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Monitoring of the Australian petroleum industry

Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia

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Australian Competition and Consumer Commission
23 Marcus Clarke Street, Canberra, Australian Capital Territory 2601

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Contents

Shortened terms

7-Eleven	7-Eleven Stores Pty Ltd
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
AIP	Australian Institute of Petroleum
APAC	APAC biofuel consultants (a joint venture of EnergyQuest Pty Ltd and Ecco Consulting Pty Ltd)
APS	Australian Petroleum Statistics
ASX	Australian Securities Exchange
AUD	Australian dollars
avg.	average
bl	barrel
BP	BP Australia Pty Ltd
Btu	British thermal unit — a measure of energy
British ppl	British pence per litre
Caltex	Caltex Australia Ltd
CBA	Commonwealth Bank of Australia
CIA	Central Intelligence Agency
Coles Express	Coles Express Pty Ltd
Coogee Chemicals	Coogee Chemicals Pty Ltd
cpl	Australian cents per litre
DSEWPAC	Department of Sustainability, Environment, Water, Population and Communities
E10	see EBP
E85	see EBP
EBIT	earnings before interest and tax
EBP	ethanol blended petrol, of which E10 (unleaded petrol with 10 per cent ethanol) is a common blend. E85 is a petrol blend containing 70 per cent to 85 per cent ethanol
excl.	excluding
FCAI	Federal Chamber of Automotive Industries
FOB	free on board

FuelCC	Fuel Consultative Committee
GL	gigalitres (billion litres)
GST	goods and services tax
Gull	Gull Petroleum Group
IEA	International Energy Agency
Informed Sources	Informed Sources (Australia) Pty Ltd
IPP	import parity price/pricing
JTA	joint terminal arrangement
JV	joint venture
KL	kilolitres (thousand litres)
LHS	left-hand side
Liberty	Liberty Oil Pty Ltd
LPG	automotive liquefied petroleum gas
Marstel	Marstel Terminals Pty Ltd
mbpd	million barrels per day
ML	megalitre (million litres)
Mobil	Mobil Oil Australia Pty Ltd
MOC	market on close
Mogas	motor gasoline
MON	motor octane number
MOPS	mean of Platts Singapore (refer to Platts in the glossary)
na	not applicable
Neumann	Neumann Petroleum Pty Ltd
NZRC	New Zealand Refining Company
OECD	Organisation for Economic Co-operation and Development
On The Run	retail trading name of Peregrine Corporation
OPEC	Organization of the Petroleum Exporting Countries
pa	per annum
PSA	Prices Surveillance Authority
PULP	premium unleaded petrol
RBA	Reserve Bank of Australia
RBOB	reformulated gasoline blendstocks for oxygenate blending
RET	Department of Resources, Energy and Tourism

RFS	Renewable Fuels Scheme (United States)
RHS	right-hand side
Rio Tinto	Rio Tinto Ltd
RON	research octane number
RULP	regular unleaded petrol
Saudi CP	Saudi contract price
SEP	Strasburger Enterprises (Properties) Pty Ltd
Shell	Shell Company of Australia Ltd
SMP	Sydney Metropolitan Pipeline Pty Ltd
TGP	terminal gate price
the Act	*Competition and Consumer Act 2010* (formerly the *Trade Practices Act 1974*)
Trafigura	Trafigura Services Australia Pty Ltd
United	United Petroleum Pty Ltd
USD	United States dollars
USD/bl	United States dollars per barrel
US EIA	United States Energy Information Administration
US FTC	United States Federal Trade Commission
Vopak	Vopak Terminals Australia Pty Ltd
Woolworths	Woolworths Ltd
WSFR	Worldscale flat rate
WTI	West Texas Intermediate

Glossary

2007 ACCC petrol inquiry report	the report of the ACCC's 2007 public inquiry into the price of unleaded petrol — *Petrol prices and Australian consumers: report of the ACCC inquiry into the price of unleaded petrol*, December 2007.
2008 ACCC petrol monitoring report	the ACCC's 2008 petrol monitoring report — Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, December 2008.
2009 ACCC petrol monitoring report	the ACCC's 2009 petrol monitoring report — Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, December 2009.
2010 ACCC petrol monitoring report	the ACCC's 2010 petrol monitoring report — Monitoring of the Australian petroleum industry: Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, December 2010.
Alaska North Slope	a crude oil used as the benchmark for the acquisition cost of composite crude oil for Californian refineries.
automotive fuel	includes petrol, diesel and automotive LPG.
barrel	a traditional measure of capacity used by the oil industry: one barrel is equivalent to 158.987 litres.
benchmark pricing	the practice of pricing to an identified crude or product price; for instance, the Tapis crude oil pricing benchmark.
biodiesel	a diesel fuel based on vegetable oil or animal fat, typically made in combination with alcohol.
Brent crude	a type of oil sourced from the North Sea and usually refined in northwest Europe. The Brent crude oil marker, also known as Brent blend, London Brent and Brent petroleum, remains the major benchmark for crude oil in Europe and Africa, and is increasingly used in Australia.
buy — sell arrangements	arrangements between domestic refinery owners for the purchase and sale of petroleum products.
city — country differential	the difference between the average city retail price of petrol and the average country retail price of petrol.
commission agent	an arrangement whereby an agent receives a commission for selling a product owned by another; in the downstream petroleum sector a commission agent often operates a retail site owned by a petrol refiner or wholesaler.
crude oil	a naturally occurring flammable liquid found in rock and other geological formations, consisting of hydrocarbons and other organic compounds. Common crude oil benchmarks include Brent (North Sea), Tapis (Malaysia) and West Texas Intermediate (US).

diesel (automotive distillate)	fuel designed to run in diesel engines, widely used in the mining and transport sectors, as well as in some passenger motor vehicles.
distributor	a transport company that picks up petroleum products from refineries, terminals and depots for delivery to retailers and end users.
downstream	the refining, importing, distribution and marketing of petroleum products.
Dubai crude	a heavier more sour crude oil benchmark sourced from the Middle East.
EBIT (earnings before interest and tax)	a measure of a company's profits that excludes interest and tax expenses.
EBIT margin	EBIT divided by sales revenue.
EBP (ethanol blended petrol)	unleaded petrol that includes a proportion of ethanol (for instance, E10 is an unleaded petrol that includes up to 10 per cent ethanol).
Edmonton Par crude oil	a benchmark for crude oil in Canada.
exclusive dealing	a type of conduct prohibited in certain circumstances by section 47 of the *Competition and Consumer Act 2010* broadly involving one trader imposing restrictions on another's freedom to choose with whom, or in what or where it deals.
five largest cities	Sydney, Melbourne, Brisbane, Adelaide and Perth.
fixed costs	costs that do not vary with output.
free on board (FOB)	arrangement whereby the seller pays for transportation of goods to the port of shipment, plus loading costs, with the buyer responsible for the cost of marine freight transport, insurance, unloading and transportation from the arrival port to the final destination.
fuel	automotive, aviation, marine and other transport fuels, and non-transport fuels such as butane and heating oil.
Fuel Consultative Committee (FuelCC)	established in 2010 by the ACCC to provide a forum for the fuel industry, motoring organisations and the ACCC to discuss fuel related issues and to assist the ACCC in undertaking its role under the Act on issues related to competition and consumer protection in the fuel industry.
fuel quality premium	additional component added to a price benchmark to reflect the higher quality of Australian-grade fuel relative to the Singapore benchmark fuel.
gantry	a facility used to transfer fuel products from a refinery or terminal to trucks or rail tankers.
gasoline	commonly used term for petrol in North America
gasoline crack	the difference between the price of refined petrol and the price of a barrel of crude oil, adjusted for volume differences.

gross profit	the difference between the revenue received from the sale of products and the cost of producing or purchasing them.
import parity pricing (IPP)	the setting of domestically refined petrol in the wholesale market at a price comparable to the cost of importing fuel into a given location in Australia.
import terminal	a major terminal with a direct pipeline connection to a port—most fuel at import terminals is received via ship.
independent retailers	retailers (owning single or multiple sites) other than supermarket retailers and refiner marketers. Independent retailers can sell petrol under the brand name of one of the refiner-marketers or under their own brand name.
Informed Sources	company that collects pricing information on various fuels and provides it to subscribers.
large independent chains	larger companies — other than refiner-marketers or supermarket chains — that import, wholesale and/or retail fuel in Australia; these include Gull, United, Neumann, Liberty, 7-Eleven and On The Run.
light, sweet crude	crude oil with low American Petroleum Industry (API) gravity index (light) and relatively low levels of sulphur (sweet). These oils are preferred by refiners because of their ease of handling and relatively high yields of high-value products such as petrol, diesel and jet fuel.
major terminal	a fuel storage terminal connected to a port or a refinery by one or more pipelines. There are two broad types of major terminals—import terminals and refinery-pipeline terminals.
marginal cost	the additional cost to produce one extra unit of output.
Mean of Platts Singapore (MOPS)	the average of prices reported by Platts for Singapore traded commodities, for instance Tapis MOPS.
Singapore Mogas 95 Unleaded (Mogas 95)	the commonly used international term for the benchmark for unleaded petrol in the Asia-Pacific region, including Australia.
nameplate capacity	the potential output of a refinery running at optimum utilisation.
New York Harbour (price of)	Platts established benchmark price for unleaded petrol in the US and Canada.
notification	a process under the *Competition and Consumer Act 2010* by which a person who engages in exclusive dealing conduct may obtain prior legal protection from the application of the Act for that conduct.
Oilcode	a prescribed mandatory industry code of conduct under section 51AE of the *Competition and Consumer Act 2010*. It regulates the conduct of suppliers, distributors and retailers in the downstream petroleum industry.
other fuels	includes kerosene, biodiesel, LPG, lead replacement and aviation fuels.

other oil-based products	includes LPG, aviation fuels, industrial and marine fuels, heating oil, fuel oil, lubricant oils, greases, basestocks and bitumen.
petrol	unleaded petrol—includes RULP (RON 91), PULP (RON 95 and higher) and E10. The terms ‘unleaded petrol’ and ‘petrol’ are used interchangeably in this report.
petroleum products	any oil-based products derived from crude oil processed in oil refineries.
Platts	a private company, provider of energy market information including price benchmarks for the oil, petrol and other energy markets.
Platts assessed price for MOPS	the mean of the high and low components of a Platts assessment for oil cargoes loading from Singapore; a free onboard price for completed deals in a particular commodity, quoted in USD.
PULP	premium unleaded petrol, with RON 95 or higher.
price support	rebate provided to a petrol retailer to compensate for periods of price discounting.
refiner margin	the petroleum product revenues received by a company, less all costs for raw materials (crude oil, catalysts, etc.), product input costs and processing costs per barrel of product sold.
refiner-marketer	a company that refines, imports, wholesales and markets fuel; in Australia these are BP, Caltex, Mobil and Shell.
refinery exchange	arrangements between refiner-marketers before July 2002 for the swap of a volume of product in one location for an equivalent volume in another location where they did not operate a refinery.
refinery-pipeline terminal	a major terminal with a direct or indirect pipeline connection to a refinery that supplies most of its fuel.
refinery products	fuel and other oil-based products such as lubricants and bitumen.
refining	the production of petroleum products from crude oil.
reformulated gasoline blendstocks for oxygenate blending (RBOB)	a wholesale price for a base gasoline in California designed to be blended with an oxygenate to comply with environmental regulations for finished reformulated gasoline.
regional locations	the 150 regional centres and country towns for which the ACCC monitors petrol prices.
retail margin	the difference between the cost of acquiring a product from a wholesaler and the retail selling price of that product. Effectively the retailer’s gross margin.
retail sector	sector in which petroleum and other non-fuel products and services are sold to the public through retail sites.

return on assets (RoA)	figure calculated by dividing net profit by total assets, expressed as a percentage, which shows how effectively a company's assets are being used to generate profit.
return on capital employed (RoCE)	figure calculated by dividing net profit by the sum of total assets minus current liabilities and expressed as a percentage. This is a measure of earnings relative to the capital invested in the company.
return on sales (RoS)	figure calculated by dividing net profit by total sales, expressed as a percentage, which shows how much profit is being produced per dollar of sales.
RON	research octane number, a measure of the efficiency of petrol at resisting engine knocking. In Australia, grades of petrol typically include RON 91 (regular) and RON 95 and higher (premium grades).
Rotterdam (ARA)	Platts-established benchmark price for unleaded petrol in Europe.
RULP	regular unleaded petrol—RON 91; includes low-aromatic unleaded petrol.
shopper docket	a discount offer on fuel for consumers that have spent a certain amount in one purchase from a nominated supermarket or retailer.
smaller capital cities	Darwin, Hobart and Canberra.
supermarket retailer	supermarkets that sell fuel under their own name/brand.
supply sector	the fuel industry sector that refines crude oil, imports and exports petroleum products, and/or purchases petroleum products from Australian refineries. This sector also imports crude oil for use by refineries.
Tapis crude	a light, sweet crude oil from Malaysia; it is used in oil markets as the benchmark for crude oil in the Asia-Pacific region.
terminal	a storage facility from which fuel is received via ship and/or refinery and distributed to wholesalers, retailers, distributors and end users.
terminal gate price (TGP)	price for a spot purchase of petrol from a terminal; used as a benchmark price; the TGP is the price a purchaser expects to pay, usually in cash, when they arrive at a wholesaler's terminal wanting to purchase a tanker load of 30,000 litres of petrol.
terminal throughput	the annual volume received and then distributed by a refinery or terminal via truck or rail gantry.
terminal turnover	the number of times a terminal is effectively filled and emptied during a year (that is, annual throughput divided by physical capacity).
third line forcing	a form of exclusive dealing conduct prohibited by section 47 of the *Competition and Consumer Act 2010*. It involves the supply of goods or services on the condition that the purchaser acquires goods or services from a particular third party, or a refusal to supply because the purchaser will not agree to that condition.

unleaded petrol	see 'petrol'—the terms 'unleaded petrol' and 'petrol' are used interchangeably in this report.
vertical integration	the undertaking by a single company of successive stages in the process of production and/or supply.
wholesale sector	the sale and movement of petroleum products from a wholesaler to other wholesalers, to retailers or to end users such as transport, agricultural and mining companies.
West Texas Intermediate (WTI) crude	a type of crude oil; also known as Texas Light Sweet. WTI crude is traded on the New York Mercantile Exchange through futures contracts. Prices have been recently affected by a build-up of excess supplies as a result of infrastructure bottlenecks at the main trading hub at Cushing, Oklahoma. As a result the price of WTI is not currently a useful indicator of world demand and supply conditions for crude.
Worldscale	a provider of shipping freight prices and other freight market information. Freight rates are quoted by ship and port combination. The freight rate for a given ship and port combination reflects market demand and the availability of shipping.

Key points

For many Australians, petrol costs are a necessary and unavoidable outlay accounting for a significant proportion of household expenditure. For many families petrol is the biggest single weekly expense accounting for around 4 per cent of weekly household expenses.[1] Not surprisingly, motorists are very interested in ensuring that petrol prices are as low as possible—in other words, that petrol prices reflect competitive forces and are not subject to manipulation by petrol companies.

Australian petrol prices

Australian pre-tax petrol prices reflect international prices and thus are similar to pre-tax prices paid by consumers in other countries.

Australian pre-tax prices are in line with other countries

Petrol prices in Australia continue to be among the lowest in countries in the OECD,[2] largely due to tax rates on petrol being lower in Australia than most OECD countries. Pre-tax petrol prices are consistent with those of other OECD countries.

ACCC analysis has found that in Australia, as in other developed countries, petrol prices reflect international market prices and the local currency's value relative to the US dollar.

Domestic prices driven by international prices

Australian consumers pay a price for petrol that is, on average, reflective of the relevant international benchmark prices.

Australian petrol prices reflect international market prices

While crude oil prices clearly influence retail petrol prices, it is the international price of refined petrol which largely determines the price at the pump. Around a quarter of Australia's petrol is imported, mostly from Singapore and the most appropriate benchmark for the refined petrol that is sold to Australian consumers is the price of Singapore Mogas 95 Unleaded (Mogas 95).

ACCC analysis in this report shows that retail prices in Australia have generally moved in line with Mogas 95. Since 2002, average retail prices at Australia's five largest cities have risen 122.5 per cent while the price of Mogas 95 has risen 123.4 per cent.

1 In 2009–10, 'Motor vehicle fuel, lubricants and additives' accounted for expenditure of $51.02 out of total goods and services expenditure of $1,236.28. Australian Bureau of Statistics 2009–10 Household Expenditure Survey, Cat No 6530.0.

2 According to data compiled by the Department of Resources, Energy and Tourism, in the June quarter of 2011 Australia had the fourth lowest retail petrol prices in the Organisation for Economic Co-operation and Development (OECD).

Consumers may see a change in the price of crude oil quoted in the media and expect that to be reflected in the retail price of petrol. However, most of the media continues to quote the West Texas Intermediate (WTI) oil price which bears no relationship with the price of oil that Australian refiners pay and has no influence on Australian petrol prices. In fact, WTI does not even reflect the price most US refiners pay.

Infrastructure and transportation bottlenecks near the main trading hub for WTI at Cushing, Oklahoma have resulted in a severe build-up of excess supplies, depressing WTI prices relative to other more internationally traded benchmarks.

The price that Australian refiners pay for crude oil is better reflected in the price of the more internationally traded Brent crude oil benchmark or in the regional crude oil benchmark known as Tapis.

Crude oil prices

Higher world crude oil prices led to higher petrol prices in 2010–11

Geopolitical events (in particular, political unrest in the Middle East) combined with stronger than expected economic recovery from the Global Financial Crisis saw world oil prices (and thus retail petrol prices) increase from September 2010 to May 2011. Prices have declined somewhat in recent months with reduced concern over Middle East tensions and renewed worries about the health of the global economy.

Oil demand continues to grow, particularly in developing Asia, while exhaustion of some traditional oil fields and additional costs involved in bringing more difficult and unconventional oil deposits online has led to an overall increase in oil prices over the last few years.

Regardless of short-term fluctuations, it appears that world oil prices (and with them Australian retail petrol prices) have reached a new, significantly higher, average price range.

Profits

Evidence does not indicate excessive profits in the downstream industry

Overall, the ACCC has not found evidence of excessive profits in the Australian downstream petrol industry, with rates of return in most sectors comparable with other manufacturing industries and petrol industries in other countries. Profits are generally volatile, reflecting variability in international prices. In 2010–11, the ACCC found that the revaluation of stocks in a generally rising oil market and an increase in volumes, particularly of higher yielding diesel and premium grades of petrol, provided much of the basis for increased profits in the petrol industry.

Despite the levels of concentration in the industry, there is evidence indicating competitive tension including:

- the greater availability of Australian standard fuel in the Asia-Pacific region means that Australian wholesalers are not restricted to sourcing petrol supplies from domestic refiner-marketers
- the growth of independent importers
- the closure of two Australian refineries since 2003
- the growth of independent retail chains and the exit by two refiner-marketers from retailing.

In 2010–11 the ACCC has also reported on a number of aspects of the downstream petroleum industry that are of concern to consumers.

Price cycles

The fact that retail petrol prices in the largest cities regularly increase by significant amounts at most retail sites over a short period of time is clearly a source of considerable frustration for motorists.

Price cycles remain a concern for consumers

These price cycles, where price hikes are generally followed by several days of reductions in prices, are a source of many complaints to the ACCC. This is despite the fact that many consumers take advantage of the low point in the cycle to purchase petrol.

Petrol price cycles are not responses to changes in cost but are the result of the deliberate pricing policies of the major fuel retailers. The price increases are generally led by BP or Caltex.

The ACCC is concerned about the level of coordination apparent in price cycles and is analysing the likely effects of this behaviour on outcomes for consumers

The ACCC has reported in this year's monitoring report that retail price cycles are not unique to Australia and that they manifest in other countries, notably in some markets in Germany, US and Canada. However, evidence considered in the 2007 petrol inquiry and since then indicates that price cycles in Australia are generally larger in amplitude than those in other countries.

There are several features of the petrol industry in Australia, as well as some overseas markets, that promote regular price cycles. Despite the entry of new firms in the wholesale and retail sectors, the downstream industry remains relatively concentrated. High levels of concentration may raise competition concerns, as it is generally easier for competitors to coordinate their pricing in an industry with a few dominant firms.

In the petrol industry, coordination is potentially facilitated by the high level of price transparency. In Australia, the sharing of near real-time retail price data by the larger competing petrol retailers through the Oil Pricewatch system provided by Informed Sources assists retailers to develop an understanding of other retailers' pricing behaviour.

Regional prices

Regional prices are generally higher than urban prices reflecting higher costs and lower levels of competition in smaller markets

Another aspect of the Australian petrol industry that creates concern for many Australian consumers is the high level of prices in many regional locations. Petrol prices in regional locations are a major source of complaints to the ACCC from motorists.

There are a number of reasons why retail prices in regional locations can be higher than in larger cities:

- Petrol is generally refined or imported into the largest cities and so transport costs to get petrol to regional locations tend to be higher.
- Lower turnover at small regional retail sites compared with larger retail sites generally results in higher unit costs and lower convenience store revenues leading to higher prices.
- In some cases, higher prices in regional locations reflect a lower level of competition. There are regional locations where the population is not large enough to attract many retailers competing for business and which are not located in close proximity to larger centres or major highways. Motorists in these locations may have limited choice of retailers and pay higher fuel prices.

The ACCC takes allegations of anti-competitive behaviour very seriously and will investigate and take action through the courts where appropriate

The ACCC monitors prices in regional locations to ensure that prices reflect competition in the market and are not the result of anti-competitive conduct, such as price fixing or collusion that would be in breach of the *Competition and Consumer Act 2010* (the Act).

Where a regional market looks to be of concern, the ACCC will review recent price movements and the structure of the market and may visit the town and talk to local retailers to determine whether there is a need for further investigation.

The ACCC welcomes any evidence local businesses or members of the public may have with regard to anti-competitive conduct. The ACCC takes very seriously any evidence of possible anti-competitive conduct that may be in breach of the Act and will take action through the courts where appropriate.

Given that regional locations may only have a limited number of retail sites the ACCC pays particular attention to potential changes in ownership of retail sites in regional locations to ensure that the sale will not result in a substantial lessening of competition in that particular market.

Ethanol supply and prices

Ethanol is increasingly becoming an important part of the fuel product mix in Australia as consumers look to alternative fuels. Throughout the past year various stakeholders raised concerns with the ACCC about limited ethanol supplies.

The NSW mandate continues to increase demand for ethanol

Information provided to the ACCC suggested that during 2010 and 2011 Australian ethanol production struggled to keep up with demand. Demand increased due to increases in the NSW ethanol mandate over the year including the latest increase from 4 to 6 per cent in October 2011. Supplies were affected by weather-induced disruptions and investment uncertainty said to be caused by a tough economic climate, regulatory uncertainty and the limited viability of ethanol imports. While there are still only three domestic producers of ethanol in Australia, the ACCC understands that supply of ethanol by the existing producers is improving.

Limited ethanol supplies remained a concern for many industry participants

Last year, the ACCC reported that there was a risk that limited supply and growing mandated consumption could lead to higher ethanol prices. ACCC monitoring has found that the price differential between E10 and regular unleaded petrol (RULP) has decreased since the beginning of 2011 with E10 now only around 1.7 cpl cheaper than RULP, down from 2.6 cpl last year. This has led to comments from stakeholders suggesting E10 no longer offers consumers value for money because the price difference between E10 and RULP does not offset the reduced mileage of E10.

E10 prices have risen relative to RULP prices

The ACCC will continue to closely monitor the market structure and supply of ethanol blended petrol as well as the price offering of ethanol blended petrol (EBP) to consumers over the coming year.

Summary

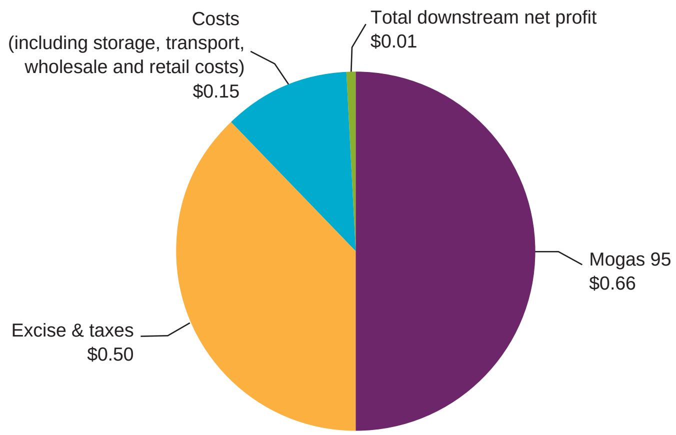
The ACCC monitored and analysed the prices, costs and profits of petrol in keeping with the ministerial direction of 13 May 2010 (see appendix A). This summary highlights the findings of the ACCC's analysis. More in-depth analysis of each of the topics covered in this summary can be found in the relevant chapters of the report.

Australian retail petrol prices follow international benchmark prices and are influenced by the exchange rate

ACCC analysis has consistently shown that retail petrol prices in Australia are primarily determined by the international price of refined petrol (which itself is driven by the price of crude oil) and the AUD—USD exchange rate.

Chart 1, which sets out the components of Australian retail prices of regular unleaded petrol (RULP) (which averaged $1.32 per litre in 2010–11), shows the importance of the international price of refined petrol, Singapore Mogas 95 Unleaded (Mogas 95), in the determination of retail prices.

Chart 1 Components of average retail RULP price: 2010–11 (components are to scale)



Source: ACCC calculations based on Informed Sources, Platts, Reserve Bank of Australia (RBA) and WA Fuelwatch data, and information provided by monitored companies

The role of the Mogas 95 petrol benchmark

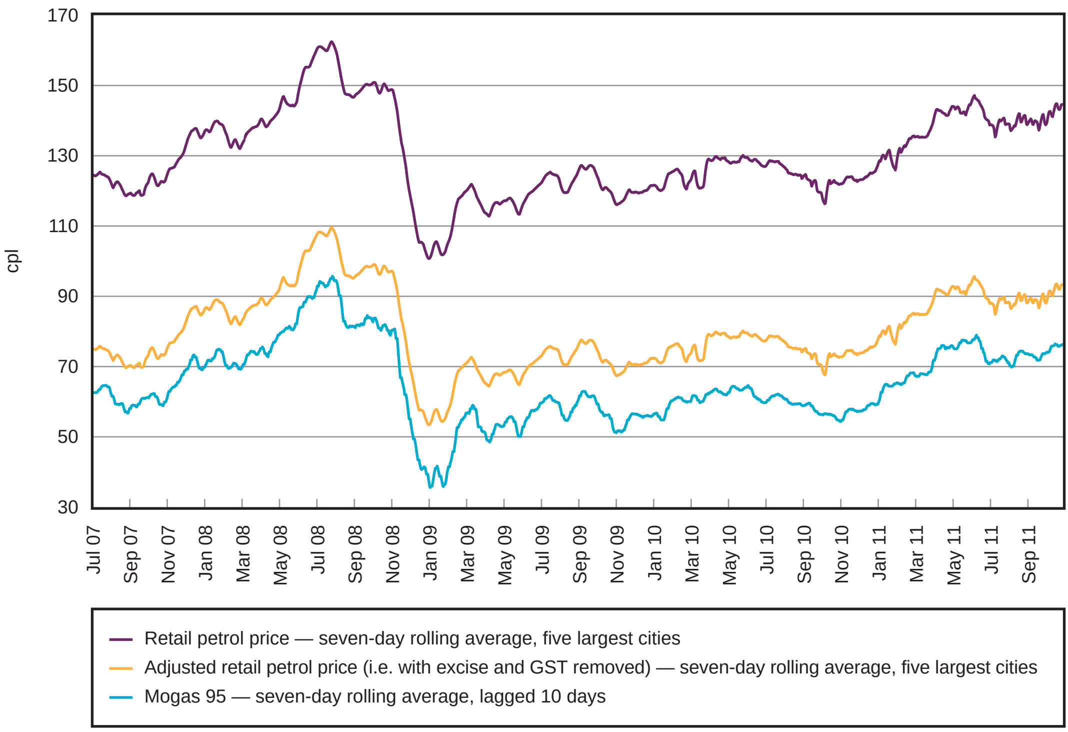
The price of refined petrol in Australia is determined with reference to international benchmark prices. The relevant international benchmark price for RULP in Australia is the price of refined petrol in the Asia-Pacific region—the price of Mogas 95.

Singapore is the regional hub for the sale of a variety of petroleum-based products into Australia and most local petrol companies use Mogas 95 as the basis for calculating the price of petrol in Australia.

Chart 2 shows seven-day rolling average retail petrol prices in the five largest cities,[3] compared with Mogas 95 (lagged by 10 days) over the period 1 July 2007 to 30 September 2011. For comparison purposes it also shows adjusted retail prices (which have excise and GST removed).

The chart shows that in the medium term retail prices in the five largest cities have closely followed movements in Mogas 95 prices in AUD terms. This shows that domestic retail prices are overwhelmingly driven by the international price of refined petrol.

Chart 2 Daily retail petrol prices, adjusted retail prices and Mogas 95 prices: 1 July 2007 to 30 September 2011 — Australian cents per litre (cpl)



Source: ACCC calculations based on Informed Sources, Platts and RBA data

While Mogas 95 is the principal benchmark for retail petrol prices in Australia, movements in Mogas 95 have primarily been influenced by movements in the international price of crude oil. Movements in the international price of oil (the price of Tapis crude oil has been commonly used as the benchmark for crude oil prices in South-East Asia) drive changes in the price of Mogas 95. Mogas 95 in turn plays a central role in setting retail petrol prices in Australia (see chart 3).

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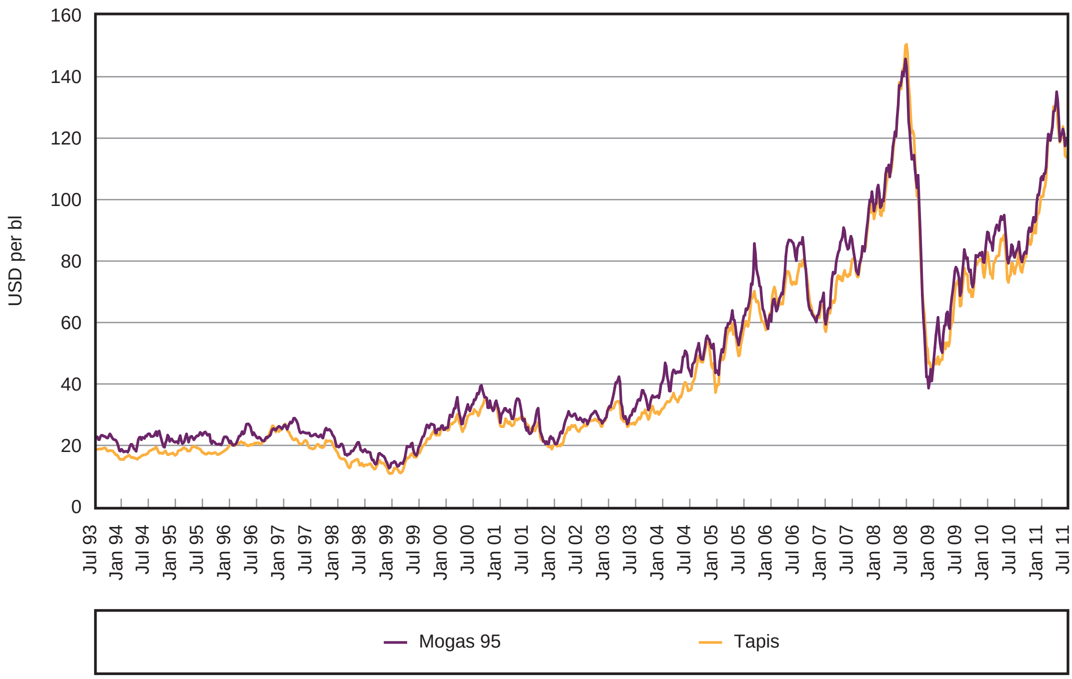
3 A seven-day rolling average price is the average of the current day's price and the prices on the six previous days. In the case of retail petrol prices it is the average of calendar days, but in the case of Mogas 95 prices it is the average of working days. A seven-day rolling average is used to smooth out the effect of the regular petrol price cycles in the larger cities. The refiner-marketers use a rolling average price for Mogas 95 when determining their wholesale prices.

Refined petrol and crude oil prices

Mogas 95 prices are largely determined by the price of crude oil. However, like most internationally traded commodities, they are also determined by global supply and demand conditions for refined petrol, and thus the Mogas 95 price may move independently from the crude oil benchmark. Because it responds to its own fundamentals, the Mogas 95 price may also move independently of the Singapore Gasoil price (the benchmark for diesel) even though both are fundamentally driven by the price of crude oil. Chart 3 shows the close relationship between refined petrol prices and crude oil prices.

Chart 3 Weekly average Mogas 95 and Tapis crude oil prices: 1 July 1993 to 30 June 2011

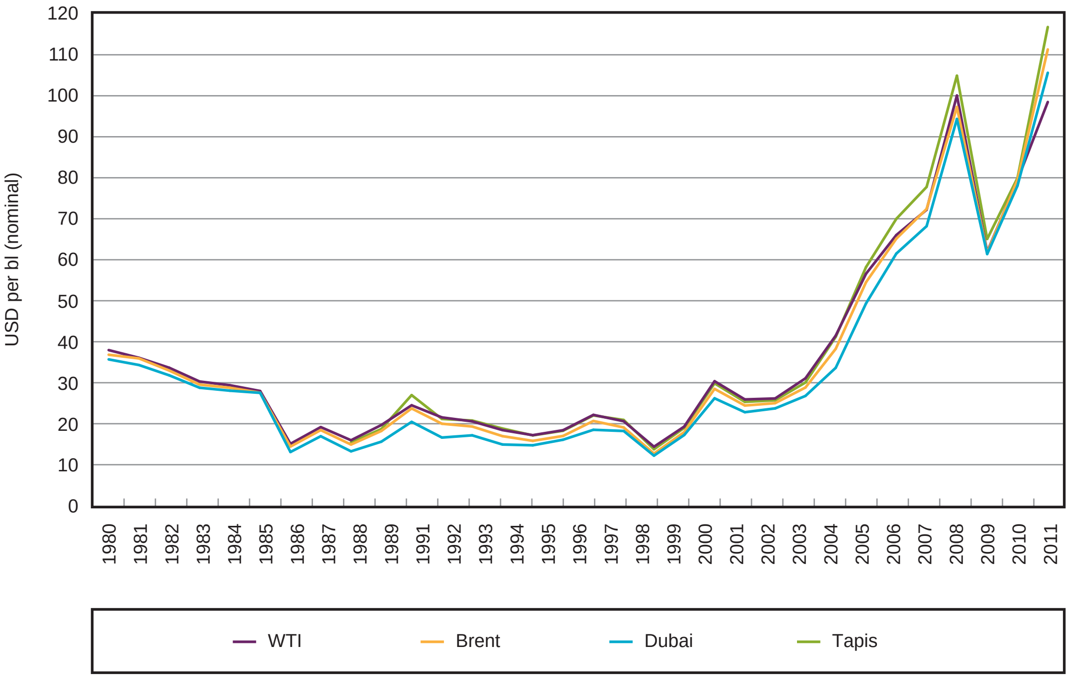


Source: ACCC calculations based on Platts data

Crude oil prices drive higher petrol prices

Tapis is one of a number of major international benchmarks for crude oil used to set prices of crude in various regions in the world. Chart 4 shows the price of crude oil using each of the major benchmarks as well as Tapis. It is clear that world crude oil prices have moved significantly higher over the past decade.

Chart 4 Average annual benchmark prices of WTI, Brent, Dubai and Tapis crude oil: 1980 to 2011



Source: Crude price data from BP Statistical review of world energy 2011

Given the importance of crude oil prices to the price of petrol (or diesel), this surge in oil prices has been the principal reason for higher petrol (and diesel) prices, not just in 2010–11, but over most of the last decade.

In the long term, other influences on retail prices include the degree of competition at the wholesale and retail levels, the level of excise and taxes, international and domestic freight costs, the fuel quality premium (which includes a component for producing petrol to Australian standards), and other wholesale and retail costs and margins.

Most appropriate crude oil benchmark

Traditionally **Tapis** crude oil (a Malaysian light sweet crude oil) has been commonly used in this region as the benchmark for crude oil. While the Tapis price remains important in the region, there is a growing use of the benchmark price of the more globally traded Brent crude.

Tapis, and increasingly Brent, are the most commonly used crude oil benchmarks in this region and thus the most appropriate to use for pricing purposes in Australia. While different crude oils have different characteristics and respond to their own demand and supply pressures, to a significant degree they are benchmarks for approximately interchangeable commodities in a global market. Thus, over the medium term the major benchmarks vary little from each other, as shown in chart 4.

Other crude oil benchmarks include:

- **Brent:** a light sweet crude from the North Sea, which is probably the most internationally traded crude on global markets.
- The **Dubai** index (sometimes known as Fateh), which is used primarily in the Middle East.
- **West Texas Intermediate** (WTI): a light sweet crude priced out of Cushing, Oklahoma. Recently, the relevance of WTI as a global market guide has diminished:
  - While WTI is often quoted in the media, it is not an indicator of global supply and demand and is not relevant to Australia.
  - Brent has historically traded at a discount to higher-quality WTI. Arbitrage has kept the differential small since cheaper Brent can be delivered against WTI if the gap widens too much.
  - However, the arbitrage does not work well when the price of WTI is depressed by regional infrastructure and institutional arrangements.[4] These have led to a regional glut in WTI crude, which has brought down its price relative to other benchmarks. The infrastructure and institutional arrangements relating to WTI mean that these price differences cannot be arbitraged away in the short term. Consequently, the recent price of WTI has been less representative of global demand — supply fundamentals than either Tapis or Brent.

In 2010–11 crude oil prices (and thus Mogas 95 prices) were influenced by:

- a particularly cold winter in the northern hemisphere which increased demand for crude oil products
- a decrease in global oil supplies resulting from conflict in Libya and fears of supply problems amid geopolitical unrest in the Middle East
- the depreciation of the USD against other major currencies (since crude oil and Mogas 95 are both priced in USD)
- mounting concerns over the fragility of economic recovery in Europe and the United States.

Drivers of crude oil prices

Short-term fluctuations in the price of crude oil are affected by many factors, including concerns over short-term economic growth, geopolitical tensions and commodity speculation. In the longer term the price of oil is set by the fundamentals of the level of international demand and the costs of supply.

Global demand for oil continues to increase, driven by the developing world and in particular the rapid industrialisation in Asia. Supply of crude oil is becoming more expensive as older and easier to obtain oil reserves are exhausted and new reserves are becoming more difficult to find and develop.

The rate of new discoveries has slowed down in recent decades. New fields are increasingly found in deep water or in more inaccessible environments, which drive up costs of discovery and extraction. Heavier crudes and unconventional sources of oil, such as tar sands and shale oil, require more expensive processing and thus will only be economically viable at higher prices.

4 For example, most of the oil infrastructure is designed to bring crude oil imports into the US, making it difficult to export regional surpluses; and legislation (USC 6212) restricts crude oil exports from the US.

A global price on carbon may also impact on oil supplies and prices. As Caltex Managing Director Julian Segal has stated, 'In a carbon-constrained world oil prices will inevitably climb just as surely as oil supplies will inevitably diminish.'[5]

Peak oil

Oil is a non-renewable resource and once a deposit is exhausted or no longer commercially viable new supplies need to be found. Crude oil production has already peaked in a number of countries, including Australia (in the last decade), the US (in the early 1970s) and Indonesia (which withdrew from OPEC in 2008 and became a net oil importer). Many of the lowest cost oil deposits have been exploited for decades and are declining in output. New fields tend to be smaller and harder to extract and process than declining existing fields.

There is concern in many quarters of the oil industry that new discoveries are not keeping up with the decline in production rates and that the world might be at, or soon heading for, what is termed 'peak oil'.[6]

Reaching peak oil does not mean that the world is running out of oil. It means that the rate of production of conventional oil will decline and the world will become increasingly dependent on harder-to-extract-and-refine unconventional supplies of oil. Given growth in demand, this would lead to significantly higher prices for oil and consequently for refined fuels such as petrol and diesel.

The era of cheap oil and therefore cheap petrol and diesel appears over

There will still be short-term fluctuations in crude oil prices but in the medium to longer term the price of oil is likely to stay in a significantly higher range. The world is very unlikely to see average crude oil prices under USD 25 per barrel such as occurred in the 20 years to 2004. Many industry experts, including the Executive Director of the International Energy Agency (IEA), Nobuo Tanaka, have noted that 'the era of cheap oil is over.'[7]

Based on evidence and expert opinion on crude oil prices, it is apparent that the world will need to adjust to the relatively new reality of sustained higher global oil (and thus petrol and diesel) prices.

Effect of the AUD—USD exchange rate on petrol prices

The AUD–USD exchange rate has a significant impact on domestic retail prices because the international benchmark prices of refined petrol are established in USD.

The value of the AUD relative to the USD has continued to move in a similar direction to the price of crude oil, which has made retail petrol prices for Australian consumers more stable (and generally relatively lower) than they would have been otherwise. The appreciation of the AUD for much of 2010–11 thus mitigated some of the effect of rising oil and Mogas 95 prices on Australian retail prices.

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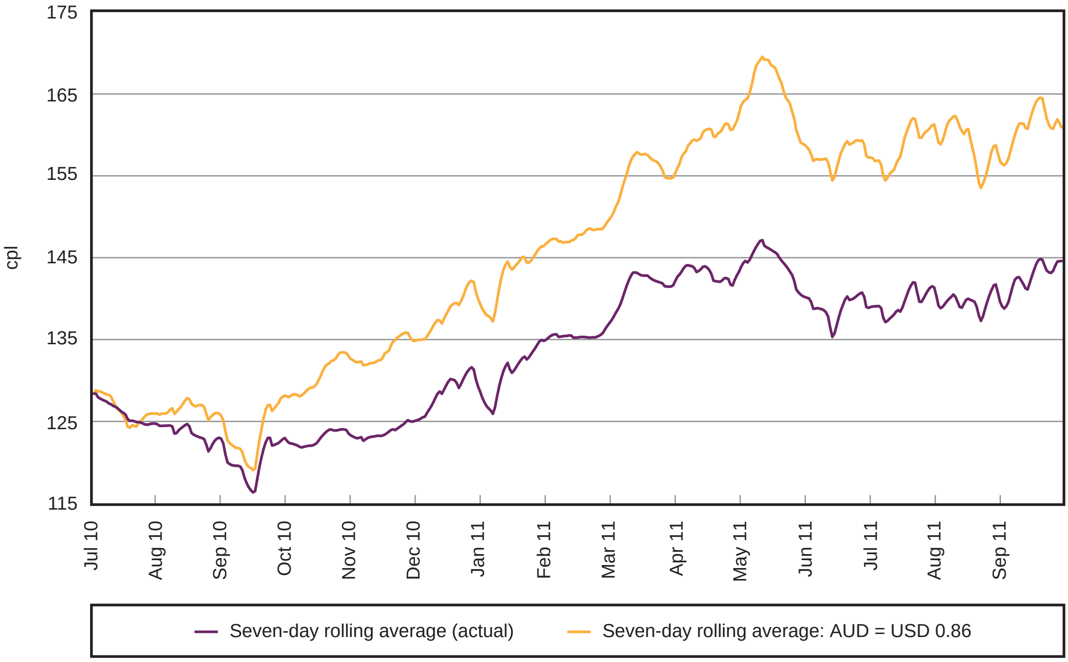
5 *The Star*, issue no. 50, Dec 2009–Jan 2010.

6 *International Energy Agency, 'Will peak oil be a guest or a spectre at the feast', World energy outlook 2010*, Executive summary, IEA, © OECD/IEA International Energy Agency pp. 6–7.

7 Nobuo Tanaka, IEA press release (08) 21, 12 November 2008, at http://www.iea.org/press/pressdetail.asp?PRESS_REL_ID=275, accessed 30 November 2011.

In chart 5, the effect that movements in the AUD–USD exchange rate have on domestic petrol prices is shown by assuming a constant AUD–USD exchange rate. Chart 5 shows actual seven-day rolling average retail prices for the five largest cities in the period 1 July 2010 to 30 September 2011 and retail prices calculated assuming a fixed AUD–USD exchange rate as at 1 July 2010 (i.e. USD 0.86).[8]

Chart 5 Seven-day rolling average retail petrol prices with actual and constant AUD–USD exchange rates, five largest cities: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources, Platts and RBA data

While the USD-denominated international refined petrol price increased in 2010–11, the appreciation of the AUD through the year protected Australian motorists from what would otherwise have been even higher retail prices. Retail prices in Australia would have reached a record high of around 170 cents per litre (cpl) in mid-May 2011—compared with actual retail prices of around 147 cpl—had the AUD–USD exchange rate in mid-May 2011 remained at the level of USD 0.86.

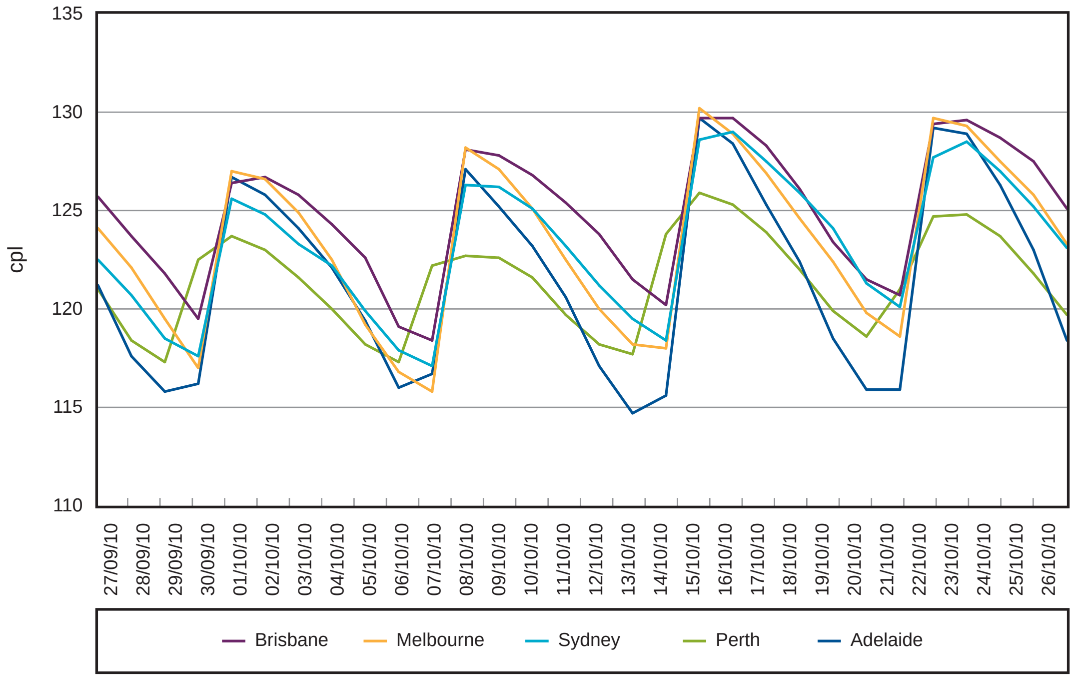
Price cycles

Retail petrol prices in the larger cities tend to move in regular price cycles which are not reflective of movements in underlying wholesale prices or international benchmarks. These price cycles used to be weekly but recently the duration of the price cycles has increased.

These cycles continue to be a feature of retail prices in the largest Australian cities as shown in chart 6 and continue to be a source of concern for many consumers.

8 Note that this is the seven-working day rolling average RBA AUD–USD exchange rate, lagged by 10 days, as at 1 July 2010.

Chart 6 Daily average retail petrol prices in the five largest cities: 27 September 2010 to 26 October 2010



Source: ACCC calculations based on Informed Sources data

The regular pattern of these cycles is clearly evident in chart 6. The regularity of price cycles has enabled the refiner-marketers[9] and other major retailers to understand and predict their competitors' likely response to changes in their own behaviour.

The price cycle has two distinct phases:

- a relatively sharp increase in prices, generally over one or two days
- a more prolonged phase of decreasing prices over the rest of the cycle.

The price increases are generally led by Caltex or BP who raise the price at several retail sites in a city by sometimes more than 10 cpl and then wait for the market to respond. If the other major retailers respond to this move with a similar increase (which is generally the case) then the cycle is continued. In some cases where competitors do not respond, or delay in responding, the price cycle breaks down and prices can remain low for an entire week or more.

While they generally do not initiate the discount phase, Woolworths, 7-Eleven and other independents have been very active in this phase of the price cycle.

9 'Refiner-marketers' is the traditional term referring to the four integrated fuel companies (BP, Shell, Caltex and Mobil) which used to refine, wholesale and retail fuel in the Australian market. While BP and Caltex continue to directly retail fuel, Mobil and Shell, while still marketing proprietary fuels, have effectively withdrawn from direct retailing of fuel. However, given its historical use, the term refiner-marketer is used throughout this report to refer to all four of these companies.

Movement of the cheapest days in the retail price cycle

Market dynamics and retail pricing policies affect the size and shape of price cycles. A few years ago, the trough of the price cycle regularly occurred on Tuesdays in most of the largest cities—the so-called 'Cheap Tuesdays'. As price cycles occasionally became longer than seven days the cheap days moved later in the week. In recent months many of the price cycles have lasted for longer than seven days, thus making it more difficult for motorists to determine when retail prices are at their lowest point in the price cycle.

Coordinated pricing in the petrol industry

Given that they do not reflect movements in underlying costs or wholesale prices, retail price cycles appear to be entirely due to the pricing policies employed by the local petrol retailers in the domestic market. The ACCC observed in its 2007 inquiry report that petrol price cycles do occur in other countries but those in Australia tend to be larger in amplitude and more consistent.

In previous petrol monitoring reports the ACCC has noted that the degree of coordination observed in price cycles is a source of concern for Australian consumers and for the ACCC.[10]

Retail petrol markets in Australia are conducive to coordinated conduct. The high level of retail price transparency provided by the sharing of timely and comprehensive price information between major competing fuel retailers through the Oil Pricewatch system provided by Informed Sources assists retailers to quickly signal price moves, monitor competitor's responses and react to them.

The degree of coordination exhibited in the weekly price cycle remains a concern for the ACCC. The ACCC is analysing the likely effects of the behaviour on outcomes for consumers.

10 ACCC, Monitoring of the Australian petroleum industry, December 2010, p. 190.

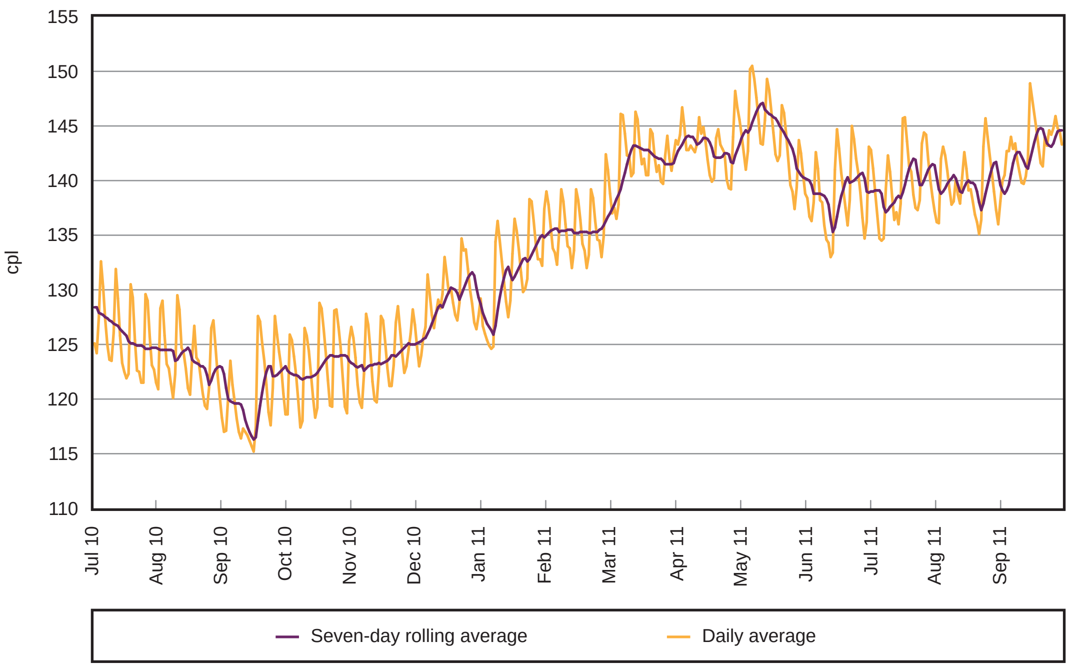
Retail prices over 2010–11

In 2010–11 petrol prices across the five largest cities (on a seven-day rolling average basis) were higher, and more volatile, than in 2009–10. Retail petrol prices were at their highest levels since October 2008.

Average prices in 2010–11 were around 132 cpl, which was around 8 cpl higher than in 2009–10.

Chart 7 shows daily average retail prices, as well as seven-day rolling average prices, across the five largest cities in the period 1 July 2010 to 30 September 2011. The regular price cycle is clearly evident.

Chart 7 Daily average retail petrol prices and seven-day rolling average retail petrol prices, five largest cities: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

Prices ranged from a low of around 116 cpl in September 2010 to a high of around 147 cpl in May 2011—a range of 31 cpl. In contrast, in 2009–10 the range between the highest and lowest prices was only 14 cpl.

Retail prices in regional locations

Retail prices in regional locations in Australia are generally higher than those in the capital cities, although they typically follow the same overall price movements.

Prices in regional locations are generally higher than in the five largest cities for a number of reasons, including:

- lower number of retail sites and therefore a lower level of local competition
- lower volumes of fuel sold
- distance/location factors
- lower convenience store sales.

These factors also explain differences in petrol prices between regional locations.

Price movements in regional locations—both up and down—tend to lag those in the five largest cities. Prices also tend to be more stable in regional locations than in the five largest cities.

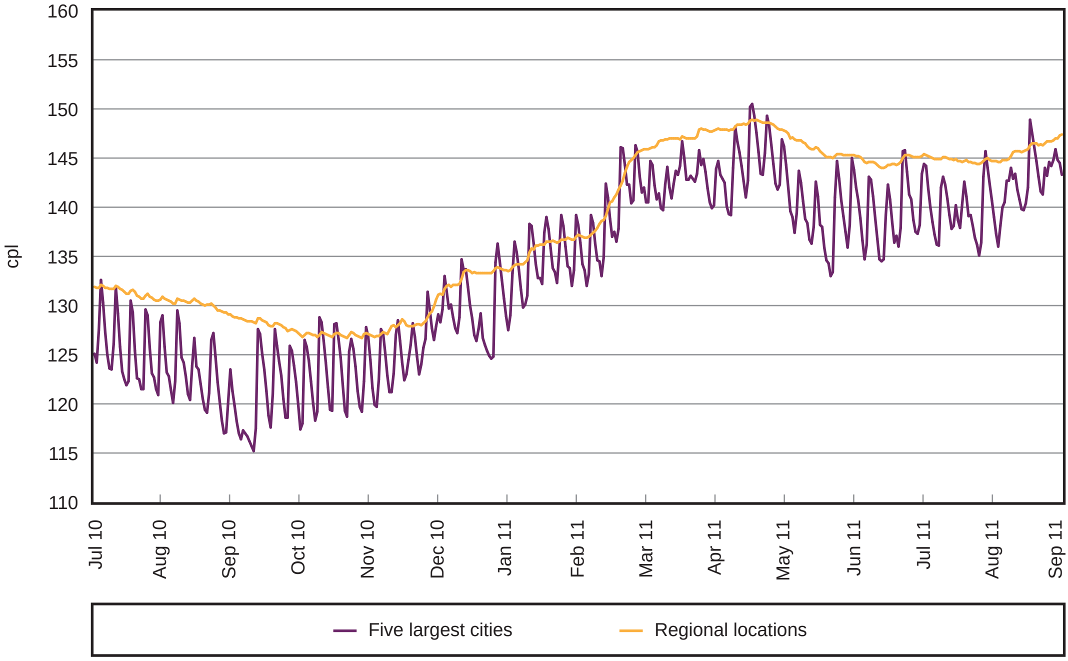
Only a very small number of regional locations have regular price cycles. These tend to be the larger population centres or locations very close to them.

Chart 8 shows daily average retail prices across all of the monitored regional locations in Australia and daily average retail prices in the five largest cities in the period 1 July 2010 to 30 September 2011.[11] It can be seen that:

- prices in the regional locations broadly follow prices in the five largest cities
- on aggregate, regional locations do not have the regular retail price cycles that are evident in the five largest cities.

11 The specific regional locations monitored by the ACCC in each state and the Northern Territory are listed in appendix G. It also provides average annual prices for RULP, diesel and automotive LPG in 2010–11 for each of those locations.

Chart 8 Daily average daily retail petrol prices in the five largest cities and the regional locations in aggregate: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

Profits

As part of its analysis of the prices, costs and profits of the Australian downstream petroleum industry, the ACCC collects extensive financial information from the four refiner-marketers and major wholesalers and retailers.

This information was analysed to estimate the profitability of each sector of the downstream petroleum industry—the refining and importing, wholesale, and retail sectors.

The financial performance of the domestic petroleum industry has also been compared with other industries operating in Australia and with petroleum companies operating overseas.

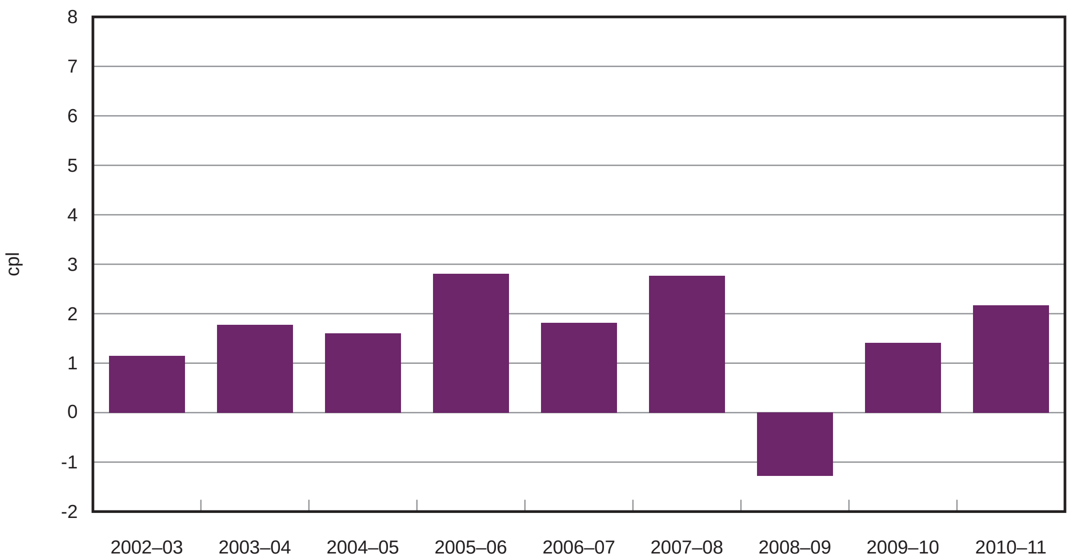
Petrol industry profits have been a small proportion of retail prices

A small proportion of the final bowser price has been retained as profits by the supply, wholesale and retail sectors. The ACCC has estimated unit net profit for the downstream industry, that is, net profit for each litre of fuel sold.

Unit net profit for petrol products is a measure of the difference between the average revenue per litre of petrol sold and the average cost for the industry to purchase crude oil and process and sell the refined petrol.

After subtracting all costs, the ACCC has estimated that net profit to the petrol companies on petrol products has averaged around 1.6 cpl over the past nine years (Chart 9). The ACCC estimates that in 2010–11 unit net profit was around 2.2 cpl on the sale of petrol products. In recent years, this measure of profit on petrol products for the combined supply, wholesale and retail sectors has typically been in the range of –1.28 to 2.81 cpl. A large part of this variability is due to fluctuations in the value of stock holdings in response to changes in international prices.

Chart 9 Total downstream unit net profit, petrol products (cents per litre): 2002–03 to 2010–11

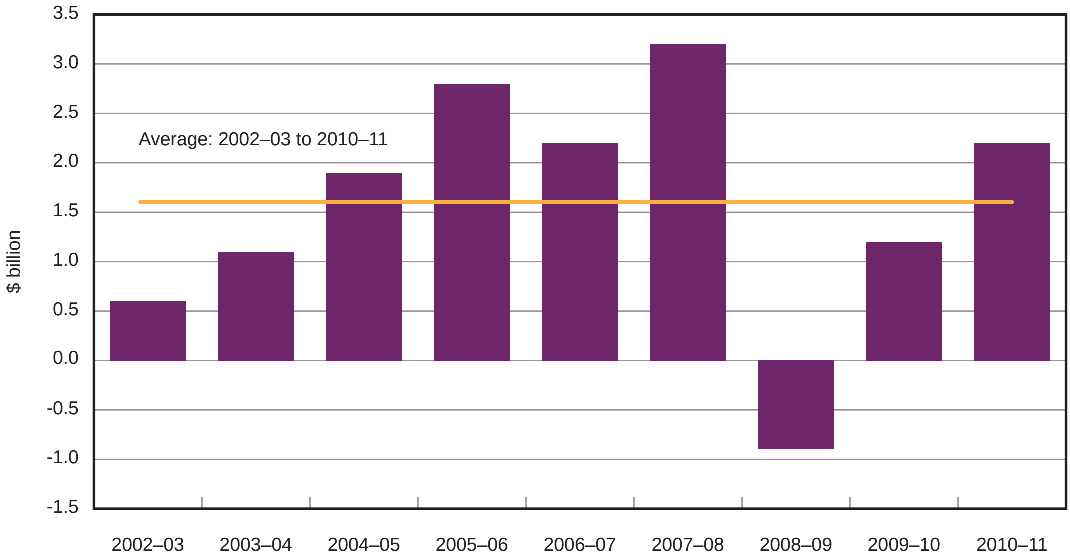


Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Downstream profits have been volatile

The downstream petroleum sector profits over the past nine years have been mixed. The petrol companies made a profit of about $1.2 billion in 2009–10 after losses in 2008–09 of about $1 billion. In 2010–11, the industry made a profit of about $2.2 billion (see chart 10).

Chart 10 Total downstream net profit (adjusted EBIT), all products: 2002–03 to 2010–11



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

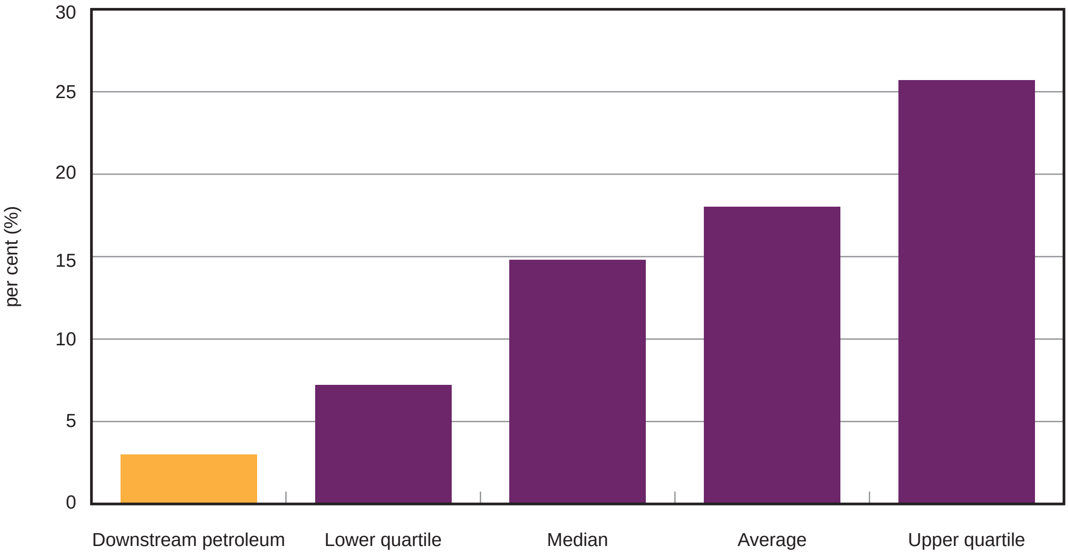
Petrol industry profits relative to other sectors

The ACCC has examined a range of profit measures or key performance indicators (KPIs) for the local petrol companies and has also compared these with other industries.

In 2010–11 return on sales across all products was 3.2 per cent, return on assets was 10.3 per cent and return on capital employed was 15.8 per cent. This compares with the 2009–10 figures for return on sales of 2.0 per cent, return on assets of 6.4 per cent and return on capital employed of 9.4 per cent. All three KPIs were negative in 2008–09.

In terms of return on sales, the local petroleum industry has ranked low compared to other industry sectors represented in the ASX200 index (see chart 11).

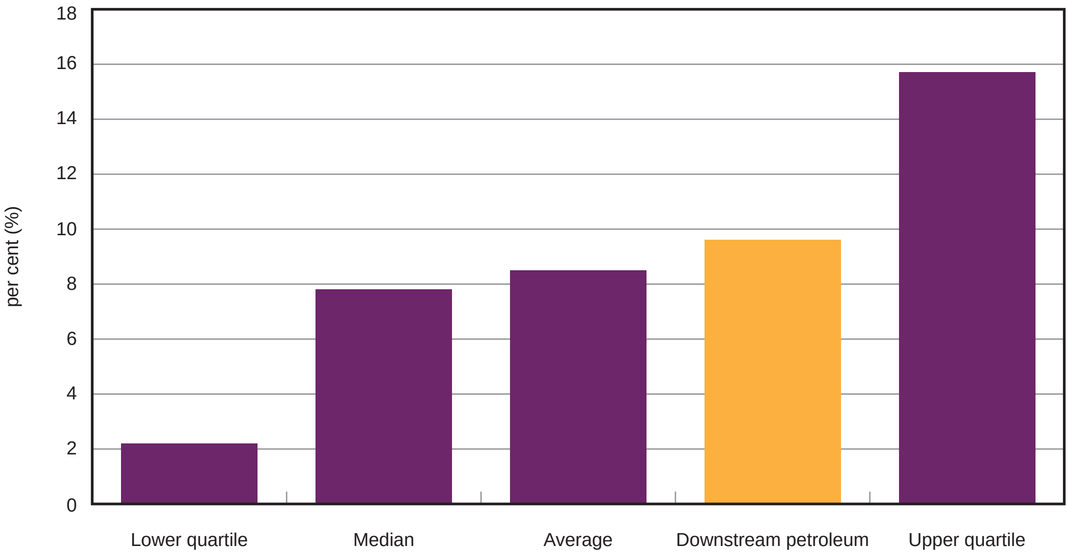
Chart 11 Comparison of return on sales for downstream petroleum sector and ASX200 companies: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

When measured using return on assets the petroleum industry is around the average for the ASX200 (see chart 12). Results of analysis of comparative return on assets must be treated with caution. Asset data is based on depreciated historical cost values provided to the ACCC by the monitored companies. The values of these assets are not market-based as they are not generally traded in a liquid market. Estimates of return on assets are affected by the use of different asset valuation approaches and by the asset age profile. For example, all else equal, a company with old assets valued on the basis of depreciated historical cost will generally have a smaller asset base than a company which either values assets on a replacement cost basis or which has a younger asset profile. Some assets in the Australian downstream petroleum industry, particularly in the refinery sector, may have a higher than average age profile.

Chart 12 Comparison of return on assets for downstream petroleum sector and ASX200 companies: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Costs

For every litre of petrol products sold by the petrol companies across supply, wholesale and retail, approximately 2.2 cpl is retained as net profit. For RULP this figure is 1.2 cpl. This means that the underlying costs of supply account for the remainder of the bowser price.

Nominal components of cost

Australian petrol prices are not regulated and local petrol companies are free to set prices in the market. However, the two largest components of the pump price—the international price of refined petrol and tax (excise and GST) are outside the control of the local petrol companies.

The two largest components in petrol, diesel and automotive LPG prices are:

- the international benchmark prices for refined fuel
- excise (for petrol and diesel—there is currently no excise imposed on automotive LPG) and GST.

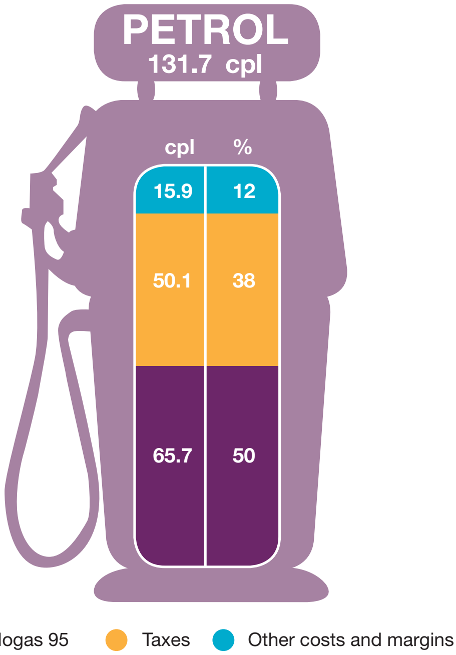
Together, these two components account for about 88 per cent of the price of petrol. That is, out of a retail price of 131.7 cpl, around 115.8 cpl is directly attributable to the cost of refined petrol and taxes (see chart 13).

For diesel, these two components also account for 88 per cent of the bowser price (see chart 14).

For automotive LPG, the international benchmark price and GST account for 80 per cent, in part reflecting the lack of excise on automotive LPG and higher transport and storage costs relative to petrol and diesel (see chart 15).

Margins and other costs therefore account for about 16 cpl of the retail price of petrol, 16 cpl for diesel and 12 cpl for automotive LPG. This amount covers a number of costs such as freight (including freight to Australia from overseas), wages, and terminal costs and retail site operations.

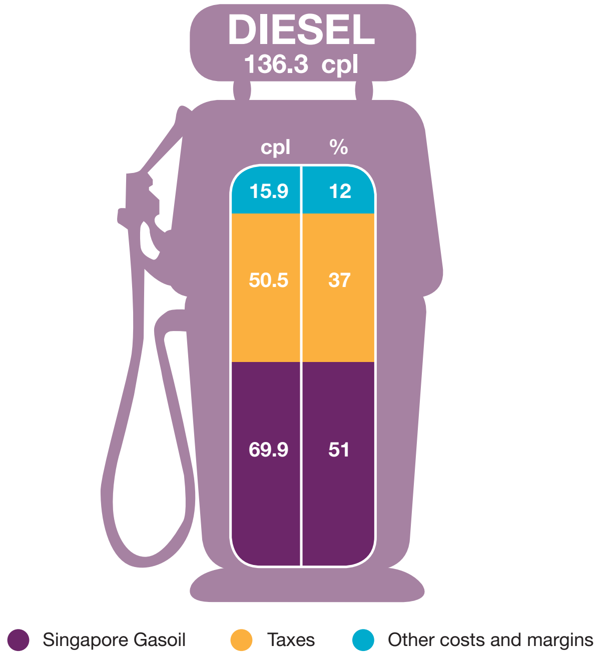
Chart 13 Nominal components of average retail RULP prices in the five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA data

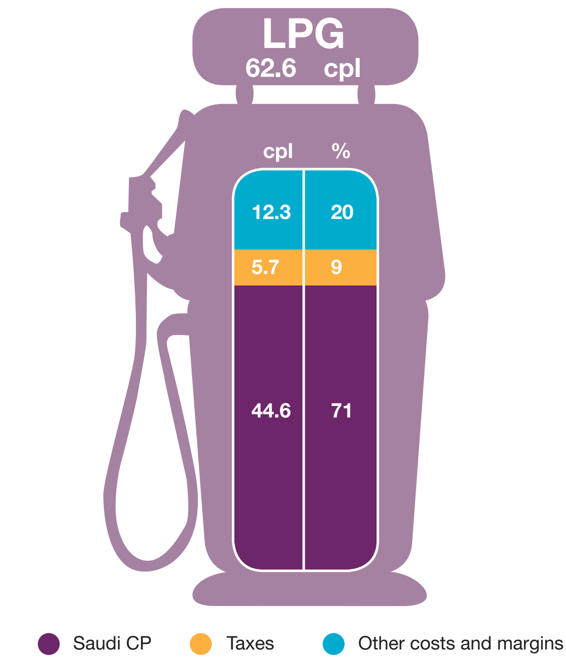
Note: Of the 15.9 cpl other costs and margins, 1.2 cpl is the total downstream net profit per litre across the supply, wholesale and retail sectors.

Chart 14 Nominal components of average retail diesel prices in the five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA data

Chart 15 Nominal components of average retail automotive LPG prices in the five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, LPG Australia and RBA data

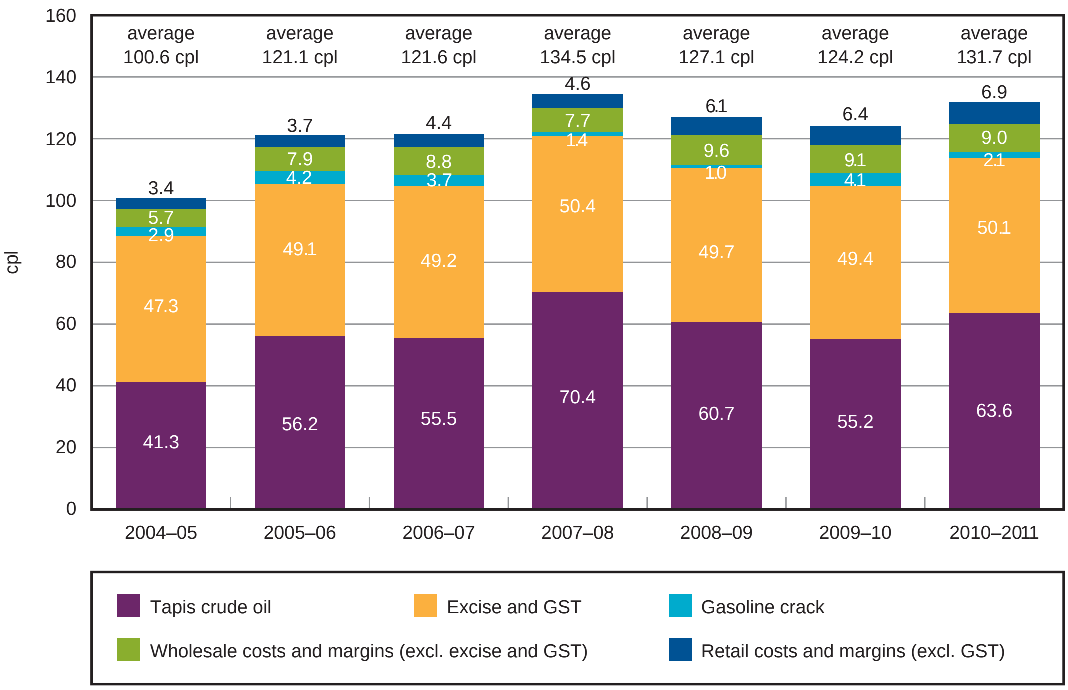
Components of the pump price

Chart 16 shows a more detailed breakdown of the components of the annual average retail petrol price across the five largest cities from 2004–05 to 2010–11.

Each bar represents the annual average retail price disaggregated into the following:

- Tapis crude oil—the benchmark for crude oil in the Asia-Pacific region (including Australia)
- gasoline crack—the difference between the price of Mogas 95 and Tapis crude oil
- wholesale costs and margins (excluding excise and the GST)[12]
- retail costs and margins (excluding the GST)
- excise and the GST—this is excise (which is set at a constant 38.14 cpl) and the GST.

Chart 16 Components of Australian retail petrol prices in the five largest cities: 2004–05 to 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA and WA Fuelwatch data, and information provided by monitored companies

Chart 16 shows clearly that changes in the international price of crude oil have been overwhelmingly responsible for movements in retail petrol prices.

The components attributable to excise and GST and the local petrol companies have been relatively stable.

12 Note that prior to July 2009, the Queensland Government provided a subsidy at the retail level of 8.4 cpl (around 9.2 cpl when GST is included). Therefore, terminal gate prices prior to July 2009 in Brisbane have been reduced by 9.2 cpl to put the wholesale and retail prices on a consistent basis.

Between 2004–05 and 2010–11, the average pump price of RULP increased by around 31 cpl. Most of this increase—over 22 cpl—has flowed back to the suppliers (owners and extractors) of the crude oil. By contrast, the amount flowing back to the local petrol companies has increased by about 7 cpl over the same period. This increase includes increases in costs to cover inflation as well as increases in freight and other operating costs.

Conclusion: prices, costs and profits

ACCC analysis has shown that petrol prices have generally been in line with the underlying costs of supply and international benchmarks:

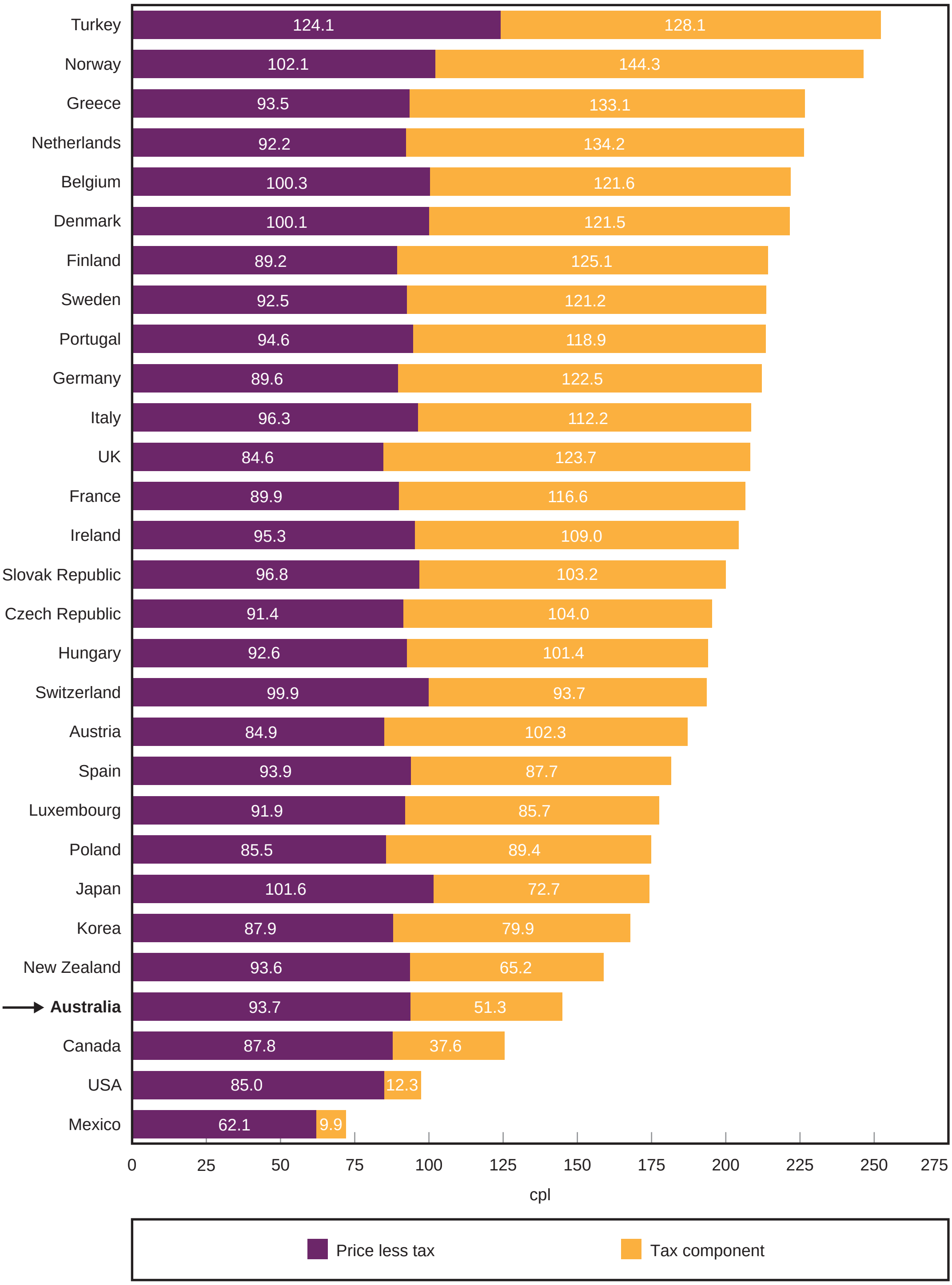
- Movements in the international price of crude oil have driven movements in petrol prices in the region (as reflected in the Mogas 95 benchmark price) that in turn have driven movements in Australian retail petrol prices.
- In any particular week, retail price cycles in the major cities may cause divergences from the benchmark prices of several cents per litre, depending on the phase of the cycle.
- Average downstream petrol industry profits in Australia do not appear high compared with other industry sectors operating in Australia.
- Most of the benefits from recent higher fuel prices have been captured by the owners and producers of crude oil. Of the increase in petrol prices from 2004–05 and 2010–11 of 31 cpl, over 22 cpl flowed back to the suppliers of the crude oil. Over the same period the amount flowing back to the local petrol companies increased by about 7 cpl.

Petrol prices in Australia compared with prices in other countries

Retail petrol prices in Australia remain low compared with other countries in the Organisation for Economic Co-operation and Development (OECD) (see chart 17). In the June quarter of 2011, Australia had the fourth-lowest petrol prices in the OECD.

To a large degree, lower petrol prices in Australia are due to lower fuel taxes. If the impact of taxation is removed, the underlying price of petrol in Australia is around the median of OECD countries.

Chart 17 Petrol prices and taxes in OECD countries: June quarter 2011



Source: Department of Resources Energy and Tourism, *Australian Petroleum Statistics*; issue no. 182, September 2011

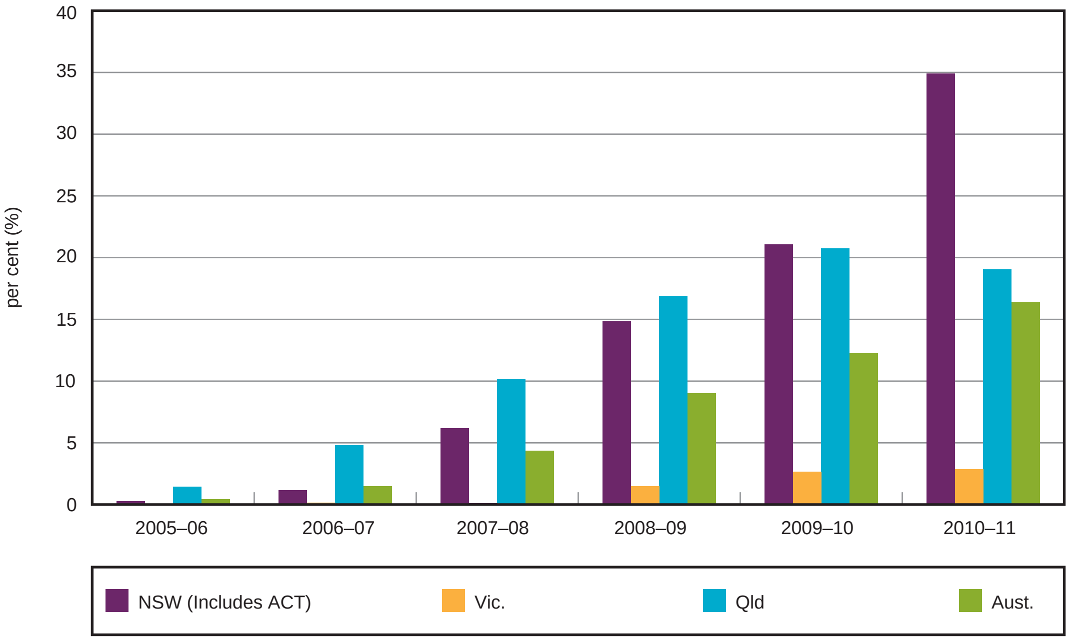
Notes: Care must be taken when making international comparisons as fuel quality standards (for example, octane rating and the content of MTBE and sulphur) for the most commonly used form of petrol in each market differ between countries.

Recent developments in the fuel industry

Continued increase in sales of E10

During 2010–11, sales of ethanol blended petrol (EBP) continued to increase substantially. This increase has primarily been due to the operation of the NSW Government mandate (see chart 18). On the other hand, in Queensland, where plans for the introduction of a mandate were suspended, sales have fallen slightly.

Chart 18 Ethanol blended petrol as a percentage of total petrol sales: 2005–06 to 2010–11



Source: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues

NSW Government mandate on ethanol

The NSW Government mandate specifies the following:

- From 1 January 2010, the volume of ethanol sold should have made up a minimum of 4 per cent of the total volume of petrol sales.
- From 1 October 2011, the mandate increased to 6 per cent. As E10 generally consists of 10 per cent ethanol, in effect this means that 60 per cent of all petrol sales must be E10.
- From 1 July 2012, 'primary wholesalers' must not sell RULP unless it is E10. This means that most motorists in NSW will effectively be only able to buy E10 or PULP.

The Queensland Government had proposed to introduce an ethanol mandate for petrol sold in Queensland by 31 December 2010. The draft bill stated that the volume of ethanol must not be less than 5 per cent of the total volume of RULP and EBP sold in Queensland from 31 December 2010. Plans for the mandate were suspended in October 2010.

The operation of the NSW ethanol mandate is having and will continue to have some significant impacts on consumers:

- The mandate reduces the availability of RULP (from 1 July 2012, RULP will effectively be removed as a choice for consumers in NSW and, as an indirect consequence, the ACT).
- Motorists who cannot use E10 (or choose not to) may be forced to use premium unleaded petrol (PULP), which is significantly more expensive than RULP.
- Despite recent increases in production, some industry participants have raised concerns that current domestic production capacity may not be sufficient to meet demand under the full effects of the mandate and that there is the potential for shortages of ethanol and E10.
- The tax treatment of fuel ethanol imports makes it unlikely imports will be able to provide competitive pressure on Australian prices in the short to medium term.
- The move to PULP by some consumers could lead to a shortage of premium unleaded petrol (PULP) throughout Australia.
- There is potential for the price of E10 and PULP to increase relative to RULP.

In the past, the ACCC has acknowledged industry concerns about the potential supply and price impacts of the ethanol mandate. Given ongoing industry concern over supply and price issues relating to ethanol mandates, the ACCC intends to continue closely monitoring the EBP market in the coming year.

Changes in market structure

The structure of the domestic fuel market continues to evolve in line with international trends. Integrated refiner-marketer oil companies continue to move away from lower margin downstream activities to concentrate on oil exploration and extraction.

This year saw a number of important developments in the Australian fuel industry.

The announcement of the end of refining at Shell's Clyde refinery will bring the number of refineries in Australia down to six from eight a decade ago. Shell will convert the refinery along with the Gore Bay terminal into an import facility.

In 2010–11, 7-Eleven and Peregrine Corporation (which trades as On The Run) completed their takeover of the former Mobil-owned retail sites, significantly increasing their retail presence. This continues a trend in the Australian market of specialist retailers, including supermarkets, increasing their involvements in fuel retailing.

In recent years, the retail market share of the refiner-marketers has declined. Shell and Mobil are now effectively out of petrol retailing. Specialist retailers—such as 7-Eleven, independent retail chains such as On The Run, the retail operations of independent wholesalers Neumann, United and Gull, and the supermarkets—have been increasing their exposure to fuel retailing.

Reflecting these trends, data provided to the ACCC indicates material changes in market shares in the retail sector.

For example, table 1 shows that in 2010–11, the sale of the Mobil retail network to 7-Eleven and On The Run boosted the independent retail chains' share of branded retail sales from 10 to 17 per cent. While some Mobil retail sales may have been picked up by BP and Caltex branded retailers, the four refiner-marketers' combined share of total branded retail sales fell from 45 per cent to 39 per cent.

Table 1 Share of volume of retail petrol sales by brand: 2002–03 to 2010–11

	BP %	Caltex %	Mobil %	Shell %	Coles Express/Shell (co-branded) %	Woolworths Caltex (co-branded) %	Independent retail chains %
2002–03	20	24	19	20	0	10**	6
2003–04	20	22	17	3	16	14	7
2004–05	18	18	12	3	25	18	6
2005–06	19	16	11	3	25	20	6
2006–07	19	16	11	3	22	22	7
2007–08	20	17	11	2	20	22	8
2008–09	19	16	10	2	22	23	9
2009–10	17	16	10	2	22	23	10
2010–11	19	18	*	2	22	23	17

Source: ACCC analysis and estimates based on data obtained from firms monitored through the ACCC's monitoring process

Notes: *2010–11 sales for Mobil sites sold to 7-Eleven and On The Run are included in the 'Independent retail chains' column.

**In 2002–03 Woolworths was not co-branded with Caltex.

Totals may not add to 100 per cent due to rounding.

2010–11 also saw significant developments among the major independents. United Petroleum purchased the Dalby ethanol refinery, which had been operating under administration. Darwin-based Ausfuel took over the operations of Perth-based Gull Petroleum and Neumann Petroleum completed its pipeline in Brisbane, improving its access to imported fuel.

Increase in independent imports

During 2010–11, the amount of petrol imported by independent operators continued to increase. While still relatively small, these independent importers provide a competitive discipline on the larger players.

In the last three years, while the total volume of petrol imports has declined slightly, independent imports of unleaded petrol have increased from less than 5 per cent to around 40 per cent of total unleaded petrol imported into Australia.

Role of the ACCC

Petrol is similar to other products in that well regulated and competitive markets generally provide consumers with the lowest sustainable prices.

The ACCC has no role in setting petrol prices. Petrol prices in Australia are set by market forces.

The ACCC has two broad roles in relation to the petrol industry:

1. The ACCC enforces competition and consumer protection laws across Australia

The ACCC is an independent statutory authority that administers the *Competition and Consumer Act 2010* (the Act) (formerly the *Trade Practices Act 1974*) and other laws. The purpose of the Act is to enhance the welfare of Australians through the promotion of competition and fair trading and provision for consumer protection. These laws apply to all industry sectors, including the fuel industry.

The most relevant enforcement work of the ACCC in the fuel industry relates to its role in enforcing compliance with the Act, assessing mergers and acquisitions and authorisations and notifications.

2. Monitoring the prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry

In December 2007, the Minister directed the ACCC to monitor the prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry in Australia for three years to the end of 2010. On 13 May 2010, the Minister subsequently extended the direction for a further year to the end of 2011. This is the fourth report on the ACCC's petrol monitoring activities. On 10 May 2011, the Minister issued a further direction for the ACCC to prepare a monitoring report to the end of 2012.

The ACCC collects fuel prices in each capital city and around 150 regional locations. The ACCC reviews these prices and compares them with the international benchmarks. Each year, the ACCC also obtains cost and profit information from the petrol companies. The ACCC uses this information to compare Australian prices, costs and profits against international benchmarks. In addition, the Minister has asked the ACCC to also focus on the prices of diesel and automotive LPG.

If ACCC analysis indicates there are factors impairing competition in fuel markets, it can alert the government and community to the problem as it did with its concerns on the prices and supply of EBP.

Enforcement and compliance

Misleading conduct and false representations

Many of the contacts the ACCC received in 2010–11 related to alleged misleading and deceptive conduct and false or misleading representations. Conduct will be in breach of the Act where it misleads, deceives or is likely to mislead or deceive consumers. Such conduct may include lying to consumers, leading them to a wrong conclusion, creating a false impression or making false or inaccurate claims.

Similar to 2009–10, the main issues raised by consumers in 2010–11 included concerns about pricing practices, labelling on fuel pumps, advertising promotions (such as discount schemes), fuel quality claims and concerns about inaccurate fuel measurements. Of the total complaints further assessed, the ACCC achieved an enforcement outcome in relation to Prime Fuel Distributors Pty Ltd (see chapter 2). A number of complaints remain under investigation.

Business-to-business dealings

In 2011, the ACCC continued to examine allegations of anti-competitive conduct, such as price fixing and predatory pricing in the downstream petroleum industry. During this time the ACCC assessed a number of matters, however to date no allegations have been substantiated.

Markets in regional Australia

As part of its monitoring activities in 2010–11, the ACCC continued to actively monitor fuel prices in around 150 regional locations.

The ACCC uses this information to assess the competitiveness of fuel prices in regional locations. Where there is an allegation of anti-competitive conduct, it will make targeted inquiries to investigate the issue. After making inquiries, if there is information available to the ACCC that a breach of the Act is likely to have occurred, it can take action to enforce the Act.

Given that many regional locations only have a limited number of retail sites, the ACCC pays particular attention to potential changes in ownership of retail sites in regional locations to ensure that the sale will not result in a substantial lessening of competition in that particular market.

Improving business practices

From the complaints and inquiries received, the ACCC became aware of some practices that were causing concern for consumers and raised these concerns with industry. In September 2011, the ACCC wrote to the major petrol companies and industry associations to request that they review their business practices and take corrective action where necessary. The practices raised in these letters included the following:

- Labelling of petrol containing ethanol—consumers raised concerns that in some instances petrol containing ethanol had not been adequately differentiated from regular unleaded petrol. This appears to be a particular problem on signboards where only petrol containing ethanol is sold at the retail site.
- Advertising and labelling—consumers complained about the failure of retailers to clearly display terms and conditions of offers, unclear labelling of different fuel products, and inaccurate representations about the performance, grade or composition of fuels.

The ACCC will continue to monitor the issues and take enforcement action where it is appropriate.

In addition, as a result of discussions with industry about specific compliance issues, the ACCC was requested to contribute an article about predatory pricing for the Australasian Convenience and Petroleum Marketers Association (ACAPMA) magazine. This article was published in mid 2011 to assist industry players to understand their rights and obligations under the Act.

Mergers and acquisitions

Section 50 of the Act prohibits acquisitions that would have the effect, or likely effect, of substantially lessening competition in a market. The ACCC administers and enforces the merger provisions under Part IV of the Act.

Over 2010–11, the ACCC completed public reviews of one fuel-related merger proposal, the outcome of which is summarised below.

Caltex Australia Petroleum Pty Ltd: proposed acquisition of the Mobil assets at the Caltex–Mobil joint fuel terminal Gladstone

Caltex proposed to acquire the Mobil assets at the Gladstone fuel terminal, which was operating as a joint fuel terminal by Caltex and Mobil.

On 15 October 2010, the ACCC commenced a public review of the acquisition. The ACCC published a Statement of Issues on 2 December 2010, seeking comments by 23 December 2010 and had initially proposed to announce its findings on 27 January 2011, but this was extended to allow the merger parties to provide further information.

On 26 May 2011, the ACCC decided to allow the merger to proceed, as it was determined that it was unlikely to substantially lessen competition.

Authorisations and notifications

In certain circumstances, the ACCC can grant immunity from legal action for potential anti-competitive conduct. Businesses may obtain immunity by applying for an authorisation or submitting a notification with the ACCC.

Authorisations

Authorisation is a process under which the ACCC can grant immunity for potential breaches of the competition provisions of the Act if it is satisfied the conduct delivers a net public benefit. There were no fuel-related authorisations lodged with the ACCC in 2010–11.

Exclusive dealing notifications

Notification of exclusive dealing conduct, which includes conduct such as requiring a person to purchase goods from a third-party supplier (known as third line forcing) or requiring a person not to purchase goods from other competitors, provides immunity for potential breaches of the applicable sections of the Act.

Immunity for third line forcing conduct takes effect 14 days after the notification is lodged with the ACCC, and remains unless it is revoked by the ACCC. Immunity for other exclusive dealing conduct takes effect from the date on which the notification is validly lodged with the ACCC.

In 2010–11, the ACCC considered 15 fuel-related exclusive dealing notifications and allowed immunity to continue in each case. The notifications fall into two broad categories:

- proposed shopper docket third line forcing arrangements
- third line forcing arrangements in relation to acquiring goods or services from a nominated preferred supplier.

Administration of the Oilcode

The Oilcode came into effect on 1 March 2007 as a prescribed industry code of conduct under the Act. The Oilcode formed part of the Australian Government's Downstream Petroleum Reform Package. In general terms, the Oilcode aims to regulate the conduct of suppliers, distributors and retailers in the downstream petroleum retail industry.

The ACCC's role is to ensure compliance with the Oilcode and the Act by informing downstream petroleum industry participants of their rights and obligations under the law and by enforcing the law if necessary.

In 2010–11, the ACCC received four Oilcode-related complaints and six inquiries. The complaints related to the supply of declared petroleum products and fuel re-selling agreements. Of the four complaints, one complainant was advised to pursue private legal action, two complaints were not pursued because the evidence was insufficient to establish a breach of the Oilcode or the Act and one was referred to the police.

In 2009, the Department of Resources, Energy and Tourism released its review of the Oilcode and made 11 recommendations.

In 2011, the government accepted all the recommendations. A further review of the Oilcode will be conducted in 2013. Further information is available from the Department of Resources, Energy and Tourism website.[13]

Conclusion: level of compliance with the Act

Over 2010–11, the ACCC received around 1,000 complaints and inquiries about the fuel industry. The majority of these complaints related simply to the fact that market prices were high rather than allegations of a breach of the Act. The ACCC undertook a number of investigations into conduct that may breach the Act.

Of the total complaints further assessed, the ACCC achieved an enforcement outcome in relation to Prime Fuel Distributors Pty Ltd and has a number of other cases currently under investigation.

The ACCC will continue to monitor the operation of the fuel industry and will take appropriate action where there is evidence of a breach of the Act.

13 See http://www.ret.gov.au/resources/fuels/petroleum_refining_and_retail/downstream_petroleum_legislation/oilcode_review/Pages/OilcodeReview.aspx, accessed 30 November 2011.

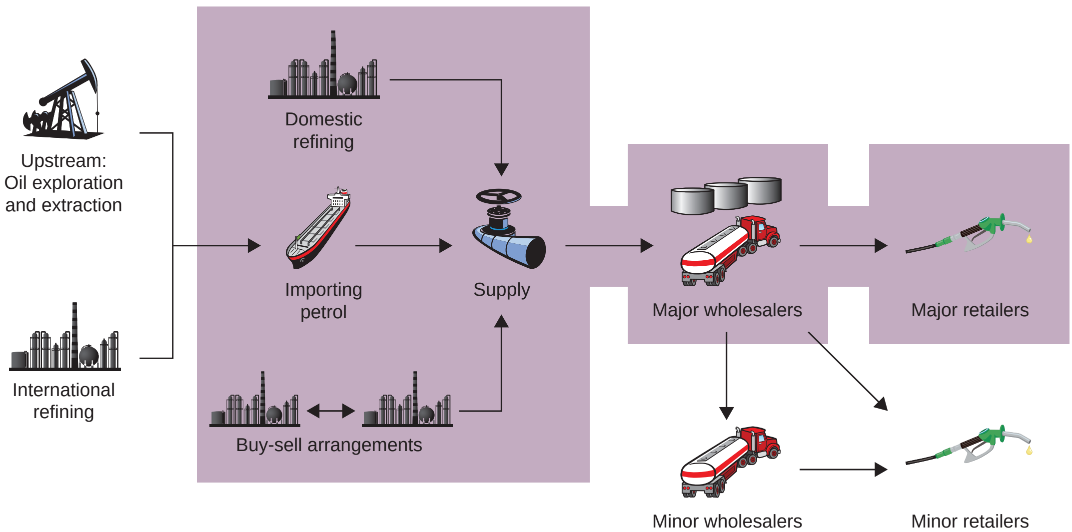
1 Background and objectives

This monitoring report on the petrol industry by the Australian Competition and Consumer Commission (ACCC) has been prepared pursuant to a direction issued on 13 May 2010 by the Minister for Competition Policy and Consumer Affairs, the Hon. Craig Emerson MP. This is the fourth monitoring report on the petrol industry prepared by the ACCC since the original direction by the Minister for Competition Policy and Consumer Affairs in December 2007. This report follows monitoring reports provided to the minister in December of 2008, 2009 and 2010.

1.1 Scope of the monitoring report

This monitoring report is broadly similar in approach and framework to previous monitoring reports and again covers the three major segments of the Australian petrol industry: refining and importing, wholesaling and retailing. These are illustrated in Figure 1.1.

Figure 1.1 Scope of the 2011 ACCC petrol monitoring report



The ACCC has not sought data from overseas suppliers of crude oil or refined product, domestic producers of crude oil or from minor wholesalers and retailers.

The report analyses data on wholesale and retail prices and volumes of petrol products including regular unleaded petrol (RULP), premium unleaded petrol (PULP), ethanol blended petrol (EBP), automotive liquefied petroleum gas (LPG) and diesel.

The report presents detailed cost, revenue and profitability data for the supply (refining and import), wholesale and retail sectors. The report also considers international factors that influenced the Australian industry, developments in the market for biofuels and the latest trends in the industry.

In addition, the 2011 monitoring report:

- explains the key factors that have driven the evolution of the current industry structure
- considers how Australia's experience with wholesale and retail prices compares with other countries.

1.2 The current role of the ACCC in the petrol industry

Presently, the ACCC has three main roles in the petrol industry:

- enforcement and compliance: ensuring compliance with and enforcing the provisions of the *Competition and Consumer Act 2010* (the Act) in the petrol industry
- monitoring: including preparing annual monitoring reports as directed by the minister
- public information and education: informing the public about the petrol industry.

In addition, there are other specific functions under the Act that the ACCC may be required to fulfil in the petrol industry. These include responsibilities to hold price inquiries. A full account of the ACCC's activities in relation to the petroleum industry over 2010–11 is set out in chapter 2.

1.2.1 Monitoring

The ACCC monitors the prices, costs and profits of unleaded petroleum products, including RULP, PULP and EBP, as well as the prices of diesel and automotive LPG.

The ACCC's monitoring activities include preparing an annual monitoring report for the government. This monitoring report (the 2011 ACCC petrol monitoring report) has been prepared in response to a direction issued in May 2010, by the Minister for Competition Policy and Consumer Affairs, the Hon. Craig Emerson MP, to monitor the prices, costs and profits of unleaded petrol in Australia. The direction is to monitor for a period of 12 months and report to the minister by 17 December 2011. A copy of the letter and direction is attached at appendix A1.

This direction followed a direction issued on 17 December 2007 by the Assistant Treasurer and Minister for Competition Policy and Consumer Affairs, the Hon. Chris Bowen MP, to undertake monitoring for three years to the end of 2010. The minister made this direction after receiving *Petrol prices and Australian consumers: report of the ACCC inquiry into the price of unleaded petrol* (the 2007 ACCC petrol inquiry report) in December 2007. A copy of this direction is at appendix A2.

In February 2008, the minister had asked the ACCC to increase its focus on diesel and automotive LPG prices.

In May 2011, the Parliamentary Secretary to the Treasurer, the Hon. David Bradbury MP, subsequently extended the direction to monitor the unleaded petrol industry for one further year to the end of 2012. A copy of this direction is at appendix A3.

1.2.2 Enforcement and compliance

The ACCC enforces competition and consumer protection laws in the petrol industry, as with other sectors of the Australian economy. The ACCC pays particular attention to the operation of competition to ensure that petrol companies are complying with the Act. The Act prohibits conduct such as price fixing, predatory pricing, misleading advertising and mergers that substantially lessen competition. Since March 2007, the ACCC has also had responsibility for ensuring compliance with the Oilcode.

Chapter 2 provides a full account of the ACCC's activities in relation to the petroleum industry for the year 2010–11.

1.2.3 Other functions

Under Part VIIA of the Act the ACCC can undertake the following functions:

- hold price inquiries
- examine proposed price rises for goods and services that have been declared by the minister
- monitor prices, costs and profits of an industry or business that the minister directs it to monitor, and reporting the results to the minister and making them publicly available.

The minister's direction to the ACCC to monitor prices, costs and profits in the unleaded petroleum industry was issued pursuant to section 95ZE in Part VIIA of the Act.

Under section 95ZK of the Act, the ACCC can compel the provision of information and documents relevant for the ACCC's functions under Part VIIA.

1.3 The 2011 monitoring report

1.3.1 Objectives of the monitoring program

The key objectives of the monitoring program for the petrol industry derive from the minister's letter and direction as well as the ACCC's responsibilities under the Act. Accordingly, through the monitoring program, the ACCC has sought to:

- increase the level of information available and improve consumer awareness regarding the petrol industry
- provide a description and analysis of trends in prices, costs and profits as directed by the minister
- focus on information that sheds light on those sectors of the industry where competition may be less than fully effective and on industry conduct that may warrant further consideration by the ACCC.

Furthermore, and consistent with the requirements under subsection 95G(7) of the Act, the ACCC has had 'particular regard' to the following matters in establishing an appropriate methodology for examining prices, costs and profits in the petrol industry:

a) The need to maintain investment and employment, including the influence of profitability on investment and employment.

b) The need to discourage a person who is in a position to substantially influence a market for goods or services from taking advantage of that power in setting prices.

c) The need to discourage cost increases arising from increases in wages and changes in conditions of employment inconsistent with principles established by relevant industrial tribunals.

In general, the ACCC considers that the requirements under subsection 95G(7) can be fulfilled by economically efficient prices that reflect an efficient cost base and a reasonable rate of return on capital.[14]

The matters in subsection 95G(7)(a) and (b) are generally satisfied where prices include a component for a reasonable rate of return on capital. This ensures appropriate incentives for firms to maintain profitable investment, while at the same time discouraging firms from charging prices based on profits above a reasonable rate of return.

The significance of subsection 95G(7)(c) has diminished since these provisions were enacted in the *Prices Surveillance Act 1983* (PS Act) and subsequently subsumed into the *Trade Practices Act 1974* (TP Act) and later into the *Competition and Consumer Act 2010*. Following changes to industrial relations legislation in 1996, which had the effect of replacing centralised wage fixing tribunals with negotiated enterprise agreements, subsection 95G(7)(c) has become less relevant for the ACCC's monitoring functions.

The object of the *Workplace Relations Act 1996* was to give 'primary responsibility for industrial relations and agreement making to employers and employees at the enterprise and workplace levels'.[15]

1.3.2 Data collection

Process

The approach to data collection for the 2011 monitoring report was similar to previous monitoring reports.

During February and March 2011, the ACCC met with representatives from all major industry participants to discuss the 2010 ACCC petrol monitoring report and the data requirements and monitoring processes for 2011. On 16 March and 20 April 2011 data templates were provided to the refiner-marketers, independent wholesalers, importers, terminal owners/operators and retailers. Data sought included wholesale, import and retail transaction data, pricing benchmark data and financial data. The templates sent to terminal owners and operators sought information on the operation of import terminals.

14 See ACCC, *Statement of regulatory approach to assessing price notifications*, June 2009, pp. 12–13, for guidance on the ACCC's approach having regard to the matters in s 95G(7).

15 Commonwealth Department of Industrial Relations, *Changes in federal workplace relations law: legislation guide*, December 1996, p. 1.

Data was collected in two tranches on prices, volumes, costs, revenues and profits from major industry participants operating in the supply (refining and importing), wholesale and retail sectors of the industry. In addition, data on terminals was collected from owners and operators of major import terminals. The following companies have provided information for the 2011 monitoring report:

- refiner-marketers: Mobil, Shell, BP and Caltex
- supermarket chains: Coles Express and Woolworths
- independent wholesalers: Liberty, United, Gull and Neumann
- large retail chains: Gull, United, Neumann, 7-Eleven and On The Run
- terminal owners/operators: Vopak, Marstel, Gekko, Terminals Pty Ltd and Coogee Chemicals.

On The Run is the trading name of a retail chain owned and operated by Peregrine Corporation in South Australia. In October 2010, Peregrine Corporation purchased from 7-Eleven retail sites in South Australia which 7-Eleven acquired from Strasburger Enterprises (Properties) Pty Ltd (SEP). These sites were part of the network of sites that SEP operated under the Mobil brand and sold to 7-Eleven. Previously, data for the Quix sites had been collected from SEP. This is the first year that the monitoring program has included the On The Run retail chain. The ACCC also obtained retail price information from Informed Sources.

The ACCC wishes to thank the companies for the information provided for this report.

Data issues

The ACCC encountered a number of issues in collecting and processing data from monitored companies. These are outlined below.

Cost basis

As with previous monitoring reports, the main objective of the 2011 monitoring program is to report on unleaded petroleum products (RULP, PULP and EBP). Focusing exclusively on these unleaded products, however, presents only a partial picture of the petrol industry. In order to provide broader industry context, data has also been collected on other products and services, mainly diesel, automotive LPG and non-fuel retail sales.

Presenting cost and profitability data for individual products is complicated by the fact that petrol products are produced jointly. That is, refinery processes and staff are not dedicated to the production of individual products but rather are employed to produce a suite of petrol products. As refineries do not measure profits for individual products and thus do not themselves allocate costs on this basis, it has been necessary to collect information on the full range of petrol products. At the retail level, similar issues emerge: companies do not report costs separately for fuel and non-fuel sales. In most cases, retail cost data has been reported for the entire retail operation and not split between fuel and non-fuel items and between different types of fuel.

To estimate the level of profits associated with the supply of a particular petrol product, it has been necessary for the ACCC to allocate refinery common costs across the various petrol products. In retail, the ACCC has had to allocate total retail expenses between fuel and non-fuel items, and between the different types of fuel sold.

The ACCC has allocated costs on the basis of well-accepted rules and conventions. Allocators used include production volumes, sales volumes and sales values. It is relevant to note, however, that there is no economically meaningful way of allocating joint and common costs to individual products and services. When interpreting data presented in this report, it is therefore pertinent to exercise caution and to be cognisant of the limitations of cost allocators.

Financial data has been reported to the ACCC on a historical cost basis. An alternative basis for reporting data is replacement cost. Theoretically, replacement cost represents a closer approximation to current costs. In an environment of relative price stability, the two measures are likely to produce roughly approximate results. However, in industries where prices are volatile, the measures produced by historical cost and replacement cost can be expected to diverge. The petrol industry can be subject to rapidly changing prices for its major input, that is, crude oil. Crude oil is a globally traded commodity and subject to price volatility. With replacement cost data, the effects of changing crude prices are excluded from profit measures.

That said, not all companies typically report data on a replacement cost basis. Since historical cost reporting is consistent with Australian and international accounting standards, the ACCC has accepted data based on historical cost.

Consistency

To ensure that data collected in the monitoring program is comparable across companies, the ACCC has standardised the data templates. The ACCC is aware, however, that different companies, in particular the refiner-marketers, use different business models, organisational structures and accounting systems. Even among companies that are sectorally similar—for example, the specialist retailers—there are differences in the way they operate and report data. As far as possible, the ACCC has taken into account the potential cost to companies of complying with its data requests. In some cases, comparisons across companies are complicated by differences in company reporting structures and accounting systems.

The coverage of the ACCC's monitoring program varies across sectors. Data has been collected on the refining operations of all four refiner-marketers. The wholesale and retail sectors include a large number of small and independent operators from which it was not possible to collect data. Data on these sectors was obtained from the four refiner-marketers, Liberty, United, Neumann, Gull, 7 Eleven, On The Run, Coles Express and Woolworths. Petrol price data for some of the smaller retailers was obtained from Informed Sources. Retail sales volumes of smaller operators can be estimated from the data provided by refiner-marketers on their wholesale transactions.

The design and conceptual basis of the financial and transactional data templates for 2011 were, with some minor exceptions, the same as for 2010.

Time series

Data was collected from monitored companies for financial year 2010–11. This continues the time series for transactional data that began in 2007–08 and for financial data in 2002–03.

Confidentiality

Much of the information provided to the ACCC is commercially sensitive and has been provided on a confidential basis. To protect confidentiality, the analysis of costs, revenues and profits is presented in this report at an aggregate rather than a company level.

1.4 History of ACCC involvement in the petrol industry

Prior to the commencement of the present series of formal monitoring reports in 2008, there is a history of involvement in the petroleum industry by the ACCC and, previously, the Trade Practices Commission and the Prices Surveillance Authority. This includes prices surveillance, public inquiries, informal price monitoring, public awareness and education as well as enforcement of the Act.

Between 1984 and 1998, the petrol industry operated under a prices surveillance regime whereby the Prices Surveillance Authority, and subsequently the ACCC, established maximum endorsed wholesale prices for petrol, including freight differentials. Prices surveillance was discontinued in August 1998.

Following deregulation, the ACCC maintained informal prices monitoring of the industry. This watching brief enabled the ACCC to provide information to consumers through various ACCC publications and the ACCC website. Information collected from informal monitoring also assisted with administering the provisions of the Act and helped the ACCC prepare analyses and reports for the Australian Government and Parliament.

The ACCC's 2007 inquiry into the petrol industry under Part VIIA of the *Trade Practices Act* was triggered by concerns about a discrepancy between movements in domestic petrol prices and international petrol prices. The ACCC inquiry covered the industry structure, an assessment of competition in the industry, the determination of prices and current impediments to efficient petrol pricing and possible methods to address them. The ACCC report made a number of key findings and recommendations to the government. A summary of the ACCC's major findings and recommendations, and the government's response, was presented in the 2009 ACCC petrol monitoring report.[16]

16 ACCC, *Monitoring of the Australian petroleum industry*, December 2009, p. 6.

1.5 Report structure

The 2011 monitoring report is largely based on Australia's downstream petrol industry structure and the various elements of the industry highlighted in the minister's direction.

The report's structure is as follows:

- **Chapter 2** outlines the ACCC's petrol-related activities in 2010–11
- **Chapter 3** notes developments in the industry structure
- **Chapter 4** discusses the evolution of the current industry structure
- **Chapter 5** sets out the international context for price-setting in Australia
- **Chapter 6** focuses on developments in the market for biofuels in Australia
- **Chapter 7** describes trends in the market for premium grades of petrol
- **Chapter 8** assesses pricing in the wholesale sector
- **Chapter 9** outlines prices in the retail sector
- **Chapter 10** considers retail pricing in regional locations
- **Chapter 11** analyses major retail pricing issues in 2010–11
- **Chapter 12** presents an international perspective on petrol prices
- **Chapter 13** considers the revenue, costs and profits in downstream petroleum
- **Chapter 14** considers the revenue, costs and profits in the refining and supply sectors
- **Chapter 15** considers the revenues, costs and profits in the wholesale and retail sectors
- **Chapter 16** describes broad trends in Australia's petrol industry.

2 ACCC activities related to the petroleum industry

Key points

- The ACCC considered around 1,000 complaints and inquiries about fuel issues in 2010–11. The most common issues raised by consumers were high prices, issues relating to the quality of fuel and allegations of anti-competitive conduct.
- The ACCC continued to monitor developments relating to biofuels and premium unleaded petrol.
- It continued to undertake its fuel monitoring activities including in regional Australia.
- The ACCC sought to improve consumer understanding about fuel issues by distributing fact sheets and other publications, providing information on its website and providing informed comment to the media.
- It actively engaged with stakeholders to identify opportunities to improve compliance with the *Competition and Consumer Act 2010* (the Act) and held two Fuel Consultative Committee meetings.
- In 2011, the ACCC issued two infringement notices and accepted court enforceable undertakings for conduct in the fuel industry that was likely to breach the consumer protection provisions of the Act.

2.1 Fuel industry and the Competition and Consumer Act

The ACCC's main role is to enforce the *Competition and Consumer Act 2010* (the Act) across the Australian economy, which includes the fuel industry. The ACCC's activities relating to the Act includes enforcement and compliance, mergers and acquisitions, authorisations and notifications and administration of the Oilcode.

One of the key fuel-related enforcement outcomes during 2010–11 for the ACCC was the issuing of two infringement notices and accepting a court enforceable undertaking from Prime Fuel Distributors Pty Ltd (Prime Fuel) for conduct that the ACCC considered was likely to breach the consumer protection provisions of the Act. This is discussed further in section 2.1.2.

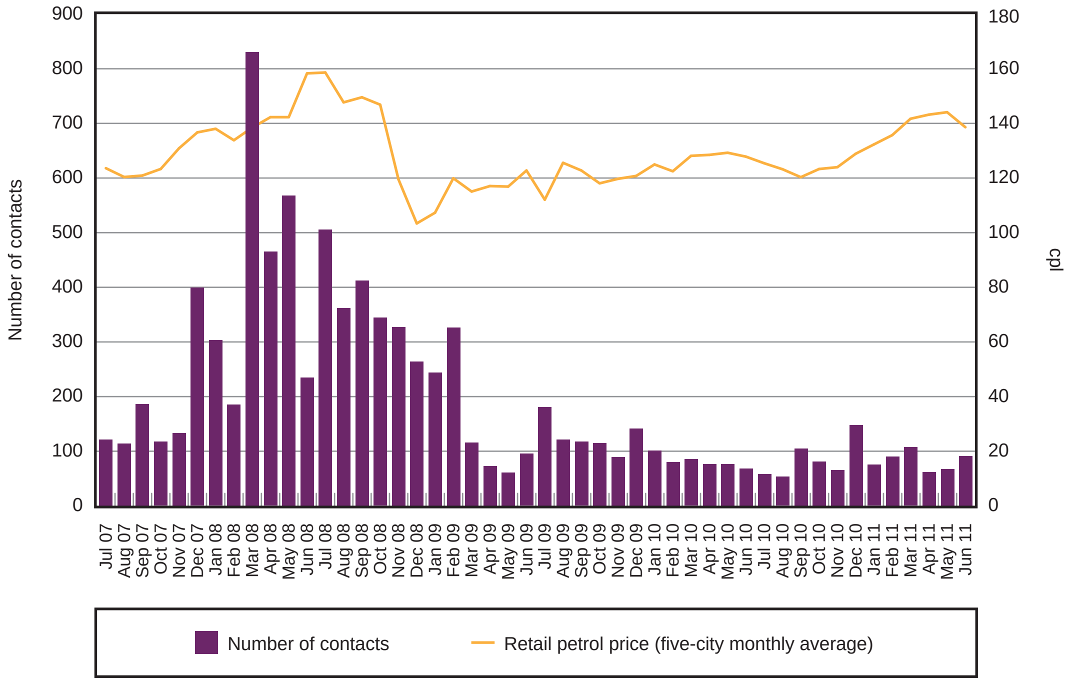
2.1.1 Enforcement and compliance

Complaints and inquiries regarding fuel

The ACCC receives information about potential breaches of the Act from a wide variety of sources, however, the most common source is complaints and inquiries from consumers. During 2010–11, the ACCC received around 1,000 complaints and inquiries about fuel issues, which is slightly lower than levels in 2009–10.

Similar to previous years, during 2010–11 the number of fuel-related complaints and inquiries received by the ACCC moved broadly in line with movements in retail fuel prices. In particular, the ACCC has generally found that when prices increase, complaints and inquiries to the ACCC also increase. In early 2011, while prices were similar to price levels in early 2008, there were far fewer complaints than in 2008. This could be due to the steady price rises in 2011, as compared to the sharp price rises in 2008, which may demonstrate consumer sensitivity to rapid price rises (see chart 2.1).

Chart 2.1 Fuel contacts received by the ACCC by month and average petrol prices in the five largest cities: July 2007 to June 2011



Source: ACCC and Informed Sources data

High prices

The ACCC does not set wholesale or retail fuel prices in Australia. Retailers are free to set their prices according to market conditions. As detailed in chapter 9, retail fuel prices are largely driven by movements in international market prices for oil and refined petroleum products.

Despite this, in 41 per cent of the complaints and inquiries received about the fuel industry, the primary issue raised was that the price of fuel was 'too high'. Similar to 2009–10, common issues included complaints or inquiries about:

- differences in fuel prices between suburbs, towns or retail sites
- differences in fuel prices for one type of fuel compared to another
- the relationship between retail fuel prices in Australia and international benchmark prices.

While the ACCC's primary role is to enforce the provisions of the Act it also currently monitors fuel prices. In doing this, the ACCC seeks to educate consumers on what influences domestic retail prices by providing fact sheets, information on its website and by responding to contacts with its Infocentre. Further information on these activities can be found in section 2.3.

Potential compliance issues

About 59 per cent of complaints and inquiries received about the fuel industry related to potential compliance issues under the Act. The ACCC examined these contacts carefully and made further inquiries or assessments in respect of over 20 matters.

2.1.2 Misleading conduct and false representations

Many of the contacts the ACCC received in 2010–11 related to alleged misleading and deceptive conduct and false or misleading representations. Conduct will be in breach of the Act where it misleads, deceives or is likely to mislead or deceive consumers. Such conduct may include lying to consumers, leading them to a wrong conclusion, creating a false impression or making false or inaccurate claims.

Similar to 2009–10, the main issues raised by consumers in 2010–11 included concerns about pricing practices, labelling on fuel pumps, advertising promotions (such as discount schemes), fuel quality claims and concerns about inaccurate fuel measurements. Of the total complaints further assessed, the ACCC achieved an enforcement outcome in relation to Prime Fuel (see text box below). A number of other matters remain under investigation.

Service stations misled motorists about petrol type

In 2011, the ACCC issued two infringement notices to Prime Fuel totalling $13,200. It also obtained court enforceable undertakings from the company directors restraining them from engaging and promoting or selling different fuels as the same fuel, requiring them to implement a trade practices program and publish corrective notices in major newspapers and at two retail sites.

The ACCC alleged that between May and October 2010 Prime Fuel sold the same petrol as both unleaded and E10 unleaded 95 at the two retail sites. It considered that by selling the same petrol as two different products at different price points, Prime Fuel was likely to have breached the *Trade Practices Act 1974*, known as the *Competition and Consumer Act 2010* from 1 January 2011. It further considered that the price board signage and different coloured labelling on bowsers gave the impression that two different petrol products were available when both products had the same octane rating and ethanol content of around 10 per cent.

Following the ACCC's investigation, Prime Fuel took immediate corrective action at both retail sites, by withdrawing one of its unleaded products from sale and correcting promotional signage and labelling on petrol bowsers to reflect this change.

Further information about this matter is available on the ACCC website.

2.1.3 Business-to-business dealings

In 2011, the ACCC continued its focus on examining allegations of anti-competitive conduct in the retail fuel industry. If warranted by the information provided in support of the allegation, the ACCC undertakes further analysis of fuel prices in the metropolitan and regional locations in the context of such allegations. Where there is information to suggest a breach of the Act may have occurred, the ACCC will investigate by making targeted inquiries. If the information available to the ACCC shows that a breach of the Act may have occurred, it can take action.

While most matters were addressed directly with the complainants, the ACCC identified a number of matters concerning allegations of anti-competitive conduct for further investigation over the 2010–11 financial year. Despite further investigating these matters, to date no allegations have been able to be substantiated.

2.1.4 Improving business practices

From the complaints and inquiries received, the ACCC analysed emerging trends to identify issues of concern for consumers. In September 2011, the ACCC wrote to the major petrol companies and industry associations to request that they review their business practices and take corrective action where necessary. The practices raised in these letters included the following:

- Labelling of fuel containing ethanol—consumers raised concerns about fuel containing ethanol not being adequately differentiated from regular unleaded petrol (RULP) and where a single or prominent price appears on a price board, consumers reported that their understanding was that the price related to RULP as opposed to ethanol blended petrol (EBP).
- Restrictive trade practices—after receiving concerns from consumers about potential anti-competitive conduct, the ACCC again reminded businesses of their responsibilities under the Act. The ACCC reiterated that it takes these allegations very seriously and will take action if there is evidence to establish a breach of the Act.
- General advertising, labelling and pricing—consumers raised concern about the presentation of labelling and signage at retail sites as well as advertising of discounts and other offers. There were also general concerns relating to price boards and prices at the fuel pump.
- Petrol price cycles—consumers raised concerns about the movement of prices as a result of the price cycle and prices rising on weekends and around public holidays. It should be noted that the degree of coordination exhibited in the price cycle is a concern for the ACCC and it is analysing the likely impact of this behaviour on consumers.
- Fuel quality, grade and composition—consumers raised concerns about purchasing fuel which did not meet the advertised characteristics. One investigation resulted in the ACCC issuing two infringement notices and obtaining court enforceable outcomes (Prime Fuel).

The ACCC will continue to monitor these issues and take enforcement action where it is appropriate.

In addition, as a result of discussions with industry about specific compliance issues, the ACCC was requested to contribute an article about predatory pricing in the Australasian Convenience and Petroleum Marketers Association magazine. This article was published in mid-2011 to assist industry players to understand their rights and obligations under the Act.

2.1.5 Markets in regional Australia

As part of its monitoring activities in 2010–11, the ACCC considered regional fuel price issues. The ACCC monitors prices in around 150 regional locations throughout Australia. It also actively collects information about regional fuel pricing issues from industry groups and members of the public.

The ACCC uses this information to assess the competitiveness of fuel prices in regional locations. Where there is an allegation of anti-competitive conduct, it will make targeted inquiries to investigate the issue. After making inquiries, if there is information available to the ACCC that a breach of the Act is likely to have occurred, it can take action to enforce the Act.

In addition, the ACCC pays particular attention to any potential changes in the ownership of retail sites in regional locations. Given many regional locations have a limited number of retail sites, the ACCC actively monitors such changes to ensure that the sale will not substantially lessen competition in that particular market.

Further information about the ACCC's activities relating to fuel price issues, including in regional locations, can be found in sections 2.2 and 2.3.

2.1.6 Emerging market for biofuels

In its 2010 petrol monitoring report, the ACCC reported that biofuels (particularly EBP and biodiesel) were becoming an important part of the fuel product mix in Australia. Developments in this emerging market continued to be of interest to the ACCC during 2010–11.

During late 2010 and early 2011, the ACCC received concerns from key stakeholders about the lack of supply of ethanol after the floods in Queensland had reportedly disrupted some of the key ethanol processing plants. The ACCC highlighted its concerns in a media release in January 2011.

In December 2010 and again in June 2011, the NSW Government postponed an increase in its ethanol mandate from 4 per cent to 6 per cent. The government cited ethanol supply shortages and the need to consult with its stakeholders to enable it to consider the best way forward. In September 2011, the government announced that it would proceed to increase the mandate to 6 per cent from 1 October 2011.[17]

The ACCC has made its concerns over the potential supply and price impacts of the ethanol mandate known to the NSW Government. Given ongoing supply and price issues, the ACCC will continue to closely monitor the ethanol and EBP markets in the coming year.

The Queensland Government had also planned to introduce an ethanol mandate on 31 December 2010. However, on 28 October 2010, the Queensland Government announced that they would suspend the implementation of the ethanol mandate. To date, no further announcements have been made regarding the future of this mandate.

The Australian Government's *Taxation of Alternative Fuels Legislation Amendment Act 2011* was passed in June 2011.[18] As a result, the Ethanol Production Grants Program was extended to allow qualifying ethanol producers to continue to receive grants to offset the applicable fuel excise.

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17 C Hartcher MP, 'NSW ethanol mandate rises to 6 per cent from 1 October 2011', Ministerial media release, NSW, 28 September 2011. Available at http://www.biofuels.nsw.gov.au/, accessed 30 November 2011.

18 *Taxation of Alternative Fuels Legislation Amendment Act 2011* (No. 68 of 2011).

After 30 June 2021, the Australian Government will conduct a review of the taxation arrangements for biofuels.[19]

The ACCC continued to receive numerous complaints and inquiries about EBP in 2010–11. The issues that have been brought to the ACCC's attention regarding EBP include concerns about:

- the NSW Government's mandate for the use of EBP and the associated withdrawal of RULP from many retail sites in NSW
- advertising of EBP by retailers, such as prices for RULP and EBP not being sufficiently differentiated on some roadside price boards or advertising EBP on price boards when it was not available
- labelling of EBP at retail sites and changes by some retailers to the colours of pump handles used to dispense fuel products, including EBP
- the decreasing price differential between EBP and petrol.

In light of its role to ensure consumer protection and to promote competition, the ACCC will continue to monitor developments in the emerging biofuels industry and take action where it is necessary.

See chapter 6 for more detail on biofuels, as well as chapter 9 and appendix D for more information on the retail price of E10.

2.1.7 Mergers and acquisitions

Section 50 of the Act prohibits acquisitions that would have the effect, or likely effect, of substantially lessening competition in a market. The ACCC administers and enforces the merger provisions under Part IV of the Act.

During 2010–11 the ACCC completed a public review of one fuel-related merger proposal.

Caltex Australia Petroleum Pty Ltd: proposed acquisition of the Mobil assets at the Caltex–Mobil joint fuel terminal Gladstone

Caltex proposed to acquire the Mobil assets at the Gladstone fuel terminal, which was operating as a joint fuel terminal by Caltex and Mobil.

On 15 October 2010, the ACCC commenced a public review of the acquisition. The ACCC published a Statement of Issues on 2 December 2010 seeking comments by 23 December 2010. The ACCC initially proposed to announce its findings on 27 January 2011, but this was extended to allow the merger parties to provide further information.

On 26 May 2011, the ACCC decided to allow the merger to proceed, as it was determined that it was unlikely to substantially lessen competition.

2.1.8 Authorisations and notifications

In certain circumstances, the ACCC can grant immunity from legal action for potential anti-competitive conduct. Businesses may obtain immunity by applying for an authorisation or submitting a notification with the ACCC.

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19 B Shorten MP, 'Introduction of alternative fuels legislation', Ministerial media release, Parliament House, Canberra, 12 May 2011. Available at: http://www.dpm.gov.au/DisplayDocs.aspx?doc=pressreleases/2011/078.htm&pageID=003&min=brs&Year=&DocType=0, accessed 30 November 2011.

Authorisations

Authorisation is a process under which the ACCC can grant immunity for potential breaches of the competition provisions of the Act if it is satisfied the conduct delivers a net public benefit. There were no fuel-related authorisations lodged with the ACCC in 2010–11.

Exclusive dealing notifications

Notification of exclusive dealing conduct, which includes conduct such as requiring a person to purchase goods from a third party supplier (known as third line forcing) or requiring a person not to purchase goods from other competitors, provides immunity for potential breaches of the applicable sections of the Act.

Immunity for third line forcing conduct takes effect 14 days after the notification is lodged with the ACCC and remains unless it is revoked by the ACCC. Immunity for other exclusive dealing conduct takes effect from the date on which the notification is validly lodged with the ACCC.

In 2010–11, the ACCC considered 15 fuel-related exclusive dealing notifications and allowed immunity to continue in each case. The notifications fall into two broad categories:

- proposed shopper docket third line forcing arrangements
- third line forcing arrangements in relation to acquiring goods or services from a nominated preferred supplier.

2.1.9 Administration of the Oilcode

The Oilcode came into effect on 1 March 2007 as a prescribed industry code of conduct under the Act. The Oilcode formed part of the Australian Government's Downstream Petroleum Reform Package. In general terms, the Oilcode aims to regulate the conduct of suppliers, distributors and retailers in the downstream petroleum retail industry.

The ACCC's role is to ensure compliance with the Oilcode and the Act by informing downstream petroleum industry participants of their rights and obligations under the law and by enforcing the law if necessary.

In 2010–11, the ACCC received four Oilcode-related complaints and six inquiries. The complaints related to the supply of declared petroleum products and fuel re-selling agreements. Of the four complaints, one complainant was advised to pursue private legal action, two complaints were not pursued because the evidence was insufficient to establish a breach of the Oilcode or the Act and one was referred to the police.

In 2009, the Department of Resources, Energy and Tourism released its review of the Oilcode and made 11 recommendations.

In 2011, the government accepted all the recommendations. A further review of the Oilcode will be conducted in 2013.[20]

20 Further information is available on the Department of Resources, Energy and Tourism website at http://www.ret.gov.au/resources/fuels/petroleum_refining_and_retail/downstream_petroleum_legislation/oilcode_review/Pages/OilcodeReview.aspx, accessed 30 November 2011.

2.2 Monitoring activities

As part of its monitoring activities during 2010–11, the ACCC monitored petrol, diesel and automotive LPG across the majority of Australia on a daily basis. It also undertook its formal monitoring activities, including the production of this report, in response to the direction by the Minister.

The extensive fuel price information collected by the ACCC to inform its monitoring program includes:

- retail prices of RULP, diesel and automotive liquefied petroleum gas (LPG) in the capital cities and around 150 regional locations
- premium unleaded petrol (PULP) 95/96 and PULP 98 prices in all capital cities and available regional locations
- E10 petrol (RULP with up to 10 per cent ethanol) prices across Australia
- international crude oil and relevant international refined fuel prices
- data on wholesale transactions related to petrol
- published terminal gate prices (TGPs) of the oil companies and some independent wholesalers
- certain financial information from firms monitored under the formal monitoring program.

2.3 Informing consumers

Throughout 2010–11, the ACCC expanded its public information activities to provide a broad range of information to consumers.

2.3.1 Website

During 2010–11, the ACCC continued to review its fuel-related content on its website and improve the accessibility of the information it provides. The website is located at www.accc.gov.au/fuel.

2.3.2 Fact sheets

The ACCC had five fuel fact sheets available in 2010-11:

- What influences the price of unleaded petrol?
- What influences the price of automotive LPG?
- What influences the price of diesel?
- Petrol price cycles in Australia
- Fuel prices in regional Australia

The ACCC updated the above fact sheets and published two additional fact sheets in 2011:

- A guide to biofuels in Australia
- How do international factors influence petrol prices?

These fact sheets are available on the ACCC website.

2.3.3 Ministerial correspondence

In 2010–11, the ACCC addressed 27 pieces of correspondence from Commonwealth and State parliamentarians on fuel issues. The most common topics were:

- the level of competition in the retail fuel markets
- fuel price differentials between various (usually regional) locations
- the relationship between domestic fuel prices and relevant international benchmarks
- price differentials between different fuel types.

2.3.4 ACCC Infocentre

During 2010–11, the ACCC responded to around 1,000 fuel-related complaints and inquiries received by the Infocentre. Issues arising from these calls were discussed in section 2.1.

2.3.5 Enhancing consumer understanding

The ACCC regularly engages with newspapers, television, radio and internet media outlets with the objective of making information about its analysis and developments in the petroleum industry more accessible to consumers. In 2010–11, the ACCC distributed news releases and provided informed comment on a variety of issues including:

- the potential impact of the floods in Queensland on the supply of ethanol in Australia
- movements in fuel prices and how international factors have influenced such movements
- labelling and promotion of fuel products at retail sites
- differences in fuel prices between regional locations
- predatory pricing in the retail fuel industry.

The ACCC also distributed the 2010 formal monitoring report and summary to key stakeholders.

2.4 Engagement with key stakeholders

In 2010–11, the ACCC continued to engage with key stakeholders, including consumers, industry and government organisations on fuel issues.

2.4.1 ACCC Consultative Committees

In addition to ongoing liaison with key stakeholders as part of its broader role, the ACCC formally consulted with industry and consumer groups through its consultative committees.

Fuel Consultative Committee

In 2010–11, the Fuel Consultative Committee (FuelCC) met on two occasions and discussed issues including industry consolidation, availability of pricing information to consumers, state government mandates on biofuels, price cycles, fuel supply concerns, broader industry regulation and the profitability of the fuel industry.

The ACCC formed the FuelCC in 2010 to:

- provide an opportunity for meaningful dialogue between the ACCC, the fuel industry and motoring organisations
- provide information to increase the ACCC's understanding of fuel industry issues and to assist the ACCC in undertaking its role under the Act on issues related to competition and consumer protection in the fuel industry.

There are currently 16 members on the FuelCC including fuel retailers, refiner-marketers, industry associations and motoring organisations.

Consumer Consultative Committee

In 2011, the Consumer Consultative Committee discussed the ACCC's role in monitoring specific industries, using its experiences in monitoring the fuel industry as an example.

2.4.2 Other government bodies

As part of its broader role, the ACCC liaises and shares information in accordance with its Information Sharing Policy with the following government bodies to fulfil its functions under the Act:

- the Commonwealth Treasury concerning fuel pricing issues and the fuel industry broadly
- the Commonwealth Department of Resources, Energy and Tourism concerning the fuel industry broadly and fuel supply, including security of supply
- the Commonwealth Department of Sustainability, Environment, Water, Population and Communities in relation to the quality of fuel supplies, including allegations of contamination
- the National Measurement Institute in relation to concerns regarding fuel trade measurement practices
- state government bodies, such as state offices of fair trading and the FuelWatch monitoring service administered by the Western Australian Government, concerning consumer protection and other related issues.

2.4.3 Consumer groups

In addition to meetings of the FuelCC and its efforts to increase consumer understanding about fuel prices, the ACCC corresponds and meets with consumer groups and motoring organisations to address concerns raised about the conduct of fuel retailers which affect consumers. In 2010–11, the ACCC engaged with organisations which included the motoring organisations across Australia. Issues raised by these groups and considered by the ACCC included:

- labelling of petrol pumps at retail sites
- proposals for increasing fuel pricing information available to consumers
- cost differentials between RULP and PULP
- retail price differentials between metropolitan and regional locations
- allegations of anti-competitive conduct
- new and emerging issues in the fuel industry.

2.4.4 Industry associations

The ACCC regularly corresponds and meets with industry associations to address key issues in the fuel industry. Organisations that the ACCC has engaged with in 2010–11 include the Australasian Convenience and Petroleum Marketers Association, the Australian Institute of Petroleum, the Service Station Association of Australia, LPG Australia and the Biofuels Association of Australia.

3 Developments in industry structure

Key points

- Australia's refining sector continues to be increasingly reliant on imported crude oil.
- Australia's refining output increased in 2010–11, but it continued to be supplemented by imports of refined petrol.
- While still comprising a relatively small proportion of total supply, independent imports increased substantially, following growth in capacity of independently owned import terminals.
- The domestic refining industry continues to be under pressure from larger Asian refineries.
- Specialist retailers continued to increase their market share.

3.1 Introduction

This chapter covers recent developments in the structure of the downstream petroleum industry, focusing on the 12-month period since the 2010 ACCC petrol monitoring report.

The industry has two broad areas of operation: upstream and downstream. This report covers downstream operations, which are divided into three sectors: total supply (including refining and importing), wholesale and retail. Upstream operations, that is, the exploration, production and export of crude oil, are generally outside the scope of this report, though are covered where they impact on Australia's downstream petroleum industry.

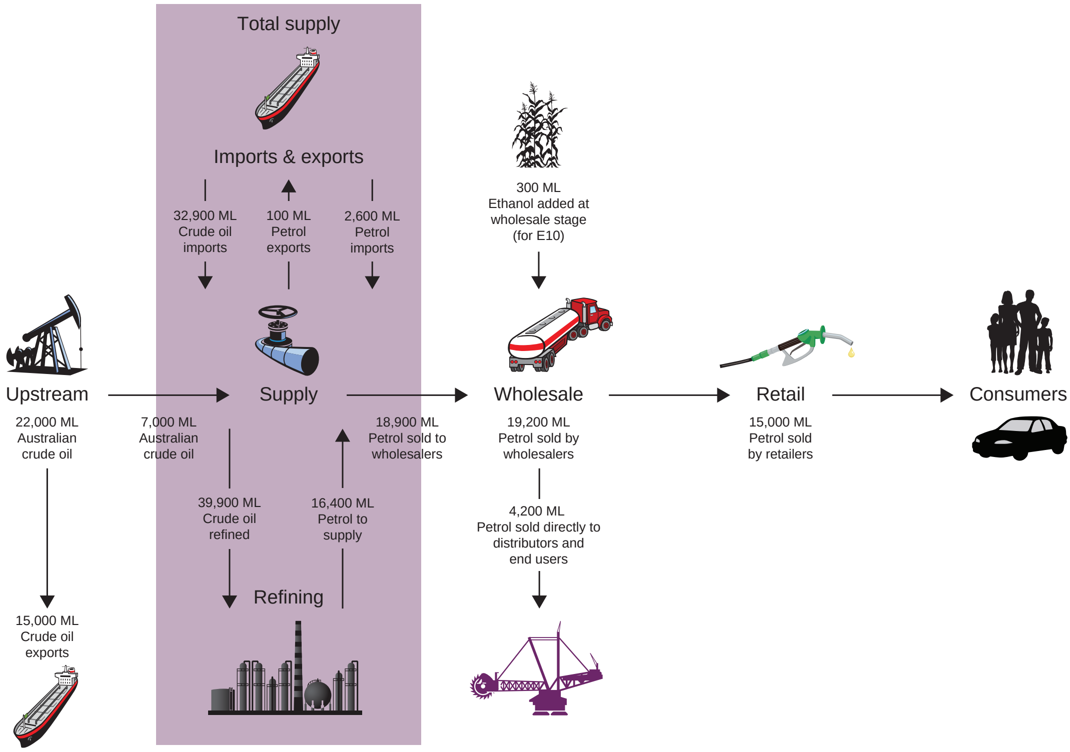
The total supply sector provides petroleum products for on-selling to wholesalers. Petroleum products are either refined locally or imported. This sector comprises mainly the refiner-marketers, though independent importers are becoming increasingly important.

Wholesale refers to the sale, and in some cases transportation, of petroleum products by a refiner, importer or wholesaler to other wholesalers, retailers, or end users. As with the supply sector, wholesale is dominated by the refiner-marketers, albeit with an increasingly important presence by independent wholesalers.

The retail sector comprises operators that purchase refined products from wholesalers and sell to the public through retail sites. While most retail sites carry the brand of a refiner-marketer, in practice refiner-marketers only operate a small percentage of sites. Independent operators have a significant and growing presence in the retail sector.

Figure 3.1 schematically represents the volumes of crude oil and petrol flows within and between the sectors of the industry. This gives a national overview of the industry, though the operations and infrastructure are predominately state-based. For a description of infrastructure by state, refer to the state-by-state schematics at appendix B.

Figure 3.1 Volumes of crude oil and petrol flows: 2010–11



Source: Department of Resources, Energy and Tourism (RET), *Australian Petroleum Statistics*, issue 179, June 2011; ACCC estimates based on data obtained from firms monitored through the ACCC's monitoring process; APAC Biofuel Consultants, *Australian Biofuels 2011-12*

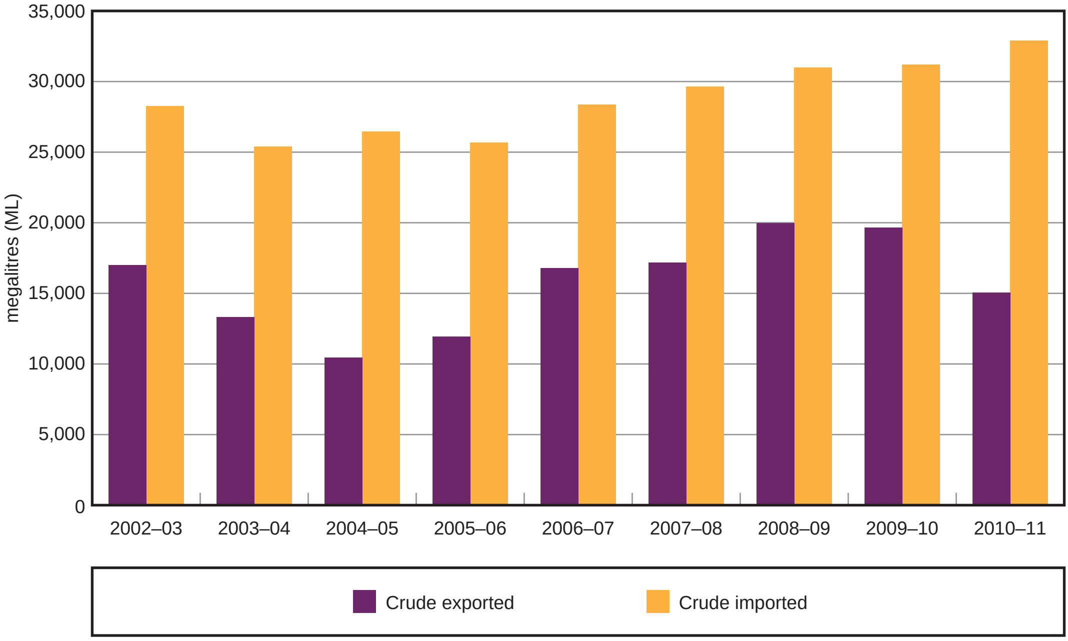
3.2 Crude oil production

3.2.1 Crude oil inputs

Australia exports much of its crude oil production, and increasingly relies on imports for the supply of crude for its refineries. Australian refineries generally require a blend of different types of crude, including heavier crudes which must be imported. Most crude oil produced in Australia is light sweet crude from the North West Shelf in Western Australia and Bass Strait in Victoria. While crude of this quality may be suitable for Australian refineries, it can be exported at a premium relative to heavier crudes.

Australia's crude oil imports have risen each year since 2005–06 (chart 3.1). In 2010–11, imports were 32,900 megalitres (ML), compared with 31,206 ML in 2009–10. While the volume of exports rose in the four years up to 2008–09, it has fallen in the last two years. In 2010–11, 15,000 ML were exported, a decrease of about 17 per cent compared to 2009–10.

Chart 3.1 Australian crude oil and condensate[21] exports and imports: 2002–03 to 2010–11



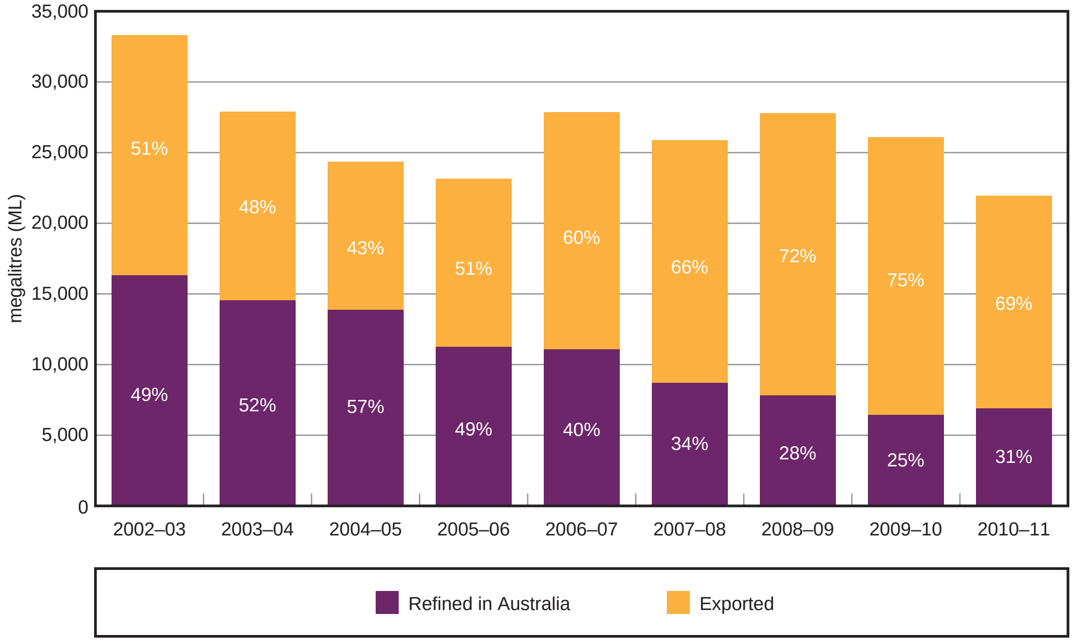
Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

Note: Not comparable with chart 3.1 in 2010 ACCC petrol monitoring report due to data revision.

While Australia's crude oil production fell in 2010–11, from 26,083 ML to 21,942 ML, there was an increase in both the volume and percentage used in local refineries (chart 3.2). Overall, the total volume of crude refined in Australia increased in 2010–11 to 39,794 ML (chart 3.3), the highest volume since 2004–05. Australia is increasingly reliant on imported crude: in 2010–11, only 17 per cent of crude refined in Australia was local, compared with 35 per cent in 2004–05.

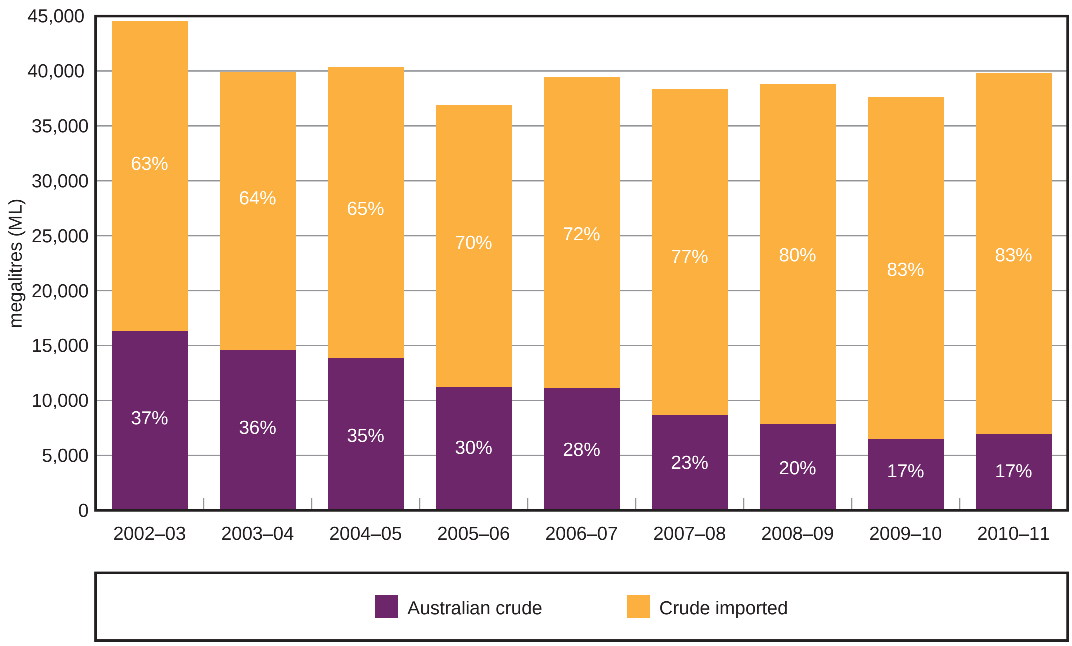
21 Condensate is defined in the *Excise Act 1901* as either (a) liquid petroleum, that is, a mixture of hydrocarbons that is produced from gas wells and that is liquid at standard temperature and pressure after recovery in surface preparation facilities, or (b) another substance that is derived from gas associated with oil production and that is liquid at standard temperature and pressure.

Chart 3.2 Volume and percentage of Australian crude oil and condensate production used for domestic use or exported: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107 June 2005; 143, June 2008; and 179, June 2011

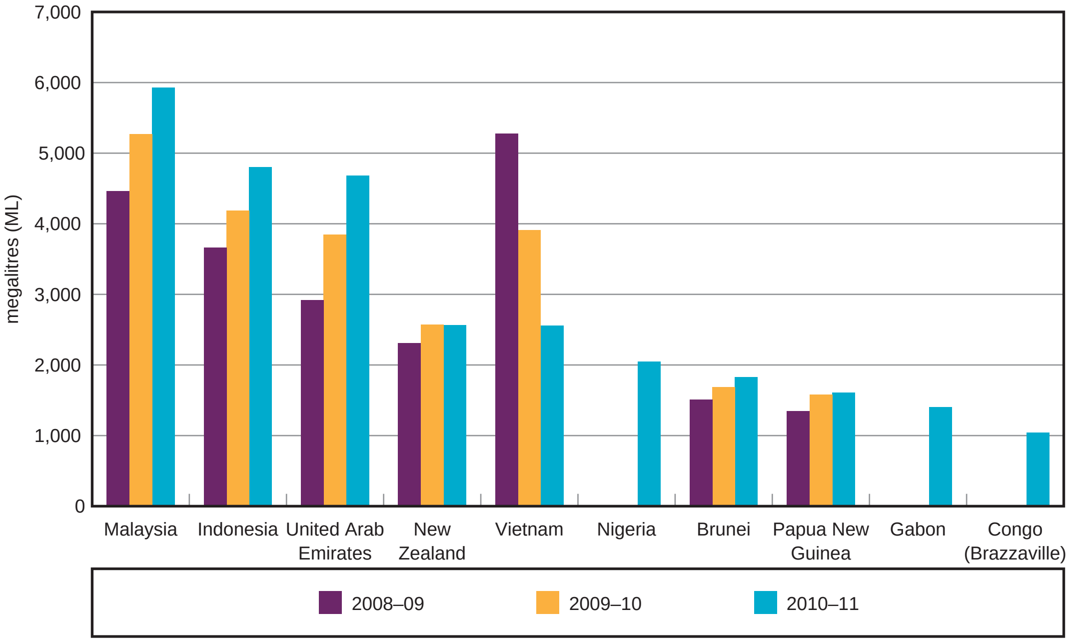
Chart 3.3 Volume and percentage of crude oil and condensate refined in Australia by source: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

The sources of Australian crude oil imports continued to change in 2010–11 (chart 3.4). Local refineries sought new sources as Vietnam reduced its exports. In 2008–09, Vietnam was Australia's primary source of imports, but has recently increased its domestic refining activities, using more of its own crude rather than exporting. In 2010–11, Malaysia was the main source of crude oil imports (as in 2009–10), with 5,929 ML. Other important suppliers of crude oil imports included Indonesia, United Arab Emirates and New Zealand. For the first time since at least 2008–09 African countries were major sources of imports: Nigeria, Gabon and Congo (Brazzaville).

Chart 3.4 Major sources of crude oil imports to Australia: 2008–09 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issue 179, June 2011

3.3 Total supply sector: refining

Australia currently has seven refineries, located in Sydney (two), Brisbane (two), Melbourne, Geelong, and Kwinana (near Perth).[22] All are small by international standards and face an increasingly competitive environment. In 2010, Australia accounted for less than 3 per cent of Asia-Pacific refining capacity.[23] Shell recently announced its intention to close its Clyde refinery in Sydney by mid-2013, and to convert it to an import terminal. Shell has claimed that output from the Clyde refinery cannot compete with imports from the larger and more modern refineries in Asia.[24] It is the smaller of the two Sydney refineries and the second smallest in Australia.

The site at Clyde is well located to operate as a terminal, a role it has often played since 2008 as a result of refinery breakdowns and maintenance. Although located inland, it is connected by pipeline

22 For information on the refineries refer to chapter 4 and the 2009 ACCC petrol monitoring report, pp. 25–6.

23 BP, Statistical review of world energy, June 2011, historical data at http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481, accessed 30 November 2011.

24 Shell Australia, 'Shell to cease refining at Clyde', media release, 27 July 2011.

from Gore Bay in Sydney Harbour, so can function as an import terminal. The refinery is the oldest of those currently operating and, while it has been effectively rebuilt and upgraded over its lifetime, has required significant investment in recent years. A major maintenance shutdown was scheduled for 2013.

3.3.1 Refinery capacity

Australia's total refining capacity is estimated to have changed little in recent years. The most recent estimate from the Australian Institute of Petroleum indicates total refining capacity of 44,210 ML pa, which is the same as 2009–10.[25] This will be reduced by 4,740 ML pa following the closure of Clyde.

3.3.2 Refinery production

Most petroleum products consumed in Australia are refined locally. In 2010–11, there was a significant increase in production of petroleum products, the largest by volume since at least 2002–03 (table 3.1). The volume of sales also rose in 2010–11. Since 2002–03, the percentage of sales of petroleum products produced in Australia has fallen to 77 per cent in 2010–11. This was up from 72 per cent in 2009–10.

Table 3.1 Petroleum products production as a percentage of sales in Australia: 2002–03 to 2010–11

	Petroleum products production ML	Petroleum products sales ML	Production as a percentage of sales %
2002–03	41,951	41,980	100
2003–04	39,654	43,899	90
2004–05	38,786	45,496	85
2005–06	37,160	45,610	81
2006–07	39,108	46,541	84
2007–08	37,744	48,434	78
2008–09	34,590	48,052	72
2009–10	34,839	48,665	72
2010–11	38,188	49,359	77

Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

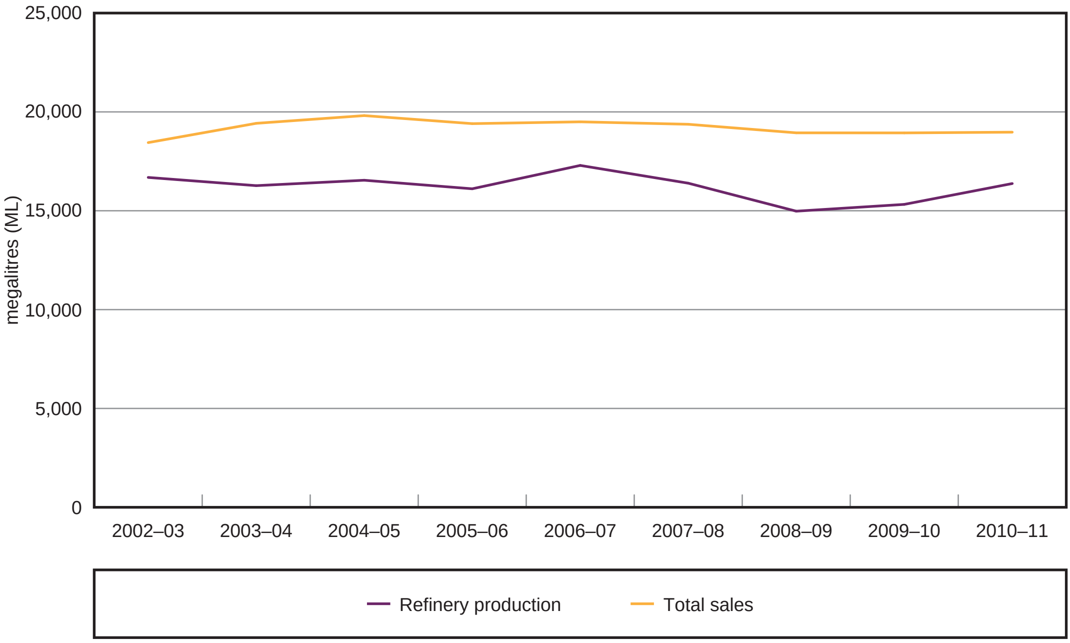
25 Australian Institute of Petroleum, Downstream petroleum 2009, p. 5. The capacities of individual refineries were specified in the 2009 ACCC petrol monitoring report, p. 25.

3.3.3 Petrol production

In 2010–11, petrol production increased from 15,322 ML to 16,376 ML, while sales rose slightly (chart 3.5).

As a percentage of sales, petrol production has risen from 81 per cent in 2009–10 to 86 per cent in 2010–11.

Chart 3.5 Production and sales of petrol in Australia: 2002–03 to 2010–11



Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

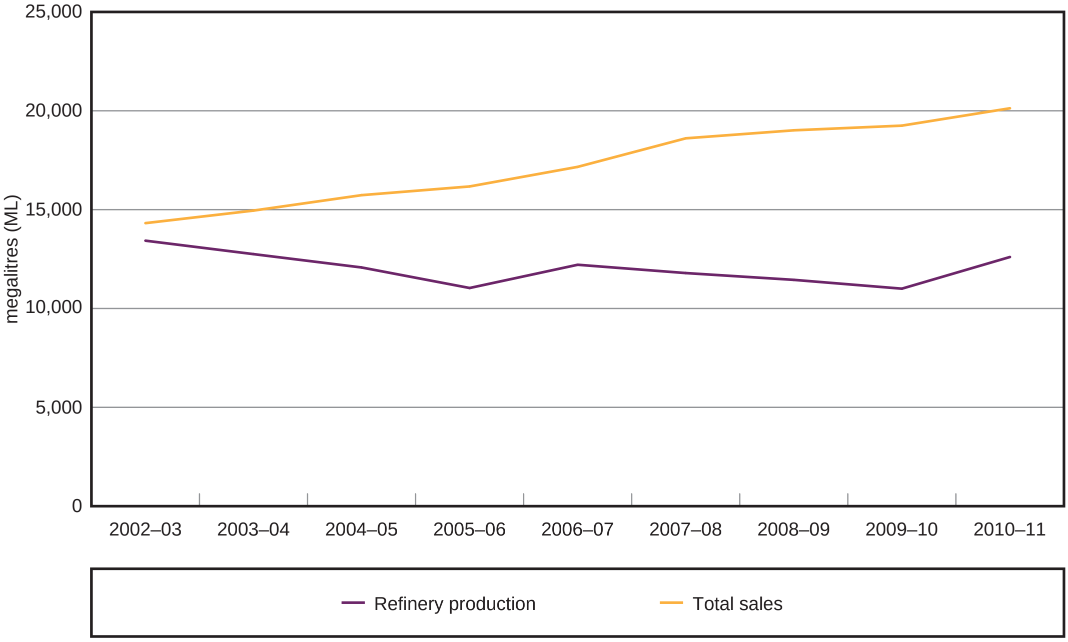
3.3.4 Diesel production

Domestic diesel production increased significantly in 2010–11 to the highest level since 2003–04 (chart 3.6). This is in contrast to consecutive falls in the three previous years. 2010–11 was only the second year since 2002–03 in which diesel production increased.

Sales of diesel rose in 2010–11 to 20,127 ML, up from 19,249 ML in 2009–10. Diesel sales have increased 41 per cent since 2002–03.

As a percentage of sales, domestic production of diesel has fallen from 94 per cent in 2002–03 to 62 per cent in 2010–11.

Chart 3.6 Production and sales of diesel in Australia: 2002–03 to 2010–11



Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

3.3.5 Petrol refining market shares

Refinery market shares changed for all companies in 2010–11 (table 3.2).

There were two significant changes: Shell's share rose from 23.9 per cent in 2009–10 to 28.0 per cent in 2010–11, while Caltex's share fell from 31.8 per cent to 27.4 per cent. The other changes were less significant: BP's share up from 29.1 per cent to 30.9 per cent and Mobil's down from 15.1 to 13.7 per cent in 2010–11.

Table 3.2 Share of petrol production in Australia: 2002–03 to 2010–11

	BP %	Caltex %	Mobil %	Shell %
2002–03	24.7	28.6	18.3	28.3
2003–04	25.6	31.1	16.8	26.5
2004–05	27.2	32.5	15.9	24.5
2005–06	23.5	34.3	14.8	27.4
2006–07	25.6	35.4	13.3	25.7
2007–08	27.2	33.7	13.9	25.2
2008–09	29.1	34.6	14.2	22.1
2009–10	29.1	31.8	15.1	23.9
2010–11	30.9	27.4	13.7	28.0

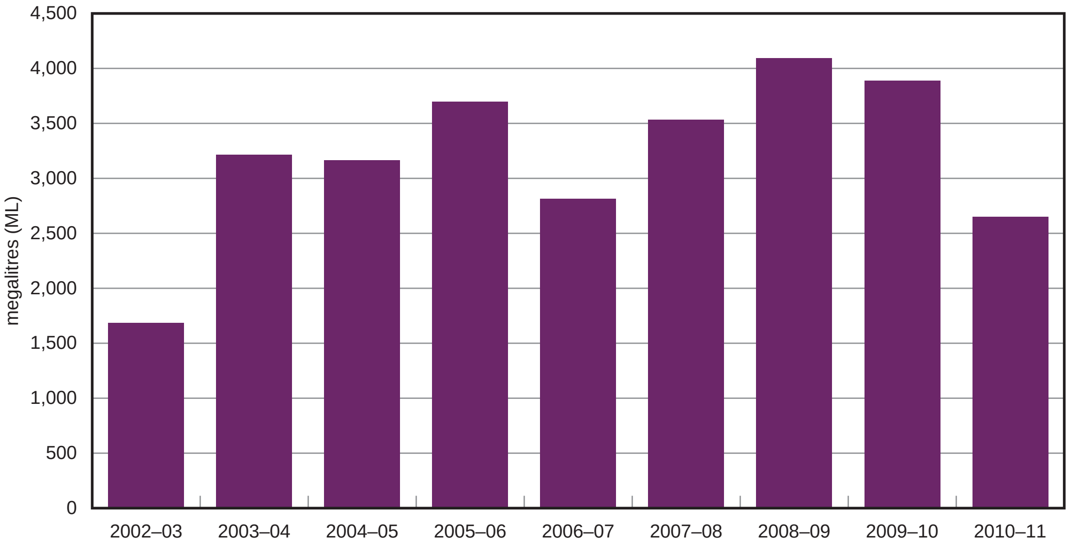
Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

3.4 Total supply sector: importing refined petroleum products

3.4.1 Petrol imports

The volume of petrol imports fell significantly in 2010–11, to 2,651 ML (chart 3.7). This was the lowest level of imports since 2002–03, when the Port Stanvac refinery was operating.[26]

Chart 3.7 Volume of petrol imported into Australia: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

In 2002–03, while total imports were relatively small, independent importers accounted for around one half of imports.[27] Subsequently, with the introduction of new Australian fuel standards it became more difficult to source imports and the proportion of independent imports declined. Since 2003–04, independent imports were often significantly less than 10 per cent of total imports.

In 2009–10, independent imports increased again, assisted by enhanced access to independently owned import capacity (see section 3.5.2), and exceeded 10 per cent of total imports.

In 2010–11, independent imports continued to grow while overall imports fell. As a result, the share of independent imports increased to around 40 per cent of total imports.[28]

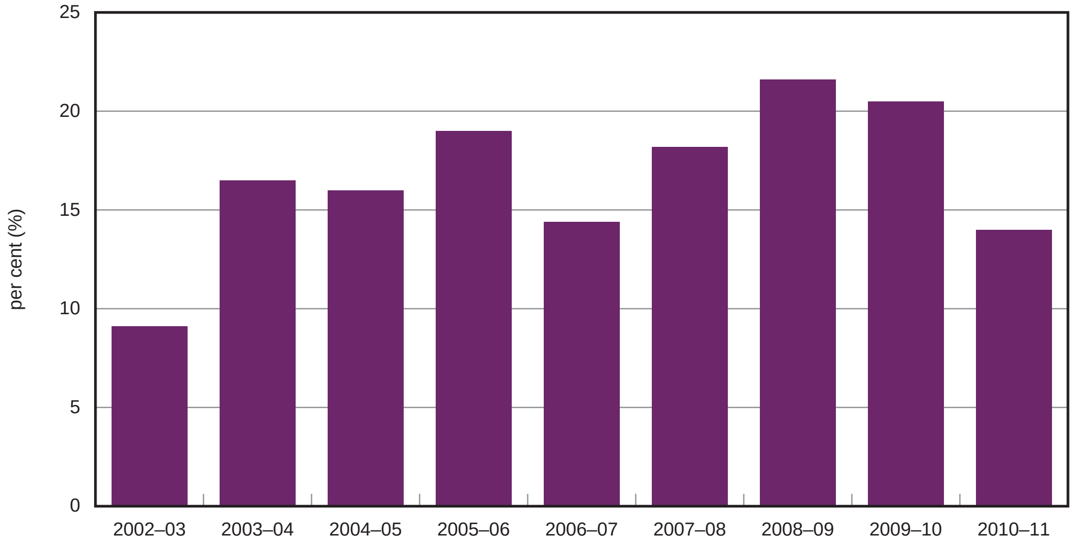
In 2010–11, imports represented 14 per cent of total petrol sales, compared with just over 20 per cent in 2009–10 (chart 3.8). This was the lowest percentage since 2002–03 when imports comprised 9 per cent of total petrol sales.

26 The Port Stanvac refinery was owned by Mobil and ceased operation on 1 July 2003.

27 ACCC petrol inquiry report, 2007, pp. 63–4.

28 For more on the changes in independent imports, see chapter 4, section 4.2.2.

Chart 3.8 Petrol imports as a percentage of total sales in Australia: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011; ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

The percentage of refined petrol imports from Singapore decreased from 86 per cent in 2009–10 to 79 per cent in 2010–11 (table 3.3). South Korea became increasingly important as a source of imports, accounting for 15 per cent, which was up from 7 per cent in 2009–10.

Table 3.3 Sources of petrol imports into Australia: 2007–08 to 2010–11

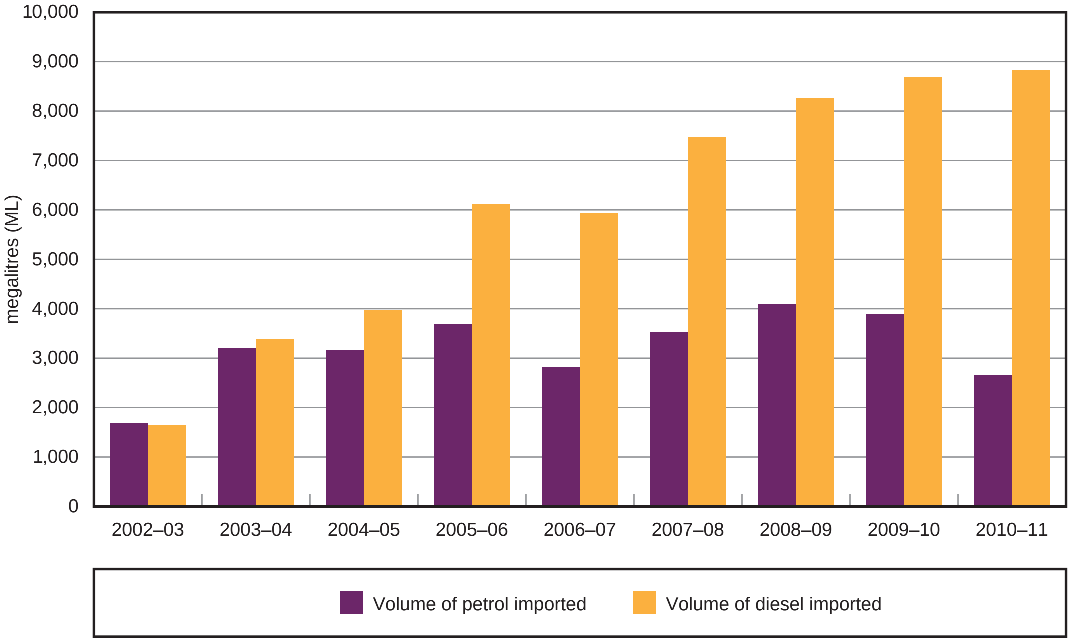
	2007–08		2008–09		2009–10		2010–11	
	ML	%	ML	%	ML	%	ML	%
Singapore	3,301	93	3,426	84	3,330	86	2,101	79
Taiwan	110	3	297	7	91	2	90	3
Oman	0	0	108	3	46	1	0	0
South Korea	18	0	81	2	278	7	407	15
Other	107	4	182	4	144	4	54	2
Total	**3,536**	**100**	**4,093**	**100**	**3,889**	**100**	**2,652**	**100**

Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

3.4.2 Diesel imports

Diesel imports continued to increase in 2010–11, to 8,831 ML, though at a slower rate compared with the previous three years (chart 3.9). While in 2002–03 volumes of petrol and diesel imports were similar, by 2010–11 increasing domestic demand for diesel for transport and industrial uses had caused the volume of diesel imports to increase to three times that of petrol.

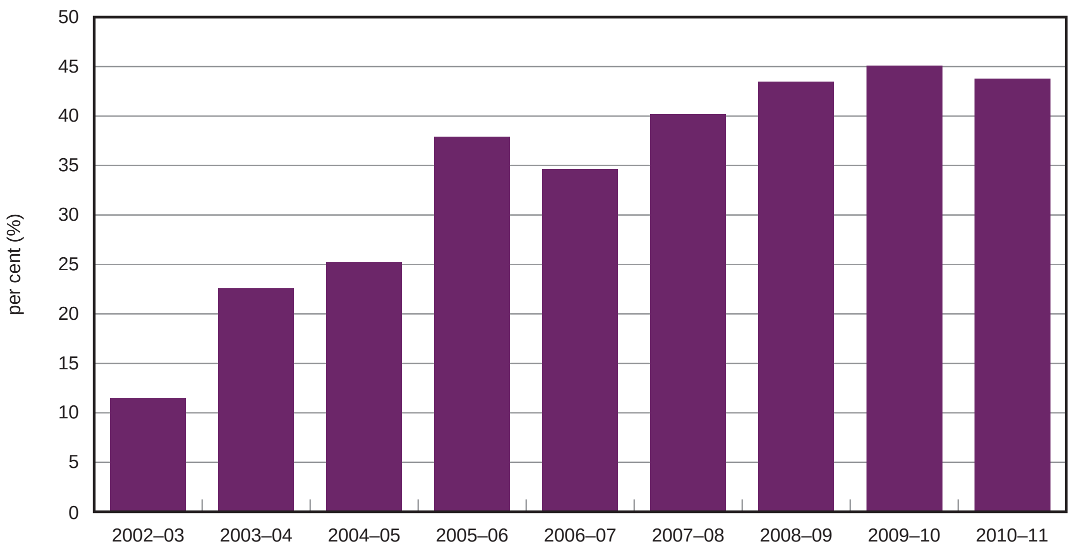
Chart 3.9 Volumes of petrol and diesel imported into Australia: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

Diesel imports as a percentage of total sales decreased marginally in 2010–11 to 43.8 per cent (chart 3.10). This represented the first decrease since 2006–07.

Chart 3.10 Diesel imports as a percentage of total sales in Australia: 2002–03 to 2010–11



Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011; ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

3.5 Import infrastructure

As part of its monitoring activities, the ACCC collects detailed data on the use of and plans for import terminal infrastructure. Data is collected from the refiner-marketers, major independent wholesalers/importers and terminal owners/operators.

This section outlines changes in import infrastructure since the 2010 ACCC petrol monitoring report. The focus is on major terminals and includes a brief description of expansion plans.

Major terminals are defined as terminals which have a pipeline connection to a port and/or refinery. They are the point where fuel which has been refined in Australia or imported, is stored, distributed or sold, by refiner-marketers and importers.

3.5.1 Terminal throughput

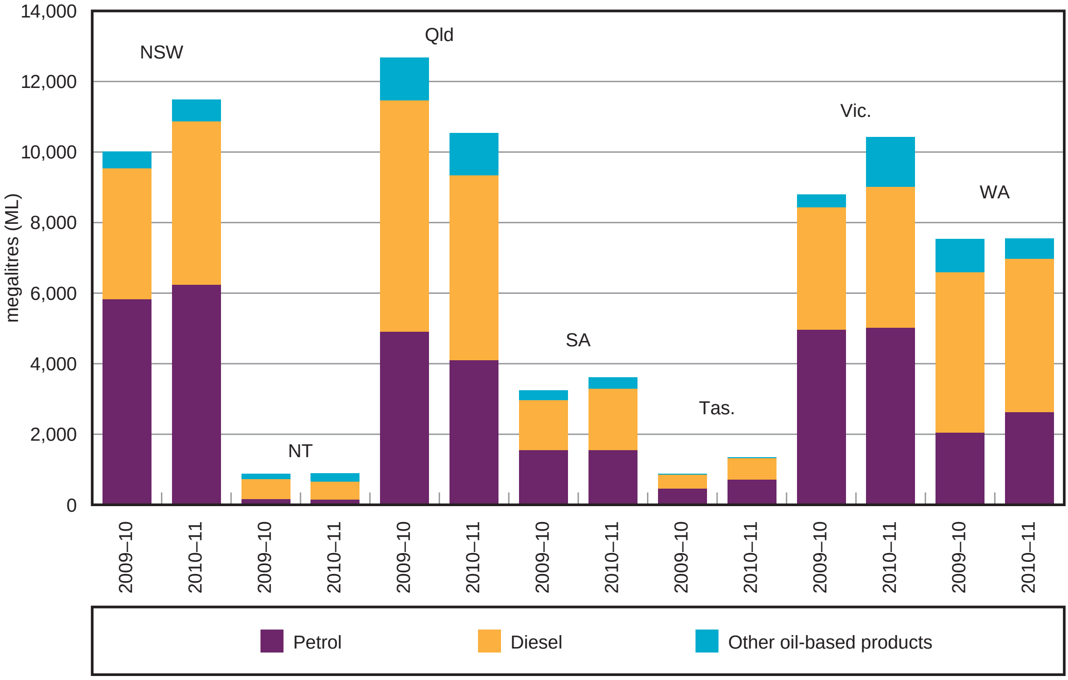
Petroleum products

While there was national growth in terminal throughput of both petrol (2.4 per cent) and diesel (2.2 per cent), there were significant variations between states (chart 3.11). The largest increases in petrol throughput in 2010–11 were in Tasmania, Western Australia and New South Wales. There were declines in petrol throughput in Queensland and Northern Territory.

In 2010–11, there were large increases in diesel throughput in Tasmania, New South Wales, South Australia and Victoria, while there was a significant decline in Queensland. The floods in January 2011 may be one reason for the declines in petrol and diesel throughput in Queensland terminals.

Across Australia, the percentage of terminal throughput accounted for by independent wholesalers/importers has increased steadily since 2007–08, rising from 3.5 per cent to 5.8 per cent in 2010–11.

Chart 3.11 Petroleum products throughput by state: 2009–10 and 2010–11



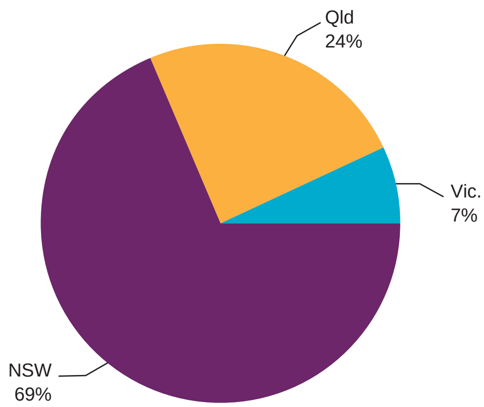
Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

Ethanol

During 2010–11, ethanol throughput grew by 81.2 per cent, with increases in each of the three states with significant ethanol throughput (chart 3.12).

By far the largest increase was in New South Wales, the only state with a state government ethanol mandate. New South Wales now accounts for 69 per cent of total ethanol throughput, compared with 50 per cent in 2009–10. Queensland's share of throughput has fallen from 40 per cent to 24 per cent in 2010–11, at least partly due to the impact of the January 2011 floods which affected production. It is likely that the suspension of the announced state government ethanol mandate may also have dampened demand for ethanol in Queensland.

Chart 3.12 Ethanol terminal throughput by state: 2010–11



Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

Note: New South Wales, Queensland and Victoria were the only states with significant ethanol throughput in 2010–11.

3.5.2 Developments at major terminals by state, 2010–11

Historically, the majority of major terminals have been owned and operated by the refiner-marketers. While this is still the case, there is a trend of increasing independent terminal ownership and operation. As outlined below, two terminals are planned to be constructed by independent owners and used by refiner-marketers.

In October 2011, Marstel changed it's name to Stolthaven Australasia Pty Ltd, following acquisition of a 70 per cent stake by Stolt-Nielsen Ltd, a multinational transport company and terminal owner/operator.[29]

New South Wales

Marstel has submitted plans to the NSW Government for a new 54 ML terminal at Newcastle. It aims to commence construction before the end of 2011 and start operating in 2012. The company has signed a memorandum of understanding with Shell, which intends to use the facility to import diesel, including from its refinery in Singapore. It will supplement Shell's existing Newcastle terminal, which lacks import capability.[30]

Mobil has reported it has spare capacity at the Silverwater terminal, which it jointly owns with Caltex. Mobil is currently closing its Botany terminal.

Northern Territory

Vopak has reported no plans for expansion at the Northern Territory's only major petrol import terminal, in Darwin.

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29 Stolt-Nielsen media release, 4 October 2011: http://www.stolt-nielsen.com/Media-Centre/Feed-News.aspx?link=http://cws.hugionline.com/5/154/PR/201110/1552136.xml

30 Shell Australia, 'New diesel import and storage facility for Newcastle', media release, 4 April 2011, and information supplied to the ACCC.

Queensland

Shell is constructing 19.6 ML of additional diesel capacity at its Mackay terminal which is due for completion in March 2012.

A new 15 ML diesel tank is to be built at Neumann's Eagle Farm terminal, with completion due in December 2012. The commissioning of the new pipeline connecting the terminal to a deep-water port was delayed and is now expected by the end of 2011.

At Gladstone, the ACCC did not object to Caltex's acquisition of Mobil's share of the jointly owned Caltex–Mobil terminal. Mobil has advised the ACCC it intends to seek a hosting agreement with Caltex and continue to supply its customers from this terminal.

At Mackay, Caltex has completed expansion of diesel capacity: this has increased by 26 ML to 55 ML.

Marstel's Bundaberg terminal remains unused, though it is expected to be recommissioned during 2012.

South Australia

There are significant proposals to expand storage capacity in the Adelaide area, especially for diesel.

Mobil is expanding its Birkenhead terminal with the construction of a 9 ML diesel tank due to be completed mid-late 2012.[31] Petrol capacity at this terminal is expected to increase slightly by late 2012 at the conclusion of its current major maintenance program.

At Largs North, BP is planning to build a new tank which will increase the diesel capacity of its terminal by 30 ML. It is due for completion by the end of 2012. BP has also announced it is planning to build a rail gantry at this terminal.[32]

Terminals Pty Ltd has announced plans to build a new 85 ML terminal at Outer Harbour, Adelaide. Due for completion in 2013, this terminal will have capacity for petrol, diesel, ethanol and biodiesel. Caltex has signed a 25-year agreement to use the terminal instead of its existing facility at Birkenhead, which is experiencing space constraints.

Tasmania

There have been no significant developments at the Tasmanian terminals. Marstel has spare throughput capacity of about 100 ML at its Bell Bay terminal.

Victoria

At Newport, Shell is constructing a 0.9 ML biodiesel tank which is due for completion in December 2012. Mobil's Yarraville terminal has spare capacity. A major maintenance program is being undertaken at this terminal. Following the conclusion of this program in 2012 and related tank reallocations, there will be slight increase in diesel capacity.

Western Australia

At Port Hedland, in May BP completed its expansion of diesel capacity and loading infrastructure, as outlined in the 2010 ACCC petrol monitoring report. Caltex expects to complete its 40 ML diesel capacity expansion by December 2011.

31 ExxonMobil, 'Mobil to expand Adelaide terminal', media release, 23 June 2011.

32 BP, 'Growing demand leads to expansion at BP terminal in Adelaide', media release, 14 April 2011.

Caltex has reported spare throughput capacity at its Albany terminal of 15 ML pa. At Kwinana, Coogee's terminal, which now incorporates the former Gull (Terminals West) terminal, has spare throughput capacity of 100–200 ML pa.

3.5.3 Import terminals with spare capacity

There are two types of major terminals: import terminals and refinery-pipeline terminals. Import terminals are connected to a port, which in most cases is their only source of fuel. Refinery-pipeline terminals are connected to a refinery by pipeline. They may also be connected to a port, though are likely to receive most of their fuel from the refinery and will hence have higher turnover than an import terminal.

Import terminals would be expected to have a significantly lower turnover compared with refinery-pipeline terminals.[33] This is primarily due to the fact that they do not have a direct link to what is usually an ongoing source of supply. In 2010–11, Australia's import terminals had an average turnover of 7.3 times, up from 6.8 times in 2009–10 (table 3.4). Turnover rates of refinery-pipeline terminals were also higher, 32.5 times compared with 29.7 times in 2009–10.

Table 3.4 Petrol turnover by type of terminal

	IMPORT TERMINALS			REFINERY-PIPELINE TERMINALS		
	Capacity ML	Throughput ML	Turnover times	Capacity ML	Throughput ML	Turnover times
2009–10	687.8	4,703.0	6.8	442.9	13,134.3	29.7
2010–11	691.5	5,019.1	7.3	488.1	15,876.2	32.5

Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

Note: Excludes Corio and Parramatta refinery-pipeline terminals (which are directly attached to refinery storage tanks and have no stand-alone storage capacity), and import terminals that exist primarily to service local mines.

Terminal access for independent importers can affect their ability to compete in the petrol industry. The low turnover of independently owned import terminals suggests availability of spare capacity for independent importers (table 3.5). There are also independently owned refinery-pipeline terminals which may have spare capacity.

Table 3.5 Import terminal petrol turnover by type of ownership: 2010–11

Type of ownership	Capacity ML	Throughput ML	Turnover times
Independently owned	398.7	1,504.8	3.8
Refiner-marketer owned	292.8	3,514.3	12.0
Australia	**691.5**	**5,019.1**	**7.3**

Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

Note: Excludes throughput for terminals that exist primarily to service local mines.

Table 3.5 also shows that independently owned import terminals have significantly greater total petrol capacity than those owned by refiner-marketers. In 2007–08, the independents' capacity was similar to that of the refiner-marketers. Since then, independent owners have undertaken acquisitions and major expansions, increasing total capacity by more than one and

33 Turnover refers to the number of times a terminal is effectively emptied and filled in the year.

a half times. Over the same period, petrol capacity of terminals owned by refiner-marketers has been virtually unchanged.

The percentage of total throughput accounted for by independently owned terminals has increased steadily over the past four years, from 3.5 per cent in 2007–08 to 5.8 per cent in 2010–11.

3.6 Exporting refined product

There has been a significant downward trend in petrol exports as a percentage of domestic supply since the cessation of production at the Port Stanvac refinery in 2003–04 (chart 3.13). Australia is now a structural importer; exports form a very minor part of the industry.

Chart 3.13 Petrol exports as a percentage of domestic supply: 2002–03 to 2010–11

Source: RET, *Australian Petroleum Statistics*, issues 107, June 2005; 143, June 2008; and 179, June 2011

3.7 Wholesaling

3.7.1 Wholesale market share

The most noticeable change in wholesale market share from 2009–10 to 2010–11 was the fall in Mobil's share from 13 per cent to 9 per cent (table 3.6). Independent wholesalers, primarily United, Neumann, Gull and Liberty, continued to increase their share of the wholesale sales of the monitored companies, rising from 6 per cent to 7 per cent.

Table 3.6 Monitored companies' share of wholesale petrol sale volumes: 2005-06 to 2010-11

	2005–06 %	2006–07 %	2007–08 %	2008–09 %	2009–10 %	2010–11 %
BP	17	17	17	17	17	18
Caltex	36	36	36	36	36	36
Mobil	14	15	15	13	13	9
Shell	29	27	27	28	29	30
Independent wholesalers	4	4	5	6	6	7

Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

3.7.2 Types of wholesale sales

The refiner-marketers' largest wholesale customers in 2010–11 were independent retailers (including supermarkets), which accounted for 55.3 per cent of total wholesale sales (table 3.7).

The percentage of total sales accounted for by independent retailers has increased steadily over the past four years. The second largest category of wholesale customers was branded retailers, including branded independents, franchisees and company-owned businesses, with 32.6 per cent. This was down from 35.8 per cent in 2009–10.

The sale by Mobil of its retail assets to 7-Eleven contributed to the fall in the shares of wholesale sales to refiner-marketer branded retailers and the rise of independent retailers' share of wholesale sales.

The shares of resellers and other distributors have declined since 2007–08 as a percentage of the refiner-marketers wholesale sales. It is possible that this is at least partly due to the increase in independents' imports.

Table 3.7 Refiner-marketers' wholesale petrol sales by type of customer: 2007–08 to 2010–11

Type of customer	2007–08 %	2008–09 %	2009–10 %	2010–11 %
Resellers and distributors	9.8	9.3	7.2	8.3
Independent retailers (incl. supermarkets)	50.6	51.3	53.0	55.3
Refiner-marketer branded retailer	35.7	34.8	35.8	32.6
Other retailers	3.9	4.5	3.9	3.8

Source: ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

3.7.3 Developments in the wholesale sector

In December 2010, the Western Australian operations of independent wholesaler and retailer Gull were acquired by Ausfuel.[34] In March 2010, Gull had sold its import terminal at Kwinana, near Perth, to Coogee Chemicals.

In May 2011, United announced it had acquired one of the two ethanol plants in Queensland, at Dalby.[35]

34 *West Australian*, 'Rae family lets Gull out from under wing', 2 December 2010, p. 52; and Ausfuel 'Gull Petroleum stays in independent hands', media release, 1 December 2010.

35 United Petroleum, 'United Petroleum purchase Dalby bio-refinery', media release, 20 May 2011.

3.8 Retailing

The retail sector continued to undergo structural changes in 2010–11. The refiner-marketers continued to withdraw from retail and sharpen their focus on the total supply and wholesale sectors.

3.8.1 Retail market share

The structure and nature of petrol retailing continues to undergo profound changes. As discussed in more detail in chapters 4 and 16, the Australian retail sector has changed dramatically over time.

One of the most important factors behind the evolution of the retail sector has been the emergence of specialist retailers that have transformed petrol stations into broader retail outlets. This trend has favoured specialist retailers such as 7-Eleven, On The Run and the supermarkets.

There was a significant increase in the market share of the independent retail chains during 2010–11, principally as a result of the sale of Mobil's retail business to 7-Eleven and On The Run (table 3.8). This follows four years of steady growth for the independent chains and is consistent with the longer-term changes that have been evident in the industry for several decades (see chapter 4, section 4.2.4).

The other beneficiaries from Mobil's exit from retailing appear to have been BP and Caltex-branded sites; both recorded market share increases in 2010–11, after having fallen in most years since 2002–03.

Table 3.8 Share of volume of retail petrol sales by brand: 2002–03 to 2010–11

	BP %	Caltex %	Mobil %	Shell %	Woolworths Caltex (co-branded) %	Coles Express/Shell (co-branded) %	Independent retail chains %
2002–03	20	24	19	20	10	0	6
2003–04	20	22	17	3	14	16	7
2004–05	18	18	12	3	18	25	6
2005–06	19	16	11	3	20	25	6
2006–07	19	16	11	3	22	22	7
2007–08	20	17	11	2	22	20	8
2008–09	19	16	11	2	23	22	9
2009–10	17	16	10	2	23	22	10
2010–11	19	18	0	2	23	22	17

Source: ACCC analysis and estimates based on data obtained from firms monitored through ACCC's monitoring process

Notes: 2010–11 sales for Mobil sites sold to 7-Eleven and On The Run are included in the 'Independent retail chains' column. In 2002–03 Woolworths was independently branded. The agreement with Caltex began in August 2003.

3.8.2 Retail business types

As has been noted in previous monitoring reports, the brand name on a petrol retail site does not always provide an accurate indication of the owner or type of ownership structure. Most petrol retail businesses are actually owned and/or operated by supermarkets, independent retailers, franchisees, or commission agents (table 3.9). In 2010–11, 9.6 per cent of petrol retail businesses were under the brand of specialist retailers and a further 6.4 per cent were independent wholesalers.

Table 3.9 Percentage of monitored retail sites by brand and business operator: 2010–11[a]

	Business operated by[b]:					
Brand	Directly owned and operated %	Distributor owned operations %	Independent retailer %	Franchisee[d] %	Commission agent[d] %	Total %
BP	3.6	16.3	6.4	0.3	0.0	26.5
Caltex	1.8	9.5	3.0	4.4	6.5	25.3
Mobil	0.0	6.0	0.0	0.0	0.0	6.0
Shell	0.4	0.0	4.6	0.0	0.0	5.0
Woolworths/Caltex (co-branded)	10.2	0.0	0.0	0.0	0.0	10.2
Coles Express/Shell (co-branded)	11.0	0.0	0.0	0.0	0.0	11.0
Specialist retailers[c]	0.0	0.0	2.2	5.5	1.9	9.6
Independent wholesalers	0.0	0.0	0.3	0.3	5.8	6.4
Total	**27.1**	**31.7**	**16.4**	**10.4**	**14.3**	**100.0**

Source: ACCC analysis and estimates based on data obtained from firms monitored through ACCC's monitoring process

a Data is only for monitored companies, so underestimates the total number of retail sites in Australia.
b Sites are categorised by the operator of the business on the site, regardless of branding.
c Specialist retailers include those businesses operated by independent retail chains and some other independents.
d Commission agents generally manage a business owned by a refiner-marketer or independent chain, and are generally compensated in the form of a commission based on the quantity of product sold. Franchisees rent a site or a number of sites and source fuel from the franchisor and brand it accordingly. They may receive price support from the franchisor (wholesaler), providing some influence over the retail prices set by the franchisee. These categories exclude supermarkets in this table.

3.8.3 Developments in the retail sector

In August 2010, BP advised the ACCC that it intended to acquire one of its rural and regional distributors, Reliance Petroleum. This company operated 215 BP-branded retail sites. Reliance also supplied and distributed BP fuel and lubricants to a significant number of third-party owned and operated BP-branded retail sites, as well as to commercial customers.

In November 2010, the ACCC announced that it would not oppose the acquisition, concluding that the proposed acquisition was unlikely to substantially lessen competition in the relevant markets.

As noted above, on 4 October 2010, Mobil sold its 295 retail sites to 7-Eleven. Most of these sites were operated by Mobil's multi-site franchisee Strasburger Enterprises (Properties) Pty Ltd. The 30 Mobil sites in South Australia were on-sold by 7-Eleven to Peregrine Corporation, which operates under the trading name of On The Run.

3.9 Concluding observations

The changes in the petrol industry detailed in previous ACCC petrol monitoring reports continued in 2010–11. The most significant changes were in the total supply and retail sectors.

Key developments included:

- Petrol imports fell substantially, mainly because refineries were affected by fewer shutdowns and were able to meet a greater proportion of Australia's petrol requirements.
- Independent imports increased strongly and now account for more than 40 per cent of total petrol imports.
- Independent terminal operators and owners are becoming an important part of the industry, providing enhanced access to import infrastructure.
- The announced closure of Shell's Clyde refinery suggests Australian refining continues to be affected by competitive pressures from refineries in Asia.
- While the refiner-marketers still supply fuel to the bulk of retail sites, the number of retail businesses in which they have an interest continued to decline.
- The presence of specialist retailers continued to rise.

The changes evident in the structure of the Australian downstream petroleum industry suggest that the extent of vertical integration by the refiner-marketers continues to diminish.

In the context of the evolution of the industry, the retail sector is moving closer to its structure of several decades ago with a predominance of specialist independent retailers; though with the critical difference that the refiner-marketers now have a more reliable outlet for their refined and imported products. This evolution is detailed in the next chapter.

4 Evolution of current industry structure

Key points

- The Australian petroleum industry is changing in three fundamental ways:
  - Domestic refining capacity has been and continues to be rationalised.
  - Although a small proportion of total supply, independent imports are growing.
  - The refiner-marketers are withdrawing from fuel retailing.
- The result of these changes is that the refiner-marketers as a group are less dominant than they have been in the past.
- The factors that have brought about these changes include:
  - construction of refinery capacity in Asia capable of producing Australian-standard fuel
  - improved access to independently owned and operated import infrastructure
  - establishment of a large-scale retail presence by independent retailers selling petrol as part of a broader offering of non-fuel products and services.
- The factors that are driving changes in the industry appear to have long-term momentum.

4.1 Introduction

This chapter outlines the process by which the Australian downstream petroleum industry has evolved to its current structure.

The shape of the Australian downstream petroleum industry is changing in three fundamental areas:

- **Refining:** there is ongoing competitive pressure on domestic refining assets.
- **Independent imports:** there is growing competition from an expanding and increasingly viable independent imports sector.
- **Retail:** there is an increasing presence of specialist retailers as refiner-marketers reduce their involvement in the retail sector.

These trends represent manifestations of major structural changes to the way that petrol is being supplied to the market and sold to consumers.

In order to understand the forces that are driving these three changes, it is pertinent to look at how and why the industry evolved to the current structure.

These changes represent a reversal of what had been the defining characteristic of the Australian petrol industry since the 1950s and 1960s: control of all sectors of the industry by the refiner-marketers.

In essence, the story of the evolution of the Australian petroleum industry is the story of changes in the extent of vertical integration by the major petrol companies.

4.2 Vertical integration

Prior to the 1950s, the core business of the multinational oil companies in the Australian market was supplying crude oil and refined products into the wholesale market. There were just two refineries operating in Australia at the time, so the local subsidiaries of these companies mostly imported petrol and other refined products (either from the parent companies or other sources). In this environment there were opportunities for independent importers to become established and successful. The most significant examples were HC Sleigh (Golden Fleece) and Ampol, both of which gained good market shares and established a major presence in the Australian industry.

By the beginning of the 1950s, the supply and wholesale sectors comprised seven major oil companies:[36]

- four subsidiaries of major multinational oil companies: Shell, Vacuum (now Mobil), Caltex and Atlantic Union (later Esso, then Mobil)
- one joint venture between the Australian Government and a multinational (BP's predecessor): Commonwealth Oil Refineries (COR)
- two independent Australian–owned importers–wholesalers: Ampol and Sleigh.

Two of these companies owned a refinery (Shell had the Clyde refinery in Sydney and COR had a refinery at Laverton in Melbourne), but none had more than a small direct interest in petrol retailing. Since the 1920s, the major companies had owned some of the petrol pumps, though almost all retail sites were independently owned and operated, and often sold more than one brand of petrol (figure 4.1).

36 Royal Commission on Petroleum, *Marketing and pricing of petroleum products in Australia*, fourth report, 1976, pp. 15-30; Petroleum Information Bureau, The Australian oil industry, Melbourne, 1962, pp. 10-3. The subsidiaries' parent companies were: Shell — Royal Dutch Shell; Vacuum — Socony–Vacuum; Caltex — California Texas Oil; Atlantic Union — Standard Oil (New Jersey). While Vacuum's and Atlantic Union's parents merged their eastern hemisphere operations in 1933, the Australian operations did not merge until 1990 when Mobil purchased Esso's downstream business.

Figure 4.1 Petrol retail outlet, Sydney ca 1920–45

Source: AG Foster, Exterior view of the Four Ways Car Service station, Sydney, between 1920–45, National Library of Australia, http://nla.gov.au/nla.pic-vn3064432. Note the multiple bowsers offering fuel from a number of different companies.

While the major oil companies were operating in a generally favourable environment, they had limited control over the movement of petrol in the retail sector.[37] They had to deal with a large number of independently owned and operated small businesses which were represented in their dealings with the oil companies by wholesaler and retailer 'trade associations'. These associations were able to exert significant countervailing power in their negotiations with the oil companies. The 1976 Royal Commission into the Australian petroleum industry observed that these associations were as powerful as the oil companies. They reportedly had agreements not to compete on price, open a new site without closing an existing one, or install pumps in new locations.[38]

In order to assume greater control over the retailing of their products, the multinational companies adopted a strategy of single-brand retailing. This was initiated in 1951 by Shell and immediately followed by Mobil, then Caltex within a few months. These companies signed up existing retailers to exclusively sell their products and also built their own sites in strategic locations. Rather than competing on price, the companies' strategy was to compete for market share by increasing the number of retail sites.[39]

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37 Among other things, their wholesale margins were protected by price regulation. Royal Commission, fourth report, p. 330; Prices Surveillance Authority, *Inquiry in relation to the supply of petroleum products*, interim report, 1984, p. 14.

38 Royal Commission, fourth report, p. 37.

39 Ibid., pp. 22, 30, 38–9, 41–4.

The introduction of single-brand retailing profoundly changed the retail sector; the impacts are still evident today. Using their significant resources and experience operating single-brand retailing in other countries, the multinational companies had outmanoeuvred the Australian-owned/controlled companies: Ampol, Sleigh and COR. In 1952, BP bought out the Government's majority share of the COR joint venture and embarked on a massive investment in retail sites.[40]

The strategy also created difficulties for new entrants, even other multinational companies. Two that entered the Australian market after 1951, Total (1955) and Amoco (1962), had limited opportunities to sign up existing dealer-owned sites and had to build most of their own outlets.[41] They left the market in the 1980s after failing to develop a meaningful wholesale or retail customer base (table 4.1).

Table 4.1 Wholesale petrol market shares by company

	1974–75 %	1979 %	1986 %	1990 %	1995 %	2002–03 %	2006–07 %	2010–11 %
Shell	24	24	26	25	26	24	27	30
BP	22	19	21	21	20	12	17	18
Mobil	15	14	14	14	22	22	15	9
Caltex	+17	12	18	18	33	30	36	36
Ampol	8	10	14	16	na	na	na	na
Esso	7	8	8	7	na	na	na	na
HC Sleigh	+	7	na	na	na	na	na	na
Amoco	4	4	na	na	na	na	na	na
Total	3	4	na	na	na	na	na	na
Independent wholesalers	*	*	*	*	*	11	4	8

Source: Royal Commission on Petroleum, fifth report, *Towards a national refinery policy*, AGPS, Canberra, 1976, p. 246; Trade Practices Commission (TPC), *Price discrimination in the petroleum retailing industry*, AGPS, 1980, p. 24 (sums to over 100 due to slightly differing time periods used by the companies); ACCC, *Inquiry into the petroleum products declaration*, vol. 1, 1996, p. 12 (data from AIP and Department of Primary Industries and Energy); 2007 ACCC Petrol inquiry report, p. 69; ACCC analysis based on data obtained from firms monitored through ACCC's monitoring process

Notes: *In these years, it is difficult to determine the market share of the independent wholesalers as they were not measured separately.

+Caltex and Sleigh are combined.

na: not applicable as company was no longer operating in the downstream industry.

By the early 1950s, the multinational oil companies had taken control of most of the retail sector and were fully vertically integrated into the Australian market. To complement their large retail networks, they had their parent companies' oil fields and refineries to draw on for supplies of petrol. They also had their own import terminals, or shared access to a terminal with another major oil company.[42]

Given this level of integration and control in the early to mid-1950s, it is pertinent to ask why the four largest multinational oil companies operating in Australia decided to build local refineries.

40 R Murray, *Go well: 100 years of Shell in Australia*, Hargreen Publishing Company, Melbourne, 2001, pp. 148–9.

41 Royal Commission, fourth report, pp. 26, 31, 35.

42 Royal Commission, fourth report, pp. 44–5, 374–5; ACIL Economics and Policy Pty Ltd, *Turning point or crisis: a study of the Australian oil refining and marketing industry*, Canberra, 1997, p. 33.

4.2.1 Refining

It is likely that the decisions to open refineries in the early to mid-1950s were a result of a very favourable external environment, both domestic and international. First, at the time Australian refining was subject to limited competitive pressures from other refineries in the region.[43] Second, these companies had access to supplies of low-cost crude, often from the parent companies' upstream oil fields in the Middle East and other regions. Third, state governments offered significant levels of assistance, while the Australian Government provided tariff protection (for both defence and industry development purposes).[44] Finally, there was international and domestic price and demand stability. With control of the retail sector, increases in demand could be predicted with relative confidence and refineries could make the necessary incremental extensions using readily available capital.[45]

The refineries built in the mid-1950s were in three different states: Victoria, New South Wales and Western Australia (table 4.2).[46] By international standards of the time these refineries were small, likely as a consequence of each being designed to serve its local, usually state-based, market. The decisions to build small, geographically dispersed refineries partly explain the current structure of the refining sector, and the economic challenges that they are presently facing.

Five more refineries were opened in the mid to late 1960s: four were newly constructed and one was a bitumen plant which was converted to oil refining. Following the precedent set in the previous decade these were spread across four states, and were even smaller than the existing refineries.[47]

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43 Refer to chart 4.1 in section 4.2.2

44 Royal Commission, fifth report, pp. 89–90.

45 Ibid., pp. 12–13. Before World War II, refineries around the world had been built near the source of crude. The trend after 1945 was to be located near markets.

46 In 1954, a bitumen and lubricating oil plant at Altona was converted to an oil refinery by joint venture partners Mobil/Esso, and Shell also opened its Geelong refinery (and substantially rebuilt Clyde around the same time); in 1955, BP opened Kwinana; and in 1956 Caltex opened Kurnell.

47 In 1963, Mobil/Esso opened a joint refinery at Port Stanvac (closed in 2003); in 1965, Ampol opened at Lytton, while across the Brisbane River Amoco opened Bulwer Island; and in 1966, BP opened a refinery at Westernport (closed in 1985). In 1969, a bitumen plant in Matraville, Sydney, was converted to oil refining, though it was very small and closed in 1984.

Table 4.2 Major Australian petroleum refineries operating since 1970

Refinery location	City/state	Ownership (years)	Current status	Capacity (ML pa) 1976	1983	1992	2003	2009
Clyde	Sydney	William Fell (1926–27); Shell (1927–current)	Planned to be converted to import terminal by mid-2013	4,062	5,281	4,353	4,991	4,740
Altona	Melbourne	Mobil/Esso (65/35) (1954–90); Mobil (1990–current)	Operating (1949–54 lubricating oil and bitumen plant)	5,803	5,803	6,268	7,834	4,640
Geelong	Victoria	Shell (1954–current)	Operating	5,919	7,660	6,384	6,906	6,530
Kwinana	Perth	BP (1955–current)	Operating	6,383	6,383	7,138	8,037	8,280
Kurnell	Sydney	Caltex (1956–current)	Operating	7,312	8,937	6,210	7,225	7,810
Port Stanvac	Adelaide	Mobil/Esso (65/35) (1963–90); Mobil (1990–2003)	Closed in 2003 (4,526 ML pa capacity)	4,178	4,178	4,179	4,526	na
Lytton	Brisbane	Ampol (1965–95); Caltex (1995–current)	Operating	3,482	3,482	4,504	6,122	6,300
Bulwer Island	Brisbane	Amoco (1965–84); BP (1984–current)	Operating	1,625	2,611	3,308	5,107	5,910
Westernport	Victoria	BP (1966–85)	Closed in 1985 (3,482 ML pa capacity)	3,482	3,482	na	na	na
Matraville	Sydney	Boral/Total (1969–71); Total (1971–83); Ampol (1983–84)	Closed in 1984 (696 ML pa capacity) (1948–68 bitumen-plant)	696	696	na	na	na
Total capacity				**42,942**	**48,513**	**42,342**	**50,747**	**44,210**

Source: Royal Commission, fourth report, pp. 16, 20, 23, 25–6, 31; Industry Commission, *Petroleum products*, 1994, AGPS, Melbourne, p. 8; 2007 ACCC petrol inquiry report, p. 50; Australian Institute of Petroleum, *Petroleum gazette (statistical review)*, 1993, pp. 5–6; *Downstream petroleum*, 2003, p. 5; and Downstream petroleum, 2009, p. 5; D Ferguson, *The petroleum retailing industry in Australia*, 1984, prepared for the Australian Automobile Association, Canberra, p. 13 (AIP data); RM Murray, *Fuels rush in: oil and gas in Australia*, Macmillan, South Melbourne, 1972, pp. 56–7; Petroleum Information Bureau, Melbourne, 1962, pp. 10–3, 19–20.

Having a structure of small, dispersed refineries made the sector vulnerable to changes in the external environment, which by the early 1970s was becoming less favourable. The refiner-marketers were about to face three major challenges:

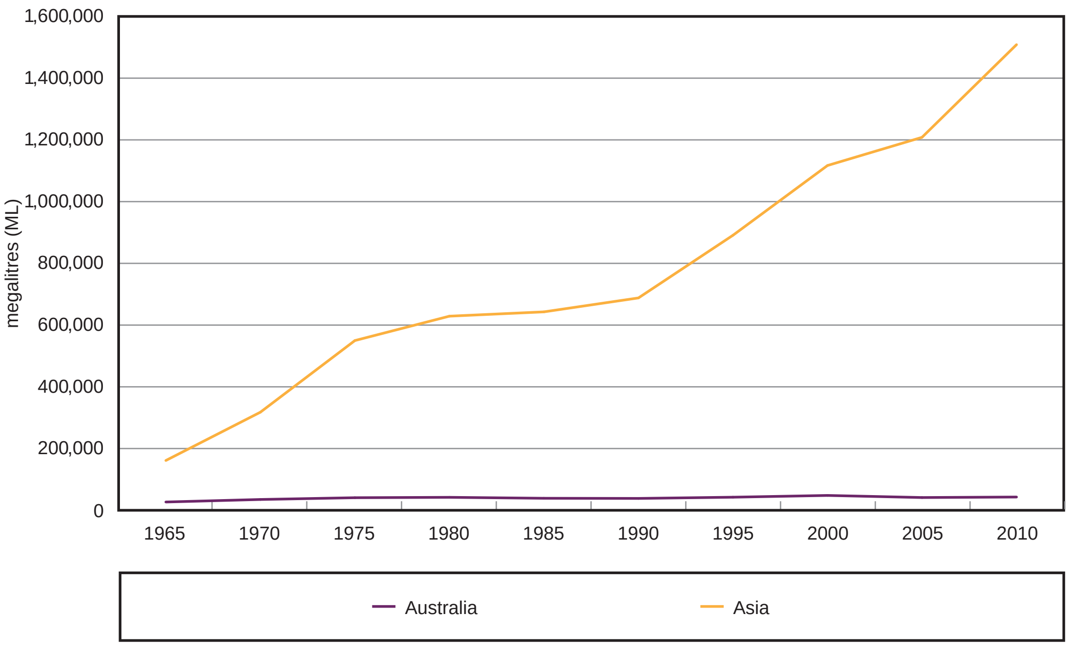
- competition from independent importers
- loss of access to low-cost crude
- an increasingly competitive retail sector.

The resulting increase in price and demand volatility led to profound short and long-term changes in the structure of the industry which are, to varying degrees, still having significant impacts today. These are analysed in the rest of this chapter.

4.2.2 Independent imports

The economic development of countries in Asia and the ensuing dramatic increase in refining capacity in the region has been a key ongoing factor driving change in Australia's refining sector (chart 4.1). Most significantly, this provided opportunities for independent firms to purchase petrol from sources other than the domestic refiner-marketers and to directly compete against them.

Chart 4.1 Australian and Asian oil refining capacities, 1965–2010



Source: BP, Statistical review of world energy, 2011, at http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481, accessed 30 November 2011

The growth of large independent wholesalers and retailers has been inextricably linked to the potential for independent imports.

In the years since the establishment of effective control over the domestic petrol industry by the current refiner-marketers in the 1950s, there have been three major opportunities for independent importing to become established as a part of the structure of the industry.

The first was in 1966, when two companies, XL Petroleum and Daylube Oil Company, imported petrol from Japan and Korea. Subsequently, they obtained further cheap distress cargoes, all of which they initially sold in Geelong at prices below those in the local markets.[48] These were largely opportunistic attempts at importing and were not successful at creating a viable independent import sector. However, they highlighted the potential for selling discounted petrol that had been independently sourced from overseas refineries.

Once the potential for independent imports had been established, other wholesaler–retailers entered the market. However, during the 1970s and 80s they primarily obtained supply from the smaller refiner-marketers and did not establish a significant market presence.[49] They were hindered

48 Royal Commission, fourth report, p. 124.

49 Ibid., pp. 32–5, 125–6, 134; Ferguson, pp. 20, 23; Industry Commission, pp. 11, 13–4.

by poor access to import terminals, and the absence of a retail customer base. For some of this time they were also disadvantaged by a requirement under the Crude Oil Allocation Scheme (COAS) to purchase and refine quantities of indigenous crude in line with their market shares.[50]

The second opportunity for significant independent import activity was in the 1990s. By this time, the prospect of ongoing surplus petrol at Asian refineries stimulated construction and expansion of independently owned import terminals in or near most capital cities.[51] At the same time, opportunities were arising to supply retailers, the most significant being Trafigura's arrangement with Woolworths. While Australia's overall imports by the early 2000s were small, the percentage by independents increased to around 52 per cent in 2002–03.[52]

The progressive introduction of higher national fuel standards over the period 2002 to 2006 stalled this process as it had the effect of restricting the number of overseas refineries from which independent importers could source petrol. By 2006–07, the percentage of imports by independents had fallen to just 9 per cent.[53]

The third, and current, opportunity for independent importers to become established emerged in the late 2000s, when an increasing number of Asian refineries were able to refine petrol to Australian standards. By this time, independent importers had access to import terminals at an increasing number of locations.[54]

A further indication of improvements in terminal access in the last few years is the fact that independent importers are now sharing terminal space with refiner-marketers (see appendix C).

The evidence strongly suggests that, unlike the situation that has existed since the mid-1950s, the current structure of the industry continues to provide significant opportunities for new and existing independent importers to establish and expand their presence in the industry.

4.2.3 The end of low-cost crude oil

The ability of independents to establish a presence in the Australian market was assisted by two events which combined to end Australian refineries' access to low-cost crude from their parent companies' oil fields.[55] Firstly, as a result of the discovery of commercial quantities of indigenous crude oil in the late 1960s in Bass Strait, the Australian Government enacted the COAS to encourage use of the newly discovered crude. The scheme effectively forced refineries to process a proportion of indigenous crude (at a predetermined price).[56] Secondly, in the early 1980s the 'oil price shocks' by the Organisation of the Petroleum Exporting Countries (OPEC) had significantly increased the price of crude oil paid by Australian refineries.[57]

50 Ferguson, p. 20; Industry Assistance Commission, *Certain petroleum products: taxation measures,* AGPS, Canberra, 1986, pp. 37–8.

51 ACIL, pp. 33–4. The terminals were in Hastings, near Melbourne; Port Botany, Sydney; Eagle Farm, Brisbane; and two in Kwinana, near Perth.

52 ACCC, 2007, pp. 60, 63, 81–3.

53 Ibid., pp. 60, 63.

54 ACCC, 2010 petrol monitoring report, p. 73. See also chapter 3, section 3.5.3.

55 The only exception was Esso, a minority partner in two refineries, whose parent Exxon had a 50 per cent share in the Bass Strait fields.

56 Companies also had to undertake substantial modifications to allow them to process the lighter and higher petrol-yielding indigenous crudes (most had been designed to process their parent company's heavier crudes). Ferguson, pp. 18–20; Royal Commission, fifth report, p. 73.

57 PSA, 1984, pp. 2–3.

The oil price shocks and ensuing price volatility led to a dramatic fall in demand, and excess refining capacity which continued until the late 1980s. The refiners responded by reducing capacity, including closing two refineries (see table 4.2).[58]

This rapidly changing external environment forced fundamental changes which in essence have led to the current industry structure. As the level of competition increased, it became increasingly more difficult for the refiner-marketers to subsidise unprofitable operations, leading to substantial rationalisation in the refining and retailing sectors, and consolidation among refiner-marketers.

Rationalisation of refining assets started in the 1980s, as noted above, and has continued in recent years. While domestic refining capacity peaked in 2003, the refinery sector continues to be under competitive pressure, as evidenced by the announced closure of the Shell Clyde refinery in Sydney.[59] The closure of the Clyde refinery in 2013 will be the second refinery to be closed by the major petrol companies in 10 years after the closure of the Mobil refinery in Port Stanvac in 2003.

4.2.4 Retailing

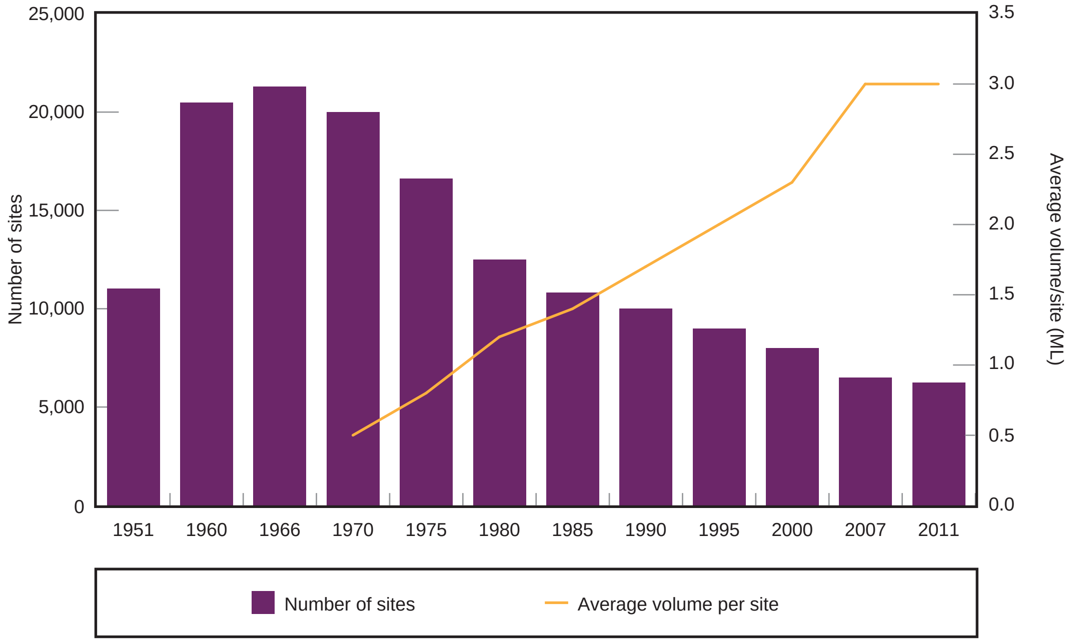
Adoption of the single-brand marketing strategy, and the pursuit of non-price competition, led to a rapid increase in the number of retail sites in the 1950s (chart 4.2). A large number of low-volume, inefficient and financially unviable retail sites were being subsidised by the companies' upstream profits and profitable sites.[60]

However, by the 1970s, this strategy was no longer sustainable as a result of the changed external environment. While the refiner-marketers recognised their strategy was unsustainable, they were at first reluctant to close sites. The initial decline in retail sites was mostly sites that had become unviable, and were predominately independently owned.[61]

It was not until the enactment of the Australian Government's *Petroleum Retail Marketing Sites Act* (1980) that the number of sites directly operated by the refiner-marketers significantly decreased.[62] From then, the number of sites continued to decline, and in 2010–11 sites directly owned and operated by the refiner-marketers represented just 5.8 per cent of total sites (chapter 3, table 3.9). Chart 4.2 suggests that since the mid-2000s the number of retail sites has plateaued at between 6,000 and 6,500 sites, with average annual petrol sales of around 3 ML per site.

58 Ibid., p. 6.
59 Shell Australia, 'Shell to cease refining at Clyde', media release, 27 July 2011.
60 Royal Commission, fourth report, pp. 254, 324.
61 Ibid., pp. 163–6, 257, 405.
62 Industry Commission, pp.152–3, 155.

Chart 4.2 Number of retail sites and average annual petrol sales volume per site



Source: Royal Commission, fourth report, pp. 43, 57, Annexure A; PSA, *National inquiry into petroleum prices*, 1990, pp. 14, 17–8; ACCC, 1996, pp. 9, 17; ACCC, 2007, p. 78; combined with data from the Department of Resources, Energy and Tourism, the Bureau of Infrastructure, Transport and Regional Economics, and Informed Sources

During the 1970s and 1980s there were other structural changes in the retail sector:[63]

- a move to large-volume and self-service sites
- independents' expanded their presence in the retail sector
- lowering of retail margins as a result of growth in independent retail sites and the resulting price competition
- mechanical workshops being replaced by convenience stores.

The introduction of self-service in 1976 led to significant growth in commission agents, which received a commission on sales of fuel owned by a refiner-marketer. Shell was the leader in introducing self-service. One effect of this was that the ensuing reduction in site operating costs gave retailers the scope to reduce prices and compete with the aggressive discounting of the independents.[64]

The emergence of specialist independent petrol retailers in the 1970s radically changed the way petrol was marketed and sold to motorists.[65] Competition from specialist retailers transformed petrol retailing from simply being a means for delivering petrol to motorists to a stand-alone business. Convenience stores provided a retail alternative at a time of changing community attitudes to shopping outside traditional shopping hours. They offered petrol at discounted prices to attract customers to their range of convenience store products.

63 PSA, 1984, p. 8; Industry Commission, pp. 17–8, 28.
64 TPC, pp. 27–8.
65 Industry Commission, p. 16.

In the 1990s, these trends continued. Growth in convenience stores continued to gather momentum as petrol retailers tried to spread their overheads over a wider range of products. They took advantage of a gradual relaxing of retail trading restrictions which enabled, among other things, retailers to sell petroleum as well as other retail products. By 1993, non-petrol sales were a significant source of secondary income, and there were also dedicated convenience stores where petrol was a sideline.[66]

In 1996, there was a further major change in the retail sector with the entry of Woolworths, which was supplied by an independent importer (Trafigura). By offering discounts for their supermarket customers, this retailer was able to rapidly expand its petrol business. This was taken to the next stage in 2003, when Coles and Shell entered into an alliance, and Woolworths made an agreement with Caltex for branding and supply at their existing sites.[67] Through the alliance with Coles, Shell had a reliable outlet for its products, without the need for direct involvement in retailing.

The current trend towards the refiner-marketers reducing their direct involvement in retailing represents a partial return to the structure of the industry prior to 1951, with three key differences:

- all sites now sell under a single (refiner-marketer or other) brand
- the refiner-marketers have retained some influence over price at some sites through the use of price support, franchise agreements and other means
- a significant and growing presence of large independent retail chains and supermarkets.

4.3 Summary

The evolution of Australia's petrol industry is an account of the major petrol companies moving down and then back up the vertical integration continuum.

The evolution of the Australian downstream petroleum industry to its current structure is the story of how the four largest multinational refiner-marketers operating in Australia in the 1950s first established control over each sector of the industry, and then relinquished or lost some of that control.

In the process, the industry has seen profound changes. The role of the major oil companies has changed from being initially fully integrated from crude oil production to refining to retailing, to a situation where they are now increasingly scaling back their retailing and to a degree their refining activities.

In the 1950s, the multinational oil companies' initial strategy was based on two main planks. First, they took control of the retail sector through significant investments in large retail networks to maximise volumes. Competition in the retail sector focused on convenience and brand recognition rather than price. Second, encouraged by the congruence of a number of positive external factors, they built and refurbished refineries.

While the implementation of this strategy was expensive, it fundamentally changed the industry. It established the framework for the subsequent dominance of the industry by the four largest multinational refiner-marketers operating in Australia in the 1950s, which continues today.

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66 Ibid., p. 17.

67 ACCC, 2007, pp. 77, 181–2.

This strategy directly influenced the evolution of the industry until the 1970s, which was a watershed decade. The OPEC price shocks had the twin effects of reducing demand and increasing supply costs. The shocks combined with the COAS to effectively end the refiner-marketers continued access to cheap crude. Subsequently, they also faced increasing competition from Asian refineries, which provided opportunities for independent importers to supply their own and other retail sites. The refiner-marketers were forced to compete in an increasingly dynamic domestic and international environment. The inefficient and unprofitable sectors of the industry were exposed, leading to further consolidation and rationalisation in the subsequent two decades.

While the industry today is dominated by the same four refiner-marketers that were the first-movers in the 1950s, their strategies are now very different. Instead of seeking to vertically integrate, they are now being forced to wind back their control over the supply chain by competitive pressures. In refining, competition from the more efficient Asian refineries has forced domestic refiners to rationalise their refinery assets. In wholesale, there is now competition from independent importers and other wholesalers. In the retail sector, specialist independent retailers have now achieved critical mass in a number of geographic markets.

These changes in the refining, wholesale and retail sectors appear to have become embedded into the structure of the industry.

4.4 Conclusions

The key forces that have driven changes since about the 1970s appear to have momentum. To this extent, it is likely that they will continue to shape the structure of the industry in the following ways:

- Growth of high-quality refining capacity in Asia will continue to provide credible sources of alternative supplies for independent importers and maintain pressure on domestic refineries.
- It is likely that independent importers will have increasingly greater access to import terminals.
- Specialist retailers are likely to continue making inroads into petrol retailing.
- The search for opportunities in upstream activities is likely to continue as rising crude prices improve the prospects for upstream businesses.
- Government policies are likely to continue emphasising transparency and competitive processes.

5 International context

Key points

- Changes in domestic retail petrol prices reflect movements in international prices of refined petrol that in turn reflect changes in international prices of crude oil.
- Crude oil is a globally traded commodity. Like the prices of other commodities, prices of crude oil products are determined by the interplay of global supply and demand.
- The most appropriate crude oil benchmark for Australia is the widely used Brent crude or the regional Tapis crude benchmark.
- Western Texas Intermediate (WTI), while quoted by the media, does not presently reflect global supply and demand conditions for crude oil and is unrelated to Australian retail petrol prices.
- In 2010–11, crude oil prices continued to rise from the low levels seen during the Global Financial Crisis (GFC), driven mainly by the economic recovery from the GFC and the Libyan crisis.
- Crude oil prices are likely to remain high in the medium to long-term as:
  - demand, driven by continued high rates of growth in emerging economies, principally China and India, will grow at a faster pace than supply
  - the cost of crude exploration and production is likely to increase as existing fields continue to mature and new sources of conventional supplies become more costly to find and develop
  - conventional sources of crude supplies become more scarce and are increasingly replaced by non-conventional sources.

5.1 Introduction

Retail prices of petrol in Australia reflect movements in international prices of refined petrol. In turn, international refined petrol prices are heavily influenced by international crude oil prices. This chapter describes developments in global oil and petrol markets that impacted on domestic prices in 2010–11.

5.2 Crude oil prices

Crude oil is an actively traded international commodity. There are many types of crude oil traded in different spot markets around the world. Most crudes are differentiated in terms of their ‘heaviness’ and ‘sweetness’. A crude is ‘heavy’ or ‘light’ depending on the extent to which it floats on water according to the American Petroleum Industry (API) gravity index crude. The sweetness of crudes is measured in terms of their sulphur content. Crudes with a sulphur content of less than 0.5 per cent are typically described as ‘sweet’, while those with a sulphur content of more than 0.5 per cent are said to be ‘sour’.

Spot crude oil markets function like other commodity spot markets where product is bought and sold for immediate delivery at the going price.[68] Transactions take place at prices based on marker crude prices. The prices of marker crudes act as benchmarks for the broader market for crude oil products because they are traded more heavily than other crudes.

The most influential marker crudes are Brent crude, Dubai crude and West Texas Intermediate (WTI).

- **Brent crude** is also a light sweet crude deliverable at the Shetland Islands in the UK North Sea. It has been used extensively in Europe and is now increasingly used as a crude price benchmark outside Europe as well.
- **Dubai crude** is considered a sour heavy crude and is used in the Middle East.
- **WTI** is a benchmark for light sweet crude deliverable in Cushing, Oklahoma, US. It is used extensively in the North American trading region.

Malaysian Tapis crude, which is a light sweet crude, has been used as a marker crude in the South-East Asian region, particularly in Singapore.[69] Recently, however, Dated Brent has been increasingly used as a crude marker in Australia as well (see section 5.2.4 for a discussion of the diminishing importance of Tapis as a crude marker in the South-East Asian region).

5.2.1 Crude oil prices since 1980

In the long term, crude prices tend to be influenced by changes in world economic growth.

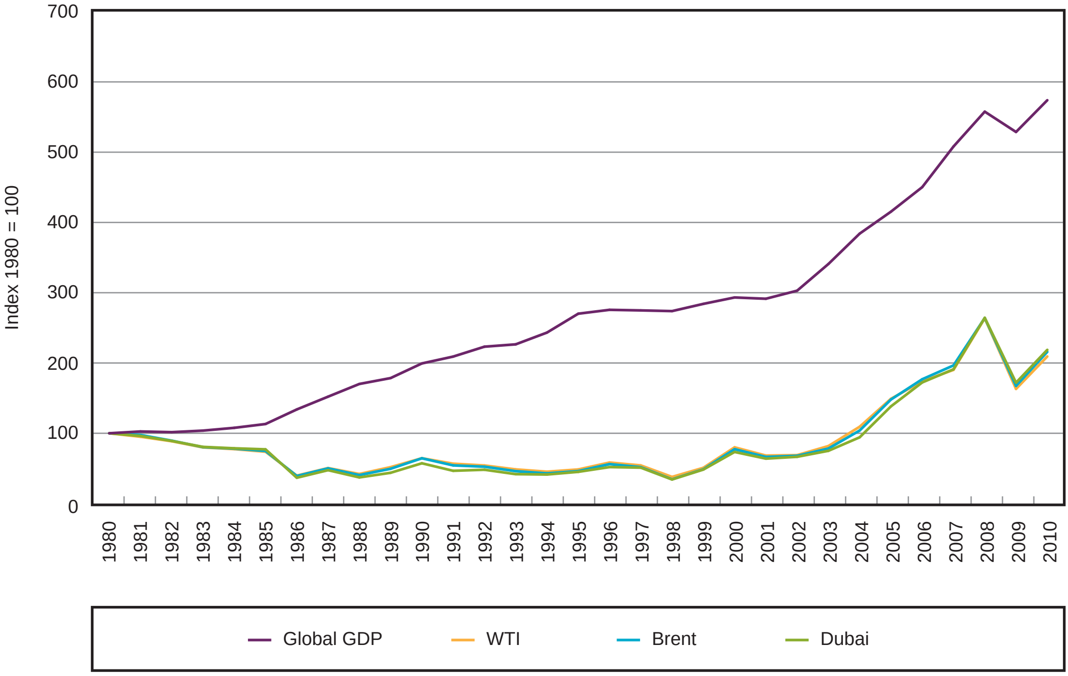
While changes in global levels of economic activity in any one year are not necessarily mirrored in changes in crude oil prices, in the long run, there appears to be a close relationship between changes in gross domestic product (GDP) levels and changes in crude prices.

Chart 5.1 shows changes in the benchmark prices of WTI, Brent and Dubai crude with changes in annual world GDP growth since 1980.

68 Spot transactions generally take place over the counter, not in exchanges. Futures crude transactions take place in futures exchanges in various regions. Physical deliveries of the most influential marker crudes underpin trading in futures exchanges.

69 See Reserve Bank of Australia, Statement of monetary policy, August 2007, box B: ‘Recent developments in oil prices’, at http://www.rba.gov.au/publications/smp/2007/aug/html/box-b.html, accessed 30 November 2011.

Chart 5.1 Changes in average annual benchmark prices of WTI, Brent and Dubai crudes, and in average annual world GDP: 1980 to 2010, Index 1980 = 100



Source: Crude price data from BP Statistical review of world energy, 2011, at http://www.bp.com/assets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/spreadsheets/statistical_review_of_world_energy_full_report_2011.xls, accessed 30 November 2011; and USEIA at http://www.eia.gov/dnav/pet/xls/PET_PRI_WCO_K_W.xls., accessed 2 August 2011. GDP data from The World Bank, GDP (current USD) at: http://api.worldbank.org/datafiles/NY.GDP.MKTP.CD_Indicator_MetaData_en_EXCEL.xls, accessed 30 November 2011.

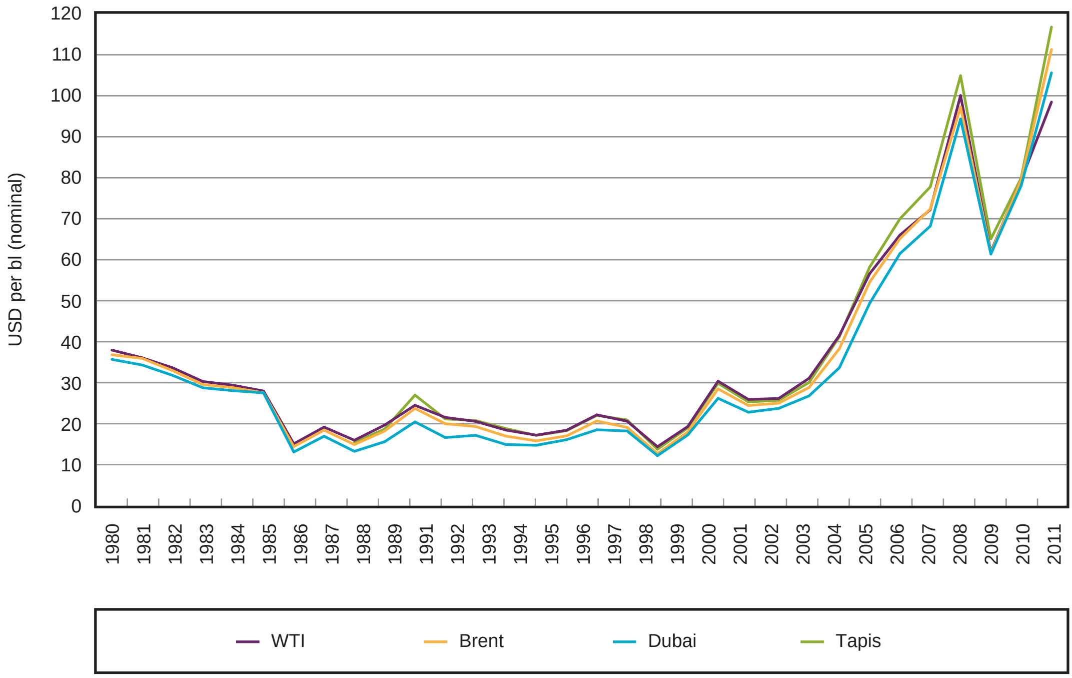
Notes: Data are in nominal terms. Benchmark prices for Tapis crude are not shown as data are not available prior to 1988.

While world economic output increased strongly between 1980 and 2004 crude prices exhibited volatility, but by the end of 2004 were no higher than in 1980 (chart 5.1). Since 2004, however, crude prices appear to have tracked changes in global economic growth more closely, including the volatility associated with the Global Financial Crisis (GFC) of 2008–09.

Benchmark prices of marker crudes reflect their different chemical properties. Generally, lighter and sweeter crudes are considered higher quality and will trade at a premium relative to heavier and sourer crudes. This is mainly because they yield higher volumes of refined petrol and diesel and are therefore less costly to process on a unit basis into high-value refined petrol products such as petrol and diesel, compared with heavy crudes that are more suited for production of low-value products such as fuel oil. The lower levels of sulphur in sweeter crudes mean that they do not need as much processing to meet environmental standards.

Chart 5.2 compares average annual prices of the four major marker crudes: WTI, Brent, Dubai and Tapis from 1980 to June 2011.

Chart 5.2 Average annual benchmark prices of WTI, Brent, Dubai and Tapis crudes: 1980 to 2011



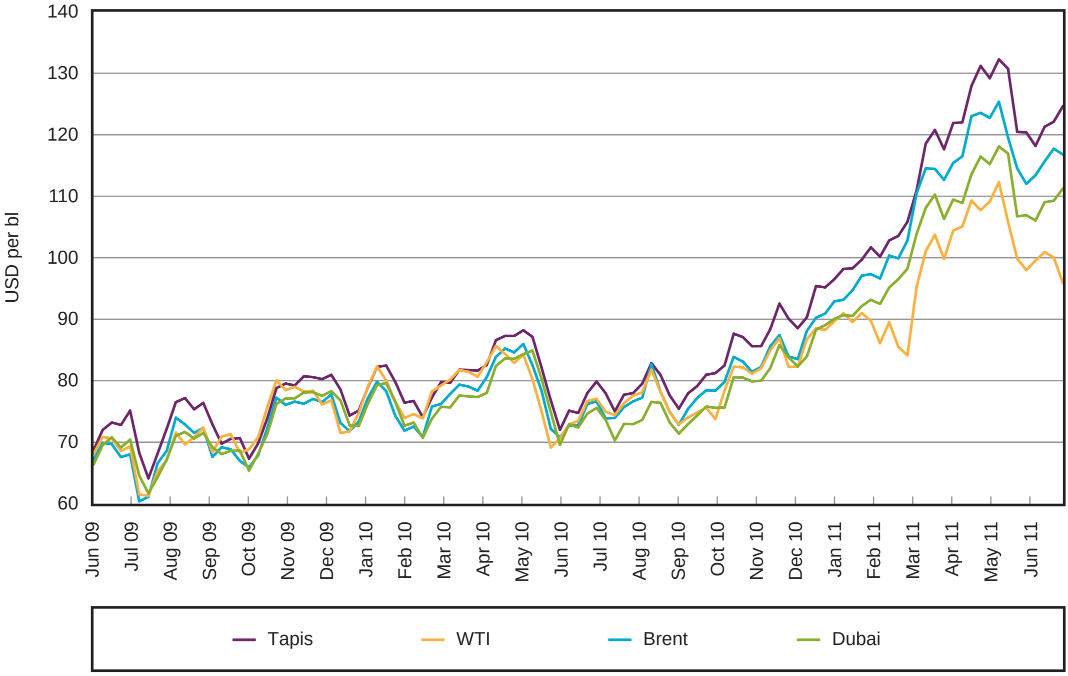
Source: Crude price data from BP Statistical review of world energy, 2011, at http://www.bp.com/assets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/spreadsheets/statistical_review_of_world_energy_full_report_2011.xls, accessed 30 November 2011; and US Energy Information Administration at http://www.eia.gov/dnav/pet/xls/PET_PRI_WCO_K_W.xls, accessed 2 August 2011.

Chart 5.2 shows that since 1980, prices of the major marker crudes have followed each other closely. In the long run, variations in prices of the different marker crudes will generally reflect differences in quality. Tapis has generally traded at a premium relative to other crudes because it is the lightest and sweetest among these four marker crudes. Dubai crude has tended to trade at a discount with respect to the other three marker crudes because it is the heaviest and most sour crude of the four marker crudes. As WTI is slightly lighter and sweeter than Brent, all else equal, it has generally traded at a slight premium to Brent.

5.2.2 Crude oil prices in the short term

Chart 5.3 provides a comparison of average weekly prices for the four marker crudes since June 2009. From this chart more significant price variations can be observed.

Chart 5.3 Average weekly benchmark prices of WTI, Brent, Dubai and Tapis crudes: June 2009 to June 2011



Source: Crude price data from US Energy Information Administration at http://www.eia.gov/dnav/pet/xls/PET_PRI_WCO_K_W.xls, accessed 2 August 2011, and at http://www.eia.gov/dnav/pet/xls/SPT_S1_W.xls, accessed 30 November 2011.

It is apparent from chart 5.3 that the relationship between the key international benchmarks for crude oil prices has changed recently. Since mid-2010, there appears to be a widening differential between the marker crudes.

5.2.3 Price relativity between marker crudes

Since June 2010, WTI has traded at an increasingly larger discount to Brent and Tapis, and since January 2011, at a discount also to Dubai crude prices. Furthermore, the discount relative to Brent has been significant, averaging about USD 5 per barrel (bl) since June 2010 and in the range of USD 10–15/bl in 2011.

It is generally accepted that oil markets are sufficiently developed and efficient to ensure that price variations that do not reflect quality differentials are quickly arbitraged away, even in the very short term.

In view of this, it is not surprising that the widening and persistent differential between WTI and other marker crudes has attracted attention. Reasons that may explain this recent price divergence include:

- High stock levels of crude oil in the United States (US). The US Department of Energy reported record high inventories in Cushing of 41.8 million barrels in March 2011.[70] This was due to strong crude oil production in the US and increased flows from Canada through two new pipelines. The build-up of stocks has put downward pressure on WTI prices.
- Cushing is an inland distribution centre and there are significant physical barriers to exporting crude. This renders arbitrage more difficult—Brent can be delivered against WTI contracts but WTI is not deliverable against Brent contracts.

The immediate outlook for the differential between WTI and the other marker crudes is likely to depend on a number of factors, including the prospects for US refineries to increase production and exports of refined petrol.

5.2.4 Increasing use of Brent in Asia region

With WTI being affected by the significant build-up of inventories near the delivery trading centre of Cushing, WTI prices are seen as out of step with broader market fundamentals and not indicative of global supply and demand conditions. For these reasons, WTI is losing support as a key marker crude and as a benchmark for pricing purposes.

Instead, Brent is attracting interest as a leading benchmark for crude oil prices. Brent is used as the principal benchmark for setting prices in transactions for crude outside North America, and increasingly outside Europe as well. According to Platts, which provides quotes for most of the world's key marker crudes, 'more than 60% of the world's internationally traded crude oil is priced against Dated Brent'.[71]

The International Energy Agency (IEA) has reported that Brent has replaced WTI as its preferred pricing instrument for assessing fuel markets, citing volatility in the differential between WTI and other international marker crudes.[72]

Brent is increasingly being used also in Asia, where Tapis crude has been the traditional marker used for setting crude oil prices. There is a growing awareness that the fundamentals driving Tapis prices are unrepresentative of the fundamentals for the broader market for crudes used in the region. Production from Malaysia's reservoirs of light sweet crude is declining.[73] As this means a smaller number of cargoes available for trading, objective price setting becomes more problematic. Inevitably, prices determined on the basis of fewer trades are less reliable indicators of fundamental supply and demand factors for the benchmark crude, and for other crudes.

Petronas, the national oil company of Malaysia which developed the Tapis oil fields, has announced that from 1 June 2011 crude prices would be based on Dated Brent rather than Tapis crude prices, reportedly because of volatility in the Tapis benchmark.[74]

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70 See US Energy Information Agency, at http://www.eia.gov/dnav/pet/pet_stoc_wstk_dcu_YCUOK_m.htm, accessed 11 August 2011.

71 Platts defines the term Dated Brent as 'the physical cargo price for North Sea Brent light crude which has been allocated a specific forward loading date'. See Platts, 'Dated Brent: the pricing benchmark for Asia-Pacific sweet crude oil', May 2011, p. 2, at http://www.aip.com.au/pricing/crude.htm, accessed 30 November 2011. Platts, a division of the McGraw–Hill Companies Inc.

72 See International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 24 © OECD/IEA International Energy Agency.

73 See Platts, Market issues: oil. 'Dated Brent: the pricing benchmark for Asia-Pacific sweet crude oil', May 2011, p. 3. Platts, a Division of The McGraw-Hill Companies, Inc.

74 See Reuters, 'Malaysia to change crude price benchmark to Dated Brent from June 1', 4 April 2001, at http://www.reuters.com/article/2011/04/04/malaysia-crude-price-idUSL3E7F406S20110404, accessed 30 November 2011.

In Australia, information collected by the ACCC from monitored companies indicates an increasing proportion of crude import cargoes being priced on the basis of Dated Brent, rather than Tapis. Caltex Australia, one of the refiner-marketers monitored by the ACCC, has announced that due to 'comparative substantial volatility' in Tapis crude prices, from 1 January 2011 it was replacing Tapis with Dated Brent as the basis for pricing purchases of crude.[75] The Australian Institute of Petroleum now publishes benchmark prices for both Tapis and Dated Brent.[76]

Recognising that Tapis may be losing its significance as a crude marker and as a benchmark for pricing crude oil in the Asia-Pacific region, the ACCC has included dated Brent to the list of international benchmark prices it monitors.

5.2.5 Recent movements in crude oil prices

Crude oil prices increased significantly during 2010–11 (see charts 5.2 and 5.3). Brent crude increased from a low of around USD 75/bl in July 2010 to over USD 120/bl in May 2011. By late June 2011 prices eased off slightly to around USD 110/bl.

The major influences on crude prices in recent years have been the GFC of 2008–09 and the subsequent (un-uniform) recovery of the world economy. The significant swings in crude prices evident in charts 5.2 and 5.3 reflect not only the nature and extent of the GFC but also the speed and strength of the ensuing economic rebound. Global demand for oil recovered much more quickly than had been anticipated in the immediate aftermath of the GFC. According to the IMF, annual growth in world demand for oil during 2010 was twice as strong as had been predicted at the start the year and the strongest since 2004.[77]

The supply response during 2010–11 has been mixed. The combined effects of reductions in spare capacity among member countries of the Organisation of Petroleum Exporting Countries (OPEC), production increases (mostly from non-OPEC countries), and running down of inventories were not sufficient to accommodate the increase in demand. OPEC's response was adversely affected by the reduction in supplies from Libya.

5.2.6 Future crude oil prices

Clearly, the prospects for crude prices in the short to medium term will depend on the interplay between the supply response to the world's energy requirements and the extent to which demand can continue to remain buoyant, particularly in view of current high energy prices.

In the 20 years prior to 2004, the prices of the four major marker crudes averaged under USD 25/bl. Since 2004, it appears that prices have moved into a higher range with prices averaging around USD 77/bl in the seven years to June 2011.

A discussion of relevant fundamental demand and supply factors likely to impact world oil prices follows in sections 5.3 and 5.4. An assessment of the likely course of future crude prices is presented in section 5.7.

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75 Caltex Australia, Understanding our financial results, 2011; at http://www.caltex.com.au/investorcentre/pages/understandingourfinancialresults.aspx, accessed 30 November 2011.

76 See Australian Institute of Petroleum, at http://www.aip.com.au/pricing/marketwatch.htm, accessed 30 November 2011.

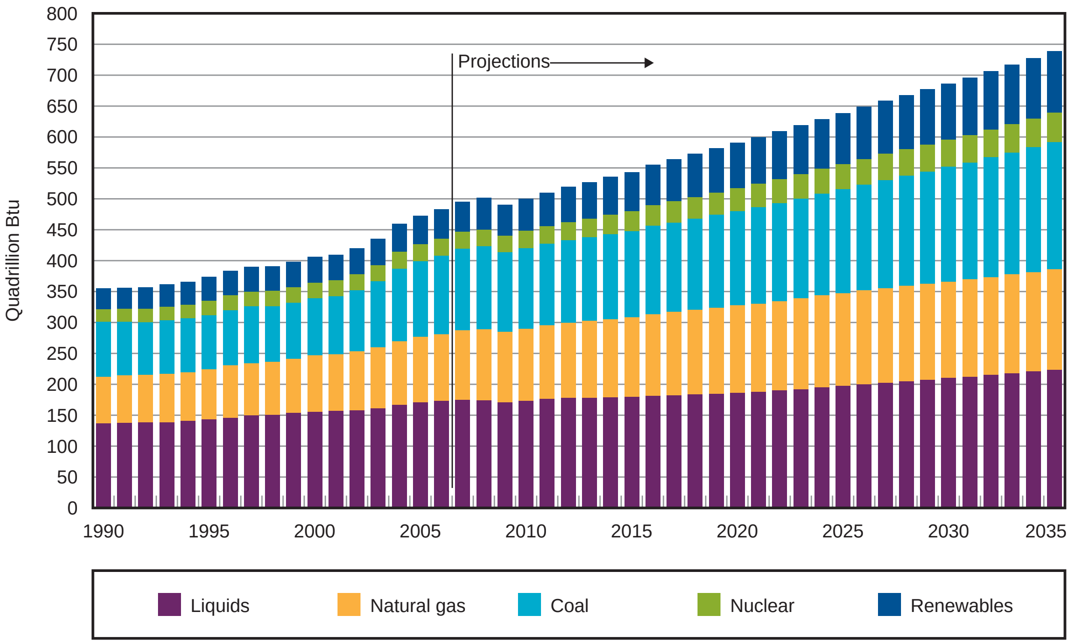
77 See International Monetary Fund, *World economic outlook*, April 2011, p. 92, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

5.3 Crude oil demand

For decades, crude oil has been the world's largest source of energy and is projected to remain so in the medium term. Presently, oil provides about 33 per cent of the world's total energy requirements followed by coal and natural gas, which supply 28 and 23 per cent of total energy needs, respectively.[78]

Chart 5.4 shows annual consumption data for the four primary sources of energy (oil, natural gas, coal and nuclear) and renewable energy sources.

Chart 5.4 Annual world energy consumption, by fuel type: 1990 to 2035



Source: US Energy Information Administration, *International energy outlook*, 2010, at http://www.eia.gov/oiaf/ieo/excel/figure_16data.xls, accessed 30 November 2011

Notes: Liquid fuels include other petroleum-derived fuels and non-petroleum derived liquid fuels, such as ethanol and biodiesel, coal-to-liquids, and gas-to-liquids, petroleum coke, natural gas liquids, crude oil consumed as fuel, and liquid hydrogen (US Energy Information Administration, *International energy outlook*, 2010, p. 23). Renewable energy sources are geothermal, hydropower, solar and wind.

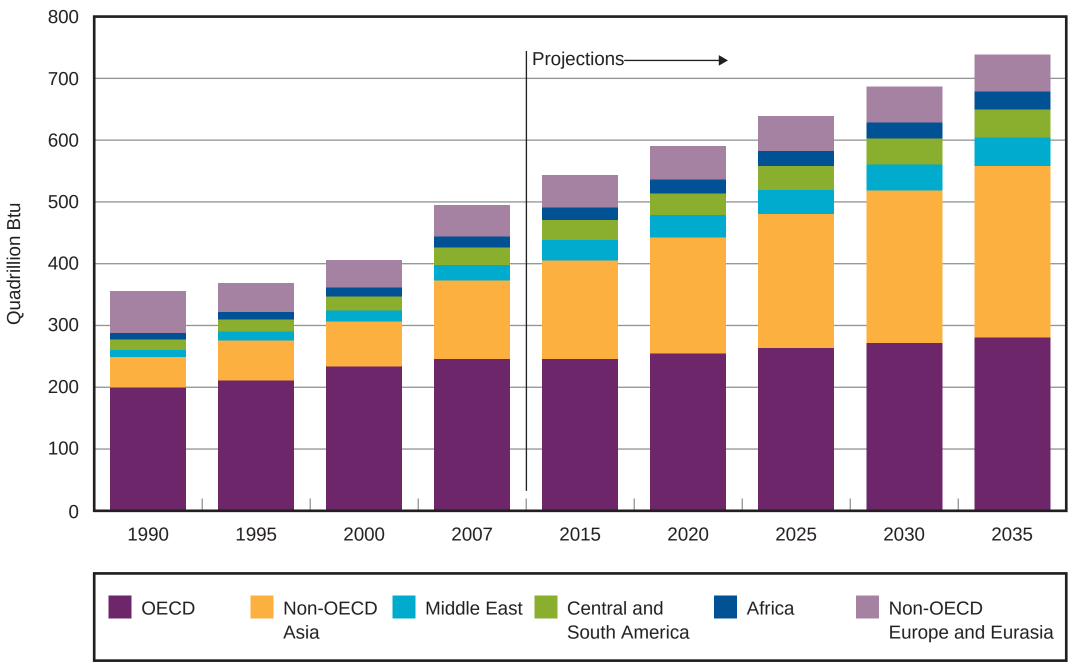
By 2035, the US Energy Information Administration (US EIA) projects that while the relative importance of oil as an energy source will diminish, and that of coal, renewable energy and, to a lesser extent, nuclear energy, will rise, oil will continue to be the world's largest source of energy.

78 See International Monetary Fund, *World economic outlook*, April 2011, pp. 32–3, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

In the future, it is likely that demand for energy will continue to be closely related to the level of economic activity. World economic activity is forecast to remain reasonably robust in the short to medium term. According to the US EIA, world GDP will grow by an average annual rate of 3.2 per cent up to 2035, with countries from the Organisation for Economic Co-operation and Development (OECD) growing by 2.5 per cent and non-OCED countries by 4.4 per cent per annum.[79]

Generally, the economies of non-OECD countries are forecast to grow at higher rates than those of developed countries in the OECD.[80] This will affect energy demand patterns. The growth in energy use in non-OECD countries in the last 20 years is expected to continue in the medium term. Indeed, non-OECD countries, and Asian countries in particular, are estimated to account for the bulk of the expected growth in energy consumption up to 2035 (chart 5.5).

Chart 5.5 Energy consumption in OECD and non-OECD countries: 1990–2035



Source: US Energy Information Administration, *International energy outlook*, 2010, p. 10.
Also, http://www.eia.gov/oiaf/ieo/excel/figure_15data.xls and http://www.eia.gov/oiaf/ieo/excel/figure_13data.xls, accessed 30 November 2011

Among Asian countries, China and India are among the largest consumers of energy and are estimated to account for the bulk of the projected increase in energy consumption in the medium term. Since 1990, their combined share of world energy use doubled to 20 per cent of global energy demand.[81]

79 US Energy Information Administration, *International energy outlook*, 2010, table A3, p. 148. International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 36. International Monetary Fund, *World Economic Outlook*, April 2011, table A1, p. 181.

80 Ibid.

81 US Energy Information Administration, *International energy outlook*, 2010, p. 10.

The energy consumption profile of countries varies according to, among other things, their level of economic development.[82] Countries in the OECD have mature petrol consumption markets where demand is affected by continual efficiency gains, higher fuel taxes, behavioural changes, structural declines in fuel consumption and a greater disposition to coordinated action on environmental issues. On the other hand, demand in developing and emerging countries is responsive to higher incomes and, in some countries, relatively insensitive to price increases due to government subsidies and a lack of alternative energy sources.

Based on results of econometric analysis of world oil consumption demand, the IMF observes that:

> *The growing importance of emerging market economies appears to have reduced world oil demand price elasticity … and increased income elasticity.*[83]

This means that in the global stage incomes will be more important determinants of demand than prices. The economic engine of developing countries becomes increasingly oil-intensive as their economic development gathers pace. Developing and emerging economies increase their total demand for energy in line with their growing income levels.[84] In contrast, the dependency of developed economies on oil tends not to increase dramatically with increases in GDP. Also, developed economies rely more on oil and less on coal to satisfy their energy requirements than developing and emerging economies.

In addition, as income levels increase in developing and emerging economies, consumption of oil increases more than proportionately to other forms of energy. The IEA considers that 'oil demand takes off exponentially when income per capita reaches around USD 3,000 per capita (in year 2000 dollars) and begins to taper off after passing the USD 20,000 mark'.[85]

This is demonstrated in chart 5.6, which shows average daily oil consumption by the US and China since 1990, projected to 2035.

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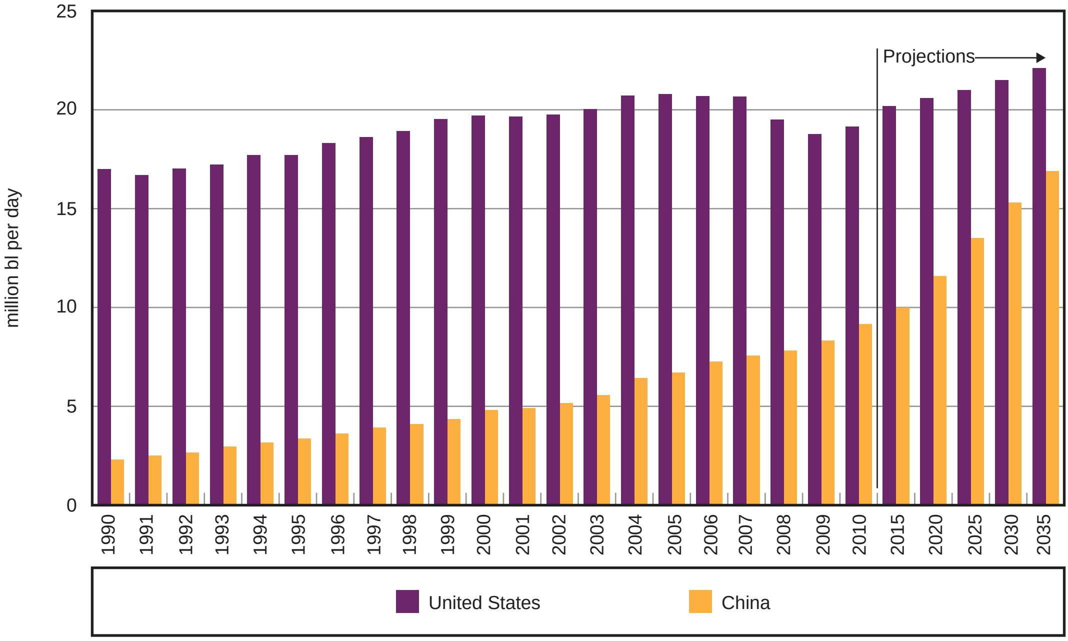
82 See International Monetary Fund, *World economic outlook*, April 2011, pp. 92–7.

83 Ibid., p. 95.

84 The International Monetary Fund claims that the 'income elasticity of energy demand is close to unity', *World economic outlook*, April 2011, p. 93.

85 International Energy Agency, *Medium-term oil and gas markets 2011 report*, pp. 38, 60 ©OECD/IEA International Energy Agency, p. 38.

Chart 5.6 Oil consumption in US and China: 1990 to 2035



Source: US Energy Information Administration, *International energy outlook*, 2010, table A5, p. 150. Also, http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=CG6,CG5,&syid=1990&eyid=2010&unit=TBPD, accessed 30 November 2011

Notes: Includes liquid fuels and other petroleum-derived fuels and non-petroleum derived liquid fuels, such as ethanol and biodiesel, coal-to-liquids, and gas-to-liquids, petroleum coke, natural gas liquids, crude oil consumed as fuel, and liquid hydrogen.[86]

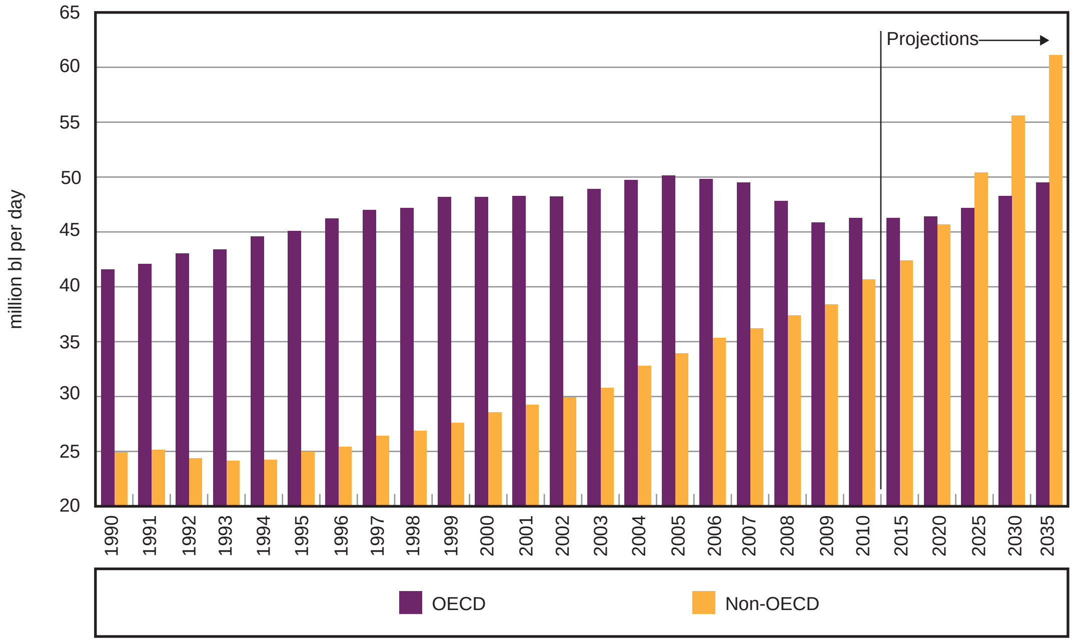
Chart 5.6 demonstrates the contrast between the growth in demand for oil in the US and in China since 1990 and projected growth to 2035 and highlights the magnitude of the impact on global demand for oil that the Chinse economy could have in the next few decades.

The strong growth in demand for oil in China (and to a lesser extent in India) underpins much of the growth evident among developing and emerging countries. Just under half of the total growth in non-OECD demand will come from China. Compared with 2001, China's oil demand is expected to double by 2015 and treble by 2030.[87] This is demonstrated in chart 5.7, which shows oil demand in OECD and non-OECD countries from 1990 to 2035.

86 US Energy Information Administration, *International energy outlook*, 2010, p. 23.

87 Ibid.

Chart 5.7 Oil consumption in OECD and non-OECD: 1990 to 2035



Source: US Energy Information Administration, *International energy outlook*, 2010, table A5, p. 150. Also, http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=CG6,CG5,&syid=1990&eyid=2010&unit=TBPD, accessed 30 November 2011

Notes: Includes liquid fuels and other petroleum-derived fuels and non-petroleum derived liquid fuels, such as ethanol and biodiesel, coal-to-liquids, and gas-to-liquids, petroleum coke, natural gas liquids, crude oil consumed as fuel, and liquid hydrogen.[88]

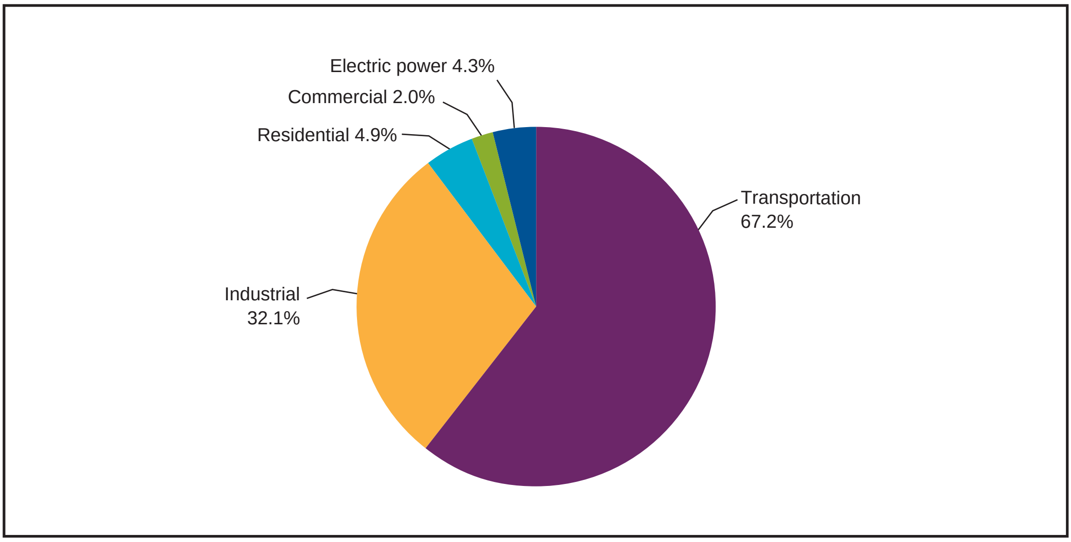
From 2010 to 2020, non-OECD countries are expected to account for almost all the growth in world demand for oil, and as chart 5.9 shows, the demand for oil by non-OECD countries is expected to surpass total OECD demand around 2020.

While there are difficulties with reporting and collecting data on sectoral sources of demand, it appears that the transport sector will continue to be the major driver of global oil use. The US EIA estimates that by 2035, transport will account for more than two-thirds of total oil use and for more than 80 per cent of the increase in oil consumption since 2007 (chart 5.8).[89]

88 US Energy Information Administration, *International energy outlook*, 2010, table A5, p. 150. Also, http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=5&aid=2&cid=CG6,CG5,&syid=1990&eyid=2010&unit=TBPD., accessed 30 November 2011.

89 Ibid.

Chart 5.8 World oil consumption by sector: 2035



Source: US Energy Information Administration, *International energy outlook*, at http://www.eia.gov/oiaf/ieo/excel/figure_26data.xls, accessed 30 November 2011

Demand for diesel is projected to be the principal source of growth in demand for crude oil. The IEA expects diesel to account for around 40 per cent of total forecast growth and for 30 per cent of total world demand by 2016.[90] According to the IEA around 90 per cent of the growth in demand for diesel is likely to be concentrated in countries outside the OECD.[91]

5.4 Crude oil supply

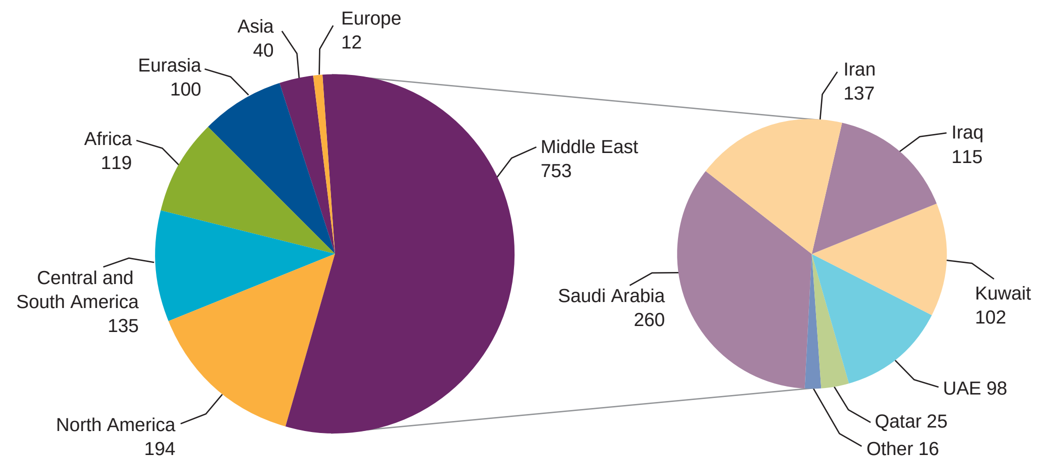
5.4.1 Proved reserves

Most of the world's proved reserves of crude oil are in the Middle East where 753 billion barrels out of a total 1,353 billion barrels of proved reserves are located. Chart 5.9 provides data on the global distribution of proved reserves as at January 2010.

90 International Energy Agency, *Medium-term oil and gas markets 2011 Report*, pp. 40–1, 60 © OECD/IEA International Energy Agency

91 Ibid.

Chart 5.9 Proved crude oil reserves, billions of barrels: 2010



Source: US Energy Information Administration, *International energy*, figure 35 and table 5, p. 37; based on data reported by the *Oil and gas journal* from estimates provided to the US Securities and Exchange Commission.

Notes: Proved reserves are defined by the US EIA as 'estimated quantities that analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable under existing economic and operating conditions': US Energy Information Administration, *International energy*, p. 37.

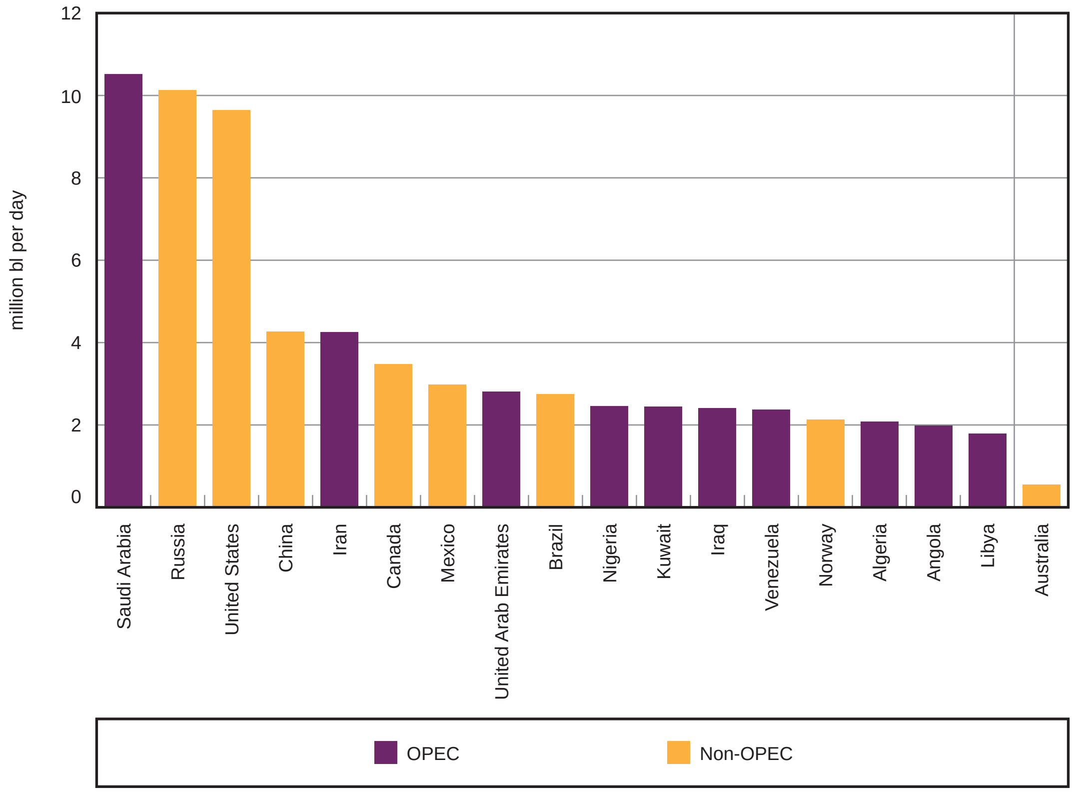
According to the US EIA, Saudi Arabia holds the world's largest pool of proved oil reserves with around 260 billion barrels of oil. The North America region holds the second largest pool of crude with 194 billion of proved reserves. Of these, 175 billion barrels are in Canada, mostly in the form of tar sand deposits. Venezuela's reserves hold 99 billion barrels of oil (mostly in its Orinoco heavy oil belt), the sixth largest pool of reserves in the world.[92]

5.4.2 Major producers and exporters

The world's major crude oil producing countries include countries that consume most of their supplies and those whose supplies exceed their internal consumption needs and thus are able to export crude. In 2010, Saudi Arabia was the world's largest producer and exporter of crude oil. Large crude oil producers that consume most of their supplies include the US and China. Chart 5.10 presents production data for 2010 for the largest producers of crude and for Australia.

92 Estimates of proved oil reserves may vary, sometimes considerably depending on assessments of what constitutes recoverable oil. For example, the latest BP Statistical review reports that as at the end of 2010, Venezuela had proved oil reserves of 211.2 billion barrels. See BP Statistical review of world energy, June 2011, p. 6.

Chart 5.10 Major crude oil producers and Australia: 2010

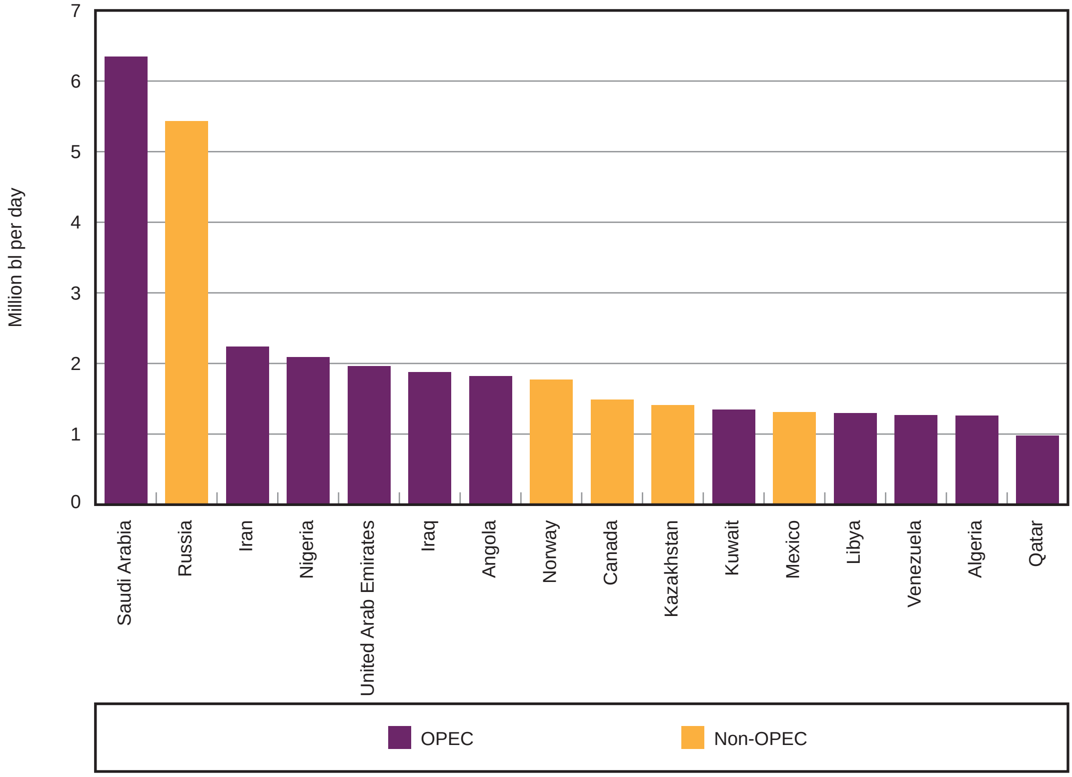


Source: US Energy Information Administration, *International energy*, tables G1 and G2, also at http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=53&aid=1&cid=regions,ww,r1,r2,r4,CG6,CG5,CG9,&syid=1990&eyid=2010&unit=TBPD, accessed 30 November 2011

Chart 5.10 shows that in 2010, Saudi Arabia was the world's largest producer of crude oil with a production of 10.5 million barrels per day (mbpd). Russia was the second largest producer with a production of 10.1 mbpd, slightly ahead of the US (9.7 mbpd) and China (4.3 mbpd). Australia was ranked 32nd, with an output of 550,000 barrels per day.

Chart 5.11 shows export data for major exporters for 2009. Saudi Arabia and Russia are also the world's largest exporters of crude with exports in 2009 of 6.4 mbpd and 5.4 mbpd respectively. The next largest exporter in 2009 was Iran with 2.2 mbpd.

Chart 5.11 Major crude oil exporters: 2009



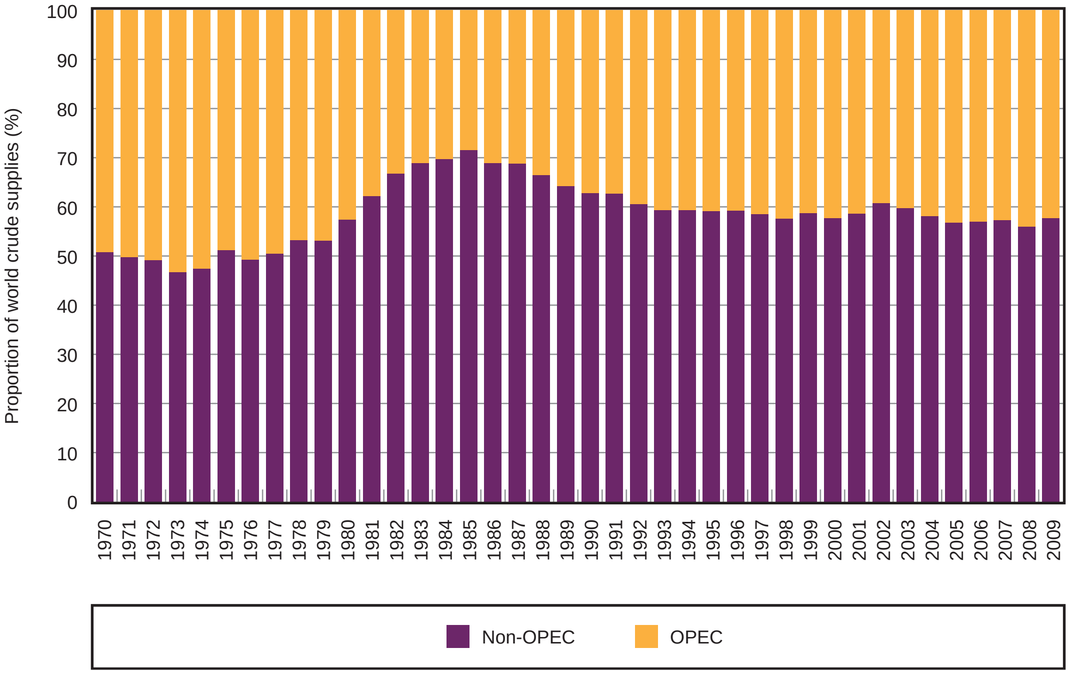
Source: US Energy Information Administration, *International energy*, at http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=4&cid=regions&syid=2005&eyid=2009&unit=TBPD, accessed 30 November 2011

Most of the large exporters of crude are members of OPEC, an intergovernmental cartel of some of the largest producers of crude oil in the world. OPEC has twelve member countries: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates and Venezuela. OPEC's stated objective is to 'coordinate and unify the petroleum policies of member countries and ensure the stabilization of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital to those investing in the petroleum industry'.[93]

In 2009, supplies of crude from OPEC member countries accounted for around 42 per cent of global crude supplies (chart 5.12).

93 OPEC Mission Statement, at www.opec.org, accessed 30 November 2011.

Chart 5.12 Proportion of global crude oil production, OPEC and non-OPEC countries: 1970 to 2009



Source: US Energy Information Administration, *International energy*, at http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=54&aid=4, 30 November 2011

The contribution of OPEC member countries to total world crude supplies has varied over time. Since 1970, OPEC's contribution to global supplies has ranged from 25 per cent in 1986 to 55 per cent in 1973. This is consistent with the perception of OPEC as a swing producer that aims to vary output to maximise revenues at given world prices subject to global demand and supply conditions.

According to IEA forecasts, by 2016 OPEC countries will contribute about 60 per cent of the growth in global crude production capacity of 6.8 mbpd.[94] Iraq, Angola and United Arab Emirates will account for most of this growth while a lack of investment in new production capacity is likely to adversely affect supplies from Iran. The civil war in Libya is likely to affect its production prospects for the next few years; the IEA's baseline scenario for Libya is that pre-war production levels will not be recovered before 2014.[95] Given the decline of mature fields in Mexico and the North Sea, the majority of growth in non-OPEC supplies up to 2016 will come from Canada, the US, Brazil and Russia.

In the longer term, the US EIA estimates that by 2035 Brazil, Canada and the US will achieve significant gains in production levels. Brazil is forecast to increase production by 4.9 mbpd, the largest increase among non-OPEC countries.[96]

94 International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 60 © OECD/IEA International Energy Agency.

95 Ibid., p. 18.

96 US Energy Information Administration, *International energy outlook, 2010*, table G1, p. 249; also, http://www.eia.gov/oiaf/ieo/excel/ieopoltab_1.xls, accessed 30 November 2011. Includes conventional liquids (crude oil, lease condensate, natural gas liquids and refinery gain) and unconventional liquids (biofuels, oil sands, extra heavy oil, coal-to-liquids, gas-to-liquids and shale oil).

Growth in Brazil will come from higher production levels in existing deep-water fields and recently discovered large sub-salt fields in the Campos and Santos offshore basins. The largest of the recently discovered fields, Tupi, lies beneath several kilometres of salt strata about 2,000 metres below the Atlantic sea level. The size and contents of the sub-salt area off Brazil's south-west coast is still to be fully assessed. According to the US IEA, the sub-salt discoveries in Brazil may point to 'the presence of other large fields in the same formation'.[97]

The other major contributors to long-term growth in world oil production among non-OPEC countries are expected to be the US and Canada.[98] The US is likely to benefit from more efficient oil recovery in existing deep-water fields and new output from recently discovered fields in the Gulf of Mexico. Greater shale oil production from onshore fields will also enhance the US's crude oil supplies in the long term.[99] In Canada, the bulk of the growth in oil supplies is likely to come from unconventional sources, mainly oil sands. Brazil and Iraq are projected to experience the most significant increases in their respective shares in world production. Countries that are likely to experience notable reductions in their share of world output in the long run include countries where mature fields continue to decline, namely, OECD Europe (North Sea) and Mexico. Iran, Libya and Venezuela are also expected to account for smaller proportions of world output by 2035.

5.4.3 Conventional and unconventional sources of crude oil supplies

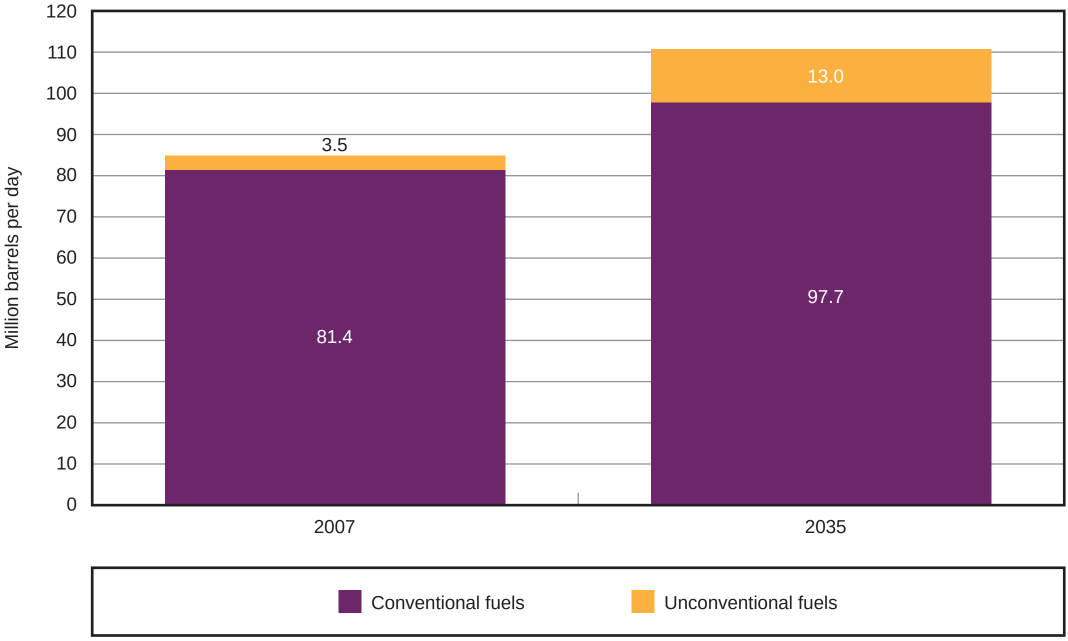
Conventional crude oil will continue to be the primary source of liquid fuels in the next 25 years. However, unconventional liquids are expected to grow more than proportionately to conventional liquids. Chart 5.13 provides data on world supplies of conventional and unconventional liquid fuels for 2007 and 2035.

97 US Energy Information Administration, *International energy outlook, 2010*, p. 30. Recent estimates suggest that Tupi may hold 120 billions barrel of oil. For example, see 'Brazil oil fields may hold more than twice estimates', at http://www.bloomberg.com/news/2011-01-19/brazil-oil-fields-may-hold-more-than-twice-estimated-reserves.html, accessed 30 November 2011.

98 US Energy Information Administration, *International energy outlook, 2010*, table G1, p. 249. Also, http://www.eia.gov/oiaf/ieo/excel/ieopoltab_1.xls, accessed 30 November 2011.

99 International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 69 © OECD/IEA International Energy Agency.

Chart 5.13 World liquid fuels production, conventional and unconventional: 2007 and 2035



Source: US Energy Information Administration, *International energy outlook*, 2010, table 3, p. 24.

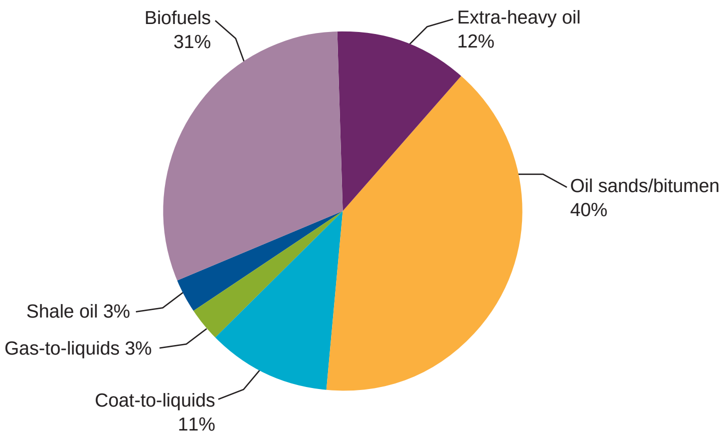
Notes: Conventional liquids include crude oil, lease condensate, natural gas liquids and refinery gain. Unconventional liquids include biofuels, oil sands, extra heavy oil, coal-to-liquids, gas-to-liquids and shale oil.

Chart 5.13 shows that unconventional liquid fuels' contribution to total world liquid fuel supplies will grow from 3.5 mbpd in 2007 to 13.0 mbpd in 2035 and will account for about 37 per cent of the increase in total supplies over that period.

By 2035, the most important source of unconventional fuels will be oil sands (chart 5.14). These are sand deposits which contain (among other things) oil in solid or semi solid state. The mixture is heavy and viscous (bituminous and tar like) and must be heated in order to extract the oil from the sand deposits.[100]

100 The world's largest sources of oil sands are in Canada and Venezuela. Canada is considerably more advanced than Venezuela in its development of oil sand deposits.

Chart 5.14 Unconventional liquid fuels, by type of fuel: 2035



Source: US Energy Information Administration, *International energy outlook*, 2010, table 3, p. 24.

Notes: Conventional liquids include crude oil, lease condensate, natural gas liquids and refinery gain. Unconventional liquids include biofuels, oil sands, extra heavy oil, coal-to-liquids, gas-to-liquids and shale oil.

Data in chart 5.14 indicates that after oil sands, the next largest source of unconventional fuels in 2035 is expected to be biofuels which will account for 31 per cent of all unconventional fuel supplies. Other important sources of unconventional fuels will be extra-heavy oil (12 per cent of total unconventional fuels) and coal-to-liquids (11 per cent of total unconventional fuels). These estimates indicate that in future the supply of conventional fuels will not keep pace with the world's requirements and will need to be increasingly supplemented with fuels produced from unconventional sources.

5.4.4 Strategic management of supplies

The ability of the global market to deal with unforeseen supply disruptions, such as those caused by severe weather events or geopolitical turmoil, by bringing additional supplies onto the market at short notice, depends on the extent to which supplies can be increased quickly or stocks released.

The ability of major suppliers to do this depends on the size of holdings of strategically held stocks, and their willingness to release them, and/or the potential to tap into spare crude production capacity.

The IEA is an energy forum established in 1974 to establish emergency supply security measures. Members of the IEA consist of OECD countries (including Australia) as well as some non-OECD countries. On 23 June 2011, member countries decided to release 60 million barrels of oil from their strategic reserves.[101] This was in response to supply disruptions at Libya's production facilities. This was the third time the IEA had released supplies of crude from its member countries' holdings of strategic supplies. Previously supplies had been released in the lead up to the Gulf War in 1991 and in the aftermath of Hurricane Katrina in 2005.

Member countries of the IEA are required to hold oil stocks equivalent to at least 90 days of net imports. This is done in a variety of ways. In some countries, governments own stocks of oil.

101 See International Energy Agency, *Medium-term oil and gas markets 2011*, p. 76. © OECD/IEA International Energy Agency.

In other countries, governments require industry to hold a certain amount of compulsory stocks. Some countries are net exporters of oil or their market processes are such that they do not rely on formal arrangements. When governments release crude oil from their holdings of strategic stocks, these are typically released onto the market by a tender process. Some time may elapse before the crude is available for delivery into pipeline or ship.

Other countries deal with emergency disruptions differently. Member countries of OPEC, who are subject to production quotas, usually rely on the buffer provided by spare production capacity to meet unexpected demand–supply imbalances. OPEC's spare capacity enables member countries to act as the world's swing producer and take advantage of favourable market situations at relatively short notice.

There are varying estimates of OPEC's current spare capacity. The most recent estimate by OPEC is at around 4.5 mbpd.[102] According to the IEA, total OPEC capacity in 2011 is likely to be the lowest in four years even after Saudi Arabia's substantial investments in new capacity in 2009–10, mainly due to the loss of Libya's productive capacity. The IEA estimates that in 2011 average spare capacity may be around 3.15 mbpd.[103] The IMF, on the other hand, estimates OPEC's spare capacity at around 6 mbpd.[104] The IEA observes that most of OPEC's spare capacity is held by Saudi Arabia and that Iraq will provide about 70 per cent of OPEC's planned capacity expansion up to 2016.[105]

5.5 Refining capacity

Australia accounts for less than 1 per cent of the world's refining capacity.[106] As a net importer of fuel products, Australia's ability to meet its domestic requirements depends on the supplies of refined petrol in the region. According to the 2011 BP Statistical review, since 2000 the bulk of additions to the world's refining capacity have occurred in the Asia-Pacific region (chart 5.15).

102 See OPEC Secretary General, HE Abdalla S El-Badri, 'Asian energy outlook up to 2030', speech to the Fourth Asian Roundtable: Sustainable Growth and Energy Interdependence, Kuwait, 18 April 2011, at http://www.opec.org/opec_web/en/press_room/2036.htm, accessed 30 November 2011.

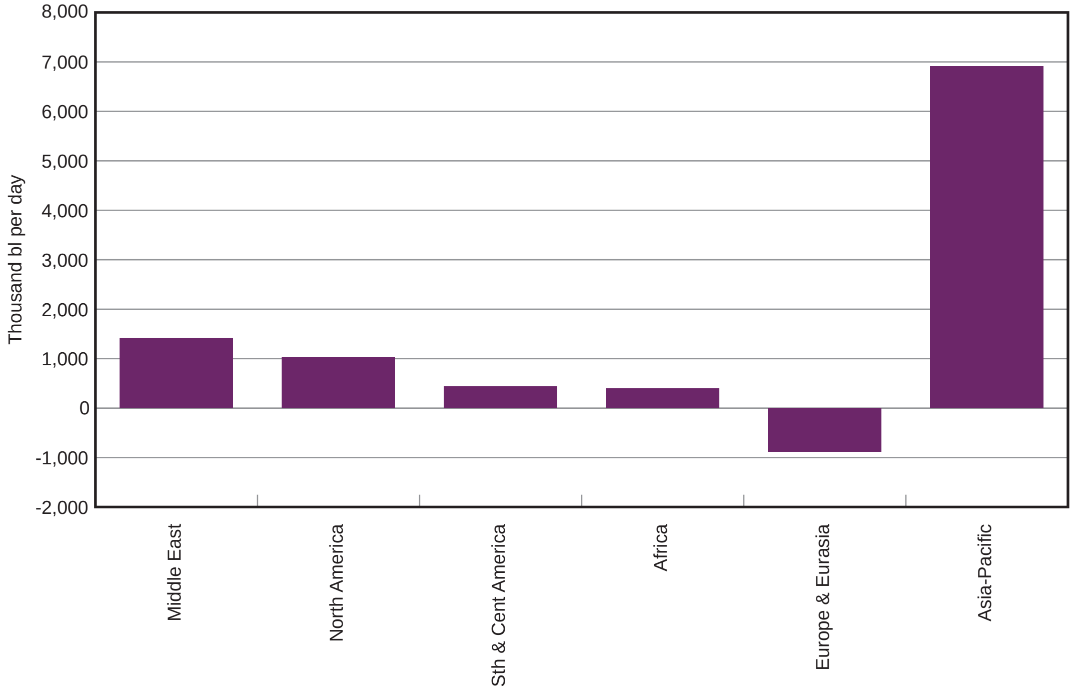
103 See International Energy Agency, press release, at http://www.iea.org/press/pressdetail.asp?PRESS_REL_ID=418, accessed 30 November 2011.

104 See International Monetary Fund, *World economic outlook*, April 2011, p. 99, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

105 See International Energy Agency, *Medium-term oil and gas markets 2011*, p. 76. © OECD/IEA International Energy Agency.

106 See BP, Statistical review of world energy, June 2011; historical data, at http://www.bp.com/sectionbodycopy.do?categoryId=7500&contentId=7068481, accessed 30 November 2011.

Chart 5.15 Growth in world refining capacity, by region: 2000 to 2010

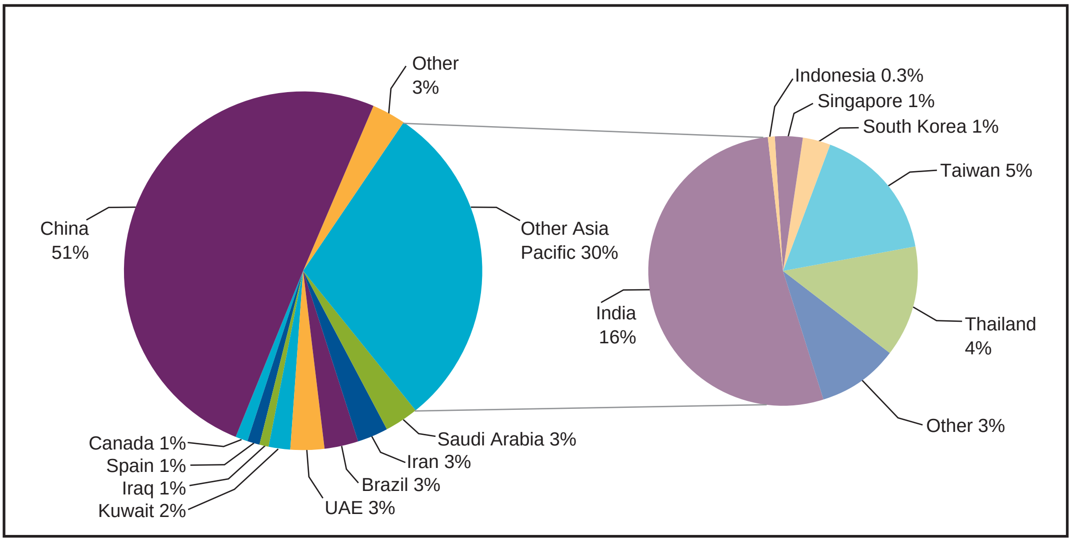


Source: BP, *Statistical review of world energy*, June 2011, p. 16, also at http://www.bp.com/sectiongenericarticle800.do?categoryId=9037130&contentId=7068669, accessed 30 November 2011

Chart 5.15 shows that from 2000 to 2010 refining capacity in the Asia-Pacific region increased by almost 7 mbpd, about 74 per cent of the total increase in the world's refining capacity.

The majority of the growth in refining capacity in Asia-Pacific is accounted for by China, a net importer of refined petrol. Data in chart 5.16 shows that China has accounted for about 51 per cent of the growth in the world's refining capacity since 2000.

Chart 5.16 Growth in world refining capacity, by country: 2000 to 2010

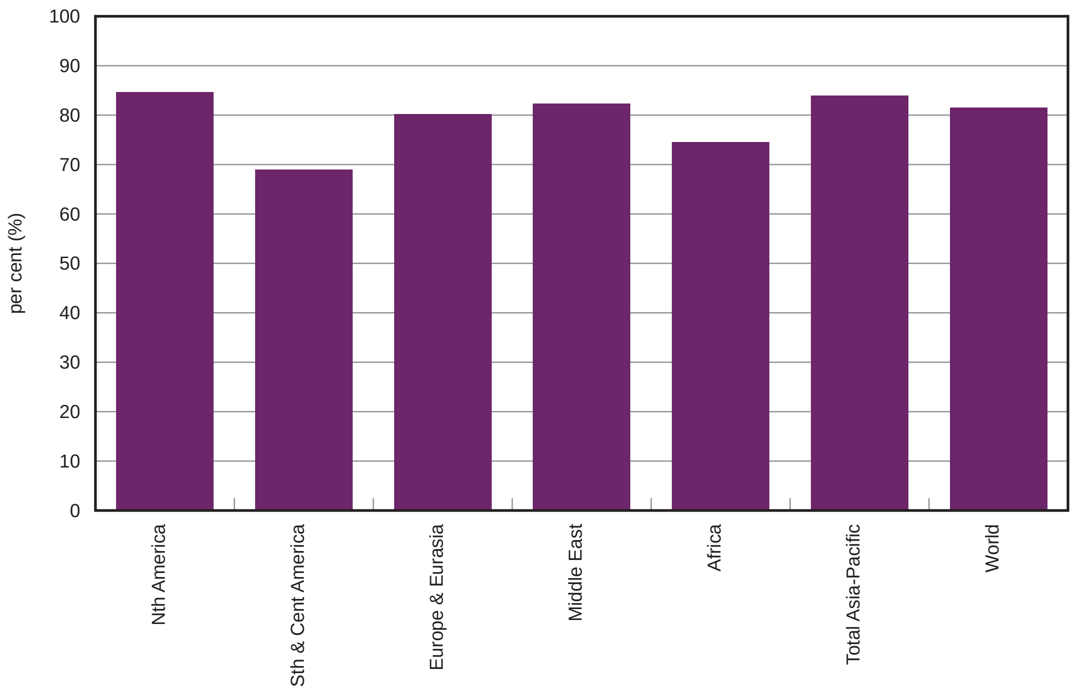


Source: BP, *Statistical review of world energy*, June 2011, p. 16, also at http://www.bp.com/sectiongenericarticle800.do?categoryId=9037130&contentId=7068669, accessed 30 November 2011

Excluding China, the rest of the Asia-Pacific region (consisting mostly of countries that are net exporters of refined petrol) contributed around 30 per cent of total growth in refining capacity. India's refining sector accounted for about 16 per cent of the increase in the world's refining capacity and more than half of the growth among countries in the Asia-Pacific region, excluding China.

Refinery utilisation in 2010 was, on average, below capacity in most regions in the world, suggesting that there was scope, in the short term, for additional exports of refined petrol. Chart 5.17 presents data on refinery capacity utilisation rates by region for 2010.

Chart 5.17 Refining capacity utilisation rates, by region: 2010



Source: BP, *Statistical review of world energy*, June 2011, p. 16, also at http://www.bp.com/sectiongenericarticle800.do?categoryId=9037130&contentId=7068669, accessed 30 November 2011

Average refinery capacity utilisation rates vary across regions in the world. Refineries in Central and South America operated at around 69 per cent capacity during 2010 while the average utilisation rate in North America was around 85 per cent.[107] The average utilisation rate in the Asia-Pacific region was 84 per cent.

By 2016, world crude distillation capacity is forecast to increase by 9.6 mbpd.[108] China is expected to account for around 34 per cent of the total increase while capacity in refineries in the rest of Asia will increase by 1.3 mbpd, or around 13 per cent of the total increase in capacity. The IEA reports that India is expected to increase refinery capacity by more than one mbd by 2016.[109] Since the commissioning of the Reliance refinery at Jamnagar in 2009, India has established itself as an exporter of high-quality product.

107 BP, *Statistical review of world energy*, June 2011, p. 16; also at http://www.bp.com/sectiongenericarticle800.do?categoryId=9037130&contentId=7068669, accessed 30 November 2011.

108 International Energy Agency, *Medium-term oil and gas markets 2011 report*, table 5, p. 137. ©OECD/IEA International Energy Agency.

109 International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 108. © OECD/IEA International Energy Agency.

5.6 Potential limits to production of crude oil: peak oil

The cost of producing crude oil is a major influence on the prices of crude and petroleum products. Production costs vary depending on the source of supplies. How quickly existing sources of supply will have to be replaced by more costly non-conventional sources is at the heart of the so-called 'peak oil' issue.

The impact of the exhaustion of current supplies on costs, and therefore the price of crude oil and petrol prices, will depend to a large degree on how quickly existing oil reservoirs will be depleted and replaced by more costly sources of crude. There is much conjecture on the issue of how quickly current conventional sources of supply are being depleted. In essence, this issue is about whether or not the world is presently approaching, or has even approached, what is known as 'peak oil' production.

There appears to be some confusion about the concept of peak oil. Reaching peak oil does not mean running out of oil. Peak oil refers to the rate of production, not the level of production. Concerns about peak oil are centred on the issue of when crude oil production rates reach a maximum, not when the world runs out of crude oil. The world will not run out of crude after passing 'peak oil'; it is just that the rate at which it is produced will start declining, causing prices to rise.

The debate about peak oil stems from the fact that crude oil is a non-renewable resource with finite supply constraints. Furthermore, the level of economically extractable oil in any given reservoir is something less than the total available volumes. This is typically referred to as the level of crude oil 'reserves'. Oil from an individual reservoir can be extracted at an increasing rate up to a maximum point after which oil is produced at a declining rate. According to the theory the production rate for an individual reservoir roughly follows a bell-shaped curve with the maximum production rate typically happening after about half the reserves have been recovered.[110]

Peak oil has been reached for many oil fields and countries, including the US. World peak oil is the point at which the rate of production from the world's combined reserves of crude starts to decline. There are many difficulties associated with establishing the point of peak oil. One is that geological estimates of oil reserves are often based on judgment and are subject to considerable error. Furthermore, as noted in a 2007 study published recently by the British Department of Energy and Climate Change 'in the literature of peak oil, the use of different data and a lack of standardised definitions and methodologies leads to significant disagreement about even the basic empirical facts'.[111]

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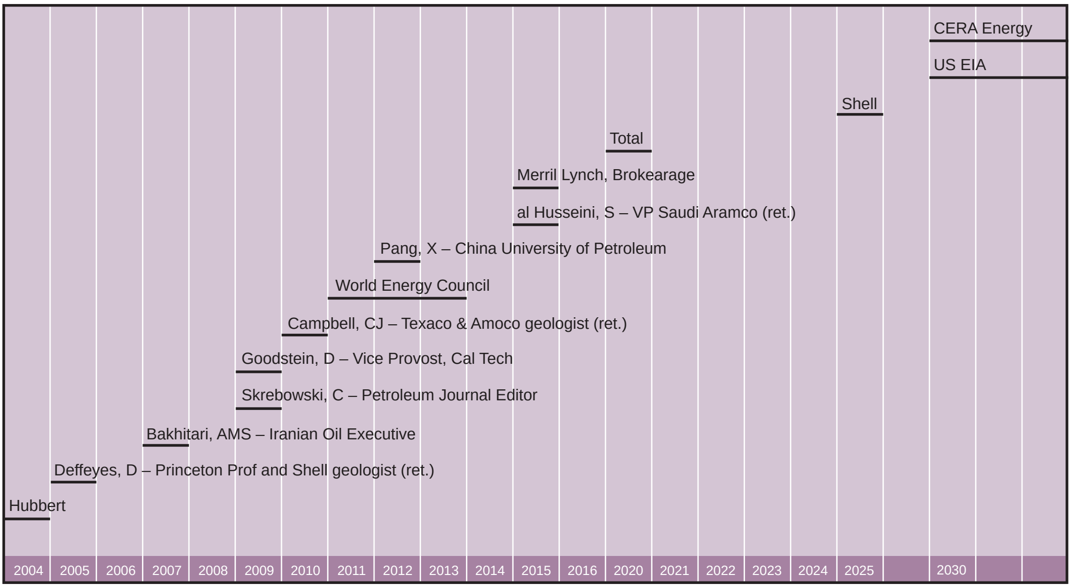
110 Known as the Hubbert curve after MK Hubbert, a geophysicist who while working for Shell in 1956 proposed that the rate of production over time from a crude oil field would follow a bell-shaped curve. See MK Hubbert, 'Nuclear energy and fossil fuels', presented to the American Petroleum Institute, March 1956, at http://www.oilcrisis.com/hubbert/, accessed 30 November 2011.

111 See *The guardian*, 'UK ministers ignored "peak oil" warnings, report shows', 15 June 2011, at http://www.guardian.co.uk/environment/2011/jun/15/peak-oil-warning, accessed 30 November 2011. See also 2007 report by the then British Department of Business Enterprise and Regulatory Reform, at http://www.decc.gov.uk/publications/basket.aspx?filetype=4&filepath=What+we+do%2fGlobal+climate+change+and+energy%2fInternational+energy%2fenergy+security%2f1790-decc-report-2009-oil-decline.pptx&minwidth=true#basket, accessed 30 November 2011.

Not surprisingly, the IEA noted in 2010 that 'the size of ultimately recoverable resources of both conventional and unconventional oil is a major source of uncertainty for the long-term outlook for world oil production'.[112] Reflecting this, a recent summary of estimates of when peak oil may occur shows that there is a wide range of possible scenarios considered by industry forecasters (see Figure 5.1).

Figure 5.1 Peak oil forecasts



Source: Based on 'Peaking of world oil production: recent forecasts', RL Hirsch, Senior Energy Program Advisor (Science Applications International Corporation), April 2007, at http://www.worldoil.com/April-2007-Peaking-of-world-oil-production-Recent-forecasts.html, accessed 30 November 2011

Notes: Forecast year of peak oil is underlined in table. According to RL Hirsch: Exxon Mobil sees no sign of peak oil, BP considers that it is impossible to predict, while OPEC denies the theory of peak oil.

Notwithstanding the absence of consensus about the mechanics and the precise timing of peak oil, it seems clear that as oil is a non-renewable resource, eventually global production will decline. Increasingly, pronouncements from the major energy agencies suggest that the rate of global production may be approaching peak levels in the next two decades.

The IEA, for example, has estimated that by 2035 about 75 per cent of crude oil production from existing fields will have passed its peak.[113] According to the IEA, this represents around '50 mbpd, which is equivalent to about four times the production capacity of Saudi Arabia, the world's largest oil producer'.[114]

112 International Energy Agency, *World energy outlook 2010*, Executive summary, p. 6, at http://www.worldenergyoutlook.org/, accessed 30 November 2011.

113 Nobuo Tanaka, IEA 'Oil in the global energy mix: climate policies can drive an early peak in oil demand', 13 April 2011, at http://www.iea.org/index_info.asp?id=1928, accessed 30 November 2011.

114 Ibid.

The implications of such scenarios are apparent: unless there is substantial production of crude oil from newly discovered fields and unconventional sources to compensate for the projected decline in existing fields, then demand will continue to outstrip supply of conventional crude oil and prices will continue to rise.

Indeed, prices are likely to rise in the future even if production from newly discovered fields and unconventional sources make up for the loss of production in mature existing fields. As noted in the previous section, existing fields are the cheapest sources of crude oil. Production from new more remote oil reservoirs and from unconventional sources is likely be more costly and viable only at higher prices.

5.7 Prospects for crude oil prices

The volatility seen in crude oil prices in the last few years suggests that predicting future prices remains an extremely difficult task. As discussed in the previous section, prices are the outcome of a complex interaction of many factors impacting on both demand and supply, including:

- responsiveness of demand to changes in prices and income levels
- the rate of decline of existing crude oil fields
- the cost of discovering and exploiting new fields
- technological changes that improve recovery rates at existing fields and exploitation of more remote fields
- prices of alternative fuels and energy sources
- ‘above ground’ or geopolitical factors.

An additional layer of uncertainty stems from an increase in possible speculative activity. According to OPEC, increasingly prices also seem to be influenced by the activities of global commodity traders. OPEC claims that in recent years there has been a ‘rapid increase in the participation of non-commercial traders’ such as investment banks and funds that look to make profits from movements in oil prices rather than from conventional investments.[115]

In terms of market fundamentals, the supply and demand scenarios considered in this chapter suggest that in the short to medium term, growth in demand may outstrip supplies of conventional crude oil and that the costs of supply are likely to increase as the marginal sources of supply become more costly. The most likely future price path is one with an upward bias.

The IEA’s short- to medium-term forecast indicates that by 2016, global demand for oil will grow 7.2 mbpd while total supply capacity will expand 6.8 mbpd, suggesting a widening supply shortfall.[116] According to the IMF, growth in global production capacity is likely to remain modest with the main buffer being provided by OPEC’s spare capacity.[117] With supply being constrained in the short run, there may be limited scope to accommodate demand surprises.

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115 OPEC, *World oil outlook 2010*, p. 24, at http://www.opec.org/opec_web/en/publications/340.htm, accessed 30 November 2011.

116 International Energy Agency, *Medium-term oil and gas markets 2011 report*, pp. 37, 60, ©OECD/IEA International Energy Agency.

117 See International Monetary Fund, *World economic outlook*, April 2011, p. 99, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

Whether world demand can continue growing at the pace seen in recent years if crude prices remain at current high levels is a matter of conjecture. As the US EIA observes, 'the impacts of world prices on energy demand are a considerable source of uncertainty …'.[118] The IEA further comments that 'although … rising income per capita will remain a far more central driver of global oil demand growth than prices, another spike in international prices may jeopardise the ongoing global economic recovery'.[119]

A number of baseline forecasts, that is, scenarios that exclude demand and supply shocks, indicate that, in the short to medium term, it is likely that the outcome from the dynamics of the interplay between supply and demand is at least a continuation of recent high price levels. For example:

- In Australia, the Australian Bureau of Agricultural and Resource Economics projects average WTI prices of around USD 90–95/bl up to 2016.[120]
- The IEA forecasts average import prices of around USD 101/bl in 2016 based on Brent futures.[121]
- The US EIA projects WTI prices of USD 100/bl by 2017.[122]
- The IMF warns that while its base case rests on the assumption that the tension between demand and supply is likely to be 'resolved with oil prices around current high levels',[123] 'on balance risks to prices remain on the upside …'.[124]

The evidence considered in this chapter indicates that the global crude oil market may have shifted to a new paradigm. Demand will continue to be driven by strong growth in emerging economies while supply will be affected by depletion of existing cheap sources of crude and increasing reliance on more costly conventional and non-conventional sources. In this new paradigm, it would be extremely unlikely for oil prices to sustainably fall back to the prices seen in the period 1985–2005 when oil averaged less than $25 a barrel.

118 US Energy Information Administration, *International energy outlook*, 2010, p. 25.

119 International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 43, ©OECD/IEA International Energy Agency.

120 See ABARE, *Australian commodities*, vol. 18 no. 1, March quarter 2011, p. 137.

121 International Energy Agency, *Medium-term oil and gas markets 2011 report*, pp. 23–4, ©OECD/IEA International Energy Agency.

122 US Energy Information Administration, *International energy outlook*, 2010, pp. 25–7.

123 See International Monetary Fund, *World economic outlook*, April 2011, p. 89, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

124 See International Monetary Fund, *World economic outlook*, April 2011, p. 35, at http://www.imf.org/external/pubs/ft/weo/2011/01/index.htm, accessed 30 November 2011.

6 Biofuels

Key points

- Australian biofuel production increased from 2009–10 to 2010–11, continuing the trend of recent years.
- The devastating Queensland floods in December 2010 and January 2011 disrupted ethanol production at two of the three ethanol plants (Sarina and Dalby in Queensland) into the first half of 2011.
- Supply disruptions within the first half of 2011 contributed to Australian ethanol production struggling to meet demand at this time, particularly in Queensland. While the supply situation is improving, it remains a concern for many industry participants. Given this uncertainty, the ACCC will continue to monitor the adequacy of ethanol supplies.
- The NSW Government delayed its latest ethanol mandate increase until 1 October 2011 and delayed the requirement to replace all RULP with E10 until 1 July 2012. The Queensland Government suspended the introduction of its proposed ethanol mandate.
- The number of sites selling ethanol blended fuels across Australia decreased during 2010–11 as a number of retailers began phasing out ethanol blended petrol bowsers at sites in Queensland and Victoria citing low demand and lack of supply due to the NSW mandate.
- The largest volumes of ethanol were sold in NSW and Queensland. The volume of ethanol sold in NSW was about four times the volume sold in Queensland.
- ACCC monitoring over the past year across the monitored locations found that E10 prices increased relative to RULP, resulting in a narrowing price difference between RULP and E10.
- The *Taxation of Alternative Fuels Legislation Amendment Act 2011* now provides continuing excise equivalent grants for eligible domestically produced biofuels until 2021, which creates greater certainty for domestic ethanol suppliers and investors.

6.1 Introduction

In the 2010 petrol monitoring report, the ACCC reported on the emergence of the biofuels market in Australia, market developments and the key observations relating to competition and consumers. The ACCC continued to monitor developments in the biofuels sector during 2010 and 2011.

6.2 Biofuels in Australia

Ethanol and biodiesel are the two main types of biofuel used as transport fuels in Australia.

- Ethanol is sometimes also referred to as ethyl alcohol, alcohol or grain spirit. Most ethanol is produced by fermenting raw materials such as sugar cane, sugar beet, molasses, wheat, grain and forest products. It is added to petrol to produce various grades of ethanol blended petrol (EBP). In Australia, up to 10 per cent ethanol is blended with regular unleaded petrol (RULP) to produce E10, which is the most common ethanol blend marketed in Australia.
- Biodiesel is derived from plant or animal feedstocks containing fatty acids such as vegetable oils and tallow. It is usually blended with petroleum-based diesel to produce fuels for diesel-powered vehicles and equipment. In Australia, biodiesel is typically used as a fuel additive in 5 per cent (B5) and 20 per cent (B20) blends.

While there are other types of biofuels, this chapter focuses specifically on ethanol and partly on biodiesel as the two main types of biofuels sold as blended transport fuel in Australia. The chapter also examines recent developments in overseas markets for these products.

6.2.1 Biofuels production

Australian biofuel production reached a total of 419 megalitres (ML) in 2010–11; this was an increase from 354 ML in 2009–10. Ethanol production increased from 269 ML to 319 ML and biodiesel production increased from 85 ML to 100 ML.[125]

In 2010–11, there were a number of key regulatory developments (see section 6.4) and other events that impacted on the production of biofuels, particularly ethanol.

Ethanol

Australian ethanol is currently produced from wheat and wheat starch, sugarcane and sorghum by three producers. The largest producer is Manildra (at Nowra, NSW), with a current annual capacity of around 250 ML.[126] Sucrogen's Sarina plant and the Dalby plant are both located in Queensland. Sucrogen's current capacity is around 60 ML per annum.[127] After going into voluntary administration in June 2010, the Dalby plant (capacity of about 80 ML per annum[128]) was sold to United Petroleum in May 2011.[129] In 2011, total ethanol production capacity in Australia was estimated to be between 390 ML and 410 ML (see tables 6.1 and 6.2). This is estimated to be an increase in capacity of between 40 ML and 60 ML from 2010.

The ACCC understands that there were no imports of ethanol for transport fuels into Australia during 2010–11. This is likely due to the import duty and a subsidy scheme that favours domestic ethanol production.

125 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, pp. 14–5.

126 Ibid., p. 29.

127 Ibid.

128 Ibid.

129 D Symczak (United General Manager), 'United Petroleum purchase Dalby Bio-Refinery', media release, United, 20 May 2011, at http://www.unitedpetroleum.com.au/media/united-petroleum-purchase-Dalby-bio-refinery, accessed 30 November 2011.

A number of events occurred in 2010–11 that had an impact on ethanol production and supply. Significant flooding occurred in many areas of Queensland during December 2010 and January 2011, with three-quarters of the state declared a disaster zone. The ACCC issued a media release, warning motorists of possible ethanol shortages around this time and reminded retailers about their obligations under the *Competition and Consumer Act 2010* (the Act) to ensure that consumers were not misled.[130]

Sucrogen's Sarina plant was shut down for around 150 days from mid-January to the end of May 2011 due to the 2010–11 Queensland floods. The Dalby plant was also closed for around a month, with road closures in the Dalby area affecting the supply of grain to the plant and the transport of ethanol from the site. The floods also had an effect on the supply of water to the Dalby plant.[131]

Looking forward regarding potential production, APAC biofuel consultants (APAC) suggest there are five proposed plants which may come online from 2013–2014. While APAC has indicated that in recent times a number of forecast plants have not proceeded, there appears to be a more positive environment for investors with the potential for improving economic conditions and the announcement from the Australian Government about the continuation of the grants scheme for domestic ethanol production. APAC predicts that current ethanol producers are likely to commence investing in further expansions before the planned new projects come online in 2013–14.[132]

The ACCC also understands that the consortium known as Flex Ethanol Australia is continuing with plans announced in 2010 to investigate the viability of establishing an ethanol plant using materials such as household rubbish and building waste. APAC estimates that if this project goes ahead it will come online during 2014.

Table 6.1 shows current and estimated future production capacity for existing ethanol plants. It also shows estimated additional capacity to 2016 if planned plants go ahead. Should estimated production and investment in plants proceed, APAC predicts an increase of 737 ML of ethanol production capacity between 2011 and 2016.[133]

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130 ACCC, 'ACCC warns motorists of possible ethanol shortages', media release, 11 January 2011, at http://www.accc.gov.au/content/index.phtml/itemId/967108/fromItemId/966100, accessed 30 November 2011.

131 Ronald Buchanan, 'Caltex restores full production, E10 supplies at Lytton', *Platts oilgram news*, 25 January 2011, p. 10.

132 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 13.

133 Ibid., p. 29.

Table 6.1 Australian ethanol production capacity: 2010 to 2016 (APAC)

Operator	Location	Current Status	2010 ML	2011 ML	2012 ML	2013 ML	2014 ML	2015 ML	2016 ML
Manildra	Nowra, NSW	Operating	210	250	300	300	300	300	300
Sucrogen	Sarina, Qld	Operating	60	60	70	100	100	100	100
Dalby	Dalby, Qld	Operating	80	80	80	90	90	90	90
Total from existing plants			**350**	**390**	**450**	**490**	**490**	**490**	**490**
Marinna	Junee, NSW	Planned					115	230	230
FlexEthanol Aust (Coskata)	Vic.	Planned					100	200	200
Austcane	Ayr, Qld	Planned					87	87	87
NQBE	Ingham, Qld	Planned					30	60	60
Primary energy	Gunnedah, Qld	Planned					30	60	60
Total from planned plants							**362**	**637**	**637**
Total from existing and planned plants			**350**	**390**	**450**	**490**	**852**	**1127**	**1127**

Source: APAC biofuels consultants, *Australian Biofuels* 2011–12, p. 29

Table 6.2 shows aggregated current and estimated future production capacity for existing ethanol plants based on information provided by the three producers.

Table 6.2 Aggregated Australian ethanol production capacity: 2010 to 2016 (Producers)

	2010 ML	2011 ML	2012 ML	2013 ML	2014 ML	2015 ML	2016 ML
Total from existing plants (Manildra, Sucrogen, Dalby)	**350**	**410**	**490**	**560**	**560**	**560**	**560**

Source: ACCC calculations based on information provided by Manidra Group, United Petroleum and Sucrogen.

Developments with E85

E85 is an ethanol and petrol blend containing between 70 and 85 per cent ethanol which is only suitable for flex fuel vehicles. Last year the ACCC reported that a small number of retailers had commenced offering E85 in some city locations in recent years.

Caltex continued to sell E85 fuel at around 40 of its retail sites[134] despite having announced in 2010 plans to increase to 100 the number of sites selling E85 during 2011.[135] GM Holden also indicated in September 2011 that their entire Commodore range was now flex fuel capable.[136]

134 Caltex, at http://www.caltex.com.au/HelpCentre/SiteLocator/Pages/FindAServiceStation.aspx, accessed 7 November 2011.

135 Caltex, 'Caltex Bio E-Flex brings another high performance fuel to the forecourt', media release, 15 September 2010.

136 GM Holden, 'Improved fuel efficiency and flex-fuel capability for MY12 Commodore', media release 1 September 2011, at http://media.gm.com/content/media/au/en/holden/news.detail.html/content/Pages/news/au/en/2011/Sep/0901ImprovedFuelEconomyandFlexFuelCapabilityforMY12Comm, accessed 30 November 2011.

Biodiesel

According to APAC, Australian operating biodiesel production capacity in 2011 was about 200 ML, which is unchanged from 2010 (see table 6.3). This capacity is provided by three biodiesel producers currently operating six plants in Australia. The largest Australian producer of biodiesel is Australian Renewable Fuels, which now operates four plants nationally following the acquisition of the Biodiesel Producers plant at Barnawatha, Victoria.

While there are plans to increase biodiesel production capacity, new projects have faced repeated deferrals and ongoing uncertainty. For example, National Biodiesel's planned plant in NSW is in its third year of deferral and its future is therefore uncertain.[137] Based on APAC estimates, biodiesel operating production capacity is expected to remain fairly stable (see table 6.3).

Australia biodiesel producers face particular challenges due to the availability and price of feedstocks. Potential feedstocks include tallow, canola, used cooking oil, algae, soy and poppy seed. However, in Australia the predominant feedstocks are used cooking oil, tallow and to a lesser extent juncea. There are other developments relating to alternative feedstocks being considered however they are not currently in commercial use in Australia. These include mustard seeds, pongamia seeds and algae. APAC indicates that the high costs of feedstocks continue to impact on the domestic production of biodiesel in Australia.[138] High feedstock prices have added to the challenge of reliably supplying biodiesel that meets specification on a continual basis.[139]

Despite there being excess domestic production capacity, 20 ML of biodiesel was imported in 2010–11. This represented an increase of 5 ML from 2009–10. A majority of the imported biodiesel in 2010–11 came from the United States (US) largely because US biodiesel exports attract a subsidy of USD 1.00 per gallon (US 26.4 cpl). This subsidy effectively made it cheaper to import biodiesel from the US than to produce it in Australia. An anti-dumping customs duty of 18 cpl was introduced in late 2010 to provide assistance to Australian producers against the effects of the US subsidy. The anti-dumping duty effectively brought the price of biodiesel imports in line with diesel imports.[140]

Biodiesel production in Australia continues to face numerous challenges. As such APAC notes that biodiesel production is likely to continue to develop slowly.[141] The ACCC will continue to monitor developments in the biodiesel industry.

137 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 40.
138 Ibid., p. 11.
139 Ibid.
140 Ibid., p. 46.
141 Ibid., p. 39.

Table 6.3 Australian biodiesel production capacity: 2010 to 2016

Operator	Location	Current Status	2010 ML	2011 ML	2012 ML	2013 ML	2014 ML	2015 ML	2016 ML
Australian Renewable Fuels (BPA, Vic.)	Barnawatha, Vic.	Operating	60	60	60	60	60	60	60
Australian Renewable Fuels, WA	Picton, WA	Operating	45	45	45	45	45	45	45
Australian Renewable Fuels, SA	Adelaide, SA	Operating	45	45	45	45	45	45	45
BioMax Fuels, Vic.	Laverton, Vic.	Operating	20	20	30	30	30	30	30
Biodiesel Industries, NSW	Rutherford, NSW	Operating	20	20	20	20	20	20	20
Australian Renewable Fuels, Vic.	Laverton, Vic.	Operating	10	10	10	10	10	10	10
Total operating			**200**	**200**	**210**	**210**	**210**	**210**	**210**
Eco Tech (Gull)	Narangba, Qld	Stand-by	30	30	30	30	30	30	30
Total stand-by			**30**	**30**	**30**	**30**	**30**	**30**	**30**
National Biodiesel, NSW	Port Kembla, NSW	Planned				100	288	288	288
Total operating + standby + planned			**230**	**230**	**240**	**310**	**528**	**528**	**528**

Source: APAC biofuels consultants, *Australian Biofuels* 2011–12, p. 40.

6.2.2 Biofuels consumption in transport fuels

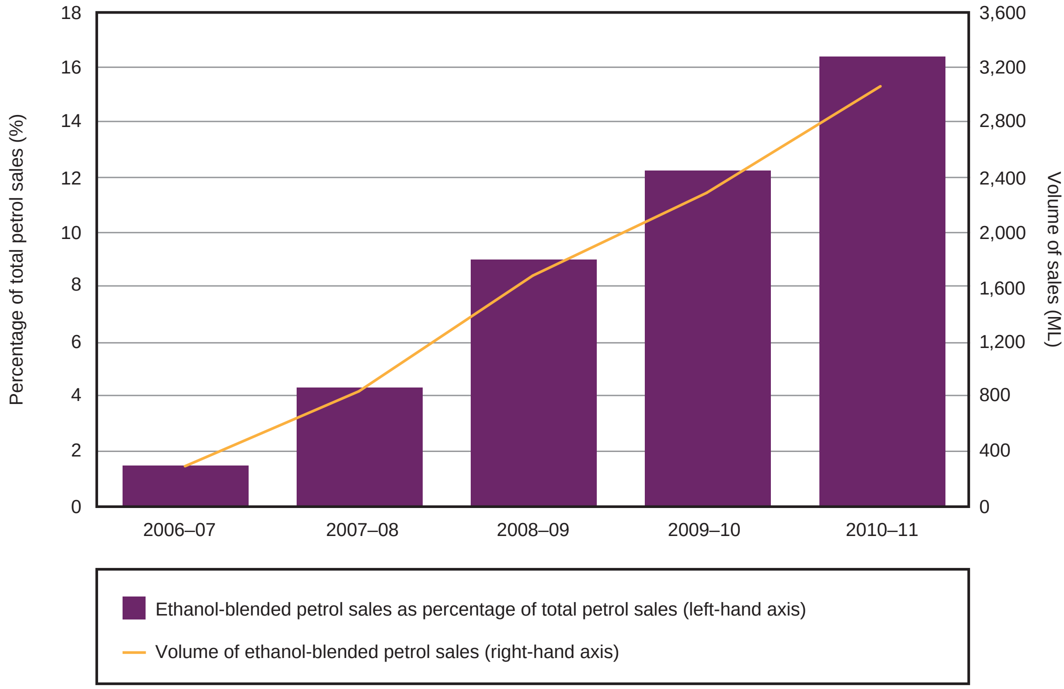
Biofuel consumption in transport fuels in Australia continued to grow in 2010–11. Australian fuel ethanol consumption grew in 2011 despite supply disruptions and the postponement or suspension of consumption mandates. APAC reports that biodiesel consumption in Australia also grew.[142] This is despite high feedstock prices and issues surrounding reliability of supply.

Ethanol

Growth in demand for EBP across Australia relative to other blends of unleaded petrol continued in 2010–11, largely because of the NSW ethanol mandate. This is examined further in section 6.4.

142 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 11.

Chart 6.1 Ethanol blended petrol sales: 2006-07 to 2010-11



Source: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues

Biodiesel

No data is reported publicly in Australia on the amount of biodiesel that is consumed as transport fuel. However, APAC suggests that biodiesel demand increased from 80 ML in 2009–10 to 120 ML in 2010–11.[143] The limited demand for biodiesel in Australia resulted in 100 ML of biodiesel being produced domestically out of the 200 ML of operating industry capacity, with a further 20 ML imported mostly from the US.[144]

6.3 Biofuels internationally

Globally, biofuels provide only around 2 per cent of total transport fuel.[145] In terms of both biofuels production and consumption, Australia is a very small player. Australia produced less than 1 per cent of global ethanol and biodiesel production in 2011. Biofuels industries in many countries share, to varying degrees, similar characteristics to those that exist in Australia, including supply mandates, subsidies, consumer concerns and supply issues (discussed further at section 6.5.1).

143 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 11.

144 Ibid., p. 39.

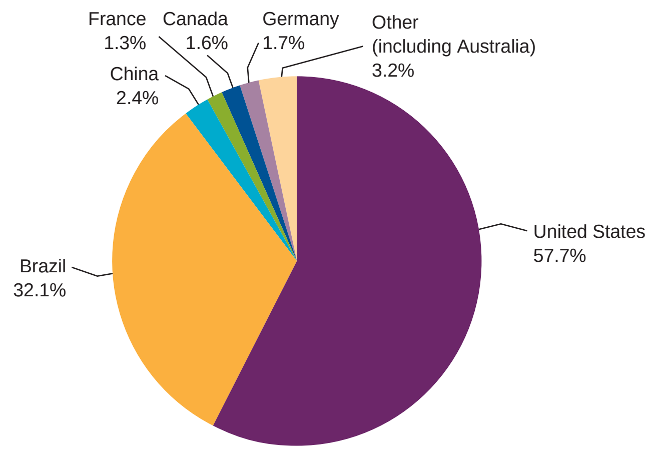
145 International Energy Agency, *Technology roadmap biofuels for transport*, 2011, p. 1.© OECD/IEA International Energy Agency.

6.3.1 Ethanol

Global ethanol production

Production and sales of ethanol have grown globally in recent years. Global ethanol production in 2010 was 87 gigalitres (GL), which represented an 11 GL increase since 2009.[146] Chart 6.2 shows that the US and Brazil were the major producers in 2010, producing almost 90 per cent of world ethanol volumes.

Chart 6.2 Global ethanol production: 2010



Source: ACCC calculations based on APAC biofuel consultants' data, *Australian Biofuels 2011–12*, p. 25.

United States

In April 2011, the US Agricultural Department extended grants and loan guarantees to retailers intending to install blender pumps and distribution systems for the sale of gasoline with up to 85 per cent ethanol.[147]

The US Environmental Protection Agency (EPA) also approved the use of E15 for cars and light truck models manufactured from 2001.[148] The US ethanol industry is encouraging the use of ethanol in E15, rather than exporting it abroad. The US exported 397 million gallons of ethanol in 2010, largely to Canada, but also to Brazil, which was using sugarcane for sugar production rather than ethanol due to high sugar prices.

146 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 25.

147 T Vilsak (US Secretary of Agriculture), 'Agriculture Producers in Non-rural Areas are Now Eligible, Funding May Be Used for Flex-Fuel Pumps', United States Department of Agriculture, News release no. 0164.11, 14 April 2011.

148 G Gentile, 'EPA approves E15 for more cars, light trucks', *Platts oilgram news*, 24 January 2011, p. 6.

Although the EPA finalised labelling rules for the sale of E15 at retail pumps in June 2011, the uptake of E15 remains slow.[149] Retailers in the US also raised concerns about their liability in the event of consumers misfuelling their vehicles. In response, the state government of Iowa approved legislation providing liability cover for retailers selling E15.[150] Iowa is one of the largest ethanol producers in the US.

Brazil

In October 2010, the Brazilian government introduced regulations to reduce the ethanol content in petrol from 25 per cent to 20 per cent due to a decline in ethanol production. The decline was largely due to a fall in sugar cane harvests resulting from drought, flood and frost.[151]

Furthermore, higher returns from sugar discouraged ethanol producers from reallocating cane to ethanol production.[152] Reduced supplies of ethanol led to Brazilian ethanol prices reaching a record high in April 2011 (see chart 6.3).

Europe

The European Union (EU) has introduced regulations under the Renewable Energy Directive that includes biofuels sustainability criteria. These criteria must be satisfied before they can contribute to member states' efforts to meet binding national sustainability targets due in 2020.[153]

In January 2011, following an EU directive requiring 10 per cent use of renewable energy in total transport by 2020, Germany allowed a 10 per cent blend of ethanol in petrol.[154] The rollout of E10 in Germany has been slow due to reluctance by drivers to use E10, based in part on fears that it may damage their vehicles.

Asia

In August 2011, the Philippines government introduced a 10 per cent ethanol mandate. It was expected that 70 to 80 per cent of the market would immediately meet this mandate, with full implementation of the mandate expected to take effect in February 2012. Currently, the Philippines produces around 40 ML of ethanol per year and it is expected that ethanol imports will be required to meet the mandate.[155]

Vietnam opened its first fuel ethanol plant, Dong Xahn, in April 2011. The plant uses cassava as a feedstock and has a current production capacity of 125 ML. It is expected that by July 2012, Vietnam will have a total ethanol production capacity of 300 ML. It is reported that ethanol from Vietnam is of good quality and has been exported throughout Asia, including to the Philippines.[156]

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149 B Evans, 'More ethanol exports, curtailments before E15: Poet', *Platts oilgram news*, 8 April 2011, p. 7; B Evans, 'Industry rails against new EPA rules for sale of E15', *Platts oilgram news*, 29 June 2011, p. 1.

150 B Evans, 'Iowa House approves bill with E15 liability protection', *Platts oilgram news*, 5 May 2011, p. 12.

151 D Phillips, 'Brazil to reduce ethanol in gasoline to 20%', *Platts oilgram news*, 31 August 2011, p. 7.

152 Czarnikow Group, *Bioethanol review*, 5 May 2011.

153 European Commission, at http://ec.europa.eu/energy/renewables/biofuels/biofuels_en.htm, accessed 30 November 2011

154 G Kfouri, 'Ethanol market hit by slow rollout of E10 in Germany', *Platts oilgram news*, 15 April 2011, p. 9.

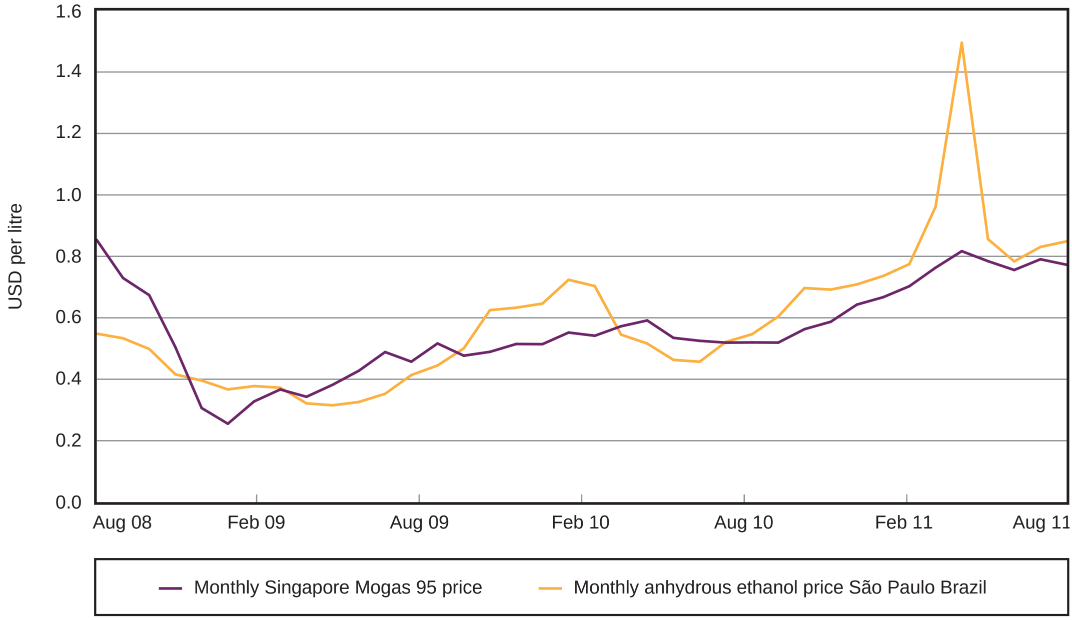
155 B Kosit, 'Philippine companies get discount ethanol', *Platts oilgram news*, 24 June 2011, p. 3.

156 M Ho, 'Vietnamese ethanol seen gaining popularity', *Platts oilgram news*, 5 July 2011, p. 3.

Global ethanol pricing

According to APAC, the Brazilian ethanol price is used as a benchmark price as it is the measure for ethanol pricing used in Brazil and the most referenced price for ethanol contracts worldwide.[157] While ethanol imports into Australia face numerous challenges, the Brazilian ethanol price has been higher than the Singapore Mogas 95 price (the international benchmark price for Australian RULP) for most of the period between August 2009 and August 2011 (see chart 6.3).

Chart 6.3 Brazilian ethanol price* compared with Australian petrol benchmark (Singapore Mogas 95): August 2008 to August 2011



Source: ACCC calculations based on Platts and CEPEA data

Note: *Brazilian ethanol price is the monthly average ESALQ (Escola Superior de Agricultura Luiz Queiroz) index price in cash for anhydrous ethanol from São Paolo State in USD per litre (before freight and taxes), as obtained from CEPEA, a research centre of the University of São Paolo; see http://www.cepea.esalq.usp.br/xls/SaamensalUS.xls, accessed 30 November 2011.

6.3.2 Biodiesel

Global biodiesel production in 2010 was 19 GL, which represents a 2 GL increase since 2009.[158] Europe and Brazil are the two largest global biodiesel producing regions (see chart 6.4 below). European countries were the largest producers of biodiesel in 2010. However, in global percentage terms, biodiesel production diminished in Europe and the US due to increased production from South America and other smaller biodiesel producers.

According to APAC, considerable excess biodiesel capacity remains globally due to poor margins, mainly as a result of high feedstock prices.[159]

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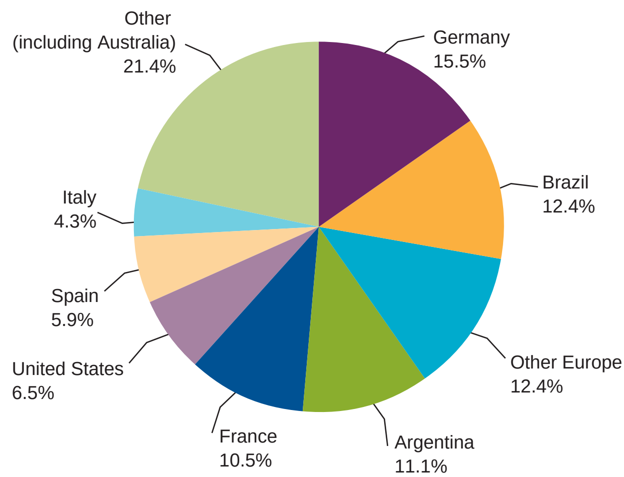
157 Energy Quest, *Report to the ACCC: benchmarking the price of fuel ethanol in Australia*, July 2010, p. 7.

158 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, pp. 25-6.

159 Ibid.

Chart 6.4 Global biodiesel production: 2010



Source: ACCC calculations based on APAC biofuels consultants data, *Australian Biofuels 2011–12*, p. 26.

6.4 Biofuels and government regulation in Australia

There were a number of key regulatory developments relating to biofuels throughout 2010–11. These included:

- the delay in the increase of the ethanol mandate in NSW
- the suspension of the ethanol mandate in Queensland
- the passing of legislation firming up biofuels excise and grants arrangements
- the development of a fuel quality standard on E85 and a national standard for biodiesel
- the continuation of the Australian Government's work on the Energy White Paper process which will include an alternative fuel strategy assessment.

6.4.1 NSW biofuels mandate

There is currently no Australian Government mandate on the supply of biofuels in Australia. NSW was the first state government to introduce a mandate on the supply of biofuels in 2007.

The NSW mandate has progressively required an increase in the percentage of ethanol in total fuel sales in that state. The mandate was set to increase from 4 per cent to 6 per cent on 1 July 2011 (after previously being delayed in December 2010). However, the government again delayed the mandate increase for a further three months to consult with industry groups (many of whom were failing to meet the 4 per cent target).[160] On 28 September 2011, the NSW Government announced that the mandate would progress to 6 per cent from 1 October 2011 and that it would continue to monitor ethanol supply conditions. The NSW ethanol mandate also currently prescribes that from 1 July 2012, 'primary wholesalers' must not sell RULP unless it is E10.

160 T Kelly (NSW Minister for Lands), 'Suspension of NSW ethanol mandate', media release, NSW government, 2 December 2010.

The NSW biofuels mandate also establishes a volumetric biodiesel mandate of 2 per cent, which came into effect on 1 January 2010. The biodiesel mandate is expected to increase to 5 per cent from 1 January 2012.[161]

6.4.2 Queensland ethanol mandate

The Queensland Government had also planned to introduce a 5 per cent ethanol mandate for petrol sold in Queensland by 31 December 2010. However, this was postponed on 28 October 2010 when the Queensland Government announced that it would suspend the implementation of the ethanol mandate.[162] To date, no announcement has been made regarding the future of this mandate.

6.4.3 Excise on biofuels

Transport fuels are currently subject to a fuel excise of 38.14 cents per litre. This excise applies to fuels such as petrol and diesel. While biofuels such as ethanol and biodiesel are also subject to this excise, eligible domestically produced biofuels receive excise offsetting grants under the Ethanol Production Grant (EPG) program and the Energy Grants (Cleaner Fuels) Scheme for ethanol and biodiesel, respectively. AusIndustry administers the Ethanol Production Grants program on behalf of the Department of Resources, Energy and Tourism (RET) and the Australian Tax Office administers the Energy Grants (Cleaner Fuels) Scheme.[163]

The *Taxation of Alternative Fuels Legislation Amendment Act 2011* extended the existing support to the ethanol and biodiesel industries until 2021, in recognition of the potential environmental, fuel security and regional development benefits of biofuels in Australia. These measures will be reviewed in 2021.[164]

6.4.4 E85 fuel quality standard

In 2011, the Australian Government released a position paper on setting a fuel quality standard for ethanol (E85) relating to fuel quality parameters, listing the proposed test methods that will be used to determine compliance and proposed labelling requirements.[165] During this process, the ACCC raised the importance of consumer protection issues related to the labelling of E85.

6.4.5 National standard for biofuels

The Biofuels Association of Australia (BAA) is also working with Standards Australia and the International Organisation for Standardisation (ISO) to develop internationally agreed sustainability criteria for bio-energy.[166] The ACCC understands they will continue to work on this in the coming year.

161 NSW Office of Biofuels, *Biofuels legislation*, at http://www.biofuels.nsw.gov.au/office_of_biofuels, accessed 30 November 2011.

162 The Honourable Andrew Fraser (Treasurer and Minister for Employment and Economic Development, Qld), media statement, 28 October 2010, available at http://statements.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=72283, accessed 30 November 2011.

163 Department of Resources, Energy and Tourism, Ethanol Production Grant and Concessional Excise Treatment of Biodiesel, at http://www.ret.gov.au/resources/resources_programs/alternative_fuels_programs/ethanol_and_biodiesel_production_grant_excise/Pages/EthanolandBiodieselProductionGrantExcise.aspx, accessed 30 November 2011.

164 Taxation of Alternative Fuels Legislation Amendment Bill 2011, Explanatory memorandum, p. 8, at http://www.comlaw.gov.au/Details/C2011B00077/Explanatory Memorandum/Text, accessed 30 November 2011.

165 Department of Sustainability, Environment, Water, Population and Communities, at http://www.environment.gov.au/atmosphere/fuelquality/publications/ethanol-e85-position-paper.html, accessed 30 November 2011.

166 Biofuels Association of Australia, at http://www.biofuelsassociation.com.au/index.php?option=com_content&view=article&id=207:iso-standards-australia&catid=1:industry-news&Itemid=50, accessed 30 November 2011.

6.4.6 Australian Government alternative fuel strategy

The Department of Resources, Energy and Tourism (RET) is formulating an energy white paper as part of its national energy strategy. The paper is due to be released in December 2011. Its objective is to maintain energy security and prosperity, ensuring that Australia continues to have a secure, competitive, efficient and sustainable energy sector to 2030 and beyond.[167]

The white paper also aims to provide a coherent and consistent platform for alternative fuels in Australia including an alternative fuels strategy assessment. The assessment will examine issues relating to industry structure, technology, infrastructure challenges and public acceptance of alternative fuels in Australia and will be directed at removing any regulatory impediments to the uptake of alternative fuels on a commercial basis.[168]

6.5 Biofuels: consumers and competition in Australia

Biofuels such as ethanol are increasingly becoming an important part of the fuel product mix in Australia. Because of this, the ACCC is mindful that in the early stages of the development of a new market, competition and consumer protection issues may be more likely to occur. The ACCC is monitoring developments in the emerging markets for biofuels in readiness to consider possible issues of non-compliance with the *Competition and Consumer Act 2010* (the Act), if they arise.

The ACCC has been directed by the government to monitor fuel. As biofuels are used in transport fuels, the ACCC takes an interest in the development of biofuels markets, particularly regarding the supply and price of ethanol, EBP and biodiesel.

In light of this, the ACCC has examined some of the market characteristics of biofuels (particularly ethanol) and has engaged with consumers, motoring organisations, and industry stakeholders. This engagement has informed the ACCC's analysis of the developments in the biofuels industry in 2010 and 2011.

6.5.1 Market characteristics for biofuels

The developing markets for biofuels in Australia exhibit characteristics that can impact on the competitive landscape and ultimately on the price of biofuels for the consumer.

167 Department of Resources, Energy and Tourism, at http://www.ret.gov.au/energy/facts/white_paper/process/Pages/process.aspx, accessed 30 November 2011.

168 Department of Resources, Energy and Tourism, Energy White Paper Fact Sheet June 2011, at http://www.ret.gov.au/energy/facts/white_paper/Pages/energy_white_paper.aspx, accessed 30 November 2011.

Ethanol

As the ethanol market has developed in Australia it has undergone significant change. It is likely that it will continue to change as it develops further. The ACCC has noted some of the characteristics of the ethanol market in Australia that may influence the competitive landscape, including:

- Ethanol markets are heavily influenced by the availability and price of feedstocks:
  - The price of feedstocks are estimated to make up about 70 per cent of the price of ethanol.[169] Australian producers are primarily co-located in the regions where the feedstock is sourced. This helps to reduce any additional transportation costs and ensure the prompt availability of feedstocks to the plant for processing. These practices are also exhibited in other ethanol markets such as in the US.
  - Due to ethanol feedstocks being mostly derived from crops, supply can also be impacted by poor crop yields and other events that impact on crops.
- There are only a small number of producers in Australia and the risk of ethanol supply concentration is heightened by the commercial advantages of locating production facilities close to feedstocks:
  - Production capacity in Australia is currently limited to three major producers with a current combined production capacity of between 390 ML and 410 ML (see tables 6.1 and 6.2). Concentration is particularly prevalent in NSW, where Australia's largest producer provides almost two-thirds of Australia's total ethanol production capacity and supplies a substantial majority of the NSW requirement for ethanol in EBP. The ACCC has been informed about increased certainty in the biofuels market and the potential increased opportunity for new entrants into the market.
- There are limited competitive opportunities for ethanol imports into Australia:
  - There may be a number of reasons why imports of ethanol into Australia are limited. In particular, the ACCC understands that there are limited available supplies of ethanol in the region for import into Australia on a consistent basis at a competitive price. The Australian Government's Production Grants Program also effectively provides relief for domestic producers of ethanol from excise until 2021. Ethanol imports do not qualify for this grant.
- Ethanol consumption mandates exist in NSW and (while suspended) may be considered further in Queensland:
  - On 1 October 2011, the NSW ethanol mandate increased from 4 per cent to 6 per cent of total petrol sales. Plans to replace all RULP with E10 in NSW remains deferred until 1 July 2012. In addition, the proposed Queensland ethanol mandate, which would have required the volume of ethanol sold in that state to make up at least 5 per cent of all petrol sales, was suspended in October 2010. If the NSW mandate progresses as planned and the Queensland mandate goes ahead, they may continue to impact on the supply and price of ethanol.
- Consumer perceptions about ethanol and EBP:
  - Stakeholders have informed the ACCC that some consumers may have certain perceptions about the efficiency and price of EBP compared to RULP. In particular, some stakeholders have indicated that a narrowing price difference between RULP and E10 may lead them to further exhibit a preference for RULP, or even premium unleaded petrol (PULP), due to the perception that motorists obtain less mileage from EBP.

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169 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 34.

Biodiesel

The market for biodiesel in Australia has similarly undergone significant change over the past year. It is likely that as the market develops, it will continue to change. Some elements of the competitive landscape for biodiesel in Australia include the following:

- The number of biodiesel producers has fallen due to industry rationalisation:
  - There are currently three biodiesel producers operating six plants in Australia, following the Australian Renewable Fuels purchase of Biodiesel Producers Australia.
- Like ethanol, biodiesel markets are heavily influenced by the availability and price of feedstocks:
  - For example, feedstocks used in biodiesel, such as tallow, make up 70–75 per cent of the cost of biodiesel production.[170]
- Biodiesel sales and production in Australia have been well short of capacity:
  - In 2010–11, Australian biodiesel plants operated at a low utilisation rate of 45 per cent of aggregate capacity.[171]
- The application of anti-dumping duties on imported biodiesel have made imports from the US less competitive:
  - While there have been imports of biodiesel into Australia, future imports from the US will attract an anti-dumping duty of around 18 cpl.[172] In addition, eligible biodiesel produced in Australia is covered by the Energy Grants (Cleaner Fuels) Scheme, which effectively offsets the fuel excise. This grant has been extended until 2021.
- Concerns about quality and reliability of biodiesel supply:
  - The ACCC understands that a key challenge for Australian biodiesel producers is being able to supply biodiesel that consistently meets specifications for blending and on a continual basis.[173]

6.5.2 Public concerns about biofuels

The ACCC has actively engaged with consumers and industry stakeholders throughout 2010–11. From this engagement, the ACCC has been informed of ongoing consumer concerns about biofuels.

Complaints and inquiries

The ACCC continued to receive complaints about biofuels in 2010–11, a majority of which were about EBP. Over 70 per cent of complaints came from NSW and Queensland. This is likely due to the large number of retail sites that have sold EBP in those states.

The main issues that were brought to the ACCC's attention in respect of EBP included concerns about:

- the NSW Government's mandate for the use of EBP and the associated withdrawal of RULP from many retail sites in NSW
- advertising of EBP by retailers, such as prices for RULP and EBP not being sufficiently differentiated on some roadside price boards or advertising EBP on price boards when it was not available

170 APAC biofuels consultants, *Australian Biofuels 2011–12*, September 2011, p. 44
171 Ibid., p. 10.
172 Ibid, p. 46.
173 Ibid, p. 39.

- labelling of EBP on retail site forecourts and changes by some retailers to the colours of pump handles used to dispense fuel products, including EBP
- the price difference between EBP and RULP.

While most consumer complaints and inquiries do not raise concerns under the Act, the ACCC will take action where appropriate. The ACCC investigated allegations of misleading and deceptive conduct relating to the sale of EBP in 2010–11. Enforcement action was taken against Prime Fuel Distributors Pty Ltd when it was found it was likely to have misled motorists about the type of petrol it had supplied (see chapter 2 for further details).

Engagement with key stakeholders on biofuels issues

During 2010–11, the Fuel Consultative Committee (FuelCC)[174] continued to play an important role in the ACCC's engagement with key stakeholders about biofuel matters, particularly relating to ethanol and EBP. During the FuelCC meetings held in 2011, members raised concerns about:

- difficulties faced by the ethanol industry in 2011 (i.e. supply issues and the Queensland floods)
- changes to ethanol excise and the likelihood of ethanol imports
- state based biofuel mandates including the cost of implementing the mandates and additional costs where mandates are suspended
- the price difference between E10, RULP and PULP
- the increased logistical costs of handling, transporting and storing EBP to meet mandated ethanol consumption
- the need for legislative certainty to drive investment in the biofuels market.

The ACCC also continued to engage with stakeholders outside of the FuelCC including liaising directly with ethanol producers, fuel retailers, industry associations, motoring organisations and government agencies regarding biofuels.

6.5.3 Observations on the supply of ethanol in Australia

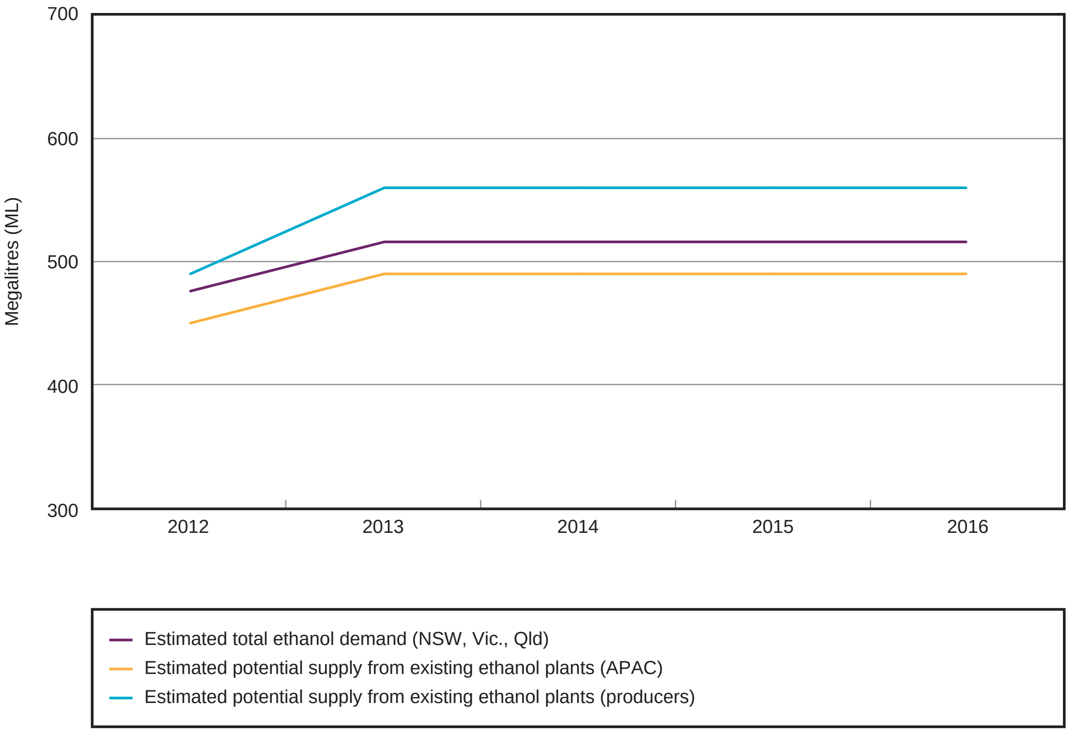
In the 2010 petrol monitoring report, the ACCC raised the potential for ethanol supply disruptions due to limited domestic ethanol supply. Throughout 2010 and 2011, various stakeholders continued to raise concerns with the ACCC about existing and suspended mandates in NSW and Queensland, limited capacity, and regulatory uncertainty surrounding the implementation of mandates and the tax treatment of biofuels.

On 11 January 2011, the ACCC raised concerns about ethanol supply disruptions caused by the Queensland floods. This supply disruption and others in the first half of 2011 caused shortages in the supply of ethanol for blending with fuel. These supply concerns led the Queensland Government to suspend its mandate and the NSW Government to delay its mandate. Since then, concerns about ethanol supply among some stakeholders appear to have lessened due to recovery from the Queensland floods, increased regulatory certainty and planned and actual capacity expansions. However, differing views among stakeholders about the adequacy of ongoing ethanol supply remain, leading to uncertainty and concerns about the supply and price of ethanol and EBP.

174 See chapter 2 for more details on this committee.

Chart 6.5 illustrates ethanol potential supply and demand estimates based on data obtained by the ACCC from APAC (table 6.1), producers (table 6.2) and RET. Potential supply estimates based on APAC data shows that from 2012 there may be an estimated ethanol supply shortage of around 26 ML per year. Alternatively, potential supply estimates based on data from producers indicates there may be excess ethanol supplies. This reflects the different views regarding ethanol supplies in Australia.

Chart 6.5 Estimated potential ethanol demand and supply: 2012 to 2016



Sources: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues, APAC biofuels consultants' data, *Australian Biofuels 2010–11*, and information provided by the three producers (Manildra Group, United Petroleum and Sucrogen.)[175]

175 Estimated potential ethanol supply is based on Australian ethanol nameplate capacity reported by APAC and provided by producers. Ethanol demand is based on fuel consumption figures provided by RET's *Australian Petroleum Statistics*. Ethanol demand estimates into the future are based on 2010 market shares for RULP, PULP and EBP. These forward estimates are extrapolated from fairly stable total petrol consumption figures from previous years. Future ethanol consumption in NSW is calculated using the planned mandates in NSW. The mandate percentages are based on the following assumptions: the Queensland mandate remains indefinitely suspended and there are no further suspensions of the NSW mandate. The NSW mandate increased to 6% on 1 October 2011 and from 1 July 2012 all RULP sold by primary wholesalers will be required to be E10. Chart 6.5 is based on existing mandated demand from NSW. From 1 July 2012, some motorists may switch to PULP rather than EBP. The possible substitution from EBP to PULP is not shown in this chart because the exact rate of substitution to PULP is difficult to predict. Additionally, potential growth in E10 demand from Queensland and Victoria as well as demand for higher blends of EBP such as E85 in all states where it is sold is not taken into account in the chart. While there are some new plants proposed and expected to begin providing ethanol for sale in 2014, it is unclear if they will go ahead. Consequently, chart 6.5 does not include potential capacity from proposed new plants.

The combination of limited, albeit increasing, domestic ethanol supply, mandates and the challenges of importing ethanol have left little existing spare supply to respond to increased demand over the past 12 months. If the NSW mandate proceeds as planned in 2012 or the Queensland mandate's suspension is lifted, ethanol shortages could occur in the medium to long term. The likelihood of shortages would increase if planned production expansions do not commence in the near future. Additionally, any increased uptake of E85 has the potential to place further pressure on ethanol supply.

The ACCC considers that while overall the supply situation appears to be improving, there are differing views about the adequacy of future supply, which has led to some uncertainty. Given this uncertainty, the ACCC will continue to monitor developments in the fuel ethanol market.

6.5.4 Observations on the price of EBP and differentials with RULP

Last year, the ACCC reported there was a risk that limited supply and growing mandated consumption could lead to higher ethanol prices. ACCC monitoring over the past year across the monitored locations has found that average E10 prices increased relative to RULP, which has resulted in a narrowing price difference between RULP and E10. ACCC analysis has shown that in some cases the price of E10 has exceeded the price of RULP, particularly in Sydney in the second half of 2011. Stakeholders have also reported the same observations to the ACCC.

As shown in table 6.4, from January to October 2011 the monthly price difference between RULP and E10 narrowed by 0.9 cpl from 2.6 cpl to 1.7 cpl across locations monitored by the ACCC.

Table 6.4 Average price difference between RULP and E10 across the monitored locations: January 2007 to October 2011

	Jan cpl	Feb cpl	Mar cpl	Apr cpl	May cpl	Jun cpl	Jul cpl	Aug cpl	Sep cpl	Oct cpl	Nov cpl	Dec cpl	Ave cpl
2007	3.0	3.0	3.0	3.0	3.0	2.9	2.9	3.0	3.0	3.0	3.0	2.7	3.0
2008	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.9	2.9	2.9	2.9	3.0	2.8
2009	3.0	2.7	2.5	2.6	2.5	2.6	2.5	2.5	2.5	2.6	2.5	2.6	2.6
2010	2.6	2.6	2.6	2.5	2.6	2.5	2.6	2.6	2.6	2.6	2.5	2.6	2.6
2011	**2.6**	**2.2**	**2.1**	**2.0**	**2.0**	**2.0**	**1.7**	**1.7**	**1.7**	**1.7**	**—**	**—**	**2.0**

Sources: ACCC analysis based on Informed Sources data

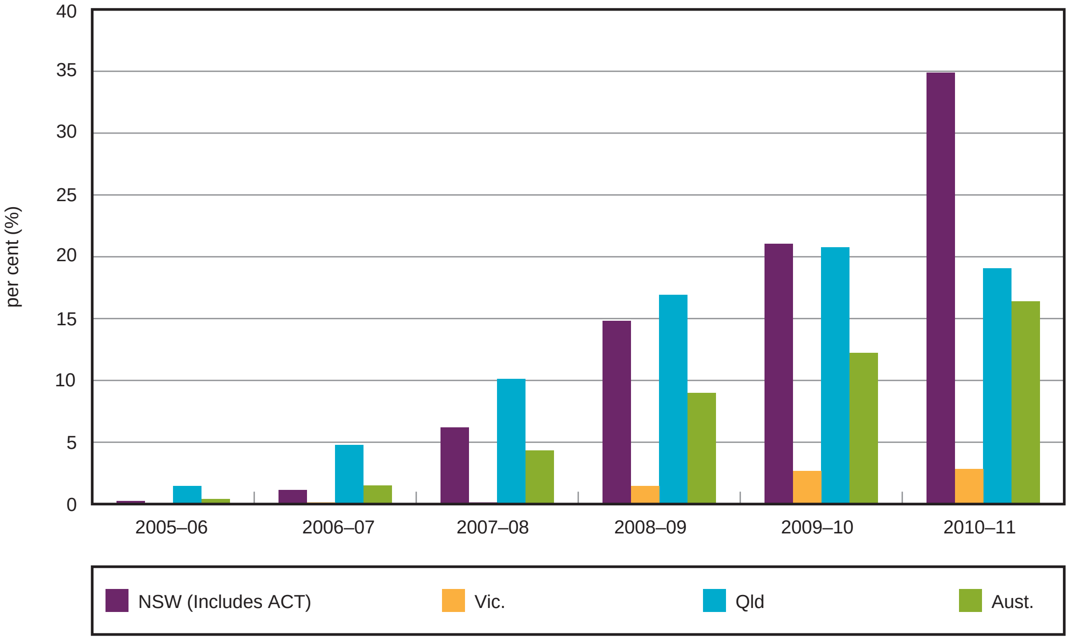
6.5.5 Continued increase in sales of ethanol blended petrol

As shown in chart 6.6, consumption and EBP sales continued to grow in Australia during 2010–11, which continues the trend of increasing use of EBP in Australia since 2005–06.

The increasing use of E10 may be due to a number of factors, but it is likely to be largely due to the mandate operating in NSW and the proposed mandate in Queensland. Increased consumer acceptance of E10 may also be contributing to higher use of EBP.

Looking at the states with the most EBP sales, NSW experienced significant growth in EBP sales, whereas demand in Queensland has declined slightly over the past year. The differing uptake of EBP in NSW and Queensland may be due to the increase of the NSW ethanol mandate and the suspension of the ethanol mandate in Queensland.

Chart 6.6 EBP as a percentage of total petrol sales: 2005–06 to 2010–11



Source: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues

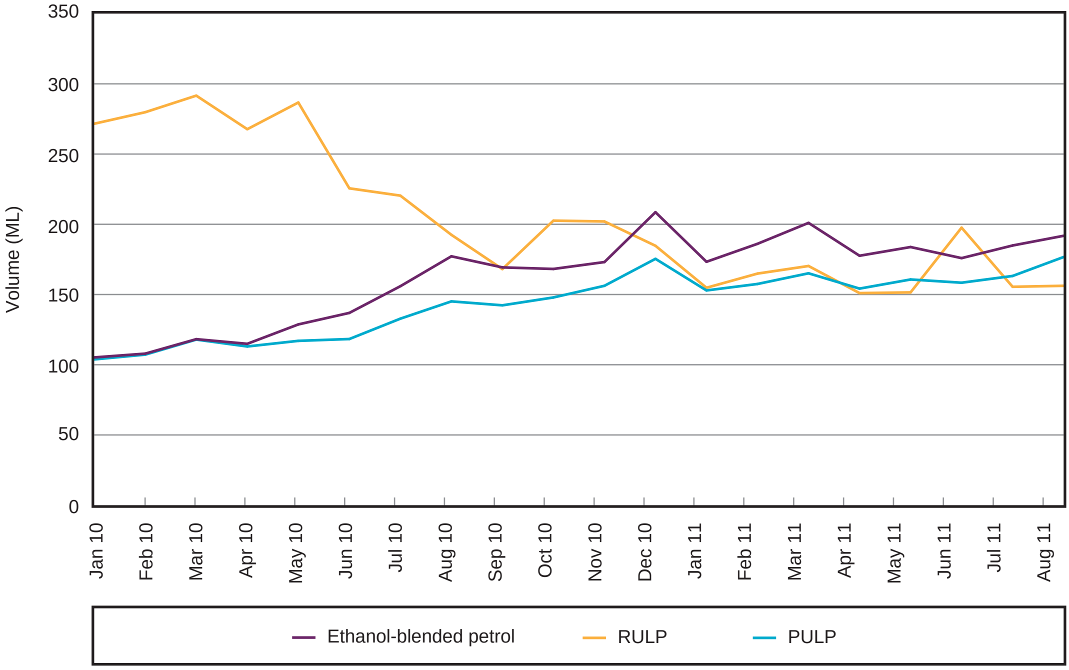
There was little movement in Victoria's sales of EBP during 2010–11. However, in August 2011 it was reported that Shell (and consequently Coles Express) planned to withdraw E10 from sale in Victoria due to a low take-up by motorists in that state.[176] This is in contrast to media reports that the take-up of E10 at United Petroleum sites in Victoria continues to grow.[177]

176 Steve Colquhoun, 'Shell pulls ethanol pumps from Victoria,' *The Age*, 12 August 2011, at http://m.theage.com.au/drive/motor-news/shell-pulls-ethanol-pumps-from-victoria-20110812-1iq02.html, accessed 30 November 2011.

177 Mark Hinchliffe, 'Oil majors shift out of ethanol', *Courier-Mail*, 7 September 2011, at http://www.couriermail.com.au/ipad/oil-majors-shift-out-of-ethanol/story-fn6ck51p-1226130916120, accessed 30 November 2011.

Comparing volumes of sales in NSW by fuel type, there is a noticeable decline in RULP sales from around May 2010 with an upward trend in E10 and PULP sales at that time (as shown in chart 6.7). This may be due to the progressive implementation of the NSW biofuels mandate. The NSW biofuels mandate commenced at 4 per cent on 1 January 2010 and it was expected to increase to 6 per cent on 1 January 2011, but this increase was twice deferred until 1 October 2011.

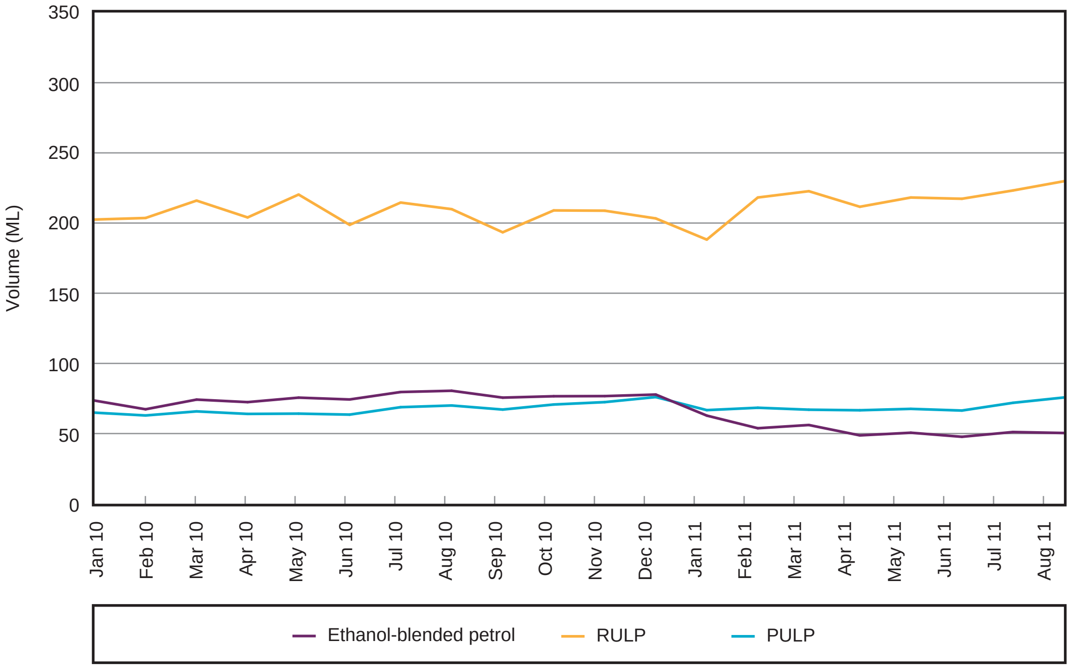
Chart 6.7 Monthly sales of EBP, PULP and RULP in NSW: January 2010 to August 2011



Source: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues

The volume of E10 sales in Queensland noticeably decreased from around the end of 2010 and continued to decrease, at a slower rate, throughout 2011 (see chart 6.8). During that time, there was also a noticeable increase in RULP sales. This may be due to the suspension of the Queensland ethanol mandate, which was announced on 28 October 2010. The Queensland Government had proposed to introduce a 5 per cent ethanol mandate for petrol sold in Queensland by 31 December 2010.

Chart 6.8 Monthly sales of EBP, PULP and RULP in Queensland: January 2010 to August 2011

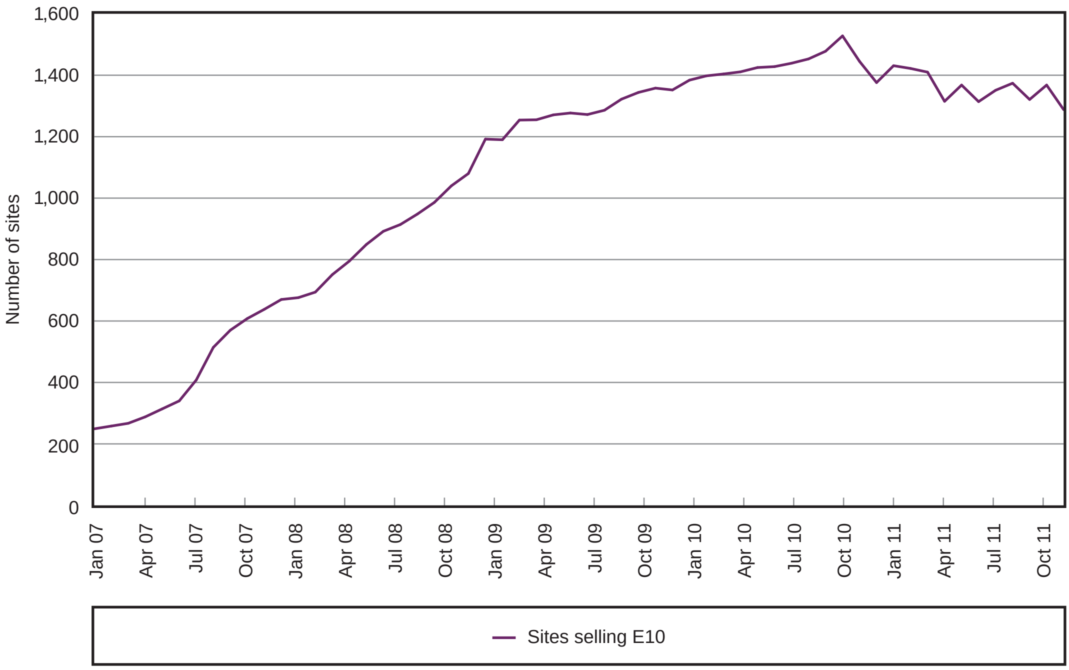


Source: ACCC calculations based on RET data, *Australian Petroleum Statistics*, various issues

6.5.6 Trends in retail sites selling E10

Despite the mandate in NSW and a proposed mandate in Queensland for the supply of ethanol, during 2010–11, the number of sites selling E10 across Australia declined over the year (see chart 6.9). This is in contrast to the previous year which saw an increase in sites selling E10. This is also despite the increase in national sales of EBP.

Chart 6.9 Number of sites selling E10 in Australia: January 2007 to October 2011



Source: ACCC calculations based on Informed Sources data

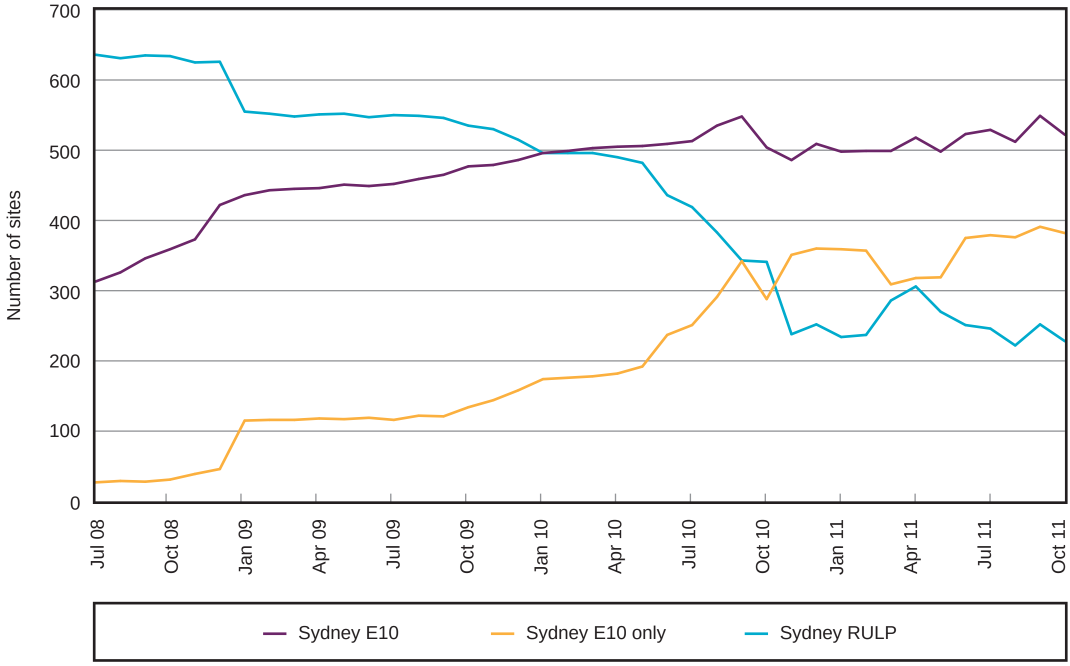
The ACCC considers that a number of factors may have contributed to this decline including:

- a reported reduction in the availability of supplies of ethanol due, in part, to the Queensland floods
- the delay of the increase in the NSW mandate and the suspension of the Queensland mandate
- consumer preference for RULP over E10.

BP and others announced in 2011 that they would phase out E10 and replace it with RULP in their Queensland sites due to disruptions in the supply of ethanol.[178]

178 BP Australia, '*Queensland ethanol supply constrained–BP to replace E10 blend with Unleaded*', press release, at http://www.bp.com/genericarticle.do?categoryId=9008681&contentId=7066674, accessed 30 November 2011.

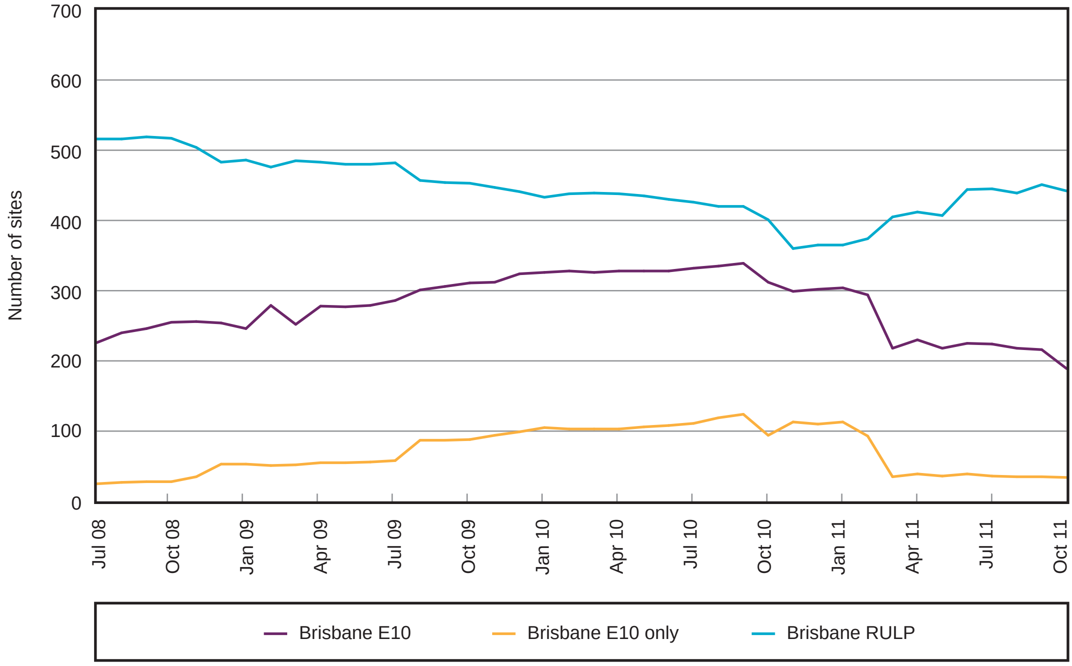
Chart 6.10 Number of sites selling RULP, E10 and E10 only in Sydney: July 2008 to October 2011



Source: ACCC calculations based on Informed Sources data

While NSW had the highest level of E10 sales last year, the number of sites selling E10 in addition to RULP in Sydney increased marginally and there was a noticeable increase in sites that sold only E10 (see chart 6.10). This also reflected a similar decline in the sites in Sydney that sold RULP. These trends, which largely began to occur from early 2010, were likely due to expected increases in the NSW ethanol mandate to 4 per cent from 1 January 2010 and the further expected increase to 6 per cent from 1 January 2011, which did not occur until 1 October 2011.

Chart 6.11 Number of sites selling RULP, E10 and E10 only in Brisbane: July 2008 to October 2011



Source: ACCC calculations based on Informed Sources data

In Brisbane, the number of sites selling E10 declined significantly between the end of 2010 and September 2011 (see chart 6.11). The Queensland Government's proposed 5 per cent ethanol mandate for petrol sold was suspended on 28 October 2010. This decision in combination with supply disruptions due to the floods is likely to have led to the reduced number of sites selling E10 in Queensland.

7 Premium unleaded petrol

Key points

- The market for premium unleaded petrol (PULP) continued to grow in 2010–11, particularly in NSW where PULP sales increased by over 40 per cent from the previous year.
- The jump in PULP sales in NSW is likely to be driven by the ethanol mandate, which has had the effect of limiting supplies of regular unleaded petrol (RULP) available to NSW motorists.
- The price of PULP is largely determined by the import parity price (IPP) benchmark, which is driven by the international price of refined premium grade unleaded petrol.
- If the demand for PULP continues to expand it may place pressure on both supplies and prices.

7.1 Introduction

The product mix in the Australian petrol industry has undergone considerable change in recent years.

Since the commencement of the ACCC petrol monitoring program in 2008, there has been a reduction in demand for regular unleaded petrol (RULP) and an increasing presence of premium and alternative fuels in the marketplace.

With the continued rollout of the ethanol mandates in NSW as well as the growth in motor vehicles recommended to use premium fuels, demand for premium unleaded petrol (PULP) has risen substantially.

This chapter considers the demand, supply and pricing of premium grades of unleaded petrol sold in Australia.

7.2 Features of premium unleaded petrol

PULP refers to grades of petrol, which, by virtue of their higher octane, additional refining and additives, may be able to boost the performance of some engines.

According to the quality specifications set out in the Fuel Standard (Petrol) Determination 2001, PULP and RULP must meet certain minimum specifications. For RULP, the specifications are less stringent than for PULP (table 7.1)

Table 7.1 Product specifications for PULP 95 and RULP

	PULP 95	RULP
Sulphur content	Less than 50 mg/kg	Less than 150 mg/kg
Research octane number (RON)[a]	Minimum of 95	Minimum of 91
Motor octane number (MON)[b]	Minimum of 85	Minimum of 81

Source: Fuel Standard (Petrol) Determination 2001, compilation prepared 28 June 2008

Notes: [a] RON is a rating of a fuel's resistance to auto-ignition to the fuel after being tested in an engine simulating road conditions where pure iso-octane has a rating of 100.

[b] MON is a similar rating to RON but with the fuel being tested in an engine simulating conditions of greater stress.

Typically, PULP is produced and made available in two common grades:

- PULP 95: unleaded petrol with a 95 RON
- PULP 98: unleaded petrol with a 98 RON.

In addition, refiners often add detergents and cleaning agents to PULP to minimise wear and tear in the engine. This and other characteristics of PULP, principally the higher octane rating, generally enhance the performance of engines with a higher level of energy output.

However, this does not necessarily mean that PULP is a more economical fuel than RULP. The cost differential compared with RULP must also be taken into account in evaluating the relative cost effectiveness of PULP.

7.2.1 Production process

The refining process for PULP is more complex than for RULP, mainly due to the desulphurisation process. However, the desulphurization process also reduces the octane rating of the fuel. Depending on the feed stock going into refining, PULP may require additional refining in order to achieve a 95 or 98 RON rating.

In addition, further processing may be involved where refiners add a cleaning agent or detergent in order to minimise carbon build-up in the engine.

For these reasons, PULP is a more costly fuel to produce than RULP.

7.2.2 Premium unleaded petrol in the marketplace

While RULP is largely identified as a homogenous product regardless of the seller, the PULP market seems to be characterised by a higher degree of product differentiation.

Many PULP products contain the same octane level, and are generally very similar products. Nevertheless, marketers attempt to distinguish their premium fuels from those of their competitors.

Table 7.2 shows the more common RULP and PULP products in the marketplace as well as ethanol blended premium unleaded petrol (EBP 95/98). In contrast to RULP products, most PULP products have an individual brand name.

Table 7.2 Petrol products and branding as at September 2011

	Type of petrol					
	RULP	PULP 95	PULP 98	EBP 95	EBP 98	EBP 100
BP	Unbranded	Unbranded	BP Ultimate	—	—	—
Shell	Shell Unleaded	Shell Premium Unleaded	V-Power	—	—	—
Caltex	Unbranded	Vortex 95	Vortex 98	—	—	—
Mobil[a]	Unbranded	Unbranded	Unbranded	—	—	—
United	—	—	Premium 98	Plus ULP	Boost 98	Premium 100
Neumann	—	—	—	E-Gen 95	E-Gen 98	—
Gull	Unbranded	Gull PULP	—	—	—	—

Source: Company websites

Note: [a] Mobil no longer has retail operations but supply 7-Eleven sites.

PULP 95 and PULP 98 products are generally refined and blended with proprietary additives and then marketed as a company-branded retail product. In the case of ethanol-blended fuels, it is unclear what grade of unleaded fuel is blended with ethanol in order to achieve the relevant octane rating.

With the exception of Mobil, all refiner-marketers appear to have branded their PULP products with distinctive brand names in order to achieve product differentiation from both RULP as well as from other PULP products.

It is not clear how these branded proprietary blends differ from each other in terms of composition or fuel grade; however, they do contain unique patented additives which may give consumers the perception of quality differences, of a different 'feel' while driving.

The refiner-marketers generally promote their branded PULP products on the various benefits over RULP, including:

- that use of premium fuels will have the effect of cleaning the engine
- raise the level of performance
- cause less pollution.

7.3 Demand for premium unleaded petrol

The demand for PULP has changed over time and now no longer mirrors the trend in the demand for RULP. While the overall demand for petrol products has decreased marginally over the past four years, the demand for PULP has increased.

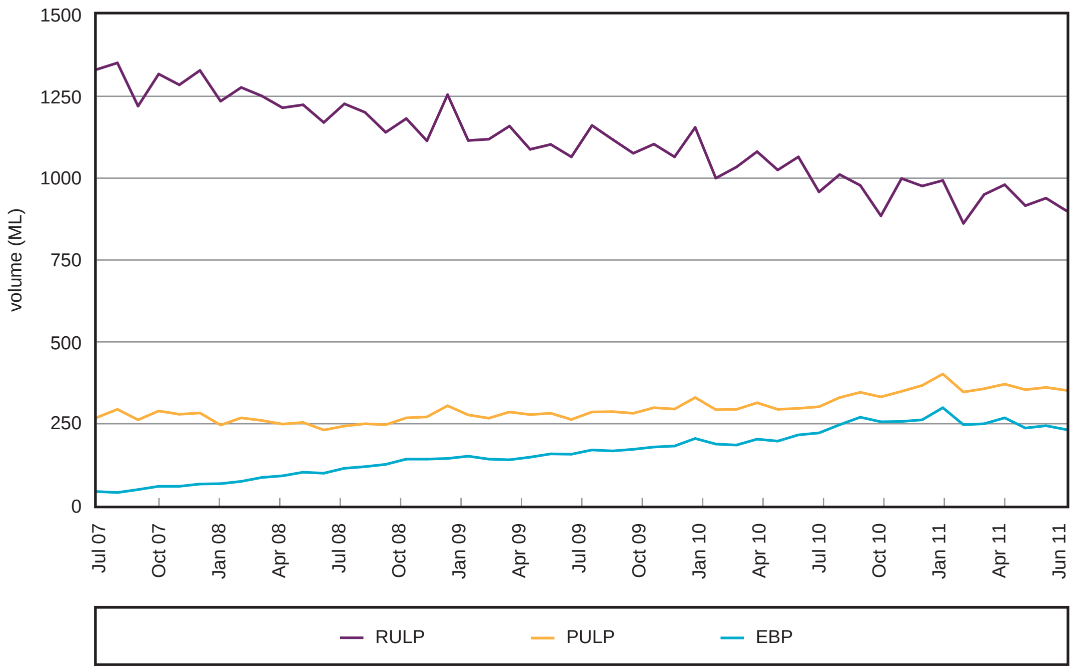
7.3.1 Overall demand for premium unleaded petrol

Chart 7.1 shows sale volumes for PULP, RULP and ethanol blended petrol (EBP) in Australia over the four years to June 2011.

The monthly volume of PULP sold in Australia has steadily increased from about 270 megalitres (ML) in July 2007 to about 350 ML in June 2011. On the other hand, RULP sales have decreased from 1,332 ML in July 2007 to 900 ML in June 2011.

In 2010–11, the increase in PULP volumes was counter to the trend in the sales of RULP: while sales of RULP decreased by 432 ML, PULP sales increased by 81 ML. The volume of EBP sales has increased significantly from a small base.

Chart 7.1 Monthly sale volumes of PULP and RULP and EBP, all states and territories: July 2007 to June 2011



Source: RET, *Australian Petroleum Statistics*, various issues

Accordingly, the proportion of PULP sold in Australia has increased substantially in recent years. In 2007–08, PULP sales of 3,186 ML constituted about 17 per cent of total petrol demand. In 2010–11, PULP sales had reached 4,267 ML or 23 per cent of petrol sales (table 7.3).

There has been a marked decline in the proportion of RULP sales and a clear increase in sales of EBP over the same period, primarily in NSW as a result of the state government mandate on fuel ethanol sales.

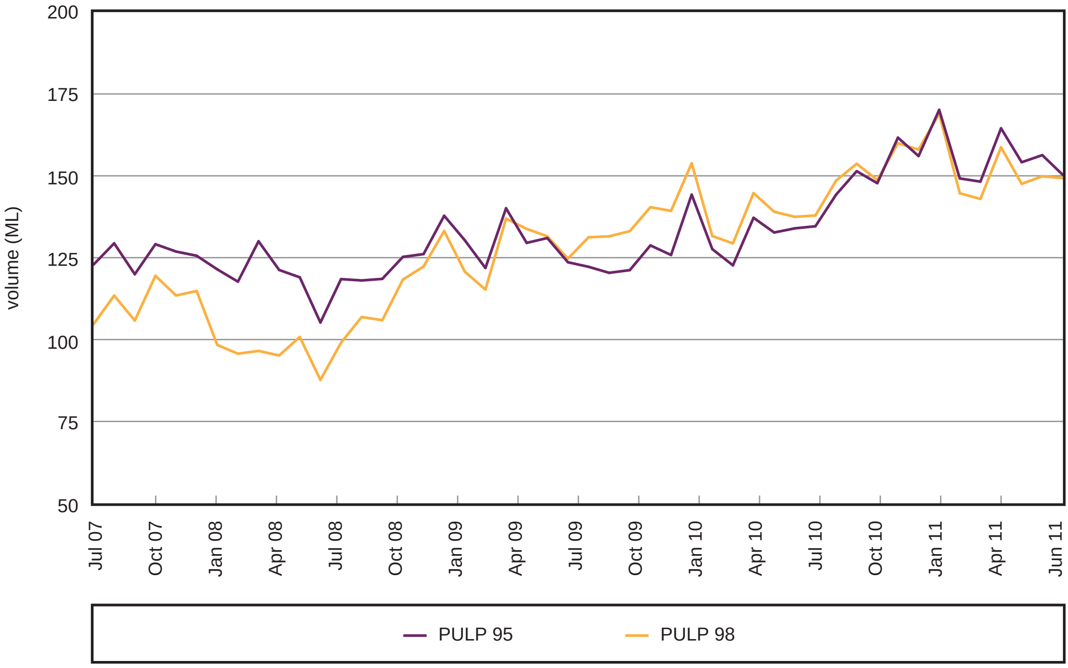
Table 7.3 Proportion and volume of annual sales of PULP, RULP and EBP, all states and territories: 2007–08 to 2010–11

	RULP		EBP		RULP and EBP		PULP	
	%	ML	%	ML	%	ML	%	ML
2007–08	79	15,209	4	835	83	16,044	17	3,186
2008–09	74	13,768	9	1,682	83	15,450	17	3,236
2009–10	69	12,841	12	2,288	81	15,129	19	3,573
2010–11	61	11,388	16	3,069	77	14,458	23	4,267
Change in proportion	**18** ▼		**12** ▲		**6** ▼		**6** ▲	

Source: RET, *Australian Petroleum Statistics*, various issues

In 2010–11, demand for the two main grades of PULP, that is, PULP 95 and PULP 98, was split relatively evenly, despite the price differential. Data on wholesale volumes provided to the ACCC indicate that over the four-year period to June 2011, demand for PULP 98 has grown faster than PULP 95 and now represents about half of total demand for premium fuel (chart 7.2).

Chart 7.2 Monthly wholesale sale volumes of PULP 95 and PULP 98, all states and territories: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

7.3.2 State demand for premium unleaded petrol

The demand for PULP across most states and territories in Australia has not varied significantly, with most states showing a steady increase in the volume of PULP sales over recent years.

In New South Wales, however, the volume of PULP sold has increased substantially, particularly over the 2010–11 financial year.

Table 7.4 presents data on volumes of RULP, PULP and total petrol sold from 2007–08 to 2010–11 in each state and the Northern Territory.

In 2010–11, the volume of PULP sales in NSW increased by over 40 per cent, from 1,316 ML to 1,849 ML. The second largest increase occurred in VIC where PULP sales increased from 804 ML to 896 ML, or about 11 per cent.

Table 7.4 Annual volumes and proportion of sales of RULP, PULP and total petrol (including EBP): 2007–08 to 2010–11

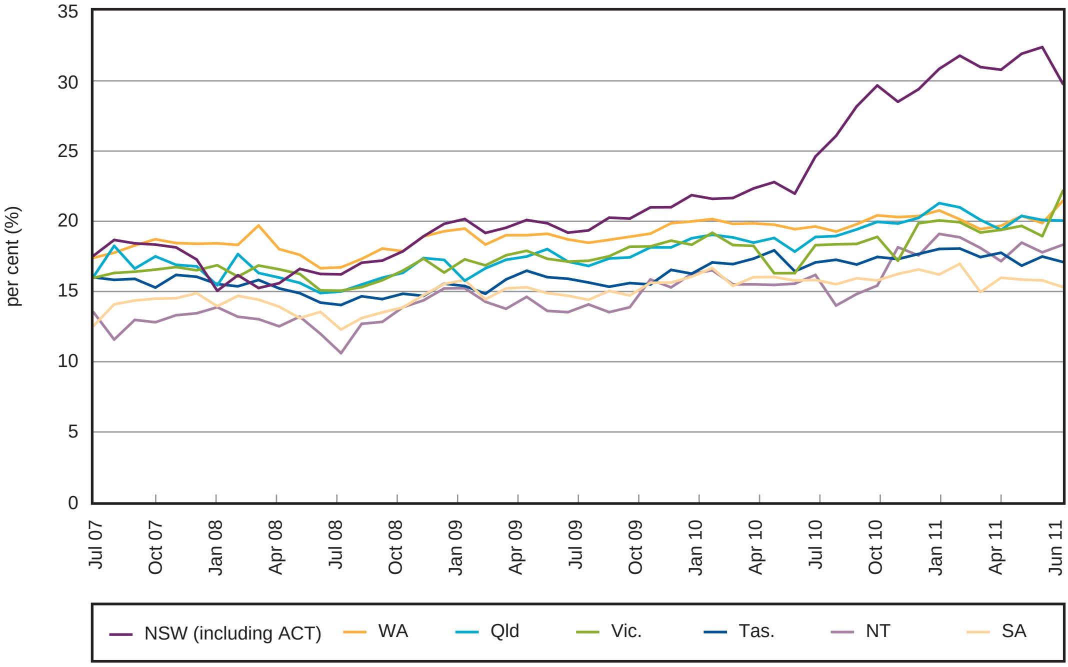
		2007–08 ML	%	2008–09 ML	%	2009–10 ML	%	2010–11 ML	%
NSW (incl. ACT)	RULP	4,666	77	3,981	66	3,508	57	2,160	35
	PULP	1,030	17	1,124	19	1,316	22	1,849	30
	Total	**6,072**		**5,995**		**6,112**		**6,108**	
Vic.	RULP	3,998	84	3,684	82	3,572	79	3,612	77
	PULP	783	16	751	17	804	18	896	19
	Total	**4,787**		**4,502**		**4,496**		**4,685**	
Qld	RULP	3,282	73	2,855	66	2,590	61	2,515	61
	PULP	740	17	715	17	772	18	828	20
	Total	**4,475**		**4,296**		**4,243**		**4,122**	
SA	RULP	1,139	86	1,117	86	1,111	84	1,090	84
	PULP	186	14	189	14	205	16	206	16
	Total	**1,325**		**1,306**		**1,316**		**1,296**	
WA	RULP	1,610	82	1,629	81	1,583	81	1,576	79
	PULP	357	18	370	19	383	19	398	20
	Total	**1,967**		**1,999**		**1,966**		**1,987**	
Tas.	RULP	384	85	370	85	351	84	331	83
	PULP	71	16	67	15	69	16	70	17
	Total	**454**		**437**		**420**		**401**	
NT	RULP	131	87	133	86	126	85	104	83
	PULP	19	13	21	14	23	16	21	17
	Total	**150**		**154**		**148**		**126**	

Source: RET, *Australian Petroleum Statistics*, various issues

Note: 'Total' category includes EBP. Percentages may not add to 100 in states with EBP sales.

Chart 7.3 illustrates the rapid increase in PULP sales through 2010–11 in NSW. Throughout 2010–11 PULP sales continued to increase and at the end of June 2011 PULP represented over 30 per cent of total petrol sales. In contrast, while other states and territories have also shown an upward trend in PULP sales over the four-year period to June 2011, PULP sales in these locations averaged between 15 and 20 per cent of total petrol sales in 2010–11.

Chart 7.3 Monthly PULP sales as a percentage of total unleaded petrol sales in each state and the Northern Territory: July 2007 to June 2011



Source: RET, *Australian Petroleum Statistics*, various issues

7.3.3 Drivers of demand for premium unleaded petrol

The demand for PULP can be linked to a variety of factors which are likely to play a significant role in consumers' purchasing decisions.

The major influences on the demand for PULP include:

- an increasing proportion of vehicle manufacturers either recommending or requiring that PULP be used
- consumer perceptions and marketing about the quality of PULP and the associated benefits
- the NSW Government's ethanol mandate resulting in the reduced availability of RULP in that state.

Vehicle manufacturers' recommendations and specifications

Vehicle manufacturers are increasingly recommending the use of PULP in some of their vehicles. Generally, vehicle manufacturers recommend using premium fuels for a larger proportion of new, luxury and high performance vehicles.[179] ABS data indicates that around 60 per cent of registered passenger vehicles were manufactured after the year 2000.[180]

Manufacturers of most European brands are also likely to recommend the use of premium fuels as most countries in Europe specify 95 RON as the minimum grade of petrol to be offered for sale.

179 Many vehicles will operate on a lower grade of petrol; however, PULP 95 is sometimes specified as the minimum grade of petrol for some vehicles while other high performance engines require a minimum grade of 98 RON.

180 ABS, *Motor vehicle census*, 31 January 2011, p. 15.

While Australian and Asian manufacturers account for the greatest number of passenger vehicles, over the past few years there has been an increasing number of European vehicles on Australian roads. For example, the recent motor vehicle census conducted by the ABS indicates that over the period from 2006 to 2011 there has been a notable increase in sales of several European brands, far exceeding the relative increase in sales of most comparable non-European brands.[181]

Consumer perceptions and marketing

In addition to recommendations of car manufacturers to use premium fuel in newer and high performance vehicles, petrol companies also engage in marketing strategies to promote the advantages of using their specific premium blends.

State government mandates on petrol

Mandates on the use of ethanol in fuel can also impact on the demand for PULP through its overall effect on the mix of petrol products supplied in the marketplace.

In NSW, the current ethanol mandate requires that volume fuel sellers ensure the volume of ethanol sold makes up a minimum of 6 per cent of the total volume of petrol sales.

The mandate was set to increase to 6 per cent on 1 January 2011 but was postponed in December 2010, and then postponed for a further three months in June 2011. On 1 October 2011 the mandate was increased to 6 per cent and from 1 July 2012 all RULP sales will have to be E10.

The impacts of these mandate expansions are likely to reduce the availability of RULP, as more and more regular unleaded fuel is mixed with up to 10 per cent ethanol and sold as ethanol blended petrol or E10. From July 2012, RULP will be effectively unavailable in NSW as all RULP will need to be mixed with ethanol in order to meet the proposed target.

Analysis in chapter 6 shows that over the four years to June 2011 there has been a gradual decline in the number of retail sites in Sydney offering RULP for sale and a steady increase in the number of sites only selling E10.

The restriction, and ultimate removal of RULP from the marketplace is likely to drive demand for PULP in NSW for two key reasons:

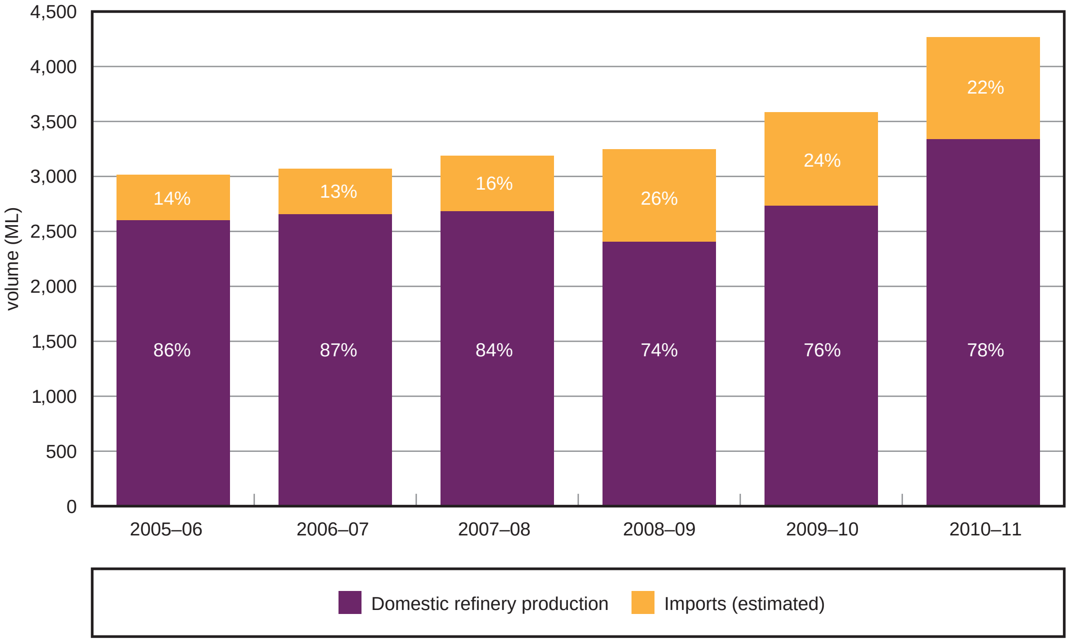
- some motor vehicles are not compatible with ethanol fuel blends
- a proportion of motorists prefer to use traditional unleaded petrol rather than an ethanol mix.

181 Australian Bureau of Statistics, *Motor vehicle census*, 31 January 2011, cat. no. 9309.0, p. 12, ABS, Canberra.

7.4 Supply of premium unleaded petrol

A substantial proportion of the supply of PULP is being met by imports from various countries. Chart 7.4 shows the volumes of total PULP sales that were supplied through domestic refinery production and imports.

Chart 7.4 Sale volumes and proportions of PULP by domestic production and imports, all states and territories: 2005–06 to 2010–11



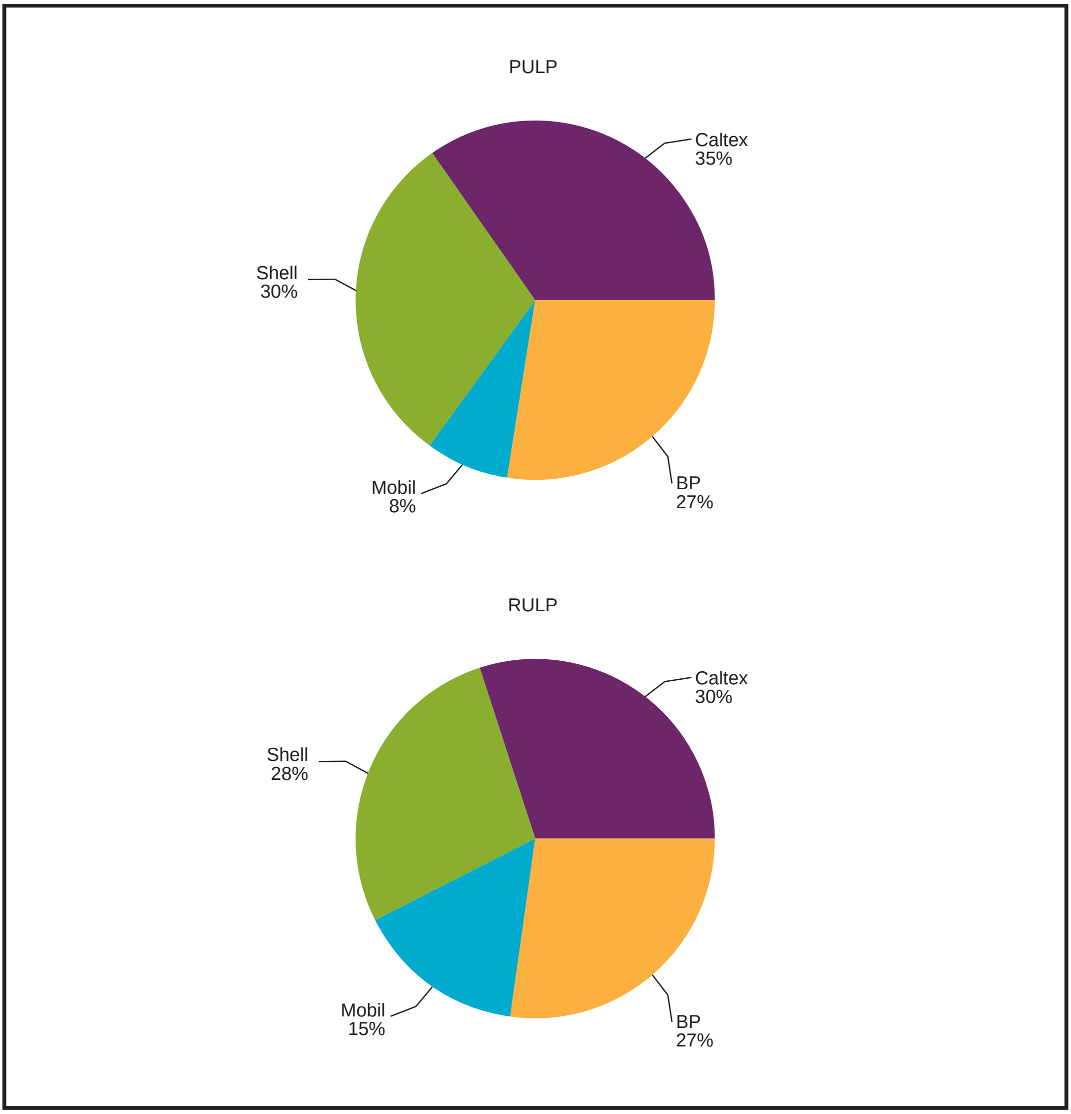
Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process. RET, *Australian Petroleum Statistics*, various issues

Imports of PULP more than doubled between 2005–06 and 2010–11, while refinery production grew by more than 28 per cent. In 2010–11 refinery production of PULP was 3,337 ML, or about 78 per cent of total PULP sales, while imports were 930 ML, or 22 per cent of total PULP sales.

Chart 7.5 illustrates refiner-marketers' shares of refinery production of both PULP and RULP in 2010–11.

BP has approximately equal shares of PULP and RULP refinery production. Mobil has a smaller share of PULP production than RULP and the smallest shares of refinery production of both products. Caltex's share of PULP production is the largest share held by any of the refiner-marketers in the production of these products.

Chart 7.5 Shares of domestic production PULP and RULP: 2010–11



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

7.5 Pricing of premium unleaded petrol

Prices of PULP are largely built up on the same basis as regular unleaded petrol. The import parity price (IPP) is the key building block of the price of PULP and represents the notional cost of importing PULP into the Australian market.

Another commonly observed benchmark in the pricing of PULP is the terminal gate price (TGP). The PULP TGP represents the spot price of purchasing PULP from a wholesaler at the terminal gate.

7.5.1 Import parity price of premium unleaded petrol

As imports represent the marginal source of supply for PULP, the notional cost of importing, or IPP, acts as the basis for the price of PULP. The price paid for imported premium petrol places a competitive constraint on prices that can be charged by local producers.

The IPP is applied to establish prices for both PULP 95 and PULP 98 (as it is with RULP). The IPP used as the basis for RULP is discussed further in chapter 8.

All four refiner-marketers calculate an IPP for PULP 95 while only one refiner calculates an IPP for PULP 98.

The IPP for PULP 95 contains a number of components including:

- the benchmark price of refined premium petrol in Singapore
- a quality premium
- a breakdown of other transportation costs.

Three out of four refiner-marketers base the benchmark price on the Platts Singapore quote for refined premium petrol of RON 97 (Mogas 97). This quoted price can also be referred to as MOPS 97 (Mean of Platts Singapore for Mogas 97).[182] The quality premium provides an indication of the difference between the benchmark price for refined premium petrol in Singapore and the price of PULP 95 refined to Australian specifications.

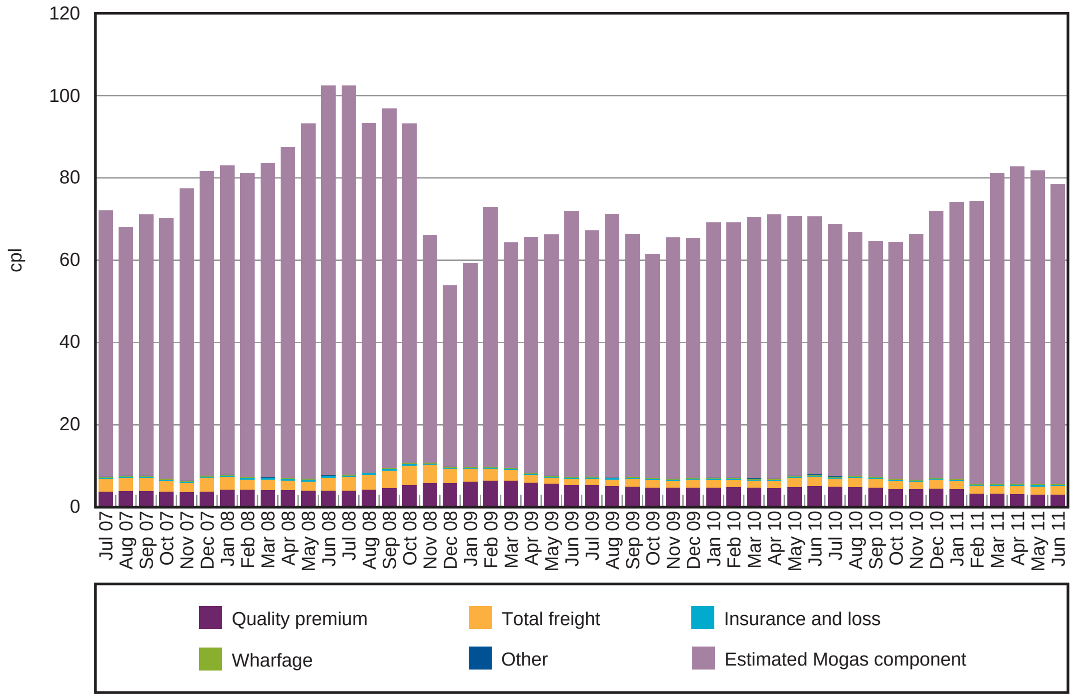
While the calculation of IPP differs among refiners, the general construction of the IPP for PULP 95 is shown as:

IPP (PULP 95) = Benchmark price of refined premium petrol (Mogas 95/97) + Quality premium + Freight + Insurance and loss + Wharfage + Other costs (+ PULP margin)

Chart 7.6 shows the average components of the IPP for PULP 95 each month over the four years to June 2011. The Mogas component is clearly the largest element of the IPP and is the main factor driving changes in the level of the IPP.

182 One refiner calculates their IPP for PULP 95 slightly differently, using the quote for refined premium petrol of RON 95 (Mogas 95) and then adding an extra ‘PULP’ margin.

Chart 7.6 Components of monthly average IPP for PULP 95 in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: The data in chart 7.6 is not comparable with RULP IPP data due to the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others. Components shown in chart 7.6 have been adjusted to reflect this.

On average, the Mogas component made up over 87 per cent of the IPP in 2010–11, slightly more than the previous two years due to higher benchmark prices.

Table 7.5 provides further detail on the components of the PULP 95 IPP in 2010–11.

Table 7.5 Components of monthly average IPP for PULP 95 in the five largest cities: July 2010 to June 2011

	Exchange rate AUD1 = USD	Mogas cpl	Quality premium cpl	Total freight cpl	Insurance and loss cpl	Wharfage cpl	Other (IPP) cpl
Jul 10	0.87	61.26	4.91	1.97	0.28	0.25	0.10
Aug 10	0.90	59.36	4.74	2.25	0.27	0.26	0.00
Sep 10	0.92	57.31	4.63	2.16	0.27	0.26	0.00
Oct 10	0.98	57.75	4.37	1.83	0.26	0.26	0.00
Nov 10	0.99	59.80	4.34	1.77	0.27	0.26	0.00
Dec 10	0.98	64.79	4.38	2.21	0.29	0.26	0.00
Jan 11	1.00	67.36	4.26	1.96	0.29	0.25	0.00
Feb 11	1.00	68.69	3.24	1.92	0.29	0.25	0.00
Mar 11	1.01	75.57	3.24	1.85	0.32	0.25	0.00
Apr 11	1.05	77.14	3.08	1.99	0.32	0.25	0.00
May 11	1.07	76.25	3.00	2.00	0.32	0.25	0.00
Jun 11	1.06	72.94	3.03	1.99	0.31	0.25	0.00
2010–11 average	**0.99**	**66.50**	**3.94**	**1.99**	**0.29**	**0.25**	**0.01**

Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: The data in table 7.5, including exchange rates, is not comparable with data in table 8.1 in chapter 8 on RULP IPP data due to the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others. Components shown in table 7.5 have been adjusted to reflect this.

7.5.2 Components of IPP in premium and regular unleaded petrol

Although the concept of IPP is used in the pricing of many fuel types, the value of the components in the build-up of prices vary for different fuels.

The most notable differences in the build up of IPP for PULP 95 and RULP are:

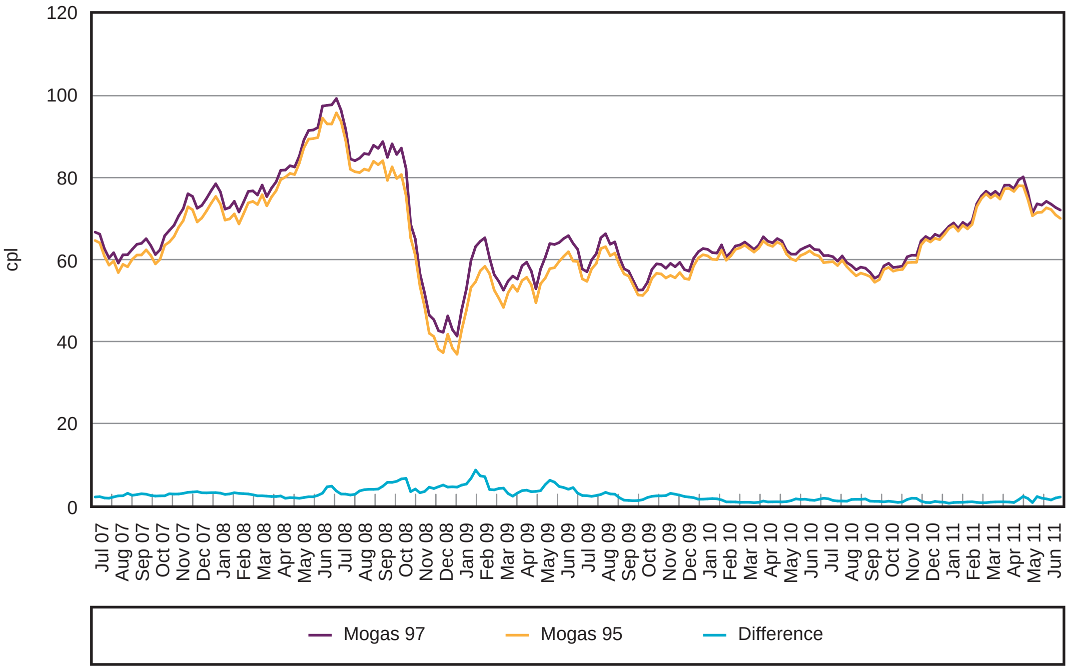
- the refined product benchmark
- the quality premium component.

While most refiner-marketers use the benchmark price of Mogas 97 in the build up of a PULP 95 IPP, the build-up of the RULP IPP uses the price of Mogas 95. Typically, the price of Mogas 97 is higher than that of Mogas 95 reflecting the additional processing required. The markets for Mogas 95 and Mogas 97 are, however, separate and movements in the price of one are not necessarily always reflected in the price of the other.

Chart 7.7 shows the weekly movements of Mogas 97 and Mogas 95 over the four years to June 2011 as well as the difference between the two. Overall, the two benchmark prices have tracked each other very closely, with Mogas 97 priced slightly higher over the period.

The difference between the two benchmark prices, however, appears to have narrowed since January 2010 and throughout 2010–11. During 2010–11, the average differential was 1.12 cpl. This compares with average differentials of 1.62 cpl in 2009–10, 4.39 cpl in 2008–09 and 2.61 cpl in 2007–08.

Chart 7.7 Weekly average Mogas 95 and Mogas 97 prices: July 2007 to June 2011



Source: ACCC calculations based on Platts and RBA data

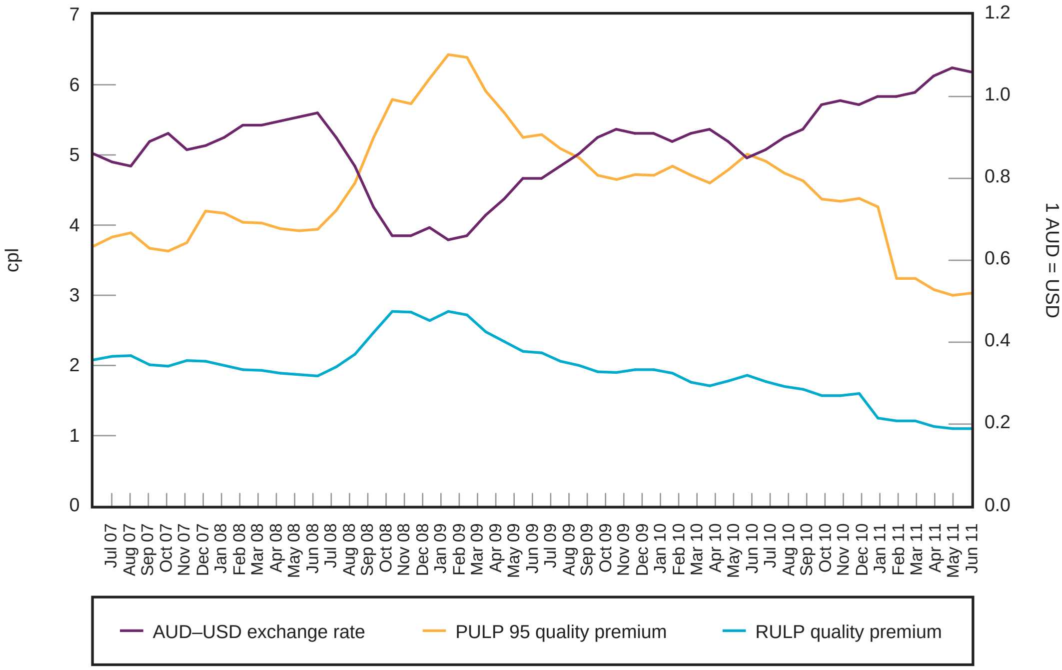
The close relationship of Mogas 97 and Mogas 95 can be partly explained by the increased refining capacity and more sophisticated refining infrastructure now available in the Asia-Pacific region. This allows production of higher quality products in the region placing downward pressure on prices.

The quality premium component is the other key factor which differentiates the IPP for PULP 95 compared to the IPP for RULP.

In theory, the RULP and PULP quality premiums should take into account the difference between the respective benchmark prices of fuel, that is, Mogas 95 and Mogas 97, and the respective prices of RULP and PULP refined to Australian standards. In practice, the differential also reflects differences in the relative bargaining strengths and market conditions for the two fuels.

Chart 7.8 shows the monthly average quality premiums for PULP 95 and RULP across the five largest cities over the four years to June 2011. While the quality premiums for both products move in similar trends, the premium for PULP 95 is clearly higher than the premium for RULP. Over the four years to June 2011 the differential averaged 1.93 cpl but has narrowed, particularly in 2011.

Chart 7.8 Monthly average PULP 95 and RULP quality premiums in the five largest cities, USD–AUD exchange rate: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: The quality premium data shown in chart 7.8 has been adjusted to reflect the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others.

7.5.3 Wholesale prices of premium unleaded petrol

Comparing the prices paid for PULP at the wholesale level with IPP provides an indication of the extent to which wholesale prices reflect their notional import cost. Wholesale prices represent the average prices paid by retailers, distributors and other wholesalers who purchase premium fuels in the wholesale sector.

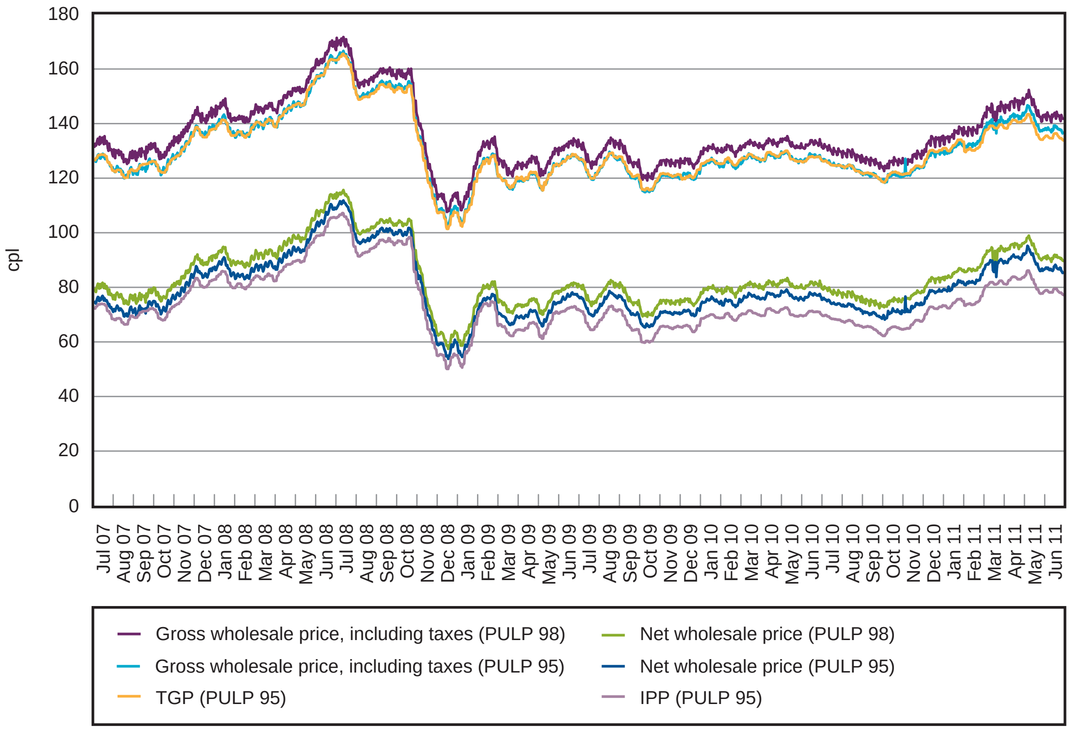
Chart 7.9 shows the two commonly observed benchmark prices for PULP 95: IPP and TGP. The chart also plots monthly average gross and net wholesale prices paid for PULP 95 as well as for PULP 98 from July 2007 to June 2011.

Overall the chart indicates that over the four year period to June 2011:

- average net wholesale prices for PULP 95 have tracked the IPP benchmark very closely
- net wholesale prices for PULP 95 (excluding taxes) have averaged about 4.96 cpl higher than IPP, representing a combination of other operating costs incurred by wholesalers as well as a profit margin
- average gross wholesale prices for PULP 95 and TGPs (which also include taxes) have followed a similar path.

Similar to the market for RULP, few PULP transactions are actually made at the terminal gate with most transactions negotiated in advance with prices struck slightly above or below TGP depending on volumes and additional services.

Chart 7.9 Daily average wholesale prices and IPP and TGP benchmark prices for PULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

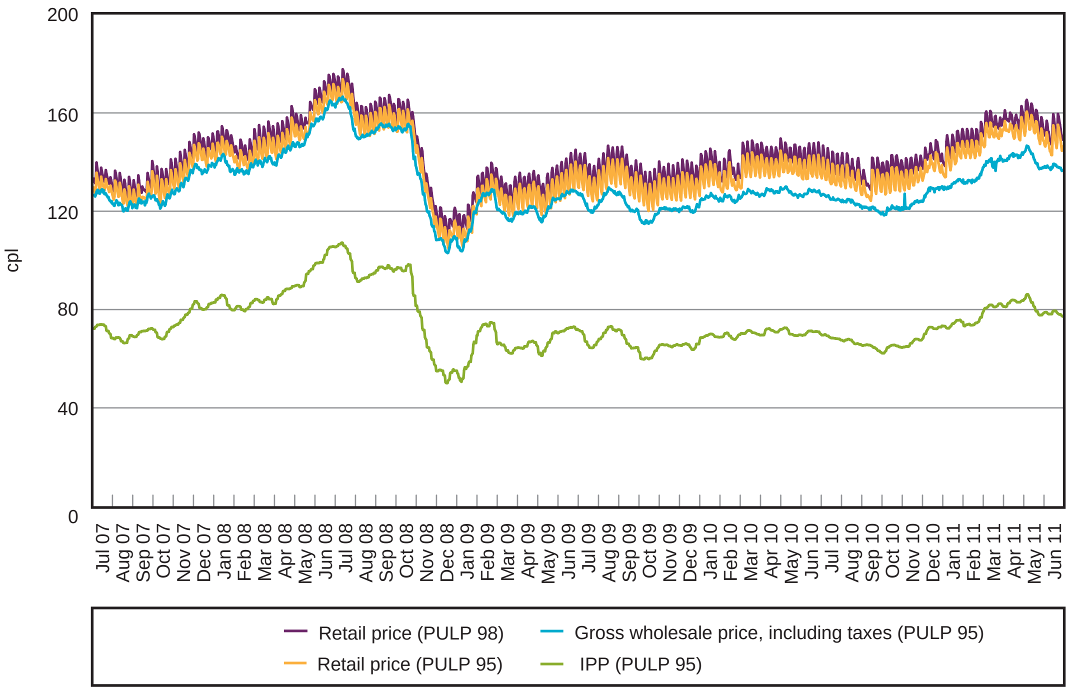
Note: The data in chart 7.9 is not comparable with RULP data due to the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others. Averages shown in chart 7.9 have been adjusted to reflect this.

Wholesale prices for PULP 98 are also shown in chart 7.9. While the benchmark prices included in the chart are based on the 95 RON grade, it is clear that wholesale prices of the higher octane 98 RON grade have followed a similar trend albeit at a slightly higher price overall. The additional premium on PULP 98 reflects the additional processing to achieve the higher octane levels as well as margins resulting from the marketing strategies used by various companies.

7.5.4 Retail prices of premium unleaded petrol

Retail prices of PULP have also tracked their benchmark prices relatively closely. Chart 7.10 shows the daily average retail price of both PULP 95 and PULP 98 alongside benchmark prices for PULP 95 in the five largest cities.

Chart 7.10 Daily average IPP, gross wholesale and retail prices for PULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process, Informed Sources data

Note: The data in chart 7.10 is not comparable with RULP data due to the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others. Averages shown in chart 7.10 have been adjusted to reflect this.

While the short-term cyclical nature of retail prices in Australia's large cities is clearly evident in chart 7.10, the general trend in retail prices has followed the trend in both IPP and TGP benchmarks. Again, the retail price of PULP 98 is consistently higher than the price of the lower octane PULP 95.

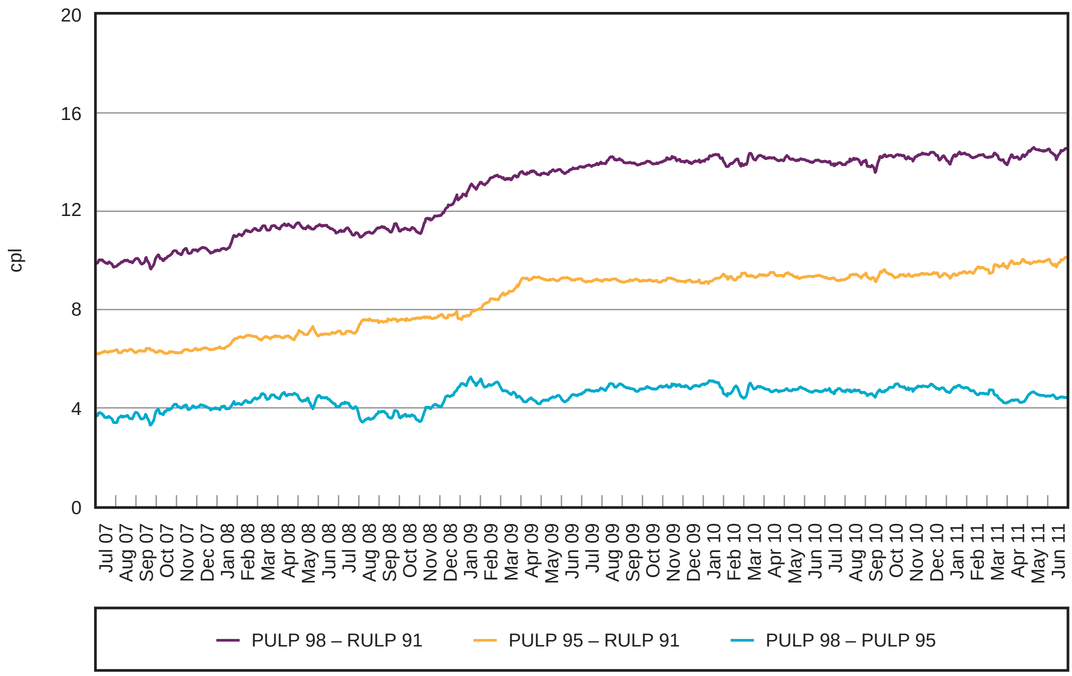
The differential between wholesale and retail prices comprises non-fuel costs incurred by retailers as well as a margin on the fuel sold to motorists.

Despite the overall trends in retail, wholesale and benchmark prices appearing to be very similar, there seems to be a gradual widening in the difference between wholesale and retail prices beginning around July 2009 and then again evident in March 2010. This appears to coincide with significant events which have occurred in the industry, such as the removal of fuel subsidies in Queensland and New South Wales in mid-2009 and the expansion of the NSW ethanol mandate in January 2010.

7.5.5 Retail prices across grades of premium and regular unleaded petrol

The previous charts indicate that the retail price of the two common grades of PULP, 95 RON and 98 RON, seemed to maintain a relatively consistent differential over time. Chart 7.11 considers the retail price differential of the premium grades with respect to regular unleaded petrol.

Chart 7.11 Differential between average daily PULP and RULP retail prices in the five largest cities, seven-day rolling averages: July 2007 to June 2011



Source: ACCC analysis based on Informed Sources data

Over the period from July 2007 to June 2011, the differential between the retail prices of PULP 95 and RULP, and between PULP 98 and RULP have both increased:

- The PULP 95–RULP differential increased by 3.9 cpl to about 10.1 cpl in June 2011.
- The PULP 98–RULP differential increased by 4.6 cpl to about 14.5 cpl as at June 2011.

The differential between the two PULP blends had only increased marginally over the same period.

7.6 Key observations on premium unleaded petrol

In 2010–11, the market for PULP continued to grow in Australia, particularly in NSW where PULP sales increased by over 40 per cent from the previous year.

While a number of factors play a role in the supply and demand of PULP in the market, the distinct jump in PULP sales in NSW is likely to be driven by the ethanol mandate in effect in that state. This growth in demand for PULP is likely to continue into the future as the NSW ethanol mandate expands further in 2012.

Similar to RULP, IPP is a key benchmark and the major determinant in the pricing of PULP. The major component of the PULP IPP is the Mogas price which is the driver of movements in the IPP. Wholesale and retail prices of PULP appear to track the PULP IPP as well as the PULP TGP relatively closely.

The supply of PULP is currently being met through a mix of refinery production and imports. A continuation of the recent growth in PULP sales may put pressure on the supplies and prices of PULP going forward.

8 Wholesale prices

Key points

- The import parity price (IPP) benchmark is the fundamental basis for wholesale prices and is largely driven by the cost of refined unleaded petrol plus other costs associated with importing petrol to Australia.
- Over the four years to June 2011 the notional IPP has been shown to closely reflect the actual costs of importing.
- Throughout 2010–11, movements in wholesales prices have continued to reflect movements in the IPP, which, in turn is driven by movements in the cost of refined unleaded petrol.

8.1 Introduction

This chapter considers the wholesale sector in the Australian petroleum industry and the petrol pricing arrangements throughout the sector. Petrol pricing is examined at the point where petrol enters the wholesale sector as well as at the point where petrol moves from the wholesale sector into the retail sector.

The chapter builds on the analysis of the wholesale sector in the 2010 ACCC petrol monitoring report, focusing on wholesale pricing in 2010–11.

8.2 The wholesale sector

The wholesale sector of the petroleum industry is much like the wholesale sector operating in other industries. The main role of the wholesale sector is to distribute product from the point of production to the point of retail sale.

The four refiner-marketers along with a number of the larger independent wholesalers such as United, Neumann, Gull and Liberty trade the majority of the volume flowing through the sector.

Petrol enters the wholesale sector through two main sources:

- domestic refinery production, by the refiner-marketers
- petrol cargo imports, by both refiner-marketers and independent wholesalers.

Petrol also moves in and around the downstream industry through buy–sell transactions among the refiner-marketers. These transactions take place around Australia and allow refiner-marketers to purchase large volumes of petrol in locations where they do not operate a refinery. Buy–sell transactions also provide an opportunity for operators of a local refinery to supply other refiner-marketers who do not have a refining presence in that location.

In 2010–11, the refiner-marketers continued to supply the majority of Australia's petrol whether by refinery production or importing:

- about 77 per cent of wholesale volumes were refined domestically with 23 per cent sourced through imports (see section 3.3.2 in chapter 3)
- refiner-marketers imported around 60 per cent of total petrol imports while independent importers accounted for about 40 per cent of imports.

The four refiner-marketers supplied over 90 per cent of total supplies of petrol.

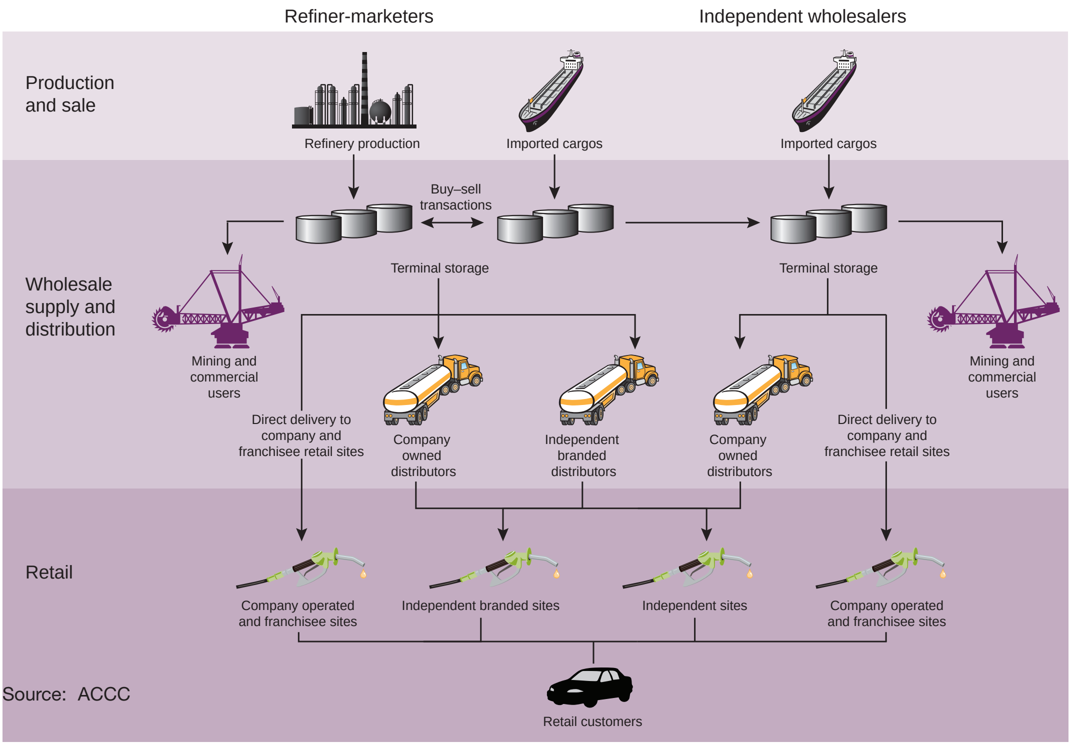
The significant rise in the share of petrol imported by independent importers from around 6 per cent in 2008–09 to around 40 per cent in 2010–11 is partly due to an overall reduction in petrol imports by the refiner-marketers during 2010–11, as well as a steady increase in volumes imported by the independents.

Petrol is distributed within the wholesale sector to supply a variety of users, including:

- independent wholesalers, who often purchase large volumes of petrol from refiner-marketers at the wholesale level to supplement any petrol they import directly
- companies and independent distributors who deliver petrol to the retail sector
- mining and large commercial entities.

As petrol moves from the wholesale to the retail sector it is distributed to a variety of retailers, including company operated and franchisee sites, independently operated branded sites and sole independent operators. Figure 8.1 illustrates the role of the wholesale sector and the flow of petrol through the industry.

Figure 8.1 Flow of petrol through sectors of the Australian petroleum industry



Source: ACCC

8.3 Basis of wholesale prices

Wholesale prices are largely based on the costs of acquiring petrol. In Australia, the costs of acquiring petrol are most commonly observed by the costs faced by refiner-marketers or independent wholesalers to import petrol.

As the Australian market must import petrol in order to satisfy its total demand, the cost of importing petrol provides the basis for which wholesale and retail prices are determined. If the price of locally refined petrol supplies were too high, wholesalers could choose to source petrol through imports at a more competitive price.

Refiner-marketers utilise a notional cost of importing as the basis for setting wholesale and retail prices. This cost, known as the import parity price (IPP), represents the cost of importing petroleum into Australia and is a key pricing benchmark. IPP is used as the basis for pricing throughout the industry, including for price setting under buy–sell arrangements.

While IPP is an important determinant in establishing wholesale prices, it is not the only component. Wholesale prices, including Terminal Gate Prices (TGPs), are largely comprised of four main components:

- IPP
- taxes (excise and GST)
- other costs incurred at the wholesale level
- margins.

8.3.1 Import parity pricing

IPP is the notional price that a company pays to import petrol from overseas. The specific value of IPP is comprised of the individual cost of the base petrol product refined to Australian fuel standards as well as the costs associated with transporting it to Australia.

The base product price used for the pricing of regular unleaded petrol (RULP) in Australia is the Platts Singapore quote for refined unleaded petrol of 95 RON (Mogas 95).

Mogas 95 is an international price subject to supply and demand factors on the global market. It is also used as the benchmark price for petrol in other countries in the Asia-Pacific region such as New Zealand.

Other components of IPP include:

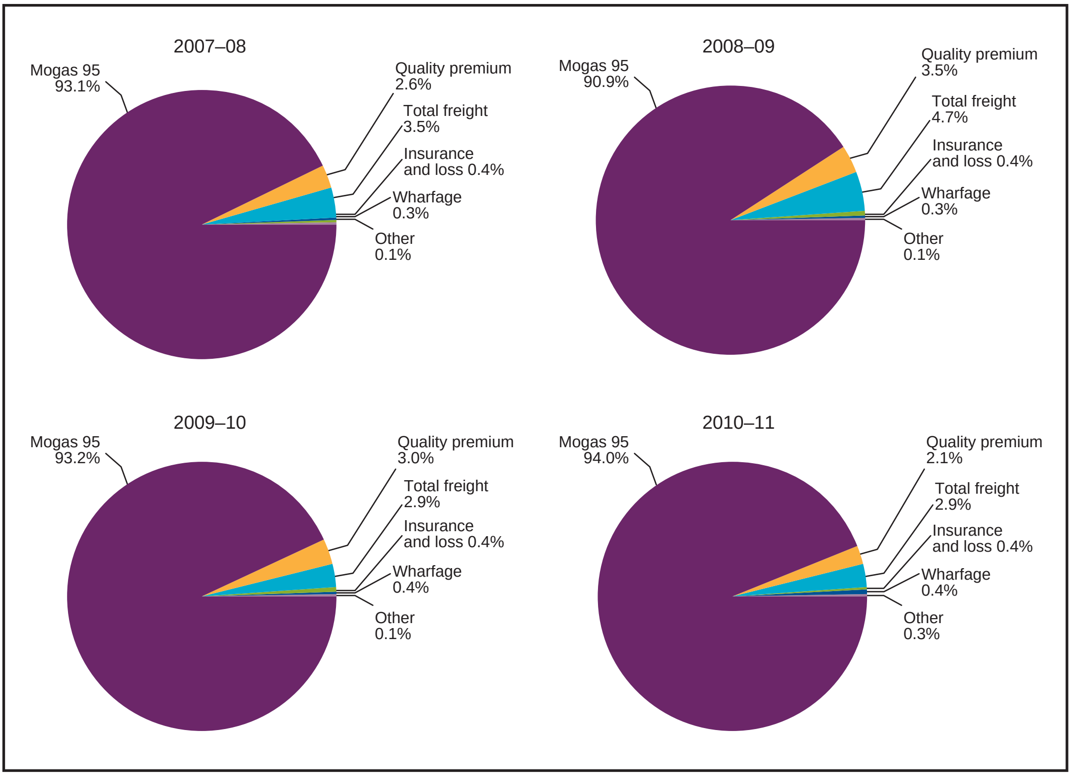
- a quality premium, accounting for the difference between the prices of fuel refined to Australian fuel standards and the specification of the refined product benchmark in Singapore
- transport costs such as freight, wharfage and other incidental costs.

The common formula used to derive the IPP for RULP can be expressed as:

IPP (RULP) = Benchmark price of refined petrol (Mogas 95) + Quality premium + Freight + Insurance and loss + Wharfage

Chart 8.1 shows that in each of the last four financial years, Mogas 95 has represented the largest component of IPP (over 90 per cent). In 2010–11, it represented 94 per cent of the annual average IPP.

Chart 8.1 Components of annual average IPP for RULP in the five largest cities: 2007–08 to 2010–11

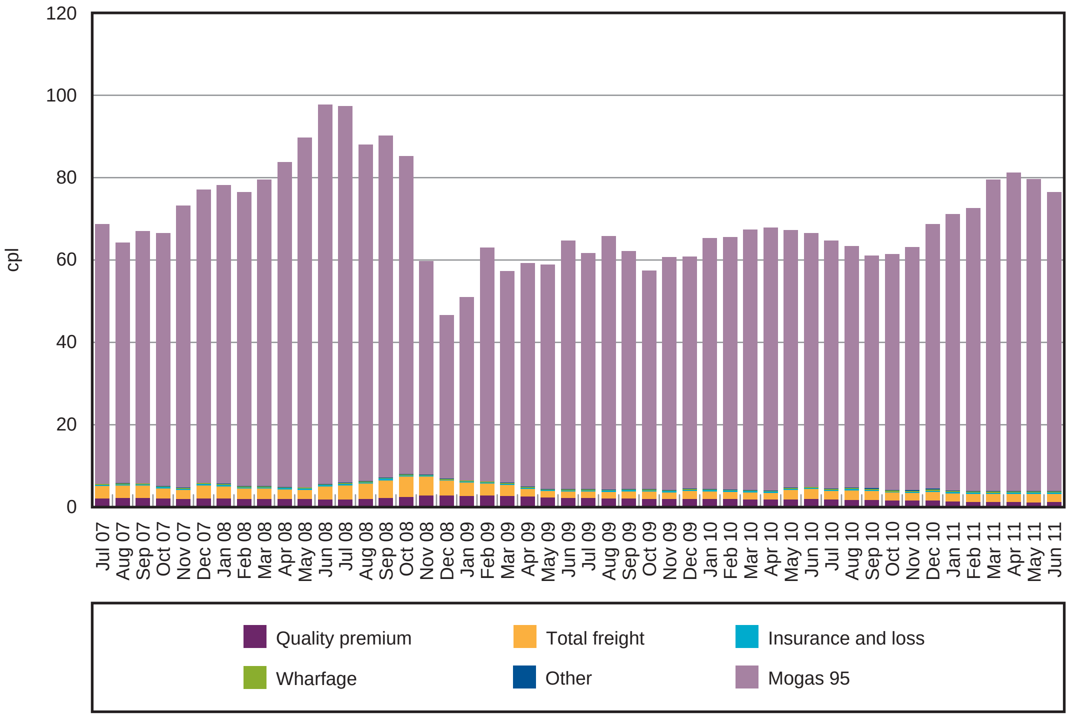


Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Chart 8.2 shows the monthly movements in the IPP from July 2007 to June 2011. It is clear that Mogas 95 is not only the largest component of IPP, but is also the key driver of changes in the IPP and exerts an overwhelming influence on the IPP.

To give an indication of the importance of Mogas 95 in the composition of the IPP, from June to November 2008, as Mogas 95 decreased by over 50 cpl, the combined change in all other components amounted to less than 2 cpl.

Chart 8.2 Components of monthly average IPP for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Table 8.1 details the components of the IPP throughout 2010–11. Mogas 95 was highest in April 2011 at 77.23 cpl and lowest in September 2010 at 56.48 cpl.

Table 8.1 Components of monthly average IPP for RULP in the five largest cities: July 2010 to June 2011

	Exchange rate AUD = USD	Mogas 95 cpl	Quality premium cpl	Total freight cpl	Insurance and loss cpl	Wharfage cpl	Other cpl	IPP cpl
Jul 10	0.86	60.21	1.83	2.01	0.27	0.25	0.18	64.75
Aug 10	0.89	58.64	1.76	2.28	0.25	0.25	0.18	63.37
Sep 10	0.91	56.48	1.72	2.19	0.24	0.25	0.18	61.07
Oct 10	0.97	57.29	1.63	1.86	0.24	0.25	0.18	61.45
Nov 10	0.98	59.00	1.62	1.79	0.25	0.25	0.25	63.17
Dec 10	0.98	64.34	1.64	2.01	0.27	0.25	0.25	68.76
Jan 11	0.99	67.13	1.29	2.01	0.27	0.25	0.18	71.14
Feb 11	1.00	68.72	1.25	1.94	0.28	0.25	0.18	72.63
Mar 11	1.00	75.68	1.25	1.88	0.30	0.25	0.18	79.55
Apr 11	1.04	77.23	1.18	2.01	0.31	0.25	0.18	81.17
May 11	1.06	75.68	1.15	2.03	0.30	0.25	0.18	79.59
Jun 11	1.05	72.51	1.16	2.02	0.29	0.25	0.18	76.41
2010–11 average	**0.98**	**66.05**	**1.46**	**2.00**	**0.27**	**0.25**	**0.19**	**70.23**

Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

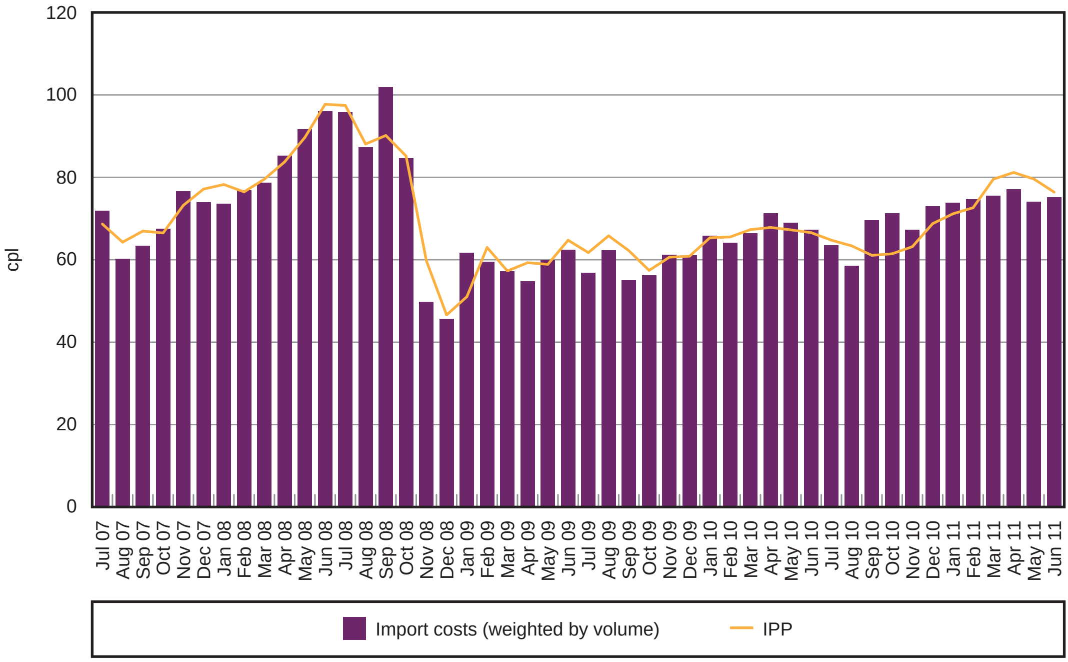
Note: The data in table 8.1, including exchange rates, is not comparable with data in table 7.5 in chapter 7 on PULP IPP data due to the fact that one refiner-marketer calculates its PULP 95 IPP differently from the others. Components shown in table 7.5 have been adjusted to reflect this.

Most of the other components have remained relatively stable, although the value of the quality premium in Australian currency has gradually decreased over the year. This is partly due to the increased fuel specifications in the other countries in the Asia-Pacific region and partly due to the fact that as the quality premium is denominated in USD, the strength of the AUD–USD exchange rate has resulted in a lower component for quality premium expressed in terms of the Australian currency.

8.3.2 IPP and actual costs of importing

As IPP represents a notional formula based on the cost of importing petrol into Australia, it is pertinent to compare it with the actual import costs faced by importers. Chart 8.3 shows IPP against actual import costs for RULP that were paid by refiner-marketers and independent wholesalers who imported RULP over the four years to June 2011.

Chart 8.3 Monthly average import costs and IPP for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

In general, the IPP appears to have moved in line with actual import costs, despite occasions where the observed import costs have deviated slightly from IPP in the short-term. Small deviations are compounded by a number of factors, including payment timings for import cargoes, exchange rate movements and, particularly through 2010–11, a smaller than usual number of import transactions in a given month.

Overall, over the four years to June 2011 the difference between IPP and observed imports costs has been, on average, less than 1 cpl.

A more extensive analysis of IPP is available in chapter 6 of the 2009 ACCC petrol monitoring report as well as in a report by McLennan, Magasanik and Associates reviewing the appropriateness of using IPP in Australia. Both references are available from the ACCC website.

8.3.3 Pricing of buy–sell transactions

In locations where a refiner-marketer does not operate a refinery, it is faced with three supply options:

- import petrol
- transport petrol from the refinery it operates in another location
- obtain petrol from a refinery in the local area, operated by a different refiner-marketer.

Often the most efficient method of accessing local supplies where a refiner-marketer does not operate a refinery is to purchase it from a local refiner-marketer. Refiner-marketers buy and sell refined petrol with each other through buy–sell arrangements. Refiner-marketers facilitate this buying and selling of petrol through six-monthly agreements outlining the volumes they intend to buy and sell in each location.

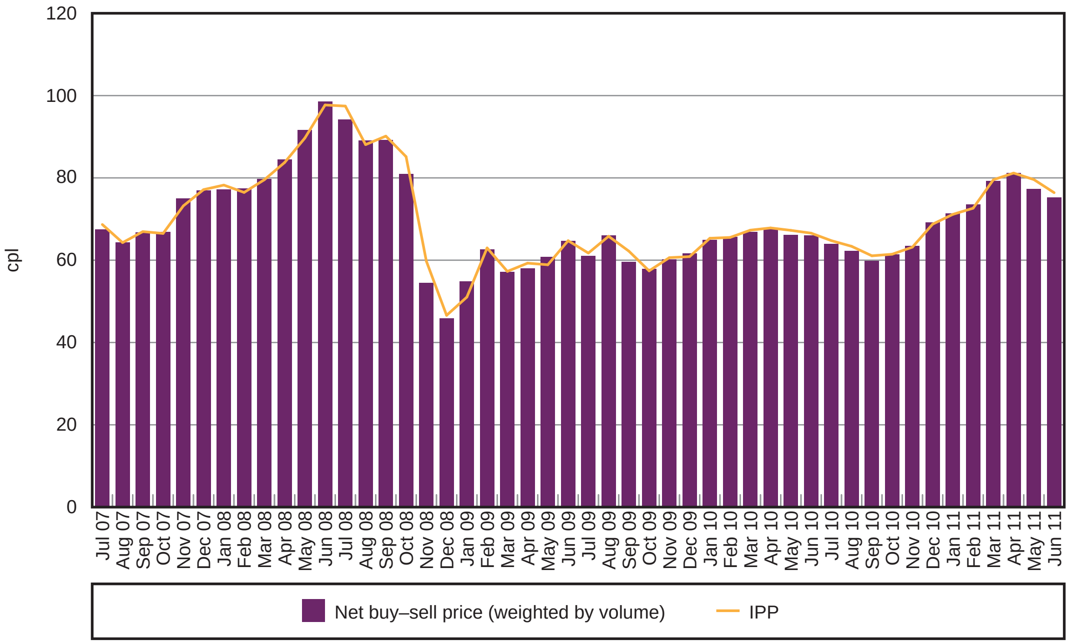
The price at which petrol is traded under buy–sell arrangements also impacts on wholesale prices. Generally, prices at which buy–sell transactions take place are based on IPP. If prices were substantially higher than IPP, a refiner-marketer could choose to import petrol at the lower cost of importing.

Concerns had been raised in the 2007 ACCC petrol inquiry report about the exclusive nature of buy–sell agreements, as independent wholesalers are not privy to such arrangements. The ACCC's 2009 petrol monitoring report found that while arrangements may have had the potential to lessen competition, there was insufficient evidence to support a conclusion that the arrangements contravened the *Trade Practices Act 1974* (since replaced by the *Competition and Consumer Act 2010*).

Since 2009, further evidence has shown that buy–sell prices and IPP have tracked each other very closely, indicating that prices at which buy–sell transactions take place are competitive with the notional costs of importing.

Chart 8.4 illustrates that over the four years to June 2011 buy–sell prices (exclusive of taxes) have tracked closely with the IPP.

Chart 8.4 Monthly average net buy–sell prices and IPP for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

8.3.4 Terminal gate prices

Terminal gate prices (TGPs) are spot prices at which petrol can be bought on demand from a refinery or terminal. As most wholesale transactions occur under contract (or other negotiations) few transactions actually occur at the terminal gate, and at the specific TGP.

TGPs are, however, a useful indicator for analysing movements in average wholesale prices. Each refiner-marketer and other independent wholesalers publish their TGPs online according to the provisions in the Oilcode.

TGPs are determined with reference to the IPP and by adding tax components, other operating costs incurred at the wholesale level and a wholesale margin.

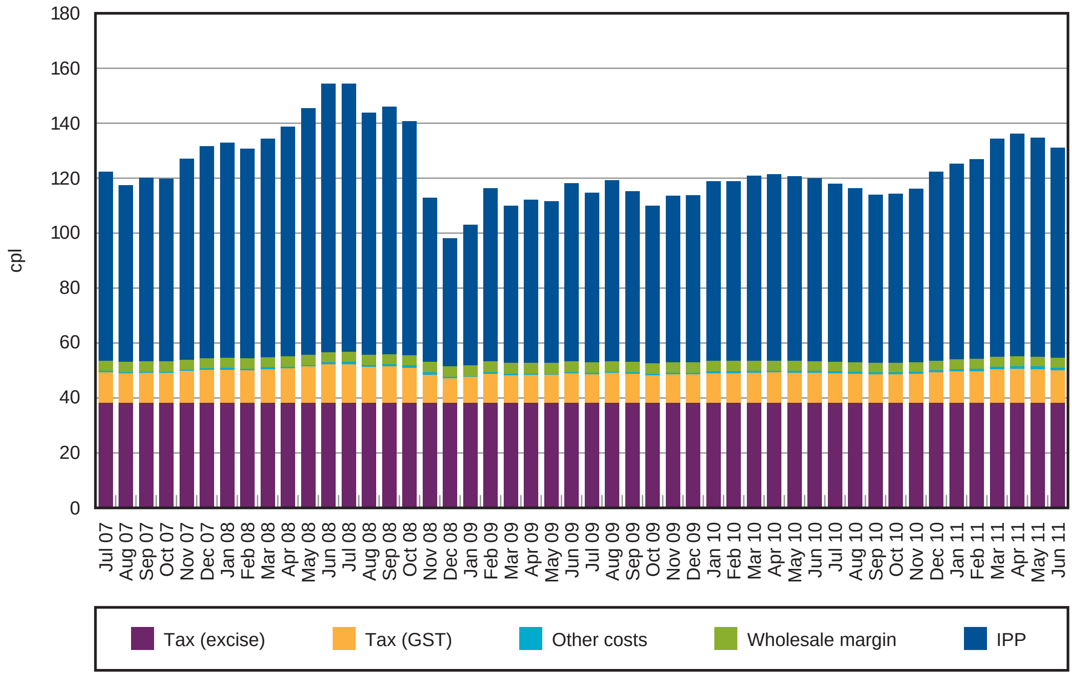
The common formula used to derive TGPs can be expressed as:

TGP = IPP + Excise + GST + Wholesale margin + Other operating costs

Chart 8.5 shows the components of the monthly average TGPs for RULP in the four years to June 2011. IPP is clearly the largest component of TGP and is the key contributor to changes in TGP.

Just like IPP, the vast majority of the price movements in TGPs are also a result of movements in the price of the underlying Mogas 95, as the other significant component, taxes, are relatively stable over time.

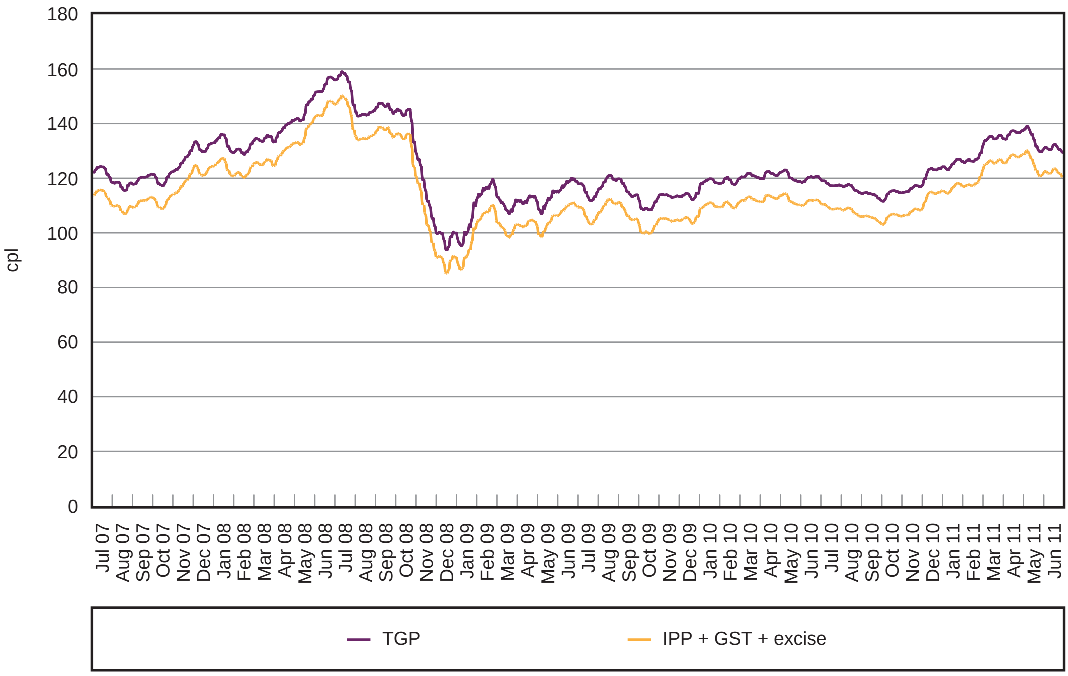
Chart 8.5 Components of the annual average TGP for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Chart 8.6 shows movements in TGPs and IPPs (with taxes). Over the four years to June 2011 TGPs have consistently tracked IPPs closely. The difference between the two price benchmarks is a combination of other operating costs incurred at the wholesale level and a margin.

Chart 8.6 Daily average adjusted IPP (including taxes) and TGPs for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: The IPP has been notionally adjusted for excise and GST to allow a comparison with TGP, which includes taxes.

8.4 Relationship between wholesale prices and their benchmarks

Comparing IPP with TGP and actual wholesale prices paid throughout the market provides an indication of the extent to which wholesale prices reflect notional import costs.

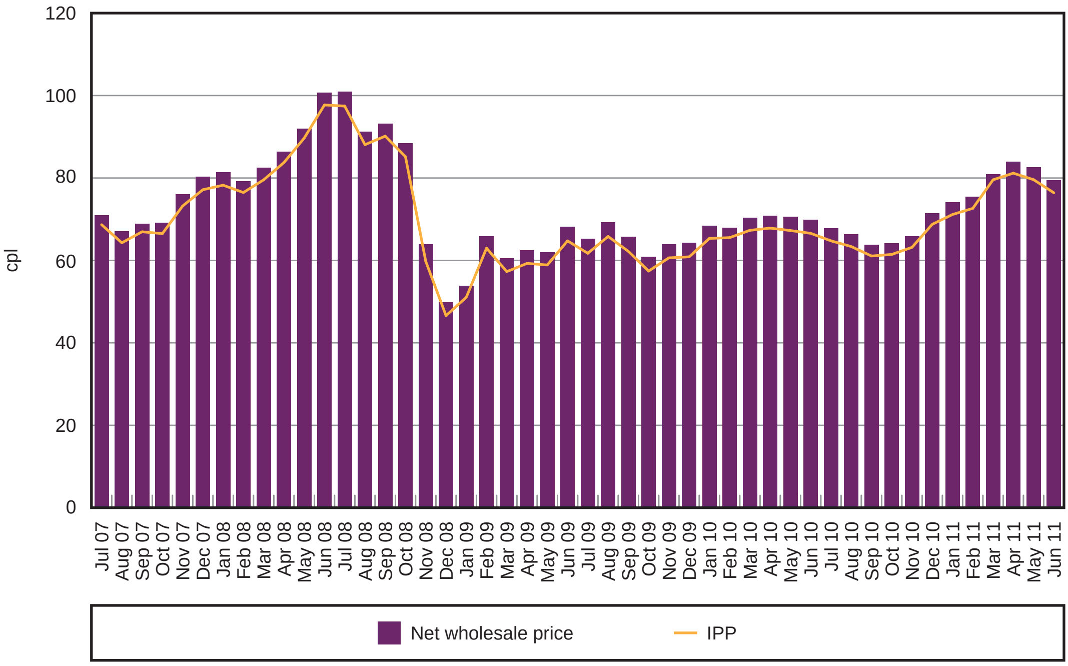
Details of transactions between refiner-marketers and their wholesale customers, including wholesale prices actually paid, have been collected from the four refiner-marketers over the four years to June 2011. Wholesale customers of the refiner-marketers include other wholesalers, resellers and distributors, large commercial customers and retail outlets. In total, details on about 4.5 million wholesale transactions have been collected and analysed since the commencement of the monitoring program.

8.4.1 Wholesale prices and IPP

As IPP is a pivotal pricing benchmark, and bears a strong relationship with actual import costs, the degree to which wholesale prices reflect IPP provides an indication of how closely costs translate into wholesale prices.

Chart 8.7 shows monthly average net wholesale prices (exclusive of taxes) and IPP for RULP in the five largest cities. Similar to previous analysis, IPP has consistently shown a close relationship with wholesale prices in 2010–11.

Chart 8.7 Monthly average net wholesale prices and IPP for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: Wholesale prices have been notionally adjusted to exclude excise and GST to allow a comparison with IPP, which excludes taxes.

The difference between net wholesale prices and IPP is accounted for by operating costs for storage and local transportation and a profit margin for wholesalers. The differential appears to have remained relatively constant over the four-year period examined.

Table 8.2 shows the differentials between net wholesale prices and IPP across the five largest cities in 2010–11. Sydney experienced the smallest differential at 1.5 cpl. The largest differential occurred in Melbourne with Brisbane, Adelaide and Perth averaging around the middle.

Table 8.2 Annual average net wholesale prices and IPP for RULP in the five largest cities: 2010–11

	Net wholesale price cpl	IPP cpl	Difference cpl
Sydney	72.0	70.5	1.5
Melbourne	73.2	70.3	2.9
Brisbane	72.5	70.1	2.4
Adelaide	72.7	70.5	2.2
Perth	72.0	69.7	2.3

Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: Wholesale prices have been notionally adjusted to exclude excise and GST to allow a comparison with IPP, which excludes taxes.

8.4.2 Wholesale prices and TGP

Movements in gross wholesale prices can be compared with the TGP benchmark to show how actual wholesale prices reflect spot wholesale prices made available to the public.

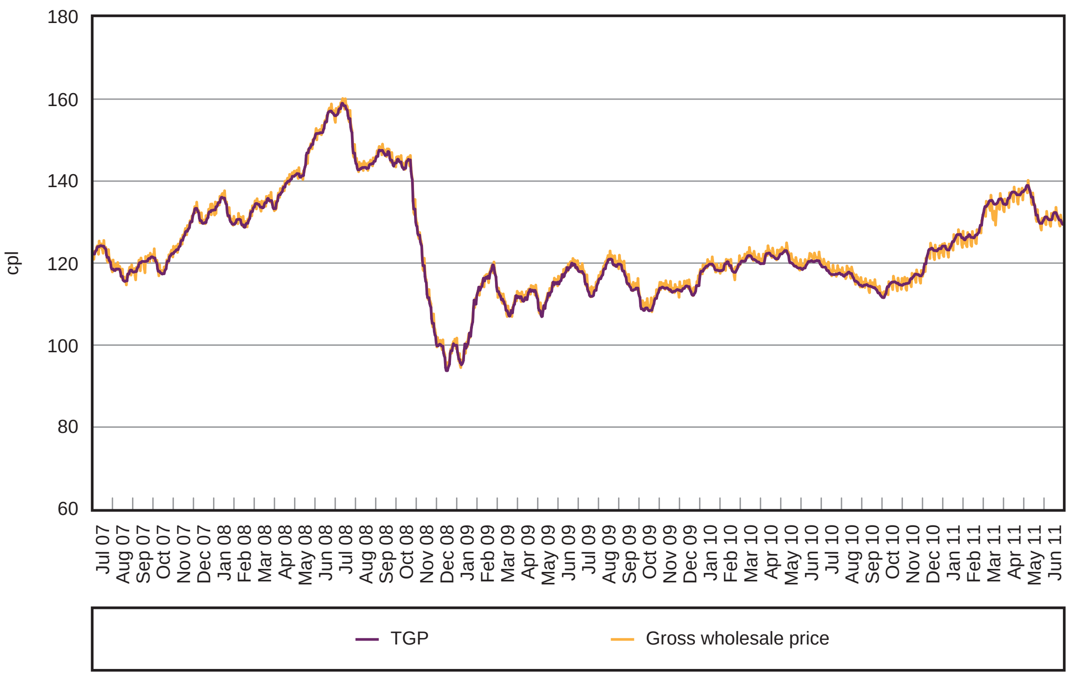
As seen earlier in the chapter, movements in TGP closely mirror movements in IPP.

Chart 8.8 tracks daily average gross wholesale prices for RULP with TGP across the five largest cities. As was the case with IPP, TGP also bears a close relationship with wholesale prices that were actually paid to the refiner-marketers.

On a daily basis, this relationship varies as practical arrangements for purchasing fuel from the wholesale sector differ among companies. Some companies only purchase petrol while others also purchase a delivery service, branding and other services associated with petrol retailing.

Overall, however, the movements of wholesale prices and TGP are closely aligned.

Chart 8.8 Daily average wholesale prices and TGPs for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Table 8.3 shows the differentials between gross wholesale prices and TGPs across in the five largest cities in 2010–11. As was the case with IPP, Sydney shows the smallest differential while Melbourne and Brisbane experienced the largest differences.

Table 8.3 Annual average gross wholesale prices and TGPs for RULP in the five largest cities: 2010–11

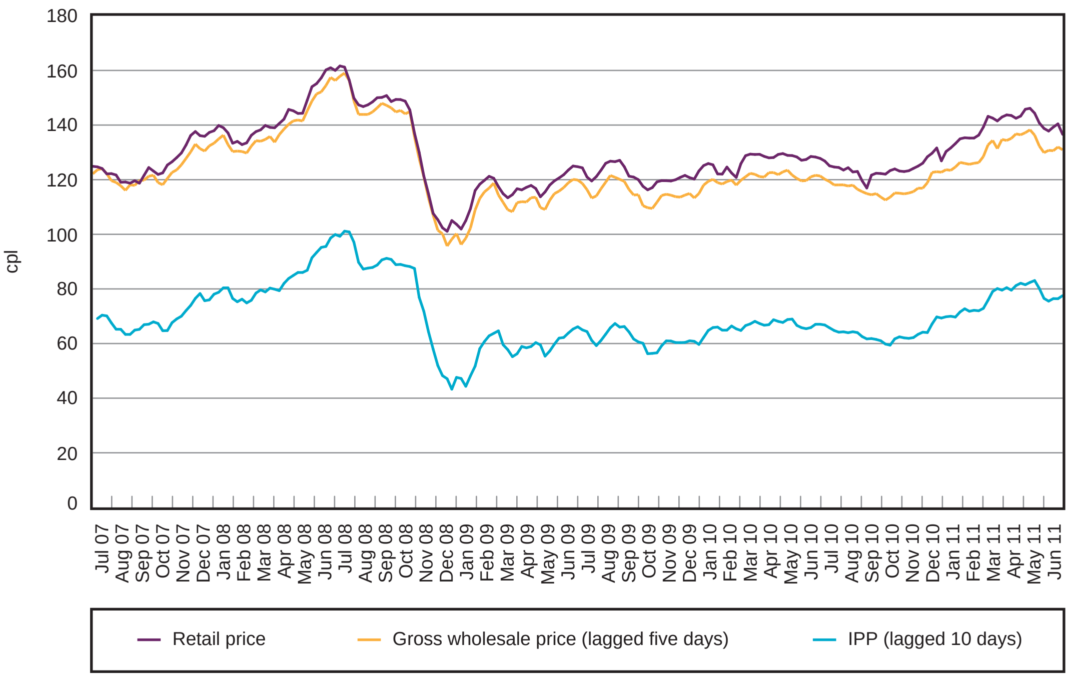
	Gross wholesale price cpl	TGP cpl	Difference cpl
Sydney	123.4	124.1	–0.7
Melbourne	124.6	123.6	1.0
Brisbane	124.5	123.8	0.7
Adelaide	123.8	124.1	–0.3
Perth	124.7	124.8	–0.1

Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

8.5 Wholesale and retail prices

This chapter has examined the role and significance of IPP as the pricing basis for wholesale prices. The subsequent relationship between wholesale prices and retail prices is considered in chart 8.9, which shows average weekly retail prices for RULP alongside lagged IPP and gross wholesale prices (that is including tax) in the five largest cities over the four years to June 2011.

Chart 8.9 Weekly average IPP, gross wholesale prices and retail prices for RULP in the five largest cities: July 2007 to June 2011



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

The key characteristic of the relationship observed between wholesale prices and the IPP and TGP is also evident in the relationship between wholesale prices and retail prices. Chart 8.9 shows that retail prices track movements in wholesale prices closely. The additional premium of retail prices over wholesale prices represents a combination of costs incurred at the retail level as well as a margin.

It appears that the differential between wholesale and retail prices has increased since early to mid 2009. This can be partly explained by the removal of Queensland and New South Wales fuel subsidies in July 2009 but may also reflect an increase in retail margins. Gross indicative retail differences are considered further in chapter 9. Neither the differential shown in chart 8.9 nor the gross indicative retail differences considered in chapter 9 are measures of financial performance. Chapter 15 examines the financial performance of the wholesale and retail sectors.

8.6 Key observations on wholesale prices

Previous ACCC petrol monitoring reports have found that since July 2007 wholesale prices of RULP have tracked movements in the IPP pricing benchmark.

Over 2010–11, IPP has continued to be the basis for setting wholesale prices in the Australian petrol industry. Movements in wholesale prices have overwhelmingly reflected movements in the IPP. Prices established under buy–sell arrangements also closely reflect the IPP.

In turn, IPP appears to reflect the actual costs associated with importing petrol into Australia and is predominantly driven by the price of Mogas 95, the benchmark base product for refined unleaded petrol in Australia.

Wholesale prices also show a strong relationship with publicly available TGPs.

9 Retail prices

Key points

- In 2010–11, petrol prices across the five largest cities (on a seven-day rolling average basis) were higher, and more volatile, than in 2009–10.
  - Average prices in 2010–11 were around 132 cpl, which was around 8 cpl higher than in 2009–10.
  - Daily prices ranged from a low of around 116 cpl in September 2010 to a high of around 147 cpl in May 2011—a range of 31 cpl. In contrast, in 2009–10 the range between the highest and lowest daily price was only 14 cpl.
- In 2010–11, retail petrol prices reached their highest levels since October 2008.
- Movements in Australian retail petrol prices are primarily determined by movements in the international price of refined petrol (Singapore Mogas 95 Unleaded) and the AUD–USD exchange rate.
- Motorists were generally protected from very high petrol prices in 2010–11 by the appreciation in the AUD–USD exchange rate.
- The international price of refined petrol, and excise and taxes, were the main components of petrol prices in 2010–11, as they have been in previous years.

9.1 Introduction

This chapter primarily focuses on regular unleaded petrol (RULP) prices. However, it also examines the prices of other grades of petrol (premium unleaded petrol (PULP) 95, PULP 98, and E10), diesel and automotive liquefied petroleum gas (LPG).[183] It focuses on retail prices across the five largest cities (Sydney, Melbourne, Brisbane, Adelaide and Perth) although the three smaller capital cities (Canberra, Hobart and Darwin) are also considered. Petrol prices in regional locations are analysed in chapter 10.

Although the analysis of petrol price movements largely focuses on average prices across the five largest cities, price levels and price movements are not uniform across cities. This is because factors specific to each city influence the extent of competition (and therefore prices).

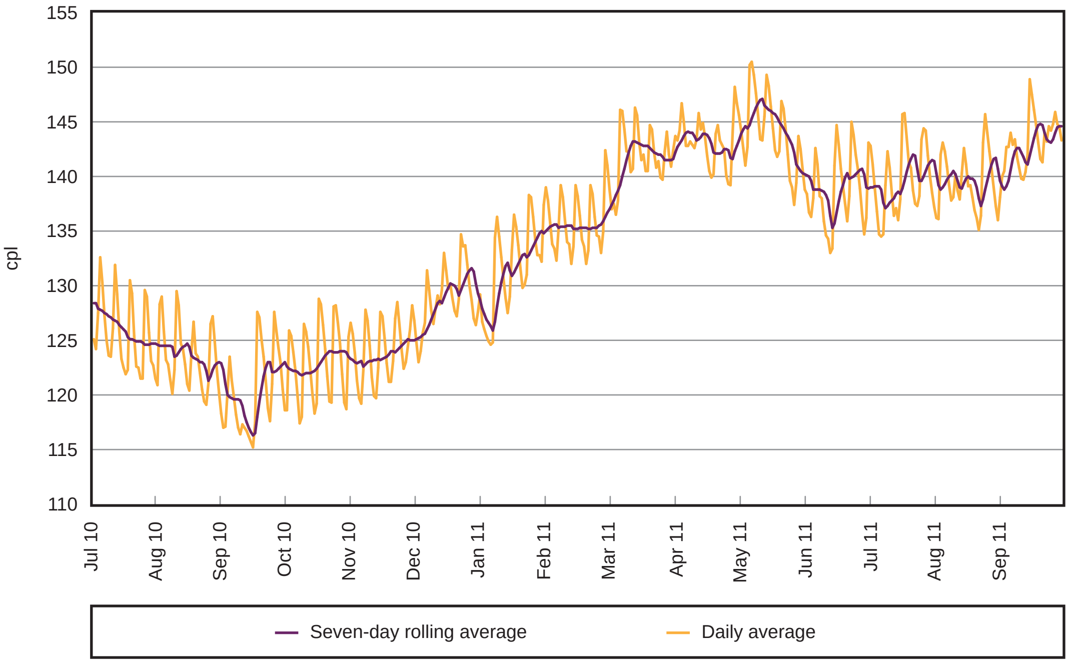
183 References to petrol in this chapter are to regular unleaded petrol (RULP) unless otherwise specified.

9.2 Retail petrol price movements

9.2.1 Prices between July 2010 and September 2011

Chart 9.1 shows daily average retail prices, and seven-day rolling average prices, across the five largest cities for the period 1 July 2010 to 30 September 2011.[184]

Chart 9.1 Daily average retail petrol prices and seven-day rolling average retail petrol prices, five largest cities: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

Chart 9.1 shows that:

- The year began with seven-day rolling average prices at around 128 cpl.
- Between July and mid-September 2010, prices decreased by around 12 cpl. They reached a low for the year of around 116 cpl.
- From mid-September 2010 to early May 2011, prices steadily increased, reaching a high for the year of around 147 cpl.
  - In 2010–11, the range between the highest and lowest prices was 31 cpl.
- Between early May and the end of September 2011, seven-day rolling average prices decreased by around 2 cpl to around 145 cpl.
- The regular price cycles that occur in the five largest cities are clearly evident.
  - Price cycles are analysed in detail in chapter 11.

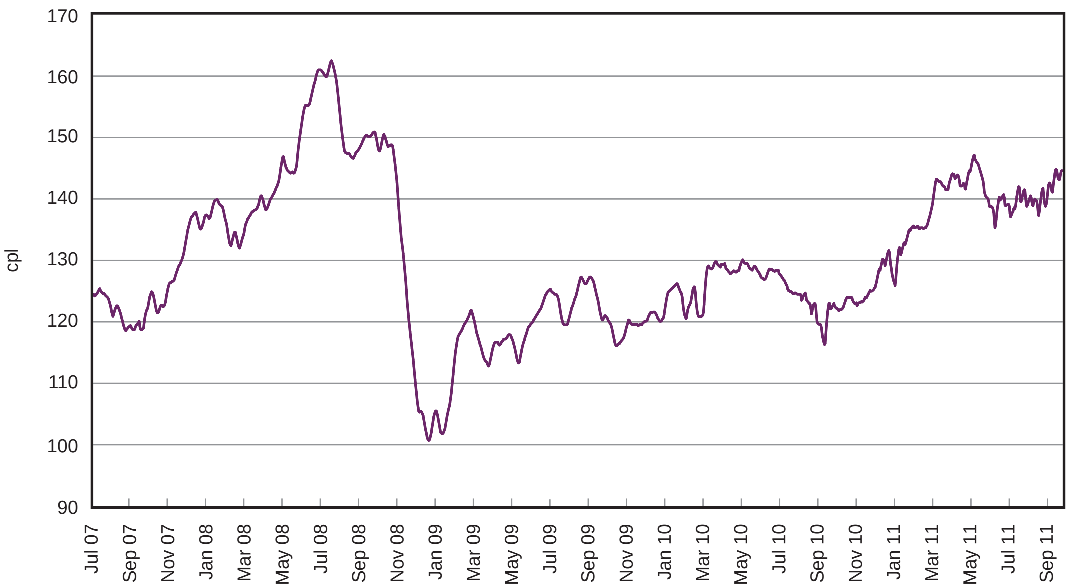
184 A seven-day rolling average price is the average of the current day's price and the prices on the six previous days. In the case of retail petrol prices it is the average of calendar days but in the case of Mogas 95 prices it is the average of working days (i.e. Monday to Friday). A seven-day rolling average is used to smooth out the effect of the regular petrol price cycles in the larger cities. The refiner-marketers use a rolling average price for Mogas 95 when determining their wholesale prices.

In 2010–11, the average price of petrol across the five largest cities was 131.7 cpl. This was 7.5 cpl higher than in 2009–10.

9.2.2 Prices between July 2007 and September 2011

Chart 9.2 shows seven-day rolling average retail petrol prices across the five largest cities over the period 1 July 2007 to 30 September 2011.

Chart 9.2 Seven-day rolling average retail petrol prices, five largest cities: 1 July 2007 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

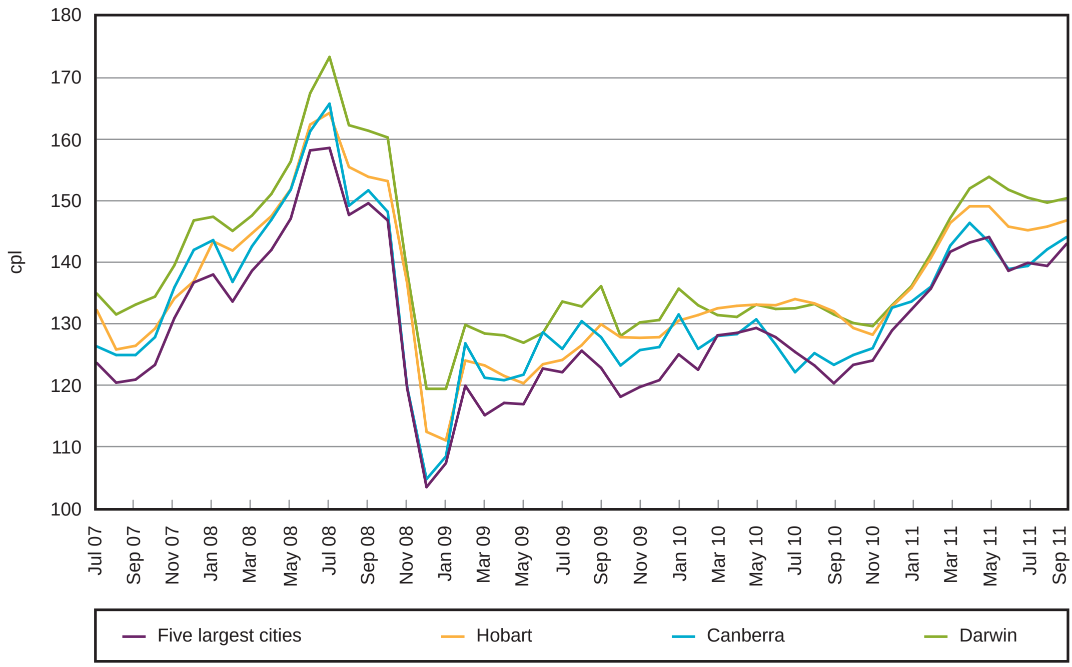
It shows that:

- Petrol prices in 2010–11 were more volatile than in 2009–10.
  - The range between the highest and lowest prices in 2010–11 was 31 cpl—this was significantly greater than in 2009–10 (14 cpl).
- Prices in 2010–11 peaked at levels last reached in October 2008.
  - Retail prices were at their highest in mid-July 2008 at around 163 cpl.
- Between July 2007 and July 2008, retail prices increased rapidly (by around 38 cpl). Prices decreased substantially in the second half of 2008 (by around 62 cpl) due to the Global Financial Crisis, before recovering in early 2009 and entering a period of relative stability in 2009–10.

9.2.3 Prices in the three smaller capital cities

Chart 9.3 shows monthly average retail petrol prices in the three smaller capital cities (i.e. Canberra, Hobart and Darwin) from July 2007 to September 2011, compared with the average monthly price across the five largest cities.

Chart 9.3 Monthly average retail petrol prices in Hobart, Canberra, Darwin and the five largest cities: July 2007 to September 2011



Source: ACCC calculations based on Informed Sources data

The chart shows that over this period:

- Prices in the smaller capital cities tend to follow similar trends to those in the five largest cities.
- Price relativities between the smaller capital cities and the five largest cities vary over time.
- Prices in the five largest cities are generally lower than in the three smaller capital cities.

Prices in Darwin tend to be higher than those in Hobart and Canberra, and the five largest cities.

Factors that may be influencing the relatively higher prices in Canberra, Hobart and Darwin are outlined in section 10.3 of chapter 10.

9.3 Determinants of petrol prices

Movements in retail petrol prices in Australia are primarily determined by movements in the international price of refined petrol (which itself is driven by the price of crude oil) and the AUD-USD exchange rate.

Other influences on retail prices include the degree of competition at the wholesale and retail levels, the regular price cycles that occur in the largest cities, the level of excise and taxes, international and domestic freight costs, the fuel quality premium (which includes a component for producing petrol to Australian standards), and other wholesale costs and margins.

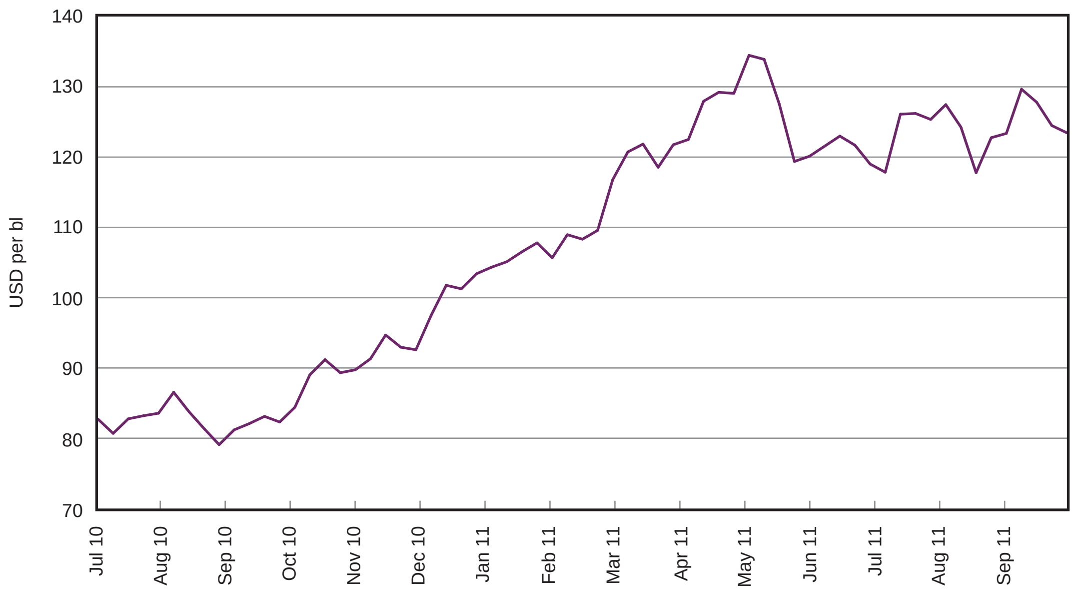
9.3.1 International price of refined petrol

The price of refined petrol in Australia is set with reference to international benchmark prices. The relevant international price for RULP in Australia is the price of refined petrol in the Asia-Pacific region—the price of Singapore Mogas 95 Unleaded (Mogas 95).

Prices between July 2010 and September 2011

Chart 9.4 shows movements in weekly average Mogas 95 prices for the period 1 July 2010 to 30 September 2011.

Chart 9.4 Weekly average Mogas 95 prices: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Platts data

Mogas 95 prices steadily increased for most of the period. Prices started the year at around USD 83 per barrel, peaked in early May 2011 at around USD 138 per barrel (an increase of around 66 per cent), and subsequently declined to around USD 123 per barrel by 30 September 2011.

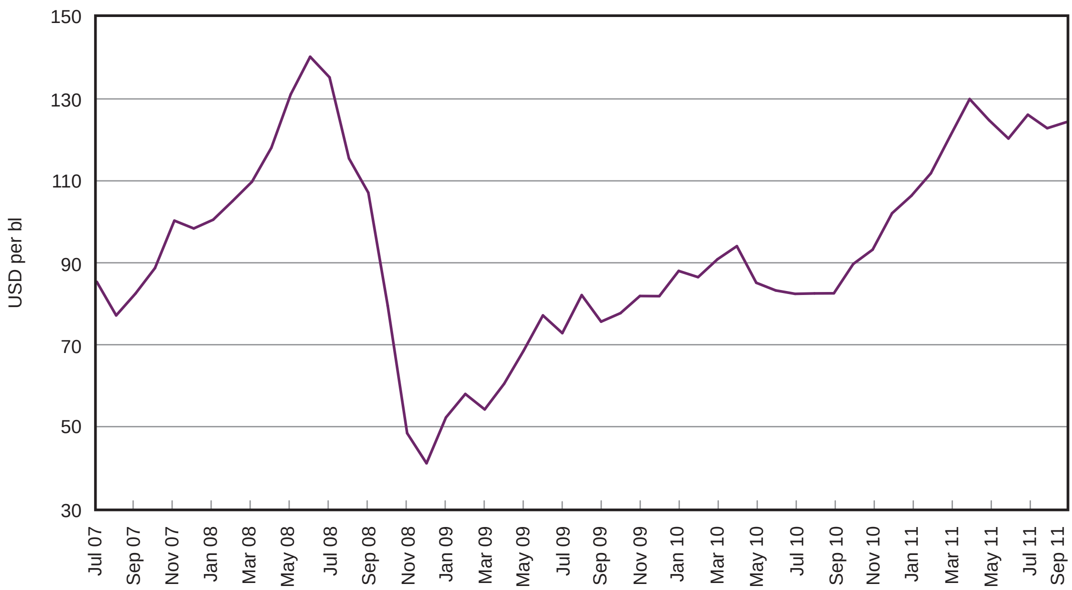
Over the period, Mogas 95 prices were influenced by:

- a particularly cold northern winter, which increased demand for crude oil products
- a decrease in global oil supplies resulting from conflict in Libya and fears of supply problems amid geopolitical unrest in the Middle East
- the depreciation of the USD against other major currencies
- economic concerns in Europe and the US.

Prices between July 2007 and September 2011

Chart 9.5 shows movements in monthly average Mogas 95 prices for the period July 2007 to September 2011.

Chart 9.5 Monthly average Mogas 95 prices: July 2007 to September 2011



Source: ACCC calculations based on Platts data

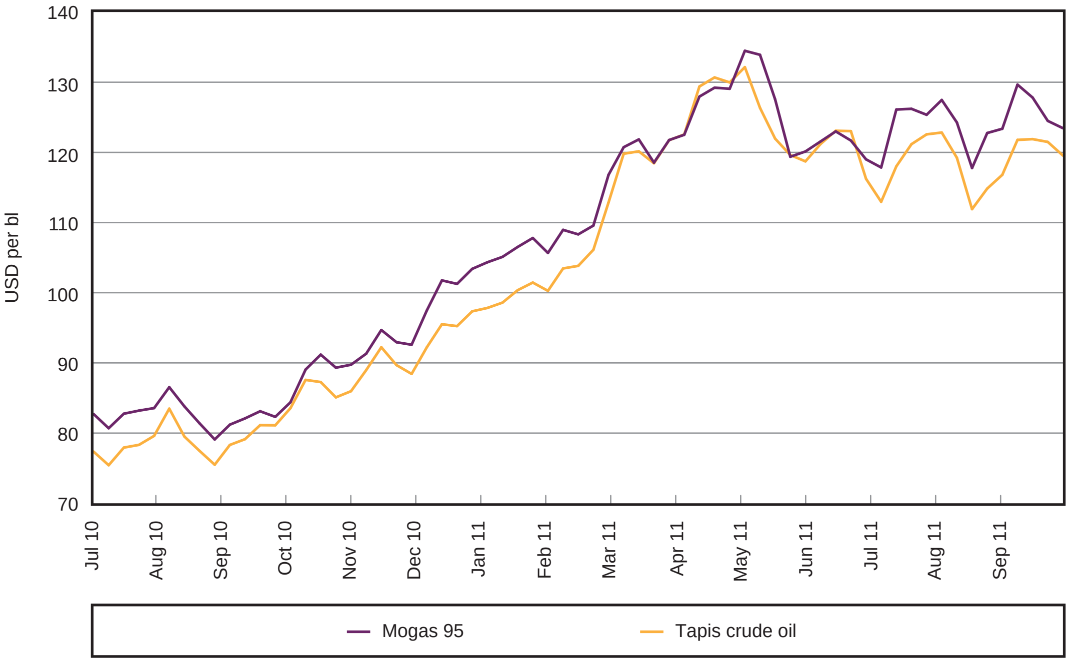
Mogas 95 prices reached a record high in July 2008 of around USD 140 per barrel. As a result of the Global Financial Crisis, prices subsequently decreased sharply to around USD 40 per barrel in December 2008, a decrease of around USD 100 (or over 70 per cent).

Prices steadily increased from early 2009 through to mid-2011. Price levels in May 2011 (around USD 130 per barrel) were the second-highest on record after the levels reached in mid-2008.

Refined petrol and crude oil prices

Mogas 95 prices are largely determined by the price of crude oil. However, like the prices of most internationally traded commodities, the price of Mogas 95 is also determined by global supply and demand conditions. Chart 9.6 shows the close relationship between Mogas 95 prices and Tapis crude oil prices in the period 1 July 2010 to 30 September 2011.[185]

Chart 9.6 Weekly average Mogas 95 and Tapis crude oil prices: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Platts data

The effects of movements in international benchmark prices on domestic retail prices in a number of other countries are considered in chapter 12.

9.3.2 AUD–USD exchange rate

The AUD–USD exchange rate is an important influence on domestic retail prices because the international benchmark prices of refined petrol are established in USD.

Chart 9.7 shows movements in the daily AUD–USD exchange rate between 1 July 2010 and 30 September 2011.[186] The AUD steadily appreciated throughout most of this period, from a low of around USD 0.84 in early July 2010 to a peak of around USD 1.11 in late July 2011 (an increase of around 32 per cent). The AUD fell sharply in August and September 2011 following economic uncertainty. At the end of September 2011 the AUD–USD exchange rate was around USD 0.98 (a decrease of around 12 per cent from the July 2011 peak).

185 As noted in chapter 5, Australian refiner-marketers are increasingly using the price of Brent crude oil as the appropriate international benchmark price.

186 These are the daily RBA 4.00 pm closing rates; see http://www.rba.gov.au/statistics/frequency/exchange-rates.html, accessed 30 November 2011.

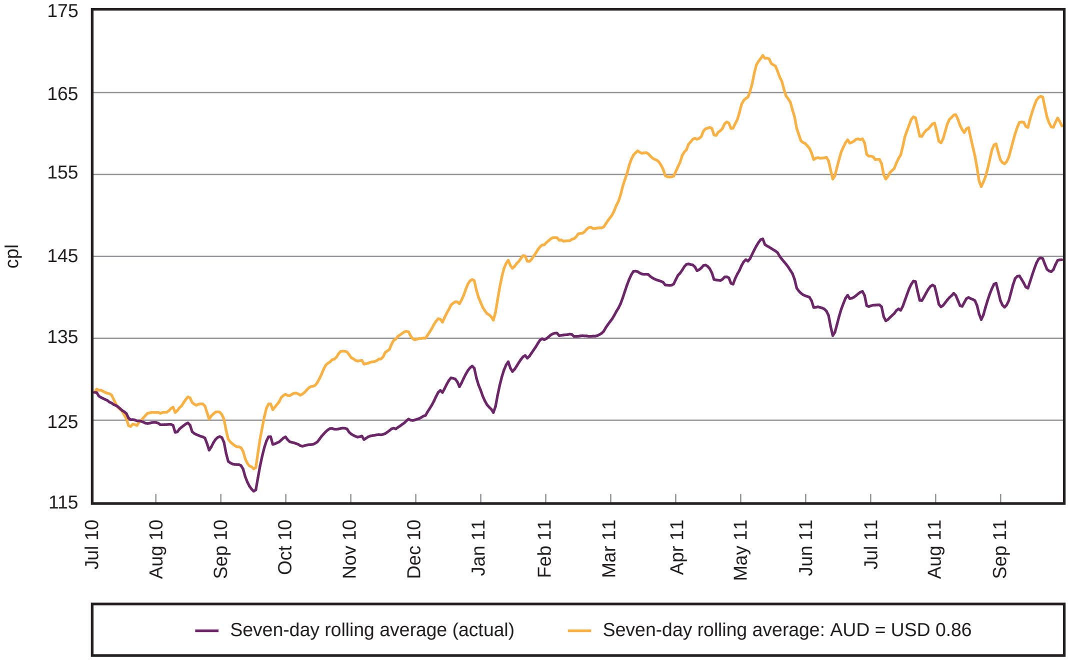
Chart 9.7 Daily average AUD–USD exchange rates: 1 July 2010 to 30 September 2011

Source: Reserve Bank of Australia (RBA) data

The effect that movements in the AUD–USD exchange rate have on domestic petrol prices is shown by assuming a constant AUD–USD exchange rate. Chart 9.8 shows actual seven-day rolling average retail prices for the five largest cities in the period 1 July 2010 to 30 September 2011 and retail prices calculated assuming a fixed AUD–USD exchange rate as at 1 July 2010 (i.e. USD 0.86).[187]

187 This is the seven-working day rolling average RBA AUD–USD exchange rate, lagged by 10 days, as at 1 July 2010.

Chart 9.8 Seven-day rolling average retail petrol prices with actual and constant AUD–USD exchange rates, five largest cities: 1 July 2010 to 30 September 2011



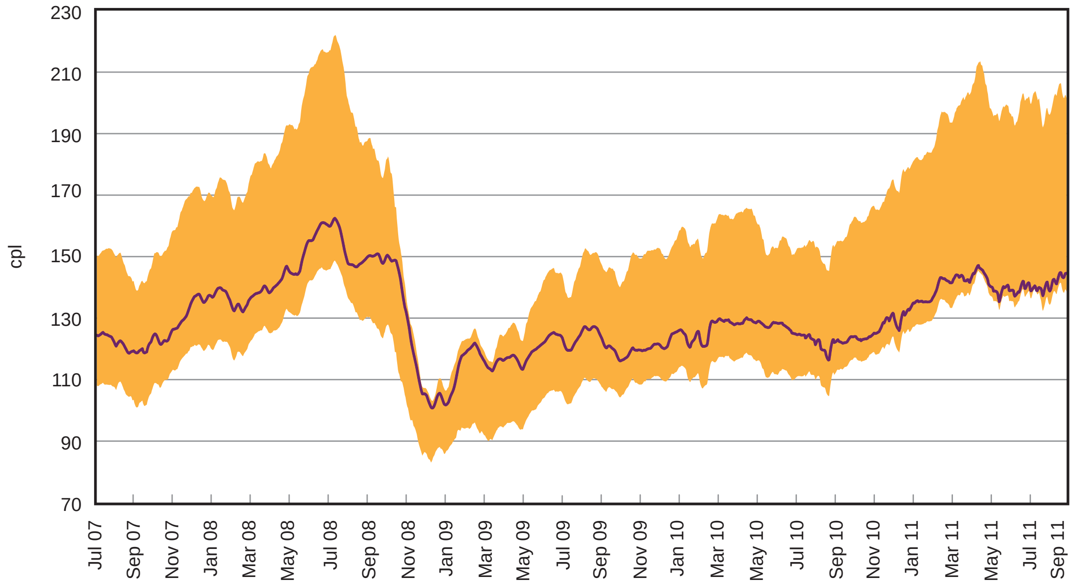
Source: ACCC calculations based on Informed Sources, Platts and RBA data

While the USD-denominated international refined petrol price increased in 2010–11, the appreciation of the AUD through the year protected Australian motorists from what would otherwise have been even higher retail prices. Retail prices in Australia would have reached a record high of around 170 cpl in mid-May 2011—compared with actual retail prices of around 147 cpl—had the AUD–USD exchange rate in mid-May 2011 remained at the level of USD 0.86.

Influence of the AUD–USD exchange rate in the medium term

Chart 9.9 highlights the significance of the AUD–USD exchange rate on retail petrol prices. The burgundy coloured line shows actual daily seven-day rolling average retail prices across the five largest cities from July 2007 to September 2011. The upper line shows what retail prices would have been if the AUD–USD exchange rate was held constant at the lowest daily exchange rate for the period (i.e. around USD 0.61 in October 2008), everything else being equal. The lower line shows what retail prices would have been if the AUD–USD exchange rate was held constant at the highest daily exchange rate for the period (around USD 1.11 in July 2011), everything else being equal.

Chart 9.9 Seven-day rolling average retail petrol prices in the five largest cities—based on actual, minimum and maximum AUD–USD exchange rates: 1 July 2007 to 30 September 2011



Source: ACCC calculations based on Informed Sources, Platts and RBA data

The chart indicates that:

- Retail prices were at their highest in July 2008 at around 163 cpl. The AUD–USD exchange rate was relatively high at this time (around USD 0.96). If the exchange rate had been at its minimum level at this time, retail prices would have been over 220 cpl (a difference of 57 cpl).
- Retail prices were at their lowest in December 2008 at around 100 cpl. The AUD–USD exchange rate was relatively low at this time (around USD 0.65). If the exchange rate had been at the maximum level at this time, retail prices would have been around 15 cpl lower at around 85 cpl.
- In 2010–11, retail prices peaked at around 147 cpl in May 2011. The AUD–USD exchange rate was relatively high at this time (around USD 1.08). If the exchange rate had been at its minimum level at this time, retail prices would have been over 210 cpl (a difference of 63 cpl).
- The strong AUD has generally protected consumers from the high international petrol prices seen throughout most of 2011.

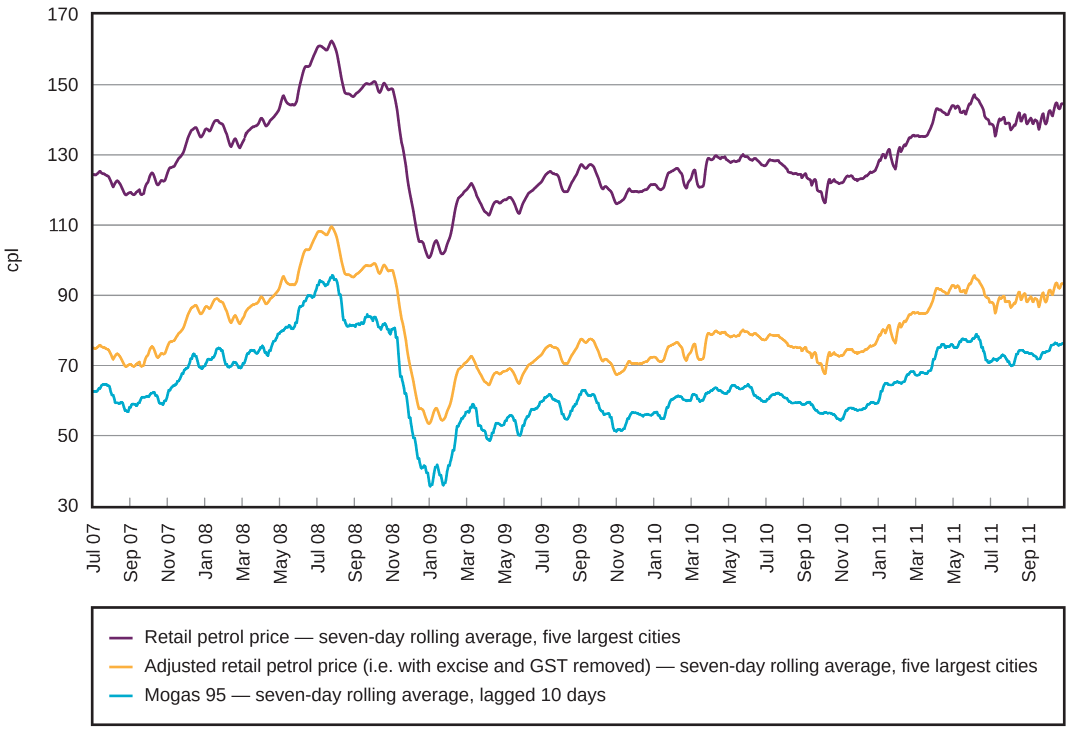
The effect of movements in exchange rates on domestic retail prices in a number of other countries is considered in chapter 12.

9.3.3 Retail petrol prices compared with Mogas 95 prices

Chart 9.10 shows seven-day rolling average retail petrol prices in the five largest cities, compared with Mogas 95 prices (lagged by 10 days) over the period 1 July 2007 to 30 September 2011.[188] For comparison purposes, it also shows adjusted retail prices (which have excise and the GST removed).

The chart shows that in the medium term retail prices in the five largest cities have closely followed movements in Mogas 95 prices in AUD terms. This demonstrates that changes in domestic retail prices are overwhelmingly driven by changes in the international price of refined petrol.

Chart 9.10 Daily retail petrol prices, adjusted retail petrol prices and Mogas 95 prices: 1 July 2007 to 30 September 2011



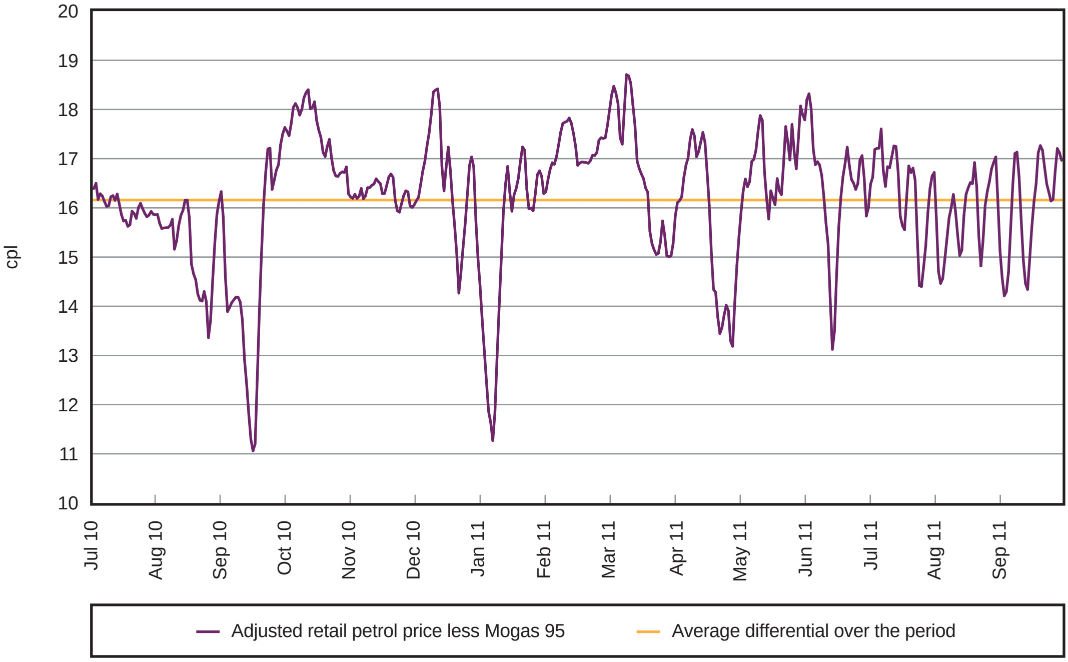
Source: ACCC calculations based on Informed Sources, Platts and RBA data

188 Mogas 95 prices are lagged by 10 days as there is generally around a one- to two-week lag between changes in international prices and changes in retail prices in the five largest cities (because of the averaging formula used by refiners in Australia when setting their wholesale prices). The lag may be longer during times of significant price volatility.

Chart 9.11 shows the daily differential between adjusted seven-day rolling average retail petrol prices in the five largest cities and seven-day rolling average Mogas 95 prices (lagged by 10 days) in Australian cents per litre over the period 1 July 2010 to 30 September 2011.

The differential between adjusted domestic retail prices and international refined petrol prices is influenced by a range of other factors, including changes in the fuel quality premium, freight costs, wholesale and retail costs, and the level of local competition.

Chart 9.11 Daily differentials between seven-day rolling average adjusted retail petrol prices in the five largest cities and Mogas 95 prices: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources, Platts and RBA data

Between 1 July 2010 and 30 September 2011, the average daily differential between adjusted retail prices and Mogas 95 prices was just over 16 cpl.[189] Over the period, the daily differential was within plus or minus 2 cpl of the yearly average differential on 403 days, or 88 per cent of the time, indicating the relative stability of the daily differential.

There were four occasions when the daily differential decreased significantly: these were in mid-September 2010, early-January 2011, late-April 2011, and mid-June 2011. On all of these occasions, petrol price cycles failed or were truncated in one or more cities.[190] The cyclical movements in the differential since July 2011 have been caused by the extended price cycles in Sydney, Melbourne, Brisbane and Adelaide.

Chart 9.11 shows that, from day to day, the differential between Australian retail prices and the price of Mogas 95 varies around the average for the period. Therefore, comparisons between

189 Note that the average differential of 16.2 cpl in 2010–11 is slightly higher than the 'Other costs and margins' component in the petrol bowser in chart 9.12 (15.9 cpl). This is because there is a 10-day lag in the Mogas 95 data in chart 9.11, whereas no lag is used in chart 9.12.

190 See section 11.5.1 for a definition of the various types of price cycles.

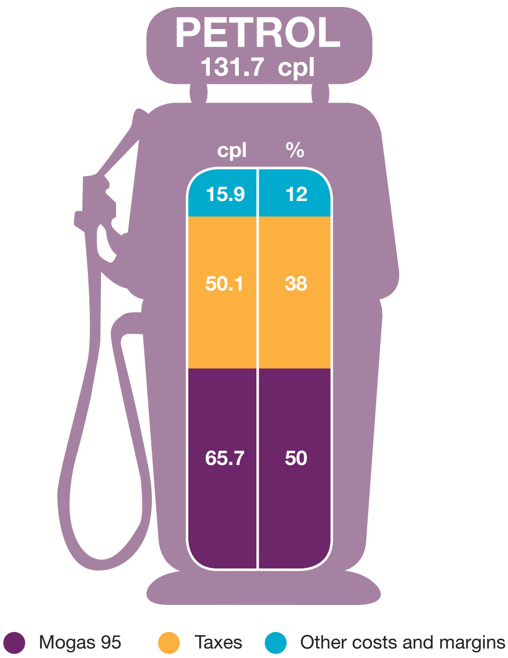
domestic retail prices and international benchmark prices should not solely focus on the differential on a particular day but consider the trend of the differential over a longer period of time.

9.4 Components of retail petrol prices

There are three broad components of the retail price of petrol: the international refined petrol price; domestic taxes (excise and the GST); and other costs and margins at the wholesale and retail level.

Chart 9.12 shows the components of the average retail petrol price across the five largest cities in 2010–11. The two largest components of the pump price—Mogas 95 and taxes—accounted for 88 per cent of the price of petrol. These components are largely outside the control of the local petrol companies.

Chart 9.12 Components of average retail petrol price in the five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA data

The proportions of the annual average price in 2010–11 represented by each of Mogas 95, taxes, and other costs and margins were broadly similar to those in 2009–10.

In 2010–11 the cost of refined petrol (Mogas 95) represented 50 per cent of the average price of a litre of petrol (up by 2 per cent from 2009–10).

Chart 9.13 shows a more detailed breakdown of the components of the annual average retail petrol price across the five largest cities from 2004–05 to 2010–11.

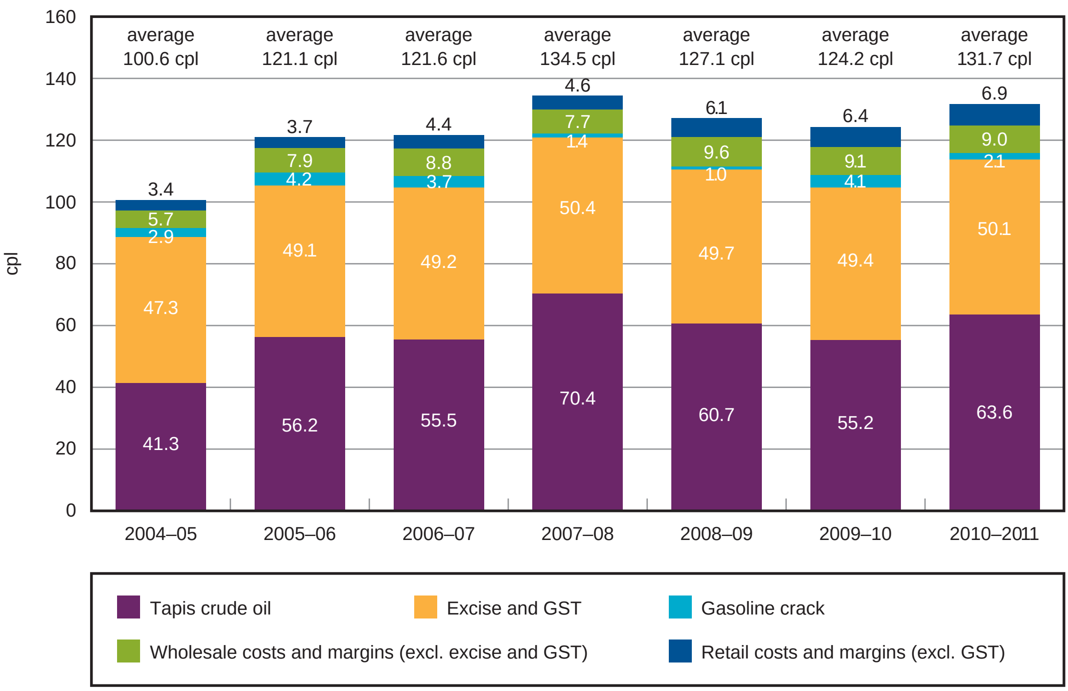
Each bar represents the annual average retail price disaggregated into the following:

- Tapis crude oil: the benchmark for crude oil in the Asia–Pacific region (including Australia)
- gasoline crack: the difference between the price of Mogas 95 and Tapis crude oil
- wholesale costs and margins (excluding excise and the GST)[191]
- retail costs and margins (excluding the GST)
- excise and the GST: this is excise (which is set at a constant 38.14 cpl) and the GST.

The chart shows that:

- from 2005–06, the price of Tapis crude oil has been the largest component in the retail price of petrol
- wholesale and retail costs and margins (excluding GST) have remained broadly stable over the last three years.

Chart 9.13 Components of Australian retail petrol prices in the five largest cities: 2004–05 to 2010–11



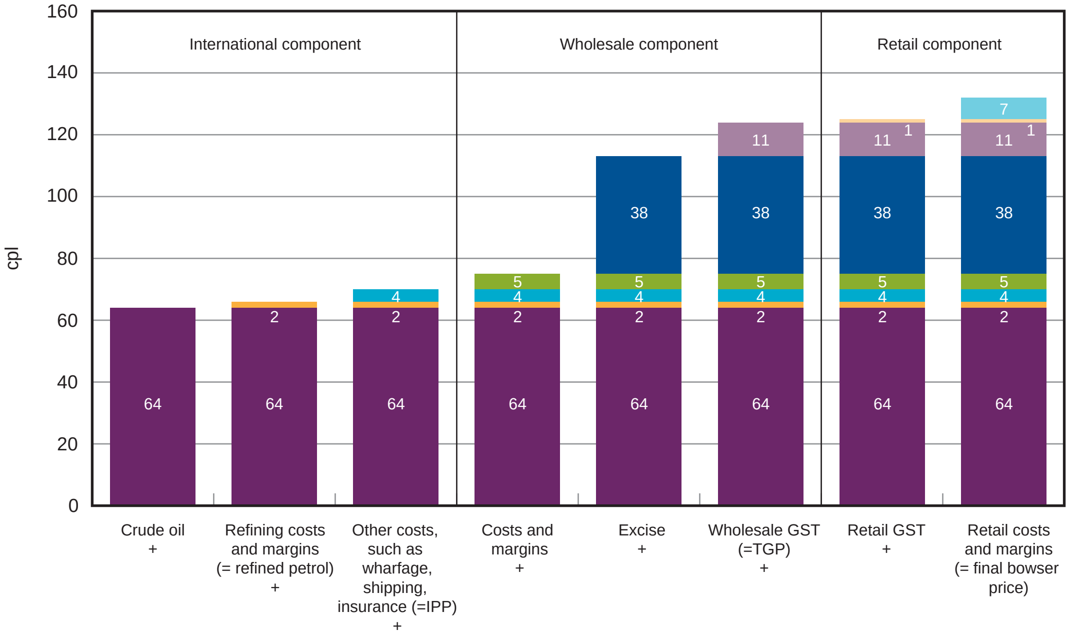
Source: ACCC calculations based on Informed Sources, Platts, RBA and WA FuelWatch data, and information provided by the monitored companies

191 Note that prior to July 2009, the Queensland Government provided a subsidy at the retail level of 8.4 cpl (around 9.2 cpl when GST is included). Therefore, terminal gate prices in Brisbane prior to July 2009 have been reduced by 9.2 cpl to put the wholesale and retail prices on a consistent basis.

Chart 9.14 presents the components of Australian retail petrol prices in 2010–11 in a different way. It shows the build up of prices according to the relevant industry sector. Note that the components are to scale.

The chart highlights that the starting point in the retail petrol price is the price of crude oil. It also indicates that, since the other largest component of the retail price of petrol is excise (which is fixed at 38.14 cpl), movements in the price of petrol are fundamentally driven by movements in the international price of crude oil.

Chart 9.14 Build up of Australian retail petrol prices: five largest cities, 2010–11



Source: ACCC calculations based on Informed Sources, Platts, RBA, WA FuelWatch data and information provided by the monitored companies

9.5 Gross indicative retail differences for petrol

Gross indicative retail differences are calculated by subtracting average terminal gate prices (TGPs) from average retail prices.

TGPs are the prices at which petrol can be purchased from wholesalers in the spot market and are posted on a regular basis on the websites of the major wholesalers. As noted in chapter 8, not all wholesale transactions are at TGPs—some will be at higher prices and some will be at lower prices. Therefore, TGPs can be regarded as indicative wholesale prices.

Furthermore, TGPs are 'petrol only' prices and exclude other retail operating costs (such as branding, transportation, labour, etc.). Therefore, gross indicative retail differences should be treated as a useful indicator only. They should not be confused with actual retail profits.[192]

Table 9.1 shows gross indicative retail differences in the five largest cities in both nominal and real terms, from 2003–04 to 2010–11.[193]

Table 9.1 Annual average retail prices, terminal gate prices and gross indicative retail differences, five largest cities: 2003–04 to 2010–11

	Average retail price cpl	Average TGP cpl	Gross indicative retail difference cpl	Gross indicative retail difference (real) cpl
2003–04	90.3	86.1	4.2	4.1
2004–05	100.6	96.9	3.7	3.5
2005–06	121.1	117.0	4.1	3.8
2006–07	121.6	116.8	4.8	4.3
2007–08	134.5	129.4	5.1	4.4
2008–09	127.1	120.4	6.7	5.6
2009–10	124.2	117.2	7.0	5.8
2010–11	131.7	124.1	7.6	6.0

Sources: ACCC calculations based on Informed Sources, ABS, Trafigura and WA FuelWatch and information provided by the monitored companies

Table 9.1 shows that:

- Gross indicative retail differences increased by 0.6 cpl in 2010–11 to 7.6 cpl, the highest for the period. In real terms, they also increased by 0.2 cpl to 6.0 cpl.
- In both nominal and real terms, gross indicative retail differences have been increasing every year since 2004–05.

While gross indicative retail differences have been increasing over time, it is likely that a significant part of this increase is related to increasing costs. Data in chapter 15 shows that the net retail profit from petrol sales over the last six years has on average been less than 1.0 cpl.

192 Chapter 15 presents data on retail profits derived from financial data provided by the monitored companies.

193 The ABS All Groups Consumer Price Index for the five cities Sydney, Melbourne, Brisbane, Adelaide and Perth was used to deflate the retail margins to 2002–03 prices. Source: Australian Bureau of Statistics, *6401.0 Consumer Price Index*, Australia, Tables 1 and 2. CPI: All Groups, Index Numbers and Percentage Changes, http://www.abs.gov.au/AUSSTATS, accessed 30 November 2011. Appendix E provides information on gross indicative retail differences for petrol and diesel for the five capital cities individually on an annual basis and a monthly basis for 2010–11.

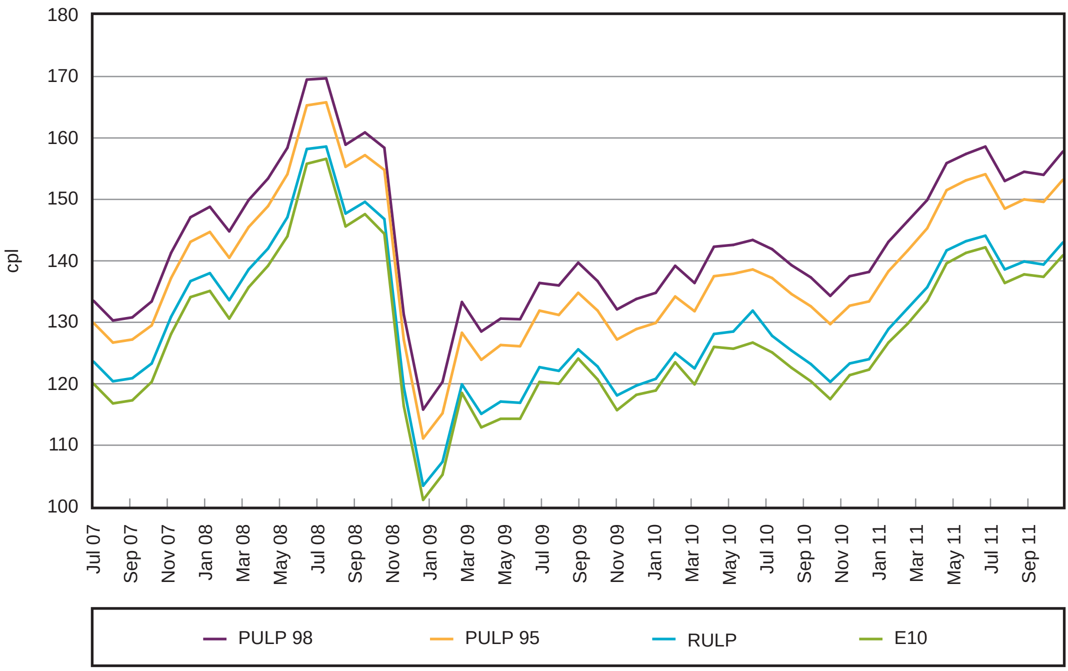
9.6 Other grades of petrol

9.6.1 Retail prices of the different petrol grades

The retail prices of the different grades of unleaded petrol—RULP, PULP 95 and 98, and E10—tend to move in similar patterns.

Chart 9.15 shows average monthly retail prices for these four grades of petrol in the five largest cities from July 2007 to September 2011.[194]

Chart 9.15 Monthly average retail prices of RULP, PULP 95, PULP 98 and E10 in the five largest cities: July 2007 to September 2011



Source: ACCC calculations based on Informed Sources data

Retail prices of the different grades of petrol move in similar patterns because prices for the four products are set according to international refined petrol benchmark prices (which primarily move in line with changes in the price of crude oil). However, the price differentials between each type of petrol vary over time. For example, the differential between average RULP prices and E10 prices has narrowed in recent months and the differential between RULP prices and prices for the two PULP grades has increased over the period.

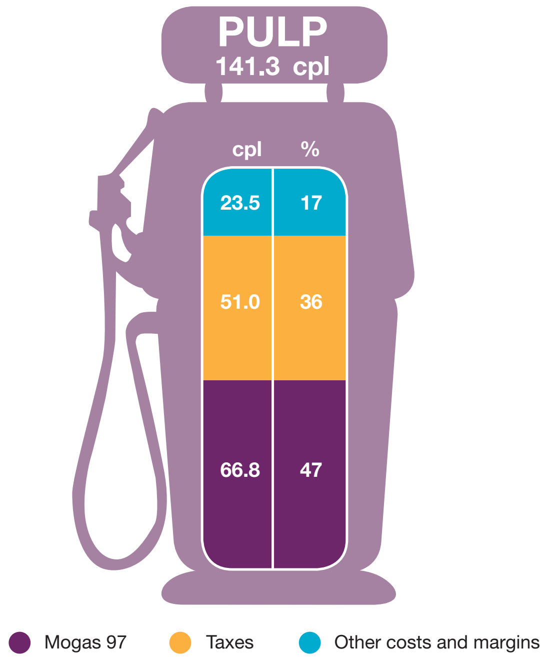
For a discussion of the markets for E10 and PULP, including movements in average retail prices, see chapters 6 and 7 respectively.

194 E10 prices in the chart are for four capital cities and do not include Perth, as E10 is not sold in Western Australia.

9.6.2 Components of retail PULP 95 prices

Chart 9.16 shows the broad components of the average retail PULP 95 price across the five largest cities in 2010–11.[195]

Chart 9.16 Components of average retail PULP 95 price in the five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA data

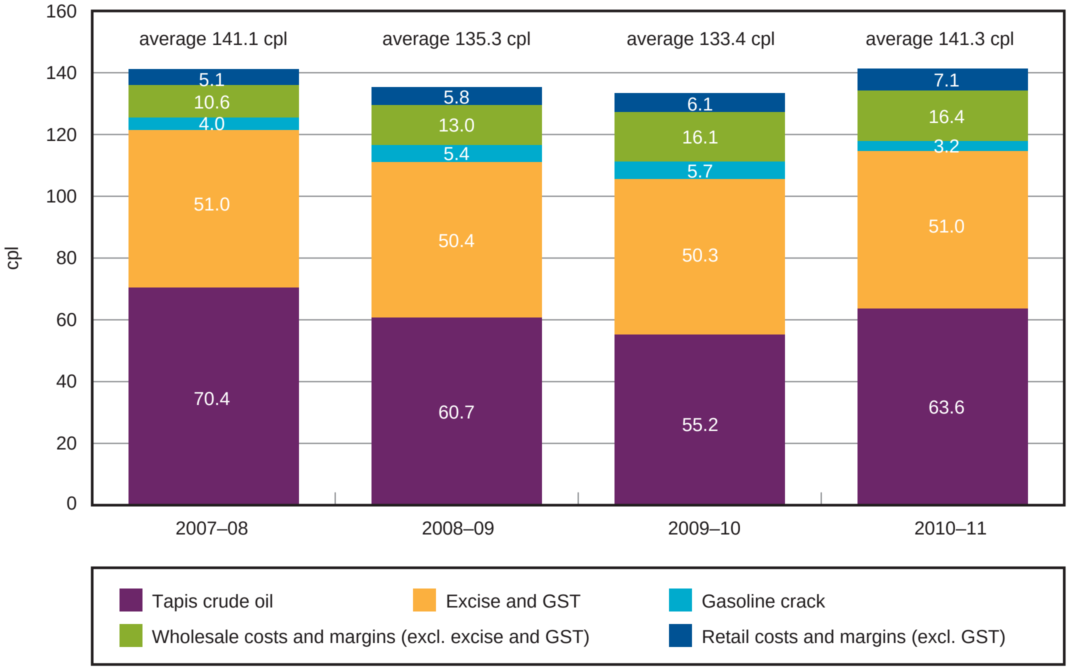
195 The components of PULP 98 prices are not included in this section because wholesale prices for most companies are not available. Components of E10 prices are also not included as E10 wholesale prices are only available for a few cities and E10 is primarily sold in Sydney and Brisbane.

Chart 9.17 shows more detailed components of the annual average retail PULP 95 price across the five largest cities from 2007–08 to 2010–11.[196] PULP 95 can be disaggregated into the same components as RULP. However, the appropriate international refined petrol benchmark for PULP 95 is Singapore Mogas 97 Unleaded (Mogas 97), which is a higher grade of petrol than Mogas 95.

Chart 9.17 indicates that:

- changes in the retail price of PULP 95 in Australia are largely influenced by the price of Tapis crude oil
- in 2010–11, retail costs and margins (excluding GST) for PULP 95 (7.1 cpl) were very similar to those for RULP (6.9 cpl)
- wholesale costs and margins (excluding excise and GST) for PULP 95 in 2010–11 (16.4 cpl) were considerably higher than for RULP (9.0 cpl). In part, this reflects a higher fuel quality premium for PULP 95 relative to RULP, as well as other related costs.

Chart 9.17 Components of annual average retail PULP 95 prices in the five largest cities: 2007–08 to 2010–11



Source: ACCC calculations based on Informed Sources, Platts and RBA data, and information provided by the monitored companies

196 TGPs for PULP 95 prior to 2007–08 are unavailable.

9.7 Diesel and automotive LPG prices

9.7.1 Diesel and automotive LPG prices compared with petrol prices

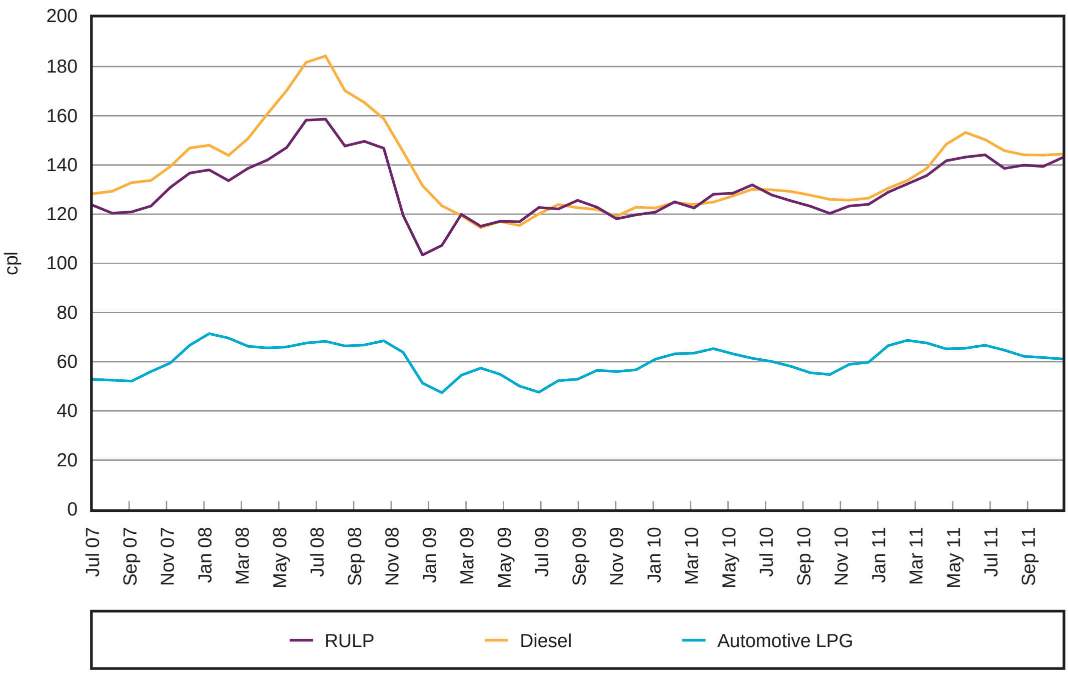
Retail prices of petrol, diesel and automotive LPG generally move in line with their respective international benchmark prices. However, these benchmark prices will vary over time because each product has its own market and is therefore influenced by different supply and demand factors.

The appropriate international benchmark price for diesel is the price of Singapore Gasoil with 10 parts per million sulphur content (Gasoil 10 ppm).[197] International demand for diesel is different to that for petrol, in part because of diesel's off-road, industrial and electricity generation uses. However, both petrol and diesel are refined from crude oil and will tend to follow broadly similar movements over the long term.

The appropriate benchmarks for automotive LPG are the Saudi Aramco Contract Prices for propane and butane (Saudi CP). These prices only change once a month, at the start of each month. International LPG prices will only very loosely move in line with petrol or diesel prices.

Chart 9.18 shows monthly average retail petrol, diesel and automotive LPG prices in the five largest cities from July 2007 to September 2011.

Chart 9.18 Monthly average retail prices of petrol, diesel and automotive LPG in the five largest cities: July 2007 to September 2011



Source: ACCC calculations based on Informed Sources data

197 Prior to 1 January 2009 the appropriate international benchmark for diesel was Gasoil 50 ppm.

The chart shows that:

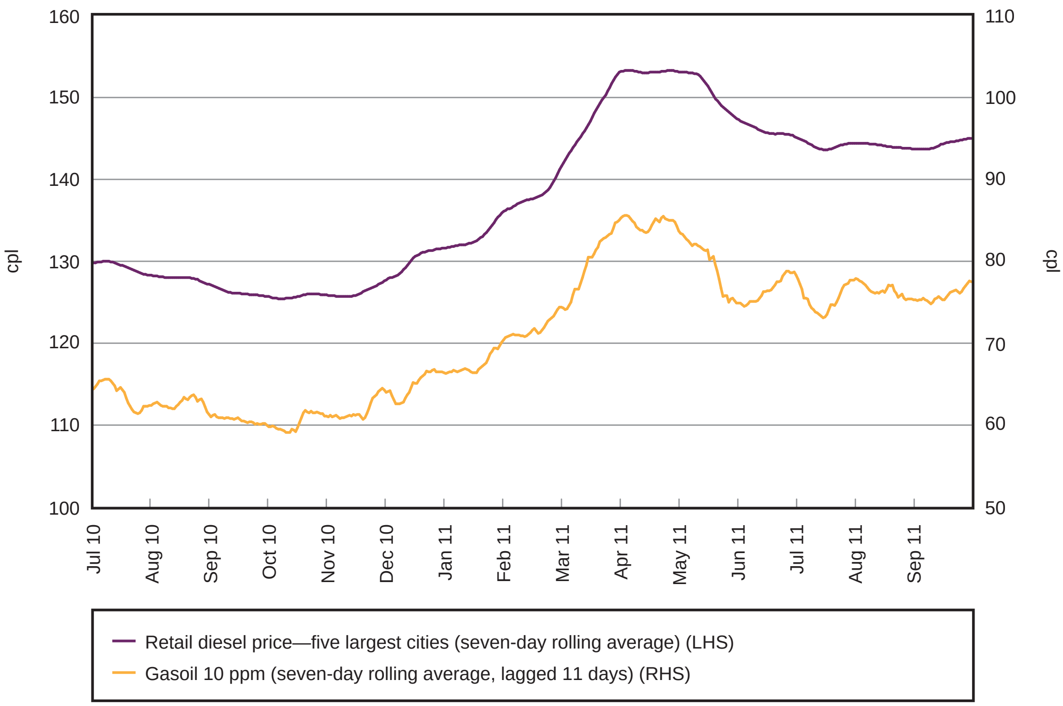
- Over the period, petrol and diesel prices broadly moved in line with each other, generally following movements in the price of crude oil.
- Diesel prices were higher than petrol prices between July 2007 and February 2009. This reflected relatively high demand for diesel compared with petrol, particularly from China and India.
- Following the Global Financial Crisis, movements in petrol and diesel prices were much closer together.
- Automotive LPG prices are significantly lower than petrol and diesel prices:
  - A major reason for this is that excise is imposed on petrol and diesel (at a rate of 38.14 cpl), but there is currently no excise imposed on automotive LPG.
  - In June 2011, the government passed legislation that will impose excise on automotive LPG from 1 December 2011. The rate will be 2.5 cpl increasing in similar annual increments to a final rate of 12.5 cpl from 1 July 2015.

9.7.2 Diesel prices

Retail diesel prices compared with Gasoil prices

Chart 9.19 shows seven-day rolling average retail diesel prices in the five largest cities, compared with Gasoil 10 ppm prices for the period 1 July 2010 to 30 September 2011. Retail diesel prices broadly followed movements in Gasoil 10 ppm prices throughout the period.

Chart 9.19 Seven-day rolling average retail diesel prices in the five largest cities and Gasoil 10ppm prices: 1 July 2010 to 30 September 2011



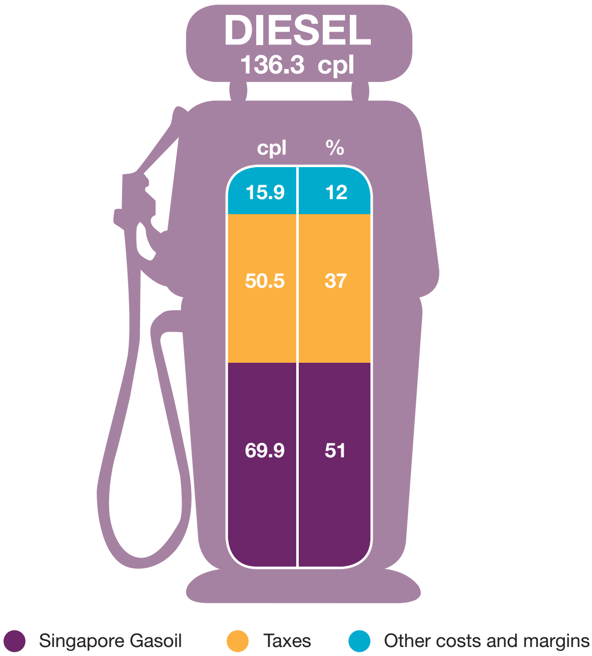
Source: ACCC calculations based on Informed Sources, Platts and RBA data

Components of diesel prices

Chart 9.20 shows the broad components of the average retail price of diesel across the five largest cities in 2010–11.

Over half of the average price of diesel in 2010–11 was represented by the international price of refined diesel (i.e. Gasoil 10 ppm), compared with 48 per cent in 2009–10. The proportion of the pump price represented by other costs and margins in 2010–11 (12 per cent) was the same as in 2009–10.

Chart 9.20 Components of average retail diesel price in the five largest cities: 2010–11

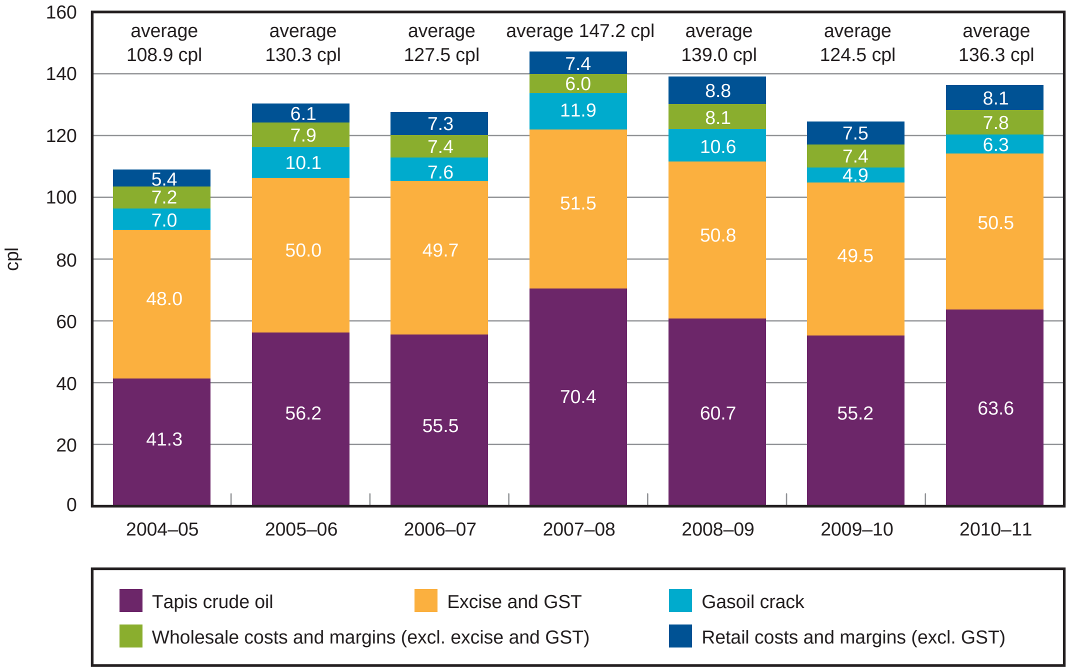


Source: ACCC calculations based on Informed Sources, Platts and RBA data

Chart 9.21 shows more detailed components of the annual average retail prices of diesel across the five largest cities from 2004–05 to 2010–11. It shows that:

- Since 2005–06, the largest component of the retail price of diesel has been the Tapis crude oil price.
- Retail costs and margins (excluding GST) have been relatively stable since 2006–07.
- In 2010–11 the gasoil crack was around half of what it was in 2007–08.

Chart 9.21 Components of annual average retail diesel prices in the five largest cities: 2004–05 to 2010–11



Source: ACCC calculations based on Informed Sources, RBA, AIP, and Platts data

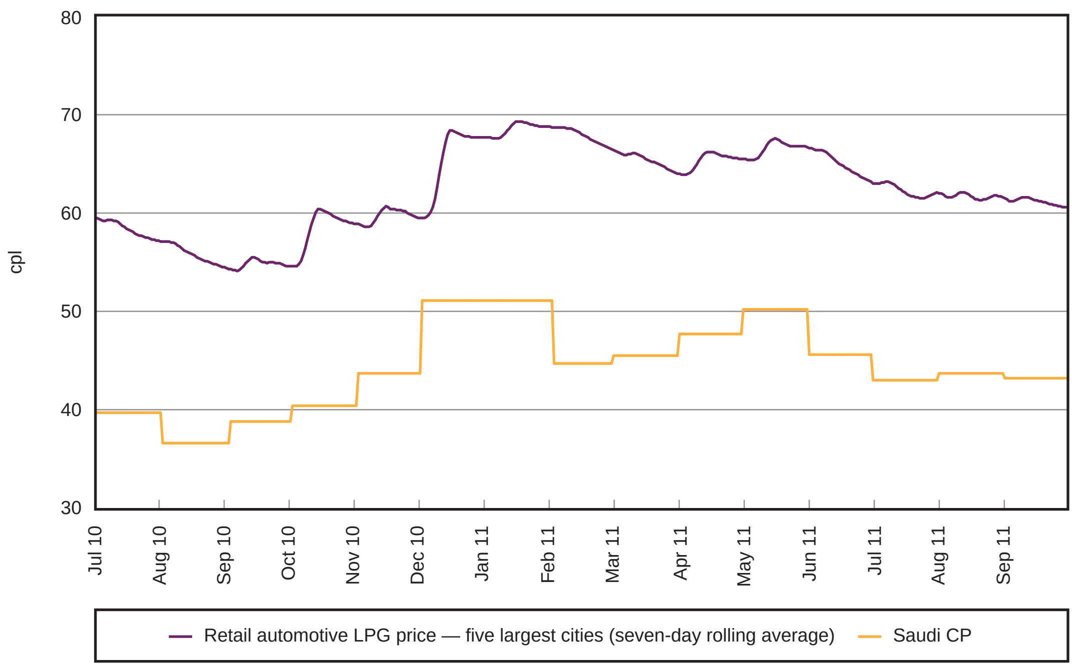
9.7.3 Automotive LPG prices

Retail automotive LPG prices compared with Saudi CP

Chart 9.22 shows seven-day rolling average retail automotive LPG prices in the five largest cities, compared with the Saudi CP in the period 1 July 2010 to 30 September 2011. Because the Saudi CP only changes at the start of each month, the relationship between movements in the benchmark prices and retail prices is somewhat different compared with petrol and diesel.

The chart shows that automotive LPG retail prices broadly tracked movements in the international benchmark price over the period. It also shows that after a rapid price increase at the start of some months, prices generally trended downward for the remainder of the month.

Chart 9.22 Seven-day rolling average retail automotive LPG prices in the five largest cities and Saudi CP: 1 July 2010 to 30 September 2011



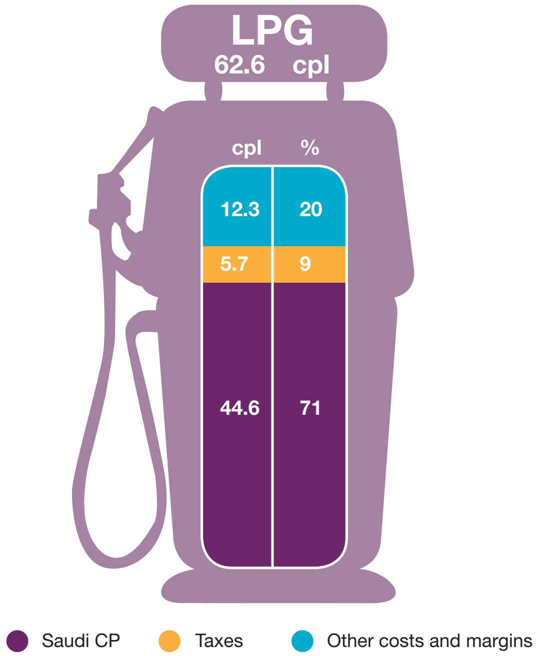
Source: ACCC calculations based on Informed Sources, LPG Australia and RBA data

Components of automotive LPG prices

Chart 9.23 shows the broad components of the average retail price of automotive LPG across the five largest cities in 2010–11.

Over 70 per cent of the average price of automotive LPG in 2010–11 was accounted for by the international prices of butane and propane. The proportion of the price accounted for by other costs and margins in 2010–11 (20 per cent) was slightly lower than last year (22 per cent).

Chart 9.23 Components of average retail automotive LPG price in the five largest cities: 2010–11



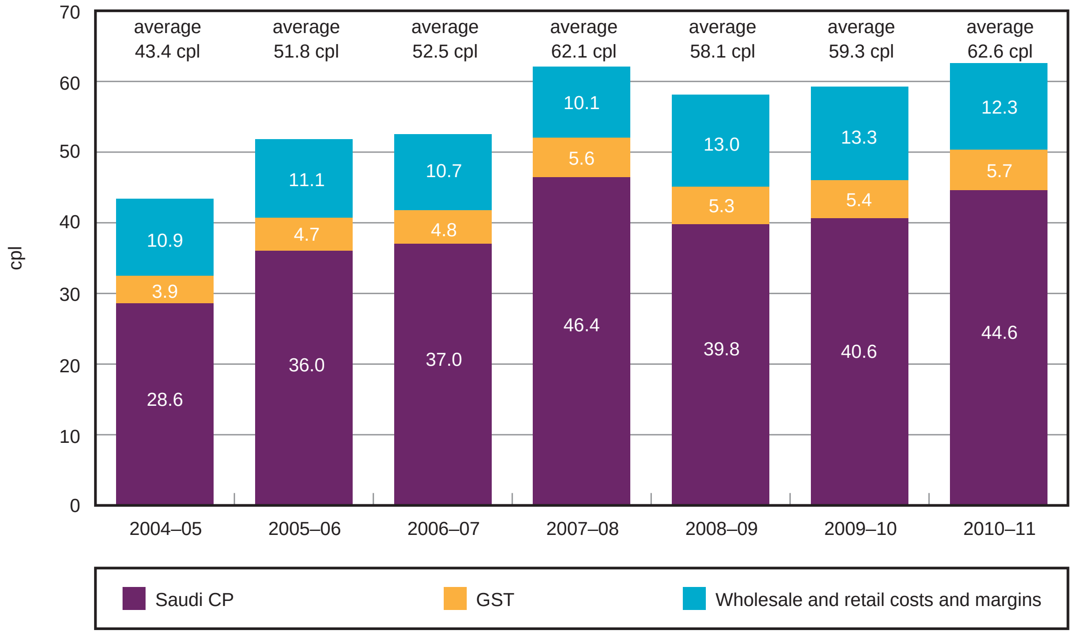
Source: ACCC calculations based on Informed Sources, LPG Australia and RBA data

Chart 9.24 shows more detailed components of the annual average retail prices of automotive LPG across the five largest cities from 2004–05 to 2010–11.

Chart 9.24 indicates that:

- Changes in the retail price of automotive LPG in Australia are predominantly influenced by changes in the Saudi CP.
- Notional wholesale and retail costs and margins make up a relatively larger proportion of the retail price for automotive LPG compared with those for petrol and diesel, because there is currently no excise imposed on automotive LPG.

Chart 9.24 Components of Australian retail automotive LPG prices in the five largest cities: 2004–05 to 2010–11



Source: ACCC calculations based on Informed Sources, LPG Australia and RBA data

10 Retail prices in regional locations

Key points

- Movements in retail petrol prices in regional locations are largely driven by changes in international refined petrol prices and the AUD–USD exchange rate, just as they are in the five largest cities.
- However, prices in regional locations are generally higher than in the five largest cities for a number of reasons, including:
  - lower number of retail sites and therefore a lower level of local competition
  - lower volumes of fuel sold
  - distance/location factors
  - lower convenience store sales.
- These factors also explain differences in petrol prices between regional locations.
- Price movements in regional locations—both up and down—tend to lag those in the five largest cities.
- Prices in regional locations tend to be more stable than in the five largest cities. Only a very small number of regional locations have regular petrol price cycles. These tend to be the larger population centres or locations very close to them.

10.1 Introduction

This chapter examines retail petrol prices in regional locations in Australia and the city–country price differential.[198]

In 2009–10, the ACCC significantly increased its focus on regional locations. The geographical coverage of regional locations included in the ACCC's price monitoring program increased from around 110 towns to around 150 towns. This extended coverage has continued in 2010–11.

198 All references to petrol in this chapter are to regular unleaded petrol (RULP).
The city–country price differential for each state and the Northern Territory is the difference between the arithmetic average of prices in each regional location in the state and Northern Territory and the average capital city price.
When comparing retail prices between city and regional locations—or between states—over time, note that prices in certain locations may be influenced by the application of (or removal of) state government subsidies aimed at reducing retail petrol prices. The subsidies that applied in 2010–11 are described in appendix F.

10.2 Petrol prices in regional locations

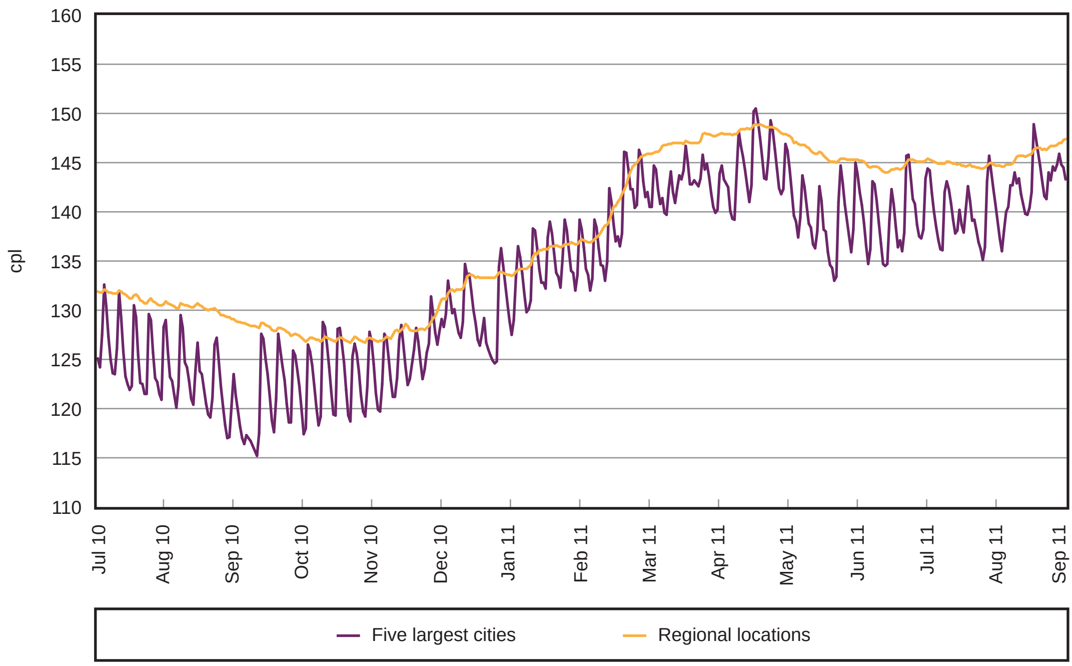
10.2.1 Prices in aggregate

Retail prices in regional locations in Australia are generally higher than those in the capital cities, although they typically follow the same overall price movements. Furthermore, in many regional locations, there is a lag between movements in capital city prices and local prices. This lag occurs both when prices are increasing and when they are decreasing.

Chart 10.1 shows daily average retail prices across all the monitored regional locations in Australia and daily average retail prices in the five largest cities.[199] It can be seen that:

- Prices in the regional locations broadly follow prices in the five largest cities.
- Regional locations in aggregate do not have the regular retail price cycles that are evident in the five largest cities.

Chart 10.1 Daily average petrol prices in the five largest cities and the regional locations in aggregate: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

199 The specific regional locations in each state and the Northern Territory that are monitored by the ACCC are listed in appendix G. It also provides average annual prices for petrol, diesel and automotive LPG in 2009–10 and 2010–11 for each location.

10.2.2 Prices in each of the states and the Northern Territory

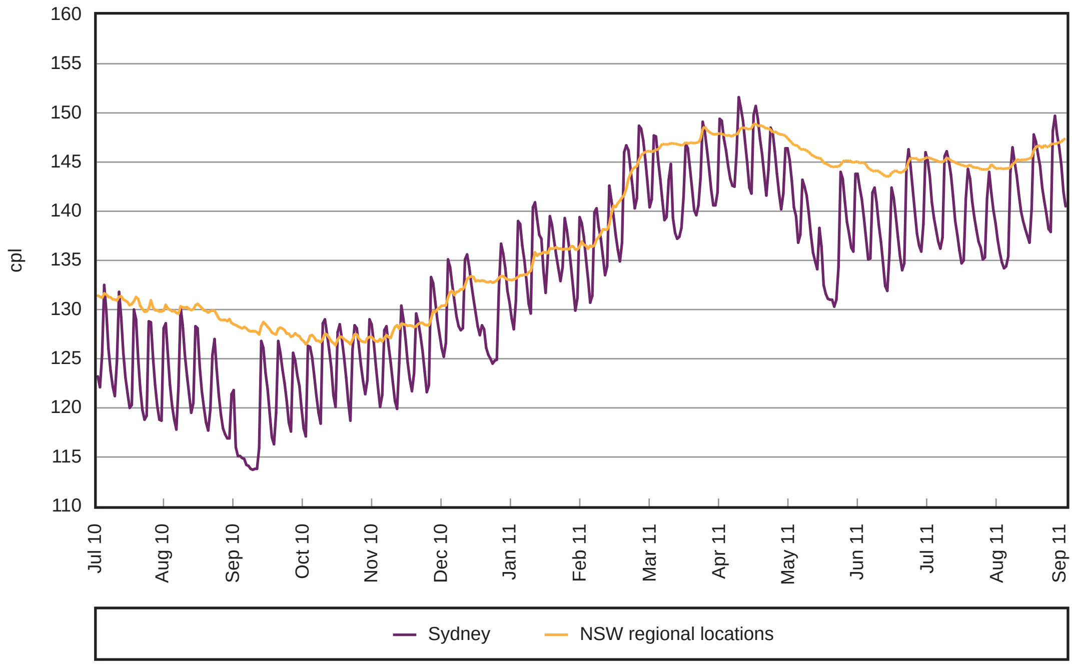
Charts 10.2 to 10.8 show daily average retail prices for the monitored regional locations in aggregate in each state and the Northern Territory, along with the relevant capital city prices, from 1 July 2010 to 30 September 2011.

The charts show that:

- There are price cycles in Sydney, Melbourne, Brisbane, Adelaide and Perth but not in Hobart and Darwin.[200]
- Apart from the fluctuations associated with these regular price cycles, prices in regional locations, on average, have generally followed movements in prices in their respective capital cities.
- The city–country price differentials vary on a daily basis, particularly for those states with capital cities that have regular price cycles.
- There are particular times when the city–country price differentials are larger than usual. These are evident when there are periods of discounting in the capital cities.
  - For example, there was a period of discounting in Adelaide in August 2010, when the monthly average city–country price differential increased to 7.5 cpl, compared with the average city–country differential in 2010–11 of 4.5 cpl.
- Price movements in regional locations generally lag behind the movements in the larger capital cities.
- Prices in regional locations in Western Australia and the Northern Territory, where many locations are a long way from a refinery and import terminals, are significantly higher than those in Perth and Darwin respectively. Conversely, in Tasmania, where distances from terminals are smaller, prices in regional locations are relatively close to those in Hobart.

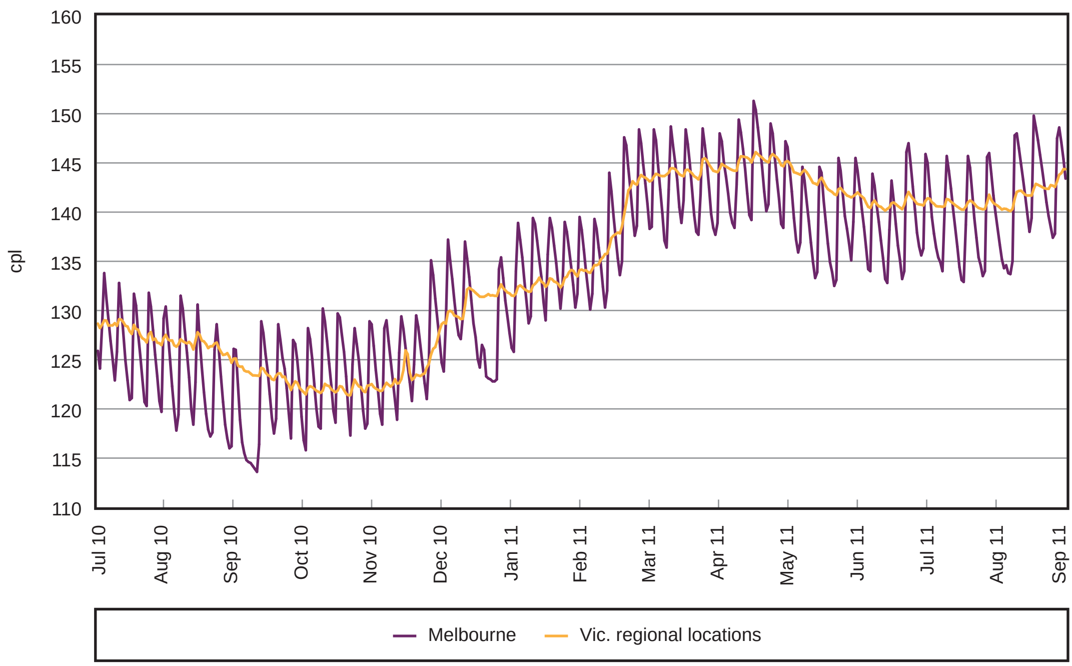
200 Canberra also has periods of regular price cycles. See chart H.8 in appendix H.

Chart 10.2 Sydney and New South Wales regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



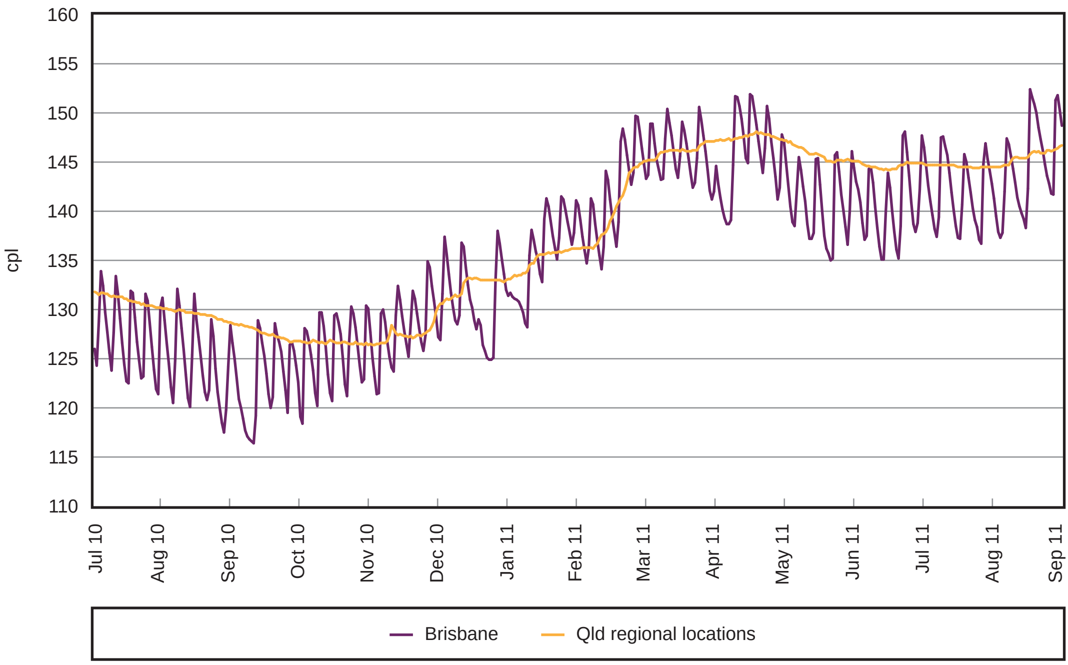
Source: ACCC calculations based on Informed Sources data

Chart 10.3 Melbourne and Victorian regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



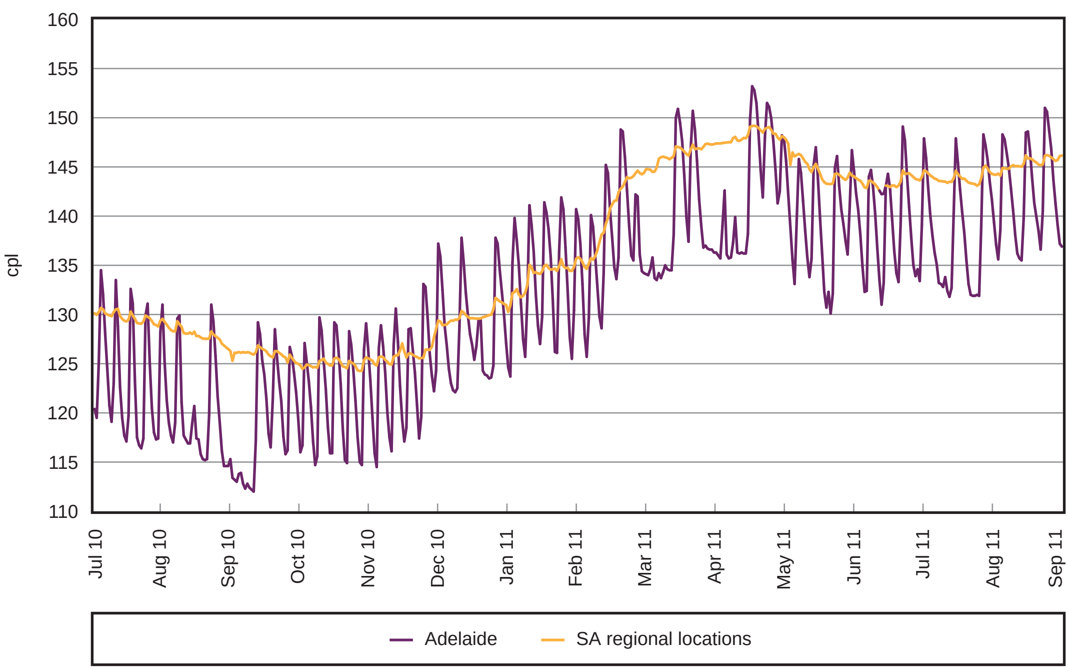
Source: ACCC calculations based on Informed Sources data

Chart 10.4 Brisbane and Queensland regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



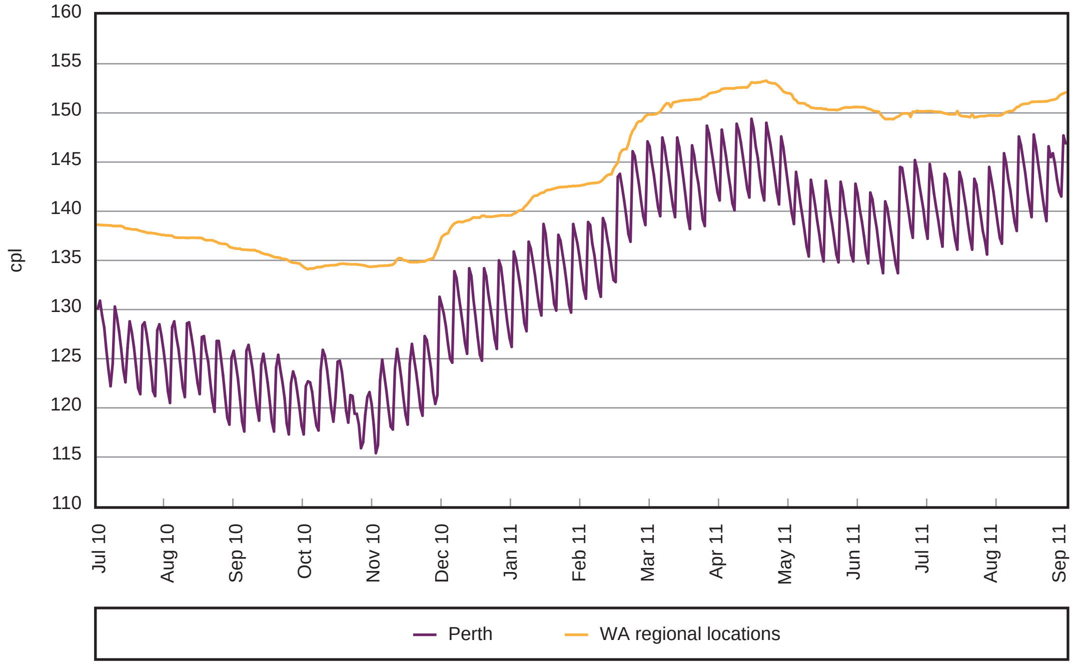
Source: ACCC calculations based on Informed Sources data

Chart 10.5 Adelaide and South Australian regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



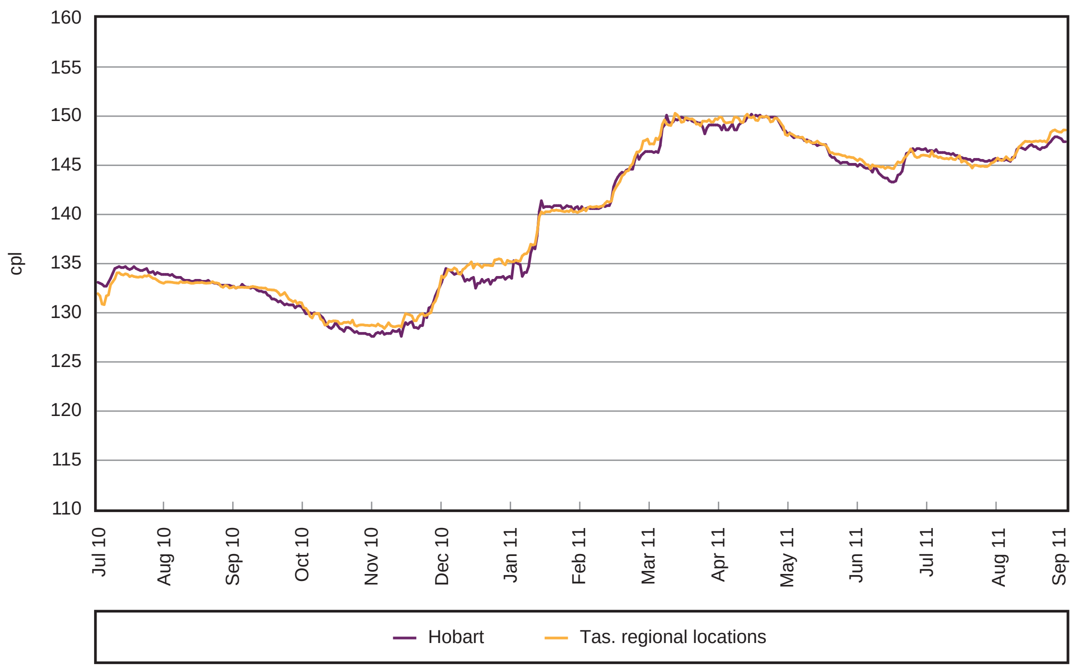
Source: ACCC calculations based on Informed Sources data

Chart 10.6 Perth and Western Australian regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



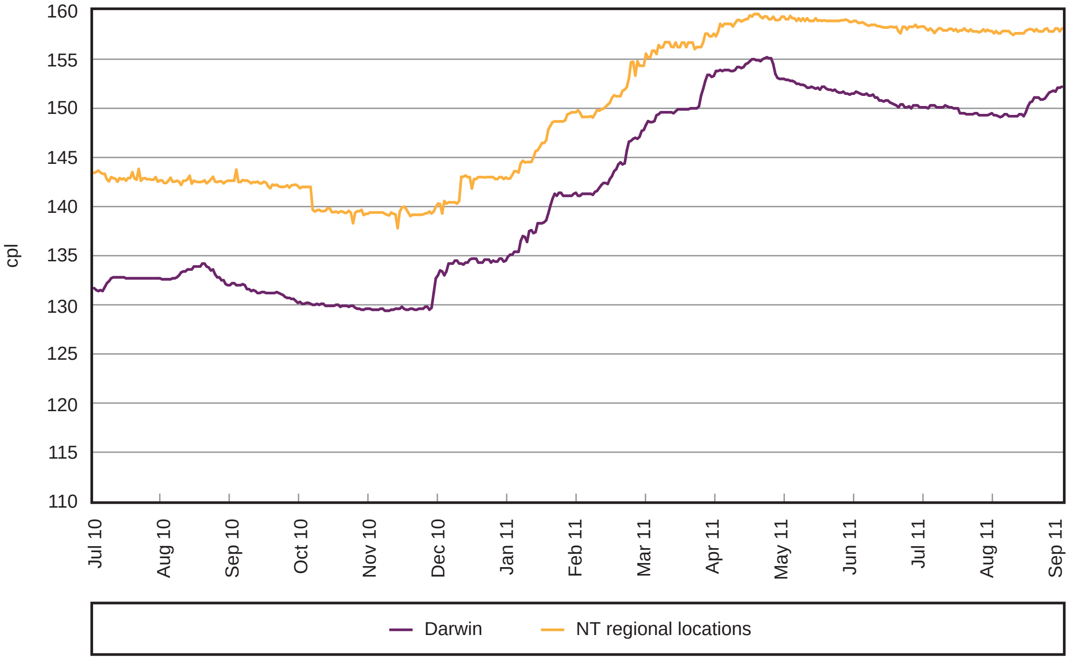
Source: ACCC calculations based on Informed Sources data

Chart 10.7 Hobart and Tasmanian regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



Source: ACCC calculations based on Informed Sources data

Chart 10.8 Darwin and Northern Territory regional locations, daily average petrol prices: 1 July 2010 to 30 September 2011



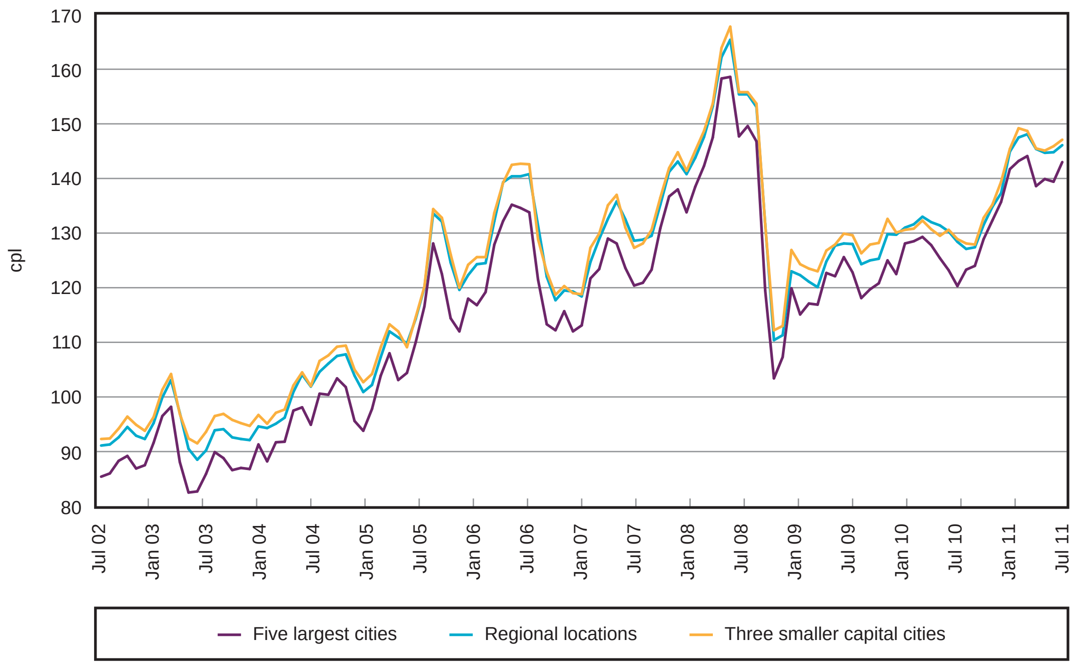
Source: ACCC calculations based on Informed Sources data

10.2.3 Comparison with capital city prices

Chart 10.9 shows monthly average retail prices across the five largest cities, three smaller capital cities and regional locations from July 2002 to September 2011. Table 10.1 shows average annual prices over the same period. It can be seen that, since July 2002:

- Movements in monthly average prices in the five largest cities, three smaller capital cities and regional locations have followed similar trends.
- Average prices in the three smaller capital cities are higher than in both the five largest cities and the regional locations.
- Relative price differentials between these categories have decreased over the last two years.
  - This may have been influenced, in part, by the increase in the number of regional locations included in the monitoring program from July 2009.

Chart 10.9 Monthly average petrol prices in the five largest cities, three smaller capital cities, and regional locations: July 2002 to September 2011



Source: ACCC calculations based on Informed Sources data

Table 10.1 Annual average retail petrol prices: five largest cities, three smaller capital cities and regional locations: 2002–03 to 2010–11

Year	Five largest cities cpl	Three smaller capitals cpl	Regional locations cpl
2002–03	88.5	95.5	94.1
2003–04	90.3	97.1	95.0
2004–05	100.6	107.5	106.3
2005–06	121.1	128.2	127.1
2006–07	121.6	128.7	127.6
2007–08	134.5	141.0	140.4
2008–09	127.1	134.6	132.9
2009–10	124.2	129.8	128.7
2010–11	131.7	136.7	135.8

Sources: ACCC calculations based on Informed Sources data

10.2.4 Price differentials over time

Table 10.2 provides data on annual average price differentials between the capital city and regional locations for each state and the Northern Territory. This table also shows the aggregate indicators of the city–country price differential (five-city and eight-city).[201]

Table 10.2 Annual average petrol price differentials between the capital city and the monitored regional locations for each state and the Northern Territory: 2002–03 to 2010–11

State	2002–03 cpl	2003–04 cpl	2004–05 cpl	2005–06 cpl	2006–07 cpl	2007–08 cpl	2008–09 cpl	2009–10 cpl	2010–11 cpl	9-year avg.
NSW	5.6	4.6	4.1	5.8	5.3	4.7	5.1	4.9	3.5	4.9
Vic.	4.4	3.7	5.4	5.2	4.5	4.8	3.0	1.2	1.0	3.7
Qld	4.2	2.9	3.4	5.0	4.8	4.7	2.6	1.6	1.8	3.4
SA	4.6	3.1	3.9	4.6	5.7	4.8	4.2	3.3	4.5	4.3
WA	10.2	10.4	12.6	11.6	12.2	12.6	17.0	12.9	10.6	12.2
Tas.	–0.8	0.3	0.4	–1.1	0.0	1.1	1.5	–0.1	–0.1	0.1
NT	6.5	3.9	5.8	4.4	5.5	8.1	7.1	8.1	8.9	6.5
Aggregate Indicators										
Five-city	5.5	4.7	5.7	6.1	6.0	5.9	5.8	4.5	4.1	5.4
Eight-city	2.9	2.2	3.1	3.4	3.4	3.5	3.0	2.5	2.3	2.9

Sources: ACCC calculations based on Informed Sources data

As shown in table 10.2, the city–country price differential varies between states and over time. Both five-city and eight-city city–country price differentials in 2010–11 were lower than in 2009–10.

There was an increase in the number of regional locations included in the ACCC's price monitoring program in July 2009. This change in the composition may have contributed, in part, to the general decrease in the city–country price differential in most states in 2009–10 and 2010–11.

201 The **five-city** city–country price differential is the difference between the arithmetic average of prices in the monitored regional locations in the six states and the Northern Territory and the arithmetic average price in the five largest cities (Sydney, Melbourne, Brisbane, Adelaide and Perth). Note that there are no prices available for locations in the Australian Capital Territory other than Canberra.
The **eight-city** city–country price differential is the difference between the arithmetic average of prices in the monitored regional locations in the six states and the Northern Territory and the arithmetic average price in the eight capital cities (the five largest cities plus Canberra, Hobart and Darwin).
Since the eight-city city–country price differential includes the three smaller capital cities in the city price, and these locations tend to have higher prices than the five largest cities, the eight-city city–country price differential is lower than the five-city city–country price differential.

2010–11 compared with 2009–10

Table 10.2 shows that compared with 2009–10, in 2010–11:

- The city–country price differential increased in South Australia, Queensland and the Northern Territory. The largest increase was in South Australia, with an increase of 1.2 cpl.
  - The increase in South Australia is likely to have been influenced by the abolition of the state government retail subsidy in regional locations from 1 January 2011.
- There was a decrease in the city–country price differential in New South Wales, Victoria and Western Australia. The largest decrease was in Western Australia, with a decrease of 2.3 cpl.
- The price differential remained the same in Tasmania at –0.1 cpl.
- The five-city price differential decreased by 0.4 cpl and the eight-city price differential decreased by 0.2 cpl.

Trends over time

Table 10.2 shows that over the nine-year period 2002–03 to 2010–11:

- Western Australia always had the highest city–country price differential and Tasmania had the lowest.
- The lowest five-city price differential occurred in 2010–11 and the lowest eight-city price differential occurred in 2003–04. Overall, these differentials have been decreasing since 2007–08.
- The difference between the highest and lowest city–country price differential over the nine years was highest in Western Australia (6.8 cpl). Elsewhere, the difference ranged between a low of 2.3 cpl in New South Wales and a high of 5.0 cpl in the Northern Territory.
- The five-city price differential ranged between a low of 4.1 cpl (2010–11) and a high of 6.1 cpl (2005–06), and the eight-city price differential ranged between a low of 2.2 cpl (2003–04) and a high of 3.5 cpl (2007–08).
- The price differentials in 2010–11 were lower than the nine-year average differential in New South Wales, Victoria, Queensland, Western Australia and Tasmania, and higher than the nine-year average price differential in South Australia and the Northern Territory.

10.3 Influences on prices in regional locations

Movements in retail petrol prices in regional locations are largely driven by changes in international refined petrol prices and the AUD–USD exchange rate, just as they are in the five largest cities. However, prices are generally higher in regional locations than in the five largest cities. A number of factors contribute to these higher prices and they are outlined below.

The influence of these factors can vary significantly from location to location, which means that there may be substantial differences in prices between regional locations.

10.3.1 Factors which influence prices in regional locations

Lower number of retail sites and therefore a lower level of local competition

In general, the degree of competition in a market will be greater if there are a large number of sellers. Therefore, everything else being equal, the higher the number of retail sites in a location, the greater the level of competition. Smaller populations in regional locations generally have fewer vehicles, and therefore retail sites, compared with the larger cities. Often this results in less competition in regional locations.

In regional locations with few retail sites there may be little incentive to reduce prices. This is because competitors will also quickly reduce their prices and the net result is the same volume of petrol sold at each site but with a lower margin.

Lower volumes of fuel sold

The volume of fuel sold at any particular site can significantly influence the price. Generally, the greater the volume of fuel sold the lower the price.

Certain costs of running a retail site (such as rent and maintenance) may be fixed irrespective of the volume of fuel sold. However, retail sites in regional locations generally sell lower volumes of fuel than retail sites in larger cities because they have comparatively fewer customers. Retail sites with higher volume sales can spread their fixed costs over this greater volume, which reduces the unit cost of supplying their fuel compared with retail sites with lower volumes of sales.

For example, the average volume of fuel sold in a busy capital city retail site could be over 400,000 litres per week. However, in regional locations an average retail site's sales are more likely to be around 200,000 litres per week and, in some cases, could be less than 50,000 litres per week.

Distance/location factors

It generally costs more to deliver fuel to most regional locations than it does to the largest capital cities. In regional locations, fuel needs to be moved further from the terminals, leading to higher freight costs. Additional storage costs may also be necessary if the fuel is stored in a local storage facility before being supplied to retail sites.

Regional locations which are situated along a major highway may have lower prices, due to increased competition. This is because they may sell higher volumes due to the passing traffic on the highway, and may also have lower delivery and storage costs.

Lower convenience store sales

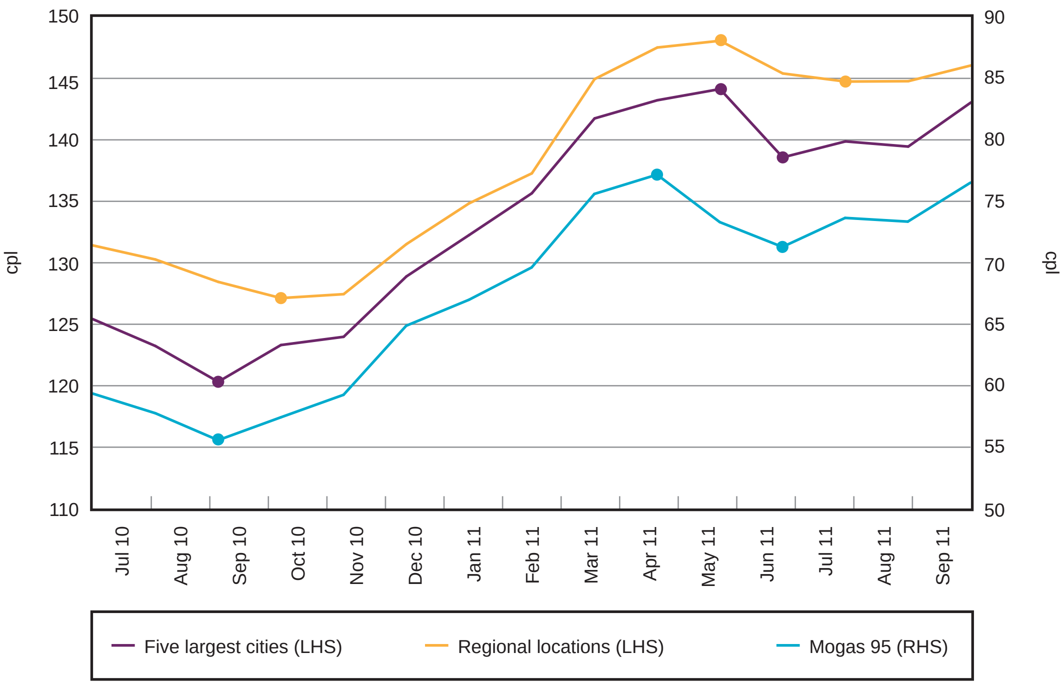
The margin on convenience store sales is generally higher than on fuel sales. In the five largest cities convenience store sales generally make a greater contribution to the returns of the retail site than they do in regional locations.[202] Therefore, these sites can remain profitable on much lower margins on fuel sales. As a result, upwards pressure is put on retail petrol prices in retail sites with lower convenience store sales, such as in regional locations.

10.3.2 Lags in price movements in regional locations

Price movements in regional locations generally lag behind movements in the five largest cities. This is due in part to a lower volume of sales in these locations, and hence slower replenishment of fuel stocks by wholesalers and retailers. Consequently, prices in regional locations often take more time to reflect changes in international prices than those in the five largest cities.

Chart 10.10 shows monthly average petrol prices in the five largest cities, regional locations in aggregate, and the monthly average price of Mogas 95 in Australian cents per litre in the period July 2010 to September 2011.[203]

Chart 10.10 Monthly average retail petrol prices in the five largest cities, regional locations in aggregate and Mogas 95 prices in Australian cents per litre: July 2010 to September 2011



Source: ACCC calculations based on Platts, RBA and Informed Sources data

202 See *2009 ACCC petrol monitoring report*, pp. 247–8.

203 Note that retail prices are shown on the left hand side of the chart and Mogas 95 prices are shown on the right hand side of the chart (with different starting and ending values). This is done to show clearly the relative price movements in the three price series.

Monthly Mogas 95 prices troughed in September 2010. Retail prices in the five largest cities also troughed in September 2010; however, retail prices in regional locations did not reach their lowest point until a month later, in October 2010.

Similarly, monthly Mogas 95 prices peaked in April 2011. Retail prices in the five largest cities and in regional locations reached their peak a month later in May 2011. Subsequently monthly Mogas 95 prices decreased to a low in June 2011, as did retail prices in the five largest cities. Retail prices in regional locations reached their low point one month later in July 2011.

10.3.3 Case studies

The influence of the factors outlined in section 10.3.1 is considered in two case studies.

When comparing petrol prices between locations, it needs to be stressed that every location will tend to have particular factors that influence prices to varying degrees, and these influences can also change over time.

Toowoomba and Brisbane

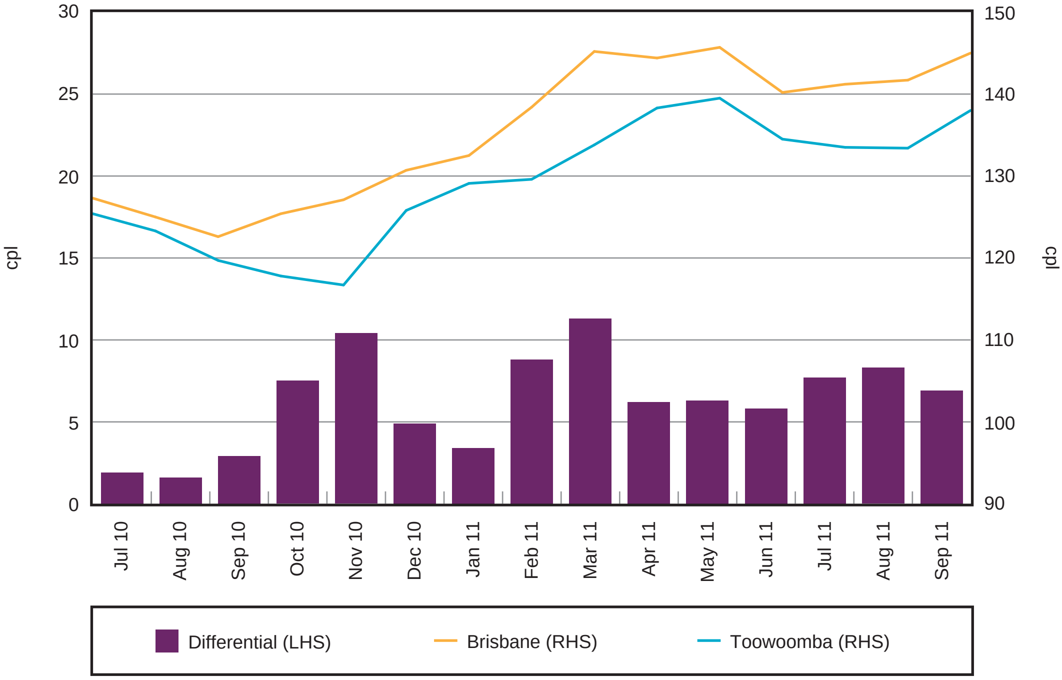
Brisbane is the capital of Queensland and is located on the coast in the south-east of the state. The Brisbane region has a population of around 2.6 million people, around 610 retail sites, two refineries and four fuel terminals.[204] Toowoomba is located around 130 kilometres west of Brisbane on the Great Dividing Range. It has a population of around 110,000 people and around 40 retail sites. There are no terminals in Toowoomba.

Chart 10.11 shows monthly average retail petrol prices in Toowoomba and Brisbane for the period July 2010 to September 2011, along with the monthly average differential.

Monthly average prices in Toowoomba were always lower than those in Brisbane. The average differential over the period was 6.3 cpl, and it ranged from a low of 1.6 cpl in August 2010 to a high of 11.3 cpl in March 2011.

204 Source: Informed Sources and the Queensland Office of Economic and Statistical research, at http://www.oesr.qld.gov.au/subjects/demography/population-estimates/tables/erp-ucl-qld/index.php, accessed 30 November 2011.
Note that as Brisbane petrol prices include prices in the Gold and Sunshine Coasts, the population data for Brisbane includes the Brisbane metropolitan area as well as the Gold and Sunshine Coasts.

Chart 10.11 Monthly average petrol prices in Toowoomba and Brisbane and the differential: July 2010 to September 2011



Source: ACCC calculations based on Informed Sources data

On the basis of the factors discussed in section 10.3.1, one would expect that retail petrol prices in Toowoomba would be higher than those in Brisbane. However, Toowoomba has a greater number of retail sites relative to its population than Brisbane.

In Toowoomba, on average there is one retail site for around every 1,900 people, whereas in Brisbane on average there is one retail site for around every 4,300 people. The greater number of retail sites relative to population in Toowoomba compared with Brisbane may lead to a higher level of competition—and hence lower prices—in Toowoomba.

This observation is consistent with comments provided by some major retailers to the ACCC in the last year about the intense nature of competition in the Toowoomba retail petrol market.

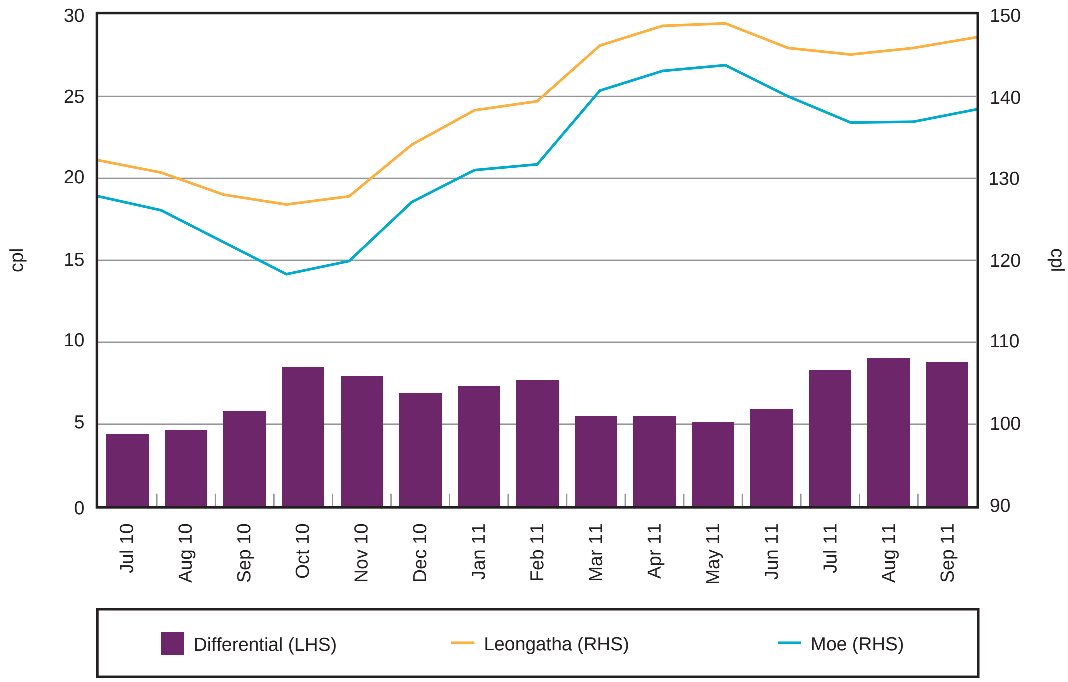
Leongatha and Moe

Leongatha and Moe are two regional towns in Victoria, situated around 70 kilometres apart. Leongatha is located around 130 kilometres south-east of Melbourne, on the South Gippsland Highway. It has a population of around 4,500 people and has four retail sites. Moe is also located around 130 kilometres south-east of Melbourne, but it is on the Princes Highway. Moe has a population of around 16,000 people and has 24 retail sites.[205]

Chart 10.12 shows monthly average retail petrol prices in Leongatha and Moe, and the monthly differential, for the period July 2010 to September 2011.

205 Informed Sources and Australian Bureau of Statistics, *2006 Census of Population and housing*, urban centres and localities 'Geographic codes UCL234800 (Moe) and UCL227800 (Leongatha)', http://www.censusdata.abs.gov.au/, accessed 30 November 2011.

Chart 10.12 Monthly average petrol prices in Leongatha and Moe and the differential: July 2010 to September 2011



Source: ACCC calculations based on Informed Sources data

Monthly average retail prices in Moe were always lower than those in Leongatha. The average differential over the period was 6.7 cpl and the monthly differential ranged from a low of 4.4 cpl in July 2010 to a high of 9.0 cpl in August 2011.

Some of the factors that may influence the lower prices in Moe are:

- Moe has six times more retail sites than Leongatha (which is in turn related to the fact that Moe has nearly four times the population of Leongatha).
- Moe also has a greater number of retail sites relative to population than Leongatha. In Moe there is one retail site for around every 667 people, whereas in Leongatha there is one retail site for around every 1,125 people.
- Moe is situated on the Princes Highway, a highly trafficked interstate highway which runs through a number of large regional towns such as Warragul and Traralgon. Leongatha is situated on a far less trafficked highway and hence may have lower volumes of petrol sales than Moe.

These two case studies illustrate that average prices in various locations may vary due to a range of factors.

10.4 Incidence of price cycles in regional locations

Regular price cycles are a prominent feature of petrol prices in Australia's five largest cities (see chapter 11). Petrol price cycles also sometimes occur in Canberra, but not in Hobart or Darwin.

This section examines the extent to which there were petrol price cycles in regional locations in calendar year 2010.[206] Daily average petrol prices in all of the regional locations included in the ACCC's fuel price monitoring program were analysed and classified according to the number of price cycles that occurred.[207]

10.4.1 Methodology

A petrol price cycle is a movement in price from the trough to a peak to a subsequent trough. A price cycle was considered to have occurred if the following criteria were met:

- the increase in price from the trough to the peak was 3 per cent or more of the trough price, and
- the decrease in price to the subsequent trough was also 3 per cent or more of the initial trough price.

To ensure that the price cycles in regional locations were of a broadly regular pattern—similar to those in the five largest cities—an additional criterion was applied. This was that the decrease in price from the peak to the subsequent trough must have occurred within three weeks of the peak being reached.

The daily price movements in all of the regional locations were assessed and locations were classified into three broad categories according to the number of price cycles in the year. These categories were:

- **no or few price cycles:** these regional locations had five price cycles or less during 2010
- **occasional price cycles:** these regional locations had between six and 19 price cycles during 2010
- **regular price cycles:** these regional locations had 20 or more price cycles during 2010.

A degree of judgement was required when setting the criteria and classification for this analysis. Note that:

- Price cycle increases are calculated from daily average prices in each regional location. This means that the actual increase in price at any individual retail site may vary from the average price cycle increase.
- Prices in some regional locations may appear to move in a similar pattern to a price cycle; however, unless they met the criteria and classifications above these price movements were not counted as price cycles.

206 This analysis examines data in the year 2010 to be comparable with the data on price cycles in the five largest cities in 2010 contained in chapter 11.

207 The number of regional locations in the monitoring program which report petrol price data can change from one year to the next. This is because retail sites close (and open) in particular locations, and sometimes price data is not regularly available for all of the year. In 2010, there were 151 regional locations for which petrol price data was available.

10.4.2 Analysis

Of the 151 regional locations analysed:

- Nine regional locations (6 per cent) had regular price cycles. These were:
  - Wollongong, Newcastle, Queanbeyan, Singleton, Moss Vale and Bulahdelah in New South Wales; Geelong and Seymour in Victoria; and Gawler in South Australia
- Nine regional locations (6 per cent) had occasional price cycles. These were:
  - Forster, Mittagong and Nowra in New South Wales; Ballarat in Victoria; Charters Towers and Miles in Queensland; Coober Pedy in South Australia; and Sorrell and Ulverstone in Tasmania
- 133 regional locations (88 per cent) had no or few price cycles. Of these:
  - 83 regional locations (55 per cent of the total number of regional locations) had no price cycles at all in 2010—this included all regional locations in Western Australia and the Northern Territory
  - 24 regional locations (16 per cent) had only one price cycle.

Some common features of the nine regional locations with regular price cycles in 2010 are:

- a number of these are major population centres—Newcastle, Wollongong and Geelong
- others are close to major population centres and/or on major highways:
  - Queanbeyan is close to Canberra
  - Moss Vale is close to Wollongong, on the Illawarra Highway and close to the Hume Highway
  - Singleton is close to Newcastle and on the New England Highway
  - Bulahdelah is close to Newcastle and on the Pacific Highway
  - Seymour is relatively close to Melbourne and on the Hume Highway
  - Gawler is close to Adelaide and near the Sturt Highway.
- Generally, when price cycles failed in the capital city, they also failed in the associated regional location. This suggests that prices in these regional locations may be set on a similar basis to those in the five largest cities.

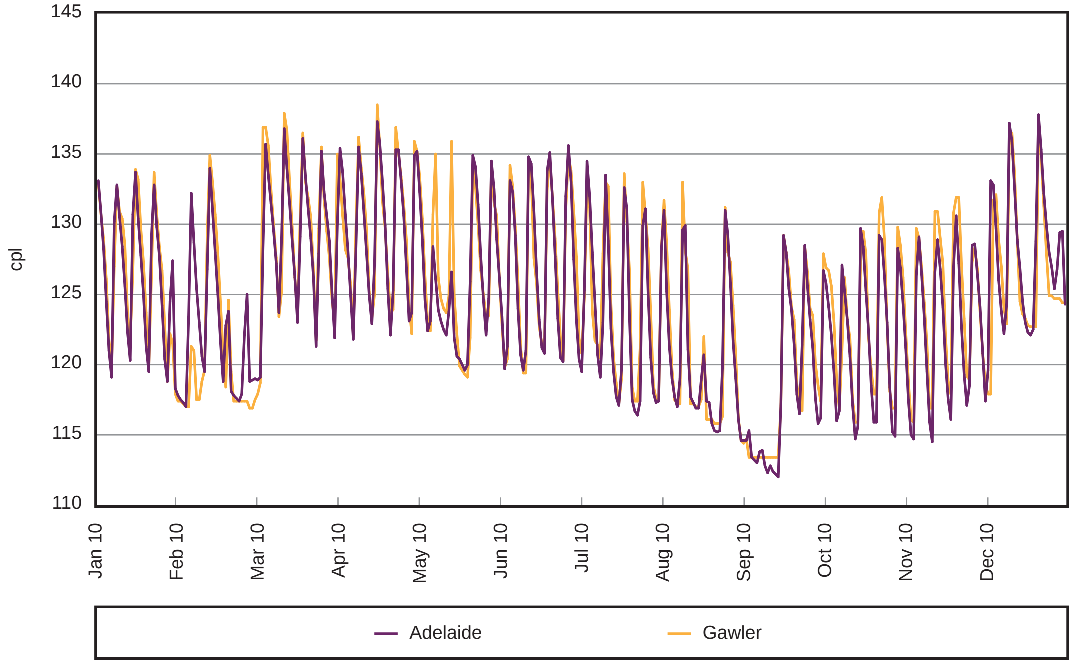
10.4.3 Comparison of price cycles in capital cities and regional locations

Regional locations with regular price cycles

Chart 10.13 shows daily average petrol prices in Gawler and Adelaide in 2010 and chart 10.14 shows daily average petrol prices in Geelong and Melbourne in 2010. Gawler and Geelong both have regular price cycles, which closely follow the price cycles in their respective capital city. Generally, when price cycles failed in the respective capital city, they also failed in the associated regional location.

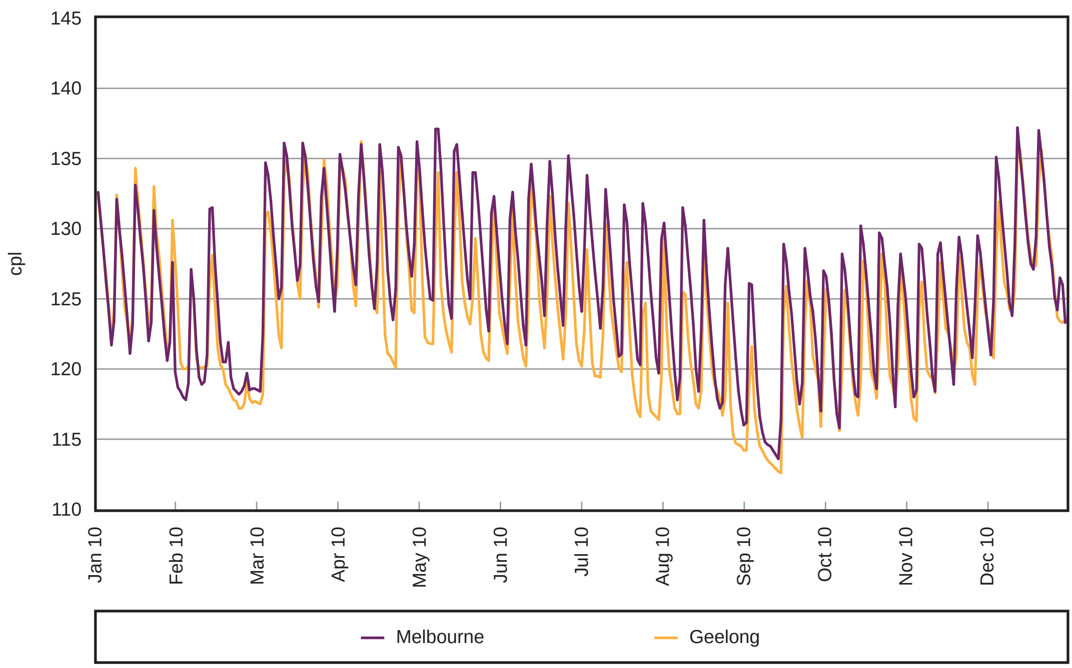
Charts for the other seven regional locations with regular petrol price cycles in 2010 are provided in appendix H, along with those for Canberra, Hobart and Darwin.

Chart 10.13 Gawler and Adelaide daily average retail prices: 2010



Source: ACCC calculations based on Informed Sources data

Chart 10.14 Geelong and Melbourne daily average retail prices: 2010

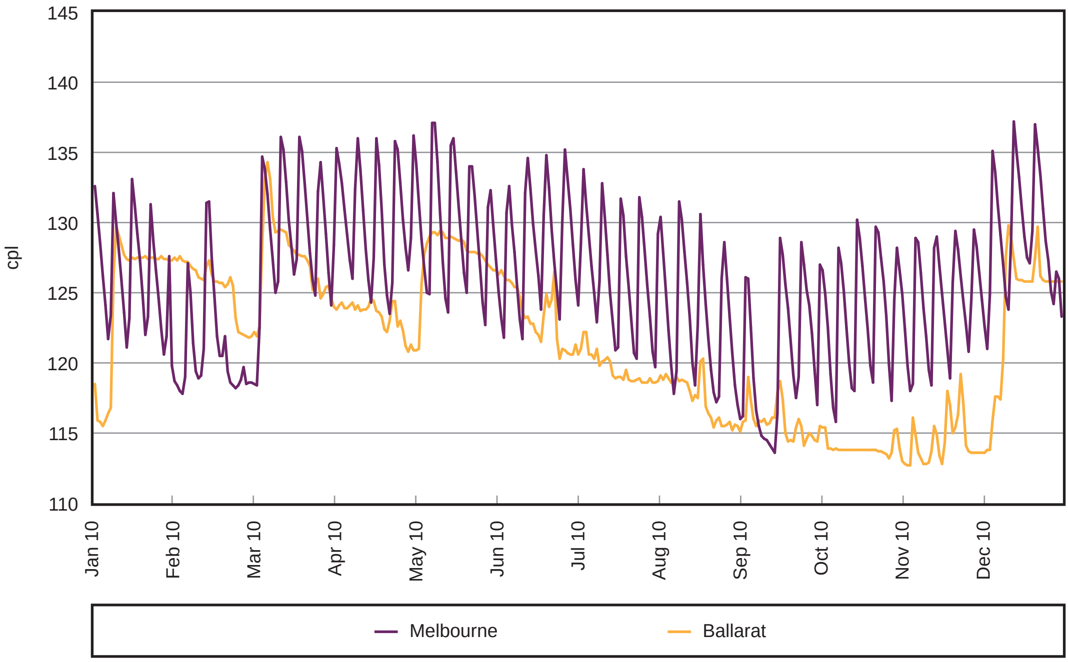


Source: ACCC calculations based on Informed Sources data

Regional locations with occasional price cycles

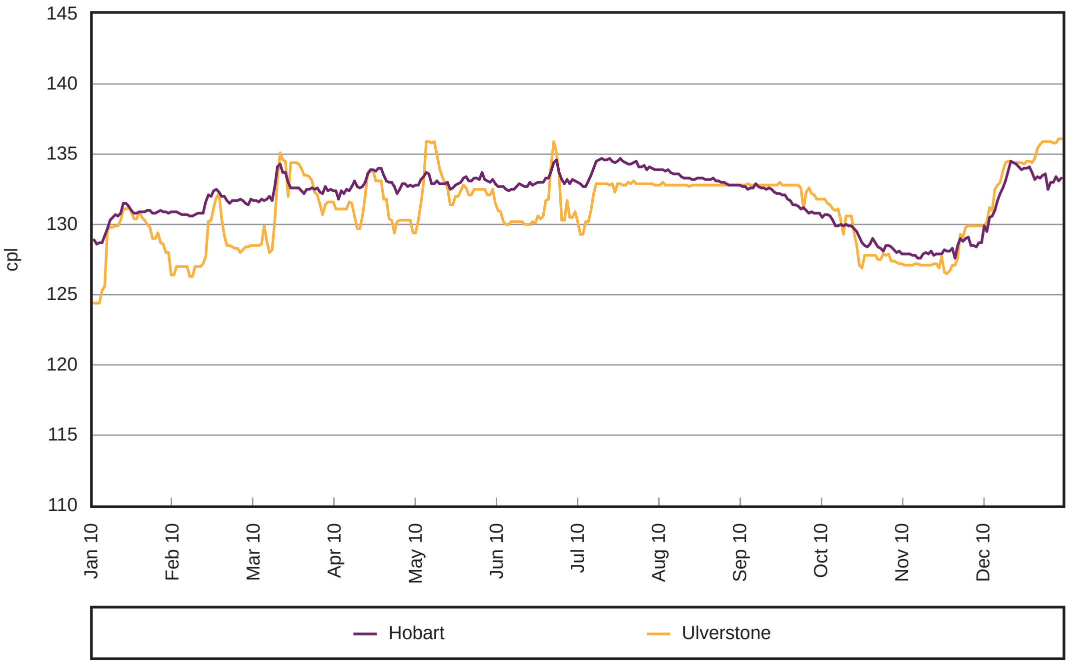
Chart 10.15 shows daily average petrol prices in Ballarat and Melbourne in 2010 and chart 10.16 shows daily average petrol prices in Ulverstone and Hobart in 2010. Both Ballarat and Ulverstone were classified as having occasional price cycles. There is only very limited correlation between movements in the capital city prices and those in the regional location.

Chart 10.15 Ballarat and Melbourne daily average retail prices: 2010



Source: ACCC calculations based on Informed Sources data

Chart 10.16 Ulverstone and Hobart daily average retail prices: 2010

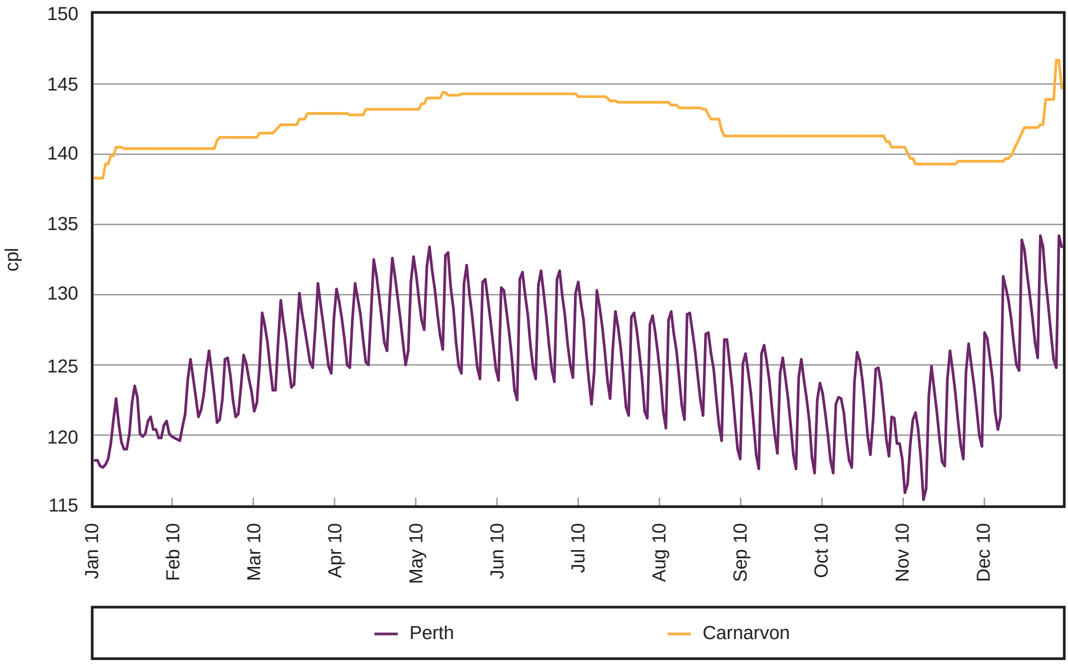


Source: ACCC calculations based on Informed Sources data

Regional locations with no or few price cycles

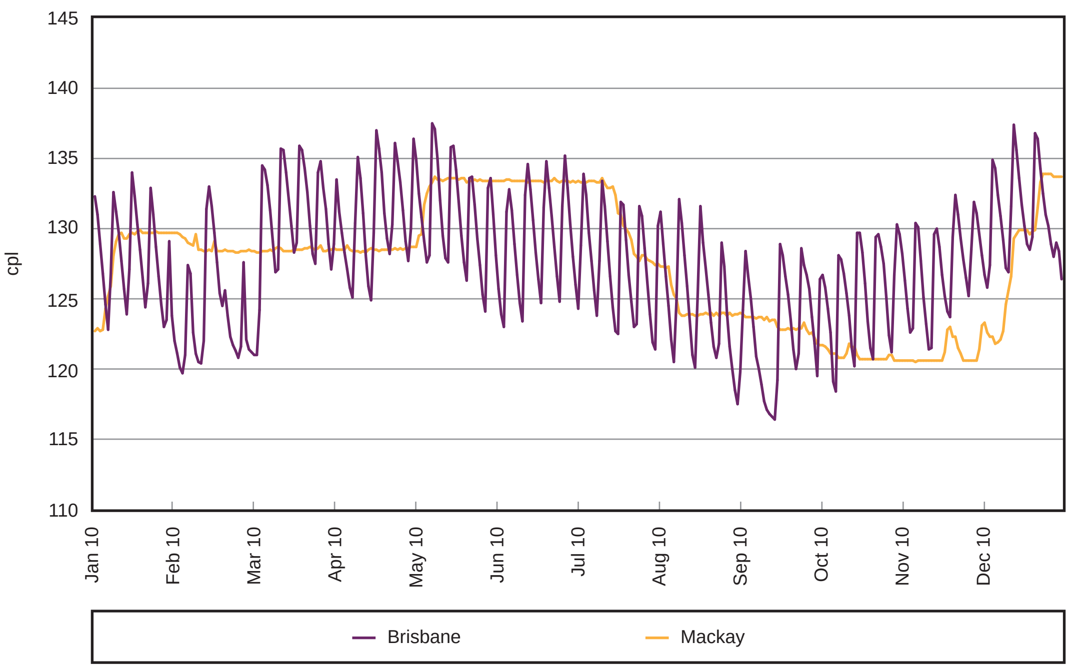
Chart 10.17 shows daily average retail petrol prices in Carnarvon and Perth and chart 10.18 shows daily average retail petrol prices in Mackay and Brisbane. Both Carnarvon and Mackay were classified as having no price cycles. Prices in Carnarvon and Mackay are constant for long periods of time and broadly follow movements in the respective capital city with a lag.

Chart 10.17 Carnarvon and Perth daily average retail prices: 2010



Source: ACCC calculations based on Informed Sources data

Chart 10.18 Mackay and Brisbane daily average retail prices: 2010



Source: ACCC calculations based on Informed Sources data

11 Retail pricing analysis

Key points

- In 2011, petrol price cycles in four of the five largest cities were characterised by considerable variability:
  - the day of the week on which price cycles peaked and troughed moved through the week
  - the duration of price cycles was more often greater than a week.
- Perth was the exception to this pattern—it had stable price cycles, with little variation in the duration of price cycles or the timing of the cycle during the week.
- Petrol prices change infrequently during the day—on average less than twice a day—and the vast majority of price changes are decreases, rather than increases.
- Price cycle increases before public holidays were on average no larger than in other weeks of the year.

11.1 Introduction

Regular price cycles are a prominent feature of petrol prices in Australia's largest cities. Price cycles occur only at the retail level; wholesale prices do not exhibit similar cyclical movements. Price cycles concern some consumers due to the large price increases that occur in a single day, and across most retail sites, on an almost weekly basis.

A petrol price cycle is a movement in price from the trough to a peak to a subsequent trough. A price cycle is considered to have occurred if the increase in price from the trough to the peak is 3 per cent or more of that trough price, and the decrease in price to the subsequent trough is also 3 per cent or more of the initial trough price. The price cycle increase is the increase in price from the initial trough to the peak.

Detailed analysis of petrol price cycles was undertaken in previous ACCC monitoring reports. This chapter extends that analysis to the end of September 2011.[208] In particular, it considers:

- price cycle increases (that is, the increase in price from trough to peak)
- the days of the week on which prices peak and trough and the duration of price cycles
- the regularity (or otherwise) of price cycles
- movements of prices during the day
- changes in consumer buying patterns during the price cycle
- the size of price cycle increases before public holidays.

208 All references to petrol in this chapter are to regular unleaded petrol (RULP). All references to the year 2011 are to the period 1 January 2011 to 30 September 2011.

11.2 Price cycles in recent years

11.2.1 Price cycles in 2009 and 2010

Price cycles in the five largest cities in 2009 were much more consistent—both in terms of the number of price cycles and their pattern—than in previous or subsequent years. There was only one failed price cycle in 2009 (which was in Brisbane).[209] Price cycle troughs generally occurred on Wednesday in all cities except Perth (which was generally on Tuesday) and peaks generally occurred on Friday in all cities except Adelaide (which was generally on Thursday).

In contrast, in 2010 the day of the week on which prices troughed and peaked changed significantly in Sydney, Melbourne, Brisbane and Adelaide. In Perth the day of the week on which prices most commonly peaked was the same as in 2009 (i.e. Friday) but the day of the week on which prices most commonly troughed changed in March 2010 from Tuesday to Wednesday. In addition, there were a significant number of failed and truncated price cycles in 2010.

11.2.2 Price cycles in 2011

In contrast to 2009, when price cycles generally had a duration of seven days, in 2011 price cycles of eight and nine days' duration were increasingly common. As a result, the cheapest and most expensive days to buy petrol changed throughout the week. The exception was Perth, where the pattern of price cycles was fairly consistent and their duration in 2011 was almost always seven days.

Across the five largest cities, there were 15 failed or truncated price cycles in 2011. Of these instances, nine were in Adelaide and three were in Brisbane. There were no failed or truncated price cycles in Perth.

11.3 Data on price cycles

There are three main influences on the size of price cycle increases:

- changes in wholesale prices—price cycle increases tend to be higher than average when underlying wholesale prices are increasing and lower than average when underlying wholesale prices are decreasing
- the extent of discounting before the price cycle increase
- the overall price level—for example, the absolute magnitude of the price cycle increase when prices are around 150 cpl is likely to be higher than when prices are around 100 cpl.

Price cycle increases are calculated from daily average prices in each city. This means that the actual increase in price at any individual retail site can vary from the average price cycle increase.

Data on the number of price cycles and average price cycle increases in the five largest cities for the period 1 January 2005 to 30 September 2011 is shown in table 11.1.[210]

209 See section 11.5.1 for definitions of the various types of price cycles.

210 The number of price cycles in a year is recorded as the number of peaks that occurred in that year.
When comparing data across these cities, some locally specific factors need to be considered: in Perth, FuelWatch operates, which prevents intra-day price changes; in Brisbane, prior to July 2009 there was a state subsidy to retail prices of around 9.2 cpl (including GST); and in Sydney, the number of retail sites selling RULP has been declining since October 2007 following the introduction of an ethanol mandate in New South Wales.

Table 11.1 Average price cycle increase in cents per litre and as a percentage of average price, and number of price cycles, in the five largest cities: 2005 to 2011*

Year	Sydney	Melbourne	Brisbane	Adelaide	Perth
Average price cycle increase (cpl)					
2005	7.0	7.1	7.1	7.6	10.8
2006	9.0	9.2	8.2	9.8	7.3
2007	9.4	9.6	8.4	10.3	8.0
2008	10.1	9.9	8.5	11.2	9.1
2009	12.2	11.0	9.3	13.5	7.6
2010	10.2	11.3	9.3	12.9	7.2
2011*	9.2	11.2	8.9	13.7	8.3
Price cycle increase as a percentage of average annual price (%)					
2005	6.3	6.4	6.9	6.7	9.8
2006	7.2	7.3	7.0	7.8	5.9
2007	7.5	7.7	7.1	8.3	6.4
2008	7.1	6.9	6.3	7.9	6.5
2009	10.2	9.1	7.9	11.3	6.5
2010	8.2	9.0	7.3	10.4	5.8
2011*	6.6	8.0	6.3	9.9	5.9
Number of price cycles					
2005	46	28	34	49	6
2006	47	43	45	50	20
2007	44	49	50	45	24
2008	52	48	47	46	11
2009	52	52	51	52	38
2010	45	47	48	49	49
2011*	33	33	31	29	39

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

In 2011, average price cycle increases were smaller compared with 2010 in Sydney, Melbourne and Brisbane, and larger in Adelaide and Perth. In Sydney, the average price cycle increase was the lowest since 2006.

Adelaide had the largest average price cycle increase in 2011 of 13.7 cpl. It has also had the highest average price cycle increase of the five cities each year since 2006. Perth had the lowest average price cycle increases in 2011, at 8.3 cpl. As a percentage of the average price, the average price cycle increase in 2011 was lower in all cities except Perth.

In the 39 weeks of 2011, Perth had a price cycle every week. There were a smaller number of price cycles in the other cities, because of price cycle failures and an increase in the duration of price cycles. The number and classification of price cycles in 2011 by city are analysed further in section 11.5.

Over the period January 2005 to September 2011, all cities except Perth had their highest number of price cycles in 2009 (Sydney also had the equal highest number in 2008). The highest number of price cycles for Perth was in 2010. Between 2005 and 2008, Perth had a significantly lower number of price cycles than the other cities. This was due to a longer average duration of price cycles (of around two weeks compared with one week in the other cities) and periods where price cycles were irregular or absent.

11.4 Recent changes in price cycles

11.4.1 Number of peaks and troughs by day of the week

Prior to 2010, there were long periods when price cycle peaks and troughs generally occurred on the same day each week. Since then, changes in the day of the week on which prices peak and trough have made price cycle movements less predictable for consumers. The converse is true in Perth, where price cycles have become more predictable in 2010 and 2011 than in previous years.

Tables 11.2 to 11.6 show the number of troughs and peaks (and percentage of the annual total) on each day of the week in each of the five largest cities for the period 1 January 2005 to 30 September 2011.

Table 11.2 Number of troughs and peaks (and percentage of annual total) in petrol prices on each day of the week, Sydney: 2005 to 2011*

Year	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Trough								
2005	11 (24%)	27 (59%)	6 (13%)	2 (4%)				46
2006	1 (2%)	44 (94%)					2 (4%)	47
2007		43 (98%)			1 (2%)			44
2008		26 (49%)	26 (49%)				1 (2%)	53
2009			52 (100%)					52
2010	1 (2%)	2 (5%)	11 (25%)	10 (23%)	13 (30%)	4 (9%)	3 (7%)	44
2011*	3 (9%)	2 (6%)	3 (9%)	6 (18%)	15 (45%)	1 (3%)	3 (9%)	33
Total	16 (5%)	144 (45%)	98 (31%)	18 (6%)	29 (9%)	5 (2%)	9 (3%)	319
Peak								
2005			4 (9%)	31 (67%)	6 (13%)	3 (7%)	2 (4%)	46
2006			3 (6%)	44 (94%)				47
2007				44 (100%)				44
2008				51 (98%)	1 (2%)			52
2009				12 (23%)	40 (77%)			52
2010	4 (9%)		2 (4%)	1 (2%)	15 (33%)	11 (24%)	12 (27%)	45
2011*	8 (24%)	2 (6%)	1 (3%)	4 (12%)	3 (9%)	5 (15%)	10 (30%)	33
Total	12 (4%)	2 (1%)	10 (3%)	187 (59%)	65 (20%)	19 (6%)	24 (8%)	319

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

Table 11.3 Number of troughs and peaks (and percentage of annual total) in petrol prices on each day of the week, Melbourne: 2005 to 2011*

Year	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Trough								
2005	9 (32%)	12 (43%)		6 (21%)			1 (4%)	28
2006	2 (5%)	41 (95%)						43
2007	1 (2%)	47 (96%)	1 (2%)					49
2008		23 (47%)	26 (53%)					49
2009			52 (100%)					52
2010	1 (2%)	3 (7%)	10 (22%)	11 (24%)	15 (33%)	4 (9%)	2 (4%)	46
2011*	4 (12%)	2 (6%)	2 (6%)	5 (15%)	12 (36%)	5 (15%)	3 (9%)	33
Total	17 (6%)	128 (43%)	91 (30%)	22 (7%)	27 (9%)	9 (3%)	6 (2%)	300
Peak								
2005			3 (11%)	16 (57%)		2 (7%)	7 (25%)	28
2006				43 (100%)				43
2007				49 (100%)				49
2008				48 (100%)				48
2009				8 (15%)	44 (85%)			52
2010	3 (6%)	2 (4%)		2 (4%)	16 (34%)	10 (21%)	14 (30%)	47
2011*	5 (15%)	3 (9%)	3 (9%)	3 (9%)	5 (15%)	4 (12%)	10 (30%)	33
Total	8 (3%)	5 (2%)	6 (2%)	169 (56%)	65 (22%)	16 (6%)	31 (10%)	300

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

Table 11.4 Number of troughs and peaks (and percentage of annual total) in petrol prices on each day of the week, Brisbane: 2005 to 2011*

Year	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Trough								
2005	5 (15%)	10 (29%)	1 (3%)	11 (32%)	3 (9%)	1 (3%)	3 (9%)	34
2006		42 (93%)	1 (2%)			1 (2%)	1 (2%)	45
2007		43 (86%)	6 (12%)				1 (2%)	50
2008		21 (45%)	26 (55%)					47
2009		1 (2%)	51 (98%)					52
2010	1 (2%)	3 (6%)	11 (23%)	13 (28%)	13 (28%)	4 (9%)	2 (4%)	47
2011*	4 (13%)	4 (13%)	1 (3%)	5 (16%)	13 (42%)	4 (13%)		31
Total	10 (3%)	124 (41%)	97 (33%)	29 (9%)	29 (9%)	10 (3%)	7 (2%)	306
Peak								
2005			1 (3%)	15 (44%)	2 (6%)	6 (18%)	10 (29%)	34
2006				45 (100%)				45
2007				49 (98%)	1 (2%)			50
2008				45 (96%)	2 (4%)			47
2009				3 (6%)	48 (94%)			51
2010	3 (6%)	2 (4%)	1 (2%)	1 (2%)	15 (31%)	11 (23%)	15 (31%)	48
2011*	5 (16%)	3 (10%)	1 (3%)	4 (13%)	4 (13%)	3 (10%)	11 (35%)	31
Total	8 (3%)	5 (2%)	6 (1%)	162 (53%)	72 (23%)	20 (6%)	36 (12%)	306

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

Table 11.5 Number of troughs and peaks (and percentage of annual total) in petrol prices on each day of the week, Adelaide: 2005 to 2011*

Year	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Trough								
2005	1 (2%)	14 (29%)	1 (2%)	6 (12%)	27 (55%)		2 (4%)	49
2006	2 (4%)	47 (92%)					2 (5%)	51
2007		41 (93%)	1 (2%)				1 (2%)	44
2008		34 (72%)	12 (26%)				1 (2%)	47
2009		1 (2%)	50 (96%)				1 (2%)	52
2010	1 (2%)	2 (4%)	26 (54%)	7 (15%)	7 (15%)	4 (8%)	1 (2%)	48
2011*	4 (14%)	3 (10%)	3 (10%)	7 (24%)	10 (34%)	1 (3%)	1 (3%)	29
Total	8 (2%)	142 (45%)	93 (29%)	20 (6%)	44 (14%)	5 (2%)	8 (2%)	320
Peak								
2005			1 (2%)	15 (31%)		7 (14%)	26 (53%)	49
2006			1 (2%)	49 (98%)				50
2007				45 (100%)				45
2008				46 (100%)				46
2009				36 (69%)	16 (31%)			52
2010	2 (4%)	3 (6%)	1 (2%)	2 (4%)	27 (55%)	9 (18%)	5 (10%)	49
2011*	1 (3%)		3 (10%)	5 (17%)	1 (3%)	9 (31%)	10 (34%)	29
Total	3 (1%)	3 (1%)	6 (2%)	198 (62%)	44 (14%)	25 (8%)	41 (13%)	320

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

Table 11.6 Number of troughs and peaks (and percentage of annual total) in petrol prices on each day of the week, Perth: 2005 to 2011*

Year	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Trough								
2005	3 (43%)		1 (14%)	1 (14%)			2 (29%)	7
2006	2 (11%)				1 (5%)	4 21%)	12 (63%)	19
2007	10 (42%)	4 (17%)	1 (4%)	1 (4%)		1 (4%)	7 (29%)	24
2008	4 (36%)	3 (27%)	2 (18%)				2 (18%)	11
2009		34 (87%)	4 (10%)				1 (3%)	39
2010		11 (23%)	37 (77%)					48
2011*			39 (100%)					39
Total	19 (10%)	52 (28%)	84 (45%)	2 (1%)	1 (1%)	5 (3%)	24 (13%)	187
Peak								
2005	1 (17%)	2 (33%)	1 (17%)	2 (33%)				6
2006		1 (5%)	13 (65%)	6 (30%)				20
2007			3 (13%)	8 (33%)	11 (46%)	2 (8%)		24
2008		2 (18%)		2 (18%)	4 (36%)		3 (27%)	11
2009				1 (3%)	33 (87%)	4 (11%)		38
2010				7 (14%)	34 (69%)	8 (16%)		49
2011*				38 (97%)	1 (3%)			39
Total	1 (1%)	5 (3%)	17 (9%)	64 (33%)	83 (45%)	14 (7%)	3 (2%)	187

Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

The tables show that in 2010 there was a significant change in the days of the week on which prices peaked and troughed, as well as the number of days on which a peak or trough occurred.

For example, in 2009 in Sydney all troughs occurred on Wednesday, whereas in 2010 there was at least one trough on each day of the week. The most common day in Sydney for prices to trough changed to Friday. A similar change occurred for peaks in Sydney: in 2009 all peaks in Sydney occurred on either Thursday or Friday; in 2010, apart from Tuesday, there was at least one peak on each day of the week. Friday remained the most common day for prices to peak in Sydney.

Similar changes occurred in Melbourne, Brisbane and Adelaide between 2009 and 2010. However, in Perth there was no change in the day of the week on which prices most commonly peaked and troughed.

In 2011, both troughs and peaks have occurred on every day of the week in Sydney and Melbourne, and on at least six days of the week in Brisbane and Adelaide. In contrast, in Perth peaks have occurred on two days of the week and troughs on only one day of the week.

11.4.2 Changes in days of the week of peaks and troughs

Charts 11.1 to 11.10 identify the day of the week on which each price cycle peak and trough occurred in each of the five largest cities in the period from 1 July 2009 to 30 September 2011. Each dot in the charts depicts a trough or a peak during the price cycle.

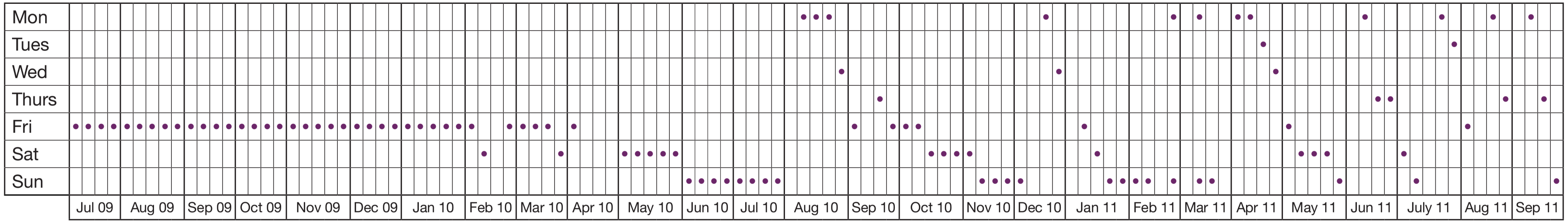
The charts highlight the significant changes in the peak and trough days that have occurred in 2010 and 2011.

From July 2009 to around April 2010, the day of the week on which the peak occurred was generally Friday in Sydney, Melbourne and Brisbane and Thursday or Friday in Adelaide. The day of the week on which the trough occurred in Sydney, Melbourne, Brisbane and Adelaide was almost exclusively Wednesday.

From April–May 2010, the day of the week on which prices peaked and troughed shifted through the week. The movement of peaks and troughs through the week reflects the increase in the duration of price cycles in these cities from seven days to eight or more days.

In Perth, price cycles have been quite stable since regular weekly cycles commenced in March 2009. In 2010, price cycle peaks generally occurred on Friday and troughs on Wednesday. In 2011, every price cycle trough occurred on Wednesday, and all but one price cycle peak occurred on Thursday.

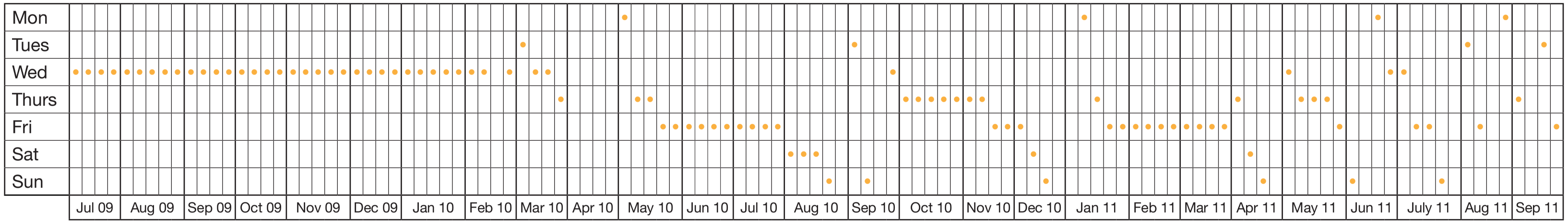
Chart 11.1 Day of peak, Sydney: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

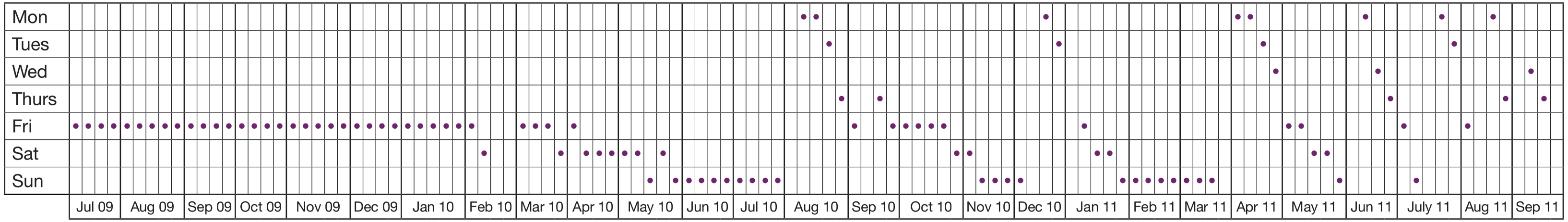
Chart 11.2 Day of trough, Sydney: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one trough in a cycle.

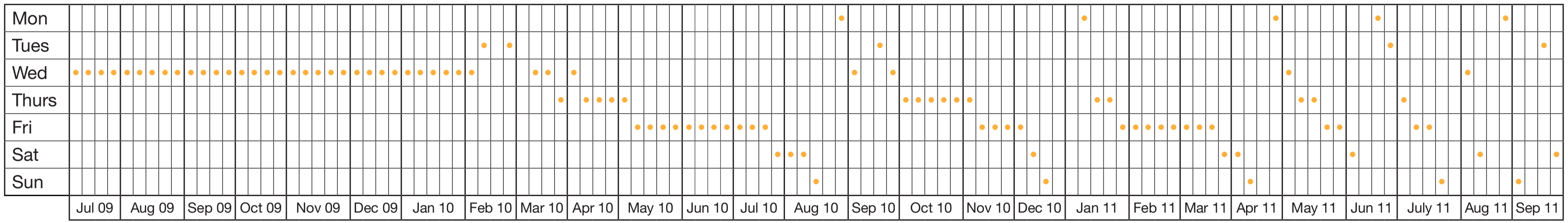
Chart 11.3 Day of peak, Melbourne: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

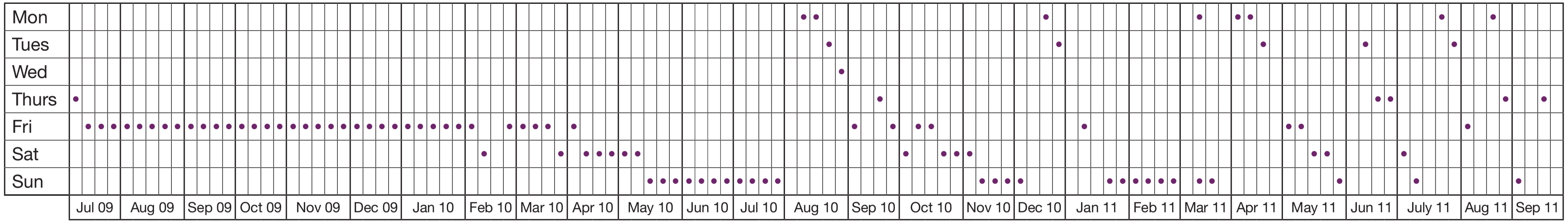
Chart 11.4 Day of trough, Melbourne: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one trough in a cycle.

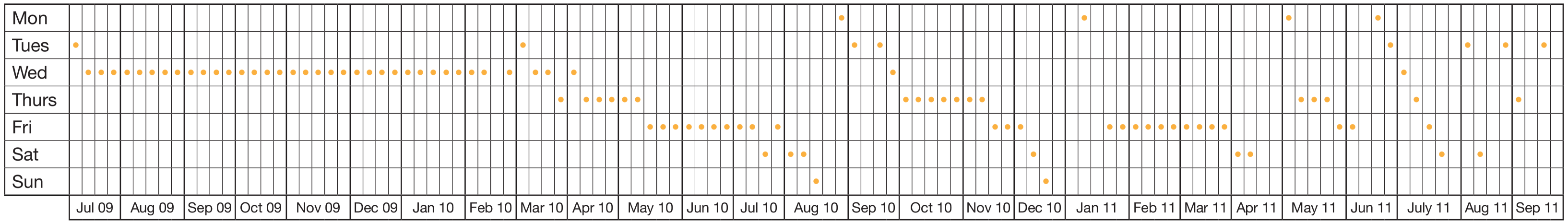
Chart 11.5 Day of peak, Brisbane: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

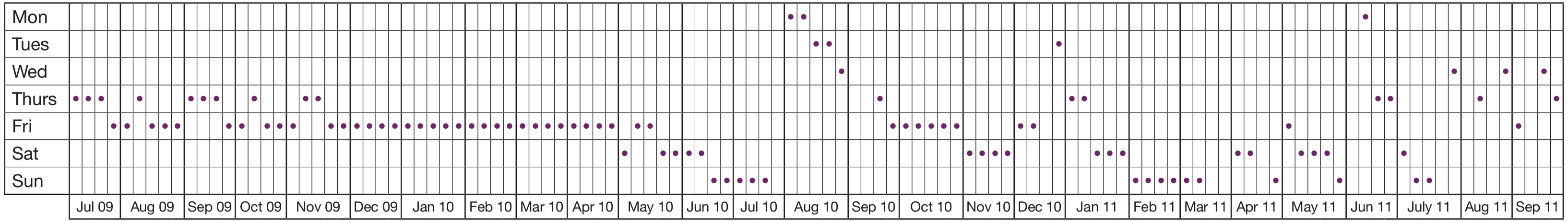
Chart 11.6 Day of trough, Brisbane: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one trough in a cycle.

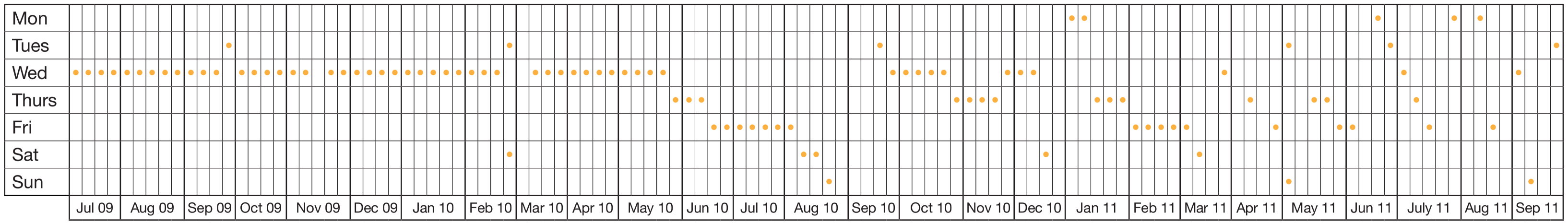
Chart 11.7 Day of peak, Adelaide: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

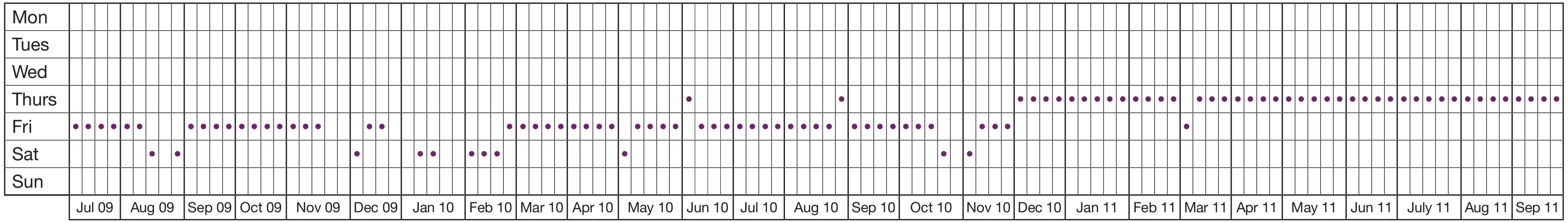
Chart 11.8 Day of trough, Adelaide: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

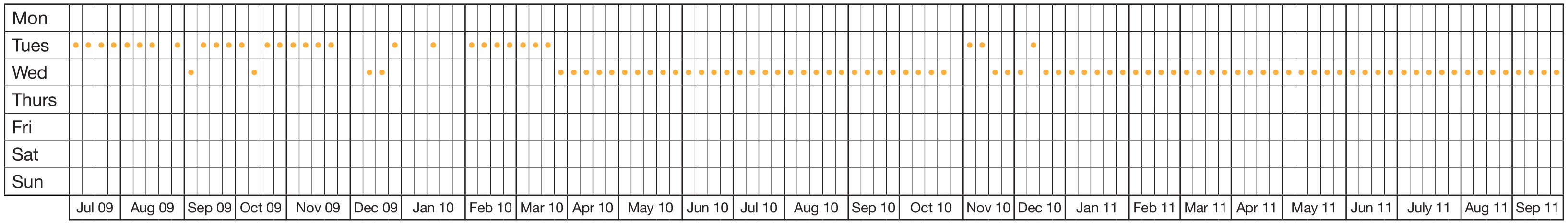
Chart 11.9 Day of peak, Perth: 1 July 2009 to 30 September 2011



Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

Chart 11.10 Day of trough, Perth: 1 July 2009 to 30 September 2011



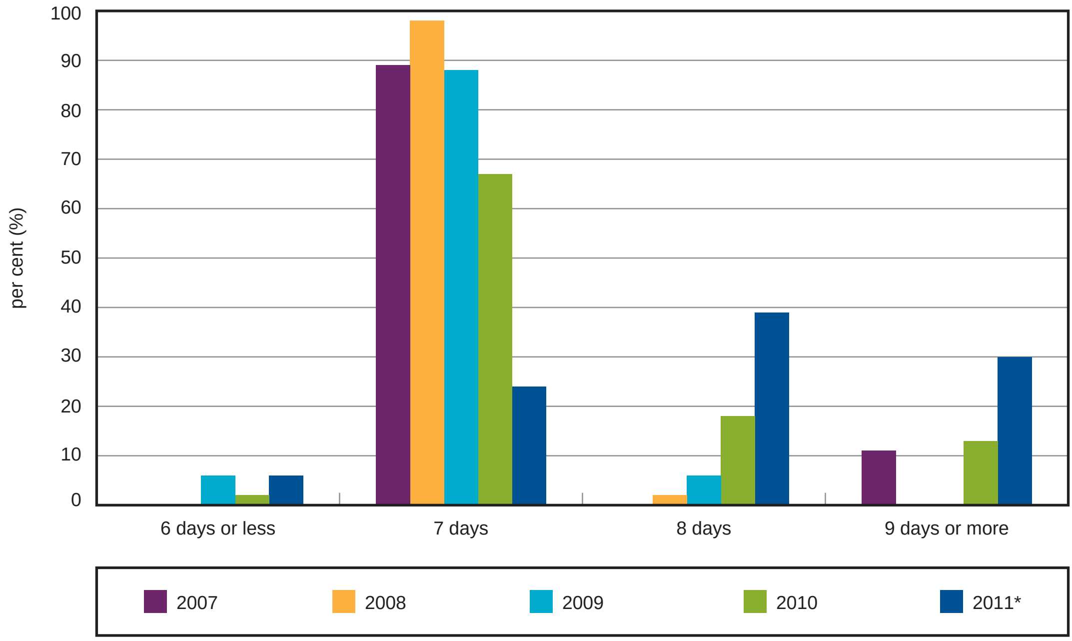
Source: ACCC analysis based on Informed Sources data

Note: Each dot depicts one peak in a cycle.

11.4.3 Duration of price cycles

Charts 11.11 to 11.15 show the duration of price cycles over the years 2007 to 2011 in each city.

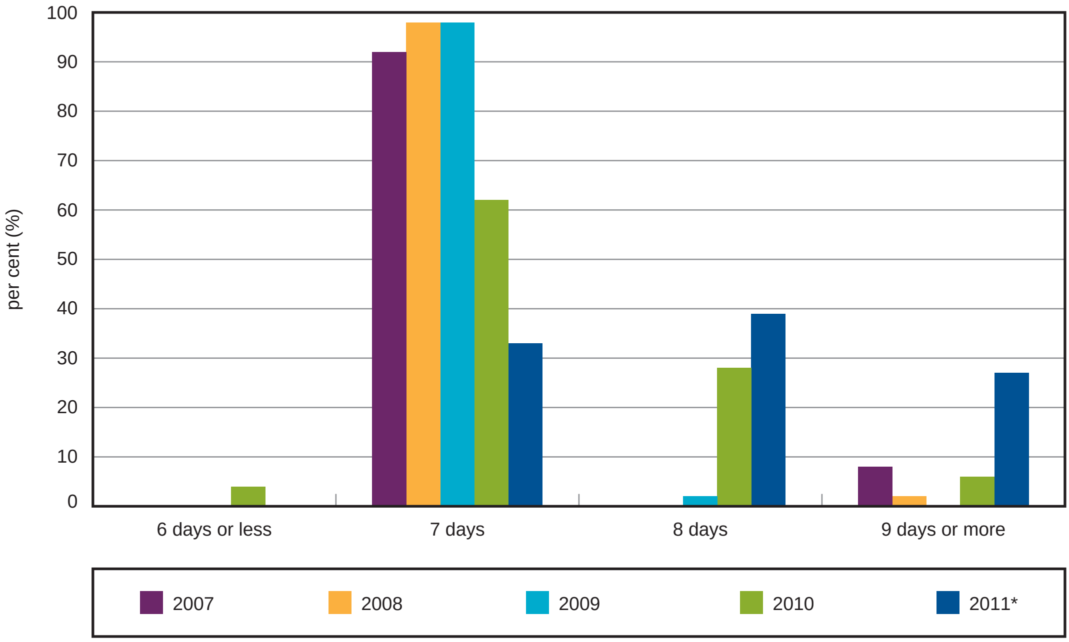
Chart 11.11 Duration of price cycles, Sydney: 2007 to 2011*



Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

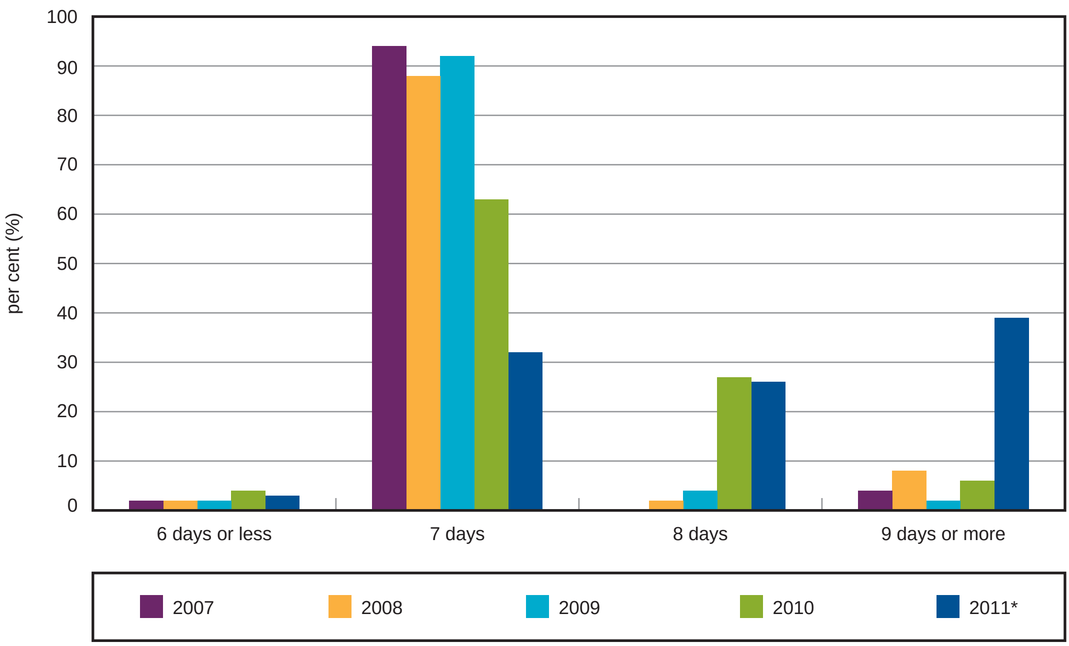
Chart 11.12 Duration of price cycles, Melbourne: 2007 to 2011*



Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

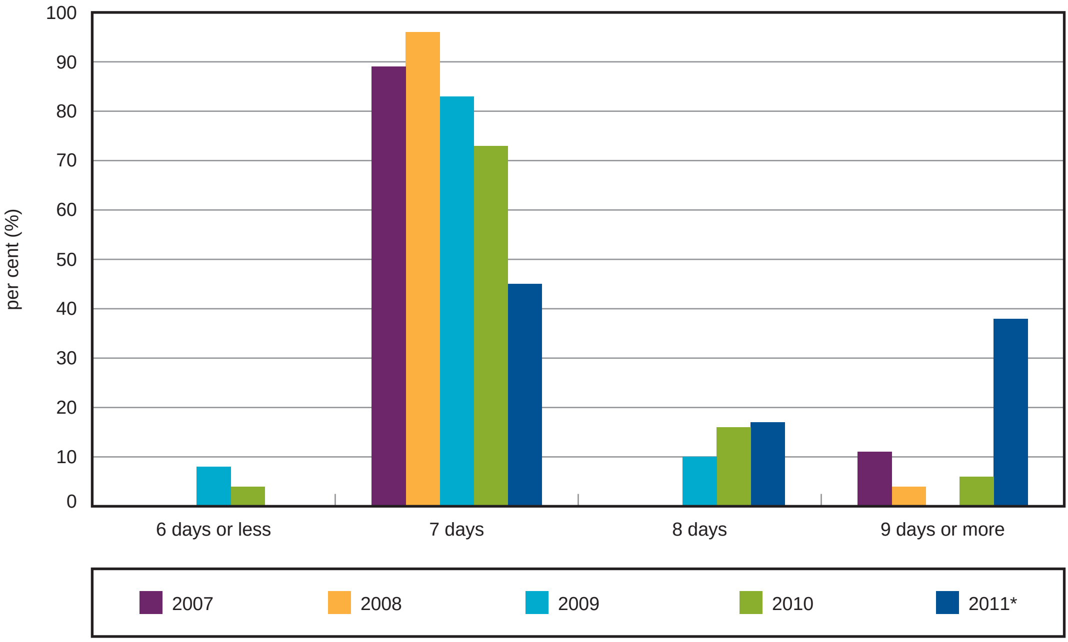
Chart 11.13 Duration of price cycles, Brisbane: 2007 to 2011*



Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

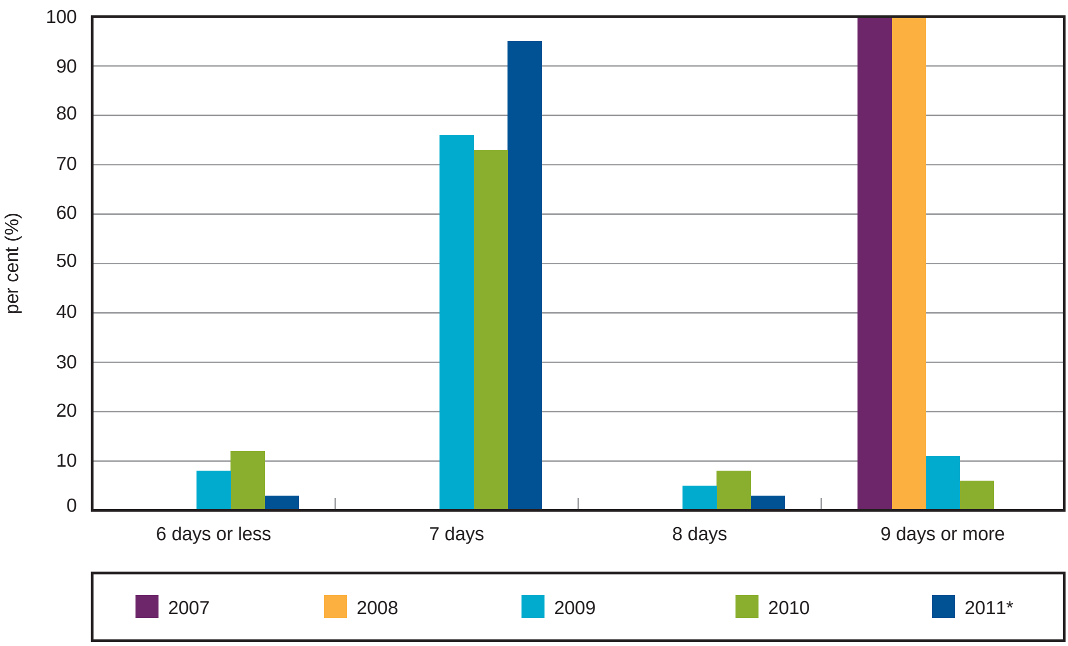
Chart 11.14 Duration of price cycles, Adelaide: 2007 to 2011*



Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

Chart 11.15 Duration of price cycles, Perth: 2007 to 2011*



Source: ACCC analysis based on Informed Sources data

Note: *Year to 30 September 2011.

The charts show that:

- From 2007 to 2009, on more than 80 per cent of occasions the duration of price cycles in Sydney, Melbourne, Brisbane and Adelaide was seven days.
- Over the last two years, there has been a trend toward price cycles with a duration of more than seven days in Sydney, Melbourne, Brisbane and Adelaide.
- Seven-day price cycles in 2011 occurred less than a third of the time in Sydney, Melbourne and Brisbane. They occurred less than half of the time in Adelaide.
- In contrast, Perth price cycles were always nine days or more in 2007 and 2008.
- Since 2009, price cycles in Perth have been seven days in duration most of the time.

11.5 Regularity of price cycles

The typical pattern of the petrol price cycle in the five largest cities in recent years has been one where prices have risen quickly at the outset (over one to two days) and then steadily declined over the rest of the week; that is, they moved in a 'sawtooth' pattern. This can be considered to be a 'regular' price cycle. The duration of regular price cycles in recent years has generally been a period of around seven days.

There are also a number of price cycles that could be considered to be irregular. These can be classified as 'failed' or 'truncated' price cycles. Price cycles in 2011, as well as in the period 2005 to 2010, have been analysed to determine the extent to which there have been regular, failed and truncated price cycles.

11.5.1 Methodology

Price cycles have been classified into three broad categories:

- **Regular:** this is a price cycle which meets the 3 per cent definition (as discussed in section 11.1), where the peak occurs at a time when an increase would have been expected, and where the regular sawtooth pattern is apparent.
- **Truncated:** this is where the trough to peak increase meets the 3 per cent definition of a price cycle, and where the peak occurs at a time when an increase would have been expected, but the typical sawtooth pattern is shortened (that is, there is a return to a lower price within one or two days of the trough to peak increase). Generally, the price cycle increase is significantly less than would be expected.
- **Failed:** this is where there is a small (or no) increase in price, at a time when an increase would have been expected, but the magnitude of the price increase does not meet the 3 per cent definition.

The classification of price cycles has been made on a weekly basis (as defined by Monday to Sunday). This classification tended to work well in the past, when price cycles were generally of seven days duration. However, in 2011 price cycles were generally of a longer duration. This means that there were weeks in which no price cycle peak was recorded but price cycle movements were regular in nature.[211]

During regular price cycles, most market participants increase prices within a day or so of each other. Generally, a small number of retailers increase their prices first and the rest of the market

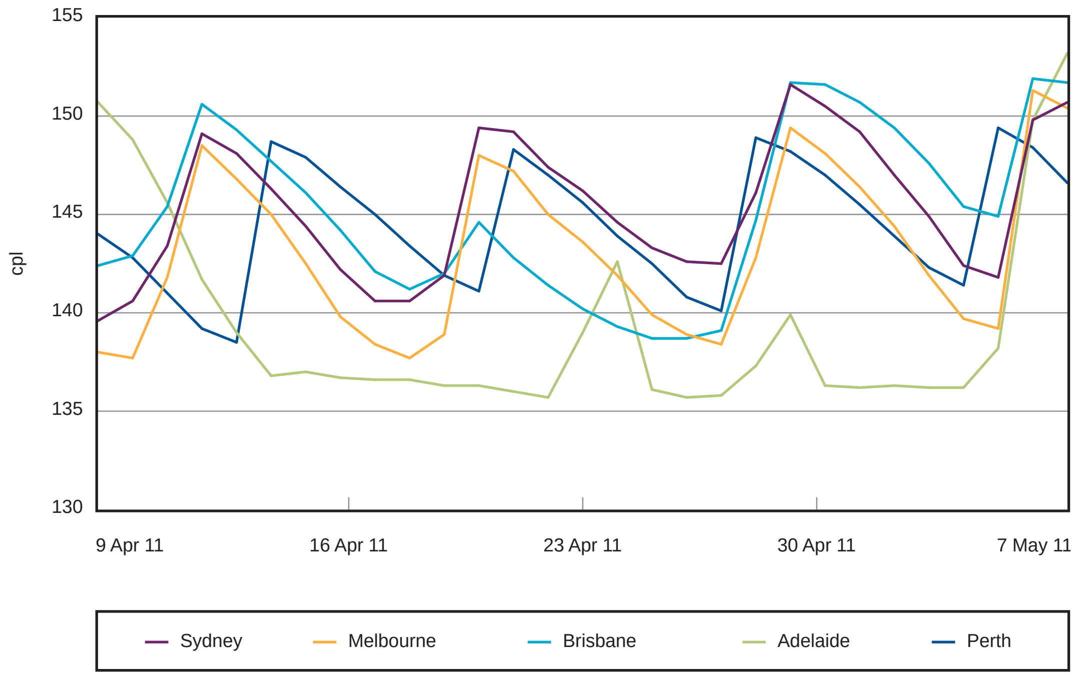
211 These are denoted by an asterisk in table 11.7.

follows. Failed and truncated price cycles can occur because some market participants do not increase prices during this time. This can lead to price cycles taking longer to occur (or not occur at all), or to a collapse in the price cycle (as those retailers that increased their prices first notice that the rest of the market has not followed them, and subsequently decrease their prices).

11.5.2 Categories of price cycles

Chart 11.16 shows daily average retail prices in the five largest cities for the period 9 April 2011 to 7 May 2011. There were regular, failed and truncated price cycles during this period.

Chart 11.16 Daily average prices in the five largest cities: 9 April 2011 to 7 May 2011



Source: ACCC based on Informed Sources data

The chart indicates that:

- Price cycles in Sydney, Melbourne and Perth over this period were consistently regular.
- In Adelaide (the green line in the chart) there was a failed price cycle (around 16 April), followed by a truncated price cycle (around 23 April) and then another failed price cycle (around 30 April).[212]
- In Brisbane (the light blue line in the chart) there was a failed price cycle (around 20 April) in between two regular price cycles.

212 While the third price cycle looks like a truncated price cycle it is actually a failed price cycle because it does not meet the 3 per cent rule discussed in section 11.1.

11.5.3 Classification of price cycles in 2011

Table 11.7 indicates the weekly classification of the price cycle for the 39 weeks in the period 27 December 2010 to 25 September 2011.

Table 11.7 Price cycles in the five largest cities by classification: 27 December 2010 to 25 September 2011

Starting Monday	Ending Sunday	Sydney	Melbourne	Brisbane	Adelaide	Perth
27 Dec	2 Jan	**Failed**	**Failed**	**Failed**	**Truncated**	Regular
3 Jan	9 Jan	Regular	Regular	Regular	Regular	Regular
10 Jan	16 Jan	Regular	Regular	**Failed**	Regular	Regular
17 Jan	23 Jan	Regular	Regular	Regular	Regular	Regular
24 Jan	30 Jan	Regular	Regular	Regular	Regular	Regular
31 Jan	6 Feb	Regular	Regular	Regular	Regular	Regular
7 Feb	13 Feb	Regular	Regular	Regular	Regular	Regular
14 Feb	20 Feb	*	Regular	Regular	Regular	Regular
21 Feb	27 Feb	Regular^	Regular	Regular	Regular	Regular
28 Feb	6 Mar	*	Regular	*	Regular	Regular
7 Mar	13 Mar	Regular^	Regular	Regular^	**Truncated**	Regular
14 Mar	20 Mar	Regular	Regular	Regular	**Failed**	Regular
21 Mar	27 Mar	*	*	*	**Failed**	Regular
28 Mar	3 Apr	Regular	Regular	Regular	Regular	Regular
4 Apr	10 Apr	Regular	Regular	Regular	Regular	Regular
11 Apr	17 Apr	Regular	Regular	Regular	**Failed**	Regular
18 Apr	24 Apr	Regular	Regular	**Failed**	**Truncated**	Regular
25 Apr	1 May	Regular	Regular	Regular	**Failed**	Regular
2 May	8 May	Regular	Regular	Regular	Regular	Regular
9 May	15 May	Regular	Regular	Regular	Regular	Regular
16 May	22 May	Regular	Regular	Regular	Regular	Regular
23 May	29 May	Regular	Regular	Regular	Regular	Regular
30 May	5 Jun	*	*	*	*	Regular
6 Jun	12 Jun	**Truncated**	Regular	Regular	Regular	Regular
13 Jun	19 Jun	Regular	Regular	Regular	Regular	Regular
20 Jun	26 Jun	Regular	Regular	Regular	Regular	Regular
27 Jun	3 Jul	Regular	Regular	Regular	Regular	Regular
4 Jul	10 Jul	Regular	Regular	Regular	Regular	Regular
11 Jul	17 Jul	*	*	*	Regular	Regular
18 Jul	24 Jul	Regular	Regular	Regular	*	Regular
25 Jul	31 Jul	Regular	Regular	Regular	Regular	Regular
1 Aug	7 Aug	Regular	Regular	Regular	**Failed**	Regular
8 Aug	14 Aug	*	*	*	Regular	Regular
15 Aug	21 Aug	Regular	Regular	Regular	**Failed**	Regular
22 Aug	28 Aug	Regular	Regular	Regular	Regular	Regular
29 Aug	4 Sep	*	*	Regular	Regular	Regular
5 Sep	11 Sep	Regular	Regular	*	*	Regular
12 Sep	18 Sep	Regular	Regular	Regular	Regular	Regular
19 Sep	25 Sep	Regular	*	*	Regular	Regular

Source: ACCC analysis based on Informed Sources data

Note: *Denotes where there was no price cycle peak in the specified week. These occasions are associated with price cycles of durations longer than seven days.

^Denotes where there were two price cycle peaks in the specified week. These occasions are associated with price cycles of durations less than seven days.

Table 11.7 shows that over the 39 weeks in 2011 to Sunday, 25 September:

- There were 11 failed price cycles:
  - Adelaide had six failed cycles, Brisbane had three, and Sydney and Melbourne had one each.
  - In the first week of 2011, the price cycle failed in Sydney, Melbourne and Brisbane.
- There were four truncated price cycles: three were in Adelaide and one was in Sydney.
- Altogether there were a total of 15 failed and truncated price cycles in the five largest cities (nine of which occurred in Adelaide).
- Perth had regular price cycles every week during the period.

The occasions in the second half of 2010 and the first half of 2011 when failed and truncated price cycles occurred in Sydney, Melbourne, Brisbane and Adelaide can be seen in the charts at appendix I.

11.5.4 Classification of price cycles in 2005–10

Petrol price cycles in Sydney, Melbourne, Brisbane and Adelaide over the period 2005 to 2010 were examined in order to provide a historical context for the failed and truncated price cycles in 2011. The analysis covered a total of 1,248 weeks across the four cities over the six years. Price cycles in Perth were not included in the analysis as they were not as regular, or as frequent, as those in the other cities for much of this period (this can be seen in table 11.1 in section 11.3).

Table 11.8 indicates the number of failed and truncated price cycles in each of the cities for each year from 2005 to 2010.

Table 11.8 Failed and truncated price cycles in Sydney, Melbourne, Brisbane and Adelaide: 2005 to 2010

	Sydney	Melbourne	Brisbane	Adelaide	Total
Failed price cycles					
2005	6	24	18	3	51
2006	5	9	7	2	23
2007	8	3	2	7	20
2008	–	4	5	6	15
2009	–	–	1	–	1
2010	5	3	2	2	12
Total	**24**	**43**	**35**	**20**	**122**
Truncated price cycles					
2005				1	1
2006	1	–	–	3	4
2007	–	–	1	1	2
2008	1	–	1	1	3
2009	–	–	–	3	3
2010	5	2	3	6	16
Total	**7**	**2**	**5**	**15**	**29**
Failed and truncated cycles					
2005	6	24	18	4	52
2006	6	9	7	5	27
2007	8	3	3	8	22
2008	1	4	6	7	18
2009	–	–	1	3	4
2010	10	5	5	8	28
Total	**31**	**45**	**40**	**35**	**151**

Source: ACCC analysis based on Informed Sources data

Table 11.8 shows that from 2005 to 2010 there were 122 failed price cycles and 29 truncated price cycles, representing 12 per cent of the total weeks in that time. This indicates that for 88 per cent of the weeks during the six year period, price cycles were classified as regular.

Failed price cycles

Failed price cycles occurred simultaneously in all four cities on four occasions; in three cities on five occasions; and in two cities on 19 occasions. There were 53 occasions when a failed price cycle occurred in only one city.

The four occasions when failed price cycles occurred simultaneously in all four cities were the weeks beginning 29 August 2005, 15 January 2007, 10 September 2007 and 6 September 2010. It is not always apparent why the price cycle failed in all four cities simultaneously. However, the occurrence in 2005 is likely to have been associated with the steep increase in wholesale and retail prices as a result of Hurricane Katrina.

Failed price cycles occurred most frequently in 2005, with 51 failed price cycles (42 per cent of the total). The frequency of failed price cycles steadily diminished each year to only one in 2009. However, in 2010 there were 12 failed price cycles.

Truncated price cycles

There were 29 truncated price cycles identified over the six-year period. Sixteen truncated cycles occurred in 2010, including six in Adelaide and five in Sydney.

In 2010, truncated price cycles occurred simultaneously in all four cities in the week beginning 25 January 2010, in three cities in the week beginning 1 February 2010, and in two cities in the week beginning 22 February 2010. Prior to 2010, there was only one other occasion when truncated price cycles occurred in more than one city at the same time.

Price cycles in Perth

Prior to May 2008, Perth had regular price cycles with an average duration of around two weeks, compared with an average of around one week in the other four largest cities. Price cycles thereafter were very irregular until March 2009, since when they have been regular with an average duration of around seven days.

From March 2009, Perth had eight failed price cycles: four each in 2009 and 2010. The only truncated cycle was in the week beginning 14 December 2009, which immediately preceded two consecutive failed cycles.

11.6 Movement of prices during the day

Petrol price changes during the day are an issue of concern for motorists.[213] This section analyses the frequency of petrol price changes within a day and the size of petrol price changes. As most retail sites are open for 24 hours, this analysis records data on prices and price changes between midnight and 11.59 pm each day. It examines prices in Sydney, Melbourne, Brisbane and Adelaide over the period 1 July 2004 to 30 June 2011.

Perth was not included in the analysis because the FuelWatch arrangements in Western Australia require that retail prices are fixed for 24 hours from 6.00 am each day. Therefore, prices in Perth can only change once per day.

This analysis was undertaken by Informed Sources for the ACCC and is based on electronically collected data from the major petrol retailers.[214] Some caveats on the results include:

- As not all retailers are subscribers to Informed Sources the analysis covers most, but not all, retail sites in each city.
- These are average results across the retail sites in each city. Therefore, they may not represent the results at any specific retail site.
- A degree of caution is required when considering the results for Sydney because the number of retail sites selling RULP has decreased substantially over the period. This is primarily due to the ethanol mandate in NSW, which has led to retail sites selling E10 petrol and ceasing to sell RULP.

11.6.1 Frequency of price changes per day

The frequency of price changes within a day was assessed using two indicators: the average number of price changes per day, and the average price duration per day.

Average number of price changes per day

The average number of changes per day was derived by counting the number of changes in a day at each site and averaging across all the retail sites in a city each year.

Table 11.9 shows the average number of price changes per day in each year (and half years in the case of 2004 and 2011) in each city.

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213 See the summary of the ANOP consumer survey in November 2007 commissioned by the ACCC and included in appendix H of the 2007 ACCC petrol inquiry report.

214 This analysis is based on price data from BP, Caltex, Mobil, Coles Express, Woolworths, 7-Eleven, and On The Run. Some methodological issues are noted below.
Informed Sources collects price data electronically from its subscribers, which enables the collection of price changes throughout the day. However, the data is subject to distortions that can occur as the result of operators misusing the system. In particular, there are cases where console operators have made one-off changes to their price in order to allow a fuel customer to make incidental purchases (e.g. cigarettes) on a company petrol card.
These rapid, short duration changes can significantly bias the results of any analysis of change frequency (although they have little impact on average price). For the purposes of this analysis Informed Sources filtered out all changes that had a duration of less than an hour.
The manual overrides of prices by operators can also lead to unrealistically high or low prices, and although these have little impact on the average prices, they can significantly impact on assessment of price ranges. Therefore, the top and bottom 0.5% of prices in each city and year have been excluded from the analysis.

Table 11.9 Average number of price changes per day—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide	Brisbane	Melbourne	Sydney	Four-city average
H2-2004	1.2	1.4	1.1	1.2	**1.2**
2005	1.5	1.3	1.2	1.3	**1.3**
2006	1.5	1.4	1.6	1.3	**1.4**
2007	1.4	1.4	1.6	1.3	**1.4**
2008	1.6	1.2	1.6	1.3	**1.4**
2009	1.9	1.4	1.9	1.4	**1.7**
2010	1.7	1.2	1.6	1.1	**1.4**
H1-2011	1.6	1.1	1.7	1.1	**1.5**
Average	**1.6**	**1.3**	**1.6**	**1.3**	**1.4**

Source: Informed Sources

Table 11.9 shows that over the period July 2004 to June 2011, on average petrol prices changed less than twice a day. They changed most in Melbourne and Adelaide (on average 1.6 times per day) and least in Sydney and Brisbane (on average 1.3 times per day).

Table 11.9 also indicates that:

- The average number of price changes across all four cities ranged from a low of 1.2 times per day in the second half of 2004 to a high of 1.7 times per day in 2009.
- On an individual city basis, the highest number of changes per day (1.9 times) occurred in Adelaide and Melbourne in 2009 and the lowest number of changes per day (1.1 times) occurred in Sydney in 2010 and the first half of 2011, in Melbourne in the second half of 2004 and in Brisbane in the first half of 2011.

While the table shows the average number of price changes per day in each city in each year, the actual number of price changes per day at individual retail sites ranged from no changes per day to more than 10 changes per day. However, the number of retail sites with a high number of price changes was so small as to be relatively insignificant. Over the period July 2004 to June 2011, 96 per cent of the total number of price changes per day at each retail site ranged between no price changes to three price changes per day.

Average price duration per day

The average price duration was calculated by finding the average duration of all the price changes at a retail site on a given day (in hours), and averaging this across all the retail sites in a city. By taking an average of retail site averages (rather than an average of all changes), equal weight was given to each retail site.

Table 11.10 shows the average price duration per day for each year (and half years in the case of 2004 and 2011) in each city.

Table 11.10 Average price duration per day (in hours)—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide	Brisbane	Melbourne	Sydney	Four-city average
H2-2004	14.1	13.0	15.0	13.8	**14.0**
2005	12.1	13.9	13.7	13.5	**13.5**
2006	12.4	13.0	11.5	12.8	**12.4**
2007	12.3	12.5	10.9	12.9	**12.1**
2008	11.6	13.3	11.0	12.8	**12.1**
2009	10.0	12.4	9.5	12.0	**10.9**
2010	11.3	13.3	11.0	15.1	**12.4**
H1-2011	12.0	13.6	10.1	13.6	**11.9**
Average	**11.8**	**13.1**	**11.3**	**13.1**	**12.3**

Source: Informed Sources

Over the period July 2004 to June 2011, the average petrol price duration per day was 12.3 hours. The duration was shortest in Melbourne (on average 11.3 hours per day) and longest in Sydney and Brisbane (on average 13.1 hours per day).

Table 11.10 also shows that:

- The average price duration across all four cities was shortest in 2009 (10.9 hours per day) and longest in the second half of 2004 (14.0 hours per day).
- On an individual city basis, the shortest price duration occurred in Melbourne (9.5 hours per day) in 2009 and the longest occurred in Sydney (15.1 hours per day) in 2010.
- Over time, the average price duration per day in Adelaide and Melbourne has tended to decline, whereas in Sydney and Brisbane it has tended to be more stable.

There is a relationship between the number of price changes per day and the average duration of price changes per day. In Melbourne petrol prices change more frequently per day and therefore the average price duration per day is shorter. Conversely, in Sydney, there are fewer price changes per day and therefore the average price duration is longer.

11.6.2 Size of price changes

To assess the size of price changes, a number of indicators were used:

- Price decreases as a percentage of total price changes, and the average price decrease.
- Price increases as a percentage of total price changes, and the average price increase.[215]

Price decreases

Table 11.11 shows the percentage of price changes that were price decreases in each year (and half years in the case of 2004 and 2011) in each city. It clearly indicates that the vast majority of petrol price changes were price decreases.

215 When comparing prices and price changes across cities it is important to remember the caveat on Sydney prices noted earlier, and that the magnitude of price changes in Brisbane may have been influenced by the Queensland Government retail subsidy (of around 9.2 cpl including the GST) which applied prior to July 2009.

Table 11.11 Percentage of price changes that were price decreases—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide %	Brisbane %	Melbourne %	Sydney %	Four-city average %
H2-2004	76.6	79.4	76.1	76.1	**77.0**
2005	81.5	76.4	79.8	76.8	**78.3**
2006	85.2	83.9	87.7	83.6	**85.3**
2007	85.9	85.8	88.9	85.3	**86.9**
2008	86.6	82.9	88.3	84.3	**85.8**
2009	90.2	85.4	91.0	87.1	**88.8**
2010	88.8	83.4	89.2	83.4	**87.0**
H1-2011	88.3	83.3	90.1	84.0	**87.6**
Average	**86.3**	**82.9**	**87.8**	**82.9**	**85.2**

Source: Informed Sources

Table 11.11 shows that:

- Over the period July 2004 to June 2011, the average percentage of price decreases across all four cities was around 85 per cent.
  - It was highest in Melbourne (on average around 88 per cent) and lowest in Brisbane and Sydney (on average around 83 per cent).
- The average percentage of price decreases across all four cities ranged from a high of around 89 per cent in 2009 to a low of 77 per cent in the second half of 2004.

Table 11.12 shows the average price decrease in each year (and half years in the case of 2004 and 2011) in each city.

Table 11.12 Average price decrease—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide cpl	Brisbane cpl	Melbourne cpl	Sydney cpl	Four-city average cpl
H2-2004	1.8	2.3	1.8	2.0	**2.0**
2005	1.6	2.1	1.4	2.0	**1.8**
2006	1.7	1.8	1.4	1.9	**1.7**
2007	1.7	1.5	1.3	1.8	**1.5**
2008	1.8	1.8	1.4	2.1	**1.7**
2009	1.5	1.6	1.3	2.1	**1.6**
2010	1.8	1.9	1.6	2.5	**1.8**
H1-2011	1.6	1.6	1.3	2.0	**1.5**
Average	**1.7**	**1.8**	**1.4**	**2.0**	**1.7**

Source: Informed Sources

Over the period July 2004 to June 2011, the average price decrease across all four cities was 1.7 cpl. It was highest in Sydney (2.0 cpl) and lowest in Melbourne (1.4 cpl). It was broadly similar in Brisbane and Adelaide (1.8 cpl and 1.7 cpl respectively).

Table 11.12 also indicates that:

- The average price decrease across all four cities ranged from a high of 2.0 cpl in the second half of 2004 to a low of 1.5 cpl in 2007 and the first half of 2011.
- The largest average price decrease was in Sydney in 2010 (2.5 cpl) and the smallest average price decrease was in Melbourne (1.3 cpl) in 2007, 2009 and the first half of 2011.

Price increases

Table 11.13 shows the percentage of price changes that were price increases in each year (and half years in the case of 2004 and 2011) in each city. It clearly shows that, on average over the period, less than one in six price changes were price increases.

Table 11.13 Percentage of price changes that were price increases—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide %	Brisbane %	Melbourne %	Sydney %	Four-city average %
H2-2004	23.4	20.6	23.9	23.9	**23.0**
2005	18.5	23.6	20.2	23.2	**21.7**
2006	14.8	16.1	12.3	16.4	**14.7**
2007	14.1	14.2	11.1	14.7	**13.1**
2008	13.4	17.1	11.7	15.7	**14.2**
2009	9.8	14.6	9.0	12.9	**11.2**
2010	11.2	16.6	10.8	16.6	**13.0**
H1-2011	11.7	16.7	9.9	16.0	**12.4**
Average	**13.7**	**17.1**	**12.2**	**17.1**	**14.8**

Source: Informed Sources

Table 11.13 shows that:

- Over the period July 2004 to June 2011, the average percentage of price increases across all four cities was around 15 per cent.
  - It was highest in Brisbane and Sydney (on average around 17 per cent) and lowest in Melbourne (on average around 12 per cent).
- The average percentage of price increases across all four cities ranged from a low of around 11 per cent in 2009 to a high of 23 per cent in the second half of 2004.
- The highest percentage of price increases was in Sydney and Melbourne in the second half of 2004 (around 24 per cent).
- The lowest percentage of positive price changes was in Melbourne in 2009 (9 per cent).

Table 11.14 shows the average price increase in each year (and half years in the case of 2004 and 2011) in each city.

Table 11.14 Average price increase—Adelaide, Brisbane, Melbourne and Sydney: July 2004 to June 2011

Year	Adelaide cpl	Brisbane cpl	Melbourne cpl	Sydney cpl	Four-city average cpl
H2-2004	5.5	8.0	5.5	6.4	**6.4**
2005	6.7	6.8	5.6	6.8	**6.4**
2006	9.3	9.1	9.4	9.7	**9.4**
2007	9.8	9.2	10.3	10.2	**9.9**
2008	10.0	8.3	9.7	10.5	**9.6**
2009	13.2	9.6	12.2	13.9	**12.1**
2010	12.4	9.0	11.5	11.6	**11.0**
H1-2011	11.0	7.6	11.0	10.3	**9.9**
Average	**9.8**	**8.5**	**9.5**	**9.6**	**9.3**

Source: Informed Sources

Table 11.14 shows that over the period July 2004 to June 2011, the average price increase across all four cities was 9.3 cpl. It was highest in Adelaide (9.8 cpl) and lowest in Brisbane (8.5 cpl).

The table also indicates that:

- The average price increase across all four cities ranged from a high of 12.1 cpl in 2009 to a low of 6.4 cpl in the second half of 2004 and 2005.
- The highest average price increase was in Sydney in 2009 (13.9 cpl) and the lowest average price increase was in Adelaide and Melbourne (5.5 cpl) in the second half of 2004.

The data in this section confirms the regular sawtooth pattern of petrol price changes, with large increases followed by smaller more frequent decreases.

11.7 Consumer buying patterns during the price cycle

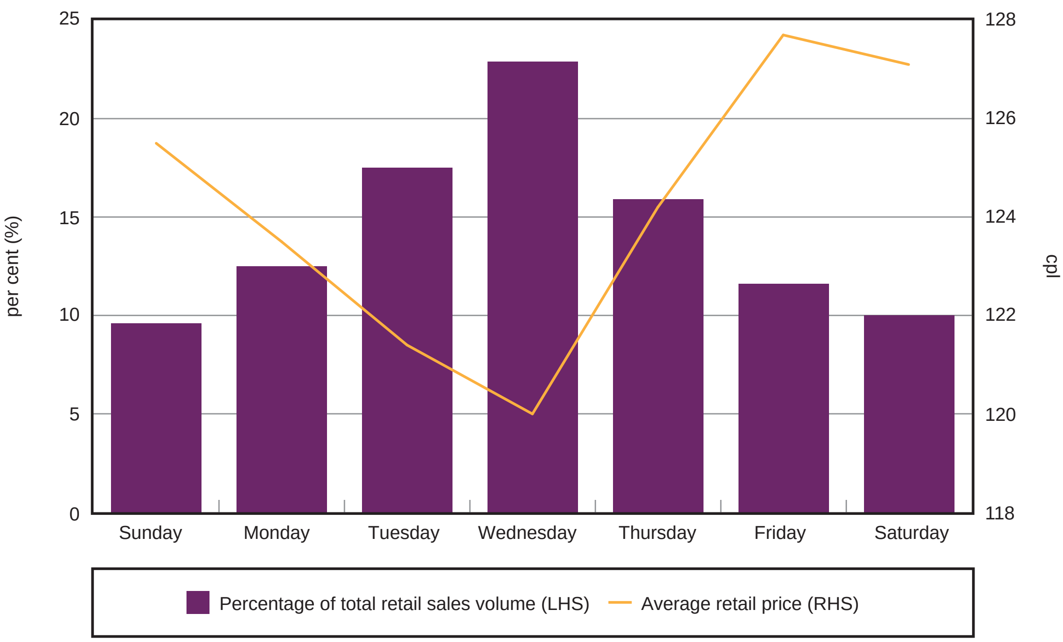
This section provides information on the volume of retail petrol sales and the average price of petrol by day of the week in the five largest cities in 2009–10 and 2010–11.[216]

11.7.1 Consumer buying patterns in 2009–10

In 2009–10, the day of the week on which the price cycle peak occurred was generally Thursday or Friday in Adelaide, and Friday in the other cities. The day of the week on which the price cycle trough occurred in Sydney, Melbourne, Brisbane and Adelaide was almost exclusively Wednesday, and in Perth it was Tuesday and Wednesday.

Chart 11.17 shows the percentage of average sales volumes and average retail petrol prices by day of the week in 2009–10 in the five largest cities. Almost one quarter (23 per cent) of the total volume of retail petrol sales across the five largest cities was sold on Wednesday, when average retail prices were at their lowest. The lowest percentage was sold on Saturday and Sunday (with around 10 per cent each) when average retail prices were relatively high. The most expensive day to buy petrol was Friday.

Chart 11.17 Average petrol sales volumes and prices by day of the week, five largest cities: 2009–10



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

216 The analysis in this section examines volumes and prices in the five largest cities only. It is therefore not comparable with information on consumer buying patterns during the price cycle in the 2009 and 2010 ACCC petrol monitoring reports which provided data on national sales volumes.

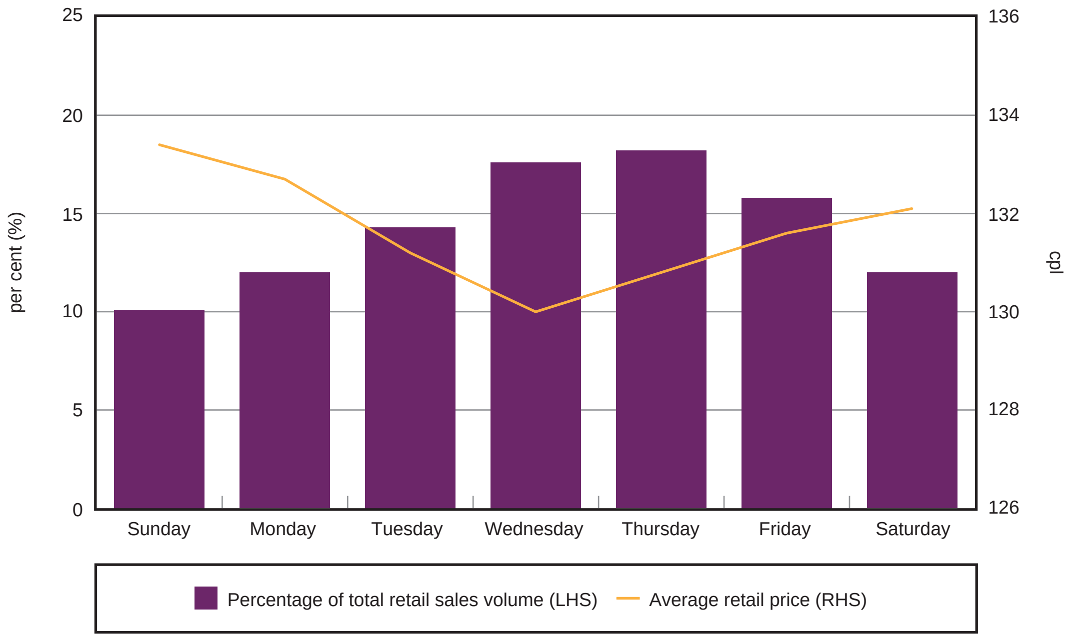
11.7.2 Consumer buying patterns in 2010–11

Chart 11.18 shows the percentage of average sales volumes and average retail petrol prices by day of the week in 2010–11 in the five largest cities. The chart shows that compared with 2009–10 there was a smaller variation in average retail prices from day to day over the week, as well as a more uniform pattern of sales volumes.

This reflects the fact that compared with 2009–10, in 2010–11 in most cities:

- there were more price cycles with durations of more than seven days
- there were more days of the week on which price cycles peaked and troughed.

Chart 11.18 Average petrol sales volumes and prices by day of the week, five largest cities: 2010–11



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

The chart shows that in 2010–11 there was still an inverse relationship between average retail petrol price levels and retail sales volumes, but the relationship was less pronounced than in 2009–10. This suggests that, despite changes in the duration of price cycles in 2010–11, consumers still tended to buy a greater volume of petrol when prices were at or near the price cycle trough. As with 2009–10, the lowest volume was sold on Sunday, which was also the most expensive day to buy petrol in 2010–11.

Similar charts for 2007–08 and 2008–09 are provided in appendix J.

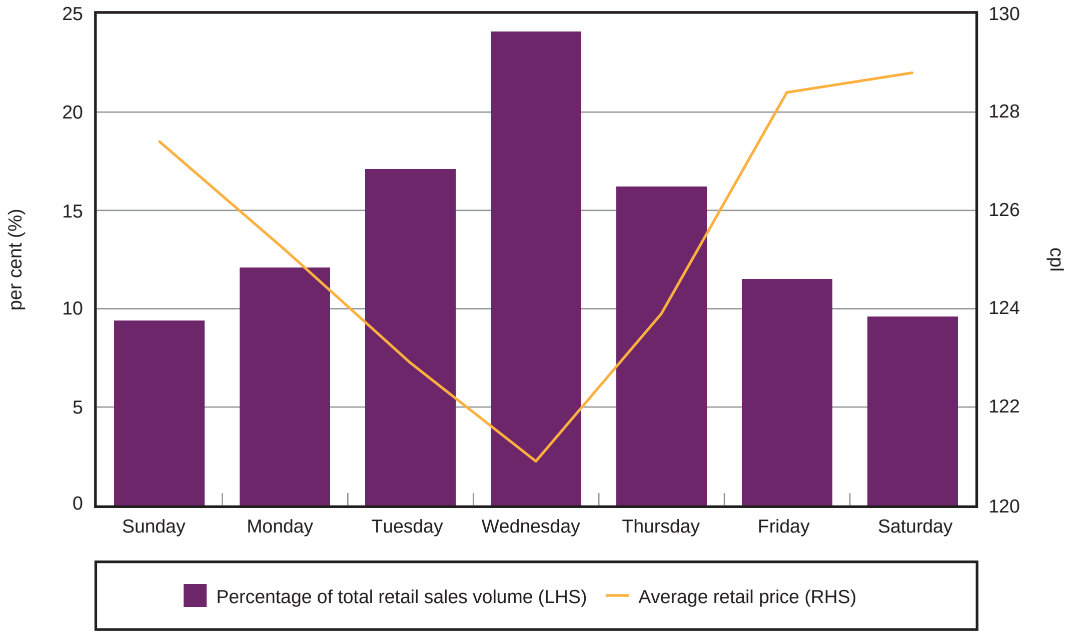
11.7.3 Consumer buying patterns in Melbourne and Perth in 2010–11

The changes in the price cycles in 2010–11 mentioned in section 11.7.2 occurred in Sydney, Melbourne, Brisbane and Adelaide but not in Perth. In Perth, price cycles have shown a more consistent weekly pattern in 2010–11 than in previous years, with the price cycle peak and trough generally occurring on the same day from week to week.

To illustrate the difference between Perth and the other largest cities, charts 11.19 and 11.20 show the percentage of average sales volumes and average retail petrol prices by day of the week in 2009–10 and 2010–11 in Melbourne and charts 11.21 and 11.22 show the same information for Perth.

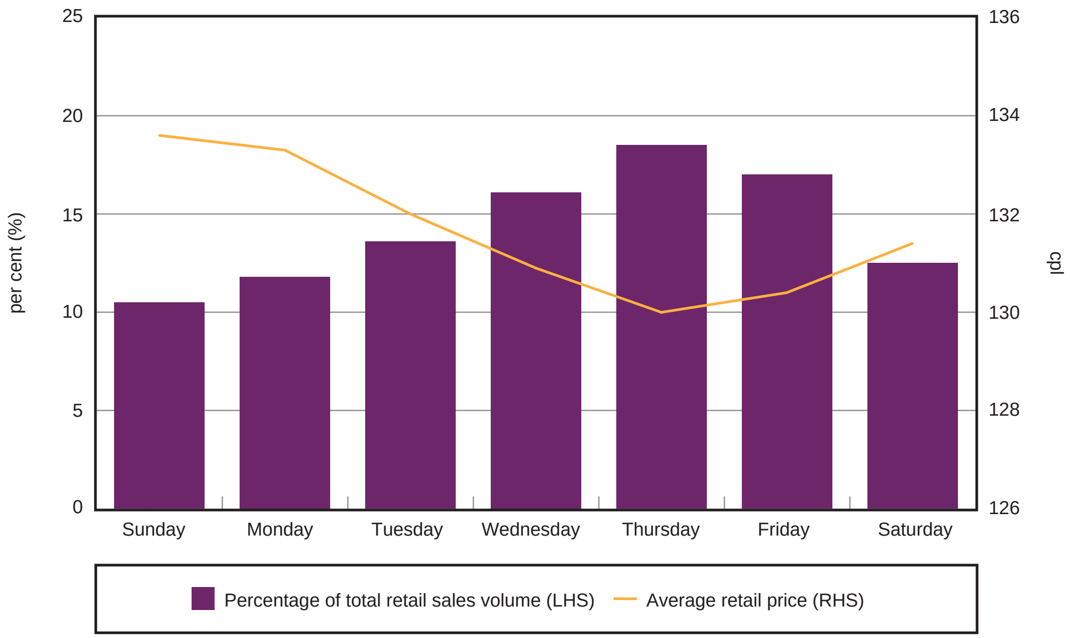
Appendix J provides similar charts for Sydney, Brisbane and Adelaide.

Chart 11.19 Average petrol sales volumes and prices by day of the week, Melbourne: 2009–10



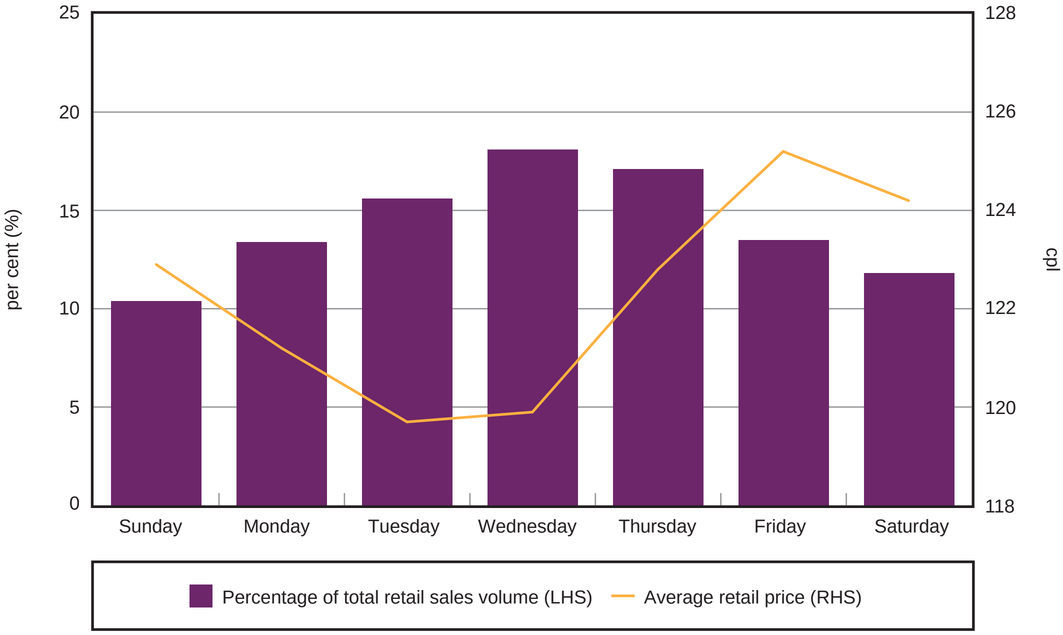
Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

Chart 11.20 Average petrol sales volumes and prices by day of the week, Melbourne: 2010–11



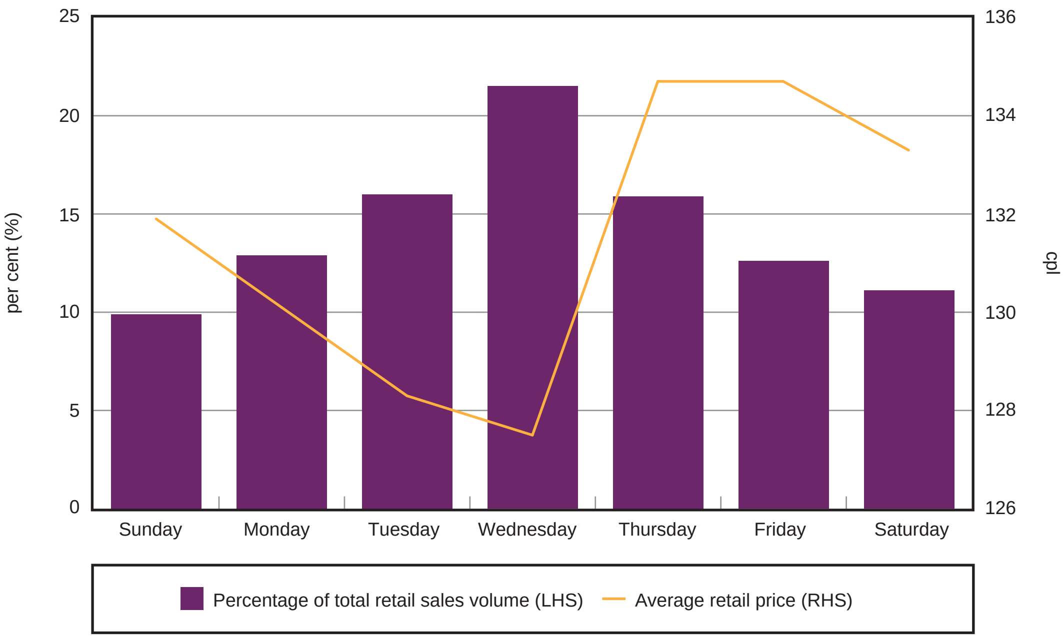
Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

Chart 11.21 Average petrol sales volumes and prices by day of the week, Perth: 2009–10



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

Chart 11.22 Average petrol sales volumes and prices by day of the week, Perth: 2010–11



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

The charts show that:

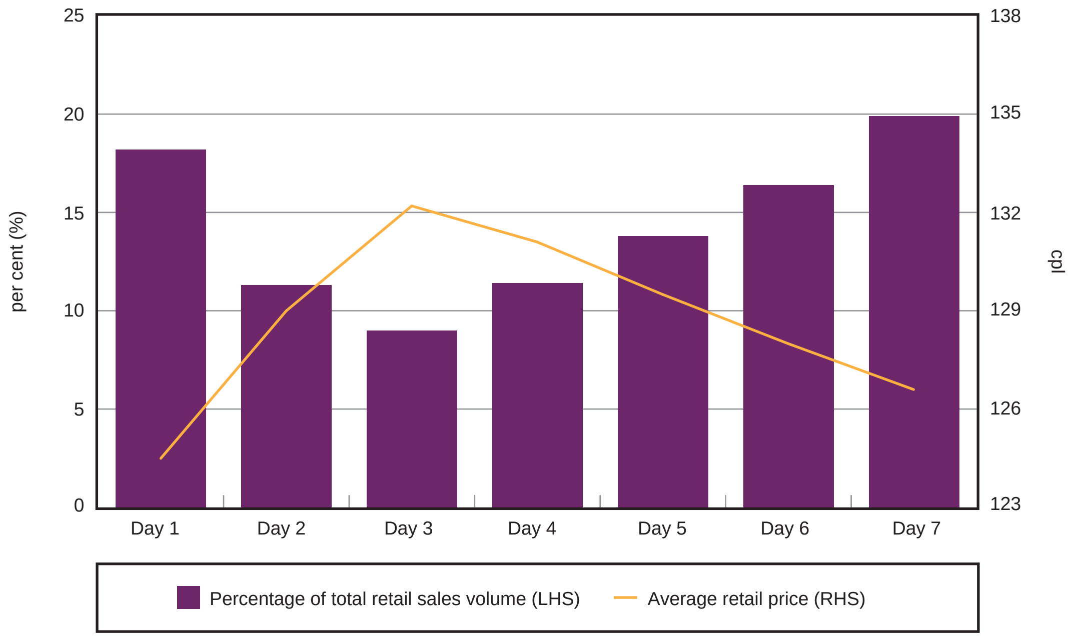
- In Melbourne in 2009–10:
  - The range in average retail price between the cheapest day of the week (Wednesday) and the most expensive (Saturday) was 7.9 cpl.
  - Almost a quarter of petrol volumes (24 per cent) were sold on the cheapest day.
  - There was a strong inverse relationship between the volume of petrol sold and the price of petrol.
- In Melbourne in 2010–11:
  - The range in average retail price between the cheapest day of the week (Thursday) and the most expensive (Sunday) was only 3.6 cpl.
  - The volume of petrol sold was more evenly distributed over the week compared with 2009–10; however, in aggregate, consumers bought more petrol on the cheaper days and less petrol on the more expensive days.
- In Perth in 2009–10:
  - The range in average retail price between the cheapest day of the week (Tuesday) and the most expensive (Friday) was 5.5 cpl.
  - There was broadly an inverse relationship between the volume of petrol sold and the price of petrol; however, more petrol was sold on Wednesday and Thursday than on the cheapest day. Likewise, less petrol was sold on Saturday and Sunday than on the most expensive day.
- In Perth in 2010–11:
  - The range in average retail price between the cheapest day of the week (Wednesday) and the most expensive (Thursday and Friday) increased to 7.2 cpl. Likewise, there was a greater variation in the volume of petrol sold throughout the week compared with 2009–10.
  - There was a stronger inverse relationship between the volume of petrol sold and the price of petrol (22 per cent of volume was sold on the cheapest day). However, less petrol was sold on Saturday and Sunday than on the most expensive days.

11.7.4 Case study 1: Brisbane—consumer buying patterns and changes in price cycle duration

Seven-day cycles

Chart 11.23 shows the percentage of average sales volumes and average retail petrol prices by day of the price cycle for the two weeks beginning Friday, 19 November 2011 in Brisbane. These two price cycles were of seven days duration.

Chart 11.23 Average petrol sales volumes and prices by day over two seven-day price cycles, Brisbane: Friday 19 November to Thursday 2 December 2010



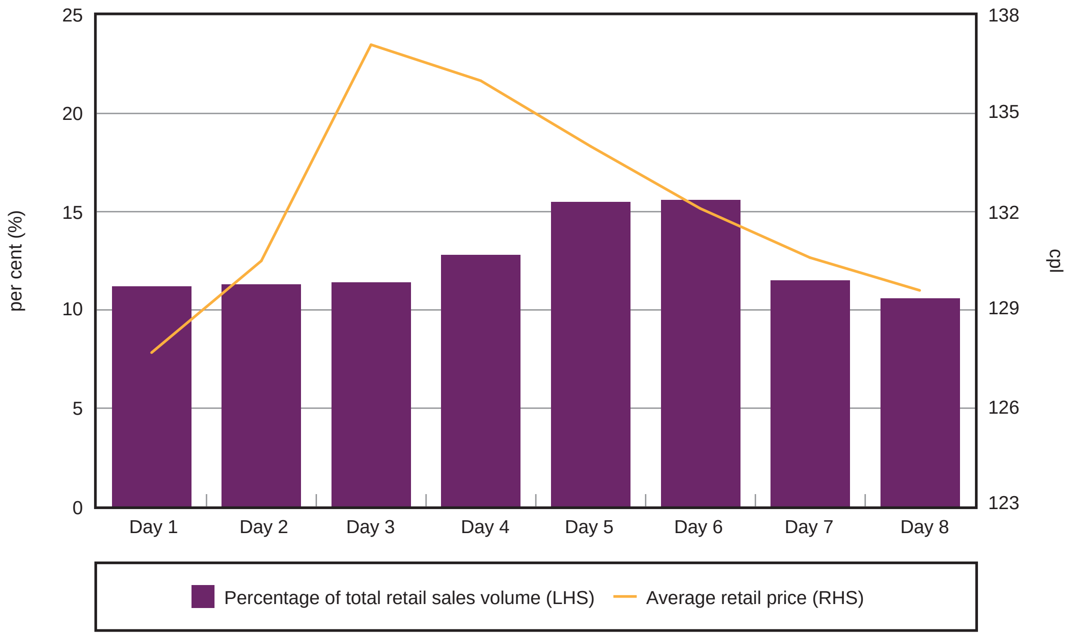
Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

The chart shows a strong inverse relationship between the volume of petrol sold and the average retail price level across the price cycle. That is, consumers were effectively taking advantage of the lower prices around the trough.

Eight-day cycles

Chart 11.24 shows the percentage of average sales volumes and average retail petrol prices by day of the price cycle for the 16 days beginning Saturday, 11 December 2010 in Brisbane. These two price cycles were both of eight days duration.

Chart 11.24 Average petrol sales volumes and prices by day over two eight-day cycles, Brisbane: Saturday 11 December to Sunday 26 December 2010



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

The chart shows that average retail prices were at a trough on day 1. They increased on days two and three, and then gradually decreased through to day eight. However, the largest volumes of petrol were sold on days five and six (over 15 per cent each), when prices were relatively high.

Charts 11.23 and 11.24 suggest that the recent changes in the price cycle (the increasing duration and changes to the peak and trough day from week to week) may have lead to a degree of uncertainty among consumers about the timing of the price cycle. When this is the case, consumers in aggregate appear not able to take advantage of the cheaper days in the price cycle to the extent that they otherwise would when the peak and trough days are more predictable.

Case study 2: Melbourne and Perth—daily petrol sales volumes and average prices over a longer period

Daily average petrol sales were compared with daily average retail prices in Melbourne and Perth over June 2011.

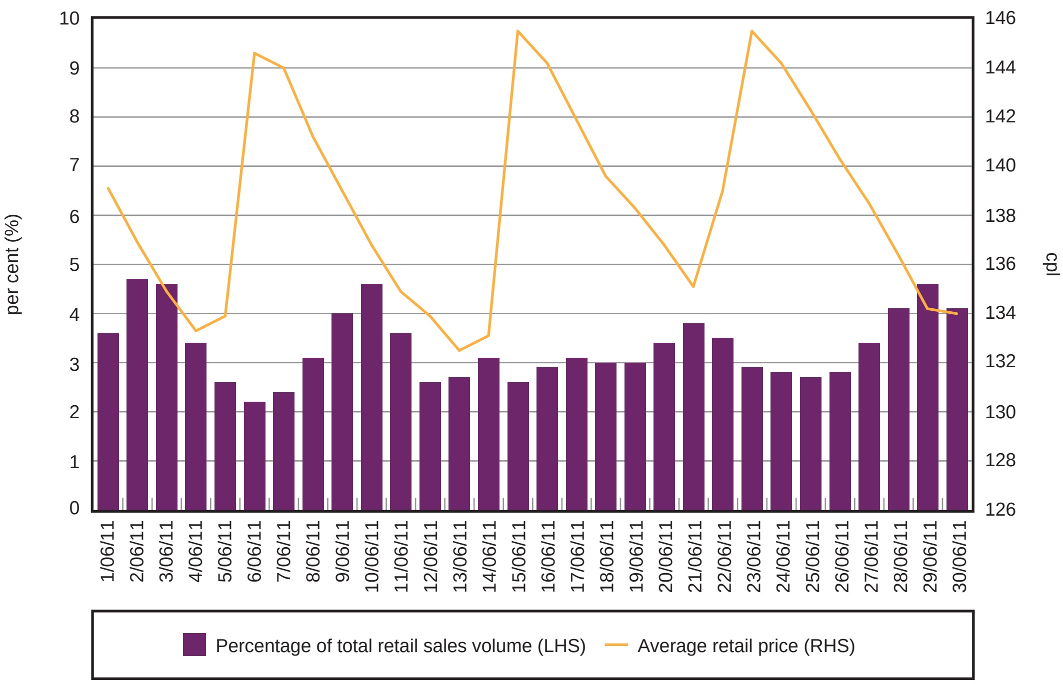
Melbourne

In Melbourne in June 2011, price cycles were around eight to nine days in duration with no day of the week consistently being the peak day or the trough day. In Perth, however, throughout June 2011 the trough was always on Wednesday and the peak was always on Thursday.

Chart 11.25 shows the daily percentage of average sales volumes and average retail petrol prices in June 2011 for Melbourne. It shows that:

- In the first half of the month, higher volumes of petrol were sold one or more days before prices reached the trough.
- In the second half of the month, higher volumes of petrol were sold around the trough.
- Lower volumes of petrol were sold at the peak days, although there was an occasion where low volumes were sold at around the trough (12–13 June) or mid-cycle (25–26 June).
- Overall, consumer buying patterns were somewhat inconsistent over the price cycle. This suggests that the changing pattern of the price cycle is leading to a degree of consumer uncertainty.

Chart 11.25 Daily petrol sales volumes and daily average retail petrol prices, Melbourne: June 2011



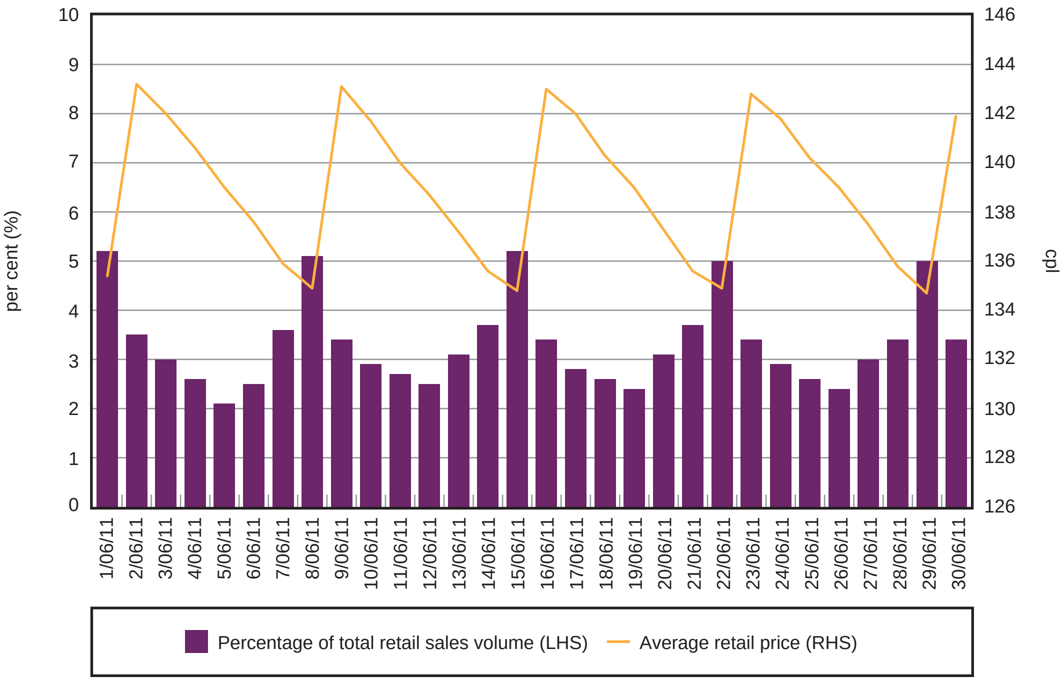
Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

Perth

Chart 11.26 shows the daily percentage of average sales volumes and average retail petrol prices in June 2011 for Perth. It shows that:

- More than a quarter of petrol sold in June was sold on the trough day, Wednesday.
- The lowest volume sold during the month was on a Sunday, when prices were on average around 4.0 cpl lower than at the peak.
- On average, the peak day (Thursday) had the third highest volume sales in the month.
- Overall, consumer buying patterns were broadly consistent over the week.

Chart 11.26 Daily petrol sales volumes and daily average retail petrol prices, Perth: June 2011



Source: ACCC calculations based on Informed Sources, and information provided by the monitored companies

11.8 Price cycle increases and public holidays

It is often claimed that retail petrol prices increase before public holidays. These increases are not surprising as petrol prices increase most weeks in the five largest cities. The 2010 ACCC petrol monitoring report examined petrol price increases before public holidays in each of the five largest cities for the period January 2007 to June 2010. It found that during this period the average price cycle increase before public holidays was equal to or above the annual average price cycle increase less than half (48 per cent) of the time.

As noted in section 11.3 there are three main influences on the size of price cycle increases: changes in wholesale prices, the extent of discounting before the price cycle increase and the overall price level. These factors are not influenced by the timing of public holidays.

Analysis of price cycle increases has been updated to cover the four-and-a-half year period January 2007 to June 2011. In each of the years 2007 to 2010, and the first half of 2011, the price cycle increase before a public holiday was compared with the relevant yearly average price cycle increase (or half yearly in the case of 2011). The results are shown in table 11.15. Charts showing price cycle increases and public holidays in the five largest cities in 2010–11 are provided in appendix I.

Table 11.15 shows that during this period the price cycle increases before public holidays were equal to or above the yearly average price cycle increase less than half (45 per cent) of the time.[217]

Table 11.15 Number (and percentage) of price cycle increases before public holidays in the five largest cities: January 2007 to June 2011

	Number of price cycle increases before public holidays			
	Total	Greater than or equal to calendar year average	Less than calendar year average	Less than calendar year maximum
Sydney	30	13 (43%)	17 (57%)	30 (100%)
Melbourne	33	13 (39%)	20 (61%)	31 (94%)
Brisbane	32	14 (44%)	18 (56%)	31 (97%)
Adelaide	32	21 (66%)	11 (34%)	30 (94%)
Perth	27	9 (33%)	18 (67%)	26 (96%)
Total	**154**	**70 (45%)**	**84 (55%)**	**148 (96%)**

Source: ACCC analysis based on Informed Sources data

The table shows that:

- The majority of price cycles before public holidays had smaller price increases than the average yearly price cycle increase.
- In Sydney, Melbourne, Brisbane and Perth price cycle increases before public holidays were below the average annual price cycle increase more than half of the time.

217 A price cycle increase before a public holiday has been defined as having occurred within the week up to and including the day of the public holiday. However, the period before a public holiday was extended to two weeks prior to 2009 in Perth (because price cycles in Perth were around two weeks duration up to around April 2008). The price increase before (or on) the New Year's Day public holiday is compared with the average price cycle increase for the previous year. This is because the price increase usually occurs in the last week of the previous year.

- In Adelaide price cycle increases before public holidays were equal to or above the average annual price cycle increase more than half of the time.
- In Melbourne and Adelaide, there were two occasions when the price cycle increase before a public holiday was the highest price cycle increase for the year. In Brisbane and Perth there was one occasion and in Sydney there were none.

The results for the four-and-a-half year period January 2007 to June 2011 are consistent with the conclusions from previous ACCC monitoring reports. They continue to show that there is little evidence to support the claim that price cycle increases before public holidays are always higher than the price cycle increases when there is no public holiday.

11.9 Coordinated pricing in the petrol industry

The regularity of price cycles in the five largest cities has enabled the refiner-marketers and other major retailers to largely understand and predict their competitors' likely response to changes in their own behaviour.

The price increases are generally led by BP or Caltex who raise the price at several retail sites in a city by sometimes more than 10 cpl and then wait for the market to respond. If the other major retailers respond to this move with a similar increase (which is generally the case) then the cycle is continued. In some cases where competitors do not respond or delay in responding the price cycle breaks down and prices can remain low for an entire week or more.

While they generally do not initiate the discount phase, Woolworths, 7-Eleven and other independents have been very active in this phase of the price cycle.

Given they do not reflect movements in underlying costs or wholesale prices, retail price cycles appear to be entirely due to the pricing policies employed by the local petrol retailers in the domestic market. Petrol price cycles do occur in other countries but those in Australia tend to be larger in amplitude and more consistent.[218]

In previous petrol monitoring reports the ACCC has noted that the degree of coordination observed in price cycles is a source of concern for Australian consumers and for the ACCC.

Retail petrol markets in Australia are conducive to coordinated conduct. The high level of retail price transparency provided by the sharing of timely and comprehensive price information between major competing fuel retailers through the Oil Pricewatch system provided by Informed Sources assists retailers to quickly signal price moves, monitor competitor's responses and react to them.

The degree of coordination exhibited in the weekly price cycle remains a concern for the ACCC. The ACCC is analysing the likely effects of this behaviour on outcomes for consumers.

218 See chapter 11 of the 2007 ACCC petrol inquiry report for analysis of overseas experience of price cycles.

11.10 Concluding comments on price cycles

In 2011:

- The day of the week on which prices peak and trough continued to move through the week.
- There were a greater percentage of price cycles with eight or nine days' duration than in previous years.
- The number of failed price cycles was broadly comparable with prior years (excluding 2009) and the number of truncated cycles was lower than in 2010 but higher than in previous years.
- Reflecting these changes to the price cycle in 2011, consumer buying patterns during the week in 2010–11 were different from the previous year.
- Petrol prices change infrequently during the day—on average less than twice a day—and the vast majority of prices changes are decreases.
- Price cycle increases before public holidays were on average no larger than in other weeks of the year.

12 Petrol pricing: an international perspective

Key points

- Australia's experience with petrol prices is not unique.
- A number of major petroleum markets around the world exhibit many of the characteristics of retail price behaviour seen in Australia. In particular:
  - Retail petrol prices closely track movements in relevant international benchmark prices.
  - Exchange rates affect retail petrol prices.
  - Crude oil prices and taxes account for the majority of the retail price of petrol.
- In at least one other country, there is also evidence of retail petrol prices moving in consistent patterns over the course of the week.
- Excluding the impact of taxes, retail petrol prices in a number of countries, including Australia, are similar.
- Including taxes, Australia had the fourth lowest retail prices in the OECD in 2010–11.

12.1 Introduction

Over the last few years the ACCC's analysis of the Australian downstream petroleum industry has shown that Australia's experience with retail petrol prices is characterised by a number of key features.

First, the major determinants of changes in Australian retail petrol prices have been global factors including changes in the refined petrol benchmark price (Singapore Mogas 95 Unleaded or, simply Mogas 95), which is largely driven by the international price of crude oil. Movements in the exchange rate of the AUD against the USD also influence retail petrol prices.

Short-term movements observed in the weekly price cycle in the largest capital cities also affect day-to-day retail petrol prices.[219]

In addition, taxes are a key component of petrol prices in Australia.

While these features of petrol prices in Australia have long been recognised it is pertinent to examine the experience of other countries around the world to give international context to Australia's experience.

This chapter considers the determinants, components and behaviour of petrol prices in selected countries around the world and how they compare with Australian petrol prices.

219 ACCC, *Monitoring of the Australian petroleum industry*, December 2010, p. xix.

In doing so, the chapter focuses on petrol prices in a number of countries which provide a reasonable comparison. These include:

- Canada
- the US (United States)
- New Zealand
- Germany
- the UK (United Kingdom).

The chapter also shows how Australian petrol prices rank among other major economies around the world and finally looks at the general level of petrol prices and prices of other goods, both in Australia and overseas.

12.2 Petroleum markets around the world

Petrol prices in most countries are typically established with reference to the relevant refined petrol benchmark price in their respective regions.

Just as retail petrol prices in Australia are influenced by international benchmark prices of crude oil and refined petrol, petrol prices in other countries are also influenced by similar international benchmark prices.

Platts, a provider of benchmark prices and assessments of commodity markets, publish crude oil and refined petrol benchmark prices in all major trading regions. For refined petrol, Platts establishes benchmark prices in New York (North America), Singapore (Asia) and Rotterdam (Europe).

These prices are established using a Market On Close (MOC) assessment methodology which is applied consistently across each region.[220] The refined petrol benchmark for Australia is based on traded product in the Singapore market, the largest petrol-trading centre in the Asia-Pacific region.

As benchmark prices across regions are quoted in USD, retail petrol prices in different countries are also influenced by changes in the value of their currency relative to the USD. The levels of petrol prices are also influenced by taxes. Most countries apply a tax to the sale of petrol and this varies from country to country.

In this chapter, petrol prices in Canada, the US, New Zealand, Germany and the UK are considered in detail for comparative purposes (figure 12.1):

220 The MOC process means that Platts publish prices calculated from actual transactions of physical and paper swap trades to reflect a market price paid by the market participants for a particular product.

Figure 12.1 Countries included in the comparative analysis of international petrol prices

These countries are located across three major regions of the world: North America, Europe and Asia-Pacific. All countries are members of the Organisation for Economic Co-operation and Development (OECD) and, similar to Australia, the petroleum industries in each of these countries have operations in both the upstream and downstream sectors.

The rest of this section provides an overview of the petroleum industries in these countries including the sources of petroleum products and their similarities with Australia.

Canada

Canada's geographic size, gross domestic product and low population density are comparable to Australia.

However, unlike Australia, Canada is a growing net exporter of crude oil, exporting significant volumes of heavier crude to refineries in the US. Canada's oil reserves are considered to be among the largest in the world.[221] The majority of Canada's oil reserves, around 97 per cent, are non-conventional oil sands reserves which typically require far more processing and are less economic to extract and process than conventional reserves.[222] Canada is also a net exporter of petroleum products (see sections 5.4.2 and 5.4.3 in chapter 5).

221 International Energy Agency, *Oil and gas security emergency response of IEA countries: Canada*, 2010, p. 5. © OECD/IEA International Energy Agency.

222 Natural Resources Canada, *Canadian crude oil, natural gas and petroleum products: review of 2009 and outlook to 2030*, May 2011, p. 8.

Some features of the Canadian downstream petroleum industry can be likened with elements of the Australian industry:

- Petroleum products are generally imported, exported and transferred around four regional areas in Canada (Western Canada, Quebec, Ontario and Eastern Canada), similar to the largely state based markets in Australia.
- Canadian refiners enter into product exchange agreements with one another to access petrol in different regions, similar to arrangements previously in place in Australia.[223]
- The number of refineries operating in Canada has decreased from around 40 in the 1970s to 18 in 2010.
- The Canadian retail market consists of both refiner-marketer operated retail sites as well as independently operated sites. The number of retail sites in Canada has fallen from about 20,000 in 1989 to around 12,710 in 2010 (a fall of around 38 per cent).[224]
- At the end of 2010 around 74 per cent of retail sites operating in Canada were under the price control of individual outlet proprietors or non-refiner marketers, with 26 per cent of sites under the price control of the refiner-marketing companies.[225]
- Supermarket chains also operate in the retail petrol market, and are known for high-volume, low-margin strategies.
- According to the US Federal Trade Commission (US FTC) there is evidence of petrol price cycles occurring in some parts of Canada.[226]

California (US)

While the state of California is one of many that make up the US, California is a significant economy in itself. It is rich in energy resources and is one of the largest producers of crude oil in the US.[227]

Refineries in California are mostly located in the San Francisco Bay area, the Los Angeles area and in the Central Valley. At the beginning of 2011 there were 20 oil refineries in California operated by 14 companies.[228] Along with crude that is sourced locally, Californian refiners also process significant volumes of Alaskan and foreign crude oil including from the Middle East and South America.

Since 1996, environment regulations have meant that Californian motorists have been required to use cleaner fuels, including reformulated petrol and low-sulphur diesel. Californian refineries are capable of producing petrol to the appropriate clean fuel standards, and are usually utilised at, or very close to, their maximum capacity.[229]

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223 Natural Resources Canada, *Overview of the Canadian downstream petroleum industry*, July 2005, p. 13.

224 MJ Ervin, *National retail petroleum site census 2010*, 30 April 2011, p. 5.

225 MJ Ervin, *National retail petroleum site census 2010*, 30 April 2011, p. iii.

226 US Federal Trade Commission, *Gasoline price changes and the petroleum industry: an update*, September 2011, at http://www.ftc.gov/os/2011/09/110901gasolinepricereport.pdf, accessed 30 November 2011.

227 US Energy Information Administration, October 2009, at http://www.eia.gov/state/state-energy-profiles-analysis.cfm?sid=CA, accessed 30 November 2011.

228 US Energy Information Administration, *2011 Refinery capacity report*, 24 June 2011, pp. 1–10.

229 US Energy Information Administration, October 2009, at http://www.eia.gov/state/state-energy-profiles-analysis.cfm?sid=CA, accessed 30 November 2011.

In terms of the retail market, there were approximately 10,200 retail sites supplying gasoline in California in July 2008.[230] Similar to the Australian market, as well as many other markets around the world, the Californian retail market comprises a variety of retailers:

- Branded retail sites sell a specific company's brand of fuel such as Chevron, Shell or Arco. These sites can have varying owner/operator arrangements.
- Independent retail sites not affiliated with a well-known brand name but which are nevertheless supplied from the same refineries as the branded outlets.[231]

As noted, the US FTC has reported that in some cities in the US, primarily in the Midwest, retail prices move in regular patterns or cycles.[232]

New Zealand

New Zealand is geographically the closest developed country to Australia. It can also be regarded historically as well as culturally as the country most like Australia in the Asia-Pacific region.

New Zealand has reserves of relatively light and sweet indigenous crude. The one refinery operating in New Zealand, however, is more suited to heavier types of crude. As a result the indigenous crude is largely exported, mostly to Australia, and heavier crude is imported from the Middle East and other parts of the world.[233]

The refinery is owned by New Zealand Refining Company (NZRC). BP, Chevron, ExxonMobil and Greenstone Energy are significant shareholders and customers of the refinery.[234] Shell previously operated in the downstream industry before confirming the sale of its downstream business in March 2010.

Similarities between the New Zealand and the Australian downstream petroleum industries include:

- Although there is only one refinery in New Zealand, there are effectively four refiner-marketing companies operating at the refining, wholesale and retail level.
- Gull Petroleum, a major wholesaler-retailer in Western Australia, operates in the wholesale market and imports petrol directly into New Zealand.[235]
- In 2008 there were about 1,265 retail sites in New Zealand with the share of retail sites split between refiner-marketers, independent operators and supermarkets.[236]
- Similar to the trend in Australia, there has been an ongoing downward trend in the number of retail sites in New Zealand.

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230 The terms 'gasoline' and 'petrol' are used interchangeably throughout this chapter.

231 Californian Energy Commission, *Oil to car*, July 2008, p. 10.

232 US Federal Trade Commission, *Gasoline price changes and the petroleum industry: an update*, September 2011, at http://www.ftc.gov/os/2011/09/110901gasolinepricereport.pdf, accessed 30 November 2011.

233 Hale and Twomey, *2007 ACCC report into Australian petrol prices: review of applicability to the New Zealand petrol market*, July 2008, p. 13.

234 New Zealand Refining Company Limited, *NZRC Annual report 2010*, p. 10.

235 Greenstone Energy website: http://z.co.nz/about-z/getting-z-products-to-you/, accessed 30 November 2011.

236 Hale and Twomey, *2007 ACCC report into Australian petrol prices: review of applicability to the New Zealand petrol market*, July 2008, p. 19.

Germany

Germany's fuel requirements, including both gasoline and diesel fuel, are largely met by domestic refinery production using imported crude oil. Most of the crude oil is imported from Russia and Norway as well as a variety of other sources. Crude oil supplies are mainly imported by pipelines connected to Germany as well as through sea vessels. Imported petroleum products make up a smaller proportion of fuel requirements.[237]

In 2008, there were 14 refineries in Germany. The majority of the refineries are operated by the five vertically integrated companies, with a small number operated by independent companies.[238] Refineries are located throughout the country.

Some features of the German downstream petroleum industry show certain similarities with the Australian industry:

- Five vertically integrated companies have significant operations in all levels of the German downstream petroleum industry.
- Some, but not all, companies have arrangements in place whereby they exchange products with one another from a refinery or storage facility, similar to the arrangements that previously existed in Australia.
- In addition to the five vertically integrated companies, the retail sector includes specialist retail operators. While a small number of operators are associated with international integrated petrol companies, a large number of independent small enterprises also operate at the retail level.[239]
- The German authority responsible for overseeing competition, the Bundeskartellamt, has reported in its recent fuel sector inquiry that cyclical fuel price movements occur over the course of a week in parts of Germany.[240]

United Kingdom

The UK has significant crude oil reserves, mostly in the North Sea, and in 2010 was regarded as having the largest reserves in the European Union (EU).[241] UK North Sea oil, however, is steadily declining.

The UK's refining industry is relatively large and produces more refined products than it consumes. However, recently product demand has not matched refinery production leaving excess gasoline and fuel oil (which are exported) and insufficient gas oil and jet fuel (which are imported).

At the end of 2010, there were eight major refineries located around the coast of the UK with a range of pipelines and terminal infrastructure linking the refineries to supply chains further downstream. Products are distributed to around 60 major terminals, some of which can also directly import products.

237 Bundeskartellamt, *Fuel sector inquiry: interim report*, June 2009, p. 10.

238 The five fully integrated companies are BP/Aral, ConocoPhilips/Jet, ExxonMobil/Esso, Shell and Total.

239 Bundeskartellamt, *Fuel sector inquiry: interim report*, June 2009, p. 14.

240 Bundeskartellamt, *Fuel sector inquiry: final report summary*, May 2011, p. 21, at http://www.bundeskartellamt.de/wEnglisch/Publications/sector_inquiriesW3DnavidW2651.php, accessed 30 November 2011.

241 US Energy Information Administration, Country analysis brief: United Kingdom, September 2010, p. 2.

Some features of the UK downstream petroleum industry are also common to elements of the Australian industry:

- Exchange arrangements are common where a company does not have access to its own supplies in a particular location.[242]
- Oil majors account for around 25 per cent of retail sites while independents and supermarkets account for around 60 and 15 per cent respectively.
- There has been a long-term decline in the number of retail sites in the UK decreasing from over 37,500 in 1970 to 8,787 at the end of 2010.[243]
- There has also been a change in the structure of the retail sector in the UK with a significant increase in supermarket sites and some oil majors recently exiting the retail market.

12.3 Determinants of petrol prices in other countries

Results of ACCC analysis of retail pricing data (presented in chapter 9) has shown that the major determinants and drivers of the retail price of petrol in Australia are:

- the international benchmark price of refined petrol in Australia (Mogas 95), which is largely driven by the price of crude oil
- taxes (including excise and GST)
- the AUD–USD exchange rate
- short-term movements in the day-to-day retail price of petrol, largely as a result of the weekly price cycles that operate in the largest capital cities.

This section looks at the extent to which similar factors influence the retail price of petrol in other parts of the world and compares this with the experience of petrol prices in Australia.

12.3.1 Influence of international factors

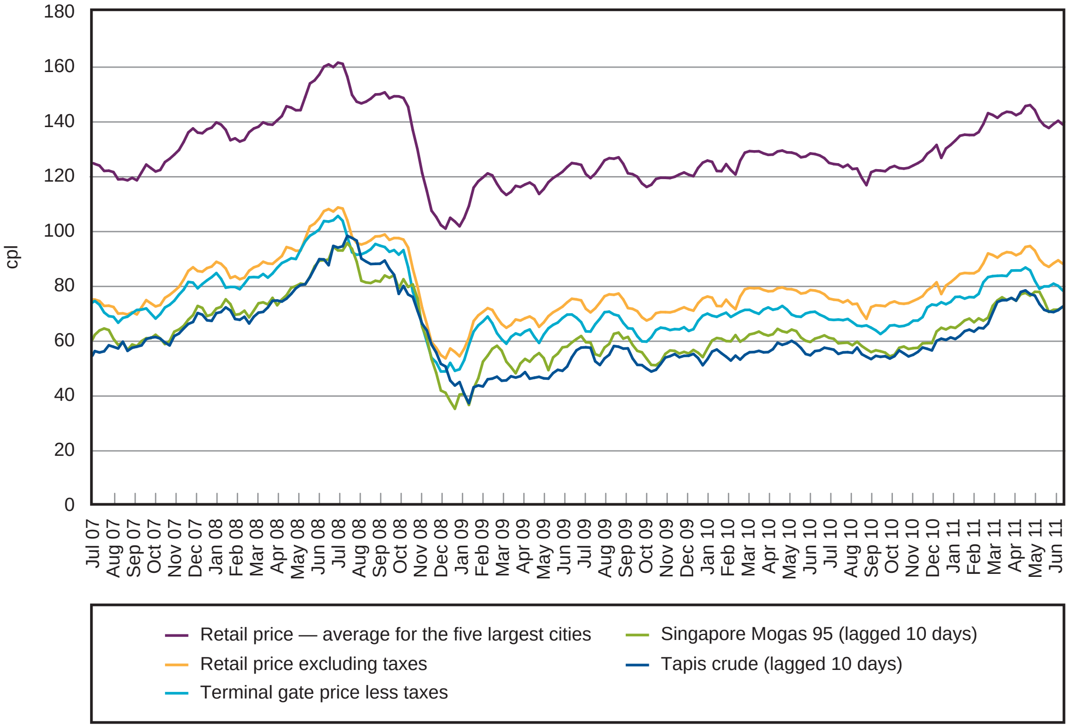
The influence of international benchmark prices on retail petrol prices in Australia has been discussed in detail in chapter 9.

Chart 12.1 shows the close relationship between weekly average retail prices of regular unleaded petrol (RULP) in Australia's five largest cities and average wholesale, refined petrol and crude oil benchmark prices in the four years to June 2011. Over the long term, Australian retail prices are largely determined by international benchmark prices and follow their movements very closely.

242 International Energy Agency, *Oil and gas security emergency response of IEA countries: United Kingdom*, 2010, p. 10. © OECD/IEA International Energy Agency.

243 United Kingdom Petroleum Industry Association (UKPIA), *UKPIA Statistical review 2011*, June 2011, p. 28.

Chart 12.1 Weekly movements in crude, refined product, wholesale and retail prices for RULP in Australia: July 2007 to June 2011



Source: ACCC calculations based on data from Informed Sources, Platts, RBA and information provided by monitored companies

The sections that follow consider the relationship between retail petrol prices and international benchmark prices in Canada, California, New Zealand, Germany and the UK. Prices are shown in local currency to illustrate the experience within each country.

Canada

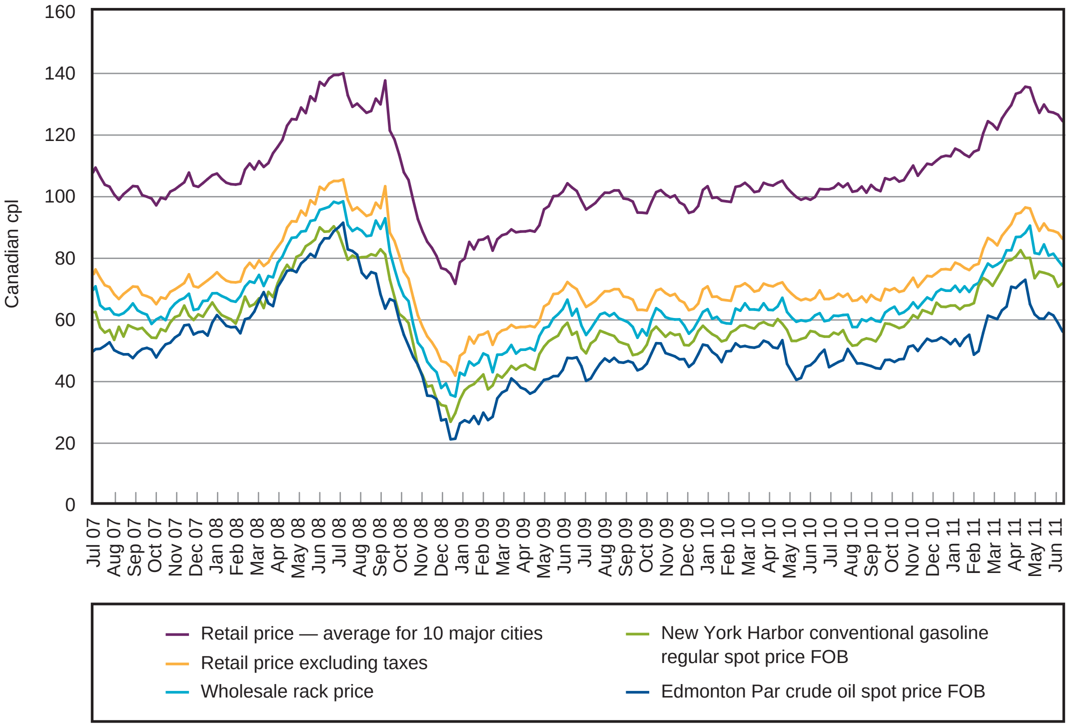
Chart 12.2 shows the average retail price for regular unleaded gasoline and the appropriate wholesale and international benchmark prices in Canada. Retail prices are shown including and excluding taxes.

As Canada is located in a different region of the world, petrol prices are based on different international benchmark prices than in Australia. In Canada, wholesale rack prices are based on the benchmark price of gasoline at New York Harbour[244] and the price of Edmonton Par crude oil is used as the crude price benchmark.[245] The wholesale rack price is paid by small independent wholesalers at the terminal and is the only observable reference for wholesale prices in Canada.

244 Natural Resources Canada, *Petroleum product market outlook*, May 2007, at http://www.nrcan.gc.ca/eneene/sources/petpet/reprap/2007-06/pripri-eng.php, accessed 30 November 2011.

245 Natural Resources Canada, *Review of issues affecting the price of crude oil*, October 2010, p. 15, at http://www.nrcan.gc.ca/eneene/sources/crubru/index-eng.php, accessed 30 November 2011.

Chart 12.2 Weekly movements in crude, refined product benchmarks, wholesale and retail prices for regular unleaded gasoline in Canada: July 2007 to June 2011



Source: ACCC calculations based on data from US EIA, Bank of Canada, MJ Ervin

Notes: Retail prices are an average of a weekly observed Tuesday price across 10 Canadian cities. Wholesale prices reflect a snapshot of wholesale prices at a particular point in time and at specific locations. Full data collection methodology on wholesale and retail prices is available at http://kentmarketingservices.com/dnn/PetroleumPriceData/Methodology.aspx, accessed 30 November 2011.

Similarities between the Canadian and Australian experiences are evident. Chart 12.2 indicates that:

- Retail petrol prices in Canada track wholesale, refined gasoline and crude oil benchmark prices very closely.
- Over the longer term, the movements in petrol prices have been broadly similar to those in Australia, for example, where higher prices occurred through mid-2008 and lower prices around January 2009.

California (US)

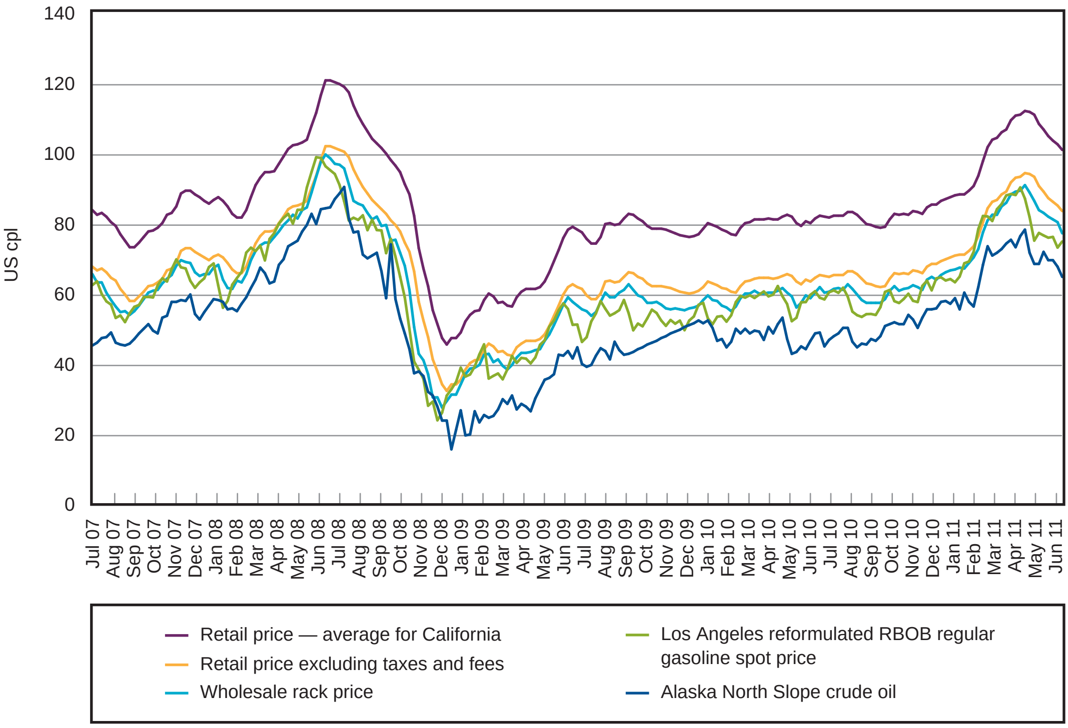
The relationship between Californian benchmark prices of crude oil, refined product, and wholesale and retail petrol prices is also considered.

Chart 12.3 shows the relevant international benchmark and wholesale prices along with retail prices of regular branded gasoline across California.[246] In California, regular gasoline is blended with oxygenates to meet the local environmental standards.

246 Branded gasoline refers to fuel that is sold under a brand name such as BP, Shell, Exxon, Chevron and Valero.

The Californian wholesale rack price is an average of wholesale prices at various wholesale fuel loading racks around the state. The Los Angeles Reformulated Gasoline Blendstocks for Oxygenate Blending (RBOB) price is a wholesale price for a base gasoline designed to be blended with an oxygenate to comply with environmental regulations for finished reformulated gasoline.[247] Alaska North Slope crude oil is used as the benchmark for the acquisition cost of composite crude oil for California refineries.[248]

Chart 12.3 Weekly movements in crude, refined product benchmarks, wholesale and retail prices for regular gasoline in California: July 2007 to June 2011



Source: ACCC calculations based on data from US EIA, Californian Energy Commission

Notes: Retail prices are weekly prices collected by the US EIA. Wholesale prices reflect the average of 13 unbranded and 13 branded wholesale prices at various wholesale fuel loading racks around California. This average price is for the same day as US EIA's weekly average gasoline price. Full data collection methodology on wholesale prices is available at: http://energyalmanac.ca.gov/gasoline/margins/index.php#terms, accessed 30 November 2011.

Similar to the experience illustrated in the Australian and Canadian cases, chart 12.3 shows a close relationship between movements in benchmark prices and retail prices in California. Again, higher price levels in both benchmark and retail prices are evident in mid-2008 as well as the ease of prices later that year and relatively stable price levels through most of 2010.

In the case of California there appears to be a smaller difference between wholesale prices and retail prices relative to Australia. This is largely due to the lower tax rates of petrol in the US compared with many other parts of the world.

247 Californian Energy Commission, at http://energyalmanac.ca.gov/gasoline/types_of_gasoline.html, accessed 30 November 2011.
248 Californian Energy Commission, at http://energyalmanac.ca.gov/gasoline/margins/index.php, accessed 30 November 2011.

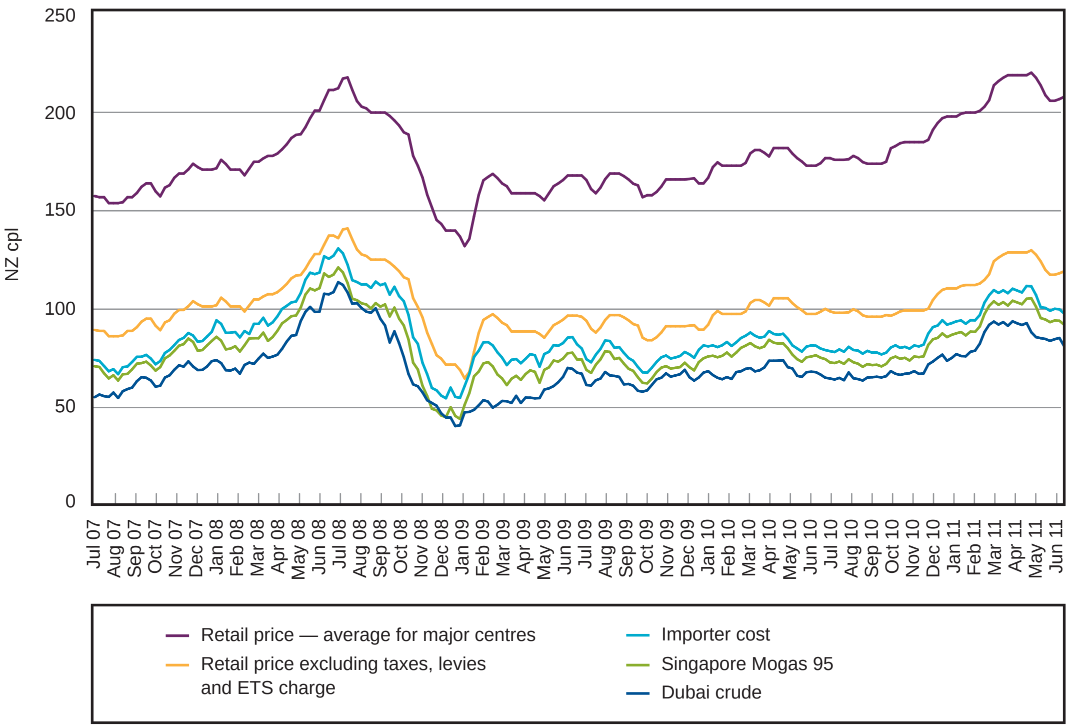
New Zealand

Retail petrol prices in New Zealand also track movements in their relevant crude oil, refined petrol benchmark and wholesale benchmark prices closely. Chart 12.4 shows the retail price of regular petrol across major centres in New Zealand.

The international benchmark prices relevant to New Zealand are similar to those used in the analysis of the Australian market. The appropriate refined petrol benchmark is Singapore Mogas 95, the same as in Australia. The importer cost shown in chart 12.4 represents the landed cost of petrol in New Zealand, conceptually similar to the Import Parity Price (IPP) in Australia, and is also based on the price of Mogas 95.

The crude oil benchmark price used in New Zealand is Dubai crude. This is because the only refinery in New Zealand is suited to a cheaper heavier crude than the Australian refineries, with more crude oil sourced from the Middle East.[249]

Chart 12.4 Weekly movements in crude, refined product benchmarks, wholesale and retail prices for regular petrol in New Zealand: July 2007 to June 2011



Source: ACCC calculations based on data from Platts, RBA, New Zealand Ministry of Economic Development

Notes: Retail prices are based on more than 90 per cent of total petrol transactions across all major centres. Importer cost is based on the Singapore benchmark petrol price plus an estimated quality premium and an assessment of the importation costs of freight, insurance, losses, and wharfage.

249 Hale and Twomey, *2007 ACCC report into Australian petrol prices: review of applicability to the New Zealand petrol market*, July 2008, pp. 8, 13.

As in Australia, international benchmarks also have a strong influence on retail prices in New Zealand. This can be seen in chart 12.4 which shows that:

- retail and wholesale prices in New Zealand track closely with the international price of Mogas 95
- shifts in the price of Mogas 95 are closely linked with movements in the price of crude oil.

The overall tax rate of regular petrol in New Zealand is higher than in Australia, resulting in a slightly larger difference between international benchmarks and final retail prices.

Germany

Chart 12.5 shows retail prices of Euro-Super 95, a widely used grade of petrol in Europe, along with refined petrol and crude oil benchmark prices in Germany. Unlike Australia and the US, a premium or 95 RON grade of petrol is more popular than RULP among motorists throughout most of Europe.

The benchmark price of refined petrol shown in chart 12.5 is the average price of Mogas 95 in the Antwerp/Rotterdam/Amsterdam region. Rotterdam is the largest European port for the import of crude oil.[250] German refining and importing companies base their prices on the relevant benchmark prices in Rotterdam.[251] Brent crude oil is the dominant oil benchmark in Europe and its price is increasingly being utilised as a marker for crude oil prices around the world (see chapter 5 for a discussion on the emergence of Brent crude as a leading indicator of crude oil prices).[252]

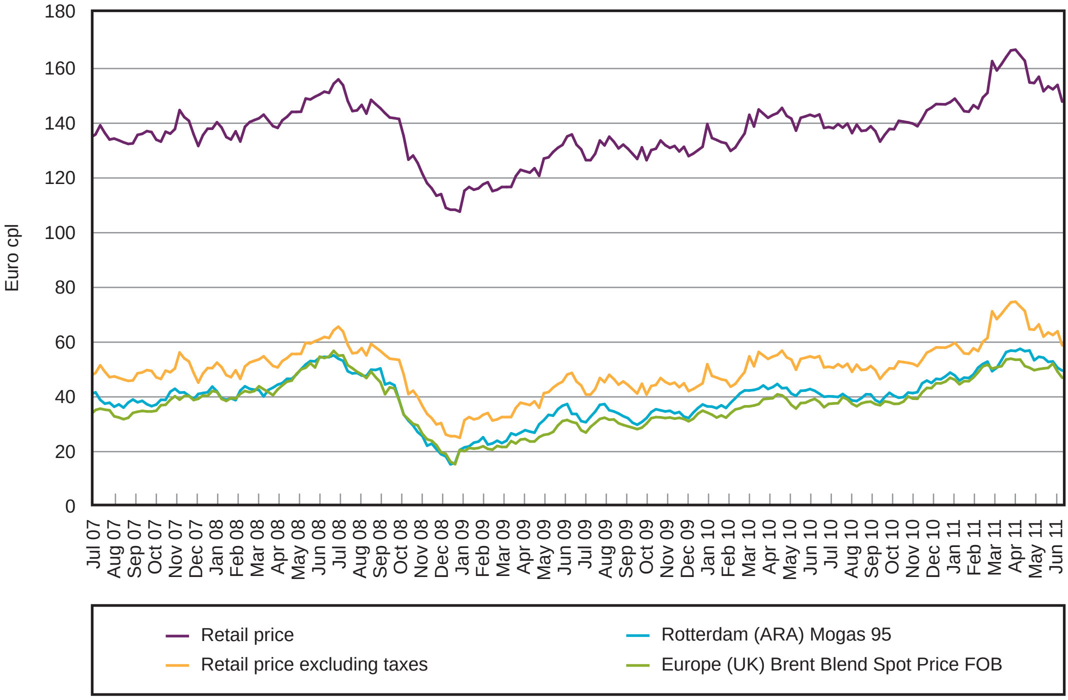
Chart 12.5 shows that the experience in Germany is also not dissimilar to that in Australia.

250 Reuters, 'FACTBOX-Rotterdam port, Europe's biggest', 6 Jan 2011, at http://af.reuters.com/article/energyOilNews/idAFLDE7051Q320110106, accessed 30 November 2011.

251 European Commission, Survey on the petroleum products' price data collection, *Weekly oil bulletin*, Feb 2009, p. 11.

252 *Oil and gas journal*, Transatlantic energy prices show need for realignment, 6 June 2011, at http://www.ogj.com/index/article-display.articles.oil-gas-journal.volume-109.issue-23.general-interest.transatlantic-energy-prices-show-need-for.html.html, accessed 30 November 2011.

Chart 12.5 Weekly movements in crude, refined product benchmarks and retail prices for Euro-Super 95 petrol in Germany: July 2007 to June 2011



Source: ACCC calculations based on data from US EIA, Bloomberg, US Federal Reserve Bank, European Commission

Notes: Retail prices are the average of a weekly observed Monday price. Prices are collected from five oil companies which cover most of the market. A small number of prices represent a calculated average of the preceding and following weeks as prices were not collected in some weeks. Full data collection methodology is available at http://ec.europa.eu/energy/observatory/oil/bulletin_en.htm, accessed 30 November 2011.

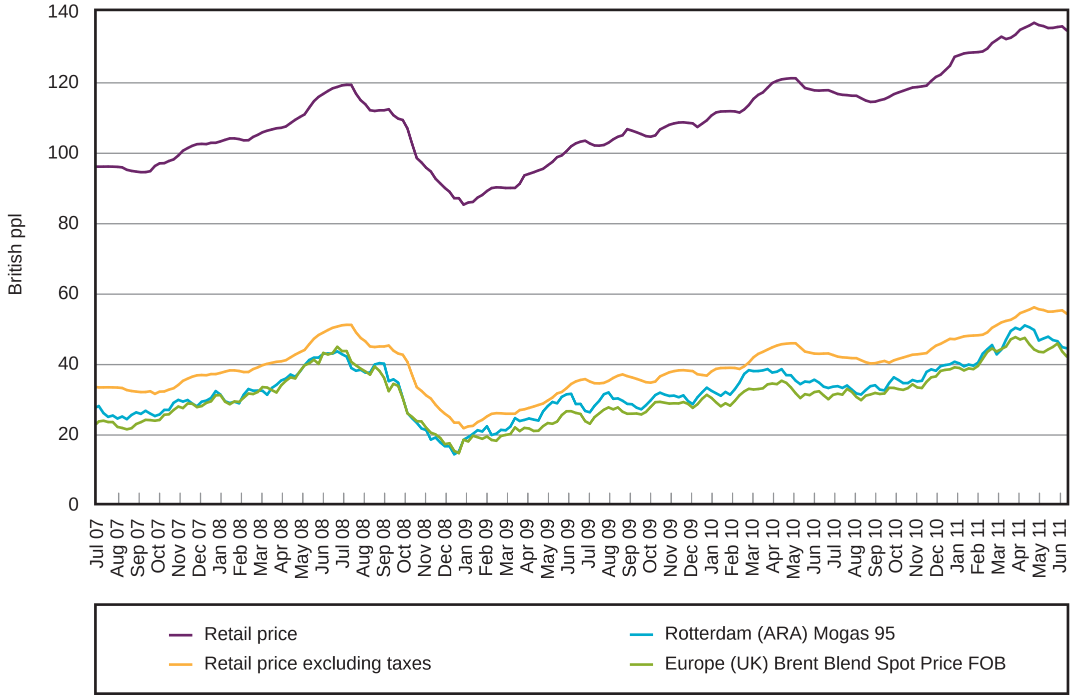
The difference between benchmark prices and the final retail price can be explained largely by taxes as well as other costs and margins.

While European countries generally set a higher level of taxation on petrol than countries in the Asia-Pacific and North American regions, the pre-tax retail prices in Germany generally track international benchmark prices closely.

United Kingdom

In the UK retail prices of petrol have also followed international benchmark prices. Chart 12.6 shows the pump price of Euro-Super 95 in the UK along with the Rotterdam Mogas 95 benchmark and the price of Brent crude oil.

Chart 12.6 Weekly movements in crude, refined product benchmarks and retail prices for Euro-Super 95 petrol in the UK: July 2007 to June 2011



Source: ACCC calculations based on data from US EIA, Bloomberg, US Federal Reserve Bank, European Commission

Notes: Retail prices represent a weekly observed Monday price. Prices are collected from five oil companies and two supermarkets which cover the majority of the market. A small number of prices represent a calculated average of the preceding and following weeks as prices were not collected in some weeks. Full data collection methodology is available at http://ec.europa.eu/energy/observatory/oil/bulletin_en.htm, accessed 30 November 2011.

It is evident from chart 12.6 that retail petrol prices in the UK are also driven by movements in international benchmark prices. The tax component of the price of petrol in the UK is higher than in Australia (see section 12.4).

Key observations on the influence of international factors

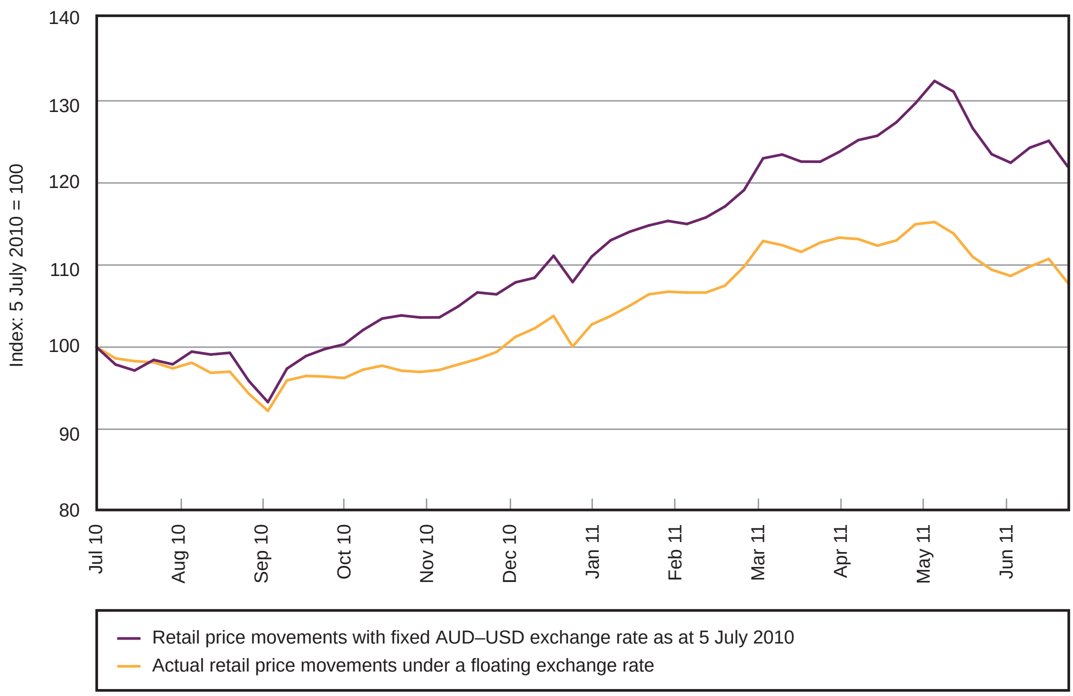
The close relationship between movements in international benchmark prices and domestic retail petrol prices is a common experience in other countries. The Australian experience is not only similar to neighbouring New Zealand, but to countries in North America and Europe as well.

12.3.2 Influence of exchange rates

As the international benchmark prices of crude oil and refined petroleum are typically traded in USD all over the world, the value of the exchange rate between the USD and a local currency influences the level of local retail petrol prices in terms of the local currency.

Exchange rate movements between different currencies against the USD can be explored to gauge the likely effect on local retail prices over time. Chart 12.7 compares Australian retail prices with prices calculated with the exchange rate fixed as at 5 July 2010, that is 1 AUD = USD 0.84.

Chart 12.7 Index of Australian weekly retail price movements of RULP with a fixed and actual AUD–USD exchange rate: 2010–11



Source: ACCC calculations based on data from Informed Sources, Platts, RBA and information provided by monitored companies

As discussed in chapter 9, the appreciation of the AUD against the USD over 2010–11 has contributed to lower retail prices than otherwise may have been the case. This is clearly evident from the data in chart 12.7.

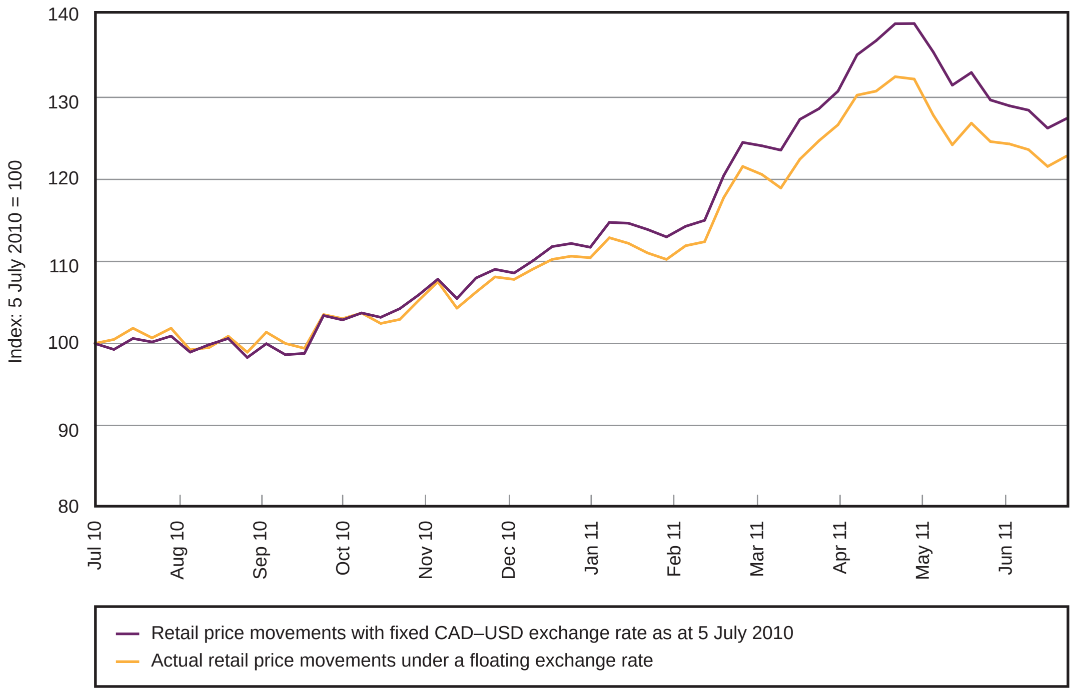
Data in charts 12.8 and 12.9 show similar exchange rate effects in Canada and Germany respectively. In 2010–11, the value of the Canadian dollar (CAD) appreciated against the USD. As a result actual retail petrol prices were lower than if the exchange rate had been fixed at its 5 July 2010 level.

A similar trend is also evident in Germany. The value of the Euro (EUR) also appreciated against the USD over 2010–11, thus protecting motorists in Germany from even higher prices had the EUR not appreciated against the USD.

The extent of the exchange rate effects differs across currencies.

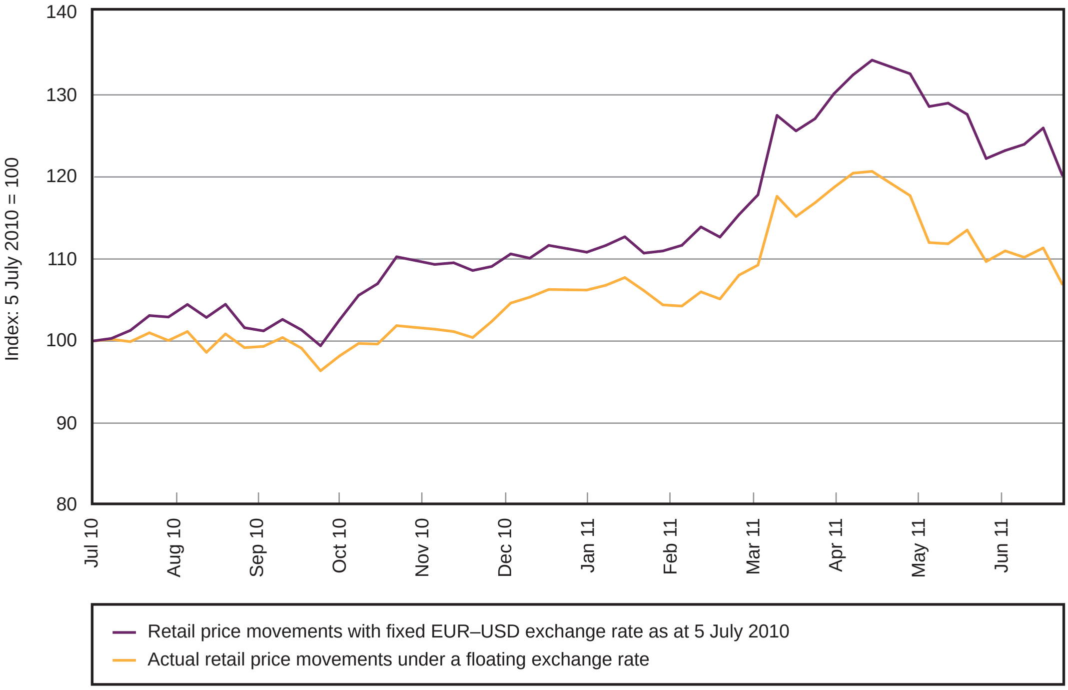
For example, as the CAD has historically tracked relatively closely with the USD, the size of any exchange rate effect on Canadian retail prices is likely to be generally smaller than for currencies which are less correlated with the USD, for example, the Euro (see charts 12.8 and 12.9).

Chart 12.8 Index of Canadian weekly retail price movements of regular petrol with a fixed and actual CAD–USD exchange rate: 2010–11



Source: ACCC calculations based on data from US EIA, US Federal Reserve Bank, Natural Resources Canada

Chart 12.9 Index of German weekly retail price movements of Euro-Super 95 petrol with a fixed and actual EUR–USD exchange rate: 2010–11



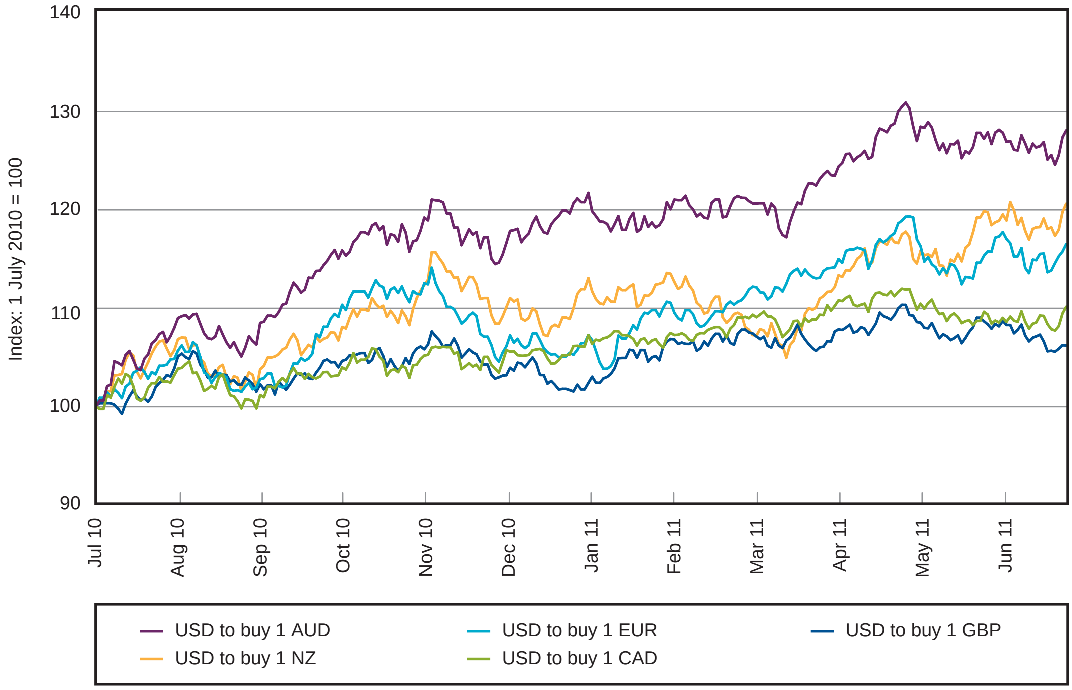
Source: ACCC calculations based on data from Bloomberg, US Federal Reserve Bank, European Commission

Looking more broadly at how the exchange rates of a number of currencies have moved against the USD shows that the recent strengthening in the AUD–USD exchange rate has been particularly favourable for motorists in Australia compared with other countries.

Chart 12.10 illustrates movements in the exchange rates of five currencies against the USD, starting from levels at 1 July 2010 through to 30 June 2011. The value of the AUD, CAD, EUR, British pound (GBP) and New Zealand dollar (NZD) all strengthened against the USD over this period.

The movement of the AUD–USD exchange rate has been particularly significant, appreciating by about 28 per cent from around USD 0.84 to USD 1.07. Over the same period, the CAD–USD exchange rate appreciated by about 10 per cent, the EUR–USD rate appreciated by 17 per cent and the NZD–USD rate appreciated by around 21 per cent.

Chart 12.10 Index of daily movements in exchange rates of a number of currencies against the USD: 1 July 2010 to 30 June 2011



Source: ACCC calculations based on data from US Federal Reserve Bank

Key observations on exchange rates

As noted, exchange rate movements throughout 2010–11 have led to lower retail petrol prices in Australia than otherwise may have been the case. Data presented in this chapter indicates that other countries have also benefited from movements in their respective currencies against the USD; however, the degree of protection provided by the appreciation of the AUD appears to have been greater than other major currencies.[253]

253 There may be situations where a rise in the AUD against the USD may not necessarily have a favourable impact on domestic prices. For example, it might be argued that because crude prices are denominated in USD, a fall in the value of the USD could result in higher prices (in USD/bl) as sellers seek compensation for the loss of the USD's purchasing power. To the extent that there are no other fundamental demand–supply factors affecting prices, then a fall in the USD could lead to higher prices in the global market for crude. All else equal, in such a scenario the concomitant rise in the AUD against the USD would be offset by the rise in crude prices thus leaving domestic petrol prices unaffected. See, for example, S Blomberg and E Harris, 'The commodity–consumer price connection: fact or fable?', *Economic policy review*, vol. 1, October 1995, pp. 21-38.

12.3.3 Short-term movements in petrol prices

In addition to the influence of global factors on retail petrol prices there are also short-term factors that influence the day-to-day retail price of petrol. In Australia, the weekly retail price cycle, discussed in chapter 11, affects the day-to-day movements in the price of petrol in the largest capital cities.

Short-term movements in the price of petrol are not unique to Australia. The 2007 ACCC petrol inquiry report noted that although price cycles are not widespread around the world, they do occur in various cities and regions in other countries, including Canada, the US, Germany and also Norway.[254]

Recent studies have again identified retail price cycles in some markets in Canada and parts of the US, particularly in states in the Midwest.[255] These types of cycles resemble those occurring in the largest Australian cities where a significant price increase is followed by subsequent decreases until another restoration phase occurs.

In May 2011 the German competition authority, the Bundeskartellamt, released a comprehensive inquiry into the fuel sector, analysing fuel prices in four German cities from January 2007 to June 2010. The English summary of the final report refers to the German fuel market and the 'cyclical price movements within one week'.[256] For example, the summary noted the following pattern in regard to the retail price of diesel in Cologne:

> *In 2007 and 2008 the fuel price reached its peak, above all, on Friday afternoons and evenings … the high price level on Fridays continues until Saturday afternoons. Only then do prices begin to fall, resulting in a lower price level on Sundays and Mondays. Prices can then be seen to rise by the latest on Tuesday mornings. Whilst prices can be seen to fall from Tuesdays to Thursdays, at least in the evenings … The analysis has shown that in each of the years examined, the price on Fridays was among the highest. The fuel price was lowest on Sundays and Mondays.*

The report also identified a number of characteristics of the intra-week cyclical price movements in parts of Germany:

- Steps of the price increases were generally greater than the price reductions, while price reductions occurred at a greater frequency.
- Price increases often occur simultaneously at the majority of petrol stations of an oil company, while price reductions are generally offered only at specific individual sites.[257]

The ACCC has used data presented in the final report by the Bundeskartellamt to construct a daily price chart for a number of cities in Germany. Chart 12.11 illustrates average prices for gasoline at different times during each day of the week in four large cities across Germany in 2010.

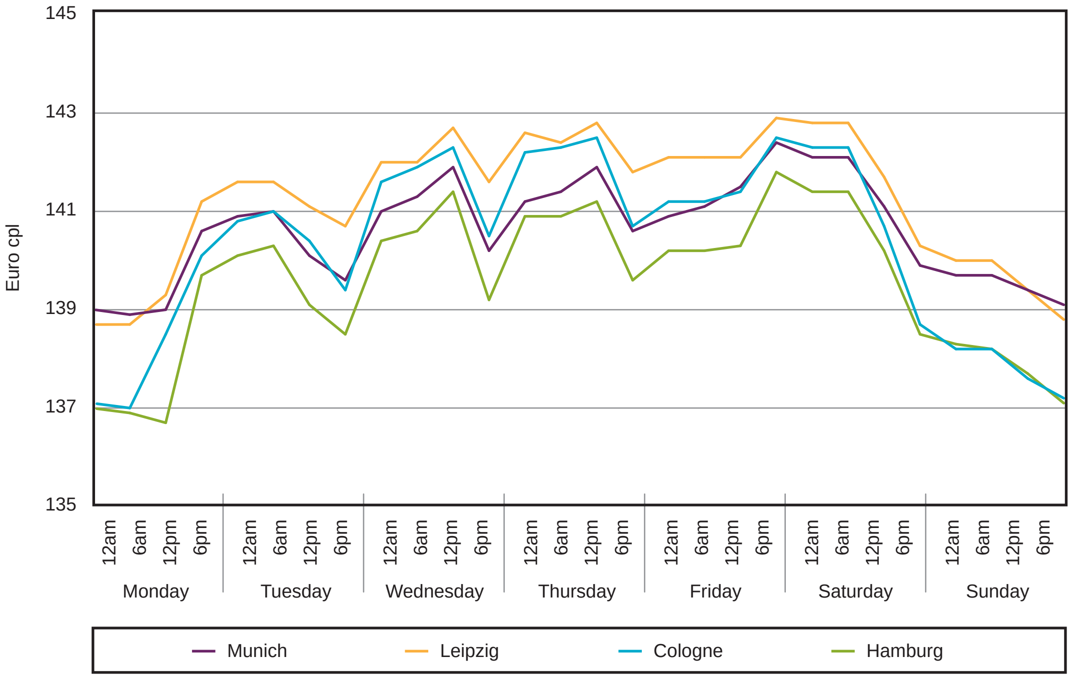
254 ACCC, *Petrol prices and Australian consumers: report of the ACCC inquiry into the price of unleaded petrol*, December 2007, pp. 162–3.

255 US Federal Trade Commission, *Edgeworth price cycles in gasoline: evidence from the US*, May 2011, at http://www.ftc.gov/be/workpapers/wp303.pdf, accessed 30 November 2011.

256 Bundeskartellamt, *Fuel sector inquiry: final report summary*, May 2011, p. 21, at http://www.bundeskartellamt.de/wEnglisch/Publications/sector_inquiriesW3DnavidW2651.php, accessed 30 November 2011.

257 Bundeskartellamt, *Fuel sector inquiry: final report summary*, May 2011, pp. 22–3, at http://www.bundeskartellamt.de/wEnglisch/Publications/sector_inquiriesW3DnavidW2651.php, accessed 30 November 2011.

Chart 12.11 Average annual retail prices for gasoline by day of the week and six hour period in Cologne, Hamburg, Munich and Leipzig: 2010



Source: ACCC calculations based on data from Bundeskartellamt, Sektoruntersuchung Kraftstoffe Anhänge (Fuel Sector Inquiry: Final report Appendices), May 2011, pp. 8–15. See also Bundeskartellamt, Fuel Sector Inquiry, Final Report Summary, May 2011

A recent study by the US FTC[258] notes that on the basis of information relating to certain local markets in the US and Canada, there are two main ingredients necessary for petrol price cycles:

- a sufficiently large number of refiner-marketer affiliated service stations
- a sufficiently large number of independent service stations.

The refiner-marketer affiliated stations are reportedly instrumental in the price rising phase and independent stations are more active in the price cutting phase. According to the US FTC study, it is the interaction between these two groups of market participants that promote price cycles.

While there is clear evidence of petrol price cycles, or at least regular short-term movements of retail petrol prices in other countries, the extent to which these cycles mimic those observed in Australia is uncertain. Evidence presented in the 2007 ACCC petrol inquiry suggested that petrol price cycles in Australia had larger amplitudes than those occurring in other countries.[259] The ACCC is presently in the process of considering evidence on overseas price cycles.

258 US Federal Trade Commission, *Gasoline price changes and the petroleum industry: an update*, September 2011, at http://www.ftc.gov/os/2011/09/110901gasolinepricereport.pdf, accessed 30 November 2011.

259 ACCC, *Petrol prices and Australian consumers: report of the ACCC inquiry into the price of unleaded petrol*, December 2007, pp. 155–80.

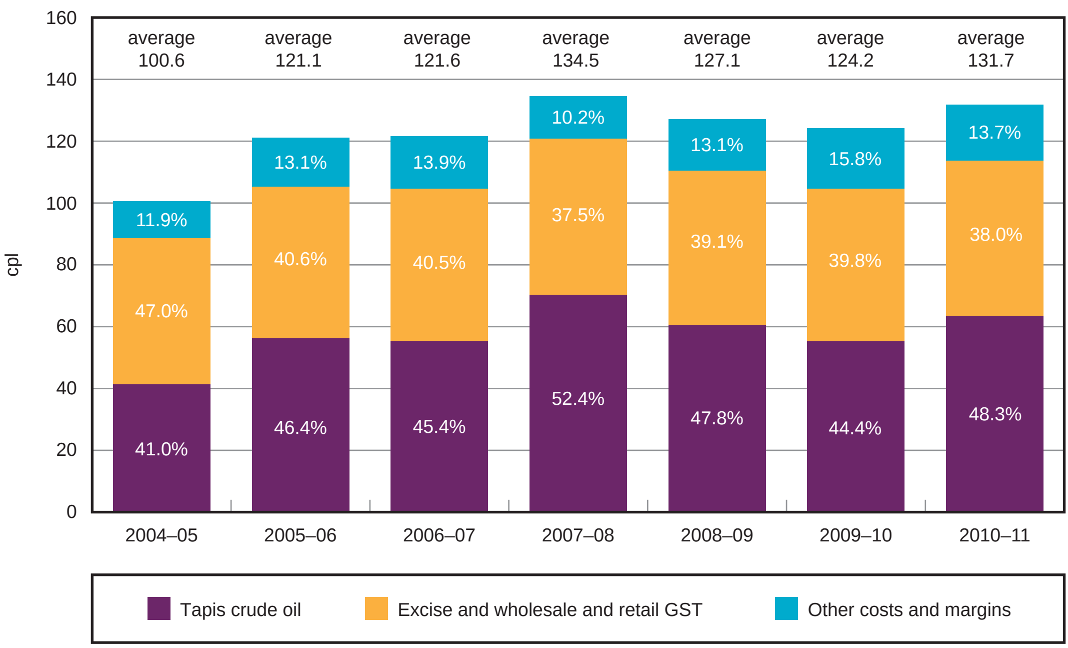
12.4 Components of petrol prices in other countries

The major components of Australian retail petrol prices were considered in detail in chapter 9. Chart 12.12 again illustrates that the major components of average retail prices of RULP from 2004–05 to 2010–11 were:

- the price of crude oil
- taxes
- other costs and margins at the refining, wholesale and retail levels.

For the last six years the cost of crude oil has been the largest component, and clearly the biggest contributor to changes in the retail price of RULP. Taxes have also been a significant component of the retail price.

Chart 12.12 Australian components of retail RULP prices across the five largest cities: 2004–05 to 2010–11



Source: ACCC calculations based on data from Informed Sources, Platts, RBA, WA Fuelwatch data and information provided by monitored companies

Notes: Annual averages are calculated from daily data.

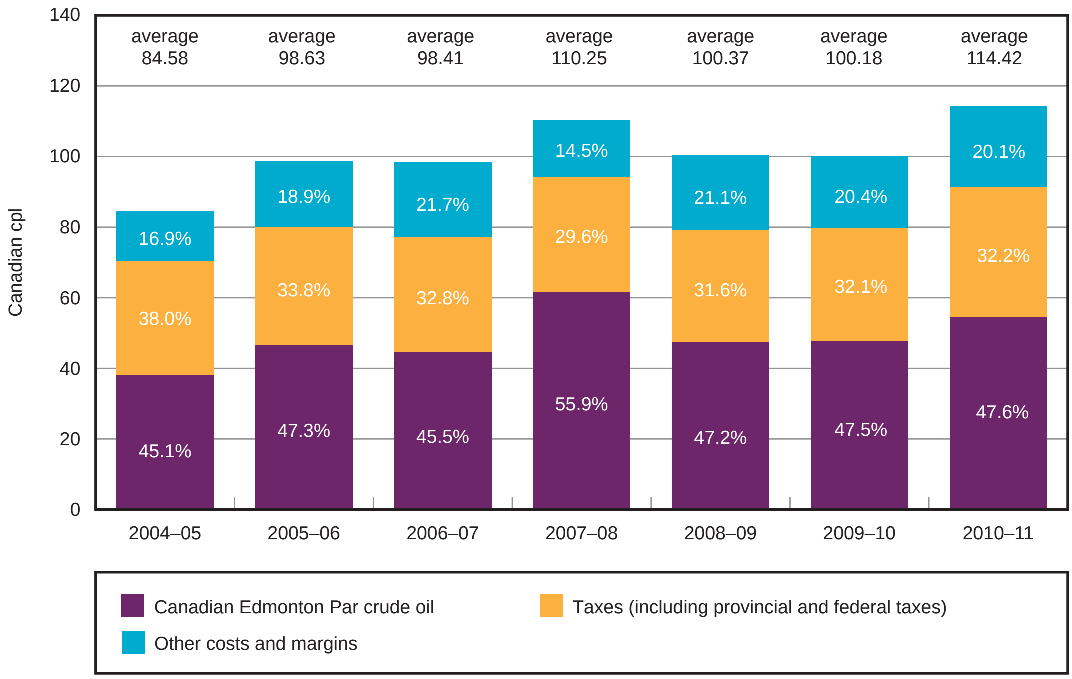
Evidence on price components for other countries again suggests that Australia's experience is not unique. Charts 12.13 to 12.17 show the major components of retail petrol prices in Canada, California, New Zealand, Germany and the UK in local currency.

Due to data limitations it is not possible to make precise comparisons of margins at each of the retail, wholesale and refinery levels across countries. It is possible, however, to examine the crude oil and fuel tax components of retail prices in other countries as well as the collective component representing other costs and margins.

Chart 12.13 shows the components in the price of regular gasoline in Canada from 2004–05 to 2010–11. Overall, the chart indicates that:

- the Canadian benchmark for the cost of crude oil, Edmonton Par crude, has been the largest component, and the main contributor to changes in the price of gasoline for the last seven years
- the tax component appears to be slightly smaller than in Australia.

Chart 12.13 Canadian components of retail regular unleaded gasoline prices in 10 major cities: 2004–05 to 2010–11



Source: ACCC calculations based on data from MJ Ervin

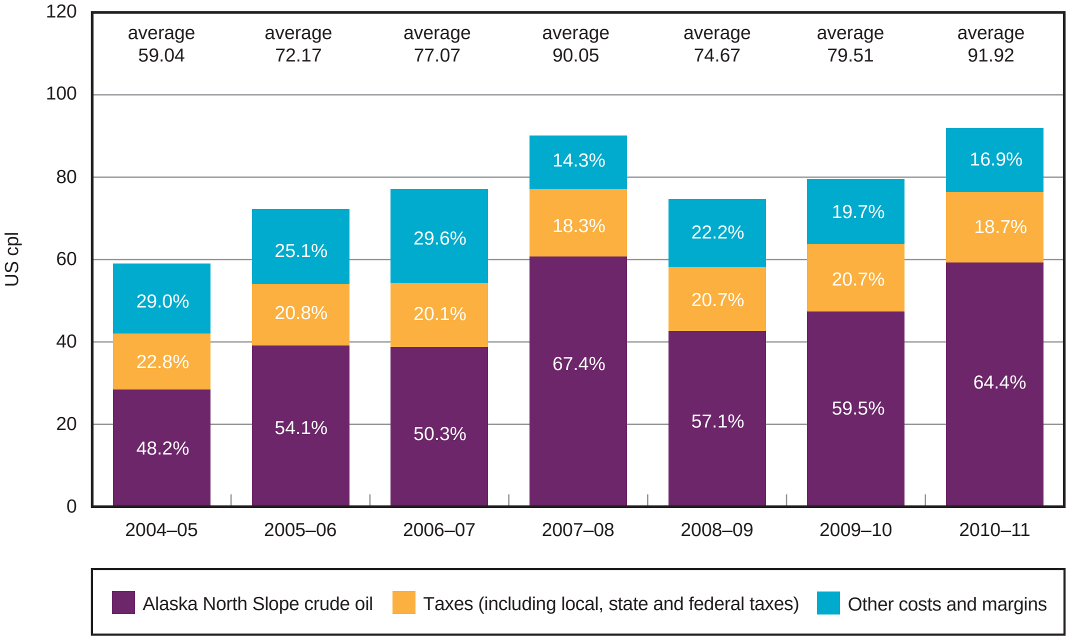
Notes: Annual averages are calculated from monthly data.

The component of retail prices attributable to other costs and margins varies across different countries. This occurs partly because different crude oil markers are used in different locations. The Edmonton Par, for example, generally trades at a lower price than Tapis crude which can have two potential effects: on the one hand, it might mean that the refining margin may be slightly higher in Canada (due perhaps to the lower cost of crude); on the other hand, there may be higher unit costs involved in processing the slightly heavier and lower-yielding grade Edmonton Par crude.

Chart 12.14 shows the components of retail regular gasoline prices from 2004–05 to 2010–11 in California. As with both the Australian and Canadian retail components, the cost of crude oil is the most significant component of retail prices in California. In fact, in California the cost of crude oil exerts a more powerful influence on retail prices, making up over 60 per cent of average retail prices in 2007–08 and 2010–11.

The relatively large influence of crude oil on retail prices in California is partly due to the lower level of fuel taxation compared to many other developed countries.

Chart 12.14 Californian components of retail regular gasoline prices at branded sites: 2004–05 to 2010–11



Source: ACCC calculations based on data from Californian Energy Commission

Notes: Annual averages are calculated from weekly data.

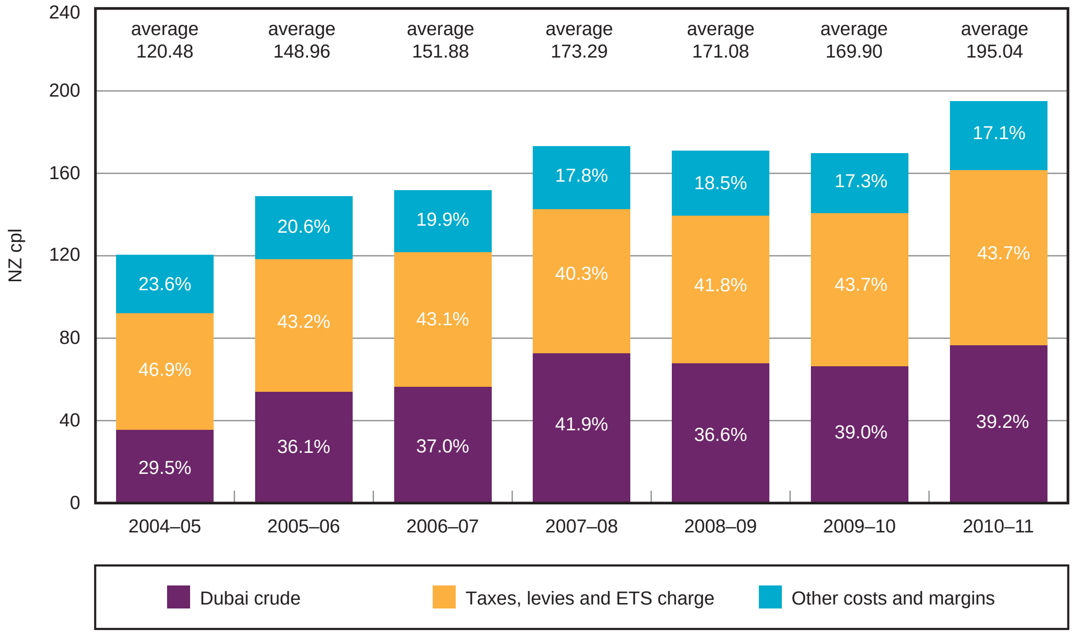
Chart 12.15 illustrates the components of retail petrol prices in New Zealand over the seven years to June 2011. The chart indicates that:

- Taxes generally account for the largest component of retail petrol prices, except in 2007–08 when crude prices were high and thus became the largest component.
- Although the cost of crude oil has generally been the second largest component of retail prices in New Zealand, crude oil costs appear to have been a significant contributor to changes in retail prices.
- Average price levels in 2010–11 appear to be notably higher than other years, partly due to an increase in the cost of crude oil as well as a recent increase in the level of fuel taxation and the GST in New Zealand.[260]

The margin components of retail petrol prices in New Zealand represents a combination of refining, wholesale and retail costs and margins associated with the use of a relatively cheaper grade of oil (Dubai crude). This may contribute to a margin component slightly higher than in Australia.

260 New Zealand Ministry of Transport, 21 October 2010, at http://www.transport.govt.nz/ourwork/land/roaduserchargers/, accessed 30 November 2011.

Chart 12.15 New Zealand components of retail regular petrol prices in major centres: 2004–05 to 2010–11



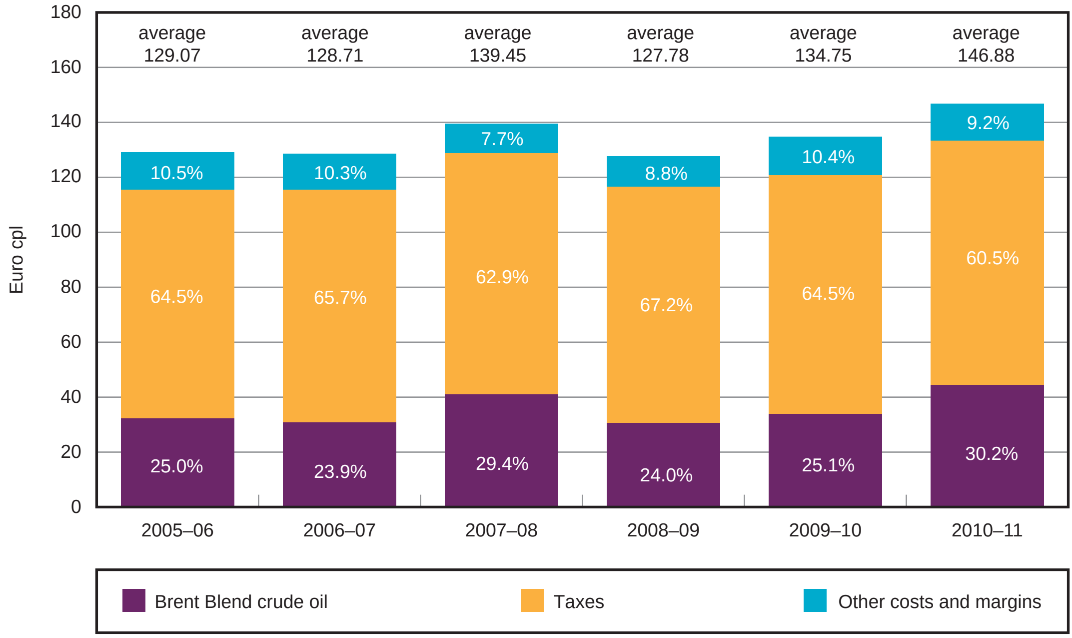
Source: ACCC calculations based on data from New Zealand Ministry of Economic Development

Notes: Annual averages are calculated from weekly data.

Charts 12.16 and 12.17 show the components of retail prices for Euro-Super 95 petrol from 2005–06 to 2010–11 in Germany and the UK respectively. The charts show that:

- Over the last few years, taxation represented over 60 per cent of the price of petrol in both Germany and the UK. The second largest component has been the cost of crude oil.
- Changes in the retail price of petrol appear to be largely driven by changes in the cost of crude oil.

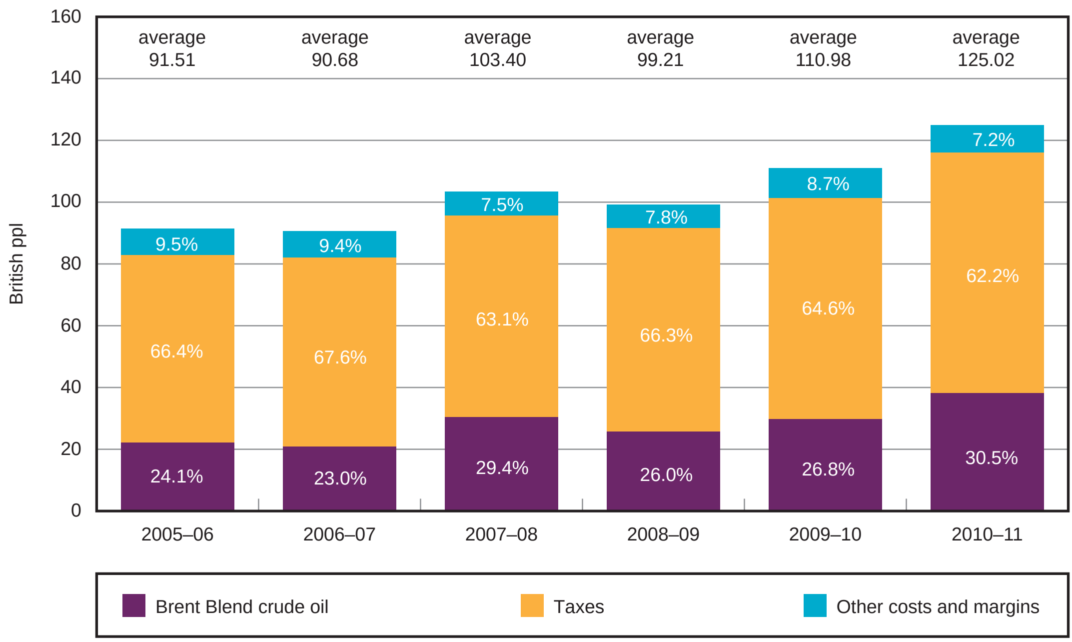
Chart 12.16 Components of retail Euro-Super 95 petrol prices in Germany: 2005–06 to 2010–11



Source: ACCC calculations based on data from US EIA, US Federal Reserve Bank, European Commission

Note: Annual averages are calculated from weekly data.

Chart 12.17 Components of retail Euro-Super 95 petrol prices in the UK: 2005–06 to 2010–11



Source: ACCC calculations based on data from US EIA, US Federal Reserve Bank, European Commission

Note: Annual averages are calculated from weekly data.

Key observations on components of retail prices

While the exact mix of the components of retail petrol prices varies across the countries considered in this chapter, the components that are common to all countries are crude oil and taxes. Petrol prices in countries with lower levels of fuel taxation such as the US appear to be most heavily influenced by the cost of crude oil.

The cost of crude oil is also the main influence on petrol price movements in European countries such as Germany and the UK. Although these prices include a larger tax component, the level of taxation seems to have remained relatively stable over time.

12.5 Australian retail prices: an international perspective

Chart 12.18 shows retail petrol prices in Australia and the five other countries considered in this chapter in Australian currency over the period July 2007 to June 2011.

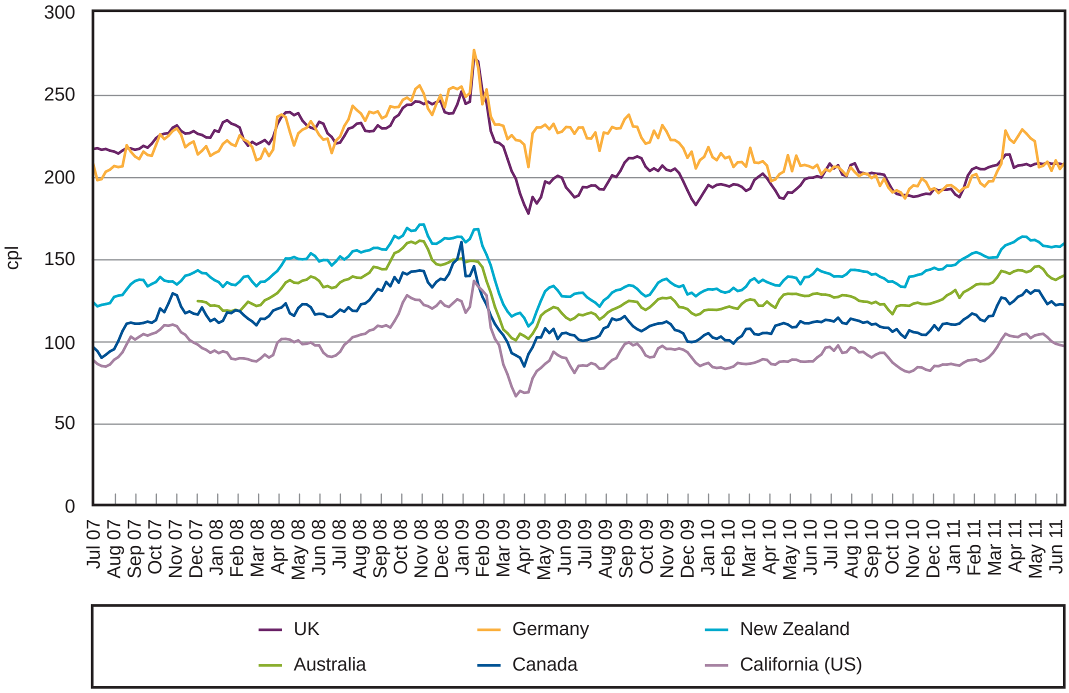
The chart shows that:

- The level of retail petrol prices differs around the world; however, the long-term movements in retail prices appear to be largely similar across a number of countries, reflecting movements in their respective international price benchmarks.
- The level of retail prices in Australia is at the lower end of the range of prices shown for various countries, behind California and Canada.

Another factor that is evident from chart 12.18 is the effect of exchange rate movements in domestic retail prices.

While movements in retail prices across most countries track each other fairly closely, prices in Germany in late 2008 and 2009 seemed to be out of step with movements in other countries' retail prices. From November 2008, prices in Germany fell proportionately less than in other countries. This was due to the effect of changes in the value of the Euro (EUR) relative to other currencies. From late 2008, the EUR experienced a period of weakness relative to other currencies, thus limiting the extent to which petrol prices in Germany fell in response to falls in international benchmark prices. When the EUR strengthened again around June 2010, prices in Germany again moved in line with prices in other countries.

Chart 12.18 Weekly retail petrol prices (including taxes) across Australia, Canada, California, New Zealand, Germany and the UK: July 2007 to June 2011



Source: ACCC calculations based on data from Informed Sources, MJ Ervin, Californian Energy Commission, New Zealand Ministry of Economic Development, European Commission, RBA

Notes: Fuel types shown in this chart are those described throughout section 12.3.1 and vary from country to country. The basis of weekly retail prices shown varies across countries. Details of retail price data collection methodologies can be found in notes to charts 12.2 to 12.6.

The most significant difference in the level of retail prices across countries is the level of fuel taxation in each country.

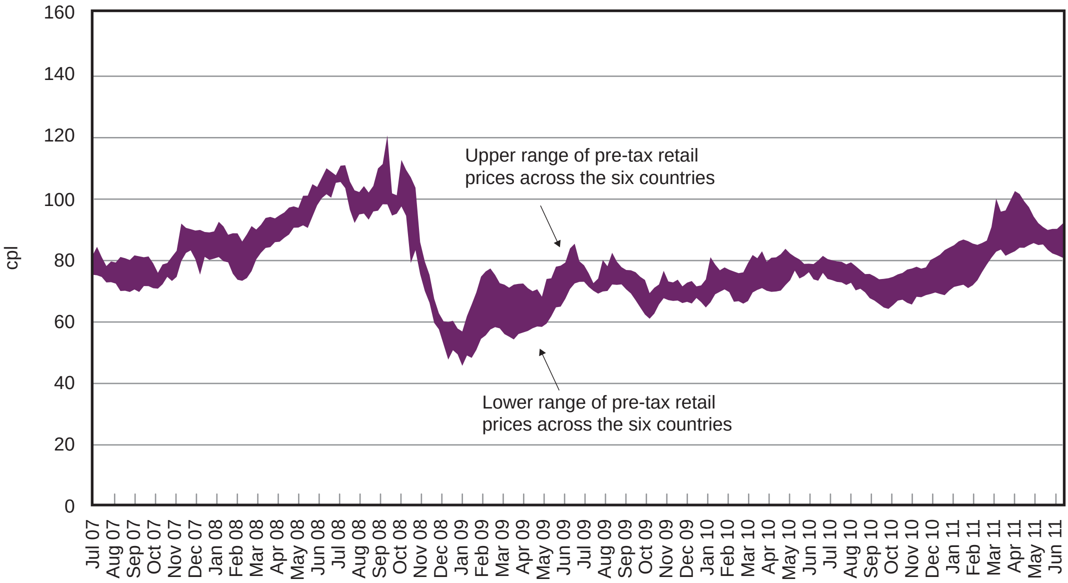
In California and Canada, petrol is taxed at a lower rate than in Australia. In New Zealand, Germany and the UK, the level of taxation on petrol is higher than in Australia.

When the impact of taxes is excluded from the retail petrol prices, the spread of prices across the various countries is very different. Chart 12.19 shows the range of retail petrol prices across the various locations when excluding the impact of taxes over the four years to June 2011. Prices are again shown in Australian currency.

Over the four-year period to June 2011, the range of pre-tax retail prices for these countries, including Australia, has averaged about 10 Australian cents per litre. This compares with an average range of around 125 Australian cents per litre when looking at prices including taxes.

Exchange rate movements as well as local market conditions will mean that retail price levels in countries will differ when looking at pre-tax prices converted to a single currency.

Chart 12.19 Range of weekly retail petrol prices excluding taxes across Australia, Canada, California, New Zealand, Germany and the UK: July 2007 to June 2011



Source: ACCC calculations based on data from Informed Sources, MJ Ervin, Californian Energy Commission, New Zealand Ministry of Economic Development, European Commission, RBA

Notes: Fuel types shown in this chart are those described throughout section 12.3.1 and vary from country to country. The basis of weekly retail prices varies across countries. Details of retail price data collection methodologies can be found in notes to charts 12.2 to 12.6.

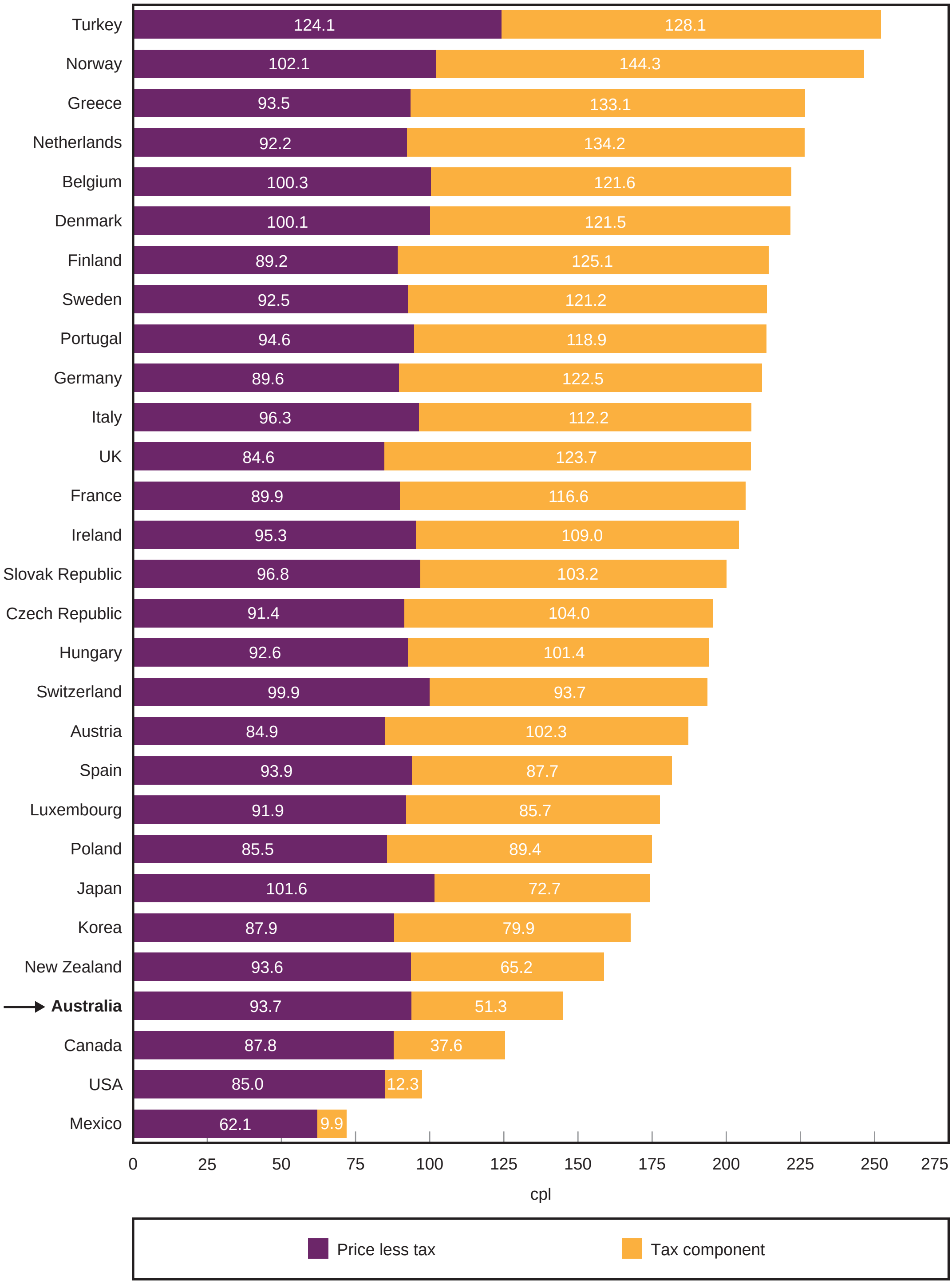
The Department of Resources, Energy and Tourism (RET) publishes a ranking of Australia's retail prices for petrol relative to prices of other countries in the OECD.

Chart 12.20 shows the retail price of petrol among countries in the OECD both including and excluding the tax component.[261]

The chart shows that final retail petrol prices in Australia are among the lowest in the OECD, with the fourth lowest petrol prices.

261 The ACCC has previously commented on its methodological concerns about the usefulness of international price comparisons using OECD data. These include that petrol quality varies from country to country; data is based on metropolitan prices only; different sources are used for exchange rates; and government subsidy programs in some countries—and how they may affect the tax rate—are not considered. These issues were outlined in appendix J of the ACCC's 2001 report, *Reducing fuel price variability*. In addition, it must be noted that fuel types may also vary from country to country. Notwithstanding these issues, the data provides a reference by which Australian retail prices can be compared with other developed countries. Furthermore, it enables Australia's retail prices relative to other countries to be examined over time.

Chart 12.20 Petrol prices and taxes in OECD countries: June quarter, 2011



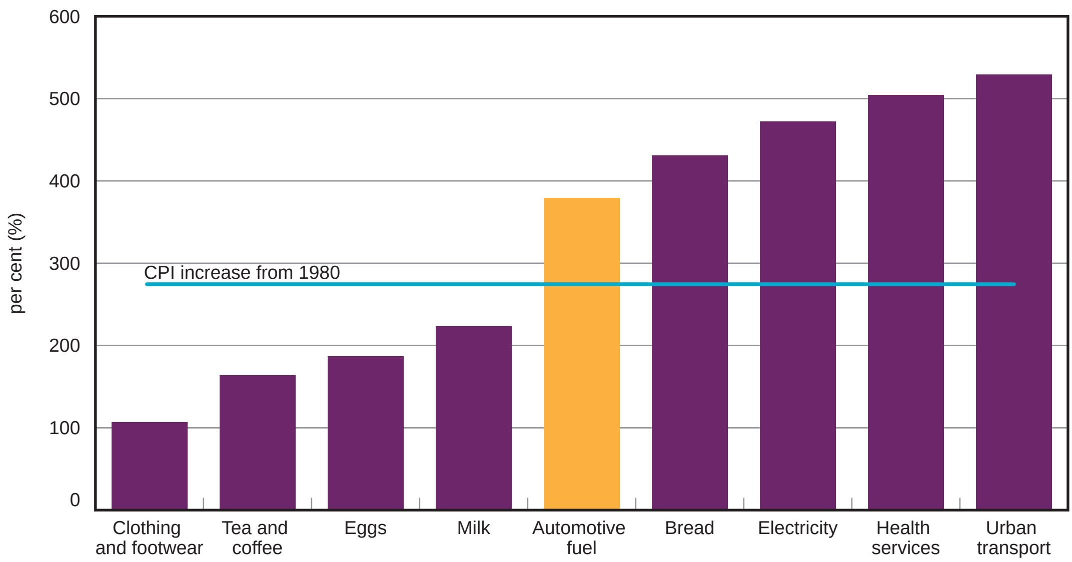
Source: RET, *Australian Petroleum Statistics*, issue 182, September 2011

12.6 Petrol prices and other goods

In addition to comparing Australia's experience with the level of retail petrol prices with that of other countries it is pertinent to examine changes in petrol prices relative to the prices of other goods. Chart 12.21 provides a comparison of price movements for automotive fuel as well as a group of commonly used household goods and services in Australia over the past 30 years.

Although the increase in automotive fuel costs has been higher than the increase in the Consumer Price Index (CPI), the general price of electricity has increased by a larger amount, as has the price of urban transport.

Chart 12.21 Australian comparative changes in the retail prices of fuel and other consumer items: 1980 to June 2011



Source: ACCC calculations based on data from Australian Bureau of Statistics (2011), Consumer Price Index, Australia, Table 11: CPI Group, Sub-group and Expenditure Class, Index Numbers by Capital City', data cube: Excel Spreadsheet, cat. No. 6401.0, at http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6401.0Sep%202011?OpenDocument, accessed 30 November 2011

Notes: 'Automotive fuels' includes petrol, diesel fuel, automotive LPG and other gas fuels, oils lubricants and additives.

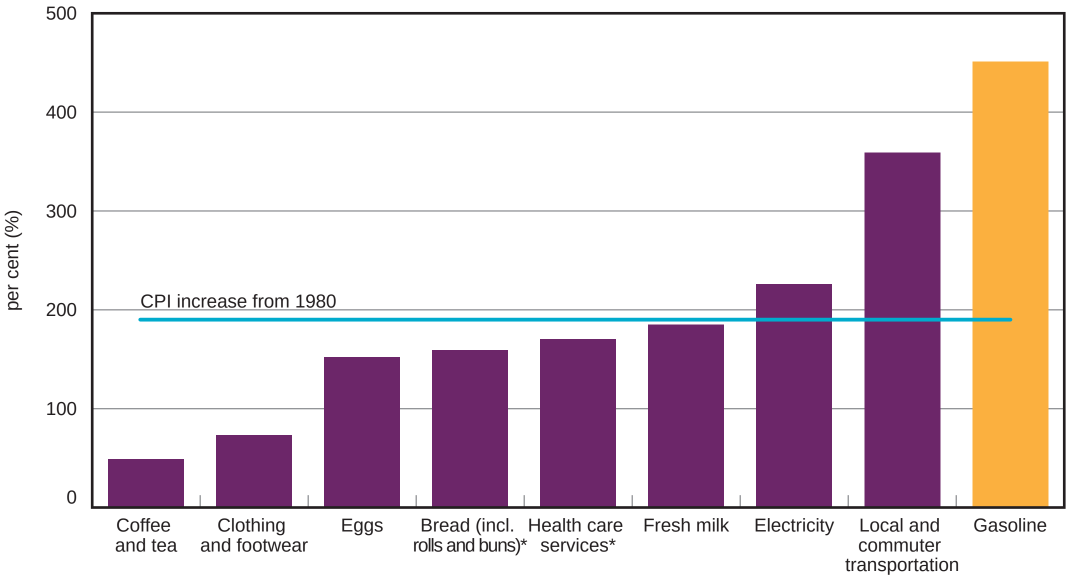
Similar comparisons can be made in respect of petrol price changes in other countries around the world.

Charts 12.22 to 12.24 show the price movements of fuels and other common goods and services in Canada, the US and New Zealand.

Comparisons are also shown for Germany and the UK in charts 12.25 and 12.26 respectively although the time period considered for these countries is shorter.

While the basket of goods and services illustrated in the Australian comparison are not exactly replicated for other countries, these charts provide an indication of general price movements for similar goods.

Chart 12.22 Canadian comparative changes in the retail prices of fuel and other consumer items: 1980 to 2011



Source: ACCC calculations based on data from Statistics Canada 2011, Consumer Price Index (Using CANSIM data, dating back to 1980), E-STAT, Learning Resources, at http://www40.statcan.gc.ca/l01/cst01/cpis01a-eng.htm, accessed 30 November 2011

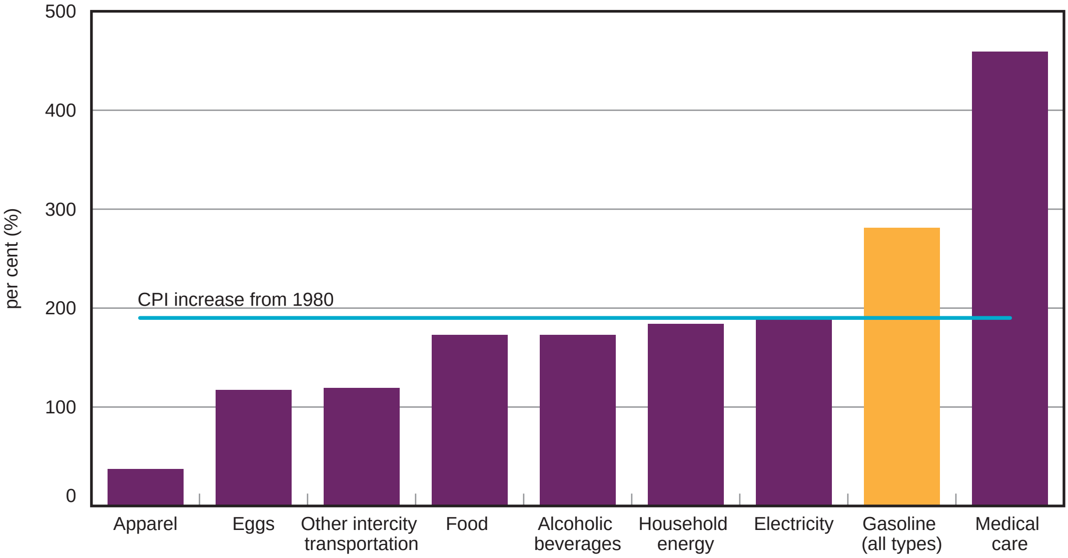
Notes: Both bread and health care categories commence from 1985.

The relative price movements of gasoline in Canada over the last 30 years have been somewhat different. Compared with movements in the local CPI and other goods and services, the price of gasoline has increased significantly, more than increases in the price of electricity and local and commuter transportation.

Comparisons of price increases in Germany and the UK begin in 1991 and 1996 respectively. Both countries show the movements in the price of fuel-related goods to be higher than the local CPI as well as higher than the relevant measure of electricity.

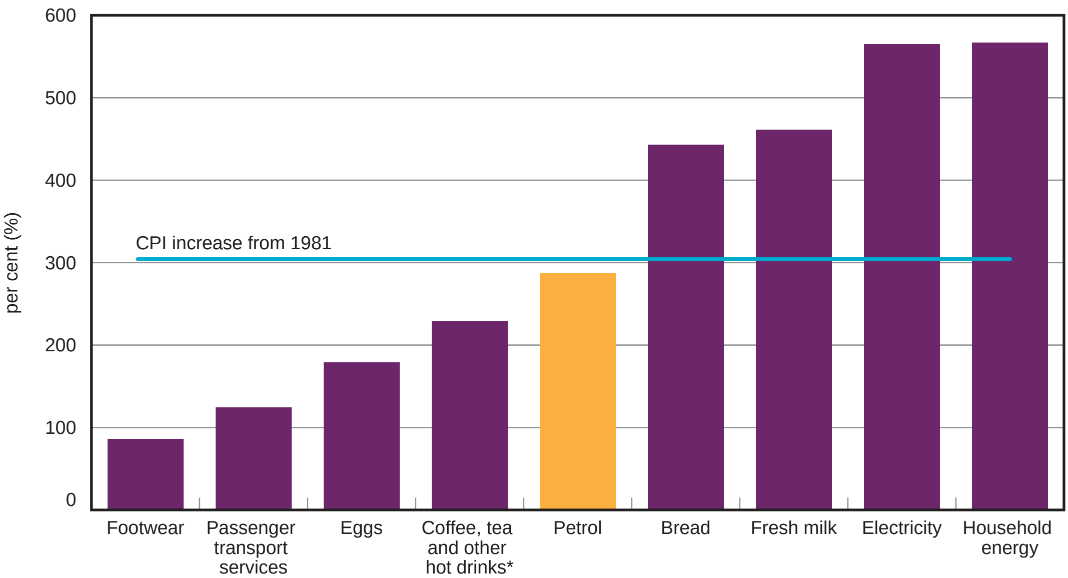
The experience in the US appears to be closest to the Australian experience with price increases in petrol being slightly higher than the increase in the CPI. In New Zealand the price of petrol has increased less than the CPI.

Chart 12.23 Comparative changes in the retail prices of fuel and other consumer items in the US: 1980 to June 2011



Source: ACCC calculations based on data from Bureau of Labour Statistics (US), 2011, Consumer Price Index (using CPI Database dating back to 1980), at http://www.bls.gov/cpi/#data0, accessed 30 November 2011

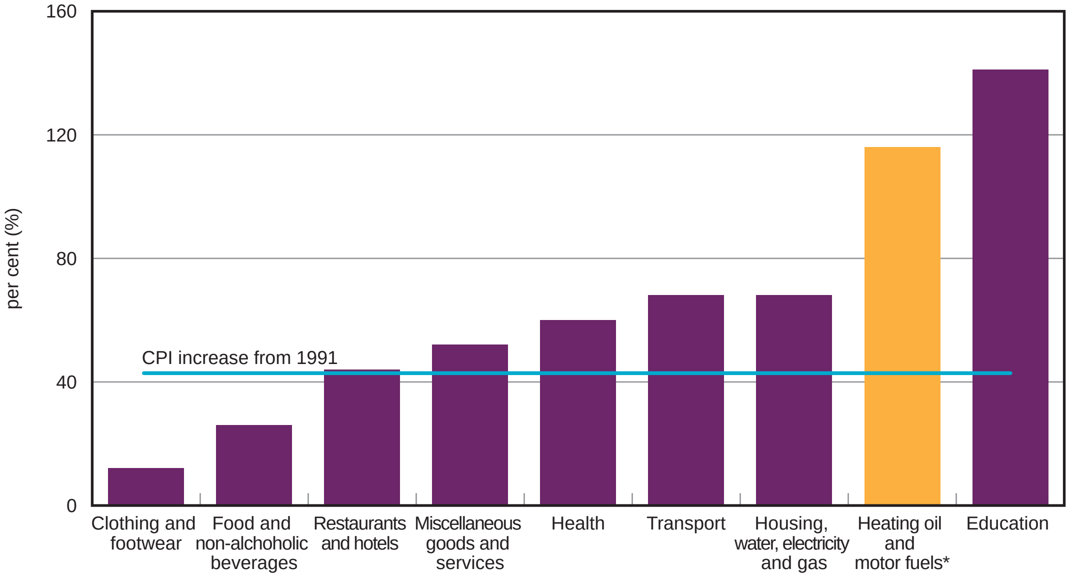
Chart 12.24 New Zealand comparative changes in the retail prices of fuel and other consumer items: 1981 to June 2010



Source: ACCC calculations based on data from Statistics New Zealand, Consumer Price Index (using Infoshare data dating back to 1981), at http://www.stats.govt.nz/infoshare/, accessed 30 November 2011

Notes: Coffee, tea and other hot drinks commence from 1983.

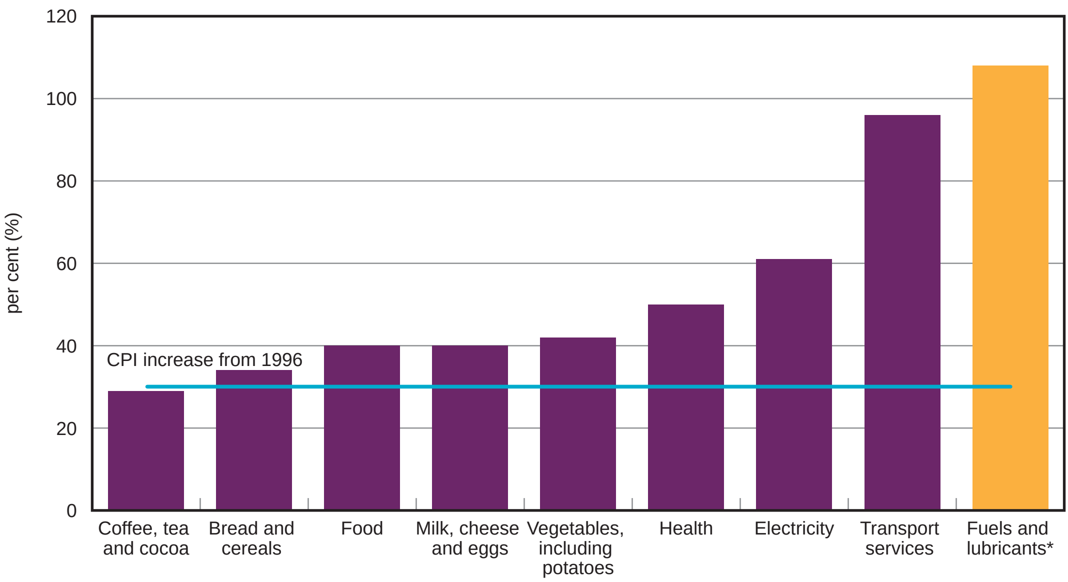
Chart 12.25 Germany comparative changes in the retail prices of fuel and other consumer items: 1991 to June 2010



Source: ACCC calculations based on data from Federal Statistical Office Germany, 2011, Consumer Price Index 1991 to 2010, annual, at http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/EN/Content/Statistics/TimeSeries/EconomicIndicators/BasicData/Content100/vpi101a,templateId=renderPrint.psml, accessed 30 November 2011

Notes: Fuel category contains petrol and home heating oils.

Chart 12.26 Comparative changes in the retail prices of fuel and other consumer items in the UK: 1996 to June 2010



Source: ACCC calculations based on data from Office for National Statistics (UK), 2011, Consumer Price Index (using Statbase 1996 to 2010), at http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Consumer+Price+Indices, accessed 30 November 2011

12.7 Conclusions

Evidence considered in this chapter demonstrates that Australia's experience with petrol prices is similar to a number of major petroleum markets around the world.

In particular:

- Despite some elements of the Australian petrol industry that are different compared with other countries, Australia's experience in petrol pricing is in many respects not unique. The following aspects of petrol pricing behaviour are evident in other countries:
  - retail petrol prices are largely driven by movements in their relevant international benchmark prices
  - changes in exchange rates have significant effects on retail prices.
- Short-term cyclical movements in petrol prices are not limited to the Australian market. In Germany, for example, petrol prices appear to move in regular cyclical patterns over the course of the week in a number of cities.
- Compared with other countries, however, some evidence suggests that Australian price cycles may have a larger amplitude.
- Similar to Australia, the price of crude oil and taxes also account for the majority of the price of petrol in many other countries.
- Australia has the fourth lowest retail petrol prices in the OECD, due mainly to the fact that the level of taxation on petrol is relatively low compared with other OECD countries.
- While Australian petrol prices have moved slightly higher than CPI movements over the last 30 years, with the exception of New Zealand, fuel prices in other countries considered in this chapter appear to have risen considerably more than their respective CPI.
- Similar to the trend evident in Australia, some of the countries examined in this chapter have also experienced a long-term decline in retail site numbers.

13 Financial performance of the total downstream petroleum industry

Key points

- The Australian downstream petroleum industry recorded a unit net profit of 2.54 cents per litre (cpl), or $2.2 billion on sales of 86 billion litres of fuel and total revenue of $68 billion.
- Product contributions to profits in the downstream petroleum industry were:
  - petrol products (that is, RULP, PULP and EBP) earned unit net profit of 2.17 cpl, or $807 million on sales of 37 billion litres and total revenues of $28.6 billion.
  - diesel earned unit net profits of 2.4 cpl, or $764 million on sales of 32 billion litres and total revenue of $24.7 billion.
- The refinery sector earned 0.91 cpl on sales of 38.2 billion litres and total revenues of $26.4 billion.
- The wholesale sector earned 1.96 cpl on sales of 49 billion litres and revenues of $37.9 billion.
- The retail sector earned 2.1 cpl on sales of 17.4 billion litres and revenues of $17 billion.

13.1 Introduction

This chapter considers the overall financial performance of the downstream petroleum industry, including the total supply (refining, importing and buy–sell transactions), wholesale and retail sectors. In particular, the chapter reports on the revenues, costs and profits associated with the supply of petroleum products, as specified by the Minister's direction of 13 May 2010.

The revenues, costs and profits in the total supply sector (including refining) are discussed in greater detail in chapter 14, while chapter 15 focuses on the revenues, costs and profits in the wholesale and retail sectors. Indicators of financial performance are also included for petrol products (regular unleaded petrol (RULP), premium unleaded petrol (PULP, RON 95 and RON 98), and ethanol blended petrol (EBP)). The financial results of activities in marketing other products in the downstream petroleum industry, such as diesel, are also discussed.

13.2 Overview of financial performance of the total downstream petroleum industry

In 2010–11, the Australian downstream petroleum industry earned $2.2 billion in net profits. Unit net profits were 2.54 cents per litre (cpl). Total revenue was estimated to be around $68 billion and total sale volumes were estimated to be 85,550 million litres (ML). Sale volumes, revenues, total net profits and unit net profits were higher than the average for the period 2002–03 to 2010–11.

Total net profits on petrol products, that is, regular unleaded petrol (RULP), premium unleaded petrol (PULP) and ethanol blended petrol (EBP), were $807 million. Unit net profit on petrol products for 2010–11 was 2.17 cpl. Total revenues from sales of petrol products were estimated to be around $29 billion and total petrol sale volumes were 37,122 million litres (ML). Diesel contributed around $764 million to total industry net profits. Average unit net profit on diesel products were higher than the average for all products and for petrol products.

Table 13.1 shows sale volumes, revenues and net profits (adjusted EBIT) for the total downstream industry, for all products, for petrol products and for diesel. Table 13.1 also provides average values for these products from 2002–03 to 2010–11.

Table 13.1 Sale volumes, revenues and net profits in the downstream sector: 2010–11 and average for 2002–03 to 2010–11

		2010–11	2002–03 to 2010–11 average
All products	Sale volumes (ML)	85,550	78,852
	Total revenue ($ million)	67,820	52,703
	EBIT ($ million)	2,171	1,568
	Unit EBIT (cpl)	2.54	2.00
Petrol	Sale volumes (ML)	37,122	36,190
	Total revenue ($ million)	28,579	23,454
	EBIT ($ million)	807	577
	Unit EBIT (cpl)	2.17	1.59
Diesel	Sale volumes (ML)	31,814	26,294
	Total revenue ($ million)	24,654	17,743
	EBIT ($ million)	764	709
	Unit EBIT (cpl)	2.40	2.69

Sources: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

The wholesale sector was the largest contributor to total industry profit with $966 million, or 44 per cent of total downstream profit. This wholesale profit is 44 per cent above the wholesale sector's average profit over the period 2002–03 to 2010–11. The total supply sector was the second-largest contributor to total industry profit with $847 million, or 39 per cent of total profit. The retail sector contributed $359 million to total industry profit.

Diesel contributed around 35 per cent of total downstream profit. PULP products net profit was estimated to be $450 million or 21 per cent of total profit. RULP products earned an estimated $289 million, or 13 per cent of total profits.

It is likely that inventory gains had a material impact on total profits in 2010–11. In the petroleum industry, prices are established with reference to international prices of crude oil and refined petrol. Like the prices of other globally traded commodities, the prices of crude oil and refined product are volatile and affected by changes in global supply and demand conditions. Since the on set of the Global Financial Crisis in 2007–08, international prices have risen significantly. These price rises have resulted in sustained upward adjustments in the value of stocks held and then subsequently sold. Those companies that report profits on a replacement cost basis are able to quantify the effect of inventory gains, but for others in the industry which report on a historical cost basis, it is not possible to quantify the precise effect of inventory gains or losses.

The remainder of the chapter discusses the performance of the downstream petroleum industry by:

- total industry performance, for all products
- total industry performance for petrol products
- total industry performance for individual products (e.g. RULP, PULP and EBP)
- sectoral performance summary.

13.3 Revenues, costs and profits in the downstream industry: all products

13.3.1 Revenues and costs, all products

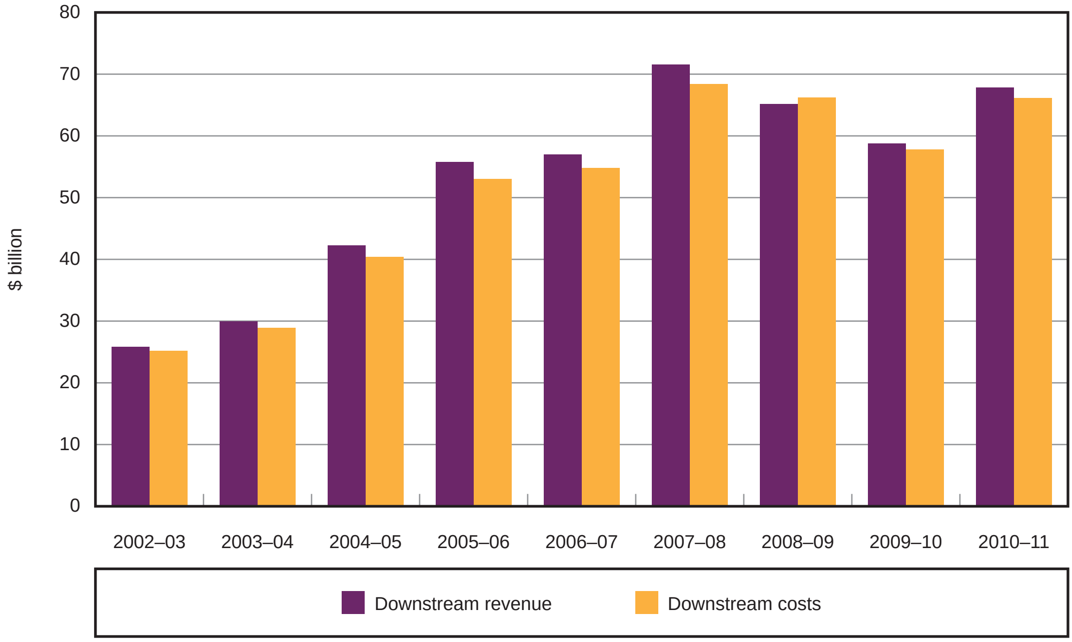
The main sources of revenue in the downstream petroleum industry include:

- revenues from refining crude oil into fuels and other petroleum products
- revenue from the on-selling of refined products (petrol, diesel and LPG) and other products such as lubricants and bitumen
- revenue from the on-selling of fuel products to the public through retail sites
- revenues from selling retail convenience store products and services.

In 2010–11, total revenues and costs in the petroleum industry increased to around $68 billion. This increase reflects higher average prices when compared to the previous year (due to higher international prices) and an increase in volumes of 3.3 per cent over the previous year.

Chart 13.1 shows the total revenues and costs for all monitored firms for the period 2002–03 to 2010–11.

Chart 13.1 Downstream industry revenues and costs, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

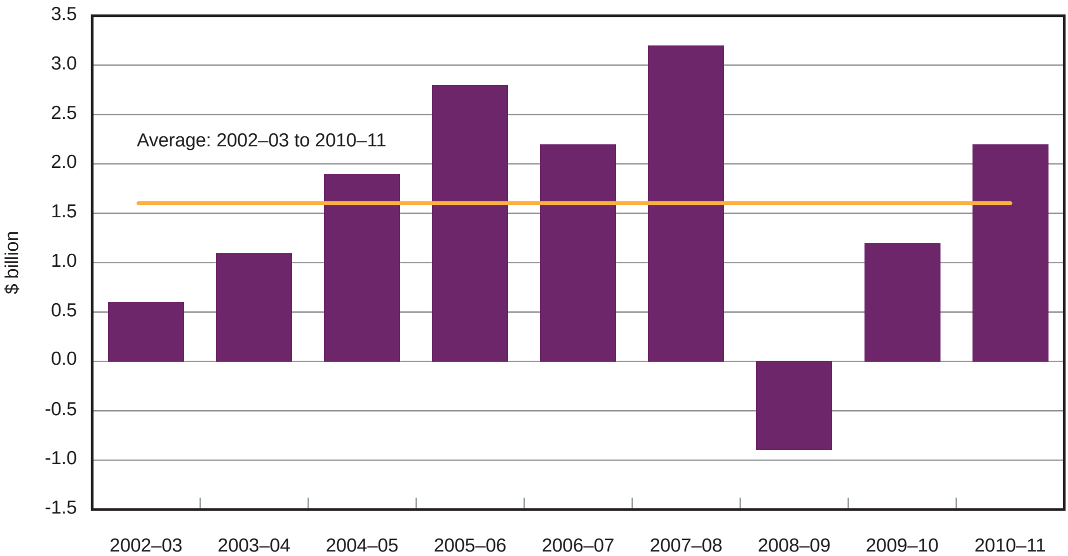
13.3.2 Total and unit net profits, all products

The ACCC uses a number of profitability measures for the downstream petroleum industry. One of the key measures is net profit (adjusted EBIT). Net profit is a standard accounting measure of earnings from the perspective of shareholders. Further details on KPIs used in this chapter can be found in section 13.10 at the end of this chapter. The adjusted EBIT (net profit) excludes a number of items including impairment costs, amortisation and profit or loss on the sale of assets. Substantial amounts in one or more of these categories were reported to the ACCC for 2010–11 and therefore underlying profitability may differ from the net profit data presented in this chapter.

Chart 13.2 shows net profit for all monitored firms from 2002–03 to 2010–11. Points from this chart include:

- Net profit for the downstream petroleum industry for 2010–11 was $2.2 billion compared with average net profit for the period 2002–03 to 2010–11 of $1.6 billion. The financial performance of the downstream industry for 2010–11 was affected by increased volumes produced or traded, and by inventory valuation changes. Inventory valuation changes occur when a company purchases a product for on-selling and the market price of the product either increases or declines by the time the product is sold.[262] During 2010–11, the price of crude oil and refined product generally rose. In this case, it is likely that inventory valuations increased over time relative to the original purchase price. Companies in the refining and importing sector can benefit from inventory gains in a rising market (and conversely suffer losses when petrol prices fall).[263]
- Over the time series, profits have been variable due to changes in international prices of crude and refined petrol. In light of this, assessing profits in any one year in isolation may be misleading.

Chart 13.2 Downstream industry net profit, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

262 In companies which report data on a replacement cost basis, the difference between the purchase and sell price is recorded as an inventory gain or loss in a company's accounts. Generally, those companies which report on a historical cost basis do not record inventory gains or losses. Data for the ACCC petrol monitoring program has been provided on a historical cost basis and thus did not include separate values for inventory valuation changes.

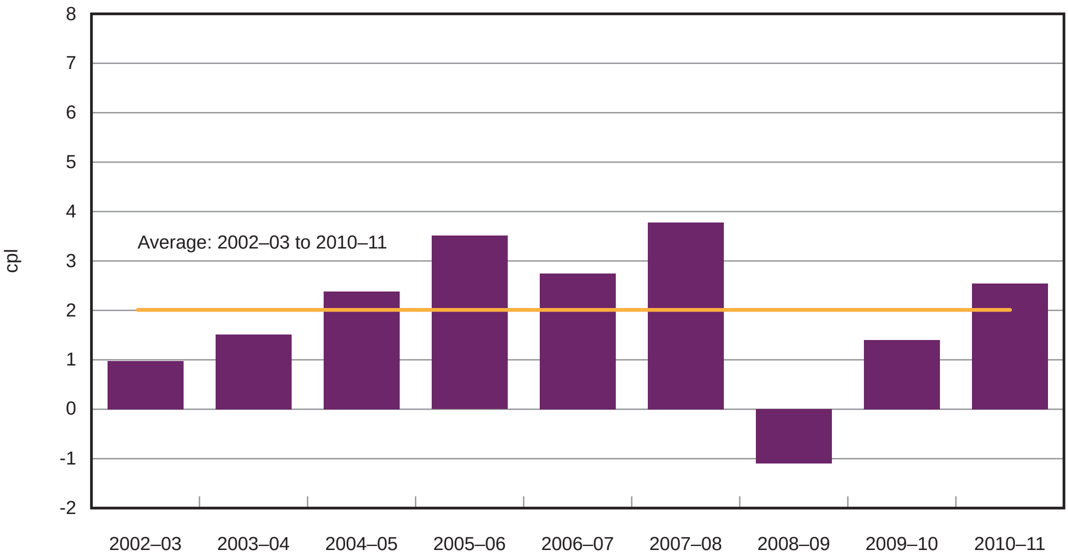
263 As an example, Caltex reported in their 2011 half yearly profit results to the Australian Securities Exchange that inventory gains comprised around 38 per cent of the total, half yearly historical cost EBIT result of $416 million. Caltex, 2011 Half year review: shareholder report, at http://www.asx.com.au/asx/statistics/announcements.do?by=asxCode&asxCode=CTX&timeframe=D&period=W, accessed 30 November 2011.

Unit net profits represent total net profit divided by total volume, after the elimination of inter-company volume transfers. Unit net profits are presented in terms of cents per litre (cpl).

Chart 13.3 displays unit net profit for all monitored companies for the period 2002–03 to 2010–11.

Chart 13.3 indicates that unit net profit for the downstream petroleum industry was 2.54 cpl in 2010–11. The average unit net profit over the period 2002–03 to 2010–11 has been 1.99 cpl.

Chart 13.3 Downstream industry unit net profit, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process.

13.3.3 Other key performance indicators

This section presents other profit KPIs for the downstream petroleum industry. To measure the profitability of different products and activities, a common accounting method is to compare net profits (in this instance, adjusted EBIT) to sales and to total assets. An alternative measure to return on assets is return on capital employed, which is net profit divided by the sum of total adjusted assets less current adjusted liabilities of the business (see the discussion in box 13.1 at the end of this chapter).

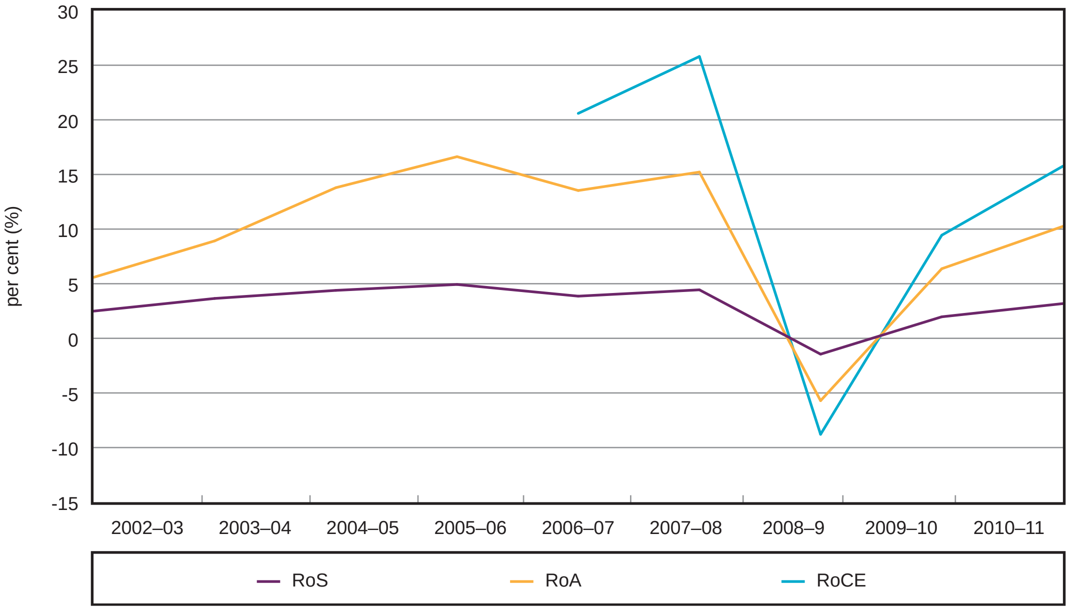
Chart 13.4 displays these profit KPIs for the period 2002–03 to 2010–11. Note that return on capital employed is presented from 2006–07 to 2010–11.

Return on sales (RoS) increased to 3.2 per cent in 2010–11. The weighted average RoS over the nine years to 2010–11 was 2.97 per cent.

Return on assets (RoA) for the downstream industry was 10.3 per cent in 2010–11, compared with the long-term weighted average of 9.6 per cent.

Return on capital employed (RoCE) increased to 15.8 per cent in 2010–11. This compares with the long-term return average on capital employed average of 12.4 per cent.

Chart 13.4 Downstream industry return on sales, return on assets and return on capital employed, all products: 2002–03 to 2010–11



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

Note: Return on capital employed is presented from 2006–07 onwards.

Chart 13.4 shows variability in these KPIs over time, particularly for RoA and RoCE.

13.4 Revenues, costs and profits in the downstream industry: petrol products

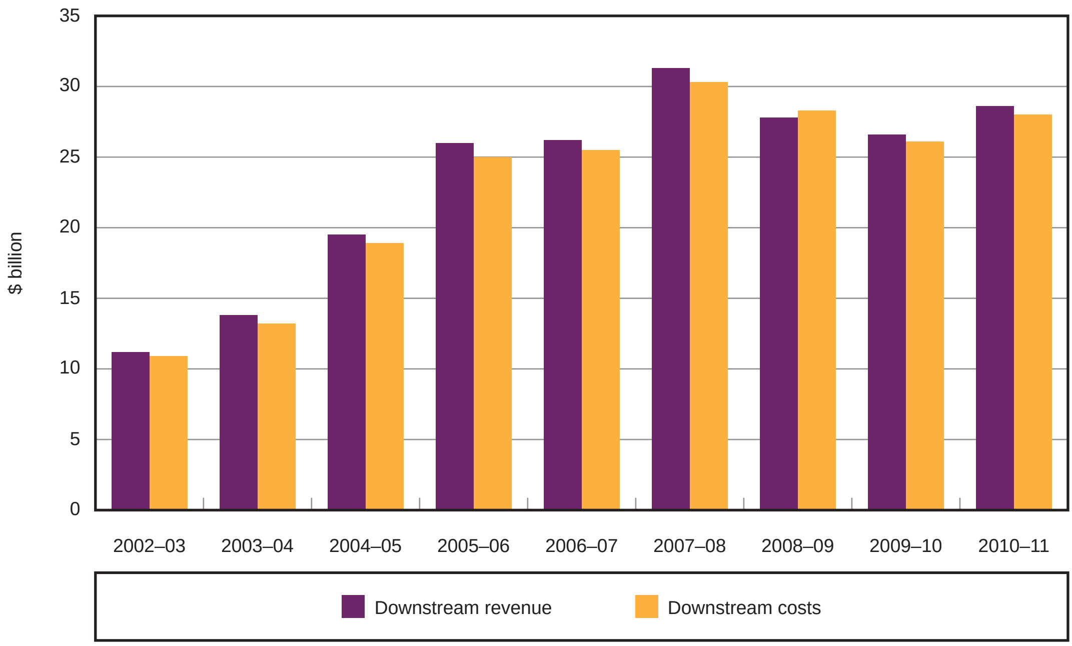
13.4.1 Revenues and costs of petrol products

The previous section discussed overall revenues, costs and profits associated with the production and marketing of all products in the downstream petroleum industry. This section discusses the profitability of the downstream 'petrol' industry. Petrol refers to the group of products including RULP, PULP and EBP. As discussed in section 13.10.2 the ACCC has estimated profits to individual products by the allocation of expenses to products.

Petrol revenues rose to $28.6 billion and costs increased to $28 billion. Total petrol volumes decreased slightly during 2010–11, down 1.6 per cent from 2009–10.

Chart 13.5 shows the total revenues and costs of petrol for all monitored firms for the years 2002–03 to 2010–11.

Chart 13.5 Downstream industry revenues and costs, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.4.2 Total net profit and unit net profit, petrol products

The ACCC has estimated net profits (adjusted EBIT) for petrol products for the entire downstream industry. These net profits represent a standard accounting measure of net earnings on petrol products accruing to shareholders.

Chart 13.6 displays net profit for all monitored companies for the years 2002–03 to 2010–11. Chart 13.6 indicates that:

- in 2010–11, net profit for petrol increased to $807 million
- since 2002–03, net profit ranged from a loss of $485 million in 2008–09 to a high of $1,063 million in 2007–08.

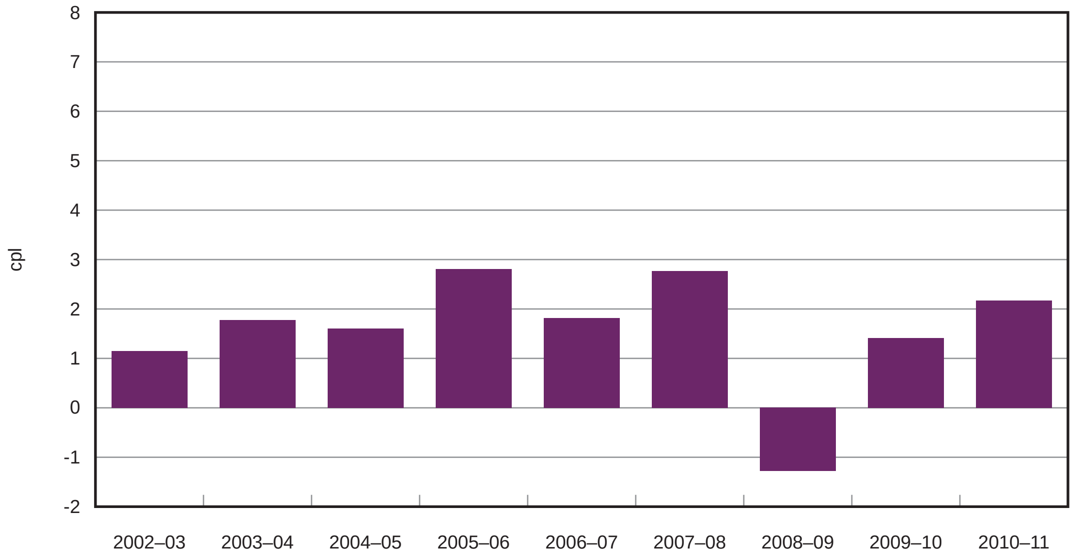
Chart 13.6 Downstream industry net profit (adjusted EBIT), petrol products: 2002–03 to 2010–11

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 13.7 displays unit net profit for petrol for all monitored companies from 2002–03 to 2010–11. Chart 13.7 indicates that:

- unit net profit for petrol in the downstream industry was 2.17 cpl in 2010–11.
- unit net profit on petrol products has been variable over the time series.

Chart 13.7 Downstream industry unit net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.4.3 Motorist's perspective profits, petrol products

The profitability data presented in sections 13.3.1 to 13.3.3 is for the entire downstream petroleum industry and is derived using standard Australian accounting principles. Inter-sector adjustments have been made to disaggregate intra-company transactions across different sectors of the industry. The data reflects the results of transactions between petrol companies and all their customers. This includes overseas purchasers, other refiner-marketers, wholesalers, commercial customers and retail customers and motorists.

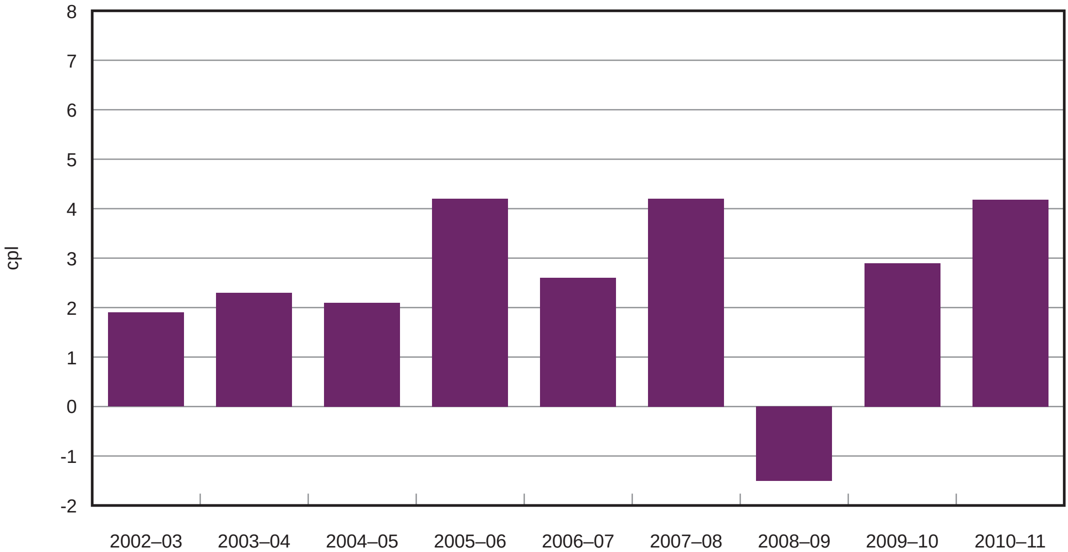
As an additional indicator of profitability, the ACCC has attempted to estimate profits associated with petrol sales to motorists. Due to data reporting difficulties, it is not possible to arrive at a precise measure of profits contributed by motorists. However, the 'motorist's perspective' profit is presented as an estimate of how much profit motorists may pay to the industry with each litre of petrol purchased. It is calculated by estimating each sector's (total supply, wholesale and retail) profit or loss by taking into account the revenues and costs in that particular sector.[264] The motorist's perspective profit is a measure of the sum of the unit net profit in each sector as a stand-alone business.[265] This measure ignores inter-sector volume transfers.

Chart 13.8 shows that the motorist's perspective unit net profit on petrol for 2010–11 was 4.18 cpl.

264 To quantify this example, if we have three non–vertically integrated companies, each working in a separate sector such as total supply, wholesale and retail. If each company made a unit net profit of 2 cpl, then from the motorist's perspective, the total unit net profit of the industry would be 6 cpl.

265 Each sector's unit gross (net) profit has been added to estimate unit gross (net) profit the industry receives from selling each litre of petrol at the retail level. This aggregated profit measure from the motorist's perspective is different from the consolidated profit measure for the industry as presented in chart 13.7, which calculates the downstream petrol industry average cpl profitability. However, from the motorist's perspective, the unit profits at each sector have been added in order to illustrate the 'total unit net profit' that all consumers pay when purchasing a litre of petrol.

Chart 13.8 Motorist's perspective—downstream industry unit net profits, petrol products: 2002–03 to 2010–2011



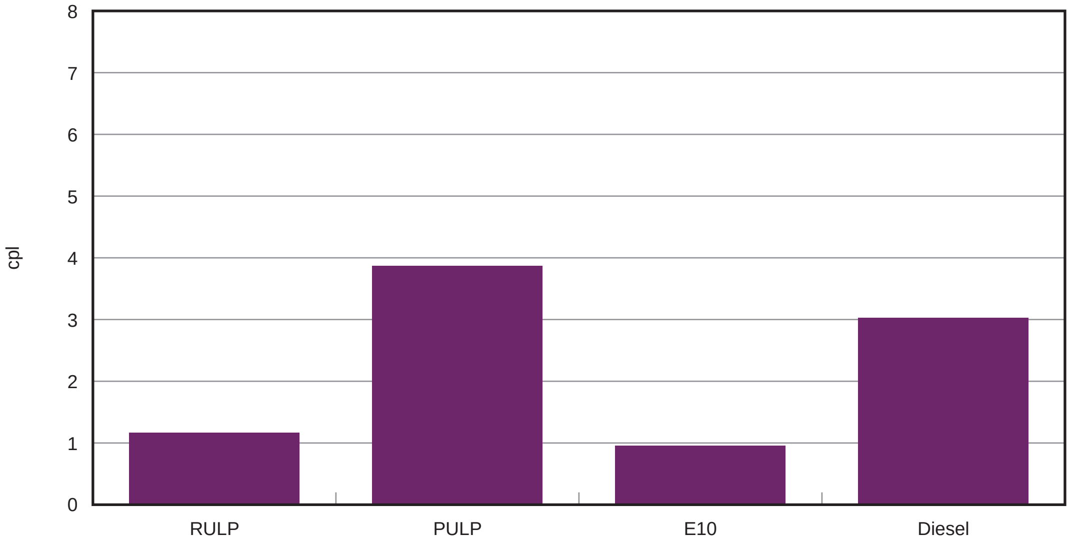
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.4.4 Unit net profits by fuel type

Unit net profit in cpl has been estimated for each product type. Section 13.10.2 describes the methodology used for splitting costs by product and the caveats on this measure.

Chart 13.9 displays estimates of average unit net profit by fuel type for the years 2005–06 to 2010–11: premium unleaded fuels earned an estimated average unit net profit of 3.9 cpl while average diesel unit net profits were 3 cpl.

Chart 13.9 Downstream industry average annual unit net profit, by fuel type: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.5 Revenues and profits by sector: all products

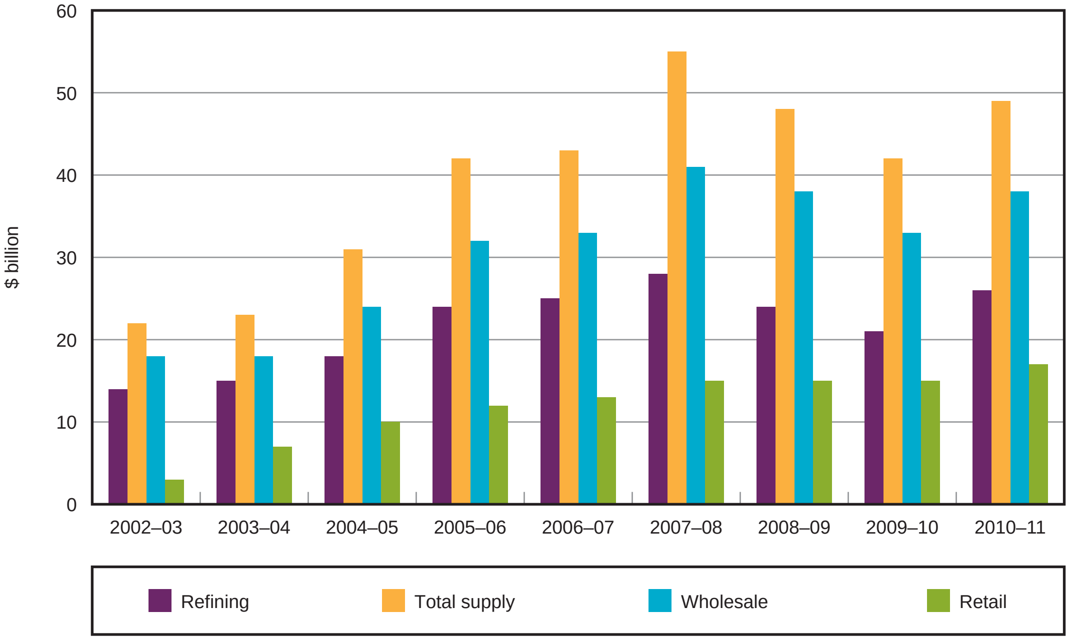
This section provides a sectoral split of total revenues and profits across all products and services in the downstream petroleum industry. This section discusses the financial performance of the refinery sector, total supply (which includes refining, imports and buy–sells), wholesale and retail sectors. Further detailed financial information on these sectors is presented in chapters 14 and 15.

13.5.1 Sectoral revenues, all products

Total revenues by sector are provided in chart 13.10. The following observations can be made from this chart:

- Revenues in the total supply sector are higher than in other sectors. Data collected by the ACCC for the total supply sector covers a greater proportion of this sector's activities than data collected for other sectors. Revenue in the total supply sector is affected by changes in international product prices to a greater degree than other sectors. This is because as stocks are typically held in the total supply sector, inventory valuation adjustments due to changes in international prices of crude oil and refined petrol are realised in this sector.
- Since 2002–03, total supply shows the greatest variance in revenue movements. The greater volatility in refinery and total supply revenues and costs may be influenced by the exposure of these sectors to international price movements and exchange rate movements. These risks are especially elevated when international markets are volatile, as has been the case since 2007–08.

Chart 13.10 Revenues by sector in the downstream industry, all products: 2002–03 to 2010–11



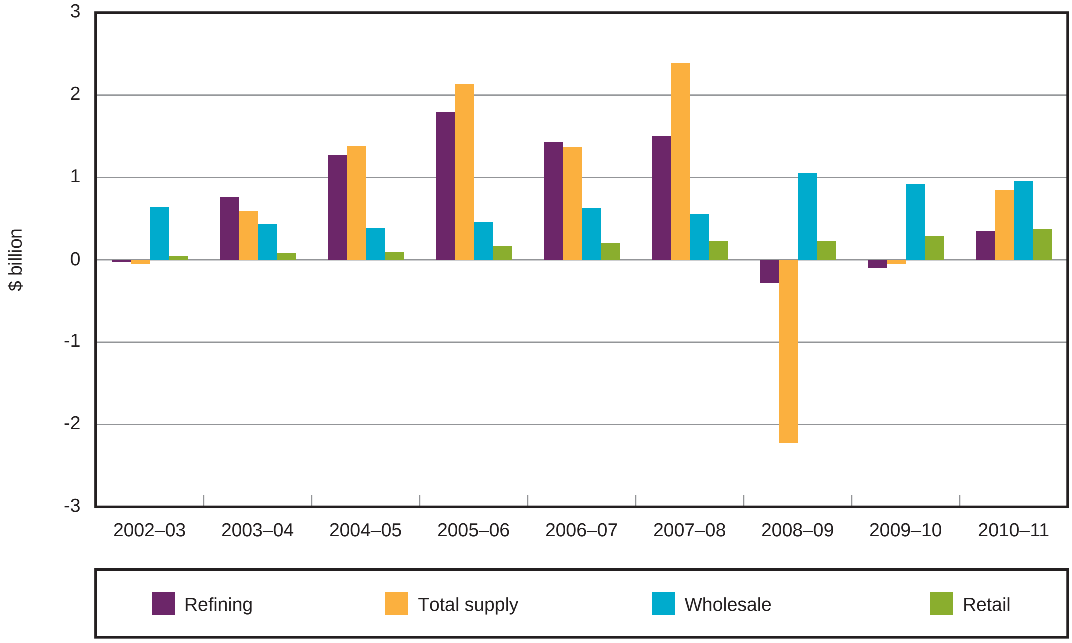
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.5.2 Sectoral net profits, all products

Total net profit by sector is provided in chart 13.11. Observations that can be made from this chart include:

- In 2010–11, net profit in the wholesale sector was $966 million.
- The refinery and total supply sectors have recovered from the losses incurred in 2008–09 and 2009–10 to earn profits of $348 million and $847 million respectively.
- The losses in refining and total supply over the past two years are in contrast with the four years between 2004–05 and 2007–08 when both these sectors were profitable.

Chart 13.11 Downstream industry net profits by sector, all products: 2002–03 to 2010–11



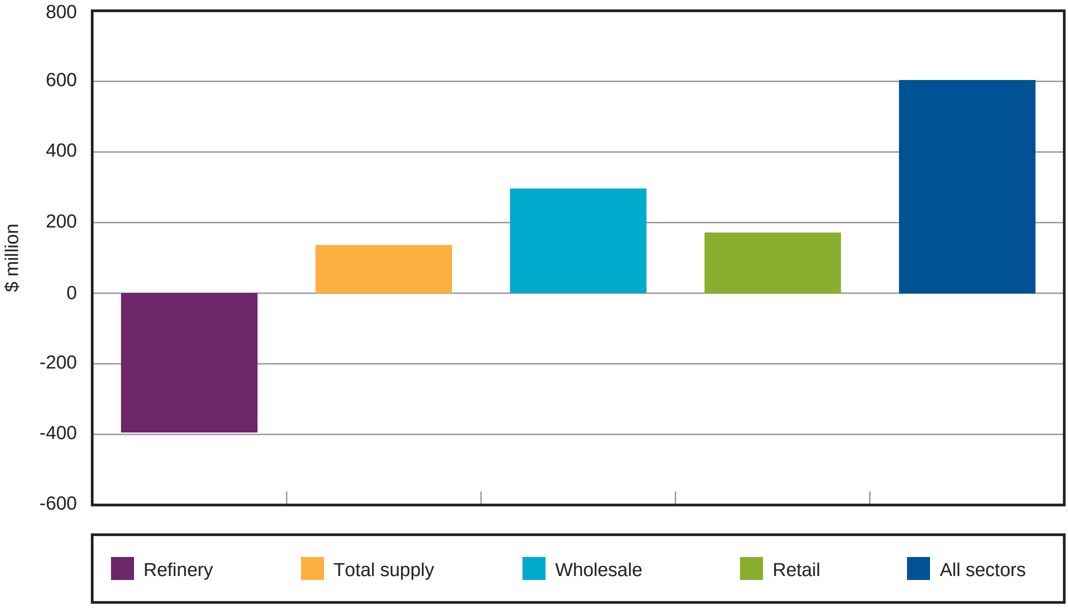
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.5.3 Sectoral variation with average profit, all products

Net profits by sector in 2010–11 have been considered relative to their long-term average net profits from 2002–03 to 2010–11. These are displayed in chart 13.12 which shows:

- Although improving from 2009–10, refinery net profits for 2010–11 were lower than their long-term averages.
- Total supply sector net profit for 2010–11 was above its long-term average.
- The wholesale sector net profit exceeded the long-term average. In 2010–11, the wholesale sector net profit was $296 million above its long-term average.
- The retail sector net profit for 2010–11 was $172 million above the long-term average.

Chart 13.12 Downstream industry net profits by sector relative to long-term average, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

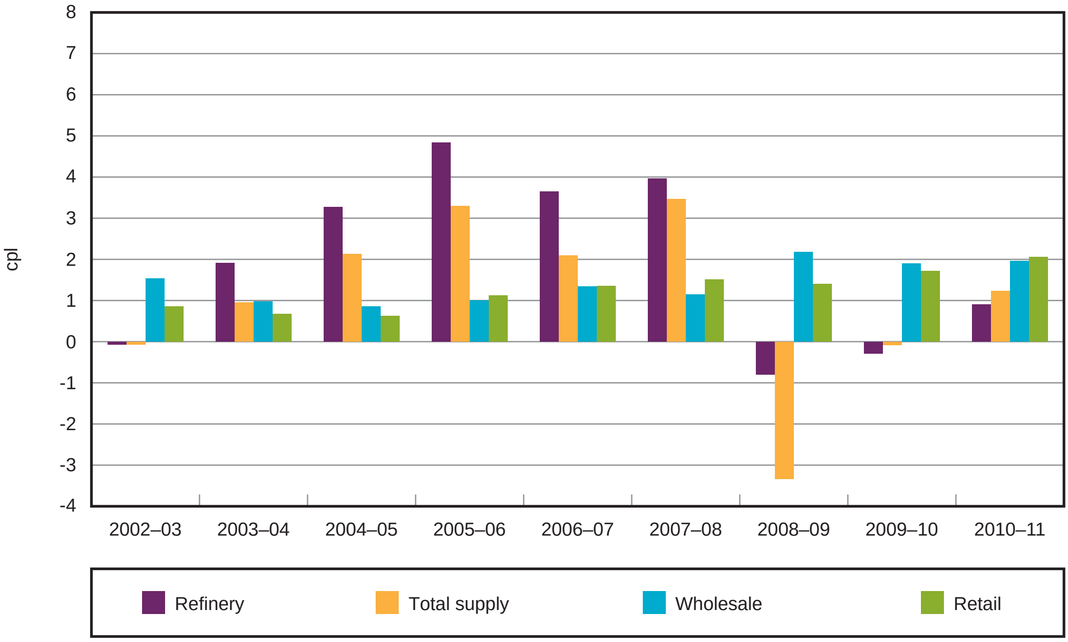
13.5.4 Sectoral unit net profits, all products

Unit net profit by sector is presented in chart 13.13. Findings include:

- Unit net profit for 2010–11 in the wholesale sector was 1.96 cpl.
- The average unit net profit for the entire time series in the refinery sector has been 1.96 cpl.
- The retail sector unit net profit for 2010–11 was 2.1 cpl.[266] The average over the time series was 1.3 cpl.
- Total supply sector average unit net profit was 1.08 cpl.

266 Note that retail unit net profits are derived from total retail profits, which include convenience store profits.

Chart 13.13 Downstream industry unit net profits by sector, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

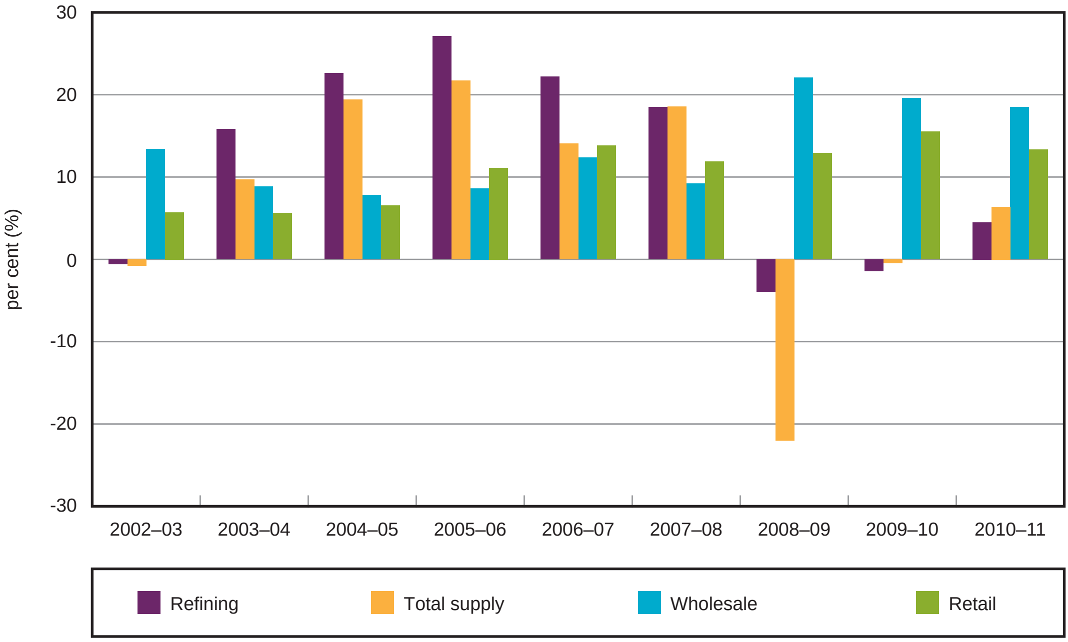
13.5.5 Sectoral return on assets, all products

The rate of return on assets (RoA) by sector for the period 2002–03 to 2010–11 is shown in chart 13.14.

This chart shows that:

- The wholesale sector's rate of return on assets was 18.5 per cent in 2010–11.
- The retail sector's RoA for 2010–11 was 13.4 per cent.
- The refinery and total supply sectors' RoA for 2010–11 was 5 and 6 per cent respectively. The average RoA for 2002–03 to 2010–11 for the refining sector was 11 per cent and for total supply, 7 per cent.

Chart 13.14 Downstream industry return on assets by sector: all products 2002–03 to 2010–11 average



Source: ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process

13.6 Petrol profits by sector: petrol products

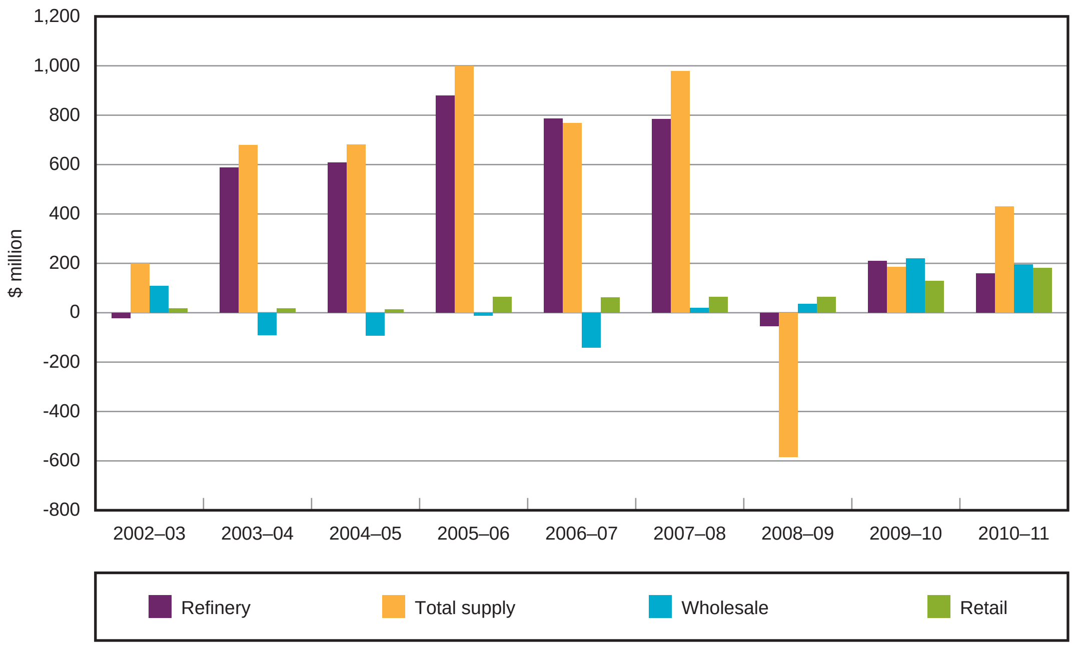
This section provides KPIs on net profits by sector for petrol products. Petrol net profits include profits earned on RULP, PULP and EBP. Further detailed financial information on these products is presented in chapters 14 and 15.

13.6.1 Sectoral net profits, petrol products

During 2010–11, all sectors continued to show profits on petrol products. Chart 13.15 displays petrol net profit for all sectors. Points from the chart include:

- Total supply sector net profits on petrol products in 2010–11 were $430 million.
- The refinery sector earned net profits on petrol of $159 million in 2010–11.
- The total supply sector's average net profit on petrol over the period 2002–03 to 2010–11 has been $482 million.

Chart 13.15 Downstream industry, net profits by sector, petrol products: 2002–03 to 2010–11



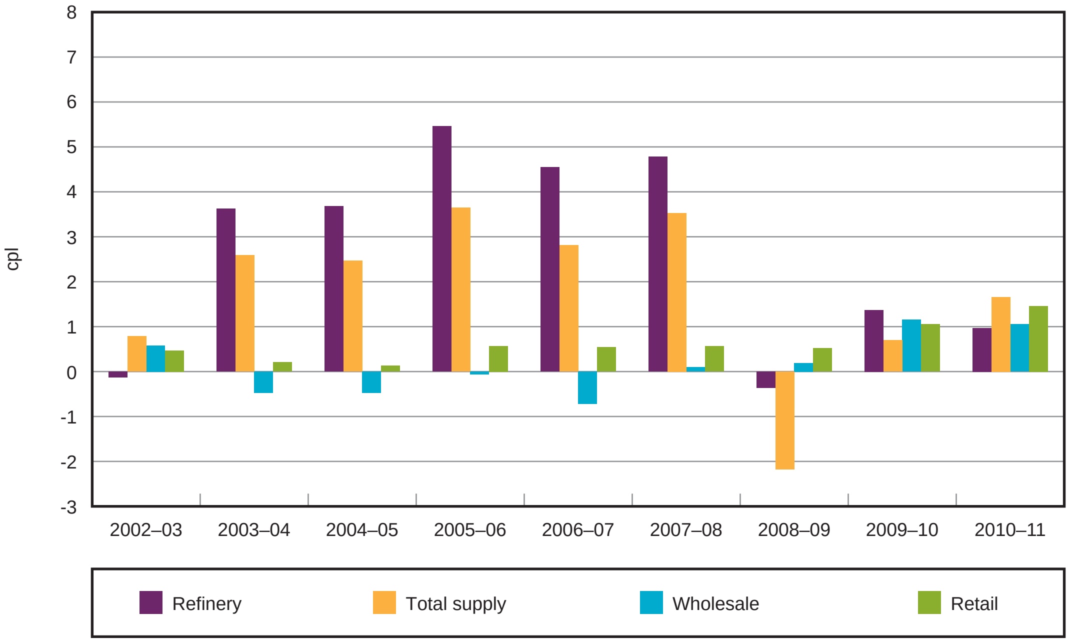
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.6.2 Sectoral unit net profits, petrol products (cpl)

Chart 13.16 displays sectoral unit net profit on petrol. Chart 13.16 shows that in 2010–11:

- The refinery sector unit net profit for petrol was 0.97 cpl.
- The total supply and retail sectors had unit net profits on petrol of 1.7 and 1.5 cpl respectively.
- The wholesale sector unit net profit on petrol was 1 cpl.

Chart 13.16 Downstream industry, unit net profits by sector, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

13.7 Comparison of the profitability of the downstream petroleum industry with other industries

The ACCC has developed benchmarks to assess the Australian downstream petroleum industry's profitability against other Australian industries. The ACCC has used the Australian Securities Exchange's top 200 businesses by market capitalisation (ASX200) to compile KPIs by individual industries such as energy, transportation and utilities.

Note that the ASX200 groupings are based on the Standard and Poor's' Global Industry Classification Standard (GICS). The KPIs used include return on sales and the return on assets for the ASX200 top 10 GICS industry groups, based on market capitalisation with at least three companies in each industry group (for comparative purposes, the financial and media ASX sectors have been excluded). These industry groups are compared with the downstream petroleum industry.

In relative terms, the return on sales for the downstream petroleum industry is relatively low, while the return on assets is estimated to be the same as the average of ASX200 companies.

13.7.1 Australian comparison: return on sales

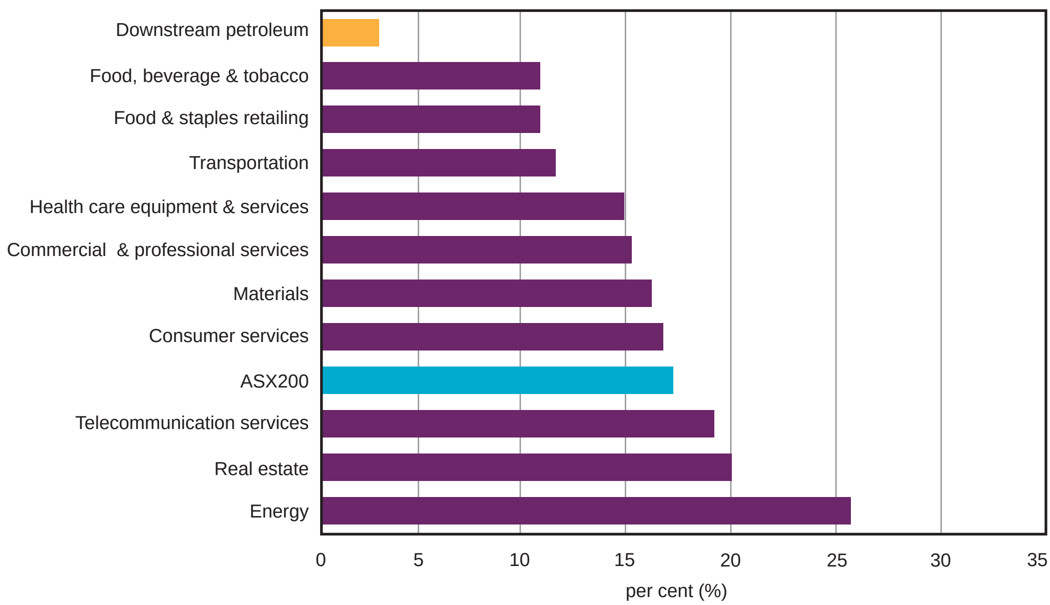
Chart 13.17 presents average return on sales (RoS) for the period 2002–03 to 2010–11 and compares the downstream petroleum industry to a selection of Australian industries.

Observations from the chart include:

- The downstream petroleum industry has the lowest RoS among other selected industries. The average downstream petroleum industry ROS between 2002–03 and 2010–11 was, approximately 3 per cent.
- The ASX200 average for the period 2002–03 to 2009–10 was around 18 per cent. The energy grouping had the highest RoS with around 27 per cent.

The downstream petroleum industry, particularly in the wholesale and retail sectors is regarded as a high-volume, low-margin industry. These types of industries will generally have lower RoS when compared to low-volume, high-margin industries such as complex manufacturing.

Chart 13.17 Comparison of return on sales for downstream petroleum sector, ASX average and ASX top 10 GICS industry groupings (excluding financial and media sectors): 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Note: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoS of more than 70 per cent (positive and negative) in any year have been excluded; Caltex has also been excluded.

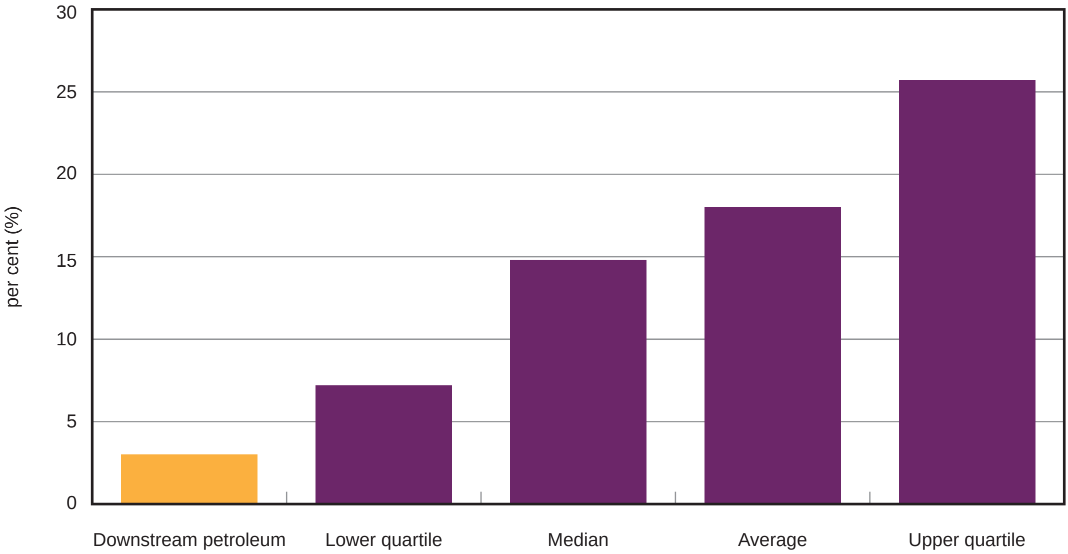
Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

The energy industry grouping does not include utilities companies. Although the utilities' grouping was used separately in the same chart in the 2010 monitoring report, this grouping was not included in the 2011 monitoring report because it was no longer one of the top 10 GICS industry groupings and therefore ineligible for inclusion in the chart. The utilities industry grouping was replaced by real estate in this year's top 10 industry groupings.

Chart 13.18 presents the ASX200 RoS for all units (refer to the notes under the chart for exclusions) with rankings for the lowest and highest quartile and the median and average results.

The downstream petroleum industry is substantially below the lower quartile grouping. Average return on sales for the ASX200 was around 18 per cent.

Chart 13.18 Comparison of return on sales for downstream petroleum industry and ASX200 companies: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process, Bloomberg and Bureau van Dijk Orbis database

Note: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoS of more than 70 per cent (positive and negative) in any year have been excluded; Caltex has also been excluded.

Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

The energy industry grouping does not include utilities companies. Although the utilities' grouping was used separately in the same chart in the 2010 monitoring report, this grouping was not included in the 2011 monitoring report because it was no longer one of the top 10 GICS industry groupings and therefore ineligible for inclusion in the chart. The utilities industry grouping was replaced by real estate in this year's top 10 industry groupings.

13.7.2 Australian comparison: return on assets

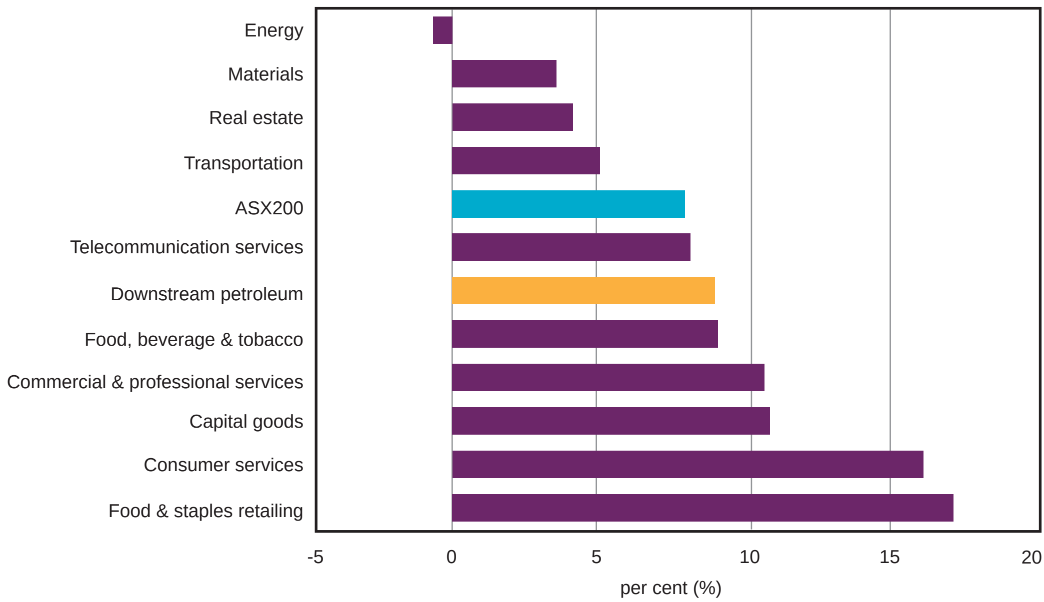
This section compares the rate of return on assets (RoA) in the downstream petroleum industry with the ASX200. Return on assets is not as adversely affected as RoS by high-volume low-margin industries and provides a clearer comparison between the petroleum sector and other Australian industries.

Results of analysis of comparative RoA data must be treated with caution. The asset data is based on depreciated historical cost values provided to the ACCC by the monitored companies. The values of these assets are not market based as they are not generally traded in a liquid market. Estimates of return on assets are affected by the use of different asset valuation approaches and by the asset age profile. For example, all else equal, a company with old assets valued on the basis of depreciated historical cost will generally have a smaller asset base than a company which either values assets on a replacement cost basis or which has a younger asset age profile. Some assets in the Australian downstream petroleum industry, particularly in the refinery sector, may have a higher than average age profile.

Chart 13.19 presents RoA for the period 2002–03 to 2010–11 and compares the downstream petroleum industry to ASX200 derived industry groupings. Points from the chart include:

- The average RoA for the Australian downstream petroleum industry was 9.6 per cent compared with the ASX200 average of 8.5 per cent.
- Food and staples retailing has the highest average RoA of 18.3 per cent.

Chart 13.19 Comparison of return on assets for downstream petroleum industry, ASX average and ASX top 10 GICS industry groupings (excluding financial and media sectors): 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process, Bloomberg and Bureau van Dijk Orbis database

Note: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoA of more than 70 per cent (positive and negative) in any year have been excluded; Caltex has also been excluded.

Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

The energy industry grouping does not include utilities companies. Although the utilities' grouping was used separately in the same chart in the 2010 monitoring report, this grouping was not included in the 2011 monitoring report because it was no longer one of the top 10 GICS industry groupings and therefore ineligible for inclusion in the chart. The utilities industry grouping was replaced by real estate in this year's top 10 industry groupings.

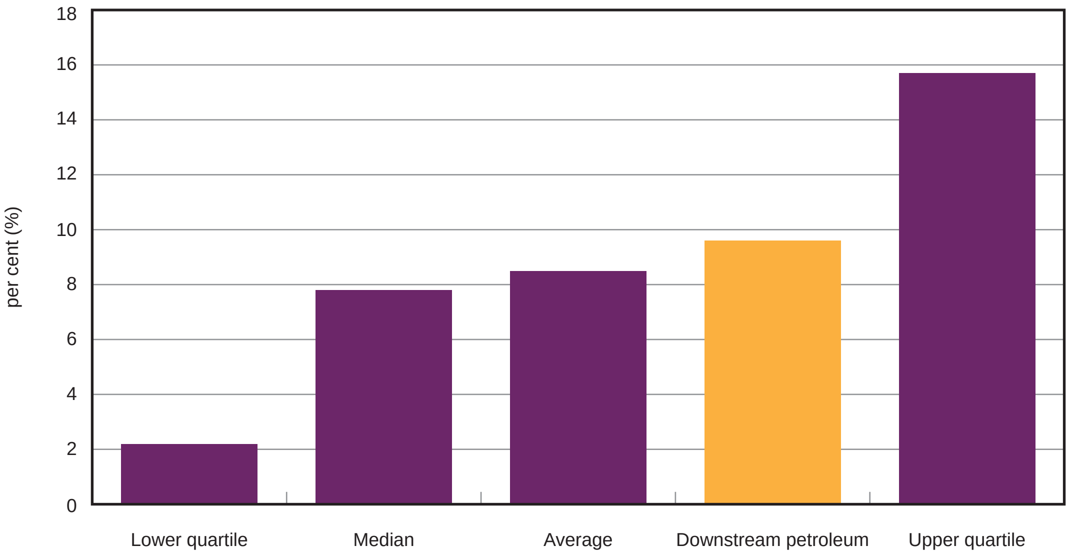
Chart 13.20 presents the ASX200 RoA (refer to the notes under the chart for exclusions) and has ranked these into the lowest and highest quartile, the median and average results.

The chart shows:

- In difference to the chart showing return on sales, the Australian downstream petroleum industry's rate of return is around the average for the entire ASX200 RoA.
- This downstream rate of return is still relatively low compared with the upper quartile where the RoA is around 16 per cent.

As noted, estimates of return on assets can be influenced by asset evaluation principles, depreciation of assets and the extent to which assets are replaced over time. In the context of the Australian downstream petroleum industry, the historical value of assets such as refineries may be relatively low given their age and depreciation over time. This could affect comparisons of profitability across industries using this KPI.

Chart 13.20 Comparison of return on assets for downstream petroleum industry and ASX200 companies: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process, Bloomberg and Bureau van Dijk Orbis database

Note: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoA of more than 70 per cent (positive and negative) in any year have been excluded; Caltex has also been excluded.

Not all companies have data for all years. Some companies report on a calendar- year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

The energy industry grouping does not include utilities companies. Although the utilities' grouping was used separately in the same chart in the 2010 monitoring report, this grouping was not included in the 2011 monitoring report because it was no longer one of the top 10 GICS industry groupings and therefore ineligible for inclusion in the chart. The utilities industry grouping was replaced by real estate in this year's top 10 industry groupings.

13.8 Comparison of the profitability of the downstream petroleum industry with international downstream companies

In the previous two sections, the ACCC compared the Australian downstream petroleum industry with other Australian industries. This section compares the downstream industry with comparable overseas firms in downstream petroleum businesses. It is important to isolate downstream activities from overseas integrated petrol companies as companies with upstream operations appear to earn quite high profits relative to their downstream activities. See chapter 16 for further consideration of earnings in upstream and downstream businesses.

The following three sections will compare return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE). The comparison period is the average of 2002–03 to 2010–11. Return on capital employed is presented for the period 2006–07 to 2010–11.

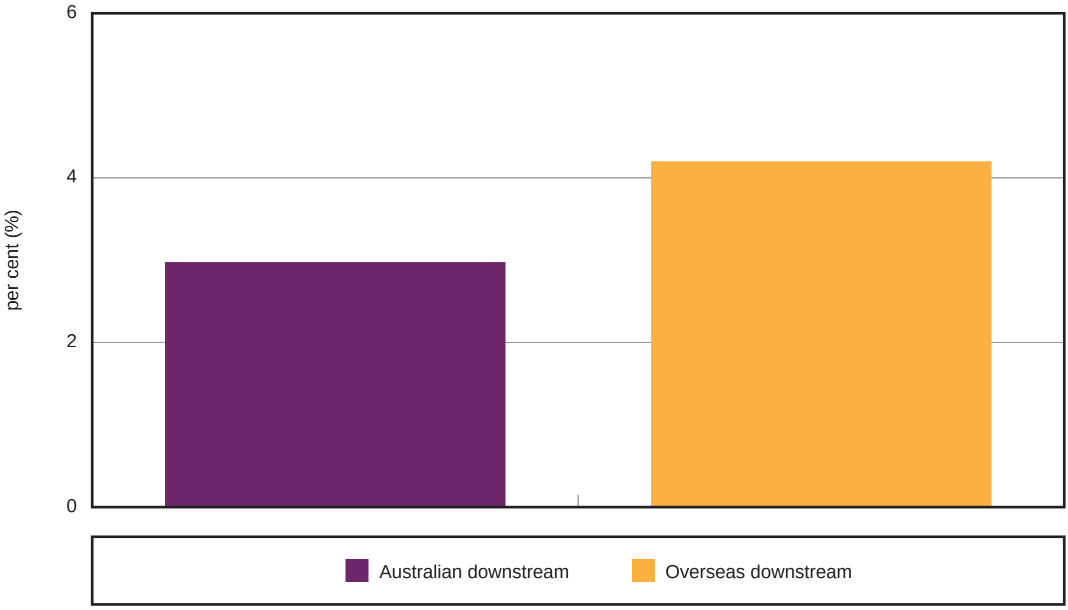
Overall the three charts suggest that the Australian downstream RoS and RoCE are generally similar to the overseas comparable companies. The Australian RoS is lower compared with overseas companies.

13.8.1 International comparison: return on sales

Chart 13.21 displays the Australian downstream petroleum industry RoS and compares this to more than thirty similar overseas businesses.

The chart shows that the Australian RoS is less than comparable international levels.

Chart 13.21 Comparison of return on sales for downstream petroleum industry in Australia and overseas: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bureau van Dijk Orbis database

Note: Not all companies have data for all years. Overseas companies report on various annual bases. For example, year 2009 has been taken as 2009–10.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non–government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner marketers with large upstream activities such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non–petroleum related secondary activities such as chemical manufacturing or gas related activities. The screening process reduced the size of the sample from around 70 to 30 companies.

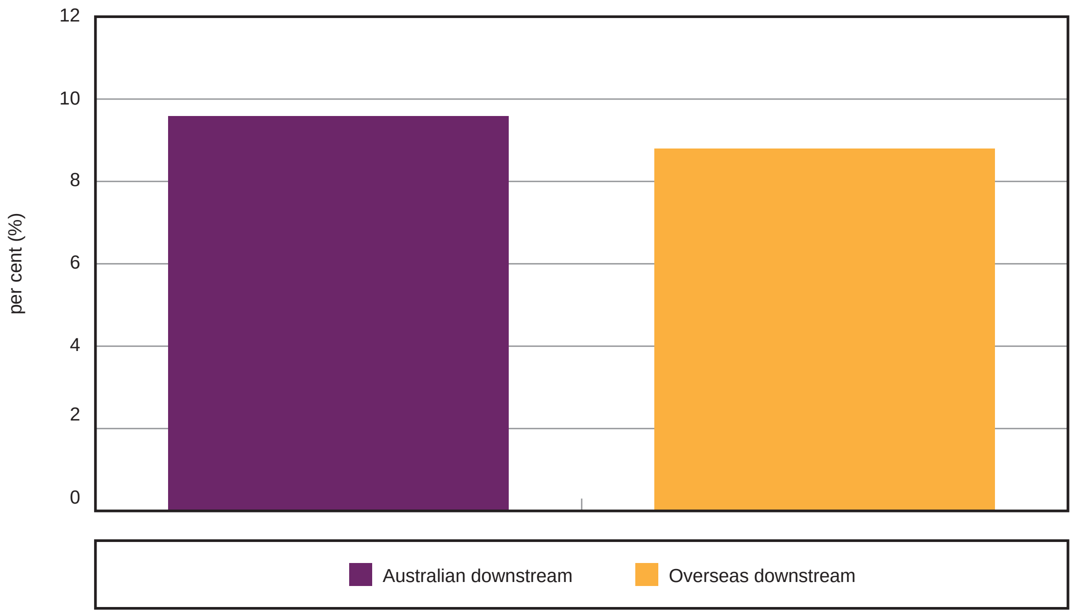
13.8.2 International comparison: return on assets

Chart 13.22 shows the Australian downstream petroleum industry RoA and the RoA for the same overseas units presented in section 13.8.1.

The cautionary caveats outlined in section 13.7.2 regarding difficulties in comparing rates of return on assets across firms and industries also apply in respect of data presented in this section.

The average Australian RoA is slightly above comparable international units' average RoA.

Chart 13.22 Comparison of return on assets for downstream petroleum industry in Australia and overseas: 2002–03 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bureau van Dijk Orbis database

Note: Not all companies have data for all years. Overseas companies report on various annual bases. For example, year 2009 has been taken as 2009–10.

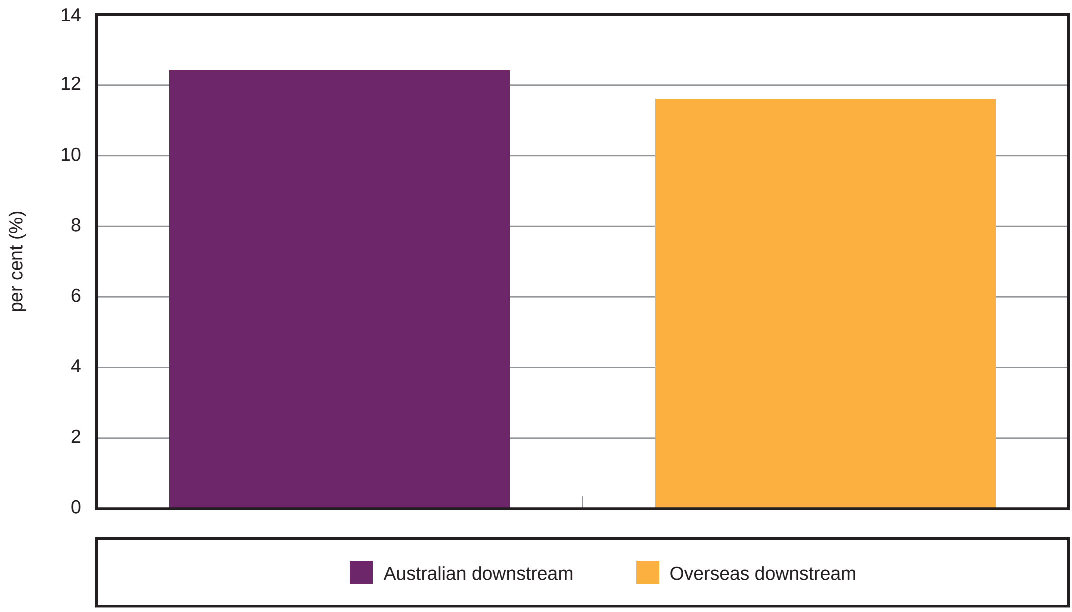
The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non–government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner marketers with large upstream activities such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities such as chemical manufacturing or gas related activities. The screening process reduced the size of the sample from around 70 to 30 companies.

13.8.3 International comparison: return on capital employed

Chart 13.23 compares the average RoCE for the Australian downstream petroleum industry with the same overseas units presented in section 13.8.1.

The average Australian RoCE is slightly above comparable international units' average RoCE.

Chart 13.23 Comparison of return on capital employed for downstream petroleum industry in Australia and overseas: 2006–07 to 2010–11 average



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bureau van Dijk Orbis database

Note: Not all companies have data for all years. Overseas companies report on various annual bases. For example, year 2009 has been taken as 2009–10.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non-government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner marketers with large upstream activities such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities such as chemical manufacturing or gas related activities. The screening process reduced the size of the sample from around 70 to 30 companies.

13.9 Concluding remarks on the financial performance of the downstream petroleum industry

Key points from this chapter include:

- In 2010–11, industry profitability continued to recover from the losses incurred in 2008–09 following the Global Financial Crisis.
- In 2010–11 net profit for the downstream industry was around $2.2 billion.
- Unit net profit in 2010–11 was 2.54 cpl.
- The refining and total supply sectors recovered from the losses reported in 2009–10 with net profits in 2010–11 of $348 and $847 million, respectively.
- Wholesale net profits were $966 million in 2010–11 (or 1.96 cpl).
- The retail sector recorded a net profit of approximately $359 million (or 2.1 cpl) in 2010–11.

13.10 Methodology note for assessing profitability in the downstream petroleum industry

The data in chapters 13, 14 and 15 was obtained by the ACCC from the monitored companies using established financial data templates. These templates sought data on revenues, costs and profits for each company in aggregate and for each sector in which it may operate. Data was also requested for the major products and services produced or marketed by the monitored companies.

The monitored companies included in this analysis includes the four refiner-marketers, Mobil, Caltex, BP and Shell. The monitored independent wholesalers include Neumann Petroleum, United Petroleum, Gull Petroleum and Liberty. Companies who operate in the retail sector and also included in the monitoring program include 7 Eleven, On The Run, Coles Express and Woolworths Petrol.

As would be expected with an input such as crude oil which is a globally traded commodity, annual historical cost profits can be volatile, particularly in times of rapid increases or decreases in prices.[267] Profit measures for an extended time series, from 2002–03 to 2010–11, have been used to provide long-term perspective to annual data. In some cases, the ACCC has averaged this time series to smooth out the historical cost profits. Analysis of profits for individual years' financial performance may not give an accurate assessment of overall profitability in the industry.

13.10.1 Replacement and historical cost profit measures

The ACCC has collected data from monitored companies for the 2010–11 financial year based on the historical cost accounting convention. The previous three monitoring reports also presented data on a historical cost basis.

Historical cost accounting records revenue, expenditure and asset acquisition and disposal at the actual or original cost of the transaction. In the context of the downstream petroleum industry, this approach means that oil companies can earn profits or incur losses depending on values at the time when they purchase crude oil and when they sell refined fuel.

267 As occurred during 2007–08 and 2009–10.

An alternative approach is to present financial data on a replacement cost basis. Replacement cost accounting excludes the impact of the rise or fall in crude oil or refined product prices. Under a replacement cost regime, companies report the impact of these changes in their financial statements as inventory gains or losses. Replacement cost is calculated by adjusting the cost of sales using the replacement cost of goods sold. On this basis the purchase price of goods sold is based on an estimate of current cost. Caltex for example revalue the cost of sales, or more specifically inventories, by calculating the average monthly cost of cargoes received during the month of the sales.[268]

Data based on replacement cost and historical cost will differ in a volatile market where prices are rising or falling rapidly. In the petroleum industry, replacement cost accounting is generally preferred because by excluding the impact of changes in the price of crude and refined product, it measures underlying profitability (and management performance).

Both Caltex and BP have stated that they prefer to present their profit results on the basis of replacement cost because it excludes movements in the prices of crude and refined product, which they see as external factors. By excluding the changing value of inventories (or external factors), these companies believe that investors gain a greater understanding of management performance of the group and this methodology also makes comparisons with other reporting periods more relevant.[269]

As noted in previous monitoring reports, the ACCC has reported data on the Australian downstream petrol on a historical cost basis. There are both practical and conceptual reasons why the ACCC does not collect data on the petroleum industry on a replacement cost basis. They include:

- Data availability: not all refiner marketers report on a replacement cost basis. While Caltex, BP and Shell report on both a replacement and historical cost basis, Exxon Mobil only reports on a historical cost basis. Also, independent wholesalers and retailers report on a historical cost basis.
- Historical cost is consistent with Australian and international accounting standards.
- Historical cost shows the actual returns to the company and company's shareholders.
- Because replacement cost accounting is less widely used, historical cost profit allows the ACCC to compare data with other Australian industries and also companies in overseas downstream petroleum sectors.

268 Caltex, *Understanding our financial results, historic cost versus replacement cost basis*, 2011, at http://www.caltex.com.au/InvestorCentre/Pages/UnderstandingOurFinancialResults.aspx, accessed 30 November 2011.

269 BP, Supplementary information 1Q, 2011 financial results, 2011, at http://www.bp.com/extendeddownloadscript.do?categoryid=9007137&contentId=7045446, accessed 1 december 2011.

13.10.2 Key performance indicators for assessing the profitability and performance of the downstream petroleum industry

The ACCC utilises a number of key performance indicators (KPIs) to assess the profitability of the industry. These KPIs measure the financial performance of:

- the total combined downstream industry
- each sector, such as refinery, total supply, wholesale and retail
- individual products—KPIs are presented for 'petrol products' (RULP, PULP and EBP). Also presented are KPIs for related fuel products such as diesel, as well as for each sector in the industry.

A widely accepted KPI profitability measure is earnings before deducting interest expenses and taxes (EBIT). This measure has been further adjusted to remove revenues and costs not directly related to the production and sale of refined petroleum products. This includes eliminating revenue not directly associated with petroleum products. The term for this KPI is 'adjusted EBIT' and this is the ACCC's preferred measure of underlying profits. Throughout chapters 13, 14 and 15, 'adjusted EBIT' is also referred to as net profit. Box 13.1 provides more detail on the various KPI profit measures used in this report.

Adjusted EBIT or net profit is presented in absolute dollar values as well as in terms of unit profit expressed in cents per litre (cpl). The net profit for the industry as a whole and for each sector reflects results of activities related to the production and sale of all petroleum products including:

- all fuels and products (in the case of the refiner-marketers, it includes petrol, diesel, aviation fuels, LPG, and other products such as petroleum coke, lubricating oils, naphtha and bitumen).[270]
- convenience store sales (for those with retail site operations)
- transactions with the commercial and retail customers (largely applicable for market participants at the wholesale level).

The unit net profit measure for the retail sector presented in 'cpl' needs to be treated with caution. In the retail sector, 'unit net profit' includes revenues from convenience stores, that is, from the sale of non-fuel products and services. As such, it is not possible to assess performance of petrol related activities from the overall 'unit net profit' for the retail sector. On the other hand, unit net profit measures for individual petrol products, such as 'regular unleaded petrol unit net profit', are more reliable measures of profitability for each petrol product.

The existence of common costs in the petroleum industry means that the methodology for estimating profits by product requires some estimation of costs. The methodology the ACCC has adopted to allocate common costs in the 2011 monitoring report is consistent with that used in previous monitoring reports. Product volumes have been used as a proxy for splitting common costs. The assumption is that costs indirectly associated with refining or selling petrol and other products tend to be proportional to the volumes of these products. This methodology has also been used in respect of the total supply (including refining) and wholesale sectors.

The allocation of costs in the retail sector differs slightly due to the convenience store activities. In the retail sector, common costs are first allocated on the basis of gross profit on petroleum sales and on convenience sales. Costs estimated for petroleum product activities are then further allocated to individual products on the basis of their respective sales volumes.

270 The revenues and costs associated with these other products (such as petroleum coke, lubricating oil, naphtha and bitumen) may be significant from a refinery's overall profitability. The profitability of these products is not the focus of the financial analysis undertaken in chapters 13, 14 and 15. However, profits earned by these products are included in the overall downstream and sectoral profit.

Box 13.1 Key performance indicators

Gross profit: Gross profit is a measure of profit calculated by deducting the costs of goods or services sold from sales revenues. In refining, those costs can include the purchase of crude or refined product, direct labour and factory overheads included in the manufacturing (refining) process and the cost of delivering it to the customer (usually a wholesaler). The measure of gross profit does not include all costs as other operating expenses not involved in the transformation of crude into refined product are excluded. Gross profit on a cpl basis is calculated by dividing the gross profit by the volumes of product sold.

Note that the gross indicative differences used in the analysis of retail prices (see chapter 9) are based on international benchmark prices for crude oil and refined products, notional import parity prices, published terminal gate prices and average retail prices. As such, they differ from the estimates provided in chapters 13, 14 and 15 which are based on financial information provided directly by the monitored companies.

Gross margin: Gross margin is the ratio of gross profit to sales and indicates how much is left from each dollar of sales after costs of goods sold have been subtracted. The remainder covers other expenses and provides a net profit. Gross margin is expressed as a percentage of sales.

Adjusted EBIT (net profit): EBIT is a common accounting measure of profit and measures the total returns to the firm before interest incomes or expenses and taxes are taken into account. EBIT has widespread use as it is not affected by the effects of different capital structures and tax rates used by various companies. The ACCC uses an adjusted EBIT profit measure. Adjusted EBIT excludes non-operating incomes, amortisation, impairment charges, and profits or losses on sales of fixed assets. This provides a consistent measure of profits from petrol activities and the petroleum industry rather than of total profits of the monitored companies. Adjusted EBIT is commonly referred to in this report as net profit. It is presented in dollars as well as cpl.

Adjusted EBIT to sales (return on sales): The ratio of adjusted EBIT relative to sales revenue calculates the extent to which profit is earned from each dollar of revenue after deducting all relevant operating costs, other than interest and tax. This measure is referred to in this report as return on sales. It is expressed as a percentage of sales.

Return on adjusted total assets (return on assets): The ratio of adjusted EBIT to total assets calculates the extent to which profit is earned relative to assets used in the business. Return on assets provides an indication of how efficient management is at using its assets to generate earnings. Total assets have been adjusted to exclude deferred tax assets as they are not relevant to an after-tax profit assessment. Intangibles are excluded since those values have not been consistently provided by the monitored companies, and usually arise from the acquisition of other companies (as opposed to growth solely by increasing sales). It is expressed as a percentage of total assets.

Box 13.1 Key performance indicators (cont.)

Return on capital employed: The ratio of adjusted EBIT to total assets less current liabilities is a common measure of the return on capital employed. This measure compares earnings with the total capital used in the company. In this respect, it is a similar measure to return on assets, except that it excludes current liabilities such as trade and other payables. This KPI is in effect a measure of the return on funds provided by non-current liabilities plus owner's equity, that is, all capital used in a business.

14 Financial performance of the refinery and total supply sectors

Key points

In 2010–11:

- The total supply sector earned a unit net profit across all products of 1.23 cents per litre (cpl). This represents total net profit of $847 million on sales of 68.8 billion litres of fuel and revenues of $48.6 billion.
  - Petrol products earned a unit net profit of 1.66 cpl, or total net profit of $430 million on sales of 25.8 billion litres of petrol products and revenues of $18.3 billion.
  - Diesel unit net profit was 1.83 cpl, or total profit of $516.2 million on sales of 28.2 billion litres of diesel and revenues of $20.7 billion.
- The refinery sector earned a unit net profit across all products of 0.91 cpl. This represents total net profit of $348 million on sales of 38.2 billion litres of fuel and revenues of $26.4 billion.
  - Petrol products in the refinery sector earned unit net profit of 0.97 cpl, or $159.5 million on sales of 16.4 billion litres of petrol products and revenues of $11.5 billion.
  - Diesel in the refinery sector earned unit net profit of 2.65 cpl, or $334.5 million on sales of 12.6 billion litres of diesel and revenues of $9.1 billion.

14.1 Overview of financial performance in the refinery and total supply sectors

The financial performance of the overall downstream industry was discussed in chapter 13. Chapters 14 and 15 cover specific sectors of the downstream industry. This chapter reports on the refinery and total supply sectors.

Refinery is a sub-sector of the total supply sector; its importance to the overall downstream industry warrants a separate analysis. As noted in chapter 13, revenues, costs and profits of the refinery and total supply sectors are reported on a historical cost basis.

In 2010–11, the profitability of the refinery sector across all major product categories, including petrol and diesel, was below the average from 2002–03 to 2010–11 (table 14.1). Sales volumes in 2010–11 were similar to the long-term average.

Table 14.1 Sales and profits in the refinery sector: 2010–11 and average from 2002–03 to 2010–11

		2010–11	2002–03 to 2010–11 average
All products	Sale volumes (ML)	38,187	38,002
	EBIT ($ million)	348	743
	Unit EBIT (cpl)	0.91	1.96
Petrol	Sales volumes (ML)	16,376	16,219
	EBIT ($ million)	159	438
	Unit EBIT (cpl)	0.97	2.70
Diesel	Sales volumes (ML)	12,604	12,038
	EBIT ($ million)	335	515
	Unit EBIT (cpl)	2.65	4.28

Sources: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

The overall financial performance of the total supply sector in 2010–11 was above the average for the period 2002–03 to 2010–11 (table 14.2). However, the profitability of petrol products was lower than the long-term average.

Table 14.2 Sales and profits in the total supply sector: 2010–11 and average from 2002–03 to 2010–11

		2010–11	2002–03 to 2010–11 average
All products	Sale volumes (ML)	68,753	65,559
	EBIT ($ million)	847	711
	Unit EBIT (cpl)	1.23	1.10
Petrol	Sales volumes (ML)	25,817	26,709
	EBIT ($ million)	430	482
	Unit EBIT (cpl)	1.66	1.80
Diesel	Sales volumes (ML)	28,189	24,056
	EBIT ($ million)	516	513
	Unit EBIT (cpl)	1.83	2.13

Sources: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process.

The rest of this chapter considers the performance of both the refinery and total supply sectors in detail and analyses the performance of each sector at a number of levels, including by:

- total sector performance, for all products
- results for the suite of petrol products
- results for individual products.

14.2 The refinery sector – revenues, costs and profits, all products

The refinery sector in Australia consists of seven refineries (see chapter 3). Each refinery refines crude oil into petrol, diesel and a range of other petroleum products. The product mix at refineries depends on their configuration and their equipment as well as the type of crude oil used.

Australian refineries are by international standards technically sophisticated but small, particularly when compared to the new large Asian refineries.[271]

14.2.1 Refinery sector: revenues and costs, all products

Revenues, costs and profits in both the refinery and total supply sectors tend to be volatile due to the effects of changes in international prices of crude oil and refined petrol and in exchange rates. These industries are also capital-intensive and experience high investment costs at various times. Consequently, less emphasis is placed on annual changes in financial performance.

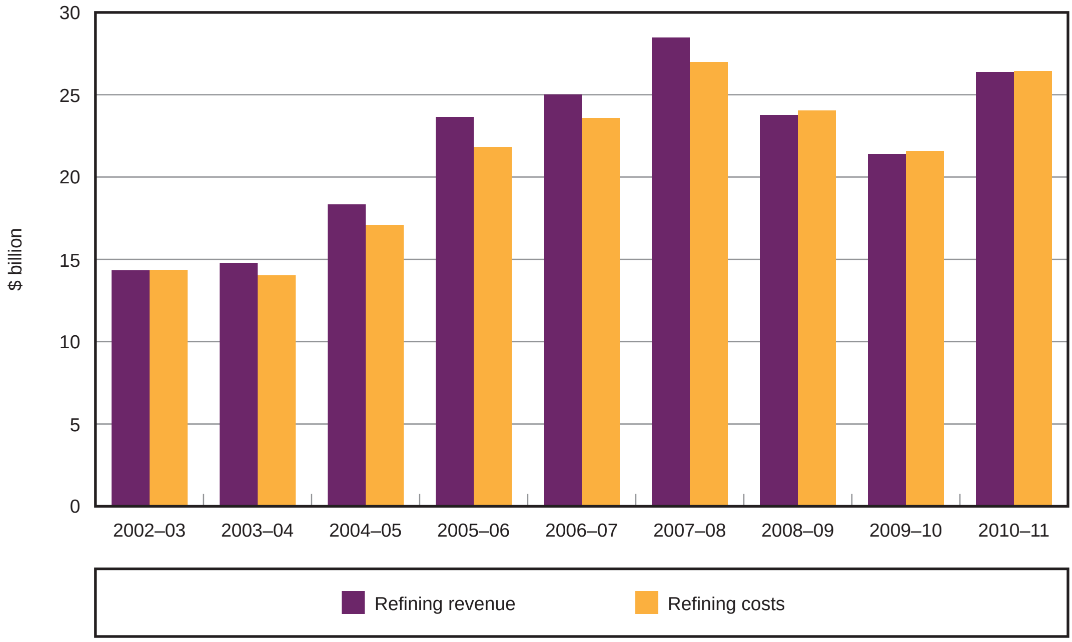
The main sources of revenue from petroleum refining are the production and sale of petrol, diesel, aviation gas and other products such as liquefied petroleum gas and bitumen. The major cost component for any refinery is crude oil, which can be in excess of 90 per cent of the total cost of goods sold and other expenses. Other major costs include maintenance, transport and wages.

In 2010–11, the refinery sector's total revenue and costs were both just over $26 billion (chart 14.1). Both revenue and costs were higher than in 2009–10. The increase in revenues was associated with higher international prices for refined petroleum products and increased output (volume). The increase in costs was due to higher production volumes and prices of crude oil.

Refinery sector volumes in 2010–11 were 38,187 million litres; the highest level of output since 2006–07.

271 Australian Institute of Petroleum, *Downstream petroleum 2009*, Canberra.

Chart 14.1 Refinery sector revenues and costs, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.2.2 Refinery sector: total and unit net profits, all products

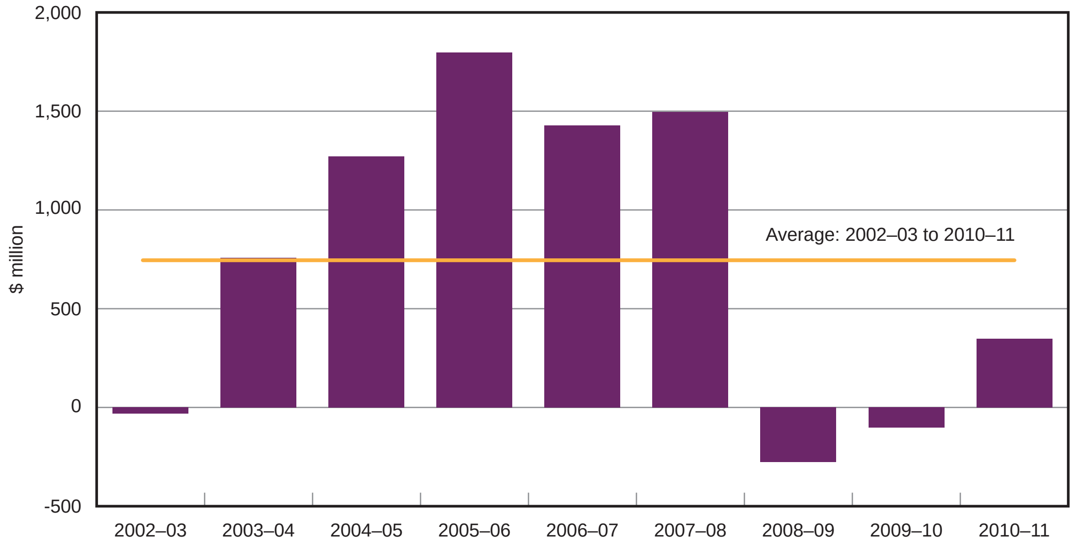
As outlined in chapter 13, a number of profitability measures have been used for the downstream petroleum industry and their sectors. The key measure is adjusted EBIT (net profit), which represents net earnings from the perspective of shareholders.

Chart 14.2 displays net profit for all refineries from 2002–03 to 2010–11. Points from the chart include:

- A net profit of $348 million in 2010–11 follows two years of losses.
- The net profit result for 2010–11 is lower than the average net profit for the period 2002–03 to 2010–11 of $743 million.[272]
- The results for the past three financial years were below the profitability levels over the period 2003–04 to 2007–08.

272 As noted, profitability in the refinery sector is volatile. It is significantly impacted by changes in the international price of crude oil, exchange rate movements and major capital investments.

Chart 14.2 Refinery sector net profit, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 14.3 shows unit net profit measured in cents per litre (cpl) for all Australian refineries for each year from 2002–03 to 2010–11. Refinery sector unit net profits are calculated by dividing total net profit by volumes.

Unit net profit for the refinery sector in 2010–11 was 0.91 cpl. The average unit net profit for the period 2002–03 to 2010–11 was 1.96 cpl.

Chart 14.3 Refinery sector unit net profit, all products: 2002–03 to 2010–11

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

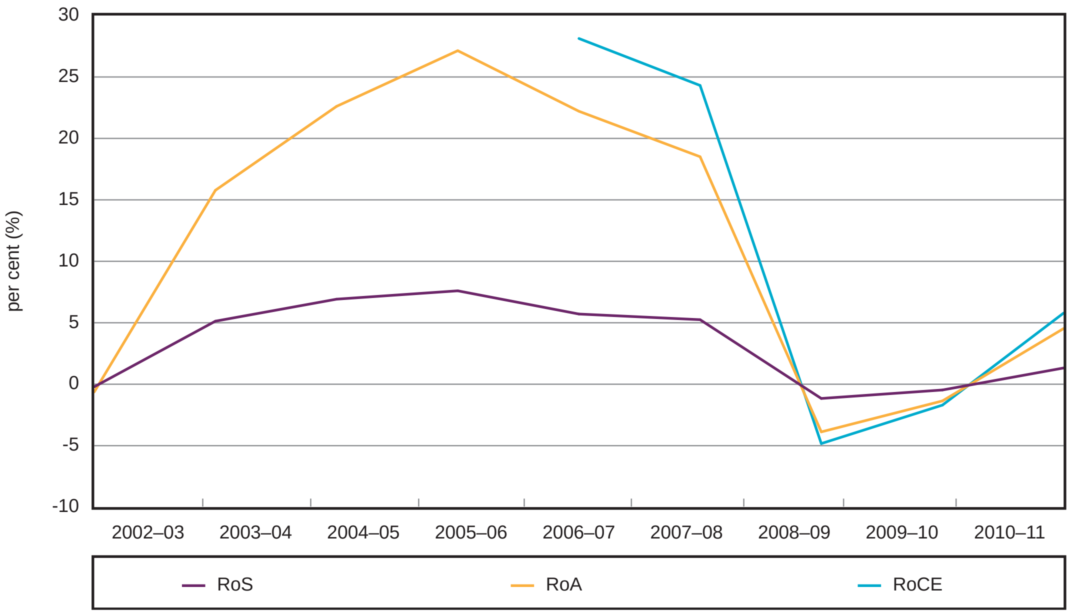
14.2.3 Refinery sector: other key performance indicators, all products

This section presents other profit key performance indicators (KPIs) for the refinery sector. The KPIs considered are: return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE). See box 13.1 for further details on KPIs used in this chapter.

Chart 14.4 shows these KPIs for the period 2002–03 to 2010–11 (RoCE is shown for 2006–07 to 2010–11). Points from the chart include:

- RoS during 2010–11 was 1.3 per cent. This is below its long-term average of 3.4 per cent.
- RoA and RoCE were 4.5 and 5.8 per cent respectively and below their long-term averages of 11.4 per cent and 13.2 per cent.

Chart 14.4 Refinery sector return on sales, return on assets and return on capital employed, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.3 Refinery sector: revenues, costs and profits — petrol products

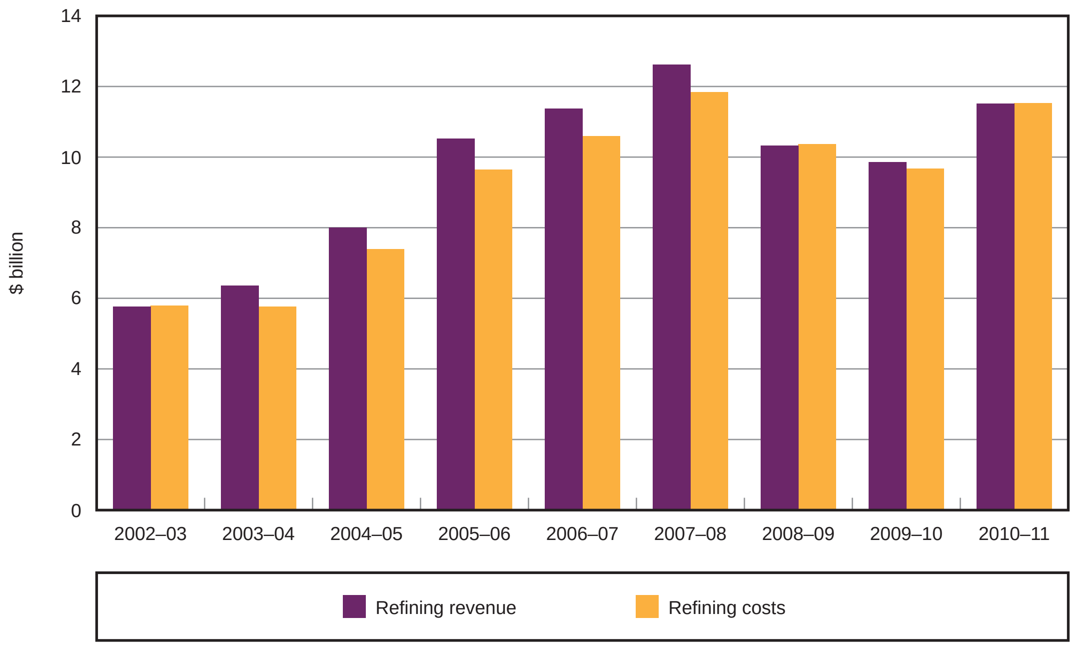
The previous section discussed overall revenues, costs and profits associated with the refining of all petroleum products at Australian refineries. This section discusses the revenues, costs and profits associated with the refining of petrol products only. Petrol products are: regular unleaded petrol (RULP), premium unleaded petrol (PULP) and ethanol blended petrol (EBP).

14.3.1 Refinery sector: revenues and costs, petrol products

Chart 14.5 displays the total revenues and costs associated with the production of petrol products at Australian refineries. Petrol revenues increased by 17 per cent from 2009–10 while costs increased by 19 per cent.

In 2010–11, total refinery sector petrol volumes increased by 7 per cent from 2009–10 to about 16 billion litres.

Chart 14.5 Refinery sector, revenues and costs, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

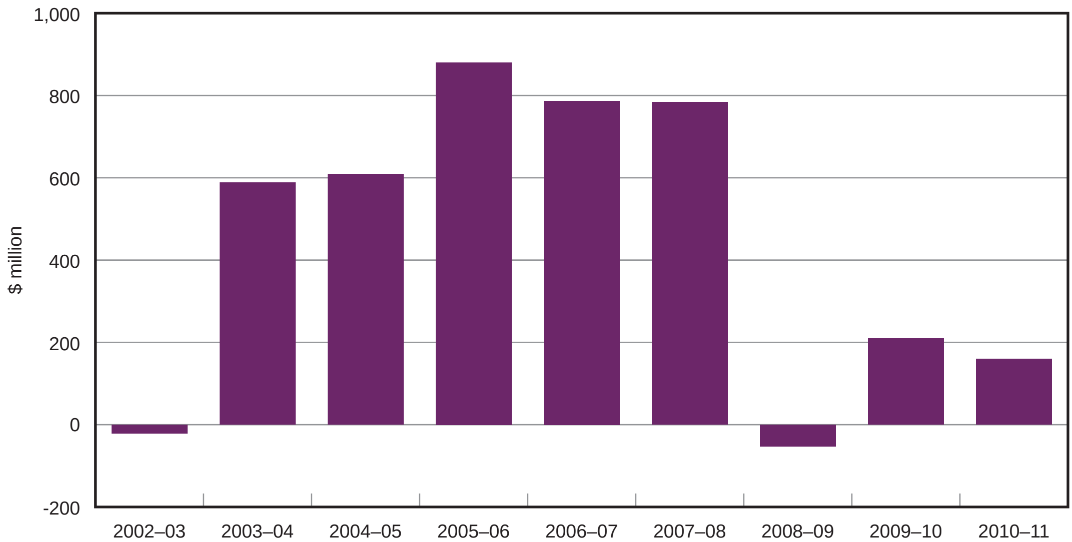
14.3.2 Refinery sector: total and unit net profit, petrol products

The most important products by volume at Australian refineries are RULP, PULP and diesel. As outlined in chapter 6, EBP is produced at terminals where refined petrol is blended with ethanol. In 2010–11, these products represented about 75 per cent of all volumes produced at Australian refineries.

The ACCC has estimated total and unit net profits for petrol products and diesel for the Australian refinery sector. These net profits are calculated on the basis of standard accounting methodologies and represent net earnings on these products accruing to shareholders.

Chart 14.6 displays net profit on petrol products for all Australian refineries from 2002–03 to 2010–11. In 2010–11 net profit for petrol was $159 million. This was around $279 million below the average net profit for petrol products for the period 2002–03 to 2010–11.

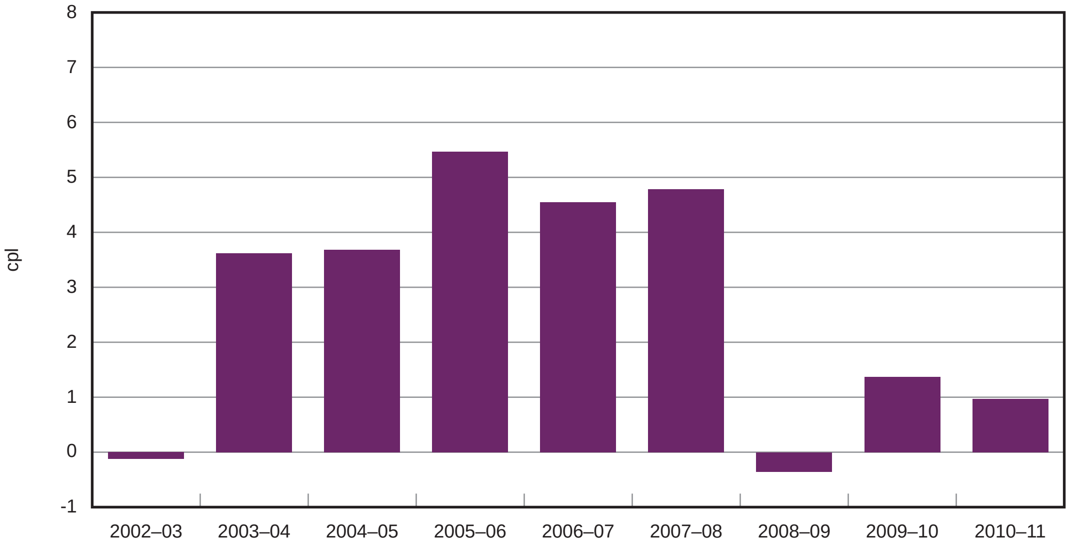
Chart 14.6 Refinery sector net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 14.7 shows unit net profit for petrol products for the period 2002–03 to 2010–11. Unit net profit on petrol in Australian refineries was 0.97 cpl in 2010–11, compared with the average unit net profit over the period 2002–03 to 2010–11 of 2.70 cpl.

Chart 14.7 Refinery sector unit net profit, petrol products: 2002–03 to 2010–11



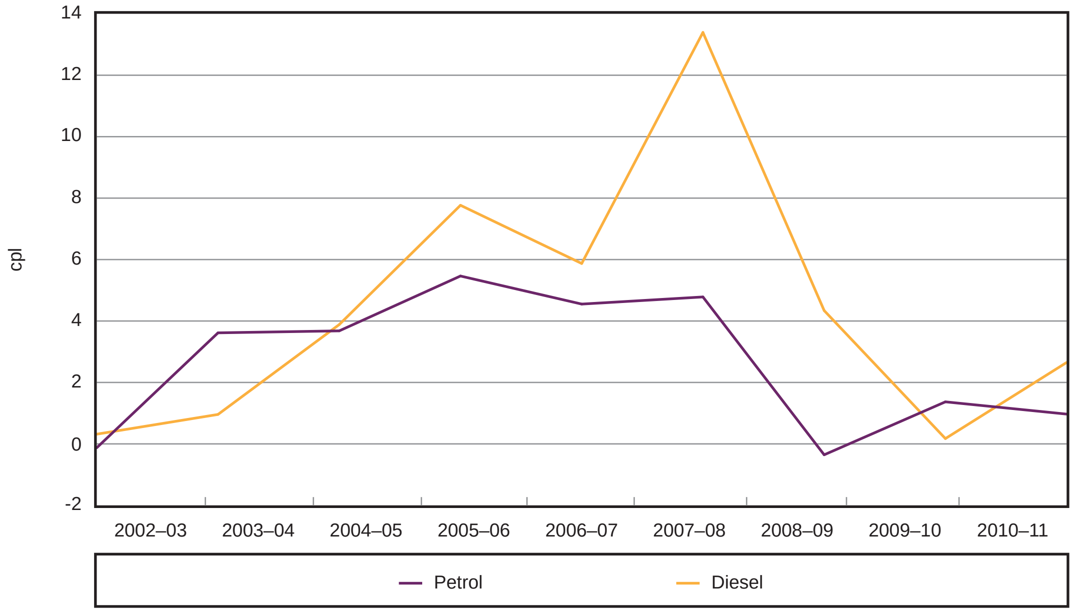
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.3.3 Refinery sector: comparison between unit petrol and unit diesel net profits

Chart 14.8 provides a comparison of unit petrol and unit diesel net profits for the period 2002–03 to 2010–11. The following points arise from this chart:

- In 2010–11, diesel unit net profits were 2.65 cpl.
- Unit net profits on diesel have in general been higher than petrol.
- Since 2002–03, the average unit net profit for petrol has been 2.70 cpl and for diesel 4.28 cpl.
- The largest difference in unit net profit between diesel and petrol occurred in 2007–08, when unit net profits for petrol were 4.78 cpl and for diesel 13.39 cpl.
- The difference in unit profit between petrol and diesel for 2010–11 was 1.68 cpl. On average, diesel was 1.58 cpl higher than petrol over the period 2002–03 to 2010–11.

Chart 14.8 Refinery sector unit net profits, petrol and diesel: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

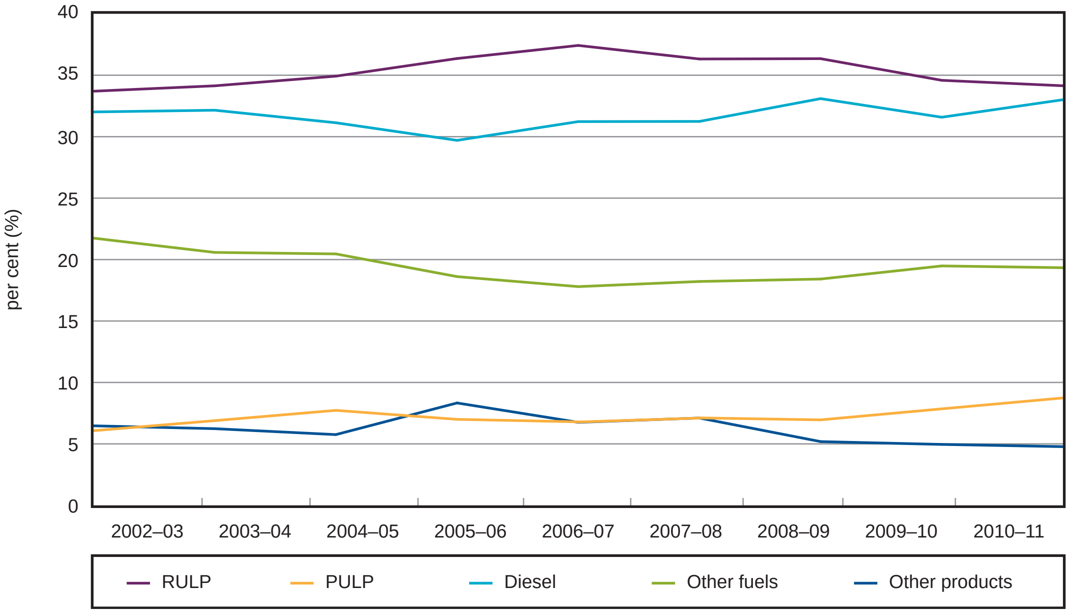
14.4 Refinery sector product mix

As outlined in the previous section, RULP, PULP and diesel account for a large share of production at Australian refineries.

Chart 14.9 displays the production mix from Australian refineries from 2002–03 to 2010–11. Observations from this chart include:

- Overall, the mix of products produced at Australian refineries has not changed substantially since 2002–03, the only exception being PULP, which increased its share of output volumes from 6 per cent to 9 per cent. The increase in PULP's share is not unexpected. PULP is increasingly the fuel of choice for new cars. As noted in chapter 6, the ethanol mandate in NSW may have also had the effect of reducing availability of RULP and thus stimulated demand for PULP.
- In 2010–11, RULP accounted for 34 per cent of total production, just above diesel at 33 per cent.

Chart 14.9 Refinery sector production mix: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.5 Refinery capacity utilisation rates

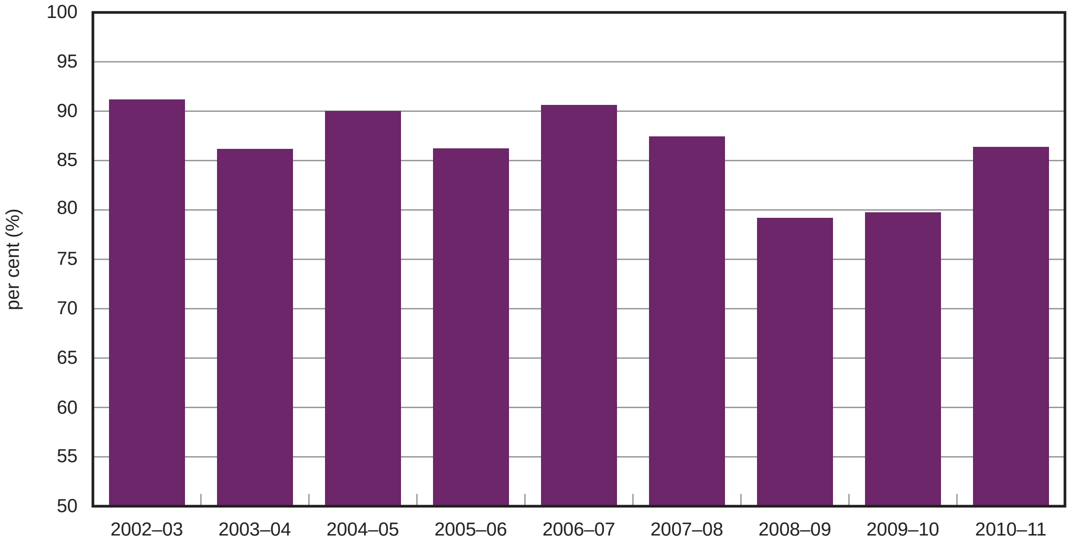
The ACCC has used data provided by Australian refineries to derive refinery capacity utilisation rates. Utilisation rates measure the percentage of a company's production capacity that is actually used in production during a year. A refinery's utilisation rate shows the extent to which its capacity has been used to process crude oil and refined petroleum products.

Generally, refineries do not operate at 100 per cent utilisation rate as production processes require down-time for regular maintenance and upgrades. Furthermore, production disruptions such as fires, floods and other unscheduled incidents also reduce utilisation rates. For example, Caltex stated that their refinery operations in the first half of 2011 were affected by the 'impact of unplanned outages, extension of planned maintenance, and extreme weather events'.[273]

Chart 14.10 displays the total Australian refinery utilisation rate for the period 2002–03 to 2010–11. This chart shows that utilisation rate for Australian refineries increased in 2010–11 to 87 per cent, from just below 80 per cent in 2009–10. The 2010–11 utilisation rate was approximately equal to the average for the period 2002–03 to 2010–11.

273 Caltex, 'Strong marketing performance continues despite challenging refining environment', press release, 23 August 2011, at http://www.caltex.com.au/LatestNews/Pages/NewsItem.aspx, accessed 30 November 2011.

Chart 14.10 Refinery sector capacity utilisation rates: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; and AIP *Downstream Petroleum* reports

14.6 Refinery sector: comparison of KPIs with other industries in Australia

The ACCC has developed a number of benchmark KPIs for comparing Australian refineries with other selected Australian industries. As outlined in section 13.7, the ACCC has used the Australian Securities Exchange's top 200 (ASX200) companies by market capitalisation to compile profitability KPIs for all industries and selected manufacturing industries, such as chemicals, beverages and building products.

Two KPIs are used for these comparative purposes: RoS and RoA. The caveats discussed in chapter 13 about comparing the profitability of various industries using standard KPIs also apply in this section.

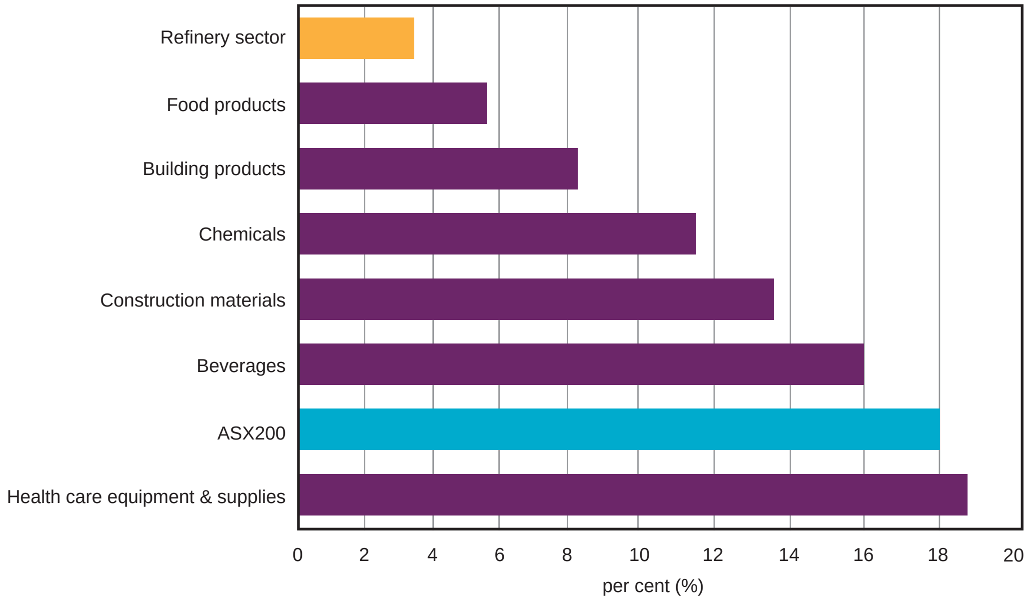
14.6.1 Australian manufacturing industry comparison: return on sales, all products

Chart 14.11 presents average RoS for the period 2002–03 to 2010–11 for the Australian refinery sector and other selected manufacturing industries. Observations from the chart include:

- Australian refineries have the lowest average rate of return compared to the selected industries. The overall average RoS for refineries was 3.4 per cent.
- The next closest selected manufacturing industry was food products with 5.6 per cent return on sales.

Refining is regarded as a high-volume and low-margin activity. Companies in these types of industries will generally have lower returns on sales than firms in a low-volume, high-margin industry.

Chart 14.11 Average return on sales for refinery sector and other manufacturing industries in the ASX200: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process, Bloomberg and Bureau van Dijk Orbis database

Notes: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoS of more than 70 per cent (positive and negative) in any year have been excluded; Caltex and non-manufacturing companies have also been excluded.

Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

14.6.2 Australian manufacturing industry comparison: return on assets, all products

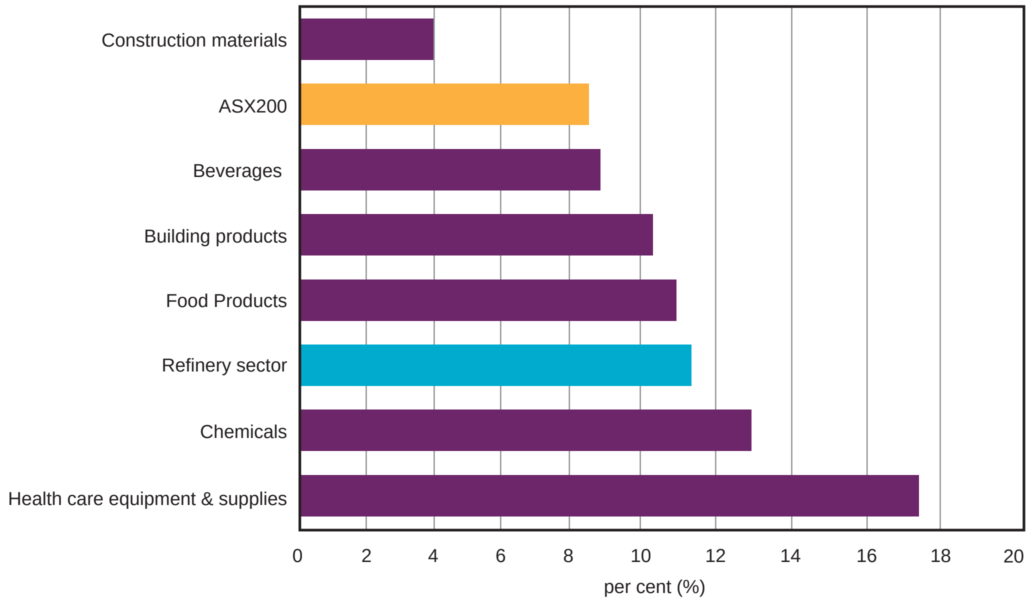
This section compares the rate of RoA in the Australian refinery sector with other selected manufacturing industries. Compared with the limitations of a measure such as RoS for a low-margin, high-volume industry, RoA provides a clearer indication of relative profitability.

However, results of analysis of comparative RoA data must be treated with caution. Asset data is based on depreciated historical cost values provided to the ACCC by the monitored companies. The values of these assets are not market-based as they are not generally traded in a liquid market. Estimates of return on assets are affected by the use of different asset valuation approaches and by the asset age profile. For example, all else equal, a company with old assets valued on the basis of depreciated historical cost will generally have a smaller asset base than a company which either values assets on a replacement-cost basis or which has a younger asset age profile. Some assets in the Australian downstream petroleum industry, particularly in the refinery sector, may have a higher than average age profile.

Chart 14.12 presents average RoA for the period 2002–03 to 2010–11. Points from the chart include:

- On average, domestic refineries have higher average rates of RoA than the ASX200 average.
- Manufacturing industries with the highest average RoA over the period were health-care equipment and supplies, and chemicals, with 17.7 per cent and 12.7 per cent, respectively.

Chart 14.12 Average return on assets for refinery sector and other manufacturing industries in the ASX200: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process. Bloomberg and Bureau van Dijk Orbis database

Notes: The list of companies in the ASX200 is as at 21 September 2011.

The list of companies is less than 200: for the specific industries, companies with RoA of more than 70 per cent (positive and negative) in any year have been excluded; Caltex and non-manufacturing companies have also been excluded.

Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis. Industries are grouped using the Global Industry Classification Standard (GICS) and include at least two companies.

14.7 Total supply sector

The total supply sector covers all refinery operations, imports of refined product and the buying and selling of petroleum products between the refiner-marketers through buy–sell arrangements. In addition, the total supply sector exports refined product. As previously noted, the refinery sector is a sub-sector of total supply.

Other activities for the total supply sector include the coordination of crude imports for refining and the coordination of imported refined product for distribution (including for those situations when there are refinery disruptions or shutdowns).

Although all refiner-marketers conduct supply activities, not all have a separate supply sector. For these refiner-marketers, some of the supply activities are combined with the refinery operations and/or combined with the wholesale sector. Furthermore, those refiner-marketers which have a supply sector do not necessarily operate it as a cost centre.

For the purpose of reporting data for all companies on a consistent basis, the ACCC has adopted the concept of a separate total supply sector within the downstream petroleum industry. Without a common approach based on a separate supply section, and a four-sector split, the analysis of other sectors would have been complicated by the fact that some companies place supply activities in other sectors.

It must be noted that some of the revenue and cost data supplied by companies for the total supply sector were based on allocations not normally reported in their accounting systems. Any assessment and conclusions drawn from the analysis of the total supply sector should be treated with caution and should only be used with the caveats outlined above.

14.8 Total supply sector: revenues, costs and profits—all products

14.8.1 Total supply revenues and costs, all products

Total supply revenues are normally derived from the sale of petroleum products including petrol, diesel, aviation fuel and bitumen. Revenue is also earned from the exporting of refined product, although this is not substantial.

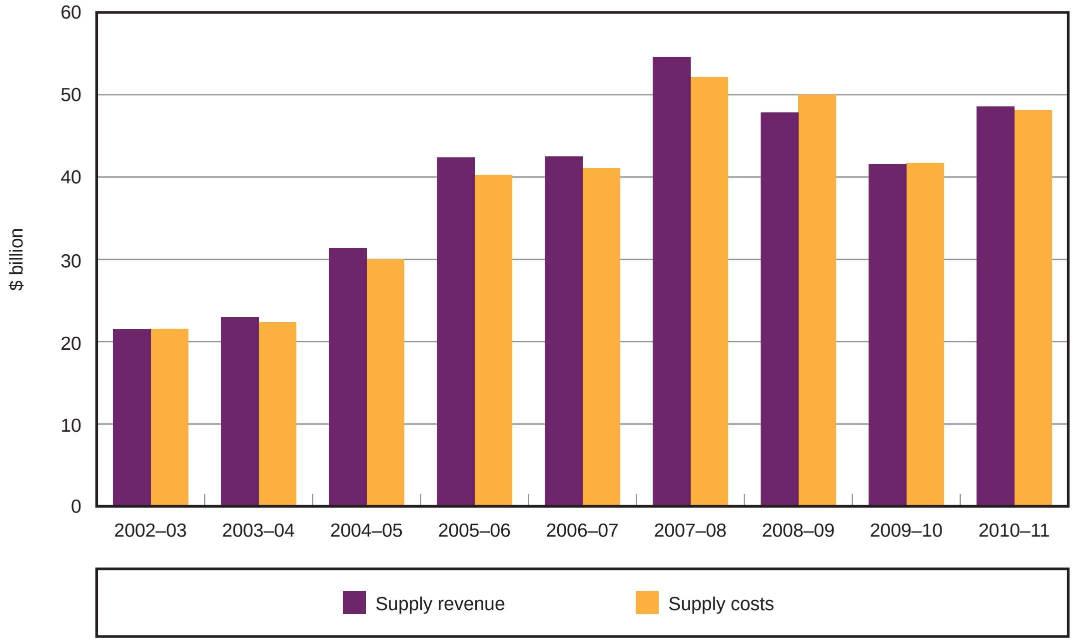
Costs in total supply normally relate to the purchases of crude oil, imported refined product and the costs associated with buy–sell transactions. Other costs, such as the net gain or loss on foreign exchange transactions, can also be substantial (such as occurred in 2008–09 — see section 14.11 for further details).

Total supply revenues and costs are displayed in chart 14.13. Total revenue for 2010–11 was $49 billion, while costs rose to $47 billion.

As the supply sector is typically involved in importing, buying and selling crude oil and refined petrol, prices of its products are closely linked to relevant international benchmark prices. In this sector, prices — and thus revenues (and costs) — generally follow international benchmark prices.

Total supply volumes increased by 3.4 per cent in 2010–11. This was the third-largest increase over the past eight years. The largest was 5.1 per cent in 2007–08.

Chart 14.13 Total supply sector revenues and costs, all products: 2002–03 to 2010–11

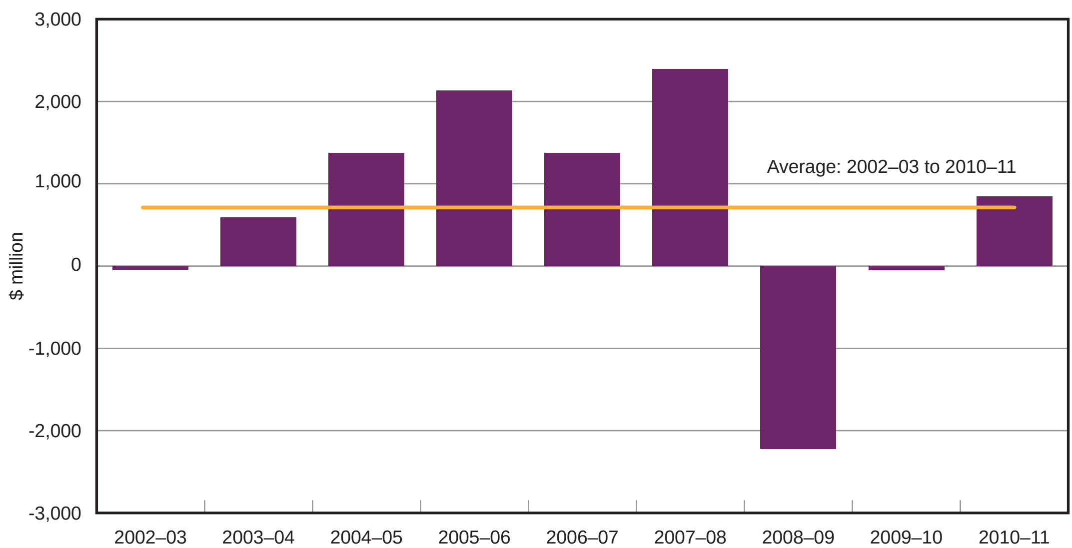


Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.8.2 Total supply sector: total and unit net profits, all products

Chart 14.14 shows net profit for the total supply sector for all petroleum products from 2002–03 to 2010–11. After the losses of the past two years, net profit was $847 million in 2010–11 compared with the average net profit of $711 million for the period 2002–03 to 2010–11.

Chart 14.14 Total supply sector net profit, all products: 2002–03 to 2010–11

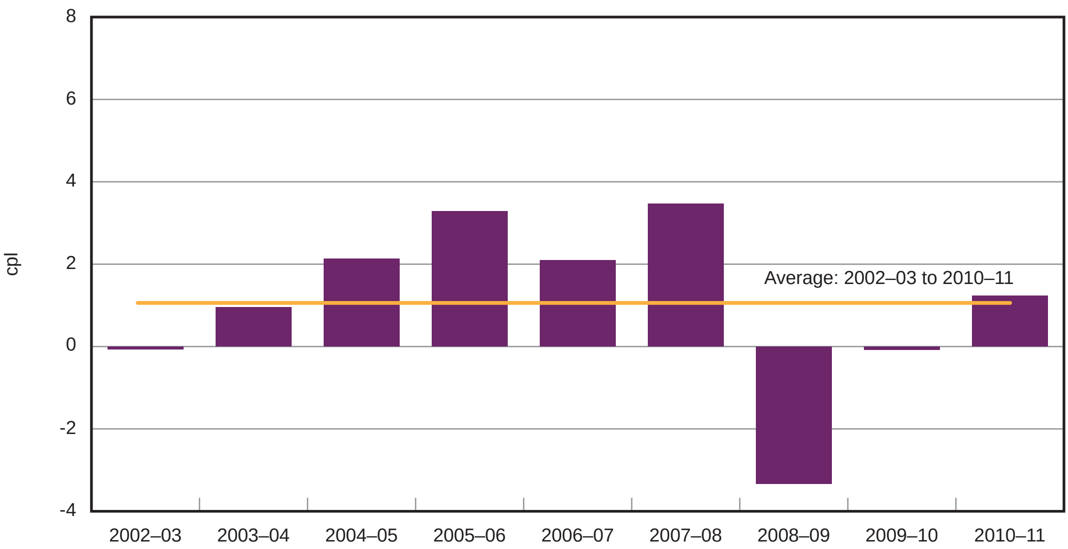


Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Unit net profits represent total net profit for all petroleum products divided by total volume, after the elimination of inter-company volume transfers.

In 2010–11, total supply unit net profit was 1.23 cpl (chart 14.15). This is just above the average unit net profit over the period 2002–03 to 2010–11 of 1.08 cpl.

Chart 14.15 Total supply sector unit profit, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.8.3 Total supply sector: other key performance indicators, all products

This section presents three other profit KPIs for the total supply sector: return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE).

Chart 14.16 shows these three profit KPIs for the period 2002–03 to 2010–11.

Total supply sector RoS for 2010–11 was 1.7 per cent, which is marginally below its long-term average of 1.8 per cent. The RoA was around 6.4 per cent, which is just below its long-term average of 7.4 per cent. Both these KPIs were closer to the long-term average in 2010–11 than in any of the past nine years.

RoCE was 9.0 per cent, above the average of 6.0 per cent for the past five years.

Chart 14.16 Total supply sector return on sales, return on assets and return on capital employed, all products: 2002–03 to 2010–11

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.9 Total supply sector: revenues, costs and profits — petrol products

This section discusses the profits derived from the sale of petrol products alone. The above caveats on the total supply sector and the allocation of expenses should be considered carefully when assessing petrol profits in the total supply sector.

14.9.1 Total supply sector: revenues and costs, petrol products

Total revenues and costs for petrol in the total supply sector are shown in chart 14.17.

In 2010–11, petrol revenues and costs increased by 7 per cent and 6 per cent respectively. Total petrol revenues and costs were both $18 billion.

Total supply petrol volumes fell by 2.8 per cent to 25,817 ML in 2010–11. While RULP volumes decreased by 10.9 per cent to 17,155 ML, this was offset by an 11 per cent increase in PULP volume.

Chart 14.17 Total supply sector petrol revenues and costs, petrol products: 2002–03 to 2010–11

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

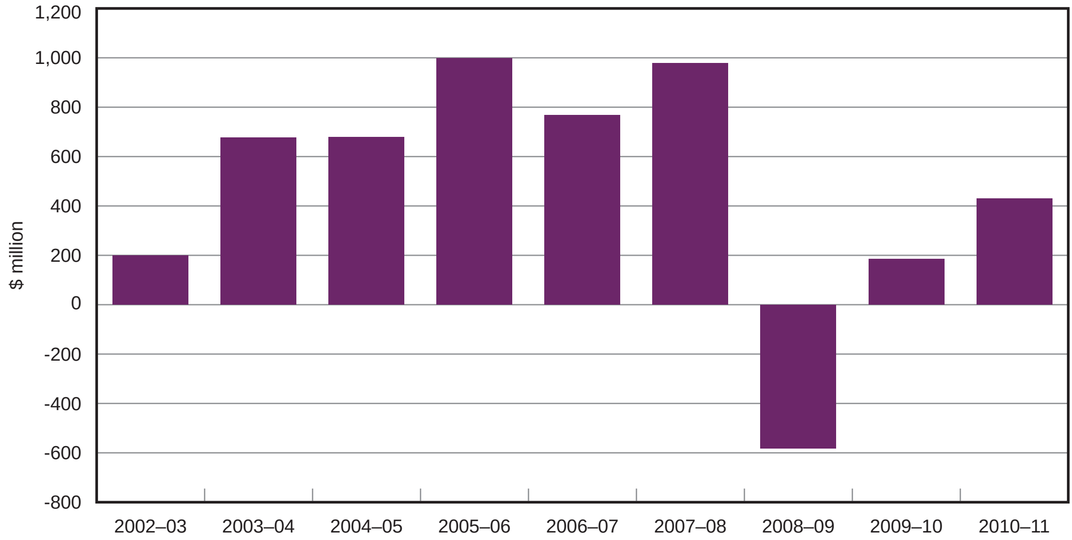
14.9.2 Total supply: total and unit net profit, petrol products

Estimates of total and unit net profits for petrol for the total supply sector represent net earnings on petrol products accruing to shareholders. These earnings have been calculated using standard accounting methodologies.

Chart 14.18 displays net profit for petrol products in the total supply sector for the period 2002–03 to 2010–11.

This chart indicates that in 2010–11, net profit on petrol products was $430 million. This compares with the average of $481 million for the period 2002–03 to 2010–11.

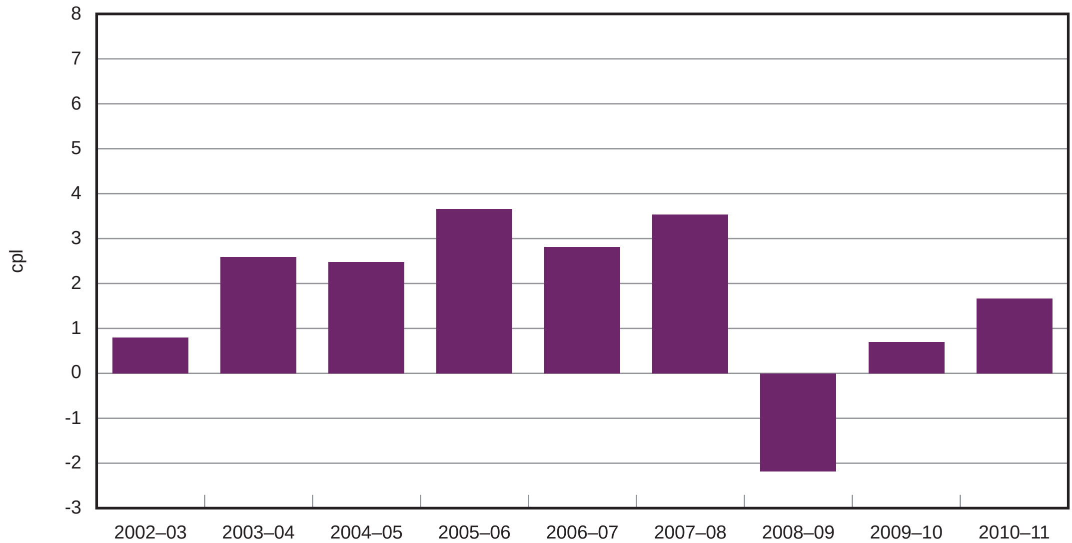
Chart 14.18 Total supply sector net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 14.19 shows unit net profit per litre (cpl) on petrol products for the total supply sector for the period 2002–03 to 2010–11. In 2010–11, unit net profit was 1.66 cpl, compared with the average over the period 2002–03 to 2010–11 of 1.8 cpl.

Chart 14.19 Total supply sector unit net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

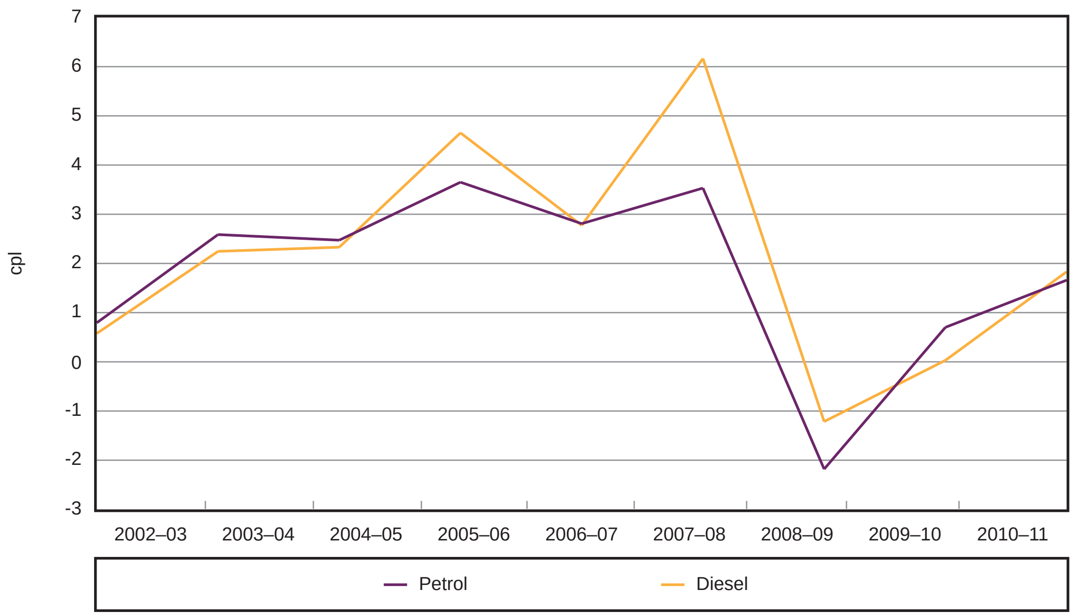
14.9.3 Total supply sector: comparison between petrol and diesel unit net profits

This section assesses and compares the relative unit net profits of petrol and diesel products. As was the case in the refinery sector, the two most important products in the total supply sector are petrol and diesel products. In the nine years to 2010–11, their share of volumes in the total supply sector has ranged from 74 per cent to 80 per cent.

Chart 14.20 displays a comparison of petrol and diesel unit net profit for the period 2002–03 to 2010–11. Points from the chart include:

- Unit net profits in 2010–11 were 1.66 cpl for petrol and 1.83 cpl for diesel.
- These were similar to the long-term (2002–03 to 2010–11) average unit net profits of 1.8 cpl for petrol and 2.13 cpl for diesel.
- The largest difference between diesel and petrol unit net profit occurred in 2007–08, when diesel unit net profits were 6.17 cpl and petrol was 3.53 cpl.

Chart 14.20 Total supply sector unit net profits, petrol and diesel: 2002–03 to 2010–11



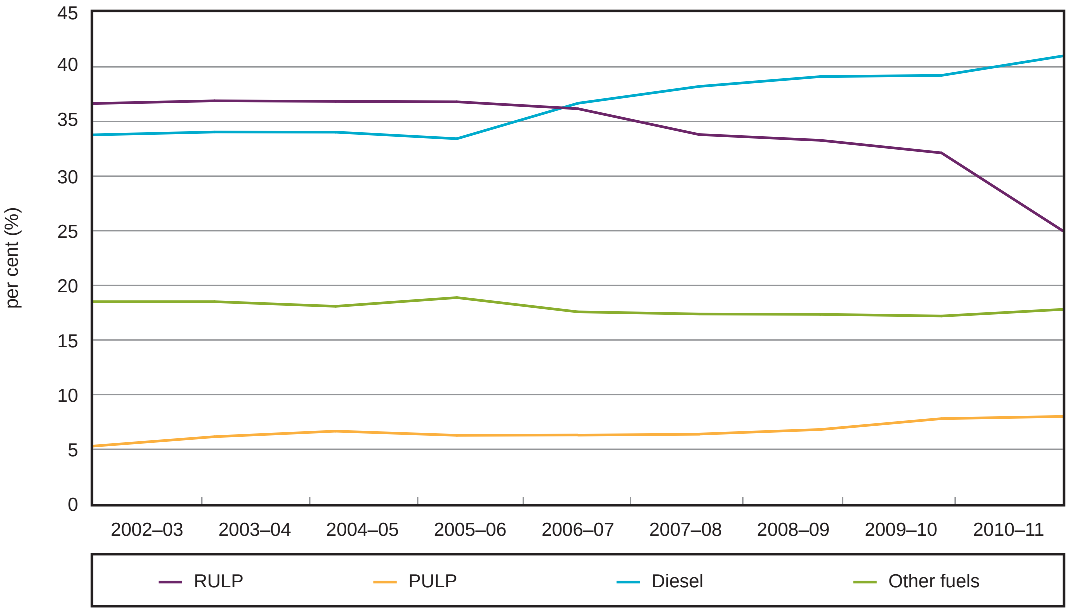
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.10 Total supply sector: product mix

The total supply sector product mix since 2002–03 is shown in chart 14.21. The product mix in total supply displays the following trends:

- Increasing share of diesel has been at the expense of RULP.
- Diesel has become the largest petroleum product supplied to the Australian market.
- Diesel's share of total volumes in the supply sector has increased from 34 per cent in 2002–03 to 41 per cent in 2010–11.
- In contrast, RULP's share of total supply volumes decreased from 36 per cent to 25 per cent over the same period.
- The increases in PULP volumes as a percentage of total volumes have been more modest, increasing from 5 per cent to 8 per cent, mostly due to higher demand in NSW.

Chart 14.21 Total supply sector product mix: 2002–03 to 2010–11

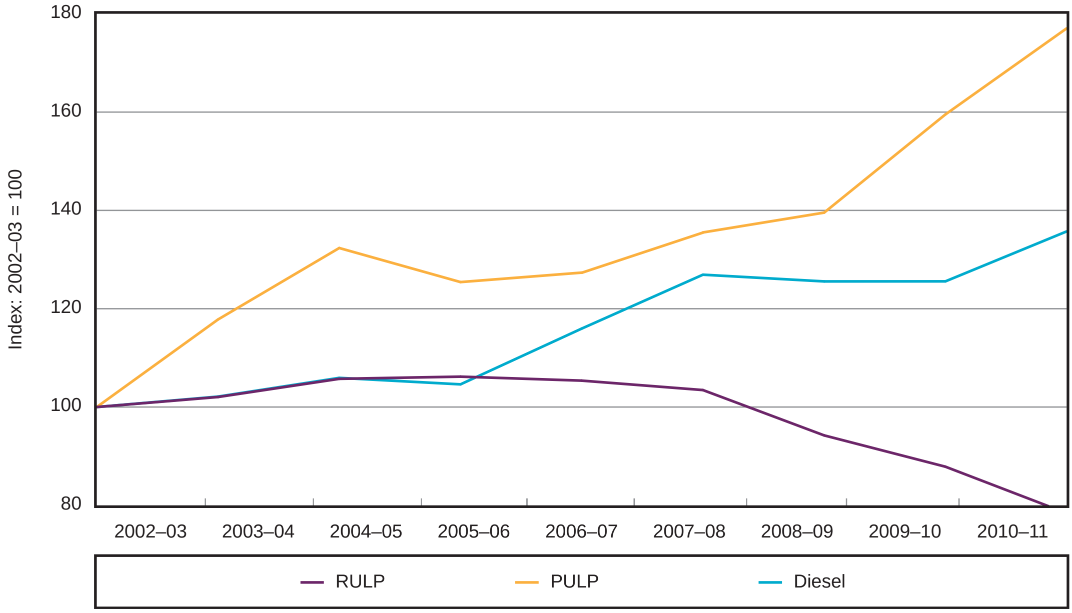


Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 14.22 displays rates of change in volumes of RULP, PULP and diesel since 2002–03 using an index.

Diesel has increased its volume share by 36 per cent since 2002–03, while RULP has decreased 22 per cent. PULP has shown the greatest proportionate increase in volumes, albeit from a smaller base.

Chart 14.22 Total supply sector, growth in volumes of RULP, PULP and diesel (index): 2002–03 = 100



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.11 Total supply sector: foreign exchange gains and losses

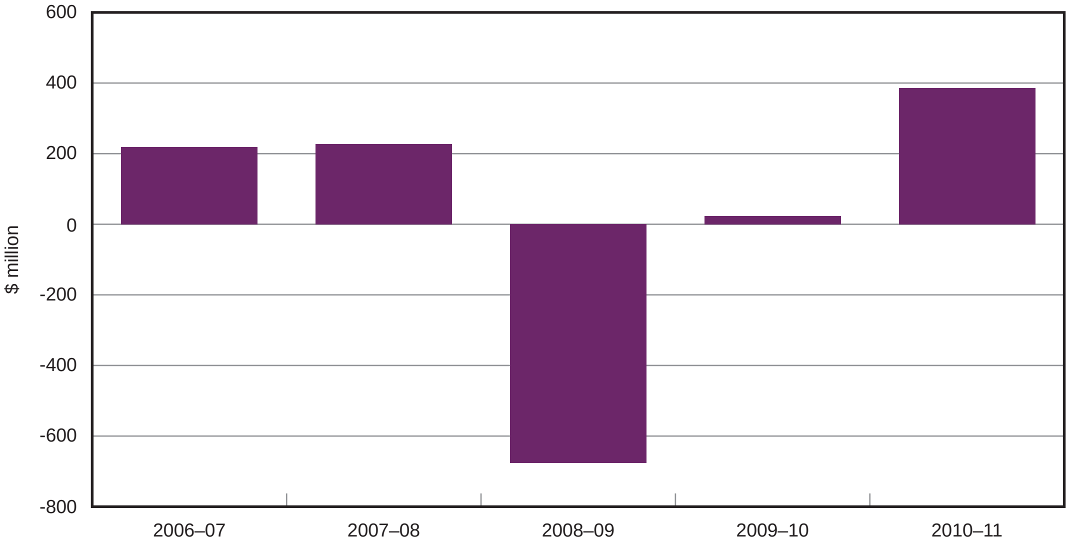
The total supply sector coordinates the purchasing of domestic and imported crude oil, and imported refined products. The majority of these purchases are normally settled in USD. The use of another currency creates the potential for gains or losses in net foreign exchange position held by the refiner-marketers.

It is understood that some refiner-marketers utilise foreign exchange derivatives to manage risks. Caltex, for instance, announced that from 1 July 2010 it would hedge 50 per cent of its USD crude oil and product payables exposure.[274]

Chart 14.23 displays foreign exchange gains and losses from 2006–07 to 2010–11. The total supply sector made a foreign exchange gain of $385 million during 2010–11. This is a substantial turnaround from three years ago, where the net foreign exchange position for the total supply sector, was a loss of about $680 million. This amount represented 31 per cent of the loss incurred by the total supply sector in that year.

274 Caltex 2010 half-year financial report, available at http://www.caltex.com.au/InvestorCentre/Documents/2010/2010%20Half%20Year%20Report.pdf, retrieved 28 October 2010.

Chart 14.23 Total supply sector, foreign exchange gains and losses: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

14.12 Concluding remarks on the financial performance of the refinery and total supply sectors

Key points from this chapter include:

- Net profit for the refinery sector in 2010–11 was $348 million or 0.91 cpl.
- The average unit net profit for refining across all products over the period 2002–03 to 2010–11 was 1.96 cpl.
- Refinery sector net profit on petrol products was $159 million (0.97 cpl) in 2010–11. The average annual unit net profit on petrol products in Australia is estimated to have been 2.7 cpl since 2002–03.
- The net profit for the total supply sector in 2010–11 was about $847 million (1.23 cpl).
- The average unit net profit for petrol products for the total supply sector over the period 2002–03 to 2010–11 was 1.8 cpl.

14.13 Methodology note

The ACCC, in consultation with the industry, segmented the downstream industry into four sectors. Three of these sectors — refining, wholesaling and retail — directly align with the Australian and New Zealand Standard Industrial Classification 2006 (ANZSIC06). The ANZSIC06 classes are Petroleum and Coal Product Fuel Manufacturing class 1701, Petroleum Product Wholesaling class 3321 and Fuel Retailing class 4000. The other sector is total supply. This covers refining, imports and buy–sells and is not directly aligned to any ANZSIC class.

While Australian refineries report revenues by product, it is often not possible to measure costs by product. This means that total costs must be allocated to individual products. Cost allocation is complicated by the fact that the various petroleum products are produced from the same barrel of oil and using the same refining facilities. Some companies have not provided cost splits for these reasons. As outlined in section 13.1, the ACCC has used sales volumes to prorate costs across products so that costs and profits can be estimated for each type of product.

15 Financial performance of the wholesale and retail sectors

Key points

In 2010–11:

- Unit net profit for all products sold in the wholesale sector was 1.96 cents per litre (cpl). This represents total net profit of $966 million on sales of 49.4 billion litres of fuel and total revenues of $37.9 billion.
  - Petrol products earned unit net profit of 1.05 cpl in the wholesale sector, or $196 million on sales of 18.6 billion litres of petrol and revenues of $14.1 billion.
  - Diesel earned unit net profit of 0.87 cpl, or $175 million on sales of 20.1 billion litres and revenues of $15.7 billion.
- The retail sector's unit net profit for all products was 2.06 cpl, or $359 million on sales of 17.4 billion litres and revenues of $17.0 billion.
  - Petrol products earned a unit net profit of about 1.46 cpl, or $181 million on volumes of 12.4 billion litres and sales of $10.3 billion.
    - RULP products earned a unit net profit of about 0.76 cpl, or $53 million on volumes of 7.0 billion litres and sales of $5.7 billion.
    - PULP products earned a unit net profit of about 3.84 cpl, or $110 million on volumes of 2.9 billion litres and sales of $2.6 billion.
    - EBP products earned a unit net profit of about 0.72 cpl, or $18 million on volumes of 2.5 billion litres and sales of $2.0 billion.
  - Diesel products earned a unit net profit of about 1.99 cpl, or $73 million on volumes of 3.7 billion litres and sales of $3.2 billion.
  - Convenience store sales earned a total net profit of $139 million, with revenues of around $2.7 billion.

15.1 Overview of financial performance in the wholesale and retail sectors

In 2010–11, estimated unit net profit (defined as earnings before interest and taxes, or EBIT) for the wholesale sector was about 1.96 cpl (or $966 million in total).

In 2010–11, sale volumes and net profit in the wholesale sector were above the average over the period 2002–03 to 2010–11, while sale volumes of petrol were slightly below the average.

Table 15.1 shows 2010–11 sale volumes and net profits in the wholesale sector, for all products as well as for petrol products, that is, regular unleaded petrol (RULP), premium unleaded petrol (PULP), ethanol blended petrol (EBP), as well as diesel and other products and their average for the period 2002–03 to 2010–11.

Table 15.1 Sale volumes and net profits (EBIT) in the wholesale sector: 2010–11 and the average from 2002–03 to 2010–11

		2010–11	2002–03 to 2010–11 average
All products	Sale volumes (ML)	49,358	46,448
	EBIT ($ million)	966	670
	Unit EBIT (cpl)	1.96	1.44
Petrol	Sale volumes (ML)	18,649	19,171
	EBIT ($ million)	196	27
	Unit EBIT (cpl)	1.05	0.14
Diesel	Sale volumes (ML)	20,127	17,259
	EBIT ($ million)	175	150
	Unit EBIT (cpl)	0.87	0.87
Other products (incl. lubricants and engine oils)	Sale volumes (ML)	1,312	1,663
	EBIT ($ million)	472	449
	Unit EBIT (cpl)	35.96	27.01

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Sale volumes and net profit in the retail sector were also above average. In the case of the retail sector, the average is calculated for the period 2005–06 to 2010–11.

Table 15.2 shows sale volumes and net profits in the retail sector for all products and for petrol products, as well as results for RULP, PULP, EBP and diesel. The table also shows total revenue and EBIT for convenience store sales in 2010–11, and the average of convenience store sales from 2006–07 to 2010–11.

The unit net profit in 2010–11 for all products in the retail sector was about 2.06 cpl (or $359 million in total). For petrol products alone, unit net profit was about 1.46 cpl (or $181 million in total).

In 2010–11, while volumes for RULP were below the average from 2005–06 to 2010–11, unit profits were higher than average over this period. On the other hand, volumes for PULP, EBP and diesel were notably higher than their respective averages for 2005–06 to 2010–11. The unit net profit for PULP was also higher than the long-term average.

In 2010–11, convenience store sales earned around 39 per cent of total net profits in the retail sector, or about $139 million.

Table 15.2 Sale volumes and net profits (EBIT) in the retail sector: 2010–11 and the average from 2005–06 to 2010–11

		2010–11	2005–06 to 2010–11 average
All products	Sale volumes (ML)	17,437	15,863
	EBIT ($ million)	359	245
	Unit EBIT (cpl)	2.06	1.54
Petrol products	Sale volumes (ML)	12,400	11,746
	EBIT ($ million)	181	93
	Unit EBIT (cpl)	1.46	0.79
RULP	Sale volumes (ML)	7,048	8,432
	EBIT ($ million)	53	52
	Unit EBIT (cpl)	0.76	0.62
PULP	Sale volumes (ML)	2,863	2,165
	EBIT ($ million)	110	35
	Unit EBIT (cpl)	3.84	1.60
EBP	Sale volumes (ML)	2,490	1,150
	EBIT ($ million)	18	6
	Unit EBIT (cpl)	0.72	0.56
Diesel	Sale volumes (ML)	3,682	2,805
	EBIT ($ million)	73	58
	Unit EBIT (cpl)	1.99	2.08
Convenience stores	Revenue ($ billion)	2.7	2.3
	EBIT ($ million)	139	101

Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Note: Average convenience store revenue and EBIT is for the period 2006–07 to 2010–11.

The rest of the chapter considers the performance of both the wholesale and retail sectors in detail and analyses the performance of each sector at a number of levels, including by:

- total sector performance, for all products
- results for the suite of petrol products
- results for individual products.

15.2 Wholesale sector: revenues, costs and profits

The refiner-marketers operate in the wholesale sector and have substantial networks in most states. A number of independent wholesalers also compete in the wholesale sector. These independent wholesalers source fuel from the refiner-marketers and increasingly from imports.[275] Some refiner-marketers and other wholesalers supply their own retail outlets.

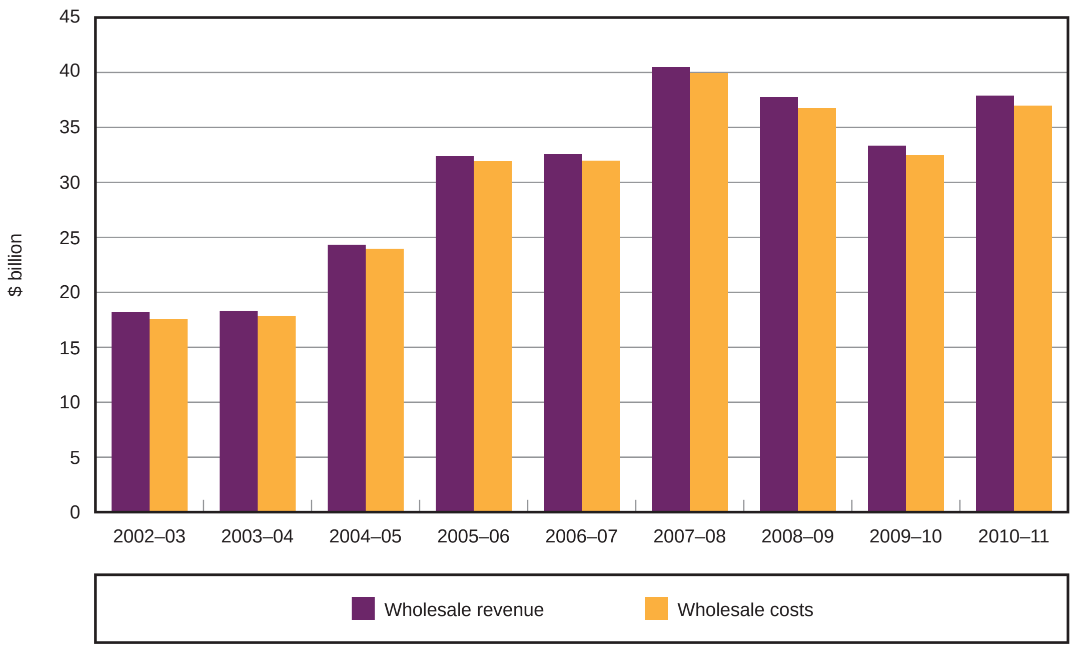
Financial analysis of the wholesale sector covers the four refiner-marketers – Mobil, Caltex, Shell and BP – and the larger independent wholesalers – United Petroleum, Liberty Petroleum, Neumann Petroleum and Gull Petroleum.

The refiner-marketers dominate the petroleum wholesale sector with around 93 per cent of total volumes of petroleum products sold.

15.2.1 Wholesale sector: revenues and costs, all products

In the wholesale sector, companies earn revenue from the sale of products to the general commercial sector as well as to end users and retailers. Chart 15.1 displays total revenues and costs for the wholesale sector from 2002–03 to 2010–11.

Chart 15.1 Wholesale sector revenues and costs, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

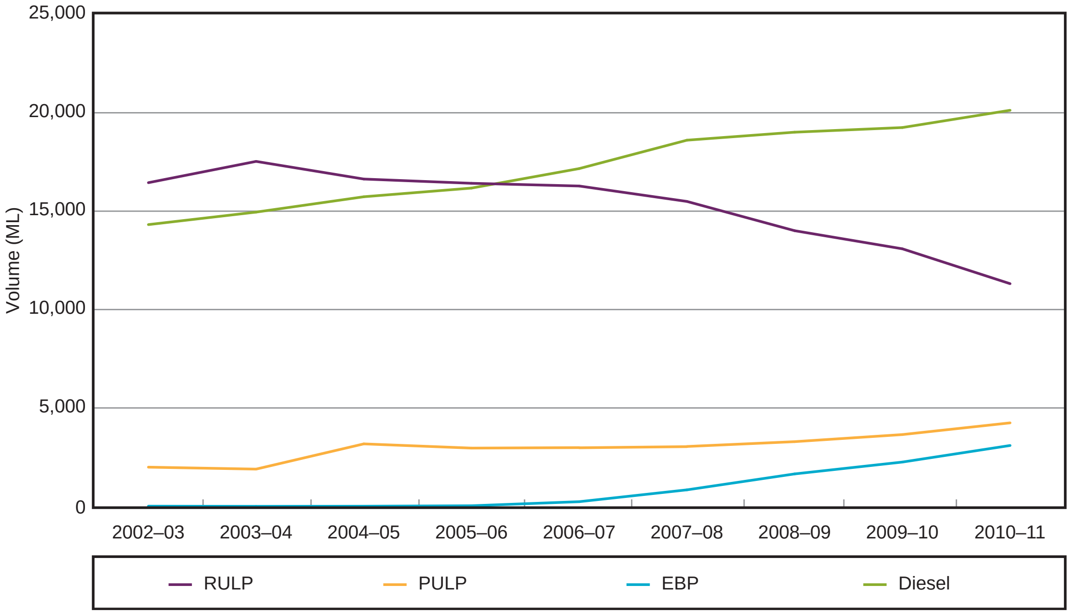
275 Volumes of independent imports are included in data for the wholesale sector. Imports by refiner-marketers are included in the data for total supply sector.

Total revenues in the wholesale sector increased by 13.7 per cent in 2010–11 to about $37.9 billion. Total costs increased by 13.9 per cent to around $37.0 billion. The general movements in total revenues and costs in the wholesale sector are influenced by changes in the international price of petrol.

Chart 15.2 displays volumes sold in the wholesale sector from 2002–03 to 2010–11 by type of product, including RULP, PULP, EBP and diesel.

Sales of diesel increased by 4.6 per cent from the previous year and represented the largest product share of total wholesale volumes in 2010–11 (40.8 per cent). Total RULP volumes declined again, continuing the long-term trend. In 2010–11, RULP volumes represented 22.9 per cent of total volumes, down 31.2 per cent from 2002–03.

Chart 15.2 Wholesale sector sales volumes by product: 2002–03 to 2010–11



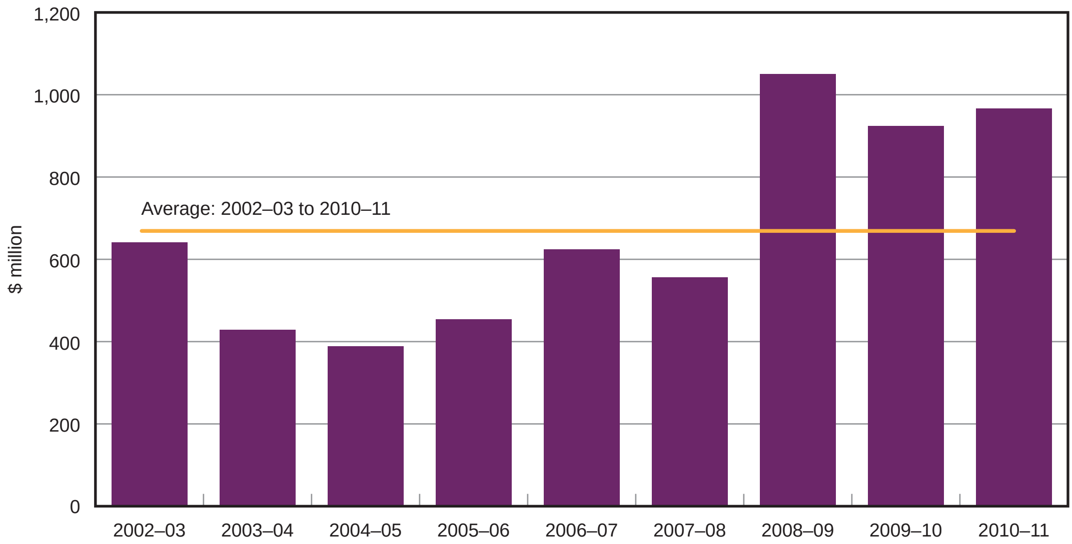
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.2.2 Wholesale sector: total and unit net profits, all products

A number of profitability measures are used in the analysis of monitored firms in the downstream petroleum industry. As discussed in chapters 13 and 14, the key measure of profit used by the ACCC is net profit or adjusted EBIT. This is a standard accounting measure of earnings accruing to shareholders.

Chart 15.3 displays net profit for the wholesale sector for all products, that is, unleaded petrol products (RULP, PULP and EBP), diesel, automotive LPG and other petroleum products, from 2002–03 to 2010–11. The chart shows that wholesale net profit for 2010–11 was about $966 million, compared with the average net profit of about $670 million over the period from 2002–03 to 2010–11. In contrast to the refinery and total supply sectors, the wholesale sector's net profits have been less volatile.

Chart 15.3 Wholesale sector net profit, all products: 2002–03 to 2010–11

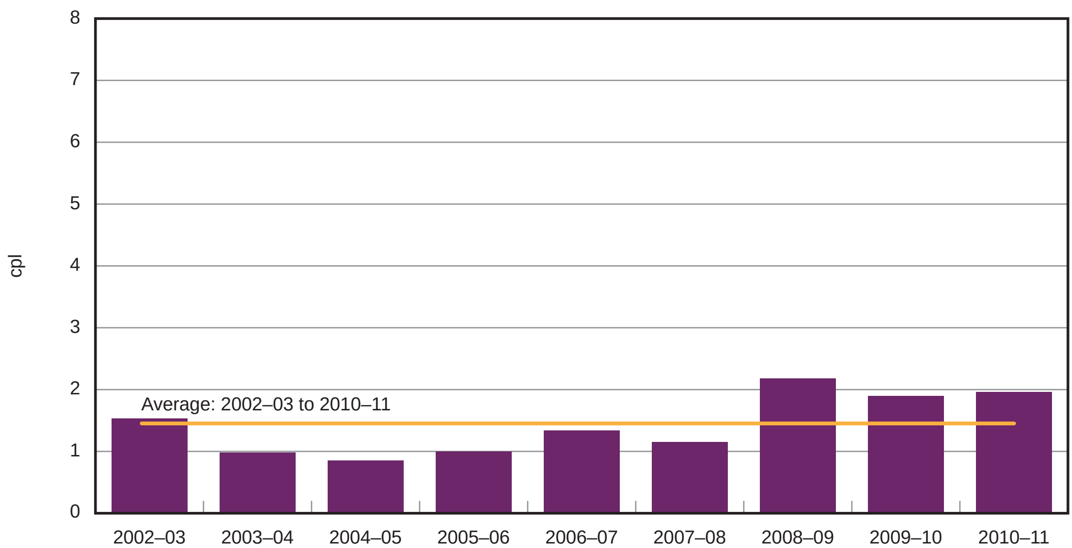


Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Unit profit measures are expressed in cents per litre and are derived by dividing total net profit by total volumes sold in the financial year. Chart 15.4 displays unit net profit in cents per litre (adjusted EBIT cpl) for the wholesale sector for the period 2002–03 to 2010–11.

Unit net profit for the wholesale sector has remained relatively stable in recent years. In 2010–11, unit net profit was 1.96 cpl, compared with the average unit net profit for the time series of 1.44 cpl. The unit net profit has ranged from a low of 0.85 cpl in 2004–05 to a high of 2.18 cpl in 2008–09.

Chart 15.4 Wholesale sector unit net profit, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.2.3 Wholesale sector: other key performance indicators

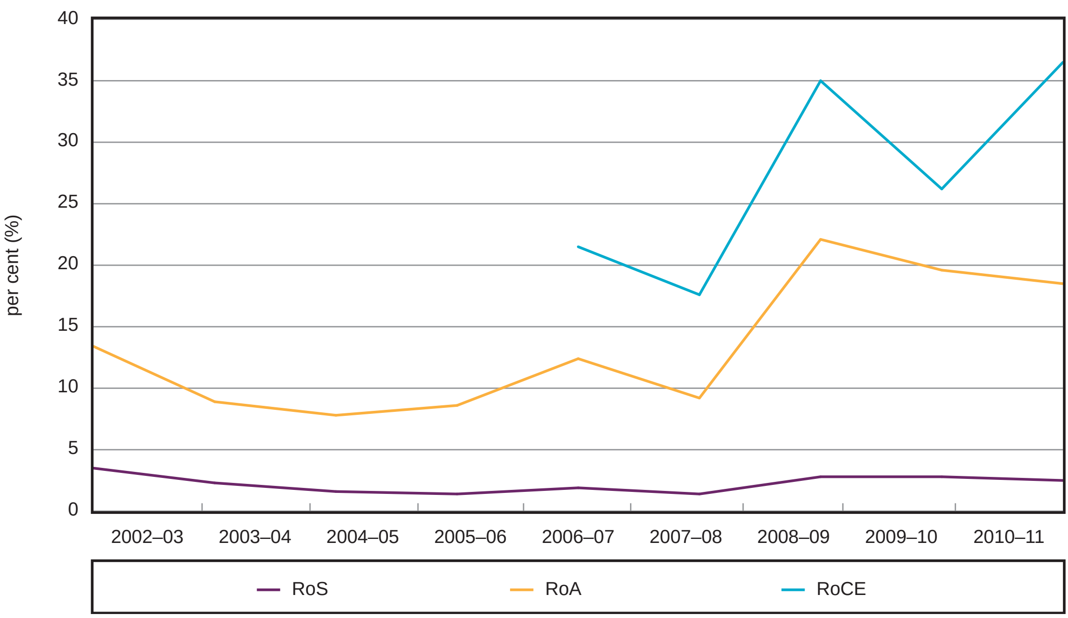
Other profit KPIs used to assess wholesale sector performance include return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE). For further detail on these KPIs refer to box 13.1 in chapter 13.

Chart 15.5 shows RoS and RoA for the period 2002–03 to 2010–11. RoCE is shown for the period 2006–07 to 2010–11.

Observations from this chart include:

- RoS in 2010–11 was 2.5 per cent. This compares with an average of 2.2 per cent for the period 2002–03 to 2010–11.
- RoA for the wholesale sector was 18.5 per cent in 2010–11. The average RoA for the entire time series was 13.2 per cent.
- RoCE was 36.5 per cent in 2010–11, compared with the long-term average of 27.0 per cent.

Chart 15.5 Wholesale sector return on sales, return on assets and return on capital employed, all products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.3 Wholesale sector: revenues, costs and profits — petrol products

Section 15.2 discussed total revenues, costs and profits for all wholesale activities conducted by the monitored firms. This includes sales of all petroleum and other products to the retail and commercial sectors.

This section discusses the revenues, costs and profits associated with the wholesaling of petrol products only. Petrol products include RULP, PULP and EBP.

Data provided by monitored firms has allowed assessment of revenues and purchases by product. However, as was the case in the refinery sector, it has been necessary to allocate costs in order to assess net profits by product. Sale volumes in the wholesale sector were used to prorate costs across products and calculate net profits by product.

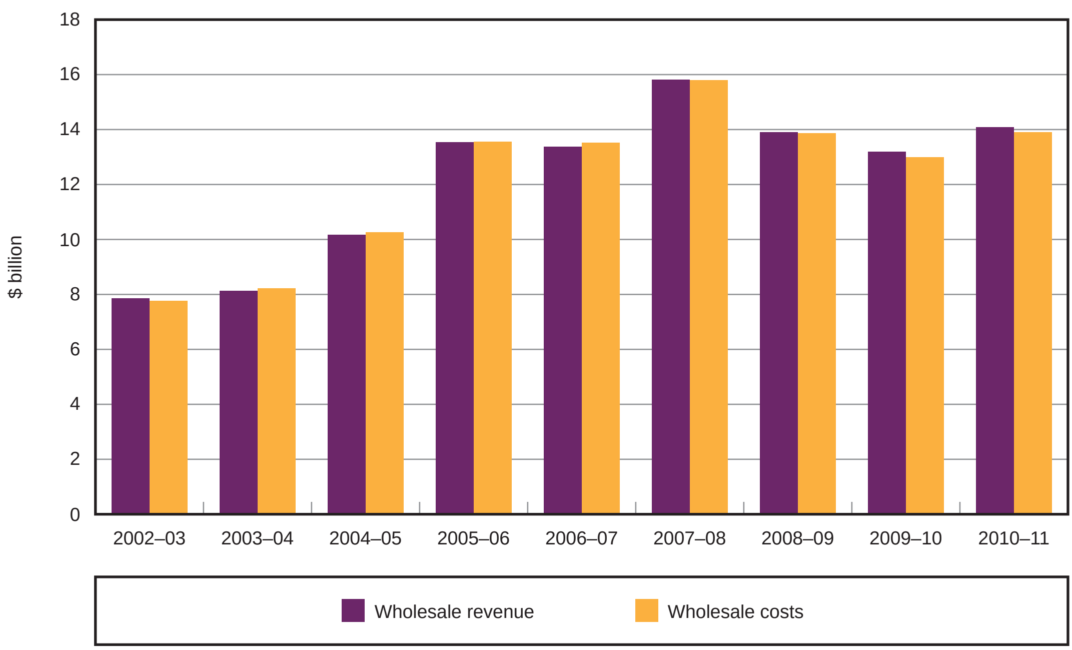
15.3.1 Wholesale sector: revenues and costs, petrol products

Revenues and costs associated with buying and selling petrol products in the wholesale sector are presented in Chart 15.6.

After two years of declining revenues and costs since 2007–08, revenues for petrol in the wholesale sector increased to about $14.1 billion in 2010–11. Costs increased to $13.9 billion.

Overall petrol volumes traded in the wholesale sector decreased by 1.8 per cent to 18,649 megalitres in 2010–11. Over the last three years to 2010–11, total petrol volumes in the wholesale sector have remained relatively stable. Movements in the associated revenues and costs have been affected by changes in oil and refined product prices observed in international markets.

Chart 15.6 Wholesale sector revenues and costs, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

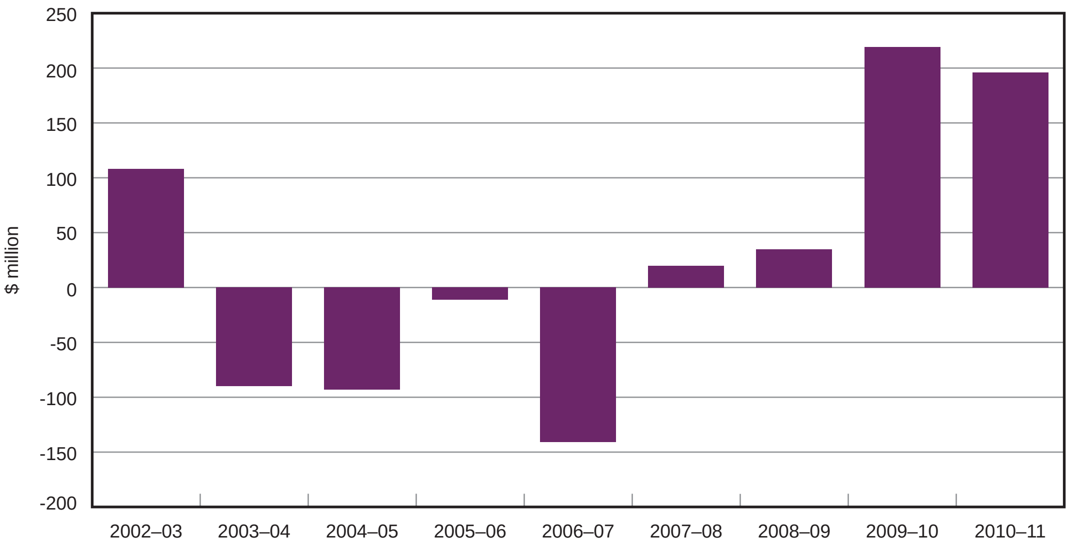
15.3.2 Wholesale sector: total and unit net profits, petrol products

This section presents estimates of total net profits (adjusted EBIT) and unit net profits (expressed in cents per litre) for petrol products for the wholesale sector. Adjusted EBIT is a standard accounting measure of net earnings accruing to shareholders.

Chart 15.7 displays net profit on petrol for the wholesale sector since 2002–03. Chart 15.7 indicates that:

- In 2010–11, net profit was about $196 million. This compares with the long-term average of $27 million.
- In contrast to total sector profits, profits in the wholesale sector on petrol products have been volatile, with negative returns in four of the nine years since 2002–03. Assessing the profitability of petrol products using data for any one year may provide a misleading picture of the overall performance of the sector.

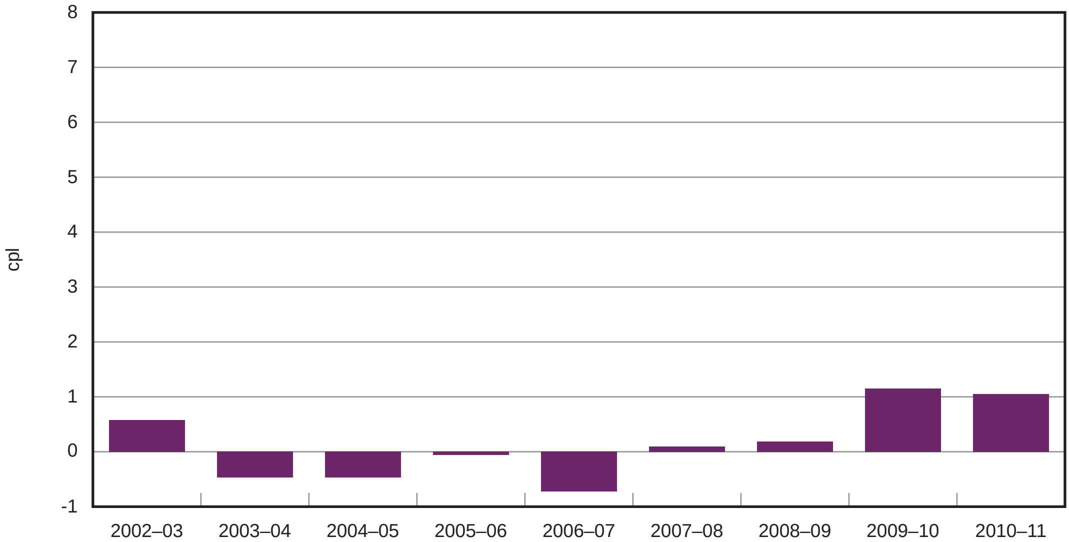
Chart 15.7 Wholesale sector net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 15.8 displays unit net profit for petrol products (that is, in cents per litre) in the wholesale sector from 2002–03 to 2010–11.

Chart 15.8 Wholesale sector unit net profit, petrol products: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 15.8 indicates that for petrol products in the wholesale sector:

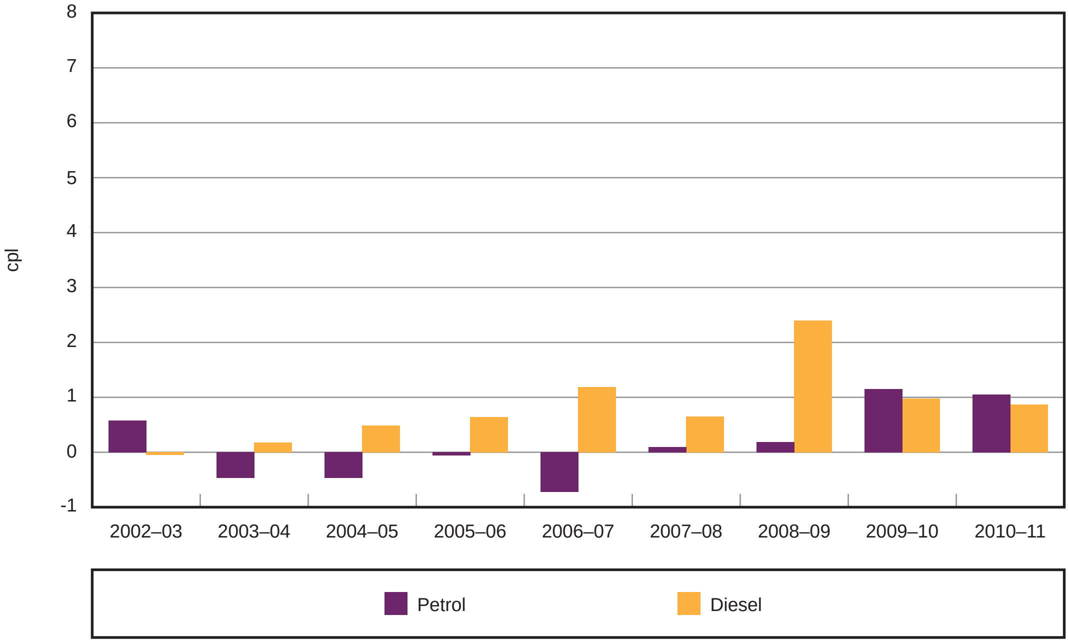
- Unit net profit was 1.05 cpl in 2010–11, compared with the average unit net profit of 0.14 cpl over the period 2002–03 to 2010–11.
- Unit net profits have ranged from a low of negative 0.72 cpl in 2006–07 to a high of 1.15 cpl in 2009–10.

15.3.3 Wholesale sector: comparison of unit net profit for petrol and diesel

This section compares unit net profit of petrol products (RULP, PULP and EBP) with diesel. Chart 15.9 displays unit net profit for petrol and diesel in the wholesale sector since 2002–03. Points from the chart include:

- In 2010–11, diesel unit net profit was 0.87 cpl while unit net profit for petrol products was 1.05 cpl.
- Since 2002–03, average unit net profit for diesel has been 0.87 cpl while the unit net profit for petrol has averaged 0.14 cpl.
- Diesel unit net profit has been relatively more consistent over the period. These positive profits are partly linked to the increase in diesel volumes, increasing from 34 per cent of total wholesale volumes in 2002–03 to about 41 per cent in 2010–11. Petrol volumes over the same period have declined from 44 per cent to around 38 per cent of total wholesale volumes.

Chart 15.9 Wholesale sector unit net profits, petrol products and diesel: 2002–03 to 2010–11



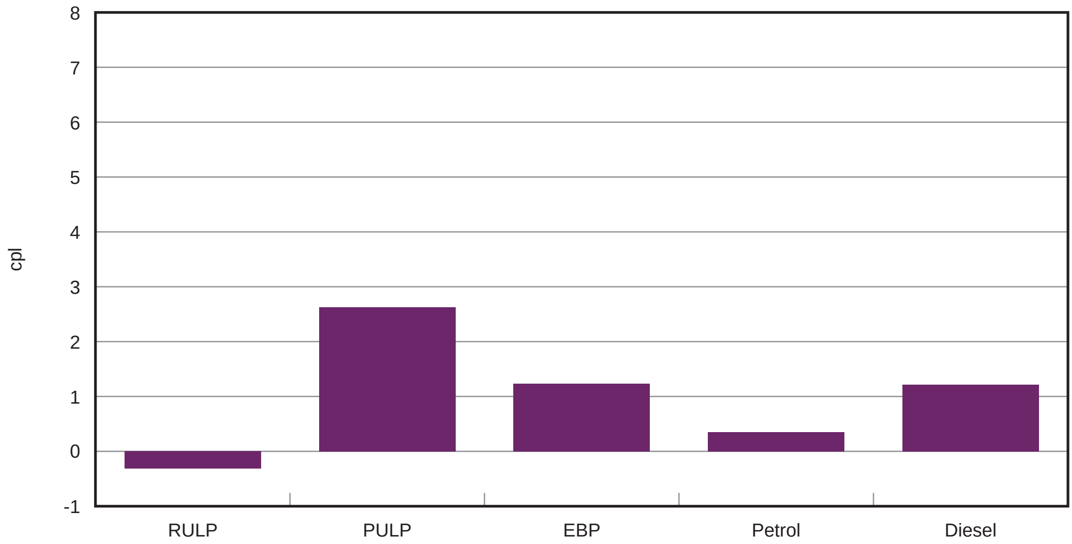
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.3.4 Wholesale sector: unit net profits by product

This section breaks down the components of petrol profits and estimates the individual profitability of RULP, PULP, EBP and diesel in the wholesale sector. Chart 15.10 displays the average unit net profit by product from 2006–07 to 2010–11. The chart indicates that:

- Over the past five years, unit net profit for PULP has averaged about 2.63 cpl.
- The average unit net profit for RULP has been negative while the unit net profit for all petrol products (RULP, PULP and EBP) averaged around 0.35 cpl.
- Diesel unit net profit has averaged 1.22 cpl over the period.

Chart 15.10 Wholesale sector estimated unit net profits by product: average from 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.4 Comparison of the profitability of the petroleum wholesale sector with other Australian industries

The ACCC has developed benchmarks for assessing profits in the Australian petroleum wholesale sector, represented by the firms monitored by the ACCC, relative to other selected Australian wholesaling industries. The ACCC has compared monitored firms with companies which operate in selected Australian wholesaling industries, such as chemical, grocery and motor vehicle wholesaling.

Three KPIs are used for the purpose of this comparative analysis: return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE). The caveats discussed in chapter 13 about comparing the profitability of various industries using standard KPIs also apply in this section.

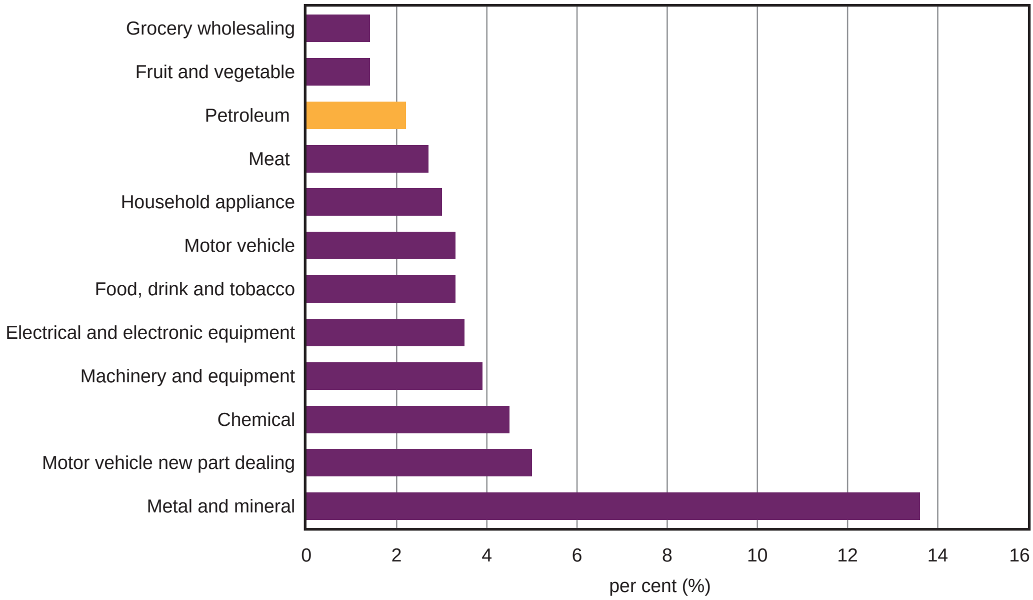
15.4.1 Wholesale sector comparative analysis: return on sales

Chart 15.11 presents average RoS for the period 2002–03 to 2010–11 for the petroleum wholesale sector compared with other selected Australian wholesaling industries.

Observations from the chart include:

- The RoS for the petroleum wholesale sector for the period 2002–03 to 2010–11 was about 2.2 per cent. This rate is lower than most other industry groupings. Firms in high-volume, low-margin industries generally have lower than average RoS.
- Other wholesale industries with lower RoS were grocery wholesaling and fruit and vegetable wholesaling, both with returns of around 1.4 per cent.

Chart 15.11 Average return on sales of the petroleum wholesale sector and other domestic wholesale industries: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bloomberg database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis. Industries have been chosen on the basis of the largest number of firms within each industry (minimum number of firms in each industry is five).

15.4.2 Wholesale sector comparative analysis: return on assets

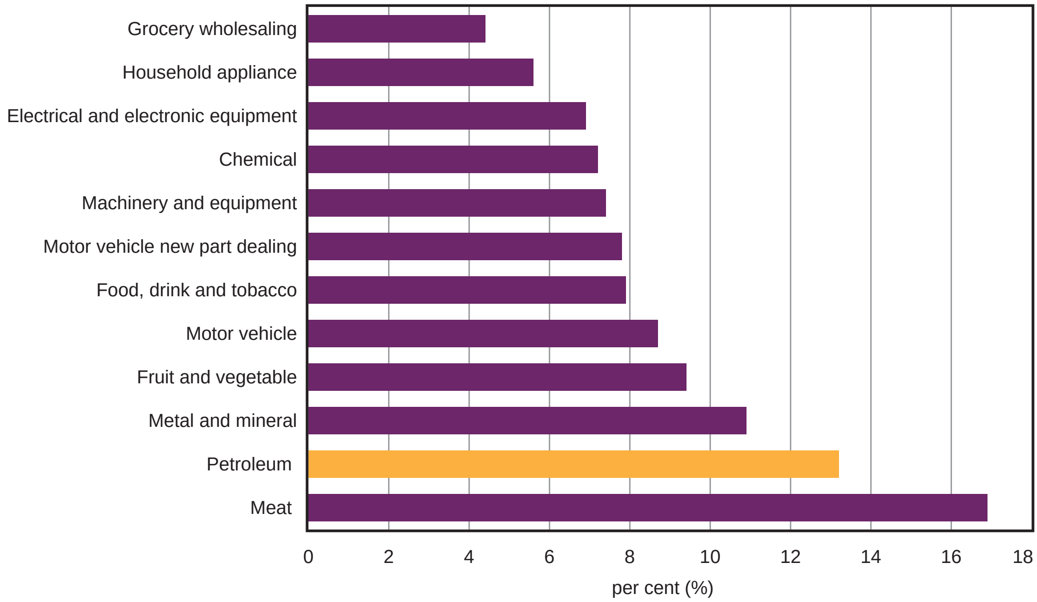
This section compares the RoA in the Australian petroleum wholesale sector with other selected wholesaling industries. As noted in chapter 13, RoA provides a clearer indication of relative profitability for firms in high-volume, low-margin industries.

However, as noted in chapters 13 and 14, it is important to treat estimates of RoA with caution as they may be affected by different approaches to asset valuation and by differences in companies' asset age profiles. All else equal, asset values will tend to be lower for assets that are old and valued in terms of depreciated historical cost than relatively new assets valued on a replacement cost basis. Data for the petrol monitoring program has been reported to the ACCC on the basis of historical cost.

Chart 15.12 presents average RoA for the period 2002–03 to 2010–11. Points from the chart include:

- The petroleum wholesale sector average RoA was 13.2 per cent.
- This rate of return is at the higher end of the selected wholesale industry groupings. Only meat wholesaling exceeded petroleum wholesaling, with an average RoA of 16.9 per cent.

Chart 15.12 Average return on assets of the petroleum wholesale sector and other domestic wholesalers: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bloomberg database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis. Industries have been chosen on the basis of the largest number of firms within each industry (minimum number of firms in each industry is five).

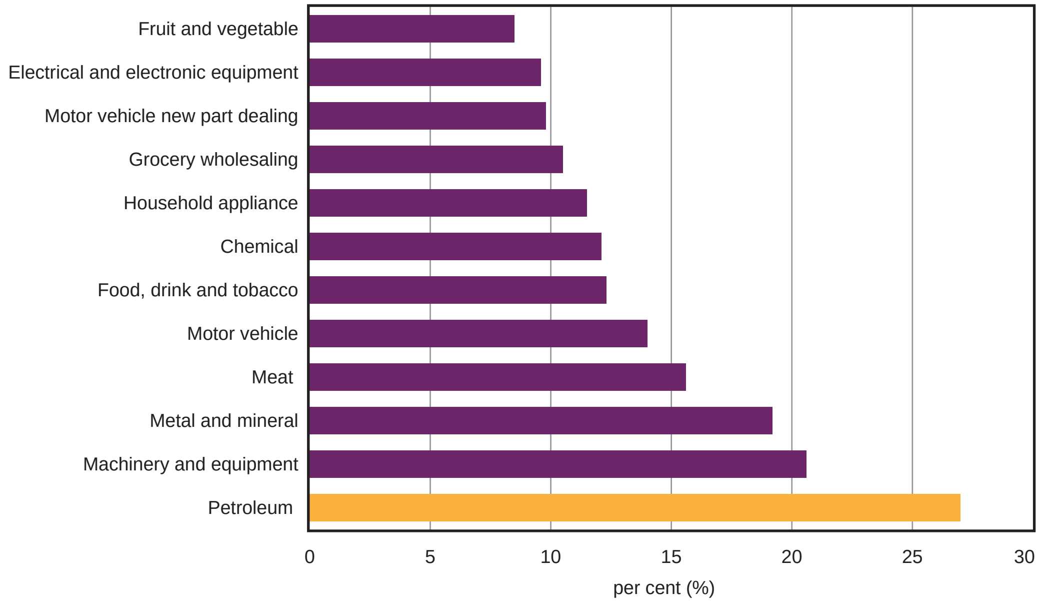
15.4.3 Wholesale sector comparative analysis: return on capital employed

This section compares RoCE in the petroleum wholesale sector with other selected Australian wholesaling industries.

Chart 15.13 shows comparative data for RoCE for the period 2006–07 to 2010–11. Observations from this chart include:

- RoCE for the petroleum wholesale sector was around 27 per cent.
- This was the largest return on capital among the selected industry groupings. The next largest grouping was machinery and equipment, with a return of around 21 per cent.

Chart 15.13 Average return on capital employed of the petroleum wholesale sector and other domestic wholesalers: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bloomberg database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis. Industries have been chosen on the basis of the largest number of firms within each industry (minimum number of firms in each industry is five).

15.5 International comparative analysis: Australian and international petroleum wholesale sectors

In the previous section, the petroleum wholesale sector was compared with other Australian wholesale industries. This section provides a comparison between the Australian petroleum wholesale sector and an average of selected overseas petroleum wholesale sectors.

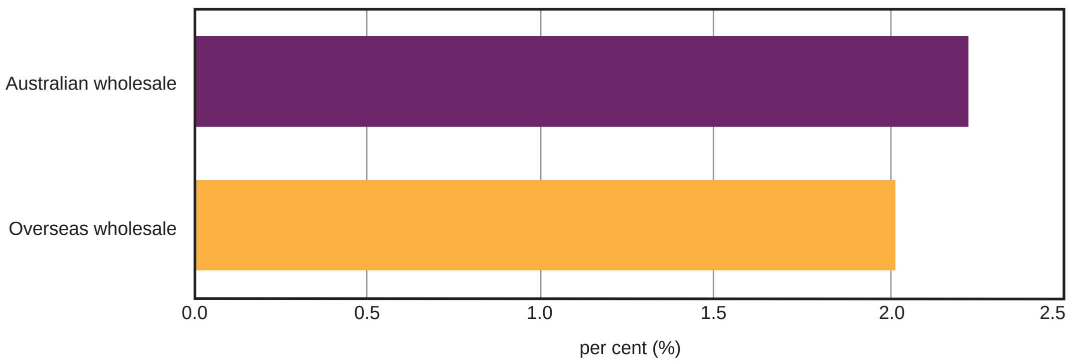
The following two sections compare RoS and RoA. The overseas companies selected for this comparative analysis include around 27 companies from multiple countries whose primary activity is the wholesaling of petroleum products. The comparison period is 2002–03 to 2010–11.

15.5.1 Wholesale sector international comparison: return on sales

Chart 15.14 displays average RoS for the Australian petroleum wholesale sector and for similar overseas businesses.

The average RoS for the Australian wholesale sector for the period 2002–03 to 2010–11 was 2.2 per cent, broadly comparable with the average for overseas companies of 2.0 per cent.

Chart 15.14 Average return on sales of the domestic petroleum wholesale sector and international petroleum wholesale sector: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bureau van Dijk Orbis database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non-government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner-marketers with large upstream activities, such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities, such as chemical manufacturing or gas-related activities. Calculations are based on a sample of 27 international wholesalers.

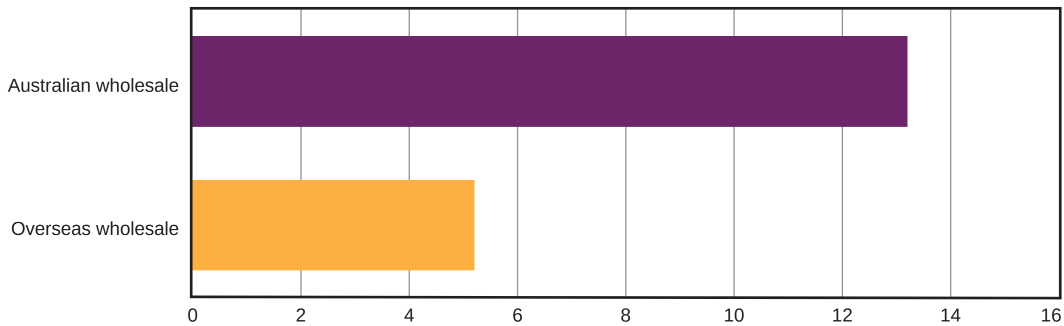
15.5.2 Wholesale sector international comparison: return on assets

Chart 15.15 displays average RoA for the period 2002–03 to 2010–11 for the Australian petroleum wholesale sector and for the same overseas units presented in section 15.5.1.

The cautionary caveats outlined in section 15.4.2 regarding difficulties in comparing rates of return on assets across firms and industries should also be noted in respect of data presented in this section.

The average RoA for Australian petroleum wholesale sector for the period 2002–03 to 2010–11 was 13.2 per cent, comparable with the international average of 5.2 per cent.

Chart 15.15 Average return on assets of the domestic petroleum wholesale sector and international petroleum wholesale sector: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process and Bureau van Dijk Orbis database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non-government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner-marketers with large upstream activities, such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities, such as chemical manufacturing or gas-related activities. Calculations are based on a sample of 27 international wholesalers.

15.6 Retail sector: revenues, costs and profits

The retail sector in Australia is comprised of a large number of single and multi-site operations. The focus of the analysis in this chapter is on the retail operations of the monitored companies. These include refiner-marketer owned and operated sites, commission agents, franchisees, refiner-marketer branded sites, and various large and small independents. Companies in the retail sector purchase petrol products and other fuels from wholesalers and sell them to the public.

The retail sector increasingly also provides non-fuel services, such as car-wash and ATM facilities. As far as possible, data on non-fuel products and services are presented as 'convenience store' sales throughout the chapter.

As noted in chapters 3, 4 and 16, the retail sector has been among the most dynamic of all sectors in the Australian downstream petroleum industry. In recent years, petrol retailing has undergone significant changes in terms of the number of retail sites, the type of ownership and the general approach to selling petrol to consumers.

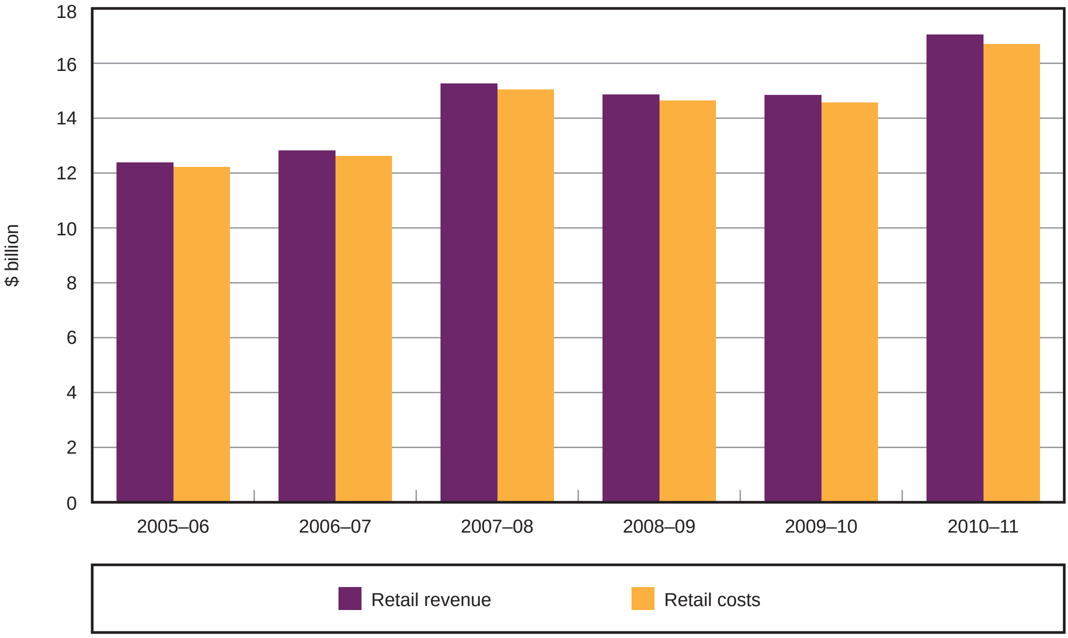
15.6.1 Retail sector: total revenues, costs and volumes, all products and services

The retail sector derives revenues from the sale of all petroleum products (RULP, PULP, EBP, diesel, automotive LPG), lubricants and other convenience store products and services to consumers and other end users.

Convenience services, including ATM hosting, car-wash facilities, gas bottle exchange, trailer hire and general convenience store sales have become a critical element in overall revenue and profitability in the retail sector. The convenience store contribution to profits is discussed in section 15.10.

The retail sector's total revenues and costs are presented in chart 15.16. In 2010–11 total revenue increased by 14.8 per cent to about $17.0 billion. Costs, on the other hand, increased by 14.7 per cent to around $16.7 billion.

Chart 15.16 Retail sector, total revenues and costs, all products and services: 2005–06 to 2010–11

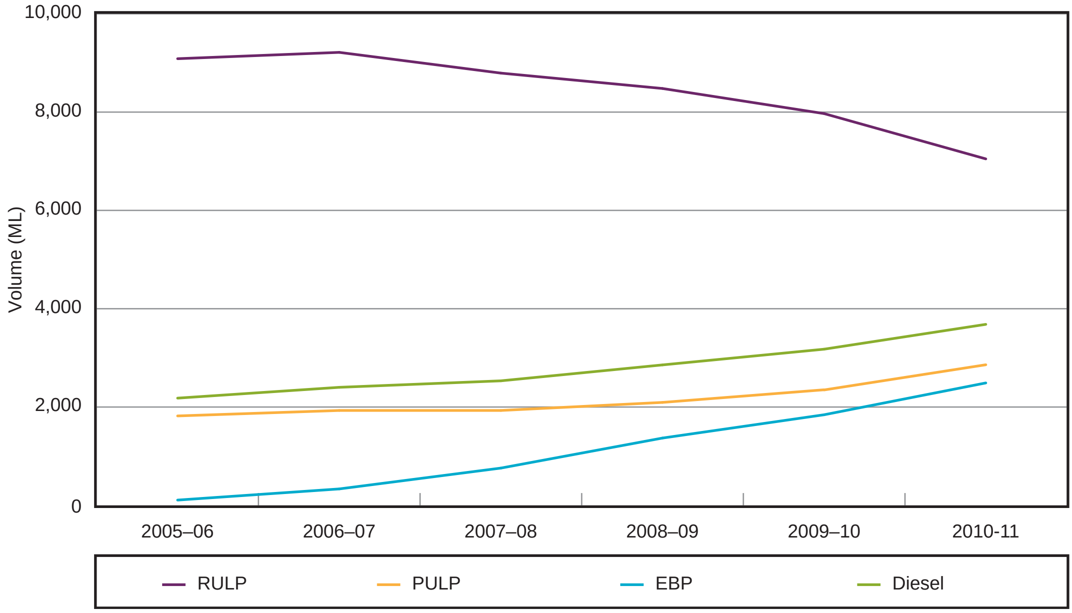


Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

Chart 15.17 displays sale volumes of petrol products and diesel from 2005–06 to 2010–11. In difference to the wholesale sector where diesel had the largest sector share, RULP accounts for the largest volume sales in the retail sector. This is partly due to significant wholesaling of diesel volumes directly to commercial users and the mining industry.

Although sales of RULP are dominant, they have been declining over the past five years. Sale volumes of RULP have fallen by around 22 per cent since 2005–06. In contrast, sales of PULP and diesel have increased, by about 57 per cent and 69 per cent respectively. EBP volumes have also increased from a relatively small base.

Chart 15.17 Retail sector sale volumes by product type: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

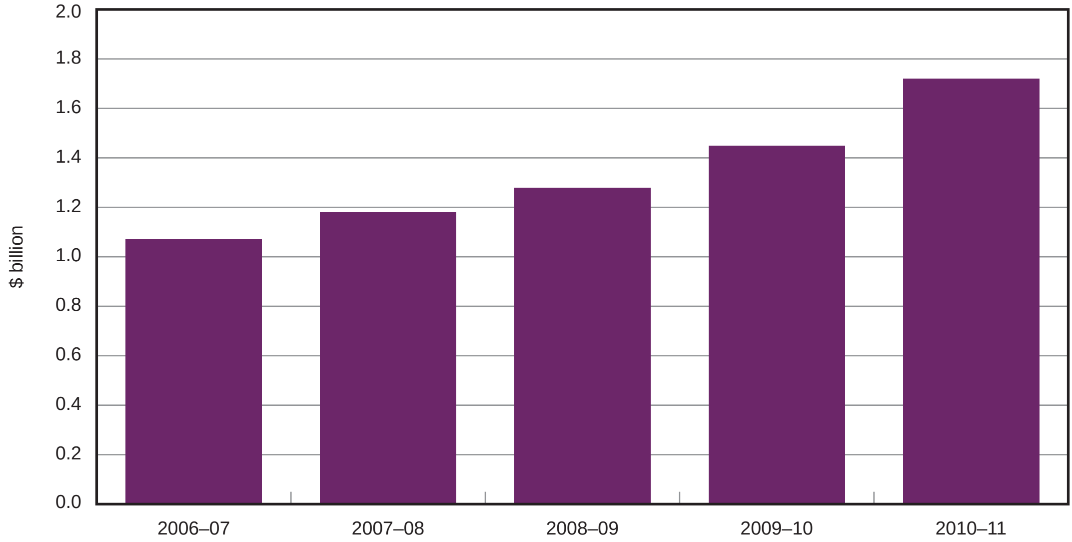
15.6.2 Retail sector: total operating expenses, all products and services

Retail operating expenses are costs other than those associated with the purchase of fuel or convenience store goods for resale. Typical retail operating expenses include wages and salaries, repairs and maintenance, transport costs and utility costs. Note that total changes in operating expenses can be influenced by changes in a company's internal accounting policies or procedures.

Chart 15.18 displays total operating expenses (excluding purchases) from 2006–07 to 2010–11.[276] Operating expenses have risen every year since 2006-07.

276 The ACCC used a slightly modified data collection template prior to 2006–07. Expense aggregates are not available prior to this year.

Chart 15.18 Retail sector, total operating expenses, all products and services: 2006–07 to 2010–11



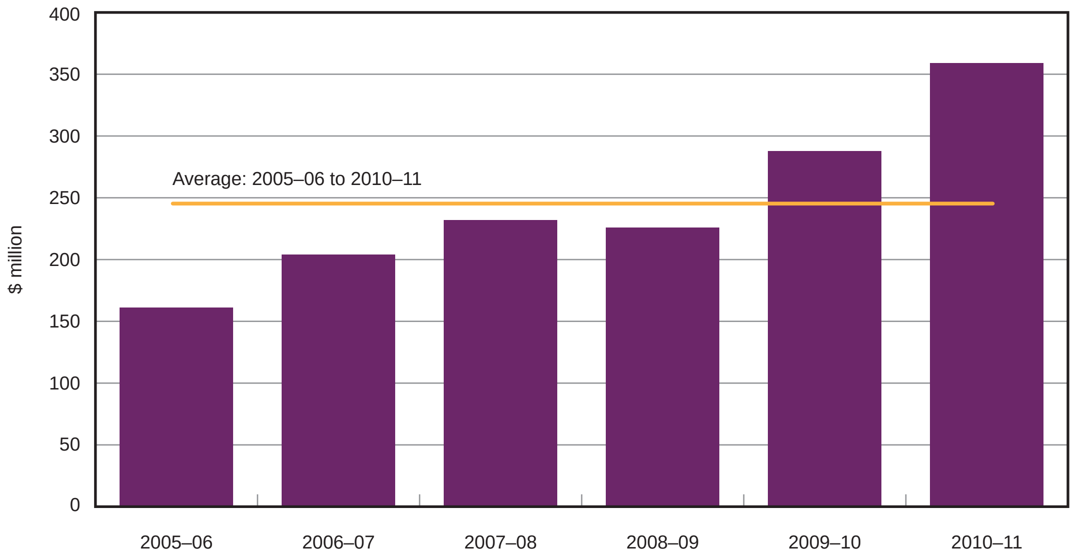
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.6.3 Retail sector: total net profits, all products and services

This section presents estimates of net profits for all products in the retail sector, that is, petrol products (RULP, PULP and EBP), diesel, automotive LPG and other petroleum products and non-fuel products and services. Chart 15.19 displays total net profit for the retail sector from 2005–06 to 2010–11. Points from the chart include:

- Net profit increased to about $359 million in 2010–11. The average net profit over the period 2005–06 to 2010–11 was $245 million.
- Overall retail sector profitability has increased since 2005–06, apart from 2008–09 when there was a decrease of 2 per cent.

Chart 15.19 Retail sector, total net profit, all products and services: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.6.4 Retail sector: total net profits per retail site, all products and services

The ACCC has estimated total net profits per retail site. When assessing net profit per site, it is necessary to note that the monitored companies have different ownership and profit-sharing arrangements. Among other things, the operators of retail businesses are not always the owners of those businesses.

In many cases, retailers have staff who manage the retail site and all profits accrue to the owner/s. In other cases, there are profit-sharing arrangements whereby convenience store profits are retained by the operator but profits on fuel sales are shared. Other monitored firms have a profit-sharing arrangement across all products and services with the franchisee of the store.

To calculate convenience store profits, the ACCC has adjusted the methodology that is used in the refinery, total supply and wholesale sectors.

While sales and purchases by type of product in the retail sector can be measured without difficulty, estimating net profits is complicated by the presence of common costs.

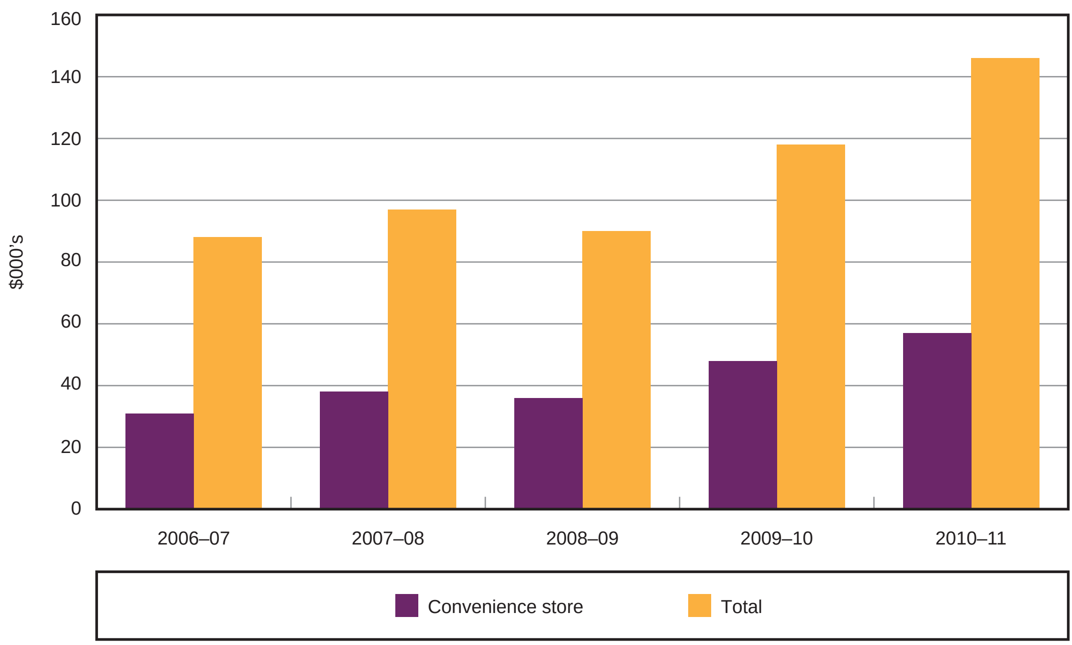
In order to calculate net profits by product, common costs were allocated through a two-stage process. Firstly, gross profit by convenience store and fuel sales were used to prorate costs between these two broad activities. Secondly, costs were then split by product on the basis of the relative product volumes sold.

Chart 15.20 displays total net profit per site and net profits per site for only convenience store sales since 2006–07.[277]

Chart 15.20 indicates that:

- In 2010–11, total net profit per site in the retail sector was about $146,000.
- Convenience store profit growth increased to around $57,000.
- The share of convenience store profits per site increased from 35 per cent in 2006–07 to 40 per cent in 2009–10. In 2010–11, the share of convenience profits had slightly decreased to 39 per cent of total net profit.

Chart 15.20 Retail sector, estimated total and convenience store net profit per site: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

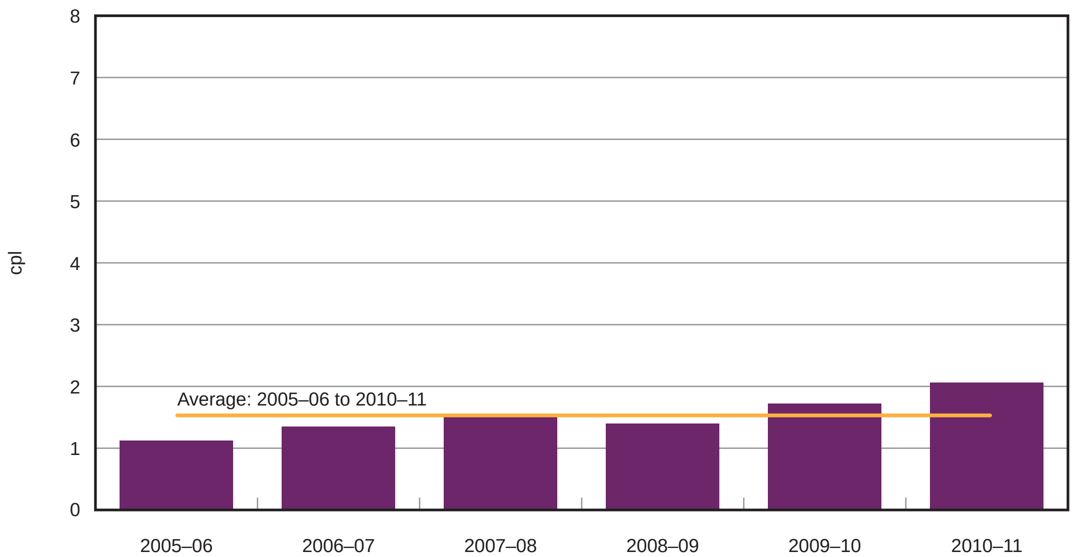
277 Due to data revisions, data presented in this year's monitoring report for net profits per site and in chart 15.20 differ slightly to data presented on pp. 260–261 of the 2010 ACCC petrol monitoring report.

15.6.5 Retail sector: unit net profit, all products and services

Unit net profits for the retail sector are derived by dividing net profit for all petroleum products and convenience store sales by the total volume of petroleum products sold. Chart 15.21 presents unit net profits for the retail sector for each year from 2005–06 to 2010–11. The chart shows that:

- In 2010–11, unit net profit for the retail sector for all petroleum products and convenience store sales was 2.06 cpl.
- The average unit net profit for the retail sector for the period 2005–06 to 2010–11 was 1.54 cpl.

Chart 15.21 Retail sector, unit net profit, all petroleum products and convenience store products and services: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.6.6 Other key performance indicators

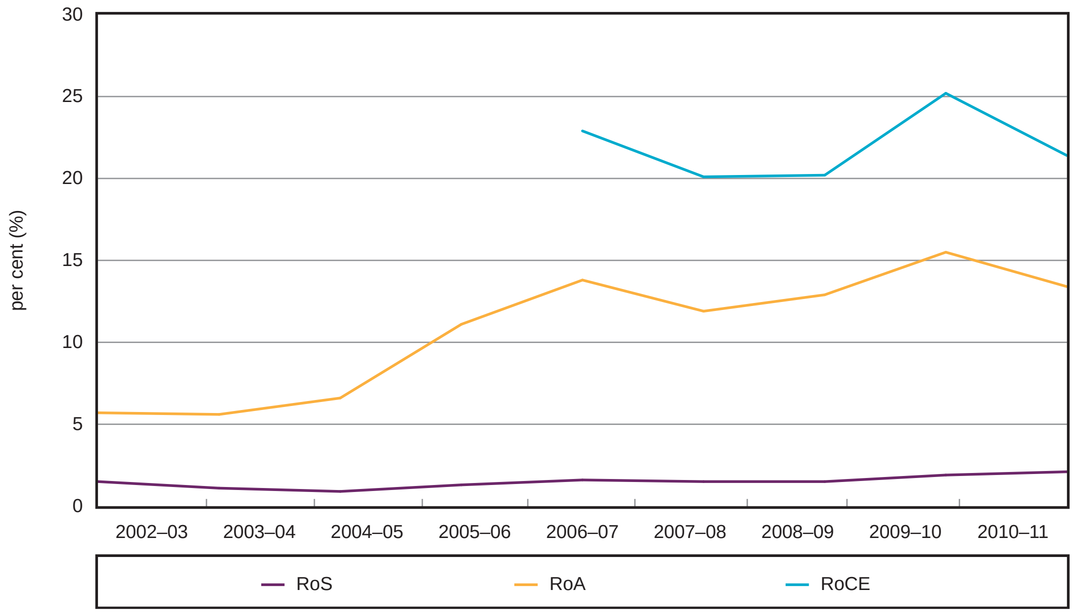
This section presents other profit KPIs to assess the retail sector, return on sales (RoS), return on assets (RoA) and return on capital employed (RoCE). The discussion in box 13.1 in chapter 13 provides further details on these KPIs.

Chart 15.22 displays these profit KPIs for the period 2002–03 to 2010–11 for all petroleum products and convenience store products and services. Note that RoCE is presented for the period 2006–07 to 2010–11.

The chart shows that in 2010–11:

- RoS was 2.1 per cent, slightly above the long-term average of 1.6 per cent.
- RoA was 13.4 per cent, above its long-term average of 11.5 per cent.
- RoCE was 21.4 per cent, below the long-term average of 21.9 per cent.

Chart 15.22 Retail sector, return on sales, return on assets and return on capital employed, all petroleum products and convenience store products and services: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.7 Retail sector: revenues, costs and profits — petrol products

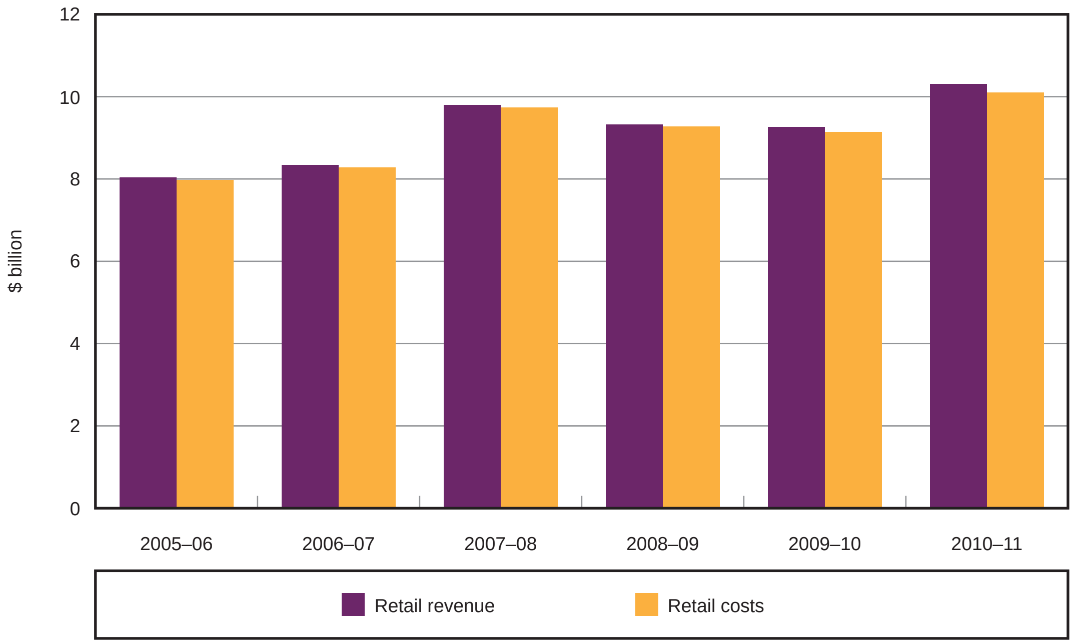
This section discusses the profits derived from the sale of petrol products in the retail sector. Petrol products include RULP, PULP and EBP. Refer to section 15.6.4 for further details on the methodology for expense allocation.

15.7.1 Retail sector: revenues and costs, petrol products

Both revenue and costs associated with the sale of petrol products increased in 2010–11. Total revenue increased to about $10.3 billion and costs increased to around $10.1 billion.

Chart 15.23 presents total revenues and costs from 2005–06 to 2010–11.

Chart 15.23 Retail sector, revenues and costs, petrol products: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

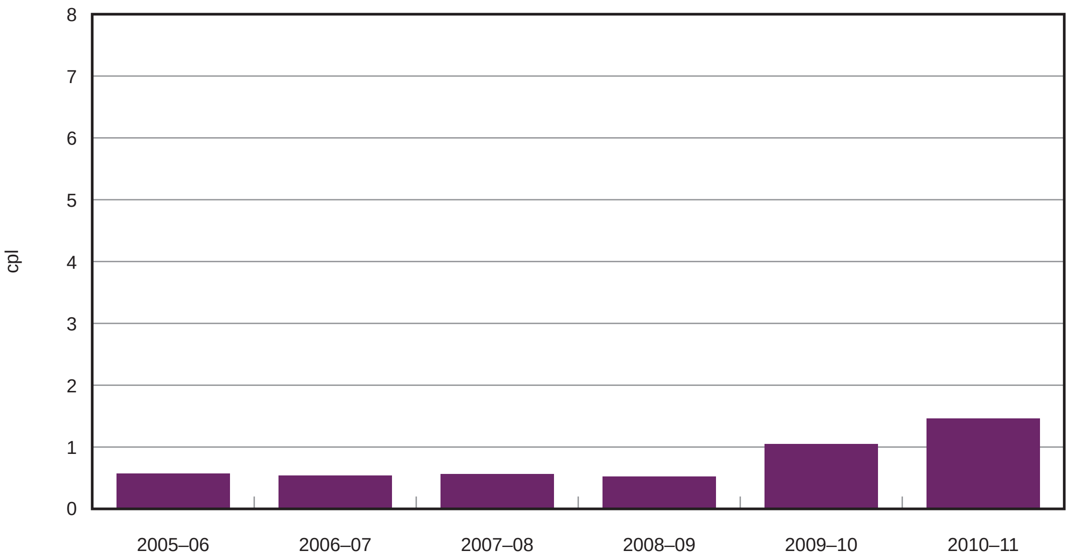
15.7.2 Retail sector: total and unit net profits, petrol products

The ACCC has estimated net profits for petrol products for the monitored firms in the retail sector. Total net profit for petrol was about $181 million in 2010–11. This compares with the average long-term net profit of $93 million.

Chart 15.24 displays unit net profits for petrol products for each year from 2005–06 to 2010–11. Unit net profits are estimated on a cents per litre basis. Overall, the chart indicates that:

- Net profits on petrol increased in 2010–11 to 1.46 cpl.
- The average unit net profit on petrol over the time series was 0.79 cpl.

Chart 15.24 Retail sector, unit net profit, petrol products: 2005–06 to 2010–11



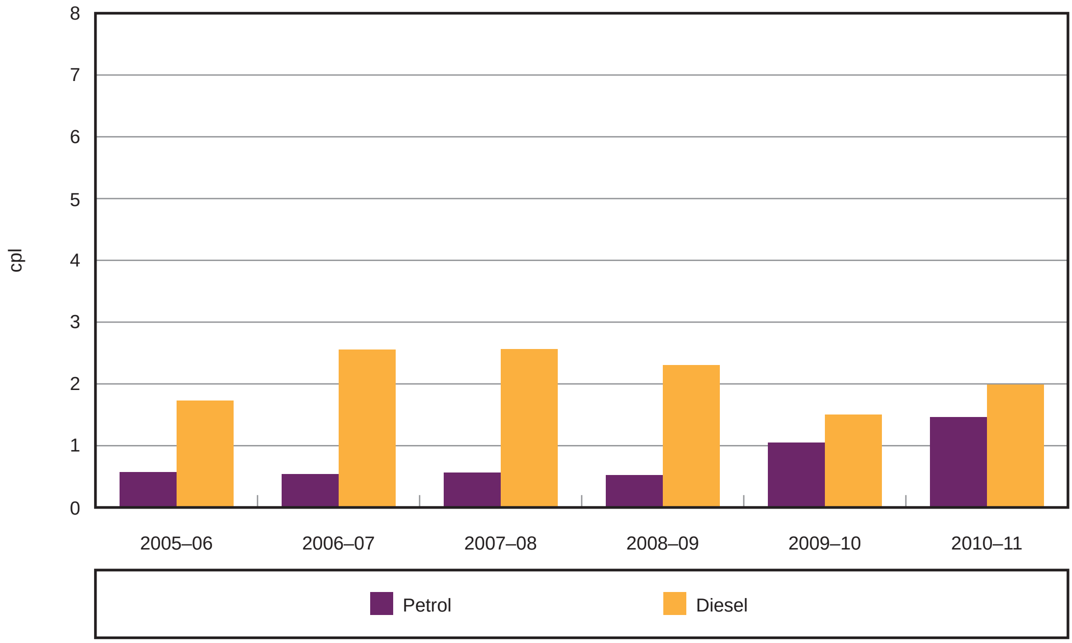
Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.7.3 Retail sector: petrol and diesel unit net profits

Chart 15.25 compares unit net profits from retail sales of petrol products and diesel from 2005–06 to 2010–11. Points from the chart include:

- Diesel unit net profit has remained above unit net profit for petrol in 2010–11.
- Diesel unit net profit averaged 2.08 cpl over the time series, with petrol averaging 0.79 cpl, although the last two years have seen rising unit net profits for petrol products.

Chart 15.25 Retail sector, unit net profits, petrol products and diesel: 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

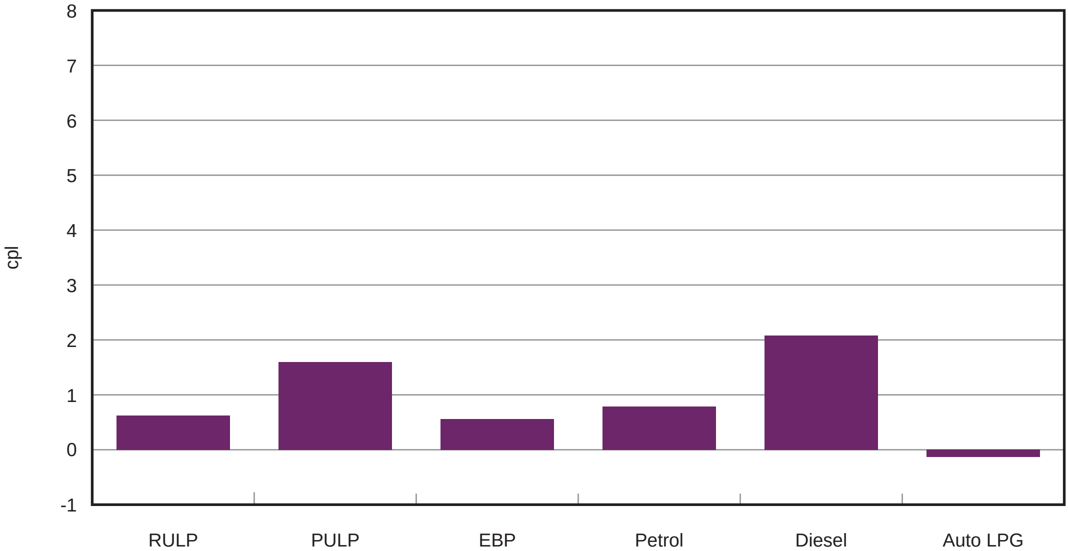
15.7.4 Retail sector: unit net profits by product

The ACCC has estimated net profits for individual products sold in the retail sector (that is RULP, PULP, EBP, diesel and automotive LPG). Chart 15.26 displays estimates of the average unit net profit for each product over the period 2005–06 to 2010–11.

Points from the chart include:

- Unit net profit for RULP has averaged 0.62 cpl.
- Diesel average unit net profit over the period was 2.08 cpl.
- PULP average unit net profit was 1.60 cpl.

Chart 15.26 Retail sector, estimated unit net profit by product: average from 2005–06 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.8 Comparison of the profitability of the retail sector with other Australian retail industries

The ACCC has developed benchmarks to assess firms monitored by the ACCC in the Australian retail petroleum sector (that is, including all petroleum and non-fuel products and services) relative to firms in other selected Australian retail industries. The ACCC has used data in the Australian Securities Exchange's top 200 (ASX200) businesses by market capitalisation to compile profitability KPIs for selected Australian retailing businesses.

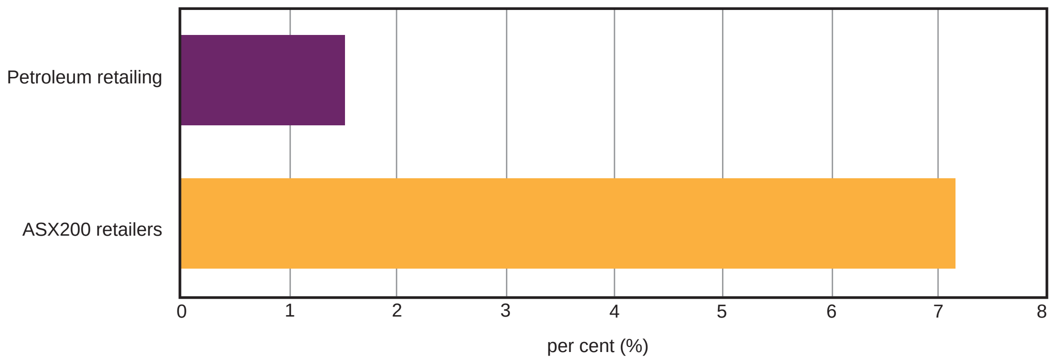
Two KPIs are used for these comparative purposes: RoS and RoA. The caveats discussed in chapter 13 about comparing the profitability of various industries using standard KPIs also apply in this section.

15.8.1 Australian comparison: return on sales

Chart 15.27 shows the average RoS for the period 2002–03 to 2010–11 for the retail petroleum sector, as well as for other selected Australian retailing businesses. Observations from the chart include:

- The retail petroleum sector average RoS was 1.6 per cent.
- The selected retail units from the ASX200 have a higher average return of 7.2 per cent.

Chart 15.27 Comparison of average return on sales for domestic retail petroleum sector and ASX200 retailers: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Notes: Calculations of RoS of more than 70 per cent (positive and negative) in any year for any company have been excluded. Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis.

15.8.2 Australian comparison: return on assets

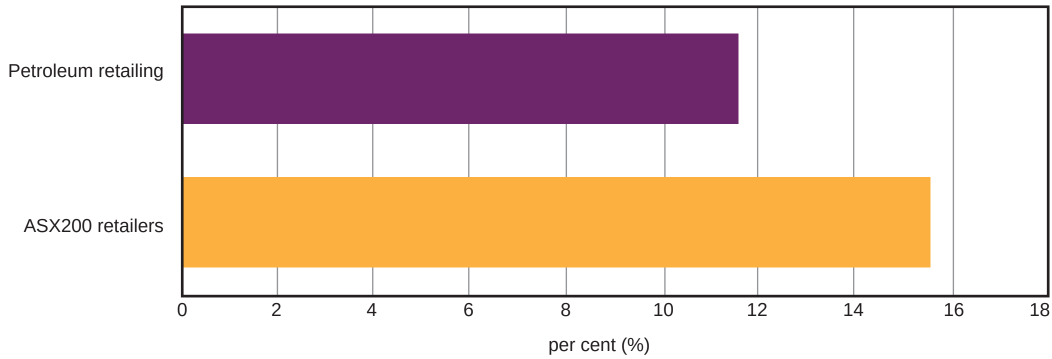
This section compares the RoA in the Australian retail petroleum sector with other selected Australian retail businesses.

As noted in sections 15.4.2 and 15.5.2, estimates of RoA in the retail petroleum sector and other industries should be treated with caution as they may be affected by differences across firms and industries in the age profile of the asset base and also by different approaches for valuing assets. Data for the petrol monitoring program has been reported to the ACCC on the basis of historical cost.

Chart 15.28 presents average RoA for the period 2002–03 to 2010–11. Points from the chart include:

- The retail petroleum sector average RoA was 11.5 per cent.
- Average return for the selected retail businesses from the ASX200 was 15.5 per cent.

Chart 15.28 Comparison of average return on assets for the domestic retail petroleum sector and ASX200 retailers: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Note: Calculations of RoA of more than 70 per cent (positive and negative) in any year for any company have been excluded. Not all companies have data for all years. Some companies report on a calendar-year or other financial-year basis.

15.9 International comparative analysis: the profitability of the Australian retail petroleum sector and international petroleum retailers

In the previous section, the ACCC compared the Australian retail petroleum sector (including all petroleum and non-fuel products and services) with other Australian retailers.

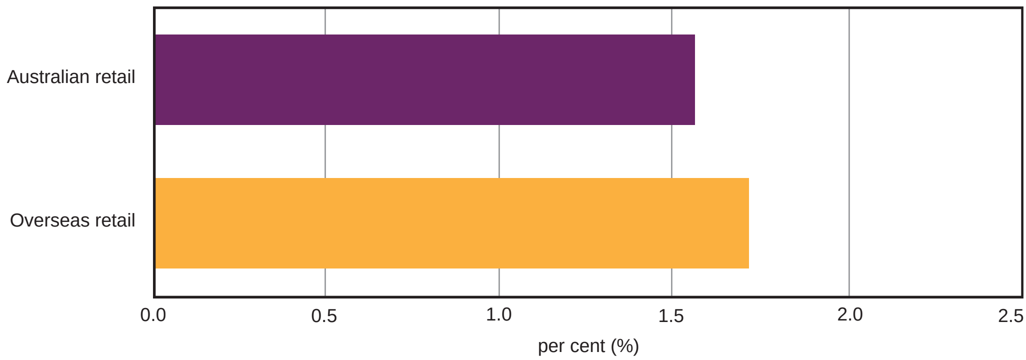
This section compares RoS and RoA for the Australian retail petroleum sector with comparable overseas retail petroleum sectors. Around 22 companies were selected from multiple countries whose primary activity is the retailing of petroleum products. The comparison period is 2002–03 to 2010–11.

15.9.1 Retail sector: international comparison—return on sales

Chart 15.29 shows RoS for the Australian retail petroleum sector and around 22 similar overseas petroleum retailers.

The Australian average RoS was below the international aggregate with 1.6 per cent compared to around 1.7 per cent.

Chart 15.29 Average return on sales of the domestic retail petroleum sector and international retail petroleum sector: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non-government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner-marketers with large upstream activities, such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities, such as chemical manufacturing or gas-related activities. Calculations are based on a sample of 22 international retailers.

15.9.2 Retail sector: international comparison—return on assets

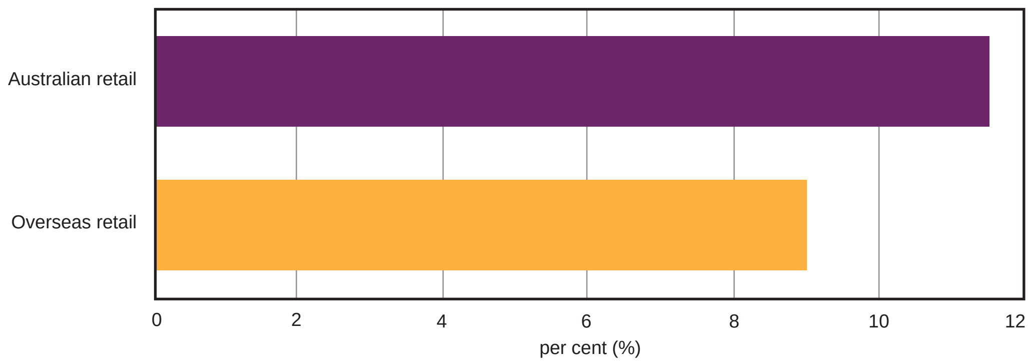
Chart 15.30 displays RoA for the Australian retail petroleum wholesale sector and for the same overseas businesses presented in section 15.9.1.

The caveats outlined in earlier sections of this chapter regarding the difficulties in comparing rates of return on assets across firms and industries also apply in respect of data presented in this section.

The average RoA for the Australian petroleum retail sector was 11.5 per cent compared to the international average of 9.0 per cent.

Comparisons with RoS and RoA suggest that the profitability in the domestic petroleum retail sector is broadly in line with the profitability in overseas petroleum retail sectors.

Chart 15.30 Average return on assets of the domestic retail petroleum sector and international retail petroleum sector: 2002–03 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process; Bloomberg and Bureau van Dijk Orbis database

Notes: Not all companies have data for all years. Some companies report on a calendar year or other annual basis.

The selection of an overseas company was based on the following criteria: it had to be based in an OECD country; be non-government owned; and have annual turnover greater than USD 10 million. Companies were also screened on the basis of their activity profile to ensure comparability with Australian downstream petroleum companies. That is, they had to derive their income from the refining and marketing of petroleum products. Major international refiner-marketers with large upstream activities, such as Exxon Mobil, British Petroleum and Chevron, were excluded from the sample. A company was also excluded if it had significant non-petroleum related secondary activities, such as chemical manufacturing or gas-related activities. Calculations are based on a sample of 22 international retailers.

15.10 Retail sector: the importance of convenience store sales

Convenience store sales have become an important source of revenues and profits to a fuel retailer. A convenience store site can range from a small canopy (used in some supermarket retail sites and some very old retail sites) with relatively few non-fuel products and services to convenience store models characterised by extensive service areas providing a mini-supermarket shopping environment, bread-making and cafes.

In some cases, separate franchise operations for businesses such as Subway and Bakers Delight may exist in the same store.

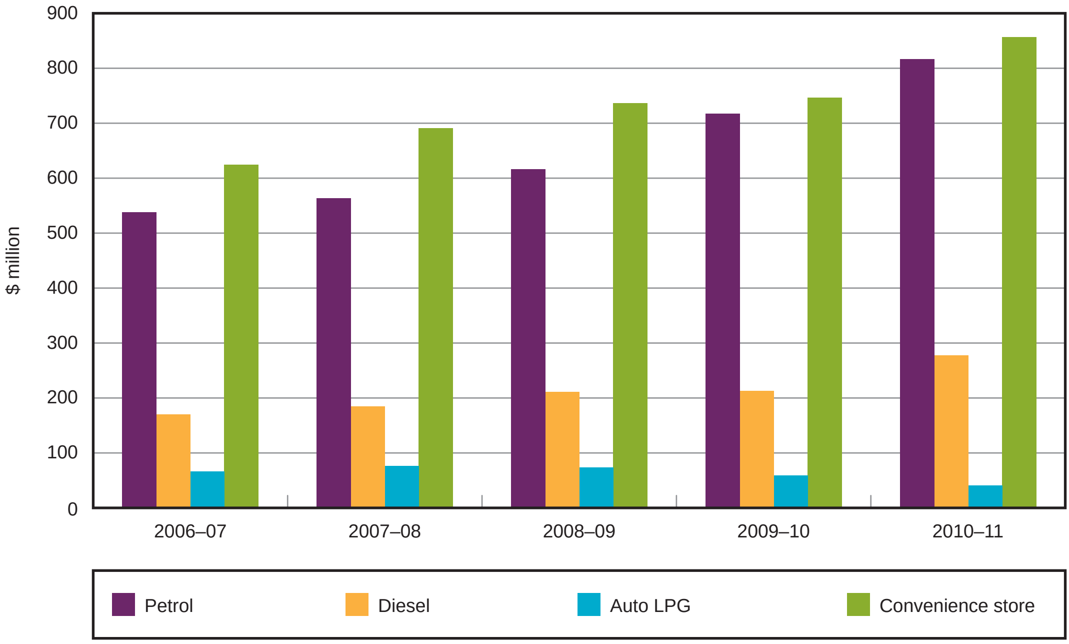
15.10.1 Convenience store gross profits and margins

Gross profits are calculated by subtracting cost of goods sold from total revenue. The measure of gross profit does not include operating expenses. These are typically subtracted from gross profit to derive net profits. The higher the gross profit, the greater the capacity of a firm to cover other operating costs and earn a net profit.

Chart 15.31 compares convenience store gross profits with gross profits for petrol, diesel and automotive LPG for the period 2006–07 to 2010–11. Points from the chart include:

- Convenience store gross profits were $856 million in 2010–11.
- The share of convenience store gross profits in total retail gross profits remained the same as the previous year at 43 per cent, but lower than the 45 per cent share in 2006–07.
- Petrol products (that is, RULP, PULP and EBP) were the second most profitable product category in terms of gross profit, with $816 million in 2010–11.
- Petrol gross profits have increased as a share of total gross profits, from 38 per cent in 2006–07 to 41 per cent in 2010–11.

Chart 15.31 Retail sector, total gross profits for petrol, diesel, automotive LPG and convenience store sales: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

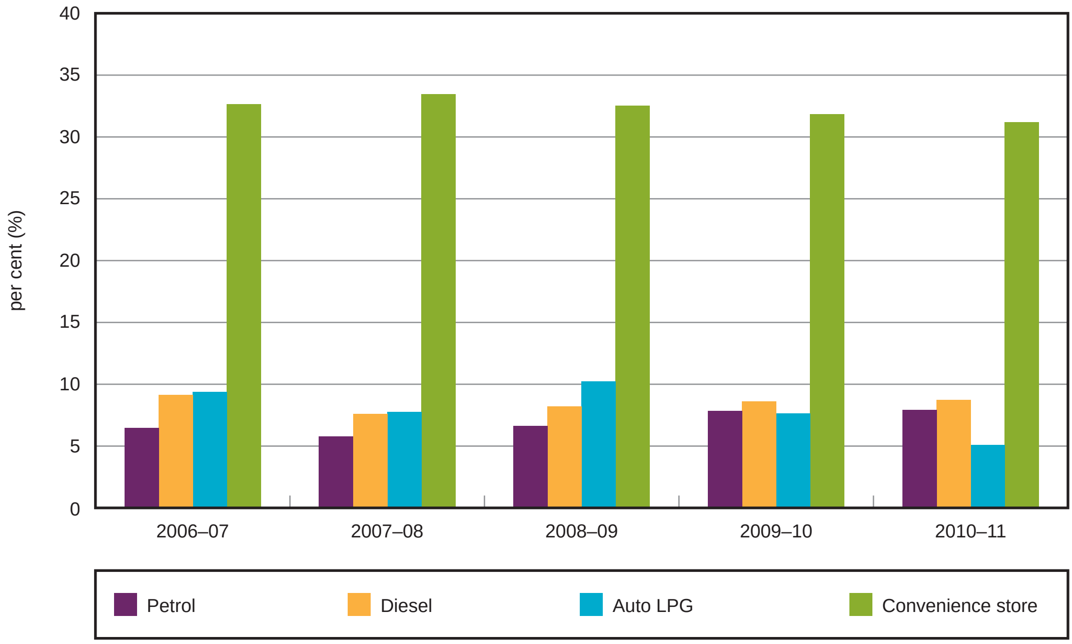
An alternative measure to gross profit is gross margin, which is derived by dividing gross profit by sales revenue. Gross margin indicates how much per dollar of sales revenue a business retains to cover other expenses.

Chart 15.32 presents gross margin on all retail sales, that is, sales of convenience store products and services, petrol, diesel and automotive LPG. Points from the chart include:

- Gross margins for convenience store products and services were above other products, at around 31 per cent in 2010–11. Since 2006–07, convenience store gross margins have averaged around 32 per cent.
- In contrast, gross margins on petrol products, diesel and automotive LPG, ranged from a low of 5 per cent for LPG to 8 per cent and 9 per cent for petrol and diesel respectively in 2010–11.

The relatively stronger gross margins on in-store products seem to underline the trends evident in the retail sector, whereby many retailers have increasingly focused on improving convenience store sales and the range of non-fuel products available to consumers.

Chart 15.32 Retail sector, gross margins for petrol, diesel, automotive LPG and convenience store sales: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

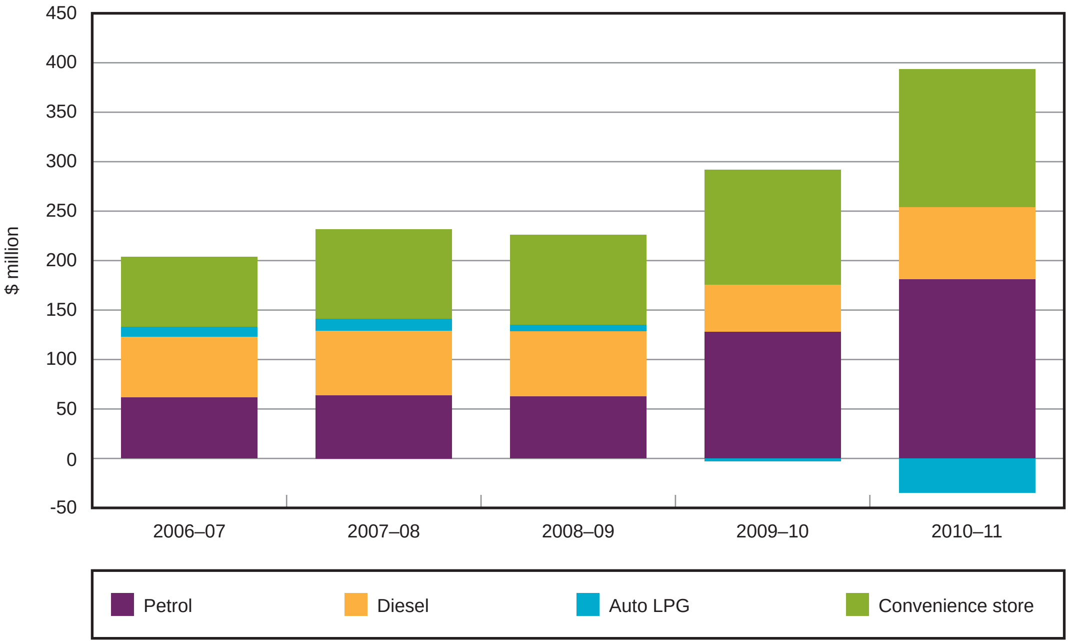
15.10.2 Convenience store net profits

Section 15.10.1 discussed gross profits. This section reports on net profits on sales of convenience store products and services. This is a measure of earnings accruing to the owners of the retail businesses.

Chart 15.33 presents total net profits for convenience store products and services, petrol products, diesel and automotive LPG for the period 2006–07 to 2010–11. Points from the chart include:

- The importance of convenience store profits to overall net profit is evident with over 34 per cent of total retail profits coming from convenience sales in each year. In 2010–11, convenience store profits contributed $139 million or 38.8 per cent of total retail net profits.
- Petrol products were significant contributors to overall net profit, with an increasing share of total profits. In 2010–11, about $181 million or around 50 per cent of net retail profits were earned from petrol sales.
- In the last two years, petrol products' contribution to total net profits has exceeded that of convenience sales.
- Diesel profits were also significant with a share of 20 per cent of total net retail profits in 2010–11. Sales of automotive LPG incurred a net loss in both 2009–10 and 2010–11.

Chart 15.33 Retail sector, total net profit for petrol, diesel, automotive LPG and convenience store sales: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.11 Recent trends in shopper docket sales

Shopper-docket sales refer to a discount or linked offer on fuel stemming from purchases in an attached convenience store or from purchases from an associated or third-party business.

The traditional shopper-docket petrol scheme is generally associated with the two major Australian supermarkets, Coles and Woolworths. Both of these supermarkets generally offer discounts of 4 cpl on petrol when a minimum amount of goods are purchased at their supermarkets, typically $30 of purchases. In the past 12 months, the supermarkets have also had discount offers greater than 4 cpl.

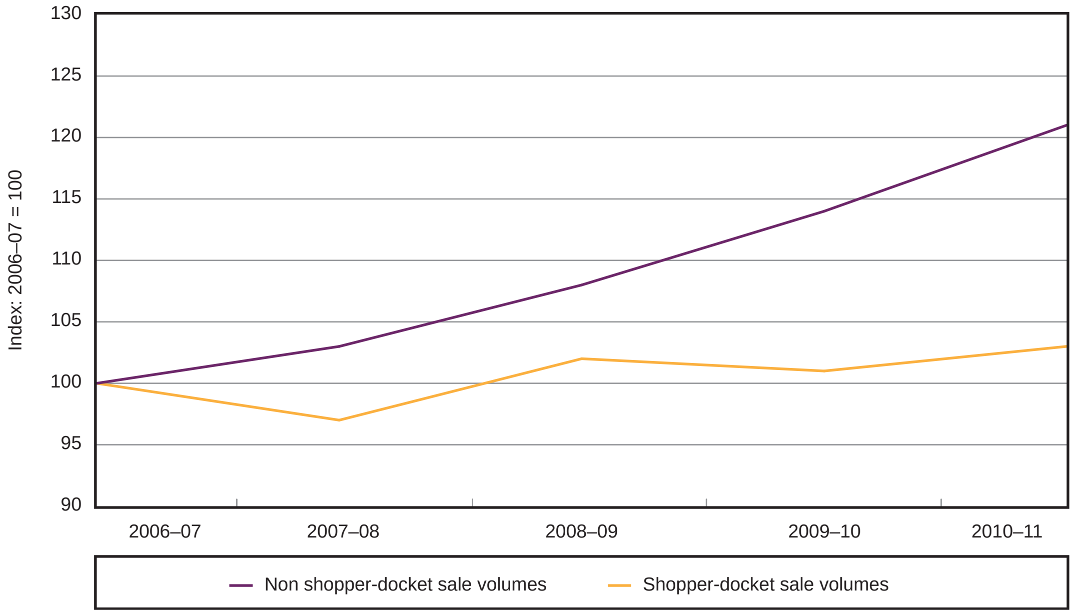
In the past, other retailers such as United, BP, Caltex and 7-Eleven have also conducted shopper-docket schemes. Some of these schemes have been linked to purchases at a local independent supermarket while others combine purchases from the convenience store with offers of fuel discounts.

Chart 15.34 shows an index of the volumes of fuel sales made under shopper-docket schemes compared to all other fuel sales. The chart illustrates that the volume of fuel sales made under shopper-docket schemes has remained relatively stable over the last five years.

Non–shopper-docket fuel sales on the other hand have increased significantly over the same period.

While total fuel sales have increased in recent years, those made under shopper-docket schemes have remained comparatively flat. This suggests that in recent years much of the increase in total volumes sold at retail level has occurred through non–shopper-docket transactions.

Chart 15.34 Retail sector, index of the volume of shopper-docket and non shopper-docket fuel sales: 2006–07 to 2010–11



Source: ACCC calculations based on data obtained from firms monitored through the ACCC's monitoring process

15.12 Concluding remarks on the financial performance of the wholesale and retail sectors

The analysis of revenues, costs and profits in the wholesale and retail sectors has shown a number of important results.

Key points regarding the wholesale sector include:

- In 2010–11, total net profit of the wholesale sector was $966 million (1.96 cpl) compared with the average unit net profit of 1.44 cpl over the period 2002–03 to 2010–11.
- Since 2002–03, the average unit net profit on petrol products in the wholesale sector has been 0.14 cpl compared with 0.87 cpl for diesel.

Key points from analysis of the retail sector include:

- In 2010–11, total net profit in the retail sector was $359 million (2.06 cpl) compared with the average unit net profit of 1.54 cpl over the period 2005–06 to 2010–11.
- In 2010–11, the average unit net profit on petrol products in the retail sector was 1.46 cpl. From 2005–06, the average annual unit net profit for petrol has been estimated to be 0.79 cpl.
- Convenience store sales are an important source of income for fuel retailers. Convenience store gross margins have been higher than for fuel products, averaging 32 per cent since 2006–07 compared with around 7 per cent for petrol products.
- Net profits for petrol products have improved in the last two years. Estimates for profits on individual products indicate that sales of PULP have contributed to improved earnings on petrol products.

15.13 Methodology note

Similar to chapters 13 and 14, analysis of 2010–11 financial results in the wholesale and retail sectors are largely compared with long-term average results. Analysis of the wholesale sector generally focuses on results since 2002–03, while analysis of the retail sector examines results from 2005–06.

The analysis of financial results in the total downstream and refinery and total supply sectors focused on long-term average profitability because of the effects of changes in international prices of crude oil and refined petrol on annual financial performance. While significant year-on-year swings in earnings are less prevalent in the wholesale and retail sectors when compared with the refinery and total supply sectors, it is pertinent to consider the long-term profitability of these sectors.

The data presented for the Australian wholesale sector includes imports by independent wholesalers. It was not possible to allocate these imports to the total supply sector as with the refiner-marketers' imports. The revenues and costs associated with these volumes are included in the independents' wholesale financial data.

The assessment of revenues in the wholesale sector is complicated by the provision of price support. Price support is a mechanism used by fuel suppliers to provide assistance to linked retailers during times of heavy price discounting (normally at the trough of a retail price cycle). Among other things, price support allows the supplier to partly control or influence the setting of prices for certain products at certain retail sites. For the purposes of assessing revenues, price support has been deducted from each product's sales revenue.

The ACCC's monitoring program does not encompass the entire retail sector, due to the very large number of small businesses. The retail sector is comprised of many single and multi-site independent service station owners. The ACCC has collected data from retail businesses operated by the refiner-marketers, major independent wholesalers/importers, supermarkets and the larger specialist retailers.

Data has been collected from the following larger retail sector businesses:

- refiner-marketers BP and Caltex
- large independent chains On The Run, 7-Eleven, United Petroleum, Gull Petroleum and Neumann Petroleum
- supermarkets Coles Express and Woolworths Petrol.

As such, the ACCC considers that the scope of the monitoring program is sufficiently wide to capture a significant proportion of retail outlets.

16 Analysis of key issues in the fuel industry

Key points

- Recent evidence and expert opinion on the future of crude oil prices suggests the era of cheap petrol may be over.
- The large integrated oil petrol companies are scaling back their involvement in downstream activities in order to pursue more attractive returns in crude oil exploration and production.
- Despite improved performances by Australian refineries in 2010–11, the announced closure of the Shell refinery in Sydney is evidence of the challenges faced by Australian refiners to compete with the larger and more efficient refineries in Asia.
- While still a relatively small contributor to total supply, independent importers and wholesalers continue to be an important source of competition in the Australian downstream petroleum industry. In 2010–11, independent imports accounted for a substantial proportion of total imports.
- Specialist retailers continue to increase market shares in the retail sector while the refiner-marketers reduce their retail presence.
- Australia's experience with petrol prices is common among developed countries. Retail prices in many countries are established with reference to, and driven by changes in, international benchmark prices for refined petrol.
- While domestic production of ethanol has increased recently, industry participants have expressed concern about the industry's ability to meet demand when the NSW ethanol mandate comes into full effect in 2012.

16.1 Introduction

This monitoring report has highlighted the significance of recent trends in the Australian downstream petroleum industry.

This chapter examines in more detail the key factors underlining each of these key trends that characterise the Australian downstream petroleum industry.

16.2 Rising crude oil prices

Evidence considered in chapter 5 indicates that higher crude oil prices are likely to persist in the short to medium term. Pressure on prices is building up not only because demand for crude is likely to remain strong, principally driven by strong growth in emerging countries, but also because supply costs will rise as production increasingly moves to non-conventional sources of crude.

Crude oil is a finite resource. Current debates about peak oil (see section 5.6) centre less on whether it will occur, but rather when. As the world moves closer to peak oil, and then beyond it, production costs are likely to rise as the rate at which crude is extracted from existing lower-cost fields slows down.

Ultimately, however, as crude oil is produced from increasingly more costly sources, the world will be effectively facing upwardly shifting cost functions for crude oil.

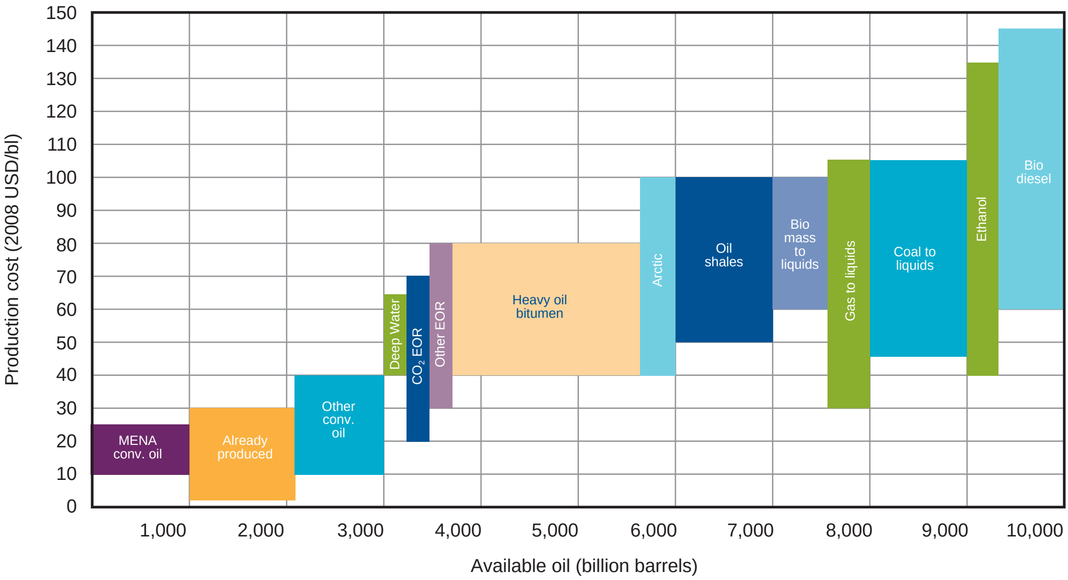
16.2.1 Production costs to increase

The lowest cost crude comes from conventional supplies in easily accessible reservoirs in the Earth's geological strata. The cost of producing crude oil increases as production shifts from easily accessible sources to fields located in geographically and politically difficult environments. The cost also increases when the use of advanced technologies is required to enhance the recovery of oil in mature and declining fields. Costs rise further when crude oil is produced from non-conventional sources such as bitumen, coal, gas, shale and bio-mass. Production of crude from these substances is an energy intensive two-stage process involving exploration and extraction of the source stock and converting the source stock into crude oil.

As current fields mature and existing reserves are depleted, naturally occurring crude oil will become increasingly scarce. To the extent that the most accessible oil fields have already been exploited, it follows that future production costs can be expected to rise. All else being equal, increased production costs will mean higher crude prices. While improvements in technology and the discovery of new fields may relieve pressure on prices, this may be counter-balanced by higher exploration and production costs as new fields are sought and exploited in increasingly more remote and risky locations. In the longer term, increased reliance on alternative sources of oil is likely to keep upward pressure on prices of petroleum products.

Estimates from the International Energy Agency (IEA) strongly suggest that the cheapest oil may have been that which has already been produced. The IEA has proposed a production cost schedule based on range estimates which suggests rising production costs from less than USD 10 per barrel (bl) for existing sources of conventional liquids up to USD 150/bl for biodiesel (chart 16.1).

Chart 16.1 Oil production cost schedule: as at 2011



Source: ACCC estimates based on International Energy Agency, *Medium-term oil and gas markets 2011*, p. 62.

Notes: Production cost is the break-even point not including an assumed rate of return on investment. EOR—Enhanced Oil Recovery. MENA—Middle East and North Africa.

Chart 16.1 shows ranges of costs associated with the production of crude from various sources. The chart suggests that at current crude prices of around USD 100–110/bl, production of oil from a number of alternative sources is commercially viable:

- deep water
- enhanced recovery from existing fields
- bitumen
- arctic
- oil shales
- gas/coal/biomass conversions.

While the full ramifications of the blowout at the BP Macondo well in the US Gulf of Mexico may not yet be clear, according to the IEA it is not expected to greatly affect exploration of deep-water fields in the long term. Production of crude oil from deep-water fields is forecast to increase its share of total world supply from 6 to 9 per cent by 2016.[278]

278 See International Energy Agency, *Medium-term oil and gas markets 2011 report*, p. 67 © OECD/IEA International Energy Agency.

According to the IEA, enhanced oil recovery (EOR) from existing fields is cost-effective at prices ranging from USD 20 to USD 80/bl. The IEA reports that the average 'observed field decline rate' for crude has fallen in recent years suggesting increased recovery rates at existing production sites. The forecast for 2011 is a rate of decline of 6 per cent compared with 7.3 per cent in 2009.[279] This suggests that there has been an increased use of enhanced oil recovery technologies such as injections of gas (carbon dioxide, natural gas), chemicals and microbes and even steam to reduce viscosity and increase pressure. Use of enhanced oil recovery techniques can increase the proportion of oil that can be recovered in any one field.

The implications of the IEA production cost schedule for exploration and development are relatively clear: as existing fields mature and conventional sources of crude are depleted, the average cost of producing oil will increase as production from non-conventional sources increases.

16.2.2 Higher crude oil prices

Prices of crude oil can be expected to rise even before existing sources of crude are fully exhausted. This is because as the flow of oil from existing fields declines, the marginal source of supplies becomes oil produced from more remote conventional sources and other non-conventional sources. The marginal cost of oil will therefore no longer be the marginal cost of extracting oil from existing fields but will instead increasingly reflect the marginal cost of production from more costly sources.

In this context, it is not surprising to note that in April 2011 the IEA Executive Director Nobuo Tanaka declared that 'the age of cheap energy is over'.[280]

In summary, there seems to be a growing body of evidence indicating that the world supply–demand equation may be fundamentally changing. The world has already seen significantly higher crude prices, not just in the last 12 months, but for most of the past decade. While prices may fluctuate according to market sentiment, it is extremely unlikely that crude oil prices will return to the average price of around USD 22/bl seen during most of the 1980s and 1990s.

Increasingly, the evidence suggests that higher crude and petrol prices will persist.

16.3 Structural changes

There are four fundamental forces that are shaping the Australian downstream petroleum industry:

- Rising crude oil prices are improving profits in the upstream exploration and extraction sector relative to the downstream sector.
- The viability of domestic refining is challenged by competition from major Asian refineries which are now reliable suppliers of Australian standard fuel.
- Improved access to import infrastructure is facilitating independent imports.
- Independent specialist retailers are increasing their presence while previously integrated refiner-marketers withdraw from the retail sector.

279 International Energy Agency, Ibid., p. 63. © OECD/IEA International Energy Agency.

280 Nobuo Tanaka, IEA, 'Oil in the global energy mix: climate policies can drive an early peak in oil demand', 13 April 2011, at http://www.iea.org/index_info.asp?id=1928, accessed 30 November 2011.

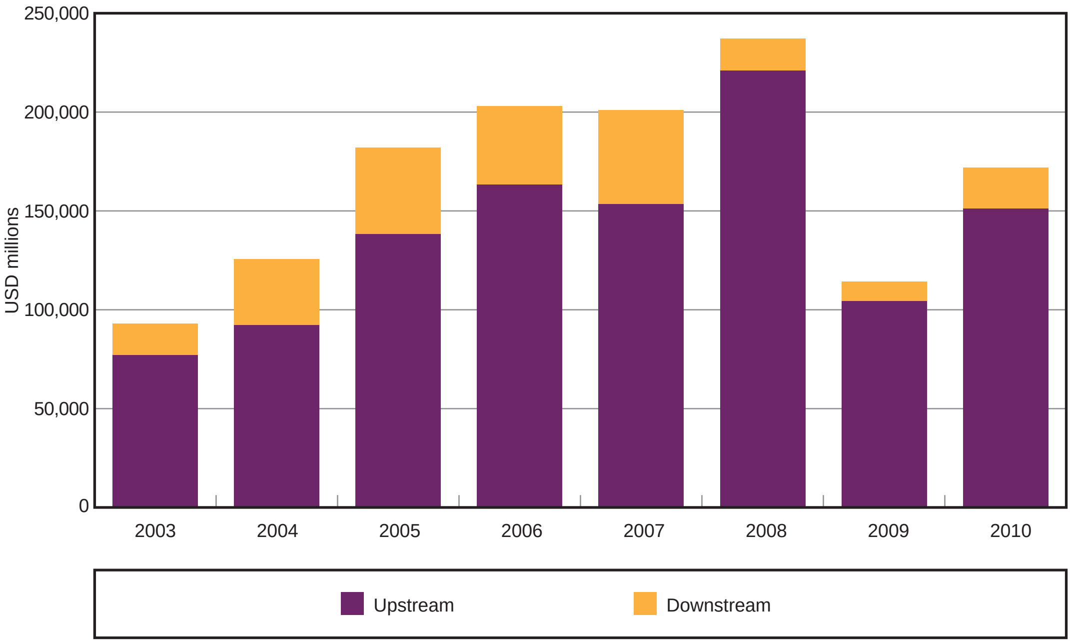
16.3.1 Comparative returns: upstream vs downstream

As crude oil prices rise, production of crude from low-cost conventional sources is increasingly profitable. In essence, upstream activities become more attractive with higher crude prices.

Major companies in the global petrol industry are increasingly refocusing their businesses away from downstream refining-marketing activities towards their upstream businesses.[281] A recent example of a company embarking on such a strategy is ConocoPhillips, a major integrated global petrol business. On 14 July 2011, ConocoPhillips announced its intention to split its exploration and production businesses away from the marketing business to concentrate on 'pure-play exploration and production with strong returns and investment opportunities'.[282] Following the split, the company will have two stand-alone publicly listed companies operating separately in the upstream and downstream sectors.

In order to gauge the nature of returns in upstream activities, the ACCC has assessed the latest data on comparative earnings from upstream and downstream activities of five global integrated petrol companies. Data in chart 16.2 shows combined earnings from the upstream and downstream businesses of BP, Chevron, ExxonMobil, Royal Dutch Shell and ConocoPhilips since 2003.

Chart 16.2 Upstream and downstream net earnings, BP, Chevron, ExxonMobil, Royal Dutch Shell and ConocoPhilips combined: 2003 to 2010



Source: ACCC calculations based on data from companies' annual reports

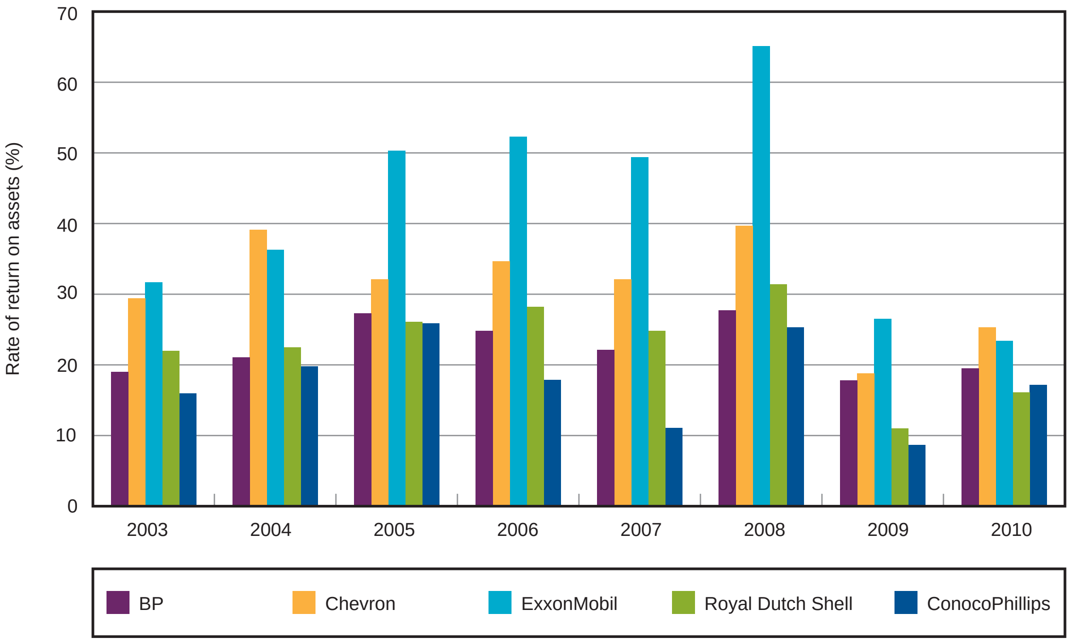
281 ACCC, Monitoring of the Australian petroleum industry, December 2010, pp. 274–7.

282 See ConocoPhillips, 'Pursuing plan to separate into two stand-alone, publicly traded companies', at http://www.conocophillips.com/EN/newsroom/news_releases/2011news/Pages/07-14-2011.aspx, accessed 30 November 2011.

It is clear from chart 16.2 that the level of earnings from upstream activities have consistently exceeded earnings from downstream activities.

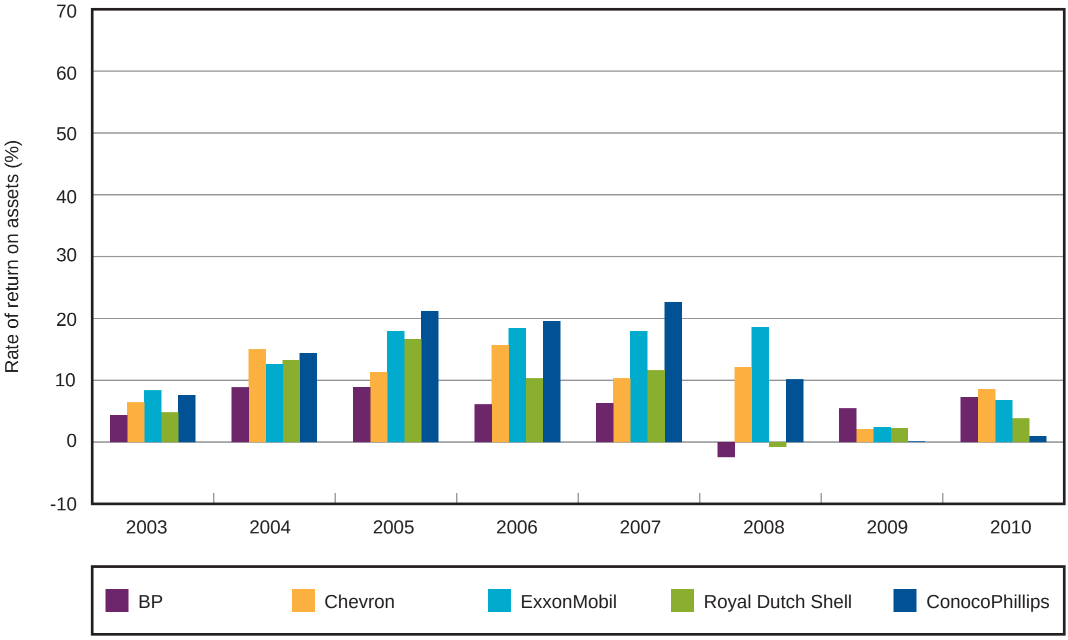
While rates of return on assets employed in the upstream and downstream sectors vary across companies, the evidence in charts 16.3 and 16.4 clearly indicates that since 2003 rates of return have been higher in the upstream than downstream businesses.

Chart 16.3 Upstream rates of return on assets, BP, Chevron, ExxonMobil, Royal Dutch Shell and ConocoPhilips: 2003 to 2010



Source: ACCC calculations based on data from companies' published annual reports

Chart 16.4 Downstream rates of return on assets, BP, Chevron, ExxonMobil, Royal Dutch Shell and ConocoPhilips: 2003 to 2010



Source: ACCC calculations based on data from companies' published annual reports

The data presented in charts 16.2 to 16.4 suggest that the prospect of superior returns in upstream compared with downstream operations may explain decisions by integrated petrol companies to focus on upstream activities.

Clearly, factors other than accounting rates of return are bound to be considered when comparing investments in businesses as vastly different as crude oil exploration and petrol retailing. Among other things, the relative risks associated with these activities are likely to be very different. That said, the data appears strongly consistent with, and provides support for, the observed strategies of oil companies to move resources from downstream to upstream activities.

16.3.2 Domestic production: viability of refining

Unleaded petrol

There is evidence of improved operational efficiency in Australian refineries in 2010–11. A lower incidence of refinery outages and unplanned shutdowns allowed domestic refineries to operate at higher levels of capacity utilisation and increase production of refined petrol compared with the previous 12 months. As a consequence, fewer imports were required to meet Australia's demand for petrol products. As observed in chapter 3, at 2.6 billion litres, petrol imports in 2010–11 were the lowest since 2002–03 (chart 3.7 in section 3.4.1).

Data considered in chapter 14 indicates that the financial performance of the refining sector also improved in 2010–11. Net earnings increased in absolute terms and relative to sales and assets in all sectors of the industry. The improved financial performance partly reflects technical and operational efficiency gains. However, it does not appear that unleaded petrol products contributed significantly to the improved performance of the refinery sector. While higher volumes of unleaded petrol products in conjunction with the inventory effects of rising international prices for refined fuel have been positive influences on overall outcomes, they were not the major drivers of profits in 2010–11. Diesel products accounted for a significant contribution to the increase in profits in the refinery sector in 2010–11 (see chapter 13).

This data underlines the current state of refining and the fact that domestic refiner-marketers continue to monitor their involvement in refining. The availability of petrol refined to Australian standards in the Asian region is an ongoing source of competitive pressure on domestic refiners. The new Asian refineries are more modern, larger and consequently often more efficient than Australia's refineries. Most of Australia's refineries were originally built in the 1950s and 1960s and have required considerable maintenance in recent years (see discussion in chapter 4 on the evolution of the petrol industry).

As it is likely that refineries in Asia are able to operate at a lower unit cost than Australian refineries, they impose strong competitive disciplines on the domestic refiner-marketers. The main effect of this competitive discipline is to put pressure on domestic refineries to be operationally and economically viable at the import parity price. The cost to Australian refineries of not being price competitive is the risk of being bypassed for alternative suppliers of petrol in the region.

Recent trends in independent imports provide an example of this trend. Imports by independent wholesalers increased again in 2010–11 and, because of a fall in refiner-marketer imports, accounted for a substantial proportion of total imports (see sections 3.4.1 and 16.3.3).

The evidence on the competitive response of Australian refineries to the Asian challenge is mixed. The improved operational performance of domestic refineries in 2010–11 may be indicative of a positive response. On the other hand, the announced closure of Shell's Clyde refinery in 2013 suggests that some refinery assets are struggling to cope with the competitive pressures from refineries in Asia.[283] In the case of Clyde, Australia's oldest refinery, Shell has stated that:

> *the decision recognised the Clyde Refinery was no longer regionally competitive against Asian mega-refineries.*[284]

283 See Shell Australia, 'Shell to cease refining at Clyde', press release, 27 July 2011, at http://www.shell.com.au/home/content/aus/aboutshell/media_centre/news_and_media_releases/2011/clyde_cease_refining_27072011.html, 30 November 2011.

284 Ibid.

The closure of the Shell Clyde refinery is significant because when it ceases production in 2013, it will be the second refinery in Australia to have closed down in only 10 years. In 2003, Mobil mothballed its Port Stanvac refinery in Adelaide, finally deciding to abandon and remediate the site in June 2009.[285]

The announcement on the closure of the Shell Clyde refinery was followed by reports in the Australian financial press that Caltex was also reviewing the future of its refineries.[286]

There are currently no plans to build another major refinery in Australia.

It is likely that pressure on Australian refining assets will not lessen in the foreseeable future. As noted in chapters 4 and 5, total refinery capacity in Asia has increased substantially in recent years as it has become a focal point for new investment.

Globally, rationalisation of refinery assets has been happening at many of the world's major petrol companies. In the US, a period of intense merger activity in the late 1990s raised the level of concentration and resulted in fewer but larger refineries. In the process, a specialist refiner has emerged with significant holdings of refining assets. Following a spate of acquisitions since its formation in 1980, Valero Energy Corporation now operates a network of 17 refineries in North America where it has become the second largest refiner by capacity.[287]

As noted, modest refinery margins at a time when earnings in upstream activities are improving is sharpening the focus of integrated petrol companies on their refinery businesses. Indeed, questions are increasingly being raised about the benefits of vertical integration and whether these compensate an integrated petrol company for the comparatively lower returns from its downstream activities.[288]

While some companies are withdrawing from downstream activities completely, others have preferred to take a cautious and targeted approach to improving downstream earnings. Thus, Royal Dutch Shell's strategy has centred on improving earnings in their downstream activities through opportunistic asset rationalisation rather than exiting completely.[289]

Diesel

Demand for diesel continued to grow strongly in 2010–11, reflecting continued high levels of activity in the transport and resources sectors. A more efficient refining sector allowed domestic production to increase significantly during 2010–11. This represents only the second time in the past eight years that diesel production has increased. Annual production, however, was still below levels in 2002–03, the first year for which the ACCC collected data for its monitoring program.

Financial data in chapter 14 indicates that diesel's contribution to total refinery profitability improved significantly in 2010–11.

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285 See ExxonMobil, 'Future of Port Stanvac refinery', press release, 25 June 2009, at http://www.exxonmobil.com/Australia-English/PA/news_releases_20090625.aspx, accessed 30 November 2011.

286 See 'Caltex Australia reviewing petroleum refineries after H1profit falls 24pc', 22 August 2011, at http://www.theaustralian.com.au/business/profit-loss/caltex-australia-reviewing-petroleum-refineries-after-h1-profit-falls-24pc/story-fn91vch7-1226119611900, accessed 30 November 2011.

287 See Federal Trade Commission, 'Gasoline price changes and the petroleum industry: an update', September 2011, at http://www.ftc.gov/be/econrpt.shtm, accessed 30 November 2011.

288 See A. Good, 'Is the integrated oil and gas model burned out?', 11 March 2011, at http://www.morningstar.co.uk/uk/news/article.aspx?articleid=96928, accessed 30 November 2011.

289 See Shell, 'Shell on track with strategy to improve performance and growth', press release, 15 March 2011, at http://www.shell.com/home/content/investor/news_and_library/2011_media_releases/2011_strategy_update_15032011.html, accessed 30 November 2011.

As annual production increased more than demand in 2010–11, there was a slight fall in the level of imports that were needed to meet Australia's total diesel requirements.

Australia does not produce sufficient diesel to meet its requirements. Almost half of Australia's diesel requirements are met by imports. As noted in chapter 3, the gap between demand and production, and thus Australia's import requirements, has generally been growing since 2002–03.

Notwithstanding a more healthy performance from the refining sector in 2010–11, Australia is not expected to significantly reduce its dependence on diesel imports, particularly if current economic growth levels and patterns continue.

Biofuels

In 2010 and 2011, concerns about adequacy of supplies of ethanol continued to affect the market for ethanol blended petrol (EBP).

Total sales of EBP increased strongly again in 2010–11. Boosted mainly by the state government mandate in New South Wales, demand has almost doubled in the past two years. Though demand levelled off somewhat in Queensland in 2010–11 following the decision to suspend plans for an ethanol mandate, it was still substantially greater than a few years earlier. Demand also grew in Victoria.

While production of ethanol in 2010–11 increased relative to 2009–10, industry participants have continued to express concerns that investment in new capacity has not been sufficient to meet future demand, particularly when the NSW Government mandates come into full effect in 2012.

The supply concerns in NSW were sufficiently strong to prompt the state government in June 2011 to postpone to 1 October 2011 the date for the increase in the legislated volumetric ethanol mandate from 4 to 6 per cent. This was the second time that the higher mandates had been suspended as the government expressed concerns about the fact that most resellers were not able to meet required targets due to supply problems.

16.3.3 Imports: a source of competitive pressure

Total imports of petrol products (that is, regular unleaded petrol, premium unleaded petrol and ethanol blended petrol) fell in 2010–11 as improved refinery performance reduced the need for imports by Australian refiner-marketers.

The independent import sector, while still relatively small, continued to experience strong levels of activity. Independent imports' share of total imports rose from around 10 per cent in 2009–10 to more than 40 per cent in 2010–11. Greater import volumes by the larger independent importers were complemented by a surge in imports by some of the smaller importers like Gekko Petroleum. It is too early to predict that emerging small import firms will become a permanent feature of the Australian petroleum industry. However, evidence of new small scale importing, even in the short term, is significant because it suggests barriers to entry in the import sector may not be prohibitive.

While the independent import sector is still small relative to the size of the overall market, the potential for opportunistic entry suggests that it may become an important source of competition for the major petrol companies.

In recent years, independent importers have benefited from two key features now present in the downstream industry:

- the increased availability of Australian standard fuel in the Asian region

- improved access to import infrastructure.

Many of the new refineries in Asia have the technical capability and spare capacity to supply Australian importers with petrol refined to Australian standards. India in particular has invested heavily in refining capacity (including in the Reliance Jamnagar refinery) to position itself as a major exporter in the Asia-Pacific region. Other countries that are forecast to add to refining capacity in the region in the medium term include China, Japan, South Korea and Singapore.[290] It is likely that Asia will continue to have spare capacity for the production of Australian standard fuel, at least in the short to medium term.

Historically, access to import infrastructure has been a major obstacle for potential independent importers, with most terminals owned and operated by the refiner-marketers (see chapter 4).

In recent years, most of Australia's independent imports of refined petrol have been undertaken by the leading wholesalers: Neumann, United and Gull. Two of these, Neumann and United, own terminals and other infrastructure in Brisbane and Melbourne respectively to enable importing on their own account. Gull has sold its terminal near Perth but has established an arrangement with the new owner, Coogee Chemicals, for access to the terminal on a common-user basis. Other smaller importers such as Gekko Petroleum have recently been able to secure access to import infrastructure owned by independent terminal owners, principally the Vopak terminal at Port Botany in Sydney.

Evidence considered in chapter 3 indicates there may be an increasing trend to increased independent terminal ownership and operation, with announcements of plans for two new terminals by Marstel in Newcastle and Terminals Pty Ltd in Adelaide.

Other data collected by the ACCC as part of its monitoring activities on terminal operations and throughput indicates the existence of spare capacity at independently owned terminals.

16.3.4 Retail sector: emergence of specialist retailers

The structure and nature of petrol retailing continues to undergo profound changes. As discussed in chapter 4, no sector of the Australian downstream petroleum industry has changed as dramatically as the retail sector.

The retail sector is no longer just a conduit for the major petrol companies to supply refined petrol to the consumer. The role of the refiner-marketers in petrol retailing is diminishing while, increasingly, petrol is being sold to consumers by specialist retailers.

In the process, the extent of vertical integration by the refiner-marketers, and their direct influence over retail prices, has reduced. The combined share of refiner-marketers' branded retail sales as a proportion of total retail sales has fallen from 83 per cent in 2002–03 to 39 per cent in 2010–11 (see table 3.8 in chapter 3). In that time, BP and Caltex experienced a drop in market shares while the combined share of Mobil and Shell has fallen from 39 per cent to just 2 per cent. As at June 2011, only 17 per cent of the sites monitored by the ACCC were operated by the refiner-marketers through direct ownership and/or franchise/commission agent arrangements (table 3.9 in chapter 3). With the sale of its retail network to 7-Eleven, Mobil is no longer involved in retail while Shell maintains a minimal presence following the establishment of an alliance with Coles.

290 See 'Research and markets: Asia Pacific refining industry: market analysis, capacity forecasts, and competitive landscape to 2015', at http://www.reuters.com/article/2011/02/01/idUS24996+01-Feb-2011+BW20110201, accessed 30 November 2011.

At the same time, independent retailers have become more prominent. Since 2002–03, independent retailers' share of branded retail sale volumes has risen from 6 to 17 per cent. In June 2011, the proportion of retail sites operated by independent retailers (that is, by companies not associated with the refiner-marketers or the supermarkets) was 16 per cent.

There are a number of factors behind the transformation of the retail sector from a mere platform for delivering petrol to motorists to a stand-alone commercial enterprise. One of the most important has been the emergence of convenience stores. These developed to fill a niche at a time of changing community attitudes to shopping outside traditional shopping hours. There seemed to be a natural fit between the concept of convenience shopping and buying petrol. Among other things, both rely on the provision of a retail forecourt to facilitate vehicle access and attract customers.

Specialist retailers such as 7-Eleven, On The Run and the supermarkets (Woolworths and Coles Express), approached petrol retailing with a different focus to traditional 'service stations'. While they have operated in the retail sector with different strategies, they have had a similar attitude towards petrol: they generally do not see petrol as their main product but rather as a useful adjunct to their primary business objective of maximising sales of other non-fuel items. Thus, 7-Eleven has added petrol to its offerings but not departed from its main objective of being a specialist convenience store retailer. The supermarkets have aligned incentives on petrol prices to grocery purchases as a way of maximising supermarket revenues. The strategy adopted by On The Run has been to provide a 'mini shopping centre' environment with a more extensive range of convenience items.

Data on retail sector profitability presented in chapter 15 indicates that the strategies followed by the specialist retailers have been successful. Since 2003–04, convenience store sales have doubled while convenience store profits per litre of fuel sales increased by almost 30 per cent. In the five years to 30 June 2011, the proportion of convenience store net earnings to total retail earnings has also improved.

Another factor that has clearly encouraged change has been the comparatively low barriers to entry into petrol retailing. The retail sector would have evolved more slowly if firms faced severe difficulties in entering, and exiting, the sector. The entry and establishment of a significant presence by a number of specialist retailers with diverse business models, indicates that barriers to entry into petrol retailing may not be prohibitive. Entry has been possible by establishing greenfield sites in growing population centres as well as purchasing existing outlets.

This is not to say that establishing a new site in an established area already serviced by existing petrol outlets is easy. One obstacle would seem to be regulatory and environmental constraints. There may also be economic barriers if potential returns are not sufficiently high to justify the initial investment. Because fixed costs are likely to be a relatively large component of the total cost associated with the establishment of a retail site, a retailer would have to quickly gain a sizeable market share in order to break-even. To the extent that there are benefits in being part of a recognised brand or network of retail outlets, an independent operator may face additional difficulties in acquiring market share from his competitors. That said, the existence of barriers to entry into a mature and developed local market is not necessarily a hindrance to competition if motorists can avail themselves of alternative retailers within reasonable driving distances.

The ability to purchase petrol from sources other than the domestic refiners is another factor that has facilitated the establishment of an independent retail presence, particularly by the major wholesalers. The growth of wholesalers such as United, Neumann and Gull has been largely built on their capacity, or at least potential, to supply their retail sites with imports of Australian standard fuel from overseas refineries. Improved access to import infrastructure, including independently owned and operated import terminals, has been an important element of this strategy. The ability to source petrol from overseas refineries has enabled these wholesalers to negotiate more favourable prices with the Australian refiner-marketers.

Evidence considered in chapter 15 suggests that new entry into petrol retailing may not have been motivated by the prospect of superior returns from the sale of petrol. While profits in the retail sector improved in 2010–11, they are still modest relative to comparable retail sectors. Indeed, the reduced involvement by refiner-marketers in retail is partly due to the availability of superior returns in other aspects of their businesses, such as crude oil exploration and production.

Overseas evidence: retail structural changes

Changes seen in the retail sector in Australia in recent years mirror trends evident overseas. For some years, many of the major integrated global petrol companies have been following a targeted strategy of divesting retail assets. In June 2011, a private equity group in the UK purchased 810 service stations from France's Total.[291] In late 2010, Murphy Oil and Chevron were reported to be considering offers for their retail networks in the UK.[292] ExxonMobil has been selling its retail networks around the world. By 2008, it had sold most of its retail sites in the US to branded distributors[293] and in mid-2011 it was reported to be considering selling its retail base in Malaysia.[294] ConocoPhillips also sold the last of its retail assets in 2008.[295]

16.4 Australia's experience with petrol prices is not unique

As refined petrol is an internationally traded commodity, domestic petrol prices are established with reference to international benchmark prices for refined petrol, in Australia as in other countries.

As noted in chapter 9, in the long run, retail prices in Australia overwhelmingly follow movements in the price of Singapore Mogas 95 Unleaded, which is the relevant benchmark in the South East Asian region for regular unleaded petrol.

Retail prices in each of the overseas markets considered in chapter 12, California (US), Germany, the UK, Canada and New Zealand, also closely follow movements in the appropriate international benchmark prices for refined petrol in their respective regions.

Because international benchmark prices in all regions are determined in USD, retail prices in all countries (other than the US), are also affected by changes in the value of their currencies relative to the USD.

291 See Total, press release, 21 June 2011, at http://www.total.com/en/press/press-releases/consultation-200524.html&idActu=2607, accessed 30 November 2011.

292 See *Financial times*, 28 November 2010, at http://www.ft.com/intl/cms/s/0/62b504c8-fb16-11df-b576-00144feab49a.html#axzz1YkwJ3JcQ, accessed 30 November 2011.

293 See 'Exxon to sell all of company's gas stations' at http://www.msnbc.msn.com/id/25126563/ns/business-oil_and_energy/t/exxon-sell-all-companys-gas-stations/, accessed 30 November 2011.

294 See 'Exxon Mobil may sell Malaysia retail assets', at http://www.bloomberg.com/news/2011-07-23/exxon-mobil-may-sell-malaysia-retail-assets-business-times-says.html, accessed 30 November 2011.

295 See 'Here comes the PetroSun', 28 August 2008, at http://www.imakenews.com/csp/e_article001187762.cfm, accessed 30 November 2011.

As discussed in chapter 11, regular petrol price cycles in Australia have been evident in large cities for a number of years. It is apparent from the evidence presented in chapter 12, that local competitive factors also produce patterns or cycles in retail price movements in large metropolitan centres in other countries.

Evidence considered by the ACCC suggests that retail prices in cities in countries such as Germany and the US move in cycles that exhibit the familiar saw-tooth pattern seen in Australia and tend to follow weekly time paths.

Data analysed by the ACCC in section 12.3.3 on average daily retail prices in some German cities suggests that prices can move in regular and predictable patterns through the days of the week.

A recent report by the German authority responsible for competition issues, the Bundeskartellamt, identified regular price cycles in many German cities and concluded that in many instances these cycles were the product of coordinated price action by petrol companies.[296]

In the US, a study by the US Federal Trade Commission on the petrol industry also found evidence of retail price cycles in a number of cities in the US Midwest.[297] The report, which considered evidence on price cycles in other countries, including Australia, refers to price cycles as a 'phenomenon' and describes them as '… recurring "saw tooth" pattern of retail price movements characterized by periods of a relatively small number of large price increases, followed by a period of more numerous, but smaller price decreases.'[298]

That said, evidence considered in the 2007 ACCC petrol inquiry suggested that cycles in Australia had a larger amplitude than in other countries.[299] As described in chapter 11, a larger amplitude means a larger difference between the high and low prices in the cycle.

16.5 Alternative transport fuels

In the 2010 petrol monitoring report, the ACCC discussed alternatives to hydrocarbon fuels for transport.[300]

In 2011, with many of the world's governments turning their attention to the issue of climate change at the same time that prices of crude oil and refined petrol are increasing, there is continued interest in the potential of alternative sources of energy for transport. Alternative sources of energy being considered include natural gas, hydrogen, biofuels and electric batteries. The 2010 ACCC petrol monitoring report noted that, to varying degrees, all of these technologies were either already in use or in the advanced stages of development and application.

The viability of alternative sources of transport energy will ultimately depend on the extent to which they gain consumer acceptance. This in turn is inextricably linked to the development and implementation costs of the new technologies relative to the price of conventional hydrocarbon fuels. In the short to medium term, the higher the price of crude oil, the greater are the new fuels' chances of success. Recognising the challenges faced by the new technologies, governments

296 Bundeskartellamt, 'Fuel sector inquiry', Final report, May 2011, Summary, at http://www.bundeskartellamt.de/wEnglisch/Publications/sector_inquiriesW3DnavidW2651.php, accessed 30 November 2011.

297 Federal Trade Commission, 'Gasoline price changes and the petroleum industry: an update', September 2011, also, at http://www.ftc.gov/be/econrpt.shtm, 30 November 2011.

298 Ibid., pp. 39–40.

299 Australian Competition and Consumer Commission, Petrol prices and Australian consumers: report of the ACCC inquiry into the price of unleaded petrol, December 2007, pp. 155–80.

300 ACCC 2010 petrol monitoring report, December 2010, pp. 278–80.

in many countries provide a variety of incentives to promote their development and encourage consumer take-up. In the long run, as the market penetration of alternative fuels increases, the demand for petrol and diesel should moderate, relieving pressures on supply and prices.

It is too early in the development phase of non-hydrocarbon fuels to predict with certainty which of the new sources of transport energy will achieve critical mass and when. What is clear is that governments around the world recognise the need to diversify the transport fuels base and have instituted programs to accelerate development of alternative fuels. The 2010 ACCC petrol monitoring report summarized key aspects of initiatives in a number of countries.

In September 2011, the Australian Government was considering an 'Alternative Transport Fuels Strategy' as input to the development of the Energy White Paper. The main objective of the strategy is to:

> *… identify the role of alternative fuels in contributing to public policy objectives and identify barriers, including market failures, to the development of environmentally and economically sustainable fuels. Alternative fuels covered under this Strategy are those fuels that can be used for transportation both now and into the future. Currently they include biofuels, liquefied petroleum gas, compressed natural gas, liquefied natural gas, synthetic fuels derived from fossil fuel deposits, and electricity.*
>
> *The Strategy also recognises the Australian Government's proposed work program to ensure Australia's energy markets can support potential large scale adoption of electric vehicles.*[301]

Notable in this regard are initiatives by the IEA to raise awareness about and promote understanding of key issues.[302] The IEA's Energy Research and Technology Committee has proposed targets and strategies for cooperation at the intergovernmental level to lessen the world's reliance on hydrocarbon fuels. Examples of reports by the IEA include Transport, Energy and CO^2: moving toward sustainability (2009), and Technology Roadmap: Electric and Plug-in Hybrid Electric Vehicles (June 2011).

While still at an embryonic stage, the IEA initiatives are indicative of the rapidly growing belief in the need for and the potential of alternative fuels.

16.6 Carbon pricing

On 10 July 2011, the Australian Government announced the introduction of a price on carbon effective from 1 July 2012. The price will initially be set at $23 per tonne of carbon dioxide emissions.

The Government has announced that carbon price will not apply to fuel purchased for passenger and light commercial vehicles.

Refiners and other companies in the Australian downstream petroleum industry may pass on the price they pay (less any compensation) on the carbon they emit in the process of producing, storing and distributing refined petrol. The overall impact of these costs on final retail petrol prices are expected to be slight.

301 See Department of Resources, Energy and Tourism, Australian Government, at http://www.ret.gov.au/resources/fuels/alternative_transport_fuels/strategy/Pages/AlternativeTransportFuelsStrategy.aspx, accessed 30 November 2011.

302 See International Energy Agency, at http://www.iea.org/subjectqueries/keyresult.asp?KEYWORD_ID=4156, accessed 30 November 2011.

The government has directed the ACCC to investigate and take action against businesses that make false or misleading claims about the likely impact of the carbon price on retail prices.

16.7 Conclusions

There are a number of forces driving significant change in the Australian downstream petroleum industry. The key trends observed in this monitoring report include:

- It is increasingly likely that the era of cheap petrol is over. Crude and petrol prices are unlikely to revert to the levels seen up to the early 2000s.
- In the absence of further global financial disorders, it is likely that continued strong growth in demand from emerging countries will keep oil prices high. Higher production costs for crude are also likely to put upward pressure on prices as production increasingly shifts to higher-cost less accessible fields and other non-conventional sources of supplies.
- Rising global prices for crude oil continue to improve the prospects for superior returns in upstream businesses. Major integrated oil companies around the world are increasingly focusing their attention on upstream activities and scaling back their involvement in retailing and refining.
- Despite improved overall trading conditions in the refinery sector in 2010–11, spare capacity in large and efficient refineries in the Asia-Pacific region provides competitive discipline on domestic refiners.
- Greater operational efficiencies at Australian refineries reduced the need for imports in 2010–11. However, in the long term, Australia's reliance on imports, particularly for diesel, is likely to continue to grow.
- Independent wholesalers have enhanced their position in the Australian downstream market and may provide effective competition, particularly in those markets where they have developed extensive retail networks. The ability of independent wholesalers/importers to source Australian-standard fuel from Asian refineries provides them with a credible competitive threat. There is also increasing investment in import terminals by independent owners/operators.
- Specialist independent retailers have continued to increase market shares in the retail sector. Competition in retailing has diminished the benefits of vertical integration to the refiner-marketers. Two of the refiner-marketers, Mobil and Shell, are now no longer directly involved in retail.
- Australia's experience with retail petrol prices is not unique. Countries around the world have also experienced higher retail prices driven by higher international benchmark prices for refined petrol in their respective regions.
- Industry participants continue to be concerned that despite recent increases in ethanol production, NSW state government mandate for ethanol will add to pressure on supplies of EBP, particularly when the mandate comes into full effect in 2012.

Appendix A1: Minister's letter and direction

Letter and direction from the Minister for Competition Policy and Consumer Affairs to the ACCC establishing the formal monitoring of the prices, costs and profits of unleaded petrol in Australia, 2010

THE HON DR CRAIG EMERSON MP

MINISTER FOR SMALL BUSINESS, INDEPENDENT CONTRACTORS AND THE SERVICE ECONOMY
MINISTER FOR COMPETITION POLICY AND CONSUMER AFFAIRS
MINISTER ASSISTING THE FINANCE MINISTER ON DEREGULATION

Mr G Samuel AO
Chairman
Australian Competition and Consumer Commission
GPO Box 520J
MELBOURNE VIC 3001

Graeme
Dear ~~Mr~~ Samuel

I am writing to direct the Australian Competition and Consumer Commission (ACCC) to monitor prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry in Australia, pursuant to section 95ZE of the *Trade Practices Act 1974*.

This direction is to take effect at the conclusion of the previous Minister for Competition Policy and Consumer Affairs, the Hon Chris Bowen MP's, direction to you of 17 December 2007.

Attached is the direction for the ACCC to monitor prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry in Australia from 17 December 2010.

I also direct the ACCC to provide me a report on the monitoring no later than 17 December 2011.

Thank you for your assistance.

Yours sincerely

Craig Emerson

13 MAY 2010

Commonwealth of Australia

Trade Practices Act 1974

MONITORING OF THE PRICES, COSTS AND PROFITS RELATING TO THE SUPPLY OF UNLEADED PETROLEUM PRODUCTS IN THE PETROLEUM INDUSTRY IN AUSTRALIA

I, Craig Emerson, Minister for Competition Policy and Consumer Affairs, pursuant to section 95ZE of the *Trade Practice Act 1974*, hereby direct:

1. the Australian Competition and Consumer Commission (ACCC) to monitor prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry for one year, effective from 17 December 2010;
2. the ACCC to report to me on its monitoring activities in paragraph (1); and
3. the report of the ACCC to be provided by 17 December 2011.

Dated this 13th day of May 2010

Craig Emerson
MINISTER FOR COMPETITION POLICY AND CONSUMER AFFAIRS

Appendix A2: Minister's letter and direction

Letter and direction from the Assistant Treasurer and Minister for Competition Policy and Consumer Affairs to the ACCC establishing the formal monitoring of the prices, costs and profits of unleaded petrol in Australia, 2007

ASSISTANT TREASURER
AND MINISTER FOR COMPETITION POLICY
AND CONSUMER AFFAIRS

PO BOX 6022
PARLIAMENT HOUSE
CANBERRA ACT 2600

Telephone: 02 6277 7360
Facsimile: 02 6273 4125

http://assistant.treasurer.gov.au

Mr G Samuel AO
Chairman
Australian Competition and Consumer Commission (ACCC)
GPO Box 520J
MELBOURNE VIC 3001

Dear Mr Samuel

I am writing to direct the ACCC to undertake formal price monitoring pursuant to section 95ZE of Part VIIA of the *Trade Practices Act 1974*. Attached is a direction to the ACCC to monitor the prices, costs and profits relating to the supply of unleaded petrol products in the petroleum industry in Australia.

When monitoring, you may wish to focus on those parts of the industry where your report on the price of unleaded petrol (December 2007) indicated that competition is less than fully effective.

I also direct the ACCC to give me a report on the monitoring once a year, for 3 years, no later than the anniversary of the date of this letter.

Once the Government has had the opportunity to fully consider the recommendations of the ACCC's report into the price of unleaded petrol, I will write to you again with additional follow-up actions.

Yours sincerely

Chris Bowen

CHRIS BOWEN
14/12/07

Commonwealth of Australia

Trade Practices Act 1974

MONITORING OF THE PRICES OF UNLEADED PETROLEUM PRODUCTS

I, CHRIS BOWEN, Minister for Competition Policy and Consumer Affairs, pursuant to section 95ZE of the *Trade Practice Act 1974*, hereby direct:

(1) the Australian Competition and Consumer Commission ('the Commission') to monitor prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry.

(2) the Commission to report to me on its monitoring activities in paragraph (1) for a period of three years commencing from the date of this direction.

(3) the reports of the Commission to be provided annually, no later than the anniversary of the date of this direction.

Dated this Seventeenth day of December 2007

CHRIS BOWEN
Minister for Competition Policy and Consumer Affairs

Appendix A3: Minister's letter and direction

Letter and direction to the ACCC from the Parliamentary Secretary to the Treasurer establishing the formal monitoring of the prices, costs and profits of unleaded petrol in Australia, 2011

The Hon David Bradbury MP
Parliamentary Secretary to the Treasurer

Mr Graeme Samuel AO
Chairman
Australian Competition and Consumer Commission
GPO Box 520J
MELBOURNE VIC 3001

Dear Mr Samuel

Attached is a direction for the Australian Competition and Consumer Commission (ACCC) to monitor the prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry in Australia from 17 December 2011 and to provide me with a report on the monitoring no later than 17 December 2012. The direction is pursuant to section 95ZE of the *Competition and Consumer Act 2010*.

This direction is to take effect after the former Minister for Competition Policy and Consumer Affairs, the Hon Dr Craig Emerson MP's, direction to you of 13 May 2010 expires on 16 December 2011.

Thank you for your assistance.

Yours sincerely

DAVID BRADBURY

09 MAY 2011

COMMONWEALTH OF AUSTRALIA

COMPETITION AND CONSUMER ACT 2010

MONITORING OF THE PRICES, COSTS AND PROFITS RELATING TO THE SUPPLY OF UNLEADED PETROLEUM PRODUCTS IN THE PETROLEUM INDUSTRY IN AUSTRALIA

I, David Bradbury, Parliamentary Secretary to the Treasurer, pursuant to section 95ZE of the *Competition and Consumer Act 2010*, hereby direct:

1. the Australian Competition and Consumer Commission (ACCC) to monitor the prices, costs and profits relating to the supply of unleaded petroleum products in the petroleum industry in Australia for one year, effective from 17 December 2011;

2. the ACCC to report to me on its monitoring activities in paragraph (1); and

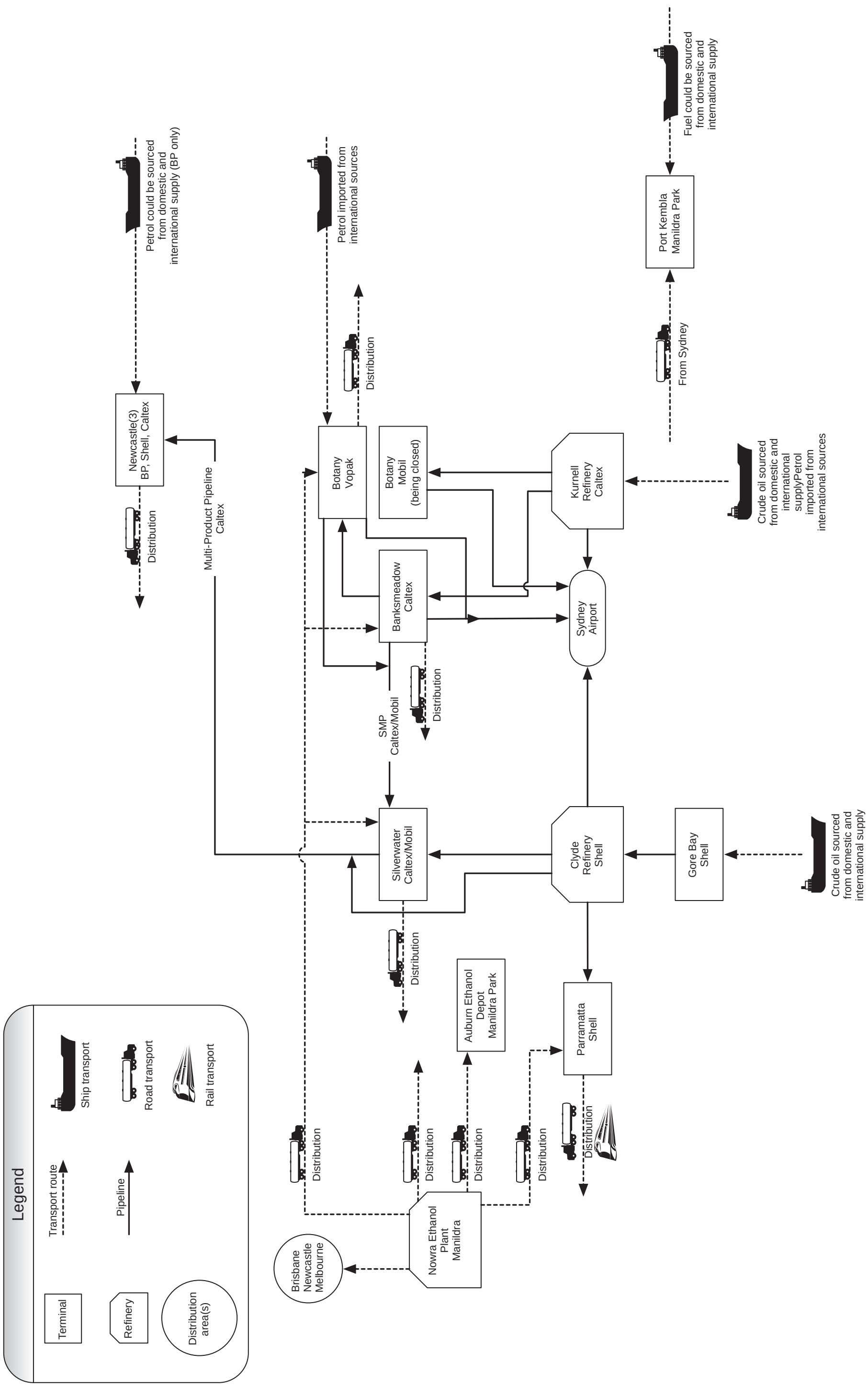
3. the report of the ACCC to be provided by 17 December 2012.

DATED THIS 9th DAY OF May 2011

David Bradbury
PARLIAMENTARY SECRETARY TO THE TREASURER

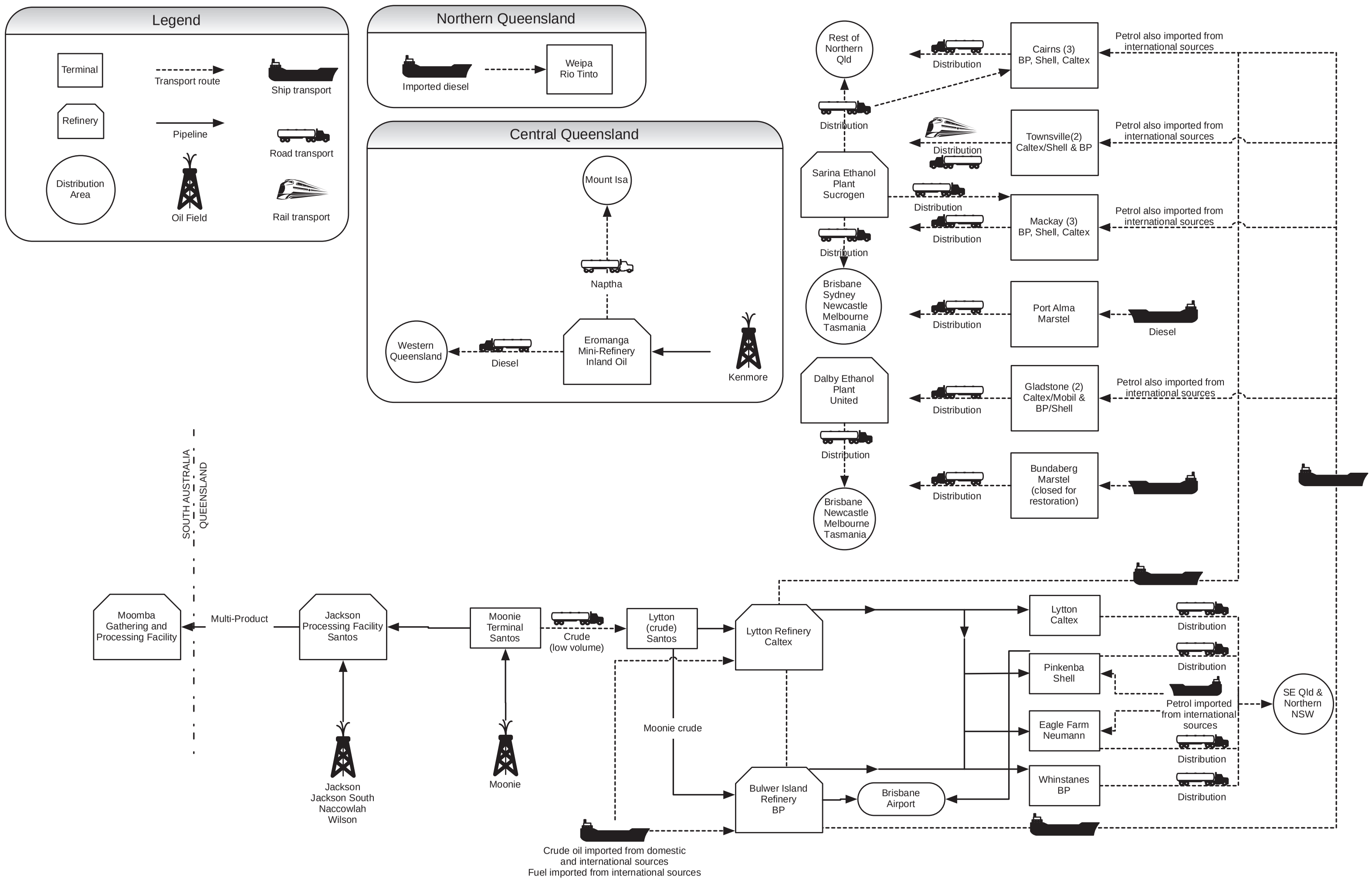
Appendix B: Major infrastructure schematics

Figure B.1 New South Wales oil flow schematic



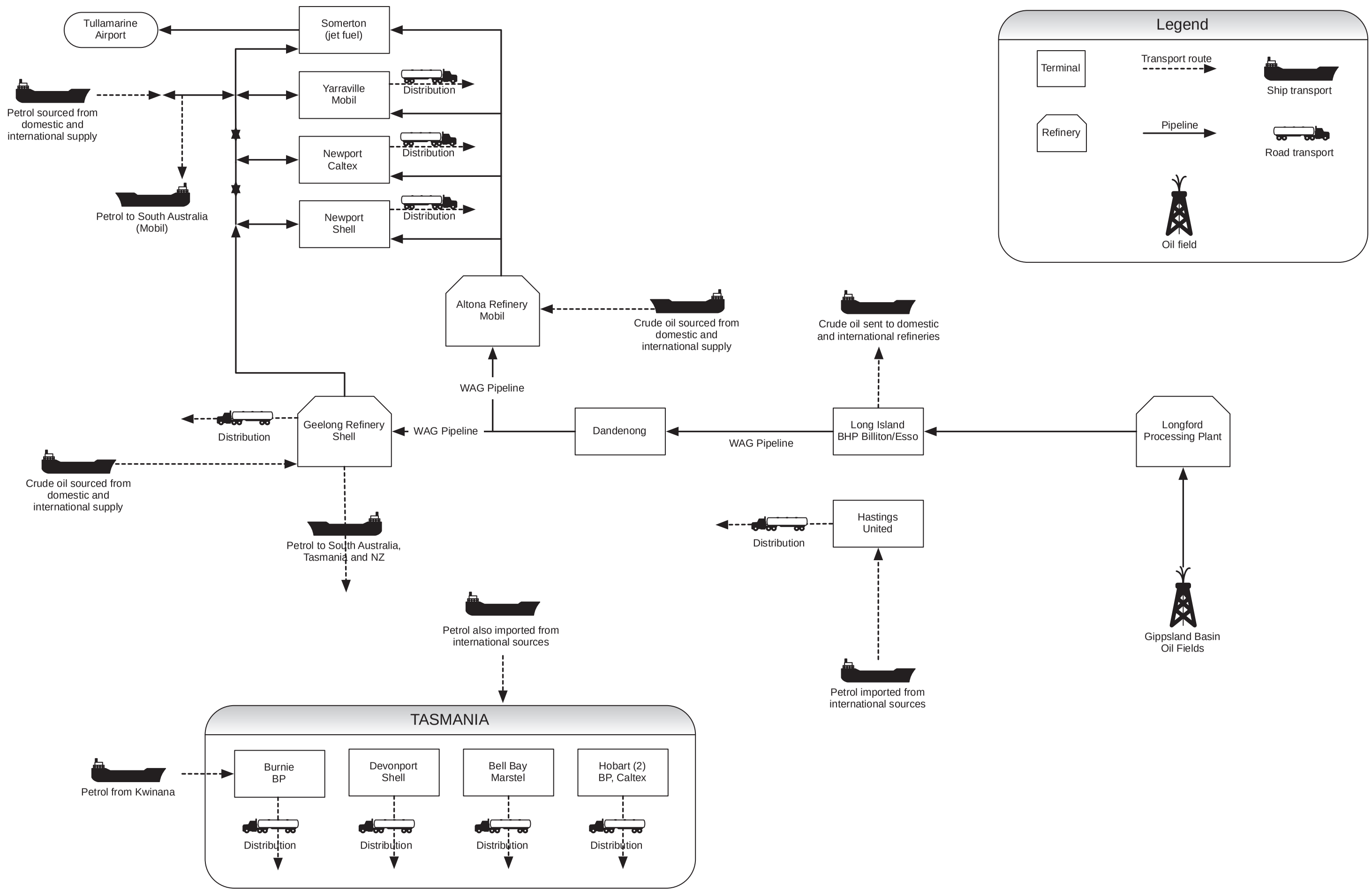
Source: Prepared by the ACCC and RLMS Pty Ltd

Figure B.2 Queensland oil flow schematic



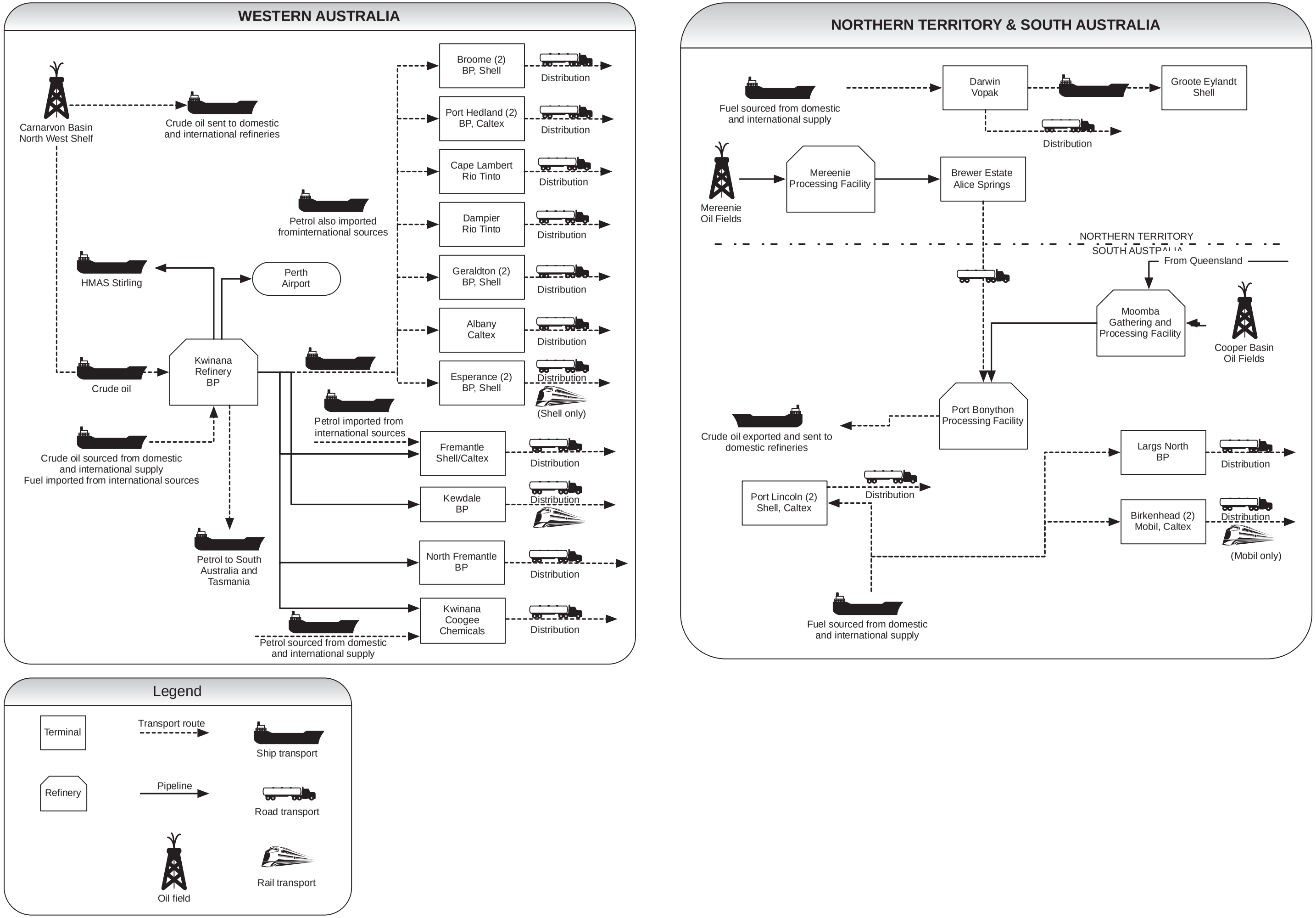
Source: Prepared by the ACCC and RLMS Pty Ltd; ethanol flows, source: *Australian Biofuels 2009*, APAC Biofuel Consultants, August 2009

Figure B.3 Victoria and Tasmania oil flow schematic



Source: Prepared by the ACCC and RLMS Pty Ltd

Figure B.4 Western Australia, Northern Territory and South Australia oil flow schematics



Source: Prepared by the ACCC and RLMS Pty Ltd

Appendix C: Major Australian terminals

Table C.1 Major terminals: New South Wales[303]

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Banksmeadow (Sydney)	Caltex	Caltex	Caltex Mobil (minor)	Indirectly through Kurnell refinery.
Parramatta (Sydney)	Shell	Shell	Shell BP (JTA)	Indirectly via Gore Bay terminal, which connects by pipeline to Clyde refinery. Terminal is a gantry at the refinery.
Silverwater (Sydney)	Caltex/Mobil (SMP)[a]	Mobil	Caltex Mobil	Indirectly through Kurnell refinery or Vopak Botany then via pipeline.
Botany (Sydney)	Mobil	Mobil	BP (JTA)	Terminal is being closed down.
Botany (Sydney)	Vopak	Vopak	BP, Mobil, Shell and independent wholesalers (co-mingled leases)	Direct from Port Botany.
Botany (Sydney)	Terminals Pty Ltd	Terminals Pty Ltd	Independent wholesaler (lease)	Direct from Port Botany. No petrol throughput, primarily diesel.
Newcastle	BP	BP	BP Mobil (minor)	Direct from Port of Newcastle. Indirect through Sydney terminals and/or refineries.
Newcastle	Caltex	Caltex	Caltex Mobil (minor)	Indirect through Sydney terminals and/or refineries.
Newcastle	Shell	Shell	Shell Mobil (JTA)	Indirect through Sydney terminals and/or refineries.
Port Kembla	Manildra Park	Manildra Park	Manildra Park	Direct from Port Kembla. Could be used to import petrol, though currently only bunker fuel is imported.

Table C.2 Major terminals: Northern Territory

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Darwin	Vopak	Vopak	BP, Caltex, Mobil, Shell and independent wholesaler (co-mingled leases)	Direct from Port Darwin.

a Sydney Metropolitan Pipeline (SMP) is a Caltex/Mobil (60/40) joint venture which owns the Silverwater terminal and the connecting pipeline to that terminal from Caltex's Banksmeadow terminal.

303 The source for tables in this appendix is ACCC analysis based on data obtained from firms monitored through the ACCC's monitoring process. Includes companies using terminals during 2010-11.
Major terminals are defined as terminals which have a pipeline connection to a port and/or refinery.

Table C.3 Major terminals: Queensland

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Lytton (Brisbane)	Caltex	Caltex	Caltex	Indirect through Lytton refinery.
Pinkenba (Brisbane)	Shell	Shell	Shell	Direct from own port. Indirect through both Brisbane refineries.
Whinstanes (Brisbane)	BP	BP	BP Caltex (infrequent) Mobil (JTA)	Indirect through Bulwer Island refinery. Import by Mobil not allowed under current JTA.
Eagle Farm (Brisbane)	Neumann	Neumann	Neumann Independent wholesalers (hosted)	Direct from own port. Indirect through both Brisbane refineries. Deeper water port to enhance import capacity completed and due to be commissioned by end of 2011.
Bundaberg	Marstel	Marstel	Under refurbishment	Will have direct port access.
Cairns	BP	BP	BP Mobil (hosted)	Direct from port.
Cairns	Caltex	Caltex	Caltex	Direct from port.
Cairns	Shell	Shell	Shell	Direct from port.
Gladstone	BP/Shell	BP	BP Shell Caltex (infrequent)	Direct from port.
Gladstone	Caltex/Mobil	Caltex	Caltex Mobil	Direct from port.
Mackay	BP	BP	BP Mobil (hosted) Caltex (infrequent)	Direct from port.
Mackay	Caltex	Caltex	Caltex	Direct from port.
Mackay	Shell	Shell	Shell Caltex (infrequent)	Direct from port.
Port Alma	Marstel	Marstel	Independent wholesaler	Direct from port.
Townsville	BP	BP	BP Mobil (hosted)	Direct from port.
Townsville	Caltex/Shell	Shell	Caltex Shell	Direct from port.
Weipa	Rio Tinto	BP	BP	Direct from port. Serves local mines, primarily diesel throughput.

Table C.4 Major terminals: South Australia

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Birkenhead (Adelaide)	Caltex	Caltex	Caltex	Direct from port.
Birkenhead (Adelaide)	Mobil	Mobil	Mobil Caltex (infrequent) Shell (JTA)	Direct from port.
Largs North (Adelaide)	BP	BP	BP	Direct from port.
Port Lincoln	Caltex	Caltex	Caltex	Direct from port.
Port Lincoln	Shell	Shell	Shell BP and Mobil (hosted)	Direct from port.

Table C.5 Major terminals: Tasmania

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Hobart	BP	BP	BP Caltex and Mobil (hosted)	Direct from port.
Hobart	Caltex	Caltex	Caltex Shell (JTA)	Direct from port.
Bell Bay	Marstel	Marstel	Independent wholesalers (leases)	Direct from port.
Burnie	BP	BP	BP Caltex (hosted)	Direct from port.
Devonport	Shell	Shell	Shell Caltex (JTA)	Direct from port.

Table C.6 Major terminals: Victoria

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Newport (Melbourne)	Caltex	Caltex	Caltex	Direct from Holden Dock.
Newport (Melbourne)	Shell	Shell	Shell	Direct from Holden Dock.
Yarraville (Melbourne)	Mobil	Mobil	Mobil BP (JTA)	Direct from Holden Dock.
Coode Island (Melbourne)	Terminals Pty Ltd	Terminals Pty Ltd	Third party (lease)	Direct from port. No petrol throughput; has ethanol capacity.
Corio (Geelong)	Shell	Shell	Shell	Indirect through refinery. Terminal is truck gantry at Geelong refinery.
Hastings	United	United	United	Direct from port.

Table C.7 Major terminals: Western Australia

Location	Owner(s)	Operator	User(s) (type of arrangement)	Import access
Fremantle (Perth)	Shell/Caltex	Shell	Caltex Shell	Indirect through Kwinana refinery.
Kewdale (Perth)	BP	BP	BP Caltex (hosted)	Indirect through Kwinana refinery.
North Fremantle (Perth)	BP	BP	BP	Indirect through Kwinana refinery. Minimal petrol throughput.
Kwinana (Perth)	Coogee	Coogee	Caltex (hosted) Mobil (hosted) Ausfuel Gull (hosted)	Direct from port.
Albany	Caltex	Caltex	Caltex	Direct from port.
Broome	BP	BP	BP	Direct from port.
Broome	Shell	Shell	Shell	Direct from port.
Cape Lambert	Rio Tinto	BP	BP	Terminal is being closed down.
Dampier	Rio Tinto	BP	BP	Direct from port. Serves local mines, primarily diesel throughput.
Esperance	BP	BP	BP	Direct from port.
Esperance	Shell	Shell	Shell Caltex (hosted)	Direct from port.
Geraldton	BP	BP	BP Caltex (hosted)	Direct from port.
Geraldton	Shell	Shell	Shell	Direct from port.
Port Hedland	BP	BP	BP Caltex	Direct from port.
Port Hedland	Caltex	Caltex	Caltex	Direct from port. No petrol throughput.

Appendix D: E10 petrol price monitoring

This appendix presents information on the ACCC's E10 price monitoring in the period October 2010 to September 2011.[304]

E10 is unleaded petrol which includes up to 10 per cent ethanol. The prices monitored are those for RULP and regular E10. The monitoring therefore excludes premium E10 and E85. E10 prices have been collected from various retail sites in a particular location and compared with the RULP prices at those retail sites. To be included in this analysis, retail sites must sell both E10 and RULP.

Eleven regional locations that were included in last year's report have dropped out of the monitoring program this year. Eight of these were in New South Wales.[305] In addition, three regional locations in New South Wales ceased to have RULP and E10 prices from early 2011. The decrease in the number of locations in New South Wales included in the E10 monitoring program is a result of the ethanol mandate in that state (as retail sites move to sell E10 and cease to sell RULP).

Methodological issues relating to the collection and reporting of this price data are discussed at the end of this appendix.

Monthly and quarterly aggregates

Table D.1 shows monthly and quarterly differentials between RULP and E10 prices across all of the locations included in the ACCC's E10 price monitoring program for the period October 2010 to September 2011.

304 E10 price monitoring quarterly reports for the December 2006 quarter and the March, June and September 2007 quarters are available from the ACCC website. Information from October 2007 onwards was included in the 2008, 2009 and 2010 ACCC petrol monitoring reports.
The source for all data in this appendix is ACCC and Informed Sources. Note that some figures in the tables may not add exactly due to rounding. Where data is not available it is identified in the tables as 'na'.

305 These are identified in the methodological section at the end of this appendix.

Table D.1 Monthly and quarterly average E10 differentials: October 2010 to September 2011—all locations monitored

Month	Differential cpl
October 2010	2.6
November 2010	2.6
December 2010	2.6
Average	**2.6**
January 2011	2.6
February 2011	2.2
March 2011	2.1
Average	**2.3**
April 2011	2.0
May 2011	2.0
June 2011	2.0
Average	**2.0**
July 2011	1.7
August 2011	1.7
September 2011	1.7
Average	**1.7**

Table D.1 shows that the average differential between RULP and E10 prices across all the locations in the ACCC's E10 price monitoring program has steadily decreased over the last four quarters.

Capital cities and regional locations

Table D.2 shows average monthly RULP and E10 prices and the differential for the capital cities and regional locations in aggregate. The table covers the period October 2010 to September 2011.

Table D.2 Monthly and quarterly average RULP and E10 prices and the differential: October 2010 to September 2011—broad aggregates

Location	Month	RULP cpl	E10 cpl	Differential cpl
Capital cities	October 2010	124.0	121.3	2.7
	November 2010	125.1	122.3	2.8
	December 2010	129.8	127.1	2.7
	Average	**126.3**	**123.6**	**2.7**
	January 2011	132.6	129.9	2.7
	February 2011	135.8	133.5	2.3
	March 2011	141.8	139.8	2.0
	Average	**136.7**	**134.4**	**2.3**
	April 2011	143.7	141.9	1.8
	May 2011	143.9	142.0	1.9
	June 2011	138.5	136.5	2.0
	Average	**142.0**	**140.1**	**1.9**
	July 2011	139.6	137.6	2.0
	August 2011	139.9	138.0	1.9
	September 2011	143.0	140.9	2.1
	Average	**140.8**	**138.8**	**2.0**
Regional locations	October 2010	124.3	121.8	2.5
	November 2010	125.0	122.5	2.5
	December 2010	129.2	126.7	2.5
	Average	**126.2**	**123.7**	**2.5**
	January 2011	132.2	129.6	2.6
	February 2011	134.7	132.5	2.2
	March 2011	142.7	140.5	2.2
	Average	**136.5**	**134.2**	**2.3**
	April 2011	144.7	142.6	2.1
	May 2011	144.8	142.8	2.0
	June 2011	142.2	140.2	2.0
	Average	**143.9**	**141.9**	**2.0**
	July 2011	141.6	139.9	1.7
	August 2011	141.8	140.2	1.6
	September 2011	143.5	141.8	1.7
	Average	**142.3**	**140.6**	**1.7**

Specific locations

Tables D.3 and D.4 show the same data as in table D.2 for each of the 41 locations across Australia included in the monitoring program in the period October 2010 to September 2011. Table D.3 includes five capital cities and table D.4 includes 36 regional locations (20 in New South Wales and 16 in Queensland).

Table D.3 Monthly and quarterly average RULP and E10 prices and the differential: October 2010 to September 2011—capital cities

Location	Month	RULP cpl	E10 cpl	Differential cpl
Sydney	October 2010	123.9	120.9	3.0
	November 2010	125.0	122.0	3.0
	December 2010	129.3	126.3	3.0
	Average	**126.1**	**123.1**	**3.0**
	January 2011	133.3	130.4	2.9
	February 2011	136.2	133.8	2.4
	March 2011	142.5	140.3	2.2
	Average	**137.3**	**134.8**	**2.5**
	April 2011	144.6	142.4	2.2
	May 2011	144.4	142.2	2.2
	June 2011	136.5	134.3	2.2
	Average	**141.8**	**139.6**	**2.2**
	July 2011	139.3	137.0	2.3
	August 2011	139.3	137.1	2.2
	September 2011	142.0	139.8	2.2
	Average	**140.2**	**138.0**	**2.2**
Melbourne	October 2010	123.8	121.0	2.8
	November 2010	124.3	121.4	2.9
	December 2010	128.7	125.9	2.8
	Average	**125.6**	**122.8**	**2.8**
	January 2011	131.7	128.9	2.8
	February 2011	135.2	133.0	2.2
	March 2011	141.9	140.1	1.8
	Average	**136.3**	**134.0**	**2.3**
	April 2011	142.6	140.9	1.7
	May 2011	143.2	141.5	1.7
	June 2011	138.4	136.5	1.9
	Average	**141.4**	**139.6**	**1.8**
	July 2011	139.2	137.3	1.9
	August 2011	138.8	136.9	1.9
	September 2011	142.0	139.8	2.2
	Average	**140.0**	**138.0**	**2.0**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Brisbane	October 2010	125.4	122.6	2.8
	November 2010	127.3	124.5	2.8
	December 2010	130.7	127.9	2.8
	Average	**127.8**	**125.0**	**2.8**
	January 2011	132.4	129.6	2.8
	February 2011	138.5	135.7	2.8
	March 2011	144.9	142.3	2.6
	Average	**138.6**	**135.9**	**2.7**
	April 2011	143.8	141.8	2.0
	May 2011	145.6	143.6	2.0
	June 2011	139.9	138.0	1.9
	Average	**143.1**	**141.1**	**2.0**
	July 2011	140.8	139.1	1.7
	August 2011	141.4	139.6	1.8
	September 2011	144.7	142.8	1.9
	Average	**142.3**	**140.5**	**1.8**
Adelaide	October 2010	122.0	120.0	2.0
	November 2010	122.4	120.4	2.0
	December 2010	127.6	125.7	1.9
	Average	**124.0**	**122.0**	**2.0**
	January 2011	131.8	129.9	1.9
	February 2011	133.2	131.3	1.9
	March 2011	137.3	135.7	1.6
	Average	**134.1**	**132.3**	**1.8**
	April 2011	141.4	139.9	1.5
	May 2011	143.2	141.5	1.7
	June 2011	138.3	136.3	2.0
	Average	**141.0**	**139.2**	**1.8**
	July 2011	138.9	136.7	2.2
	August 2011	137.4	135.2	2.2
	September 2011	142.0	139.8	2.2
	Average	**139.4**	**137.2**	**2.2**
Canberra	October 2010	125.0	122.1	2.9
	November 2010	126.3	123.4	2.9
	December 2010	132.8	129.9	2.9
	Average	**128.0**	**125.1**	**2.9**
	January 2011	133.8	130.9	2.9
	February 2011	135.9	133.9	2.0
	March 2011	142.5	140.8	1.7
	Average	**137.4**	**135.2**	**2.2**
	April 2011	146.3	144.6	1.7
	May 2011	143.1	141.4	1.7
	June 2011	139.2	137.5	1.7
	Average	**142.9**	**141.2**	**1.7**
	July 2011	139.6	137.8	1.8
	August 2011	142.7	141.0	1.7
	September 2011	144.2	142.5	1.7
	Average	**142.2**	**140.4**	**1.8**

Table D.4 Monthly and quarterly average RULP and E10 prices and the differential: October 2010 to September 2011—regional locations

Location	Month	RULP cpl	E10 cpl	Differential cpl
New South Wales regional locations				
Albury	October 2010	117.8	114.8	3.0
	November 2010	115.7	112.7	3.0
	December 2010	118.7	115.8	2.9
	Average	**117.4**	**114.4**	**3.0**
	January 2011	126.5	123.5	3.0
	February 2011	126.5	125.0	1.5
	March 2011	132.5	131.0	1.5
	Average	**128.5**	**126.5**	**2.0**
	April 2011	137.9	136.4	1.5
	May 2011	137.6	136.2	1.4
	June 2011	136.5	135.0	1.5
	Average	**137.3**	**135.9**	**1.4**
	July 2011	136.7	135.2	1.5
	August 2011	136.1	134.6	1.5
	September 2011	136.1	134.6	1.5
	Average	**136.3**	**134.8**	**1.5**
Armidale	October 2010	129.9	127.9	2.0
	November 2010	128.2	126.2	2.0
	December 2010	130.4	128.4	2.0
	Average	**129.5**	**127.5**	**2.0**
	January 2011	131.9	129.9	2.0
	February 2011	133.8	132.8	1.0
	March 2011	141.5	140.5	1.0
	Average	**135.7**	**134.4**	**1.3**
	April 2011	147.2	146.2	1.0
	May 2011	147.0	146.0	1.0
	June 2011	146.8	145.8	1.0
	Average	**147.0**	**146.0**	**1.0**
	July 2011	145.9	144.9	1.0
	August 2011	145.0	144.0	1.0
	September 2011	145.1	144.1	1.0
	Average	**145.3**	**144.3**	**1.0**
Bathurst	October 2010	122.9	119.9	3.0
	November 2010	123.8	120.8	3.0
	December 2010	127.4	124.4	3.0
	Average	**124.7**	**121.7**	**3.0**
	January 2011	131.0	128.0	3.0
	February 2011	134.5	132.5	2.0
	March 2011	140.4	138.4	2.0
	Average	**135.3**	**133.0**	**2.3**
	April 2011	142.9	140.9	2.0
	May 2011	143.1	141.1	2.0
	June 2011	141.2	139.3	1.9
	Average	**142.4**	**140.4**	**2.0**
	July 2011	140.0	138.4	1.6
	August 2011	139.8	138.2	1.6
	September 2011	140.4	138.8	1.6
	Average	**140.1**	**138.5**	**1.6**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Bulahdelah	October 2010	115.5	112.8	2.7
	November 2010	124.4	121.8	2.6
	December 2010	128.8	126.1	2.7
	Average	**122.9**	**120.2**	**2.7**
	January 2011	127.6	124.8	2.8
	February 2011	129.6	127.5	2.1
	March 2011	145.5	143.8	1.7
	Average	**134.2**	**132.0**	**2.2**
	April 2011	147.2	145.6	1.6
	May 2011	143.2	141.6	1.6
	June 2011	139.4	137.9	1.5
	Average	**143.3**	**141.7**	**1.6**
	July 2011	137.9	136.2	1.7
	August 2011	138.1	136.3	1.8
	September 2011	140.1	138.3	1.8
	Average	**138.7**	**136.9**	**1.8**
Central Coast	October 2010	123.3	120.5	2.8
	November 2010	123.4	120.5	2.9
	December 2010	133.0	130.1	2.9
	Average	**126.6**	**123.7**	**2.9**
	January 2011	135.1	132.1	3.0
	February 2011	139.4	137.2	2.2
	March 2011	143.1	141.3	1.8
	Average	**139.2**	**136.9**	**2.3**
	April 2011	142.7	140.9	1.8
	May 2011	137.2	135.4	1.8
	June 2011	135.9	134.1	1.8
	Average	**138.6**	**136.8**	**1.8**
	July 2011	138.1	136.3	1.8
	August 2011	136.4	134.7	1.7
	September 2011	141.5	139.7	1.8
	Average	**138.7**	**136.9**	**1.8**
Coffs Harbour	October 2010	123.4	120.7	2.7
	November 2010	124.5	121.8	2.7
	December 2010	128.0	125.3	2.7
	Average	**125.3**	**122.6**	**2.7**
	January 2011	130.5	127.8	2.7
	February 2011	136.2	133.9	2.3
	March 2011	143.9	141.9	2.0
	Average	**136.9**	**134.5**	**2.4**
	April 2011	147.1	145.1	2.0
	May 2011	146.9	144.9	2.0
	June 2011	142.5	140.4	2.1
	Average	**145.5**	**143.5**	**2.0**
	July 2011	142.9	140.9	2.0
	August 2011	142.3	140.3	2.0
	September 2011	na	na	na
	Average	**145.5**	**143.5**	**2.0**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Dubbo	October 2010	127.4	124.9	2.5
	November 2010	126.1	123.6	2.5
	December 2010	124.5	122	2.5
	Average	**126**	**123.5**	**2.5**
	January 2011	126.3	123.8	2.5
	February 2011	129.3	128	1.3
	March 2011	138.2	136.8	1.4
	Average	**131.3**	**129.5**	**1.8**
	April 2011	141	139.6	1.4
	May 2011	145.7	144.4	1.3
	June 2011	144.4	143	1.4
	Average	**143.7**	**142.3**	**1.4**
	July 2011	143.2	141.8	1.4
	August 2011	143.1	141.7	1.4
	September 2011	143	141.6	1.4
	Average	**143.1**	**141.7**	**1.4**
Goulburn	October 2010	na	na	na
	November 2010	na	na	na
	December 2010	na	na	na
	Average	**na**	**na**	**na**
	January 2011	na	na	na
	February 2011	134.2	131.8	2.4
	March 2011	144.1	141.8	2.3
	Average	**139.2**	**136.8**	**2.4**
	April 2011	145.7	143.3	2.4
	May 2011	146.7	144.3	2.4
	June 2011	na	na	na
	Average	**146.2**	**143.8**	**2.4**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**
Gunnedah	October 2010	130.9	128.3	2.6
	November 2010	130.9	128.4	2.5
	December 2010	130.9	128.5	2.4
	Average	**130.9**	**128.4**	**2.5**
	January 2011	132.2	129.6	2.6
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**132.2**	**129.6**	**2.6**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	na	na	na
	Average	**na**	**na**	**na**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Kempsey	October 2010	127.4	124.8	2.6
	November 2010	128.2	125.6	2.6
	December 2010	130.7	128.1	2.6
	Average	**128.8**	**126.2**	**2.6**
	January 2011	133.1	130.6	2.5
	February 2011	134.2	131.7	2.5
	March 2011	141.2	138.6	2.6
	Average	**136.2**	**133.6**	**2.6**
	April 2011	143.9	141.4	2.5
	May 2011	146.5	144.0	2.5
	June 2011	144.2	141.7	2.5
	Average	**144.9**	**142.4**	**2.5**
	July 2011	143.8	141.8	2.0
	August 2011	144.3	142.2	2.1
	September 2011	145.8	144.1	1.7
	Average	**144.6**	**142.7**	**1.9**
Lismore	October 2010	127.8	125.8	2.0
	November 2010	126.6	124.6	2.0
	December 2010	129.1	127.0	2.1
	Average	**127.8**	**125.8**	**2.0**
	January 2011	131.0	129.0	2.0
	February 2011	137.2	135.2	2.0
	March 2011	na	na	na
	Average	**134.1**	**132.1**	**2.0**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	na	na	na
	Average	**na**	**na**	**na**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**
Moruya	October 2010	127.9	125.4	2.5
	November 2010	128.7	125.8	2.9
	December 2010	134.3	131.2	3.1
	Average	**130.3**	**127.5**	**2.8**
	January 2011	137.9	134.9	3.0
	February 2011	141.2	138.0	3.2
	March 2011	149.4	146.3	3.1
	Average	**142.8**	**139.7**	**3.1**
	April 2011	150.7	147.7	3.0
	May 2011	150.6	147.5	3.1
	June 2011	146.0	143.1	2.9
	Average	**149.1**	**146.1**	**3.0**
	July 2011	145.5	143.9	1.6
	August 2011	145.6	143.8	1.8
	September 2011	149.0	146.9	2.1
	Average	**146.7**	**144.9**	**1.8**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Moss Vale	October 2010	125.9	122.9	3.0
	November 2010	128.6	125.7	2.9
	December 2010	132.0	129.0	3.0
	Average	**128.8**	**125.9**	**2.9**
	January 2011	134.8	131.8	3.0
	February 2011	138.5	137.0	1.5
	March 2011	145.0	143.6	1.4
	Average	**139.4**	**137.5**	**1.9**
	April 2011	140.4	139.0	1.4
	May 2011	144.1	142.6	1.5
	June 2011	138.8	137.4	1.4
	Average	**141.1**	**139.7**	**1.4**
	July 2011	141.4	139.9	1.5
	August 2011	140.8	139.4	1.4
	September 2011	145.5	144.1	1.4
	Average	**142.6**	**141.1**	**1.5**
Muswellbrook	October 2010	122.9	120.5	2.4
	November 2010	124.2	121.7	2.5
	December 2010	125.6	123.0	2.6
	Average	**124.2**	**121.7**	**2.5**
	January 2011	128.6	126.1	2.5
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**128.6**	**126.1**	**2.5**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	na	na	na
	Average	**na**	**na**	**na**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**
Newcastle	October 2010	122.1	119.4	2.7
	November 2010	124.5	121.8	2.7
	December 2010	131.1	128.5	2.6
	Average	**125.9**	**123.2**	**2.7**
	January 2011	133.3	130.7	2.6
	February 2011	135.1	133.0	2.1
	March 2011	142.1	140.0	2.1
	Average	**136.8**	**134.6**	**2.2**
	April 2011	143.1	141.0	2.1
	May 2011	140.7	138.6	2.1
	June 2011	138.8	136.4	2.4
	Average	**140.9**	**138.7**	**2.2**
	July 2011	140.9	138.7	2.2
	August 2011	140.7	138.2	2.5
	September 2011	143.7	141.4	2.3
	Average	**141.8**	**139.4**	**2.4**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Tamworth	October 2010	127.5	125.3	2.2
	November 2010	124.9	122.6	2.3
	December 2010	131.5	129.3	2.2
	Average	**128.0**	**125.7**	**2.3**
	January 2011	135.4	133.2	2.2
	February 2011	138.1	136.5	1.6
	March 2011	146.2	144.6	1.6
	Average	**139.9**	**138.1**	**1.8**
	April 2011	149.2	147.7	1.5
	May 2011	149.4	147.7	1.7
	June 2011	146.5	144.9	1.6
	Average	**148.4**	**146.8**	**1.6**
	July 2011	146.3	144.9	1.4
	August 2011	146.2	144.9	1.3
	September 2011	146.5	145.2	1.3
	Average	**146.3**	**145.0**	**1.3**
Taree	October 2010	119.5	117.2	2.3
	November 2010	124.6	122.3	2.3
	December 2010	130.4	128.0	2.4
	Average	**124.8**	**122.5**	**2.3**
	January 2011	131.4	129.0	2.4
	February 2011	133.8	132.1	1.7
	March 2011	145.5	143.8	1.7
	Average	**136.9**	**135.0**	**1.9**
	April 2011	147.1	145.4	1.7
	May 2011	147.7	146.0	1.7
	June 2011	138.5	136.6	1.9
	Average	**144.4**	**142.7**	**1.7**
	July 2011	135.3	133.8	1.5
	August 2011	138.0	136.5	1.5
	September 2011	142.5	140.9	1.6
	Average	**138.6**	**137.1**	**1.5**
Tweed Heads	October 2010	na	na	na
	November 2010	na	na	na
	December 2010	na	na	na
	Average	**na**	**na**	**na**
	January 2011	na	na	na
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**na**	**na**	**na**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	140.2	139.0	1.2
	Average	**140.2**	**139.0**	**1.2**
	July 2011	142.0	140.9	1.1
	August 2011	143.0	141.9	1.1
	September 2011	146.2	145.1	1.1
	Average	**143.7**	**142.6**	**1.1**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Tweed Heads South	October 2010	na	na	na
	November 2010	na	na	na
	December 2010	na	na	na
	Average	**na**	**na**	**na**
	January 2011	na	na	na
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**na**	**na**	**na**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	140.0	138.3	1.7
	Average	**140.0**	**138.3**	**1.7**
	July 2011	141.8	140.1	1.7
	August 2011	142.8	141.1	1.7
	September 2011	145.7	144.1	1.6
	Average	**143.4**	**141.8**	**1.6**
Wollongong	October 2010	125.7	122.4	3.3
	November 2010	126.5	123.3	3.2
	December 2010	132.0	129.0	3.0
	Average	**128.1**	**124.9**	**3.2**
	January 2011	135.3	132.4	2.9
	February 2011	138.6	136.1	2.5
	March 2011	145.7	143.6	2.1
	Average	**139.9**	**137.4**	**2.5**
	April 2011	146.2	142.9	3.3
	May 2011	145.8	143.3	2.5
	June 2011	141.3	139.3	2.0
	Average	**144.4**	**141.8**	**2.6**
	July 2011	141.9	140.0	1.9
	August 2011	142.9	141.0	1.9
	September 2011	144.8	142.7	2.1
	Average	**143.2**	**141.2**	**2.0**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Queensland regional locations				
Ayr	October 2010	na	na	na
	November 2010	127.3	124.3	3.0
	December 2010	130.0	127.7	2.3
	Average	**128.7**	**126.0**	**2.7**
	January 2011	na	na	na
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**na**	**na**	**na**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	na	na	na
	Average	**na**	**na**	**na**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**
Bowen	October 2010	125.9	122.9	3.0
	November 2010	127.5	124.5	3.0
	December 2010	131.2	128.2	3.0
	Average	**128.2**	**125.2**	**3.0**
	January 2011	134.6	131.6	3.0
	February 2011	137.1	134.1	3.0
	March 2011	143.3	140.3	3.0
	Average	**138.3**	**135.3**	**3.0**
	April 2011	146.0	143.0	3.0
	May 2011	146.9	144.3	2.6
	June 2011	146.8	144.3	2.5
	Average	**146.6**	**143.9**	**2.7**
	July 2011	145.9	143.9	2.0
	August 2011	145.9	143.9	2.0
	September 2011	145.9	143.9	2.0
	Average	**145.9**	**143.9**	**2.0**
Cairns	October 2010	126.9	124.2	2.7
	November 2010	126.9	124.4	2.5
	December 2010	130.0	127.2	2.8
	Average	**127.9**	**125.3**	**2.6**
	January 2011	134.3	130.8	3.5
	February 2011	136.9	133.9	3.0
	March 2011	142.9	140.0	2.9
	Average	**138.0**	**134.9**	**3.1**
	April 2011	146.0	143.6	2.4
	May 2011	146.9	144.4	2.5
	June 2011	146.9	144.4	2.5
	Average	**146.6**	**144.1**	**2.5**
	July 2011	145.3	143.7	1.6
	August 2011	145.9	144.3	1.6
	September 2011	145.9	144.3	1.6
	Average	**145.7**	**144.1**	**1.6**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Childers	October 2010	na	na	na
	November 2010	na	na	na
	December 2010	na	na	na
	Average	**na**	**na**	**na**
	January 2011	na	na	na
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**na**	**na**	**na**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	142.7	141.0	1.7
	Average	**142.7**	**141.0**	**1.7**
	July 2011	142.6	141.2	1.4
	August 2011	143.1	141.7	1.4
	September 2011	144.7	143.1	1.6
	Average	**143.5**	**142.0**	**1.5**
Dalby	October 2010	122.0	119.3	2.7
	November 2010	120.4	117.7	2.7
	December 2010	123.9	121.2	2.7
	Average	**122.1**	**119.4**	**2.7**
	January 2011	126.2	123.5	2.7
	February 2011	128.4	125.7	2.7
	March 2011	141.4	138.7	2.7
	Average	**132.0**	**129.3**	**2.7**
	April 2011	145.1	142.9	2.2
	May 2011	145.0	142.8	2.2
	June 2011	141.5	139.7	1.8
	Average	**143.9**	**141.8**	**2.1**
	July 2011	140.2	138.7	1.5
	August 2011	140.1	138.6	1.5
	September 2011	141.3	139.8	1.5
	Average	**140.5**	**139.0**	**1.5**
Gladstone	October 2010	126.2	124.2	2.0
	November 2010	127.2	125.2	2.0
	December 2010	132.0	130.0	2.0
	Average	**128.5**	**126.5**	**2.0**
	January 2011	135.7	133.7	2.0
	February 2011	137.1	135.2	1.9
	March 2011	144.2	142.2	2.0
	Average	**139.0**	**137.0**	**2.0**
	April 2011	138.6	136.6	2.0
	May 2011	139.3	137.3	2.0
	June 2011	139.0	137.1	1.9
	Average	**139.0**	**137.0**	**2.0**
	July 2011	138.6	136.6	2.0
	August 2011	139.5	137.5	2.0
	September 2011	143.9	141.9	2.0
	Average	**140.7**	**138.7**	**2.0**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Gympie	October 2010	123.3	121.3	2.0
	November 2010	125.2	123.3	1.9
	December 2010	130.2	128.2	2.0
	Average	**126.2**	**124.3**	**1.9**
	January 2011	134.3	132.3	2.0
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**134.3**	**132.3**	**2.0**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	na	na	na
	Average	**na**	**na**	**na**
	July 2011	na	na	na
	August 2011	na	na	na
	September 2011	na	na	na
	Average	**na**	**na**	**na**
Hervey Bay	October 2010	125.7	123.2	2.5
	November 2010	125.3	122.9	2.4
	December 2010	127.4	125.0	2.4
	Average	**126.1**	**123.7**	**2.4**
	January 2011	130.2	127.7	2.5
	February 2011	132.3	129.9	2.4
	March 2011	141.6	139.2	2.4
	Average	**134.7**	**132.3**	**2.4**
	April 2011	143.2	141.1	2.1
	May 2011	143.2	141.1	2.1
	June 2011	141.8	140.2	1.6
	Average	**142.7**	**140.8**	**1.9**
	July 2011	141.8	140.5	1.3
	August 2011	141.7	140.3	1.4
	September 2011	143.3	142.0	1.3
	Average	**142.3**	**140.9**	**1.4**
Ingham	October 2010	124.0	121.0	3.0
	November 2010	127.3	124.3	3.0
	December 2010	129.8	126.8	3.0
	Average	**127.0**	**124.0**	**3.0**
	January 2011	134.3	131.3	3.0
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**134.3**	**131.3**	**3.0**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	143.7	140.7	3.0
	Average	**143.7**	**140.7**	**3.0**
	July 2011	141.7	139.2	2.5
	August 2011	141.7	139.2	2.5
	September 2011	142.1	140.1	2.0
	Average	**141.8**	**139.5**	**2.3**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Mackay	October 2010	121.2	119.2	2.0
	November 2010	121.1	119.1	2.0
	December 2010	129.4	127.4	2.0
	Average	**123.9**	**121.9**	**2.0**
	January 2011	134.0	132.1	1.9
	February 2011	134.9	132.9	2.0
	March 2011	143.6	141.6	2.0
	Average	**137.5**	**135.5**	**2.0**
	April 2011	144.9	142.9	2.0
	May 2011	145.0	143.0	2.0
	June 2011	144.8	143.1	1.7
	Average	**144.9**	**143.0**	**1.9**
	July 2011	143.1	141.6	1.5
	August 2011	142.9	141.4	1.5
	September 2011	143.1	141.6	1.5
	Average	**143.0**	**141.5**	**1.5**
Maryborough	October 2010	125.8	123.8	2.0
	November 2010	125.7	123.7	2.0
	December 2010	129.2	127.2	2.0
	Average	**126.9**	**124.9**	**2.0**
	January 2011	132.8	130.8	2.0
	February 2011	135.6	133.6	2.0
	March 2011	142.7	140.7	2.0
	Average	**137.0**	**135.0**	**2.0**
	April 2011	145.1	143.1	2.0
	May 2011	145.3	143.3	2.0
	June 2011	142.9	140.9	2.0
	Average	**144.4**	**142.4**	**2.0**
	July 2011	142.4	141.4	1.0
	August 2011	142.3	141.3	1.0
	September 2011	143.4	142.4	1.0
	Average	**142.7**	**141.7**	**1.0**
Rockhampton	October 2010	127.9	125.8	2.1
	November 2010	127.9	125.8	2.1
	December 2010	132.5	130.5	2.0
	Average	**129.4**	**127.4**	**2.0**
	January 2011	135.2	133.2	2.0
	February 2011	137.6	135.6	2.0
	March 2011	146.9	144.5	2.4
	Average	**139.9**	**137.8**	**2.1**
	April 2011	150.3	148.0	2.3
	May 2011	149.0	146.7	2.3
	June 2011	144.5	142.8	1.7
	Average	**147.9**	**145.8**	**2.1**
	July 2011	144.4	143.1	1.3
	August 2011	144.6	143.2	1.4
	September 2011	148.2	146.5	1.7
	Average	**145.7**	**144.3**	**1.4**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Roma	October 2010	na	na	na
	November 2010	na	na	na
	December 2010	na	na	na
	Average	**na**	**na**	**na**
	January 2011	na	na	na
	February 2011	na	na	na
	March 2011	na	na	na
	Average	**na**	**na**	**na**
	April 2011	na	na	na
	May 2011	na	na	na
	June 2011	149.9	146.9	3.0
	Average	**149.9**	**146.9**	**3.0**
	July 2011	149.0	146.9	2.1
	August 2011	148.9	146.9	2.0
	September 2011	na	na	na
	Average	**149.0**	**146.9**	**2.1**
Toowoomba	October 2010	117.8	115.0	2.8
	November 2010	116.4	113.5	2.9
	December 2010	126.4	123.6	2.8
	Average	**120.2**	**117.4**	**2.8**
	January 2011	129.5	126.8	2.7
	February 2011	130.0	127.2	2.8
	March 2011	132.8	130.3	2.5
	Average	**130.8**	**128.1**	**2.7**
	April 2011	137.8	135.9	1.9
	May 2011	140.1	138.1	2.0
	June 2011	134.6	132.9	1.7
	Average	**137.5**	**135.6**	**1.9**
	July 2011	133.0	131.4	1.6
	August 2011	132.2	130.6	1.6
	September 2011	137.0	135.4	1.6
	Average	**134.1**	**132.5**	**1.6**
Townsville	October 2010	122.5	119.7	2.8
	November 2010	122.3	119.5	2.8
	December 2010	129.4	126.6	2.8
	Average	**124.7**	**121.9**	**2.8**
	January 2011	133.8	131.0	2.8
	February 2011	136.5	133.7	2.8
	March 2011	143.1	140.3	2.8
	Average	**137.8**	**135.0**	**2.8**
	April 2011	146.0	143.0	3.0
	May 2011	146.4	143.6	2.8
	June 2011	143.3	140.4	2.9
	Average	**145.2**	**142.3**	**2.9**
	July 2011	141.3	139.0	2.3
	August 2011	140.9	138.7	2.2
	September 2011	141.5	139.3	2.2
	Average	**141.2**	**139.0**	**2.2**

Location	Month	RULP cpl	E10 cpl	Differential cpl
Warwick	October 2010	122.3	119.6	2.7
	November 2010	121.9	119.3	2.6
	December 2010	126.1	123.4	2.7
	Average	**123.4**	**120.8**	**2.6**
	January 2011	128.3	125.7	2.6
	February 2011	130.3	127.6	2.7
	March 2011	142.9	140.2	2.7
	Average	**133.8**	**131.2**	**2.6**
	April 2011	146.2	144.0	2.2
	May 2011	145.9	143.8	2.1
	June 2011	142.3	140.3	2.0
	Average	**144.8**	**142.7**	**2.1**
	July 2011	141.1	139.6	1.5
	August 2011	140.6	139.1	1.5
	September 2011	140.8	139.3	1.5
	Average	**140.8**	**139.3**	**1.5**

Methodology

Coverage

The ACCC obtains petrol price data from Informed Sources. Informed Sources price monitoring involves sampling.

Informed Sources currently monitors fuel prices at around 4,300 retail sites in Australia. There are currently around 6,300 retail sites in Australia. Therefore, the Informed Sources monitoring covers over two-thirds of the total number of retail sites.

All of the capital cities and most of the major regional centres are included in the monitoring program, as are a representative sample of other regional locations.

Informed Sources collects E10 price data from all states and territories, except Western Australia where E10 is not commercially available.

As at early October 2011, Informed Sources collected E10 prices from around 1,290 retail sites across Australia. Of this total, around 34 per cent of these retail sites are included in the locations covered in this appendix.

The number of locations included in the E10 monitoring program has decreased from last year because retail sites in New South Wales are increasingly only selling E10 and this monitoring covers retail sites selling both RULP and E10.

Locations that were included in last year's report but which have since dropped out of the E10 monitoring program are Bega, Casino, Forster, Grafton, Moree, Nowra, Port Macquarie and Singleton in New South Wales; Bundaberg in Queensland; and Bairnsdale and Traralgon in Victoria. An additional five locations — Gunnedah, Lismore and Muswellbrook in New South Wales and Ayr and Gympie in Queensland — have not had price data available since early 2011.

Locations that have been added to the E10 monitoring program this year are Tweed Heads and Tweed Heads South in New South Wales; and Ayr and Childers in Queensland.

Data collection

Informed Sources obtains daily average E10 and RULP prices for the locations included in this appendix. The monthly averages are derived from the daily average prices. E10 prices collected are for regular E10. They do not include premium E10 or E85.

The daily E10 price for these locations is the average price at retail sites selling E10 that are monitored by Informed Sources. The daily RULP price is the average price at those retail sites. Therefore, the average RULP price for a particular location included in this report may be different from the overall average RULP price in that location.

Locations are only included in the tables where Informed Sources obtains daily E10 prices from two or more retail sites in that location. This is to ensure the robustness of the price data.

Daily price data is only included in the monthly average where both E10 and RULP prices for that day are available. To derive a monthly average price, daily average prices need to be available for at least 14 days in that month.

Informed Sources may exclude data from some retail sites which sell E10 in these locations where it has concerns about the robustness and accuracy of the E10 or RULP price data.

In some locations, there are significant variations in the monthly price differential between RULP and E10. These variations are influenced by factors such as the specific retail sites included in the monitoring each month and changes to the pricing policies at retail sites.

Appendix E: Gross indicative retail differences for regular unleaded petrol and diesel

This appendix provides data on gross indicative retail differences (subsequently referred to as ‘differences’), for petrol and diesel.[306] These differences are calculated by subtracting average terminal gate prices (TGPs) from average retail prices.

TGPs are the prices at which petrol can be purchased from wholesalers in the spot market and are posted on a regular basis on the websites of the major wholesalers. Not all wholesale transactions are at TGPs, and therefore TGPs should be regarded as indicative wholesale prices.

Furthermore, TGPs are ‘petrol only’ prices and exclude other retail operating costs (such as branding, transportation and labour). Therefore, the differences presented in this appendix should not be confused with actual retail profits.

Petrol

Differences for petrol across the five largest cities were discussed in chapter 9. This appendix provides data on differences for each of the five largest cities individually.[307] This data is shown annually for the period 2002–03 to 2010–11 and monthly for 2010–11. Annual average differences for each city in 2002–03 prices are also provided.[308]

306 All references to petrol in this appendix are to RULP.

307 Sources for the data in the tables and charts in this appendix are as follows: petrol — ACCC, Informed Sources, BP, Caltex, Mobil, Shell, Trafigura, Gull, FuelWatch, and Australian Bureau of Statistics; and diesel — ACCC, Informed Sources, ABS and the Australian Institute of Petroleum. Monthly data for previous years is available in past ACCC petrol monitoring reports.

308 The ABS All Groups Consumer Price Index for Sydney, Melbourne, Brisbane, Adelaide and Perth was used to deflate the respective retail differences. Source: Australian Bureau of Statistics, *6401.0 Consumer Price Index, Australia*, Tables 1 and 2. CPI: All Groups, Index Numbers and Percentage Changes, http://www.abs.gov.au/AUSSTATS, accessed 30 November 2011.

Sydney

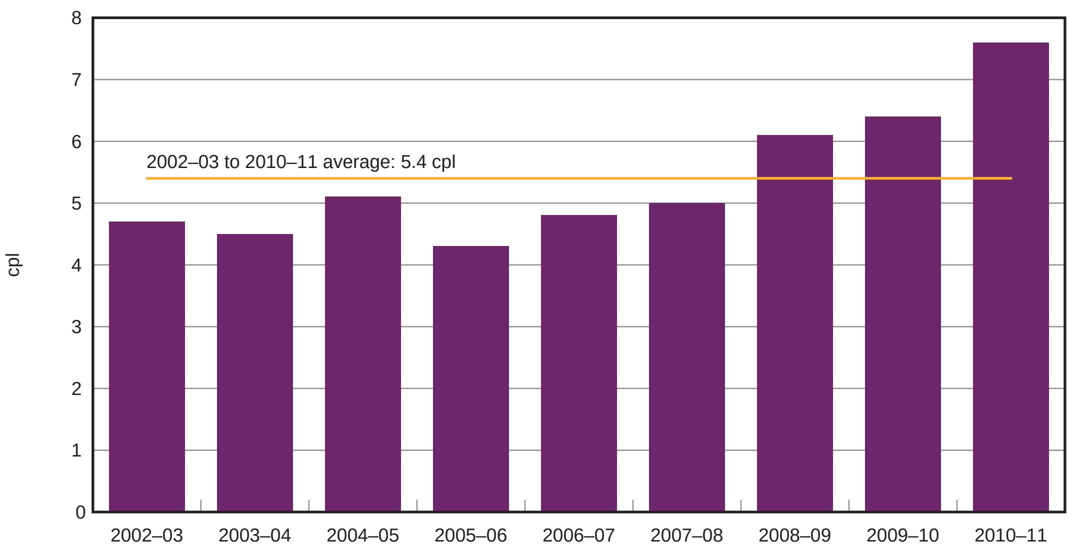
Average annual petrol retail prices, TGPs and differences in Sydney for 2002–03 to 2010–11 are presented in table E.1. The differences are also calculated in real terms relative to 2002–03 prices. The information is presented on a monthly basis for 2010–11 in table E.2. The differences for these periods are also presented in chart form (charts E.1 and E.2).

Table E.1 Average annual petrol retail prices, TGPs and differences, Sydney: 2002–03 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2002–03	89.7	85.0	4.7	4.7
2003–04	91.6	87.1	4.5	4.4
2004–05	103.3	98.2	5.1	4.9
2005–06	122.6	118.3	4.3	4.0
2006–07	123.3	118.5	4.8	4.3
2007–08	136.3	131.3	5.0	4.4
2008–09	128.2	122.1	6.1	5.2
2009–10	123.4	117.0	6.4	5.3
2010–11	131.7	124.1	7.6	6.1
Average differences			5.4	4.8

The average annual difference over the nine years was 5.4 cpl. It ranged from a low of 4.3 cpl in 2005–06 to a high of 7.6 cpl in 2010–11.

Chart E.1 Average annual differences, petrol, Sydney: 2002–03 to 2010–11



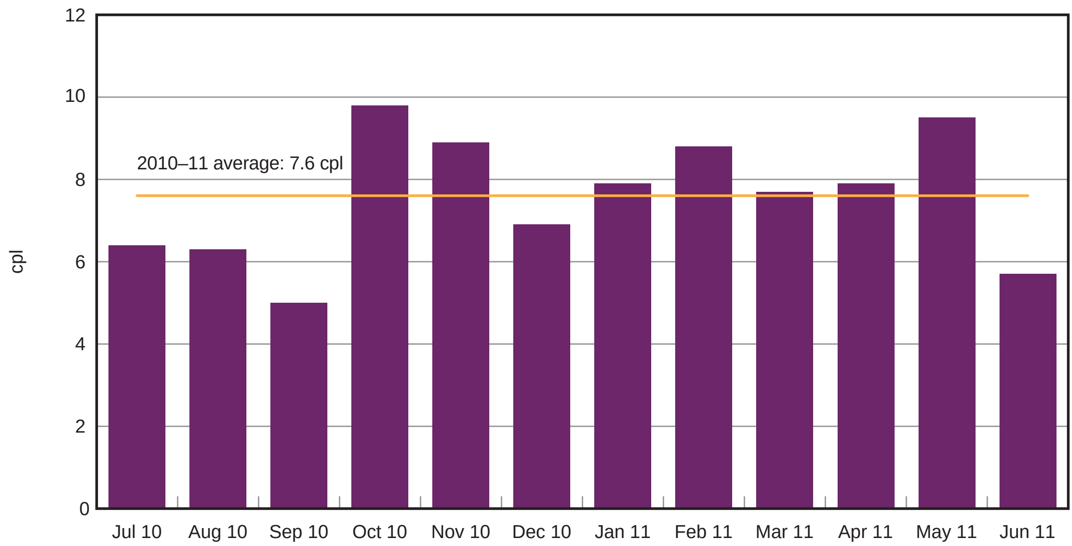
The **real** average annual difference over the nine years was 4.8 cpl. It ranged from a low of 4.0 cpl in 2005–06 to a high of 6.1 cpl in 2010–11.

Table E.2 Average monthly petrol retail prices, TGPs and differences, Sydney: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	124.2	117.8	6.4
Aug 10	122.6	116.3	6.3
Sep 10	118.7	113.7	5.0
Oct 10	123.9	114.1	9.8
Nov 10	125.0	116.1	8.9
Dec 10	129.3	122.4	6.9
Jan 11	133.2	125.3	7.9
Feb 11	135.9	127.1	8.8
Mar 11	142.3	134.6	7.7
Apr 11	144.3	136.4	7.9
May 11	144.2	134.7	9.5
Jun 11	136.8	131.1	5.7
Average difference			7.6

The monthly difference over the year ranged from a low of 5.0 cpl in September 2010 to a high of 9.8 cpl in October 2010.

Chart E.2 Average annual differences, petrol, Sydney: July 2010 to June 2011



Melbourne

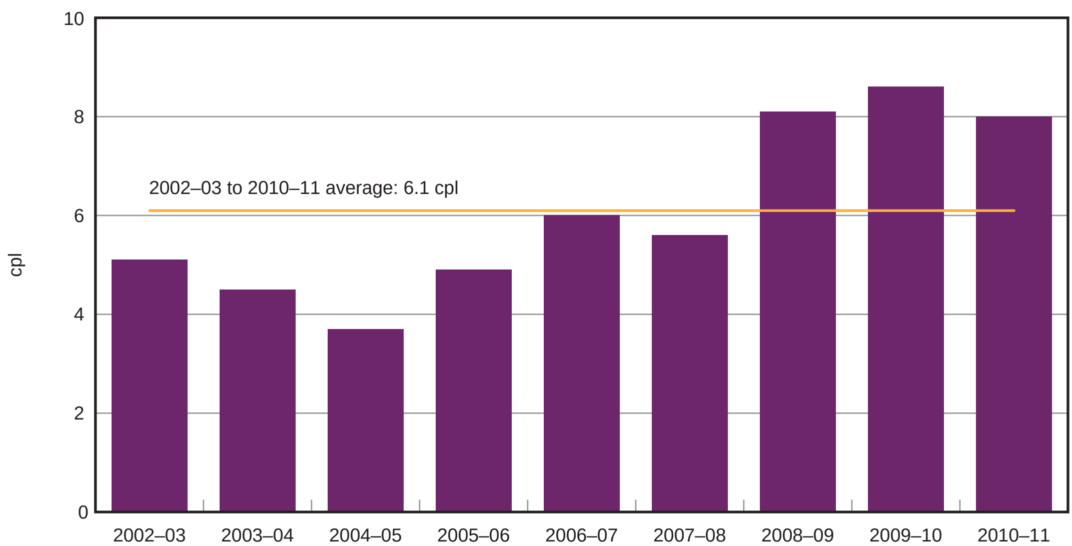
Average annual petrol retail prices, TGPs and differences in Melbourne for 2002–03 to 2010–11 are presented in table E.3. The differences are also calculated in real terms relative to 2002–03 prices. The information is presented on a monthly basis for 2010–11 in table E.4. The differences for these periods are also presented in chart form (charts E.3 and E.4).

Table E.3 Average annual petrol retail prices, TGPs and differences, Melbourne: 2002–03 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2002–03	89.2	84.1	5.1	5.1
2003–04	90.6	86.1	4.5	4.4
2004–05	101.0	97.3	3.7	3.5
2005–06	122.3	117.4	4.9	4.6
2006–07	123.5	117.5	6.0	5.4
2007–08	136.3	130.7	5.6	4.9
2008–09	129.9	121.8	8.1	6.9
2009–10	125.3	116.7	8.6	7.2
2010–11	131.6	123.6	8.0	6.5
Average differences			6.1	5.4

The average annual difference over the nine years was 6.1 cpl. It ranged from a low of 3.7 cpl in 2004–05 to a high of 8.6 cpl in 2009–10.

Chart E.3 Average annual differences, petrol, Melbourne: 2002–03 to 2010–11



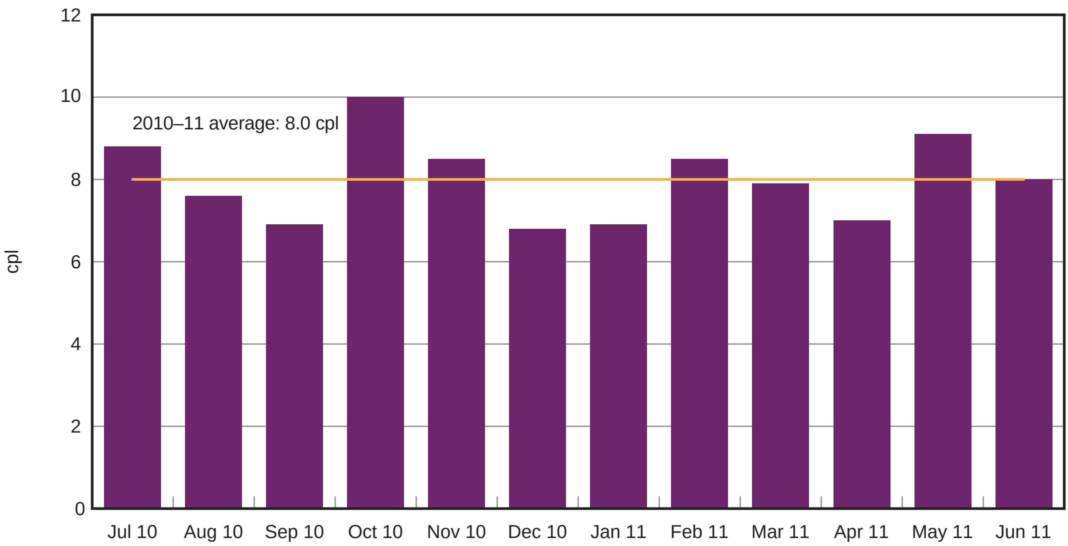
The **real** average annual difference over the nine years was 5.4 cpl. It ranged from a low of 3.5 cpl in 2004–05 to a high of 7.2 cpl in 2009–10.

Table E.4 Average monthly petrol retail prices, TGPs and differences, Melbourne: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	126.2	117.4	8.8
Aug 10	123.5	115.9	7.6
Sep 10	120.2	113.3	6.9
Oct 10	123.7	113.7	10.0
Nov 10	124.3	115.8	8.5
Dec 10	128.8	122.0	6.8
Jan 11	131.7	124.8	6.9
Feb 11	135.0	126.5	8.5
Mar 11	142.0	134.1	7.9
Apr 11	142.7	135.7	7.0
May 11	143.2	134.1	9.1
Jun 11	138.5	130.5	8.0
Average difference			8.0

The monthly difference over the year ranged from a low of 6.8 cpl in December 2010 to a high of 10.0 cpl in October 2010.

Chart E.4 Average annual differences, petrol, Melbourne: July 2010 to June 2011



Brisbane

Average annual petrol retail prices, TGPs and differences in Brisbane for 2002–03 to 2010–11 are presented in table E.5. The differences are also calculated in real terms relative to 2002–03 prices. The information is presented on a monthly basis for 2010–11 in table E.6. The differences for these periods are also presented in chart form (charts E.5 and E.6).

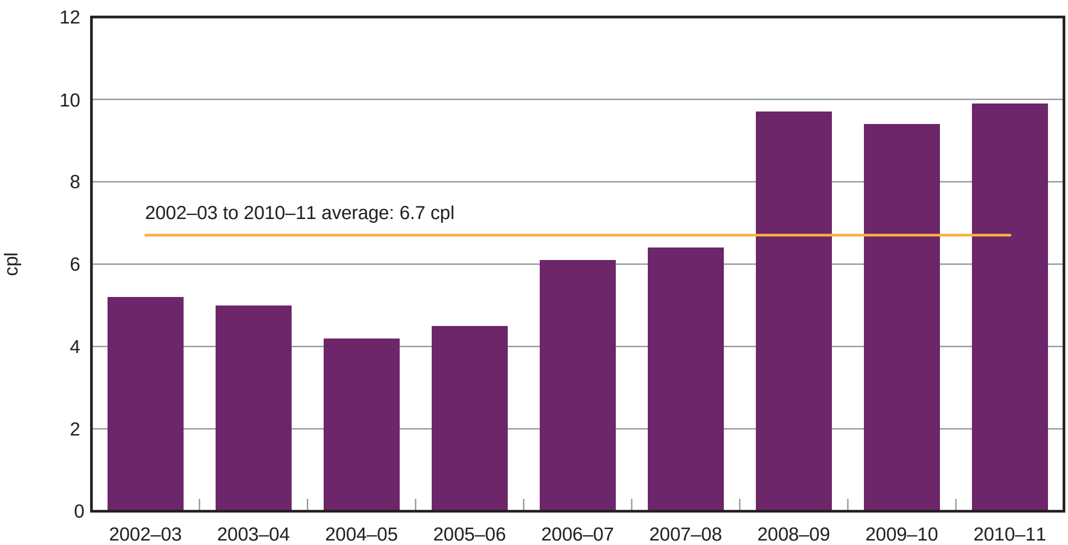
Table E.5 Average annual petrol retail prices, TGPs and differences, Brisbane: 2002–03 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2002–03	81.7	76.5	5.2	5.2
2003–04	83.9	78.9	5.0	4.9
2004–05	94.1	89.9	4.2	4.0
2005–06	114.5	110.0	4.5	4.1
2006–07	115.9	109.8	6.1	5.4
2007–08	128.4	122.0	6.4	5.5
2008–09	122.5	112.8	9.7	8.0
2009–10	126.3	116.9	9.4	7.5
2010–11	133.7	123.8	9.9	7.7
Average differences			6.7	5.8

Note: TGPs in Brisbane were adjusted downward before 2009–10 to reflect the Queensland Government retail fuel subsidy of around 9.2 cpl (including the GST).

The average annual difference over the nine years was 6.7 cpl. It ranged from a low of 4.2 cpl in 2004–05 to a high of 9.9 cpl in 2010–11.

Chart E.5 Average annual differences, petrol, Brisbane: 2002–03 to 2010–11



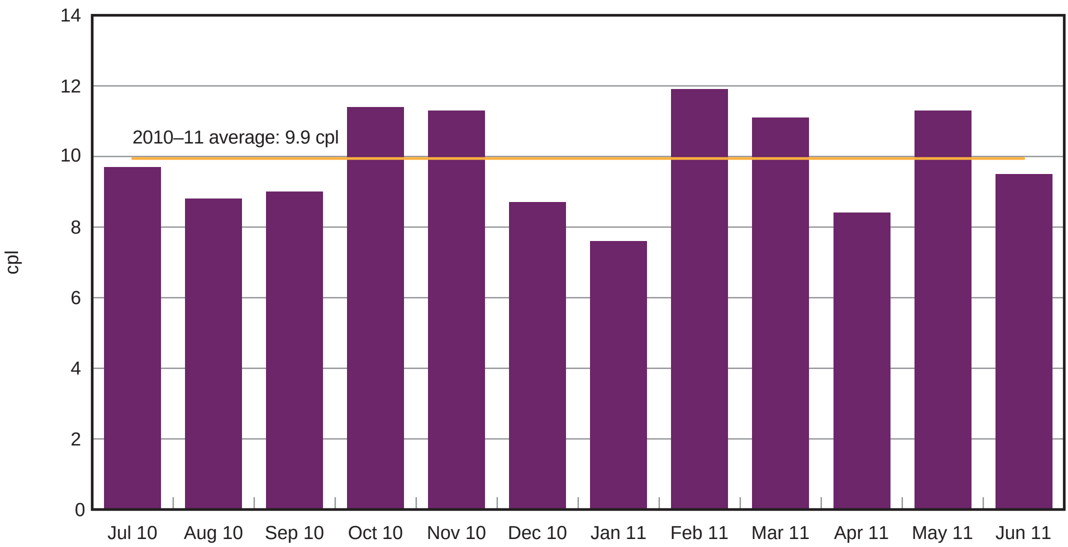
The **real** average annual difference over the nine years was 5.8 cpl. It ranged from a low of 4.0 cpl in 2004–05 to a high of 8.0 cpl in 2008–09.

Table E.6 Average monthly petrol retail prices, TGPs and differences, Brisbane: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	127.3	117.6	9.7
Aug 10	125.0	116.2	8.8
Sep 10	122.6	113.6	9.0
Oct 10	125.4	114.0	11.4
Nov 10	127.1	115.8	11.3
Dec 10	130.7	122.0	8.7
Jan 11	132.5	124.9	7.6
Feb 11	138.4	126.5	11.9
Mar 11	145.2	134.1	11.1
Apr 11	144.4	136.0	8.4
May 11	145.7	134.4	11.3
Jun 11	140.2	130.7	9.5
Average difference			9.9

The monthly difference over the year ranged from a low of 7.6 cpl in January 2011 to a high of 11.9 cpl in February 2011.

Chart E.6 Average annual differences, petrol, Brisbane: July 2010 to June 2011



Adelaide

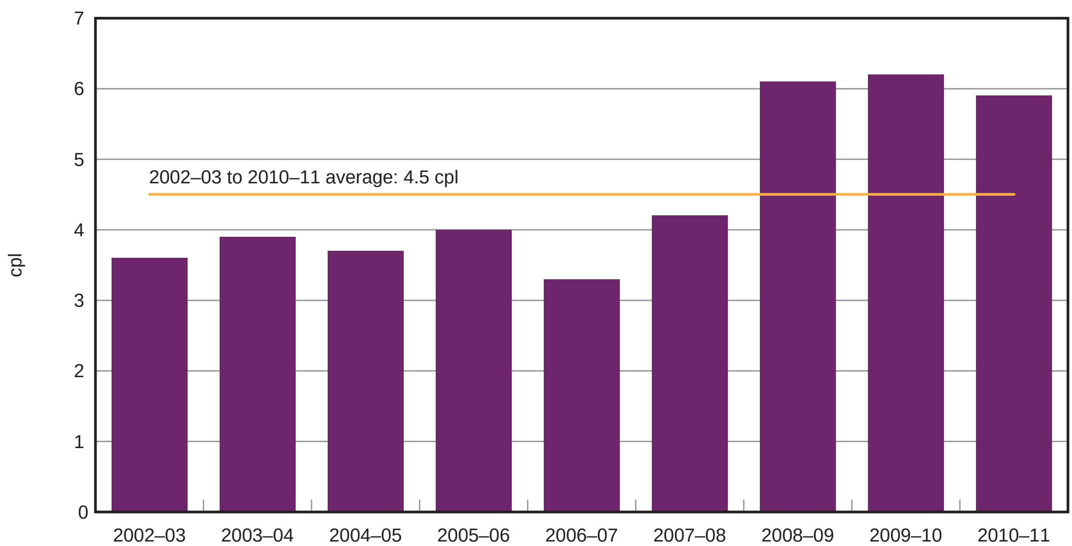
Average annual petrol retail prices, TGPs and differences in Adelaide for 2002–03 to 2010–11 are presented in table E.7. The differences are also calculated in real terms relative to 2002–03 prices. The information is presented on a monthly basis for 2010–11 in table E.8. The differences for these periods are also presented in chart form (charts E.7 and E.8).

Table E.7 Average annual petrol retail prices, TGPs and differences, Adelaide: 2002–03 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2002–03	90.4	86.8	3.6	3.6
2003–04	93.0	89.1	3.9	3.8
2004–05	103.3	99.6	3.7	3.5
2005–06	123.7	119.7	4.0	3.7
2006–07	122.4	119.1	3.3	3.0
2007–08	135.6	131.4	4.2	3.6
2008–09	128.7	122.6	6.1	5.1
2009–10	123.6	117.4	6.2	5.1
2010–11	130.0	124.1	5.9	4.7
Average differences			4.5	4.0

The average annual difference over the nine years was 4.5 cpl. It ranged from a low of 3.3 cpl in 2006–07 to a high of 6.2 cpl in 2009–10.

Chart E.7 Average annual differences, petrol, Adelaide: 2002–03 to 2010–11



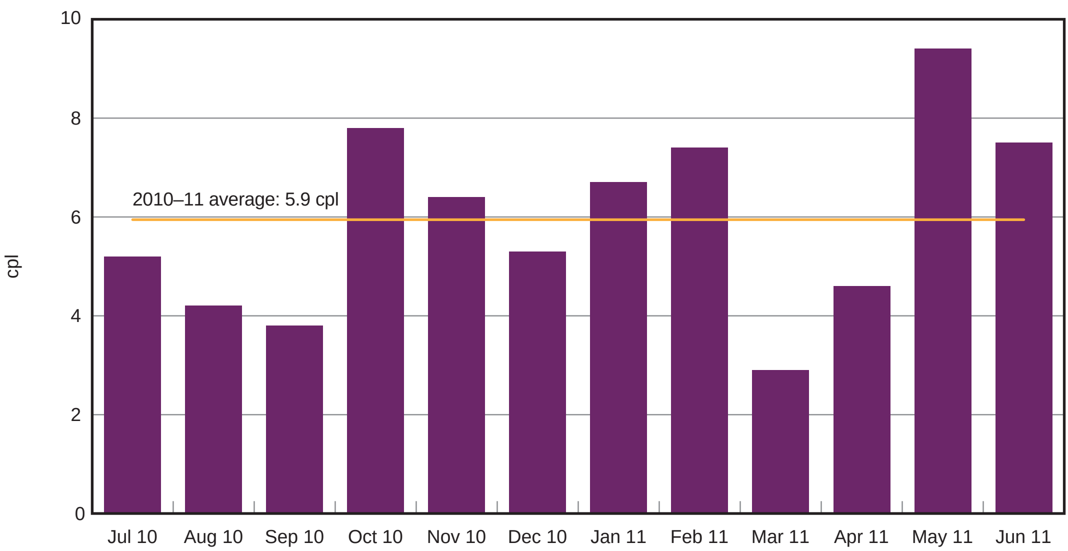
The **real** average annual difference over the nine years was 4.0 cpl. It ranged from a low of 3.0 cpl in 2006–07 to a high of 5.1 cpl in 2008–09 and 2009–10.

Table E.8 Average monthly petrol retail prices, TGPs and differences, Adelaide: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	123.2	118.0	5.2
Aug 10	120.7	116.5	4.2
Sep 10	117.8	114.0	3.8
Oct 10	122.1	114.3	7.8
Nov 10	122.5	116.1	6.4
Dec 10	127.7	122.4	5.3
Jan 11	131.8	125.1	6.7
Feb 11	134.1	126.7	7.4
Mar 11	137.2	134.3	2.9
Apr 11	140.8	136.2	4.6
May 11	144.0	134.6	9.4
Jun 11	138.5	131.0	7.5
Average difference			5.9

The monthly difference over the year ranged from a low of 2.9 cpl in March 2011 to a high of 9.4 cpl in May 2011.

Chart E.8 Average annual differences, petrol, Adelaide: July 2010 to June 2011



Perth

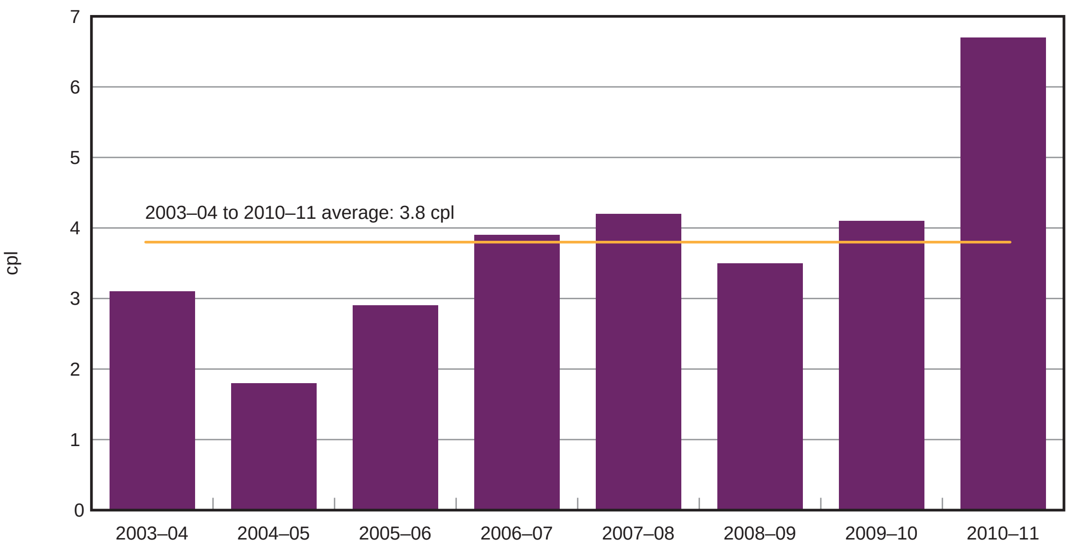
Average annual petrol retail prices, TGPs and differences in Perth for 2003–04 to 2010–11 are presented in table E.9.[309] The differences are also calculated in real terms relative to 2002–03 prices. The information is presented on a monthly basis for 2010–11 in table E.10. The differences for these periods are also presented in chart form (charts E.9 and E.10).

Table E.9 Average annual petrol retail prices, TGPs and differences, Perth: 2003–04 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2003–04	92.3	89.2	3.1	3.0
2004–05	101.4	99.6	1.8	1.7
2005–06	122.2	119.3	2.9	2.6
2006–07	122.8	118.9	3.9	3.4
2007–08	135.8	131.6	4.2	3.6
2008–09	126.2	122.7	3.5	2.9
2009–10	122.3	118.2	4.1	3.3
2010–11	131.5	124.8	6.7	5.2
Average differences			3.8	3.2

The average annual difference over the eight years was 3.8 cpl. It ranged from a low of 1.8 cpl in 2004–05 to a high of 6.7 cpl in 2010–11.

Chart E.9 Average annual differences, petrol, Perth: 2003–04 to 2010–11



The **real** average annual difference over the eight years was 3.2 cpl. It ranged from a low of 1.7 cpl in 2004–05 to a high of 5.2 cpl in 2010–11.

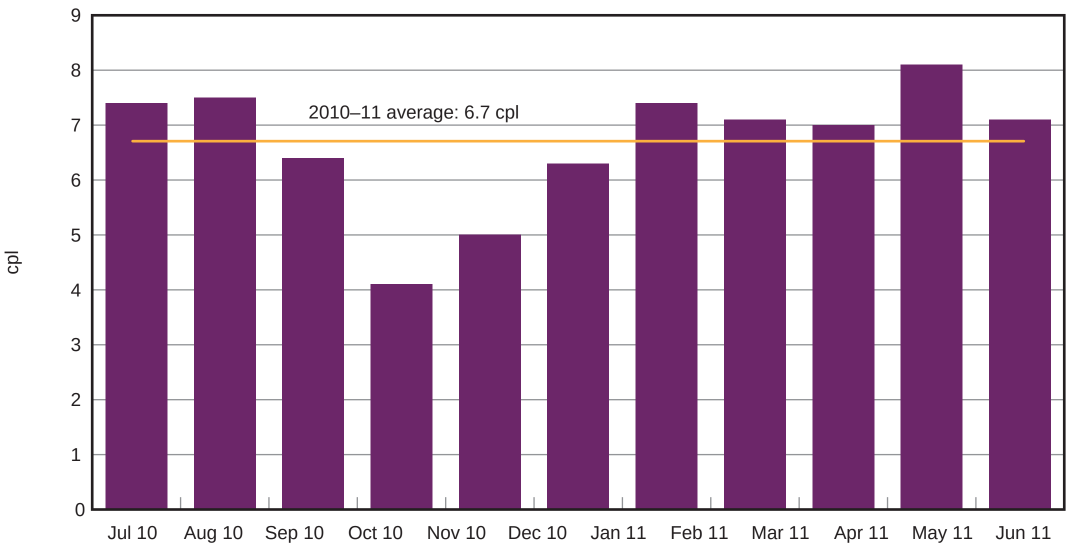
309 TGP data for Perth for 2002–03 is not available.

Table E.10 Average monthly petrol retail prices, TGPs and differences, Perth: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	126.2	118.7	7.5
Aug 10	124.5	117.1	7.4
Sep 10	122.1	114.6	7.5
Oct 10	121.4	115.0	6.4
Nov 10	121.0	116.9	4.1
Dec 10	127.9	122.9	5.0
Jan 11	132.1	125.8	6.3
Feb 11	134.8	127.4	7.4
Mar 11	142.1	135.0	7.1
Apr 11	143.9	136.9	7.0
May 11	143.5	135.4	8.1
Jun 11	138.9	131.8	7.1
Average difference			6.7

The monthly difference over the year ranged from a low of 4.1 cpl in November 2010 to a high of 8.1 cpl in May 2011.

Chart E.10 Average annual differences, petrol, Perth: July 2010 to June 2011



Diesel

Five largest cities

Average annual diesel retail prices, TGPs and differences across the five largest cities for 2004–05 to 2010–11 are presented in table E.11.[310] The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.12. The differences for these periods are also presented in chart form (charts E.11 and E.12).

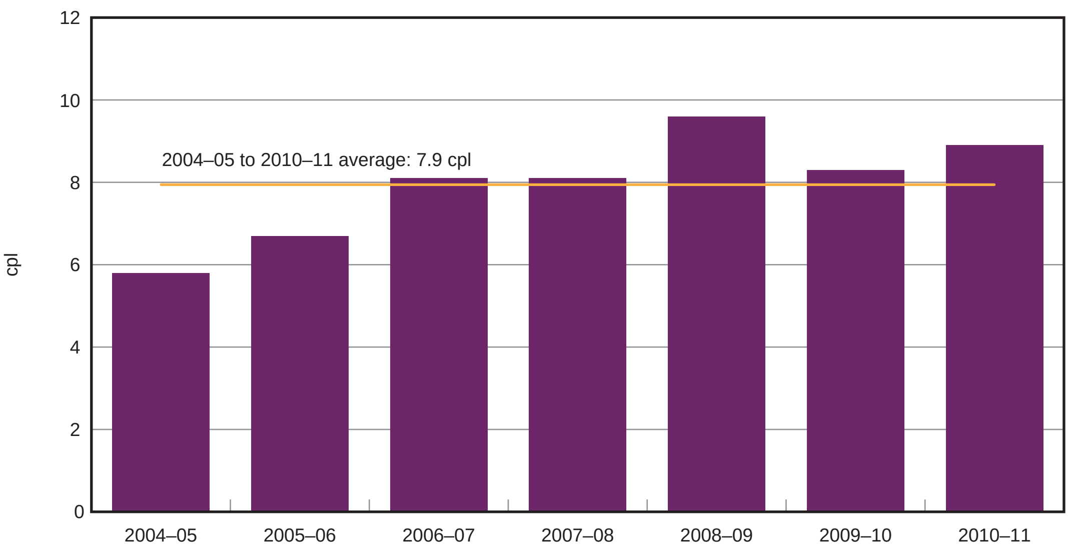
Table E.11 Average annual diesel retail prices, TGPs and differences, five largest cities: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	108.9	103.1	5.8	5.8
2005–06	130.3	123.6	6.7	6.5
2006–07	127.5	119.4	8.1	7.6
2007–08	147.2	139.1	8.1	7.4
2008–09	139.0	129.4	9.6	8.4
2009–10	124.5	116.2	8.3	7.1
2010–11	136.3	127.4	8.9	7.4
Average differences			7.9	7.2

Note: TGPs in Brisbane were adjusted downward before 2009–10 to reflect the Queensland Government retail fuel subsidy of around 9.2 cpl (including the GST).

The average annual difference over the seven years was 7.9 cpl. It ranged from a low of 5.8 cpl in 2004–05 to a high of 9.6 cpl in 2008–09.

Chart E.11 Average annual differences, diesel, five largest cities: 2004–05 to 2010–11



The **real** average annual difference over the seven years was 7.2 cpl. It ranged from a low of 5.8 cpl in 2004–05 to a high of 8.4 cpl in 2008–09.

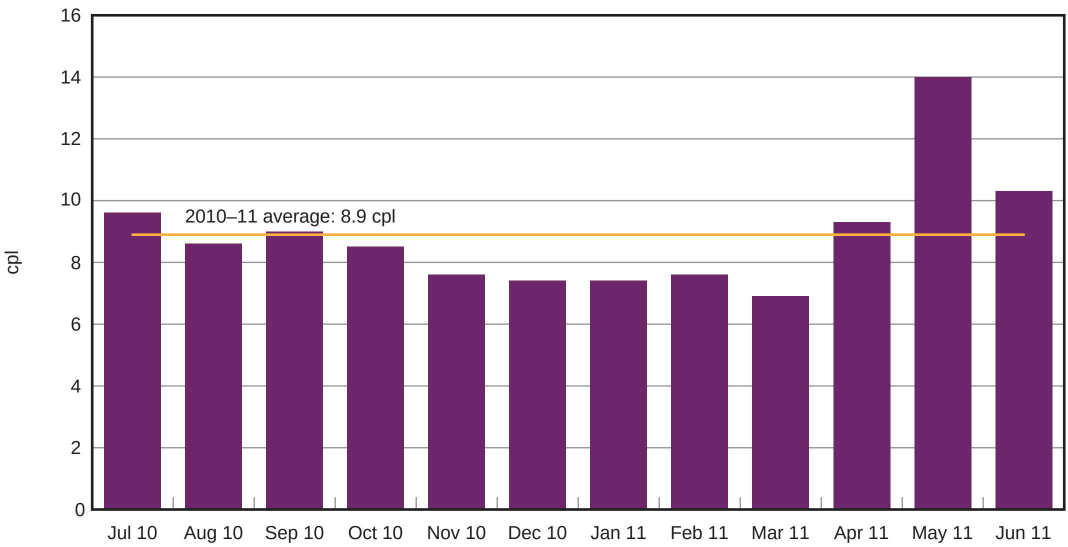
310 Diesel TGP data is sourced from the AIP and is only available from January 2004.

Table E.12 Average monthly diesel retail prices, TGPs and differences, five largest cities: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	129.2	119.6	9.6
Aug 10	127.7	119.1	8.6
Sep 10	126.0	117.0	9.0
Oct 10	125.7	117.2	8.5
Nov 10	126.5	118.9	7.6
Dec 10	130.5	123.1	7.4
Jan 11	133.7	126.3	7.4
Feb 11	138.6	131.0	7.6
Mar 11	148.4	141.5	6.9
Apr 11	153.2	143.9	9.3
May 11	150.3	136.3	14.0
Jun 11	145.8	135.5	10.3
Average difference			8.9

The monthly difference over the year ranged from a low of 6.9 cpl in March 2011 to a high of 14.0 cpl in May 2011.

Chart E.12 Average monthly differences, diesel, five largest cities: July 2010 to June 2011



Sydney

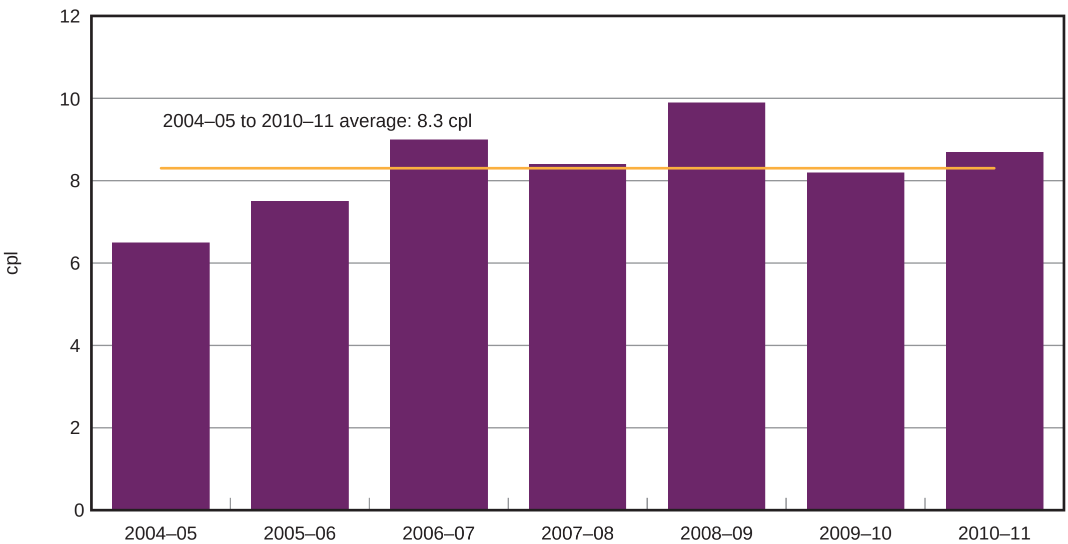
Average annual diesel retail prices, TGPs and differences in Sydney for 2004–05 to 2010–11 are presented in table E.13. The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.14. The differences for these periods are also presented in chart form (charts E.13 and E.14).

Table E.13 Average annual retail prices, TGPs and differences, Sydney: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	111.7	105.2	6.5	6.5
2005–06	132.9	125.4	7.5	7.3
2006–07	130.5	121.5	9.0	8.5
2007–08	149.6	141.2	8.4	7.7
2008–09	141.2	131.3	9.9	8.8
2009–10	124.3	116.1	8.2	7.1
2010–11	136.3	127.6	8.7	7.4
Average differences			8.3	7.6

The average annual difference over the seven years was 8.3 cpl. It ranged from a low of 6.5 cpl in 2004–05 to a high of 9.9 cpl in 2008–09.

Chart E.13 Average annual differences, diesel, Sydney: 2004–05 to 2010–11



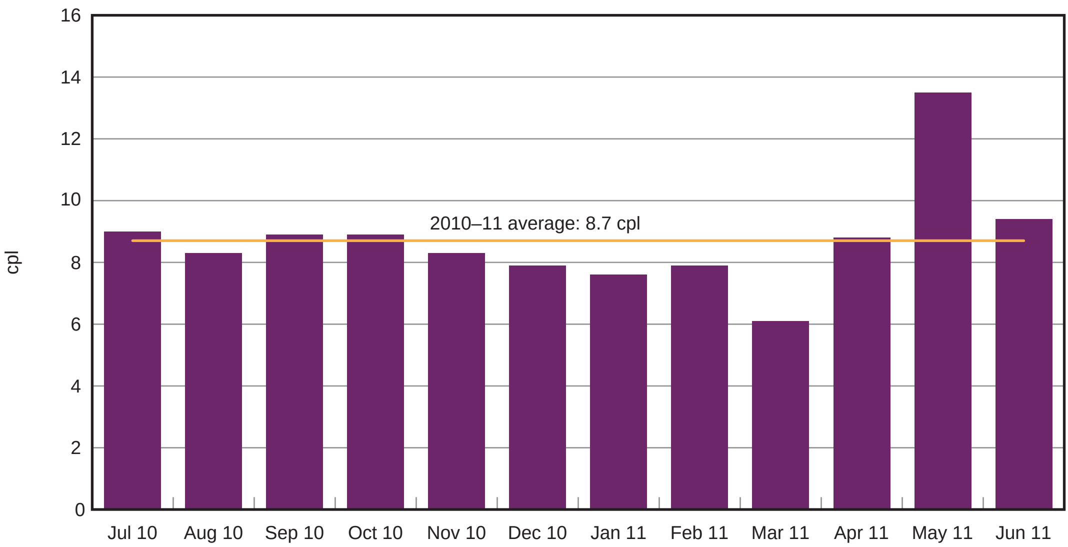
The **real** average annual difference over the seven years was 7.6 cpl. It ranged from a low of 6.5 cpl in 2004–05 to a high of 8.8 cpl in 2008–09.

Table E.14 Average monthly diesel retail prices, TGPs and differences, Sydney: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	128.6	119.6	9.0
Aug 10	127.4	119.1	8.3
Sep 10	125.9	117.0	8.9
Oct 10	126.1	117.2	8.9
Nov 10	127.3	119.0	8.3
Dec 10	131.1	123.2	7.9
Jan 11	134.1	126.5	7.6
Feb 11	139.3	131.4	7.9
Mar 11	148.0	141.9	6.1
Apr 11	153.0	144.2	8.8
May 11	150.1	136.6	13.5
Jun 11	145.2	135.8	9.4
Average difference			8.7

The monthly difference over the year ranged from a low of 6.1 cpl in March 2011 to a high of 13.5 cpl in May 2011.

Chart E.14 Average monthly differences, diesel, Sydney: July 2010 to June 2011



Melbourne

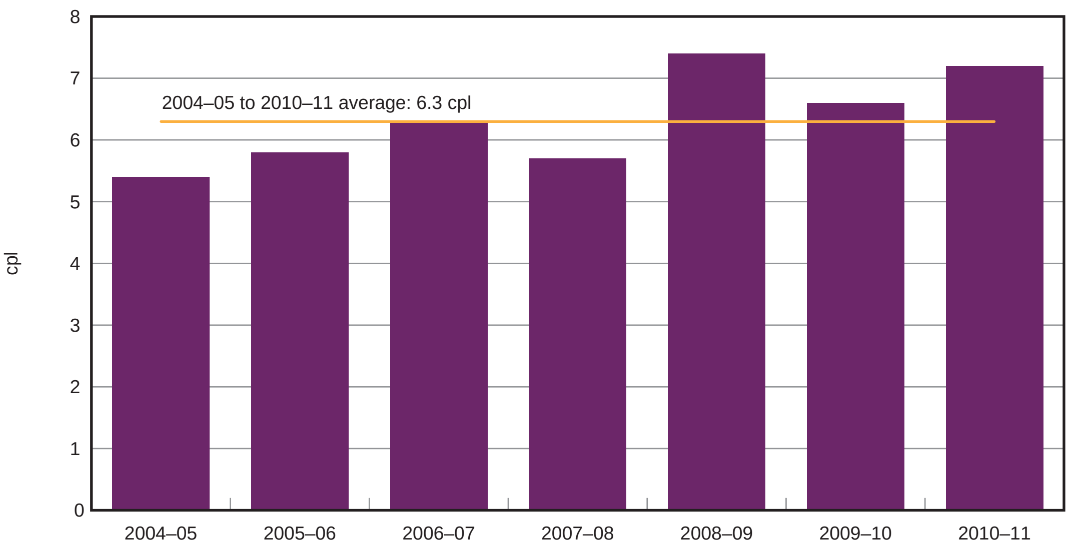
Average annual diesel retail prices, TGPs and differences in Melbourne for 2004–05 to 2010–11 are presented in table E15. The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.16. The differences for these periods are also presented in chart form (charts E.15 and E.16).

Table E.15 Average annual diesel retail prices, TGPs and differences, Melbourne: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	109.0	103.6	5.4	5.4
2005–06	129.7	123.9	5.8	5.6
2006–07	126.1	119.8	6.3	6.0
2007–08	146.1	140.4	5.7	5.2
2008–09	138.2	130.8	7.4	6.6
2009–10	122.3	115.7	6.6	5.7
2010–11	133.9	126.7	7.2	6.1
Average differences			6.3	5.8

The average annual difference over the seven years was 6.3 cpl. It ranged from a low of 5.4 cpl in 2004–05 to a high of 7.4 cpl in 2008–09.

Chart E.15 Average annual differences, diesel, Melbourne: 2004–05 to 2010–11



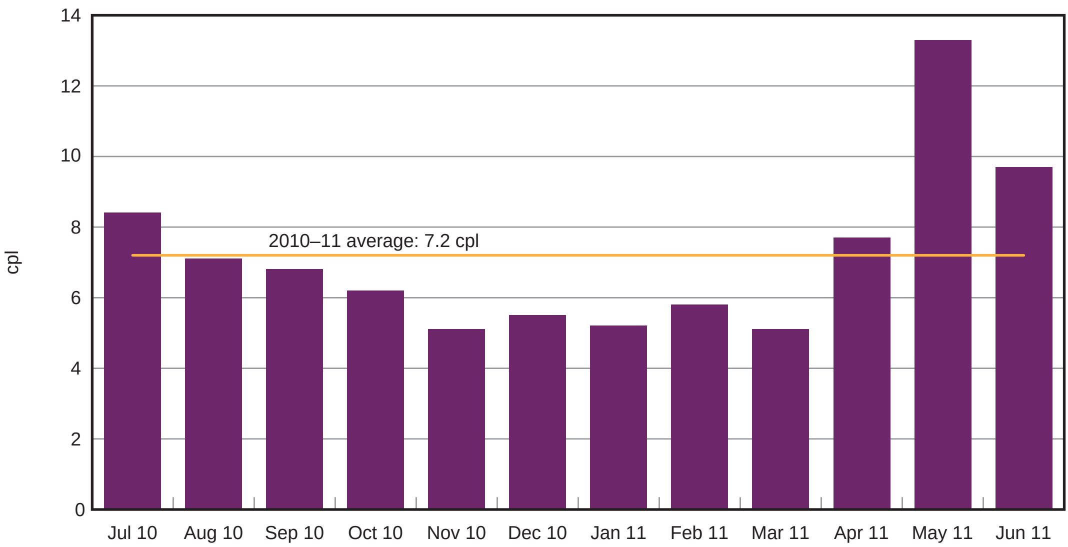
The **real** average annual difference over the seven years was 5.8 cpl. It ranged from a low of 5.2 cpl in 2007–08 to a high of 6.6 cpl in 2008–09.

Table E.16 Average monthly diesel retail prices, TGPs and differences, Melbourne: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	127.5	119.1	8.4
Aug 10	125.5	118.4	7.1
Sep 10	123.2	116.4	6.8
Oct 10	122.8	116.6	6.2
Nov 10	123.4	118.3	5.1
Dec 10	128.0	122.5	5.5
Jan 11	130.8	125.6	5.2
Feb 11	136.2	130.4	5.8
Mar 11	146.0	140.9	5.1
Apr 11	150.9	143.2	7.7
May 11	148.8	135.5	13.3
Jun 11	144.4	134.7	9.7
Average difference			7.2

The monthly difference over the year ranged from a low of 5.1 cpl in November 2010 and March 2011 to a high of 13.3 cpl in May 2011.

Chart E.16 Average monthly differences, diesel, Melbourne: July 2010 to June 2011



Brisbane

Average annual diesel retail prices, TGPs and differences in Brisbane for 2004–05 to 2010–11 are presented in table E.17. The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.18. The differences for these periods are also presented in chart form (charts E.17 and E.18).

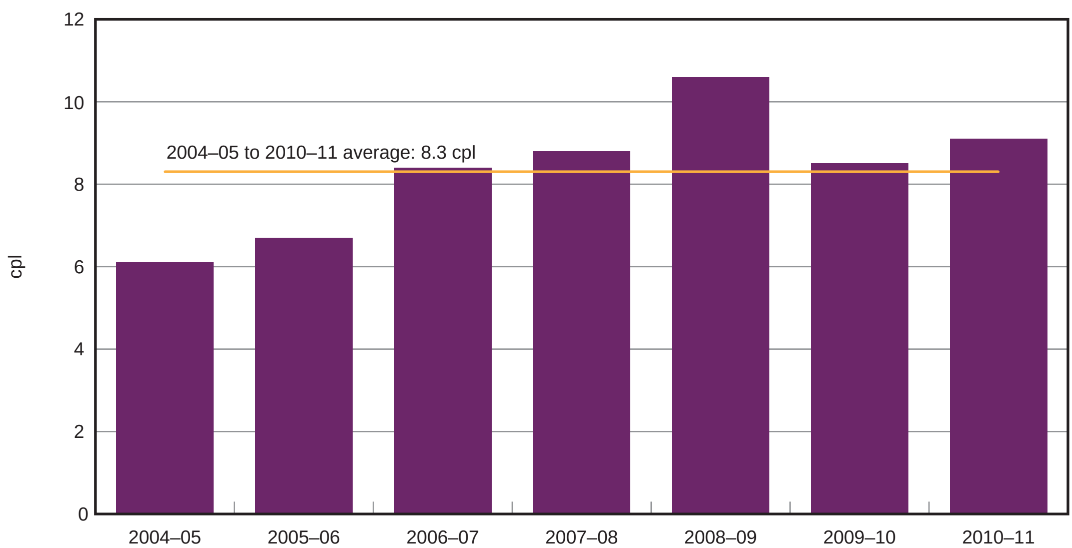
Table E.17 Average annual diesel retail prices, TGPs and differences, Brisbane: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	102.0	95.9	6.1	6.1
2005–06	123.5	116.8	6.7	6.5
2006–07	121.0	112.6	8.4	7.9
2007–08	140.5	131.7	8.8	7.9
2008–09	132.5	121.9	10.6	9.2
2009–10	124.4	115.9	8.5	7.2
2010–11	136.2	127.1	9.1	7.5
Average differences			8.3	7.5

Note: TGPs in Brisbane were adjusted downward before 2009–10 to reflect the Queensland Government retail fuel subsidy of around 9.2 cpl (including the GST).

The average annual difference over the seven years was 8.3 cpl. It ranged from a low of 6.1 cpl in 2004–05 to a high of 10.6 cpl in 2008–09.

Chart E.17 Average annual differences, diesel, Brisbane: 2004–05 to 2010–11



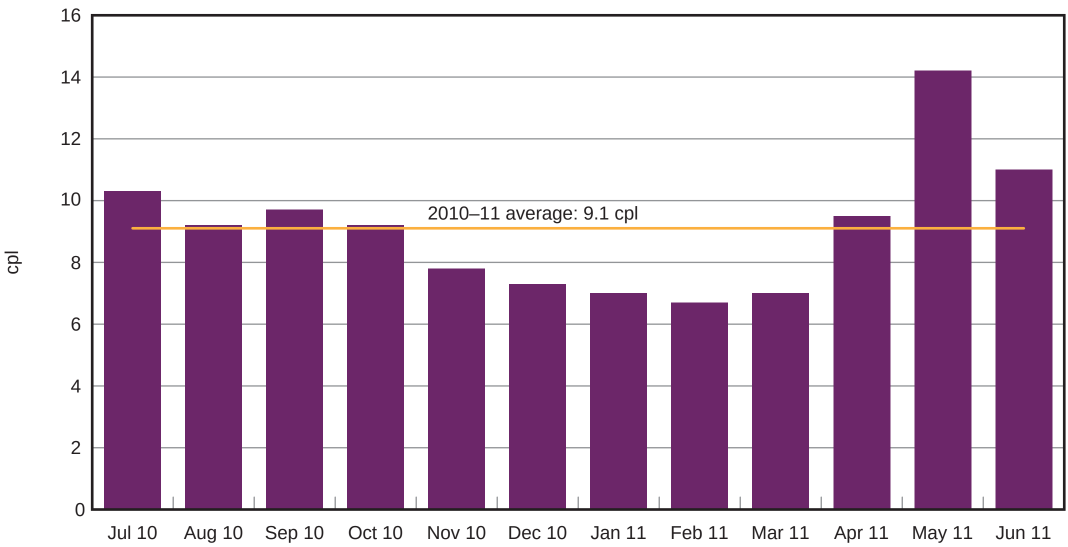
The **real** average annual difference over the seven years was 7.5 cpl. It ranged from a low of 6.1 cpl in 2004–05 to a high of 9.2 cpl in 2008–09.

Table E.18 Average monthly diesel retail prices, TGPs and differences, Brisbane: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	129.6	119.3	10.3
Aug 10	128.0	118.8	9.2
Sep 10	126.5	116.8	9.7
Oct 10	126.2	117.0	9.2
Nov 10	126.5	118.7	7.8
Dec 10	130.2	122.9	7.3
Jan 11	133.0	126.0	7.0
Feb 11	137.5	130.8	6.7
Mar 11	148.3	141.3	7.0
Apr 11	153.1	143.6	9.5
May 11	150.2	136.0	14.2
Jun 11	146.2	135.2	11.0
Average difference			9.1

The monthly difference over the year ranged from a low of 6.7 cpl in February 2011 to a high of 14.2 cpl in May 2011.

Chart E.18 Average monthly differences, diesel, Brisbane: July 2010 to June 2011



Adelaide

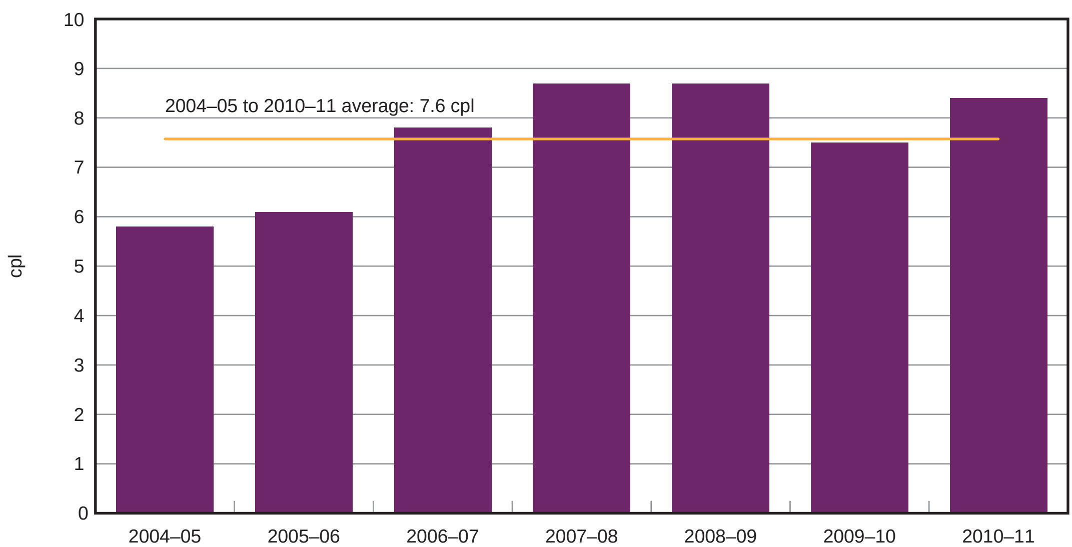
Average annual diesel retail prices, TGPs and differences in Adelaide for 2004–05 to 2010–11 are presented in table E.19. The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.20. The differences for these periods are also presented in chart form (charts E.19 and E.20).

Table E.19 Average annual diesel retail prices, TGPs and differences, Adelaide: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	110.9	105.1	5.8	5.8
2005–06	132.4	126.3	6.1	5.9
2006–07	129.8	122.0	7.8	7.4
2007–08	149.7	141.0	8.7	8.0
2008–09	140.1	131.4	8.7	7.7
2009–10	123.8	116.3	7.5	6.5
2010–11	135.8	127.4	8.4	7.1
Average differences			7.6	6.9

The average annual difference over the seven years was 7.6 cpl. It ranged from a low of 5.8 cpl in 2004–05 to a high of 8.7 cpl in 2007–08 and 2008–09.

Chart E.19 Average annual differences, diesel, Adelaide: 2004–05 to 2010–11



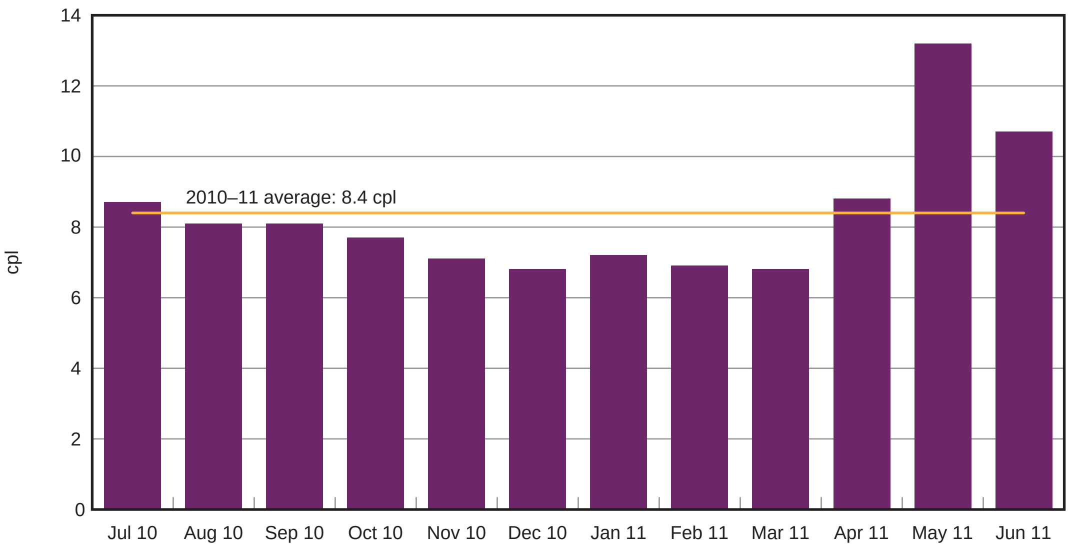
The **real** average annual difference over the seven years was 6.9 cpl. It ranged from a low of 5.8 cpl in 2004–05 to a high of 8.0 cpl in 2007–08.

Table E.20 Average monthly diesel retail prices, TGPs and differences, Adelaide: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	128.4	119.7	8.7
Aug 10	127.3	119.2	8.1
Sep 10	125.3	117.2	8.1
Oct 10	125.1	117.4	7.7
Nov 10	126.2	119.1	7.1
Dec 10	130.1	123.3	6.8
Jan 11	133.4	126.2	7.2
Feb 11	137.9	131.0	6.9
Mar 11	148.3	141.5	6.8
Apr 11	152.6	143.8	8.8
May 11	149.4	136.2	13.2
Jun 11	146.1	135.4	10.7
Average difference			8.4

The monthly difference over the year ranged from a low of 6.8 cpl in December 2010 and March 2011 to a high of 13.2 cpl in May 2011.

Chart E.20 Average monthly differences, diesel, Adelaide: July 2010 to June 2011



Perth

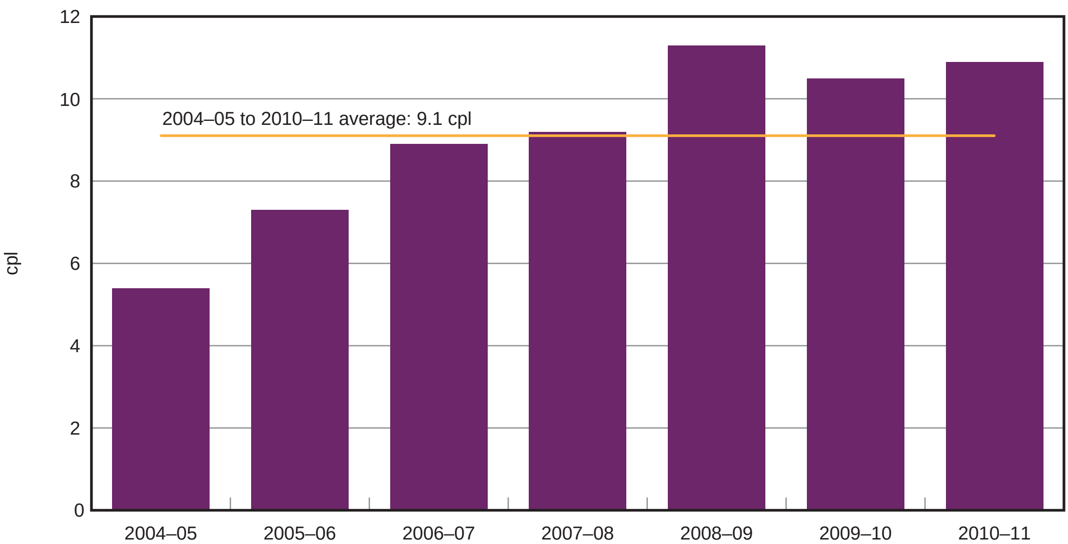
Average annual diesel retail prices, TGPs and differences in Perth for 2004–05 to 2010–11 are presented in table E.21. The differences are also calculated in real terms relative to 2004–05 prices. The information is presented on a monthly basis for 2010–11 in table E.22. The differences for these periods are also presented in chart form (charts E.21 and E.22).

Table E.21 Average annual diesel retail prices, TGPs and differences, Perth: 2004–05 to 2010–11

	Average retail price cpl	Average TGP cpl	Difference cpl	Difference (real) cpl
2004–05	111.0	105.6	5.4	5.4
2005–06	132.8	125.5	7.3	7.0
2006–07	130.3	121.4	8.9	8.2
2007–08	150.1	140.9	9.2	8.2
2008–09	142.7	131.4	11.3	9.8
2009–10	127.4	116.9	10.5	8.9
2010–11	139.0	128.1	10.9	8.9
Average differences			9.1	8.1

The average annual difference over the seven years was 9.1 cpl. It ranged from a low of 5.4 cpl in 2004–05 to a high of 11.3 cpl in 2008–09.

Chart E.21 Average annual differences, diesel, Perth: 2004–05 to 2010–11



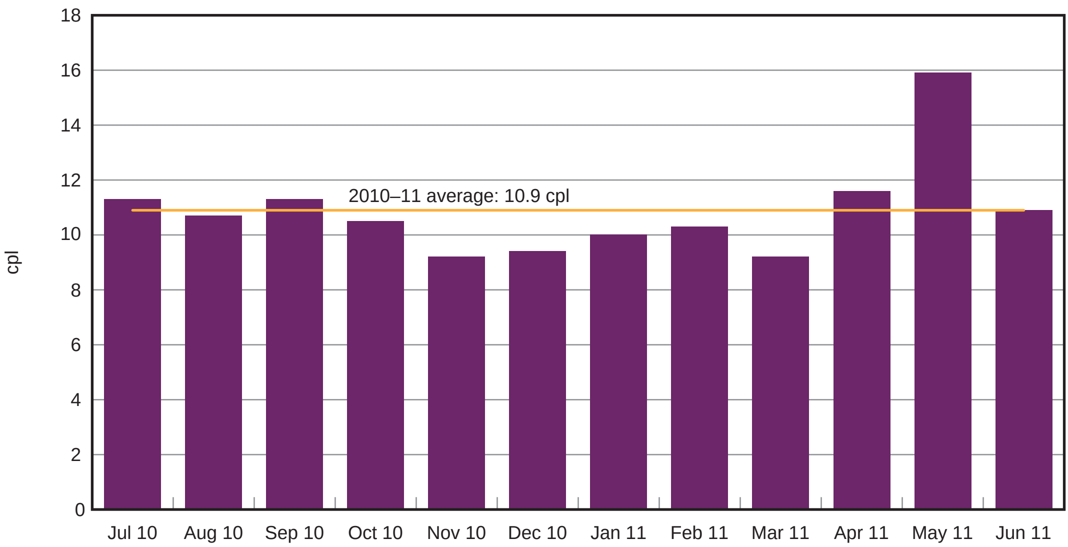
The **real** average annual difference over the seven years was 8.1 cpl. It ranged from a low of 5.4 cpl in 2004–05 to a high of 9.8 cpl in 2008–09.

Table E.22 Average monthly diesel retail prices, TGPs and differences, Perth: July 2010 to June 2011

	Average retail price cpl	Average TGP cpl	Difference cpl
Jul 10	131.6	120.3	11.3
Aug 10	130.4	119.7	10.7
Sep 10	129.0	117.7	11.3
Oct 10	128.5	118.0	10.5
Nov 10	129.0	119.8	9.2
Dec 10	133.2	123.8	9.4
Jan 11	137.0	127.0	10.0
Feb 11	142.0	131.7	10.3
Mar 11	151.5	142.3	9.2
Apr 11	156.2	144.6	11.6
May 11	153.0	137.1	15.9
Jun 11	147.1	136.2	10.9
Average difference			10.9

The monthly difference over the year ranged from a low of 9.2 cpl in November 2010 and March 2011 to a high of 15.9 cpl in May 2011.

Chart E.22 Average monthly differences, diesel, Perth: July 2010 to June 2011



Appendix F: State retail petrol and diesel subsidies in 2010–11

In 2010–11, South Australia was the only state to provide subsidies at the retail level for petrol and diesel. These subsidies were discontinued from 1 January 2011.[311] They are described in Table F.1.

The possible effect of these subsidies on average annual retail unleaded petrol and diesel prices in regional locations in Australia in 2010–11 are estimated (and included in table F.1). The calculation is based on the assumption that the full amount of the subsidies in South Australia were passed on to consumers.

Table F.1 South Australian retail price subsidies and the possible effect on average annual retail prices in regional locations in Australia in 2010–11

Fuel	Amount (excl. GST) cpl	Application	Possible effect (incl. GST) cpl
Petrol	0.82 or 3.33	0.82 cpl for towns 50–100 km from GPO; 3.33 cpl for towns >100 km from GPO	–0.2
Diesel	1.94	1.94 cpl for towns >100km from GPO	–0.1

Source: ACCC calculations based on Informed Sources data

Over the past five years, a number of states and territories have discontinued their subsidies for petrol and diesel. These include: Victoria (from July 2007); Tasmania (from October 2007); the Northern Territory (from May 2009); Queensland (from July 2009); New South Wales (from July 2009) and South Australia (from January 2011).[312] Consequently, from 1 January 2011 there were no state subsidies at the wholesale or retail level for petrol and diesel.

311 Revenue SA, Information Circular no. 18, State Budget 2010–11, issued 16 September 2010, http://www.revenuesa.sa.gov.au/petrol/index.html, accessed 30 November 2011.

312 These subsidies are described in chapter 6 of the ACCC's 2007 Petrol inquiry report and in appendices to previous ACCC petrol monitoring reports.

Appendix G: Retail fuel prices in regional locations

The ACCC monitors fuel prices in around 150 regional locations across Australia.

Annual average regular unleaded petrol, diesel and automotive LPG retail prices in regional locations in 2009–10 and 2010–11 (and the difference between these two years) are shown in tables G.1 to G.3.[313]

Table G.1 Average retail RULP prices in regional centres and country towns: 2009–10 and 2010–2011

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
New South Wales							
Albury	121.4	127.2	5.8	Merimbula	127.9	137.6	9.7
Armidale	130.2	135.8	5.6	Mittagong	127.9	na	na
Ballina	129.7	na	na	Moree	130.7	139.3	8.6
Batemans Bay	127.1	138.9	11.8	Moruya	130.1	138.2	8.1
Bathurst	125.3	132.8	7.5	Moss Vale	129.0	135.9	6.9
Bega	131.5	140.1	8.6	Mudgee	132.6	140.8	8.2
Broken Hill	128.5	136.7	8.2	Murwillumbah	127.7	134.8	7.1
Bulahdelah	123.3	130.7	7.4	Muswellbrook	na	135.5	na
Casino	126.7	135.5	8.8	Narrabri	131.3	138.6	7.3
Coffs Harbour	128.7	134.4	5.7	Newcastle	127.0	132.6	5.6
Cooma	131.6	139.3	7.7	Nowra	126.6	134.0	7.4
Cowra	124.4	na	na	Nyngan	na	na	na
Deniliquin	131.8	139.9	8.1	Orange	128.6	135.0	6.4
Dubbo	125.8	133.1	7.3	Parkes	128.8	136.6	7.8
Forbes	130.4	137.4	7.0	Port Macquarie	126.3	133.5	7.2
Forster	124.4	138.2	13.8	Queanbeyan	129.0	133.9	4.9
Gilgandra	130.4	138.4	8.0	Singleton	130.1	132.4	2.3
Goulburn	124.4	131.6	7.2	Tamworth	129.6	136.8	7.2
Grafton	127.5	134.1	6.6	Taree	123.7	132.8	9.1
Griffith	127.3	134.2	6.9	Temora	131.6	139.4	7.8
Gundagai	129.5	134.6	5.1	Ulladulla	127.0	na	na
Gunnedah	129.3	137.1	7.8	Wagga Wagga	128.6	136.1	7.5
Hay	131.6	139.2	7.6	Wellington	131.8	na	na
Inverell	129.2	136.8	7.6	West Wyalong	131.5	138.8	7.3
Jerilderie	129.5	138.0	8.5	Wollongong	126.4	134.8	8.4
Kempsey	126.0	134.6	8.6	Yass	127.4	135.8	8.4
Lismore	127.4	135.9	8.5				
Northern Territory							
Alice Springs	141.4	153.2	11.8	Tennant Creek	144.7	154.3	9.6
Katherine	134.4	137.2	2.8				

313 For a price to be included in the tables it had to meet a number of quality thresholds. In general, there had to be a price observation on at least 75 per cent of days over the year, with no break in price data of more than 30 consecutive days. In cases where this threshold was not met, a price has still been included in the table if there was an even spread of missing data observations which would mean that a broadly reliable average price could be estimated. Locations in the latter category have been identified with an asterisk (*) and a degree of caution is required in using the prices of these towns.
Sources for all tables in this appendix are ACCC and Informed Sources.

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
Queensland							
Atherton	126.8	134.9	8.1	Kingaroy	126.1	134.2	8.1
Ayr	128.8	134.7	5.9	Longreach	134.9	143.7	8.8
Biloela	128.8	137.0	8.2	Mackay	125.7	132.9	7.2
Bowen	129.1	136.1	7.0	Mareeba	127.2	135.2	8.0
Bundaberg	126.5	132.3	5.8	Maryborough	125.9	133.6	7.7
Cairns	127.1	135.4	8.3	Miles	134.1	143.4	9.3
Charters Towers	129.6	136.5	6.9	Moranbah	133.3	141.2	7.9
Dalby	124.0	131.7	7.7	Mt Isa	127.3	138.0	10.7
Emerald	128.4	136.1	7.7	Rockhampton	129.6	136.7	7.1
Gladstone	128.9	134.9	6.0	Roma	127.7	137.6	9.9
Goondiwindi	126.5	135.6	9.1	Toowoomba	122.3	127.8	5.5
Gympie	126.3	134.6	8.3	Townsville	124.0	133.3	9.3
Hervey Bay	127.2	133.2	6.0	Warwick	124.9	133.4	8.5
Ingham	125.5	134.4	8.9	Whitsunday	132.4	135.0	2.6
Innisfail	128.5	136.2	7.7	Yeppoon	129.3	136.6	7.3
South Australia							
Bordertown	128.9	137.3	8.4	Murray Bridge	124.7	131.4	6.7
Ceduna	132.4	140.9	8.5	Naracoorte	125.9	135.2	9.3
Clare	124.4	132.0	7.6	Port Augusta	126.8	129.0	2.2
Coober Pedy*	142.9	150.3	7.4	Port Lincoln	128.5	137.6	9.1
Gawler	123.5	130.3	6.8	Port Pirie	125.5	132.2	6.7
Kadina	124.3	131.7	7.4	Renmark	125.3	131.0	5.7
Keith	129.6	137.6	8.0	Victor Harbour	122.4	132.5	10.1
Loxton	124.9	134.2	9.3	Whyalla	122.3	130.1	7.8
Mt Gambier	125.3	133.6	8.3				
Tasmania							
Burnie	129.0	138.5	9.5	New Norfolk	127.9	136.7	8.8
Devonport	128.1	138.1	10.0	Queenstown	136.4	143.8	7.4
George Town*	131.5	na	na	Sorell	123.5	132.9	9.4
Huonville	131.9	139.4	7.5	Ulverstone	128.1	138.2	10.1
Launceston	130.1	138.3	8.2				
Victoria							
Ararat	123.9	128.9	5.0	Mildura	129.8	135.0	5.2
Bairnsdale	121.3	129.3	8.0	Moe	126.4	131.0	4.6
Ballarat	122.6	126.2	3.6	Morwell	125.5	130.9	5.4
Benalla	126.7	134.3	7.6	Orbost	130.9	na	na
Bendigo	123.0	128.4	5.4	Portland	128.4	136.8	8.4
Cohuna	129.2	na	na	Sale	125.3	131.7	6.4
Colac	127.5	135.4	7.9	Seymour	124.2	132.4	8.2
Echuca	126.8	136.0	9.2	Shepparton	126.6	133.4	6.8
Geelong	124.6	130.0	5.4	Swan Hill	129.9	136.8	6.9
Hamilton	128.9	136.0	7.1	Traralgon	126.4	130.9	4.5
Horsham	128.5	136.1	7.6	Wangaratta	127.4	133.3	5.9
Lakes Entrance	127.6	132.5	4.9	Warrnambool	123.9	131.3	7.4
Leongatha	130.5	137.3	6.8	Wodonga	122.9	130.2	7.3

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
Western Australia							
Albany	132.2	138.4	6.2	Esperance	134.6	137.5	2.9
Boulder	133.7	141.0	7.3	Geraldton	136.6	141.9	5.3
Broome	145.1	155.0	9.9	Kalgoorlie	132.6	139.9	7.3
Bunbury	126.4	134.3	7.9	Karratha	142.9	151.4	8.5
Busselton	128.0	134.6	6.6	Majimup	132.2	139.6	7.4
Carnarvon	141.3	147.3	6.0	Port Hedland	144.9	150.2	5.3
Collie	129.7	137.3	7.6	Waroona	129.2	136.7	7.5
Dongara	138.1	145.8	7.7				

Table G.2 Average retail diesel prices in regional locations: 2009–10 and 2010–11

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
New South Wales							
Albury	123.8	134.5	10.7	Merimbula	128.5	141.2	12.7
Armidale	131.8	142.8	11.0	Mittagong	128.6	139.0	10.4
Ballina	129.7	na	na	Moree	130.5	140.5	10.0
Batemans Bay	127.0	142.2	15.2	Moruya	129.7	141.6	11.9
Bathurst	125.4	138.8	13.4	Moss Vale	128.1	139.6	11.5
Bega	131.5	144.8	13.3	Mudgee	130.6	144.6	14.0
Broken Hill	127.2	139.2	12.0	Murwillumbah	127.7	139.7	12.0
Bulahdelah	125.4	137.3	11.9	Muswellbrook*	128.4	139.8	11.4
Casino	126.2	139.7	13.5	Narrabri	131.7	141.1	9.4
Coffs Harbour	128.7	138.1	9.4	Newcastle	125.8	136.7	10.9
Cooma	132.9	146.1	13.2	Nowra	126.2	137.2	11.0
Cowra	124.6	137.1	12.5	Nyngan	131.6	144.2	12.6
Deniliquin	130.1	141.6	11.5	Orange	127.3	140.5	13.2
Dubbo	127.4	140.0	12.6	Parkes	129.2	141.2	12.0
Forbes*	129.4	140.7	11.3	Port Macquarie	127.4	141.5	14.1
Forster	127.0	140.6	13.6	Queanbeyan	126.7	138.3	11.6
Gilgandra	127.8	140.8	13.0	Singleton	123.5	138.3	14.8
Goulburn	124.8	136.6	11.8	Tamworth	129.9	141.0	11.1
Grafton	127.0	137.5	10.5	Taree	124.0	135.9	11.9
Griffith	127.4	137.4	10.0	Temora	131.5	142.4	10.9
Gundagai	131.1	138.0	6.9	Ulladulla	128.1	140.5	12.4
Gunnedah	128.0	139.9	11.9	Wagga Wagga	129.4	140.4	11.0
Hay	130.1	140.8	10.7	Wellington	131.9	143.4	11.5
Inverell	129.2	139.7	10.5	West Wyalong	131.9	144.0	12.1
Jerilderie	125.9	136.5	10.6	Wollongong	127.7	139.6	11.9
Kempsey	127.7	140.0	12.3	Yass	127.8	141.0	13.2
Lismore	127.4	135.9	8.5				
Northern Territory							
Alice Springs	141.4	157.6	16.2	Tennant Creek	144.0	156.7	12.7
Katherine	131.9	143.5	11.6				

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
Queensland							
Atherton	128.4	138.8	10.4	Kingaroy	127.0	138.1	11.1
Ayr	126.6	138.5	11.9	Longreach	135.1	147.4	12.3
Biloela	127.8	139.7	11.9	Mackay	126.0	137.6	11.6
Bowen	127.8	138.4	10.6	Mareeba	129.1	138.8	9.7
Bundaberg	126.2	136.6	10.4	Maryborough	126.3	137.6	11.3
Cairns	128.4	138.5	10.1	Miles*	132.9	145.2	12.3
Charters Towers	128.7	138.8	10.1	Moranbah	131.9	143.0	11.1
Dalby	125.0	136.6	11.6	Mt Isa	127.5	139.7	12.2
Emerald	128.7	139.1	10.4	Rockhampton	129.8	139.6	9.8
Gladstone	128.8	139.6	10.8	Roma	129.2	139.6	10.4
Goondiwindi	127.0	139.1	12.1	Toowoomba	125.2	136.6	11.4
Gympie	125.4	137.1	11.7	Townsville	125.1	136.6	11.5
Hervey Bay	127.3	137.8	10.5	Warwick	125.9	136.8	10.9
Ingham	125.4	137.0	11.6	Whitsunday	130.1	138.4	8.3
Innisfail	127.2	140.1	12.9	Yeppoon	130.8	139.5	8.7
South Australia							
Bordertown	129.1	140.3	11.2	Murray Bridge	126.1	137.2	11.1
Ceduna	128.5	141.0	12.5	Naracoorte	127.4	137.7	10.3
Clare	124.7	136.2	11.5	Port Augusta	125.2	136.7	11.5
Coober Pedy	141.7	153.4	11.7	Port Lincoln	127.7	141.3	13.6
Gawler	123.8	135.4	11.6	Port Pirie	125.0	136.6	11.6
Kadina	124.6	136.2	11.6	Renmark	122.1	138.0	15.9
Keith	130.2	142.3	12.1	Victor Harbour	125.2	137.3	12.1
Loxton	124.7	139.8	15.1	Whyalla	126.1	136.6	10.5
Mt Gambier	128.6	139.3	10.7				
Tasmania							
Burnie	129.3	141.6	12.3	New Norfolk	129.1	141.3	12.2
Devonport	129.8	142.2	12.4	Queenstown	135.4	146.4	11.0
George Town	131.2	142.0	10.8	Sorell	127.8	139.2	11.4
Huonville	130.8	141.3	10.5	Ulverstone	129.6	142.2	12.6
Launceston	130.4	141.2	10.8				
Victoria							
Ararat	123.4	134.6	11.2	Mildura	128.4	137.8	9.4
Bairnsdale	122.9	133.1	10.2	Moe	126.2	134.9	8.7
Ballarat	122.8	135.5	12.7	Morwell	126.0	135.1	9.1
Benalla	126.7	138.7	12.0	Orbost	130.0	na	na
Bendigo	123.2	134.9	11.7	Portland	128.5	135.1	6.6
Cohuna	129.4	na	na	Sale	126.3	134.5	8.2
Colac	125.3	136.7	11.4	Seymour	123.6	137.0	13.4
Echuca	123.9	138.9	15.0	Shepparton	123.6	136.6	13.0
Geelong	121.6	134.9	13.3	Swan Hill	129.3	139.6	10.3
Hamilton	127.7	138.4	10.7	Traralgon	126.7	133.6	6.9
Horsham	125.9	138.2	12.3	Wangaratta	126.4	137.5	11.1
Lakes Entrance	127.6	134.9	7.3	Warrnambool	125.4	136.2	10.8
Leongatha	129.6	140.5	10.9	Wodonga	125.1	136.4	11.3

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
Western Australia							
Albany	132.3	142.8	10.5	Esperance	133.2	142.9	9.7
Boulder	133.9	143.7	9.8	Geraldton	136.6	144.8	8.2
Broome	140.8	153.5	12.7	Kalgoorlie	134.0	143.3	9.3
Bunbury	128.6	140.4	11.8	Karratha	141.2	151.0	9.8
Busselton	129.0	139.7	10.7	Majimup	131.8	143.6	11.8
Carnarvon	138.5	150.2	11.7	Port Hedland	137.1	145.3	8.2
Collie	130.7	142.0	11.3	Waroona	127.3	139.8	12.5
Dongara	134.9	146.5	11.6				

Table G.3 Average retail automotive LPG prices in regional locations: 2009–10 and 2010–11

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
New South Wales							
Albury	55.6	61.2	5.6	Merimbula	71.9	77.7	5.8
Armidale	72.8	79.5	6.7	Mittagong	63.2	67.6	4.4
Ballina	71.9	na	na	Moree	76.8	82.2	5.4
Batemans Bay	75.6	84.0	8.4	Moruya	76.8	80.5	3.7
Bathurst	63.4	72.3	8.9	Moss Vale	60.0	64.9	4.9
Bega	76.7	86.2	9.5	Mudgee	68.8	74.5	5.7
Broken Hill	68.2	74.6	6.4	Murwillumbah	67.7	72.8	5.1
Bulahdelah	64.9	71.5	6.6	Muswellbrook*	63.6	67.4	3.8
Casino	71.8	75.7	3.9	Narrabri	na	na	na
Coffs Harbour	65.3	72.1	6.8	Newcastle	61.4	65.9	4.5
Cooma	76.1	84.9	8.8	Nowra	62.7	69.1	6.4
Cowra	na	na	na	Nyngan	82.6	86.2	3.6
Deniliquin	68.3	75.9	7.6	Orange	67.1	74.7	7.6
Dubbo	70.6	75.8	5.2	Parkes	74.9	76.7	1.8
Forbes*	76.4	83.2	6.8	Port Macquarie	68.1	74.9	6.8
Forster	63.9	70.4	6.5	Queanbeyan	61.6	68.8	7.2
Gilgandra	77.2	86.2	9.0	Singleton	61.6	70.6	9.0
Goulburn	62.6	67.6	5.0	Tamworth	67.8	72.6	4.8
Grafton	69.0	71.5	2.5	Taree	62.5	67.7	5.2
Griffith	67.6	72.5	4.9	Temora	73.6	80.4	6.8
Gundagai	71.2	76.2	5.0	Ulladulla	67.5	73.2	5.7
Gunnedah	70.8	78.6	7.8	Wagga Wagga	65.7	71.0	5.3
Hay	68.8	75.8	7.0	Wellington	66.5	70.5	4.0
Inverell	70.0	79.7	9.7	West Wyalong	77.7	82.8	5.1
Jerilderie	66.5	73.5	7.0	Wollongong	61.1	65.2	4.1
Kempsey	65.6	68.1	2.5	Yass	63.2	71.3	8.1
Lismore	70.0	69.9	-0.1				
Northern Territory							
Alice Springs	87.5	93.0	5.5	Tennant Creek	na	na	na
Katherine	87.6	88.3	0.7				

Location	2009–10 (cpl)	2010–11 (cpl)	Diff	Location	2009–10 (cpl)	2010–11 (cpl)	Diff
Queensland							
Atherton	na	na	na	Kingaroy	63.8	68.1	4.3
Ayr	80.7	83.2	2.5	Longreach	na	na	na
Biloela	na	na	na	Mackay	67.5	74.4	6.9
Bowen	82.6	86.5	3.9	Mareeba	82.0	86.3	4.3
Bundaberg	74.2	75.6	1.4	Maryborough	74.2	78.2	4.0
Cairns	81.1	85.9	4.8	Miles*	77.6	81.7	4.1
Charters Towers	na	na	na	Moranbah	na	na	na
Dalby	74.8	76.1	1.3	Mt Isa	75.3	76.5	1.2
Emerald	79.9	79.1	-0.8	Rockhampton	76.4	81.8	5.4
Gladstone	73.6	73.4	-0.2	Roma	78.6	84.1	5.5
Goondiwindi	68.6	76.5	7.9	Toowoomba	58.6	63.7	5.1
Gympie	70.7	76.2	5.5	Townsville	76.7	78.6	1.9
Hervey Bay	73.2	78.4	5.2	Warwick	64.1	70.4	6.3
Ingham	82.0	na	na	Whitsunday	77.1	80.1	3.0
Innisfail	na	na	na	Yeppoon	76.3	na	na
South Australia							
Bordertown	67.9	73.9	6.0	Murray Bridge	65.7	69.0	3.3
Ceduna	76.0	78.4	2.4	Naracoorte	66.2	67.5	1.3
Clare	70.1	73.6	3.5	Port Augusta	64.4	65.6	1.2
Coober Pedy	na	na	na	Port Lincoln	66.7	62.2	-4.5
Gawler	60.5	62.2	1.7	Port Pirie	70.6	74.5	3.9
Kadina	69.8	72.3	2.5	Renmark	64.1	71.1	7.0
Keith	72.9	76.8	3.9	Victor Harbour	61.9	63.6	1.7
Loxton	67.4	72.8	5.4	Whyalla	63.4	67.8	4.4
Mt Gambier	66.6	71.8	5.2				
Tasmania							
Burnie	73.0	78.7	5.7	New Norfolk	71.2	79.9	8.7
Devonport	73.5	79.5	6.0	Queenstown	na	na	na
George Town	na	na	na	Sorell	69.9	76.8	6.9
Huonville	73.7	81.9	8.2	Ulverstone	74.6	78.9	4.3
Launceston	71.7	75.3	3.6				
Victoria							
Ararat	56.3	54.9	-1.4	Mildura	64.3	70.9	6.6
Bairnsdale	57.3	61.0	3.7	Moe	58.3	61.8	3.5
Ballarat	54.4	59.1	4.7	Morwell	60.1	64.4	4.3
Benalla	61.8	66.2	4.4	Orbost	62.4	na	na
Bendigo	56.4	61.1	4.7	Portland	61.4	69.0	7.6
Cohuna	65.9	na	na	Sale	59.0	64.6	5.6
Colac	55.9	60.6	4.7	Seymour	55.1	59.8	4.7
Echuca	57.9	65.0	7.1	Shepparton	59.5	63.9	4.4
Geelong	55.0	58.0	3.0	Swan Hill	61.9	70.3	8.4
Hamilton	61.8	66.8	5.0	Traralgon	59.8	60.3	0.5
Horsham	61.8	67.3	5.5	Wangaratta	57.5	62.3	4.8
Lakes Entrance	61.0	63.0	2.0	Warrnambool	57.7	64.9	7.2
Leongatha	63.9	67.7	3.8	Wodonga	58.5	65.6	7.1
Western Australia							
Albany	84.0	93.5	9.5	Esperance	87.9	96.7	8.8
Boulder	86.3	91.6	5.3	Geraldton	77.8	84.5	6.7
Broome	101.6	105.0	3.4	Kalgoorlie	82.2	86.1	3.9
Bunbury	69.7	74.3	4.6	Karratha	95.3	98.6	3.3
Busselton	76.2	80.6	4.4	Majimup	82.5	89.3	6.8
Carnarvon	91.1	97.5	6.4	Port Hedland	98.9	99.9	1.0
Collie	75.0	80.9	5.9	Waroona	74.3	83.3	9.0
Dongara	85.7	92.7	7.0				

Appendix H: Regional locations with regular petrol price cycles in 2010

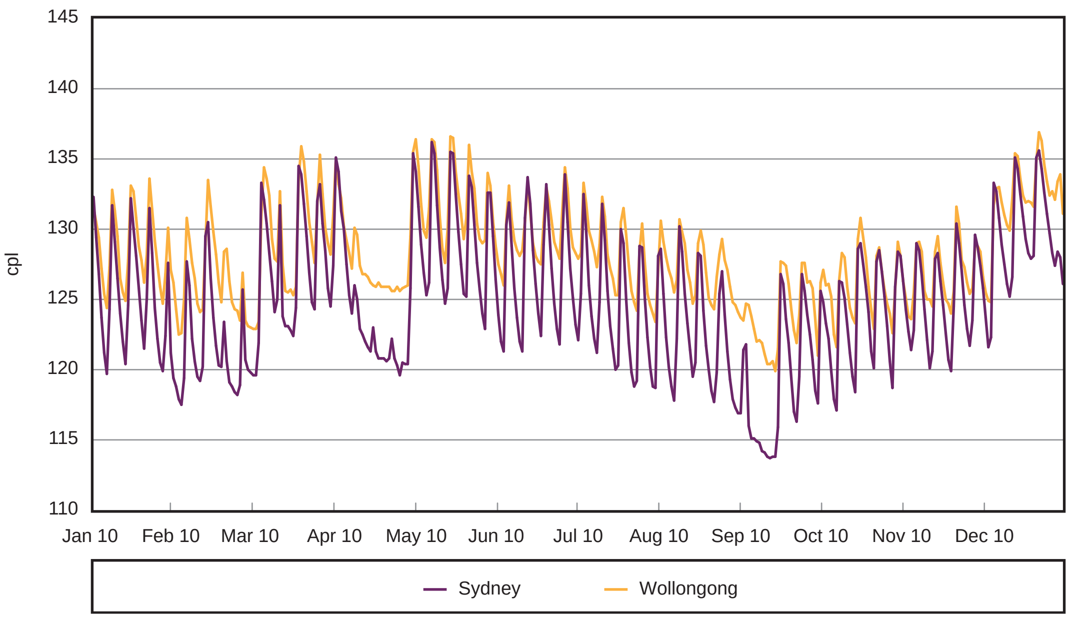
Chapter 10 noted that nine regional locations had regular petrol price cycles in 2010.[314] These were Wollongong, Newcastle, Queanbeyan, Singleton, Moss Vale and Bulahdelah in New South Wales; Geelong and Seymour in Victoria; and Gawler in South Australia.

Charts showing daily average petrol prices in Gawler and Geelong in 2010 (along with Adelaide and Melbourne prices respectively) were included in chapter 10. Charts of the remaining seven regional locations with regular price cycles in 2010 are presented in this appendix.[315]

The charts generally also show prices of the relevant capital city. However, in the case of Queanbeyan, Canberra prices have been included instead of Sydney prices since Queanbeyan prices tend to more closely follow prices in Canberra than those in Sydney. Similarly, for Singleton and Bulahdelah, Newcastle prices have been included instead of Sydney prices.

Also included in this appendix are charts showing daily average retail petrol prices in Canberra, Hobart and Darwin in 2010. They indicate that Canberra had regular price cycles (as defined in chapter 10 as 20 or more price cycles) in 2010 but Hobart and Darwin did not.

Chart H.1 Wollongong and Sydney daily average petrol prices: 2010



314 In this appendix references to petrol refer to regular unleaded petrol (RULP).

315 Source for all charts: ACCC and Informed Sources.

Chart H.2 Newcastle and Sydney daily average petrol prices: 2010

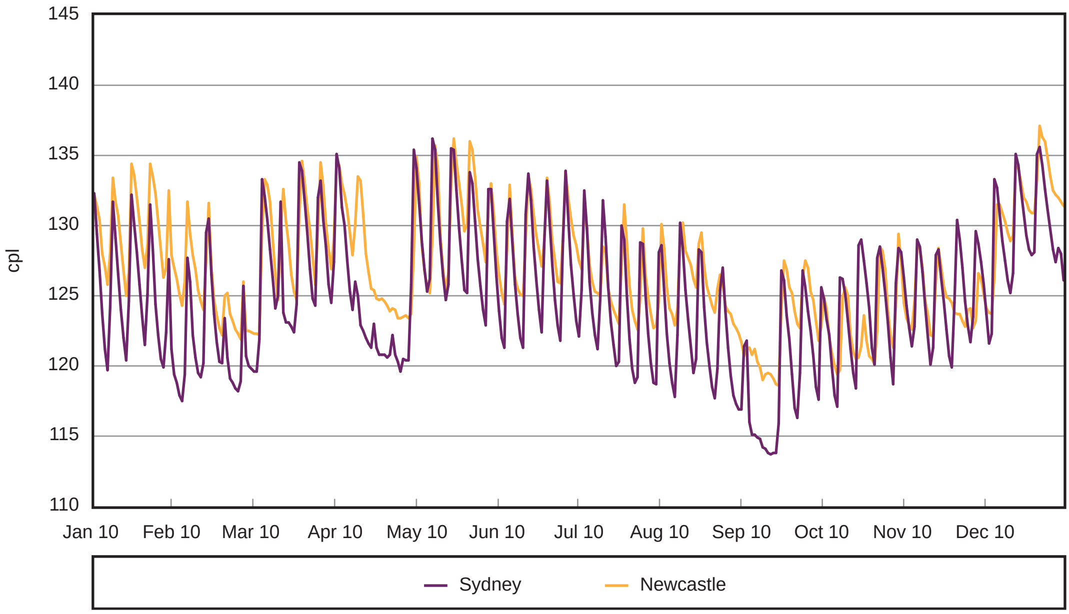


Chart H.3 Moss Vale and Sydney daily average petrol prices: 2010

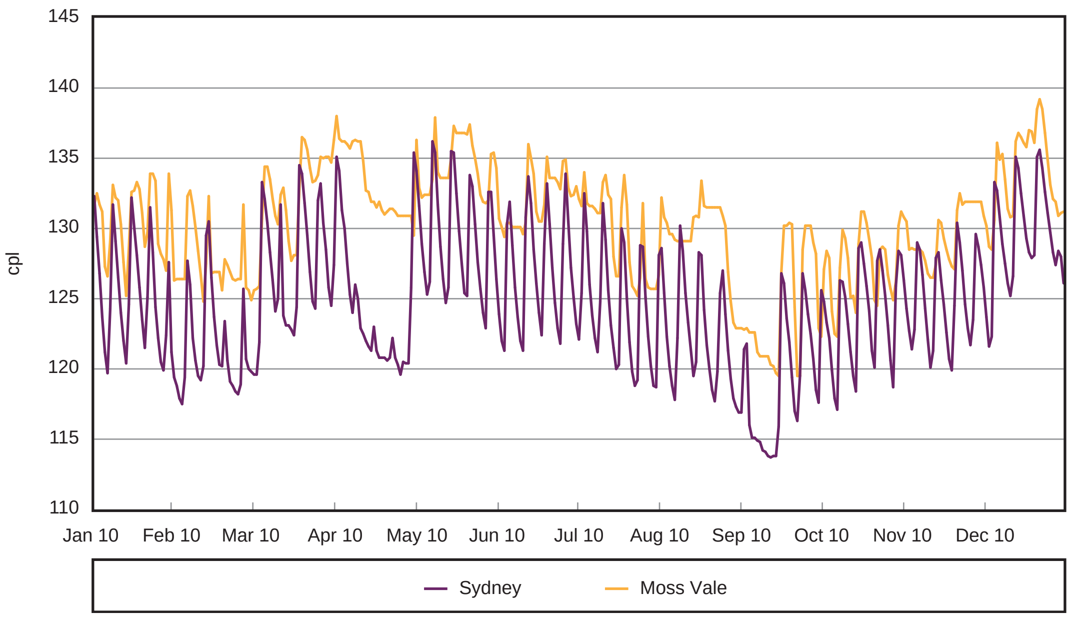


Chart H.4 Queanbeyan and Canberra daily average petrol prices: 2010

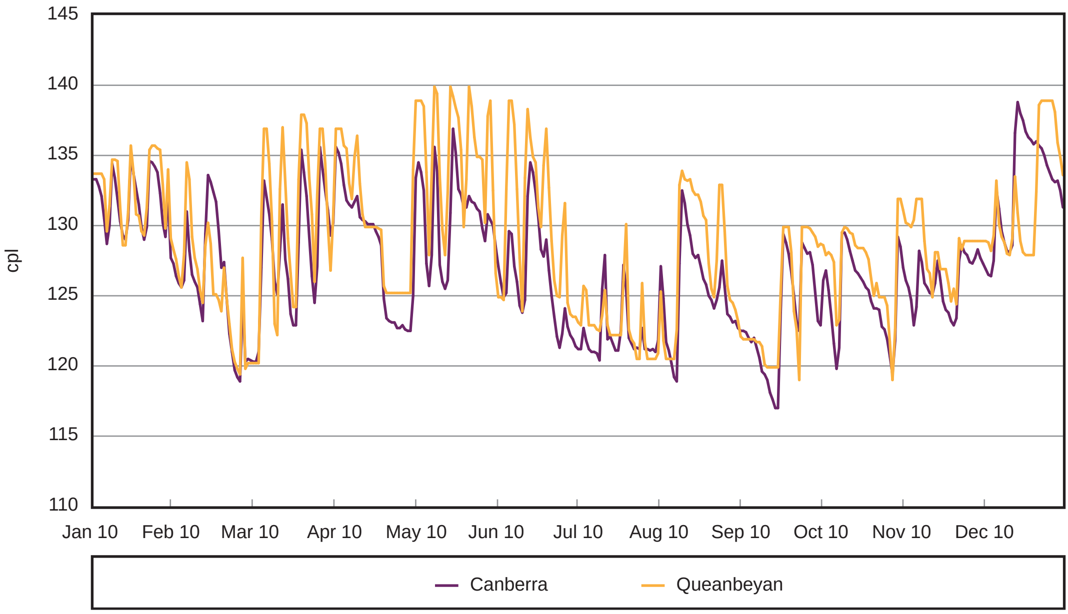


Chart H.5 Bulahdelah and Newcastle daily average petrol prices: 2010

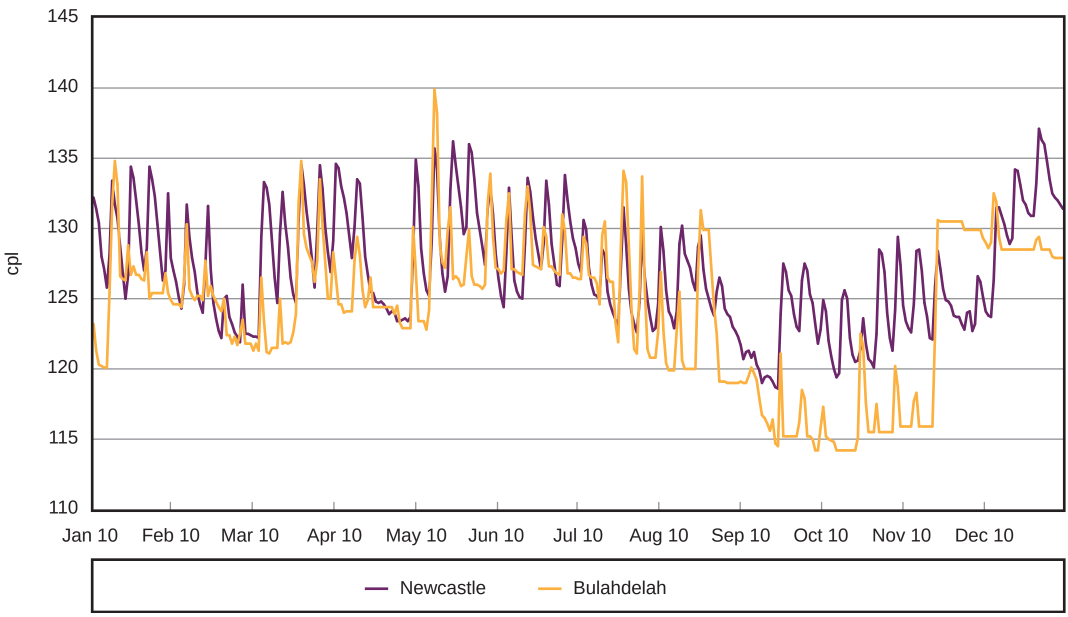


Chart H.6 Singleton and Newcastle daily average petrol prices: 2010

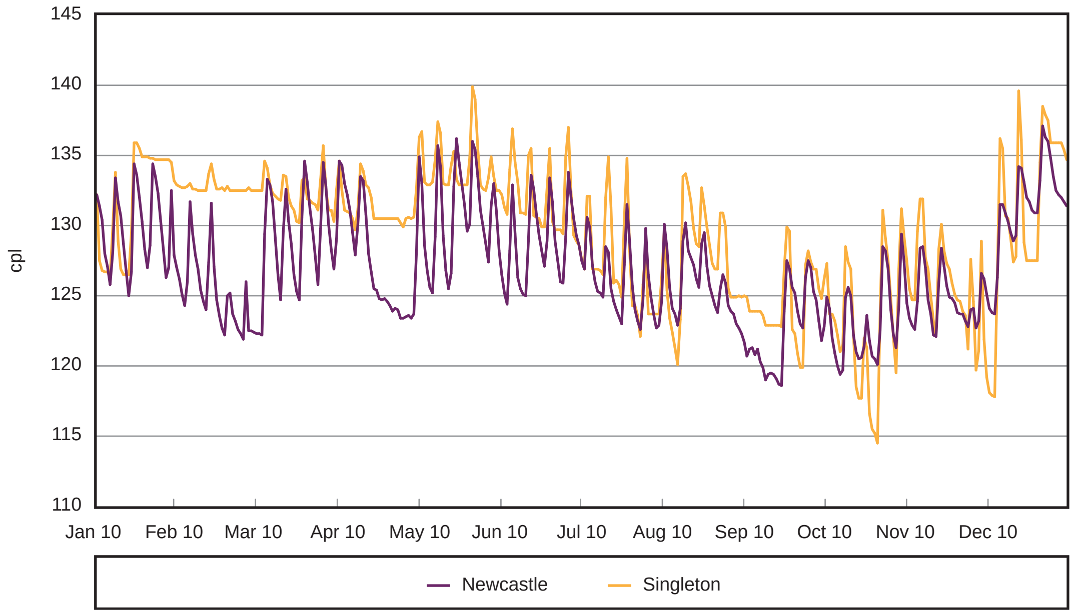


Chart H.7 Seymour and Melbourne daily average petrol prices: 2010

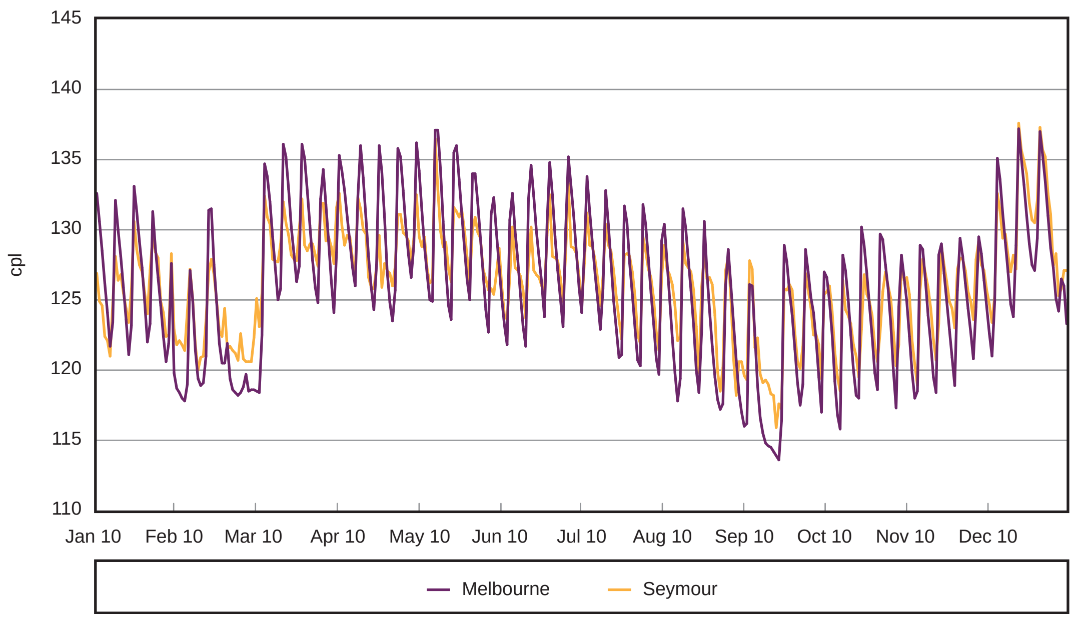


Chart H.8 Canberra daily average petrol prices: 2010

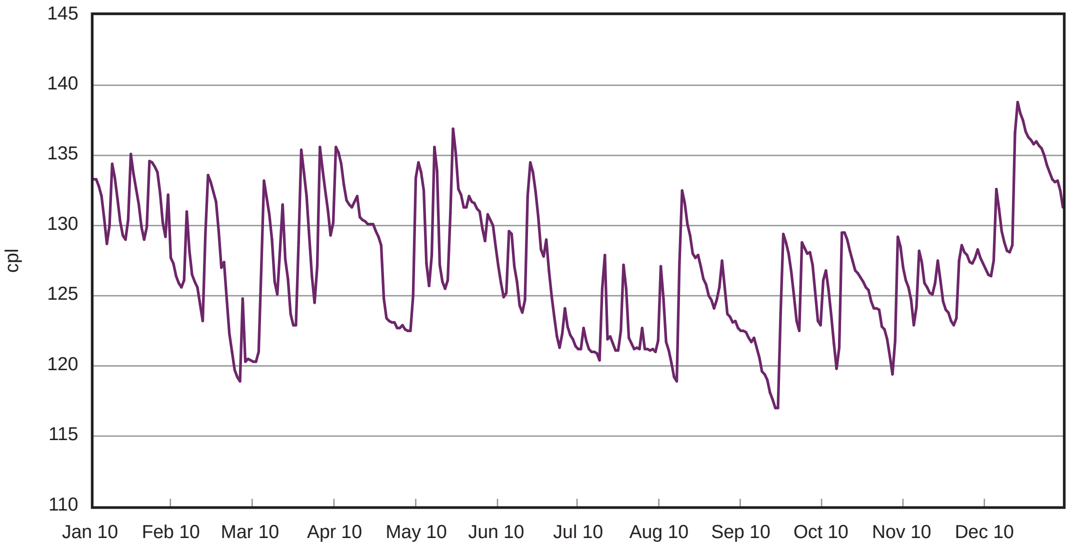


Chart H.9 Hobart daily average petrol prices: 2010

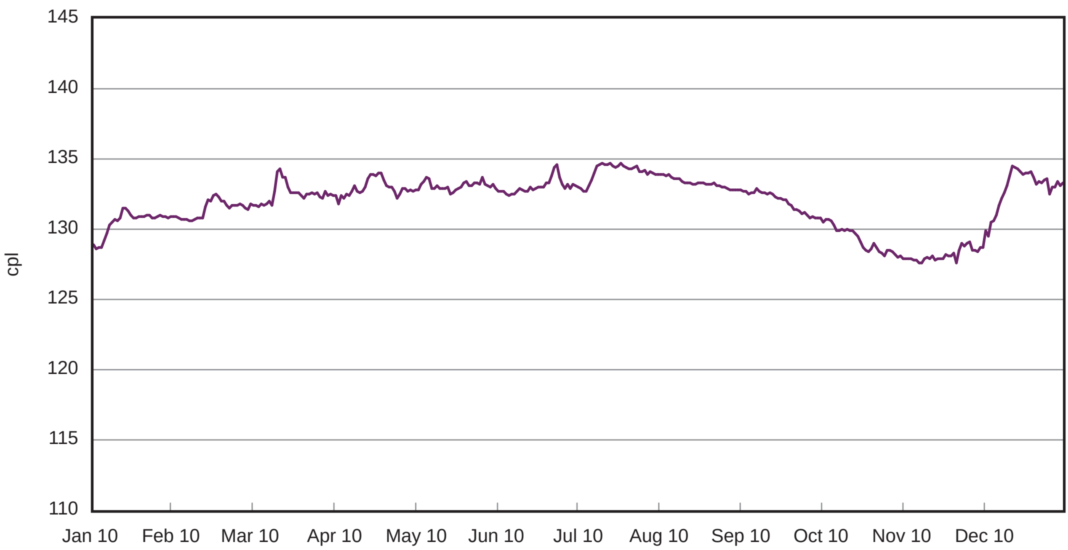
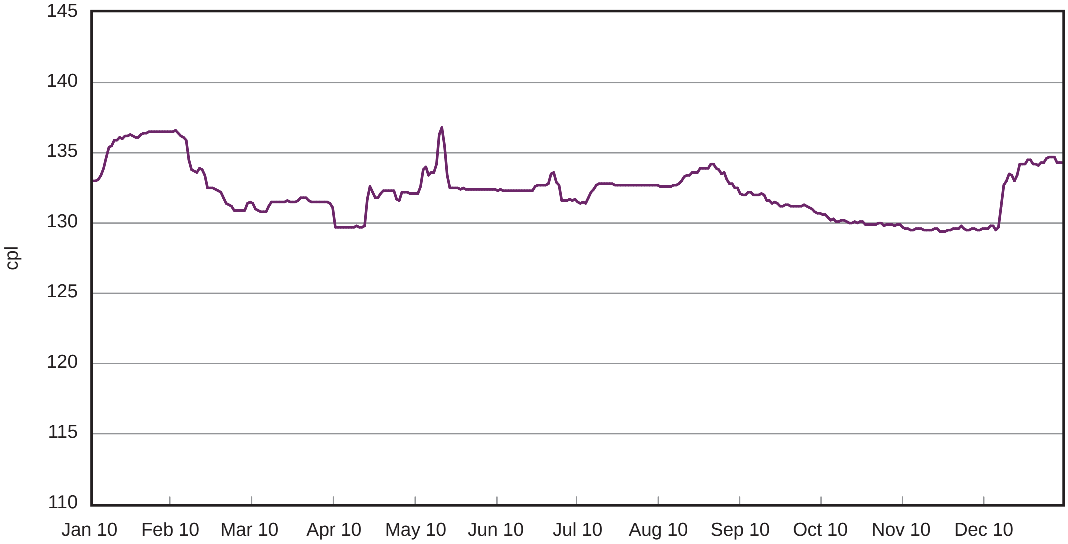


Chart H.10 Darwin daily average petrol prices: 2010



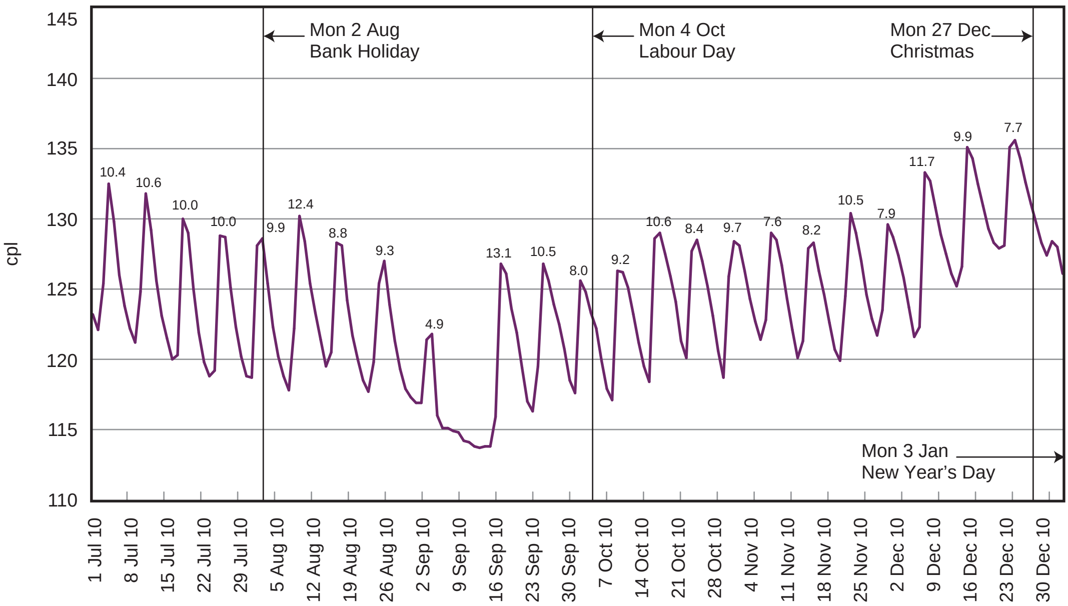
Appendix I: Petrol price cycles and public holidays in the five largest cities

Charts I.1 to I.10 show daily average retail prices for regular unleaded petrol for the second half of 2010 and the first half of 2011 in each of the five largest cities.[316] They also identify the price increase of each price cycle during the period and the dates of public holidays. The charts also provide information on the average, minimum and maximum price cycle increases in 2010 and the first half of 2011.[317]

316 Source for all charts: ACCC and Informed Sources.

317 Similar charts for the period January 2007 to June 2009 were provided in appendix G of the 2009 ACCC petrol monitoring report and for the period July 2009 to June 2010 in appendix H of the 2010 ACCC petrol monitoring report.

Chart I.1 Sydney, daily average retail prices — price cycles and public holidays: 1 July to 31 December 2010

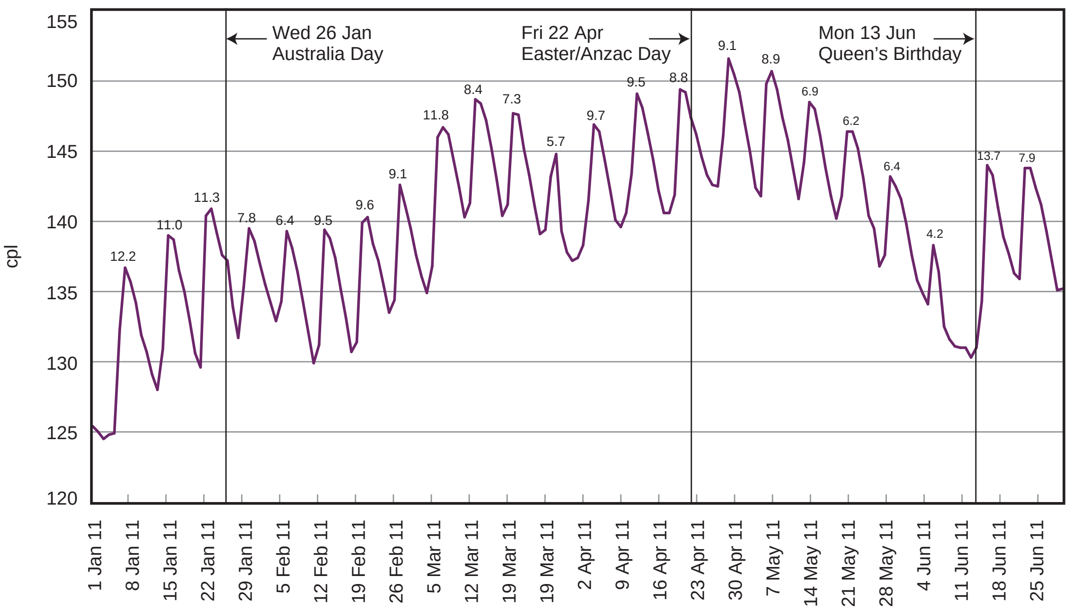


2010 average price cycle increase: 10.2 cpl

2010 minimum price cycle increase 4.9 cpl

2010 maximum price cycle increase: 15.8 cpl

Chart I.2 Sydney, daily average retail prices — price cycles and public holidays: 1 January to 30 June 2011

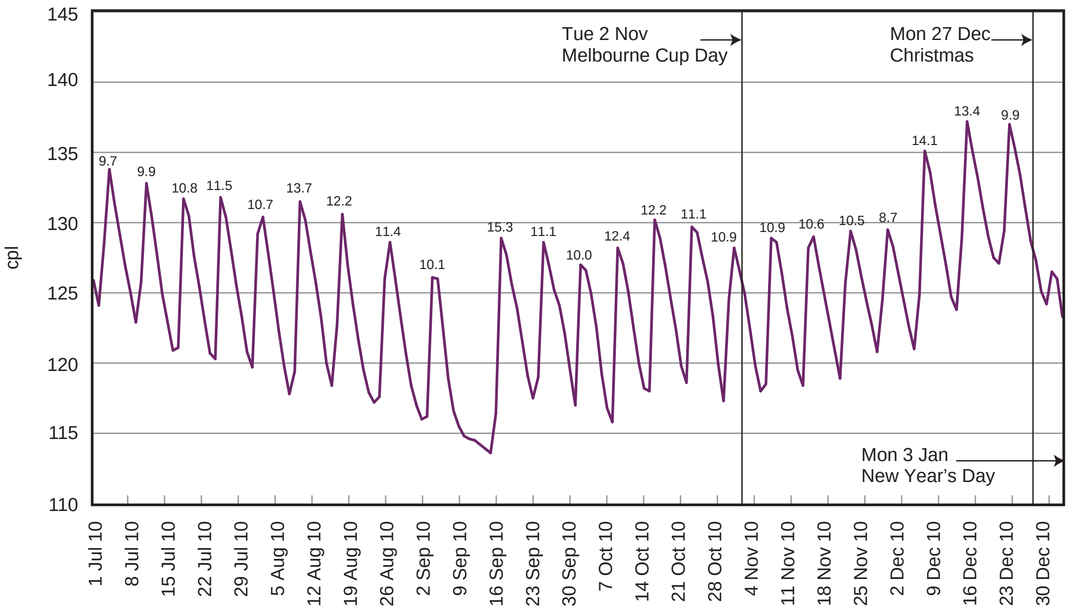


1st half 2011 average price cycle increase: 8.8 cpl

1st half 2011 minimum price cycle increase 4.2 cpl

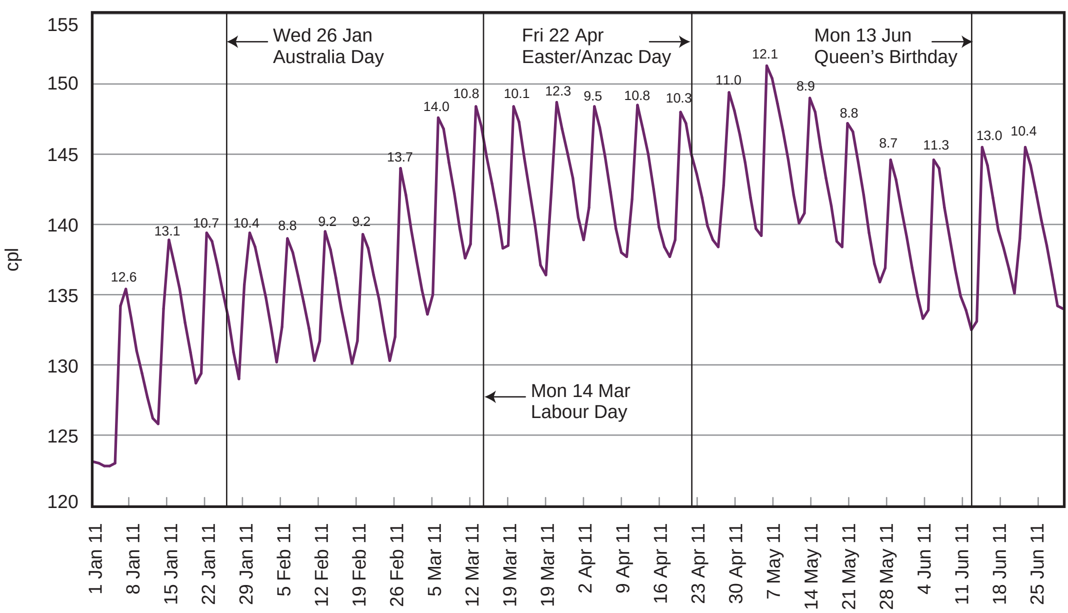
1st half 2011 maximum price cycle increase: 13.7 cpl

Chart I.3 Melbourne, daily average retail prices — price cycles and public holidays: 1 July to 31 December 2010



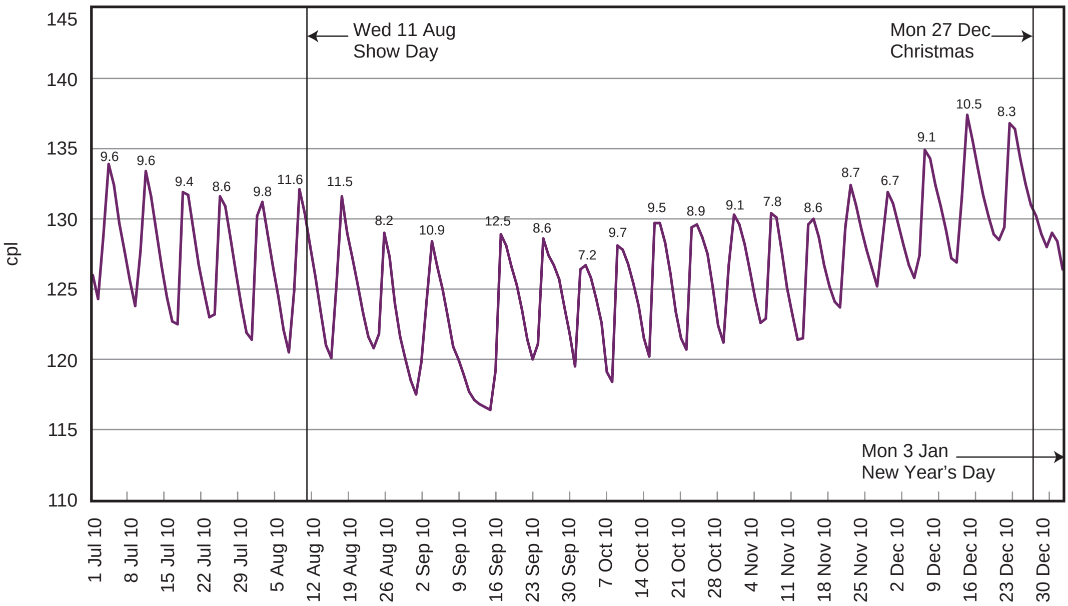
2010 average price cycle increase: 11.3 cpl
2010 minimum price cycle increase 7.0 cpl
2010 maximum price cycle increase: 16.5 cpl

Chart I.4 Melbourne, daily average retail prices — price cycles and public holidays: 1 January to 30 June 2011



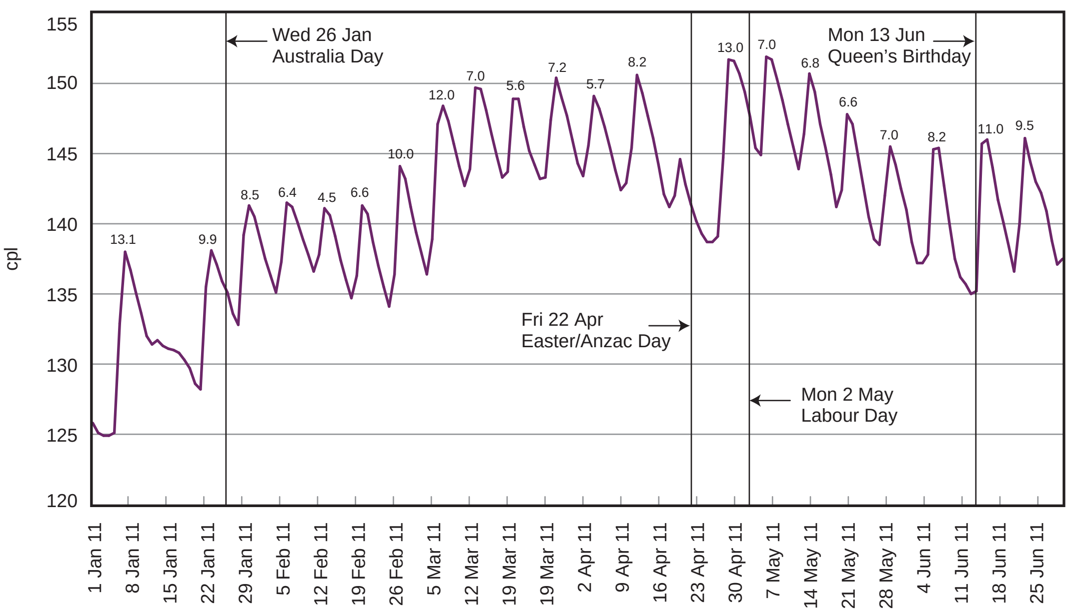
1st half 2011 average price cycle increase: 10.9 cpl
1st half 2011 minimum price cycle increase 8.7 cpl
1st half 2011 maximum price cycle increase: 14.0 cpl

Chart I.5 Brisbane, daily average retail prices — price cycles and public holidays: 1 July to 31 December 2010



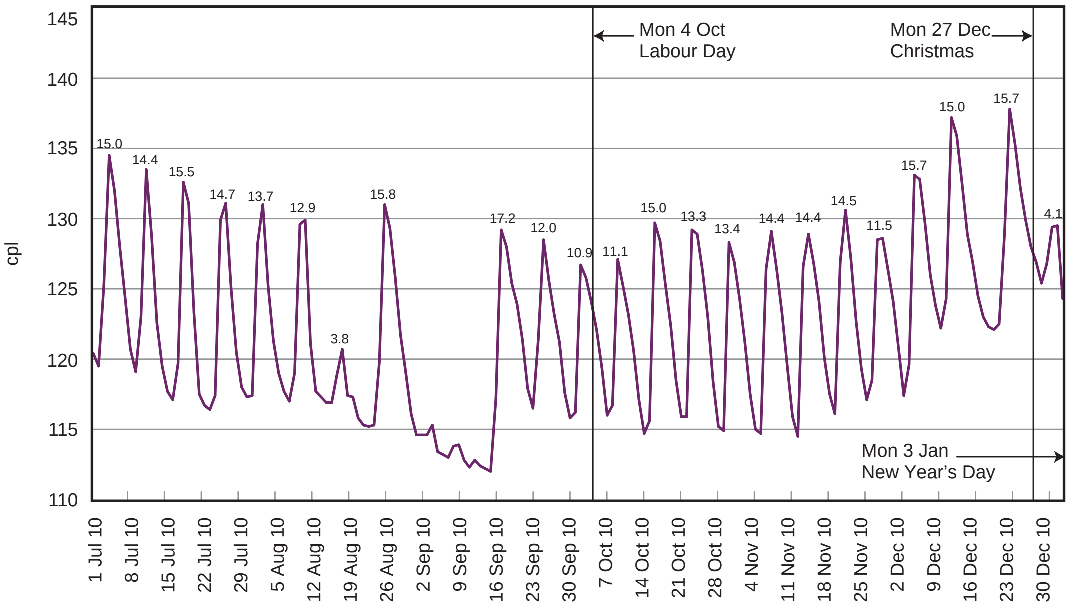
2010 average price cycle increase: 9.3 cpl	2010 minimum price cycle increase 6.1 cpl
2010 maximum price cycle increase: 13.5 cpl	

Chart I.6 Brisbane, daily average retail prices — price cycles and public holidays: 1 January to 30 June 2011



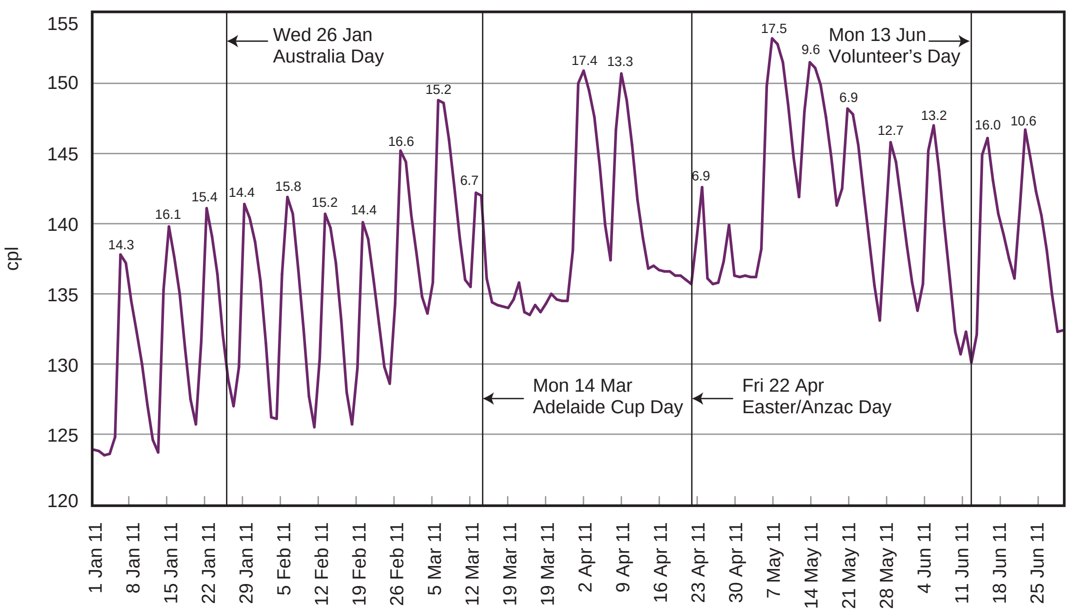
1st half 2011 average price cycle increase: 8.3 cpl	1st half 2011 minimum price cycle increase 4.5 cpl
1st half 2011 maximum price cycle increase: 13.1 cpl	

Chart I.7 Adelaide, daily average retail prices — price cycles and public holidays: 1 July to 31 December 2010



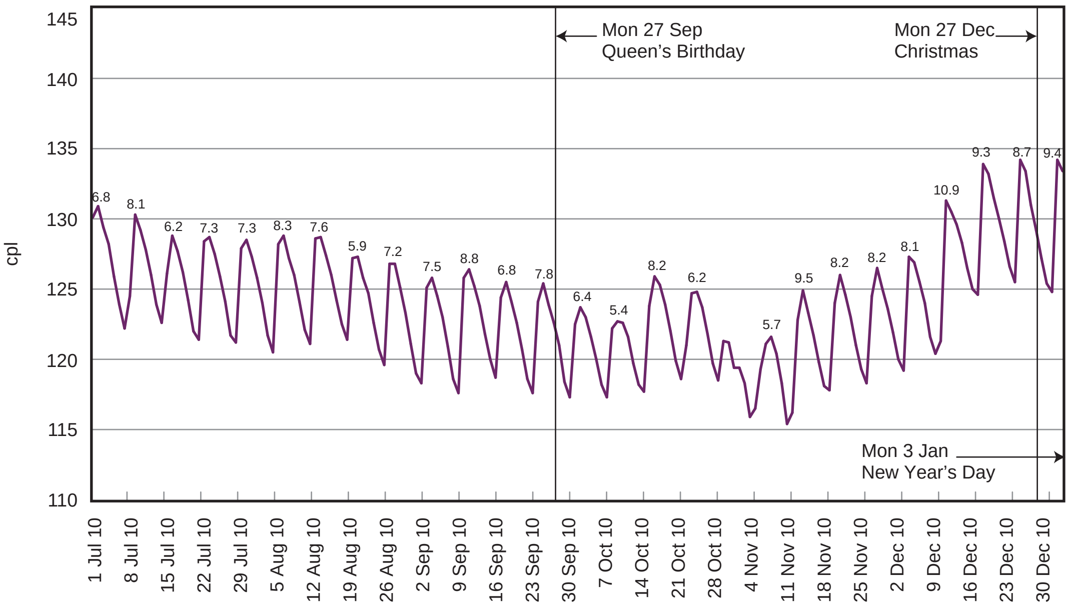
2010 average price cycle increase: 10.2 cpl	2010 minimum price cycle increase 4.9 cpl
2010 maximum price cycle increase: 15.8 cpl	

Chart I.8 Adelaide, daily average retail prices — price cycles and public holidays: 1 January to 30 June 2011



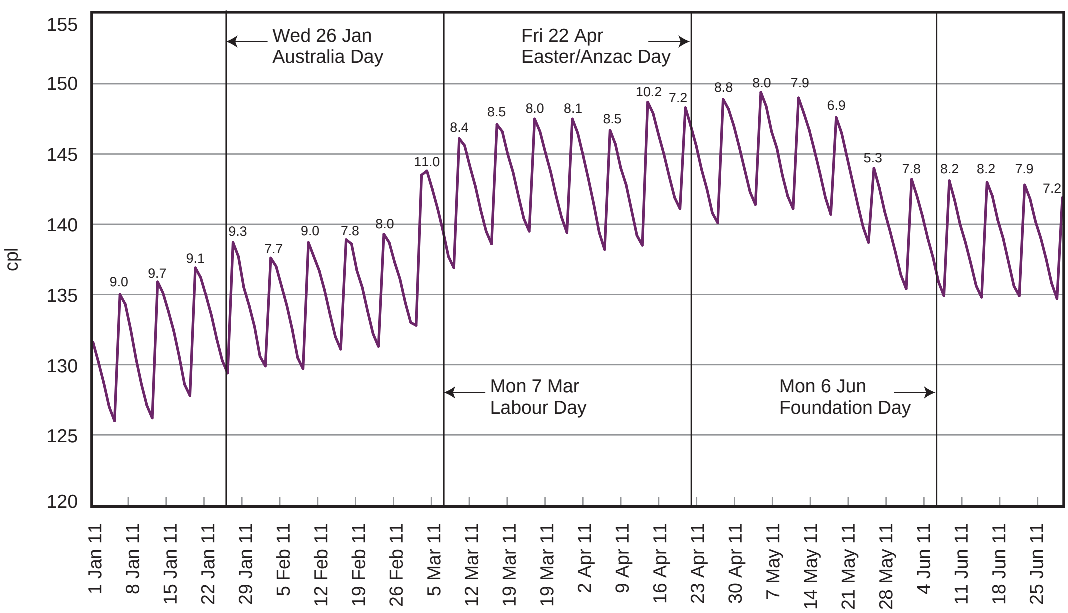
1st half 2011 average price cycle increase: 13.4 cpl	1st half 2011 minimum price cycle increase 6.7 cpl
1st half 2011 maximum price cycle increase: 17.5 cpl	

Chart I.9 Perth, daily average retail prices — price cycles and public holidays: 1 July to 31 December 2010



2010 average price cycle increase: 7.2 cpl
2010 minimum price cycle increase 4.4 cpl
2010 maximum price cycle increase: 10.9 cpl

Chart I.10 Perth, daily average retail prices — price cycles and public holidays: 1 January to 30 June 2011



1st half 2011 average price cycle increase: 8.3 cpl
1st half 2011 minimum price cycle increase 5.3 cpl
1st half 2011 maximum price cycle increase: 11.0 cpl

Appendix J: Consumer buying patterns during the price cycle in the five largest cities

Section 11.7 of chapter 11 provided information on the volume of retail petrol sales, and the average price of petrol, by day of the week in the five largest cities in 2009–10 and 2010–11. This appendix provides additional charts to that chapter.[318]

It includes:

- charts showing average petrol sales volumes and prices by day of the week in the five largest cities in 2007–08 and 2008–09 (charts J.1 and J.2)
- charts showing average petrol sales volumes and prices by day of the week in Sydney, Brisbane and Adelaide in 2009–10 and 2010–11 (charts J.3 to J.8).

318 Source for all charts: ACCC calculations based on Informed Sources data, and information provided by the monitored companies.

Chart J.1 Average petrol sales volumes and prices by day of the week, five largest cities: 2007–08

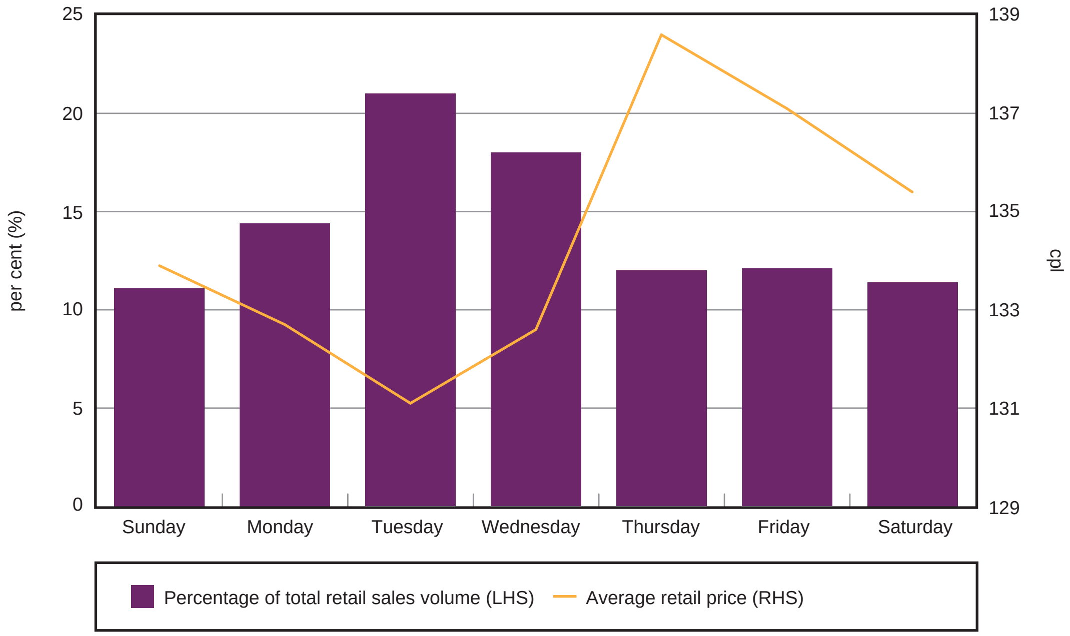


Chart J.2 Average petrol sales volumes and prices by day of the week, five largest cities: 2008–09

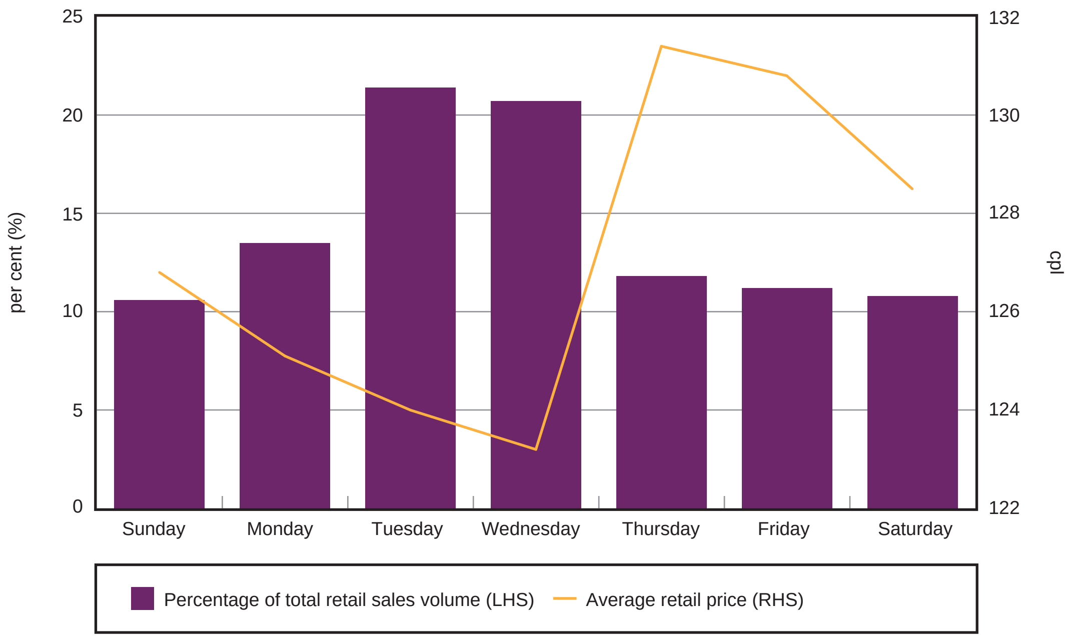


Chart J.3 Average petrol sales volumes and prices by day of the week, Sydney: 2009–10

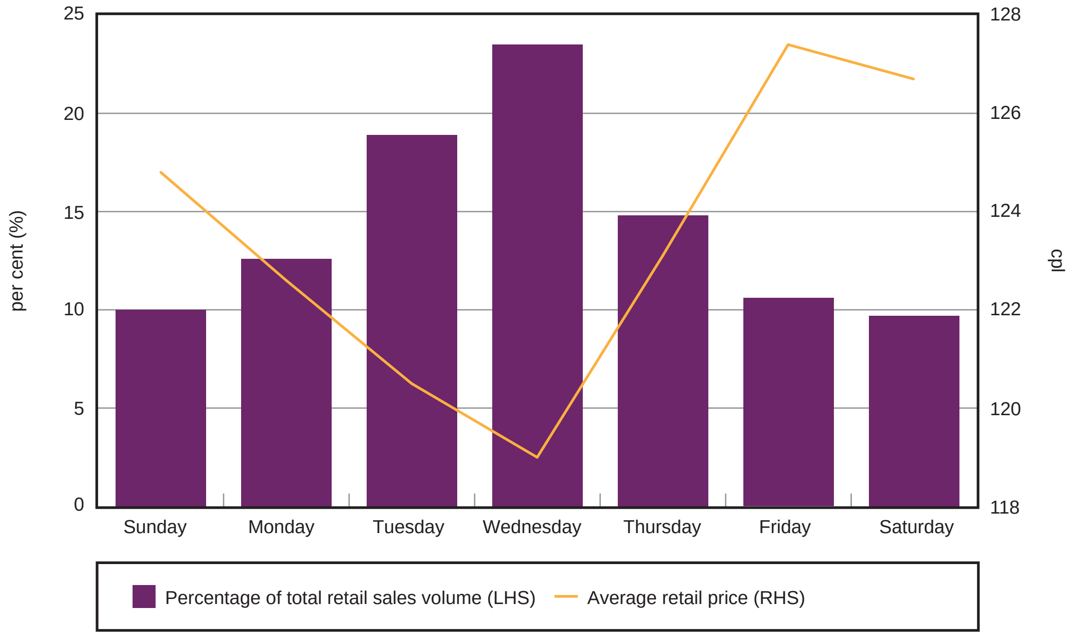


Chart J.4 Average petrol sales volumes and prices by day of the week, Sydney: 2010–11

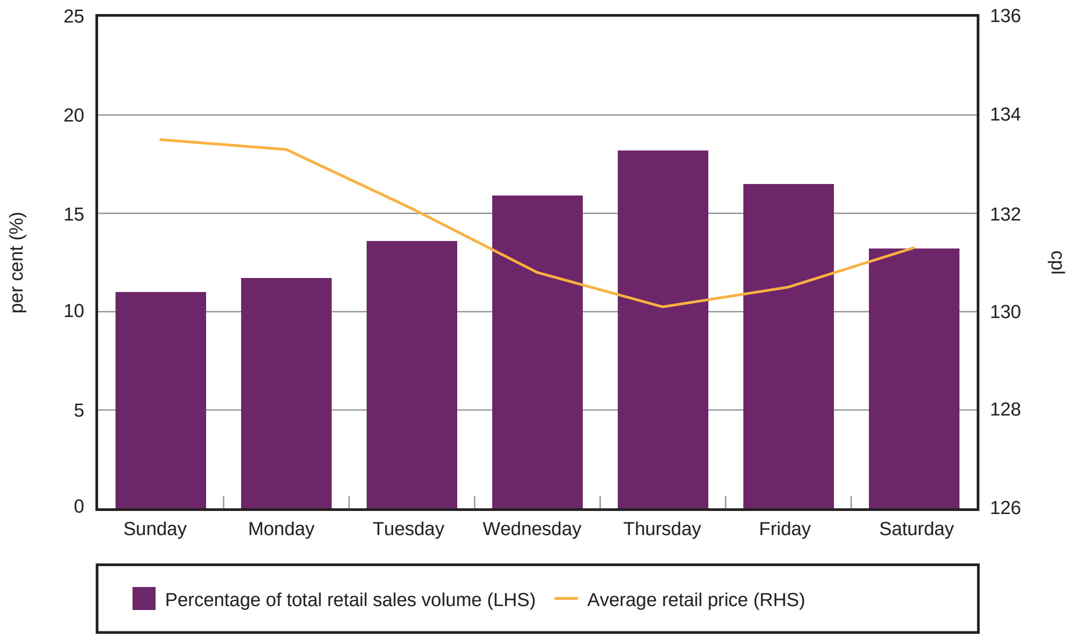


Chart J.5 Average petrol sales volumes and prices by day of the week, Brisbane: 2009–10

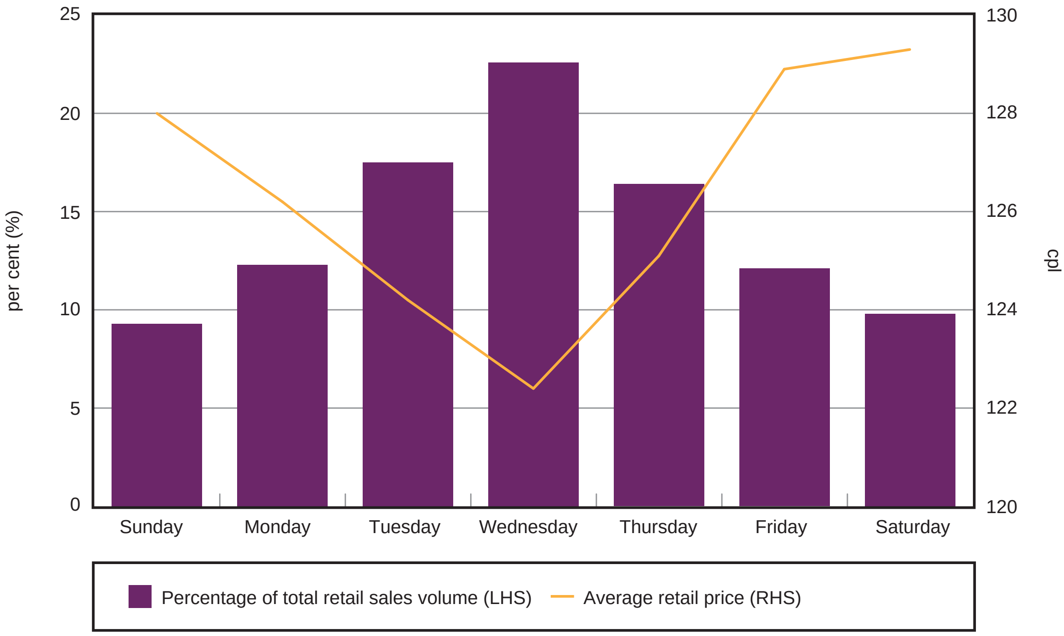


Chart J.6 Average petrol sales volumes and prices by day of the week, Brisbane: 2010–11

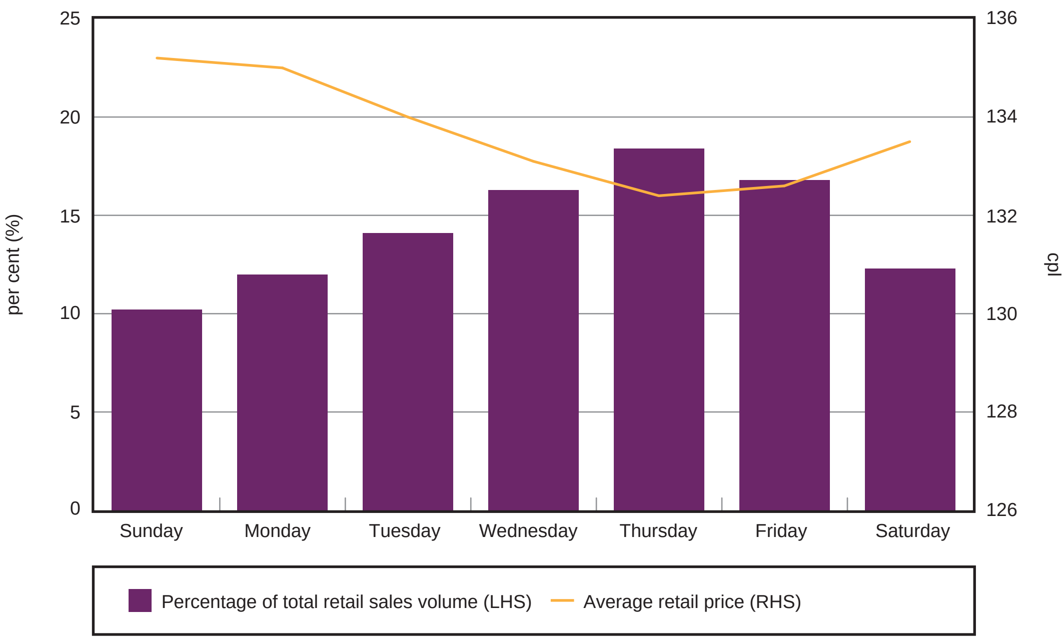


Chart J.7 Average petrol sales volumes and prices by day of the week, Adelaide: 2009–10

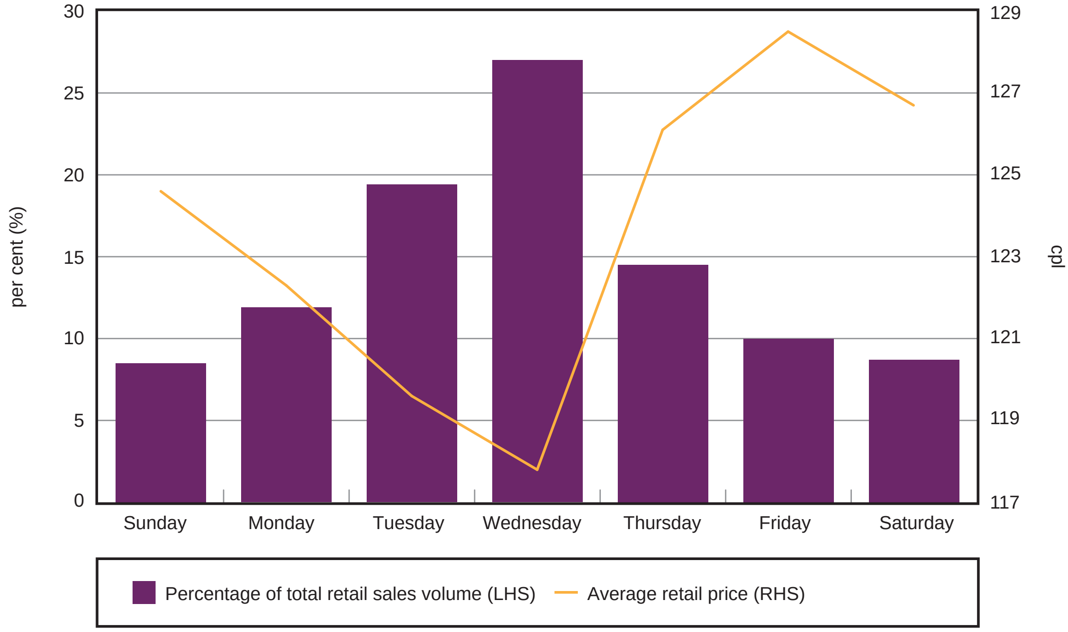
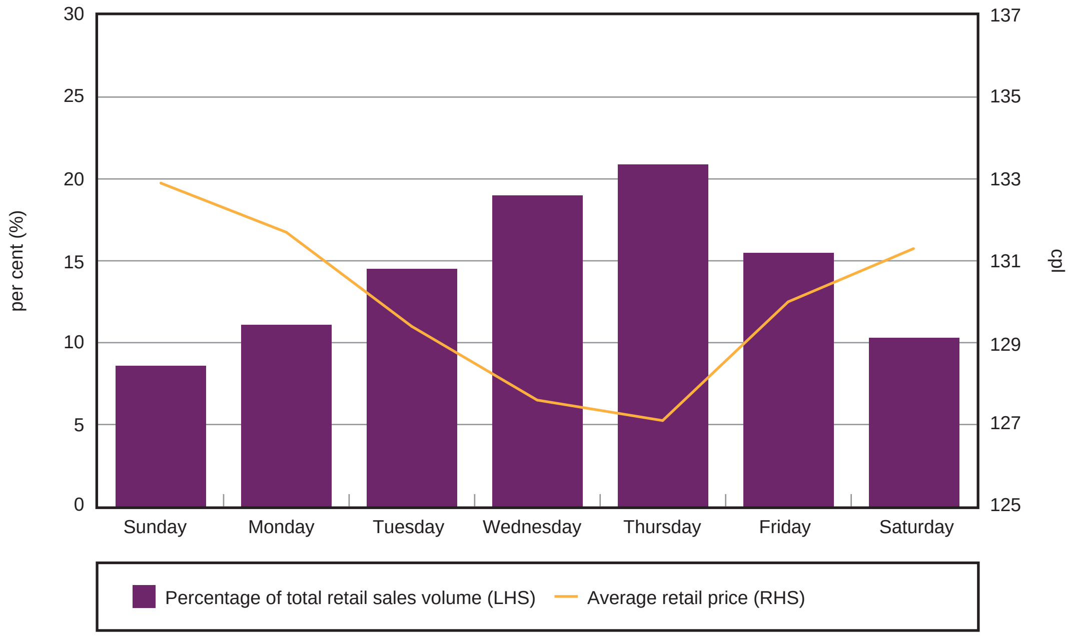


Chart J.8 Average petrol sales volumes and prices by day of the week, Adelaide: 2010–11



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