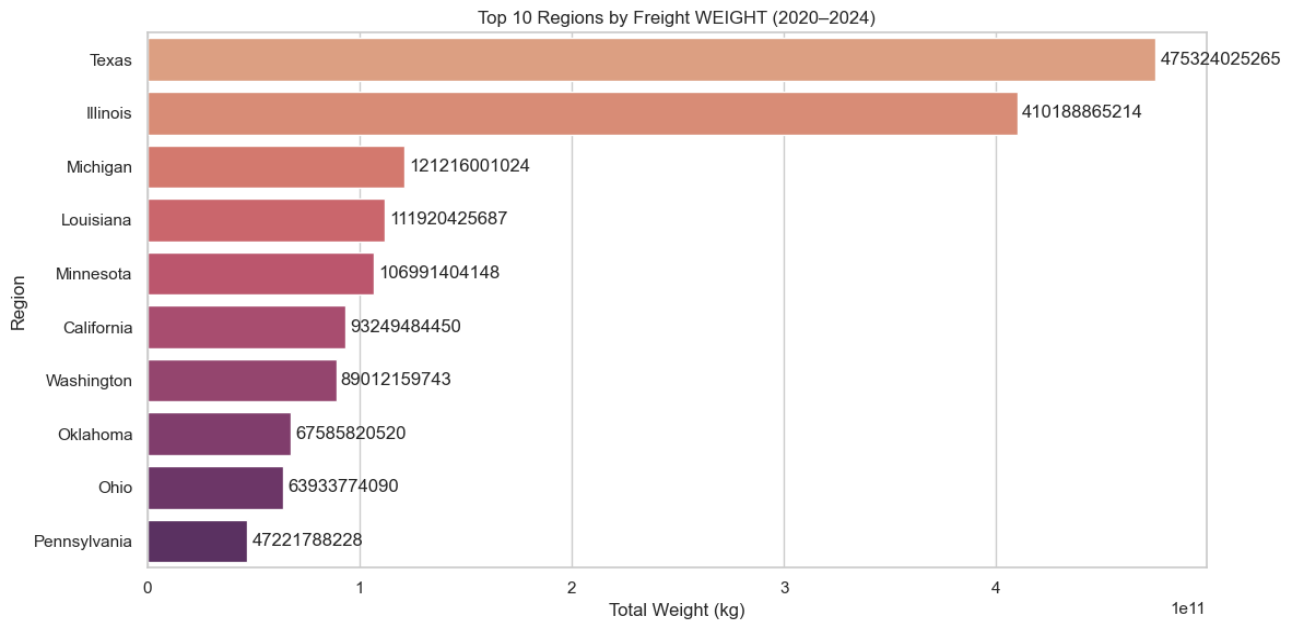
Fuels & oils dominate in weight.

Salt, stones and cement are also significant in weight.



Texas leads in freight value.

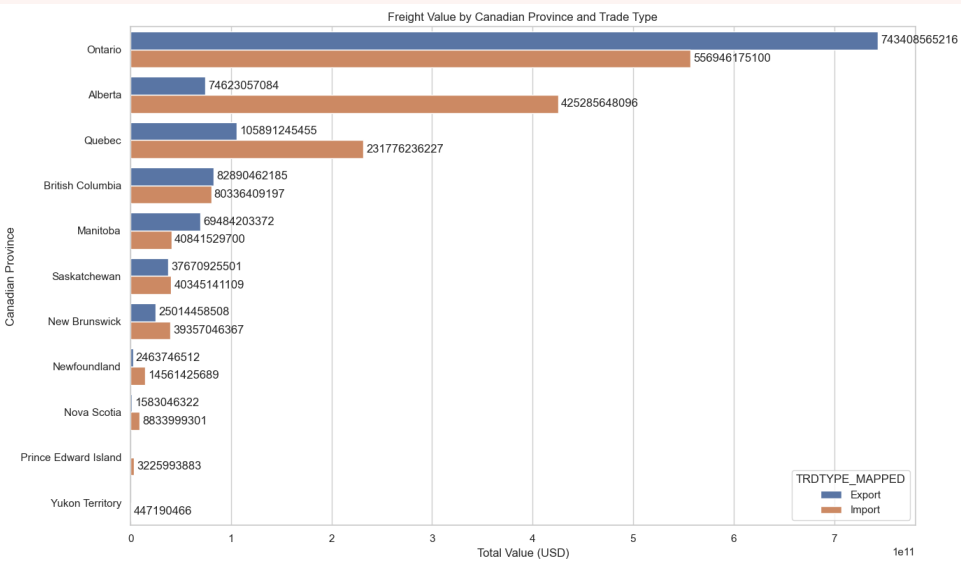
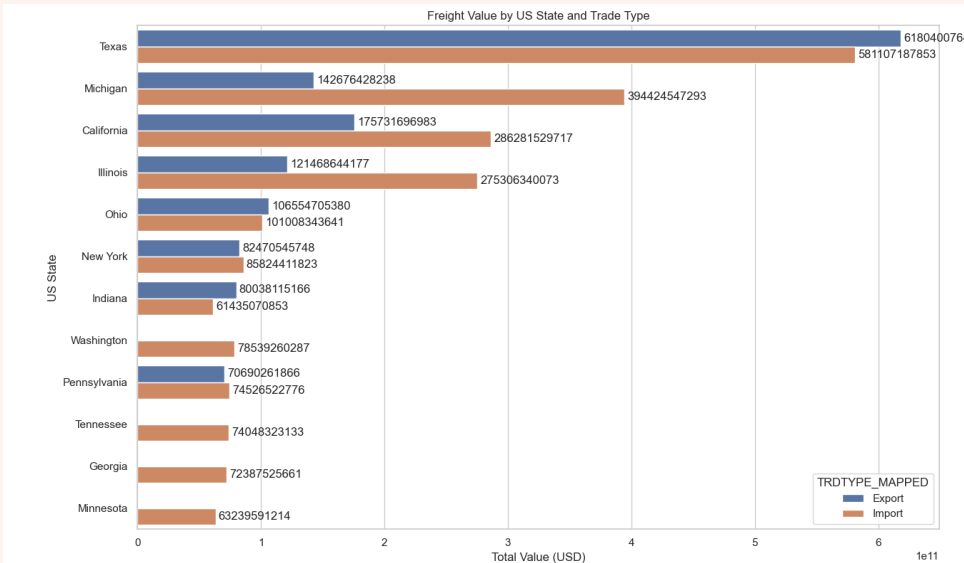
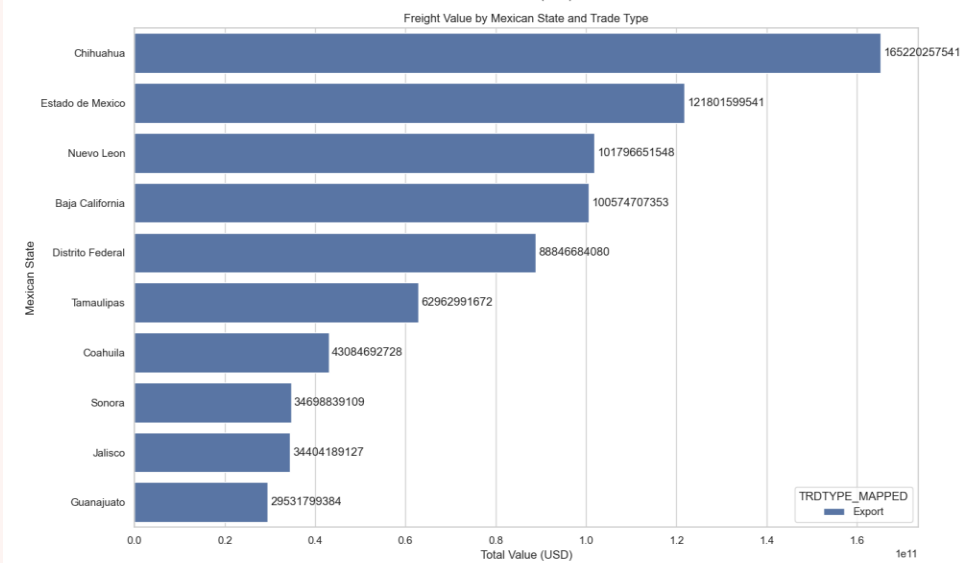
Other states like Michigan and California also show high values

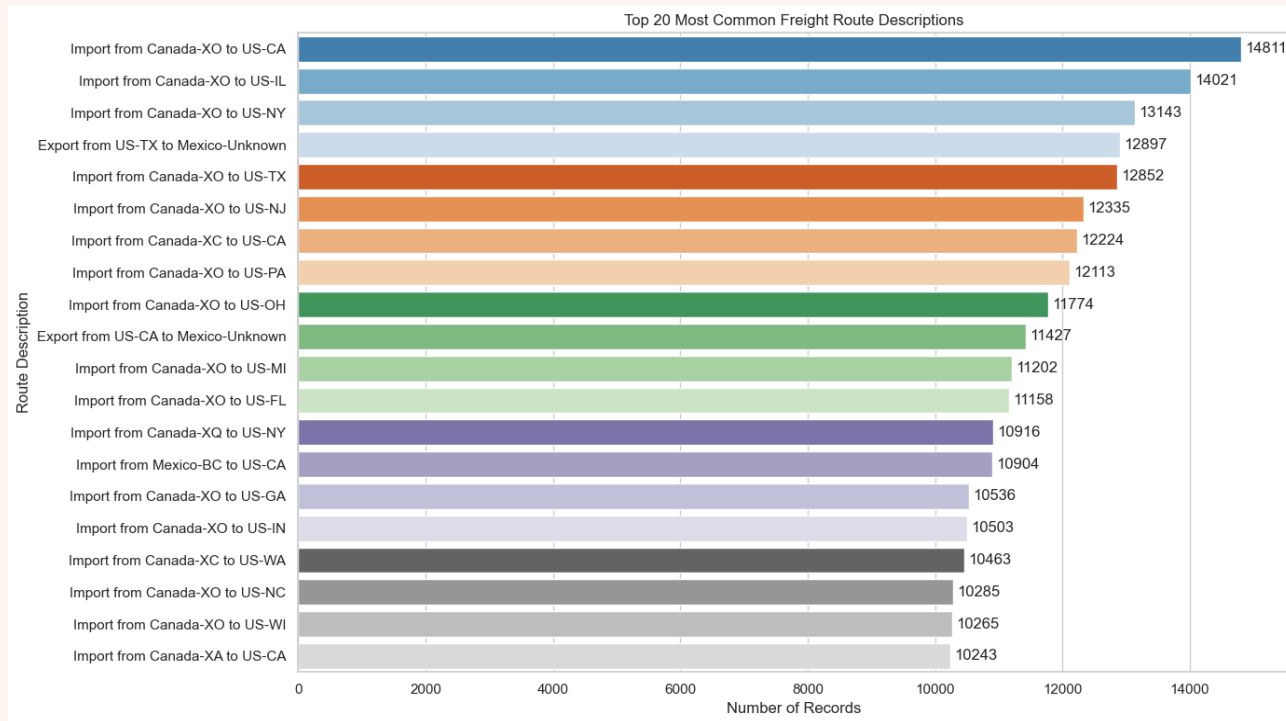


Texas and Illinois are prominent in both value and weight.

FREIGHT VALUE BY STATES AND TRADE TYPE

Each state shows different strengths in trade types.





Frequent routes from Canada to the US indicate strong cross-border trade relationships.

- Enhance infrastructure investment in road and air networks.
- Leverage technology for efficiency and sustainability.
- Strengthen cross-border trade relations and customs efficiency.
- Diversify transport modes and encourage multi-modal transport.

Conclusions:

- The analysis reveals critical insights into freight transportation dynamics.
- Recommendations aim to improve efficiency, sustainability, and safety in freight transportation.

THANK YOU

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