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HOW COMPETITION IS DRIVING PRICE INELASTICITY IN THE NIGERIAN HAULAGE MARKET

[1]C. Chris Ofonyelu and [2]Pius Isah

[1]Department of Economics, Adekunle Ajasin University, Akungba Akoko, Ondo state

Email: ofonyelu1@gmail.com

[2]Postgraduate student, Department of Economics, Adekunle Ajasin University, Akungba Akoko, Ondo state

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ABSTRACT

There is an intricate relationship between haulage pricing and diesel price change in Nigeria. The consensus in the literature suggests that change in diesel prices will always lead to changes in haulage pricing. However, the explanations did not recognize the role of competition and technology in affecting the relationship. This study examined the strength of the relationship between haulage pricing and diesel price change in Nigeria under three conditions: (a) with competition (b) with competition and new technology (c) with only new technology. The findings from the study showed that competition and technology reduce the elasticity between diesel and haulage pricing. Technology was seen as a stronger factor than competition in the relationship. The study suggests an increasing inelasticity between diesel price and haulage pricing in Nigeria using the period between 2010 and 2025 as a case study. Sustainable economic reforms in the oil sector must be competitiveness and technology driven.

Keywords: Haulage Pricing, Diesel Price, Competitiveness.

1. INTRODUCTION

The price of diesel is a major factor in the pricing of haulage in Nigeria's transport market. Transportation by road using heavy duty trucks dominate the Nigeria's haulage industry because of the country's underdeveloped railway infrastructure and limited inland water transport networks. Despite this, the Nigerian transportation policy have not shown any direction that the situation will change soon (Akinyemi, 2012). Strong diesel price elasticity exists because majorly heavy duty and haulage trucks are powered by diesel. As a result of this, the price and amount of diesel consumption for any trip constitute an important cost component when charging for haulage. The longer the distance, the more diesel to be consumed and the higher the bill. For this reason, haulage firms always raise their bills anytime the price of diesel rises and this account for the strong positive relationship between diesel price changes and hike in haulage bill. Diesel is a pervasive input in the production function of firms as well as a major cost ingredient in transportation. The general nature of the transportation industry in Nigeria requires that the underlying factors affecting its pricing be clearly understood. This is important for two main reasons.

First, there is a strong causality between diesel price rise and inflation in Nigeria. For instance, the decline in inflation from 18.02% in September to 16.05% in October 2025 was majorly as a result

Vol. 9, No. 01; 2026
ISSN: 2581-4664

of the fall in diesel and food prices. This represents the lowest level in over eight years since 2017. Looking through the year 2025, one would notice the consistent fall in diesel prices over the months and how it had impacted on the general food and market prices. Rise in diesel prices is always a precursor to spike in the general market prices and vice versa. Consequently, commodity prices have eased over time, resulting in a significant drop in headline inflation rate from 33.95 % in May 2024 to 16.05 % in October 2025. During the same period, the diesel price per liters fell from about N1400 per liter to an average of N1020.

Secondly, Nigeria is a potential emerging economy. As a result, understanding how diesel price impacts production prices will go a long way to reducing volatility and economic fluctuations which have become part of the characteristics of the economy. The economy relies heavily on diesel in building the necessary infrastructure such as roads and distribution of goods and services across the economy. It is important that a level of stability exist in the prices of the commodity. The foregoing factors suggest a very high diesel price elasticity in the haulage market. While these realities have persisted over this years, some recent development in the Nigeria economy shows that the economy may be entering a new phase of diesel price inelasticity as a result of the influence of competition and new technological innovation. This paper is focused on examining the growing inelasticity in haulage billing despite changes in diesel price changes and as well as the wider implications that the development portends for the future of the transportation industry in Nigeria. The discussion was under three perspectives: with competition, with a new technology introduction, and with competition and new technology combined. The Succeeding section discusses the literatures explaining the oil price pass through link in the haulage market. In the subsequent section, we presented a model explaining the nexus between haulage fares, diesel prices and the influence of competition and technology in the market. The last two sections discussed the implications of the unfolding relationship and conclusion.

2. CONCEPTUAL ISSUES AND STYLIZED FACTS

The economic literature is dominated with studies on the impact of oil prices on the macroeconomy (Bamaiyi (2024); Olisemeka et al (2024)). The studies focused on variables such as the gross domestic product, (un)employment, inflation, balance of payment and exchange rate and crude oil price. The crude oil is the primary raw material from which diesel is produced. The literature suggests that prices of crude oil and tradable resources will rise in response to expansions in the aggregate economy and changes in the macroeconomic variables (Eregha, Mesagan & Olawale (2015); Berument et al (2016); Nwoba et al (2017) and Babalola and Salau (2020)). One of the channels through which oil price impacts on the domestic economy is through the transportation and production costs. Haulage and transportation cost respond positively to rise in the price of oil. Being a major input in the production function across markets, rise in the price of diesel is automatically impacted into the domestic economy through the channels to raise the general price level (Richard and Dodo, 2023). Nigerian rely heavily on diesel for industrial production and transportation purposes. As a result, prices of goods and services tend to exhibit high elasticity to diesel price swings. There is a vital strategic linkage between diesel price hike and the movement of other variables in the economy. This nature of relationship has subsisted in the economy over the decades until recently. On one side of the market, the advent of Dangote refinery has brought a level of stability and steadiness of supply in the downstream sector which has greatly reduced price volatility within the local market. One is sure of steady availability of diesel at major filling

Vol. 9, No. 01; 2026
ISSN: 2581-4664

stations in recent time than what used to be the situation in the past years. On the other side, competition and new technological innovation have become increasingly deployed in the transportation and haulage industry in recent years. These developments join to impact on the extent to which changes in diesel price transmits as transportation costs. Economic literature explaining oil price transmission in the haulage market is hinged on the belief that the market is growing and rarely saturated. In reality, the Nigerian transportation market is highly competitive, saturated and fragmented with small, big, private, state-owned players as well as foreign rivals. The rising competition in the transportation industry calls for new means of adaptation and economic survival. Three main factors are important for our understanding.

First, competitiveness in modern haulage in Nigeria is determined by technology. This is because a competitive truck must be fuel efficient, new and relatively fuel price inelastic. There has been a major change in the truck importation statistics over the last three decades. As at 1990, over 60,000 vehicles were imported in Nigeria, out of which about 85% are foreign used. As at 2023, total imports of vehicles have have increased with less than 20% being trucks. The import statistics showed more than 60% reduction in the import of foreign used trucks. Mack, Man diesel, DAF, Scannia, Mercedes, Mark and Volvo brands used to be the primary brands of foreign used trucks imported for haulage over a decade ago. However, in recent years, the advent of the Chinese brands, such as Sinotruck, Faw, Foton, Shacman, etc, which are mostly imported as new vehicles have become dominant. One unique feature of the Chinese trucks is that they are fuel efficient compared to the European brands and this has made the brands to becoming dominant in modern fleets.

Second, most modern new trucks are built to run on compressed natural gas (CNG) or hybrid energy sources. This development has the advantage of saving the truck owners the risk of diesel theft by the drivers and at the same time saving costs. Drivers are used to selling part of the diesel in the truck tanks in attempt to make personal money. In facts, the introduction of CNG and/or electricity as the source of powering truck is a major relief to truck owners in taming the menace of fuel thefts. This technological development thereby deals a death blow to the correlation between trip distance and diesel consumption. The advent of gas powered trucks is a major game changer behind the diesel price stickiness in the haulage market as firms faces a diesel-invariant running cost.

Third, modern trucks are built with higher capacities. One of the significant developments in the haulage industry in the last two decades is that the trucks carrying capacities have changed. The use of higher capacity trucks exceeding 30, 40 and 45 tonnages have become more popular. With the situation, the average fuel consumption also reduces per tonnage. In facts, it is now easier and faster to load 45tonness truck than 15 or 30 tonnes truck in most manufacturing firms in Nigeria. The same is true about cross border trade across the west African countries. Using larger capacity trucks is cheaper for customers to move larger consignments than the smaller trucks. In the haulage market, there are two categories of operators. Those trucks that are owned by private or individual parsons, otherwise known as independent operators. The other category is the company or firmed owned/manage trucks. An example of company trucks is the case of Dangote transport which houses huge transport capacity to supply those good it produces. Another example is the golden transport company, which is a subsidiary of flourmills of Nigeria and is predominantly used in the haulage of flour, sugar and other products produced by the parent firm. These two categories of transportation firms exist and compete with each other. They both also respond differently to diesel

Vol. 9, No. 01; 2026
ISSN: 2581-4664

price changes. While company truck is motivated to pushing their products across territories and boosting sales, the independent operators are operated purely on business motive. These goals of their operations goes a long way to reducing the influence of diesel in determining haulage billing. Changes in the prices of diesel seizes to affect all the firms uniformly and do not exert the same impact in the market. Within the fast moving consumer goods (FMCGs) market, firms like flour mills of Nigeria (FMN), Crown Flour Mills, Nigerian Breweries and Coca-Coca HBC Nigeria Limited house huge haulage capacity as part of their selling and marketing strategies aside their engagements with third party partners for transportation (Ofonyelu, 2017 and 2024). The impact of this developments is that an implicit rivalry is created in the markets between company freighted operators and that of independent transporters. While companies tend to charge lower prices to make their products competitive and cheaper, the independent transporters charge differently. Most independent transporters use diesel to power their trucks unlike firm-based deliveries, such as Dangote, Bua and others who are the major originator of the use of CNG trucks. The continued deployment of trucks with fuel efficient technology has become a game changer in the transportation industry and the reason for the slow diesel price elasticity in haulage pricing.

Table 1: Freight fares of selected locations in Nigeria

Selected Locations	Distance (Km)	Haulage price (N)	Price per Km (N)
Lagos to Aba	605	1,300,000	2149
Lagos to Abakaliki	628	1,350,000	2150
Lagos to Abeokuta	100	380,000	3800
Lagos to Abuja	785	1,400,000	1783
Lagos to Kano	1060	2,000,000	1887
Lagos to Ado Ekiti	320	650,000	2031
Lagos to Akure	296	600,000	2027
Lagos to Benin	315	750,000	2381
Lagos to Enugu	560	1,250,000	2232
Lagos to Ibadan	130	450,000	3462
Lagos to Lokoja	518	1,100,000	2124
Lagos to Onitsha	452	1,100,000	2434
Lagos to Osogbo	225	550,000	2444
Lagos to Owerri	538	1,250,000	2323
Lagos to Port Harcourt	592	1,400,000	2365

Source: Compiled and computed

Note: Basis of computation: 600bags/30tonnes load of flour/sugar/cement from an independent transporter in the market

3. THE MODEL

In a typical haulage model, the price of a haulage trip is determined at two levels. In the first stage, the transporter takes the decision based on the price of inputs for the trip. For the sake of simplicity, diesel cost is assumed as the dominant input in the cost of transportation. As a result, changes in the price of diesel mirrors the size of the change in the pricing of a haulage trip. This is mainly the reason for the strong correlation between rise in diesel price and haulage fares in the past. In the

Vol. 9, No. 01; 2026
ISSN: 2581-4664

second stage, the transporter considers the economic environment as a determinant of the transport bill. Transportation business is one that is seriously affected by seasons and demand. Seasons affect general demand for goods and services and so also the turnover rate in transportation. During the rainy season, demand tends to be low and so price tend to respond sluggishly to diesel price spikes. In addition, roads at this period tend to be very flooded, bad and sometimes impassable. Despite the discouraging factors, the low sales demand forces many manufacturing to deliver goods with raising prices proportionally with diesel price changes. Demand pressure is a strong factor in transportation business and as a result price tend to be sticky in the face of low demand even when diesel prices are rising. Because of low sales, the pressure that used to be on company delivery eases and as a result most firms easily match their demand with the delivery capacities. The price invariant from the freighted and company delivered trucks causes the independent transporters to also retain their prices even when diesel prices are rising.

The Christmas season is another important season in the transportation business. At such period, demands tend to be high and as a result customers are willing to pay higher haulage bills to have their goods delivered and sold quickly. The rise in demand impresses on both company delivery and self-collections. At such period, changes in the price of diesel becomes irrelevant as the rise in demand causes the haulage firms to raise price and customers are willing to pay for the price rise irrespective of diesel price increments. Trucking costs include the cost of maintenance, servicing and tyres which all relates to the number of trips made over time. In the broad perspective, we can classify the factors determining haulage price as diesel price (hereafter denoted as δ) and demand related factors hereafter denoted as d).

We can specify the relationship as

$H = F(\delta, d)$

Where H= the haulage bill

δ = change in diesel price

d = general demand pressure on the economy

For the sake of simplicity, we represent the general demand pressures as the aggregate demand, GDP and relate against the changes in the diesel and haulage bills on a month-by-month basis. In pricing haulage trips, diesel bills constitute about 40% -50% of the total bill. This is the case with a typical diesel-powered truck and explains the strong link between changes in diesel price and haulage billing. The advent of the fuel efficient and CNG trucks have been evolutionary in the trucking and haulage business. In effect, the advent has reduced the consumption of diesel from what used to be 1litre to 2kilometres per trip for a loaded truck as obtained in the standard secondhand foreign used trucks trucks has improved to an average of 1litre to 3kilometres. The extra mileage and fuel conservation per kilometer is a major innovation that have improved and reshaped the pricing system in the transportation industry. The traditional European trucks such as Mandiesel, Volvo, Mercedes Benz, Iveco, Scania and Daf are not as fuel efficient as the Chinese brands such as Howo, Shacman, Foton, Dew, etc. The introduction of CNG truck also helped in reducing the cost of energy power.

Based on the rule of the thumb, haulage bills are charged as 250-300% the cost of diesel for short distance trips and about 200% for the long-distance trip. Trucks are known to be the leading consumer of diesel from the filling stations as well as the reason for the high demand for the resource in Nigeria. Should the consumption by the trucks continue to decline, the reality will be that there will not be much rewards for such investments in the future. In the same vein, the trend

Vol. 9, No. 01; 2026
ISSN: 2581-4664

is an indicator that there may not be much future for the continued use of imported used and refurbished diesel trucks from Europe when compared with the new trucks that are being imported from china which tend to be diesel efficient. Over time, the introduction of the CNG dependent truck have been a major game changer in the haulage industry and their pricing may be the determinant of haulage pricing in the industry irrespective of spike on diesel prices in the coming years.

Table 2: Diesel and haulage price changes compared

Years	2015	2020	2021	2022	2023	2024	2025
diesel price (N)	150	224	289	820	1100	1320	1100
price per kilometers (N)	1024	1617	1752	1832	1886	1891	1890
Cross correlations between diesel and haulage pricing	0.96	0.95	0.90	0.841	0.746	0.63	0.51

Source: Computed from compiled transport tariffs

A look at table 2 shows that a startling revelation. Over the decades, the strong correlation between diesel price and haulage pricing per kilometer has declined. The strength of the correlation reduced from about 96% experienced in 2015 to 51% in 2025. What is worrisome from this trend is that the relationship continues to weaken even into the near future. Based on the trend, the dominance of diesel in determining haulage price will become a thing of the past with the possibility that firms that do not adopt new competitive trucks may lose out in the market in the coming future. Table 3 shows further the cross correlation between diesel and haulage price changes in-between some selected years.

Table 3: Cross correlations across periods compared

Years	2010-2015	2010-2025	2021-2025	2023-2025
Cross-correlation	0.543	0.839	0.893	-0.006

Source: computed

Table 3 shows periodic comparison of the strength of the correlations. The years with the strongest correlation was between 2021 and 2025. The relationship reduced and became negative (-0.006) between 2023 and middle of 2025. In fact, the diesel-haulage price inelasticity was highest during this period. What this means that haulage firms must continually be competitive. Haulage firms who rely on old trucks that are not fuel efficient may lose out in competitiveness. Should the trend continue in the near future, general prices may be more stable as prices of goods and services depend majorly on haulage costs. The extent to which this happens depends majorly on competitiveness and innovation among firms in the industry.

4. FURTHER IMPLICATIONS

The falling relevance of diesel in haulage billing has a number of implications for the transportation industry and economy in general. First, the development is a product of competition.

Vol. 9, No. 01; 2026
ISSN: 2581-4664

Competition is known to drive innovation and lower market prices. The declining relationship shows that haulage pricing in Nigeria may remain relatively stable over a long period in Nigeria. A look at the industry shows that haulage pricing has remained relatively stable over the last three years. The stability remained despite the fact that diesel prices and other associated costs with trucking has changed over the years. Oil prices are known to be volatile and the volatility affects production processes that are depended on oil as its input costs.

Second, the innovation in the industry is driven by competition. Competition help to ensure price stability by internalizing cost and leading to least cost production. This development ensures that factors that could ordinarily lead to price changes are internalized into the production functions.

Table 4: Relating diesel prices with aggregate demand and haulage prices

Years	GDP at constant prices ₦'B	diesel price ₦	Haulage prices per kilometer* ₦
2010	54.61	130	781.25
2011	57.51	150	846.36
2012	59.94	141	911.5
2013	63.94	221	1041.67
2014	67.98	145	1050
2015	69.78	155	1050
2016	68.65	185	1075
2017	69.21	210	1150
2018	70.54	225	1302
2019	72.09	230	1350
2020	70.81	235	1432
2021	73.38	265	1450
2022	75.77	820	1562.5
2023	77.94	1125	1692.7
2024	80.61	1420	1757.8
2025	372.8	1020	1783

Source: computed

*The haulage price was calculated for the billing of a 30tonnes load from Lagos to Abuja of an independent transporter

The existence of company delivery alongside with self-collection options makes it difficult for a single section of the market to want to hike price without the general market being affected. The result of these actions leads to the market being stable and price inelasticity.

Third, demand is a stronger factor affecting transport fares than diesel price hike. Haulage prices may not rise unless there is an appreciable general increase in economic activities in the economy which is beyond the capacity of the extant truck size. In a situation where truck size rises in response to increase in demand, there may not be pressure on demand to raise prices as a result of competition. Competition exerts a stronger influence on price regulation than change in the costs of inputs.

Vol. 9, No. 01; 2026
ISSN: 2581-4664

Table 5: Correlating diesel prices with determinants with different market conditions

Haulage prices	Without competition	With competition	With competition and new technology	With tech efficient trucks
Diesel price	0.785	0.605	0.508	0.527
GDP	0.682	0.612	0.360	0.675
Road quality/bad	0.444	0.321	0.379	0.431
Season/rainy	0.358	0.158	0.220	0.194

Source: Authors' computation

Table 5 showed that competition is a leveler in the relationship between diesel price and haulage pricing. With competition, transporters attach greater weights to survival and as a result seek to charge lesser even when diesel prices must have risen more. We also notice similar trend with the influence of technology in the sector. While technology improves fuel efficiency, it also reduces the diesel price elasticity across the different categories. The study supports a long standing suggestion in microeconomic literature that competition offer lesser prices and drives innovation. Economic policy should create an environment for healthy and innovative competition.

5. CONCLUSION

The relationship between haulage pricing and diesel price change in Nigeria is one area that affects economic policy reforms. This is because haulage cost affects general prices of goods and services. The consensus in the literature suggests that change in diesel prices will always lead to changes in haulage pricing. However, the explanations did not recognize the role of competition and technology in affecting the relationship. This study examined the extent to which changes in diesel price have affected haulage pricing over the decades. Diesel is a major input cost in costing of haulage bills. As a result, there exist a very strong and positive relationship between change in its price and haulage pricing over the years. In recent time, this relationship has changed as haulage prices have remained relatively stable even while diesel prices continued to change. This paper found a positive relationship between diesel price change and haulage pricing in Nigeria. In addition, competition was observed as major factor leading to the stability in haulage pricing. The study suggests an increasing inelasticity between diesel price and haulage pricing in Nigeria using the period between 2010 and 2025 as a case study. Sustainable economic reforms in the oil sector must ensure competiveness and new innovations.

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Vol. 9, No. 01; 2026
ISSN: 2581-4664

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