Scientific Research Publishing

Modern Economy, 2026, 17(9), 1254-1274
https://www.scirp.org/journal/me
ISSN Online: 2152-7261
ISSN Print: 2152-7245

The Economic Impact of Rising Fuel Prices in New Zealand: Consumer Behavior, Market Structure, and Flow-On Effects

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How to cite this paper: Yang, H. (2026). The Economic Impact of Rising Fuel Prices in New Zealand: Consumer Behavior, Market Structure, and Flow-On Effects. *Modern Economy, 17,* 1254-1274.
https://doi.org/10.4236/me.2026.179060

Received: June 17, 2026
Accepted: September 21, 2026
Published: September 24, 2026

Abstract

IRecent geopolitical tensions in the Middle East have disrupted global oil supply chains, contributing to substantial increases in fuel prices worldwide. As New Zealand relies heavily on imported fuel, these price increases have had significant economic implications for households, businesses, and the government. This paper examines the impact of rising fuel prices on consumer behavior, market structure, and the broader flow-on effects within the New Zealand economy. Economic concepts including demand, price elasticity of demand, income elasticity of demand, cross-price elasticity of demand, tax incidence, and oligopoly are applied to explain changes in consumer behavior and market competition. The analysis shows that fuel demand is relatively price inelastic because fuel is a necessity with limited short-run substitutes, resulting in consumers bearing a larger share of higher fuel costs while reducing expenditure on discretionary goods and services. The paper also explores how the oligopolistic nature of New Zealand's fuel market influences firm behavior, encouraging non-price competition rather than aggressive price competition. Furthermore, the report discusses the short- and long-term impacts on consumers, producers, and the government. Overall, the findings highlight that rising fuel prices significantly affect consumer behavior and the New Zealand fuel market, creating important flow-on effects for consumers, producers, and the government.

Keywords

Fuel Prices, Consumer Behavior, Price Elasticity of Demand, Tax Incidence, Oligopoly, New Zealand

1. Introduction

As the tensions in the Middle East involving the US, Israel, and Iran have intensi-

fied, the global oil market has faced significant disruption. The conflict has led to ongoing restrictions and uncertainty in the Strait of Hormuz, a key shipping route through which around 20% of the world's oil supply is transported, resulting in unprecedented rises in fuel prices. Since New Zealand relies heavily on imported fuel, these increased international prices have surged "the petrol prices by 33.6% and diesel by 94.9% in the two months." (Stats NZ, 2026, 15 May, para.3) This report presents a conceptual economic analysis of the impact of rising fuel prices on consumer behavior, market structure and competition, and the resulting flow-on effects on consumers, producers, and the government.

2. Impact on Consumer Behavior

Due to this boost in fuel prices, consumer demand has changed. This trend can be explained by demand, price elasticity of demand, income elasticity of demand, and cross-price elasticity of demand (**Figure 1** and **Figure 2**).

2.1. Demand

Demand is consumers' willingness and ability to purchase fuel at different prices (**Figure 1**). There is an inverse relationship between quantity demanded and price, as explained by the Law of Demand, which states that when the price of fuel increases, the quantity demanded decreases, vice versa, ceteris paribus. As a result, the demand curve (D) slopes downward. This relationship arises from the substitution effect and income effect. The substitution effect occurs when the price increases; consumers look for cheaper alternatives to fuel, such as public transport or carpooling, and therefore buy fewer liters of fuel. The income effect happens because high fuel prices reduce consumers' purchasing power, making them feel relatively poorer and purchase fewer liters of fuel.

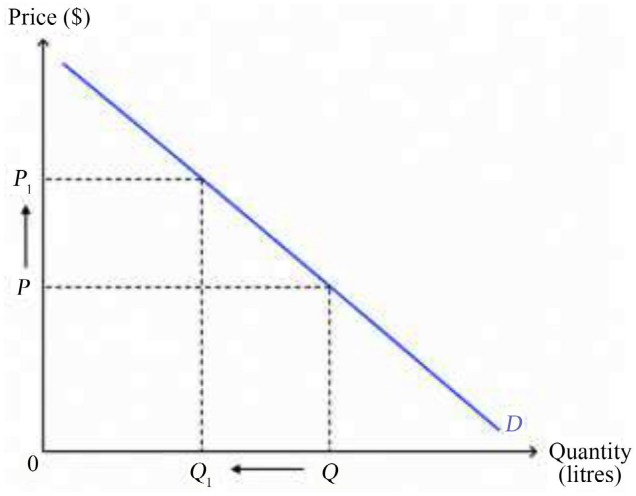


Figure 1. Demand curve of fuel.

The Law of Diminishing Marginal Utility can also be a reason for the Law of Demand. It states that as more fuel is consumed in successive equal quantities,

marginal utility (MU), which is defined as the additional satisfaction gained from consuming each extra liter, decreases. This means total utility (TU) increases but at a decreasing rate. According to the optimum purchase rule, a rational consumer maximizes utility up to the point where price equals marginal utility. When price is greater than marginal utility, the purchase is not worthwhile because the price paid exceeds the satisfaction earned. Consuming beyond a point where MU = 0 leads to a loss of utility, indicating overconsumption and negative marginal utility. This signals that the marginal utility curve, where price is equal to or less than marginal utility, becomes the demand curve (*D*), as shown in Figure 2.

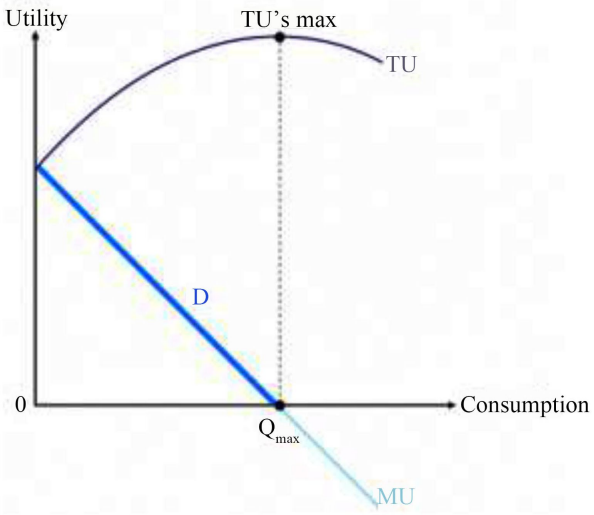


Figure 2. Marginal utility and total utility curves.

2.2. Price Elasticity of Demand (PED)

Price elasticity of demand measures the responsiveness of quantity demanded (Q_d) to a change in price (P). This elasticity is crucial because it measures how changes in price affect consumers' fuel budgets, enabling firms to set optimal pricing strategies and consumers to make informed purchasing decisions. It is defined as the ratio of the percentage change in quantity demanded to the percentage change in price. Economists also use the midpoint method to calculate the PED because it eliminates bias caused by the direction of change and is more accurate. The absolute value of PED is shown without including a negative sign, as the percentage change in quantity demanded will always be negative if the percentage change in price is positive, vice versa, due to the Law of Demand (Table 1).

Table 1. Calculating PED.

Percentage change method		Mid-point method	
$\text{PED} = \dfrac{\%\Delta Q_d}{\%\Delta P}$	(1)	$\text{PED} = \dfrac{Q_{d2} - Q_{d1}}{P_2 - P_1} \times \dfrac{P_1 + P_2}{Q_{d1} + Q_{d2}}$	(2)

There are three determinants of PED: availability of substitutes, necessity and

luxury goods, and time frame.

1) Availability of substitutes:

When more alternatives are available, demand becomes more elastic because consumers can easily switch to other options when the price of a good increases. This means that consumers' sensitivity to price changes is high. Conversely, when fewer or no alternatives exist, consumers have limited choice and are more likely to continue purchasing despite price increases, making demand more inelastic.

2) Necessity and luxury goods:

Necessities such as medicine and electricity tend to be inelastic because consumers require them regardless of price changes. This means that even if prices rise, consumption will not be reduced significantly. On the other hand, luxury goods like designer clothes and overseas holidays tend to be elastic because they are not essential. Consumers can postpone or avoid purchasing these goods if their prices increase, leading to a huge decrease in quantity demanded.

3) Time frame:

Demand becomes more elastic over time as consumers find alternatives and have time to adjust their habits. In the short run, consumers may continue purchasing the same goods or services because they cannot immediately change their routines. However, in the long run, they can invest in substitutes and alter their consumption patterns, making demand more responsive to price changes.

Table 2. Boundaries of PED.

PED value	Categories of elasticity
PED = ∞	Perfectly elastic
PED > 1	Elastic
PED = 1	Unit elastic
PED < 1	Inelastic
PED = 0	Perfectly inelastic

For example, using the percentage change method (Table 2), if the PED value is 1.5, quantity demanded decreases by 15% while price increases by 10%. The percentage change of quantity demanded (15%) is disproportionately greater than the percentage change of price (10%), meaning consumers are highly responsive to the price change. Therefore, demand is considered elastic.

For example, using the mid-point method shown by Equation (1), if the price was \$2.00 and increased to \$5.00 while the quantity demanded was 10 and decreased to 5, the PED value is 0.78, indicating that consumers are relatively unresponsive to price changes.

$P_1 = \$2.00$, $P_2 = \$5.00$, $Q_{d1} = 10$, $Q_{d2} = 5$

$$\text{PED} = \frac{5-10}{5.00-2.00} \times \frac{2.00+5.00}{10+5} = \frac{-5}{3.00} \times \frac{7.00}{15} = -0.77\cdots = 0.78 \quad \text{(2s.f)} \quad (3)$$

Each category of PED has a different demand slope as follows (Figure 3):

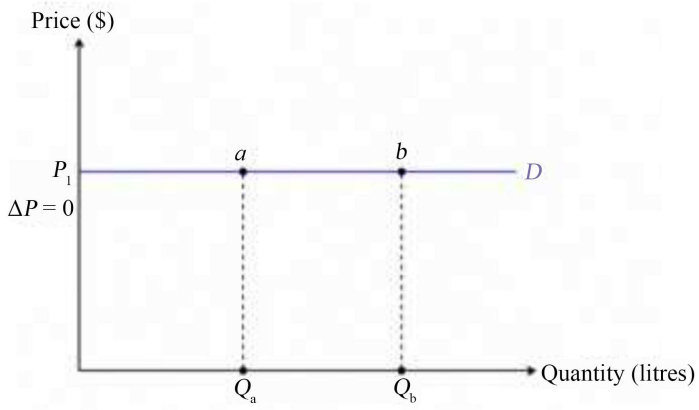


Figure 3. Perfectly elastic demand curve.

For PED = ∞ (Perfectly elastic), the demand curve is horizontal because consumers are extremely sensitive to price changes. At P_1, fuel can be sold at any quantity, such as Q_a or Q_b. However, when the price increases, the quantity demanded instantly drops to zero. This means the percentage change in quantity demanded is positive, while the percentage change in price is zero (Figure 4).

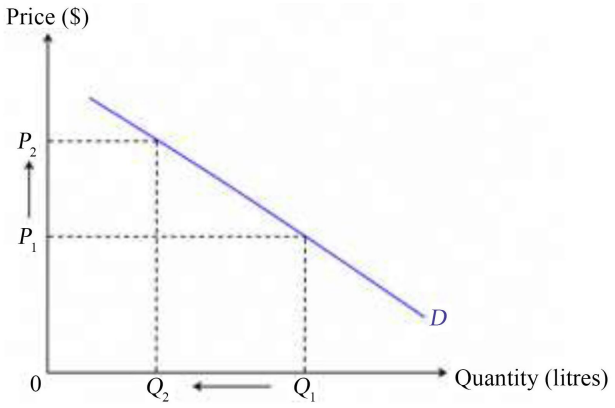


Figure 4. Elastic demand curve.

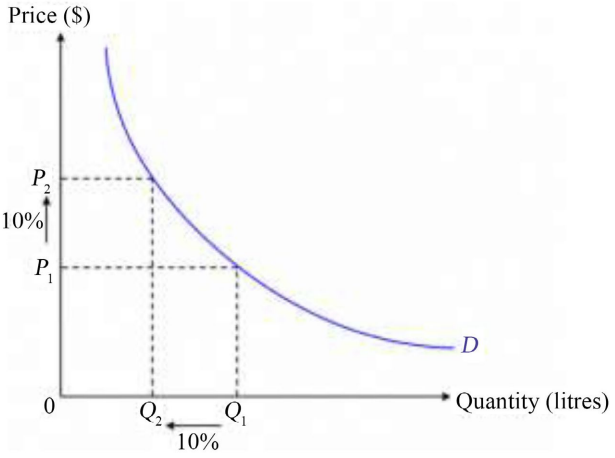


Figure 5. Unit elastic demand curve.

For PED > 1 (Elastic), the gradient is relatively flat. Consumers are relatively sensitive to price changes. When there is an increase in price ($P_1 \rightarrow P_2$), the quantity demanded will decrease by a relatively massive amount ($Q_1 \rightarrow Q_2$). This means the percentage change in quantity demanded is disproportionately larger than the percentage change in price (Figure 5).

For PED = 1 (Unit elastic), the demand curve is a rectangular hyperbola. When there is an increase in price by 10% ($P_1 \rightarrow P_2$), the quantity demanded will decrease by 10% ($Q_1 \rightarrow Q_2$). This means that the percentage change in quantity demanded is proportionate to that of price (Figure 6).

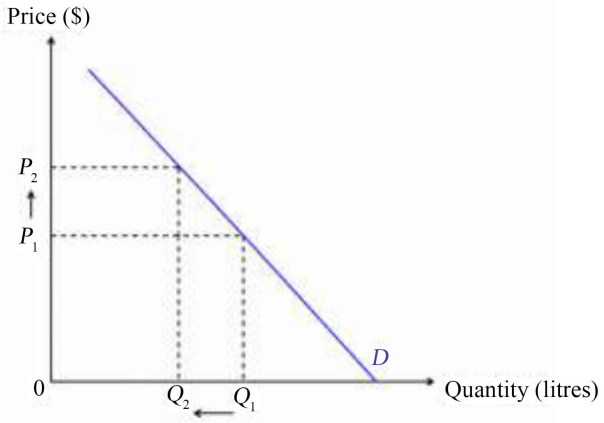


Figure 6. Inelastic demand curve.

For PED < 1 (Inelastic), the gradient is relatively steep as consumers are relatively unresponsive to price changes. When there is an increase in price ($P_1 \rightarrow P_2$), the quantity demanded will decrease only slightly ($Q_1 \rightarrow Q_2$). This means the percentage change in quantity demanded is disproportionately smaller than the percentage change in price (Figure 7).

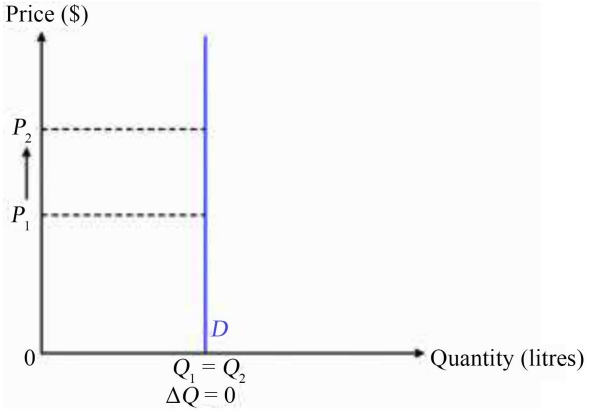


Figure 7. Perfectly inelastic demand curve.

For PED = 0 (Perfectly inelastic), the demand curve is vertical since consumers are not responsive to price changes. For every price, the quantity demanded is

always the same. When there is an increase in price ($P_1 \rightarrow P_2$), the quantity demanded will not change ($Q_1 = Q_2$). This means the percentage change in quantity demanded is zero, while the percentage change in price is positive or negative.

In addition to being identified by differences in the slope of the demand curve, PED varies along a straight diagonal demand curve (**Figure 8**).

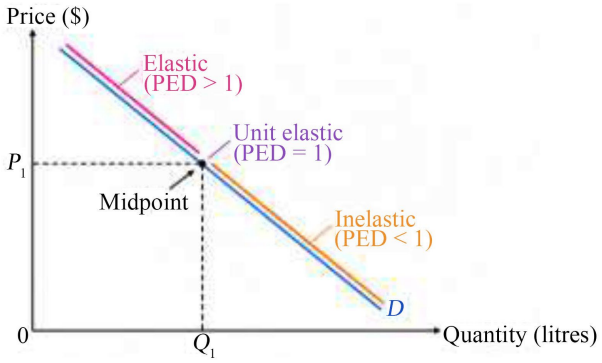


Figure 8. Elasticities along demand curve.

This occurs because elasticity measures percentage changes instead of absolute changes. At the upper section, the PED is elastic. This is because quantity demanded is relatively low and price is relatively high, so a change in quantity demanded represents a larger percentage change than an equivalent change in price. In contrast, in the lower section, the PED is inelastic. This is because quantity demanded is relatively high and price is relatively low, so the percentage change in quantity demanded is smaller than the percentage change in price for the same numeric change. At the midpoint, demand is unit elastic because the percentage changes in quantity demanded and price are equal, resulting in PED = 1. Therefore, these sections mean that as price increases, the demand curve is more elastic.

According to Hyslop et al. (2023), the estimated price elasticity of petrol demand in New Zealand is approximately −0.66 across all households. This reveals that if the percentage change in price is +20%, the percentage change in quantity demanded for fuel is −13.2%. Therefore, as the value is less than 1, the demand for fuel is considered price inelastic.

$$\text{PED} = \frac{-13.2\%}{+20\%} = -0.66 \tag{4}$$

Classifying fuel as price inelastic is reasonable because it is a necessity that many households and firms cannot easily replace, especially in the short run. Many households rely on private vehicles to travel to work, school, and other daily activities, so they cannot substantially reduce fuel consumption. They may have to cut spending on other goods and services while continuing to buy fuel. Moreover, consumers require time to modify their transport habits, such as switching to a more fuel-efficient vehicle. Therefore, the quantity demanded decreases by a disproportionately smaller percentage than the increase in price, meaning its demand curve would look like **Figure 6**, which has a steep gradient.

2.3. Income Elasticity of Demand (YED)

Income elasticity of demand indicates how responsive the quantity demanded of fuel is to a change in income (Y). It is found as the ratio of the percentage change in quantity demanded to the percentage change in income. The mid-point formula can also be used to calculate it. The YED value reveals whether fuel is a normal good, necessity good, luxury good, or inferior good (Table 3 and Table 4).

Table 3. Calculating YED.

Percentage change method		Mid-point method	
$\text{YED} = \frac{\%\Delta Q_d}{\%\Delta Y}$	(5)	$\text{YED} = \frac{\Delta Q_d}{(Q_{d1} + Q_{d2})/2} \div \frac{\Delta Y}{(Y_1 + Y_2)/2}$	(6)

Table 4. Boundaries of YED.

YED value	Categories of elasticity
YED > 0	Normal goods
0 < YED > 1	Necessity goods
YED > 1	Luxury goods
YED < 0	Inferior goods

For example, using the percentage change method, if the YED value is 2.0, the percentage change in quantity demanded is +20% when income increases by 10%, meaning quantity demanded increases by a larger percentage than the rise in income. This indicates that consumers are strongly responsive to income changes, meaning that the good is a luxury good.

Normal goods, such as brand-name clothing, restaurant meals, and vacations, are goods that consumers tend to buy more of when their income rises. This means that an increase in income leads to an increase in quantity demanded, making the YED positive.

Necessity goods, such as groceries, electricity, and medications, are a type of normal good. Although quantity demanded increases when income rises, the increase is less than proportionate because consumers already purchase these goods regularly to meet basic needs. Once these needs are satisfied, higher incomes do not lead to significantly greater consumption, giving them a YED between 0 and 1.

Luxury goods, such as designer clothing, yachts, and high-end jewelry, are a special type of normal goods. Demand for these goods is highly responsive to income changes because they are not essential and often purchased only when consumers have sufficient disposable income. As a result, an increase in income leads to a more than proportionate increase in quantity demanded, making their YED greater than 1.

Inferior goods, such as instant noodles, canned food, and public transportation, are goods for which demand decreases as income increases. As consumers become

wealthier, they are more likely to switch to higher quality or more desirable alternatives. Consequently, an increase in income decreases quantity demanded, resulting in a negative YED.

Fuel is a common example of a necessity because it is a vital product for living. Consumers already purchase it to satisfy their basic transport needs. This means that while an increase in disposable income will raise the quantity demanded of fuel, the increase will be less than proportional to the increase in disposable income.

2.4. Cross-Price Elasticity of Demand (CED)

Cross-price elasticity of demand measures how the quantity demanded for one good responds to a price change in another good. It is calculated as the ratio of the percentage change in the quantity demanded of Good A (Q_{dA}) to the percentage change in the price of Good B (P_B). The mid-point method can also be used to find it. The CED value signifies whether the two goods are substitutes, complements, or unrelated (Table 5 and Table 6).

Table 5. Calculating CED.

Percentage change method		Mid-point method	
$\text{CED} = \frac{\%\Delta Q_{dA}}{\%\Delta P_B}$	(7)	$\text{CED} = \frac{\Delta Q_{dA}}{(Q_{dA1} + Q_{dA2})/2} \div \frac{\Delta P_B}{(P_{B1} + P_{B2})/2}$	(8)

Table 6. Boundaries of CED.

CED value	Categories of elasticity
CED > 0	Substitutes
CED = 0	Unrelated goods
CED < 0	Complements

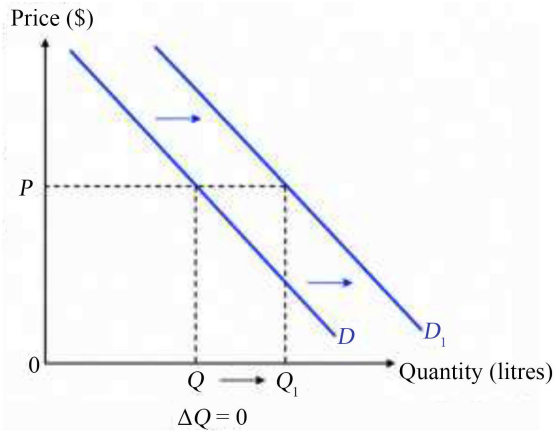


Figure 9. Demand curve for fuel (1).

Substitute goods are products that replace each other. For fuel, public transport, carpooling, electric cars, and hybrid cars are its substitutes. When the price of fuel increases ($P \rightarrow P_1$ on Figure 9), consumers buy less fuel ($Q \rightarrow Q_1$ on Figure 9)

because it becomes less affordable. Consumers switch to more attractive, cheaper alternatives. This causes the marginal utility of public transport, a substitute, to rise because they value it more than fuel. With higher MU, more consumers are willing to use public transport at each price, increasing the demand for public transport ($D \rightarrow D_1$ on Figure 10). This means that quantity demanded increases ($Q \rightarrow Q_1$ on Figure 10), while the price remains the same at P. This indicates a positive relationship between the price of fuel and the quantity demanded of public transport. Therefore, the CED value is greater than zero. For instance, a 15% rise in the price of fuel leads to a 20% increase in the quantity demanded of public transport, making the CED 0.75.

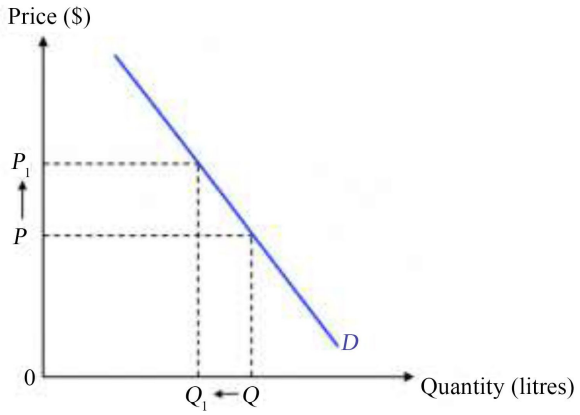


Figure 10. Demand curve for public transport.

$$\text{CED} = \frac{+15\%}{+20\%} = 0.75(>0) \tag{9}$$

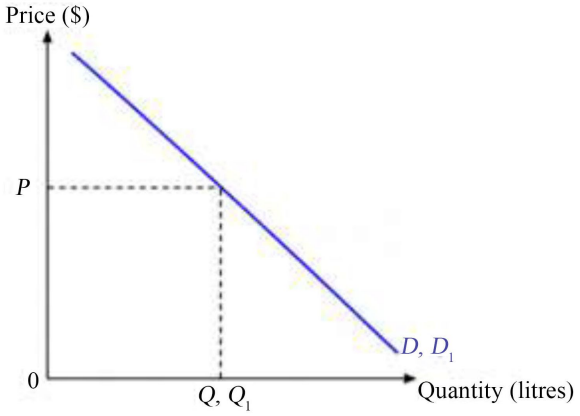


Figure 11. Demand curve for fuel (2).

Unrelated goods are products that have no connection in consumption. For example, fuel and a movie ticket can be unrelated as they satisfy entirely different wants. When the price of fuel increases ($P \rightarrow P_1$ on Figure 11), consumption decreases ($Q \rightarrow Q_1$ on Figure 11) because it is no longer as affordable as before.

However, this does not affect the MU of the movie ticket, leaving the demand for the movie ticket unchanged ($D = D_1$ on Figure 12). This shows no relationship between the price of fuel and the quantity demanded of a movie ticket, so the CED value is zero. For instance, the CED is 0 when a 20% increase in the price of fuel causes a 0% change in the quantity demanded of a movie ticket.

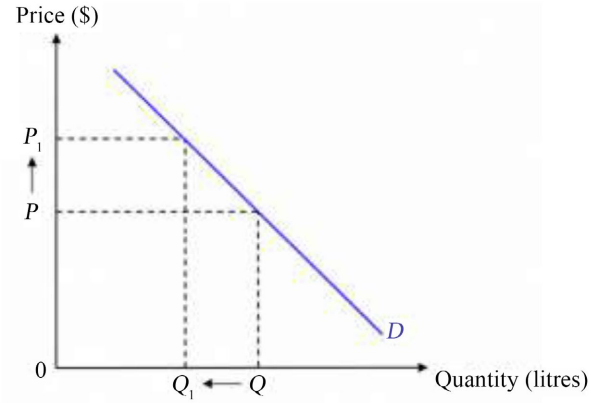


Figure 12. Demand curve for a movie ticket.

$$\text{CED} = \frac{0\%}{+20\%} = 0 \tag{10}$$

Complementary goods are products that are typically purchased together. Petrol and diesel cars, motorcycles, and trucks are its complements. When the price of fuel increases ($P \rightarrow P_1$ on Figure 13), consumers purchase less of it ($Q \rightarrow Q_1$ on Figure 13) as it becomes less affordable. Because fuel and cars are used together, the MU of cars falls. With lower MU, fewer consumers are willing to buy cars at each price. Consequently, the demand for cars decreases ($D \rightarrow D_1$ on Figure 14), resulting in a decrease in the quantity demanded ($Q \rightarrow Q_1$ on Figure 14) while the price is unchanged (P). This reveals a negative relationship between fuel price and the quantity of cars demanded. As a result, the CED value is less than zero. To illustrate this, the CED is −1.5 when a 30% decrease in the quantity demanded of cars results from a 20% rise in the price of fuel.

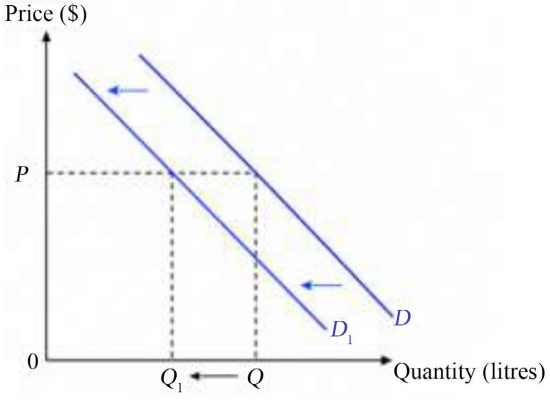


Figure 13. Demand curve for fuel (3).

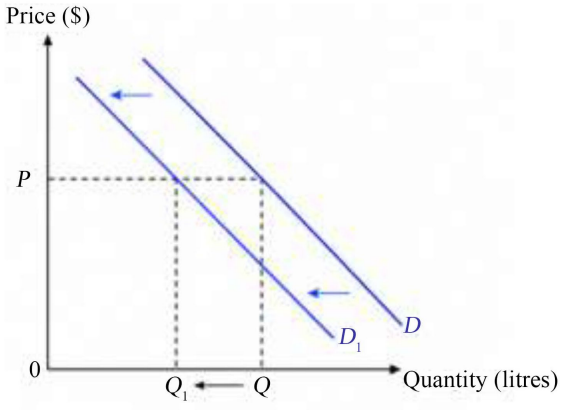


Figure 14. Demand curve for cars.

$$\text{CED} = \frac{-30\%}{+20\%} = -1.5(<0) \tag{11}$$

2.5. Tax Incidence

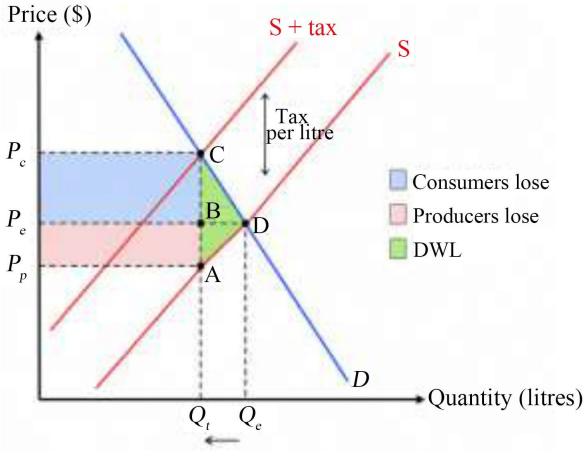


Figure 15. An excise tax on the fuel market.

In New Zealand, petrol drivers are charged a national excise tax of $0.77 per liter (MBIE, 2026, April 10), which is shown by the vertical distance between the two supply curves. Because of this tax, the supply curve shifts upward to ($S \rightarrow S+$ tax) by the amount of the tax per liter. As a result, the new price paid by consumers ($P_e \rightarrow P_c$) increases while the new price received by producers decreases ($P_e \rightarrow P_p$), decreasing quantity ($Q_e \rightarrow Q_t$) and creating Deadweight loss (DWL), which represents the loss of allocative efficiency. Tax incidence, which refers to how the burden of a tax is shared between consumers and producers, can be used to determine who bears a greater proportion of the tax burden. As shown on the **Figure 15**, the area of consumer burden (P_cCBP_e) is larger than the area of producer burden (P_pABP_e), indicating consumers bear a greater proportion than producers. Theoretically, the distribution of a tax burden depends on the relative elasticities of both demand and supply. While demand for fuel is highly price inelastic (PED =

−0.66), this tax incidence conclusion assumes that the short-run price elasticity of supply (PES) for fuel is relatively more elastic than demand. Because consumers are less responsive to price changes and continue buying fuel, producers can pass a larger proportion of the tax on to consumers.

2.6. Flow-On Effects

2.6.1. Consumers

Consumers experience a fuel shortage due to the supply disruption. As the fuel importers struggle to source adequate fuel, the supply of fuel decreases ($S \rightarrow S_1$). The resulting shortage leads consumers to bid up the price to eliminate it, moving the market toward a new equilibrium (e_1) where quantity demanded equals quantity supplied. At this new equilibrium, the price increases ($P_e \rightarrow P_{e1}$) while the equilibrium quantity decreases ($Q_e \rightarrow Q_{e1}$). However, the decrease in the quantity is relatively slight because fuel is price inelastic (PED = 0.286). This showcases that they are unresponsive to price changes and continue purchasing fuel despite the higher price. Consequently, consumers, particularly commuters whose commuting costs increase, spend a larger proportion of their disposable income on fuel. This leaves less available for other goods and services, potentially decreasing demand for other goods (Figure 16 and Figure 17).

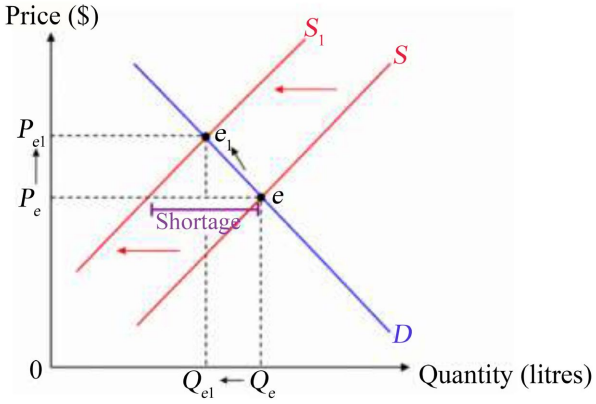


Figure 16. Demand and supply curves in the fuel market.

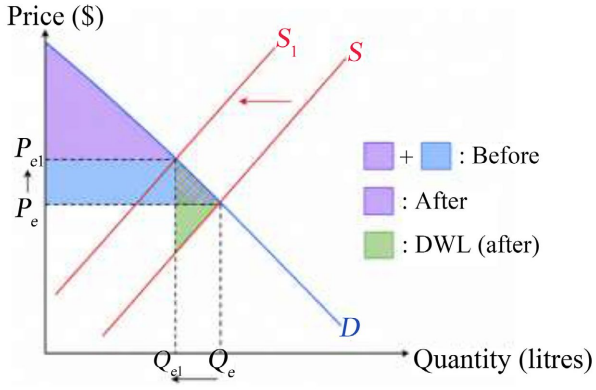
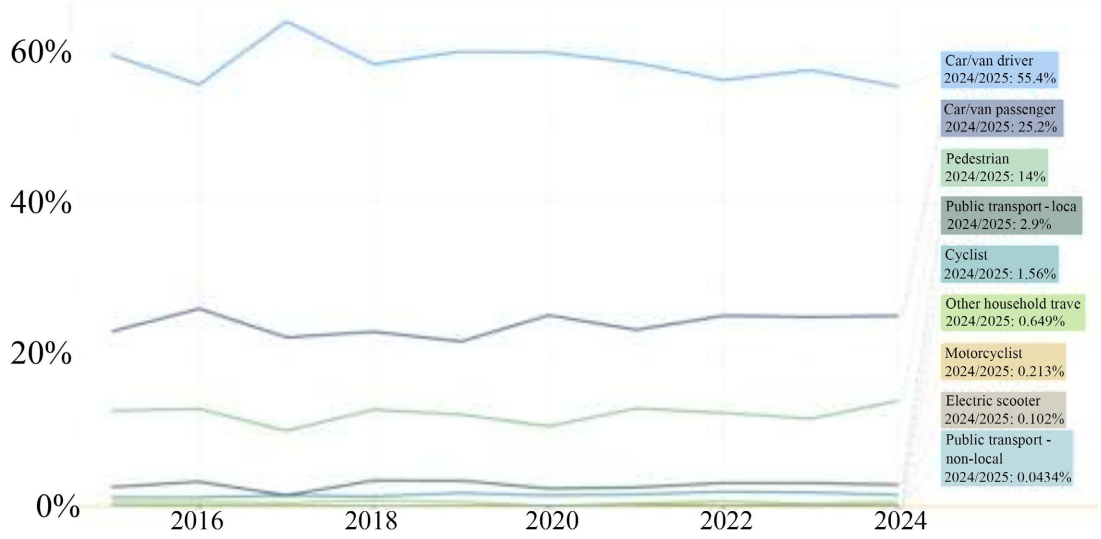


Figure 17. Consumer surplus change.

Due to this new equilibrium, the economy does not produce the exact amount of fuel society desires, as allocative efficiency is no longer achieved because deadweight loss (DWL) exists. Additionally, the consumer surplus, which is the difference between the price consumers are willing to pay and the price consumers actually have to pay to obtain fuel, decreases by the sky blue area as shown on Figure 16. This means that consumers receive less benefit from purchasing fuel and are worse off than before. As a result, they may become more conscious of their fuel usage by reducing unnecessary travel, combining multiple journeys into one, increasing carpooling, and looking for substitutes like public transport. They may also adjust their spending by cutting expenditure on discretionary goods and services such as entertainment, brunch, and holidays to afford higher fuel costs, which may lower quality of life as a result.



Source: Ministry of Transport (https://www.transport.govt.nz/statistics-and-insights/household-travel).

Figure 18. Annual share of all trips in NZ by mode of use.

To combat this in the short run, consumers can use public transport, as mentioned above. However, the Figure 18 indicates that New Zealand households rely heavily on private vehicles, with only 0.0434% + 2.9% = 2.9434% using public transport. This suggests that many consumers have limited alternatives and therefore cannot significantly reduce their fuel consumption. Instead, consumers may delay discretionary spending and prioritize essential expenses.

In the long run, consumers may continue looking for substitutes and consider more permanent alternatives, as they have ample time to change their behavior. However, switching to public transport may still be difficult, as most New Zealanders rely on private vehicles and public transport options are limited outside a few major cities like Auckland and Wellington. This means consumers, particularly those in rural areas with fewer public transport options, may instead consider saving for more fuel-efficient alternatives like hybrid or electric cars. Nonetheless, lower-income households may find it difficult to make this transition because of

the high cost of purchasing these vehicles and their tight budgets, which are further strained by higher fuel prices.

2.6.2. Producers

While total revenue, calculated as price (P) * quantity (Q), received by fuel producers is likely to increase because fuel has price-inelastic demand (PED = −0.66) and fewer substitutes, higher revenue does not necessarily translate into greater profitability for fuel retailers. It is critical to distinguish between retail fuel revenue and producer profit. The surge in pump prices is largely driven by a sharp rise in wholesale procurement costs and global crude oil prices resulting from supply chain disruptions. Because wholesale input costs increase alongside retail prices, retail profit margins may remain unchanged or even contract. Consequently, despite top-line revenue growth, the firms do not automatically gain higher profit, and their ability to reinvest may be constrained by elevated operational and supply costs. Only if businesses retain a net profit margin despite rising wholesale costs can they use any surplus earnings to invest in business development, infrastructure, and operational improvements. On the other hand, firms in other industries may receive less revenue as households reduce spending on other goods and services because they spend a larger proportion of their disposable income on fuel (Figure 19).

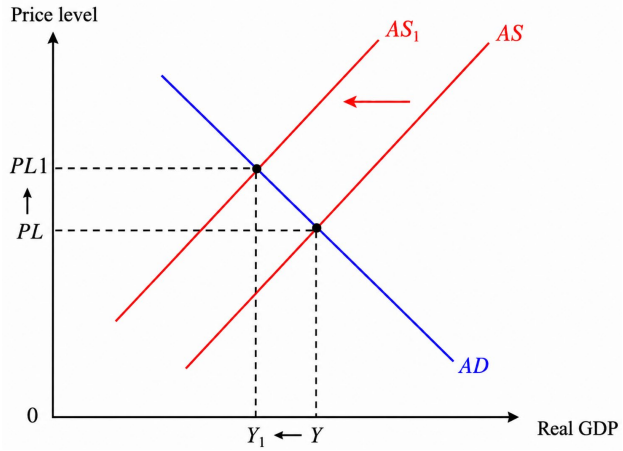


Figure 19. Cost-push inflation.

In the long run, cost-push inflation may occur as firms in other sectors heavily dependent on fuel, such as transportation, manufacturing, construction, and agriculture, face higher production costs due to increased fuel prices. This results in aggregate supply decreasing ($AS \rightarrow AS_1$), increasing the price level ($PL \rightarrow PL_1$) while decreasing real GDP ($Y \rightarrow Y_1$). These higher costs may reduce profitability in other industries and force firms to raise prices. This reduces consumers' purchasing power. If prices remain high over an extended period, these companies may invest in fuel-efficient technologies or adopt alternative energy resources such as biofuels to decrease their dependence on fuel, which may decrease demand in the fuel market.

2.6.3. Government

The government may receive less excise tax revenue as fuel consumption decreases. To restore fuel consumption and reduce the financial burden on households, the government may provide subsidies to consumers, increasing demand for fuel. However, subsidies represent government expenditure and may place pressure on the government's budget, potentially reducing the funds available for other public services and projects. Alternatively, the government could reduce the excise tax, lowering the price paid by consumers and encouraging fuel consumption. However, this would reduce tax revenue, prompting the government to cut its funds for other industries. Another option is to lower the public transport fares or provide free public transportation. This would offer consumers a more affordable substitute for private vehicles and help reduce their dependence on fuel.

In the long term, they could increase investment in public transport infrastructure. This would improve the availability and accessibility of public transport, making it a stronger substitute for fuel and private vehicles and lessening vulnerability to future oil price shocks.

3. Market Structure and Competition

3.1. Oligopoly

An oligopoly is a market structure dominated by a small number of large firms with significant market power (Pettinger, 2016). The New Zealand fuel market is best defined as an oligopoly because New Zealand currently has "'three majors' BP, Mobil, and Z Energy and two smaller companies Gull and Timaru Oil Services" (MBIE, n.d., para.5). Each firm holds a substantial share of the market and thus can influence pricing decisions. High barriers to entry exist because the current firms are well known in the industry. In addition, entering the market requires considerable capital investment in fuel stations, storage facilities, distribution networks, and supply chains, as well as access to fuel derived from crude oil, a scarce natural resource, controlled by a limited number of global suppliers. Furthermore, the large sunk costs associated with this infrastructure, which are expenses that cannot be recovered, lead to high barriers. Because only a few businesses operate in the market, they are mutually interdependent because they share most of the market. This means that one firm's actions, such as changing fuel prices, are likely to directly affect competitors' sales and profitability. Products in this market structure can be identical or differentiated. Since petrol is identical across the fuel industry, each entity focuses on building brand recognition through advertising and choosing locations to make its product stand out from other brands.

Collusion, such as cartels, often occurs in oligopolies, where firms coordinate their actions to limit competition and maintain higher prices, allowing them to artificially fix prices and capture monopoly-level profits. New Zealand, though, strictly prohibits such behavior under the Commerce Act 1986 as it deceives consumers (Gary Hughes, n.d.). Therefore, the fuel market is considered a non-col-

lusive oligopoly, where firms do not formally cooperate to set prices or output levels. Nevertheless, firms remain mutually interdependent and must consider competitors' likely reactions when making decisions.

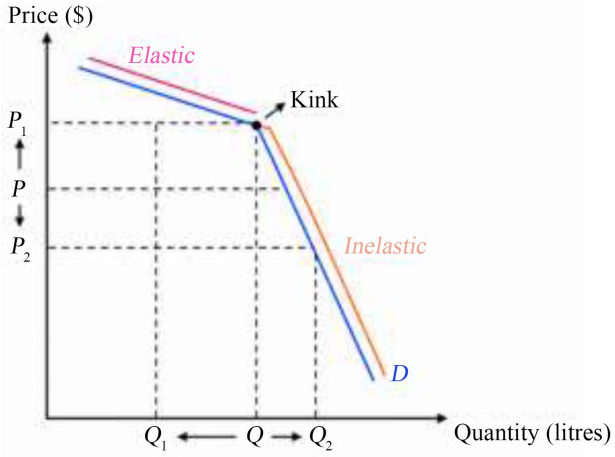


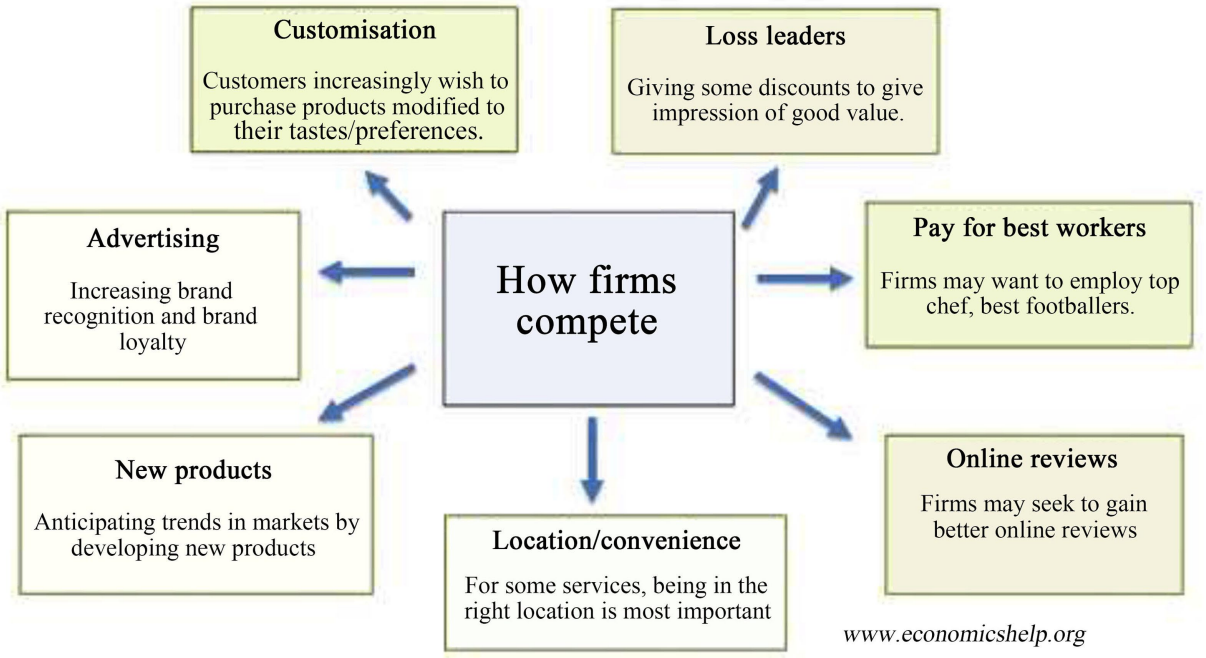
Figure 20. Demand curve of BP in oligopoly.

Oligopoly has a kinked demand curve due to its unique characteristics. Above the kink (**Figure 20**), the demand is price elastic. If BP increases its price ($P \rightarrow P_1$), competitors such as Mobil and Z Energy may not follow and maintain prices below BP's new price, causing a significant decrease in BP's quantity demanded ($Q \rightarrow Q_1$). Below the kink, the demand is price inelastic. As BP decreases the price ($P \rightarrow P_2$), rivals are likely to match it, so BP's quantity demanded increases by only a relatively small amount ($Q \rightarrow Q_2$). This difference in elasticities is shown by the differences in quantity demanded in response to the same price change, as the gap between Q and Q_1 is noticeably larger than the gap between Q and Q_2. Therefore, businesses are afraid of making themselves worse off by changing prices, so fuel prices tend to be stable and rigid. This indicates that they cannot set prices arbitrarily like a monopoly, despite being price makers. Businesses have little incentive to change prices, so they focus on non-price competition.

Figure 21. Fuel prices of major firms.

Although price competition exists in the fuel market, firms closely monitor competitors' pricing decisions because of mutual interdependence (Figure 21). The photos above, taken by me, show the advertised prices of 91, 95, and 98 petrol across three major fuel brands on the same day (2026, June 18). As expected, the prices are relatively similar. For example, the reward prices for Unleaded 91 petrol were all $3.019 per liter, while the normal prices for Unleaded 91 fuel were all $3.079 per liter across the three fuel stations. This suggests that firms are reluctant to make substantial price changes, as competitors are likely to react. Consequently, price competition tends to be limited, encouraging firms to emphasize non-price competition strategies.

The recent increase in fuel prices may further reduce price competition due to the unique characteristics of oligopoly. Since all fuel companies face higher costs, they are likely to increase prices simultaneously rather than attempt to undercut competitors. As a result, firms may place even greater emphasis on non-price strategies to maintain customer loyalty and market share.



Source: Economics Help.

Figure 22. Non-competition strategies.

Non-price competition occurs when firms compete using methods other than price in order to attract customers and increase market share (Figure 22). Because fuel is largely homogeneous and price competition is limited by the kinked demand curve, firms are more likely to compete through advertising, loyalty programs, customer service, station locations, and convenience. Companies often advertise affordable food and beverages like coffee and pies at dairies connected to petrol stations to drive more frequent consumer visits and increase overall sales. Choosing strategic locations for fuel stations is another important form of non-

price competition. Since fuel prices are often similar across competing firms, consumers tend to favor stations that are conveniently located along commuting routes, near shopping centers, or close to residential areas. In addition, services such as car washing, tire pressure checks, and selling bagged ice improve convenience and customer experience. By offering services beyond fuel, firms provide greater value, encouraging consumers to choose their stations over others. Loyalty programs are particularly pivotal in the fuel market. As shown in the images below, each major fuel firm offers its own membership and rewards scheme. Some firms also offer mobile applications and online pre-payment options, further increasing convenience. For example, Z Energy collaborates with Foodstuffs through their application, allowing consumers to earn and redeem rewards across multiple businesses and making its membership more attractive. Overall, these non-price strategies enable firms to differentiate themselves despite selling an identical product: fuel.

3.2. Flow-On Effects

3.2.1. sConsumers

As firms compete through services rather than price, consumers gain access to a wider range of facilities, improving convenience and enhancing the overall customer experience. Reward schemes may allow consumers to accumulate discounts, reward points, or partner benefits whenever they purchase fuel, leading to repeat purchases and increasing customer satisfaction. However, because price competition is limited, consumers may face similar fuel prices across fuel businesses. As a result, consumers are often forced to accept the prices set by fuel firms, potentially paying more than they would in a more price-competitive market.

In the long run, they may become accustomed to specific rewards programs, mobile apps, and services offered by a particular fuel brand. This makes them less willing to switch to a competing firm, even if small price differences exist between competing firms.

3.2.2. Producers

If non-price strategies successfully attract and retain consumers, demand for a firm's fuel will increase ($D \rightarrow D_1$), leading to higher sales and total revenue as more quantity ($Q \rightarrow Q_1$) is consumed at the same price level (P). However, non-price competition increases production costs due to expenses associated with advertising, loyalty programs, convenience services, and installing and maintaining facilities such as car wash systems. This suggests that firms must ensure that the additional revenue generated exceeds the implementation costs incurred to remain profitable. As a result, they may continuously monitor and evaluate the effectiveness of each strategy, reallocating resources away from less beneficial activities in order to maximize profits (**Figure 23**).

In the long run, thriving non-price competition can strengthen brand loyalty and enhance each firm's reputation. As consumers develop a preference for a par-

ticular fuel brand and become less likely to switch to competitors, firms may gain a larger customer base, increase market share, and earn higher profits over time.

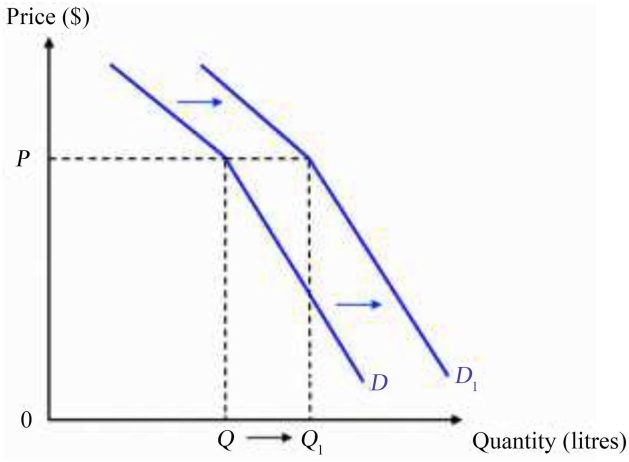


Figure 23. Demand shift of a fuel firm.

3.2.3. Government

More employment opportunities are created as fuel firms require workers to operate convenience stores and cafes, customer service staff, marketing and advertising teams, membership managers, and technicians responsible for maintaining facilities such as car wash systems. As more workers become employed, household income increases, raising consumer spending in the wider economy. They may also benefit from higher employment levels. With fewer people relying on unemployment benefits and other welfare support, government expenditure on social assistance may decrease.

At the same time, increased employment and household incomes generate additional income tax revenue, while higher business profits may increase company tax revenue. This provides the government with more funds to invest in public infrastructure, education, healthcare, and transport projects. When developing new transport infrastructure like motorways and freeways, the government may also consider how fuel stations will be accommodated and accessed, because new stations are costly to establish due to high barriers to entry in the fuel industry.

Meanwhile, the government must continue monitoring the fuel market to ensure firms comply with competition laws, maintain fair competition, and protect consumers. Given the industry's oligopolistic nature, firms may engage in anti-competitive behavior, such as collusion or coordinated pricing strategies, to increase profits.

In the long run, higher employment, increased consumer spending, and greater investment may contribute to economic growth and improve living standards.

4. Conclusion

This report examined how rising fuel prices have affected consumer behavior and the New Zealand fuel market, as well as the resulting flow-on effects on consum-

ers, producers, and the government. The findings show that fuel remains a necessity with relatively inelastic demand, meaning that consumers continue purchasing fuel despite higher prices. However, higher prices place greater financial pressure on households and often reduce spending on non-essential goods and services. The report also demonstrates how the oligopolistic structure of New Zealand's fuel market influences firm behavior. Rather than competing primarily through price, fuel retailers focus on non-price strategies such as loyalty programs, convenience, and customer service to attract and retain customers while responding to changes in global fuel costs.

Finally, the analysis underlines that increases in fuel prices create different outcomes for key stakeholders. Consumers face a higher cost of living, producers experience higher transport and operating costs, and the government must balance fuel tax revenue with policies that support households and encourage more sustainable transport choices. Consequently, fuel price increases have substantial economic impacts on both the fuel market and those who depend on it. Understanding these impacts provides valuable insight into how changes in fuel prices influence decision-making by consumers, firms, and the government.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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