**Customs Trade Data Analysis Report (2021–2024)**

**Executive Summary**

This report presents an in-depth analysis of import data between 2021 and 2024, focusing on four major areas: **Import Volume & Value, Taxation & Revenue, Logistics & Shipment, and Compliance & Processing.** Using statistical and regression methods, the study uncovers key patterns in trade flows, identifies risks in tax collection, and highlights inefficiencies in logistics and compliance.

Findings show that imports are heavily concentrated among a few countries and importers, with **China alone accounting for over ₦778 billion**. Taxes are strongly tied to import value rather than mass, but suspicious records with unusually low tax values raise concerns about compliance and possible revenue leakages. Furthermore, container weight violations suggest weak enforcement of shipping regulations.

These insights underline the need for **policy interventions to diversify import sources, strengthen compliance monitoring, and improve logistics oversight**, thereby safeguarding government revenue and enhancing efficiency in the trade ecosystem.

**Introduction**

International trade plays a pivotal role in any country’s economy, with imports contributing significantly to government revenue through customs duties and taxes. However, inefficiencies in compliance, logistics, and revenue collection create vulnerabilities that can reduce fiscal stability.

This report aims to provide evidence-based insights from customs import data to support **policy reforms, trade efficiency improvements, and enhanced compliance monitoring.**

**Methodology**

1. **Data Source**: Customs import dataset, covering transactions from 2021–2024 (77,789 records).
2. **Data Cleaning**: Missing values were handled systematically, erroneous years were corrected, and container inconsistencies were resolved while ensuring no data was dropped.
3. **KPIs Assessed**:
   * Import Volume & Value
   * Taxation & Revenue
   * Logistics & Shipment
   * Compliance & Processing
4. **Analytical Methods**:
   * Descriptive statistics for trend identification.
   * Analysis based on KPIs
   * Correlation analysis between key variables.
   * Regression models to estimate tax drivers.
   * Trend Analysis showing seasonality
5. **Tools**: Python (Pandas, Seaborn, Matplotlib), Power BI, and statistical models.

**Detailed Findings and Insights**

**1. Import Volume & Value**

* There were imported goods worth **₦1.93 trillion CIF**, about **7% higher than ₦1.80 trillion FOB**, indicating significant costs on insurance and freight — a foreign exchange outflow that could be localized.
* The **average import deal was valued at ~₦24.8 million (CIF)**, highlighting high-value consignments and bulk shipments.
* **China dominates imports**, accounting for over **₦778 billion**, creating concentration risk and over-reliance on one country.
* Import mass per transaction averaged **17,485 kg**, pointing to heavy consignments and raising questions about port infrastructure capacity.

**2. Taxation & Revenue**

* **Total tax collected: ₦1.8 trillion**.
* **Average tax per transaction: ₦3.2 million**, showing substantial fiscal contributions from imports.
* Revenue is **highly concentrated**: 5–8 major importers account for the bulk of tax revenue. Any compliance breach by them poses systemic risks.
* **Tax-to-value ratio is 13.1%**, meaning that about ₦13 tax is collected for every ₦100 import value.
* Several suspicious records show **CIF in billions with only ₦1,600 tax paid** — likely placeholders, exemptions, or under-declarations. These are red flags for possible fraud or policy loopholes.

**3. Logistics & Shipment**

* **Total shipments (2021–2024): 77,789.**
* A small group of HS Codes dominate:
  + HS **17620000** → ~4,000 shipments (high demand commodity).
  + HS **28721000** → highest inflow (₦150 billion).
  + HS **28719000** → top tax generator (₦20 billion).
* **Container anomalies**:
  + Importer **59991** had an extreme average of **100,000 containers**, far above peers (13–25).
  + Container size **45G1** was most common (~20,000 uses).
  + Several shipments **exceeded maximum payload limits** — e.g., importer 11327 frequently overloaded containers by >70,000kg, violating ISO standards.

**4. Compliance & Processing**

* **Customs offices show uneven distribution**:
  + HM CARGO and NT processed the largest share.
  + Offices like UA PORT, NT\_2, LC, RP\_1, and DK\_COLLECTION handled <1% of shipments, yet some registered **very high average taxes**, possibly due to specialized, high-value goods.
* Mass appears to play a role in tax discrepancies at certain offices — suggesting policy inconsistencies or compliance lapses.
* Some offices recorded **zero (0) mass**, raising concerns about data integrity or inefficiencies in customs processing.

**5. Advanced Statistical Insights**

* FOB and CIF perfectly correlated (1.0), as expected.
* CIF vs Tax correlation = **0.72** (strong positive), confirming value drives tax.
* Mass vs Tax correlation = **0.028** (very weak), showing weight is not a significant tax driver.
* Regression:
  + CIF explains **52.1% of tax variation (R² = 0.521)**.
  + Tax rate implied ≈ **9.5% of CIF value**, with an additional baseline charge of ~₦881,900 per shipment.
* Country-level analysis: UAE, India, Swaziland, Switzerland, and especially the British Virgin Islands, **do not follow the typical CIF–Tax pattern**, suggesting **different or inconsistent policies**.

**6. Trend Analysis**

* + May 2024 saw the highest CIF and tax spike, followed by sharp decline in October.
  + December 2022 recorded a strong revenue peak, while December 2023 saw the weakest tax collection.

**Conclusions**

* The import trade is **highly concentrated** by country (China) and importer, exposing the system to risks.
* Tax revenue is substantial but vulnerable due to reliance on a few large importers and inconsistencies in enforcement.
* Logistics inefficiencies and frequent container payload violations highlight **weak oversight in shipment monitoring**.
* Data quality issues (placeholders, missing receipt numbers, zero-mass records) threaten accuracy and policy effectiveness.
* Overall, **taxes are value-driven, not weight-driven**, but enforcement inconsistencies suggest the need for stronger compliance frameworks.

**Recommendations**

1. **Diversify Trade Partners**: Reduce reliance on China by promoting alternative sourcing and regional trade agreements.
2. **Strengthen Compliance Monitoring**: Investigate customs offices and importers with unusual tax or mass patterns; enforce strict audits.
3. **Improve Data Quality**: Replace placeholder values (₦1,600 tax, "Unknown" receipts) with validated entries; digitize customs processes to reduce human errors.
4. **Enforce Shipping Standards**: Penalize container payload violations and ensure compliance with ISO standards to reduce safety risks.
5. **Policy Benchmarking**: Compare 13% tax-to-value ratio across all global peers to determine competitiveness while ensuring fair revenue collection.
6. **Risk-Based Audits**: Focus manual review on flagged importers, shipments with extreme outliers, and countries with inconsistent CIF–Tax relationships.

**Next Steps**

* Conduct deeper **country-by-country policy alignment analysis** to explain deviations (e.g., UAE, British Virgin Islands).
* Build a **predictive compliance dashboard** to flag high-risk shipments in real time.
* Recommend further collaboration between **Customs, Trade Ministry, and Ports Authority** to streamline oversight and infrastructure planning.