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Why is Petrol So Expensive?

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You hear your parents talk about it almost daily. It is always the same. *Have you seen the price of petrol?* Perhaps there is also a little reminiscence in the question ... *petrol never used to be so expensive, why is it so expensive now?* I don't have all of the answers to that question, but I am able to shed some light on why petrol is hovering at around $1.30 per litre in Australia.

The price of petrol is related to a number of factors, including the price of crude, the demand for oil, exchange rates and the value of currency, and activities in the northern hemisphere. This article will consider each of these factors, commenting on how these factors interrelate and impact on the price of petrol. In addition, this article will also look at whether the petrol companies are acting honestly, or whether they are contributing to the price of petrol. Finally, this article will provide some practical advice on how your parents (and you!) can find relatively cheap petrol.

Why is crude so expensive?

Crude is essential for making petrol. Without crude, the world would grind to a halt. Crude is made up of a mixture of hydrocarbons, including oil, condensate, gas and LNG. By refining the crude (separating out the different hydrocarbons by heating and distilling) we are able to make many products such as petrol, kerosene, aviation gas, and oil for lubricating engines. When refining, different types of petrol are made, such as unleaded, premium unleaded and ultimate, determined by the octane level (regular petrol is about 95 octane).

The price of crude has increased over 200% in the last five years. This is attributable to a number of factors, which together have pushed the price of a barrel of crude (bbl) to over $70/bbl.

- ***Global supply shortages.*** These shortages generally arise from either a fall in production (such as in Iran due to policy and government changes), or regional instability (such as in Nigeria, where community guerrilla action has disrupted petroleum production from international oil companies' wells).
- ***Political instability and military actions in oil rich, high production areas such as the Middle East (think Iraq and Afghanistan).*** This reduces the supply of crude and makes the supply unreliable. This is a cause of concern because the world's dependence on crude for everyday life means that we require a constant, abundant and reliable source of crude. When there are threats to that supply, the world market starts to panic, and this drives up the price of crude.
- ***Increased demand for crude.*** Sustained economic growth in both developed and developing countries such as China and India has seen global GDP rise by 3.5% in 2006-2007.[1] This means that emerging economies, as well as established countries such as the USA, require more and more oil, a demand growing by about 200,000 bbl/day.[2]
- ***Interruption to supply from hurricanes Katrina and Rita.*** Between these two hurricanes, crude supplies from the Gulf of Mexico were disrupted for more than two months, with two oil rigs still not producing (probably because they are lying at the bottom of the ocean).
- ***Annual plant and refinery closures for routine maintenance.*** This is becoming a huge issue as plants and refineries age, requiring greater maintenance to enable them to continue to operate at capacity. Coupled with this is the problem that few new refineries were built at the end of the 1990's, because oil prices were so low.
- ***Demand for certain products.*** As the economies of China and India grow at an amazing rate of over 10% per annum, these countries need lots of petroleum products to help with this growth, primarily to fuel more cars, factories and supply power needs. These countries also need certain types of petroleum products, such as light crude.
- ***Changes in the Australian and US dollar exchange rate.*** The Australian dollar has become very strong against the United States dollar, and now hovers near an all time high. Yet the price of crude is still high. This is largely because the Australian dollar is still relatively weak against other currencies, such as the British Pound and the Euro. This influences crude prices as crude is purchased in EU, US and Asian markets, usually using Marker Crudes, which are priced in various currencies. An example of this is the Brent Blend which is a blend of high quality crudes from the North Sea, and generally traded on the London Mercantile Exchange.
- ***Production limits set by the Organisation of Petroleum Exporting Coantries (OPEC).*** OPEC is a very powerful cartel of oil countries that determines how much oil is to be exported to countries such as Australia and the US, which need to import oil. As a result of these restrictions, market demand is higher and the price of crude is driven up.

So why is Australian petrol so expensive, and why does the price fluctuate?

We can see some of the reasons why crude has become expensive in the past few years, and therefore why petrol prices have risen. But why is petrol in Australia expensive, given that the price of crude has begun to fall in the last year?

The answer can be found in simple economics, as described above – the reduced availability of crude and the inadequacy of the oil industry's refining capacity to meet growing world demands. But there are also a number of additional factors that are unique to Australia that affect the price of Australian petrol.

Movements in Australian petrol prices follow international benchmarks for *refined* oil rather than crude. Australian petrol prices move in line with the spot price of Singapore Mogas 95, which is refined oil from Singapore, rather than crude oil. Singaporean refined oil is used since Singapore is the closest major petroleum refining and marketing centre to Australia. Furthermore, Australia does not have the refinery capacity or sale volume to warrant it being used as an international benchmark.[3]

The price of Singapore Mogas 95 is variable, since its

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pricing incorporates refinery costs, transport and Asian currency factors. However, as illustrated in Figure 1 below, the price of Singapore Mogas is closely linked to the price of petrol in Australian capital cities. Indeed, this tracking of the price of petrol in Australian capital cities against the Singapore Mogas price is used by the Australian Competition and Consumer Commission (the ACCC) to ensure that price gouging or collusion in the Australian petroleum industry does not occur.[4] In addition, Australia's poor refining capacity as a result of small, old refineries means that Australia cannot compete in the international refining arena. This makes us even more susceptible and reliant on the Asian market, and therefore closely linked to the Singapore Mogas price.

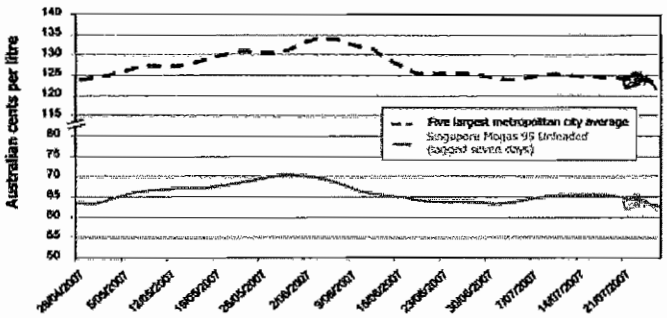


Figure 1: Comparison of the Singapore Mogas 95 price and the five largest metropolitan city petrol price (average)

Source: ACCC, http://www.accc.gov.au/content/index.phtml?itemId =793605

Activities in the northern bemisphere have an impact on the price of crude, and therefore petrol. Next time you are sweating it out in summer, and you hear on the news that there is a cold snap in Europe, be prepared for petrol prices to become the hot topic of conversation at dinner time. The cold northern winters mean that there is an enormous demand for diesel and other oils for heating. This increases demand for refined petroleum products, thus driving the price of petrol up in the marketplace.

High demand in the Asia-Pacific region to fuel fast growing economies has a huge influence on the price of Australian petrol. The fastest developing economies in the world are located on our doorstep, with the major players being China and India. These consumers also demand Singapore Mogas, thereby placing pressure on our source of refined oil, and compete with Australia for refined oil products. Naturally, market forces drive up the price of this essential commodity. The result of this is that the price of Singapore Mogas remains relatively high, and Australia has to pay this higher price.

It is important to remember that petroleum is an internationally traded commodity. As such, external factors contribute to domestic oil prices. But there are domestic factors which also influence domestic oil prices. Major domestic influences include:

- ***Taxes and tariffs.*** The price of petrol only accounts for about 60% of the price we pay at the petrol pump. The rest of the price is made up of: (a) federal taxes and excise (excise around 26%, plus GST of 10%); and (b) additional state taxes added in some states (eg, 3x3 tax in NSW).
- ***Other production costs.*** These include refining, transport, storage, insurance, and wharfage.
- ***Local price cycles.*** There is a regular cycle to petrol prices, particularly in capital cities in Australia. There seems to be a sudden peak in the price of petrol (on a Thursday),[5] when the price soars about 10c per litre. This is then accompanied by a gradual, (over about six days) decrease in the retail price of petrol.[6] In addition, competition between petrol companies can create this 'sawtooth' pricing, and this is currently being investigated by the ACCC.

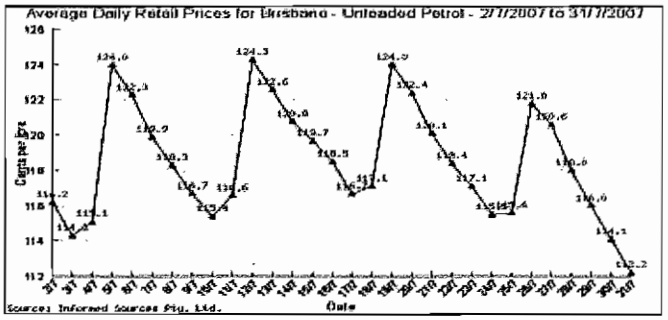


Figure 2: 'Sawtooth' petrol prices in Brisbane, July 2007

Source: ACCC, http://www.accc.gov.au/content/index.phtml/itemId/ 751636/fromItemId/280309

- ***Changing demands for petrol.*** There are daily, weekly and seasonal fluctuations in demand, all of which impact on the price of petrol in the marketplace. In particular, there is lower demand and therefore lower prices at the beginning of the week, and higher demand and therefore higher prices at the weekend.
- ***Price support by major oil companies to franchisees.*** This form of 'price discounting' reduces the price of petrol for some retailers who are supported by the major oil companies, thus triggering 'price wars'. However, this behaviour could possibly be seen as anti-competitive, and is under investigation by the ACCC.[7]
- ***Australian margins by oil companies.*** Petrol price rises in 2005 were the result of increases in crude prices, but part of the rise was the result of higher margins earned by refineries. At present profits from petrol are at an all time high, demonstrated by record profits by oil companies in the last few years. This is the result of higher Singapore refining margins, and efforts to decrease costs. However competition has intensified, with a net result of recent increases in investment for refining and storage infrastructure. The industry has not always enjoyed high profits. In the 1990's there were much lower margins, resulting in minimal investment in infrastructure. This has affected Australia's ability to respond to recent increased demand, since there is limited refinery or storage capacity for petrol in Australia.[8]
- ***Consumer behaviour.*** Consumers actively seek out cheap fuel prices, and in doing so drive strong competition between petrol retailers. This exacerbates the 'sawtooth' price cycle.
- ***Location – city vs country.*** Retail margins (pump price less wholesale price) are typically higher in the country compared with major capital cities, since there are lower fuel volumes and shop sales over which to spread service station operating costs. In addition, freight and haulage is typically 1.5-3c per litre greater for country than city delivery. Distribution costs may be significantly higher for

rural and remote areas, since fuel must be stored in depots and double-handled, rather than being delivered directly from coastal terminals. On average, the net wholesale price is lower in capital cities due to greater competition in more heavily populated urban areas, but the gap has been narrowing over time due to increased competition in country areas. Interestingly, there have been a number of accusations of price gouging in rural areas, and the ACCC is currently investigating these allegations, with a full public enquiry due to be finalised by December 2007.

Is there collusion in the petroleum industry?

The answer to the question of oil company collusion differs, depending on who you speak with. There is a general accusation that shopper loyalties give Caltex and Shell large market share ... but do they fix the price? There have been some arguments in the media that shopper dockets do nothing more than push up the price of fuel, since they involve market control by major oil companies.[9]

However, it must be remembered that the 'shopper' petrol stations comprise only one-sixth of all petrol stations in Australia.[10] As such, it is unlikely that they could control the market, although the Victorian Motor Traders Association argues that the majors control the price of petrol through all of their retail outlets combined, not just the supermarket service stations. This scenario is feasible, given that the majority of petrol retailers in Australia are tied to international oil companies either as direct ownership or franchisee.

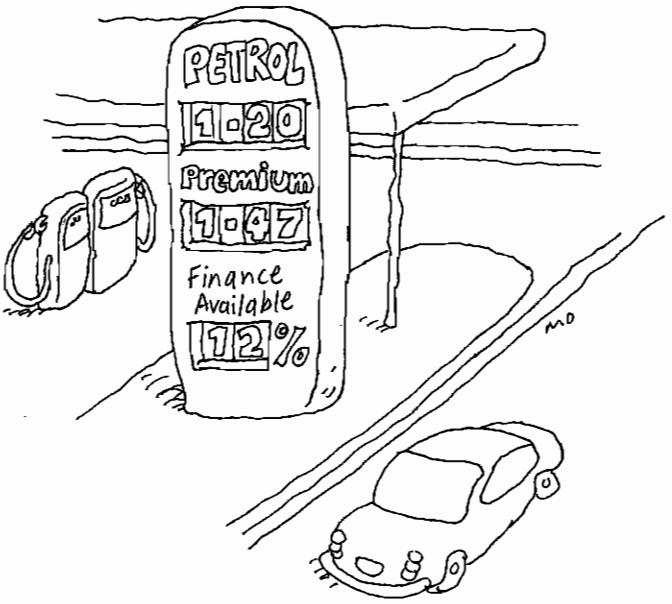
Perhaps the most suspicious feature of the Australian petrol market is the apparent 'same price' for petrol. Is it evidence of collusion, or just a tight market? The ACCC investigation of parallel price movements looked at petrol pricing, and found that there is intense competition but no apparent evidence of gouging or collusion.[11] So officially there has been no collusion between oil companies.

What is the Australian Government doing about high petrol prices?

In the 2006 Senate Report from the Standing Committee on Economics, *Petrol Prices in Australia*,[12] the Australian Government considered evidence from the public, companies and other relevant parties in relation to petrol prices. The report suggested that a number of options could be utilised to establish and maintain relatively stable and low petrol prices in Australia. Some of these measures included:[13]

- Monitor the petrol market through ACCC.
- Facilitate an understanding of petrol prices in the community.
- Educate the public about why price fluctuations occur.
- Allow changes to prices only once every 24 hours.
- Limit price increases to a certain amount each day.
- Regulate petroleum prices.
- Reintroduce wholesale petroleum price regulation (abolished in 1998).
- Allow terminal gate pricing, with open access and no price discounting.

The report also considered government intervention in the petrol market, but noted that intervention can have unwanted and unintended consequences, and may even lead to higher average daily prices overall than currently occurring.[14]



How to get cheaper fuel

The best way to buy cheaper fuel is to be aware of the weekly petrol cycle, as this can save you up to 10c per litre. If possible, avoid buying petrol on Thursdays, as it is the most expensive time to buy in the weekly cycle. Try to buy on Tuesday mornings, as the ACCC has noted that this is the cheapest time to buy.[15]

In addition, arm yourself with knowledge. There are a number of excellent petrol price watching sites on the internet. These sites constantly monitor the price of petrol in capital cities and some regional centres, allowing you to locate cheap petrol in your area. An excellent example of such an organisation is 'Fuelwatch' (found at www.fuelwatch.com.au).

And what about those shopper loyalty coupons? They are fine to use if the price of the petrol prior to the discount is comparable to other petrol stations in the area, and it is a fuel station that you would generally use anyway. Otherwise, the recycling bin is the best place for those dockets.

Is petrol really that expensive anyway?

Whether the price of petrol really is 'expensive' depends on where you live in the world. In Australia, petrol has risen from about 89c per litre a little over 4 years ago to more than $1.30 per litre in some areas of Australia. To us that is expensive. Yet by global standards, Australia rates fourth cheapest in the world.[16]

But what if you lived in Norway? The good news is that the price of petrol has not risen in Norway in three years. The bad news is that petrol is priced at a constant $2.00-$2.20 per litre. Now that is expensive! But not as bad as Turkey, where petrol is priced at over $2.60 per litre.

So when your parents are lamenting how expensive petrol is, you can now set them straight! Australia has some of the cheapest petrol in the world, and there are ways of keeping your costs down ... perhaps a 'family outing' to the petrol station every Tuesday?

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[2] British Petroleum, *Statistical Review of World Energy 2007* – available at http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2007/STAGING/local_assets/downloads/pdf/statistical_review_of_world_energy_full_report_2007.pdf (accessed 10 August 2007).

[3] Australia only consumes about 2 bbl per person per day, compared to an average US consumption of 24.2 bbl per person per day: *Statistical Review of World Energy 2007*, ibid.

[4] ACCC, *Comparison of Australian Retail Price Movements with the Singapore Mogas 95* (2007) – available at http://www.accc.gov.au/content/index.phtml/itemId/793605/fromItemId/11938 (accessed 11 August 2007).

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[6] Ibid.

[7] ACCC, *Inquiry into the Price of Unleaded Petrol* (2007) – available at http://www.accc.gov.au/content/index.phtml/itemId/790921/fromItemId/11938 (accessed 11 August 2007).

[8] Caltex, *Pricing Petrol: Plain Facts* (2006) – available at http://www.caltex.com.au/pricing_pla.asp (accessed 11 August 2007).

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[10] Parliament of Australia, Senate, *Petrol Prices in Australia* (2006) 35 – available at http://www.aph.gov.au/Senate/committee/economics_ctte/petrol_price/report/c04.htm (accessed 11 August 2007).

[11] ACCC, *Inquiry into the Price of Petrol in Australia* (2006).

[12] Above n 10.

[13] Ibid.

[14] Ibid.

[15] Above n 5.

[16] Above n 10.

Stay informed:

Keep yourself up-to-date on petrol pricing issues via the internet. Useful websites include:

- ***ACCC:*** http://www.acc.gov.au and http://www.accc.gov.au/content/index.phtml?itemId=793605
- ***Caltex:*** http://www.caltex.com.au/pricing_pla.asp
- ***Fuelwatch:*** www.fuelwatch.com.au
- ***Senate Report:*** http://www.aph.gov.au/Senate/committee/economics_ctte/petrol_price/report/index.htm