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Submission to ACCC Petrol Pricing
Inquiry: Assessing the Impact of
'Shopper Docket' Schemes

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Contents

Page

1	Background	2
2	The Incentives to Introduce Shopper Dockets.....	3
2.1	Shopper Docket Schemes versus Straight Rebates.....	3
2.2	Exclusive versus Non-Exclusive Arrangements.....	5
2.3	Why Petrol?	6
2.4	Summary	8
3	The Effects of Shopper Docket Schemes.....	9
3.1	Competition Without Shopper Dockets	9
3.2	Unilateral Introduction of Shopper Dockets.....	10
3.3	Competing Shopper Docket Schemes	13
3.4	Integration Matters	14
3.5	Summary	15
3.6	Long-Run Issues.....	15
4	Testing for impact	16
5	References.....	17

1 Background

This submission focuses on a recent development in the Australian retail petrol industry that arises because of the use of shopper dockets. Today, both of the Australia's major supermarket chains (accounting for almost 80 percent of the market) have moved to form exclusive alliances with major petrol chains. The Coles/Shell and Woolworths/Caltex¹ have differing governance (one is a co-branding/acquisition arrangement, the other is a joint venture) but each has a similar baseline offering for the customer: buy \$30 or more of groceries at a supermarket outlet and you can redeem the docket for a certain period of time for a 4 cent per litre discount at the petrol outlet. Other similar schemes have been put in place in response. Notably, Mobil offers its customers a 4 cent per litre discount if they purchase \$5 or more in their store.

The impact of these schemes is to remove the connection between the headline petrol price and underlying cost components. This is because such implied bundling as lead to a less transparent pricing structure. Consequently, it is both (a) more difficult to analyse retail petrol price trends and (b) easier to hide potential facilitating increases in petrol retail prices unrelated to key cost drivers.

In my submission here, I urge the ACCC to take another look² at these shopper docket schemes and use the data available to them to see whether these have improved or reduced the overall benefits of competition in petrol retailing.

The remainder of this submission proceeds as follows. In the next section, I examine why supermarket and petrol chains have chosen to introduce shopper docket schemes as opposed to straight discounts and non-exclusive arrangements. Section 3 then considers the short-run implications of the scheme for prices, competition and social welfare. Section 4 then considers how the ACCC might use the data gathered in its inquiry to analyse whether shopper docket schemes have impacted on the petrol market in an anti-competitive manner..

¹ Coles includes the BiLo and Liquorland chains and Woolworths also includes the Safeway chain of supermarkets.

² Following on from ACCC (2004).

2 The Incentives to Introduce Shopper Dockets

To understand the competitive and welfare implications of shopper docket schemes, it is useful to begin by considering why a pair of firms would choose to introduce them in the first place. Specifically, (1) we must ask why a shopper docket scheme would be preferable to a straight discount in terms of profitability? (2) why a shopper docket scheme should be an exclusive arrangement between specific chains rather than a broader arrangement? and (3) why supermarket chains should align themselves with petrol retail chains rather than alternative consumer arrangements?

2.1 Shopper Docket Schemes versus Straight Rebates

Recall that an offer to reduce petrol prices by 4 cents per litre in exchange for the presentation of the \$30 or higher supermarket receipt is, at first glance, equivalent to offering to reduce a consumer's supermarket bill by roughly \$2.³ For a \$30 purchase, this represents a discount of 6.67%. Of course, for larger supermarket bills the discount is more modest. For a \$200 docket, the discount would be just 1%. Nonetheless, it is important to ask why giving this discount in the form of a discounted petrol price would be preferred to a straight rebate of \$2 for every purchase of \$30 or more?

There are, of course, several key differences between a straight rebate of \$2 and a 4 cent per litre discount on petrol.

- *Differing preferences for petrol relative to groceries:* not all consumers have the same level of petrol purchases per dollar spent at the supermarket. Some consumers – those without cars – consume no petrol at all and would not benefit from this discount. Even amongst those with cars, some consumers have large supermarket bills relative to their petrol purchases. Finally, some consumers will purchase very high volumes of petrol relative to their supermarket bills (e.g., single individual

³ Based on filling a 50 litre tank.

households who commute by car). Thus, a petrol discount will disproportionately attract 'large tank, small shopping cart' consumers relative to 'small tank, large cart' consumers.

- *Consumer gaming*: if a \$2 rebate was offered for each purchase of \$30 or more, some consumers may divide their grocery purchases so as to maximise the total discount. To be sure, this is also possible for a petrol discount. However, the shopper docket usually expires a few weeks after they are issued. There is only so much petrol some consumers can purchase in that time and therefore, a limited incentive to divide the bill.
- *Higher transaction costs*: to obtain a docket, hold on to it, and then redeem it at a petrol station, involves some consumer costs relative to a simple rebate paid at the supermarket check-out.
- *Shared costs*: if the petrol discount brings new customers to the petrol retailer, that retailer is likely to want to share the costs of the discount with the supermarket. From the supermarket's perspective, this means that they receive all of the benefits of a discount on their own goods at only a fraction of the cost.

Of these four key differences, higher transaction costs are a clear disadvantage⁴ to petrol discounts over direct rebates while shared costs are a clear advantage. While a petrol discount may have an advantage in reducing consumer gaming, this may be limited as one could imagine other ways of packaging a rebate to achieve a similar effect.⁵ As such, it seems unlikely that this issue is a driving force behind the use of shopper docket schemes.

In terms of differing consumer preferences, the profitability of using a petrol discount depends upon each consumer types' price sensitivity with regard to the supermarket's products. In principle, a firm can improve profits by charging its customers who are less price sensitive a higher price than those who are more sensitive to price. This allows them to attract more sales from the latter without losing sales revenue from the former.

⁴ Of course, this disadvantage may become an advantage if some consumers forget to utilise their dockets at the petrol pump. Nonetheless, if this were the case, issuing a redeemable coupon of any kind – such as a mail-in rebate – would confer the same advantage.

⁵ Indeed, if shopper dockets could be traded (as in principle they could be), there may be no assistance in diminishing consumer gaming.

Therefore, if the ‘large tank, small cart’ consumers were more price sensitive than the ‘small tank, large cart’ consumers, then a petrol discount – by reducing the grocery bill of the former type – can improve a supermarket’s profits. On the other hand, if the reverse were true, then a straight rebate would be preferable to a petrol discount as a means of attracting customers.

I do not have at hand any evidence to suggest what the relative price sensitivities of different types of customers are. Moreover, it is not difficult to envisage situations in which either customer class could be more or less price sensitive than the other. Nonetheless, exploiting these differences could be a driving force of the current schemes.

2.2 Exclusive versus Non-Exclusive Arrangements

The above analysis of why to offer a petrol discount over some more direct rebate does not take into account a key feature of the two major petrol-grocery schemes introduced in Australia: that they are *exclusive* arrangements between a particular supermarket and petrol retail chains.

To see why this is an issue, contrast the Coles/Shell and Woolworths/Caltex arrangements with the shopper docket scheme introduced by Metcash – a group of independent supermarket outlets. In early 2004, IGA stores in Queensland offered to pay shoppers, who purchased \$30 or more, 4 cents per litre for petrol purchased regardless of where that petrol was purchased. This stands in contrast to the other schemes where a discount applied only at specific petrol stations.

Apart from the operational detail that for IGA the discount was redeemed at the supermarket checkout rather than the petrol pump, the IGA scheme was dramatically non-exclusive. However, because it was a petrol discount on essentially the same terms as Coles/Shell and Woolworths/Caltex, it shared (almost) all of the advantages of providing this type of discount over a direct rebate. The only advantage IGA did not appear to receive was any sharing of the discounted costs. Nonetheless, in exchange for this, they received a key advantage: consumers did not have to worry about where they bought their petrol.

To be sure, having a non-exclusive arrangement with a number of petrol chains is not a barrier to cost sharing. Coles or Woolworths could have made a similar offer to IGA – to redeem petrol docket – subject to have coming to an agreement with particular petrol chains.

This may have entailed additional negotiation costs but it also might have been able to encompass all petrol chains and not simply those with a more limited market share. Moreover, petrol chains would have wanted to agree to share costs so as not be left out of a wider arrangement.

Given this, what are the advantages to exclusivity? It all comes down to whether more costs would be borne by the petrol chain in an exclusive versus a non-exclusive arrangement. A petrol chain is likely to share more costs associated with a shopper docket scheme if the net advantage of so doing is large. This net advantage is the number of additional sales it expects to receive less than sales it will lose by not being part of the scheme.

In a non-exclusive arrangement, the potential loss in sales might be large but the gain is relatively small as many chains have a similar shopper docket arrangement. An exclusive arrangement reverses this on one front with a larger movement in expected sales gain from being the only chain part of the scheme. On the other, however, the potential loss in sales from not being part of the scheme is probably similar to the loss that would be incurred when arrangements are non-exclusive.

Thus, exclusivity potentially allows the supermarket chain to reduce its burden of cost sharing of the discount scheme. So long as the petrol chain it has an arrangement with is ubiquitous, then the potential detriment from exclusivity – less convenience to customers – may not be large.

Indeed, exclusivity can work both ways. By tying in a ubiquitous petrol chain, this prevents other supermarket chains from reaching an agreement with it. Given this, the burden of cost sharing is likely to flow in favour of the supermarket or petrol chain that has the greatest market power in its respective market. For Australia, there is good reason to suppose that that favour lies with supermarkets.

Nonetheless, exclusivity is likely to impose more costs and fewer advantages on consumers than non-exclusivity.

2.3 Why Petrol?

The final issue that is useful to consider is why a supermarket chain like Coles and Woolworths would choose to discount its products through an arrangement with petrol retailers rather than some other means?

It should be noted that there are other arrangements in place. There are credit card alliances and also loyalty points schemes. Flybuys offers a range of consumer benefits in travel and consumer products. Indeed, a few years ago it offered redemption vouchers at Shell (but no longer). In this respect, petrol is yet another alliance rather than something new.

What makes the current alliances more unique is: (a) its transparency and (b) its regularity. The transparency arises because it is very clear what discount will be payable for what level of purchases. Loyalty points tend to require the accumulation of a large number of purchases and it is difficult for an individual consumer to compute the precise discount they are receiving. In contrast, if you know your petrol consumption (in litres per week) you can work out how much you are saving each week from purchasing at a particular supermarket chain.

In addition, loyalty points generally allow redemptions fairly infrequently. The shopper docket schemes are utilised weekly and so can be more easily built into the habits of consumers. For this reason, as petrol purchases match the regularity of grocery purchases, there is an advantage to linking the two.

However, petrol is also a natural candidate for an exclusive arrangement; allowing the supermarket to bear a smaller share of the discount. Petrol retailing involves the sale of a relatively homogeneous product – consumers care little about the brand of petrol they purchase – in a segment that is broadly competitive.

What this means is that petrol retailing margins are thin while consumer price sensitivity (at a brand level) is high. Thus, if one petrol chain can develop an advantage in attracting consumers – after all, once you have a docket you might as well use it – then those consumers' behaviour is likely to change dramatically. And consumers do care about petrol prices. It was only a few years ago that a 1.5 cent per litre tax was a major back-down issue for the Federal government. Think about what 4 cents per litre can do.

Moreover, when margins are thin because of competitive pressures, any change that makes one customer segment more loyal can tip the balance towards being able to raise prices. If a large number of your outlet's customers shop at one of the major supermarkets, then even if you discount 4 cents per litre to them, you are able to raise your pump price by a similar amount without losing too many sales. Even if the increase in margin is nominally slight (say 1 cent) that means a very high boost to outlet profitability.

For these reasons, petrol can be seen as a desired candidate for this type of alliance. However, there are other industries with similar characteristics – electricity and gas retailing, some aspects of telecommunications, and water – all of whom might be future sources of shopper docket schemes.

2.4 Summary

While there are possible explanations of the current arrangements in terms of exploiting heterogeneous customer preferences and sharing costs, this does not explain why the schemes were exclusive and involved a relationship between supermarket and petrol retailing.

On exclusivity, supermarket chains (who have a relatively large installed retailing base relative to particular petrol chains) potentially benefit from using their size to obtain the benefits of the discount without bearing as much of the costs. However, this private benefit is not a benefit to consumers of either groceries or petrol.

On the relationship with petrol, both share a habitual purchase nature. However, petrol demand is also highly inelastic at the product level even if it isn't at the brand level. This means that any discount is likely to flow to greater supermarket sales rather than greater consumption of petrol over the entire market. However, as the discount is effectively a rebate over the entire cart of grocery purchases, it is unclear that this will lead all but marginal customers to consume more groceries.

What this suggests is that the incentives to introduce such schemes are more strategic as opposed to some broader product or marketing innovation that would lead directly to consumer benefits. Strategic benefits may impact upon the nature of competition but do not necessarily translate into higher social efficiency. Nonetheless, this is admittedly a starting point and in Section 3 a more complete competitive analysis is described.

3 The Effects of Shopper Docket Schemes

The above analysis of the incentives to introduce shopper docket schemes is partial in the sense that it neither includes changes in the prices of groceries and petrol by participants to the scheme nor price reactions by others in the industries concerned. Gans and King (2006) provide a complete analysis of the oligopolistic outcomes of shopper docket schemes. In this section I translate those technical results, describe and explain the short and long-run effects of such schemes on prices, competition and social welfare.

3.1 Competition Without Shopper Dockets

The appropriate starting point for analysis is to consider what happens in the absence of shopper docket schemes. In this situation, we have numerous brands of both supermarkets and petrol. While most consumers tend to purchase groceries *and* petrol, the co-branded alliances that have formed between Coles/Shell and Woolworths/Caltex do not appear to be related to some intrinsic affinity on the part of consumers to purchase from those groups. That is, a current shopper at Woolworths (Coles) is no more likely to purchase petrol at Caltex (Shell) as opposed to any other petrol chain.⁶

Given this, competition and pricing is confined to particular markets. Supermarkets set their prices with regard to the prices set by other supermarkets. Petrol outlets set their prices with regard to the prices set by other petrol outlets. The pricing decisions of participants in the other market do not feature and do not influence competition or consumer behaviour.

What this means is that consumers will choose their brand in each market with regard to their preferences over those brands. For the

⁶ The FlyBuys scheme which is available for purchases at both Coles and Shell does create some relationship in consumer preferences. Given the broader nature of that scheme I am going to assume throughout this analysis that this factor is not the main driver of individual choices. Of course, nothing in the analysis below hinges upon this assumption.

most part, this will be based on locational convenience. Consumers will tend to shop at supermarkets and purchase petrol from locations closest to them or on their commuting paths. For this reason, we would expect to see Coles and Woolworths consumers purchasing petrol from all chains roughly in proportion to their market shares. And we would expect to see Shell and Caltex consumers shopping at supermarkets according to their market shares.

Importantly, this state of affairs constitutes a good social advantage. From a social welfare perspective, for regular purchases, we want consumers to be making purchases at their most preferred locations and brands. This minimises the costs of 'shopping' and travel.

3.2 Unilateral Introduction of Shopper Dockets

Now consider what happens when one pair of supermarket and petrol chains introduces a shopper docket scheme. If the firms are independent – as they are with Coles and Shell (Woolworths/Caltex is murkier) – then what they do is set the petrol discount⁷ and then choose on a weekly and sometimes daily basis, their prices for their respective products.

3.2.1 Pricing Impacts

However, while a supermarket would have previously set its prices only with regard to the prices of other supermarkets, now it realises that in the eyes of some consumers – those who purchase or intend to purchase from its allied petrol chain – its products are more valuable. Consequently, the supermarket can afford to raise its own prices without losing as many customers.

The same is true for the petrol chain offering the docket discount. It now knows that some of its customers will still come to it even if it charges up to 4 cents per litre more than rival chains. Thus, the headline price of petrol will rise as well.

What is interesting about this situation is that the prices set by the allied supermarket and petrol chains are now related to one another. The higher the price charged by the allied petrol chain, the lower the incentive of the supermarket chain to raise its prices. Similarly, the

⁷ Of course, it could easily be a grocery discount but this is harder to measure given the multi-product nature of supermarkets.

higher the supermarket price, the lower the incentive of the allied petrol chain to raise its prices. However, as they are independent firms, each will, in its own pricing, neglect the effect of their actions on the other. For this reason, the allied supermarket and petrol chain will end up with a higher headline price than before – although after the discount – for those consumers who take advantage of it – prices will be lower.

Thus, from each firms' perspective, where before they sold unrelated products, the existence of the shopper docket scheme between them makes their products *complements*. Not surprisingly, this will mean that consumers treat them like complements as well and become more likely to buy from one when they buy from the other. But this also has an impact on the pricing decisions of other firms.

3.2.2 Competitive Impacts

What impact does this scheme and its resulting price changes have on the behaviour of other firms? In both supermarkets and petrol, those firms will find their market shares eroded as consumers who previously did not purchase from both chains, start to purchase from the allied chains. This means that, at the margin of competition, the discount is putting pricing pressure on other firms. As a result, they will reduce their prices to protect the erosion of their market share.

In the eventual equilibrium, the profits and headline prices of the allied petrol and supermarket chains will be higher while the prices and profits of non-allied chains will be lower. Indeed, according to the calculations in Gans and King (2006), the margin earned by allied chains on their headline price could rise by 22 percent while those earned by non-allied chains could fall by 6 percent. In terms of market shares, perhaps 3 percent will shift in favour of the allied chains. Finally, on the profit side, taking into account the discount paid, the allied firm's profits may rise by 4 percent while those of non-allied firms may drop by 8 percent.⁸

3.2.3 How Large a Discount?

Of course, the above calculations include a consideration of the setting of the discount itself. Recall that this discount is set prior to

⁸ It should be emphasised that these calculations, while based on an equilibrium model, should be considered very sparingly as the model itself has key assumptions regarding the number of competing chains as well as their differentiation in the eyes of consumers.

prices being determined by all firms. In effect, one would expect that the discount itself will be set far less frequently than the headline prices of petrol and groceries.

As the allied chains raise the discount, their market share rises but there is also a stronger pricing response from non-allied chains. For this reason while some discount is desirable, going too far (a) intensifies price competition and (b) reduces the overall revenue received by the allied chains from consumers who purchase both of their products. A greater discount increases that set of consumers but at the same time diminishes the allied chains' incentives to set the discount even higher. Thus, in equilibrium, only some portion of the petrol chain's average mark-up over the wholesale cost of petrol will be discounted. Indeed, if that mark-up is m , then according to Gans and King (2006), the unilateral discount will be about $m/2$.

3.2.4 Welfare Impacts

What are the welfare impacts of all of this? On the winning side, consumers who previously purchased from both allied chains are better off. Even though the headline prices they pay are higher, with the discount, their overall expenditures are lower. Similarly, those consumers who previously purchased from neither of the allied chains are better off as the prices charged by non-allied chains fall.

Alongside them, the shareholders of the allied chains will be better off as their profits rise.

On the losing side are the non-allied firms whose profits and market shares diminish. More significantly, however, are the consumers who purchase from only one of the allied chains. Those consumers will not receive the benefit of the discount but will pay a higher headline price. Overall, Gans and King (2006) demonstrate that their total expenditures on both groceries and petrol will be higher.

Finally, however, as noted earlier, the discount will mean that some consumers who previously purchased from only one (or neither) of the allied chains will be motivated by the discount to purchase from both of them. This is the source of the increase in the allied chain's market shares. However, with this comes a social cost. Absent any increase in grocery or petrol purchases, those consumers are no longer purchasing from their preferred mix of petrol and supermarket brands. Those will be the consumers who travel further to purchase petrol or groceries.

3.3 Competing Shopper Docket Schemes

The existence of one shopper docket alliance will create pressure for others to form. However, for these to be worthwhile – especially on an exclusive basis – the alliance must involve at least one participant who has a high market share in their respective market. This is because the consumers it will attract through the alliance will only be significant if at least one chain already has a substantial customer base. It is only by doing this that an additional alliance could counter the competitive effects of any first movers in this regard.

In Australia, this appears to mean that only two petrol-grocery alliances will be developed on an exclusive basis. While there are four large petrol retailing chains, there are only two major supermarket chains. The smaller chains have individual market shares far smaller than the large petrol retailers and so do not represent a natural fit: that is, a large petrol retailer who is not part of an alliance will do little to protect its market share by allying with a smaller supermarket chain. The customers it could attract through this would be limited and so it would be merely offering a discount to its own more loyal customers.

3.3.1 Effect on Prices

To see what will happen if there are two shopper docket alliances rather than one, note that for any given set of petrol discounts, this will allow allied chains to raise their headline prices and will lead to more consumers purchasing both products from one allied chain or the other rather than from one of them alone. The higher the discount offered, the more likely consumers will sort themselves into these two classes.

From the perspective of the remaining non-aligned petrol and supermarket chains, the existence of two schemes rather than one will put further pressure on market shares, causing them to reduce their prices even further in order to compete. Their profitability will diminish further.

3.3.2 Effect on the Discount

Not surprisingly, the existence of two competing shopper docket schemes creates pressure on each to offer a higher petrol discount. Recall, however, that this will still lead each to raise its headline prices for petrol and groceries. In this respect, setting a higher petrol discount, allows an allied chain to soften price competition overall.

Gans and King (2006) demonstrate that, in the extreme, all consumers may end up purchasing from one set or the other of allied chains. At this point, the discount is substantial, equal to the entire petrol margin, m . However, the overall price (including the discount) they pay for petrol and groceries ends up being exactly the same as it was before any shopper docket scheme was introduced. It may well be that the discounted price of petrol is lower than before (by about $m/2$) but this is made up for in higher grocery prices.

3.3.3 Welfare Implications

Of course, this extreme outcome is not necessarily something we would observe in the short-run. What will occur is an increasing disadvantage to consumers who purchase only a single product from any one allied chain (e.g., Coles customers who don't purchase from Shell, etc.) will face much higher prices than before. However, the existence of two schemes may well reduce the pricing benefit otherwise realised by some consumers when there was only one scheme.

In addition, the presence of two schemes will put further pressure on non-allied grocery and petrol chains in terms of market share and profits.

However, the main welfare cost will be a continued distortion of consumer shopping behaviour away from their most preferred product bundles. More travel time, more shopping time and even some change of consumption away from what those consumers would otherwise have preferred. All this for a highly ambiguous benefit in terms of price competition.

3.4 Integration Matters

There are some issues with respect to how shopper docket schemes are implemented. In particular, there was some integration between petrol retailers and supermarkets. This might have a softer impact than non-integrated arrangements.

Gans and King (2006) considered the integration case. An integrated firm has a more limited incentive to introduce a shopper docket scheme than a pair of non-integrated firms. Put simply, in the non-integrated case, the discount is an imperfect way of controlling the pricing decisions of petrol and grocery chains that are related by the shopper docket scheme. In contrast, this advantage is not present for the integrated case and so the petrol discount acts more like a straight

rebate. As such, for an integrated firm it intensifies rather than reduces price competition. In the end, shopper docket schemes by an integrated firm will result in a lower petrol discount, lower headline prices but a higher market share for the integrated firm than they would earn if they were implementing the same scheme as non-integrated firms.

3.5 Summary

Shopper docket schemes are predicted to have had an immediate impact on consumer behaviour and market shares and would, as a consequence, lead to welfare losses as consumer behaviour moves away from what would otherwise be the case. The pricing benefits will be mixed. Some consumers will gain while others will lose.

Importantly, however, pressure will be put on the profitability of non-allied firms. While in the short-run this is a problem for them, in the long-run, it becomes a problem for competition; something I turn to consider next.

3.6 Long-Run Issues

In Gans and King (2006), we raised concerns that, in the long-run, petrol discounts would become deeper; so deep that they could exclude rivals without exclusive supermarket deals. Fortunately, that situation has not eventuated. However, the possibility still remains that such deep discounts could be used in an anti-competitive way.

4 Testing for impact

The previous section outlined the theory as to how shopper docket might cause changes in petrol price margins. The issue is whether the introduction of such schemes has had an impact on 'headline' petrol retail prices.

Fortunately, it is possible to test for this. First, petrol discounts were not introduced by all petrol chains. Hence, the ones with a discount and the ones without can be compared. Second, discount arrangements were entered into at different times. Hence, a 'before and after' analysis is possible. Finally, discount schemes were introduced at different times in different states. Hence, a 'with and without' geographical analysis is possible.

I do not have access to the petrol pricing data that the ACCC does in order to conduct this analysis. However, one would presume that it would be a relatively straightforward matter. Indeed, it would be impossible to analyse pricing issues in these markets without some consideration of the introduction of shopper docket schemes.

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