

The RACQ publishes comprehensive monthly analysis of petrol price movements for major capital city markets and Queensland regional centres. This report draws on that information to provide an overview of fuel price trends for 2010 with a focus on the key Brisbane capital city market.

This paper looks specifically at the key price determinants including Tapis crude oil, the wholesale price and the final retail pump prices.

Key Points

- The price of petrol throughout 2010 was generally fairly stable throughout the year. The rise in the Australian dollar served as a buffer for most of the rises experienced in the crude oil price.
- Brisbane experienced a highly dynamic weekly price cycle with more frequent movements in the cheapest price day of the week. The weekly cycle in 2010 was less stable than previous years.
- The average price in Brisbane was 2 cpl higher than Sydney and Melbourne, and 4 cpl higher than Adelaide (the cheapest capital city market).

Key Numbers

	Average Price	High Price (Date)	Low Price (Date)
ULP (cpl)	127.0	137.7 (08 May)	114.8 (14 Sep)
PULP (cpl)	136.0	146.3 (17 Apr, 16 May)	124.3 (14 Sep)
Diesel (cpl)	127.6	132.3 (28 May)	122.7 (05 Jan)
Exchange Rate (A\$/US\$)	0.921	0.784 (11 Feb)	1.017 (30 Dec)
Tapis Crude (A\$/bbl)	91.5	84.1 (25 May)	100.4 (08 Dec)

Changes in the Retail, Wholesale and Benchmark prices

Oil and petrol are traded globally in high volumes; because of this Australia is a price taker for all automotive fuels.

The wholesale price is linked to the Singapore wholesale price for MOGAS 95 – this is used as the basis for producing high octane (95 RON) premium unleaded petrol. The Singapore MOGAS price is in turn linked to the price of Tapis Crude Oil.

Figure 1, displays the wholesale price or the Import Parity Indicator Price (IPIP) of 91 RON Unleaded Petrol (ULP), 95 RON Premium Unleaded Petrol (PULP) and Extra Low Sulphur Diesel (Diesel). As can be seen in this chart there is very little difference in the wholesale price of these products – typically 3.5 cents per litre (cpl).

Considering ULP only, the wholesale price of ULP rose moderately throughout 2010; starting the year at 121.33 cpl and ending at 124.75 cpl. The minimum for 2010 was 114.8 cpl in September and the maximum was 125.71 cpl in December.

Throughout the same timeframe, the price of Tapis Crude Oil (in US dollars – US\$) displayed a greater degree of variation. The price of Tapis Crude commenced the year at US\$75.12 and rose to a high of US\$99.56 at the end of December, with a mid-year low of US\$69.80 per barrel.

Australian wholesale prices were largely buffered from these price movements by similar movements in the value of the Australian dollar (A\$). The A\$ reached a low of 0.7836 US\$ in February, then strengthened steadily until October when the A\$ reached parity with the US\$ and remained at or close to parity for the remainder of the year. The Tapis Crude price rose steadily from a mid-year low to the end of 2010, and the wholesale price of ULP rose steadily in the last quarter. In Figure 1 the yellow, red and purple lines represent the fairly stable wholesale price of ULP, PULP and Diesel in Australian cents per litre, respectively. The light blue line is the fluctuating price of Tapis Crude oil in US\$ per barrel, and the light green line is the A\$/US\$ exchange rate in A\$ per US\$.

Figure 1: Tapis Crude and the Brisbane Wholesale Prices

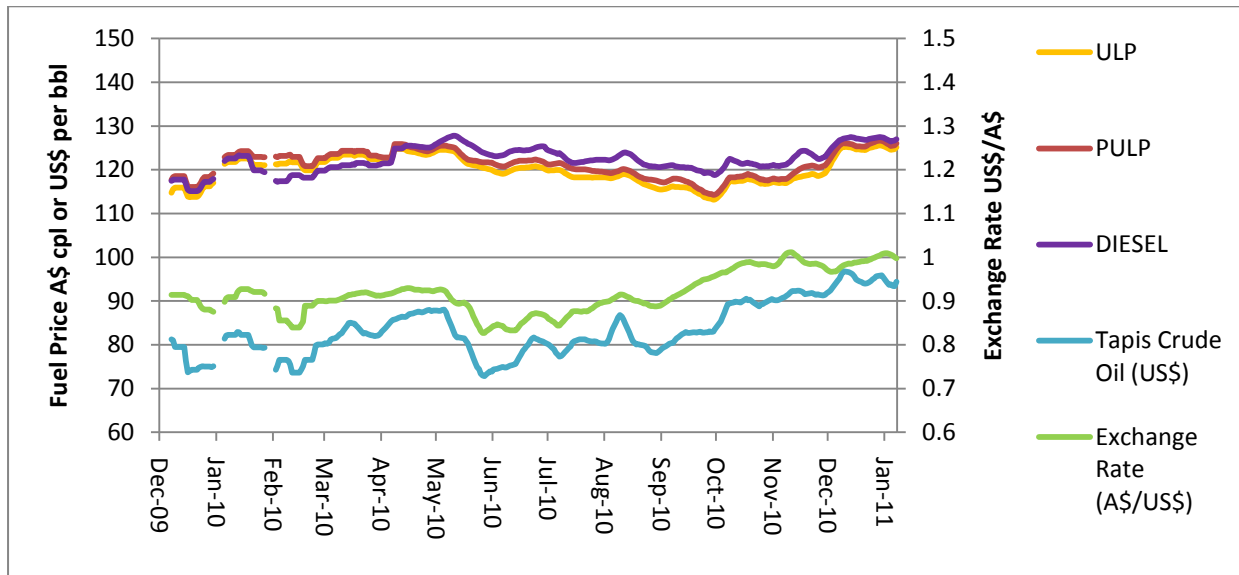
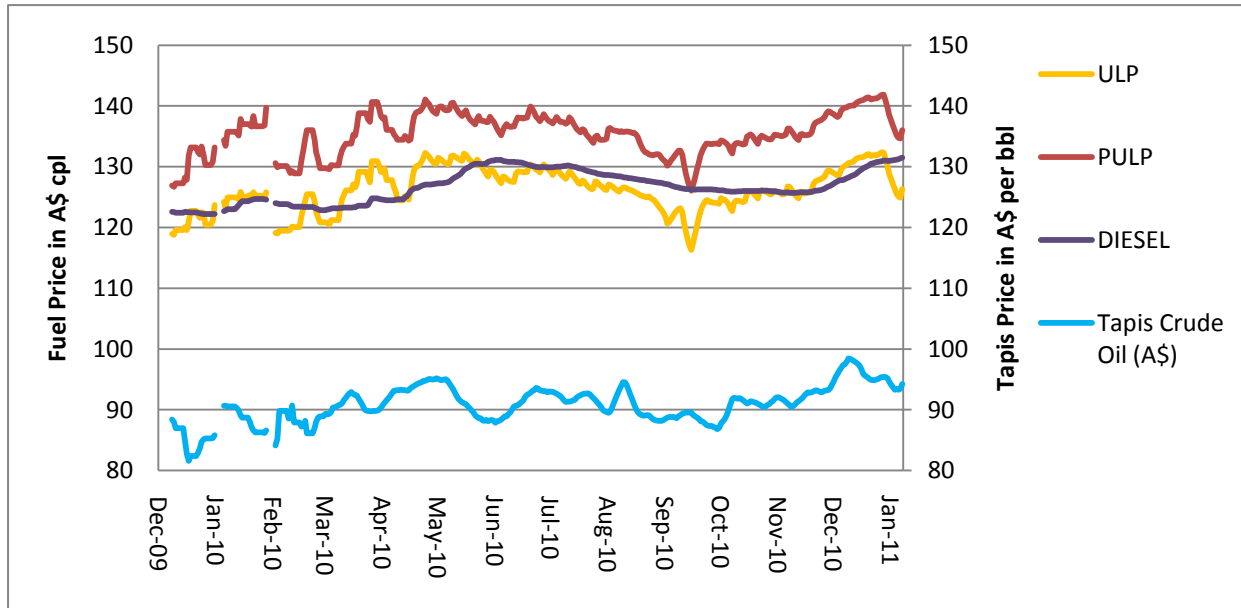


Figure 2 displays the 7-day rolling average retail price for ULP, PULP and Diesel. The 7-day rolling average is used to smooth out the weekly cycle. Figure 2 shows the retail price following a similar trend to the Tapis Crude price in A\$ per barrel which includes the impact of exchange rate variations. Note that there is a delay of 7 to 10 days for the retail price of petrol in Brisbane to reflect changes in the price of Tapis Crude. This is due to time required for shipping and refining.

Figure 2: Tapis Crude and the Brisbane Retail Prices



In Figure 2 the yellow and red lines show the 7-day rolling average of the average ULP and PULP price in Brisbane. The purple is the Diesel retail price and the blue line the Tapis Oil price (in A\$ per barrel). The ULP, PULP and diesel retail price can be seen to follow the trend set by the Tapis price with a 7 to 10 day lag. There are a few exceptions to this, in late April, early October and late December the ULP and PULP price dropped sharply. In all three cases there was a break down in the weekly cycle. Instead of a sharp price rise, the discounted price continued for a second week. The average price of ULP in Brisbane for 2010 was 127.0 cpl.

Margins

Figures 3, 4 and 5 present the total margin for ULP, PULP and Diesel respectively. In each figure the total size of the bar indicates the average total margin for each month. The blue section of the bar indicates the retail margin, the green section indicates the refiner margin and the red section indicates the wholesale margin. The retail margin is calculated from the observed retail price less the wholesale price and local freights cost of 0.7cpl. The refiner and wholesale margins are calculated using the wholesale price less the shipping costs, the 7-day lagged Tapis crude price and other costs. With the limited data available it is not possible to differentiate between the refiner and wholesale margins. Given this deficit of information the wholesale margin is assumed to be 7.2 cpl. If the calculated daily retail or refiner margin falls below zero the wholesale margin is reduced to compensate for this discrepancy. Thus, for most months the average wholesale margin is less than 7.2 cpl.

Figure 3: ULP Margins

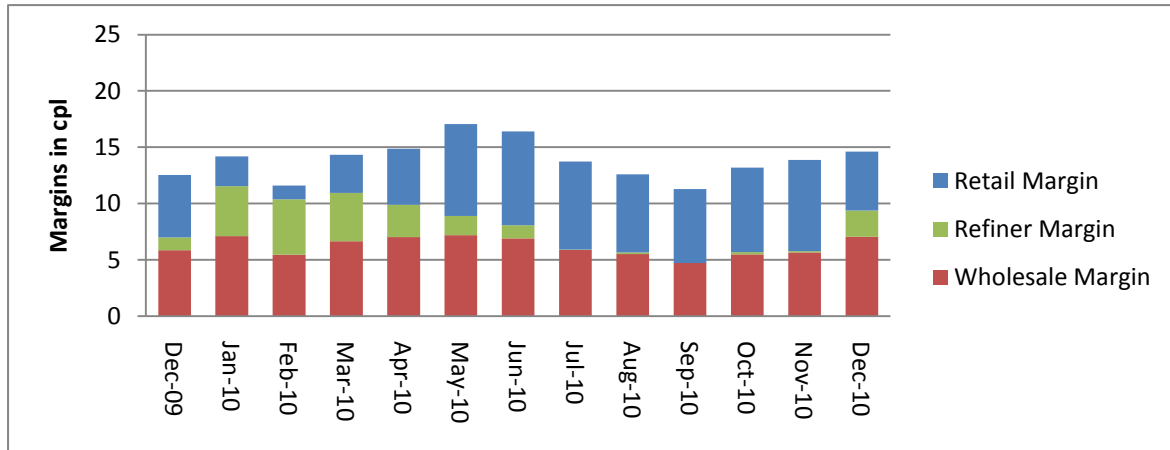


Figure 4: PULP Margins

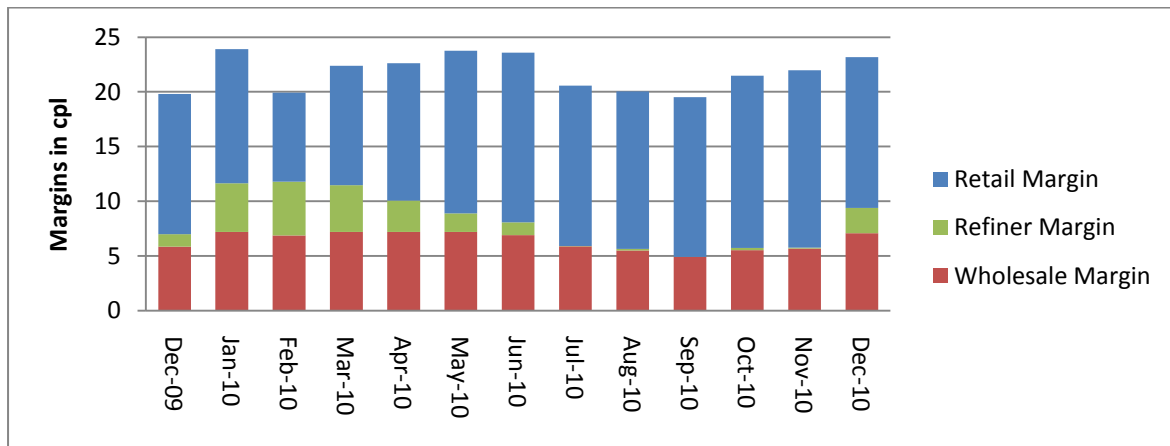
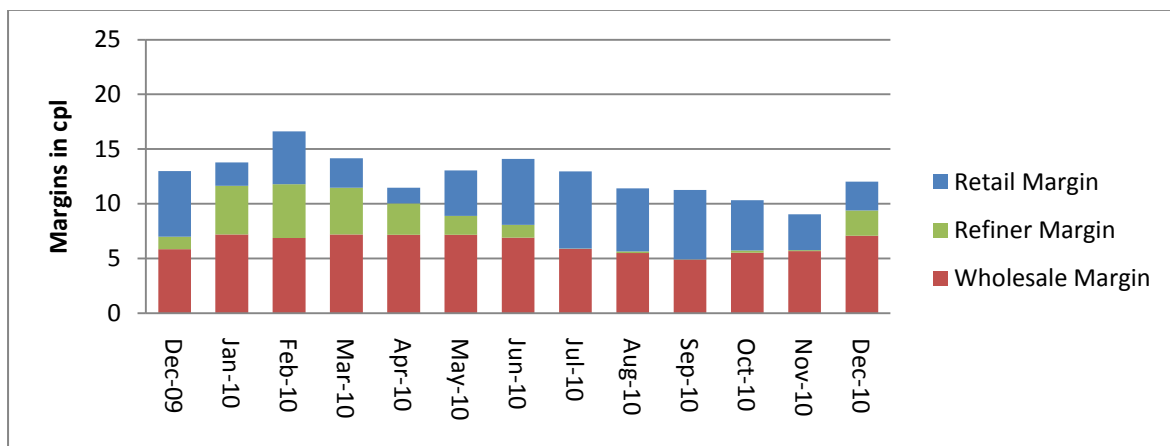


Figure 5: Diesel Margins



The average margin for ULP for all of 2010 was 13.87 cpl, the average margin for PULP for all of 2010 was 21.74 cpl, and the average margin for Diesel for all of 2010 was 12.55 cpl.

The retail margin of PULP is substantially greater than ULP. Given that the wholesale price is only slightly higher than ULP; the margins enjoyed by fuel companies on the sale of PULP are exceptionally high.

The average 2010 margin on Diesel was lower than ULP, and the diesel price is not subject to a weekly cycle. This may reflect an impact of the global financial crisis as most Diesel is used for freight and industrial purposes. It will be interesting to observe if this trend continues throughout coming years, particularly if we see increasing use of diesel as an automotive fuel.

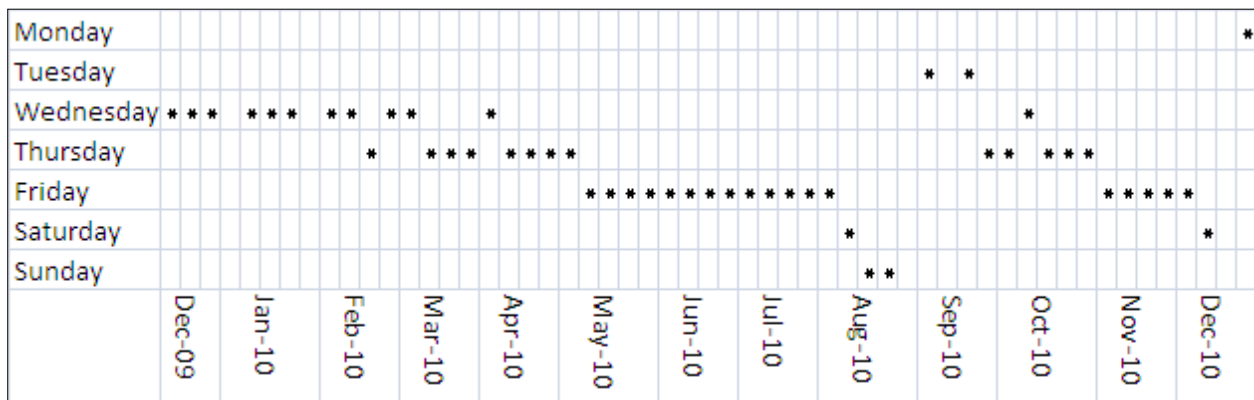
In May margins were particularly high. The wholesale price dropped somewhat and the retail price was not reduced to reflect this. It was well in to June before the retail price fell to reflect the reduced wholesale price.

Cheap days

In previous years the weekly cycle within Brisbane remained largely stable. This was not the case in 2010. As shown in Figure 6, the cheap day cycled through the week twice. At the beginning of the year Wednesday was the cheapest day to buy ULP. This slowly progressed through the week until the end of July, when Friday was the cheapest day to buy ULP. In August, September and October the cheap day rapidly moved through the weekend and the first half of the week. The cheap day returned to Friday for November and most of December before rapidly cycling through the weekend again to end the year with Monday as the cheapest day to buy ULP. Unlike previous years, the most common cheap day to buy petrol in Brisbane in 2010 was a Friday.

This evidence reinforces the need for motorists to remain well informed and vigilant about price trends in order to be able to make their purchase at the lower end of the cycle.

Figure 6: Brisbane Cheap Days

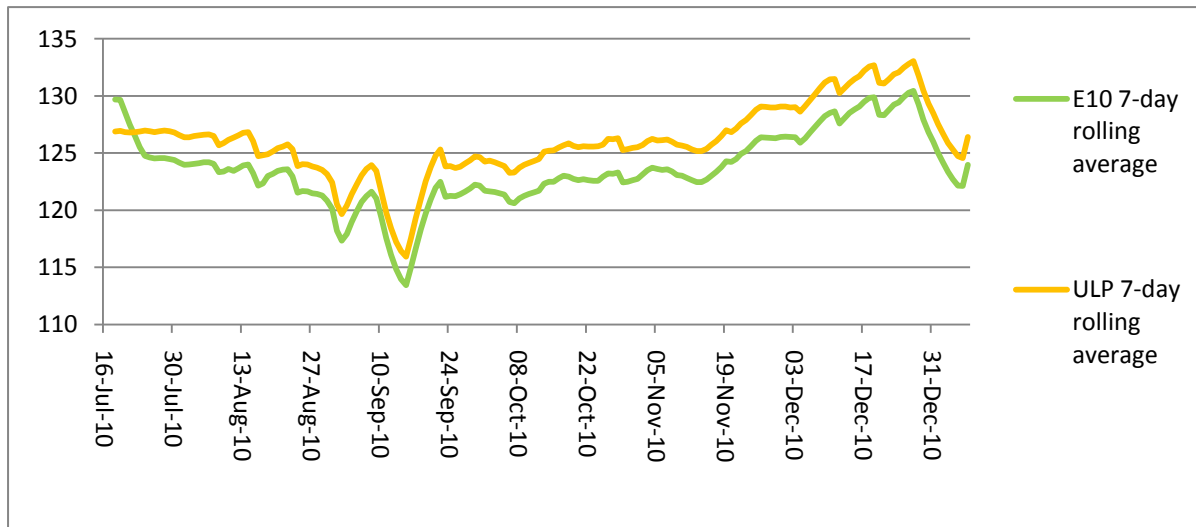


Ethanol and Ethanol Blended Fuels

A wide-scale roll-out of E10 (an ethanol blended fuel comprising 10% ethanol and 90% ULP) was observed in Queensland in 2010. This occurred in response to the Queensland Government’s proposed mandate for ethanol to constitute a minimum of 5% by volume of ULP sold from the start of 2011. This would require E10 to displace half of current ULP sales. In response to the anticipated mandate many petrol stations replaced ULP with E10 as the standard grade fuel (most notably BP). In October 2010 approximately 62% of sites in the SEQ market place sold E10 and 16% of sites did not sell ULP. The Queensland Government announced late in 2010 that they would not be progressing with the legislated mandate, citing a lack of domestic production.

Data for the price of E10 is limited to the second half of 2010. Figure 7 displays the 7-day rolling average price of E10 and ULP (displayed as the green and yellow lines respectively). As can be seen in Figure 7 the price of E10 tracked below the price of ULP. The average price difference between E10 and ULP was 2.6 cpl. It is worth noting that fuel consumption increases by 2 to 3% when E10 is used in place of ULP. Therefore, a price difference of between 2.5 and 3.8 cpl is required for E10 to represent a cost saving (using the Brisbane average price for ULP of 127.0 cpl).

Figure 7: 7-day Rolling Average Retail Price of E10 and ULP



Comparison to the Other Capital Cities

Figures 8 and 9 display the average prices of ULP and the retail margin on ULP for the state and territory capital cities. In these figures the Brisbane price is represented by the dark red line and the average of all capitals is represented by the hashed pale green line. The price in the other capital cities are represented by the different coloured lines as per the key displayed to the right of both figures. The tabulated values are presented in Appendix 1.

Figure 8: Average ULP Prices for all Capital Cities

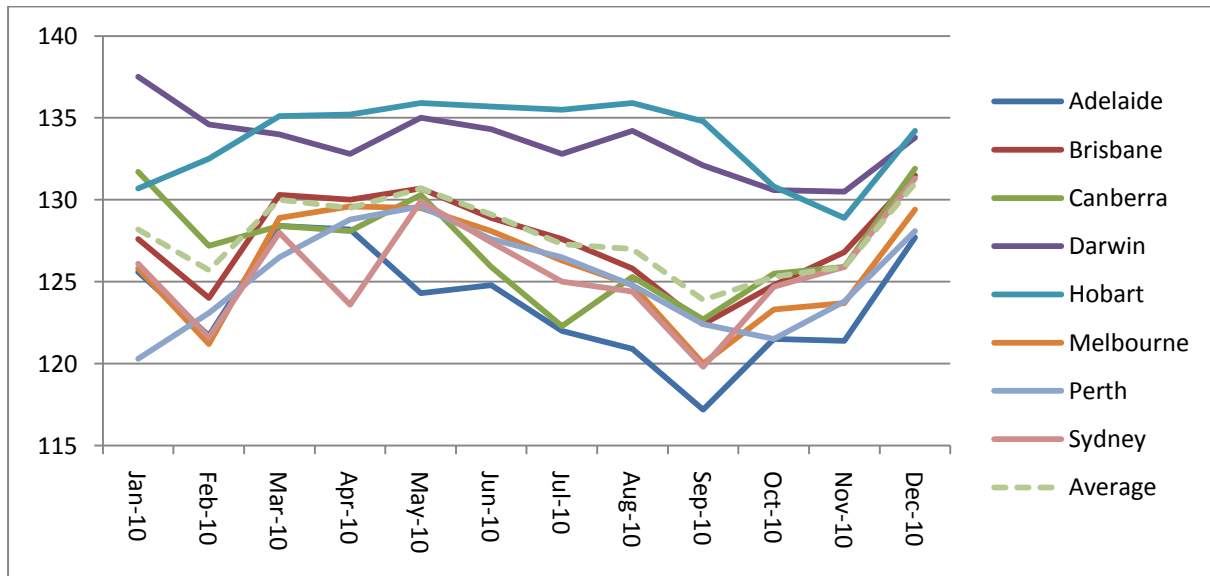
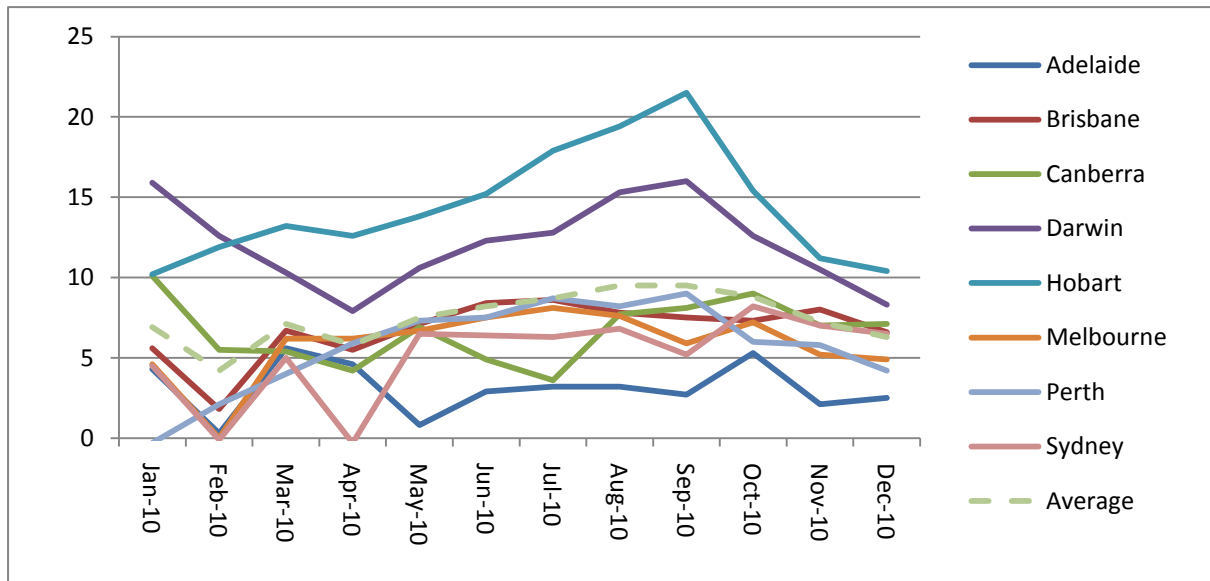


Figure 9: Average ULP Retail Margins



Brisbane was more expensive than Sydney, Melbourne, Perth and Adelaide, but cheaper than Hobart and Darwin. The average price in Brisbane was often the same as that in Canberra and close to the average of all the capitals.

The relatively high price of ULP in Brisbane is due in large part to the dominance of the major supermarkets in the Brisbane market and the absence of a major discounter. The independent retailers in Brisbane do not heavily discount their fuel as they do in other capitals, preferring to follow the price trend set by the major fuel retailers.

Adelaide was consistently the cheapest capital city in which to buy ULP. This is due to the high level of competition in the Adelaide petrol market. Unlike Brisbane, the independents in the Adelaide market pursue a high volume low price policy.

Regional Queensland

Table 1 displays the average monthly price of ULP in major Queensland Cities and Towns. The average price across Queensland in 2010 was 131.3 cpl.

In Table 1 the green shading highlights centres where the average monthly price is less than the price in Brisbane. The red shading highlights centres where the average monthly price is 10 cpl greater than the Brisbane price.

At an average of 123.6 cpl, Toowoomba was the cheapest place to buy ULP in Queensland in 2010. The Toowoomba average price was substantially lower than the average Brisbane price of 127.0 cpl. The price of ULP in Toowoomba was low due to high sales volumes, low shipping costs and a highly competitive fuel market. Bundaberg, Townsville, Maryborough and Caloundra with the average price of ULP being 126.2, 126.7, 127.1 and 127.4 cpl respectively were also all cheaper than Brisbane.

Weipa, with an average ULP price of 156.8 cpl, was the most expensive of all centres reported to buy fuel in Queensland. Normanton, Charleville and Rockhampton with an average price of 142.5 cpl, 139.8 cpl and 137.9 cpl, respectively were the second, third and fourth most expensive centres.

Rockhampton and Mackay merit further note. In the beginning of 2010 Rockhampton and Mackay were among the cheaper regional areas to buy ULP. Mackay was cheaper than Brisbane and Rockhampton was 3.5 cpl more expensive. By August both centres were more than 10 cpl more

expensive than Brisbane. Rockhampton remained more than 10 cpl more expensive than Brisbane for the rest of 2010. In November and December prices in Mackay softened slightly and ended the year 7.5 cpl more expensive than Brisbane. This trend was not observed in any of the other coastal cities.

Data Sources

All data presented in this report are RACQ calculations using FUELtrac and motormouth.com.au data.

8 February 2010
RACQ Public Policy Department

For further information please contact RACQ Public Policy on 3872 8622

Table 1: Average ULP Prices for all Queensland Regional Centres

	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2010 Average
Brisbane	123.6	127.8	124.0	130.3	130.0	130.7	128.9	127.6	125.8	122.4	124.8	126.8	131.5	127.0
Bowen	126.4	129.4	130.1	130.3	130.8	133.0	133.3	133.1	132.5	131.8	132.1	132.3	133.6	131.9
Bundaberg	123.0	128.4	127.6	126.9	128.2	131.8	129.2	126.9	125.1	121.8	120.7	121.7	126.6	126.2
Cairns	123.0	128.3	128.9	129.2	129.3	130.5	129.6	128.7	127.7	126.9	126.9	127.0	129.7	128.6
Caloundra	123.5	128.1	122.4	131.1	131.3	132.3	126.9	125.4	125.4	124.2	124.5	126.6	131.0	127.4
Charleville	138.0	142.6	141.8	141.9	141.3	142.7	142.9	142.9	141.6	133.8	132.5	134.0	139.6	139.8
Charters	128.2	130.1	130.3	130.7	133.8	133.7	134.6	135.7	131.6	130.3	127.8	127.3	131.5	131.5
Cunnamulla	132.9	134.9	135.7	135.4	137.1	138.1	138.1	138.1	137.7	137.3	135.3	135.5	136.4	136.6
Emerald	125.2	130.0	129.5	129.4	130.1	132.7	132.9	132.4	129.0	128.9	129.4	129.6	133.1	130.6
Gladstone	125.3	129.5	130.9	131.2	131.5	132.7	132.4	132.2	131.5	127.6	127.3	127.8	131.8	130.5
Gold Coast	124.0	128.6	124.6	130.6	131.1	131.3	129.4	126.8	125.2	123.1	125.1	126.9	131.9	127.9
Goondiwindi	123.0	127.7	127.0	125.9	128.1	131.8	133.4	131.4	129.9	129.7	129.0	129.0	130.2	129.4
Hervey Bay	125.1	129.1	130.0	130.2	130.7	132.4	129.8	129.2	127.3	125.3	124.0	125.6	130.7	128.7
Ipswich	122.8	127.9	124.9	130.5	130.7	131.6	129.1	127.6	128.5	127.0	125.9	126.2	129.0	128.2
Kingaroy	122.8	127.1	127.2	127.6	127.9	130.4	130.8	130.5	126.8	122.9	124.7	127.0	132.0	127.9
Longreach	133.0	134.6	134.3	135.4	136.7	138.4	138.2	138.0	129.7	128.5	127.4	127.4	129.9	133.2
Mackay	119.2	128.6	128.7	128.4	128.6	132.4	132.8	130.0	138.1	138.1	136.6	136.2	138.0	133.0
Maryborough	123.8	128.1	128.1	128.7	130.4	131.8	130.5	129.3	124.3	123.1	121.4	121.5	128.5	127.1
Mt Isa	127.4	130.3	131.2	133.1	134.6	137.0	137.0	136.1	128.3	127.1	125.8	126.1	130.0	131.4
Normanton	nd	144.4	147.3	148.9	147.9	148.2	147.0	147.6	135.9	135.3	134.7	134.5	138.5	142.5
Rockhampton	127.1	131.4	132.8	131.6	132.6	133.7	133.5	133.1	146.6	143.7	141.8	144.8	149.0	137.9
Roma	127.9	130.8	130.1	130.9	131.4	134.1	133.9	133.4	127.5	125.5	125.2	126.3	130.3	130.0
Sunshine Coast	123.3	127.9	126.1	129.7	130.9	131.7	129.5	128.3	132.7	129.7	128.0	128.1	132.2	129.6
Toowoomba	115.0	125.5	124.6	123.1	123.3	130.3	128.3	125.3	123.2	119.4	117.2	117.2	125.9	123.6
Townsville	119.0	127.5	126.1	125.6	126.0	132.2	130.5	128.7	126.2	123.5	122.8	122.4	129.4	126.7
Warwick	120.5	126.5	127.3	128.0	128.7	132.5	132.8	131.8	129.9	127.4	123.6	124.0	128.4	128.4
Weipa	nd	160.3	158.3	nd	nd	nd	nd	157.9	155.2	153.3	152.4	155.5	161.3	156.8

Appendix 1: ULP Prices for all Capital Cities

Below are the average ULP retail price and retail margins for all Australian capital cities.

Table 2: Average ULP Prices for all Capital Cities

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2010 Average
Adelaide	125.6	121.7	128.4	128.2	124.3	124.8	122.0	120.9	117.2	121.5	121.4	127.7	123.6
Brisbane	127.6	124.0	130.3	130	130.7	128.9	127.6	125.8	122.4	124.8	126.8	131.5	127.6
Canberra	131.7	127.2	128.4	128.1	130.3	125.9	122.3	125.3	122.7	125.5	125.9	131.9	127.1
Darwin	137.5	134.6	134.0	132.8	135.0	134.3	132.8	134.2	132.1	130.6	130.5	133.8	133.5
Hobart	130.7	132.5	135.1	135.2	135.9	135.7	135.5	135.9	134.8	130.8	128.9	134.2	133.8
Melbourne	125.8	121.2	128.9	129.6	129.5	128.1	126.3	124.8	120.0	123.3	123.7	129.4	125.9
Perth	120.3	123.1	126.5	128.8	129.6	127.6	126.5	124.8	122.4	121.5	123.8	128.1	125.3
Sydney	126.1	121.6	128.0	123.6	129.9	127.4	125.0	124.4	119.8	124.7	125.9	131.3	125.6
Average	128.2	125.7	130.0	129.5	130.7	129.1	127.3	127.0	123.9	125.3	125.9	131.0	127.8

Table 3: Average ULP Retail Margins for all Capital Cities

	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2010 Average
Adelaide	4.3	0.3	5.6	4.6	0.8	2.9	3.2	3.2	2.7	5.3	2.1	2.5	3.1
Brisbane	5.6	1.8	6.7	5.5	7.1	8.4	8.6	7.8	7.5	7.3	8.0	6.6	6.7
Canberra	10.1	5.5	5.4	4.2	6.9	4.9	3.6	7.7	8.1	9.0	7.0	7.1	6.6
Darwin	15.9	12.6	10.3	7.9	10.6	12.3	12.8	15.3	16.0	12.6	10.5	8.3	12.1
Hobart	10.2	11.9	13.2	12.6	13.8	15.2	17.9	19.4	21.5	15.4	11.2	10.4	14.4
Melbourne	4.6	0.0	6.2	6.2	6.7	7.5	8.1	7.6	5.9	7.2	5.2	4.9	5.8
Perth	-0.3	2.1	4.0	5.9	7.3	7.5	8.7	8.2	9.0	6.0	5.8	4.2	5.7
Sydney	4.5	-0.1	5.0	-0.3	6.5	6.4	6.3	6.8	5.2	8.2	7.0	6.5	5.2
Average	6.9	4.2	7.1	5.8	7.5	8.2	8.7	9.5	9.5	8.8	7.2	6.3	7.5