Project 8704: Logistical Precursors to Conflict
Preliminary Analysis of Dual-Use Vehicle Imports (HS 8704.21)

Data Intelligence Report

February 14, 2026

1. Executive Summary

This brief details the first implementation of a predictive model correlating "dual-use" vehicle imports (Toyota Hilux class) with Middle Eastern conflict intensity. Using a **Vector Autoregression (VAR)** framework, we tested if import anomalies serve as leading indicators for violence. Preliminary results ($p = 0.38$) suggest the current Conflict Index lacks sufficient variance to yield a significant signal. Recommendations for model expansion follow.

2. Methodology

We utilized a multivariate time-series approach to test for **Granger Causality**, controlling for economic confounders.

Variables

- X_1 **(Predictor):** Monthly Imports of Diesel Trucks (HS 8704.21) to GCC transit hubs.
- X_2 **(Control):** Brent Crude Oil Price (USD).
- Y **(Target):** ACLED Conflict Index Score.

Model Specification

Data was log-differenced to ensure stationarity (analyzing growth rates). A lag order of $p = 4$ months was selected to account for supply chain delays (shipping, smuggling, and modification).

3. Results: Baseline Model

The Granger Causality test evaluated if past Vehicle Imports predict future Conflict Scores better than Conflict history alone.

Interpretation: With $p > 0.05$, we fail to reject the null hypothesis. The current dataset does not statistically support the theory that commercial truck imports predict this specific Conflict Index.

Metric	Value	Result
F-Statistic	1.077	-
p-value	**0.3798**	Not Significant

Table 1: Granger Causality Test (H_0: No Causality)

4. Limitations

The primary failure point is **Target Variance**. The ACLED Conflict Index Score used in this iteration was highly stable (low volatility), effectively acting as a constant. Granger Causality requires variance (spikes) to detect directional relationships.

5. Future Recommendations

To improve sensitivity, the next iteration will incorporate the following adjustments:

A. Refine Target Variable Replace the smoothed Index with raw, volatile metrics:

- **Total Fatalities:** captures intensity spikes.
- **Event Count:** captures operational frequency.

B. Additional Covariates We propose adding factors to isolate the logistics signal from general noise:

- **Youth Unemployment:** Proxy for recruitment.
- **Gold Prices:** Alternative funding mechanism.
- **Temperature:** Controls for seasonal fighting lulls.