

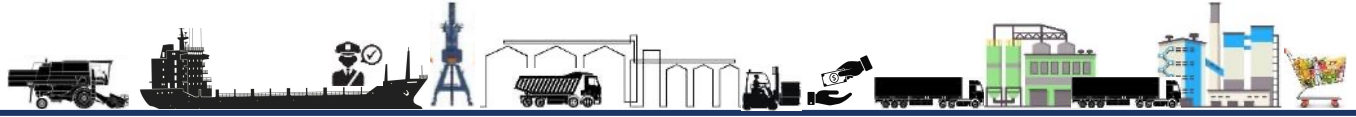
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The socioeconomic costs of maritime corruption in Nigeria

13 June 2024



Introduction



- 1. Purpose:** The purpose of the study is to understand the impact of maritime corruption on low- and middle-income countries. The objectives are two-fold. Firstly, to estimate the cost of maritime corruption to the industry and secondly, to estimate the cost of maritime corruption to society.
- 2. Scope:** Given the wide range of MACN's activities, Nigeria is selected as the first case country. In Nigeria, import of products transported by dry and wet bulk are examined. Imports of grain, all food products, petrol and total bulk import are examined individually. The police checkpoint corrupt demands are registered on the access roads to/from the terminals of Apapa and Tin Can in the port of Lagos. The port corrupt demands are registered at around 25-30 different dry and wet bulk terminals in the port of Lagos, Onne and Port Harcourt.
- 3. Limitations:** Products transported in containers are not included, which is likely to underestimate the economic damage of corruption by at least around half. Corrupt demands at police checkpoints are only measured for Tin Can and Apapa terminals, but according to [Human Rights Watch](#), corrupt demands at police checkpoints are widespread in Nigeria and similar demands are likely to be present at access roads to other terminals.
- 4. Methodology:** For the first purpose, the study applies the so-called [Total Transport and Logistics Costs \(TTLIC\) methodology](#) developed by QBIS in collaboration with Maersk in the context of impact studies in Asia, Africa and Latin America, which aimed to quantify the total time and costs of importing and exporting, taking into account the hidden indirect costs from long lead times and delays as well as corrupt payments. The TTLIC methodology is also used by the Global Alliance of Trade Facilitation (GATF) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). QBIS has worked together with the World Economic Forum on behalf of the GATF to further develop and implement the TTLIC in the context of trade facilitation projects in a number of countries. For the second purpose, the study uses a standard input-output approach to estimate how reduced consumer demand due to corrupt payments reduces sales in different industries, GDP and employment.
- 5. Data sources:** UNCTAD's port call and performance statistics, Clarksons timecharter rates for dry bulk and product tanker, interviews with shipping companies operating bulk carriers calling Nigerian ports and Nigerian trucking companies, MACN's Port Call Assistant data, customs declaration data from Cambodian Customs, container throughput statistics from APM Terminals in Nigeria, port throughput statistics from Nigerian Port Authority, import and export statistics at HS 6-digit product level from CEPII BACI, import and export statistics at HS 2-digit level from UN Comtrade.
- 6. Study period:** Corrupt demands at police checkpoints are registered in 2023. Port corrupt demands are registered in 2019-2023. The value and volume of bulk imports into Nigeria is recorded in the period 2000-2022/2023. The period for assessing the economic damage of corrupt payments is 2016/2019-2022/2023, depending on data availability.

Executive summary : The cost of maritime corruption to the industry

- The cost of maritime corruption in the import of bulk products into Nigeria is estimated to be around USD 163 million per year, or around USD 182,300 per vessel, or USD 5.9 per MT. The estimated USD 5.9 per MT is further estimated to consist of USD 3.1 per MT of direct corrupt payments and USD 2.8 per MT of indirect costs of resolving corrupt demands.
- The direct corrupt demands included in the study take place at the ports during vessel clearance and at police checkpoints when leaving or entering the ports. According to MACN's members, the average corrupt demand in 2019-2023 was around USD 20,600 per vessel, or around USD 0.8 per MT. According to Nigerian trucking companies, the average corrupt demand at police checkpoints when entering or leaving the Apapa or Tin Can terminals in the Port of Lagos was around USD 67,500 USD port call, or USD 78 per truck, or around USD 2.2 per MT.
- The indirect costs of resolving corruption consist of demurrage and safety stock. In 2019-2023, it took an average of 2.7 days to settle corrupt payments, with a standard deviation of around 7.9 days. This time, and in particular the variation, results in indirect costs such as demurrage payments and additional safety stock costs.
- Demurrage: Since it is possible to discharge a vessel within the given free time (laytime), and even leaving a margin for other factors such as weather and equipment breakdown, the resolution time for corruption is an inevitable candidate to explain the average 3.5 of demurrage days paid by bulk importers in Nigeria. Allowing resolution time to explain a part of the demurrage cost adds an estimated around USD 1.6 per MT in indirect costs.
- Safety stock: Since the resolution time of corrupt demands is long and unpredictable, importers need to keep extra safety stock to avoid out-of-stock situations and the associated production and delivery failures. It is estimated that the current average resolution time adds an estimated around 0.5-1.2 USD/MT in indirect costs due to extra safety stock.
- In conclusion, it is not just the corrupt payment itself that causes damage. The time it takes to settle the amount of a corrupt demand is also a significant factor.
- The corrupt payments (USD 5.9 per MT) are further estimated to represent around 15.2% of the total transport and logistics costs of importing bulk products into Nigeria, and around 0.8% of the total import costs including product costs but excluding profit. This means that corrupt payments add almost one percent to the prices paid by the customers of the bulk product, many of whom are average Nigerian families.
- Data and literature: UNCTAD's port call and performance statistics, Clarcksons timecharter rates for dry bulk and product tanker, interviews with shipping companies operating bulk carriers calling Nigerian ports and Nigerian trucking companies, MACN's Port Call Assistant data, customs declaration data from Cambodian Customs, container throughput statistics from APM Terminals in Nigeria, port throughput statistics from Nigerian Port Authority, import and export statistics at HS 6-digit product level from CEPII BACI, import and export statistics at HS 2-digit level from UN Comtrade.
- Assumptions: 1) The average port stay can be extended by up to 2.7 days due to the settlement of corrupt payments. 2) This extension of port stay results in demurrage and additional safety stock. Thus, since it is possible to discharge a vessel within the given free time (laytime) dictated by the charterparty, and even leaving a margin for other factors such as weather and equipment breakdown, the resolution time for corruption is an inevitable candidate to explain a sizeable part of the average 3.5 days of demurrage paid by bulk importers in Nigeria.

Executive summary : The cost of maritime corruption to society

- Corruption is always poisonous to a society, but corruption in Nigeria's imports is particularly poisonous because Nigeria imports most of its food and other daily consumables, meaning that it is not least the Nigerian households that suffer the harmful effects of corruption in imports.
- Since year 2000, the volume of Nigeria's total food imports has increased by 2.6% per year, exactly the same as population growth, highlighting the fact that Nigeria's dependence on food imports has remained unchanged over the past 20+ years.
- In addition, the value of Nigeria's total imports has increased by 0.3% per year since 2000, which is below population growth. Possible reasons for the relatively low growth include import bans, tariffs, foreign exchange restrictions and physical border closures such as in 2019.
- Hence the drop in imports is not a result of Nigeria becoming more self-reliant. Without the ability to produce its own essential products, imports are essential for Nigeria. Keeping import costs down is therefore crucial to keeping the price of the Nigerian consumer food basket affordable.
- But every time a bribe is paid, it adds to the cost of Nigeria's imports, and in most cases this cost is added to the price of imports, which for most of Nigeria's imports means rising consumer prices for the average Nigerian family.
- With 63% of Nigerians or 133 million people classified as multidimensionally poor, most Nigerian families do not have a budget surplus. Increased import costs due to corrupt payments are therefore likely to reduce their household demand by the amount of the corrupt payment. Thus, assuming such a 1:1 relationship, household demand is reduced by USD 163 million per year due to corrupt payments.
- However, the economic damage is not limited to a reduction in demand of around USD 163 million. Because the damage caused by corruption is multiplied throughout the economy, the impact of a dollar paid in corruption is not limited to the dollar lost by the payer.
- Using an input-output (IO) model of the Nigerian economy, it is estimated that the around USD 163 million in corrupt payments is associated with total economic damages of around USD 350 million in lost business sales, USD 204 million in lost GDP, USD 42 million in lost customs revenues and 235,000 fewer Full-Time Equivalent (FTE) jobs.
- Unfortunately, the total economic damage is likely to be much higher. Bulk imports are estimated to account for around 43% of the total value of imports, with containers accounting for the remaining around 57%. If similar corrupt payments are made in containers as in bulk, which QBIS (2016-2020) suggests is highly likely, the economic damage will more than double.
- Data and literature: Input-output tables from MRIO, national accounts statistics and household consumer price index from Nigerian National Bureau of Statistics, employment statistics from ILO and national account statistics from UN.
- Assumptions: 1) corrupt payments in Nigeria's imports are reflected in the final retail prices. Specifically, one dollar of corrupt payment will, on average, increase the final retail price of imported products by an estimated 0.13%. 2) Increases in the final retail prices will reduce household demand by the amount of the price increase, i.e., perfect elastic demand.

MACN's Collective Action Initiative in Nigeria

- In 2012, MACN embarked on a collective action initiative in Nigeria, partnering with the private sector, the Nigerian Government, and the Convention on Business Integrity (CBI) to tackle corruption and enhance the operational environment in the port sector.
- MACN's strategy aims to have a long-lasting impact and has focused on conducting a comprehensive risk assessment, engaging with stakeholders, implementing actions to improve transparency and governance, and driving institutionalization and capacity building to combat corruption in the Nigerian port sector.

MACN's Strategy

- **Root Cause Analysis:** A comprehensive risk assessment was conducted to identify specific forms of corruption, underlying drivers, and actions to address root causes across six ports. This led to the recommendation of an integrity plan.
- **Integrity Reform:** MACN has been working with local stakeholders from the private and public sectors to implement the actions identified in the assessment and build a robust solution landscape. This includes the development of tools, procedures, and mechanisms with the aim to improve transparency, strengthen governance frameworks and increase the ease of doing business in Nigerian ports and terminals.
- **Institutionalization:** MACN has pushed for the institutionalization of the solution landscape by anchoring activities within government agencies and building capacity for compliance functions of port agencies. The aim is to ensure the implementation of the Nigerian Ports Process Manual (NPPM), compliance with Standard Operating Procedures (SOPs), and boost enforcement activities for non-compliance to promote integrity in Nigeria's maritime sector.

Outcomes and Impact

The anti-corruption solutions adopted by the Nigerian government are the result of several years of engagement with the Vice President's Office and key governance agencies by MACN and CBI. Outcomes include:

- **Anti-Corruption Toolkit:** MACN and CBI contributed to the development of anti-corruption measures including the SOPs, the Port Service Support Portal (PSSP), the NPPM, and the establishment of a Grievance Mechanism.
- **High-Level Support:** The Federal government provided significant support through the Vice President's involvement which facilitated the development of the Anti-Corruption Toolkit, indicating a commitment to combat corruption at the highest level.
- **HelpDesk Implementation:** MACN launched and operationalized the HelpDesk, which complements the PSSP. The HelpDesk enables port users to report and track incidents of corrupt demands. This initiative has increased stakeholder capacity for anti-corruption management and reduced the cost of doing business.
- **Ensuring Compliance:** The Port Standing Task Team ensures full implementation of the NPPM and compliance with SOPs. It promotes integrity in Nigeria's maritime sector by dismantling corruption networks at the ports and terminals.
- **Legislation to Institutionalize Reforms:** Executive Order No 001 of 2017 on the Ease of Doing Business became law in February 2023. This legislation requires all government agencies, including port agencies, to publish their SOPs, application procedures and timelines, redress mechanisms, and consequences for process delays. It aims to institutionalize ongoing reforms and promote transparency.

MACN's Collective Action Initiative in Nigeria : Anti-Corruption HelpDesk

- In 2019, MACN trialled an Anti-Corruption HelpDesk for the maritime industry and vessels calling Nigerian seaports and terminals.
- The objective of the HelpDesk is to empower and support companies to reject corruption that occur during vessel and cargo clearance by providing a 24/7 real-time incident resolution mechanism.
- The MACN HelpDesk is an innovative tool in which government agencies, international and local maritime industry stakeholders collaborate to respond to corruption in ports and terminals and to monitor and enforce their integrity standards and shared collective action commitments.
- The innovation of the HelpDesk lies both in the way it provides real-time and 24/7 resolution mechanisms to corruption, and in how it generates evidence-based data on corruption risks that can inform integrity reform and advocacy work.
- If a government authority or representative makes a corrupt demand, the local HelpDesk team from MACN's civil society partner can intervene on the vessel's behalf by escalating the issue to government bodies tasked with integrity oversight. The HelpDesk relies on a standardized process as follows:
 1. Pre-arrival: a shipping company files a pre-arrival notification to MACN's HelpDesk
 2. Case handling: The HelpDesk team stands ready to escalate the case, should a corrupt incident occur.
 3. Solution: MACN and local partners engage with trusted government partners to solve the case in real-time
 4. Post departure investigation: Possible mitigating actions, and root causes investigated and implemented in dialogue with stakeholders.

Outcomes and Impact

- Over 1,100 vessels have used the HelpDesk, with over 159 cases requiring escalation due to bribery attempts (April 2024).
- Out of these escalated incidents, 98 % have been resolved and the remaining 2% have been escalated to authorities to clarify protocols.
- Prior to the HelpDesk operation in Nigeria, resolution for a single case escalated to the government took 7 to 10 days. Current HelpDesk data shows that more than 90% of corruption incidents are solved within 24 hours and that the average case resolution time is now 1 to 8 hours.
- This data suggests the HelpDesk is not just an effective resolution mechanism, but a strong corruption-prevention tool that makes business sense for the private sector.
- The HelpDesk has received international recognition and won the Anti-Corruption Collective Action Award 2022 for Outstanding Achievement from the Basel Institute.
- Although MACN members, the industry and the Nigerian Government recognize that the HelpDesk is an effective tool, only 38 companies have used the HelpDesk to date (April 2024).

Socioeconomic damage due to corruption in bulk imports

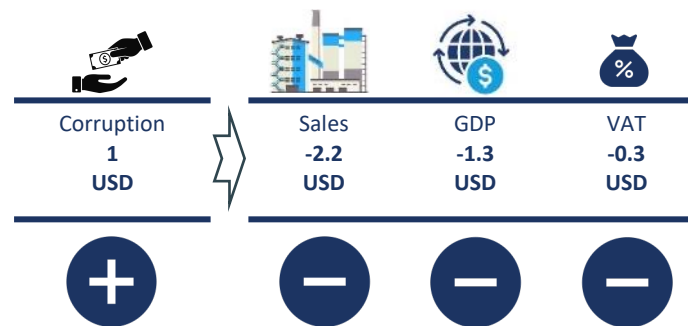


The multiplying damage of corruption in Nigeria

- UNODC et al. (2017 & 2019) estimate corrupt payments (bribes) in Nigeria at around 0.5% of GDP, equivalent to around USD 2.2-2.5 billion or 10-12 USD per capita in 2017-2019.
- UNODC et al. (2017 & 2019) further estimate that around 117 million corrupt payments (bribes) will have been made in 2019, with an average payment equivalent to around 28% of the average monthly salary in 2017.
- Thus, a corrupt payment is a big expense for the average Nigerian. But the economic damage is not limited to the individual's loss of income. The damage is multiplied throughout the economy.
- An average Nigerian family forced to pay bribes will not be able to buy as much food and other necessities as it

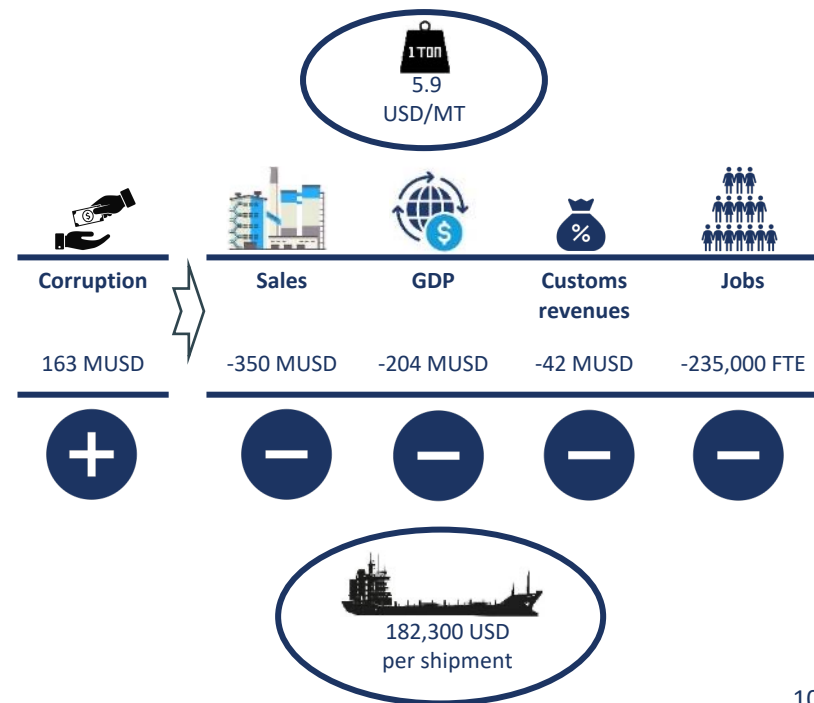
would have without the corruption. Therefore, by reducing household demand, corruption can also reduce sales at grocery stores and other businesses that cater for daily consumption

- A company forced to pay bribes may be forced to raise its prices which is likely to reduce demand for its products and services and in turn reduce the company's sales, purchases from suppliers, employees and tax payments.
- Based on an input-out model of the Nigerian economy, this study estimates that these mechanisms mean that a dollar paid in corruption in Nigeria can end up reducing business sales by 2.2 dollars, GDP by 1.3 dollar and VAT by 0.3 dollar.



The socioeconomic damage due to corruption in bulk imports

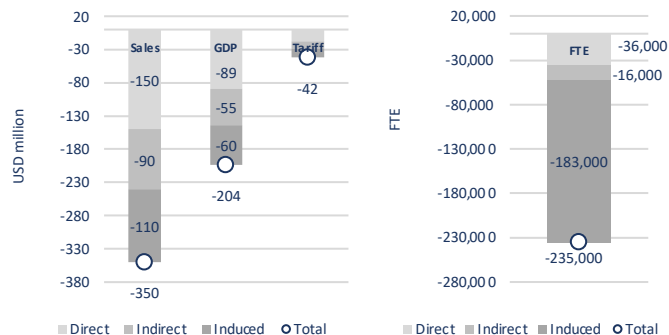
- The study estimates that corrupt payments in bulk imports are around USD 163 million per year, or around USD 182,300 per shipment and USD 5.9 per MT.
- According to the 2014 World Bank Enterprise Survey, around 3%-5% of total sales of Nigerian companies were paid in informal payments. If bulk imports are considered as sales, 3%-5% amounts to about USD 509 million per year, USD 550,000 per shipment and USD 18.4 per MT.
- The economic damage associated with the estimated corruption in bulk imports is around USD 350 million in lost sales, USD 204 million in lost GDP, USD 42 million in lost customs revenues and 235,000 fewer FTE.
- These damages include direct, indirect and induced impacts. Direct impacts are caused by the importing company, indirect impacts are caused by the importing company's suppliers, while induced impacts are caused by the spending of salaries of the employees of the importing company and its suppliers.
- Bulk imports account for around 43% of the total value of imports, while containers account for the remaining around 57%. If similar corrupt payments were made in containers as in bulk, it follows that the economic damage would more than double.



How USD 163 million in corruption reduces company sales by USD 350 million

- It may be difficult to grasp how USD 163 million in corruption can cause companies to lose USD 350 million in sales. The reason is that the same dollar is counted more than once in the socioeconomic perspective. In an input-output model, this is illustrated by the direct, indirect and induced impacts.
- The direct impact** is the loss of sales by the company that imports and/or sells the imported goods either to other companies or to consumers. The loss of sales will reduce its revenue and profit, and this may further reduce its purchases from its suppliers and the number of people it employs. Since GDP is generated from company revenue, the direct impact also results in a reduction in GDP.
- The indirect impact** is the loss of purchases from the company's suppliers. The indirect impact is the first time, where a dollar is counted more than once. First, the dollar is counted as lost sales and second, part of that dollar is counted as a purchase from a supplier. The reduced purchase from suppliers means reduced sales, and this can trigger a second wave of reduced purchases from suppliers, employees and GDP.
- The induced impact** is the lost spending of salaries of the potentially fired employees of the company (direct impact) and its suppliers (indirect impact). The induced impact is the second time, where a dollar is counted more than once. When employees spend their salaries, it typically boost the sales of companies in sectors such as food service and retail trade. The lost spending means lost sales and that can trigger a third wave of reduced purchases from suppliers, employees and GDP.
- These mechanisms imply that a dollar paid in corruption in Nigeria can end up reducing business sales by 2.2 dollars, GDP by 1.3 dollar and VAT by 0.3 dollar.

Impacts of USD 163 million contraction in household demand



Source: QBIS based on an input-output model of the Nigerian economy from 2021 using data from MRIO, Nigerian National Bureau of Statistics, UN and ILO.

The socioeconomic impact of Saying No to maritime corruption



Socioeconomic impact of Saying No to maritime corruption in grain bulk imports

Without MACN







- The economic damage associated with the estimated USD 40 million cost of corruption in grain imports is around USD 70 million in lost sales, USD 46 million in lost GDP, USD 8 million in lost customs revenues and 53,000 fewer FTE. This is the situation in the absence of the MACN.

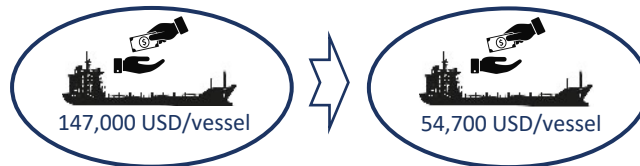
With MACN

- As a result of MACN's work in Nigeria, shipping companies are able to reduce the cost of corruption. By eliminating direct corrupt payments in the port and the associated demurrage cost and extra safety stock, the estimated cost of maritime corruption is reduced by USD 25 million from USD 40 million to USD 15 million.

Socio-Economic (SE) impact MACN

- This reduces the economic damage of corruption by USD 50 million in sales, USD 30 million in GDP, USD 6 million in customs revenue and 33,000 FTE. This reduction is the economic impact and benefit of the MACN in Nigeria.

 Scenario	 Corruption	 Sales	 GDP	 Customs	 Jobs
Without MACN	40 MUSD	-70 MUSD	-46 MUSD	-8 MUSD	-53,000 FTE
With MACN	15 MUSD	-20 MUSD	-16 MUSD	-2 MUSD	-20,000 FTE
SE impact MACN	-25 MUSD	50 MUSD	30 MUSD	6 MUSD	33,000 FTE



Socioeconomic impact of Saying No to maritime corruption in food bulk imports

Without MACN




- The economic damage associated with the estimated USD 52 million cost of corruption in grain imports is around USD 110 million in lost sales, USD 62 million in lost GDP, USD 13 million in lost customs revenues and 71,000 fewer FTE. This is the situation in the absence of the MACN.

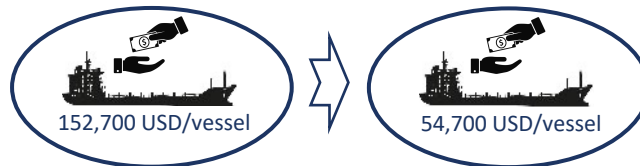
With MACN

- As a result of MACN's work in Nigeria, shipping companies are able to reduce the cost of corruption. By eliminating direct corrupt payments in the port and the associated demurrage cost and extra safety stock, the estimated cost of maritime corruption is reduced by USD 33 million from USD 52 million to USD 19 million.

Socio-Economic (SE) impact MACN

- This reduces the economic damage of corruption by USD 70 million in sales, USD 40 million in GDP, USD 8 million in customs revenue and 46,000 FTE. This reduction is the economic impact and benefit of the MACN in Nigeria.

 Scenario	 Corruption	 Sales	 GDP	 Customs	 Jobs
Without MACN	52 MUSD	-110 MUSD	-62 MUSD	-13 MUSD	-71,000 FTE
With MACN	19 MUSD	-40 MUSD	-22 MUSD	-5 MUSD	-25,000 FTE
SE impact MACN	-33 MUSD	70 MUSD	40 MUSD	8 MUSD	46,000 FTE



Socioeconomic impact of Saying No to maritime corruption in petrol bulk imports

Without MACN







- The economic damage associated with the estimated USD 70 million cost of corruption in grain imports is around USD 160 million in lost sales, USD 88 million in lost GDP, USD 19 million in lost customs revenues and 101,000 fewer FTE. This is the situation in the absence of the MACN.

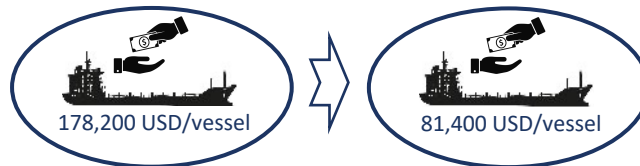
With MACN

- As a result of MACN's work in Nigeria, shipping companies are able to reduce the cost of corruption. By eliminating direct corrupt payments in the port and the associated demurrage cost and extra safety stock, the estimated cost of maritime corruption is reduced by USD 38 million from USD 70 million to USD 32 million.

Socio-Economic (SE) impact MACN

- This reduces the economic damage of corruption by USD 90 million in sales, USD 48 million in GDP, USD 11 million in customs revenue and 55,000 FTE. This reduction is the economic impact and benefit of the MACN in Nigeria.

 Scenario	 Corruption	 Sales	 GDP	 Customs	 Jobs
Without MACN	70 MUSD	-160 MUSD	-88 MUSD	-19 MUSD	-101,000 FTE
With MACN	32 MUSD	-70 MUSD	-40 MUSD	-8 MUSD	-46,000 FTE
SE impact MACN	-38 MUSD	90 MUSD	48 MUSD	11 MUSD	55,000 FTE



Socioeconomic impact of Saying No to maritime corruption in total bulk imports

Without MACN







- The economic damage associated with the estimated USD 163 million cost of corruption in bulk imports is around USD 350 million in lost sales, USD 204 million in lost GDP, USD 42 million in lost customs revenues and 235,000 fewer FTE. This is the situation in the absence of the MACN.

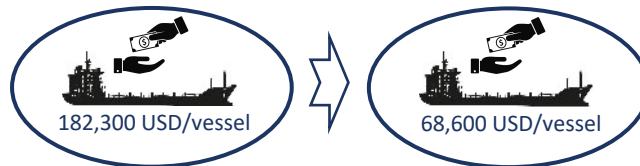
With MACN

- As a result of MACN's work in Nigeria, shipping companies are able to reduce the cost of corruption. By eliminating direct corrupt payments in the port and the associated demurrage cost and extra safety stock, the estimated cost of maritime corruption is reduced by USD 102 million from USD 163 million to USD 61 million.

Socio-Economic (SE) impact MACN

- This reduces the economic damage of corruption by USD 230 million in sales, USD 129 million in GDP, USD 28 million in customs revenue and 147,000 FTE. This reduction is the economic impact and benefit of the MACN in Nigeria.

 Scenario	 Corruption	 Sales	 GDP	 Customs	 Jobs
Without MACN	163 MUSD	-350 MUSD	-204 MUSD	-42 MUSD	-235,000 FTE
With MACN	61 MUSD	-120 MUSD	-75 MUSD	-14 MUSD	-88,000 FTE
SE impact MACN	-102 MUSD	+230 MUSD	+129 MUSD	+28 MUSD	+147,000 FTE



**Socioeconomic damage
due to corruption in
grain and total food
imports**



Import of grain and all food products

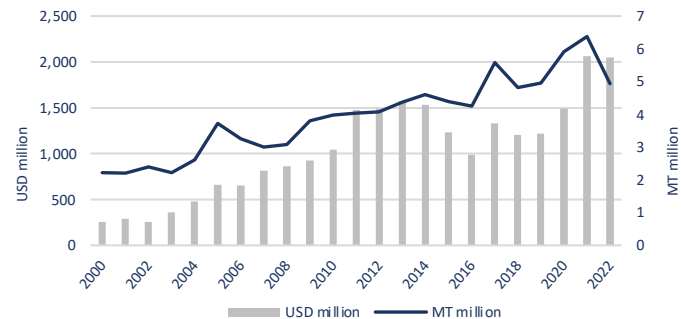
Grain imports

- Since 2000, Nigeria's population has increased by 2.6% per year, while the volume of Nigeria's grain imports has increased by 3.5% per year (CAGR), highlighting the growing importance of this food item in the Nigerian consumer food basket.
- Since 2000, Nigeria's inflation has increased by 12.6% per year, while the value of Nigeria's grain imports has increased by 9.5% per year, meaning that the price of grain imports has increased at a lower rate than the national average price level.
- In 2022, grain imports amounted to around USD 2.1 billion, or around 3.4% of total imports.

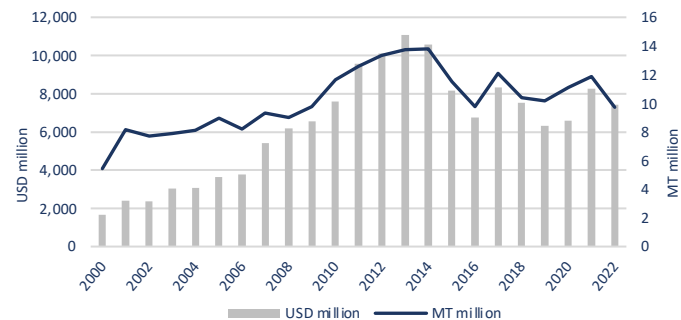
All food imports

- Since 2000, the volume of Nigeria's total food imports has increased by 2.6% per year (CAGR), exactly the same as population growth, highlighting the fact that Nigeria's dependence on food imports is unchanged. Keeping import costs down is therefore essential to keep the price of the Nigerian consumer food basket affordable.
- Since 2000, the value of Nigeria's total food imports has increased by 6.7% per year, which means that the price of food imports has increased less than the national average price level of 12.6% per year.
- In 2022, total food imports amounted to around USD 6.9 billion, or around 11.4% of total imports.

Nigeria's grain imports (HS10), 2000-2022



Nigeria's total food imports (HS1-HS23), 2000-2022



Source: QBIS based on FAOSTAT.

Import costs of grain and all food products with/without corruption

Grain imports (HS10), estimated bulk import costs excl. profit

Import cost elements	With	Without	With	Without
	(USD/MT)	(USD/MT)	(1,000 USD/vessel)	(1,000 USD/vessel)
1 Product cost, 2016-2022	275	275	6,765	6,765
2 Ocean transport, 2016-2021	11.6	11.6	286	286
3 Insurance, 2016-2021	6.4	6.4	157	157
4 Risk premium, 2023	3.3	3.3	82	82
5 Border clearance, 2023	0.0	0.0	1	1
6 Port discharge, 2023	4.2	4.2	104	104
7 Demurrage, 2019-2023 (settle corruption)	2.4	0.0	60	0
8 Demurrage, 2019-2023 (other factors)	0.7	0.7	18	18
9 Port corrupt payments, 2019-2023	0.8	0.0	21	0
10 Port storage, 2023	1.7	1.7	41	41
11 Inventory, 2023 (settle corruption)	0.5	0.0	12	0
12 Inland transport I, 2023	3.6	3.6	88	88
13 Inland processing, 2023	15	15	369	369
14 Police checkpoints, 2023	2.2	0.0	55	0
15 Inland transport II, 2023	3.6	3.6	88	88
Total	331	325	8,146	7,998

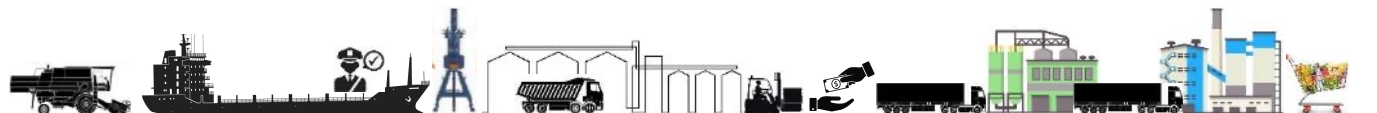
Source: QBIS based on CEPII BACI, UN Comtrade, UNCTAD, FAOSTAT, Danish Ship Finance, Nigerian Port Authority, QBIS (2023A), QBIS (2023B), QBIS (2024), and interviews with shipping lines calling Nigeria.

Total food imports (HS1-HS23), estimated bulk import costs excl. profit

Import cost elements	With	Without	With	Without
	(USD/MT)	(USD/MT)	(1,000 USD/vessel)	(1,000 USD/vessel)
1 Product cost, 2016-2022	401	401	9,869	9,869
2 Ocean transport, 2016-2021	11.6	11.6	286	286
3 Insurance, 2016-2021	6.4	6.4	157	157
4 Risk premium, 2023	3.3	3.3	82	82
5 Border clearance, 2023	0.0	0.0	1	1
6 Port discharge, 2023	4.2	4.2	104	104
7 Demurrage, 2019-2023 (settle corruption)	2.4	0.0	60	0
8 Demurrage, 2019-2023 (other factors)	0.7	0.7	18	18
9 Port corrupt payments, 2019-2023	0.8	0.0	21	0
10 Port storage, 2023	0.5	0.5	12	12
11 Inventory, 2023 (settle corruption)	0.7	0.0	17	0
12 Inland transport I, 2023	3.6	3.6	88	88
13 Inland processing, 2023	15	15	369	369
14 Police checkpoints, 2023	2.2	0.0	55	0
15 Inland transport II, 2023	3.6	3.6	88	88
Total	456	450	11,226	11,074

Source: QBIS based on CEPII BACI, UN Comtrade, UNCTAD, FAOSTAT, Danish Ship Finance, Nigerian Port Authority, QBIS (2023A), QBIS (2023B), QBIS (2024) and interviews with shipping lines calling Nigeria.

Key figures



Product FOB	Ocean transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

Grain (HS10)

Import (2016-2021)

- 6.7 million MT per year
- USD 1.95 billion per year
- 275 USD/MT
- Growing at 3.3% per year

Transport & logistics costs

- 41.1 USD/MT

Retail costs excl. profit

- 331 USD/MT

Costs due to corruption

- 6.0 USD/MT
- 147,400 USD per vessel
- 271 vessels per year
- 39.9 MUSD per year
- 14.6% of transport & logistics costs
- 1.8% of import costs excl. profit

All food products (HS1-HS23)

Import (2016-2021)

- 8.3 million MT per year
- USD 3.5 billion per year
- 401 USD/MT
- Falling at 3.1% per year

Transport & logistics costs

- 40.2 USD/MT

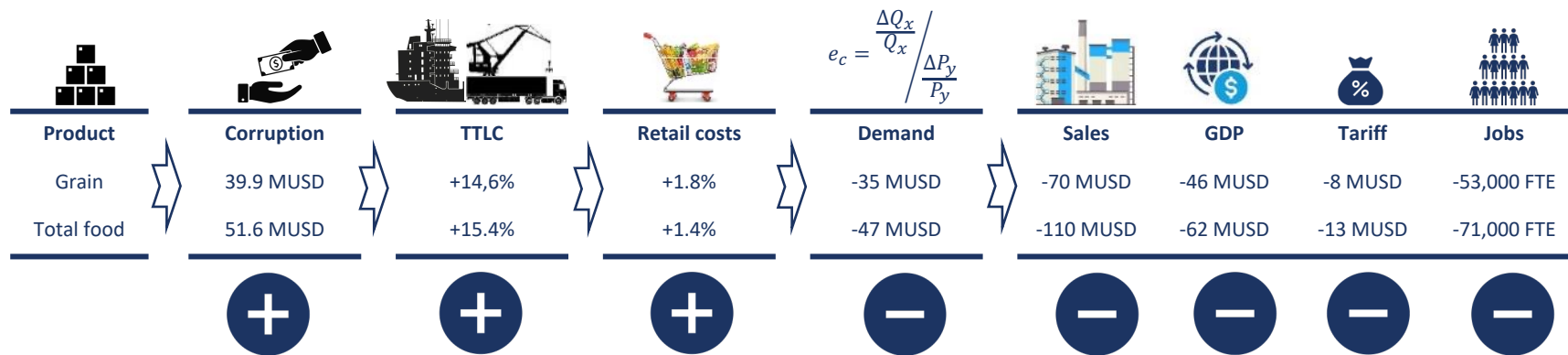
Retail costs excl. profit

- 456 USD/MT

Costs due to corruption

- 6.2 USD/MT
- 152,700 USD per vessel
- 338 vessels per year
- 51.6 MUSD per year
- 15.4% of transport & logistics costs
- 1.4% of import costs excl. profit

The socioeconomic damage due to corruption in grain and total food imports



Socioeconomic damage due to corruption in petrol and total bulk imports



Import of petrol and all bulk products

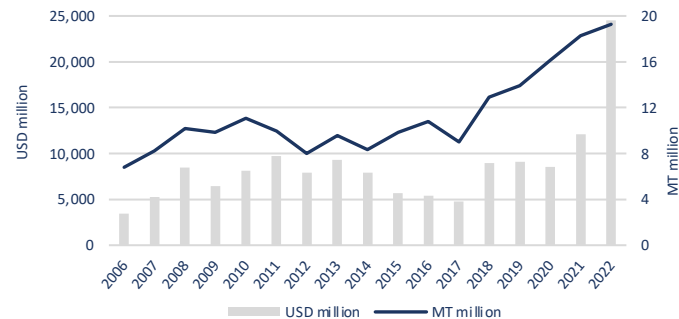
Petrol imports

- Since 2000, the Nigeria's population has increased by 2.6% per year, while the volume of Nigeria's petrol imports has increased by 6.4% per year (CAGR), highlighting the growing importance of petrol in the Nigerian consumer basket.
- Since 2000, the Nigeria's inflation has increased by 12.6% per year, while the value of Nigeria's petrol imports has increased by 8.2% per year (CAGR), meaning that the price of imported petrol has increased less than the national average price level.
- In 2022, the value of petrol imports amounted to around USD 24.5 billion, or around 40.4% of total imports.

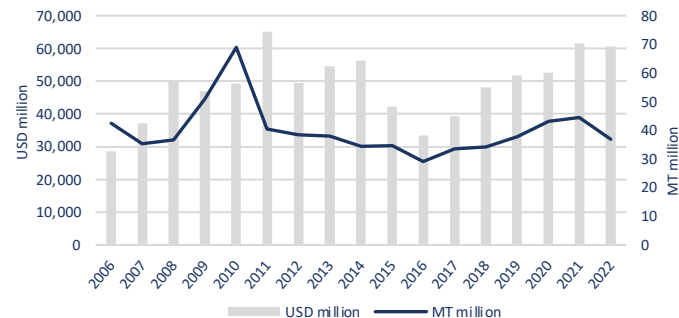
Total imports

- Since 2000, the value of Nigeria's total imports has increased by 0.3% per year (CAGR), which is below population growth. Possible reasons for the relatively low growth include import bans, tariffs, foreign exchange restrictions and physical border closures such as in 2019.
- Thus, the drop in imports is not a result of Nigeria becoming more self-reliant, and without the ability to produce its own essential products, imports are essential for Nigeria. Keeping import costs down is therefore essential to keep the price of the Nigerian consumer food basket affordable.
- In 2022, total Nigerian imports amounted to around USD 60.6 billion.

Nigeria's petrol imports (HS27), 2000-2022



Nigeria's total imports, 2000-2022



Source: QBIS based on CEPI BACI and UN Comtrade.

Import costs of petrol and all bulk products with/without corruption

Petrol (HS27-HS28), estimated bulk import costs excl. profit

Import cost elements	With		Without	
	(USD/MT)		(1,000 USD/vessel)	
1 Product cost, 2016-2022	566	566	13,925	13,925
2 Ocean transport, 2016-2021	7.3	7.3	179	179
3 Insurance, 2016-2021	10.1	10.1	249	249
4 Risk premium, 2023	1.5	1.5	36	36
5 Border clearance, 2023	0.0	0.0	1	1
6 Port discharge, 2023	5.5	5.5	134	134
7 Demurrage, 2019-2023 (settle corruption)	0.8	0.0	20	0
8 Demurrage, 2019-2023 (other factors)	0.0	0.0	0	0
9 Port corrupt payments, 2019-2023	0.8	0.0	21	0
10 Port storage, 2023	0.5	0.5	12	12
11 Inventory, 2023 (settle corruption)	1.0	0.0	24	0
12 Inland transport I, 2023	3.6	3.6	88	88
13 Inland processing, 2023	0	0	0	0
14 Police checkpoints, 2023	2.2	0.0	55	0
15 Inland transport II, 2023	3.6	3.6	88	88
Total	603	598	14,833	14,713

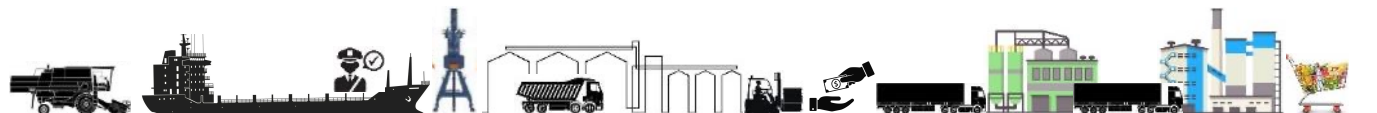
Source: QBIS based on CEPII BACI, UN Comtrade, UNCTAD, FAOSTAT, Danish Ship Finance, Nigerian Port Authority, QBIS (2023A), QBIS (2023B), QBIS (2024), and interviews with shipping lines calling Nigeria.

All bulk products (HS1-HS97), estimated bulk import costs excl. profit

Import cost elements	With		Without	
	(USD/MT)		(1,000 USD/vessel)	
1 Product cost, 2016-2022	724	724	22,326	22,326
2 Ocean transport, 2016-2021	9.4	9.4	289	289
3 Insurance, 2016-2021	8.3	8.3	257	257
4 Risk premium, 2023	2.4	2.4	73	73
5 Border clearance, 2023	0.0	0.0	1	1
6 Port discharge, 2023	4.9	4.9	150	150
7 Demurrage, 2019-2023 (settle corruption)	1.6	0.0	49	0
8 Demurrage, 2019-2023 (other factors)	0.3	0.3	11	11
9 Port corrupt payments, 2019-2023	0.8	0.0	26	0
10 Port storage, 2023	0.5	0.5	15	15
11 Inventory, 2023 (settle corruption)	1.3	0.0	39	0
12 Inland transport I, 2023	3.6	3.6	110	110
13 Inland processing, 2023	7	7	221	221
14 Police checkpoints, 2023	2.2	0.0	69	0
15 Inland transport II, 2023	3.6	3.6	110	110
Total	770	764	18,929	18,783

Source: QBIS based on CEPII BACI, UN Comtrade, UNCTAD, FAOSTAT, Danish Ship Finance, Nigerian Port Authority, QBIS (2023A), QBIS (2023B), QBIS (2024) and interviews with shipping lines calling Nigeria.

Key figures



Product FOB	Ocean transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

Petrol (HS27 & HS28)

Import (2016-2021)

- 14.4 million MT per year
- USD 8.4 billion per year
- 566 USD/MT
- Growing at 13.5% per year

Transport & logistics costs

- 36.9 USD/MT

Retail costs excl. profit

- 603 USD/MT

Costs due to corruption

- 4.9 USD/MT
- 178,200 USD per vessel
- 393 vessels per year
- 70.0 MUSD per year
- 13.2% of transport & logistics costs
- 0.8% of import costs excl. profit

All bulk products (HS1-H97)

Import (2016-2021)

- 27.6 million MT per year
- USD 20.4 billion per year
- 724 USD/MT
- Growing at 10.5% per year

Transport & logistics costs

- 38.9 USD/MT

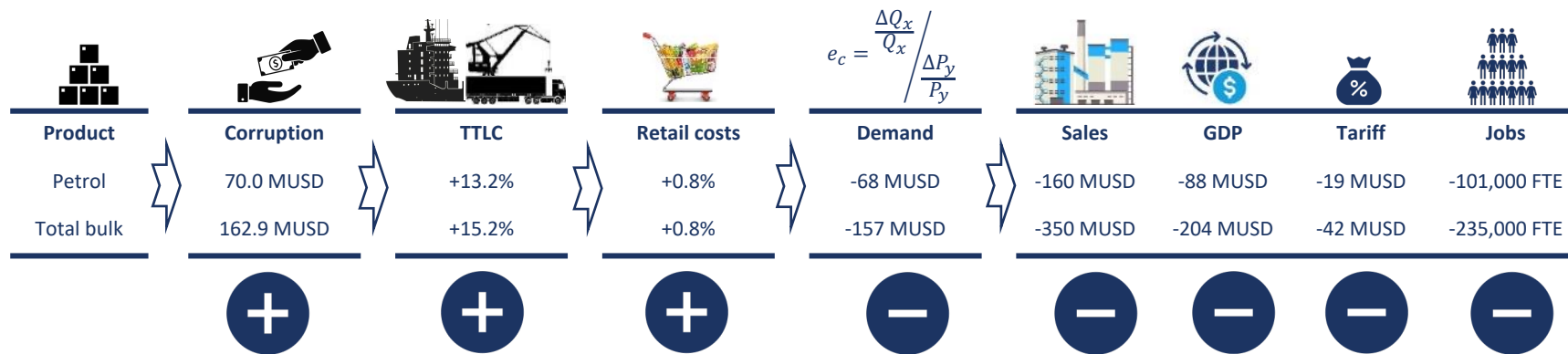
Retail costs excl. profit

- 770 USD/MT

Costs due to corruption

- 5.9 USD/MT
- 182,300 USD per vessel
- 921 vessels per year
- 162.9 MUSD per year
- 15.2% of transport & logistics costs
- 0.8% of import costs excl. profit

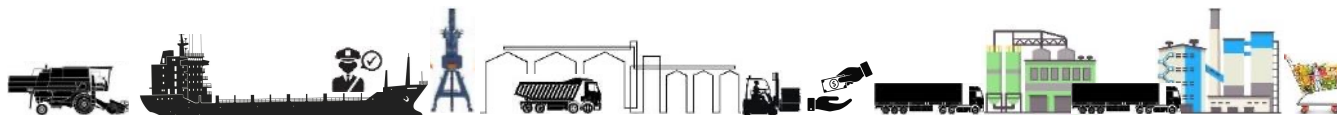
The socioeconomic damage due to corruption in petrol and total bulk imports



**Appendix A:
Estimation of import costs
for grain, all food, petrol
and all bulk products**



Import costs

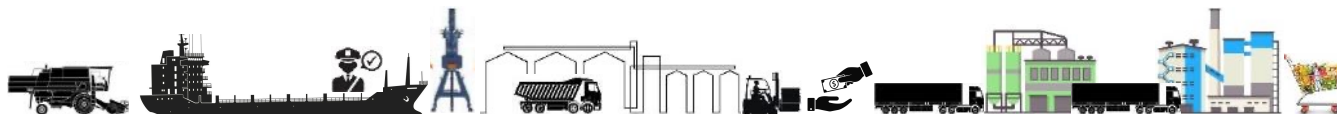


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Product FOB	Sea transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors.)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

- Product cost:** The cost of the imported product is estimated as the Cost, Insurance, and Freight (CIF) value* excluding ocean transport and insurance costs. Due to the still high level of undervaluation of imports, the use of Free on Board (FOB) values would most likely overestimate the product value. Given the high volatility of food and raw materials, the product cost is an average of the years 2016 to 2022. For grain, this corresponds to an average of around 275 USD/MT.
- Ocean transport:** The cost of ocean transport is estimated as annual time charter rates for dry and liquid bulk carriers multiplied by average sea transport times to Nigeria from its main bulk sourcing countries. Given the high volatility of time charter rates, the ocean freight cost is an average from 2016 to 2023, which corresponds to around 11.6 USD/MT for dry bulk and 7.3 USD/MT for liquid bulk.
- Insurance:** The cost of insurance is estimated by subtracting the ocean freight rates from UNCTAD's maritime transport and insurance costs to Nigeria from its major bulk suppliers. For the period 2016-2023, average insurance cost for is estimated to be around 6.4 USD/MT for dry bulk and around 10.1 USD/MT for liquid bulk.
- Risk premium:** The risk premium is estimated on the basis of interviews with shipping companies calling Nigerian ports. The risk premium is specific to Nigeria and consists of Best Management Practices 5 (BMP5), Security Escort Vessel (SEV), Voyage Risk Assessment (VRA), Additional War Risk Premium (AWRP), Loss of Hire (LOH) and extra crew bonuses. In 2023, these premiums are estimated to be around 3.3 USD/MT for dry bulk and around 1.5 USD/MT for liquid bulk.
- Border clearance:** The customs clearance fee is as reported by customs clearing agents. Fees vary depending on the product and other parameters, but the average standard fee is around 60,000 NGN, which is around 94 USD or 0.004 USD/MT. For cereal products, an additional 10,000 NGN may be added for fumigation. In any case, customs clearance fees are very low compared to other import costs.
- Port discharge:** The cost of a vessel calling at a Nigerian port is estimated on the basis of the official tariffs of the Nigerian Port Authority and includes ship dues, towage, pilotage, inner anchorage, harbor dues, stevedoring and wharfage. The total costs is estimated to be around 4.2 USD/MT (around 100,000 USD per vessel) for dry bulk carriers and around 5.7 USD/MT for liquid bulk carriers (around 200,000 USD per vessel).
- Demurrage (settle corruption):** Demurrage is a penalty for keeping a vessel longer than the agreed time (laytime). As demurrage can add significantly to shipping costs, all shippers try to avoid it. As interviews suggest that it is possible to discharge a vessel within the given laytime, the average 3.5 days of demurrage paid by shippers in 2019-2023 is likely to be due to other factors, including corrupt demands. According to MACN members, the average time taken to settle corrupt payments in 2019-2023 was around 2.7 days. Since 2020, this time has decreased, likely due to the efforts of the MACN. However, in order to capture the costs over the period, it is assumed that the average port stay has been extended by 2.7 days due to the settlement of corrupt payments. This correspond to around 2.4 USD/MT for dry bulk and around 0.8 USD/MT for liquid bulk (only average 0.7 demurrage days in 2019-2023).

Import costs

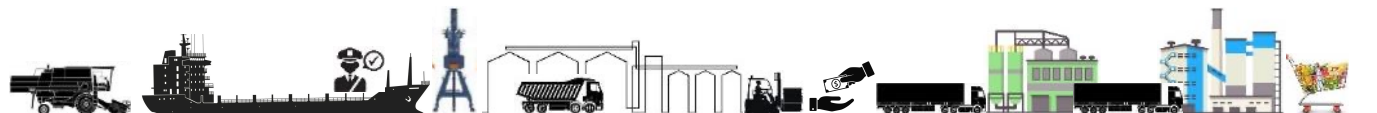


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Product FOB	Sea transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors.)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police checkpoints	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

- 8. Demurrage (other factors):** In addition to settle corrupt payments, other factors that may influence demurrage costs include weather (rain), equipment breakdown and whether the vessel is waiting for a backload. It is assumed that the remaining demurrage days are due to such other factors. This is equivalent to around 0.8 USD/MT for dry bulk and zero for liquid bulk (the average of 0.7 demurrage days is allocated to the settling corruption). In 2019-2023, an average demurrage day is assessed at around 22,000 USD for dry bulk carriers and at around 42,000 USD for liquid bulk carriers.
- 9. Port corrupt payments:** According to MACN's members, the average corrupt demand per port call in 2019-2023 is around 20,600 USD with around 17,600 USD in fines and around 3,000 USD in cash demands.
- 10. Port storage:** It was not possible to obtain accurate information on the duration and unit cost of storage in Nigerian ports. Therefore, port storage costs are estimated based on QBIS (2023A and 2024), which examines imports of grain and other bulk products in Morocco and Bahrain. According to QBIS (2023A and 2024), average storage costs for grain is around 1.7 USD/MT and around 0.5 USD/MT for all dry bulk products. Port storage costs for liquid bulk are also missing and are assumed to be same as for dry bulk products.
- 11. Extra inventory (settle corruption):** To prevent an out-of-stock situation and associated production and delivery failure, companies maintain a certain amount of safety stock of their import products. In 2019-2023, it took an average of around 2.7 days, with a standard deviation of around 7.9 days, to settle corrupt payments. This is estimated to an additional 0.5-1.3 USD/MT to import cost from the safety stock required to account for the length and variation in the resolve time of corruption.
- 12. Inland transport I:** Inland transport is assumed to include 20 km from the port to inland processing and a further 20 km from inland processing to final destination such as retail outlets or factories. According to QBIS (2016-2020), the average tonne-kilometre in Nigeria is around 0.18 USD/km/MT with an estimated average truck load of 29 MT. This translate to around 3.6 USD/MT for each of the two 20 km inland legs.
- 13. Inland processing:** Inland processing varies from product to product. Grain requires milling, while other food products require all kinds of different processing ranging from extensive and complex to simple packaging. As it is almost impossible to accurately value these many processes, the average cost has been estimated to around 15 USD/MT. As petrol is a final product, it is assumed that it requires no inland processing.
- 14. Police checkpoints:** Illegal and unofficial payments associated with crossing of the numerous police checkpoints on the Nigerian road are another major source of corruption. According to local trucking companies, there are currently around 15-19 checkpoints to and from the Apapa and Tin Can terminals requiring an average of 63 USD of corrupt payments, or an average of around 2.2 USD/MT.
- 15. Inland transport II:** See Inland transport I.

Ocean & insurance



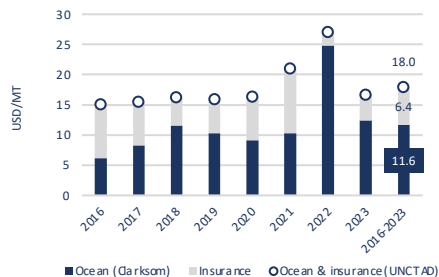
Product FOB	Ocean transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors.)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

- The cost of ocean transport is estimated as annual time charter rates for dry and liquid bulk carriers multiplied by average sea transport times to Nigeria from its main bulk sourcing countries. Given the high volatility of time charter rates, the ocean freight cost is an average from 2016 to 2023, which corresponds to around 11.6 USD/MT for dry bulk and 7.3 USD/MT for liquid bulk.
- The cost of insurance is estimated by subtracting the ocean freight rates from UNCTAD's maritime transport and insurance costs to Nigeria from its major bulk suppliers. For the period 2016-2023, average insurance cost for

is estimated to be around 6.4 USD/MT for dry bulk and around 10.1 USD/MT for liquid bulk.

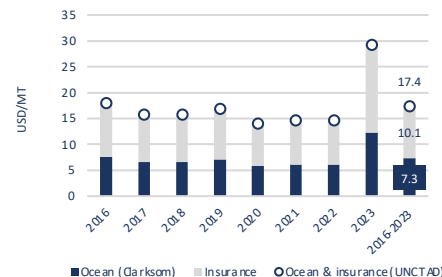
- On the basis of this approach, the percentage of transport & insurance out of product costs is estimated at around 6.6% for grain, 4.5% for all food products, 3.1% for petrol and 2.4% for all bulk products.
- According to Grigoriou et al. (2019), average transport and insurance costs including both bulk and containers typically vary from 6% to 20%. Given the larger volumes, the estimated lower percentages for bulk seem plausible.

Ocean & insurance costs, estimated, dry bulk, 2016-2023



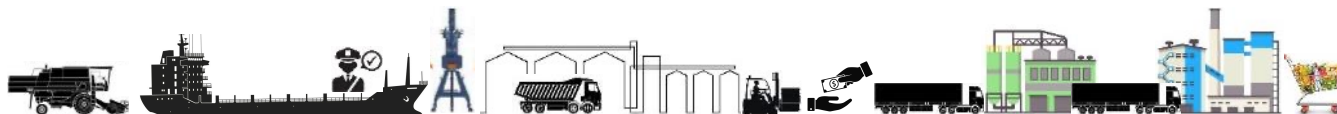
Source: QBIS based on UNCTAD, Clarksons, and Danish Ship Finance.

Ocean & insurance costs, estimated, liquid bulk, 2016-2023



Source: QBIS based on UNCTAD, Clarksons, and Danish Ship Finance.

Demurrage

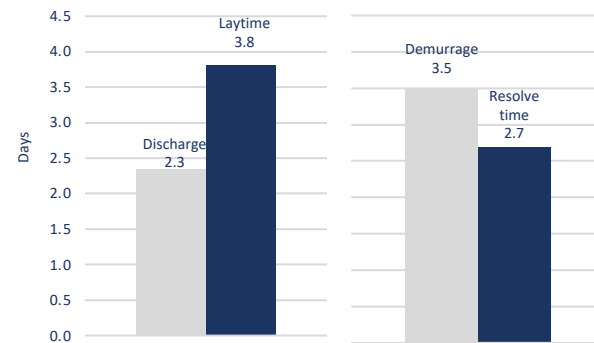


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Product FOB	Ocean transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

- For the period 2020-2023, based on UNCTAD and interviews with shipping companies, the average time in port for dry bulk carriers is estimated to be around 7.3 days in 2023.
- With an average cargo load close to 25,000 MT and a discharge rate of around 10,500 MT/day, the average discharge time is expected to be around 2.3 days.
- This means that with an average free time (laytime) of around 3.8 days, the vessel can be discharged within the free time and without any demurrage costs.
- However, in 2020-2023, the average demurrage days was around 3.5 indicating that port time depends on factors other than the discharge rate such as the weather, terminal efficiency and equipment breakdown.
- In addition, MACN members report an average 2.7 days to resolve corrupt demands with various government agencies involved in the berthing and clearance of a vessel calling Nigeria.
- It is highly likely that this resolution time could result in longer time in port and, therefore, higher demurrage days and costs.

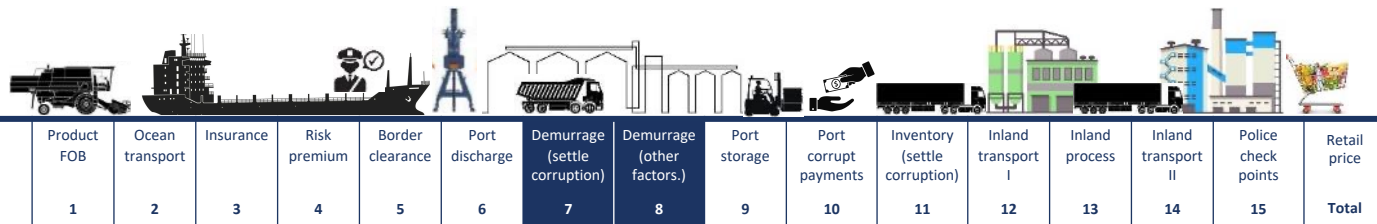
Discharge, laytime, demurrage and resolve time, 2023



Source: QBIS based on interviews with shipping companies operating bulk carriers calling Nigerian ports and MACN's Port Call Assistant data.

Demurrage

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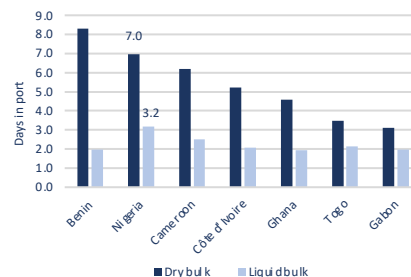


- Port time in Nigeria is among the highest of neighboring West African countries such as Gabon, Cameroon, Benin, Togo, Ghana, and Côte d'Ivoire.
- According to UNCTAD's 2021 port call and performance statistics, Nigeria has the second highest port time for dry bulk and the second highest port time for liquid bulk.
- In addition to being relatively high, Nigeria's port time appears to be increasing. Combining UNCTAD statistics for 2018-2021 and

interviews with shipping companies for 2023, port time for bulk carriers has consistently increased since 2018.

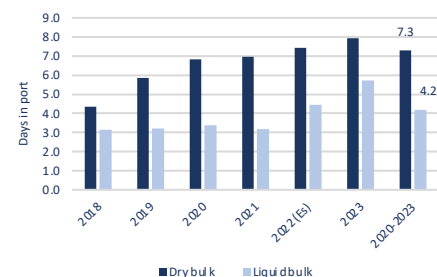
- In 2020-2023, the average port time is estimated to be around 7.3 days for dry bulk and around 4.2 days for liquid bulk.
- With a laytime of around 3-5-3.8 days, this corresponds to an average of around 3.5 demurrage days for dry bulk and around 0.7 days for liquid bulk.

Days in port, dry & liquid bulk carrier, selected WA countries, 2021



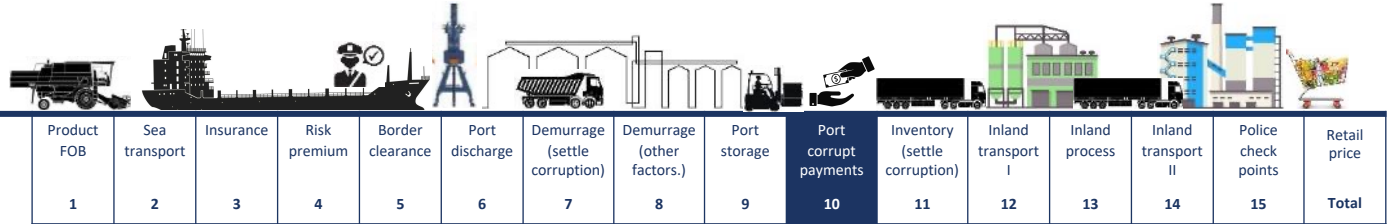
Note: Corrected for vessel size.
Source: QBIS based on UNCTAD's port call and performance statistics.

Days in port, dry & liquid bulk carrier, Nigeria, 2018-2023



Source: QBIS based on UNCTAD's port call and performance statistics and interviews with shipping companies operating bulk carriers and calling Nigerian ports.

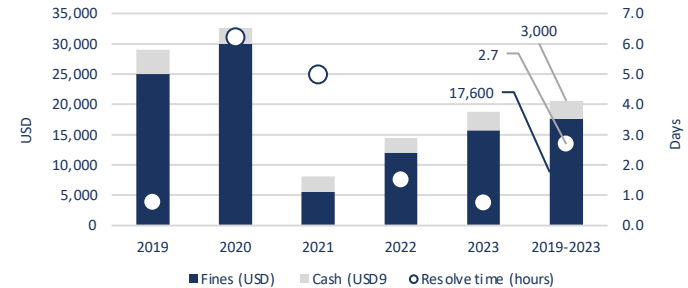
Port corruption



- According to MACN's members, the average corrupt demand per port call in 2019-2023 was around 20,600 USD with around 17,600 USD on fines and around 3,000 USD cash demands equivalent to around 0.8 USD/MT.
- Since 2020, the average time taken to settle corruption demands has decreased, likely due to the efforts of the MACN.
- At the same time, however, the size of corruption demands has gradually increased, after dropping significantly between 2020 to 2021.
- Given the volatility and, to some extent unpredictability of the resolution time and size of the corrupt demands, averages over the period rather than recent year are applied.
- The MACN data includes incident reports from 135 shipping companies calling at Nigerian ports. The number of reports gradually increased from three in 2019 to 38 in 2023.


- It is worth noting that while the average direct corruption cost is around 20,600 USD per call and around 0.8 USD/MT, the indirect costs of this corrupt payment is much higher.
- Thus, the long resolve time is assessed to be associated with longer demurrage time and higher safety stock resulting in additional import costs of around 1.6 for demurrage USD/MT and 1.3 USD/MT for safety stock.

Port corrupt demands and resolve time, 2019-2023



Source: QBIS based on MACN data.

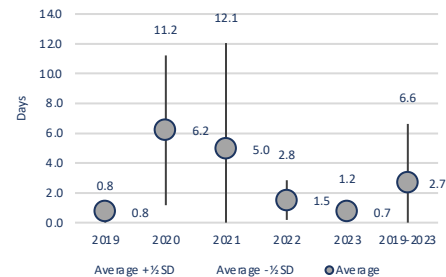
Extra inventory



Product FOB	Sea transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors.)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

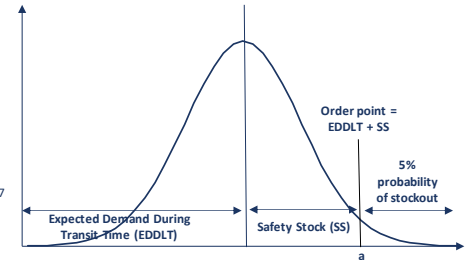
- To avoid out-of-stock situations and the associated production and delivery failures, companies hold a certain amount of safety stock of their imported products.
- In 2019-2023, it took an average of 2.7 days to settle corruption demands, with a standard deviation (SD) of around 7.9 days.
- The average of 2.7 days, and particularly the high SD of 7.9 days, is likely to increase the amount of safety stock held by importers
- It is estimated that the average safety stock for all bulk importers can potentially increase by 6.4 days.
- The additional safety stock is estimated assuming a normally distributed Expected Demand During Lead Time (EDDLT), a 5% tolerance for a stockout situation and a 10% Weighted Average Cost of Capital (WACC).
- Total inventory is determined as EDDLTL plus safety stock.
- The estimated additional 6.4 days of safety stock due to corruption resolution time and variation are further estimated to increase the average bulk import costs by 1.3 USD/MT, grain import costs by 0.5 USD/MT, all food products by 0.7 USD/MT and petrol by 1.0 USD/MT.

Resolve time, corrupt demands, average and SD, 2019-2023




Source: QBIS based on MACN data.

Safety stock for a 95% service level and a Normal distributed DDLT



Source: QBIS based on Vernimmen et al. (2007).

Inland transport



Product FOB	Sea transport	Insurance	Risk premium	Border clearance	Port discharge	Demurrage (settle corruption)	Demurrage (other factors.)	Port storage	Port corrupt payments	Inventory (settle corruption)	Inland transport I	Inland process	Inland transport II	Police check points	Retail price
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total

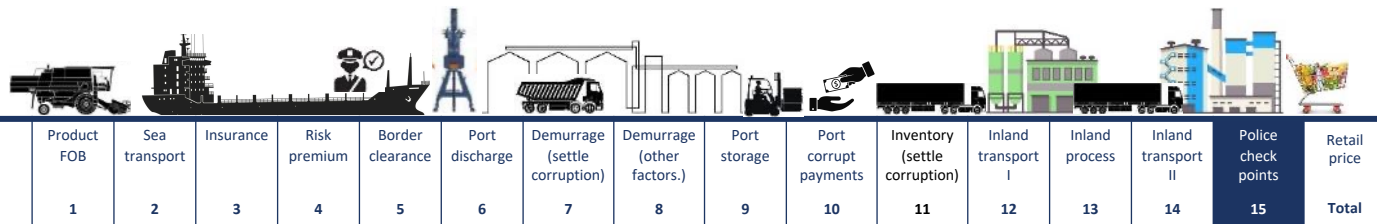
- Due to the poor infrastructure and operation of Nigeria’s railways, inland transport is mostly done by truck (Ogochukwua et al. (2021)). However, even though it is the better alternative, trucking does not work well either.
- Trucking is also subject to poor infrastructure as well as an old and worn-out truck fleet, numerous checkpoints and robberies, resulting in high unreliability of transit times (QBIS (2016-2020)).
- However, despite volatile transit times, the cost of trucking is relatively constant, mostly because of competition among trucking companies.
- According to QBIS (2016-2020), average tons kilometer in Nigeria is around 0.18 USD/km/MT

with an estimated average truck load of 29 MT. This means around 3.6 USD/MT for each of the two 20 km inland legs.

- Inland transport is assumed to include 20 km from the port to various kind of inland processing or distribution and another 20 km to final destination such as retail stores or factories.
- Inland processing varies from product to product. Grain requires milling, while other food products require all kinds of different processing ranging from extensive and complex to simple packaging. As it is almost impossible to accurately value these many processes, the average cost has been estimated to around 15 USD/MT. As petrol is a final product, it is assumed to require no inland processing.

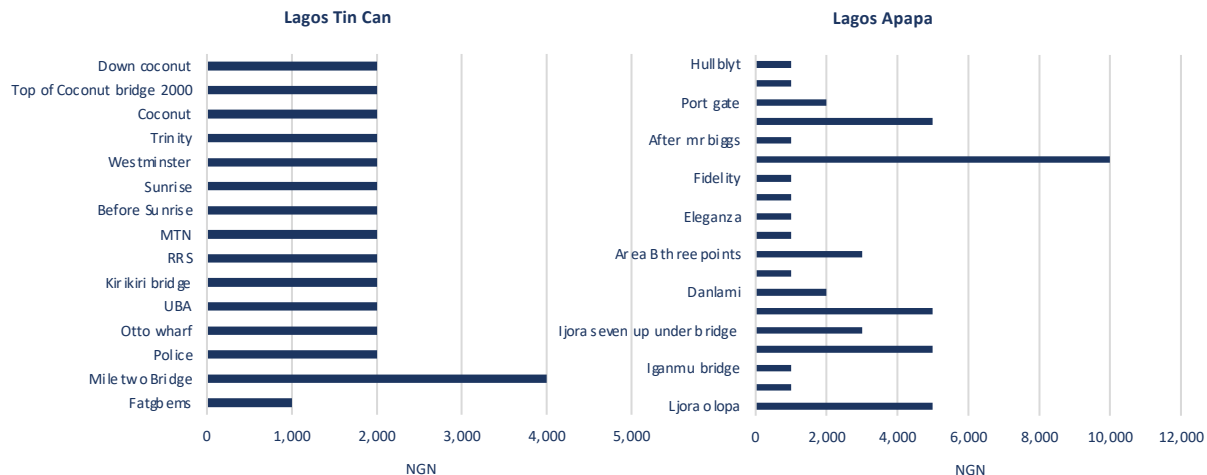


Police checkpoints



- In 2019, [BBC](#) reported how Nigerian police are asking for bribes at police checkpoints and how motorists have been shot dead after refusing to pay bribes.
- According to interviews with local trucking companies, there are currently around 15-19 checkpoints to and from the Apapa and Tin Can terminals.

- While the Apapa checkpoints are assessed to ask for a total of around 50,000 NGN, the Tin Can checkpoints are assessed to ask for around 31,000 NGN.
- At a 2023 USD/NGN currency exchange rate, this corresponds to an average of 63 USD of corrupt demands for crossing the checkpoints, or an average of around 2.2 USD/MT.



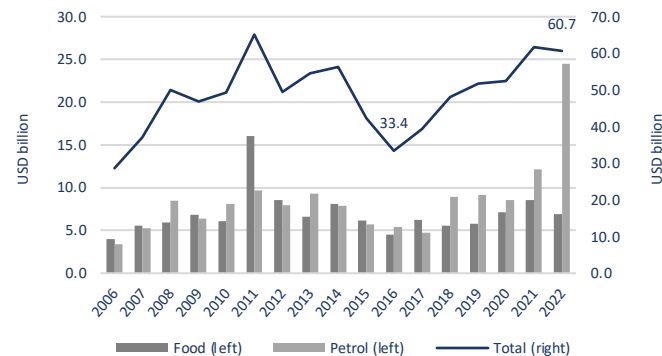
**Appendix B:
Why corruption in bulk
import will hit Nigerian
households, GDP and
employment**



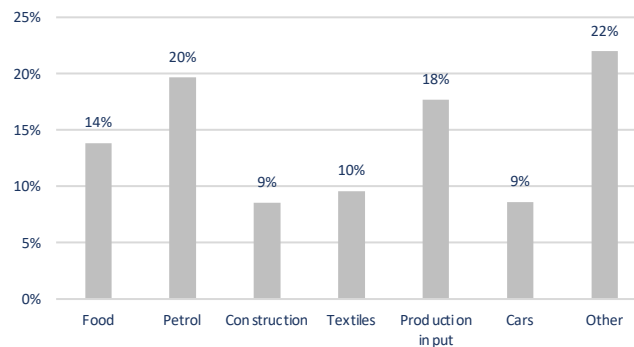
Import feeds daily consumption

- In 2022, Nigeria's imports are estimated at around USD 60.7 billion, up from USD 33.4 billion in 2016, representing a growth a CAGR of 9% between 2016 and 2022.
- Nigeria imports almost all of its food and other daily consumables, as well as several key inputs for vital sectors such as textiles and construction.
- Rising import costs therefore have a particular negative impact on the Nigerian economy.
- In 2021, Nigeria's imports are estimated to consist of 14% food products, 20% petrol, 9% construction materials, 10% textiles products, 18% production inputs, 9% cars and 22% other products.
- As evident, food and petrol account for around a third of total imports, highlighting the importance of these products to everyday life in Nigeria.
- It is estimated that around 55% of all food products are imported in bulk, while around 100% of mineral fuel products including petrol are imported in bulk.

Import, products, Nigeria, 2006-2022



Import main product categories, Nigeria, 2021

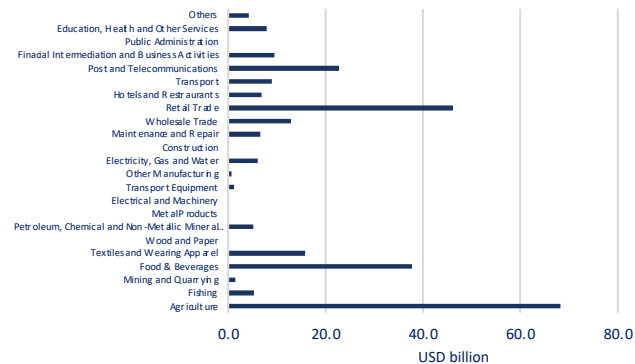


Note. The import categories are to be considered as rough approximations.
Source: QBIS based on CEPII BACI and UN Comtrade.

Why rising import costs will hit Nigerian household demand

- With only an estimated 18% production inputs, Nigeria's imports mainly feed household demand for food, petrol, housing and cars.
- This means that rising import costs due to corrupt payments will primarily impact household demand rather than, for example, domestic manufacturing.
- Nigerian household demand is mainly for agricultural products (25%), retail trade (17%), food and beverages (14%) and textiles and apparels sector (6%).
- Rising import costs will particularly impact sectors with a high import content, such as retail trade, food and beverages, and textiles and apparels.
- The impact of rising prices in these sectors on household demand depends on the price elasticity of each product.
- Basic food products with inelastic demand are likely to remain in demand, while less basic retail products and textiles & apparels with more elastic demand, are expected to fall.
- According to UNDP (2022), around 63% of Nigerians or 133 million people are classified as multidimensionally poor. This means that most Nigerian families do not have a budget surplus and rising import costs due to corrupt payments are therefore likely to reduce their household demand.

Nigerian household demand, USD 272 billion, 2021

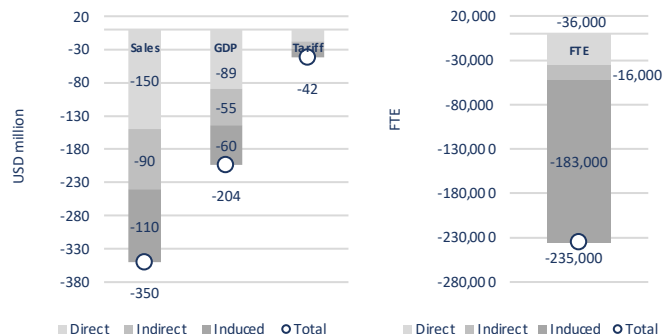


Source: QBIS based on an input-output model of the Nigerian economy from 2021 using data from MRIO, Nigerian National Bureau of Statistics, UN and ILO.

How household demand is estimated to impact GDP, tariffs and employment

- An input-output (IO) model of the Nigerian economy has been constructed to estimate the impact of a contraction in household on company revenue, GDP and employment.
- The IO model is for the year 2021 and has a GDP of USD 435 billion and a total employment of around 66 million people.
- According to [ILO](#) and Ogochukwu & Ohazulike (2021), informal employment is estimated to be around 90-95%. This means that total employment could potentially be around 130 million people, which does not seem unlikely given a total population of around 213 million in 2021 and [NBS](#) estimating that around 75% of Nigerians of working age are engaged in some form of work.
- For the period 2016-2022, corruption in bulk imports is estimated at around USD 163 million.
- Assuming a similar increase in the price of imported consumer goods, and a price elastic demand for most consumer goods (except essential items such as rice, garri and beans), this will reduce Nigerian household demand by the same amount.
- This will lead to a reduction in company sales of around USD 350 million, and a reduction in GDP of around USD 204 million. And because the reduction in household demand will also reduce imports, Nigerian Customs will lose around USD 42 million in customs revenue.
- The reduction in company sales will result in people losing their job. A total loss of around 235,000 full-time job equivalents (FTE) is associated with the USD 163 million paid in corruption for bulk imports.

Impacts of contraction in household demand



Source: QBIS based on an input-output model of the Nigerian economy from 2021 using data from MRIO, Nigerian National Bureau of Statistics, UN and ILO.

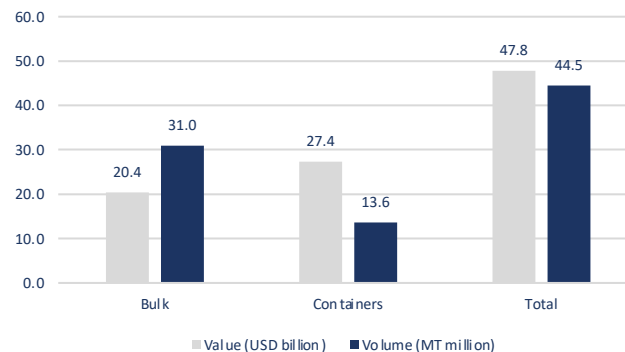
**Appendix C:
An estimation of the
breakdown of bulk and
containerised imports into
Nigeria**



Breakdown of bulk and containerised imports into Nigeria

- Neither the Nigerian Port Authority or the Nigerian National Bureau of Statistics (NBS) appear to have a breakdown of imports on bulk and containers.
- Therefore, a bulk-container breakdown has been made using alternative sources.
- Import value: A breakdown of product value into bulk and containers requires detailed information on which products that are transported in which of the two categories. Given the somewhat universal nature of the container-bulk breakdown, data at customs declaration level with a bulk-container breakdown from the Cambodian Customs was also used for Nigeria. QBIS (2022)
- Import volume: According to QBIS (2023B), total containerised imports in 2016-2021 was around 850,000 TEU, resulting in 13.6 MT million in containers with an average cargo load of 16 MT per container leaving a residual of 31.0 MT million in bulk out of a total average of 44.5 MT million.
- To dampen variations from poor data quality and other outliers, this breakdown is made for a given period between 2016-2021.
- The results show, as expected, more import value in containers and more volume in bulk. For 2016-2021, the split between bulk-container is estimated to be 43%-57% by value and 62%-38% by volume.

Breakdown of bulk and containerised imports, 2016-2021



Source: QBIS based on Cambodian Customs, APM Terminals in Nigeria, CEPII BACI and UN Comtrade.

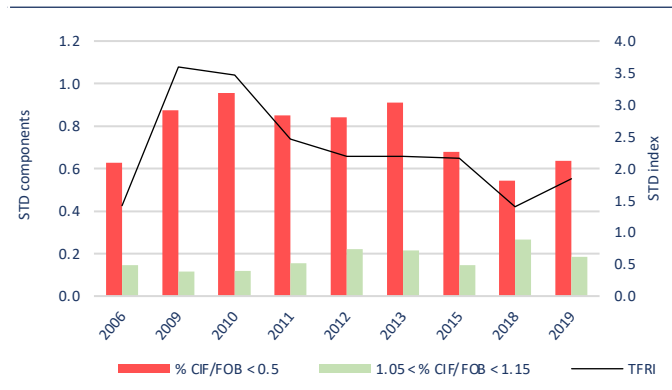
Appendix D: Trade Fraud Risk Index (TFRI) for Nigeria



Nigeria has reduced fraud with undervaluation of import value

- QBIS and the University of Copenhagen have jointly developed a Trade Fraud Risk Index (TFRI), which measures the extent of potential undervaluation of imports and lost customs revenue.
- According to this TFRI, Nigeria has significantly reduced the potential undervaluation of its imports since 2009, thereby reducing customs revenue fraud.
- This means that Nigeria has probably been able to increase its revenue from import duties for the greater benefit of the Nigerian society.
- The TFRI is based on the CIF/FOB ratio. CIF is the import value of a product plus transport and insurance costs, while FOB is the export value of a product.
- With a typical transport and insurance costs of around 5%-10% of FOB, and with no fraudulent valuation of the export and import values, the CIF/FOB ratio should be around 1.05-1.10, see green columns. This is characteristic of countries with high income with low corruption levels.
- However, with high levels of undervaluation and fraudulent practices, the CIF/FOB ratio is typically below 0.5, see red columns.
- As evident, Nigeria has reduced the red columns, while increased the green columns, especially since 2013. This in turn has reduced and improved the TFRI.

Trade Fraud Risk Index (TFRI) for Nigeria, 2006-2019



Source: QBIS based on CEPII TUV

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About QBIS

Quantifying Business Impacts on Society (QBIS) is a specialised research consultancy solely dedicated to socio-economic impact and feasibility studies of corporate business and investment activities.

QBIS' clients are typically international companies and organisations with activities and interests in manufacturing, energy, international trade, and transport and logistics.

QBIS' studies help clients document the social, economic and environmental impacts (positive and negative) of their activities, allowing them to engage more actively and fact-based with customers, investors and policymakers.

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