Petrol price cycles in Australia

December 2018
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Key Messages

Petrol price cycles are frustrating for motorists, but they can be used to buy petrol below cost and save money

Price cycles (i.e. the sudden, sharp increases in the price of petrol, followed by a gradual decline) are a prominent, and longstanding, feature of retail petrol prices in Australia’s five largest cities (i.e. Sydney, Melbourne, Brisbane, Adelaide and Perth). They occur among all the main grades of petrol, but not for diesel and automotive LPG prices.

Price cycles are frustrating for motorists, especially when prices increase quickly and by significant amounts. However, price cycles do provide opportunities for motorists to buy at relatively low prices towards the bottom (or trough) of the cycle. These prices are often below wholesale cost, as reflected by published terminal gate prices (TGPs). While not all motorists have discretion about the timing of their petrol purchases, many do.

The following chart shows petrol price cycles in Sydney in the first nine months of 2018.

Daily average retail petrol prices and estimated average costs of supplying petrol in Sydney: 1 January to 30 September 2018

The chart shows that price increases in each cycle are substantial. The numbers at the top of each cycle (the peak) show the average price increase in each cycle, which were up to 21.6 cents per litre (cpl). As these figures are based on daily average prices, the price increases at individual retail sites may be significantly more, up to 30 cpl according to ACCC analysis.

The chart also shows that once average prices reached the peak of the price cycle, they often decreased by as much as, or more, than they increased.

The red band in the chart presents a range of the estimated average costs faced by retailers in supplying petrol. This includes the wholesale cost of petrol (as reflected by published TGPs) as well as freight and other retail operating costs (such as branding, rent, labour and utility costs). The chart

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1 In this report, references to petrol are to regular unleaded petrol (RULP) unless otherwise specified. From 1 January 2014, the ACCC has used E10 (i.e. RULP with up to 10 per cent ethanol) prices instead of RULP prices in Sydney. As a result of the ethanol mandate in NSW, sales of E10 are greater than sales of RULP in Sydney. All prices in this report are nominal prices.
shows that when prices are at the peaks, they are well above these estimated average costs, but for a lot of the cycle they are at or below them.

In the first nine months of 2018, daily average prices were at, or below, estimated average supply costs around one third to half of the time in Sydney, Adelaide and Perth. In Melbourne and Brisbane they were at or below estimated average supply costs between around 20 and 40 per cent of the time.

The ACCC encourages motorists to maximise their opportunities throughout the price cycle and purchase petrol at the lowest possible price. This report describes the opportunities available for motorists and highlights the potential savings they can make.

**Not all retail sites increase their prices at the same time**

It is important to note that not all retail sites increase prices at the same time. Typically, during a price cycle, a small number of retail sites increase prices first, and others follow over several days. This provides opportunities for motorists to notice prices beginning to increase, seek out lower prices at other retail sites and fill up.

Longer cycles in the eastern capital cities (i.e. Sydney, Melbourne, Brisbane and Adelaide) in recent years have resulted in longer delays between the trough price and the peak price. It takes up to a week for prices across a market to increase from the trough price to the peak price, meaning although some retail sites increase prices first, others maintain lower prices for a number of days. This contrasts with 2009, when average prices moved from the trough price to the peak price across a market in one or two days.

This feature of price cycles provides more time for motorists to notice that prices are starting to increase, and then to seek out lower priced retail sites that are yet to increase their prices.

Analysis of the price cycle that occurred in Sydney in June 2018 indicates the time it took for retail sites across the market to reach the peak price. This is shown in the following chart.

**Proportion of retail sites at their peak price in each day of the price increase phase of the price cycle in Sydney in June 2018**

![Proportion of retail sites](chart)

Source: ACCC calculations based on FuelCheck data.
Note: The chart uses cumulative proportions and does not account for a potential small decrease in price post-peak for some retail sites.

Daily average prices in Sydney reached a trough on Tuesday 12 June and a peak on Monday 18 June. The chart shows that the majority of retail sites had not increased their prices to a peak price two days after 12 June (when prices started to increase at a small number of retail sites). Only around half of retail sites in Sydney had increased to a peak price after three days, and it took six days after prices started to increase for 94 per cent of retail sites to reach a peak price.
Motorists in the eastern capital cities can take advantage of the longer price cycles to fill up at lower priced retail sites

Analysis of the location of the lower priced retail sites in Sydney during the price increase phase of the cycle in June 2018 indicates that lower prices were available to motorists in most geographical areas of Sydney.

The following map plots retail sites across Sydney on 12 June, when average prices across the market were at the trough of the cycle. The overwhelming majority of retail sites had a low price (these are shown in blue). The few retail sites that had increased their prices are shown in red.

Day of the trough of the June 2018 Sydney price cycle—Tuesday 12 June 2018

The following map plots the same retail sites on Friday 15 June, three days after average prices started to increase, showing that nearly half of retail sites had not yet increased their prices. These sites are geographically dispersed.

While a significant number of these sites were located in the south western suburbs of Sydney, the map shows that many of the lower priced retail sites were scattered throughout the rest of Sydney, meaning motorists across the city could access lower petrol prices by shopping around.
Day three of the June 2018 Sydney price cycle increase—Friday 15 June 2018

By Monday 18 June, six days after average prices started to increase, most retail sites had moved to a peak price. However, there were still a small number of retail sites that had not. This is shown in the following map.
Overall, the maps highlight that motorists in Sydney generally have up to six days after prices start to increase (and potentially longer depending on particular locations) to shop around to seek out lower priced retail sites.

For the other eastern capital cities (Melbourne, Brisbane and Adelaide), the time for average prices to increase from a trough to a peak has also increased significantly; from one to two days in 2009 to six or seven days in 2017. As such, similar opportunities are likely to be available to motorists in Melbourne, Brisbane and Adelaide.

The ACCC estimates that motorists in Sydney who take advantage of the delays in price movements from the trough to the peak, and regularly fill up at the trough price of the cycle rather than at the peak price, could save themselves $175 per year. This calculation is based on a motorist that fills up a 50 litre tank once a week and, on 14 of those occasions (i.e. the number of price cycles in Sydney in 2017–18), buys petrol at the trough price rather than the peak price (i.e. 25 cpl lower). Motorists in Melbourne and Brisbane could save $150 per year and motorists in Adelaide could save $200 per year.²

Motorists in Perth can take advantage of weekly price cycles, with prices consistently the lowest on a Monday

In contrast to the eastern capital cities, Perth's price cycles have occurred on a weekly basis since 2011, making them highly predictable for motorists.

Prices are consistently the lowest on a Monday and usually highest on a Tuesday. The consistency of price cycles in Perth has likely been influenced by the WA FuelWatch scheme, which has been in operation since 2001.

² In Melbourne and Brisbane there were 12 price cycles in 2017–18 and 16 in Adelaide.
This scheme requires petrol retailers to notify the WA Government of the next day’s retail price by 2 pm each day. Petrol retailers must sell petrol at this price for a 24-hour period from 6 am on the following morning. The petrol price at each retail site is publicly available on the FuelWatch website. Therefore, petrol prices in Perth can only change once per day and petrol retailers must commit to their prices a day in advance.

The high degree of certainty in Perth’s price cycles provides motorists with a weekly opportunity to buy petrol at the lowest prices. In 2016, around one quarter of petrol sales occurred on the lowest priced day (Monday). At the same time, around 10 per cent of sales occurred on the highest priced day (Tuesday), suggesting that many motorists in Perth adjust their purchases to the cheapest day. It also suggests that more motorists in Perth could take advantage of ‘cheap Mondays’.

The ACCC estimates that motorists in Perth, who fill up once a week, and always on the cheapest day of each week, could save themselves around $520 a year, compared with always filling up on the most expensive day.

Throughout the price cycle, motorists can make significant savings by seeking out lower priced retail sites

Not all petrol retail sites have the same prices. Motorists in the eastern capital cities can make savings across the price cycle by seeking out lower priced retail sites.

Analysis of the Sydney petrol market in the first half of 2018 shows that in addition to the considerable variation in price between retail sites as prices increase from trough to peak, there is also a degree of price dispersion between retail sites once prices have reached a peak and are decreasing.

This is consistent with conclusions in the ACCC report *Petrol prices are not the same: petrol prices by major retailer in 2017* (released in May 2018), which showed that average petrol prices varied significantly between major retailers. This was particularly the case in Sydney.

The following chart shows the difference between each major retailer’s annual average E10 price and the market annual average E10 price in Sydney in 2017. There was a 9.5 cpl range between the highest and lowest average priced major retailer in Sydney.

**Difference between each major retailer’s annual average E10 price and the market annual average E10 price in Sydney in 2017**

Source: ACCC calculations based on Informed Sources data and information provided by some major retailers.
Notes: The number in brackets for each major retailer is the proportion of retail sites in the city for that retailer.
      The proportions of retail sites shown in the chart do not total 100 per cent due to rounding.
      The annual average Woolworths price was equal to the market average price.
      BP Jasbe is a BP-branded independent chain.
The daily average petrol price dispersion between relatively high- and low-priced retail sites in Sydney in June 2018 is shown in the following chart. It excludes the top 25 per cent most-expensive retail sites and the cheapest 25 per cent of retail sites, to provide an indication of the general price range available to most motorists in Sydney.

General daily average petrol price dispersion between retail sites in Sydney in June 2018

The range in prices across this subset of retail sites in Sydney was between 6 cpl and 8 cpl for most of June 2018. During the price increase phase of the price cycle (between 12 and 18 June) the price range was as high as 25 cpl. Excluding the seven days of the price increase phase, the average range between the highest and lowest prices in Sydney in June 2018 was around 7 cpl.

The range of prices across Sydney shows that motorists can save money by shopping around to find lower priced retail sites outside the price increase phase.

As noted earlier, motorists in the eastern capital cities could make savings by buying at the trough price instead of the peak price for every price cycle.

Motorists in Sydney who shop around could make additional savings of around 7 cpl every time they filled up in the other weeks during the year. From doing so, the ACCC estimates that motorists in Sydney could make further savings of around $130 per year. This calculation is based on a motorist that fills up a 50 litre tank once a week, saving 7 cpl each week for the 38 weeks in Sydney in 2017–18 that did not have a price cycle peak. In Melbourne and Brisbane, further savings could be $100 per year, and $90 per year in Adelaide.³

By taking advantage of the price cycles savings can be substantial

The potential savings can add up. The ACCC estimates that motorists who both time their purchases at the trough of the cycle, as well as seek out lower priced retail sites over the rest of the cycle, could potentially save around $300 per year in Sydney and Adelaide, and around $250 per year in Melbourne and Brisbane.

Assuming that one third of motorists fill up once a week, that similar savings are available for all petrol grades, and that all of these motorists took advantage of the above savings, the total potential savings in Sydney would be around $260 million per year. Savings in the other eastern capital cities per year would be: around $220 million in Melbourne, around $105 million in Brisbane and around $75 million in Adelaide.⁴

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³ On the assumption that the general dispersion between the highest and lowest prices in Sydney may be larger than in the other cities, the ACCC has assumed an average price dispersion of 5 cpl in the savings calculations of the other cities.

⁴ The estimated total savings in Perth if all motorists purchased petrol at the trough price rather than the peak price in every price cycle would be around $210 million per year.
The potential savings for motorists that fill up more than once a week would be greater, and motorists that fill up less frequently would save a lower amount. However, these illustrative savings indicate that motorists can use price cycles to their advantage to save money on their petrol purchases.

The ACCC website shows motorists the best times to buy, and fuel price websites and apps show the best places to buy

Free fuel price websites and apps enable motorists to buy petrol at lower prices.

The ACCC has been reporting on petrol price cycles since 2001. The ACCC website includes up to date price charts, and information on the characteristics of the petrol price cycles, in Sydney, Melbourne, Brisbane, Adelaide and Perth. The website also includes buying tips, which are updated three times a week, that provide guidance to motorists to help them decide when to buy petrol. Some other fuel price websites and apps also provide information to motorists to help them decide when is the best time to buy petrol.

A range of fuel price websites and apps can assist motorists to identify petrol prices at individual retail sites and decide where to buy. Some of the websites and apps available around Australia include:

- the NSW Government FuelCheck scheme and the WA Government FuelWatch scheme
- motoring organisations’ fuel price websites and apps
- commercial services such as the MotorMouth website and app, and apps operated by GasBuddy, 7-Eleven and Woolworths.

To further take advantage of low prices available through the price cycle, motorists can also utilise offers by some petrol retailers that guarantee prices for a period. For example, the 7-Eleven app provides motorists with near real-time fuel price data at 7-Eleven retail sites and allows registered users to ‘lock in’ 7-Eleven’s best local price and then redeem it at any 7-Eleven retail site Australia-wide within seven days.

While there is a range of fuel price websites and apps available to motorists, the ACCC notes that motorists should be aware that some are more comprehensive and timely than others, and not all of them include prices for the lowest-priced retail sites. The government schemes are the most comprehensive and up-to-date, whereas the commercial services (such as MotorMouth and GasBuddy) may not include all of the cheaper retail sites.

In addition to the NSW and WA Government schemes, in May 2018 the Queensland Government announced a two-year trial of a fuel price reporting scheme. This commenced on 3 December 2018, and provides motorists in Brisbane with comprehensive petrol price information.

Price cycles are the result of the pricing behaviour of petrol retailers

Petrol price cycles in Australia are not driven by movements in underlying costs or wholesale prices. Price cycles are solely due to the pricing decisions made by petrol retailers, that are aiming to maximise profits. The price increase phase of the cycle begins when prices in the market have reached their low point and an initial retailer (i.e. the price ‘leader’) increases prices to improve their margins. This is generally initiated by one or two major retailers, which increase prices substantially at a small number of retail sites. As other retailers respond to this price increase with similar price increases, the increased price then spreads across the majority of retail sites within a location.

The price decrease phase involves a gradual process of retail sites following, matching or undercutting each other’s prices in local areas by small amounts. This occurs as retailers have an incentive to discount or match lower prices in order to increase sales or prevent a loss of sales.
Variability in retailer’s pricing strategies throughout the price cycle means prices across a location can vary significantly. Some retailers may delay increasing prices at certain retail sites to capture higher sales, and some retailers may seek to reduce prices more aggressively at particular retail sites to win sales from local competitors.

Case study: Geraldton, WA

Geraldton in WA provides a clear example of the influence of a single retailer’s pricing behaviour on other retailers. Geraldton is one of the few regional locations in Australia that has a petrol price cycle. Price cycles in Geraldton started when Coles Express entered the market in April 2016.

Analysis of prices at each retail site in Geraldton shows that when Coles Express opened a retail site in Geraldton it adopted the same pricing strategy it had at all of its 53 retail sites in Perth. Subsequently, other retail sites in Geraldton, but not all, appear to have responded to prices at the Coles Express retail site by adjusting their pricing strategies to a broadly similar cyclical pattern. By January 2017, five retail sites in Geraldton had adopted a similar strategy. By May 2018 eight of the 11 retail sites selling petrol followed the weekly price cycle.

Price cycles, in and of themselves, are not illegal

Sometimes competing businesses sell goods or services at the same or similar price levels so that the price fluctuations of one petrol retailer are matched by others. In general, independent decisions by petrol retailers to adjust prices throughout price cycles reflect this process, and are not usually the result of collusive behaviour that would raise concerns under the Competition and Consumer Act 2010 (CCA).

In November 2017, the CCA was amended to prohibit a person from engaging in a ‘concerted practice’ that substantially lessens competition. These changes broaden the net for capturing anti-competitive conduct. The concept of a ‘concerted practice’ involves communication or cooperative behaviour that does not require all of the elements of an ‘arrangement or understanding’ to be reached between parties, but does involve more than a person independently responding to market conditions. The concerted practice provisions are yet to be tested in court.

If, when setting prices, petrol retailers are doing no more than responding quickly to each other’s published prices, this is likely to be parallel pricing from each petrol retailer’s independent response to market conditions. The ACCC is currently of the view that this is not a concerted practice in breach of the CCA.
There may be occasions where anomalies in price cycles will trigger an investigation into whether the pricing outcome resulted from an agreement or concerted practice. The ACCC’s monitoring of petrol prices across Australia allows the ACCC to consider such anomalies.

The communication or exchange of price (or other market sensitive) information between competitors can be anti-competitive. The ACCC has previously considered how elements of the Australian retail petrol market operate in this context under Part IV of the CCA. For example, in August 2014 the ACCC took court action against Informed Sources and several major petrol retailers that subscribed to Informed Sources’ price exchange services (BP, Caltex, Coles Express, Woolworths and 7-Eleven).

The ACCC resolved these proceedings by accepting court enforceable undertakings from Informed Sources and other market participants. The undertakings provide for greater transparency of petrol price information by making the information available to motorists at the same time the petrol retailers receive it, which has in turn helped to promote fuel price websites and apps that motorists can use to shop around.

### Price cycles have changed significantly in the eastern capital cities over the last 10 years

In the eastern capital cities the duration of petrol price cycles (i.e. the length of time between one trough and the next trough) has increased significantly over the last 10 years. In 2007, price cycles generally occurred on a weekly basis, providing an opportunity for motorists to fill up regularly at the lowest point in the cycle. ‘Cheap Tuesdays’ were a phenomenon in 2007, and by 2009 Wednesday had become the cheapest day of the week.

Over time price cycles in these capital cities have lengthened. In 2017, the average duration of price cycles ranged from around four to five weeks. Similarly, the number of price cycles that occurred each year in these cities decreased significantly, from 52 price cycles in 2009 (one each week) to between 10 and 14 price cycles in 2017 (depending on the city). These changes in price cycles have been largely influenced by changing pricing behaviour by petrol retailers.

The ACCC’s analysis indicates that, compared with the weekly cycles in 2009, the increased duration of price cycles over time has made it more difficult for motorists to buy petrol consistently at the lowest point of the cycle.

In addition to changes in the duration and number of price cycles in the five largest cities, the magnitude of the price increase has also changed over time. In 2009, the average price cycle increase ranged from around 8 cpl to 14 cpl depending on the city (or between around 7 per cent and 11 per cent of the annual average price). By 2017, the average price cycle increase ranged from around 18 cpl to 24 cpl (between around 14 per cent and 19 per cent of the annual average price).

### Price cycles occur in a small number of locations outside the five largest capital cities

The ACCC monitors petrol prices in all capital cities and over 190 regional locations across Australia. Analysis of price movements in all of these locations in 2017–18 indicates that, apart from the price cycles in the five largest cities, there were 13 locations that had price cycles. These were:

- Geelong, Koo Wee Rup, Wallan and Seymour in Victoria
- the Gold Coast, Sunshine Coast, Caboolture and Ipswich in Queensland
- Central Coast, Wollongong and Tweed Heads South in NSW
- Gawler in SA
- Geraldton in WA.

In most cases, the locations with price cycles in 2017-18 are close to the five largest cities, which also have price cycles. Motorists in those locations can use the information about price cycles in the five largest cities to help them decide when to buy petrol.
Background to ACCC monitoring

On 20 December 2017, the then Treasurer issued a new Direction to the ACCC to monitor the prices, costs and profits relating to the supply of petroleum products and related services in Australia. The Direction, issued under s. 95ZE of the CCA, took effect from that date and lasts for two years.

The ACCC’s role is to assist consumers to navigate this complex industry. Under the new Direction, the ACCC produces quarterly petrol monitoring reports focusing on price movements in the capital cities and over 190 regional locations across Australia. It also produces industry reports that focus on particular aspects of consumer interest in the fuel market in relation to prices, costs and profits. This is the third industry report under the new Direction.
1. **Price cycles occur in Australia’s five largest cities**

Petrol price cycles have been a longstanding feature of retail petrol prices in Australia’s five largest cities (i.e. Sydney, Melbourne, Brisbane, Adelaide and Perth).

Petrol price cycles typically exhibit a ‘sawtooth’ pattern, where prices increase sharply over a short period and subsequently decrease gradually over a longer period of time. Then the process starts again.

The ACCC’s analysis of the petrol industry over many years has shown that the overall level of retail petrol prices in Australia is primarily determined by movements in international refined petrol prices.\(^5\) However, the short-term movement of retail petrol prices through price cycles is a result of the pricing policies of petrol retailers.

The ACCC has previously noted that some general features of locations with regular petrol price cycles include: a large number of petrol retailers within a location, lower market concentration (i.e. there are a number of different petrol retailers), and a large number of independent petrol retailers.\(^6\) This combination of factors typically occurs in high population areas, such as the five largest cities.

This chapter describes the elements of a petrol price cycle, and the trends in recent price cycles in the five largest cities.

### 1.1 Definition of a price cycle

The ACCC defines a petrol price cycle as a movement in price from a low point (or trough price) to a high point (or peak price), and then a movement back to a subsequent trough price. A price cycle has occurred when:

- the increase in price from the trough to the peak is 3 per cent or more of the trough price
- the decrease in price to the subsequent trough is also 3 per cent or more of the initial trough price.

A ‘price cycle increase’ is the increase in price from the first trough to the peak. The ‘duration’ of the price cycle is the number of days from the first trough to the second trough. Chart 1.1 shows daily average retail petrol prices in Melbourne between 7 June and 24 July 2018 and describes the elements of a typical petrol price cycle.

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1.2 Recent price cycles in the five largest cities

Charts 1.2 to 1.7 show daily average retail petrol prices in each of the five largest cities from 1 January to 30 September 2018. The numbers at the peaks represent the price cycle increase in cents per litre (cpl) from the preceding trough. Appendix A presents similar charts for each city in 2017.

The charts show that:

- price cycles in Sydney, Melbourne, Brisbane and Adelaide (subsequently referred to as the ‘eastern capital cities’) generally occurred over a number of weeks and the pattern of the price cycles in these cities, while similar, was not the same
- price cycles in Perth moved in a regular and predictable weekly pattern
- the increases and decreases in prices throughout the price cycles were substantial.

The charts also show the daily average terminal gate price (TGP) for each city. TGPs are the price 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. Although many wholesale transactions occur at prices below the TGP, it can be regarded as an indicative wholesale price for petrol.

As the charts illustrate, petrol price cycles occur at the retail level, and are not a feature of wholesale petrol prices. The charts also show that at the peaks of the cycles there is usually a significant difference between average retail prices and TGPs, while at the troughs of the cycles there are often days when average retail prices have decreased to levels around, or occasionally below, average TGPs.

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7 There are two charts for Perth to enable the price increases each week to be clearly seen.
Chart 1.2: Daily average retail petrol prices and daily average terminal gate prices in Sydney: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil and Viva Energy.
Note: E10 prices are used in Sydney.

Chart 1.3: Daily average retail petrol prices and daily average terminal gate prices in Melbourne: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil and Viva Energy.
Chart 1.4: Daily average retail petrol prices and daily average terminal gate prices in Brisbane: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil and Viva Energy.

Chart 1.5: Daily average retail petrol prices and daily average terminal gate prices in Adelaide: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil and Viva Energy.
Chart 1.6: Daily average retail petrol prices and daily average terminal gate prices in Perth: 1 January to 30 May 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil, Viva Energy and FuelWatch.

Chart 1.7: Daily average retail petrol prices and daily average terminal gate prices in Perth: 1 June to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil, Viva Energy and FuelWatch.
1.3 Price cycles occur in all grades of petrol

Price cycles occur among all of the main grades of petrol (RULP, E10, premium unleaded petrol (PULP) 95 and PULP 98) and they move in similar patterns. This is illustrated in chart 1.8, which shows the daily average prices of E10, RULP, PULP 95 and PULP 98 in Sydney from 1 January to 30 September 2018.

Chart 1.8: Daily average retail prices of E10, RULP, PULP 95 and PULP 98 in Sydney: 1 January to 30 September 2018

Source: ACCC calculations based on FUELtrac data.
1.4 Price cycles do not occur for diesel and automotive LPG

Unlike petrol prices, prices for diesel and automotive liquefied petroleum gas (LPG) do not move in cycles. Chart 1.9 shows daily average retail prices for diesel and automotive LPG in Melbourne from 1 January to 30 September 2018.

Chart 1.9: Daily average retail diesel prices and daily average retail automotive LPG prices in Melbourne: 1 January to 30 September 2018

Diesel prices may not have price cycles because a large proportion of sales are to commercial users who purchase diesel on a contractual basis. According to the Australian Institute of Petroleum (AIP), only around 25 per cent of the diesel used in Australia is sold through retail outlets, and much of that is sold to account customers with very little sold to private customers. In the case of automotive LPG, it is a much smaller market than either petrol or diesel.

Source: ACCC calculations based on FUELtrac data.

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1.5 Price cycles do not occur in the smaller capital cities

Unlike the larger capital cities, petrol prices in the smaller capital cities (i.e. Canberra, Hobart and Darwin) do not move in cycles. This is shown in charts 1.10 to 1.12.9

Chart 1.10: Daily average retail petrol prices and daily average terminal gate prices in Canberra: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac, BP, Caltex, Mobil and Viva Energy.
Note: Sydney TGPs are shown.

Chart 1.11: Daily average retail petrol prices and daily average terminal gate prices in Hobart: 1 January to 30 September 2018

Source: ACCC calculations based on FUELtrac and AIP data.

9 The small movements in daily average retail prices in these charts are likely to be due to variations in the number of retail sites included in the data collection each day, rather than reflect actual changes in retail prices.
While price increases during the cycle are frustrating for motorists, as prices decrease consumers can buy petrol at or below average costs

Charts 1.2 to 1.7 illustrate the relationship between daily average retail prices and average wholesale prices (as reflected by TGPs) in the five largest cities. They show that at the peaks of the cycles retail prices are well above TGPs, but at the troughs of the cycles retail prices can be very close to TGPs.

The wholesale price of petrol is not the only expense incurred by retailers in supplying petrol. In addition to the cost of petrol, there are other retail operating costs (including freight, branding, rent, labour and utility costs).

It is important to note there are a variety of business models and ownership structures operating in the retail petrol market, which means that there are differing pricing strategies among retailers, as well as differing capital structures and cost bases.

By drawing on previous findings on the level of retail operating costs among petrol retailers, the ACCC has estimated a broad range of indicative average costs faced by retailers in supplying petrol, which includes the wholesale cost of petrol as well as other retail operating costs. Estimating a range of costs reflects the fact that different retailers and retail sites face higher or lower costs than others.

Charts 1.13 to 1.17 show the estimated average cost ranges, along with daily average retail prices, in each of the five largest cities in the first nine months of 2018. The range may not capture the actual costs of every retailer and every retail site in each market, but can be considered as a broadly indicative measure of the costs of supplying petrol. It does not include a margin for profit.

The charts generally indicate that at the peaks of the price cycles, average retail prices are well above average costs, but as retail prices approach the troughs of the cycles they often decrease to levels at or below average costs.

Overall, this suggests that during the price cycle, motorists have opportunities to buy petrol at relatively low prices if they buy at the right times. These opportunities are available for significant periods. Across the five largest cities:

- in Sydney, Adelaide and Perth daily average retail prices were at or below estimated average costs around a third to half of the time
- in Melbourne and Brisbane daily average prices were at or below estimated average costs between around 20 to 40 per cent of the time.

The ACCC encourages motorists to maximise the opportunities available throughout the price cycle and time their petrol purchases at the lowest possible prices.

**Chart 1.13: Daily average retail petrol prices and estimated average costs of supplying petrol in Sydney: 1 January to 30 September 2018**

Source: ACCC calculations based on data from FUELtrac and a range of petrol retailers.

Note: E10 prices are used in Sydney.
Chart 1.14: Daily average retail petrol prices and estimated average costs of supplying petrol in Melbourne: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac and a range of petrol retailers.

Chart 1.15: Daily average retail petrol prices and estimated average costs of supplying petrol in Brisbane: 1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac and a range of petrol retailers.
Chart 1.16: Daily average retail petrol prices and estimated average costs of supplying petrol in Adelaide:
1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac and a range of petrol retailers.

Chart 1.17: Daily average retail petrol prices and estimated average costs of supplying petrol in Perth:
1 January to 30 September 2018

Source: ACCC calculations based on data from FUELtrac and a range of petrol retailers.
1.7 The ACCC has a long history of reporting on price cycles and providing information to motorists

In 2001, the ACCC prepared a report on petrol price cycles, following a request from the Government.\(^{11}\) The ACCC’s 2007 petrol inquiry report also included a significant amount of data and analysis on price cycles.\(^{12}\) Since being directed to monitor prices, costs and profits in the Australian petroleum industry in December 2007, the ACCC has regularly reported on petrol price cycles in its subsequent annual and quarterly reports.

One of the recommendations of the ACCC’s 2001 report was that there should be a consumer awareness initiative to increase consumers’ understanding of price cycles, and to enable consumers to time their purchases so that they can buy petrol at times when petrol prices are relatively low.\(^{13}\)

As a result, since December 2002, the ACCC has provided data on its website on price cycles in Sydney, Melbourne, Brisbane, Adelaide and Perth.\(^{14}\) Currently, information for each city is available on:
- average retail petrol prices in the past 45 days in chart form
- the days when prices were at the trough and peak in the previous five price cycles and the number of days between them
- the duration of the previous five price cycles.

In recent years, the price cycle information on the ACCC website has been expanded to include buying tips, which are updated three times a week to provide more guidance to consumers to help them decide when to buy petrol. This webpage is routinely one of the most accessed pages on the ACCC website.\(^{15}\)

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12 ACCC, Petrol prices and Australian consumers—report of the ACCC inquiry into the price of unleaded petrol.
13 ACCC, Reducing fuel price variability, p. 1.
15 For example, see ACCC, Report on the Australian petroleum market - June quarter 2018, p. 12.
Petrol price cycles have been a feature of retail markets in Australia’s five largest cities for many years. There are a variety of explanations for price cycles, which were discussed in detail in the ACCC’s 2007 petrol inquiry report. Retail petrol price cycles in Australia are not driven by movements in underlying costs or wholesale prices. Rather, as noted previously by the ACCC, price cycles appear to be entirely due to the pricing behaviour of petrol retailers, aiming to maximise their profits.

This chapter describes the behaviour of petrol retailers that determines the broad features of petrol price cycles.

2.1 Retailer behaviour that contributes to price cycles

There are two distinct phases within a price cycle:

- A substantial increase in prices (i.e. the price increase phase). This is the price movement between a price cycle trough and the following price peak. It occurs relatively quickly, usually within a week in the eastern capital cities (and on a single day in Perth).
- A gradual decrease in prices (i.e. the price decrease phase). This is the price movement between a price cycle peak and the following price trough. It occurs over a longer time-period: over multiple weeks in the eastern capital cities and over multiple days in Perth.

These two phases are heavily influenced by the behaviour of retailers, particularly their responses to price changes made by their competitors. For example, prices will typically decrease more quickly during the price decrease phase in areas where there are retailers that compete more vigorously on price than in areas where those retailers are not present.

Chart 2.1 provides an overview of the typical retailer behaviour during the price increase and decrease phases of a price cycle that occurred in Adelaide between February and March 2018.
Stage one: A retailer increases prices by a significant amount at one or more retail sites across its network, marking the start of the price increase phase.

Stage two: In the following days other retailers and retail sites increase their prices substantially to similar price points, pushing up the average price in the market.

Stage three: The average price in the market reaches a peak after most, if not all, retail sites have increased their prices.

Stage four: Retailers and retail sites match and undercut each other’s prices across the market during the price decrease phase, pushing down the market average price. In the eastern capital cities, this phase lasts for several weeks.

Stage five: Competition pushes prices to a trough when average prices are at their lowest, either approaching, or in this instance falling below, the average terminal gate price.

Stage six: A retailer increases prices at one or more retail sites, marking the start of a new price increase phase.

Source: ACCC calculations based on FUELtrac, BP, Caltex, Mobil and Viva Energy data.
Chart 2.1 shows the daily average retail price starting to increase after being below the daily average TGP for two days. In these circumstances, some retailers begin to increase prices at certain retail sites after a period of slim profit margins or, in some instances, possibly small losses on petrol sales. Other retailers and retail sites typically follow this pattern, and once most have increased their prices to a broadly similar level, the price cycle has reached a peak. From here, a competitive dynamic of retailers matching and undercutting each other’s prices across the network of retail sites forces the daily average price down towards the TGP again.

Retailer behaviour during the price increase and decrease phases is discussed in more detail below.

2.1.1 The price increase phase

The price increase phase begins once retail prices in the market have reached their low point at the trough and an initial retailer increases their price (i.e. the ‘leader’). The phase is generally initiated by one or two of the major retailers, which increase their prices substantially, but usually at only some of their retail sites in a city. In some cases, retailers may increase prices at most of their retail sites in a city, rather than at only some.

If other retailers respond to this price increase with similar price increases at retail sites, then the increased price usually spreads across the majority of retail sites within a city. If other retailers do not respond to the initial price increase, then the price increase fails, and the retailer(s) that initially increased prices is/are likely to reduce their price back in line with the majority of the market. This is referred to as a ‘failed price cycle’ and is discussed in more detail in section 2.1.3.

Some retailers will increase their prices shortly after the leader raises their price. Other retailers take longer to follow price increases (they ‘lag’ price increases). This is because there is a short-term incentive for individual retailers to delay their price response during the price increase phase of the price cycle in order to gain a temporary increase in sales volumes and/or a reputation for low prices.

The risk for retailers that delay increasing their prices is that the leader, or those that have quickly followed, may abandon their attempt to increase prices, and return their prices to the previous, lower level. The longer other retailers delay in following an attempted price increase, the greater the potential that the leader or early followers will abandon their price increase. In these circumstances many retailers may continue to sell fuel close to or below the TGP for a longer period.

Generally, during the price increase phase, retailers increase prices to the same or a similar price point across different locations within a city. However, in recent times the ACCC has observed some retailers, in Melbourne for example, increasing prices to a level below the leader. This is also shown in chart 2.3, where in Sydney BP, Caltex, 7-Eleven and Metro Fuel retail sites increased their retail prices to less than that of the leader, Coles Express.

2.1.2 The price decrease phase

The price decrease phase involves a gradual process of retailers matching and undercutting each other’s prices on a local basis in small increments. This occurs because retailers have an incentive to discount or match lower prices to increase, or prevent loss of, sales volumes.

During the price decrease phase, the rate at which retailers reduce their prices from the peak tends to vary on a retail site-by-retail site basis, depending on factors such as the prices at nearby retail sites and the pricing strategy of each retailer. As a result, there will often be a degree of price variability between a retailer’s sites across a city in the price decrease phase, although the market average price tends to move downwards.

Major retail petrol chains generally set fuel prices at each of their sites centrally at head office, rather than having prices determined by individual retail site managers. When setting prices at a retail site, these retailers often monitor the prices at a number of competing sites in the same local area. These are commonly known as ‘marker sites’.

Decreasing prices typically continue until prices begin to approach TGPs. Once retail prices decrease to be around, or sometimes below, average TGPs many retailers are likely to be making slim profit margins (or potentially small losses) on petrol sales. At this point, some retailers increase prices to earn a more
sustainable margin and recover any losses incurred at the price cycle trough. This results in a leader increasing their prices.

### 2.1.3 Failed price cycles

A failed price cycle occurs when the price increase phase does not result in a market-wide increase in prices. While failed price cycles are not a common occurrence, they do provide an insight into the likely dynamics of a retailer’s pricing decisions during the price increase phase.

Failed price cycles can occur because some market participants do not increase prices at the time that might be expected during a regular price cycle. This can lead to a longer price cycle, or a collapse in the price cycle. This is because those retailers that increased their prices first observe that others in the market have not followed their prices, and subsequently they decrease prices to their former level.

Chart 2.2 shows an example of a failed price cycle in Sydney in February 2018, which resulted in the next price cycle taking longer to occur.

**Chart 2.2: Failed price cycle in Sydney: February 2018**

Source: ACCC calculations based on FUELtrac, BP, Caltex, Mobil and Viva Energy data.

Note: Prices are for E10.

Analysis of FuelCheck data shows that BP increased its price for E10 to 147.9 cpl at 14 retail sites across various suburbs in Sydney at the same time on 8 February 2018. This increase at multiple sites across a network is typical for a leader.

Two of the BP retail sites that increased prices are located in Mosman (a suburb in Sydney located around eight kilometres from the CBD).\(^{18}\) Within Mosman and nearby suburbs of Neutral Bay, Cremorne and Cammeray there are nine retail sites, including the two BP sites. The price movements of these retail sites between 7 and 19 February 2018 are shown in chart 2.3.

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\(^{18}\) Mosman was the only suburb that contained more than one of the 14 BP retail sites that increased E10 prices at the same time on 8 February 2018. For this reason, Mosman and surrounding suburbs were chosen for analysis.
On 8 February both BP retail sites increase prices. Competing retail sites do not match BP’s prices, and the BP retail sites decrease prices back in line with the local market.

Late on 13 February, Coles Express retail sites increase prices and soon after other retail sites put their prices up, although to a lower level than Coles Express retail sites.

A few days later, the Caltex retail site increases its price. Other retail sites do not follow, and the Caltex retail site reduces its price.

On 18 February 7-Eleven retail sites begin to lower their prices. BP retail sites follow shortly after.

Source: ACCC calculations based on FuelCheck data.
Notes: Prices are for E10. Data in the chart shows changes in prices on an hourly basis.
Chart 2.3 shows that despite both BP retail sites in Mossman increasing prices on 8 February (by around 23 cpl), a price cycle increase phase did not occur because no other nearby retail sites followed the BP price move. The BP retail sites reduced their prices back in line with the market around 24 hours after increasing them. The Caltex retail site increased its prices three days later, but like the BP retail sites, reduced its price soon after when no other retail sites followed. The three Coles Express retail sites increased prices on 13 February and maintained those higher prices, initiating the price increase phase as other sites followed them early on 14 February. However, the other retail sites did not increase their prices to the same level as the Coles Express retail sites.

While the price movements shown in chart 2.3 are reflective of price movements that occur at a local level, these movements contribute to average daily price movements across broader metropolitan markets like Sydney.

2.2 Some major retailers are more active discounters, while others frequently lead prices up during price cycles

Some major retailers are more likely to lead prices upwards, or are quick to follow price increases made by competitors, than others.

ACCC analysis over the years has shown that Caltex and/or BP have been the retailers that are generally more likely to lead price increases.19 This was shown in the ACCC’s assessments of the Caltex-Milemaker acquisition and the proposed BP-Woolworths acquisition, both in 2017. The ACCC’s analysis indicated that Caltex and BP were more likely to lead price increases than Milemaker (a former Caltex-branded independent chain) and Woolworths respectively.20 Recent academic analysis supports these conclusions, and identified BP as a price-leading retailer in Perth over an extended period.21

Conversely, some petrol retailers have been found to actively lead prices down during the price decrease phase of the price cycle. These retailers often also delay following other retailers during the price increase phase of the cycle. The ACCC’s analysis of the Melbourne petrol market as part of the Caltex-Milemaker acquisition indicated that United, Woolworths and 7-Eleven typically demonstrated this behaviour.22

Analysis of recent FuelCheck data indicates that in Sydney in the first half of 2018, Coles Express, Caltex, BP and Woolworths were among the first retailers to increase prices during the price increase phase. For example, examination of intra-day price data indicates that in the price cycle that occurred in June 2018 Coles Express was the leader, followed by Woolworths.

Chart 2.4 illustrates when major retailers increased prices at their retail sites across Sydney, and the timing of subsequent price increases by other retailers during the first few days of the June 2018 price cycle. It shows that Coles and Woolworths were the first major retailers to increase prices at a number of their retail sites.

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Chapter 5 includes further analysis of the June 2018 price cycle in Sydney. In particular, it highlights the opportunities available to motorists to shop around during the price cycle increase phase, when some retailers have increased prices while others remain significantly cheaper.

2.3 Geraldton is a recent example of retailers’ pricing behaviour leading to price cycles

Geraldton is one of the few regional locations in Australia to have a price cycle (see chapter 7). For many years, Geraldton did not have a price cycle, but price cycles commenced in Geraldton in April 2016 (see chart 2.5).
Analysis of retail petrol price data from FuelWatch shows that Coles Express entered the Geraldton market in April 2016. It appears that when the first Coles Express retail site opened in Geraldton, it followed a pricing strategy in line with the pricing strategy used by Coles Express retail sites in Perth (see chart 2.6).

After Coles Express entered the Geraldton market and adopted a cyclical pricing strategy, some of the other retail sites in Geraldton responded in the following weeks by adjusting their pricing strategies to a broadly similar cyclical pattern (see chart 2.7).
Chart 2.7: Daily average retail petrol prices in Geraldton by retail site: 10 March to 20 May 2016

Source: ACCC calculations based on FuelWatch data.

Note: The Shell retail site closed on 31 March and the Coles Express retail site opened on 8 April.

Chart 2.7 shows that United and Woolworths retail sites were among the first to respond to Coles Express’ pricing strategy. One United retail site and the Woolworths retail site adjusted their pricing strategy to closely follow that of the Coles Express retail site in the first few weeks after it opened.

By January 2017, there were five retail sites that had adopted a cyclical pricing strategy. These were the two Coles Express retail sites (a second Coles Express site entered the Geraldton market in June 2016), the Woolworths retail site, one United retail site and the Puma retail site (to a lesser extent) (see chart 2.8).
By May and June 2018, there were only three retail sites in Geraldton which did not follow a cyclical pricing strategy. These were two Caltex retail sites and one BP retail site (see chart 2.9).
The entry of Coles Express into the Geraldton retail petrol market, and its cyclical pricing strategy, appears to have been the prompt for other retail sites to respond and also adopt cyclical pricing strategies.

### 2.4 Price cycles and Australian competition law

The following discussion sets out some of the ACCC’s enforcement activities in relation to the behaviour of certain retailers in petrol markets. It also considers the more recent introduction of concerted practices provisions in the *Competition and Consumer Act 2010* (CCA), including in relation to petrol price cycles.

#### 2.4.1 The exchange of price information

The communication or exchange of price (or other market sensitive) information between competitors can be anti-competitive. The ACCC has previously considered how elements of the Australian retail petrol market operate in this context under Part IV of the CCA.

For example, in August 2014 the ACCC took court action against Informed Sources and several petrol retailers that subscribed to Informed Sources’ services (BP, Caltex, Coles Express, Woolworths and 7-Eleven). These petrol retailers provided pricing data to Informed Sources at frequent, regular intervals. In return, they received from Informed Sources collated data from the other subscribers, and various reports containing pricing information across particular regions. The ACCC alleged that this system enabled retailers to propose a price increase to their competitors and monitor the response to it. If, for example, the response was not sufficient, the retailer proposing the increase could quickly withdraw the proposal.

The ACCC alleged that these arrangements softened price competition and had the effect or likely effect of substantially lessening competition in markets for the sale of petrol in Melbourne, in contravention of s. 45(2) of the CCA.
On 22 December 2015, the ACCC accepted court enforceable undertakings from Informed Sources and other market participants to resolve the court proceedings. These undertakings provide for greater transparency of petrol price information by making it available to motorists at the same time the retailers receive it. This has in turn helped to promote fuel price websites and apps that motorists can use to shop around. These are discussed in more detail in chapter 6.

2.4.2 The introduction of concerted practices to the CCA

The ACCC has had mixed success in past cases regarding the exchange of price information in petrol markets.

For example, in some cases where the ACCC has alleged price fixing between competing petrol retailers, the ACCC was not able to prove that communications of future price information amounted to an ‘arrangement or understanding’ being reached between the parties as to how they would price their petrol. This outcome reflected the position developed by Australian courts that an understanding requires a ‘meeting of the minds’ between parties and the adoption (by at least one of them) of some commitment to act, or not to act, in a particular way.

The ACCC considers that recent changes to the CCA will broaden the net for capturing anti-competitive information exchanges where it cannot be established that competitors entered into an understanding to fix prices.

On 6 November 2017, s. 45(1)(c) of the CCA was amended to prohibit a person from engaging in a ‘concerted practice’ that substantially lessens competition. The concept of a ‘concerted practice’ involves communication or cooperative behaviour that does not require all of the elements of an understanding but involves more than a person independently responding to market conditions.

While the provisions are yet to be tested in court, the ACCC’s Guidelines on concerted practices set out how the ACCC proposes to interpret s. 45(1)(c) and describes the general approach the ACCC will take in investigating alleged contraventions of s. 45(1)(c).23 The Guidelines include a number of practical examples to help people understand the ACCC’s approach to potentially anti-competitive concerted practices, including the following petrol related example [example 6]:


24 Ibid, pp. 11–12.

A number of petrol retailers notify each other of their future pricing intentions. Retailers find such information assists them and start making business decisions in expectation of calls from their competitor. No attempt is made to reject the calls. Moreover, the retailers go to considerable lengths to ensure that their conversations occur in secret and begin to refer to each other by code names. While they have not committed to do so, and although there are some occasions when the prices are not followed, the practice continues and the petrol retailers regularly follow the price changes foreshadowed by each other.

If the conduct does not reach the level of an understanding, the ACCC considers it is likely that the retailers are engaging in a concerted practice that has the purpose (and may also have the effect or likely effect) of substantially lessening competition. The disclosures result in the pricing uncertainties present in raising or lowering prices in a competitive market being substituted by a degree of cooperation.

2.4.3 Parallel pricing, price cycles and concerted practices

Sometimes competing businesses sell goods or services at the same or similar price levels so that the price fluctuations of one retailer are matched by others. In general, independent decisions by petrol retailers to adjust prices throughout price cycles reflect this process.
There are legitimate commercial reasons for why a retailer may adjust its prices to match a competitor. These include firms responding to highly visible prices displayed by competitors (e.g. petrol price boards) and competitors quickly adjusting their prices to match price movements. This is sometimes known as ‘parallel pricing’.

The ACCC is currently of the view that parallel pricing behaviour, by itself, is not a concerted practice. If petrol retailers are doing no more than responding quickly to each other’s published prices, this is likely to be parallel pricing from each petrol retailer’s independent response to market conditions (as well as other considerations including historical pricing patterns). Price cycles, in and of themselves, are not illegal.

This position is reflected in the ACCC’s Guidelines at paragraph 3.6:25

A concerted practice should be distinguished from parallel behaviour arising simply as a result of a person’s independent response to market conditions. Parallel behaviour by competitors in the market, such as where their prices are similar or they make similar offers, is not by itself evidence that those competitors are engaged in a concerted practice. In a highly competitive market, competitors may independently respond almost immediately to each other’s changes in pricing. For example, if one competitor lowers its price, others may respond immediately to avoid losing customers.

There may be occasions where anomalies in price cycles will trigger an investigation into whether the pricing outcome resulted from an agreement or concerted practice. The ACCC’s monitoring of petrol prices across Australia allows the ACCC to consider such anomalies.

2.5 Price cycles are not unique to Australia

The ACCC has previously observed that although petrol price cycles are not widespread around the world, they do occur in various cities and regions in other countries, including in Canada, the United States, Germany and Norway.26 Previous ACCC reports have presented data and illustrated price cycles in several of these jurisdictions.27

More recent examination of petrol markets overseas indicates that petrol price cycles continue to operate in other parts of the world. For example, media reporting and price data indicates that price cycles occur in Indianapolis and Chicago in the United States, and in Montreal, Quebec and Calgary in Canada.28 Recent research also reports cyclical petrol price movements in Germany and weekly petrol price cycles occurring in some locations in Norway.29

26 ACCC, Petrol prices and Australian consumers—report of the ACCC inquiry into the price of unleaded petrol, pp. 162–163.
27 See, for example, ACCC, Monitoring of the Australian petroleum industry 2011—Report of the ACCC into the price of unleaded petrol in Australia, pp. 247–248; and Monitoring of the Australian petroleum industry 2012—Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, pp. 175-177.
3. Price cycles have changed considerably over the last 10 years

The characteristics of petrol price cycles in the five largest cities have changed significantly over the last 10 years. This chapter examines the changes in price cycles between 2009 and 2017. The year 2009 was when price cycles in the eastern capital cities most frequently occurred on a weekly basis, and 2017 is the latest calendar year for which data is available.30

As noted in chapter 1, price cycles in the eastern capital cities (Sydney, Melbourne, Brisbane and Adelaide) currently have different characteristics from those in Perth.

3.1 In the eastern capital cities the number of price cycles decreased and their duration increased

The number of petrol price cycles in the eastern capital cities in each year decreased significantly between 2009 and 2017 (see chart 3.1).31

![Chart 3.1: Annual number of price cycles in the five largest cities: 2009 to 2017](image-url)

Source: ACCC calculations based on Informed Sources and FUELtrac data.

The number of price cycles per year decreased in each of the eastern capital cities by between 73 per cent (in Adelaide) and 81 per cent (in Melbourne) between 2009 and 2017.

In 2009, there were 52 price cycles in Sydney, Melbourne and Adelaide, and 51 in Brisbane. By 2017, the number of price cycles had decreased to 12 price cycles in Sydney (40 less price cycles per year), 10 price cycles in Melbourne (42 less price cycles) and Brisbane (41 less price cycles) and 14 price cycles in Adelaide (38 less price cycles).

As the number of price cycles per year in the eastern capital cities decreased, the average duration of price cycles increased (see chart 3.2). The duration of a price cycle is the number of days from a trough price to subsequent trough price.

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30 In this analysis, RULP prices are used in Sydney in the years 2009 to 2013. From 2014 onwards, E10 prices are used.
31 The data for charts 3.1 and 3.2 is provided in appendix B.
In 2009, the average duration of price cycles was seven days in all of the eastern capital cities. By 2017, the average duration of price cycles in Melbourne and Brisbane had increased to over 36 days. Between 2009 and 2017, the average duration of price cycles had increased from occurring on a weekly basis to occurring around every five weeks.

In Sydney, the average duration of price cycles increased to around 30 days, and in Adelaide it increased to around 26 days. In these cities, between 2009 and 2017, the average duration of price cycles had increased from occurring on a weekly basis to occurring around every four weeks.

Chapter 5 considers how motorists can take advantage of the longer price cycles that occur in the eastern capital cities.

3.2 In Perth the number of price cycles increased and their duration decreased

In contrast to the eastern capital cities, the number of price cycles per year in Perth increased between 2009 and 2017 (see chart 3.1). Perth had 38 price cycles in 2009, which increased to 52 (i.e. weekly cycles) in 2011. Perth has continued to have a weekly petrol price cycle since.

The average price cycle duration in Perth decreased from around nine days in 2009 to seven days in 2011 and has remained at seven days since (see chart 3.2).

3.3 The changes in price cycles have been influenced by changing pricing behaviour by retailers

After the change in the pattern of price cycles in the five largest cities became apparent, the ACCC in September 2010 sought the views of the major petrol retailers about the reasons for the change. Factors that were identified by a number of retailers as possible influences were: an increase in the degree of retail price competition in 2010, and that some retailers had been delaying price increases until later in the week to increase their market share, through higher sales volumes.\(^{32}\)

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The ACCC’s 2010 petrol monitoring report noted that the instability in price cycles in 2010 (including changes in the peak and trough days, as well as the increased number of failed price cycles) may have been due, in part, to uncertainty among retailers amid the changing structure of the market. Specifically, the ACCC’s decision to oppose the sale of Mobil sites to Caltex in late 2009 may have contributed to this uncertainty.

In January 2012, the ACCC again sought the views of the major petrol retailers about reasons for the change in the pattern of price cycles. The same factors identified in September 2010 were also mentioned by the retailers. Other factors identified were changes in the pricing behaviour of the supermarkets (such as remaining at the bottom of the price cycle longer and increased use of shopper docket with a value greater than 4 cpl), and greater sensitivity among consumers to high petrol prices.33

If some retailers delay putting up their prices, other retailers may respond to this delay in the current and subsequent price cycles. Over time, this can lead to a longer duration of price cycles. It may also increase uncertainty in the market and lead to a degree of instability, with retailers unsure about the behaviour of the market and the response of competitors.34

The compounding impact of all of these factors over time is likely to have contributed to the lengthening of price cycles in the eastern capital cities.

In WA, the FuelWatch fuel price monitoring scheme requires petrol retailers in the state to notify the WA Government of their next day’s retail price by 2pm each day. Petrol retailers are required to sell petrol at this price for a 24-hour period from 6am on the following morning. The petrol price at each retail site is publicly available on the FuelWatch website. Therefore, petrol prices in Perth can only change once per day and petrol retailers must commit to their prices a day in advance. As a result of these arrangements, petrol retailers in Perth may adopt different pricing strategies from those employed in the eastern cities.

As noted in the ACCC’s 2007 petrol inquiry report:

*With the requirement to commit to prices for 24 hours, retailers are less able to simply lead prices up or signal a future price and then relatively quickly and cheaply return to a different price level. It requires sellers to carefully think about the risk of posting a price that leaves them out of the market for relatively price sensitive consumers for 24 hours. It raises the cost of pricing too high, in terms of lost sales to price sensitive consumers, relative to the case where there is complete pricing flexibility.*35

Due to the 24 hour price commitment, petrol retailers in Perth must decide what their petrol prices will be for the next day without knowing other retailers’ prices. This uncertainty, and the inability to immediately retreat from a pricing decision that results in lower sales, may lead to more stable and consistent pricing behaviour.

A recent academic study covering a 15-year period to 2015 points to the pricing behaviour of one retailer (BP) over time as also contributing to the consistency of price cycles in Perth.36

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33 ACCC, Monitoring of the Australian petroleum industry 2012—Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, p. 151.
34 Ibid.
35 ACCC, Petrol prices and Australian consumers—report of the ACCC inquiry into the price of unleaded petrol, p. 243.
36 Byrne and de Roos, Learning to Coordinate: A Study in Retail Gasoline.
3.4 Peak and trough days have become less predictable in the eastern capital cities and more predictable in Perth

In the eastern capital cities, it has become more difficult over time for consumers to pick the trough and peak days of price cycles.

In 2007, Tuesday was the most common trough day in all four of the eastern capital cities, and Thursday was the most common peak day. This led some consumers to refer to Tuesdays as ‘cheap Tuesday’. This had changed by 2009, when trough days were predominantly on a Wednesday and peak days were predominately on a Friday (with the exception of Adelaide, where the majority of peak days were on a Thursday). Specifically, in 2009:

- Sydney had 52 (100 per cent) trough days on a Wednesday and 40 (77 per cent) peak days on a Friday.
- Melbourne had 52 (100 per cent) trough days on a Wednesday and 44 (85 per cent) peak days on a Friday.
- Brisbane had 51 (98 per cent) trough days on a Wednesday and 48 (94 per cent) peak days on a Friday.
- Adelaide had 50 (96 per cent) trough days on a Wednesday and 36 (69 per cent) peak days on a Thursday.
- Perth had 34 (87 per cent) trough days on a Tuesday and 33 (87 per cent) peak days on a Friday.

By 2013, there was no particular day of the week on which motorists could consistently buy relatively cheap petrol in the eastern capital cities. This trend has continued in recent years. In 2017, there was no day of the week on which trough or peak days occurred with significant frequency:

- Sydney had five (42 per cent) trough days on a Tuesday and five (42 per cent) peak days on a Tuesday.
- Melbourne had four (40 per cent) trough days on a Thursday and four (40 per cent) peak days on a Monday.
- Brisbane had a relatively even spread of which day of the week had a trough and/or peak price, with no day of the week having more than three peaks or troughs.
- Adelaide had four (29 per cent) trough days each on a Wednesday and a Thursday and six (43 per cent) peak days on a Sunday.
- Perth had 52 (100 per cent) trough days on a Monday and 50 (96 per cent) peak days on a Tuesday.

The changes in the days of the week when peaks and troughs occurred are clearly shown in charts 3.3 to 3.12.

Charts 3.3 to 3.7 show the day of the week and the month on which each petrol price cycle peak occurred in the five largest cities in 2009 and 2017. Each red square in the charts represents a price cycle peak.

Charts 3.8 to 3.12 show the day of the week and the month on which each petrol price cycle trough occurred in the five largest cities in 2009 and 2017. Each blue square in the charts represents a price cycle trough.

---

Petrol price cycles in Australia

Chart 3.3: Peak days in Sydney in 2009 and 2017

2009
Mon TUE Wed Thu Fri Sat Sun

2017
Mon TUE Wed Thu Fri Sat Sun

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Note: RULP prices were analysed in 2009 and E10 prices in 2017.

Chart 3.4: Peak days in Melbourne in 2009 and 2017

2009
Mon TUE Wed Thu Fri Sat Sun

2017
Mon TUE Wed Thu Fri Sat Sun

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Chart 3.5: Peak days in Brisbane in 2009 and 2017

<table>
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<tr>
<th>Mon</th>
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<td>May-17</td>
<td>Jun-17</td>
<td>Jul-17</td>
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</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Chart 3.6: Peak days in Adelaide in 2009 and 2017

<table>
<thead>
<tr>
<th>Mon</th>
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<td>Jan-17</td>
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<td>Apr-17</td>
<td>May-17</td>
<td>Jun-17</td>
<td>Jul-17</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Chart 3.7: Peak days in Perth in 2009 and 2017

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Chart 3.8: Trough days in Sydney in 2009 and 2017

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Note: RULP prices were analysed in 2009 and E10 prices in 2017.
### Chart 3.9: Trough days in Melbourne in 2009 and 2017

#### 2009

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
<th>Fri</th>
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<td>Apr-09</td>
<td>May-09</td>
<td>Jun-09</td>
<td>Jul-09</td>
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</table>

#### 2017

<table>
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<tr>
<th>Mon</th>
<th>Tue</th>
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</thead>
<tbody>
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<td>Jan-09</td>
<td>Feb-09</td>
<td>Mar-09</td>
<td>Apr-09</td>
<td>May-09</td>
<td>Jun-09</td>
<td>Jul-09</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.

### Chart 3.10: Trough days in Brisbane in 2009 and 2017

#### 2009

<table>
<thead>
<tr>
<th>Mon</th>
<th>Tue</th>
<th>Wed</th>
<th>Thu</th>
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<th>Sun</th>
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<tbody>
<tr>
<td>Jan-09</td>
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<td>Mar-09</td>
<td>Apr-09</td>
<td>May-09</td>
<td>Jun-09</td>
<td>Jul-09</td>
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</tbody>
</table>

#### 2017

<table>
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<th>Mon</th>
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<th>Sun</th>
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</thead>
<tbody>
<tr>
<td>Jan-09</td>
<td>Feb-09</td>
<td>Mar-09</td>
<td>Apr-09</td>
<td>May-09</td>
<td>Jun-09</td>
<td>Jul-09</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Chart 3.11: Trough days in Adelaide in 2009 and 2017

2009

Mon | Tue | Wed | Thu | Fri | Sat | Sun

Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 | Oct-09 | Nov-09 | Dec-09

2017

Mon | Tue | Wed | Thu | Fri | Sat | Sun

Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Chart 3.12: Trough days in Perth in 2009 and 2017

2009

Mon | Tue | Wed | Thu | Fri | Sat | Sun

Jan-09 | Feb-09 | Mar-09 | Apr-09 | May-09 | Jun-09 | Jul-09 | Aug-09 | Sep-09 | Oct-09 | Nov-09 | Dec-09

2017

Mon | Tue | Wed | Thu | Fri | Sat | Sun

Jan-17 | Feb-17 | Mar-17 | Apr-17 | May-17 | Jun-17 | Jul-17 | Aug-17 | Sep-17 | Oct-17 | Nov-17 | Dec-17

Source: ACCC calculations based on Informed Sources and FUELtrac data.
The charts highlight that in the eastern capital cities in 2009 the day of the week when peaks and troughs occurred was much more consistent and predictable compared with 2017.

For Perth, the days of the week when peaks and troughs occurred were often predictable in 2009, and became increasingly predictable in 2017 with the trough day occurring on a Monday 100 per cent of the time and the peak day occurring on a Tuesday 96 per cent of the time.

3.5 The shape of the price cycle has remained broadly similar, but prices take longer to decrease to the trough in some cities

As noted in chapter 1, price cycles exhibit a sawtooth pattern (i.e. prices increase rapidly and then decrease gradually).

Chart 3.2 showed the average duration of price cycles in the five largest cities between 2009 and 2017. Chart 3.13 shows the average number of days for prices to increase from trough to peak price in the five largest cities in each year between 2009 and 2017, and chart 3.14 shows the average number of days for prices to decrease from peak to trough price. The weekly price cycle in Perth since 2011 is clearly evident in these charts.

Chart 3.13: Average number of days from trough to peak in the five largest cities: 2009 to 2017

![Chart showing the average number of days from trough to peak in the five largest cities: 2009 to 2017.](image)

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Note: This chart has a different scale from charts 3.2 and 3.14 to illustrate clearly the changes over time in the average number of days from trough to peak.

Chart 3.13 shows that the average time for prices to increase from trough to peak across all of the eastern capital cities has increased significantly, from around one to two days in 2009 to between five and half days and seven days in 2017.

39 The data for charts 3.13 and 3.14 is provided in appendix B.
3.6 The magnitude of price cycle increases has increased over time

Previous ACCC analysis has noted that the magnitude of price cycle increases appear to vary depending on the following factors:

- 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 price competition before the price cycle increase
- the overall price level.\(^{40}\)

Price cycle increases are calculated using daily average prices in each city. This means that the actual increase in price at any individual retail site in that city can vary from the average price cycle increase for the city.

Average price cycle increases in cents per litre terms and as a percentage of the annual price in the five largest cities for 2009 to 2017 are shown in table 3.1.

---

\(^{40}\) ACCC, Monitoring of the Australian petroleum industry 2012—Report of the ACCC into the prices, costs and profits of unleaded petrol in Australia, p. 134. In past ACCC reports, the price cycle increase has also been referred to as the ‘variation’ (Reducing fuel price variability, 2001) and the ‘amplitude’ (Petrol prices and Australian consumers—report of the ACCC inquiry into the price of unleaded petrol, 2007). All of these terms refer to the change in daily average prices from the trough price to the peak price.
<table>
<thead>
<tr>
<th></th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2009</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>12.2</td>
<td>11.0</td>
<td>9.3</td>
<td>13.5</td>
<td>7.6</td>
</tr>
<tr>
<td>Annual average price (cpl)</td>
<td>119.1</td>
<td>121.1</td>
<td>117.9</td>
<td>119.6</td>
<td>117.2</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>10.2</td>
<td>9.1</td>
<td>7.9</td>
<td>11.3</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>2010</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>10.2</td>
<td>11.3</td>
<td>9.3</td>
<td>12.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Annual average price (cpl)</td>
<td>124.8</td>
<td>126.0</td>
<td>127.6</td>
<td>124.5</td>
<td>124.8</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>8.2</td>
<td>9.0</td>
<td>7.3</td>
<td>10.4</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>2011</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>9.5</td>
<td>11.4</td>
<td>8.8</td>
<td>13.7</td>
<td>8.1</td>
</tr>
<tr>
<td>Annual average price (cpl)</td>
<td>140.0</td>
<td>139.5</td>
<td>142.4</td>
<td>139.1</td>
<td>140.3</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>6.8</td>
<td>8.2</td>
<td>6.2</td>
<td>9.8</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>2012</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>12.0</td>
<td>12.8</td>
<td>10.4</td>
<td>16.1</td>
<td>8.4</td>
</tr>
<tr>
<td>Annual average price (cpl)</td>
<td>141.4</td>
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<td>145.4</td>
<td>141.8</td>
<td>143.0</td>
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<tr>
<td>Increase as a % of average price</td>
<td>8.5</td>
<td>9.1</td>
<td>7.1</td>
<td>11.4</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>2013</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>13.3</td>
<td>14.4</td>
<td>12.9</td>
<td>16.4</td>
<td>9.8</td>
</tr>
<tr>
<td>Annual average price (cpl)</td>
<td>145.0</td>
<td>144.4</td>
<td>148.1</td>
<td>144.3</td>
<td>146.2</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>9.1</td>
<td>9.9</td>
<td>8.7</td>
<td>11.4</td>
<td>6.7</td>
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<tr>
<td><strong>2014</strong></td>
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<td></td>
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<tr>
<td>Average price cycle increase (cpl)</td>
<td>15.2</td>
<td>15.2</td>
<td>15.7</td>
<td>15.4</td>
<td>9.5</td>
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<tr>
<td>Annual average price (cpl)</td>
<td>144.2</td>
<td>144.6</td>
<td>149.8</td>
<td>144.8</td>
<td>147.9</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>10.5</td>
<td>10.5</td>
<td>10.5</td>
<td>10.7</td>
<td>6.5</td>
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<tr>
<td><strong>2015</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>17.7</td>
<td>20.6</td>
<td>16.8</td>
<td>21.2</td>
<td>12.7</td>
</tr>
<tr>
<td>Period average price (cpl)</td>
<td>127.5</td>
<td>126.2</td>
<td>130.8</td>
<td>127.4</td>
<td>128.6</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>13.9</td>
<td>16.3</td>
<td>12.9</td>
<td>16.7</td>
<td>9.9</td>
</tr>
<tr>
<td><strong>2016</strong></td>
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<tr>
<td>Average price cycle increase (cpl)</td>
<td>20.7</td>
<td>21.7</td>
<td>20.7</td>
<td>22.5</td>
<td>15.4</td>
</tr>
<tr>
<td>Period average price (cpl)</td>
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<td>116.6</td>
<td>119.3</td>
<td>114.3</td>
<td>116.6</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>18.0</td>
<td>18.6</td>
<td>17.3</td>
<td>19.7</td>
<td>13.2</td>
</tr>
<tr>
<td><strong>2017</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Average price cycle increase (cpl)</td>
<td>20.9</td>
<td>22.1</td>
<td>22.5</td>
<td>24.1</td>
<td>18.4</td>
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<tr>
<td>Period average price (cpl)</td>
<td>124.9</td>
<td>129.2</td>
<td>130.4</td>
<td>126.5</td>
<td>128.9</td>
</tr>
<tr>
<td>Increase as a % of average price</td>
<td>16.8</td>
<td>17.1</td>
<td>17.3</td>
<td>19.1</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.
Table 3.1 shows that the magnitude of price cycle increases have generally become larger over time across all five largest cities, both in nominal cents per litre terms and as a percentage of annual average prices.

- In 2009, the average price cycle increase ranged from 7.6 cpl to 13.5 cpl depending on the city (or between 6.5 per cent and 11.3 per cent of the annual average price).
- In 2017, the average price cycle increase ranged from 18.4 cpl to 24.1 cpl (or between 14.3 per cent and 19.1 per cent of the annual average price).

The average price cycle increase was largest in Adelaide in almost every year between 2009 and 2017. Perth had the smallest average price cycle increase every year between 2009 and 2017.

Similarly, the average price cycle increase as a percentage of the annual average price was the largest in Adelaide for every year between 2009 and 2017, and the smallest in Perth for every year. In recent years, Perth’s average price cycle increase as a percentage of the period average price has become larger in recent years.

Across Sydney, Melbourne and Brisbane the average price cycle increase as a percentage of the annual average price ranged between 6.2 per cent and 10.2 per cent between 2009 and 2012. In 2017 it ranged from 16.8 per cent to 17.3 per cent across the three cities.

### 3.7 Prices are sometimes below TGPs at the price cycle trough

Chapter 1 showed that an outcome of petrol price cycles is that motorists have the opportunity to purchase petrol at or below average costs and, on occasions, at or below average TGPs. ACCC analysis has found that retail prices most often fall below TGPs when TGPs are increasing, or when there is a period of intense competition.

Table 3.2 shows, for each of the five largest cities, the number of days in 2009 to 2017 when the daily average retail petrol price was equal to or below the daily average TGP.

#### Table 3.2 Number of days when the daily average retail petrol price was equal to or below the daily average TGP in the five largest cities: 2009 to 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
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<tbody>
<tr>
<td>2009</td>
<td>34</td>
<td>4</td>
<td>0</td>
<td>50</td>
<td>56</td>
</tr>
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<td>2010</td>
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<td>11</td>
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<td>56</td>
<td>17</td>
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<tr>
<td>2011</td>
<td>3</td>
<td>7</td>
<td>0</td>
<td>55</td>
<td>0</td>
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<td>2012</td>
<td>31</td>
<td>48</td>
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<td>68</td>
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<td>2013</td>
<td>41</td>
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<td>85</td>
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<td>10</td>
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<td>9</td>
<td>57</td>
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<td>2015</td>
<td>15</td>
<td>23</td>
<td>9</td>
<td>31</td>
<td>7</td>
</tr>
<tr>
<td>2016</td>
<td>46</td>
<td>18</td>
<td>8</td>
<td>98</td>
<td>36</td>
</tr>
<tr>
<td>2017</td>
<td>25</td>
<td>11</td>
<td>10</td>
<td>68</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on data from Informed Sources, FUELtrac, BP, Caltex, Mobil, Shell/Viva Energy and FuelWatch.

Between 2009 and 2017 across the five cities:

- Adelaide (which had the largest price cycle increases in almost all years) also had the most days when the daily average retail price was at or below the daily average TGP, with 568 days, or 17 per cent of the time.
- There were 234 days (7 per cent) where daily average retail prices were at or below average TGPs in Sydney, 198 days (6 per cent) in Melbourne, 37 days (1 per cent) in Brisbane and 125 days (4 per cent) in Perth.
In Brisbane between 2009 and 2012, and in Perth between 2011 and 2014, there were no days when retail prices were equal to or less than TGPs.

Apart from Adelaide, which was the city that most often had retail prices at or below TGPs, there appears to be no clear trend across the five largest cities in terms of the number of days retail prices were equal to or less than TGPs between 2009 and 2017.
4. The change in price cycles has influenced consumer buying patterns

This chapter examines how consumer purchasing behaviour changed between 2009 and 2016 in response to the changing price cycles in the five largest cities.41

4.1 Consumer purchases of petrol through the week have changed

Consumer purchasing behaviour over time has been similar in the eastern capital cities, but distinctly different in Perth. For this reason, consumer behaviour in the eastern capital cities is examined together, while consumer behaviour in Perth is examined separately.

4.1.1 Eastern capital cities

As noted in chapter 3, the eastern capital cities in 2009 had a regular weekly price cycle with predictable trough (Wednesday) and peak (Friday in Sydney, Melbourne and Brisbane, and Thursday in Adelaide) days of the week. Since then, the duration of price cycles in the eastern capital cities has increased, which has meant that trough and peak days are less frequent and less predictable. This has made it more difficult for consumers to determine the low points of the price cycle.

Charts 4.1 to 4.4 show average retail petrol sales volumes as a percentage of total volumes, and average retail petrol prices, by day of the week in 2009 and 2016 in each of the eastern capital cities.42

Chart 4.1: Average retail petrol sales volumes and average petrol prices by the day of the week in Sydney: 2009 and 2016

Source: ACCC calculations based on data from Informed Sources, FUELtrac and monitored companies.
Note: 2009 data is for RULP and 2016 data is for E10. As mentioned in chapter 1, price cycles are similar in Sydney for all grades of petrol.

---

41 Data for 2016 is used because full year data for 2017 was not available.
42 Petrol sales volume data used in this chapter was obtained from monitored companies. As part of its regular petrol monitoring activities, the ACCC collects data from the larger retailers in the Australian retail petrol market. Companies that are currently included in this monitoring program are BP, Caltex, Mobil, Viva Energy, Coles Express, Woolworths, 7-Eleven, United, Puma Energy and On The Run. The ACCC does not collect data from small independent retailers.
Chart 4.2: Average retail petrol sales volumes and average petrol prices by the day of the week in Melbourne: 2009 and 2016

Source: ACCC calculations based on data from Informed Sources, FUELtrac and monitored companies.

Chart 4.3: Average retail petrol sales volumes and average petrol prices by the day of the week in Brisbane: 2009 and 2016

Source: ACCC calculations based on data from Informed Sources, FUELtrac and monitored companies.
There was a clear pattern in consumer purchasing behaviour throughout the week in the eastern capital cities in 2009. The day with the highest average petrol volume sold during the week in 2009 coincided with the trough day of the price cycle.

In comparison, consumer purchasing behaviour in 2016, when there was no clear cheap day of the week, generally tended to favour mid-week petrol purchases, with Thursday being the most common day for petrol purchases in all of the eastern capital cities.

### 4.1.2  Perth

Unlike the eastern capital cities, Perth did not have regular weekly cycles for the whole year in 2009. A regular cycle began to develop in Perth around March 2009 and largely continued for the remainder of 2009 (see chart 4.5). From that time, the most common duration of price cycles in Perth was seven days. Troughs typically occurred on a Tuesday or Wednesday and peaks typically occurred on a Friday or Saturday.\(^{43}\)

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\(^{43}\) See charts 3.12 and 3.7.
In 2016, Perth had a weekly petrol price cycle with extremely predictable trough (Monday) and peak (Tuesday) days of the week.

Chart 4.6 shows average retail petrol sales volumes as a percentage of total volumes and average retail petrol prices by day of the week in 2009 and 2016 in Perth.

Chart 4.6 shows that consumer purchases had a more consistent pattern in Perth in 2016 than in 2009. In 2009, the lowest average retail price was generally on a Tuesday, however Thursday was the most common day for petrol purchases.

In 2016, over a quarter of average petrol sales during the week occurred on a Monday, which was also the day of the price cycle trough. At the same time, around 10 per cent of sales occurred on the highest priced day (Tuesday). It is likely that many price-sensitive consumers were actively timing their petrol purchases to coincide with the price cycle trough, due to the predictability of the Perth price cycle and...
the FuelWatch system. More Perth motorists, however, may be able to take greater advantage of the ‘cheap Mondays’.

4.2 The ability of consumers to purchase petrol at the price cycle trough has become harder in the eastern capital cities and easier in Perth

The changing nature of price cycles over the past decade has affected the ability of many consumers to purchase petrol at or around the price cycle trough. This can be seen by analysing daily average retail prices and sales volumes over different periods of time.

4.2.1 Melbourne

Chart 4.7 shows the daily average petrol price and the proportion of petrol volume sold on each day for the period 1 July to 30 September 2009 in Melbourne.

Chart 4.7: Daily average retail petrol price and daily petrol volume share in Melbourne: 1 July to 30 September 2009

- Daily volume share (LHS)
- Daily average retail price (RHS)

Source: ACCC calculations based on data from Informed Sources and monitored companies.

Chart 4.7 shows a clear pattern of consumer purchasing behaviour in Melbourne in 2009, when around twice as much petrol was purchased on the trough day as was purchased on the peak day of the cycle.

This clear pattern had diminished by 2016. Chart 4.8 shows the daily average petrol price and the proportion of petrol volume sold each day for the period 1 July to 30 September 2016 in Melbourne.
A comparison of charts 4.7 and 4.8 shows that as the price cycle in Melbourne became longer in duration, consumer purchasing behaviour does not follow as clear a pattern in 2016 as it did in 2009. It suggests that the increasing duration of price cycles, and their increased variability, made it more difficult for consumers to predict the cheapest days of the price cycle in 2016.

Similar changes in consumer purchasing behaviour occurred in Sydney, Brisbane and Adelaide between 2009 and 2016. Charts for these cities are provided in appendix C.

### 4.2.2 Perth

Consumer purchasing behaviour in Perth also changed between 2009 and 2016, although not in the same way as in the eastern capital cities.

As noted earlier, price cycles in Perth were largely absent in the first quarter of 2009. However, in the rest of the year, price cycles became more regular, and were most commonly seven days in duration.

Chart 4.9 shows the daily average petrol price and the proportion of petrol volume sold on each day for the period 1 July to 30 September 2009 in Perth.
Chart 4.9: Daily average retail petrol price and daily petrol volume share in Perth: 1 July to 30 September 2009

Chart 4.9 shows that there was a pattern of consumer purchasing behaviour when price cycles occurred during the second half of 2009. The proportion of petrol volume sold in Perth on the trough days was around 25 per cent more than that on peak days. However, the proportion of petrol sold on trough days was around half of that sold in Melbourne, which had a regular price cycle for all of 2009 and a larger variance of prices.

Chart 4.10 shows the daily average petrol price and the proportion of petrol volume sold each day for the period 1 July to 30 September 2016 in Perth.
A comparison of charts 4.9 and 4.10 shows that the variance in consumer purchasing behaviour throughout the price cycle was more pronounced in 2016 than in 2009. In 2016, the proportion of petrol sold on trough days was more than double that sold on peak days.

In 2016, it appears that many consumers were well aware of the regular weekly price cycle in Perth and knew that the cheapest day to purchase petrol each week was a Monday. Conversely, consumers appear to have had less certainty in predicting the price cycle in 2009. This suggests that the regularity of the price cycle is of more benefit to consumers for buying at the trough than the FuelWatch scheme alone (which has been operating for almost 20 years).44

### 4.3 Changes in price cycles between 2009 and 2016 have cost motorists in the eastern capital cities and benefited those in Perth

The charts in section 4.2 and appendix C indicate that the volume of petrol sold is influenced by the price of petrol, particularly when short-term movements in the price of petrol are predictable. When prices are low, the volume of petrol sold tends to increase, because consumers look to take advantage of low prices. Conversely, the volume of petrol sold tends to decrease when prices are high, as some consumers avoid purchasing petrol at high prices.

The financial impact on consumers of the changing patterns and regularity of price cycles can be estimated by comparing the average price across each price cycle with the average volume-weighted price across each price cycle. The average volume-weighted price adjusts the daily average price according to the volume of petrol sold on each day (i.e. it accounts for higher sales volumes on days when prices are low, and lower sales volumes when prices are high).

Table 4.1 shows the average price, average volume-weighted price and the difference between the two for the five largest cities in 2009.

---

Table 4.1: Average price across each price cycle, average volume-weighted price across each price cycle and the difference in the five largest cities: 2009 (cents per litre)

<table>
<thead>
<tr>
<th></th>
<th>Average price across each price cycle</th>
<th>Average volume-weighted price across each price cycle</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>119.3</td>
<td>118.0</td>
<td>-1.3</td>
</tr>
<tr>
<td>Melbourne</td>
<td>121.4</td>
<td>120.1</td>
<td>-1.3</td>
</tr>
<tr>
<td>Brisbane</td>
<td>118.2</td>
<td>117.3</td>
<td>-0.9</td>
</tr>
<tr>
<td>Adelaide</td>
<td>119.9</td>
<td>118.1</td>
<td>-1.8</td>
</tr>
<tr>
<td>Perth</td>
<td>118.8</td>
<td>118.6</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on data from Informed Sources and monitored companies.
Note: RULP data is used in all five cities.

Table 4.1 shows that in 2009 the average volume-weighted price was lower than the average price in each of the five cities. This reflects consumers purchasing greater volumes of petrol when prices are lower than the average price. The largest difference between the average price and the average volume-weighted price was 1.8 cpl in Adelaide, while the smallest difference was 0.2 cpl in Perth. This indicates that, at least in part, consumers in Adelaide were timing their petrol purchases to capture lower than average prices more often than consumers in the other cities.

Table 4.2 shows the average price, average volume-weighted price and the difference between the two for the five largest cities in 2016.

Table 4.2: Average price across each price cycle, average volume-weighted price across each price cycle and the difference in the five largest cities: 2016 (cents per litre)

<table>
<thead>
<tr>
<th></th>
<th>Average price across each price cycle</th>
<th>Average volume-weighted price across each price cycle</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>113.8</td>
<td>113.3</td>
<td>-0.5</td>
</tr>
<tr>
<td>Melbourne</td>
<td>116.3</td>
<td>116.0</td>
<td>-0.3</td>
</tr>
<tr>
<td>Brisbane</td>
<td>119.7</td>
<td>119.4</td>
<td>-0.3</td>
</tr>
<tr>
<td>Adelaide</td>
<td>114.7</td>
<td>113.8</td>
<td>-0.9</td>
</tr>
<tr>
<td>Perth</td>
<td>116.6</td>
<td>115.3</td>
<td>-1.3</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on data from FUELtrac and monitored companies.
Note: E10 data is used in Sydney.

Table 4.2 shows that the average volume-weighted price was also lower than the average price in 2016 in each of the five cities. In 2016, the largest difference between the average price and the average volume-weighted price was 1.3 cpl in Perth, and the smallest difference was 0.3 cpl in Melbourne and Brisbane.

This means that overall in both years it was more common for consumers to purchase petrol at lower than average prices. However, in 2016 it was more difficult for consumers in the eastern capital cities to do this and easier for consumers in Perth. The change in the differences between the average price and the average volume-weighted price between 2009 and 2016 is shown in table 4.3.
Table 4.3: Difference between the average price across each price cycle and the average volume-weighted price across each price cycle in 2009 and 2016, and the change between the two years (cents per litre)

<table>
<thead>
<tr>
<th>City</th>
<th>Average difference 2009</th>
<th>Average difference 2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>-1.3</td>
<td>-0.5</td>
<td>-0.8</td>
</tr>
<tr>
<td>Melbourne</td>
<td>-1.3</td>
<td>-0.3</td>
<td>-1.0</td>
</tr>
<tr>
<td>Brisbane</td>
<td>-0.9</td>
<td>-0.3</td>
<td>-0.6</td>
</tr>
<tr>
<td>Adelaide</td>
<td>-1.8</td>
<td>-0.9</td>
<td>-0.9</td>
</tr>
<tr>
<td>Perth</td>
<td>-0.2</td>
<td>-1.3</td>
<td>+1.1</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on data from Informed Sources, FUELtrac and monitored companies.

The difference between the average price and the average volume-weighted price decreased in each of the eastern capital cities between 2009 and 2016. The decrease ranged from 0.6 cpl in Brisbane to 1.0 cpl in Melbourne. Conversely, the difference between the average price and the average volume-weighted price increased in Perth, by 1.1 cpl.

The smaller the difference between the average price and the average volume-weighted price, the more consumers are paying for petrol relative to the average price. The larger the difference between the average price and the average volume-weighted price the less, on average, consumers are paying for petrol relative to the average price.

The reduction in the difference between the average price and the average volume-weighted price in the eastern capital cities between 2009 and 2016 indicates that the increased duration of price cycles in 2016 resulted in motorists paying more for petrol in Sydney, Melbourne, Brisbane and Adelaide than they did in 2009, when there were more regular price cycles. Conversely, the increased difference between the prices in Perth between 2009 and 2016 indicates that the increased regularity of price cycles in 2016 resulted in consumers paying less for petrol than they did in 2009.

While the changes shown in table 4.3 may seem small on a cent per litre basis, they represent a significant amount paid by motorists in aggregate in the five largest cities. The ACCC estimates that in 2016 the overall cost to motorists of the decrease in the difference between the average price and the average volume-weighted price in Sydney was around $25 to $30 million. In Melbourne it was around $30 to $35 million, in Brisbane it was around $10 to $15 million, and Adelaide it was around $10 million.

The increased difference between the average price and the average volume-weighted price in Perth saved motorists in aggregate around $15 to $20 million in 2016.
5. Changes in price cycles in recent years still provide motorists with opportunities to buy at relatively low prices

The two previous chapters analysed the changing nature of price cycles, particularly in the eastern capital cities, and how consumer buying patterns have changed over the past 10 years.

While changes in price cycles in the eastern capital cities have led to less certainty around when the trough occurs in those cities, the longer durations of price cycles can present opportunities for motorists to save money if they shop around.

In NSW, the FuelCheck fuel price monitoring scheme provides real-time information about petrol prices at all retail sites across the state. The scheme requires petrol retailers to inform FuelCheck of any petrol price changes and this information is provided to motorists via the FuelCheck website and app. Historical data is available for analysis.

This chapter analyses FuelCheck data in June 2018 to show the opportunities that are available to motorists in Sydney during the price cycle. In particular, the analysis shows:

- the opportunities available for motorists to take advantage of lower priced retail sites during the price increase phase of the price cycle
- the degree of price dispersion in petrol prices at all points of the price cycle, providing consumers opportunities to buy at relatively lower prices.

While there are differences in price cycles in the four eastern cities, broadly similar opportunities are likely to apply to price cycles in Melbourne, Brisbane and Adelaide, as there are in Sydney.

In Perth, which has the FuelWatch scheme and where the cheapest day of the week is regularly on a Monday, motorists have a greater degree of certainty about when to buy petrol at the lowest prices each week.

5.1 The longer price increase phase of price cycles provide opportunities for motorists to fill up at a low price

Chart 5.1 shows daily average retail petrol prices in Sydney in June 2018. Prices reached a trough on Tuesday 12 June at 136.6 cpl and over the subsequent six days increased to a peak of 153.7 cpl on Monday 18 June. The overall price increase was 17.1 cpl.

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45 Sydney E10 prices are used in this analysis. The price cycle in June 2018 was selected for analysis because its trough to peak duration (six days) using FuelCheck data was closest to the average trough to peak duration of all price cycles in 2017–18 based on FUELtrac data (around 7 days).

46 The daily average price in the analysis in this chapter is calculated using the last known price at each retail site in Sydney each day. This is different from the standard calculation of daily average prices, which is determined using the average of each price at each retail site throughout each day.
There were around 850 retail fuel sites in Sydney as at 30 June 2018. Of this total, 718 retail sites sold E10. Analysis of price movements at each of these retail sites in the June 2018 price cycle indicates that 696 retail sites (around 97 per cent) followed the price cycle.

Chart 5.2 shows the cumulative proportion of retail sites that increased to their peak price in each day of the price increase phase of the price cycle in June 2018.

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47 According to the Informed Sources Netwatch database of retail fuel sites.

48 A small number of retail sites did not increase their prices, and at some retail sites the price increase was less than 3 per cent of the daily average trough price and they were excluded from the analysis. In addition, there were two retail sites for which price data was unavailable for the June 2018 price cycle.
Chart 5.2 shows that:

- Around 3 per cent of retail sites were at their peak price on the day on which daily average prices were at their trough (12 June).
- The cumulative proportion of retail sites that were at their peak price had increased to 19 per cent by the second day of the price increase phase. In other words, only one in every five retail sites were at their peak price.
- By the third day of the price increase phase, the cumulative proportion had increased to just over one in every two retail sites.
- By the sixth day, which was the day on which daily average prices were at their peak (18 June), the cumulative proportion of retail sites that were at their peak price had increased to 94 per cent.

The data shows that Sydney motorists who missed purchasing petrol at the trough on 12 June had an additional three days before the majority of retail sites had increased their prices to their peak price.

There is no reason to believe that this price cycle is unrepresentative of other cycles in Sydney, or that a broadly similar pattern would not occur in the other eastern capital cities.

### 5.2 The price increase at most retail sites is substantial

The price cycle increase varied significantly among retail sites. However, the price increase was between 20 cpl and 30 cpl at over 40 per cent of retail sites. Chart 5.3 summarises the magnitude of the price increases of the 716 retail sites in Sydney from their trough price to their peak price in the June 2018 price cycle in Sydney.

![Chart 5.3: Range of price cycle increases at each retail site, and the proportion of retail sites in each price range, in the June 2018 Sydney price cycle](image)

Source: ACCC calculations based on FuelCheck data.

Chart 5.3 shows that:

- 13 retail sites (2 per cent) did not increase prices at all
- 71 retail sites (10 per cent) increased prices by up to 10 cpl
- 314 retail sites (44 per cent) increased prices by between 10 cpl and 20 cpl (inclusive)
- 318 retail sites (44 per cent) increased prices by between 20 cpl and 30 cpl (inclusive).

When retail sites increased their prices from trough to peak, the majority (around 85 per cent) did so in a single day. Therefore, some motorists in Sydney could have found themselves paying as much as 30 cpl more at a particular retail site within a day.

---

49 There were two retail sites for which E10 data was unavailable in the June 2018 price cycle.
5.3 The lower priced retail sites are distributed across the Sydney market

Figures 5.1 to 5.7 show the location of most of the retail sites in Sydney on each day of the June 2018 price cycle increase phase—from the trough day on 12 June, when a small number of retail sites increased their prices, to day six, when the prices peaked on 18 June.

For each day of the price cycle increase phase, retail sites that had not increased their price to the peak are marked in blue, and retail sites that had increased their price to the peak are marked in red. As noted in section 5.2, the difference in price between these retail sites can be as much as 30 cpl.

Figure 5.1: Day of the trough of the June 2018 price cycle (12 June)

Source: ACCC calculations based on FuelCheck data.

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50 Not all 696 retail sites can be seen in the charts because a number of retail sites may be located near each other (and therefore the dots are on top of each other) and others operate on the fringes of Sydney.
Petrol price cycles in Australia

Figure 5.2: Day one of the June 2018 price cycle increase phase (13 June)

Figure 5.3: Day two of the June 2018 price cycle increase phase (14 June)

Source: ACCC calculations based on FuelCheck data.
Figure 5.4: Day three of the June 2018 price cycle increase phase (15 June)

Figure 5.5: Day four of the June 2018 price cycle increase phase (16 June)

Source: ACCC calculations based on FuelCheck data.
Figure 5.6:  Day five of the June 2018 price cycle increase phase (17 June)

Source: ACCC calculations based on FuelCheck data.

Figure 5.7:  Day of the peak of the June 2018 price cycle (18 June)

Source: ACCC calculations based on FuelCheck data.
The figures show that:

- When the price cycle increase phase began (on the trough day), there were only a handful of retail sites that increased their prices to the peak.
- On days one and two, other retail sites increased to their peak price, including several (but not all) retail sites in the northern and eastern parts of Sydney. Overall, however, around 80 per cent of retail sites had not increased to their peak price at this stage. Those retail sites were widely distributed throughout Sydney.
- The most noticeable increase occurred on day three, when a significant number of retail sites increased prices to their peak. Around half of the retail sites in Sydney had reached their peak by this day, but motorists who missed the price cycle trough day could still fill up at remaining lower priced retail sites. A significant number of these remaining retail sites were in the south western suburbs of Sydney, but through the use of fuel price websites and apps motorists could still access some of the lower priced retail sites scattered throughout most of Sydney.
- The number of retail sites increasing to their peak continued to increase in subsequent days and by day six (the peak day), 94 per cent of retail sites had reached their peak. At this stage motorists are advised to delay buying petrol if possible.

### 5.4 Some major petrol brands increase their prices more quickly than others

The analysis of price increases by major brand in the June 2018 price cycle in Sydney indicates that some brands, such as Coles Express and Woolworths, were relatively quick to increase their prices, while smaller independent brands (such as Metro Fuel) and the independent retail sites generally delayed increasing prices.\(^{51}\)

Chart 5.4 shows the average number of days it took for major brands to increase prices at their retail sites to their peak price in the June 2018 price cycle in Sydney. This is calculated by determining the number of days it took for each retail site to reach its peak price following the trough on 12 June, and then calculating the average number of days for each major brand.

---

\(^{51}\) A major brand is one with 10 or more retail sites, based on the information in the FuelCheck database. These retail sites, including the ‘independent’ category, accounted for over 98 per cent of all retail sites in Sydney that had a price cycle in June 2018. BP and Caltex retail sites include retail sites at which BP and Caltex head offices set prices, and independently owned BP- and Caltex-branded retail sites, at which the site owner sets the retail prices.
Chart 5.4 shows that:

- Coles Express and Woolworths took the least time on average (around two days) to reach their peak price following the trough on 12 June.
- These major brands were followed by Caltex, 7-Eleven and BP, which on average took between three to four days to reach their peak price.
- Westside, United and Speedway followed with an average of around five days to reach their peak price.
- Finally, Budget, Metro Fuel and the independent retail sites took the most time on average (around six days) to reach their peak price.

Chart 5.5 shows the average trough to peak increase by each major brand, as well as their respective average trough and peak price levels. These price levels are based on the average of each major brand’s retail site trough price and peak price.
Chart 5.5: Average price increase from trough to peak by major brand in the June 2018 price cycle in Sydney

<table>
<thead>
<tr>
<th>Brand</th>
<th>Peak Price Increase (cpl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coles Express</td>
<td>17</td>
</tr>
<tr>
<td>Woolworths</td>
<td>23</td>
</tr>
<tr>
<td>Caltex</td>
<td>22</td>
</tr>
<tr>
<td>7-Eleven</td>
<td>24</td>
</tr>
<tr>
<td>BP</td>
<td>18</td>
</tr>
<tr>
<td>United</td>
<td>20</td>
</tr>
<tr>
<td>Westside</td>
<td>17</td>
</tr>
<tr>
<td>Budget</td>
<td>14</td>
</tr>
<tr>
<td>Independent</td>
<td>14</td>
</tr>
<tr>
<td>Speedway</td>
<td>15</td>
</tr>
<tr>
<td>Metro Fuel</td>
<td>15</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on FuelCheck data.

Chart 5.5 shows that:
- Coles Express, Woolworths, Caltex and 7-Eleven all had the highest average peak price (around 158 cpl).
- Coles Express had the highest average trough price (around 141 cpl), which was 7 cpl higher than 7-Eleven (around 134 cpl), and 11 cpl higher than Metro Fuel (around 130 cpl).

5.5 The range of prices between retail sites provides opportunities for motorists to continue to seek out lower priced retailers throughout the price cycle

The ACCC has previously noted opportunities for motorists to save money by seeking out retailers that compete primarily on price. In May 2018, the ACCC published *Petrol prices are not the same: report on petrol prices by major retailer in 2017*, which showed that overall:
- independent chains were the lowest priced major retailers in each of the five largest cities (United in Melbourne and Brisbane, Speedway in Sydney, Liberty in Adelaide and Vibe in Perth)
- Coles Express was on average the highest priced major retailer in all five cities
- the remaining retailers varied between being generally below the market average price in most cities (Woolworths) and generally above it (BP and Caltex retail sites at which head office set the price).52

Analysis of daily average prices by major brand in the June 2018 price cycle in Sydney are consistent with the conclusions in that report (see chart 5.6).

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Chart 5.6: Daily average retail petrol prices by major brand in Sydney: 1 June to 30 June 2018

Source: ACCC calculations based on FuelCheck data.

Chart 5.6 shows that, on a brand average basis, Coles Express retail sites had the highest daily average retail prices throughout the June 2018 price cycle in Sydney, and Metro Fuel retail sites generally had the lowest daily average retail prices.

It shows that the difference between average prices for Coles Express and:
- Metro Fuel ranged around 12 cpl to 26 cpl during the price increase phase, around 16 cpl when the cycle was at the peak, and around 7 cpl to 13 cpl during the price decrease phase.
- 7-Eleven ranged around 1 cpl to 12 cpl during the price increase phase, around 1 cpl when the cycle was at the peak, and around 3 cpl to 7 cpl during the price decrease phase.
- Smaller independent brands (Metro Fuel, Budget and Speedway) widened during the price increase phase of the cycle.
  - This is in contrast to the difference relative to brands such as Woolworths, 7-Eleven and Caltex, which narrowed over the same period.
  - This is due to smaller independents setting a peak price significantly below the target price set by the market leaders and other non-independent brands (which was around 157.9 cpl).

Appendix D presents charts similar to chart 5.6 for the first six price cycles in Sydney in 2018. They show similar trends to those in the June 2018 price cycle, indicating the wide range of prices between major brands in Sydney throughout the first half of 2018.

5.6 The degree of price dispersion in petrol prices at all points of the price cycle provides consumers with opportunities to buy at relatively low prices

Chart 5.6 indicates that there was a range of prices available to motorists throughout the June 2018 price cycle in Sydney.

The daily average petrol price dispersion between relatively high- and low-priced retail sites in Sydney in June 2018 is shown in chart 5.7. It excludes the top 25 per cent most-expensive retail sites and the cheapest 25 per cent of retail sites each day, to provide an indication of the general daily price range available to most motorists in Sydney.
The range in daily average prices across this subset of retail sites in Sydney was between 6 cpl and 8 cpl for most of June 2018. During the price increase phase of the price cycle (between 12 and 18 June) the daily average price range was as high as 25 cpl. Excluding the trough day and the six days of the price increase phase, the average range between the highest and lowest daily average prices in Sydney in June 2018 was around 7 cpl.

The actual average difference between the highest priced retail site and the lowest priced retail site across all retail sites in Sydney in June 2018 was around 35 cpl.

The range of prices across Sydney shows that motorists can save money from shopping around to find lower priced retail sites outside the price increase phase.
6. By using information about price cycles, and available fuel price websites and apps, motorists can save significant amounts when they buy petrol

Data in chapters 3 and 5 showed that, once the price cycle increase phase begins, motorists in the eastern capital cities have around six days to find retail sites still selling petrol at the trough price. It also showed the importance of shopping around throughout the price cycle, as prices vary significantly by brand, and a range of prices are often available to motorists.

Fuel price websites and apps are the tools that allow motorists to take advantage of these opportunities.

6.1 There are a variety of fuel price websites and apps that can assist motorists

Motorists can track the stages of the petrol price cycle in each of the five largest cities by going to the Petrol price cycles webpage on the ACCC’s website. As noted in chapter 1, it provides guidance to motorists in the five largest cities about when to buy, when not to buy and when is a good time to shop around.

There are also some commercial fuel price websites and apps that provide information about the state of the price cycle to help consumers decide when in the price cycle to buy. An example is the MotorMouth website (see figure 6.1), which shows the state of the price cycle and provides guidance on when might be a good time to fill up.

When deciding where to fill up, motorists can identify lower priced retail sites by using fuel pricing websites and apps, which show the prices at individual retail sites or provide price bands. Some of the widely used fuel price websites and apps available to motorists are described below. While there are a range of fuel price websites and apps, it is important to be aware that some are more comprehensive and timely than others, and not all of them (such as MotorMouth and GasBuddy) include prices for the lowest priced retail sites.

6.1.1 State government websites and apps

The NSW and WA Governments operate the FuelCheck and FuelWatch schemes respectively. Retail sites are required by law to provide their prices to these schemes. In Sydney, motorists can use FuelCheck to find retail sites that have not yet put their price up when the price increase phase of the cycle begins. In Perth, motorists can use FuelWatch to find the lowest priced retail site on a Monday, when the price cycle regularly troughs. Examples of the information available on these websites is shown in figures 6.2 to 6.4.

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54 The NT also has a government scheme (the MyFuel NT scheme), which was introduced in November 2017 and is similar to the NSW scheme.
Figure 6.2: Screenshot of Sydney petrol prices on the FuelCheck website—map view—as at 9.30 am on 19 November 2018

Source: FuelCheck website.
Figure 6.3: Screenshot of Sydney petrol prices on the FuelCheck website—list view—as at 9.30 am on 19 November 2018

<table>
<thead>
<tr>
<th>Price</th>
<th>Retail Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>118.9</td>
<td>Tanwar Petroleum</td>
<td>281 New Canterbury Rd, Lewisham NSW 2049</td>
</tr>
<tr>
<td>121.7</td>
<td>Budget Petrol Petersham</td>
<td>208 New Canterbury Rd, Petersham NSW 2049</td>
</tr>
<tr>
<td>122.7</td>
<td>7-Eleven Camperdown</td>
<td>198 Parramatta Road, CAMPERDOWN NSW 2050</td>
</tr>
<tr>
<td>122.7</td>
<td>7-Eleven Petersham</td>
<td>10 Crystal St., PETERSHAM NSW 2049</td>
</tr>
<tr>
<td>122.7</td>
<td>Budget Petrol</td>
<td>37 Crystal St., Petersham NSW 2049</td>
</tr>
<tr>
<td>122.7</td>
<td>Caltex Woolworths Leichardt</td>
<td>774 Parramatta Road, Lewisham NSW 2049</td>
</tr>
<tr>
<td>122.7</td>
<td>7-Eleven Haberfield</td>
<td>25 Parramatta Road, Haberfield NSW 2045</td>
</tr>
<tr>
<td>123.9</td>
<td>Caltex Starmart Newtown</td>
<td>26 Enmore Rd, NEWTOWN NSW 2042</td>
</tr>
<tr>
<td>123.9</td>
<td>7-Eleven Enmore</td>
<td>22 Stanmore Street, Enmore NSW 2042</td>
</tr>
<tr>
<td>124.7</td>
<td>United Rozelle</td>
<td>127, ROZELLE NSW 2039</td>
</tr>
</tbody>
</table>

Source: FuelCheck website.
Note: Only the 10 lowest priced retail sites are included in the screenshot.

Figure 6.2 shows that there was a difference of 45 cpl between the highest priced retail site (Coles Express, with a price of 163.9 cpl at various sites) and the lowest priced retail site (118.9 cpl at Tanwar Petroleum) in Sydney at around 9.30 am on 19 November 2018. It also shows that a number of major retail brands, including 7-Eleven, United, Budget, Caltex and Woolworths, were among the lowest priced retail sites (also shown in figure 6.3).
In addition to the NSW and WA schemes, the Queensland Government announced on 1 May 2018 that it would be introducing a two-year trial of a fuel price reporting scheme in Queensland. This commenced on 3 December 2018, and provides motorists in Brisbane with comprehensive petrol price information.

6.1.2 Motoring organisation websites and apps

Numerous motoring organisations across Australia have their own fuel price websites and apps, although the features and timeliness of data available vary. The National Roads and Motorists’ Association in NSW, the Royal Automobile Club of Victoria and the Royal Automobile Club of WA have apps that allow users to locate their nearest retail site and to check prices at retail sites. The Royal Automobile Club of Queensland provides similar information to motorists on its website.56

6.1.3 Commercial websites and apps

There are also a number of commercially operated fuel price websites and apps, including those operated by fuel retailers.

Woolworths, Coles Express, 7-Eleven, BP and Caltex have apps that allow users to find their nearest retail site and check other details, such as retail offers and opening hours. However, only the 7-Eleven and Woolworths apps provide information about retail prices at their retail sites.

The 7-Eleven app provides motorists with near real-time fuel price data at all 7-Eleven retail sites in Australia. It also allows registered users to ‘lock in’ 7-Eleven’s best local price and then redeem it at any 7-Eleven retail site Australia-wide within seven days. Motorists in the five largest cities could use this feature during the price increase phase of the cycle to ‘lock in’ a price at the price cycle trough and then fill up seven days later when the majority of retail sites have increased their price to the peak.

In May 2018 7-Eleven stated that, since its launch in 2016, more than one million Australians had downloaded the 7-Eleven fuel app, collectively saving more than $5 million on fuel purchases.57

Fuel price information is also available to motorists via the MotorMouth website and app, and the GasBuddy app. These websites and apps show prices for a variety of retailers and retail sites, although prices are not always available for all retail sites on these websites and apps. The GasBuddy app also shows the range of prices available to motorists in a particular location (see figure 6.5).

56 The Royal Automobile Club of Tasmania has an arrangement where GasBuddy displays petrol prices on its app for Tasmanian motorists.

6.2 Motorists can make significant savings if they shop around and purchase petrol at the lowest priced retail sites

Many motorists tend to fill up once a week. Many motorists in Perth that fill up once per week can easily time their purchase on the cheapest day of the week, due to the regular weekly price cycles that occur in Perth and the FuelWatch scheme (which keep prices fixed for 24 hours). Although motorists in the eastern capital cities do not have this certainty, they can still use the price cycles to their advantage to save money.

6.2.1 Savings during the price increase phase

During the price increase phase of the price cycle, prices at retail sites typically increase by a significant amount, often between 20 cpl and 30 cpl. Motorists that are consistently able to purchase petrol during the price cycle increase phase from a retail site that has not yet increased prices can make substantial savings throughout the year.

Table 6.1 shows the estimated savings to motorists in each of the five largest cities if they had purchased petrol at the trough price rather than the peak price in each price cycle in 2017–18. These savings are based on the following assumptions: that differences in prices across retail sites in the

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58 In Petrol prices and Australian consumers—report of the ACCC inquiry into the price of unleaded petrol, the ACCC reported that around 50 per cent of motorists filled up once a week (see page 285). Data available to the ACCC in early 2018 indicates that around 35 per cent of motorists fill up once a week.
price increase phase were 25 cpl in the eastern capital cities and 20 cpl in Perth, and that the average motorist filled up a 50-litre tank at each of the price cycle troughs in their city.\textsuperscript{59}

Table 6.1: Estimated annual savings to motorists that purchased petrol at the trough price in each price cycle in 2017–18 in the five largest cities\textsuperscript{60}

<table>
<thead>
<tr>
<th>Difference in price during the increase phase</th>
<th>Number of price cycles</th>
<th>Estimated savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>25 cpl</td>
<td>14</td>
</tr>
<tr>
<td>Melbourne</td>
<td>25 cpl</td>
<td>12</td>
</tr>
<tr>
<td>Brisbane</td>
<td>25 cpl</td>
<td>12</td>
</tr>
<tr>
<td>Adelaide</td>
<td>25 cpl</td>
<td>16</td>
</tr>
<tr>
<td>Perth</td>
<td>20 cpl</td>
<td>52</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on FUELtrac and FuelCheck data.

The table shows that, based on price cycle data in 2017–18, motorists in Sydney who always purchased their weekly tank of petrol from a retail site yet to raise prices during the price increase phase could have each saved themselves $175 per year. Similar motorists in Melbourne and Brisbane could have each saved $150 per year and in Adelaide $200 per year.

Given Perth’s regular weekly cycle, motorists in Perth filling up once a week could have saved themselves $520 per year by always filling up on the cheapest day of the week.

6.2.2 Savings during the rest of the price cycle

As noted in chapter 5, petrol prices also vary between retail sites when prices are at the peak and during the price decrease phase of the price cycle, although to a lesser extent than during the price increase phase. Nonetheless, motorists can use the range of available prices to their advantage.

Motorists who filled up weekly and purchased petrol at each price cycle trough at a low price in 2017–18, still had between 36 and 40 weeks throughout the year (depending on their city) when they had to fill up. At these times, motorists could have used fuel price websites and apps to find the lowest priced retail sites.

Table 6.2 shows the estimated savings to a motorist that used fuel price websites and apps to find the lowest priced retail site each time they filled up. The savings shown in the table are based on the following assumptions: that a motorist filled up once a week on weeks without a price cycle trough (i.e. during the rest of the price cycle), and that the variation between the lowest priced and highest priced retail sites was constant throughout the year. In Sydney, the variation was estimated to be around 7 cpl (from section 5.6) and in the other cities was assumed to be marginally smaller at 5 cpl.\textsuperscript{61}

\textsuperscript{59} The increase in Perth is assumed to be lower than in the other cities because historically it has had a lower price cycle increase than the other cities (see table 3.1).

\textsuperscript{60} Note that the numbers of price cycles in this table are for financial year 2017–18, whereas the price cycle data in chapter 3 is for calendar years.

\textsuperscript{61} The range of prices is indicative only in Melbourne, Brisbane and Adelaide. It is assumed to be lower in these cities than in Sydney, as the ACCC found in its Petrol prices are not the same: report on petrol prices by major retailer in 2017 that the range of prices by major retailer in Sydney was higher than in the other cities.
Table 6.2: Estimated annual savings to motorists that shopped around during the rest of the price cycle in 2017–18 in the eastern capital cities

<table>
<thead>
<tr>
<th></th>
<th>Difference in price</th>
<th>Number of times a motorist filled up</th>
<th>Estimated savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney</td>
<td>7 cpl</td>
<td>38</td>
<td>$133</td>
</tr>
<tr>
<td>Melbourne</td>
<td>5 cpl</td>
<td>40</td>
<td>$100</td>
</tr>
<tr>
<td>Brisbane</td>
<td>5 cpl</td>
<td>40</td>
<td>$100</td>
</tr>
<tr>
<td>Adelaide</td>
<td>5 cpl</td>
<td>36</td>
<td>$90</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on FUELtrac and FuelCheck data.
Note: Perth is not included in the table, as motorists that filled up weekly would have been able to fill up on the trough day of the cycle each week (and obtain the savings estimated in table 6.1).

The table shows that, based on price cycle data in 2017–18, motorists in Sydney who purchased 50 litres of petrol each week from a lower priced retail site during the rest of the price cycle could have each saved themselves $133 per year. Similar motorists in Melbourne and Brisbane could have each saved $100 per year, and in Adelaide $90 per year.

It is important to note that all savings presented in this section are based on average price variances across retail sites in each city. In many instances, the difference between the lowest and highest priced retail sites may be greater, which would result in even larger savings for motorists.

6.2.3 Total annual savings to motorists that time their purchases and shop around

Combining the savings in tables 6.1 and 6.2, motorists in Sydney who purchased 50 litres of petrol each week and timed their purchases at the trough of the price cycle, and sought out the lowest priced retail sites over the rest of the price cycle, could each have saved a total of $308 per year. Motorists in Melbourne and Brisbane could each have saved themselves a total of $250 per year, and motorists in Adelaide could each have saved themselves $290 per year.

Based on price cycle data in 2017–18, assuming that around one third of motorists fill up once a week, that similar savings are available for all petrol grades, and that all of these motorists took advantage of the above savings, the total potential savings in Sydney would be around $260 million per year. Savings in the other eastern capitals per year would be: around $220 million in Melbourne, around $105 million in Brisbane and around $75 million in Adelaide.

The estimated total savings in Perth if all motorists that fill up weekly purchased petrol at the trough price rather than the peak price in every price cycle would be around $210 million per year.

The potential savings for motorists that filled up more than once a week would be greater, and motorists that filled up less frequently would save a lower amount. However, these illustrative savings indicate that motorists can use the price cycles to their advantage to save money on petrol.
7. **A small number of locations outside the five largest cities have price cycles**

As noted in chapter 1, price cycles occur in the five largest cities (Sydney, Melbourne, Brisbane, Adelaide and Perth), but not in the smaller cities (Canberra, Hobart and Darwin). A small number of locations outside the five largest cities also display cyclical petrol price movements that can be considered to be price cycles. In most cases, these are locations close to the five largest cities.

In 2017–18, the price cycles in some of these locations closely followed the price cycles in the capital city closest to them, while in other locations their price cycles had a lesser degree of regularity and predictability than in the closest capital city.

### 7.1 Methodology

The ACCC monitors daily average retail petrol prices in all capital cities and over 190 regional locations across Australia. To identify the regional locations with price cycles, the movements in daily average retail prices in each of the monitored locations were assessed.

The following criteria were considered when assessing regional locations for price cycles:

- if there was a sequence of prices increasing to a peak then gradually falling to a trough, i.e. price movements broadly followed a ‘saw-tooth’ pattern
- if each identifiable price cycle was of a broadly similar structure, i.e. the overall shape of the cycle including its length were generally consistent
- if this asymmetrical, cyclical pattern was repeated for at least half of 2017–18.

Generally, locations with daily petrol price movements that visibly followed a similar pattern to their closest capital city were considered as having price cycles. However, a degree of judgement was used when assessing whether a regional location had price cycles in 2017–18.

It is important to 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 in the regional location may vary from the average price cycle increase.
- Prices in some regional locations may have appeared to move in a similar pattern to a price cycle at certain times; however, unless they met the criteria above these price movements were not counted as price cycles.

The ACCC’s 2012 *Monitoring of the Australian petroleum industry* report examined the extent to which there were price cycles in regional locations in calendar year 2011. The methodology and definitions used in the 2017–18 analysis are different to the previous analysis because of the increasing duration of petrol price cycles in recent years. In addition, the number of locations analysed increased from 173 locations in 2011 to 183 locations in 2017–18.
Of the 183 regional locations analysed in 2017–18, there were 13 locations that had price cycles (around 7 per cent). These were:

- Geelong, Koo Wee Rup, Wallan and Seymour in Victoria
- Gold Coast, Sunshine Coast, Caboolture and Ipswich in Queensland
- Central Coast, Wollongong and Tweed Heads South in NSW
- Gawler in SA
- Geraldton in WA.

In the 2011 analysis, Geelong, Koo Wee Rup, Wallan, Seymour, Gawler and Tweed Heads South were identified as having regular price cycles, and Central Coast and Wollongong had occasional price cycles. In 2011, prices for the Gold Coast, Sunshine Coast, Caboolture and Ipswich were included in the data for Brisbane and not reported separately.

Figure 7.1 shows that in most cases, the locations with price cycles in 2017–18 are close to the five largest cities, which also have price cycles.

*Figure 7.1: Monitored locations with price cycles in 2017–18 and the capital cities*
7.2 Locations outside the five largest cities with price cycles

7.2.1 Geelong

Geelong is a regional centre located around 75 kilometres south-west of Melbourne, with a population of around 157,100 people. As at December 2017, it had 64 retail sites. As shown in chart 7.1, petrol price movements in Geelong closely followed the price cycles in Melbourne in 2017–18.

Chart 7.1: Daily average retail petrol prices in Geelong and Melbourne in 2017–18

Source: ACCC calculations based on FUELtrac data.

7.2.2 Koo Wee Rup

Koo Wee Rup is located around 75 kilometres south-east of Melbourne on the South Gippsland Highway. The population of Koo Wee Rup is around 2300 people. As at December 2017 it had four retail sites. As shown in chart 7.2, petrol price movements in Koo Wee Rup closely followed the price cycles in Melbourne in 2017–18, although there were some slight differences between the price cycles in Koo Wee Rup and Melbourne when prices were decreasing.

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7.2.3 Wallan

Wallan is located around 64 kilometres north of Melbourne, with a population of around 8500 people. Wallan is located on the Hume Highway. As at December 2017, it had six retail sites. As shown in chart 7.3, petrol price movements in Wallan closely followed the price cycles in Melbourne in 2017–18.
7.2.4 Seymour

Seymour is located around 116 kilometres north of Melbourne. It has a population of around 5,800 people and is located close to Wallan. Seymour is also located on the Hume Highway. As at December 2017, it had five retail sites. Despite there being some variability in the price movements in Seymour in 2017–18, it is apparent from chart 7.4 that petrol price movements in Seymour closely followed the price cycles in Melbourne. In particular, the price cycle peaks and troughs in Seymour were broadly aligned with those in Melbourne.

Chart 7.4: Daily average retail petrol prices in Seymour and Melbourne in 2017–18

Source: ACCC calculations based on FUELtrac data.

7.2.5 Gold Coast

The Gold Coast is located around 78 kilometres south-west of Brisbane, with a population of around 540,600 people. As at December 2017, it had 150 retail sites. Chart 7.5 shows that petrol price movements in the Gold Coast closely followed the price cycles in Brisbane in 2017–18.
7.2.6 Sunshine Coast

The Sunshine Coast is located around 105 kilometres north of Brisbane, with a population of around 243 400 people. As at December 2017, it had 87 retail sites. Chart 7.6 shows that the petrol price movements in the Sunshine Coast broadly coincided with the price cycles in Brisbane. In particular, the price increase and price decrease phases of the price cycles in the Sunshine Coast followed the similar timing as the price cycles in Brisbane. However, the price increases in the Sunshine Coast were smaller than those in Brisbane.
7.2.7 Caboolture

Caboolture is located around 52 kilometres north of Brisbane, with a population of around 67,500 people. As at December 2017, it had 14 retail sites. As shown in chart 7.7, the petrol price movements in Caboolture closely followed the price cycles in Brisbane in 2017–18, although there were some slight differences between the price cycles in Caboolture and Brisbane when prices were decreasing.

Chart 7.7: Daily average retail petrol prices in Caboolture and Brisbane in 2017–18

Source: ACCC calculations based on FUELtrac data.

7.2.8 Ipswich

Ipswich is located around 45 kilometres south-west of Brisbane, with a population of around 193,700 people. As at December 2017, it had 57 retail sites. As can be seen in chart 7.8, the petrol price movements in Ipswich broadly followed the price cycles in Brisbane in 2017–18.

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66 This population estimate is from the 2016 Census based on the ‘Statistical Area Level 3’ classification.
67 This population estimate is from the 2016 Census based on the ‘Local Government Area’ classification.
Petrol price cycles in Australia

Chart 7.8: Daily average retail petrol prices in Ipswich and Brisbane in 2017–18

Ipswich
Brisbane
Jul-/one.tab/seven.tab
Aug-/one.tab/seven.tab
Sep-/one.tab/seven.tab
Oct-/one.tab/seven.tab
Nov-/one.tab/seven.tab
Dec-/one.tab/seven.tab
Jan-/one.tab/eight.tab
Feb-/one.tab/eight.tab
Mar-/one.tab/eight.tab
Apr-/one.tab/eight.tab
May-/one.tab/eight.tab
Jun-/one.tab/eight.tab

Source: ACCC calculations based on FUELtrac data.

7.2.9 Central Coast

The Central Coast is located around 82 kilometres north of Sydney, with a population of around 307,700 people. As at December 2017, it had 66 retail sites that sold E10. Petrol price movements in the Central Coast did not follow the price movements in Sydney particularly closely in 2017–18, but generally tended to follow the peaks of the Sydney price cycles. As can be seen in chart 7.9, the price movements for the Central Coast were broadly cyclical and repeating for 2017–18, although the price movements were not overly regular.

Chart 7.9: Daily average retail petrol prices in the Central Coast and Sydney in 2017–18

Central Coast
Sydney
Jul-/one.tab/seven.tab
Aug-/one.tab/seven.tab
Sep-/one.tab/seven.tab
Oct-/one.tab/seven.tab
Nov-/one.tab/seven.tab
Dec-/one.tab/seven.tab
Jan-/one.tab/eight.tab
Feb-/one.tab/eight.tab
Mar-/one.tab/eight.tab
Apr-/one.tab/eight.tab
May-/one.tab/eight.tab
Jun-/one.tab/eight.tab

Source: ACCC calculations based on FUELtrac data.
Note: Retail prices in the Central Coast and Sydney are for E10.
7.2.10  Wollongong

Wollongong is located around 95 kilometres south-west of Sydney, with a population of around 261,900 people. As at December 2017, it had 70 retail sites that sold E10. As shown in chart 7.10, Wollongong had periods when price movements were not cyclical, particularly between December 2017 and May 2018. In other periods, price movements in Wollongong generally followed the peaks of the Sydney price cycle and exhibited a somewhat regular, cyclical pattern. The price cycle increase was generally smaller in Wollongong than in Sydney.

Chart 7.10: Daily average retail petrol prices in Wollongong and Sydney in 2017–18

![Daily average retail petrol prices in Wollongong and Sydney in 2017–18](chart)

Source: ACCC calculations based on FUELtrac data.
Note: Retail prices in Wollongong and Sydney are for E10.

7.2.11  Tweed Heads South

Tweed Heads South is around 104 kilometres south-east of Brisbane. It borders the Gold Coast and has a population of around 8,100 people. As at December 2017, it had four retail sites. Chart 7.11 shows that petrol price movements in Tweed Heads South generally followed a similar pattern to Brisbane price cycles in 2017–18, although it tended to only follow the peaks of the Brisbane price cycles between October 2017 and February 2018. For some periods however, between July and October 2017 and between April and June 2018, the price cycles in Tweed Heads South appeared to broadly follow the price cycles in Brisbane.

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68 This population estimate is from the 2016 Census based on the ‘Statistical Area Level 2’ classification.
Petrol price cycles in Australia

Chart 7.11: Daily average retail petrol prices in Tweed Heads South and Brisbane in 2017–18

![Graph showing petrol price cycles in Tweed Heads South and Brisbane in 2017–18](chart)

Source: ACCC calculations based on FUELtrac data.

7.2.12 Gawler

Gawler is located around 52 kilometres north-east of Adelaide, with a population of around 26 500 people. It is near the Sturt Highway. As at December 2017, it had four retail sites. Petrol price movements in Gawler broadly followed the price cycles in Adelaide for 2017–18, as shown in chart 7.12.

Chart 7.12: Daily average retail petrol prices in Gawler and Adelaide in 2017–18

![Graph showing petrol price cycles in Gawler and Adelaide in 2017–18](chart)

Source: ACCC calculations based on FUELtrac data.
7.2.13 Geraldton

Geraldton is around 415 kilometres north-west of Perth, with a population of around 32 000 people. As at December 2017, it had 12 retail sites that sold petrol. Geraldton exhibited similar weekly price cycles to Perth in 2017–18, as seen in chart 7.13. In particular, the price increase and price decrease phases of the price cycles in Geraldton followed similar timing to the price cycles in Perth. However, the price increases in each price cycle in Geraldton were less than those in Perth.

Chart 7.13: Daily average retail petrol prices in Geraldton and Perth in 2017–18

Source: ACCC calculations based on FUELtrac data.

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Appendix A: Petrol price cycles in the five largest cities in 2017

Charts A1 to A11 show daily average retail petrol prices in each of the five largest cities from 1 January to 31 December 2017. The numbers at the peaks in the charts represent the price cycle increase in cents per litre from the trough to the peak.

Sydney

Chart A1: Daily average retail petrol prices in Sydney: 1 January to 30 June 2017

Source: ACCC calculations based on FUELtrac data.
Note: E10 prices are used in Sydney.

Chart A2: Daily average retail petrol prices in Sydney: 1 July to 31 December 2017

Source: ACCC calculations based on FUELtrac data.
Note: E10 prices are used in Sydney.
Melbourne

Chart A3: Daily average retail petrol prices in Melbourne: 1 January to 30 June 2017

Source: ACCC calculations based on FUELtrac data.

Chart A4: Daily average retail petrol prices in Melbourne: 1 July to 31 December 2017

Source: ACCC calculations based on FUELtrac data.
Brisbane

Chart A5: Daily average retail petrol prices in Brisbane: 1 January to 30 June 2017

Source: ACCC calculations based on FUELtrac data.

Chart A6: Daily average retail petrol prices in Brisbane: 1 July to 31 December 2017

Source: ACCC calculations based on FUELtrac data.
Adelaide

Chart A7: Daily average retail petrol prices in Adelaide: 1 January to 30 June 2017

Source: ACCC calculations based on FUELtrac data.

Chart A8: Daily average retail petrol prices in Adelaide: 1 July to 31 December 2017

Source: ACCC calculations based on FUELtrac data.
Petrol price cycles in Australia

Chart A9: Daily average retail petrol prices in Perth: 1 January to 30 April 2017

Source: ACCC calculations based on FUELtrac data.

Chart A10: Daily average retail petrol prices in Perth: 1 May to 31 August 2017

Source: ACCC calculations based on FUELtrac data.
Chart A11: Daily average retail petrol prices in Perth: 1 September to 31 December 2017

Source: ACCC calculations based on FUELtrac data.
Appendix B: Historical data on petrol price cycles in the five largest cities

This appendix provides data on price cycles in the five largest cities from 2009 to 2017. Charts using this data are included in chapter 3.

Number of price cycles

The annual number of price cycles in the five largest cities for the period 2009 to 2017 is shown in table B1.

Table B1: Annual number of price cycles in the five largest cities: 2009 to 2017

<table>
<thead>
<tr>
<th></th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>52</td>
<td>52</td>
<td>51</td>
<td>52</td>
<td>38</td>
</tr>
<tr>
<td>2010</td>
<td>45</td>
<td>47</td>
<td>48</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>2011</td>
<td>42</td>
<td>42</td>
<td>39</td>
<td>37</td>
<td>52</td>
</tr>
<tr>
<td>2012</td>
<td>28</td>
<td>23</td>
<td>28</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>2013</td>
<td>20</td>
<td>21</td>
<td>20</td>
<td>25</td>
<td>52</td>
</tr>
<tr>
<td>2014</td>
<td>14</td>
<td>14</td>
<td>15</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>2015</td>
<td>20</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>2016</td>
<td>17</td>
<td>9</td>
<td>11</td>
<td>14</td>
<td>52</td>
</tr>
<tr>
<td>2017</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>14</td>
<td>52</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Duration of price cycles

The average duration of price cycles in the five largest cities for the period 2009 to 2017 is shown in table B2. It also shows the average number of days from trough to peak and the average number of days from peak to trough and their corresponding percentages.

Table B2: Average duration of price cycles in the five largest cities: 2009 to 2017 (days)

<table>
<thead>
<tr>
<th></th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>1.8</td>
<td>1.8</td>
<td>2.0</td>
<td>1.4</td>
<td>4.5</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>25.7</td>
<td>25.7</td>
<td>28.6</td>
<td>20.0</td>
<td>48.9</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>5.2</td>
<td>5.2</td>
<td>5.0</td>
<td>5.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>74.3</td>
<td>74.3</td>
<td>71.4</td>
<td>80.0</td>
<td>51.1</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>9.2</td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
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<td>2.0</td>
<td>2.3</td>
<td>2.6</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>26.8</td>
<td>26.6</td>
<td>26.0</td>
<td>30.7</td>
<td>33.8</td>
</tr>
<tr>
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<td>5.7</td>
<td>5.2</td>
<td>5.1</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>73.2</td>
<td>73.4</td>
<td>74.0</td>
<td>69.3</td>
<td>66.2</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td>8.2</td>
<td>7.9</td>
<td>7.7</td>
<td>7.5</td>
<td>7.7</td>
</tr>
<tr>
<td>Year</td>
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<td>Melbourne</td>
<td>Brisbane</td>
<td>Adelaide</td>
<td>Perth</td>
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</tr>
<tr>
<td>2011</td>
<td></td>
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<td></td>
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<td>Average duration trough-peak</td>
<td>2.5</td>
<td>2.1</td>
<td>2.5</td>
<td>2.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>28.4</td>
<td>23.9</td>
<td>26.6</td>
<td>29.3</td>
<td>14.3</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>6.3</td>
<td>6.7</td>
<td>6.9</td>
<td>7.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>71.6</td>
<td>76.1</td>
<td>73.4</td>
<td>70.7</td>
<td>85.7</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>8.8</strong></td>
<td><strong>8.8</strong></td>
<td><strong>9.4</strong></td>
<td><strong>9.9</strong></td>
<td><strong>7.0</strong></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>3.4</td>
<td>3.3</td>
<td>3.2</td>
<td>3.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
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<td>20.9</td>
<td>24.8</td>
<td>23.2</td>
<td>15.7</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>9.5</td>
<td>12.5</td>
<td>9.7</td>
<td>10.9</td>
<td>5.9</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
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<td>79.1</td>
<td>75.2</td>
<td>76.8</td>
<td>84.3</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>12.9</strong></td>
<td><strong>15.8</strong></td>
<td><strong>12.9</strong></td>
<td><strong>14.2</strong></td>
<td><strong>7.0</strong></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>5.3</td>
<td>4.8</td>
<td>5.8</td>
<td>3.0</td>
<td>1.0</td>
</tr>
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<td>28.1</td>
<td>32.2</td>
<td>21.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>12.7</td>
<td>12.3</td>
<td>12.2</td>
<td>11.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>70.6</td>
<td>71.9</td>
<td>67.8</td>
<td>78.9</td>
<td>85.7</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>18.0</strong></td>
<td><strong>17.1</strong></td>
<td><strong>18.0</strong></td>
<td><strong>14.2</strong></td>
<td><strong>7.0</strong></td>
</tr>
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<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>7.1</td>
<td>6.1</td>
<td>6.1</td>
<td>4.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>25.9</td>
<td>21.5</td>
<td>22.8</td>
<td>17.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>20.3</td>
<td>22.3</td>
<td>20.6</td>
<td>19.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>74.1</td>
<td>78.5</td>
<td>77.2</td>
<td>82.9</td>
<td>85.7</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>27.4</strong></td>
<td><strong>28.4</strong></td>
<td><strong>26.7</strong></td>
<td><strong>23.4</strong></td>
<td><strong>7.0</strong></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>5.0</td>
<td>7.1</td>
<td>7.2</td>
<td>5.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>29.6</td>
<td>23.1</td>
<td>27.7</td>
<td>30.3</td>
<td>15.5</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>11.9</td>
<td>23.7</td>
<td>18.8</td>
<td>13.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>70.4</td>
<td>76.9</td>
<td>72.3</td>
<td>69.7</td>
<td>84.5</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>16.9</strong></td>
<td><strong>30.8</strong></td>
<td><strong>26.0</strong></td>
<td><strong>19.5</strong></td>
<td><strong>7.1</strong></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>5.0</td>
<td>5.1</td>
<td>5.5</td>
<td>5.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>23.3</td>
<td>13.5</td>
<td>15.9</td>
<td>21.1</td>
<td>14.3</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>16.5</td>
<td>32.7</td>
<td>29.0</td>
<td>21.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>76.7</td>
<td>86.5</td>
<td>84.1</td>
<td>78.9</td>
<td>85.7</td>
</tr>
<tr>
<td>Average cycle duration</td>
<td><strong>21.5</strong></td>
<td><strong>37.8</strong></td>
<td><strong>34.5</strong></td>
<td><strong>26.6</strong></td>
<td><strong>7.0</strong></td>
</tr>
</tbody>
</table>
### Petrol price cycles in Australia

<table>
<thead>
<tr>
<th></th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2017</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average duration trough-peak</td>
<td>7.3</td>
<td>5.4</td>
<td>6.2</td>
<td>6.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Average duration trough-peak as a percentage of average cycle duration (%)</td>
<td>24.1</td>
<td>14.5</td>
<td>17.0</td>
<td>22.7</td>
<td>14.3</td>
</tr>
<tr>
<td>Average duration peak-trough</td>
<td>23.0</td>
<td>31.8</td>
<td>30.2</td>
<td>20.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Average duration peak-trough as a percentage of average cycle duration (%)</td>
<td>75.9</td>
<td>85.5</td>
<td>83.0</td>
<td>77.3</td>
<td>85.7</td>
</tr>
<tr>
<td><strong>Average cycle duration</strong></td>
<td><strong>30.3</strong></td>
<td><strong>37.2</strong></td>
<td><strong>36.4</strong></td>
<td><strong>26.4</strong></td>
<td><strong>7.0</strong></td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.

### Number of peaks and troughs by day of the week

The number of price cycle troughs and peaks (and percentage) on each day of the week in the five largest cities in 2009 and 2017 is shown in table B3.

#### Table B3: Number of price cycle troughs and peaks (and percentage of annual total) on each day of the week in the five largest cities: 2009 and 2017

<table>
<thead>
<tr>
<th></th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Brisbane</th>
<th>Adelaide</th>
<th>Perth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mon</td>
<td>Tue</td>
<td>Wed</td>
<td>Thu</td>
<td>Fri</td>
</tr>
<tr>
<td>Sydney</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trough</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>1 (8%)</td>
<td>5 (42%)</td>
<td>1 (8%)</td>
<td>2 (17%)</td>
<td>2 (17%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 (8%)</td>
<td>12</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>12 (23%)</td>
<td>40 (77%)</td>
</tr>
<tr>
<td>2017</td>
<td>3 (25%)</td>
<td>5 (42%)</td>
<td>2 (17%)</td>
<td>1 (8%)</td>
<td>1 (8%)</td>
</tr>
<tr>
<td>Melbourne</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trough</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>52 (100%)</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>3 (30%)</td>
<td>1 (10%)</td>
<td>4 (40%)</td>
<td>2 (20%)</td>
<td>10</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>8 (15%)</td>
<td>44 (85%)</td>
</tr>
<tr>
<td>2017</td>
<td>4 (40%)</td>
<td>2 (20%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Brisbane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Trough</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>51 (98%)</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>1 (10%)</td>
<td>2 (20%)</td>
<td>2 (20%)</td>
<td>1 (10%)</td>
<td>2 (20%)</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>3 (6%)</td>
<td>48 (94%)</td>
</tr>
<tr>
<td>2017</td>
<td>1 (10%)</td>
<td>3 (30%)</td>
<td>2 (20%)</td>
<td>1 (10%)</td>
<td>1 (10%)</td>
</tr>
<tr>
<td>Adelaide</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Trough</td>
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</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>1 (2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>2017</td>
<td>1 (7%)</td>
<td>2 (14%)</td>
<td>4 (29%)</td>
<td>4 (29%)</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>36 (69%)</td>
<td>16 (31%)</td>
</tr>
<tr>
<td>2017</td>
<td>3 (21%)</td>
<td>4 (29%)</td>
<td>1 (7%)</td>
<td>6 (43%)</td>
<td>14</td>
</tr>
<tr>
<td>Perth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>34 (87%)</td>
<td>4 (10%)</td>
</tr>
<tr>
<td>2017</td>
<td>52 (100%)</td>
<td></td>
<td></td>
<td>1 (3%)</td>
<td>39</td>
</tr>
<tr>
<td>Peak</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
<td>1 (3%)</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td>33 (87%)</td>
<td>4 (11%)</td>
</tr>
</tbody>
</table>

Source: ACCC calculations based on Informed Sources and FUELtrac data.

Note: Due to rounding, not all percentages add up to 100.
Appendix C: Consumer purchasing behaviour in Sydney, Brisbane and Adelaide in 2009 and 2016

Chapter 4 presented charts for Melbourne and Perth showing the daily average petrol price and the proportion of petrol volume sold on each day for the periods 1 July to 30 September 2009 and 1 July to 30 September 2016.

Similar data for Sydney, Brisbane and Adelaide is shown in the following charts.

Charts C1, C3 and C5 show that there was a clear pattern of consumer purchasing behaviour in Sydney, Brisbane and Adelaide in 2009. The proportion of petrol volume sold increased significantly on the cheapest day of each price cycle. Conversely, the proportion of petrol volume sold was lowest on the most expensive day of each price cycle. Charts C2, C4 and C6 show that this clear pattern had diminished by 2016.

Chart C1: Daily average retail petrol price and daily petrol volume share in Sydney: 1 July to 30 September 2009

Source: ACCC calculations based on data from Informed Sources and monitored companies.
Chart C2: Daily average retail petrol price and daily petrol volume share in Sydney: 1 July to 30 September 2016

Source: ACCC calculations based on data from FUELtrac and monitored companies.

Chart C3: Daily average retail petrol price and daily petrol volume share in Brisbane: 1 July to 30 September 2009

Source: ACCC calculations based on data from Informed Sources and monitored companies.
Chart C4: Daily average retail petrol price and daily petrol volume share in Brisbane: 1 July to 30 September 2016

Source: ACCC calculations based on data from FUELtrac and monitored companies.

Chart C5: Daily average retail petrol price and daily petrol volume share in Adelaide: 1 July to 30 September 2009

Source: ACCC calculations based on data from Informed Sources and monitored companies.
Chart C6: Daily average retail petrol price and daily petrol volume share in Adelaide: 1 July to 30 September 2016

Source: ACCC calculations based on data from FUELtrac and monitored companies.
Appendix D: Petrol prices by major brand in the first six price cycles in Sydney in 2018

Daily average petrol prices by major brand in the petrol price cycle that occurred in Sydney in June 2018 were shown in chart 5.6 in Chapter 5. That was the seventh price cycle in Sydney in 2018.

Charts D1 to D3 show similar data for the first six price cycles in 2018.\(^70\) They reveal similar trends to those in the June 2018 price cycle, indicating the wide range of prices across the major brands in Sydney throughout the first half of 2018.

**Chart D1: Daily average retail petrol prices by major brand in Sydney: 30 December 2017 to 10 March 2018**

![Chart D1: Daily average retail petrol prices by major brand in Sydney: 30 December 2017 to 10 March 2018](image)

Source: ACCC calculations based on FuelCheck data.

---

\(^{70}\) These prices were calculated on the same basis as those in chart 5.6. These are E10 prices.
Chart D2: Daily average retail petrol prices by major brand in Sydney: 1 March to 23 April 2018

Source: ACCC calculations based on FuelCheck data.

Chart D3: Daily average retail petrol prices by major brand in Sydney: 20 April to 10 June 2018

Source: ACCC calculations based on FuelCheck data.