

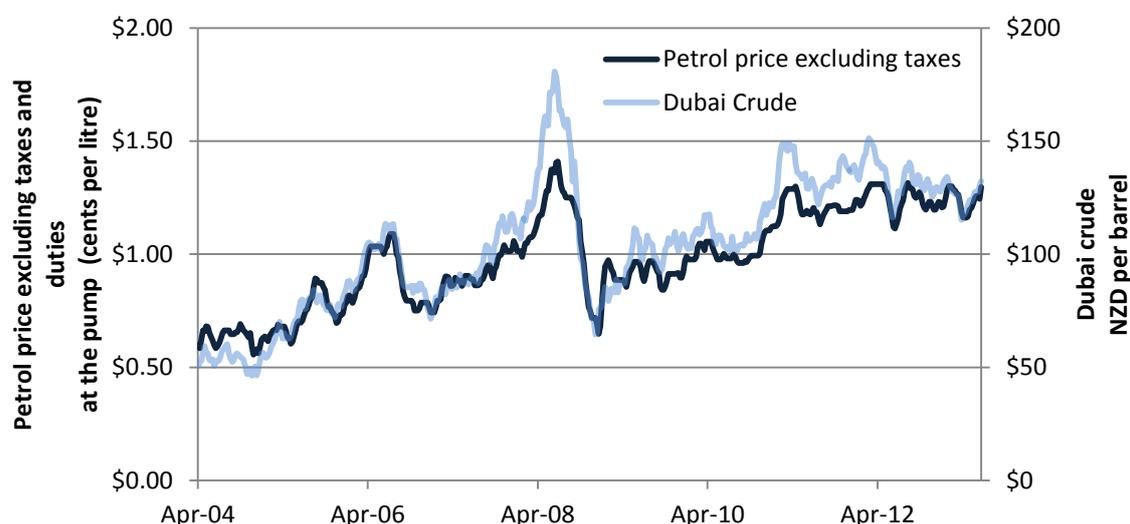
NZ petrol prices reflect input costs not gouging

Often motorists complain that petrol companies are quick to raise petrol prices at the pump but then conspire to drop prices slowly when international oil prices fall. Like in any efficient market, changes in the cost of oil – both up and down – should be passed on to consumers rapidly. We run the numbers and find no evidence of opportunistic gouging. Petrol companies pass on oil price decreases to consumers just as quickly as they pass on increases in prices.

The good oil on petrol prices

The price of petrol is mostly made up of taxes and levies that retailers can do little about.¹ Figure 1 shows that, without these taxes, levies and the cost of the Emission Trading Scheme, weekly petrol prices roughly match weekly movements in the New Zealand dollar price of Dubai crude (using data from April 2004 to June 2013, available from the Ministry of Business, Innovation and Employment (MBIE)).²

Figure 1 Changes in petrol prices roughly match changes in oil prices



Source: MBIE

¹ The last 3c-a-litre increase in excise tax means the price of petrol is about 60 percent taxes and 40 percent determined by the cost of importing fuel.

² See the weekly price monitoring information here: <http://www.med.govt.nz/sectors-industries/energy/liquid-fuel-market/weekly-oil-price-monitoring>.

At first glance, it appears that changes in oil prices are passed through to petrol prices relatively quickly. But whether the price response to increases in costs is the same price response as decreases in costs (the New Zealand price of Dubai crude) is not immediately obvious. Fuel prices could well be sticky downwards. Some argue that when the cost of Dubai crude falls the old price offers a natural focal point for oligopolistic sellers who wish to preserve margins (see Borenstein et al. (1997), for example).

In many other countries, there are concerns that domestic petrol retailers have enough market power so that increases in costs are passed on more quickly than falling costs (see for example Australia, Canada, the United Kingdom and the United States).³ So we need to dig deeper to uncover whether New Zealand companies have market power over the retail price of petrol.

Running the ruler over pump prices

Our test for whether consumers pay too much at the pump looks at whether cost rises are passed on as quickly as cost falls. We take the percentage change in the Dubai oil price data in Figure 1 and construct a cost increase variable, ΔOil_t^{+ve} , that takes the change in price for all price *increases* but is 0 when the price *falls*. That is:

$$\Delta Oil_t^{+ve} = \text{if } \Delta oil_t > 0 \text{ then } \Delta oil_t, \text{ and if } \Delta oil_t \leq 0 \text{ then } 0.$$

If cost increases drive more rapid increases in prices at the pump, then our variable ΔOil_t^{+ve} should help explain movements in petrol prices above and beyond changes in oil prices.⁴ That makes our regression for market power:

$$\Delta Fuel_t = \text{constant} + \beta_1 \Delta Oil_t + \beta_2 \Delta Oil_t^{+ve}$$

We also add lags of the variables as appropriate to our market power regression. Table 1 below shows our results for both petrol and diesel – there is no evidence of price gouging in this way. Our cost increase variable ΔOil_t^{+ve} is unimportant in explaining price movements at the pump – cost increases have similar impacts to price decreases.

Table 1 There is no evidence that retailers are gouging opportunistically at the pump

Regressions of weekly Petrol, Diesel and Dubai crude oil data April 2004-June 2013

Fuel type	Test-stat	p-value	Significant?
Petrol	0.508	0.827	No
Diesel	0.440	0.927	No

Source: NZIER

Are market dynamics improving over time?

We can expand our market power test to see if the degree of market power is changing over time. If market power is increasing over time, we expect oil price increases to lead to higher and longer increases at the pump relative to price decreases. To test for changing market power, we allow the parameter on our cost increase variable regressions to change or vary over time. This same test for changes in market power could be used more broadly in other markets.

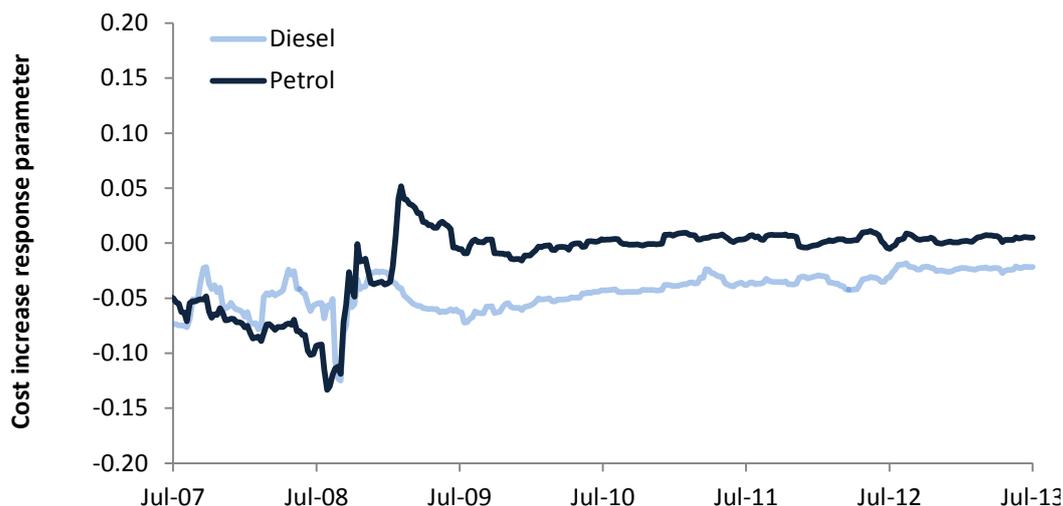
³ See Bacon (1991), Deltas (2008), Noel (2009), Valadkhani (2010), Birmingham and O'Brien (2011), Clerides (2010), NZIER (2011) and Douglas (2010).

⁴ See Douglas (2010) and Valadkhani (2010) who use a very similar methodology.

Figure 2 shows the parameter on the relative responsiveness to cost increases has not changed much over recent history. So there is little to suggest changes in market power for either petrol or diesel.

Figure 2 There is little to suggest market power has changed in recent years

Time-varying parameter on cost increase variable, $\beta_{t,2}$, is close to zero for both petrol and diesel



Source: MBIE

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