Boko Haram crisis and Customs security in the North-east region of Nigeria: Latest insights and Analytics

By

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• Background and objectives
• Methodology
• Dynamics of the crisis, trade trends and sources of impact 2010 - 2017
• Data sources, procedures and econometric model
• Results
• Advancements
In addition to the traditional role of Customs, Nigeria Customs is also involved in counter terrorism in the North-east region.

- More than 20 Customs offices situated in the affected North east Area
Objectives

» Provide data-driven insights on the dynamics of Boko Haram activities and their impact on trade.

» Map the timelines of specific reactions in order to enhance the future of intelligence sharing with other agencies.

» Estimate the change in trade activities as a result of the Boko Haram crisis using the Panel regression method of Fixed Effects model with Entity-fixed and Time-Fixed effects.
Methodology

GEOINT = Fusion of information
Boko Haram strikes between 2009 and 2017

→ **3,142** incidents and **33,100** fatalities 2009 – 2017
→ **1,881** or **60%** of the incidents and **18,998** or **57%** of the fatalities occurred between 2015 and 2017

All Boko Haram Attacks
Within 50 Km to Customs
Within 15 Km to Customs
Attacks at borders
Steadily rising incidents within 50km and 15 km of borders as 49% and 26% of the incidents occurred within these distances.
Dynamics of the crisis, trade trends and sources of impact 2010 - 2017

Import and export transactions through offices in North-east, Lagos and others 2010 - 2017

Activities of Export operators from 2009 to 2017

Activities of Import Operators from 2010 to 2017
### Timeline Analysis

<table>
<thead>
<tr>
<th>Year</th>
<th>Boko Haram related incidents</th>
<th>Government Reactions</th>
<th>Import Operations</th>
<th>Export Operations</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>20 incidents resulting in 817 fatalities</td>
<td>Origin of crisis and execution of the leader of Boko Haram insurgents by Government forces</td>
<td>No records on transactions relating to the affected Customs offices.</td>
<td>No records on transactions relating to the affected Customs offices.</td>
<td>Customs office at Borno. 15km and 50km The only incident within 15km of Customs location occurred along the border linked to Customs office at Borno.</td>
</tr>
<tr>
<td>2010</td>
<td>34 incidents resulting in 75 fatalities</td>
<td>Borno office all transactions, and values</td>
<td>Total of 224 transactions, Valued at US $ 2,570,856, through Borno office all transactions, and values</td>
<td>Total of 86 Export transactions, Valued at US $ 4,725,273, through Borno office all transactions, and values</td>
<td>Three importers account for 77.23% (173) of import transactions and 91.56% (US $ 2.35 million) of the value</td>
</tr>
<tr>
<td>2011</td>
<td>115 incidents resulting in 593 fatalities</td>
<td>Borno office all transactions, and values</td>
<td>Total of 598 transactions, Valued at US $ 8,090,669, through Borno office all transactions, and values</td>
<td>Total of 81 Export transactions, Valued at US $ 8,387,059, through Borno office all transactions, and values</td>
<td>Five major importers including the three in 2010 account for 90.97% (544) of import transactions and 97.16% (US $ 5.92 million) of the value</td>
</tr>
</tbody>
</table>

**Declarations**

- **Declarant**
- **Government forces**
- **Other Declarant**
- **Inclusions Military and Police forces of affected Countries**
- **Vigilante groups, Civilian Joint Task Force, Special forces like the United Nations etc.**
- **No change from previous observation**
- **Initial comment on the issue**
- **Increase from previous**
- **Decrease from previous**
- **Others**
- **Comments**
- **Customs Agent**
2012
- 343 incidents resulting in
- 8624 fatalities
- Incidents spread to other regions of
  - 140 Nigeria (Central and North)
  - Neighbouring countries
    - Cameroon
    - Chad
    - Mali each record one incident.
Types of attacks -
- 139 Battles
- 62 Explosions/Remote
- 120 violence against civilians
- 13 Incidents within at Custom location,
- 16 Incidents within 15km and 29 incidents within 50km
Of the incidents within 15km of Customs location, 9 occurred at Customs offices linked to Borno, while 7 were linked to Adamawa.

2013
- 281 incidents resulting in
- 7970 fatalities
- Boko Haram and unidentified group join the fight against Boko Haram groups.
- 277 Nigeria
  - 2 Incidents in Cameroon.
  - 1 Incident in Niger.
Types of attacks -
- 146 Battles
- 13 Explosions/Remote
- 111 violence against civilians
- 39 Incidents within at Customs location.
- 50 Incidents within 15km and 101 incidents within 50km
Of the incidents within 15km of Customs location, 46 occurred at Customs offices linked to Borno, while 4 were linked to Adamawa.

Imports
- Three importers account
  for 96.42%(81) of import transactions
  and 97.39%(US $ 346k) of the value.
- The same Customs
  Agent from previous year
  processed 89.28%(75) of
  import transactions, valued
  at 97,890k (US $ 57k).
- Trade in Cereals
deprees as well as
  transactions from
  Cameroon.

Exports
- One of the importers
  recorded transactions in
  previous years.

Adamawa:
- The major Customs Agent
  from Borno office is the
  Only Customs Agent and
  major importer accounting
  for 71%(2.2) of import
  transactions, valued US $ 65,880 (60%).
2014

- 488 incidents resulting in 8,831 fatalities
- Militia and unidentified group join the fight against boko Haram groups.
- 404 Nigeria
- 81 incidents in Cameroon,
- One incident in Chad
- Two incidents in Niger.

Types of attacks — 209 Battles, 53 Explosions/Remote

- 80 incidents within at Customs location,
- 137 incidents within 15km and 249 incidents within 50km
- 48 incident in Cameroon was within 15km of Nigeria’s Borders

- Of the incidents within 15km of Customs offices linked to Borno, while 40 were linked to Adamawa

- Cameroon and Niger Government forces join in the fight.

- Total of 238 transactions,
- Valued at US $ 5 million through Borno office accounts for
- 125 transactions valued at
- US $ 4.7 million
- 3 Customs Agent processed transactions for,
- 10 importers involved in the importation of:
- Oil seeds – 41 transactions valued at US $ 2.4 million from Chad;
- Residuals from food industries – 19 transactions from Chad, valued at US $ 785,293 from Chad;
- Plastics – 14 transactions from Chad, valued at US $ 589,951.

- Raw hides and skins 6 transactions from Chad, valued at US $ 280,327
- Vehicles – 41 transactions valued at US $ 102,301 from the USA

Adamawa office accounts for
- 133 transactions valued at
- US $ 295,709
- 3 Customs Agent processed transactions for,
- 3 importers involved in the importation of:
- Vehicles – 122 transactions valued at US $ 286,499 from Japan
- Raw hides and skins 8 transactions valued at US $ 22,762
- France 16 transactions valued at US $ 34,631 and Germany 8 transactions valued at US $ 17,834.

- Total of 791 Export transactions,
- Valued at US $ 55.0 million through Borno office accounts for
- 5 transactions valued at
- US $ 159,241
- One Customs Agent processed transactions for,
- Two exporters involved in exporting
- Gums – 4 transactions valued at US $ 80, 141 to Chad

Adadamawa office accounts for
- 740 transactions valued at
- US $ 34.9 million
- One Customs Agent processed transactions for
- 7 exporters involved in exporting,
- Footwear – 495 transactions valued at US $ 19.2 million:
- to Central African Republic 16 of the transactions and US $ 6.79 million of the values, Chad 329 of the transactions and US $ 12.37 million of the values
- Plastics – 289 transactions valued at US $ 15.4 million:
- to Central African Republic 117 of the transactions and
- US $ 6.2 million of the values, Chad 172 of the transactions and US $ 9.2 million of the values

2015

- 615 incidents resulting in 11,534 fatalities
- 445 Nigeria
- 96 incidents in Cameroon,
- 26 incidents in Chad and
- 48 incidents in Niger.

Types of attacks — 279 Battles, 134 Explosions/Remote

- 182 violence against civilians
- 104 incidents within at Customs location,
- 160 incidents within 15km and 318 incidents within 50km

Of the incidents within 15km of Customs location, 139 occurred at Customs offices linked to Borno, while 21 were linked to Adamawa

- Cameroononian military imposes 50km restricted "red zone" along Nigeria-Cameroon borders in the North east

- Total of 261 transactions,
- Valued at US $ 1.38 million through Borno office accounts for
- 79 transactions valued at
- US $ 1 million
- 3 Customs Agent processed transactions for,
- 7 importers involved in the importation of:
- Plastics – 3 transactions valued at US $ 121,621
- Raw hides and skins – 25 transactions valued at US $ 746,247

- Vehicles – 50 transactions valued at US $ 67, 241 from United States of America

Adamawa office accounts for
- 285 transactions valued at
- US $ 375,998
- 3 Customs Agent processed transactions for,
- 3 importers involved in the importation of:
- Cereals – 71 transactions valued at US $ 200,945 from Thailand
- Vehicles 112 transactions valued at US $ 517,052 from Japan
- 63 transactions valued at US $ 96,850, France 16 transactions valued at US $ 22,431 and Germany 21 transactions valued at US $ 31,222.

- Total of 340 Export transactions,
- Valued at US $ 15.1 million through Adamawa office all transactions, and values
- Four Customs Agent processed transactions for,
- 7 exporters involved in exporting,
- Footwear – 201 transactions valued at US $ 7.32 million:
- to Central African Republic 72 of the transactions and US $ 2.75 million of the values, Chad 129 of the transactions and US $ 4.6 million of the values
- Plastics – 137 transactions valued at US $ 7.1 million:
- to Central African Republic 59 of the transactions and
- US $ 3 million of the value, Chad 129 of the transactions and US $ 4.1 million of the values

Transactions in Oil seeds and residuals from food industries disappear from Borno.
2016: 584 incidents resulting in 3,821 fatalities
down 306 Nigeria
Up 222 incidents in Cameroun,
Up 4 incidents in Chad
↓ 52 incidents in Niger.

Types of attacks –
↓ 322 Battles,
→ 95 Explosions/Remote
↓ 114 violence against civilians
↓ 70 incidents within at Customs location,
↓ 217 incidents within 15km and ↓ 420 incidents within 50km
Of the incidents within 15Km of Customs location, ↓ 212 occurred at Customs offices linked to Borno, while ↓ 5 were linked to Adamawa

- Restricted red zone reduced to 15km along Nigeria-Cameroun borders in the North east

- Total of 459 transactions,
  ↓ Valued at US $ 2.36 million through Borno office accounts for
  ↓ 72 transactions valued at
  ↑ US $ 1.4 million
  ↑ 5 Customs Agent processed transactions for,
  ↑ 9 importers involved in the importation of:
  ↓ Oil seeds – 16 transactions valued at US $ 665,660;
  ↓ Plastics – 7 transactions valued at US $ 175,236 and
  ↓ Raw hides and skins – 12 transactions valued at US $ 357,805 from Chad,
  Vehicles – ↓ 32 transactions valued at ↓ US $ 64,124 from United States of America

- Adamawa office accounts for
  ↓ 387 transactions valued at
  ↑ US $ 928,151
  ↓ 4 Customs Agent processed transactions for,
  ↓ 5 importers involved in the importation of:
  ↓ Cereals – 20 transactions valued at US $ 56,400 mainly from Thailand.
  ↓ Oil seeds – 7 transactions valued at US $ 24,869,
  ↓ Pharmaceutical products – 7 transactions valued at US $ 13,957 and
  Vegetable plating – 35 transactions valued at US $ 250,975 from Cameroun
  Vehicles – 312 transactions valued at US $ 562,250 from:
  ↑ Japan 159 transactions valued at US $ 324,633,
  ↑ France 14 transactions valued at US $ 17,873,
  ↓ USA 67 transactions valued at US $ 191,183,
  ↓ Germany 28 transactions US $ 32,573 and
  ↓ China - 40 transactions valued at US $ 87,731

Down of 2 Export transactions,
↓ Valued at US $ 250,768 through Adamawa office all transactions, and values
↓ Two Customs Agent processed transactions for,
↓ Two exporters involved in carrying out,
↓ One transaction each of Boats to Cameroon and Salts to Central Africa Republic.

Transactions in Oil seeds reappear as major import through Borno
<table>
<thead>
<tr>
<th>Year</th>
<th>Incidents</th>
<th>Fatalities</th>
<th>Nigeria</th>
<th>Cameroon</th>
<th>Chad</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>↑ 682</td>
<td>↓ 3,643</td>
<td>↓ 306</td>
<td>↑ 247</td>
<td>↔ 4</td>
</tr>
</tbody>
</table>

**Types of attacks**
- ↑ 300 Battles
- ↑ 163 Explosions/Remote
- ↑ 156 Violence against civilians
- ↑ 81 Incidents within at Customs location
- ↑ 250 Incidents within 15km and ↑ 429 incidents within 50km

Of the incidents within 15km of Customs location, ↑ 220 occurred at Customs offices linked to Borno, while ↑ 40 were linked to Adamawa.

**Sources of impact between Boko Haram crisis and Trade operations through the North-east region of Nigeria.**

- Remarkable distortions in trade operations attributable to the crisis
- Trade operations lately respond to incidents
- Incidents occurring within 15km of Customs locations significantly impact trade
Data sources, procedures and econometric model

→ ACLED
→ Nigeria Customs Data

**Time and entity fixed effects regression model:**

\[ Y_{it} = \beta_0 + \beta_1 X_{1,it} + \cdots + \beta_k X_{k,it} + Y_2 E_2 + \cdots + Y_n E_n + \sigma_2 T_2 + \cdots + \sigma_t T_t + U_{it} \]

Where

i) \( Y_{it} \) is the dependent variable (import transactions, import value, export transactions and export values) where \( i = \) entity which is the Customs office and \( t = \) time (months)

ii) \( X_{k,it} \) is the independent variables

iii) \( \beta_k \) represents the coefficient of the Independent variables,

iv) \( U_{it} \) is the error term

v) \( E_n \) is the entity n. The variable is included in the model as n-1, as binary (dummies)

vi) \( Y_2 \) represents the coefficient for the binary regressors (entities)

vii) \( T_t \) is time as binary variable (dummy), t-1 for the time periods

**Dependent Variables**

i) Number of import transactions (Imp_trn)

ii) Value of import transactions (imp_val)

iii) Number of export transactions (xpt_trn)

iv) Value of export transactions (xpt_val)

**Independent Variables**

i) Number of Boko Haram related incidents (attcks)

ii) Number of fatalities (fatls)

iii) Imports through other offices (imp_other)

iv) Exports transactions through other offices (xpt_other_trn)

v) Customs office (c_off)

vi) Time (TIME)
Density plots and pairwise correlation of variables

- Transformed using the logarithmic function

In order to avoid inflated Standard errors, the lagged number of incidents was drooped due to the very high correlation (of 1.00) with the number of incidents.
### Import Transactions

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>OLS</th>
<th>Fixed Effects</th>
<th>Fixed Effects with Entity and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidents within 15km</td>
<td>-0.53***</td>
<td>-0.8646***</td>
<td>-0.8646***</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0.4031</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imports through other offices</td>
<td>-0.0001</td>
<td>-0.00003</td>
<td></td>
</tr>
</tbody>
</table>

### Log of Import Value

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>OLS</th>
<th>Fixed Effects</th>
<th>Fixed Effects with Entity and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidents within 15km</td>
<td>-0.08***</td>
<td>-0.0097</td>
<td>-0.1677***</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0.165</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imports through other offices</td>
<td>0.0001***</td>
<td>-0.00003</td>
<td></td>
</tr>
</tbody>
</table>

### Export Transactions

<table>
<thead>
<tr>
<th>Dependent Variable</th>
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<th>Fixed Effects with Entity and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidents within 15km</td>
<td>-0.03***</td>
<td>-0.0273***</td>
<td>-0.0337***</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0.29***</td>
<td>0.27***</td>
<td>0.23***</td>
</tr>
<tr>
<td>Exports through other offices</td>
<td>-0.0004</td>
<td>0.00004</td>
<td></td>
</tr>
</tbody>
</table>

### Log of Export Value

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>OLS</th>
<th>Fixed Effects</th>
<th>Fixed Effects with Entity and Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidents within 15km</td>
<td>-0.53***</td>
<td>-0.8646***</td>
<td>-0.8646***</td>
</tr>
<tr>
<td>Fatalities</td>
<td>0.94***</td>
<td>1.00***</td>
<td>0.89***</td>
</tr>
<tr>
<td>Imports through other offices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

→ Incidents occurring within 15 km significantly affect trade
# every strike is approximately proportionate to a reduction in trade transactions and 17% reduction in import value.

→ The variables fatalities and imports through other Customs offices do not impact on trade through the Area, which may be due to high transactions of undocumented goods.

→ Positive relationship between fatalities and exports highlights the variation between the scale of Customs data and ACLED, and the need for more detailed data collection by customs.
Conclusions

- This study practically illustrates the prospects of deploying Customs data in intelligence analysis and engagements with security agencies.

- Fostering the engagement with security agencies leveraging Customs data will require the conscious awareness of the Nigeria Customs Service on the need to effectively collect detailed and accurate data as a first step.

- Granular and reliable data will simultaneously enable in-depth analysis and reliability of the outcomes.

- Moreover, the continuous analysis of Customs data should be institutionalised as a more reliable source of intelligence, that is efficient, less expensive and less susceptible to manipulation compared to the dominant use of human intelligence (Folasade, David and Olukayode, 2018).
Questions?

Suggestion?

Thank you!