

# **Submission to the Inquiry into the Price of Petrol in Australia**

***Federal Parliament  
(Senate Economics Committee)***

**August 2006**

## EXECUTIVE SUMMARY & KEY MESSAGES

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Crude oil and refined petroleum products are bought and sold in international markets and the price paid for crude oil or for refined petroleum products like petrol or diesel reflects the market conditions of the day. This is the same for hundreds of other commodities like coal, gold, wheat, sugar, beef, etc.

There are separate, but related, international markets for both crude oil (the crude oil market) and for refined petroleum products like petrol and diesel (the product market).

### The Crude Oil Market

Crude oil is sold internationally through a variety of term contract arrangements and in spot transactions. For pricing purposes, crude oils of similar quality are often compared to a single representative crude oil, or "marker", of the quality class. These marker crudes are also convenient indicators of what is happening with prices in relevant markets.

Actual crude trades are generally based on a formula approach where a marker crude is used as the base and then a quality differential is added (eg. a premium for a higher quality crude oil), and then a premium or discount to the base price is added to reflect current market conditions for the crude.

In the Australian context, the relevant crude oil marker is the Asia-Pacific benchmark Tapis crude oil (a light, sweet crude produced in Malaysia). The Platts Tapis price quote is the representative regional crude oil price marker and is based on the average of prices for cargoes loading 15 to 45 days in the future.

- o The Platts Tapis price quote is not the actual purchase price of crude oil by individual AIP member companies (the actual purchase price may be higher or lower than the marker price quoted by Platts).

### The Refined Petroleum Product Market (the Product Market)

In the Australian context, the prices for refined petroleum products like petrol and diesel are closely related to prices in the petroleum product markets in the Asia-Pacific region – particularly in Singapore which is the major source of Australia's petroleum product imports.

Singapore is one of the world's largest oil refining centres and is a regional trading point for refined products. Spot prices for petroleum products in Singapore are extensively reported on a daily basis.

- o "MOPS95" is the common benchmark for commercially traded Australian-grade unleaded petrol. The quality of this benchmark fuel most closely reflects Australian fuel standards, although the quality of Australian fuel currently exceeds this benchmark.
- o There is also a benchmark for diesel fuel (commonly called 'gasoil') and the relevant diesel price marker is now 0.005% sulfur gasoil (ie. 50ppm sulfur), consistent with the change to the Australian diesel fuel standard from 1 January 2006.

It is important to note that the daily prices quoted for MOPS95 and gasoil are not the actual purchase prices of unleaded petrol or diesel by individual AIP member companies. The actual purchase prices for unleaded petrol are currently higher than the marker prices because of tougher Australian fuel quality standards.

### Movements in International Crude & Product Markets

The price of fuel in Australia, as in other countries, can be affected by movements in either or both of these markets. The delicate balance between the world's supply and demand for crude oil and petroleum products means that any disruption to supply – or even the threat of disruption – can push prices upward as buyers in the worldwide marketplace look to secure supplies for their customers.

While prices in these markets have been trending upwards for some time it is also clear that unanticipated events like natural disasters (eg. Hurricane Katrina) and civil unrest and war (e.g. in Nigeria and the Middle East) can have a large short term impact on world prices and, thereby, on the prices we pay in Australia.

Since crude oil price is the major component of the cost of most petroleum products, the price of petrol and diesel tends to be closely correlated to the price of crude over longer periods of time.

- o However, events in either the crude oil or product markets can affect either market and this can lead to deviations from this close correlation over shorter time periods (i.e. days or weeks).

In recent times, a heavy influence on the Asian and hence Australian market has been the strong demand for petrol and diesel in China and India placing pressures on refinery supply in this region, resulting in higher product prices. These supply pressures have come on top of high crude oil prices in 2005 and 2006.

The ongoing supply pressures in Asia, together with record high crude oil prices and a higher premia for higher quality fuels in the region, has been reflected in higher refiner margins in Asia.

- o The difference between the price of Tapis crude oil and petrol from Singapore refineries is known in oil industry jargon as the gross Singapore petrol refiner margin.
- o It is important to note that this gross margin is merely the difference between the market determined prices for crude oil and products, it is not a figure determined by refiners.
- o In addition, it is not an indicative profit margin, since the range of refiner costs need to be deducted from the gross margin to determine profits.
- o The gross refiner margin for petrol in the last two years has averaged around 3-4 cents per litre, with some significant shorter term variations – including recently where after a period of significant negative refiner margins through late 2005 and into 2006, margins have now improved reflecting the factors noted above.

The movements in prices of crude (Tapis), petrol (MOPS95) and diesel (50ppm sulfur in 2006) are charted daily on the AIP website.

### Supply Security

Despite recent price movements in these markets, there should be no present concern about liquid fuels supply reliability in Australia because of the diversity of oil import sources, flexibility of the supply chain and an established presence of imported finished petroleum products.

Australia will continue to be able to access crude oil and products to meet our fuel requirements as long as we pay the international market price. This means that any moves to set a different price structure locally would be counter-productive from a supply security perspective.

### The Australian Wholesale Fuel Market

There is a very close relationship between international product prices and the wholesale price of the fuel in Australia. The international product price plus net tax represents almost the entire wholesale price of petrol.

Australian Terminal Gate Prices (TGP) – the prices of petrol including tax at Australian terminals – are largely determined by the market petrol price in Singapore (as noted above).

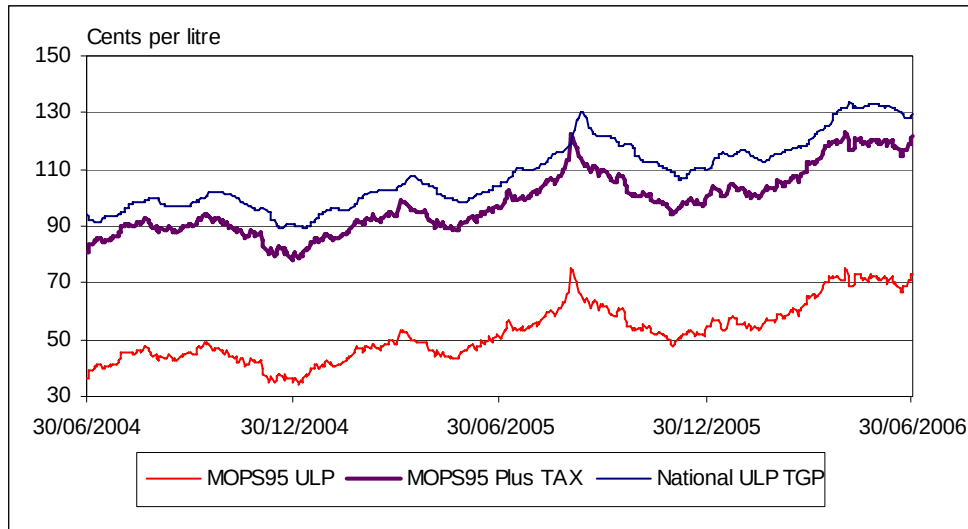
- o Australian petrol prices follow Singapore market prices because the Australian market is an integral part of the global/regional market for petroleum products. Australian refiners have to compete against petrol imports (Australia imported around 20% of the total petrol and diesel consumed in 2004-05) and the Singapore market represents the competitive alternate source of supply for Australia (and happens to be the major source of our imports).
- o If petrol prices in Australia were below international benchmarks, there would be no commercial incentive to import petroleum products (since sales of this petrol would be at a loss), and Australian refiners would have an incentive to export their production.

TGPs are calculated on the basis of what it would cost to import products into Australia.

- o This includes freight and insurance, a quality premium for Australian fuel standards (which exceeds the quality of the MOPS95 marker petrol), exchange rate adjustments, local wharfage and terminal costs, net tax (excise and GST less any state subsidy) and, to the extent possible competitively, allowance for a wholesale marketing margin.
- o In recent years, there have been increases in both shipping/transport freight rates and in fuel quality premia (reflecting the introduction of tighter fuel quality standards in Australia).

TGP data provides a good guide to how changes in international crude oil and product prices flow through to wholesale prices (ex-terminal) in Australia – as shown in the chart below.

- o TGP data is published daily by the AIP and by each of the oil majors.
- o It may take up to 1 to 2 weeks for changes in Singapore petrol prices to be reflected in Australian pump prices (reflecting different TGP pricing methodologies by fuel wholesalers), and this time lag occurs whether prices are going up or down.



### The Retail Market

In understanding movements in retail or pump prices, it is important to distinguish between the factors that contribute to the underlying price level and the factors that drive pump or retail price volatility around that underlying level. Ultimately, the market sets the retail price which can be achieved.

- o The underlying price level is largely determined by the international influences noted above and the domestic competitive market.
- o In contrast, retail price volatility is caused by the structure of the retail market and by variations in local area competitive factors (including price cycles).
- o International and domestic factors can have different impacts. For example, there are often times when there are increasing or decreasing crude oil prices (reflecting international factors), but domestic petrol prices are moving in the opposite direction (reflecting domestic market factors including price cycles).

Within the competitive market framework, the underlying retail or pump price in Australia reflects the TGP and all the costs of getting the fuel from the refinery to the consumer. This includes transport costs, administration and marketing costs, and the costs of running service stations like wages, rent, utilities etc. The ability to cover these costs depends on competition.

- o Once the refined product cost and taxes are taken into account, there is only a small proportion of the price (around 6% on average) which is received by fuel distributors and fuel retailers to cover these costs.

Historically, retail prices in many metropolitan areas have followed a discounting cycle (ie. a 'saw-tooth pattern') which has ranged up to 10 cents from peak to trough.

- o In areas where there is very strong retail competition, board prices tend to fall steadily as service station owners/operators aggressively discount to capture market share. However, large discounts typically can only be sustained for a limited period before the discounts are withdrawn and prices increase sharply.
- o Customers in many capital cities would be most familiar with these discounting cycles which typically occur on a weekly basis. Highly visible petrol pricing boards allow both customers and competitors to readily observe these price changes.
- o Analysis by the ACCC and by some AIP members has demonstrated that there are no significant deviations from typical cyclical patterns before public holidays or during periods following major market events (ie. prices do not increase because of public holidays).

ACCC analysis of these price cycles (see '*Reducing fuel price variability*' Report, December 2001, and ACCC Submission to the Inquiry) has found that these discount cycles favour the consumer with over 60% of petrol sales below the average price of the price cycle. Similar analysis by some AIP members confirms this.

This retail pricing framework in Australia reflects the diverse and competitive nature of this market.

The retail sector in Australia has undergone significant changes in the last ten years in almost every aspect of its operations — but particularly in relation to industry structure.

The convergence of fuel retailing and convenience store shopping has advanced through the supermarket alliances that have emerged since 2003 between Shell and Coles and between Caltex and Woolworths.

- o The supermarket alliances now handle around 40% of total retail fuel sales nationally and exercise a strong influence on retail prices. Supermarket chains are purchasing billions of litres annually from oil companies, and therefore have the ability to negotiate lower wholesale prices than single service stations or small chains.
- o There have been very strong consumer responses to the supermarket shopper docket discounts and according to the ACCC there are now over 450 shopper docket fuel discount schemes in place.
- o The major oil companies (BP, Caltex, Mobil and Shell) play various roles in each segment of the fuel supply chain. They operate all of the petroleum refineries in Australia and handle a large proportion of the wholesale fuel market. However, they directly operate only a relatively limited part of the retail market (around 5% of service stations across Australia).

#### Regional versus Metro Markets & Prices

Some of the key features of the retail market in regional Australia typically include the following.

- o Lower fuel turnover and hence lower profits from fuel sales (regional service stations typically see 1 tanker per 2-3 weeks vs several tankers per day at metro sites).
- o The viability or feasibility of service station expansion can be constrained by aging capital or by State/Territory government regulations.
- o The average customer base per service station is around 2,000 people in regional Australia and in many towns the customer base is between a quarter and half this number. In comparison, metro service stations typically have an average customer base of around 4,000 to 5,000 people.
- o Most major towns and cities have at least one supermarket alliance service station (45% of supermarket sites are in regional Australia)
- o Generally the more successful service stations in regional Australia are supermarkets and locally based independently owned chains (of either major oil company branded or independently branded retailers) who are often involved in fuel distribution as well. Nationally, around 64% of service stations are controlled by independent retailers, of which the majority are in regional Australia.

In addition to market structure, the difference between country and city prices is due to a number of factors:

- o Retail margins are typically higher in the country compared with capital cities, due to lower fuel turnover.
- o The general absence of discounting to attract incremental volume in country areas also means that country prices appear to be higher than fully discounted or average city prices.
- o Freight is typically 1.5 cents to 3 cents per litre greater for country than city delivery.
- o Distribution costs may be significant for some country areas where fuel must be stored in depots and double-handled, rather than being delivered directly from coastal terminals.
- o Competitive forces and costs also vary greatly between country towns, so that pump prices do not just reflect freight and handling differences.

This explanation is supported in ACCC inquiries and submissions and in other petrol price inquiries.

#### Competition & Prices

AIP has long held the position that the Australian petroleum market is highly competitive at both a retail and wholesale level. This is a view shared by many government reviews of the petroleum market and by many informed commentators and market analysts, including the ACCC and the International Energy Agency.

- o There are extremely well developed and highly competitive global markets for crude oil and petroleum products. These markets have a strong regional focus with prices reflecting regional availability (or scarcity) and quality.
- o All the way along the crude oil and products supply chains there are numerous large (integrated) and smaller (selective) market participants constantly driving market competition.

AIP also recognises the large divergence of market structures operating across Australia and how different structures can affect competitive outcomes. As the retail petrol market continues to develop under competitive pressures, operating structures can be expected to evolve to better meet the needs of consumers.

Apart from the aggressive retail discounting noted above, the competitive pressures in the market are well demonstrated by the following facts.

- o Many consumers are strongly price conscious – more so than for any other good or service in Australia – and, as a result, significant competition between market participants is largely based on price.
- o However, brand competition is also strong, particularly for premium grades of petrol, with strong corporate and product differentiation through advertising and promotion.
- o Petrol prices are highly visible to consumers at the point of business entry (ie. on price boards).
- o Australia consistently has among the lowest petrol and diesel prices in the OECD, on both a pre-tax and post-tax basis (according to official statistics from the International Energy Agency). This reflects the competitiveness of our downstream sector and Australia's comparatively low fuel taxation.
- o Petrol (excluding tax) is one of only a few staple commodities (eg. milk, eggs, public transport fares) to have reduced in price in real terms over the last two decades.
- o Australian refineries are price takers competing with imports from the Asia- Pacific region. There are no barriers to entry in the Australian fuel market unlike in many Asian countries and our wholesale petrol prices reflect Singapore market prices.

AIP strongly advocates a competitive market for fuel and publishes daily pricing information and data on its website to support this. Each of the major oil companies and other organisations (eg. state motoring bodies and the ACCC) also publish similar pricing information.

#### Industry Profitability

Although industry profitability has improved in recent years, returns to Australian refiner-marketers have been below the long term bond rate for most of the last twenty years and well below international benchmarks for the industry.

- o In addition, the return on assets for the downstream petroleum industry is well below the returns for many other industries in Australia.

Recent improvements in the financial performance of the sector have provided the cash-flow to help fund investments of over \$2 billion by the industry in the cleaner fuels program and refinery upgrades.

- o These investments will generate significant environmental benefits, particularly in terms of improvements in air quality in metropolitan areas.

#### Role of Alternative Fuels

AIP members support the development of alternative fuels (including biofuels) where they are competitively priced, reliably supplied and acceptable to the consumer. AIP member companies have submitted individual action plans to the Australian Government to assist in meeting the Government's target for the use of 350 megalitres of biofuels a year by 2010.

The potential of alternative transport fuels to meet a significant share of Australia's fuel demands in future will be influenced by the international oil and product markets, the cost of alternative fuels (including the costs of feedstocks) and the overall government policy framework.

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## **(1) INTRODUCTION**

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This submission has been developed to assist the Senate Economics Committee in its consideration of the range of petrol pricing issues identified under its current Inquiry.

The submission provides substantial information and data related to petrol pricing in Australia and the international and domestic factors impacting on the level of petrol prices and on their movement over time. Related information on the operation of Australia's downstream petroleum sector is also provided.

A particular focus of the Submission is the transparency of petrol pricing (and the influencing factors) across the entire crude oil/fuels supply chain and also the influence of competitive pressure and market structure on outcomes in the context of Australian fuel prices.

In summary, this submission covers the following subject areas:

- o Australian crude oil and petroleum product requirements
- o the refining process and costs (TOR1)
- o the basics of crude oil and petroleum product pricing (TOR1)
- o the relationship between international prices and wholesale petroleum product prices in Australia (TOR1)
- o the retail market in Australia: who sets retail prices?
- o the relationship between the wholesale and retail price of petrol (TOR1)
- o retail price comparisons
- o variations in the retail price of petrol at particular times (TOR3)
- o regional differences in the retail price of petrol (TOR2)
- o industry structure and profitability (TOR4) and
- o some other matters, including the role of alternative transport fuels (TOR5).

AIP has drawn on a wide range of reports, papers and analysis in the preparation of this submission. Details of the various documents and sources are set out in Attachment A.

AIP member companies have also made submissions to this Inquiry, and those submissions address specific items on the terms-of-reference and deal with commercial and other issues related to the specific operation of those companies.

The source of all data and charts in this submission is AIP data unless otherwise stated.

## (2) AUSTRALIAN CRUDE OIL AND PETROLEUM PRODUCT REQUIREMENTS

*This section provides an overview of the basic facts about Australia's crude oil and petroleum product requirements and some of the key factors influencing future fuel demand and refinery output and investment.*

### (a) The Crude Oil Requirements for Australian Refineries

Australia consumes a very small proportion of global oil production and our consumption of oil accounts for around 34 per cent of Australia's primary energy consumption.

Of the oil consumed in Australia, largely by Australian refineries, around 35% is sourced from Australian oilfields. There are important reasons for this.

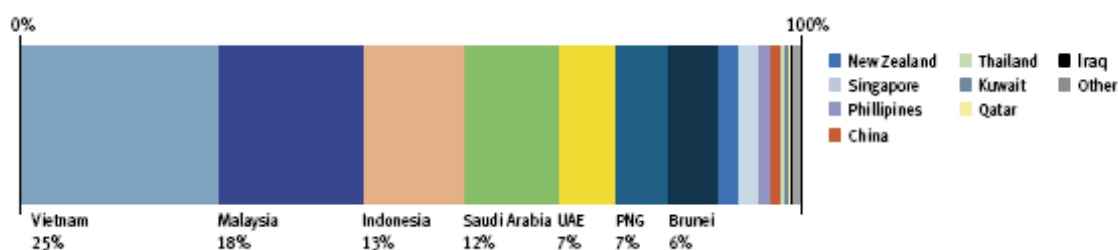
- o Australian crudes tend to be lighter (lower density) and sweeter (lower sulfur) than most crude oils. This leads to generally higher prices for our crudes and Australian refiners can find cheaper alternatives elsewhere.
- o The product yields from Australian crudes do not exactly match the proportions of products required by Australian consumers (ie. for LPG, petrol, jet fuel and diesel).
- o In addition, Australian crudes are not suitable for producing heavier products such as bitumen, lubricating oils and greases.

Therefore, in order to produce the required product slates in Australia – including with the appropriate fuel qualities and at the lowest production costs - Australian refineries use a mixture of crudes from a variety of sources.

Some 65% of crude oil used in Australian refineries is imported.

In 2004-5, these crudes were sourced from over 15 countries mainly from Asia and the Middle East. This means that any supply disruption risks are spread between domestic and imported crudes and crudes from a variety of different sources.

**Figure 1: Imports of Crude Oil (2004-05)**



Source: Australian Petroleum Statistics

Reliable access to crude oil supplies suitable for Australian needs has not been a problem, even during periods of rapidly rising oil prices. There is no reason to believe this situation will change as the level of crude oil self-sufficiency declines in Australia over the next two decades.

Australia will continue to be able to access crude oil and products to meet its fuel requirements as long as we pay the international market price. This means that any moves to set a different price structure locally would be counter-productive from a supply security perspective.

## **(b) Australian Petroleum Product Demand & Import Requirements**

### Product Consumption/Demand

Petroleum products are a critical part of energy consumption in Australia and supply more than 97% of Australia's total transport needs. The most important petroleum products in the Australian context are petrol, diesel, jet fuel and LPG.

In 2004-05, the demand for petroleum-based transport fuels was about 43,000 ML (Megalitres) or around 747,000 barrels per day. This represents over 91% of Australia's total consumption of petroleum products (of around 47,000 ML).

Within this total for petroleum-based transport fuels, the key components in 2004-5 were:

- o Petrol: 46%
- o Diesel: 35%
- o Jet fuel: 11%
- o LPG – automotive use: 5%
- o Others, including lubricants: 3%

As can be seen from the data above, the Australian passenger transport fuel market is still dominated by petrol. This is similar to US demand but unlike that of Europe, where diesel now accounts for 43% of fuel sales and where around 70% of new car sales are diesel cars.

### Import Requirements

To meet this demand, imports accounted for 23% (or around 11 000 ML) of total consumption in 2004-05.

As shown in Figure 2 below, the bulk of imported gasoline was from Singapore (around 84 %).

**Figure 2: Imports of Petrol (2004-05)**

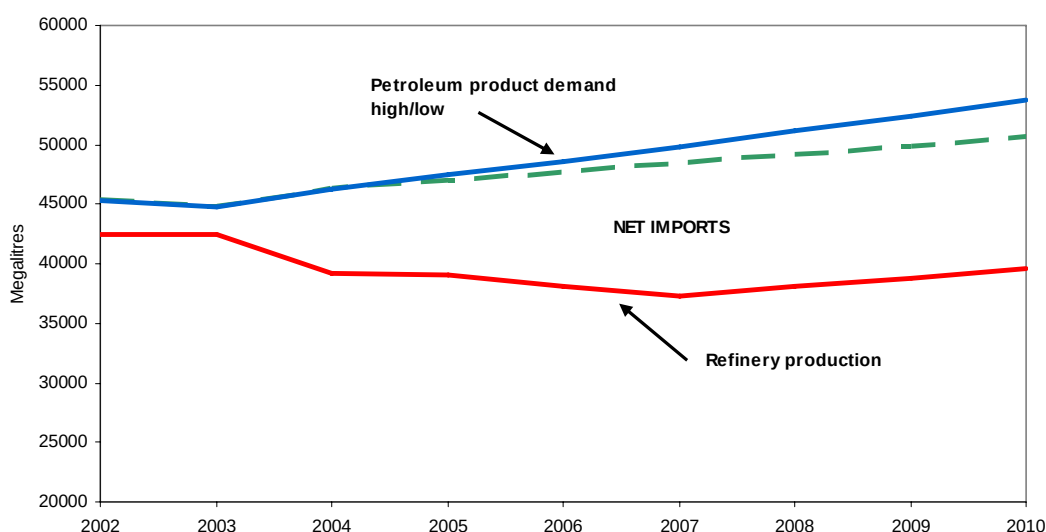


Source: Australian Petroleum Statistics

### Demand Growth

Total demand for finished petroleum products is growing at 1-2% a year, and by 2010 it is expected that demand will have increased to around 50,000 Megalitres a year (see Figure 3).

**Figure 3: Australian Petroleum Product Demand & Supply**



Source: Caltex Australia

On the basis of projected demand and refinery capacity, it is reasonable to conclude that the overall structural import demand for petroleum products will rise to around 25-30% early in the next decade.

### (c) Refinery Output

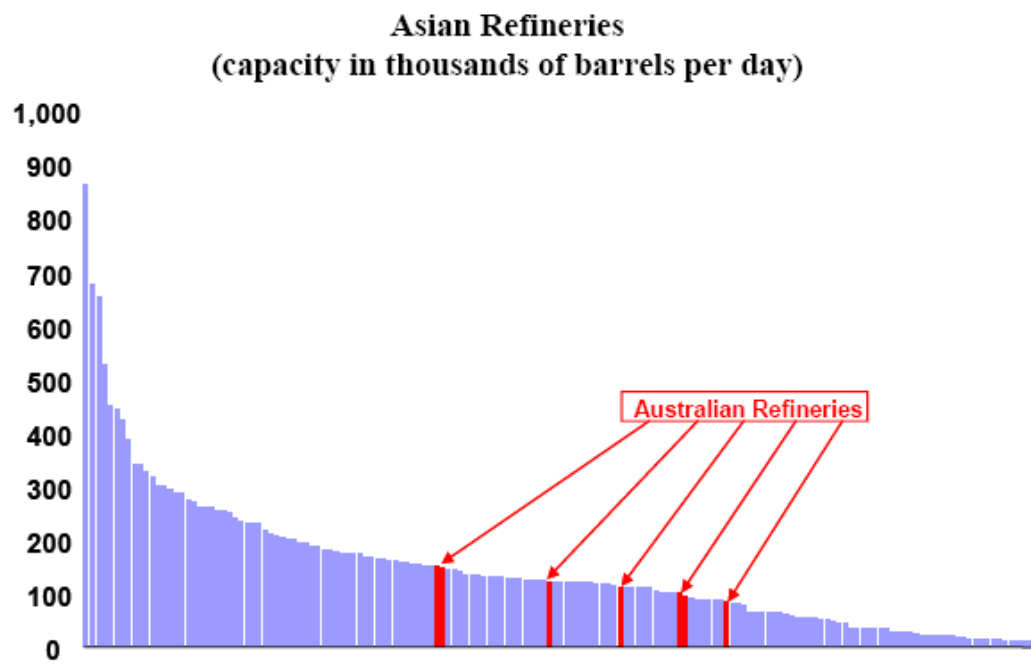
Australia has eight refineries (see Table 1) (only seven now operating following the mothballing of Port Stanvac) that were generally constructed in the 1950s and 1960s, although they have been extensively modified since then.

**Table 1: Australian Refineries**

| REFINERY                               | CAPACITY: Megalitres per year       |
|----------------------------------------|-------------------------------------|
| Bulwer Island (BP – Brisbane)          | 5,100                               |
| Lytton (Caltex – Brisbane)             | 6,110                               |
| Clyde (Shell – Sydney)                 | 4,980                               |
| Kurnell (Caltex – Sydney)              | 7,210                               |
| Altona (Mobil – Melbourne)             | 4,640 <i>(recently re-rated)</i>    |
| Geelong (Shell – Geelong)              | 6,900                               |
| Kwinana (BP – Kwinana WA)              | 8,030                               |
| <b>TOTAL</b>                           | <b>42,970</b>                       |
| <i>Port Stanvac (Mobil - Adelaide)</i> | <i>4,520 (currently mothballed)</i> |

These refineries are relatively small with the largest having a capacity of 8,000 ML pa (Megalitres per year), compared with the four largest Asian refineries which produce between 31,000 to 67,000 ML pa. Proposed greenfield refinery investments in Asia have a minimum capacity of around 26,000 ML per year.

**Figure 4: Relative Size of Asia-Pacific Refineries**



Source: The Shell Company of Australia

### (3) THE REFINING PROCESS AND COSTS

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*This section provides an overview of refining, the general make-up of refinery costs and the key influencing factors over time.*

#### (a) The Refining Process

An oil refinery is an integrated set of manufacturing processes. It is designed to produce physical and chemical changes in crude oil to convert it into everyday products like petrol, diesel, lubricating oil, fuel oil and bitumen. Each refinery is a highly sophisticated facility which is expensive to build and operate with the fine degrees of tolerance required to produce today's high quality fuels. Each refinery in Australia is different, so has different operating characteristics and produces different product slates.

Every refinery involves the separation of crude oil into different fractions by distillation of the crude oil. The fractions are further treated to convert them into mixtures of more useful saleable products by various processes such as cracking, reforming, alkylation, polymerisation and isomerisation. These mixtures of new compounds are then separated using methods such as fractionation and solvent extraction. Impurities are removed by various methods, e.g. dehydration, desalting, sulphur removal and hydrotreating. For example:

- o a catalytic cracker, uses heavy distillate output from crude distillation as its feedstock and produces additional finished distillates (heating oil and diesel) and petrol
- o sulfur removal is accomplished in a hydrotreater and
- o reforming units produce higher octane components for petrol from lower octane feedstock that was recovered in the distillation process.

A more detailed description of the refining process is set out on the AIP's website at [www.aip.com.au/industry/fact\\_refine.htm](http://www.aip.com.au/industry/fact_refine.htm).

The quality of the crude oil dictates the level of processing and upgrading necessary in the refinery to achieve the required mix of product output. Hence, price and price differentials between crude oils also reflect the relative ease of refining the relevant crude oil. For example:

- o A premium crude oil like West Texas Intermediate (WTI), the US crude oil benchmark, has a relatively high natural yield of desirable naphtha and straight-run petrol (ie. petrol extracted from simple distillation)
- o In contrast, almost half of the simple distillation yield from Saudi Arabia's Arabian Light, the historical global benchmark crude, is a heavy residue ("residuum") that must be reprocessed or sold at a discount to crude oil.

As noted in Section 2, Australian refineries only source about 35% of their crude oil requirements from Australian fields. Since Australian crude oil is generally light and getting lighter, some heavier (and cheaper) crude oils are required to produce heavier products such as lubricating oils and bitumen, and at the same time meet the required proportions of the main products.

In light of these quality considerations, refiners seek to run the optimal mix (or "slate of crudes") through their refineries, depending on the specific equipment at the refinery, the desired output mix to meet Australian fuel demand and quality standards, and the relative price of available crudes domestically and regionally/globally.

In addition to crude oil, a variety of other specialized inputs can be used to enhance the capacity of the refinery to make the desired mix of products. These components include unfinished (partly refined) oil, imported residual fuel oil or blending components such as oxygenates (noting that under Australian fuel standards certain oxygenates such as MTBE are not allowed to be used) and finished or close to finished products.

## **(b) General Make-up of Refinery Costs**

The cost of crude oil is the major input cost for refineries. Some of the other key costs for refineries include:

- o crude oil shipment and storage costs
- o crude oil processing costs
- o the cost of additives (eg. oxygenate)
- o capital costs / depreciation
- o wages and salaries
- o plant maintenance and 'outages' costs
- o costs of site security and systems
- o environmental protection costs
- o product shipment and storage.

## **(c) Factors Influencing Refinery Costs and Drivers for Improved Efficiency**

There are a number of factors which influence refinery costs. In summary, some of these include:

- o cost and type of crudes available (the crude 'yield' – noted above)
- o refinery capacity, utilisation and efficiency (eg. plant and pipeline capacities):
  - refinery reliability and HSE standards
  - capacity, age and maintenance of refinery
  - location (eg. minimal distances to import/export crude and product efficiently)
  - energy consumption/efficiency
  - refinery configurations (eg turnaround cycles, cracking capacity over crude capacity)
- o demand growth in Australia (currently 2-3 per cent growth pa)
- o type of demand – required product slate for Australian conditions/standards
- o fuel specification changes (eg. moves to cleaner fuels reducing throughput)
- o commercial considerations (eg. capital and land costs)
- o salary and wages costs
- o cost of infrastructure (eg. ports)
- o utilities charges, rates and land taxes
- o regulatory and compliance costs
- o tax and customs structures (eg. duty/excise, depreciation rates).

A number of these factors are discussed in more detail in Attachment B. In the case of factors such as wages and salary costs, government charges and levies, and regulatory burdens, it is clear that these costs are higher in Australia than in other parts of the world, adding to the competitiveness challenge for Australian refineries.

One of the most significant of these factors is refinery capacity. Refinery capacity is generally measured by crude processing capacity (barrels per day).

Over the last decade or so, and more recently with moves to cleaner fuels, the capacity of Australian refineries has been influenced by some key factors including:

- o "debottlenecking" refineries (particularly crude oil distillation units) to improve the flow and to better match capacity among different processing units
- o increased computer control of processing
- o significant investment in upgrading refineries to enhance the crude processing capacity to meet the requirements of the cleaner fuel (low sulfur) standards.

More sophisticated refineries are typically measured by their downstream processing capability (ie. the ability to turn various types/qualities of crudes into 'finished products').

- o For example, after simple distillation alone, the output from a crude oil like Arab Light would be about 20% of lightest products (petrol), and about 50% of the heaviest products. After further processing in a more sophisticated refinery, the finished product output is about 60% petrol and 5% of the heaviest products.

Consequently, over the short term, each Australian refiner will see slightly different values for different crudes at particular times due to:

- o each refinery having a different configuration of plant and equipment
- o particular refinery limitations or processing constraints
- o different product yields (petrol, diesel, kerosene) that are produced from each type of crude oil, and
- o different product demand in different markets over time.

Given the highly competitive Australian market, refiners are always seeking ways of reducing costs, and finding cheaper or better value crudes (ie. with higher yields).

## **(4) THE BASICS OF CRUDE OIL AND PETROLEUM PRODUCT PRICING**

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*This section provides an overview of the basic facts surrounding movements in the international prices for crude oil and petroleum products and the impact of these movements on prices in Australia.*

### **(a) International Crude Oil and Product Markets**

Crude oil and refined petroleum products are bought and sold in international markets and the price paid for crude oil or for refined petroleum products like petrol or diesel reflects the market conditions of the day.

There are separate, but related, markets for both crude oil (the crude oil market) and for refined petroleum products like petrol and diesel (the product market).

#### **Crude Oil Market (the Crude Market)**

Crude oil is sold internationally through a variety of term contract arrangements and in spot transactions. In addition, crude oil is also traded on futures markets generally as a mechanism to distribute risk. These mechanisms and transactions play an important role in providing pricing information to markets.

For pricing purposes, crude oils of similar quality are often compared to a single representative crude oil, or "marker," of the quality class. These marker crudes are also convenient indicators of what is happening with prices in relevant markets. The main criteria for a marker crude is for it to be sold in sufficient volumes to provide liquidity (eg. many buyers and sellers) in the physical market as well as having similar physical qualities to a reasonable number of alternative crudes.

The main marker crudes are: West Texas Intermediate (WTI – USA); Brent (Europe and Africa); Dubai and Oman (Middle East); and Tapis and Dubai (Asia-Pacific). Information on changes in the prices of these crudes is extensively reported on a daily basis.

Actual crude oil trades are generally based on a formula approach where a marker crude is used as the base and then a quality differential is added (eg. a premium for higher quality crude oil), and then a premium or discount to the base price is added to reflect current market conditions for the crude.

- o The quality differential premia for higher quality crudes reflects the potential yield and processing considerations explained in Chapter 3.

In the Australian context, the relevant crude oil marker is the Asia-Pacific benchmark called Tapis Crude Oil (a light, sweet crude produced in Malaysia).

- o The Platts Tapis price quote is the representative regional crude oil price marker and is based on the average of prices for cargoes loading 15 to 45 days in the future
- o It is important to note that the Platts Tapis price quote is not the actual purchase price of crude oil by individual AIP member companies. The actual purchase price may be higher or lower than the marker price quoted by Platts.

### Refined Petroleum Product Market (the Product Market)

Refined petroleum products are also traded in international markets and in each regional market there are price markers for each product type. In the Australian context, the prices for refined petroleum products like petrol and diesel, are closely related to prices in the petroleum product markets in the Asia-Pacific region – particularly in Singapore (which is the major source of Australia's petroleum product imports).

- o Singapore is one of the world's largest oil refining centres and is a regional trading point for refined products. The spot prices for petroleum products in Singapore are extensively reported on a daily basis.
- o "MOPS95" (the mean of Platts Singapore price quote for Premium Unleaded Petrol – 95 Octane) is the common benchmark for commercially traded Australian-grade unleaded petrol. The quality of this benchmark fuel most closely reflects Australian fuel standards, although the quality of Australian fuel currently exceeds this benchmark.
- o It is important to note that MOPS95 is not the actual purchase price of unleaded petrol by individual AIP member companies. The actual purchase prices are higher than the marker prices quoted by Platts because of tougher Australian fuel quality standards.
- o There is also a benchmark for diesel fuel (commonly called 'gasoil') and the relevant diesel price marker is now 0.005% sulfur gasoil (ie. 50 ppm sulfur), consistent with the change to the Australian diesel fuel standard from 1 January 2006.

### **(b) Factors Influencing Crude & Product Markets and How These Affect Prices**

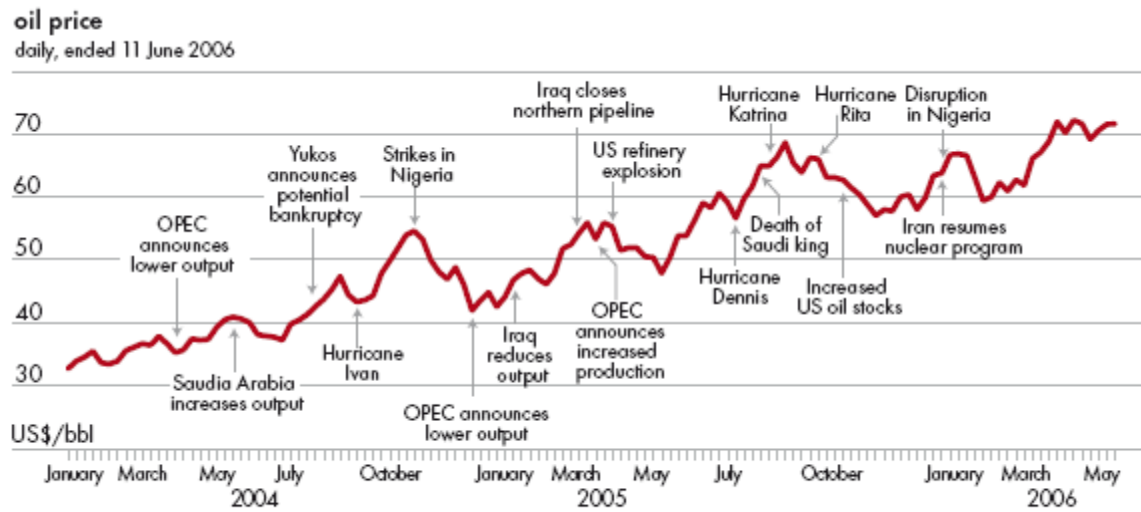
Since crude oil costs make up a significant share of the cost of petrol and diesel, the price of petrol and diesel tends to be closely correlated to the price of crude oil over longer periods of time. However, events in either the crude oil or product markets can affect either market and this can lead to deviations from this close correlation over shorter time periods (ie days or weeks).

### Movements in Crude Markets

The delicate balance between the world's supply and demand for crude oil and petroleum products means that any disruption to supply – or even the threat of disruption – can push prices upward as buyers in the worldwide marketplace look to secure supplies for their customers.

- o Prices in these global markets have been trending upwards for some time as is shown in Figure 5.
- o It is also clear that unanticipated events (like natural disasters and civil unrest) can have a substantial short term impact on world oil and product prices . Figure 5 also shows the sensitivity of the oil market to political and economic uncertainty, unusual weather conditions, and other factors.
  - For example, in recent years, there has been market reactions to a number of developments including hurricanes in the Gulf of Mexico, decisions by OPEC, ongoing civil strife in Nigeria, the post-war insurgency in Iraq, and nuclear developments in Iran.

**Figure 5: Factors Impacting on the Oil Price**



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Source: ABARE Commodities

### Movements in Petroleum Product Markets

These influences in the crude oil market are also reflected in the petroleum products market for the Asia-Pacific region.

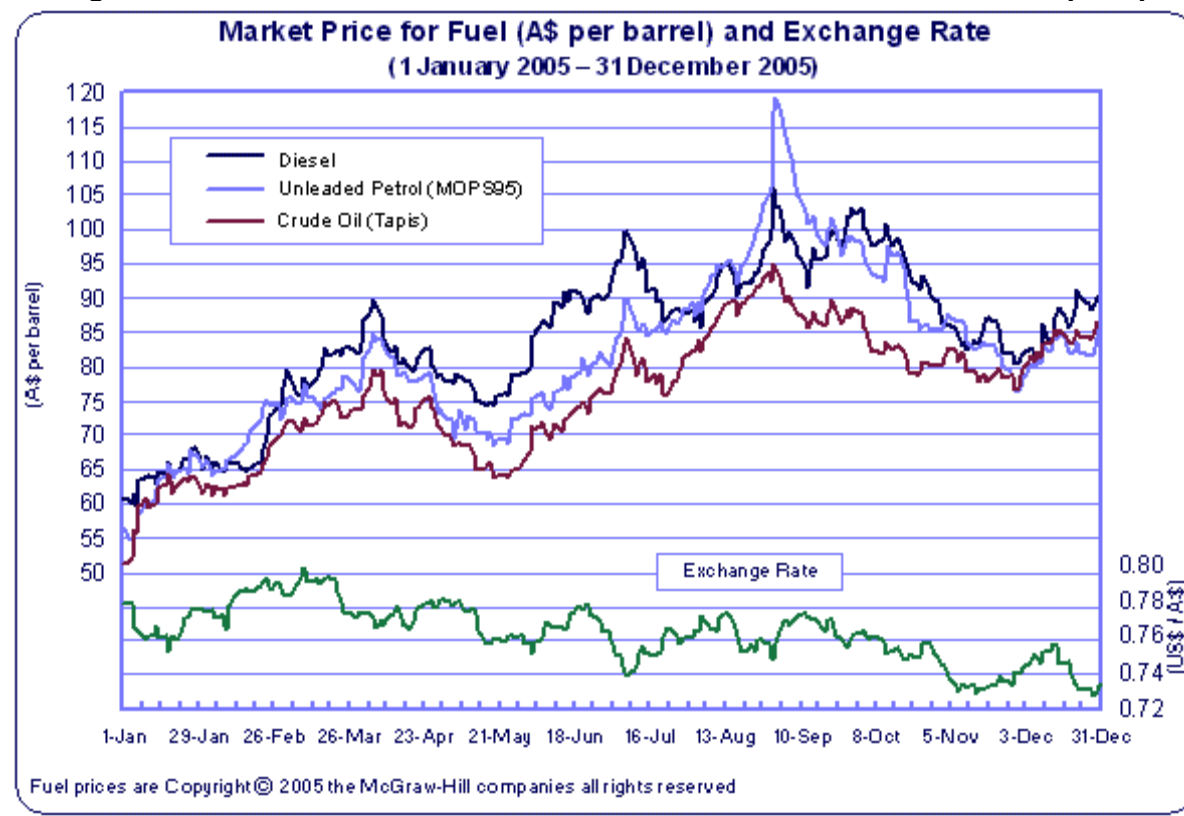
In addition, in recent times product prices have been heavily influenced by broader regional and global trends in product markets. For example:

- o strong demand for petrol and diesel in China and India has put pressures on refinery supply in China and Asia as a whole, resulting in higher product prices.
- o in the second half of 2005, disruptions to international supplies of petrol due to the export embargo in China and the US refinery closures as a result of Hurricanes Katrina and Rita drove up petrol prices across the globe – in the US, Europe, Asia and Australia.

The movements in prices of crude (Tapis), petrol (MOPS95) and diesel (gasoil 500ppm sulfur in 2005, 50 ppm in 2006) are charted daily on the AIP website.

- o Figure 6 shows these price movements over 2005.

**Figure 6: International Market Price for Crude Oil & Petroleum Products (2005)**



### (c) Singapore & Global Refiner Margins

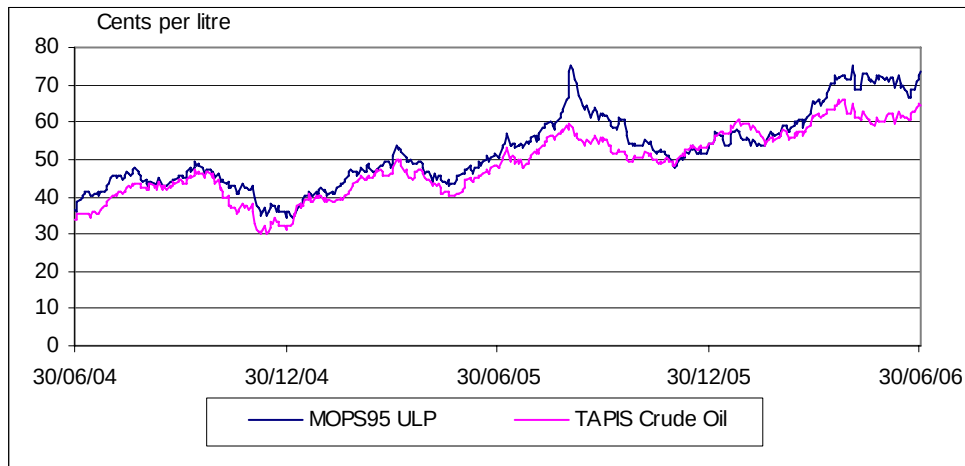
The difference between the price of Tapis crude oil and petrol from Singapore refineries is known in oil industry jargon as the gross Singapore petrol refiner margin. It is important to note that this gross margin is merely the difference between the market determined prices for crude oil and products, it is not a figure determined by refiners. In addition, it is not an indicative profit margin, since a range of costs need to be deducted from the gross margin to determine profits.

- o A number of oil market analysts (including the IEA) and individual oil companies also report net refiner margins which take account of standardized processing costs and the costs of capital invested in the industry.

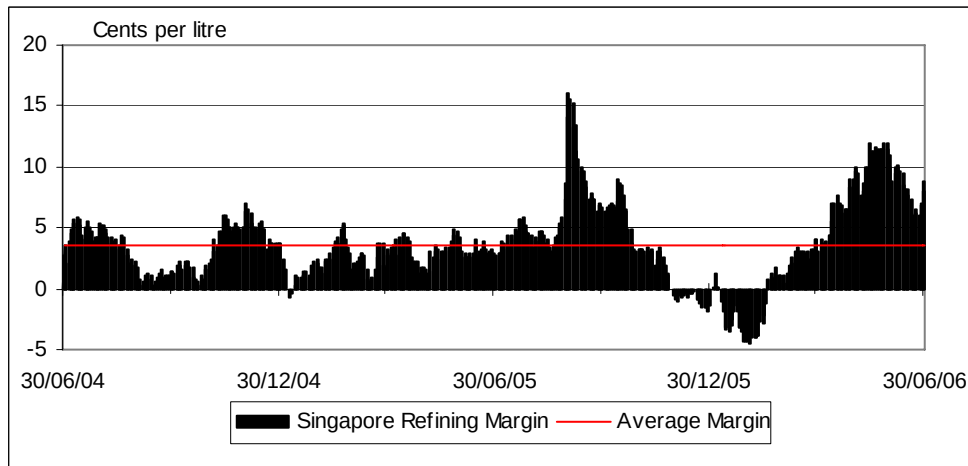
In Figures 7 & 8, it can be seen that the gross refiner margin for petrol in the last two years has averaged around 3-4 cents per litre, with some significant shorter term variations.

- o After a period of significant negative refiner margins through late 2005 and into 2006, margins have now improved.
- o Current margins largely reflect increasing demand from China and India, ongoing tight supply conditions in Asia and record high crude oil prices.

**Figure 7: Tapis Crude Oil versus MOPS95**



**Figure 8: Gross Singapore Petrol Refiner Margin**



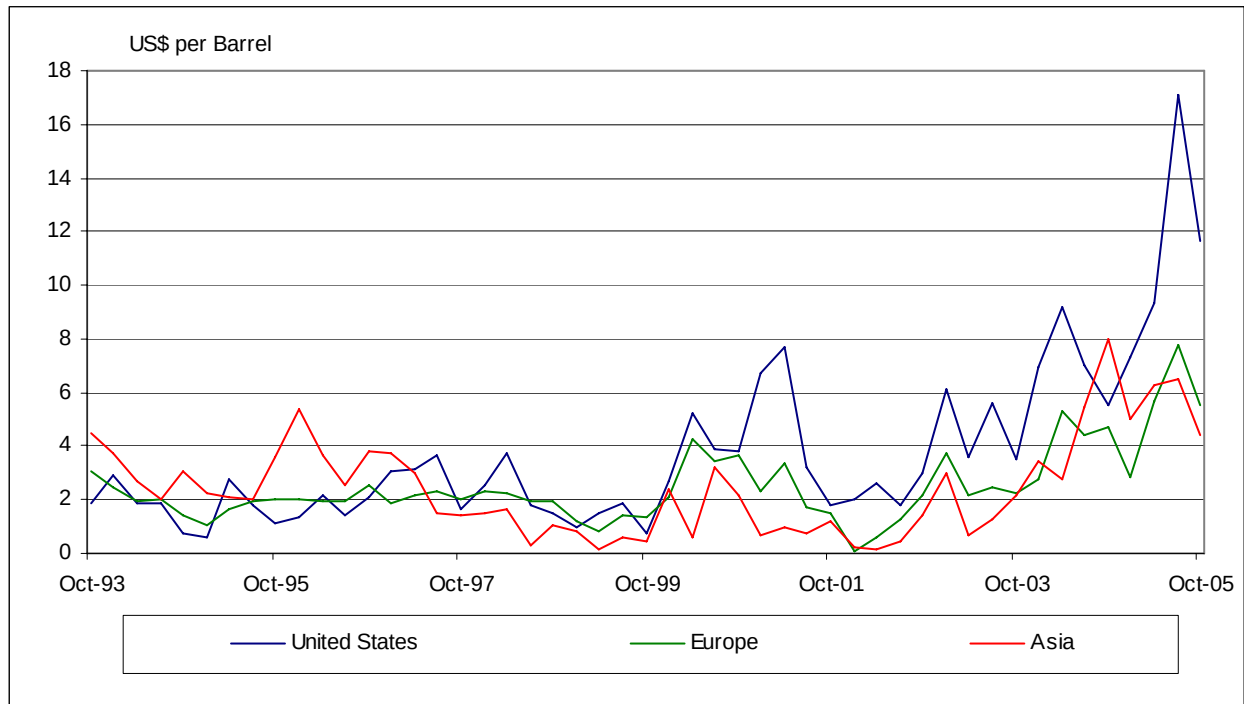
However, shorter term movements in margins must be placed in a longer term context, since refiner margins are inherently cyclical in nature.

This cyclical nature reflects, for example, the course of economic growth in regions, the regional refining capacity balance from period to period, and the premia attached to specific fuels over time (particularly due to changes in fuel standards).

These longer term cycles in margins are highlighted in Figure 9, which shows movements in gross refiner margins in Asia, United States and Europe since 1993.

The Figure shows that the excess refining capacity in Asia in the 1990s was largely reflected in depressed margins in comparison to Europe and the United States.

**Figure 9: World Refining Margins – 1993 to 2005**



Source: BP Statistical Review of World Energy June 2006

NOTE: US = WTI (Sour Coking); Europe = NWE Brent (Cracking), Asia = Singapore Dubai (Hydrocracking)

## **(5) THE RELATIONSHIP BETWEEN INTERNATIONAL PRICES & WHOLESALE PETROLEUM PRODUCT PRICES IN AUSTRALIA**

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*This section provides an overview of the relationship between movements in international prices and wholesale prices here in Australia. This includes an explanation of two key concepts - import parity pricing (IPP) and Terminal Gate Pricing (TGP).*

### **(a) Why Australian Crude & Product Prices Follow International Prices**

Australian crude oil and refined petroleum product prices follow international prices because the Australian crude oil and petroleum product markets are integral parts of the highly efficient global crude oil and fuel markets. While crude oil is produced in Australia and refined petroleum products are made in our refineries, crude oil and petroleum products are also imported into, and exported from, the Australian market.

This means there are competitive market forces in Australia that ensure the prices of petroleum products are consistent with imported fuel prices. This market pressure ensures that Australian refinery operations remain highly cost competitive. These same market forces ensure that there are adequate fuel supplies in Australia by minimising any product export incentives that would arise if prices in Australia were set below international prices.

In addition to these incentives, Australian producers of crude oil are able to sell their crude oil in Australia and overseas at international prices, thereby maximizing the incentive to explore Australian territory for new resources.

Prices in the Australian petroleum product market, like prices for many other products sold in the Australian market, are therefore based on the price of imported alternative supply, rather than on cost plus or bottom-up pricing of manufacture in Australia. One of the main benefits from the competitive pressures created by an open market like this, is that over time it tends to provide lower prices to consumers compared to prices established, for example, by a cost plus formula (with an appropriate allowance for a reasonable return on capital).

This is generally known as 'import parity pricing'.

### **(b) Import Parity Pricing Application in Australia**

For many years fuel prices, and the prices of many other goods and services were regulated by the Commonwealth and /or State governments.

The Australian Government deregulated Australian crude oil supply and marketing from 1 January 1988. Previously the Government determined the price at which crude was purchased and established the quantities that the Australian crude oil refiners were obliged to purchase.

Following the deregulation of the crude oil market, the Prices Surveillance Authority (PSA), decided that greater emphasis should be placed on movements in world product prices (i.e. refined petrol and diesel) to ensure that local product prices reflected competitive international markets.

- o The PSA (and subsequently the ACCC) set maximum wholesale prices for petrol and diesel until 1 August 1998 (i.e. the maximum price at which oil companies could supply petrol and diesel to service stations). These maximum wholesale prices were set using an IPP based on the refined product price in Singapore.
- o Maximum wholesale prices for petrol and diesel were de-regulated by the Australian Government in August 1998.

Since 1998, movements in Australian petrol and diesel prices have continued to follow movements in Singapore refined product prices.

Australian petrol prices follow Singapore market prices because the Australian market is an integral part of the global/regional market for petroleum products. Australian refiners have to compete against petrol imports (Australia imported around 20% of the total petrol and diesel consumed in 2004-05) and the Singapore market represents the competitive alternate source of supply for Australia (and happens to be the major source of our imports).

### Calculating IPP

The IPP is a calculation of the 'landed cost' for fuel in Australia and is derived from the prices for bulk ex-refinery petrol and diesel stock in Singapore. It includes a premium over MOPS95 for quality.

A typical IPP formula would include a rolling average of spot prices and takes into account international freight rates, insurance and loss, local wharfage costs and the US/Australian dollar exchange rate.

That is, a typical IPP formula is:

$$\text{IPP} = \text{Singapore Spot Purchase Price (eg MOPS95 + quality premium)} + \text{Freight} + \text{Insurance} + \text{Wharfage}$$

### **(c) Terminal Gate Prices (TGP)**

The IPP represents the largest share of the wholesale price of petroleum products in Australia.

The ex-terminal wholesale price (known as the Terminal Gate Price or TGP) also includes terminal costs in Australia, net tax (excise and GST less any state subsidy) and, to the extent possible competitively, a small wholesale marketing margin.

That is, a typical TGP formula is:

$$\text{TGP} = \text{IPP} + (\text{Excise} - \text{any wholesale subsidies}) + \text{Terminal operating costs and margin} + \text{Wholesale Marketing Margin} + \text{GST}$$

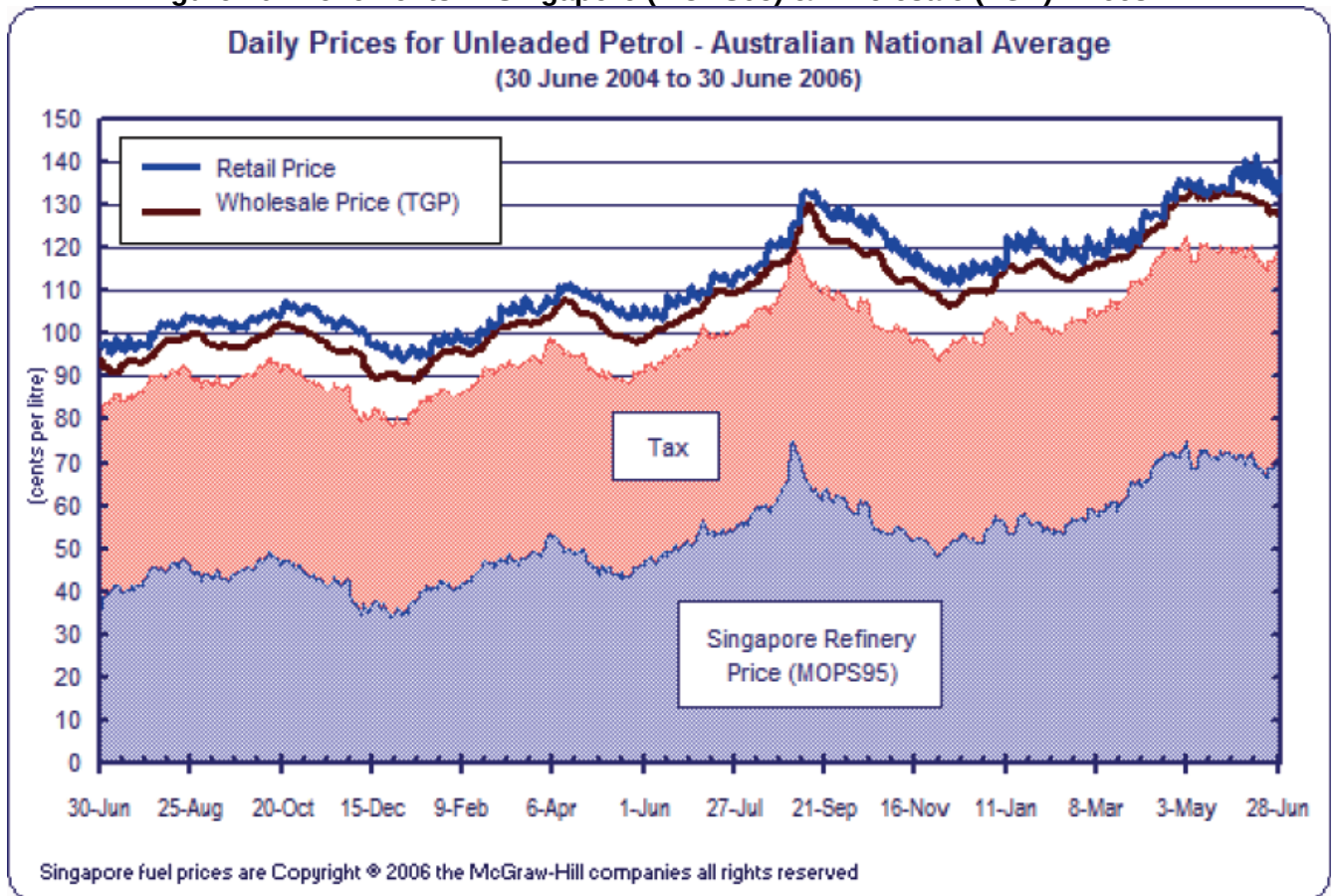
Each of the Australian fuel wholesalers have their own methodology for calculating their Terminal Gate Prices based on IPP. The recent report by Consumer Affairs Victoria (CAV) clearly shows some variation in suppliers' TGPs (see '*Report on Automotive Fuel Prices in Victoria – January 2003 to April 2006*' – particularly Graph 4 on page 9 of the Executive Summary).

There is a short time lag of between 1 & 2 weeks between changes in Singapore prices and changes in wholesale prices in Australia (reflecting different TGP pricing methodologies by fuel wholesalers).

TGP data provides a good guide to how changes in international crude oil and product prices flow through to wholesale prices (ex-terminal) in Australia. TGP data is published daily by the AIP and by each of the oil majors.

Figure 10 shows movements in MOPS95 and the national average TGP over the last two financial years. Equivalent charts for the States and the Northern Territory are at Attachment C.

**Figure 10: Movements in Singapore (MOPS95) & Wholesale (TGP) Prices**



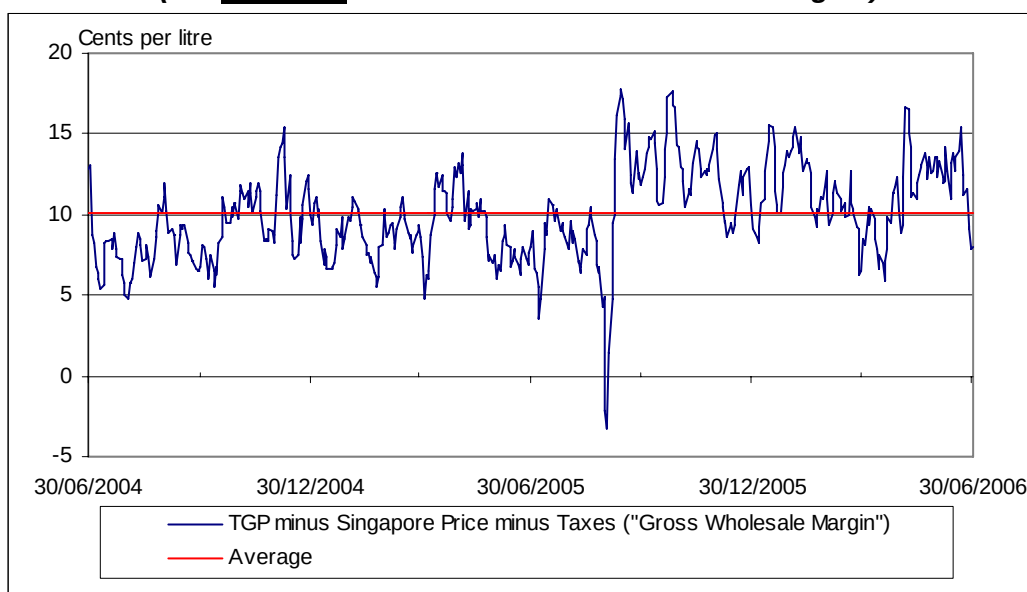
This Figure clearly illustrates the very close relationship between international product prices and the wholesale price of the fuel in Australia (TGP). The international product price plus tax (excise and GST less any state subsidy) represents almost the entire wholesale price of petrol in Australia.

The small remaining amount covers the other costs which make up the wholesale price - freight, quality premium for Australian fuel standard (which exceeds the quality of the MOPS95 marker), insurance, local wharfage and terminal costs, and an allowance where competitively possible for a small wholesale marketing profit margin.

This small remaining amount is an indicative figure or calculation that is called by some commentators the 'gross wholesale margin'. In the same way that crude and product markers (eg. MOPS95 and Tapis) do not represent the actual purchase prices of individual AIP member companies (see Section 4), the so called indicative gross wholesale margin does not either reflect the actual gross wholesale margins or the profit margins accruing to individual AIP member companies. Consequently, appropriate care should be exercised when using this data to infer financial performance of individual companies.

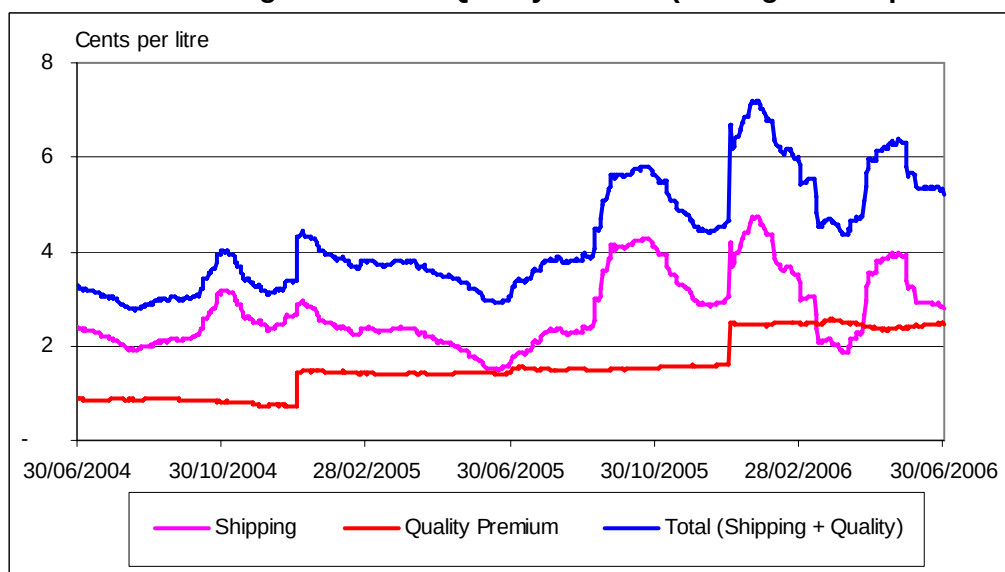
Figure 11 shows movements in the so called indicative 'gross wholesale margin' over the last 2 financial years, with the amount to cover all the costs noted above averaging around 10 cents per litre.

**Figure 11: TGP minus Singapore Price minus Taxes  
(the so called indicative “Gross Wholesale Margin”)**



Over the period in Figure 11, there have been increases in both the components for transport freight and storage as well as for quality premium. This is clearly highlighted in Figure 12 below which shows the separate movements in shipping rates and fuel quality premia over MOPS95.

**Figure 12: Increases in ‘Freight Costs’ & ‘Quality Premia’ (Average for Capital Cities)**



SOURCE: Platts and BP Australia

Some key points to note from Figure 12 include the following.

- o The changes in the fuel quality premia in recent years reflect the introduction of new fuel quality standards in Australia (see Table 2 below).
  - These premia reflect the increased cost of production and value ascribed to this fuel quality. In other words, this is how the market values the improved quality of these fuels.
  - The price impacts of cleaner fuel standards (and the associated significant environmental benefits) were well understood by Federal and State governments when the cleaner fuels program commenced in 2002.
  - To meet these standards the Australian refining sector has invested over \$2 billion.

**Table 2: Changes in Australian Fuel Standard Specifications (ULP)**

|                                                           | 2004                           | 2005                                                                     | 2006       |
|-----------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------|------------|
| <b>KEY AUSTRALIAN PRODUCT SPECIFICATION CHANGES (ULP)</b> | Olefins 18% average<br>MTBE 1% | Olefins 18% batch<br>Sulphur 150ppm<br>FBP 210C<br>Aromatics 42% average | Benzene 1% |

- o There was a change in the cost of transporting petroleum products to Australia in 2005 when a Singapore-Australia freight rate began to be utilised and subsequently replaced the previously used indicator of Singapore-Japan freight rates.
- o When these two changes are considered, it is clear that the gross wholesale margin has not increased over the past 2 years.

It is important to note that attempts by the Consumer Affairs Victoria (CAV) to calculate the indicative wholesale marketing margin since 2003 (see *Report on Automotive Fuel Prices in Victoria – January 2003 to April 2006* – particularly Graph 2 on page 8 of the Executive Summary) are seriously flawed due to CAV not making adequate allowance for the change in fuel standards since 2003 and CAV not utilising up to date information on the movements in freight rates. Thus, CAV drew wrong conclusions.

The data in Figure 12 has been provided to CAV by an AIP member company and it is expected that a revised analysis will be published by CAV. An accurate analysis would show that TGPs have remained closely in line with Singapore prices once accurate freight and quality data are taken into account.

## **(6) THE RETAIL MARKET IN AUSTRALIA: WHO SETS RETAIL PRICES?**

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*This section provides an overview of the key structural characteristics and operational features of the petroleum product retail market in Australia. Who sets pump prices in the retail market and the current and potential influence of market participants in the future is a focus. This discussion provides important context to the subsequent chapter outlining the relationship between the wholesale and retail prices of petrol.*

### **(a) Overview**

The downstream petroleum retail sector has undergone significant changes in the last ten years in almost every aspect of its operations — but particularly in relation to industry structure.

The convergence of fuel retailing and convenience store shopping has advanced through the supermarket alliances that have emerged since 2003 between Shell and Coles Myer and between Caltex and Woolworths.

The supermarket alliances now handle around 40% of total retail fuel sales nationally. There have been very strong consumer responses to the supermarket shopper docket discounts and according to the ACCC there are now over 450 shopper docket fuel discount schemes in place.

Other key factors that have influenced the structure and operation of the Australian fuel market that are discussed in more detail below are:

- o Changes in service station business models
- o Market reform
- o Current service station operations
- o Changes in service station numbers since 2000
- o Long term role of oil majors and supermarket alliances in fuel retailing
- o Terminal gate prices
- o Retail price discounting and shopper-dockets
- o Role of independent service station operators in driving competition in the retail market.

### **(b) Changes in Service Station Business Models**

Thirty years ago the dominant business model for service stations was a petrol station with a mechanical repair workshop. Since that time the multi-product service site has become the dominant model that offers a range of fast food and other consumer products in addition to liquid fuels and relies on high sales volumes for competitive advantage.

The competitive advantage of any individual site is determined by the package of goods and services that is being offered to consumers. The most obvious example is shopper dockets that have enabled supermarket alliances to boost their share of the retail market to around 40% of the national retail fuels market. Other important elements for consumers are site location and access, the facilities available and the extent of ancillary services such as a convenience store.

All these developments indicate the retail petroleum sector is a competitive and dynamic activity that could see further change if new business models are not constrained by regulation. Ultimately the consumer will benefit from greater levels of competition either through reduced prices or through better service.

### **(c) Market Reform**

AIP refiner/marketer member companies fully support the Australian Government's Downstream Petroleum Reform Package.

The Government has announced that it intends to repeal both the *Petroleum Retail Marketing Sites Act 1980* and the *Petroleum Retail Marketing Franchise Act 1980*. The repeal of these Acts is to be accompanied by the introduction of a mandatory Oilcode under the *Trade Practices Act 1974* (TPA). The Oilcode provides for regulation of fuel re-selling agreements, a national terminal gate pricing (TGP) regime, price transparency and documentation measures, and a dispute resolution process.

AIP sees many benefits from these reforms including:

- o repeal will remove barriers to greater competition in the market and consumers will benefit from more effective competition
- o the Acts limit the ability of the four oil majors to compete with unregulated supermarket chains
- o there will be greater price transparency at each stage of the supply chain
- o small business (commission agents) will gain improved tenure, while the tenure of franchisees will be maintained
- o both Acts have been found by a number of government reviews (including by the ACCC) to be outdated and ineffective
- o the Acts currently place compliance costs on the companies concerned without benefit to the community as a whole, and
- o international perceptions of Australia as an investment destination will be improved.

The retail petroleum market reform package will ensure that competition continues to be vigorous, providing ongoing benefits to the consumer. Independent rural and regional service station operators, in particular, will continue to be able to take advantage of local market knowledge and will generally have lower overheads than major service station networks.

In understanding the implications of the Market Reform Package, particularly the significant benefits to competition and consumers, it is important to understand the key features and operations of the fuel market in Australia.

### **(d) Current Service Station Operations**

The Box below summarises the actual operating arrangements across the industry.

Key factors highlighted in this summary include the following:

- o Retail prices are set in around 90-95% of cases by people other than the oil majors. While the oil majors and some importers are responsible for setting the wholesale fuel prices, retail prices and hence retail margins are set at the vast majority of sites by the site operator.
- o Service stations carrying the brand of an AIP member company are required to source their fuel either directly from that company or from one of that company's authorised distributors. This is so that customers can be assured of the quality of the fuel purchased from a station carrying a particular brand. Each of the oil majors operating in Australia closely monitors the quality of the fuel they supply at all stages through the production and distribution system. All fuel sold between the oil majors goes through the same rigorous checks for quality assurance.
- o For brand management and fuel quality assurance reasons it is not acceptable for individual branded service station operators to seek fuel supplies from other than approved distributors. This situation is no different from the arrangements that are rigorously applied in many other branded product wholesale and retail operations (eg fast food, beverages).

- o The situation is even more important under the Australian Government's cleaner fuels program, where the supply of off-spec fuel by a retailer can have severe implications for vehicle operability, giving rise to negative financial and reputation implications for the fuel supplier.

### **Box 1: Types & Numbers of Service Station Operations in Australia**

Outlined below is an explanation of the main types of service station operations:

- o **Oil Company operated (sites may be owned or leased) (316 in 2004)**
  - Numbers restricted by the Sites Act
  - Tied fuel supplies
  - Retail prices set by oil company
  - Convenience store options
- o **Supermarket alliances (872 in 2004)**
  - No mandated restrictions on operations
  - Tied fuel supplies
  - Retail prices set by supermarket
  - Convenience store options controlled by supermarket
- o **Franchisee (958 in 2004)**
  - Franchisee operated (declining in numbers)
  - Full marketing programme support by supplying oil company
  - Tied fuel supplies
  - Retail prices generally set by franchisee
  - Convenience store options controlled by franchisee
- o **AIP Company Branded Independents (3895 in 2004)**
  - Branded independents (major oil company brands) – account for almost half the total number of service stations
  - May be operated by distributors or independent retailers (in some cases may be franchised by distributors or multi-site owners)
  - Subject to branding agreement with fuel supplier
  - Agreement may or may not include marketing programme support
  - Tied fuel supplies
  - Retail prices set by independent operator
  - Convenience store options controlled by owner/operator
- o **Non AIP company branded and other independents (608 est in 2004)**
  - May be operated by distributors or independent retailers (in some cases may be franchised by distributors or multi-site owners)
  - Fuel supplies not tied to single oil major
  - Retail prices set by independent operator
  - Convenience store options controlled by owner/operator

**NOTE:** Within this structure, sites may be owned by oil majors, supermarkets, franchisees/CAs acting as investors, distributors, branded or non branded independent retailers, or unrelated investors. Sites may be operated by the owners or leased to other operators.

### (e) Changes in Service Station Numbers Since 2000

The following table summarises the changes in service station numbers in recent years.

**Table 3: Changes in Service Station Numbers Since 2000**

|                                                      | 2000        | 2004        | Change       |
|------------------------------------------------------|-------------|-------------|--------------|
| <b>AIP Member Branded Service Stations:</b>          |             |             |              |
| Company operated                                     | 296         | 316         | 20           |
| Franchises                                           | 2019        | 958         | -1061        |
| Supermarket                                          | 156         | 872         | 716          |
| Other - AIP branded independ. & other related brands | 5047        | 3895        | -1152        |
| <b>Total</b>                                         | <b>7518</b> | <b>6041</b> | <b>-1477</b> |
| <b>Non-AIP Member Service Stations:</b>              |             |             |              |
|                                                      | 659         | 608         | -51          |
| <b>TOTAL ALL SERVICE STATIONS</b>                    | <b>8177</b> | <b>6649</b> | <b>-1528</b> |

Overall, the table shows that AIP member companies now have a much more limited role in petrol retailing and there is now much less vertical integration within the industry.

Specifically, the table shows that:

- o the estimated number of Australian service stations has reduced from around 8200 in 2000 to around 6650 in June 2004 - a drop of around 19% in total service stations
- o this overall fall is largely as a result of a decline in AIP member branded service stations between 2000 and 2004 of around 1500 service stations – to around 6000 service stations in total
- o the number of independently operated, branded service stations declined by 23% between 2000 and 2004
- o the number of AIP member company branded service stations operated under franchise arrangements has dropped by 53% over the same period (to 958 sites in 2004); the majority of these service stations are now in the supermarket alliances, and
- o the number of service stations under the supermarket alliances grew by around 700 sites between 2000 and 2004 – to around 870 in total.

These general trends are evident across Australia with a greater impact in metropolitan compared to rural and regional areas.

Since 2004, these trends have continued with:

- o a further reduction in AIP Member branded service stations of around 500 sites – with these now totaling around 5500 service stations in 2006, and
- o a further increase of around 200 service stations under the supermarket alliances – with these service stations now totaling around 1080 in mid 2006.

The main drivers for site closure have been general small business viability factors including the following:

- o Lower fuel turnover and hence lower profits from fuel sales (1 tanker per 2-3 weeks vs 1 and sometimes more tankers per day at metro sites)
- o Lower convenience store turnover/sales over which to meet service station operating costs (ie limited diversity of income base)
- o Viability/expansion constrained by aging capital - older businesses without capital backing for site upgrades (eg for new storage tanks, extra pumps, new forecourt, modern and expanded convenience store)

- o Viability/expansion constrained by State/Territory govt regulations and environmental expenditure requirements (eg. to prevent leaks from underground storage tanks – most ‘at risk’ sites are in non-metropolitan areas where single-skin tanks are more prevalent).
- o Families not wishing to continue to operate their small business
- o Competition from more efficiently run businesses, and businesses offering wider range of convenience store services
- o Too many service stations in the vicinity.

Analysis by AIP suggests that the average customer base for a service station in metropolitan areas (based on numbers of residents in the vicinity of the service station) is around 4,000 to 5,000 people. In non-metropolitan areas the average customer base per service station is around 2,000 (based on numbers of residents in the vicinity of the service station), and in many towns the customer base is between a half and one quarter of this figure.

#### **(f) Longer Term Role of Oil Majors and Supermarket Alliances in Fuel Retailing**

Some commentators (including opponents of the Market Reform Package) claim that eventually there will be a fuel retail duopoly in Australia, based on the supermarket fuel operations. AIP believes the market share of supermarkets will only grow substantially if market reform is stifled.

Market reform will enable all fuel suppliers to compete on an equitable basis, without certain suppliers being unreasonably constrained in their choice of retail business model. This will enable networks to be established that are commercially viable in size and hence enable the networks to optimise the economies of scale that exist in fuel retailing and convenience store operations. Once established these networks will be the platforms from which service options can be offered to a wide range of branded independent sites across Australia.

The ability to modify business structures as required will enable more effective competition with the service stations controlled by the supermarket alliances. Progressive improvement in the quality of service stations in rural and regional areas can also be expected (ie the quality and range of services can be better targeted to meet current community needs).

#### **(g) Terminal Gate Prices**

Fuel prices are amongst the most transparent prices of all commodities sold in Australia. Extensive information is provided by a range of organisations about the factors influencing fuel prices at the international and local levels. In addition, details of average local prices and service station specific prices across the country are readily available from a variety of public and private sources.

The Government’s proposed industry reform package (particularly the Oilcode) will require the publication of terminal gate prices for all fuels sold on a ‘spot’ basis to approved customers with a tanker of 30-35,000 litre capacity that meets strict safety requirements. AIP member companies already publish these prices, but this is not the case for other fuel suppliers.

Calls for all wholesale sales of fuel to be at the published TGP would remove a significant level of competition at the wholesale level. Such a move would also be atypical in Australian business practice where volume discounts are a feature of wholesale and very large retail sales activities. Most fuel distributors and retail operators prefer to enter into term contracts with fuel suppliers to guarantee supply availability and to provide site branding and access to fuel card operations. In a fuel supply restriction (such as might arise from refinery outages), term contracts have priority over spot liftings at refinery terminals.

For large volume contracts, lower prices can be negotiated with suppliers. These negotiations take account of the value of large supply volumes in planning refinery and import operations, the value of regular uplift of product in pipelines and tankers that enables the maximum use to be made of delivery vehicles, and the risks that can be managed between supplier and customer in relation to future movements in petroleum product prices.

#### **(h) Retail Price Discounting and Shopper-Dockets**

Strong competition at the retail level in Australia has ensured that fuel prices have remained amongst the lowest across the OECD countries. With the advent of the supermarket alliances, customer loyalty programs in the form of supermarket shopper dockets redeemable as discounts on fuel have become a significant feature of fuel retailing in Australia.

- o Advice from the supermarket chains indicates that up to 4 million shopper dockets are now being utilised each week. Consumer surveys indicate that up to 75% of motorists are using shopper dockets.
- o The ACCC has considered over 450 shopper docket schemes and has confirmed that they increase retail price competition in the sector and provide a significant benefit to consumers.

#### **(i) Role of Independent Service Station Operators in Driving Competition in the Retail Market**

Independents have a strong presence in the fuel retail market and AIP does not expect this situation to change. However, in recent times we have seen independents playing a far less significant role in driving price competition in Australia.

From the mid 1990s to early 2000s there were significant volumes of petrol available from refiners in Australia and in Asia at relatively low prices, reflecting the excess production at these refineries relative to demand. There was also lower quality (and lower price) fuel available from some Asian refineries. These factors were the basis on which much of the current fuel discounting reputation of the independents was built.

However, there are no longer easy options for price discounting through access to cheap surplus fuel supplies. Rapidly growing demand in Asia has absorbed any excess refinery production and market prices have increased accordingly, while Australia has become a net importer of fuel. This situation was further tightened with the introduction of more stringent fuel quality standards in Australia to enable the introduction of new vehicle technology needed to reduce motor vehicle emissions and to improve urban air quality.

As the Northern Territory fuel pricing inquiry in 2005 indicated, while the opening of a service station by one of the larger independent chains was likely to create local price competition, the presence of the smaller chains or single site independent operators was not likely to generate price competition due to the basic economics of fuel retailing in Australia, particularly outside metropolitan areas.

Analysis by Caltex, in its submission to this Inquiry, shows that independents are not a major driver of price discounting - the main drivers are the supermarket chains.

## (7) RELATIONSHIP BETWEEN THE WHOLESALE PRICE AND THE RETAIL PRICE OF PETROL

*This section provides an overview of the relationship in Australia between the wholesale price of petrol and the retail or pump price of petrol.*

### (a) Composition of Retail Prices

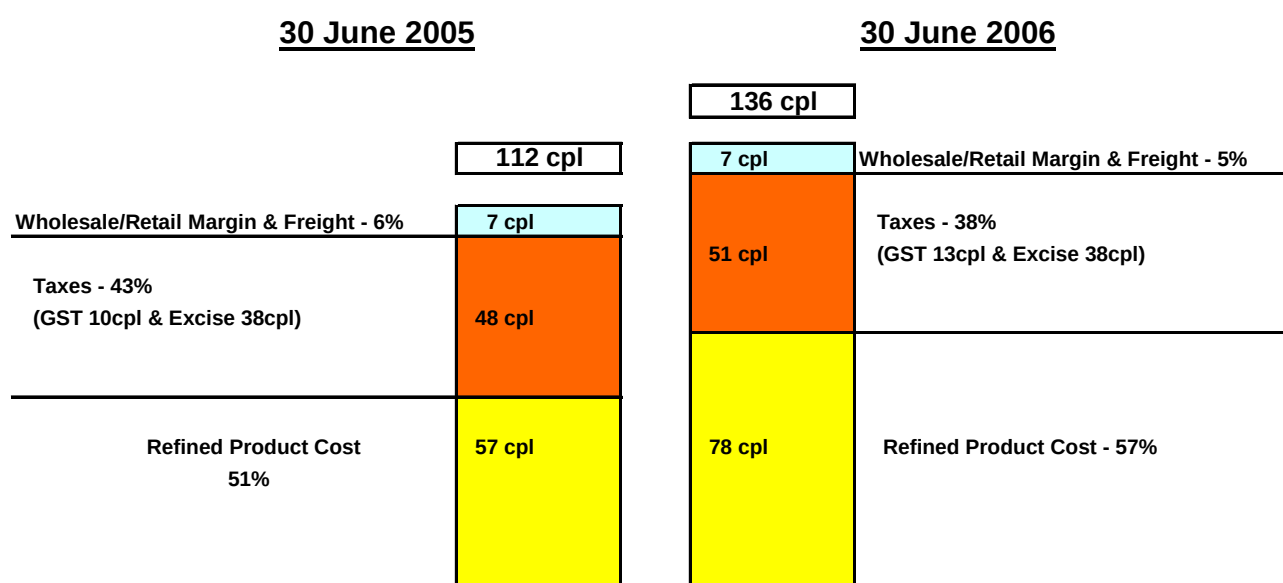
At both the wholesale and retail level prices are set by the competitive market.

Within that fundamental competitive framework, the overall retail or pump price in Australia reflects all the costs of getting the fuel from the refinery/terminal to the consumer.

The chart below shows the major components of the indicative retail price of petrol as at end of June 2005 and end of June 2006. Once the refined product cost and taxes are taken into account, there is only a small proportion of the price which is received by fuel /distributors and fuel retailers (around 6% on average).

Importantly, the wholesale/retail margin includes profit, and the amount the distributors and retailers have available to pay all of the costs from the refinery gate to the petrol bowser. This includes freight/transport costs, administration and marketing costs, and the costs of running service stations like wages, rent, utilities.

**Figure 13: Components of National Average Retail Prices**



### (b) Movement in Retail Prices

In understanding movements in retail or pump prices, it is important to distinguish between the factors that contribute to the underlying price level and the factors that drive pump or retail price volatility around that underlying price level. Ultimately, the market sets the retail price which can be achieved.

- o The underlying price level is largely determined by the international influences noted above and the domestic competitive market.

- o In contrast, retail price volatility is caused by the structure of the retail market (see Chapter 6) and by variations in local area competitive factors including price cycles (see Chapter 9).

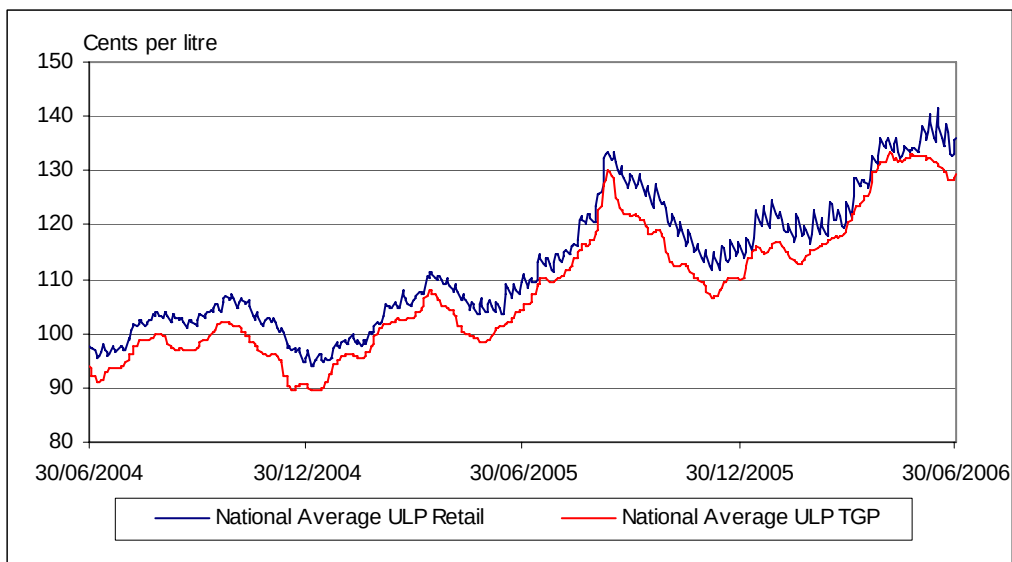
International and domestic factors can have different impacts.

- o For example, there are often times when there are increasing or decreasing crude oil prices (reflecting international factors), but domestic petrol prices are moving in the opposite direction (reflecting domestic market factors including price cycles).
- o As a general rule, it may take up to 1 to 2 weeks for changes in Singapore petrol prices to be reflected in Australian pump prices (reflecting different TGP pricing methodologies by fuel wholesalers), and this time lag occurs whether prices are going up or down.

### (c) Comparison of TGP and Retail Prices

As shown in Figure 14, national average retail petrol prices closely follow the national average TGPs (which in turn follow international crude and product prices). This demonstrates how international price movements flow through to the bowser.

**Figure 14: National Average ULP TGP versus Average ULP Pump Price**



Charts, on the same basis, for the States and Northern Territory are at Attachment D.

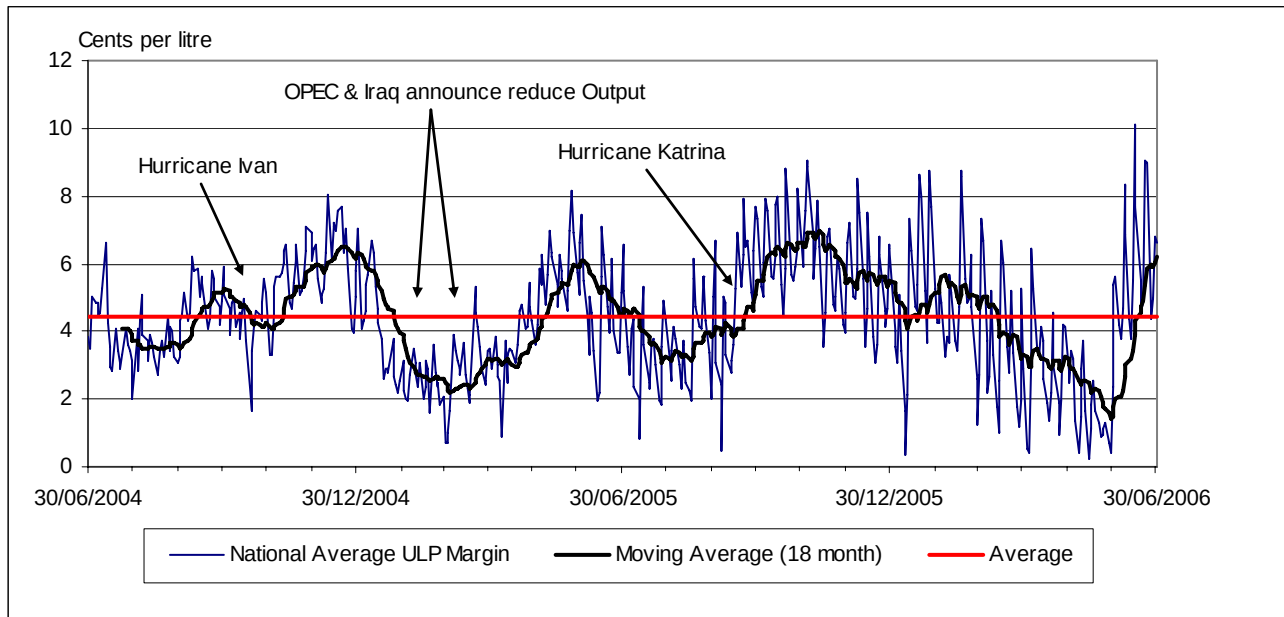
### (d) Average Retail Margins

The difference between the pump price and TGP is typically called the 'gross retail margin', noting that this margin includes profit and the amount the distributors and retailers have available to pay all of the costs from the refinery gate to the petrol bowser (eg. transport costs, administration and marketing costs, and the costs of running service stations like wages, rent, utilities).

Gross retail margins for the past two years are shown in Figure 15.

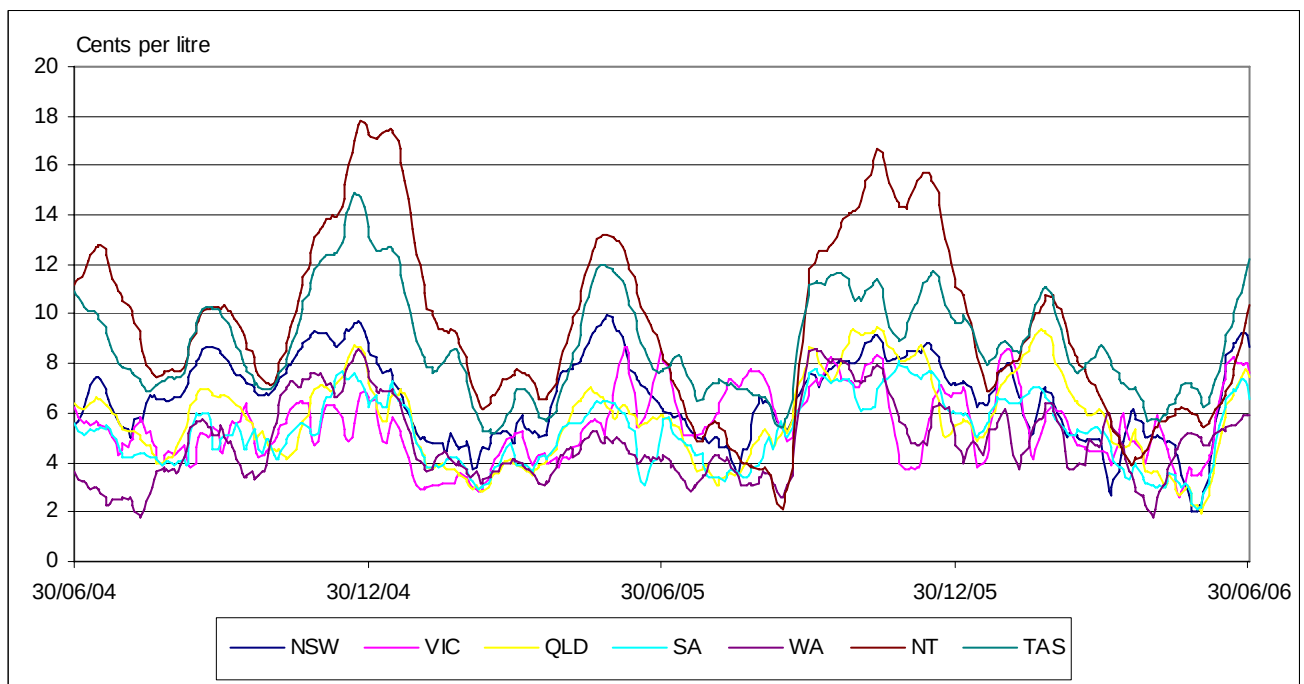
- o The gross margin has averaged between 4-5 cents per litre over the last two financial years.
- o For much of 2006, gross retail margins have been below the average of the past two years.

**Figure 15: National Average Gross Retail Margin - Pump Price minus TGP**



The gross retail margins (pump price minus TGP) for the States and Northern Territory are shown in Figure 16. While there is a high correlation between the peaks and troughs in each State/NT cycle, the amplitude of the cyclical variations are clearly more significant in some States/NT than others. These different patterns reflect local area factors and competition and the structure of the market in those jurisdictions (see Chapters 6 and 10).

**Figure 16: States/NT Average Retail Margin (Gross) - Pump Price minus TGP**



## (8) RETAIL FUEL PRICE COMPARISONS

### (a) International Comparison of Pre and Post Tax Fuel Prices

Despite international price pressures affecting recent retail price movements, Australia continues to have among the lowest petrol and diesel prices of all OECD countries – both on a pre and post tax basis - according to official statistics from the International Energy Agency. While exact rankings can change slightly from quarter to quarter (largely reflecting exchange rate movements from period to period), Australia has enjoyed among the lowest rankings for some time, largely reflecting the competitiveness of our downstream sector and Australia's comparatively low fuel taxation.

Figure 17

### Petrol Prices and Taxes in OECD Countries March Quarter 2006

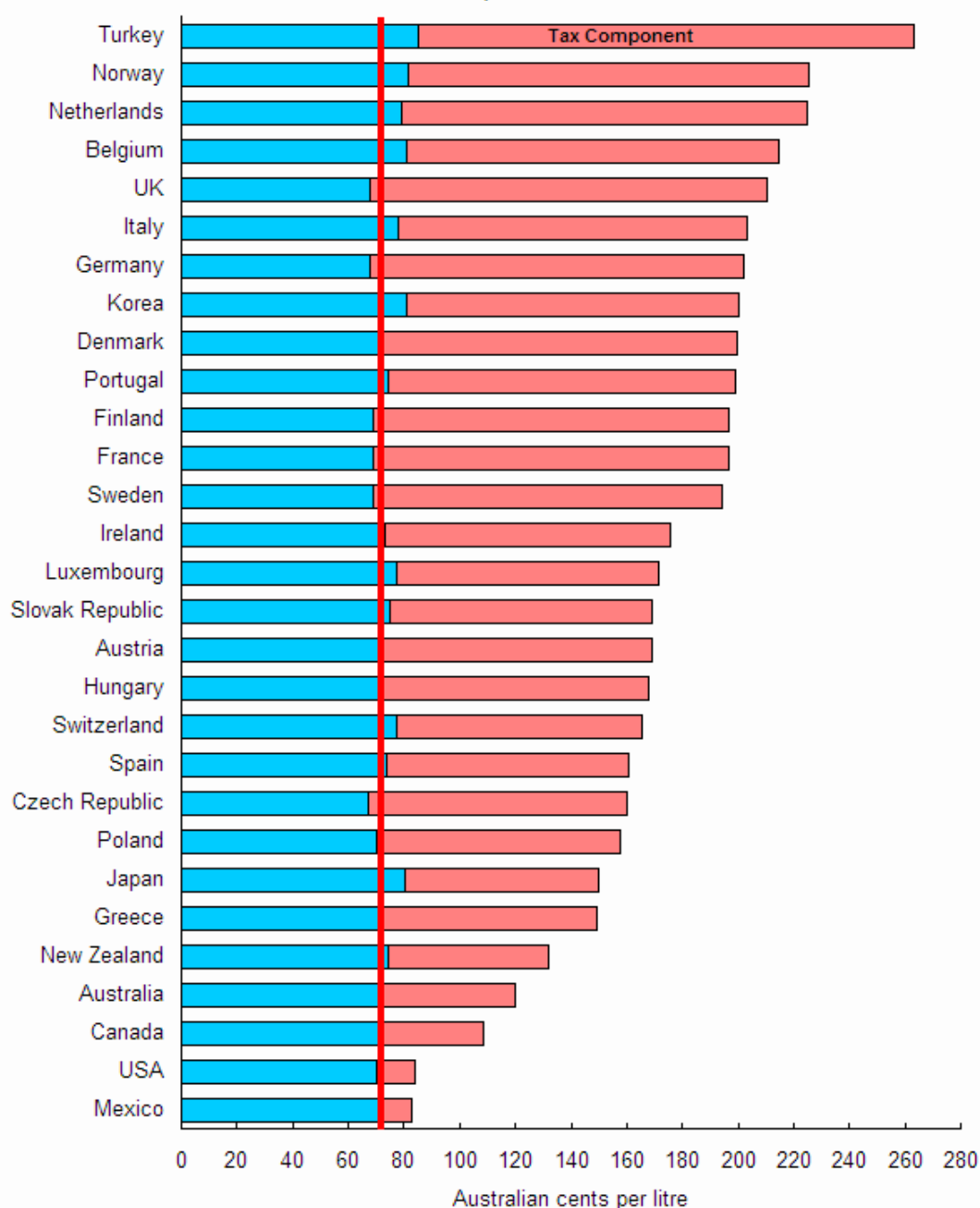
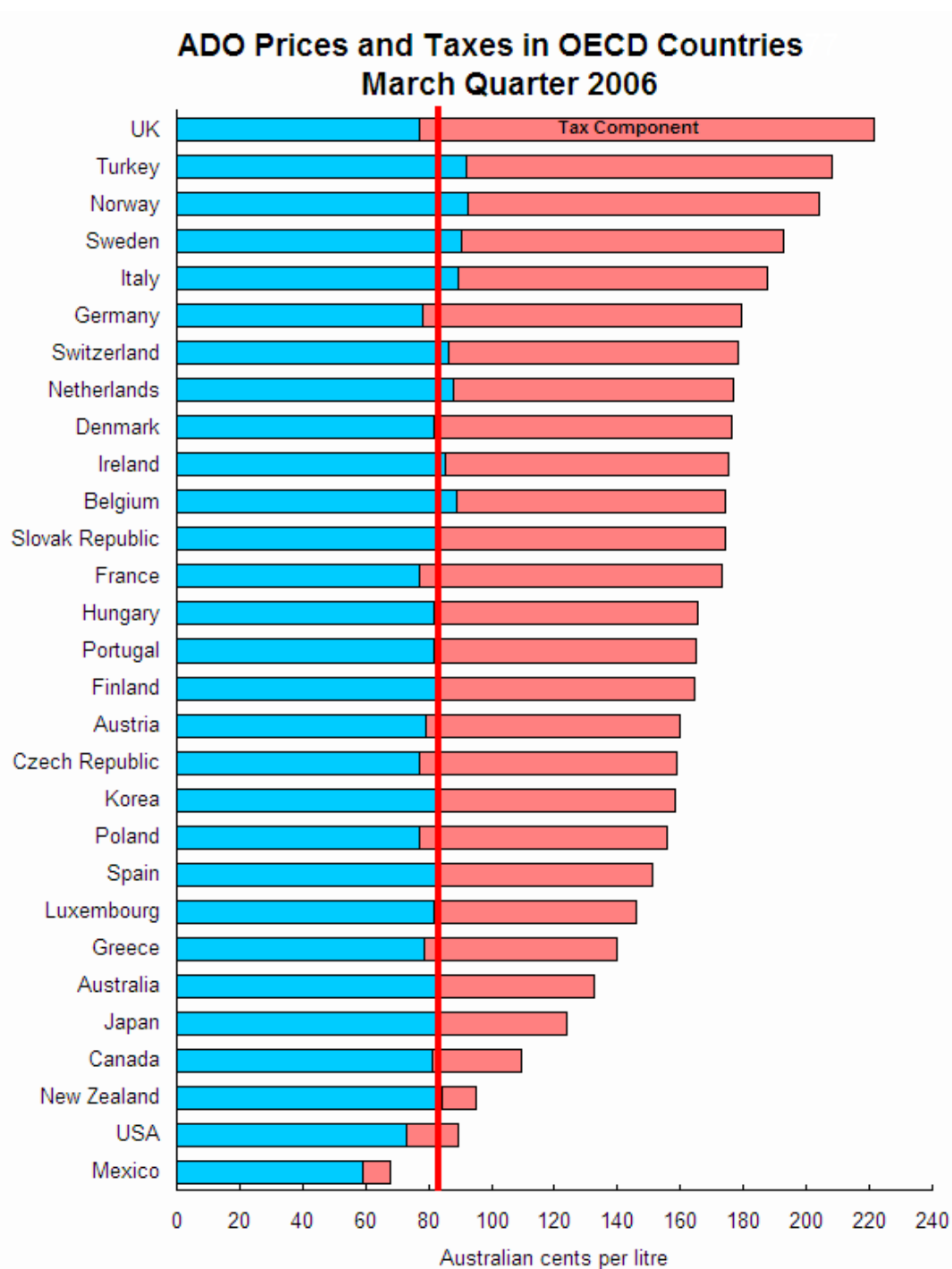


Figure 18



Source: Australian Petroleum Statistics

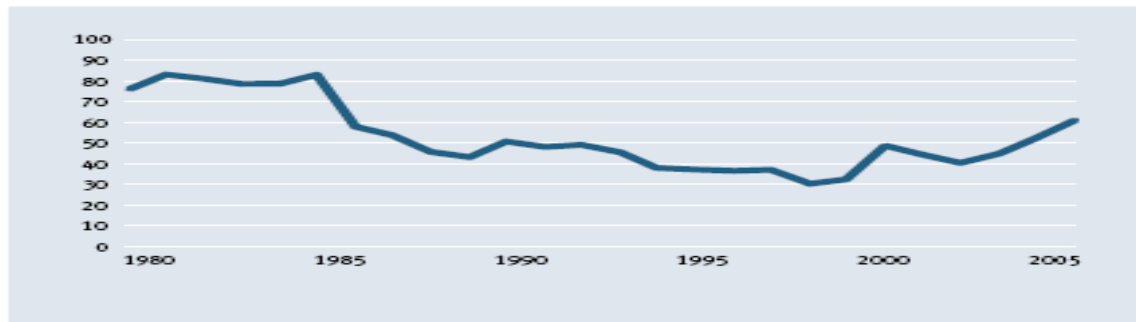
**NOTE:** New Zealand has a very low tax on diesel (8.6 cents per litre) at the pump (GST only) but the New Zealand Government applies a road user charge to vehicles. For example, a passenger diesel vehicle traveling 25 000 km per year will pay road user charges of some \$785 pa in New Zealand. In comparison, the Australian diesel consumer pays 38.143 cents per litre in excise plus GST.

## (b) Comparative Prices: Price Changes for Petrol vs Other Consumer Goods & Services

As shown in the Figures below, the price of petrol has reduced in real terms over the last two decades – one of the few staple commodities to have done this.

**Figure 19**

**Changes in petrol prices: cents per litre (constant \$2004)**

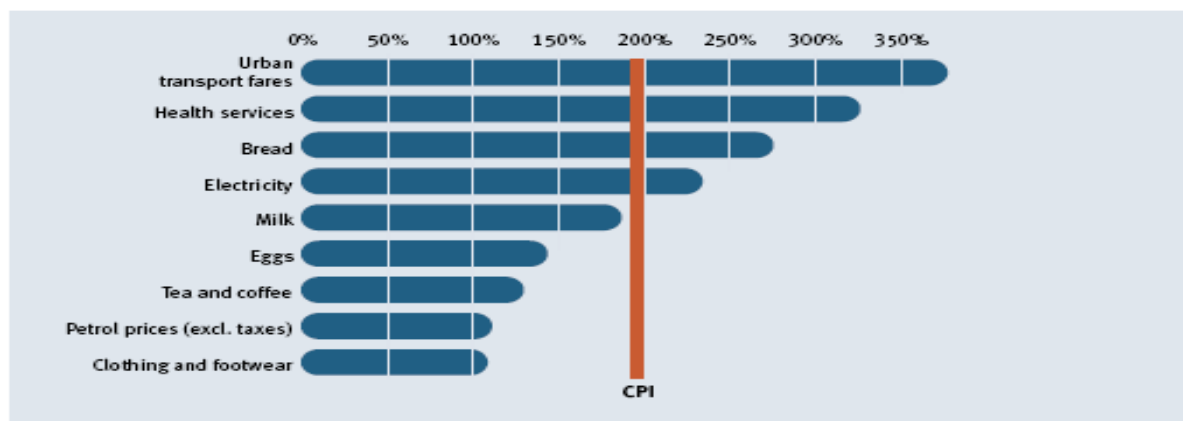


Source: Downstream Petroleum 2005

The increase in petrol prices (excluding tax) paid by consumers has been less than the increase in the CPI and less than the price increases for other significant household consumables like bread, milk, eggs and transport fares.

**Figure 20**

**Percentage change in prices: 1980–2005**



Source: Downstream Petroleum 2005

## **(9) VARIATIONS IN THE RETAIL PRICE OF PETROL AT PARTICULAR TIMES**

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*This section provides an overview of why petrol prices at the pump change over time, including at different stages of the price cycle, across different cities/regions, at different times of the day and in response to other international and domestic factors. The clear conclusion is that retail price cycles favour the consumer and follow a typical and reasonably predictable pattern in each region (including in the lead up to public holidays and following major changes in market conditions).*

### **(a) A Typical Fuel Price Cycle**

According to the ACCC, “a price cycle is considered to have occurred when there are total price movements between trough to peak of 1 cent per litre or more and similar movements between the peak and subsequent trough.”

Some common definitions of key points in a cycle (including retail petrol cycles) include:

- o trough - refers to the lowest average daily price after a peak
- o peak - refers to the highest average daily price after a trough
- o cycle length - the length of the price cycle is the number of days between two troughs
- o variation (or amplitude) – of a price cycle is the difference in price between the peak and trough.

### **(b) Drivers for Retail Fuel Price Cycles**

The overall retail or pump price in Australia is set by the competitive market but also reflects all the costs of getting the fuel to the consumer. This includes the wholesale price (or TGP), transport costs, administration and marketing costs, and the costs of running service stations like wages, rent, utilities etc.

Historically, retail prices in metropolitan areas have followed a discounting cycle (ie. a *sawtooth pattern*) which typically has ranged up to 10 cents from peak to trough.

In areas where there is very strong retail competition, board prices have tended to fall steadily as service station owners/operators aggressively discount to capture market share. However, large discounts typically can only be sustained for a limited period before the discounts are withdrawn and prices increase sharply.

Customers in capital cities would be most familiar with these discounting cycles which often occur on a weekly basis. Highly visible petrol pricing boards allow both customers and competitors to readily observe these price changes.

While these cycles have tended to follow a general pattern they are not totally regular and therefore each cycle is likely to differ.

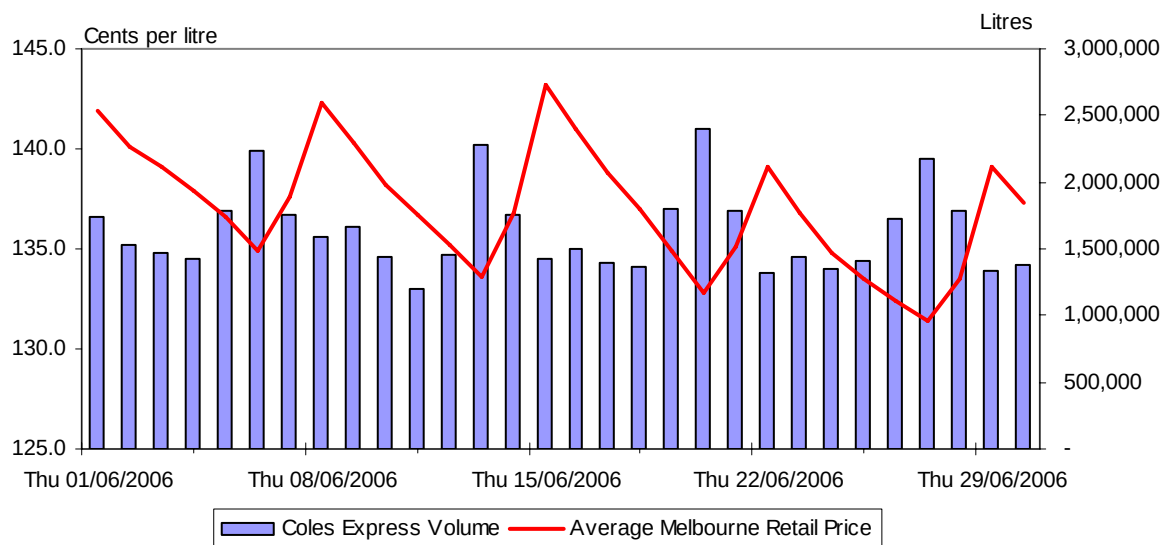
### **(c) Relationship Between Point in Price Cycle and Consumer Volume Purchases**

The ACCC has found ('*Reducing fuel price variability*' Report, December 2001) that these discount cycles favour the consumer, with over 60% of petrol sales below the average price of the price cycle. The ACCC updated this analysis in 2004, and confirmed this outcome remains valid.

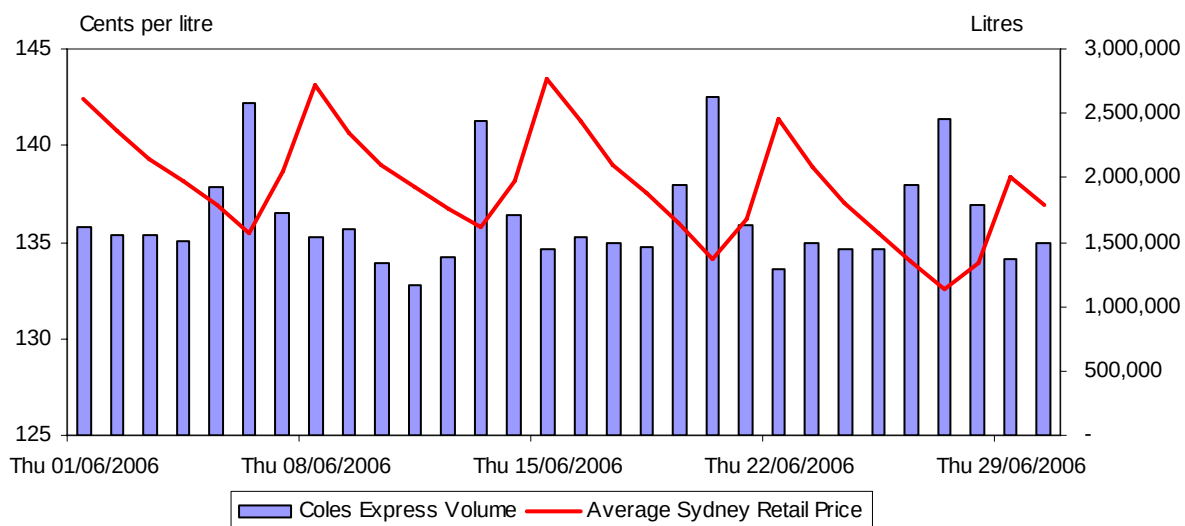
More recent analysis, including by Caltex (see Caltex Submission to the Inquiry) also confirms that consumers continue to benefit from price cycles to the same degree. This is illustrated in Figures 21 and 22, which show Shell petrol sales volumes through Coles Express for Melbourne and Sydney for the month of June 2006.

Both charts clearly show that the majority of the volume was sold when the price was below the mid-point in the price cycle.

**Figure 21: Melbourne - ULP Coles Express Volume & Average Retail ULP Price (June 2006)**



**Figure 22: Sydney - ULP Coles Express Volume & Average Retail ULP Price (June 2006)**



Source: The Shell Company of Australia

#### (d) Metropolitan Retail Price Cycling

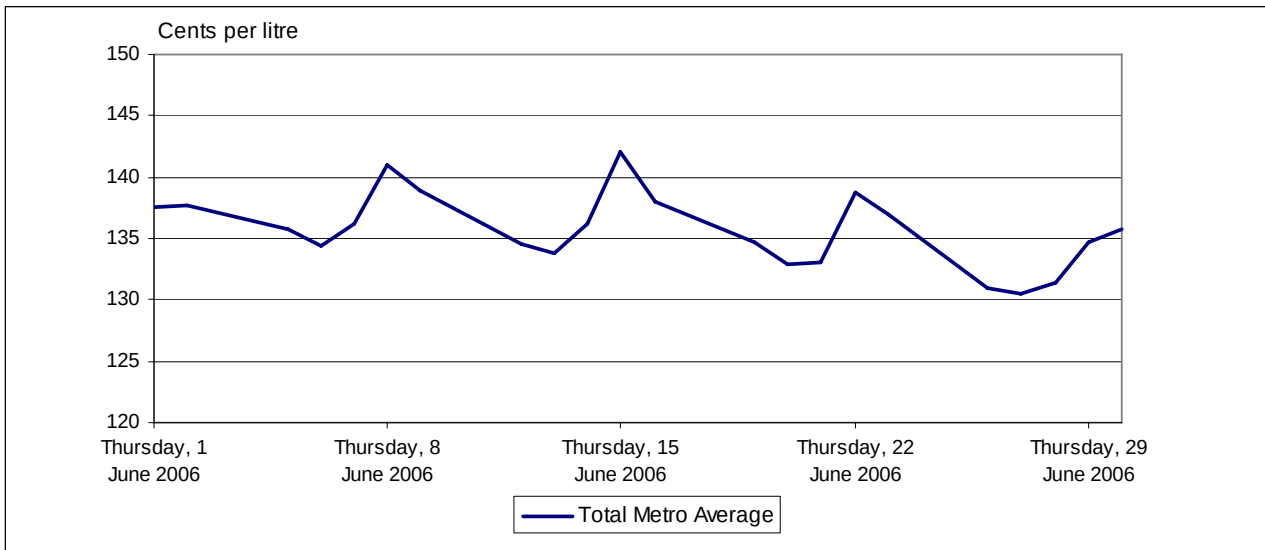
The typical saw-tooth pattern of the retail petrol cycle, including all the usual cyclical features, is illustrated in Figure 23 (and in the figures above).

These charts show that, for the month of June 2006:

- o the most common day for prices to peak was Thursday
- o the most common days for prices to trough was Tuesday
- o there were no days when prices both peaked and troughed
- o the average duration of each cycle was 5 to 7 days.

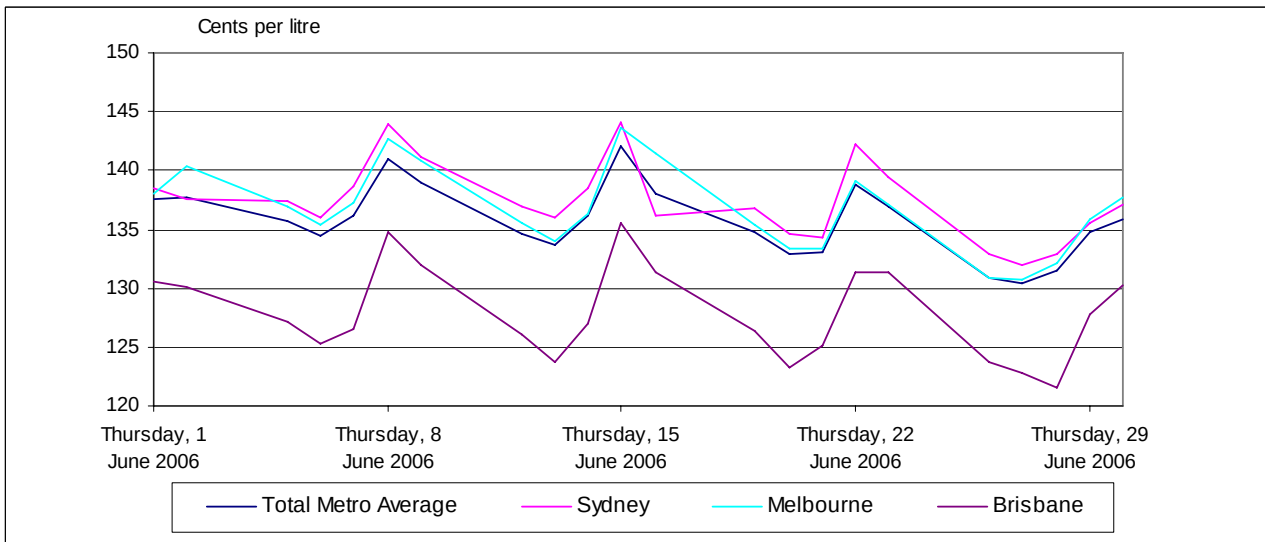
These facts are also confirmed in recent ACCC analysis of price cycles across Australian capital cities (see ACCC website, *Pricing Cycles, March to June 2006*).

**Figure 23: Retail ULP Price Cycle – National Metro Average (June 2006)**



A comparison between the retail cycles across different capital cities on the East Coast is shown in Figure 24.

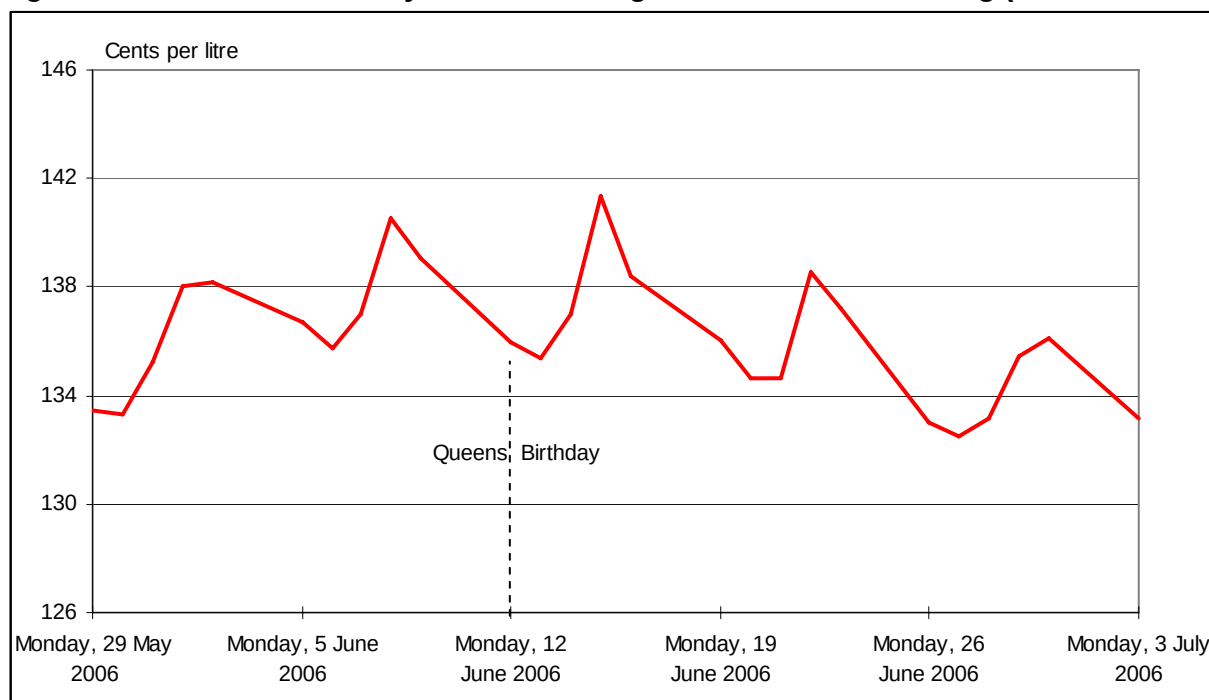
**Figure 24: Retail ULP Price Cycles – Metro Avg for East Coast Capital Cities (June 2006)**



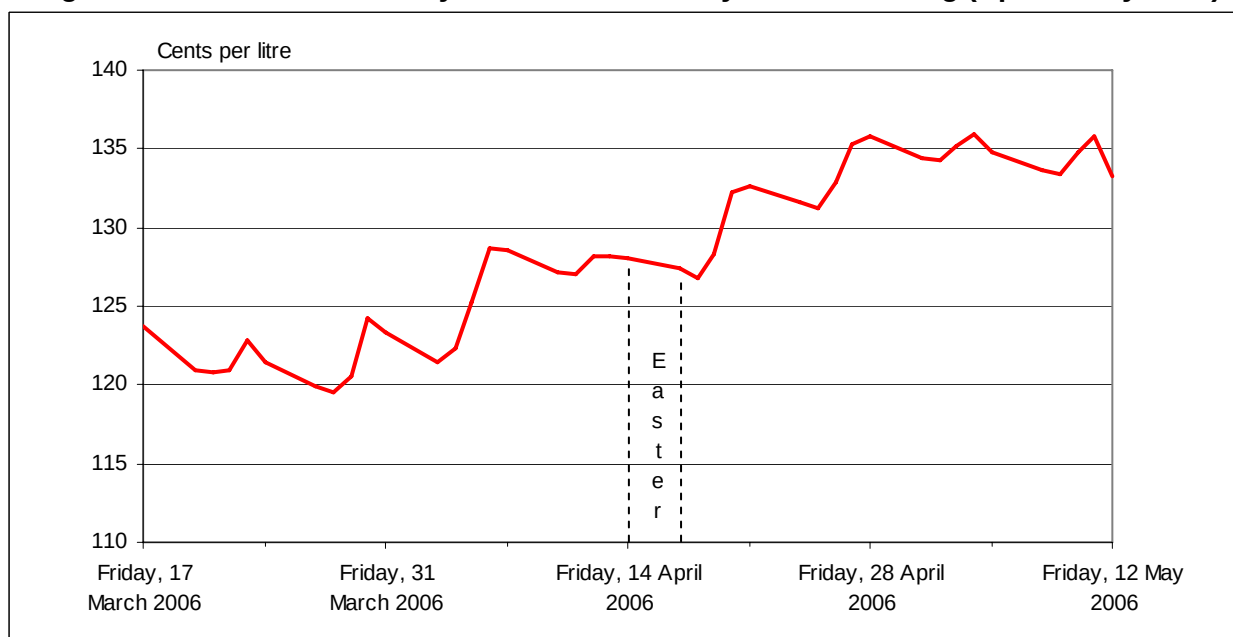
### (e) Retail Price Movements at Other Times (Public Holidays and Hurricanes)

Figures 25-27 clearly demonstrate that there are no significant irregularities in the general cyclical patterns before public holidays or during periods following major market events (like Hurricane Katrina). This is confirmed in the ACCC's submission to the Senate Inquiry, and in individual AIP member company submissions.

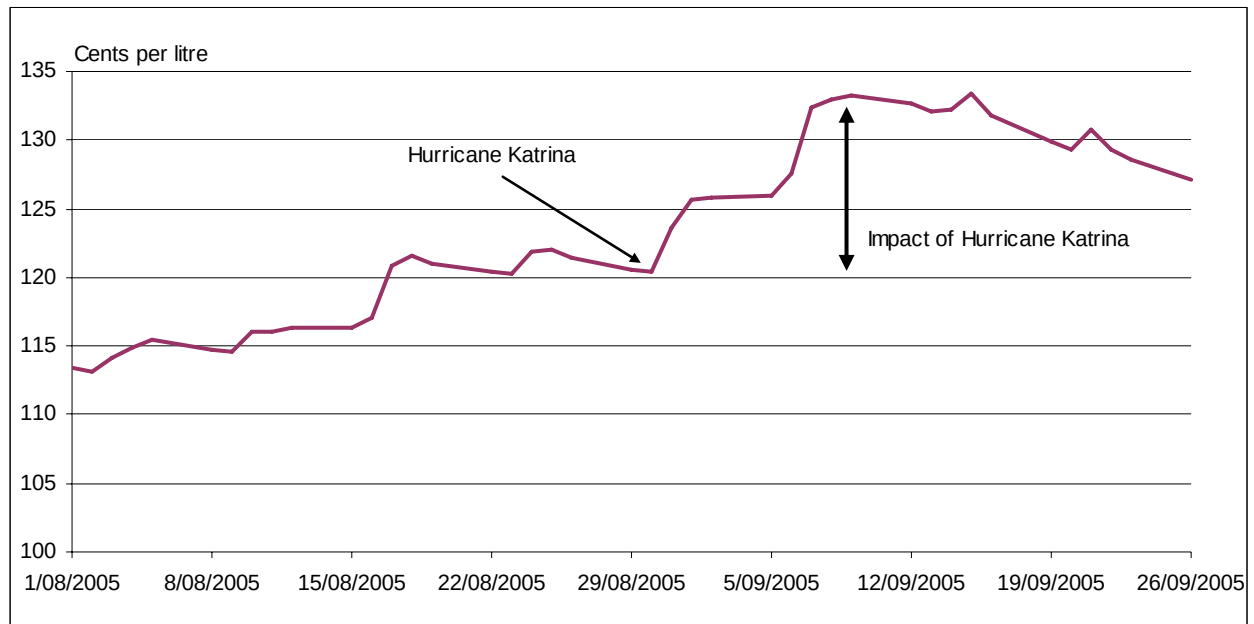
**Figure 25: Retail ULP Price Cycle & June Long Weekend – National Avg (9-12 June 2006)**



**Figure 26: Retail ULP Price Cycle & Easter Holidays - National Avg (April & May 2006)**



**Figure 27: Retail ULP Price Cycle & Impact of Hurricane Katrina - National Avg (August & September 2005)**



## **(10) REGIONAL DIFFERENCES IN THE RETAIL PETROL PRICE**

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*This section outlines the main characteristics of the regional and rural retail petrol markets and the factors which influence prices in these markets (that is, in addition to international markets and prices noted in earlier sections). The differences between metropolitan and regional prices and margins are also presented in some detail.*

### **(a) The Nature of the Retail Market in Regional Australia**

Some of the key features of the retail market in regional Australia typically include the following:

- o Lower fuel turnover and hence lower profits from fuel sales (regional service stations typically see 1 tanker per 2-3 weeks vs several tankers per day at metro sites).
- o Lower convenience store turnover or sales over which to meet service station operating costs (ie limited diversity of income base).
- o The viability or feasibility of service station expansion can be constrained by aging capital or by State/Territory government regulations.
  - Regional service stations tend to be older established businesses, typically without the capital backing for site upgrades (eg. for new storage tanks, extra pumps, new forecourt, modern and expanded convenience store)
  - Site and/or service expansion can also be constrained by State/Territory government regulations and environmental expenditure requirements (eg. to prevent leaks from underground storage tanks – most 'at risk' sites are in regional Australia where single skin tanks are more prevalent).
- o The average customer base per service station is around 2,000 people in regional Australia and in many towns the customer base is between a quarter and half this number. In comparison, metro service stations typically have an average customer base of around 4,000 to 5,000 people.
- o Most major towns and cities have at least one supermarket alliance service station (45% of supermarket sites are in regional Australia)
- o Generally the more successful service stations in regional Australia are in locally based chains of branded and unbranded independent retailers who are often involved in fuel distribution as well.
  - Nationally, around 64% of service stations are controlled by branded independents, of which the majority are in regional Australia
  - The oil majors only control around 5% of sites nationally.
- o Since 2000 there have been about 2,000 service station site closures across Australia, with the majority in metro areas – only 39% in regional Australia.

## **(b) Factors Influencing Regional Prices**

The major oil companies (BP, Caltex, Mobil and Shell) play various roles in each segment of the fuel supply chain. They operate all of the petroleum refineries in Australia and handle a large proportion of the wholesale fuel market. However, they directly operate only a relatively limited part of the retail market. As noted in Chapter 6, these companies directly operate and set prices at around 5% of service stations across Australia, with the majority of these sites in metropolitan areas.

The difference between city and country prices is due to a number of factors in addition to market structure factors noted above:

- o Retail margins are typically higher in the country compared with major capital cities, due to lower fuel volumes and shop sales over which to spread service station operating costs.
- o The general absence of discounting to attract incremental volume in country areas also means that country prices appear to be higher than fully discounted or average city prices.
- o Freight is typically 1.5 cents to 3 cents per litre greater for country than city delivery.
- o Distribution costs may be significant for some country areas where fuel must be stored in depots and double-handled, rather than being delivered directly from coastal terminals. Most service stations in country areas are operated by distributors and dealers (branded and unbranded independents).
- o Competitive forces and costs also vary greatly between country towns, so that pump prices do not just reflect freight and handling differences.

The same factors were identified in the ACCC's 1996 inquiry into the petroleum products declaration and this explanation is also supported in the Report of the NT Pricing Inquiry. For example, the NT Report identified that in the case of the Northern Territory:

- o *'pump price discounting is limited by the inherent diseconomies of fuel supply to a small market'*
- o *'the relatively low volume of fuel sold by most Territory service stations is the most important factor explaining the relatively higher price for fuel in the Territory'*
- o *'the transport costs of distribution to remote areas adds to the higher costs and price structure in the Territory'.*

These factors have an impact on returns to individual service station owners and operators. Intense competition in metropolitan areas may mean that retail margins on fuels could be generally insufficient to earn a reasonable rate of return on capital invested in the business by the service station owner/operator unless there is a very high volume of sales.

In regional areas, however, returns to individual service station owners and operators may be more reasonable. This is because, among other things, discounting in regional areas is less common and land values are lower - for both service stations and wholesalers. Regional consumers therefore do not subsidise city motorists, as is often claimed. City retail prices are often discounted below what they should be to provide a fair return to site operators.

In addition, an important factor explaining price differences across state boundaries is that most state governments provide different levels of subsidies to reduce petrol prices. For example, subsidies are either statewide (Queensland, Victoria, Tasmania, Northern Territory) or in some country areas (NSW and South Australia). The largest subsidy is the Queensland subsidy of 8.354 cents per litre.

**Table 4: Petrol and diesel fuel subsidies, by State/Territory, February 2006**

| State/Territory              | Petrol Subsidy (cpl) | On-road diesel subsidies |
|------------------------------|----------------------|--------------------------|
| Queensland                   | 8.354                | 8.354                    |
| Victoria                     | 0.43                 | 0.75                     |
| Tasmania                     | 1.95                 | 1.99                     |
| Western Australia            | 0.00                 | 0.71                     |
| Northern Territory           | 1.10                 | 1.10                     |
| New South Wales              | 0.00 to 8.35         | 0.00 to 8.35             |
| Australian Capital Territory | 0.00                 | 0.00                     |
| South Australia              | 0.00 to 3.33         | 0.00 to 1.94             |

Source: Inquiry into Petrol Pricing in Queensland, April 2006

### (c) A Comparison of Metro and Regional Prices

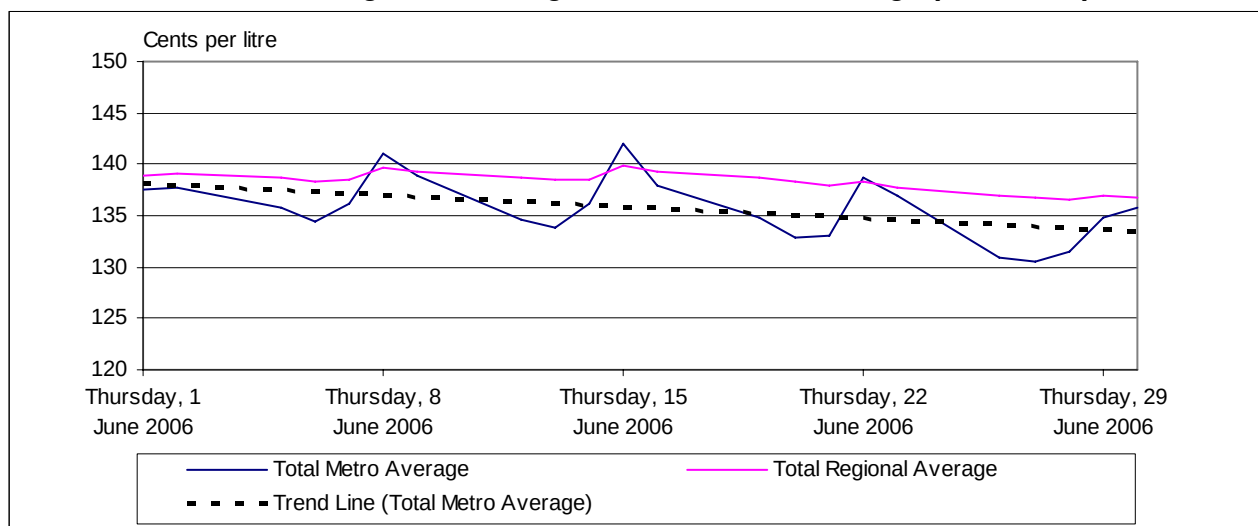
The impact of the factors noted above can be seen in a comparison between regional and metropolitan prices.

#### Short Term – Pricing Cycles

Volatility in retail petrol prices is generally confined to major metropolitan cities and some significant rural towns with prominent major highway exposure. This is highlighted in the chart below which contrasts the average national metropolitan price cycle for the month of June 2006 with the average national regional price cycle.

When a trend line is fitted to the Metro cycle, a reasonably constant difference between the metro and regional averages can be observed – in this case averaging around 2-4 cents per litre over the month of June.

**Figure 28: Retail ULP Price Cycle**  
**National 'Regional' Average vs Trend Metro Average (June 2006)**

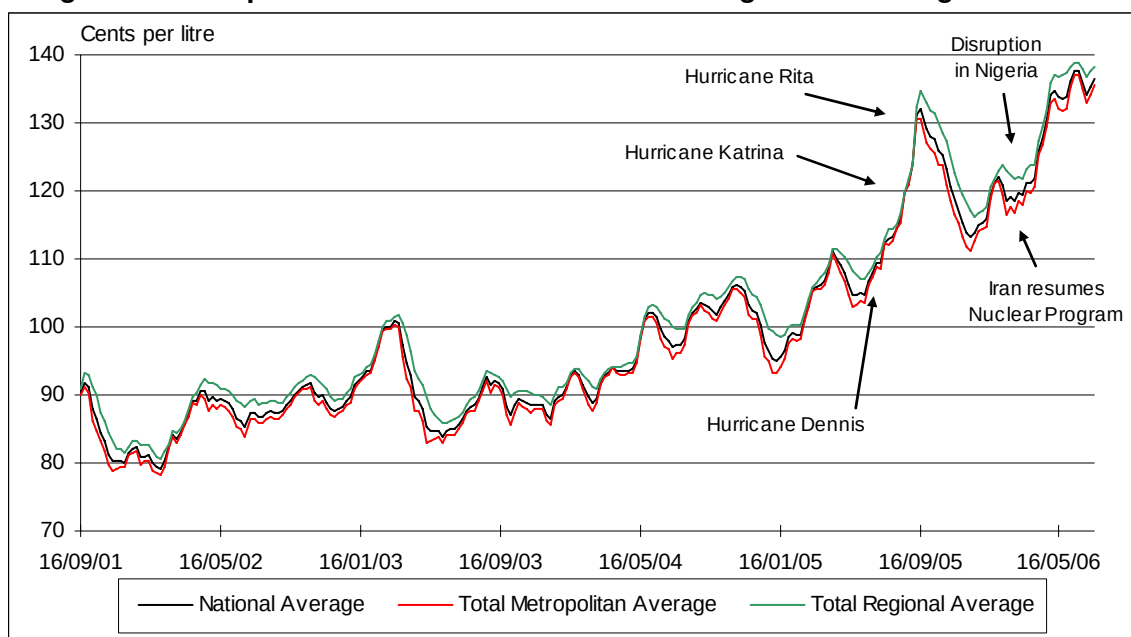


According to the ACCC, “it can be misleading to compare country prices with the low point of a metropolitan price cycle. This low price is probably unsustainable, with metropolitan retailers possibly only breaking even or making losses. A more accurate comparison is to compare prices over a longer period (e.g. a month) so that the effect of the price cycles in metropolitan areas can be averaged out.”

### Longer Term

In this context, a comparison between average National ULP retail prices for Metropolitan versus regional areas, is presented in Figure 29. This chart shows a very close correlation between regional and metro prices, albeit with regional prices almost always above metro prices reflecting the factors noted above.

**Figure 29: Comparison of ULP Retail Prices: Average Metro & Regional Prices**



### **(d) Relative Gross Retail Margins (Metro vs Regional)**

Figure 30 shows national average metropolitan and regional gross retail margins for ULP (calculated as the difference between the average ULP TGP price and the average retail or pump price for the same period). Equivalent Figures for the States and Northern Territory are at Attachment E. These show similar trends to national average movements, but with higher regional-metro differences in some jurisdictional markets.

- o Note, rolling (ten working day) averages are used for presentation purposes and metro and regional ULP retail averages for the State/NT are weighted by ABS vehicle registrations in those relevant areas.

**Figure 30: National Average ULP Margins – Metro vs Regional**

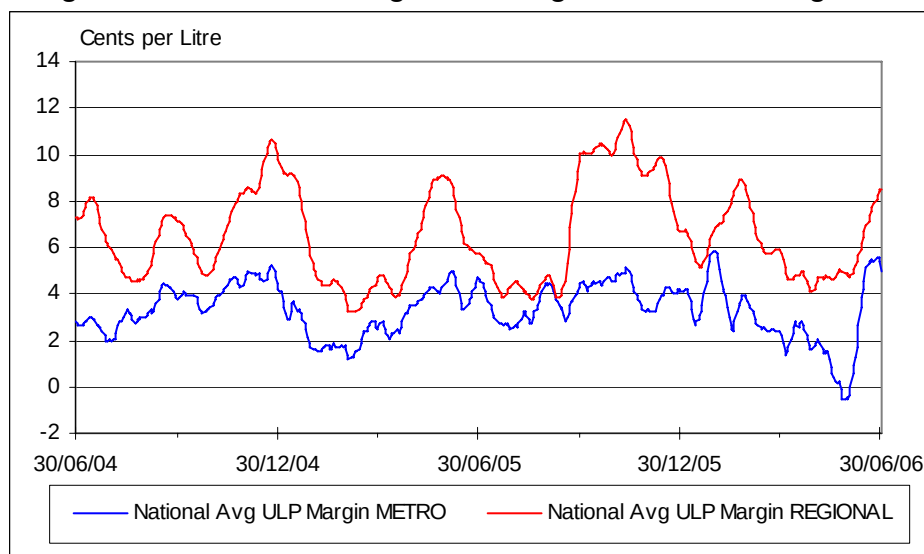
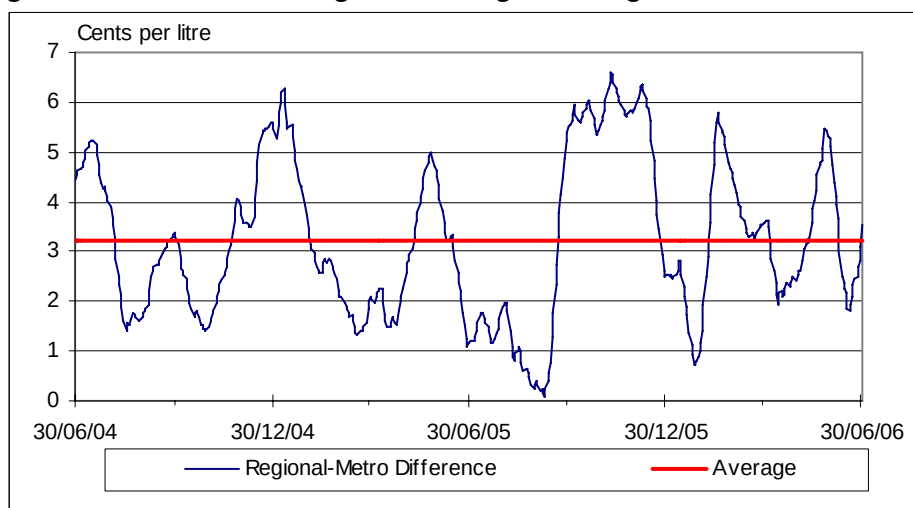


Figure 31 shows that the average regional-metro difference is slightly above 3 cents per litre. As noted above, there are a number of factors contributing to the difference between regional and metro prices (eg. lower fuel volumes and shop sales over which to spread costs, less discounting and higher transport costs of around 1.5 to 3 cents per litre).

**Figure 31: National Average ULP Margins – Regional-Metro Difference**



## **(11) INDUSTRY STRUCTURE AND PROFITABILITY**

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*This section discusses the structure of the industry more broadly, including the flawed claims surrounding the impact on competition of “vertical integration” in the sector. The section also discusses the earnings and profitability of the downstream petroleum sector and compares this performance with that for other industries in Australia.*

### **(a) The Degree and Impact of Industry Integration**

Claims have been made that vertical integration of oil company operations have an extremely negative impact on competition in the retail sector. AIP considers that the degree of integration is grossly overstated and that the impact of integration (where it exists) actually improves competition in that area.

The ACCC and most economic theories have recognised that vertical integration per se is not a negative market characteristic. What is important, as acknowledged by the ACCC, is the level of competition between integrated businesses. As most government reviews of fuel pricing have concluded, the Australian fuel market is highly competitive.

As noted in evidence given to the Senate Economics Legislation Committee by the ACCC on 8 May 2006 on the Petroleum Retail Legislation Repeal Bill 2006, the retail petroleum industry is very competitive and that competition is driven by different factors in the retail and wholesale segments of the market “.... the real pressure on refiners is not and will not come from what is happening at the retail end.”

These comments underline the reality that vertical integration varies between companies and regions in Australia where different corporate strategies have led to different levels of involvement at each stage of the supply chain. For example, as noted in AIP member company submissions to this Inquiry there is a diversity of operation, for example, BP state their limited involvement in regional retailing whereas Shell largely considers itself a fuel wholesaler. The degree of vertical integration also varies between areas, in particular, depending on whether the company has a refinery within the supply envelope.

Some comments in the media appear to be suggesting that the entire industry is vertically integrated in every place in Australia. This is demonstrably not the case. In areas where vertical integration by a particular company occurs it is driven by a competitive need to capture the lowest cost structure possible, through operating at each stage of the supply chain. While individual companies can capture these gains in particular areas it is not possible nor practicable to do so nationwide. AIP considers that rather than stifling competition such vertical integration can achieve efficiencies which are in the interests of consumers and help sustain a fully competitive market.

There are extremely well developed and highly competitive global markets for crude oil and petroleum products. These markets have a strong regional focus with prices reflecting regional availability (or scarcity) and quality. All the way along the crude oil and products supply chains there are numerous large (integrated) and smaller (selective) market participants constantly driving market competition.

In the case of crude oil, these market mechanisms play a critical role in ensuring competitive pricing and least cost operations. By comparison with other OECD countries, Australia has some of the lowest prices for petrol and diesel. In addition, the dynamic market enables supply disruption risks to be minimised through multiple sources of supply involving well developed commercial relationships.

This effectiveness of the oil market in dealing with supply disruptions has most recently been recognised by the International Energy Agency in its assessment of the global recovery from the impacts of Hurricanes Katrina and Rita.

For wholesale supplies, Australian oil companies purchase crude oil and products from all over the world from a variety of producers and pay international prices, whether or not these sources are associated with AIP member companies.

#### **(b) Who Produces Fuels and Supplies Into the Australian Wholesale Fuel Market**

AIP member companies produce about 77% of the fuel consumed in Australia. Imports are conducted by the oil majors and a number of independent importers. There are substantial independently operated terminal facilities such as the Vopak facilities at Port Botany and Darwin.

The fuel volumes handled by each company vary significantly around Australia, obviously determined by the presence of a refinery and available import terminals. The supply footprints are largely State based but imports are supplied directly to terminals in Northern Australia where supply from domestic refineries is uneconomic.

In general, these supplies can be sold into the market at Terminal Gate Price (TGP) which is based on the relevant Import Parity Price (IPP) for the fuel. Fuel may or may not be supplied to the market at TGP depending on the pricing strategy of the individual company. We note that in individual company submissions to this inquiry one AIP member conducts most of its sales at TGP while another conducts very few sales at TGP.

Product supplies from terminals enter the market by a number of different paths including:

- o transferred by pipeline, ship or road tanker to other terminal locations
- o directly to retail customers, or
- o directly to distributors.

Distributors have a variety of ownership and operating structures. They can be independent, partially oil company owned or wholly oil company owned. AIP has never collected any data relating to distributors but we note that this subject is addressed in individual AIP member company submissions and in the ACCC submission to this inquiry. We are aware from our work for the NT pricing inquiry that the NT market is wholly supplied by independent distributors.

Distributors in turn supply to retail service stations or other bulk local customers. AIP has not conducted any investigation into pricing practices of distributors; but clearly they also need to cover, in addition to fuel purchase costs, their transport and storage and other operating costs as well as a profit margin to the extent possible competitively.

Some local service stations can purchase from oil company terminals if they have the appropriate vehicle and safety clearances but most find it more convenient to purchase from distributors. It is not uncommon for service stations in a local area to be supplied directly from oil company terminals and from the local distributor.

### (c) Industry Earnings & Profitability

There is considerable misunderstanding about the earnings of the petroleum industry and how these earnings compare with other industries. The petroleum industry is among the world's largest industries. As a result, its revenue flows can be substantial. However, so are the total costs of providing consumers with the fuel they demand. Included in these significant costs are the costs of finding and producing crude oil and the costs of refining, distributing and marketing petroleum products.

The Australian downstream petroleum industry's profitability is characterised by a high level of cyclicity/volatility (reflecting the dynamics and risks of the market) and, more recently, has been characterised by poor rates of return for the sector. This performance is not well understood, in part, because media reports typically focus on the total earnings reported, rather than profitability.

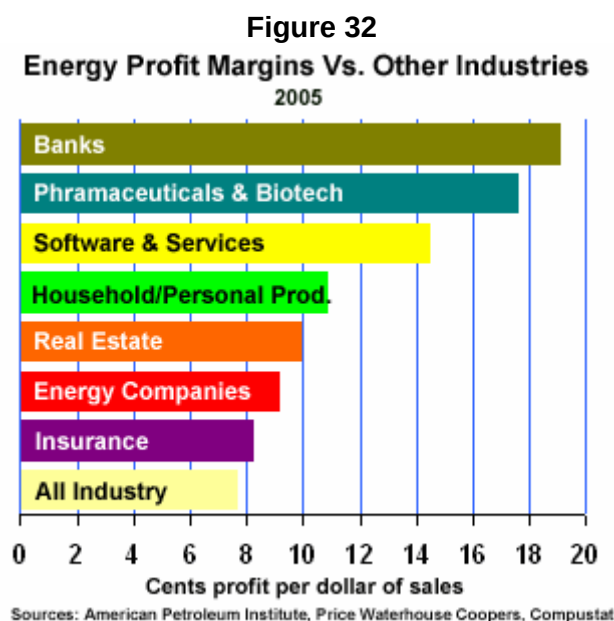
Earnings reflect the size of the company or the industry, but they are not necessarily a good reflection of financial performance or profitability.

- o Some indicators of the significant size of the downstream petroleum industry in Australia are the significant assets (refining and marketing) totaling around \$14 billion and the contribution to government revenues in 2004 of \$16.5 billion.

Rather than use/report total earnings per annum, there are a number of other relevant and accurate measures of a company's or an industry's financial health or otherwise, which can also provide a useful way of comparing financial performance between industries or different sizes.

Financial commentators regularly compare the performance and profitability of various industries and companies on the basis of profit margin, which is calculated by dividing net income (profit) by total sales and other revenues. For example, a software company that clears \$90 million in net income on product sales of \$1 billion would earn a profit margin of 9 percent or 9 cents on each dollar of sales.

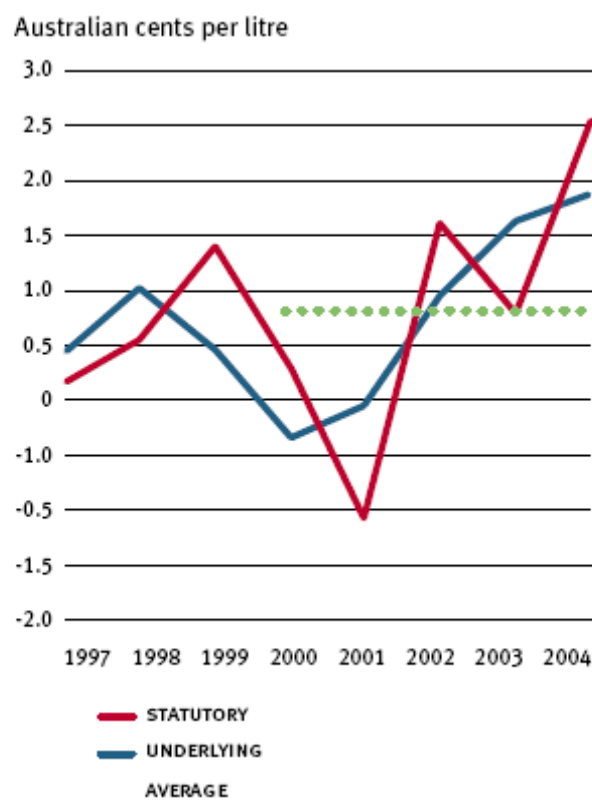
Traditionally, oil companies have trailed many other industries in this measure of profitability, as evidenced from Figure 32. This Figure compares the profit per dollar of sales across the main USA industry groupings in 2005. It shows that the profit margin of energy companies (including all energy providers not just oil) was slightly above that of all industry in 2005, but well below the profit margins of other industries such as banking, pharmaceuticals, real estate, and household and personal products.



Another way of expressing this ratio is Profits per litre of fuels which provides a more industry/fuel specific measure of a petroleum company's (or the downstream industry's) financial performance. For example:

- o In 2004 the underlying net profit for the Australian downstream sector as a whole (AIP members only) was 1.8 cents per litre – up 0.3 cents per litre from 2003.
- o Caltex recently announced an expected after tax profit for the first half of 2006 equating to around 1.7 cents per litre on average for all petroleum products sold (unchanged from the same 2005 period).

**Figure 33: Net Profit Per Litre (1997 to 2004)**



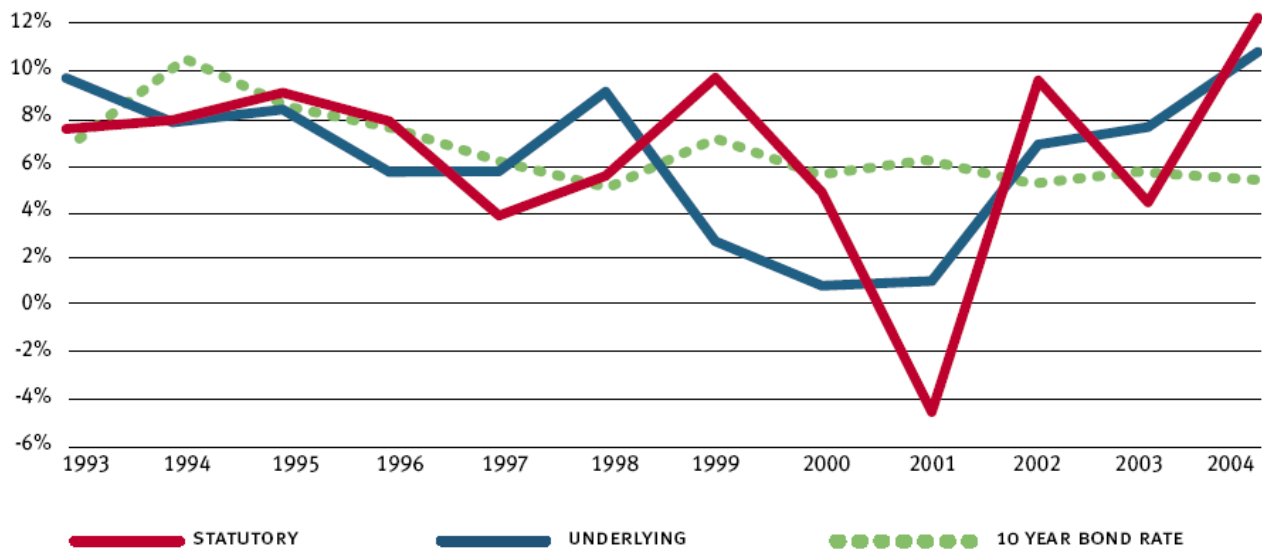
Source: Downstream Petroleum 2005

More broadly, other readily understood performance or profit measures include earnings on assets (before interest and tax or EBIT).

The earnings before interest and tax (EBIT) on total assets is also a widely used performance or profitability indicator. The EBIT on an 'underlying basis' provides a particularly clear picture of the fundamental economic performance of the industry by removing the impact of stock gains and losses (valuation effects).

As shown in Figure 34, the underlying returns for the Australian downstream sector continued to improve from 7.5 per cent in 2003 to 10.7 per cent in 2004 – making 2004 one of the few years in the last decade when the industry's rate of return rose above the long term bond rate.

**Figure 34: Return on Assets (EBIT) - 1993 to 2004**



Source: Downstream Petroleum 2005

## (12) ROLE OF ALTERNATIVE TRANSPORT FUELS

*This section provides an overview of the potential role of alternative fuels in Australian transport fuel mix and discusses the costs and supply availability of alternative fuels. Within the alternative fuels portfolio, the role of biofuels is also discussed.*

### (a) Introduction

The potential of alternative transport fuels to meet a significant share of Australia's fuel demands in future will be influenced by the international crude oil and product markets, the cost of alternative fuels (including the costs of feedstocks) and the overall government policy framework.

It is AIP's view that there should be no guaranteed role for any particular fuel in the market, whether conventional or alternative fuels. Each fuel must establish and maintain itself in the market by being

- o Cost competitive
- o Readily available on a reliable basis
- o Of consistent high quality and complying with fuel quality and other environmental standards
- o Acceptable to the customer.

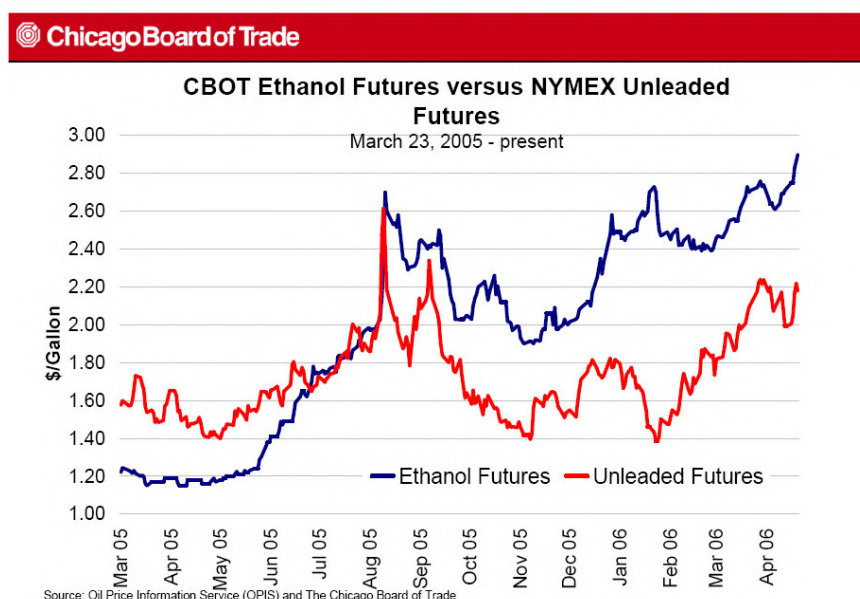
### (b) International Markets & the Cost of Alternative Fuels

International oil market analysts (see IEA and ABARE) agree that demand for liquid fuels will continue to grow fairly rapidly driven by non-OECD demand (particularly China and India). Supply, while encouraged by higher prices, will remain susceptible to any unplanned supply disruptions such as natural disasters.

The price of alternative fuels is driven by the cost of inputs and the price of substitutes such as petroleum products. In the case of LPG, international prices have increased from US\$320 per tonne in January 2004 to \$580 per tonne in January 2006 (an 81% increase). Over the same period the price of TAPIS crude oil benchmark increased from US\$34 to US\$71 (a 110% increase).

Over the past fifteen months the futures price of ethanol on the Chicago Board of Trade Exchange has increased by around 290% since trading commenced in March 2005 – see figure 35 below.

**Figure 35: Ethanol versus ULP Futures (Chicago Board of Trade)**



Biofuel feedstock costs are also influenced by the price of crude oil. Over the last three years, sugar prices have moved strongly upwards, in line with the price of crude oil as shown in Figure 36. It is likely that any large scale substitution towards biofuels from conventional petroleum based fuels would bring fairly limited price relief for liquid fuel consumers.

**Figure 36**  
**World oil and sugar prices**  
Monthly, ended January 2006



Source: ABARE Commodity Price Outlook 2006

It would also appear that the ability of alternative fuels to ameliorate price increases in the future is limited, in particular when consideration is given to the additional supply chain costs for fuel distributors and retailers associated with biofuels.

- o There are significant costs to the petroleum industry in reliably and safely blending and distributing ethanol blend fuels. In addition there are also significant costs associated with providing appropriate storage and safe handling facilities at retail sites.
- o Special attention is required throughout the supply and distribution chain to ensure that the quality of the ethanol blend fuel is maintained. The costs associated with the introduction of ethanol blend fuels will be company and site specific.
- o Ethanol suppliers should expect that refiners and fuel distributors will wish to recover these additional costs to their operations.

Anecdotal evidence also suggests that the link between crude oil prices and alternative fuels prices is more direct in some cases in Australia. For example, it is expected that ethanol contracts (for E10 blends) will be formula-linked to crude oil prices and pricing of E10 at retail will be closely related to petrol.

### **(c) Medium and Longer Term Supply Availability of Alternative Fuels**

In looking at the medium and longer term alternative sources of supply of transport fuels, the Australian Government's Energy White paper noted that Australia has access to potentially large sources of alternative fuels: technology exists to convert coal and gas to liquid fuels; Australia has enormous shale resources; Australia has significant resources of naturally occurring LPG, and can use CNG in transport applications. These resources are all in addition to the potential sources of biofuels.

The existence of these resources means that Australia is well positioned to respond to longer term changes in oil supply conditions. The Energy White Paper also set out a relevant policy framework to encourage the development of these alternative fuels. Market signals will indicate when it is commercially viable to do so.

The Australian Government has established a variety of incentives to encourage the use of alternative fuels. Various excise and other concessions have been made available to recognise benefits to be gained from the use of these fuels, and to facilitate the development of new industries.

The current policy framework, including recent announcements by the Australian Government, provides significant subsidies for the production and use of alternative fuels. Excise concessions, production grants, LPG conversion grants to car owners, grants to service station operators for conversion of sites to handle ethanol blend fuel and research grants are currently assisting the development and use of alternative fuels. The level of direct assistance is now approaching \$1 billion per annum. Despite this significant assistance, alternative fuels account for a relatively small portion of Australian liquid transport fuel demand (less than 10%).

The level of support for these fuels is set to phase down from 2011 as part of the Government's medium to longer term policy framework for transport fuels. Excise for these fuels will be gradually phased in (in even steps) from 2011 up until 2015. However, a 50% concessional excise rate will apply to alternative fuels from 2015 compared with other fuels of similar energy content.

Under the Australian Government's policy framework for transport fuels, the role of each fuel – conventional and alternative - will largely be determined by its cost competitiveness and market forces over the longer term. Therefore, the role that alternative fuels will play will largely depend on their competitiveness as fuels and on consumer demand. However, particularly in the medium term, the favourable excise treatment of alternative fuels bestows a price advantage on such fuels and a substantial implicit subsidy for their producers.

#### **(d) Role of Biofuels**

Against this background, AIP member companies:

- o believe that biofuels can play a role in the Australian transport fuel market –replacing some fuel imports and helping to meet growth in overall fuel demand (particularly for higher octane fuels)
- o have submitted individual action plans to the Australian Government to assist in meeting the Government's target for the use of 350 megalitres of biofuels a year by 2010
- o already market (or propose to market) ethanol blends and are also considering other biofuels opportunities that will assist in meeting the Government's biofuels goal.

The Prime Minister's press release of 22 December 2005 indicated that industry expects to exceed the Government's biofuels target of 350 megalitres (ML) in the fuel mix by 2010.

On this basis (ie 400-530 ML of biofuel consumption by 2010), biofuel blend fuels are expected to meet about 15% of the petrol/diesel demand in Australia.

AIP members are working with the Government to implement decisions arising from the work of the Prime Minister's Taskforce on Biofuels and welcome the announcements in 2005 and 2006 by the Australian Government of initiatives to help address critical market barriers and build consumer confidence.

## REFERENCES

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*AIP has drawn on a wide range of reports, papers and analysis in the preparation of this submission. Details of the various reference documents and resources are set out below.*

### Pricing Information

This submission draws from pricing and other material presented on the following websites:

[www.aip.com.au](http://www.aip.com.au)  
[www.bp.com.au](http://www.bp.com.au)  
[www.caltex.com.au](http://www.caltex.com.au)  
[www.exxonmobil.com.au](http://www.exxonmobil.com.au)  
[www.shell.com.au](http://www.shell.com.au)  
[www.industry.gov.au](http://www.industry.gov.au)  
[www.accc.gov.au](http://www.accc.gov.au)  
[www.fuelwatch.wa.gov.au](http://www.fuelwatch.wa.gov.au)

### Data – Supply & Demand, Pricing & Service Stations

In addition to the pricing information/data contained on the websites above, other primary sources are:

*IEA World Energy Outlook, 2005*

*BP, Statistical Review of World Energy, June 2005 & June 2006*

*IEA Oil Market Report*

*ABARE Outlook Conference 2006, March Quarter 2006.*

*Australian Petroleum Statistics, Department of Industry, Tourism & Resources, Australian Government.*

Platts (McGraw-Hill Inc) crude oil and product quotes which AIP publishes on its website (under Copyright © 2005 the McGraw-Hill companies);

Petrol pricing information prepared by ORIMA Research Pty Ltd (on behalf of AIP);

TGP data based on information provided by AIP members and Trafigura Fuels Australia; and

AIP Service Station Survey, June 2004

### Previous Inquiries, Submissions & Pricing Reports

NT Government, 'Inquiry into Fuel Prices in the Northern Territory', May 2005

ACCC, 'Reducing fuel price variability' Report, December 2001

AIP, 'Submission to the Australian Government Biofuels Taskforce', 24 June 2005

ACCC, 'Understanding petrol pricing in Australia', August 2005

AIP, 'Submission to the Inquiry into Petrol Pricing in Queensland', December 2005

AIP, Submission to the Inquiry into the Provisions of the Petroleum Retail Legislation Repeal Bill, April 2006

Consumer Affairs Victoria, *Report on Automotive Fuel Prices in Victoria – January 2003 to April 2006*

Legislative Assembly of Queensland, Report of the Inquiry into Petrol Prices in Queensland, April 2006

### Economic & Energy Security References

Australian Government, *Energy White Paper – Securing Australia's Energy Future*, June 2004

ACIL Tasman Review of the Liquid Fuel Emergency Act 1984, December 2004

### Biofuels References

Australian Institute of Petroleum, Submission to Australian Government Biofuels Taskforce Inquiry, 2005.

Australian Government Biofuels Taskforce, 'Report of the Biofuels Taskforce to the Prime Minister', August 2005.

Coffey Geosciences Pty Ltd, *Fuel Quality and Vehicle Emissions Standards Cost Benefit Analysis*, October 2003

IEA, *Biofuels for Transport: An International Perspective*, 2005

IPIECA, *Various Presentations at Buenos Aires Workshop on Biofuels*, April 2005

BTRE, *Urban Pollutant Emissions from Motor Vehicles; Australian Trends to 2020*, June 2003

CSIRO, BTRE, ABARE, *The Appropriateness of a 350 million litre Biofuels Target*, December 2003

ABARE, *Revised Assessment of Biofuels industry Viability*, April 2004

Global Insight for API, *Winners and Losers of Ethanol Mandates*, 2005

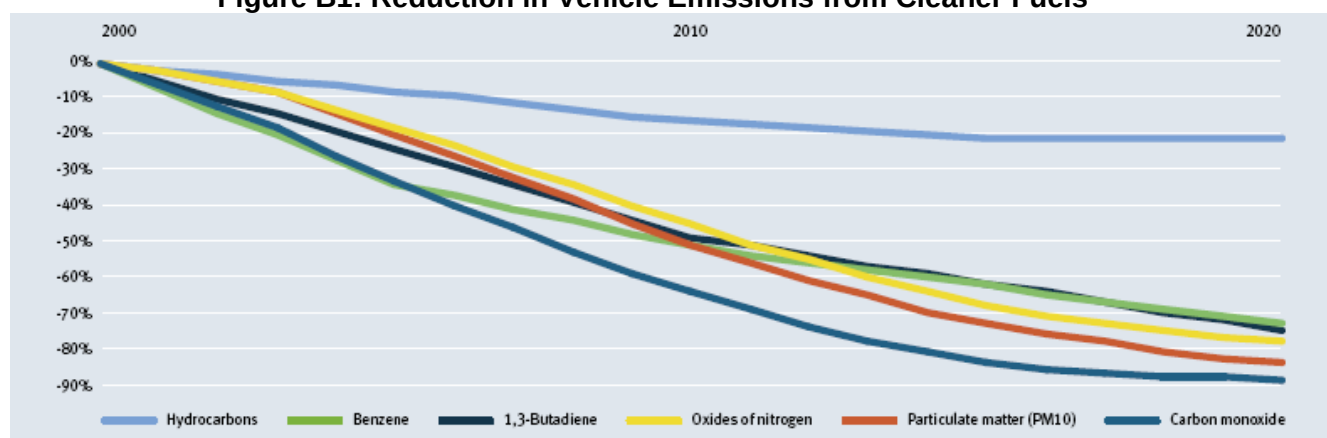
## FACTORS INFLUENCING REFINERY INVESTMENT

Apart from broader macroeconomic and government policy settings, AIP expects a number of factors to influence refinery investments and the rate of growth in demand for fuel. Some of the key factors include the influence of the cleaner fuels program domestically and regionally, crude oil and petroleum product prices, vehicle fuel efficiency targets and the role of alternative fuels in the short to medium term.

### The Cleaner Fuels Program

The government and community drive for improved urban air quality and reduced greenhouse gas emissions has led to significant changes in transport fuels standards in Australia. Reductions in vehicle emissions are being achieved through major complementary changes in engine and vehicle technologies and in the use of cleaner transport fuels. The following chart summarises the very significant reductions in vehicle emissions that are expected from the Cleaner Fuels Program.

**Figure B1: Reduction in Vehicle Emissions from Cleaner Fuels**



Legislated changes in the fuel standards will progressively lead to the virtual elimination of sulfur in diesel, and to large reductions in the amount of benzene in petrol. Sulfur levels in premium unleaded petrol will also be greatly reduced. This has a number of major implications for the Australian fuels industry

- o existing vehicle and fuel standards will greatly reduce air pollution
- o engines will be designed to operate on tightly specified fuels, and
- o fuels will need to be produced consistent with these tight specifications.

With tighter fuel quality standards and new vehicle technologies in place, there will be relatively little difference between the emissions performance of conventional and alternative fuels in Australia. All fuels will produce very low levels of emissions (see Australian Government Biofuels Taskforce, 'Report of the Biofuels Taskforce to the Prime Minister', August 2005).

To meet the new fuel standards, Australian refiners are making major investments. It is estimated that over \$2 billion will be invested over the decade to 2010. However, these investments will not result in any significant increase in Australian refining capacity.

Countries in the Asia-Pacific region are also mandating cleaner fuels on different timelines over the next decade (see below). As demand for higher quality fuels increases, refineries in the region will produce these fuels as standard products rather than as boutique fuels for specific markets. This is expected to result in increased supply availability of the cleaner fuels and reduced refinery price premiums.

**Chart B2: Regulatory Outlook for the Asia Pacific Region**

**Petrol regulatory outlook for Asia-Pacific**

|           | 2005 | 2006             | 2007  | 2008 | 2009 | 2010     | 2010+    |
|-----------|------|------------------|-------|------|------|----------|----------|
| Japan     |      | E4               |       |      |      | 10 ppm S |          |
| Hong Kong |      | E4               |       |      |      | 10 ppm S |          |
| Singapore |      | Country specific |       |      | E4   |          | 10 ppm S |
| Australia | E2   |                  | E3    |      |      | E4       |          |
| NZ        | E2   |                  | E3    |      |      | E4       | 10 ppm S |
| Malaysia  |      |                  | E2    |      |      |          | E4       |
| Thailand  |      | E2               |       | E3   |      |          | E4       |
| China     |      | Country specific |       |      | E3   |          | E4       |
| India     |      |                  | E2/E3 |      |      | E3       | E4       |
| Indonesia |      | Country specific |       | E2   |      |          | E3       |

**Diesel regulatory outlook for Asia-Pacific**

|           | 2005 | 2006             | 2007 | 2008 | 2009 | 2010     | 2010+    |
|-----------|------|------------------|------|------|------|----------|----------|
| Japan     |      | E4               |      |      |      | 10 ppm S |          |
| Hong Kong |      | E4               |      |      |      | 10 ppm S |          |
| Singapore |      | E2               |      | E4   |      | 10 ppm S |          |
| Australia | E2   |                  |      | E4   |      | 10 ppm S |          |
| NZ        | E2   |                  |      | E4   |      |          | 10 ppm S |
| India     |      |                  | E3   |      |      | E4       | 10 ppm S |
| Malaysia  |      |                  | E2   |      |      |          | E4       |
| Thailand  |      |                  | E3   |      |      |          | E4       |
| China     |      | E2               |      | E3   |      |          | E4       |
| Indonesia |      | Country specific |      |      |      | E3       |          |

### Crude Oil and Petroleum Product Prices

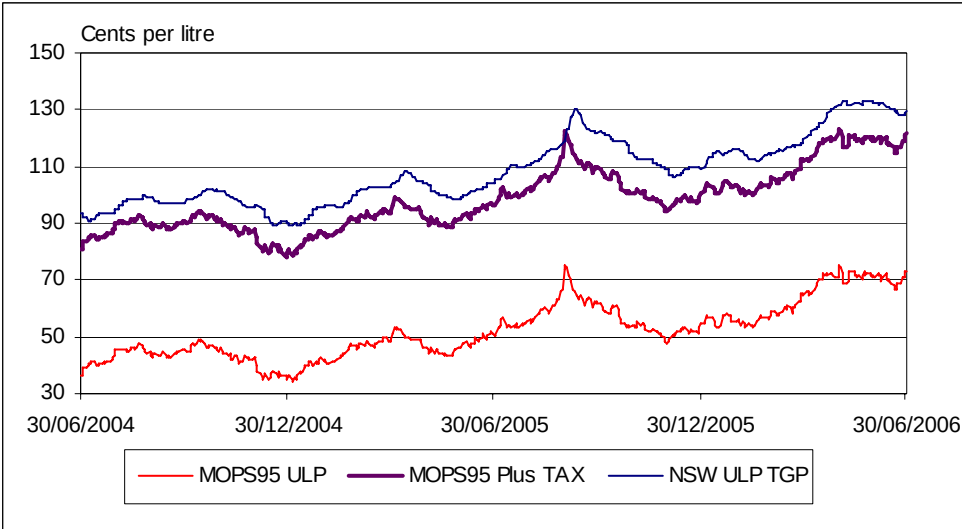
Changes in international crude oil and product prices over the past two years have confirmed the relative price inelasticity of petroleum products demand over the short term. Despite around a 40% increase in national average petrol and diesel prices over the period, total demand for these fuels actually increased as a result of economic growth. This reflects the limited opportunities in Australia to quickly shift to other modes of transport. However, during the second half of 2005, there were significant further price rises, largely as a result of the disruption to US refining because of Hurricane Katrina and an export embargo in China. These recent price rises have had a more pronounced impact on demand. For example, for the month of September 2005, there was a reduction in fuel consumption in Australia of around 6.3% in comparison to the average weekly fuel consumption of August 2005. These higher fuel prices appear to be encouraging motorists to purchase more fuel efficient vehicles. For example, from June 2005 to June 2006 there was an increase of around 20% in sales of vehicles in the 'light/small car segment'. A continuation of this trend will have implications for overall fuel demand. Since diesel is a much more efficient fuel than petrol we may also see diesel cars capture a higher share of new vehicle sales over the medium term.

### Vehicle Fuel Efficiency Improvements

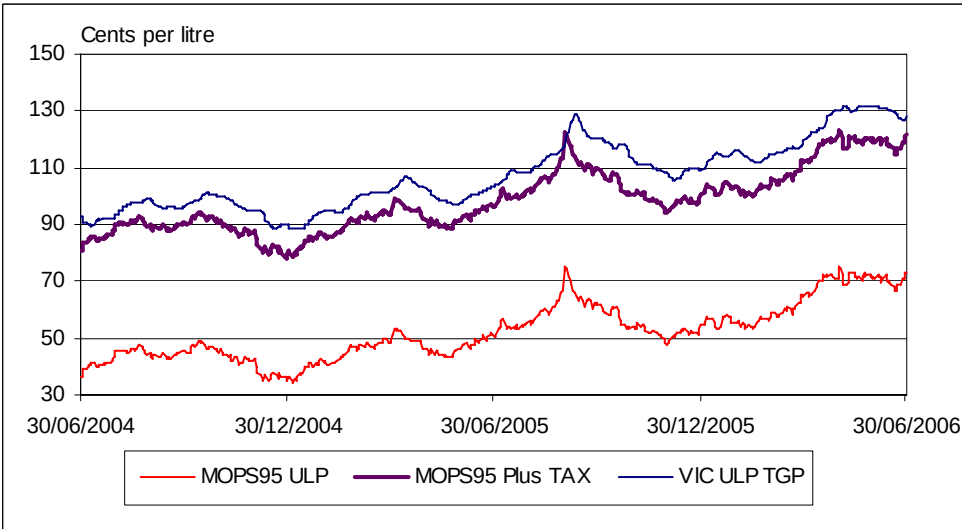
As part of the drive to increase vehicle fuel efficiency, there is a growing demand in new vehicles for higher grades of petrol – ie 95 and 98 RON petrol. Premium unleaded fuels accounted for around 15% of petrol demand in 2004-05, but as the new car fleet increasingly moves to require 95 RON petrol, this proportion is expected to rise to over 50% early in the next decade. This, of course, has implications for fuel costs as premium unleaded fuels are more expensive to produce and are priced accordingly in the market.

MOPS95 VERSUS TGP – STATES & NORTHERN TERRITORY

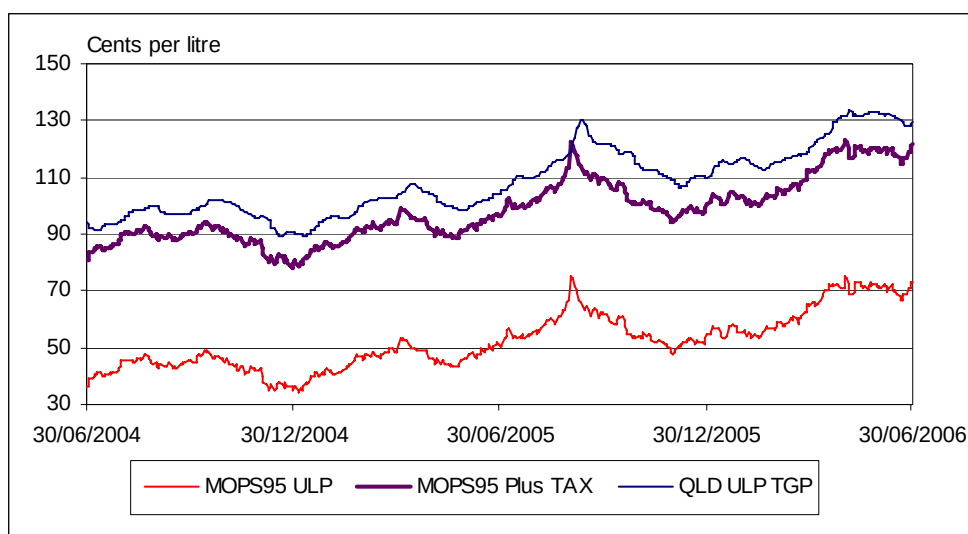
NSW



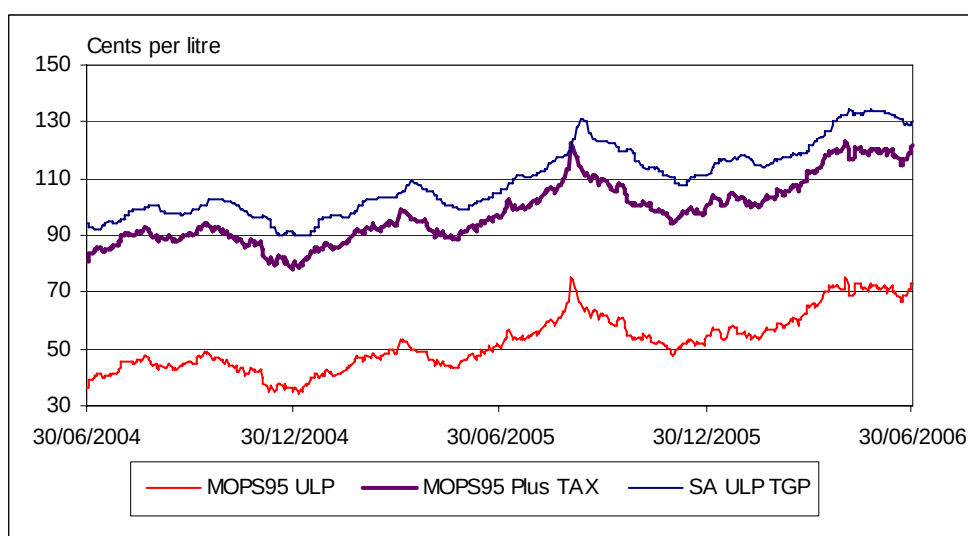
VICTORIA



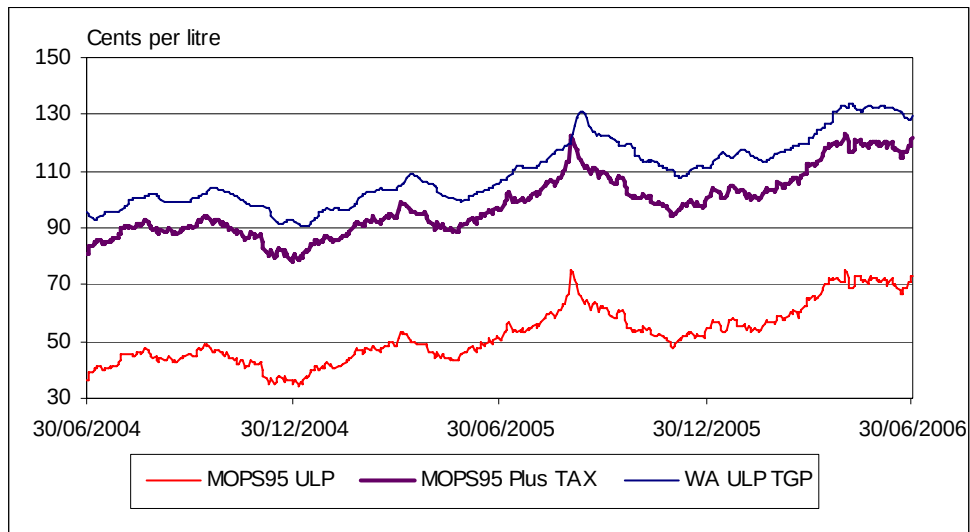
## QUEENSLAND



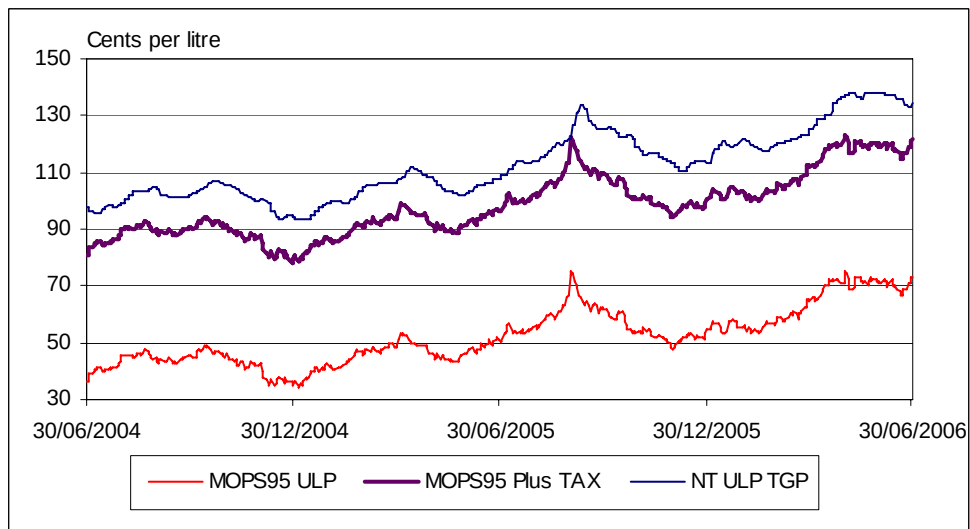
## SOUTH AUSTRALIA



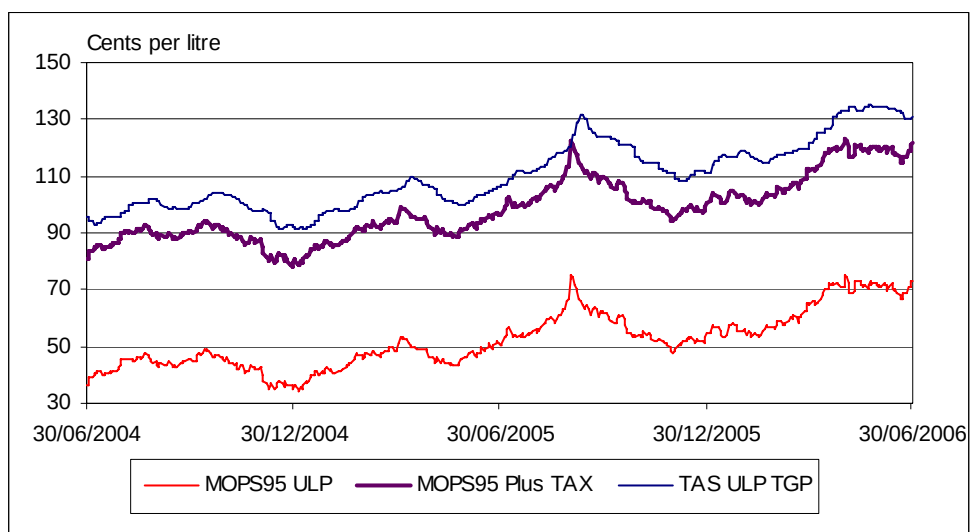
## WESTERN AUSTRALIA



## NORTHERN TERRITORY

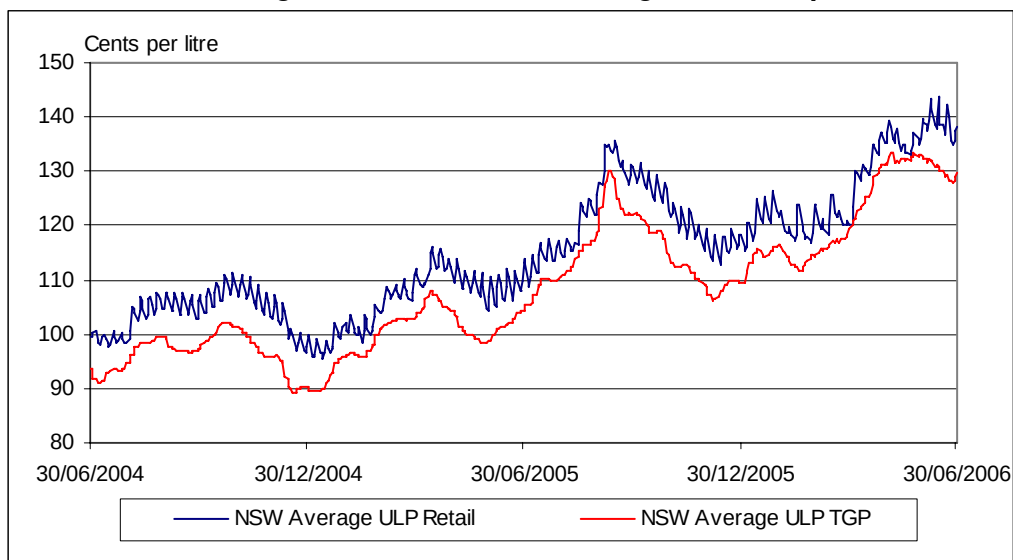


## TASMANIA

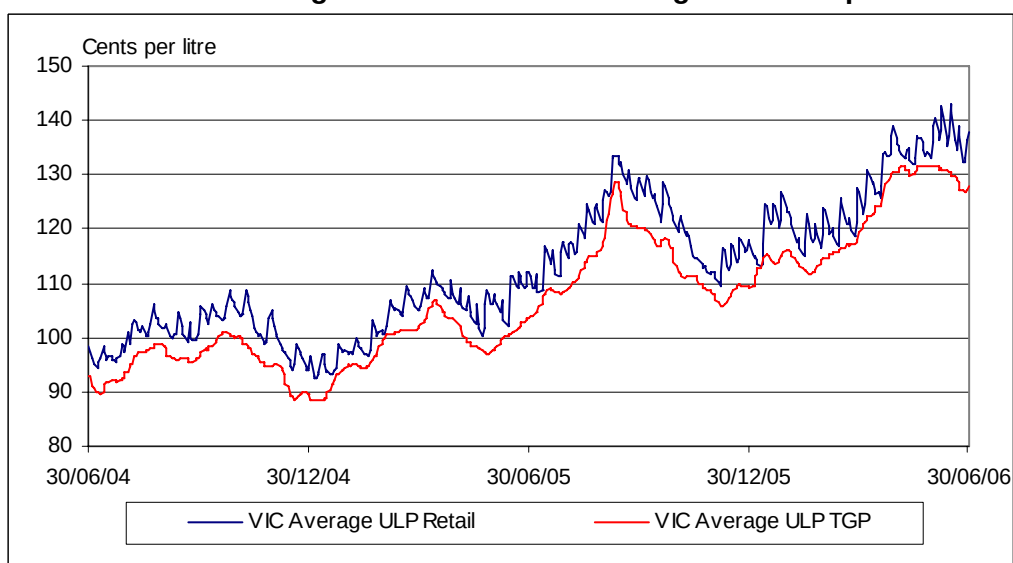


## TGP VERSUS RETAIL PRICES – STATES & NORTHERN TERRITORY

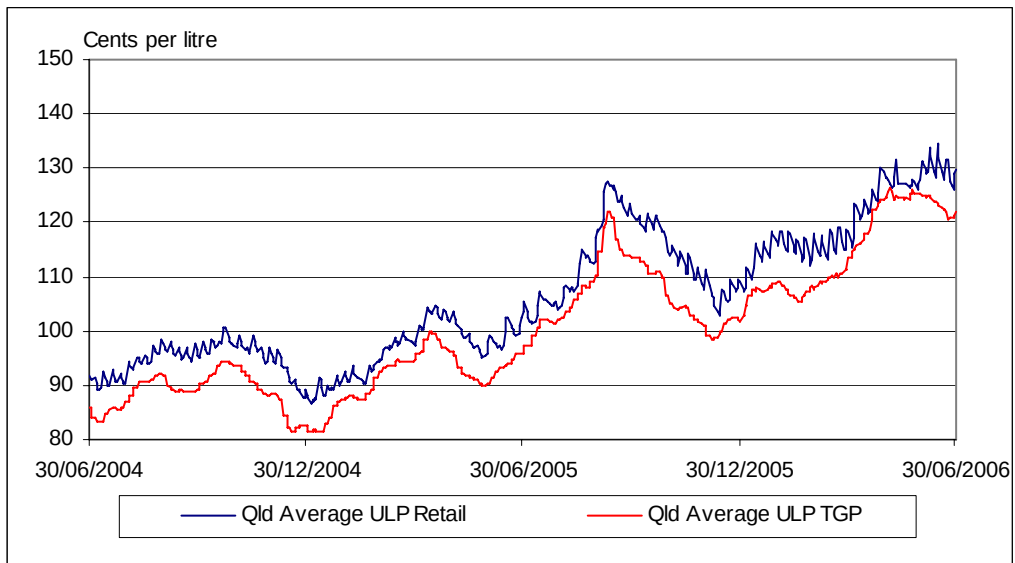
**NSW Average ULP TGP versus Average ULP Pump Price**



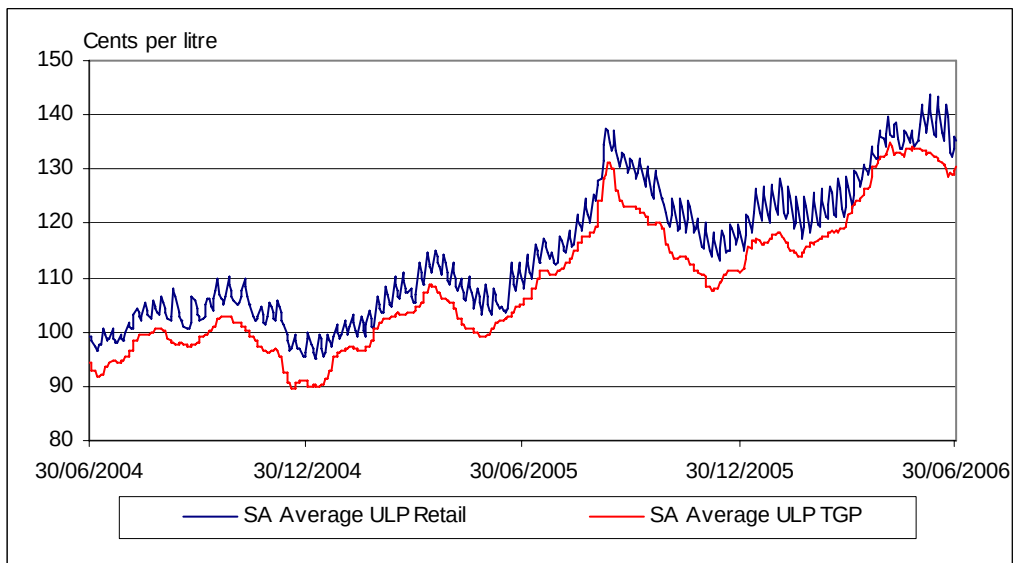
**VICTORIA Average ULP TGP versus Average ULP Pump Price**



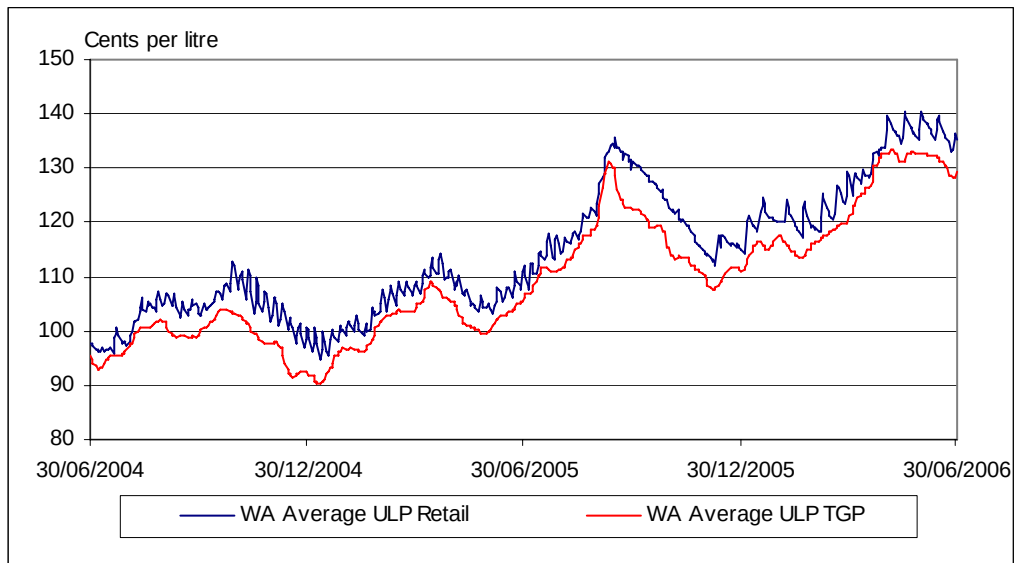
### QUEENSLAND - Average ULP TGP versus Average ULP Pump Price



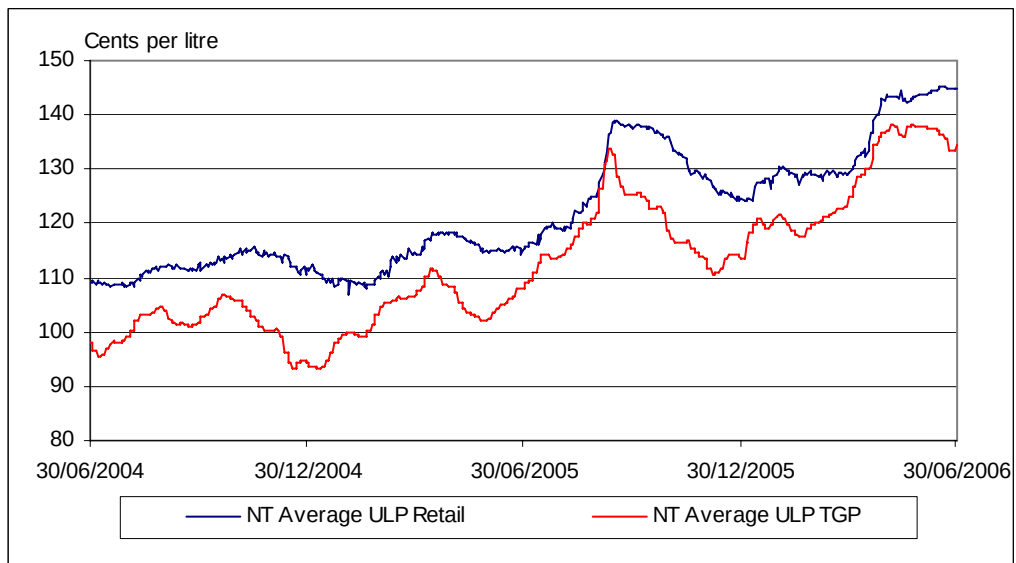
### SOUTH AUSTRALIA - Average ULP TGP versus Average ULP Pump Price



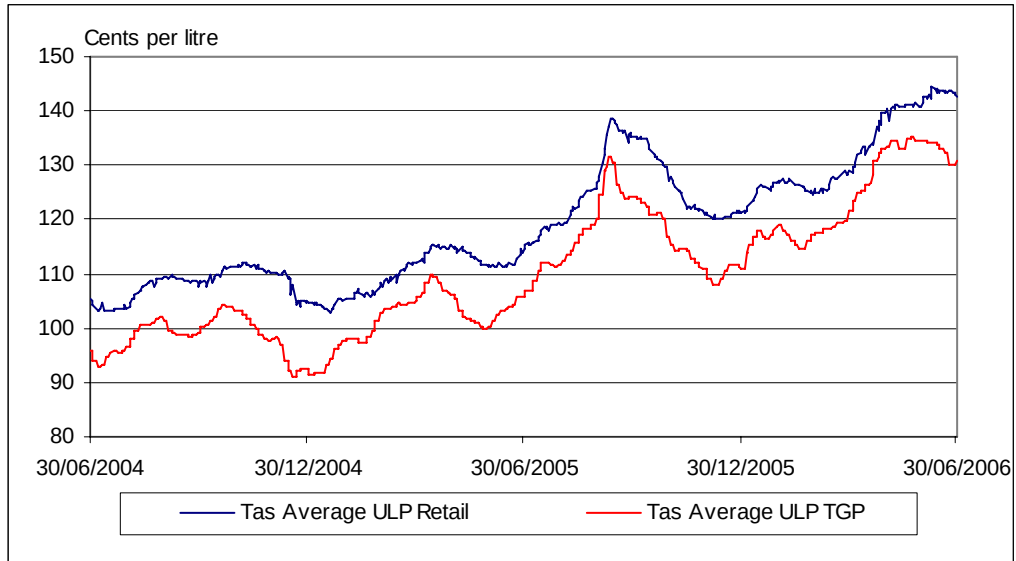
### WESTERN AUSTRALIA - Average ULP TGP versus Average ULP Pump Price



### NORTHERN TERRITORY - Average ULP TGP versus Average ULP Pump Price



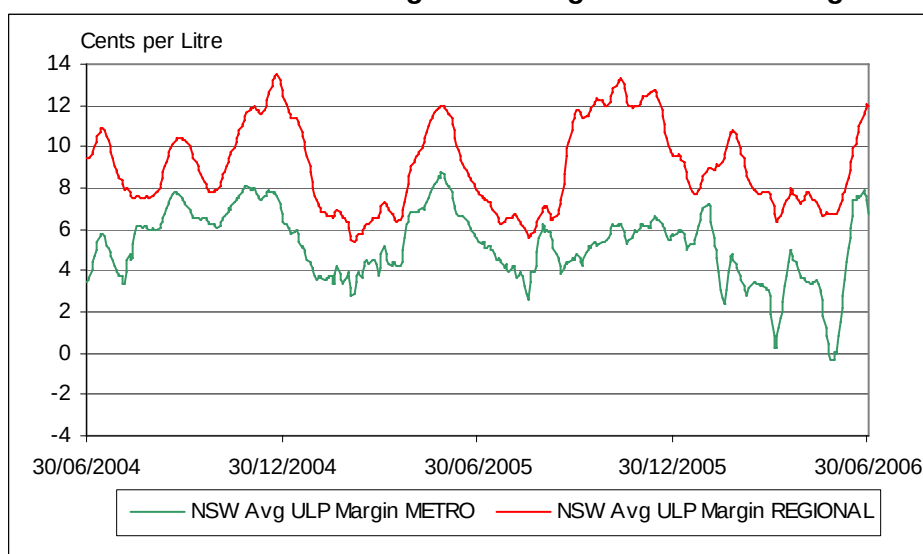
### TASMANIA - Average ULP TGP versus Average ULP Pump Price



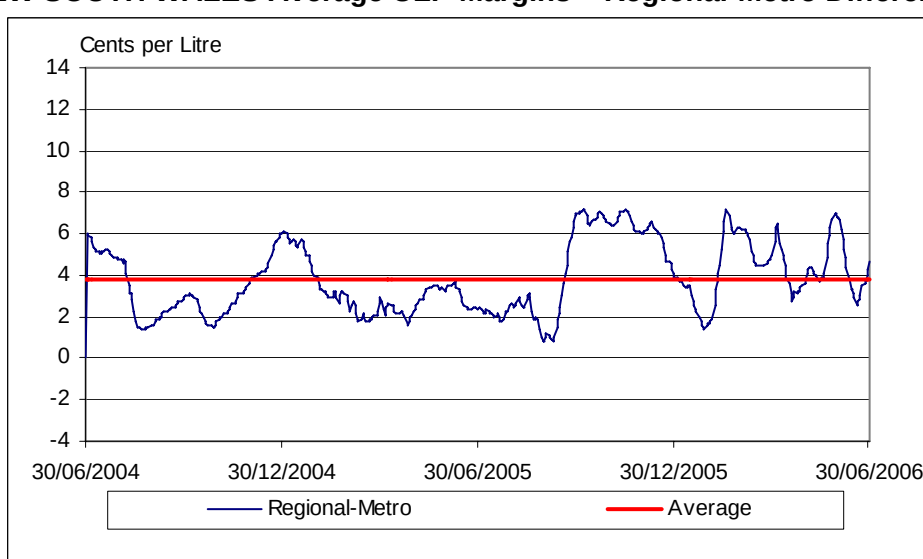
## MOVEMENTS IN GROSS RETAIL PETROL MARGINS - STATES AND NORTHERN TERRITORY (AND THE REGIONAL-METRO DIFFERENCE)

*Presented below are charts for the States & Northern Territory showing the difference between national average metropolitan and regional retail margins for ULP (calculated as the difference between the average ULP TGP price and the average retail or pump price for the same period). Rolling (10 working day) averages are used for presentation purposes and metro and regional ULP retail average data for the States/NT are weighted by ABS vehicle registrations in those areas.*

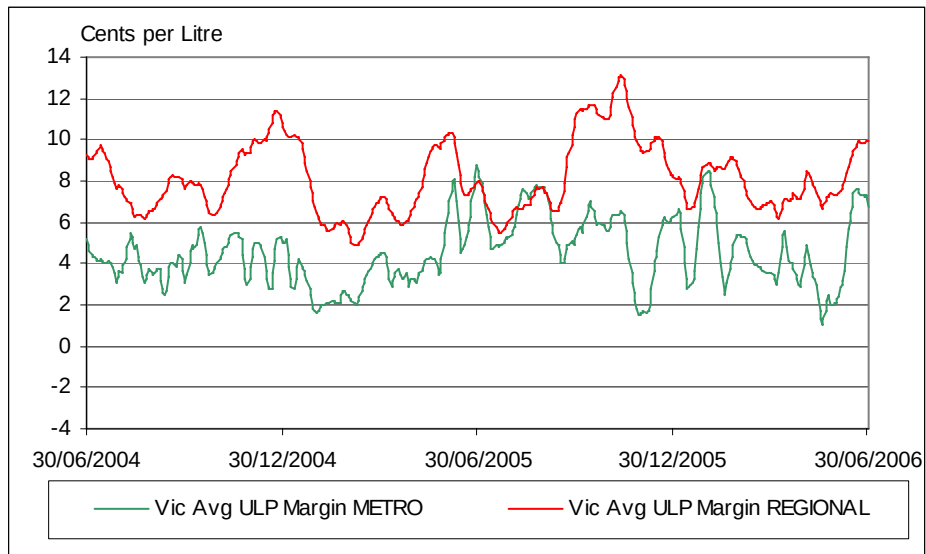
**NEW SOUTH WALES Average ULP Margins – Metro vs Regional**



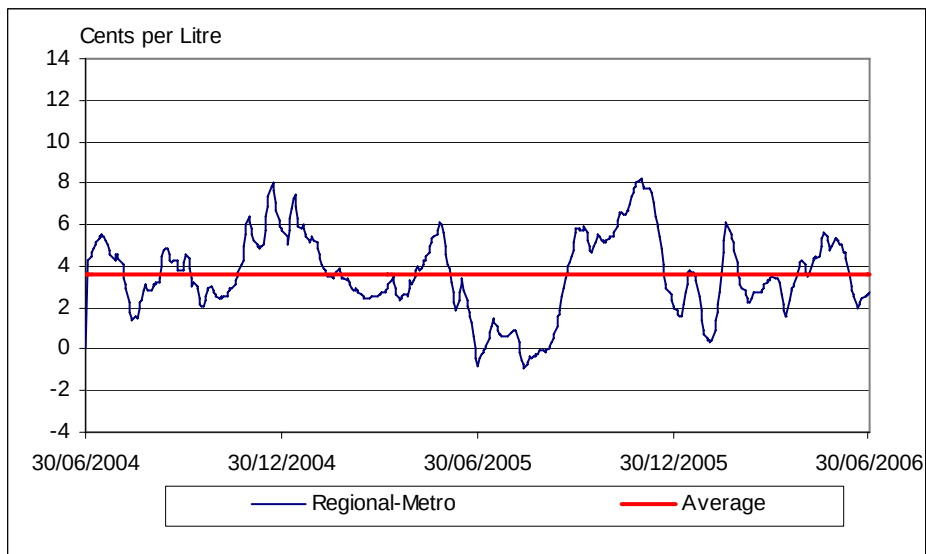
**NEW SOUTH WALES Average ULP Margins – Regional-Metro Difference**



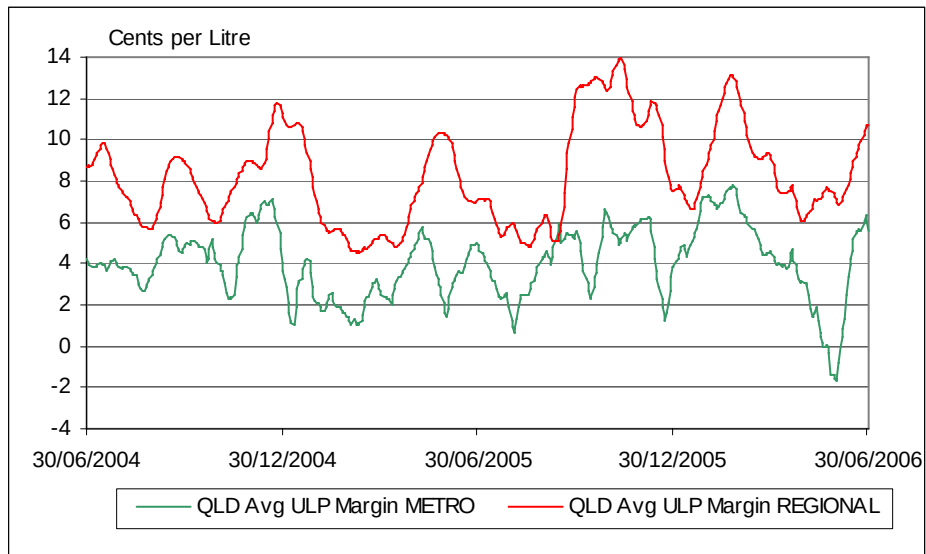
### VICTORIA Average ULP Margins – Metro vs Regional



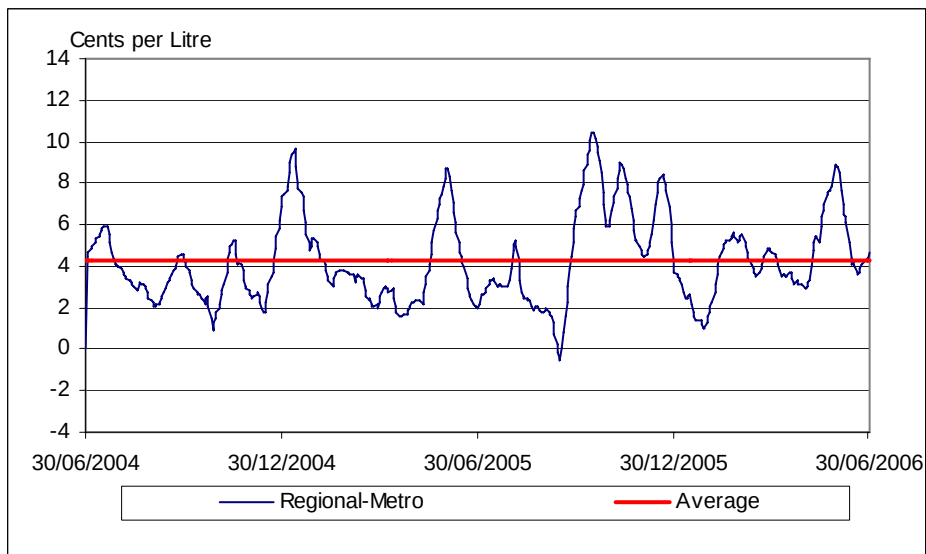
### VICTORIA Average ULP Margins – Regional-Metro Difference



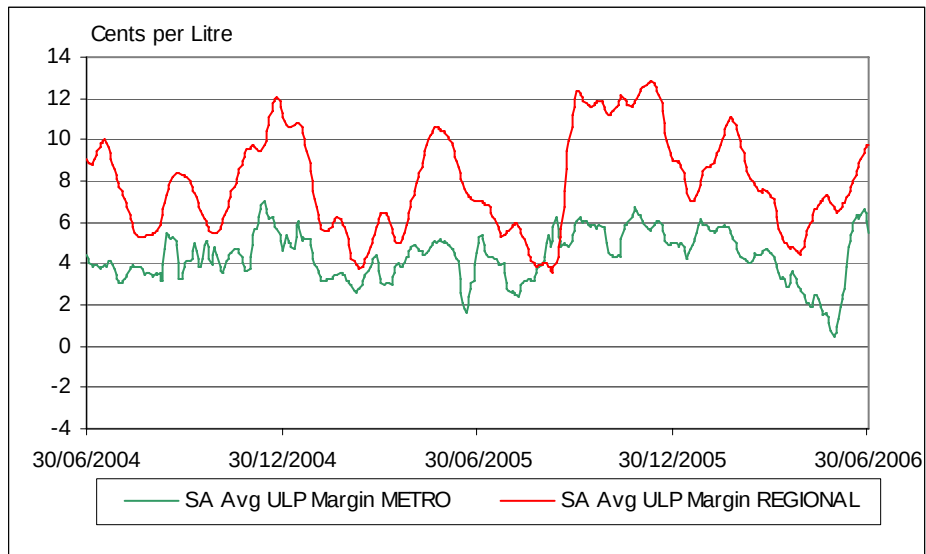
### QUEENSLAND Average ULP Margins – Metro vs Regional



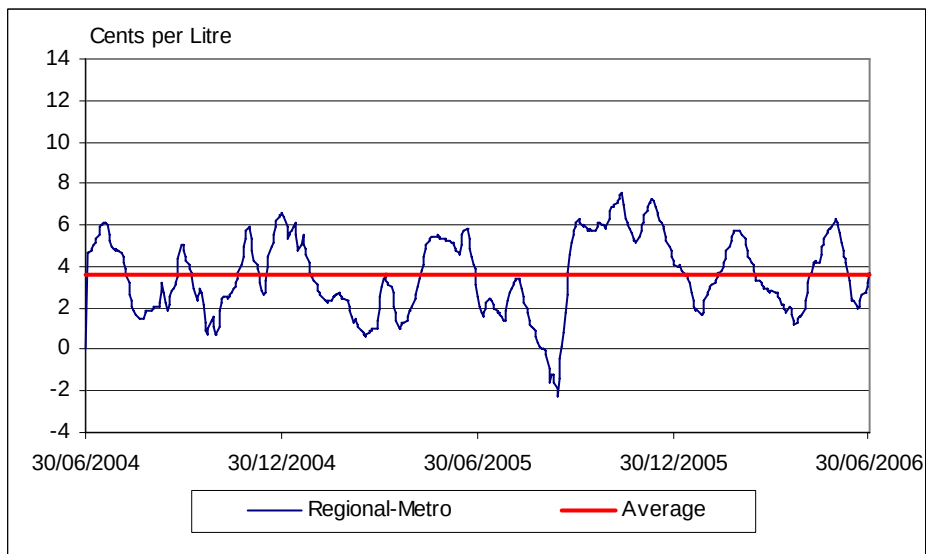
### QUEENSLAND Average ULP Margins – Regional-Metro Difference



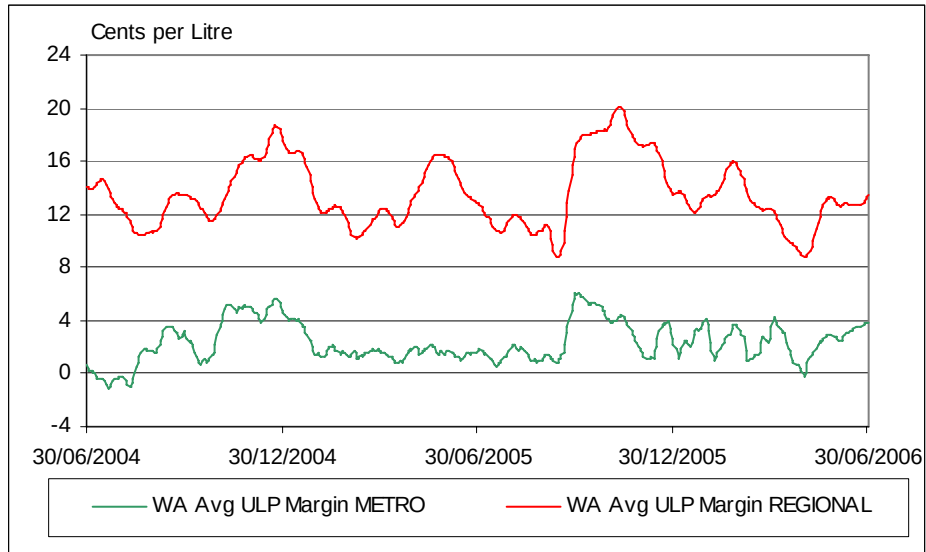
### SOUTH AUSTRALIA Average ULP Margins – Metro vs Regional



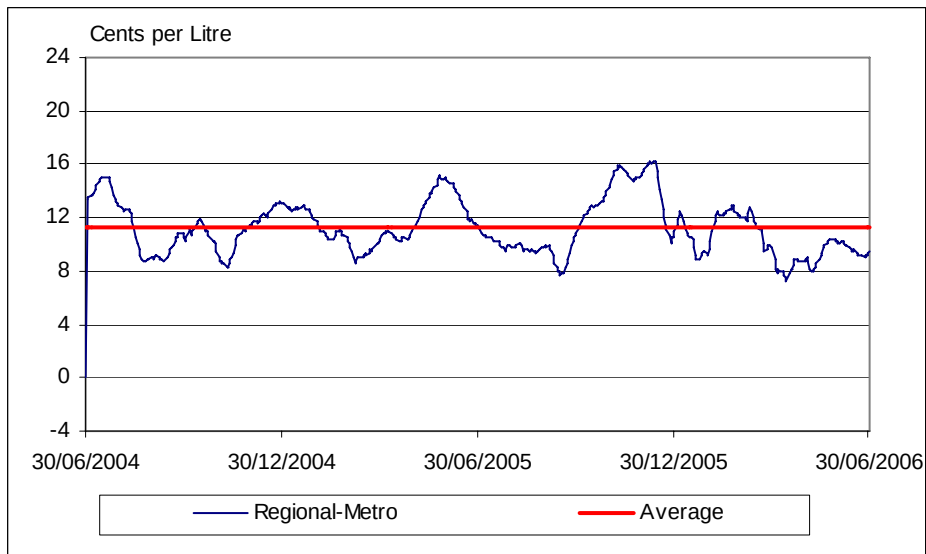
### SOUTH AUSTRALIA Average ULP Margins – Regional-Metro Difference



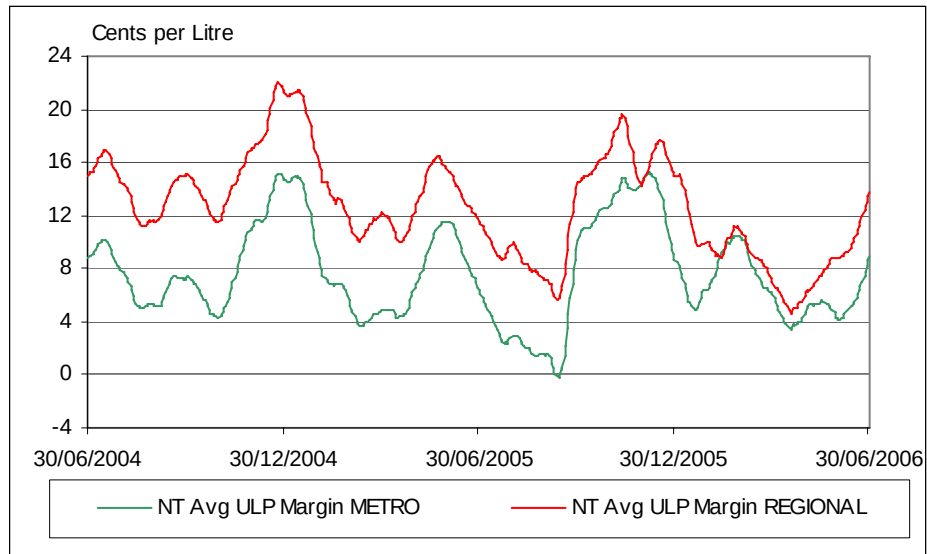
### WESTERN AUSTRALIA Average ULP Margins – Metro vs Regional



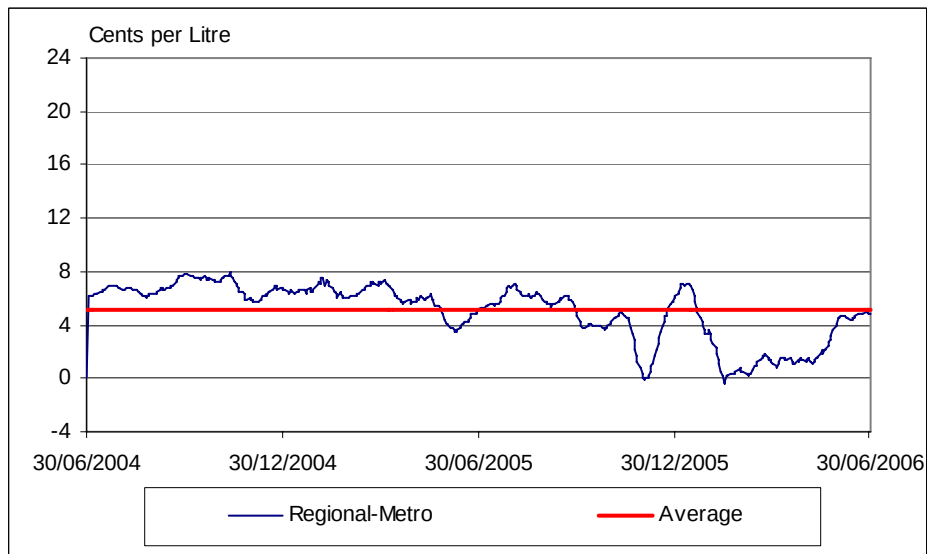
### WESTERN AUSTRALIA Average ULP Margins – Regional-Metro Difference



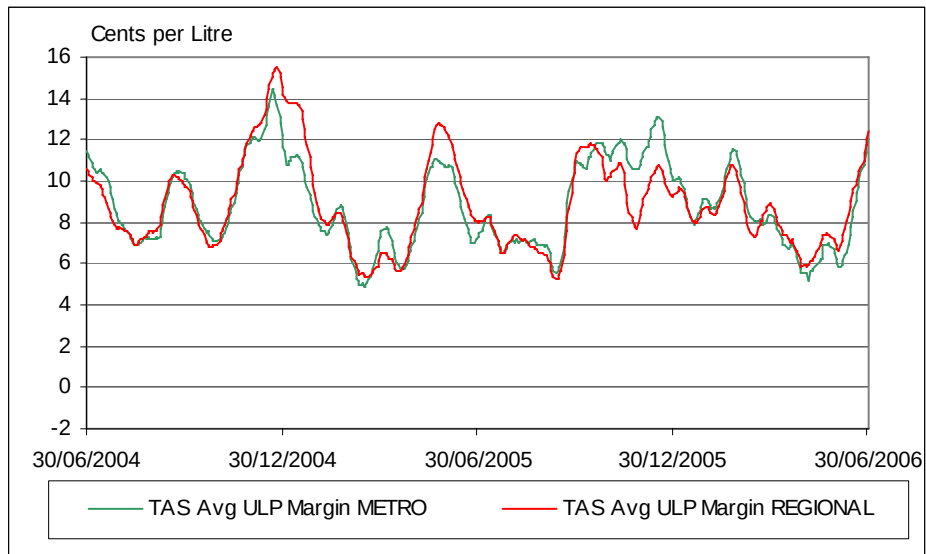
### NORTHERN TERRITORY Average ULP Margins – Metro vs Regional



### NORTHERN TERRITORY Average ULP Margins – Regional-Metro Difference



### TASMANIA Average ULP Margins – Metro vs Regional



### TASMANIA Average ULP Margins – Regional-Metro Difference

