

Independent Pricing and Regulatory Tribunal
New South Wales

NSW Container Deposit Scheme

**Monitoring the impacts on container beverage prices and
competition**

Final report

December 2018

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1 Executive Summary

In late 2017, the NSW Government introduced a Container Deposit Scheme (CDS), known as Return and Earn, which aims to cut the state's total litter volume by 40% by 2020.¹ Under this scheme, consumers who return empty eligible beverage containers to Return and Earn collection points receive a 10-cent refund per container. Businesses that supply beverages in eligible containers into NSW pay monthly fees to cover the costs of the scheme, and can increase the price of eligible container beverages to recover these costs.²

The Independent Pricing and Regulatory Tribunal of NSW (IPART) has monitored the effects of the CDS on beverage prices and competition in its first year of operation. The broad aim of this monitoring was to assist the Government in managing the risk that suppliers may seek to raise the price of beverages above the costs of the scheme. Our terms of reference from the Premier asked us to:

- ▼ monitor and report on the effect of the CDS on prices of container beverages and competition for container beverages, and any other market impacts on consumers
- ▼ recommend any government actions required to address adverse effects or behaviours arising from the operation of the scheme, and
- ▼ recommend whether price monitoring should continue beyond the initial one-year period.³

This report outlines our findings and recommendations and explains where and why they differ from those proposed in our Draft Report.

1.1 Overview of findings and recommendations

Overall, our monitoring indicates that the CDS has not had undue effects on container beverages prices or competition to date, but several issues should be addressed to improve the scheme's performance and reduce its potential to have unintended market impacts on consumers and competition in the longer term. We found that:

- ▼ **The price increases attributable to the scheme are consistent with a workably competitive market.** As is the case for any business operating in a workably competitive market, suppliers may choose to pass all or some of the CDS costs onto their customers.

¹ Return and Earn, Media Release, 18 August 2017, p 3, available at http://www.exchangeofchange.com.au/ReturnAndEarn_MediaRelease.pdf, accessed on 20 April 2018.

² The prices suppliers and retailers charge for container beverages are not regulated, so they may increase or decrease prices at any time in response to changes in their costs, and other factors such as changes in consumer preferences or competitive pressures from other suppliers.

³ See Appendix A.

- ▼ **There is no specific evidence to suggest the scheme has had a material impact on competition to date.** But we identified three issues with the potential to create barriers to entry and restrict competition in the longer term and are recommending action to address each of these.
- ▼ **There is no specific evidence to suggest the scheme has had unintended market impacts on consumers.** However, the efficiency of the scheme can and should be improved to reduce its overall costs for suppliers, consumers and taxpayers.

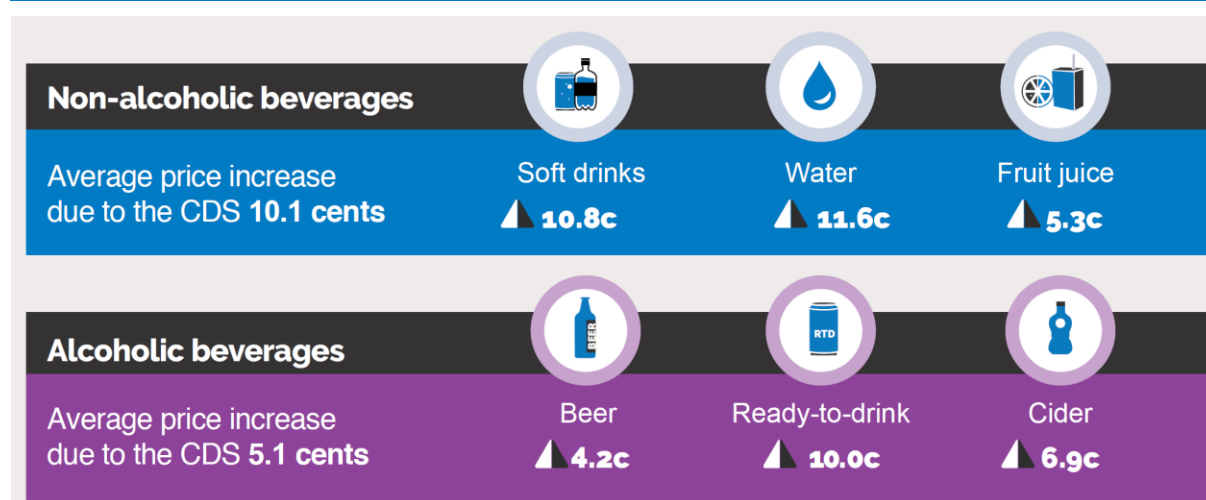
Based on these findings and recommendations we consider that ongoing price monitoring is not necessary.

1.1.1 Price increases are consistent with a workably competitive market

During the first year of the scheme's operation,⁴ the price of all eligible container beverages increased by an average of 7.7 cents per container due to the CDS.⁵ This is less than the average direct cost of the CDS, which was 9.3 cents per container.

However, as Figure 1.1 shows, the average price increase varied across beverage markets and categories. In the bottled water, soft drink and ready-to-drink categories, this increase was between 0.7 cents and 2.3 cents per container **higher** than the average direct cost of the scheme. For the cider, fruit juice and beer categories, it was 2.4 cents to 5.1 cents per container **lower** than this cost.

Figure 1.1 Average retail price increases due to the CDS (inc-GST)



Source: IPART analysis

Note: The overall average retail price increases for all, non-alcoholic and alcoholic beverages are weighted by market share. Alcoholic beverage average is based on a weighted average of our estimated price changes for promotional and non-promotional prices, where the weights are 75% and 25% for promotional and non-promotional prices, respectively. For further information see Chapter 5.

Although average price increases for some categories exceeded the direct cost, we found the price impacts of the CDS are consistent with a workably competitive market. This is because

⁴ We analysed prices during the first year of the scheme's operation (November 2017 to October 2018) relative to the prices before the scheme commenced (January 2016 to October 2017).

⁵ All figures in this report include GST unless stated otherwise.

beverage suppliers have incurred other costs, in addition to the direct costs, to participate in and comply with the requirements of the scheme, and have passed some of these on to consumers through higher prices. These include operating costs from additional administration and reporting as well as one-off capital costs from IT and reporting system upgrades. The level of these other costs varies across businesses, and for some businesses they can be substantial. Although we were unable to estimate them directly, in the presence of these other costs we consider that average price increases of between 0.7 cents and 2.3 cents per container higher than the average direct cost of the scheme are reasonable.

We also found that the difference between the **monthly** direct costs of the scheme and the **monthly** price increases in each beverage category varied substantially during the first year of the scheme's operation. For example, in February 2018 bottled water prices were around 1.1 cents **lower** than the direct costs of the scheme. However, in March 2018 bottled water prices were around 11.5 cents **higher** than the direct costs of the scheme because Exchange for Change issued its first and largest 'true up' under the scheme's payment and contribution methodology.

We consider that the scheme's payment and contribution methodology creates undesirable cost volatility for suppliers and reduces the transparency of the CDS's direct costs. Under this method, first suppliers are billed one month in advance, based on forecasts of the container volumes and types expected to be supplied, returned and recycled in the next month. Their bill amounts are then 'trued up' later, once the actual container volumes and types for that month are known. From the start of the CDS to November 2018, Exchange for Change had returned around \$80 million (ex-GST) to first suppliers through its true-up mechanism (Box 1.1).

To address these impacts, we are recommending that the NSW Environment Protection Authority (EPA) and Exchange for Change implement a scheme payments methodology that uses a simple price per container type times quantity approach, and bills suppliers in arrears.

Box 1.1 Overview of the scheme's payment and contribution methodology and true up mechanism

Exchange for Change issues invoices to first suppliers monthly in advance. The invoiced amounts reflect the:

- ▼ forecast volume of eligible containers supplied to NSW in next month, and
- ▼ forecast volume of eligible containers returned and recycled through the Network Operator (TOMRA Cleanaway who is responsible for establishing and managing a network of Return and Earn collection points across NSW, the collection of returned containers and payment of refund amounts and handling fees) and Material Recovery Facilities (MRFs businesses that process materials collected through kerbside programs) in that month.

Exchange for Change pays (or charges) first suppliers a 'true up' amount in the subsequent months, once the actual volumes of containers supplied and containers returned and recycled in that month are known. The true up amount reflects the difference between:

- ▼ the amount the supplier was invoiced for the month and paid for in advance, and
- ▼ the amount the supplier actually owes for that month.

This true up ensures that suppliers pay scheme costs only for containers that are actually returned in proportion to their actual supply volumes.

1.1.2 No specific evidence of material reduction in competition but potential for longer term impacts should be addressed

To assess the effect of the CDS on competition in the NSW container beverage market, we examined changes in supplier behaviour, market share and composition, and other indicators. We found no specific evidence to suggest the scheme has resulted in a material reduction in competition. For example, there is no evidence that:

- ▼ the total beverage supply in NSW has changed materially since the introduction of the CDS
- ▼ the scheme has impacted on the market shares of larger and smaller suppliers in different ways, or
- ▼ the scheme has resulted in a reduction in product choice or information available to consumers.

However, we identified three issues related to the operation of the CDS with the potential to reduce the competitiveness of some market participants in the longer term – particularly smaller businesses and boutique beverage suppliers.

First, the container beverage approval fee of \$80 per product, which is levied by the EPA, may restrict the ability of small and boutique beverage suppliers to compete in the market. As these businesses typically supply a wide range of products in small volumes, this fee has a disproportionate impact on them. We are recommending the container approval fee be reduced from \$80 to \$13.70 per product. This would mean that this fee only recovers the efficient variable costs associated with product assessment, with the fixed costs of the CDS Portal to be recovered through the scheme compliance fee.

Second, the 7-day payment terms on Exchange for Change's invoices to suppliers impose cashflow pressures on beverage businesses, particularly small and medium size businesses, and are out of step with normal business practice. We are recommending these terms be increased to 14 days. In our Draft Report, we proposed they be increased to 30 days. However, we now consider that payment terms of 14 days, in combination with our recommended changes to the scheme payments methodology, would provide the necessary cost stability and reduce cashflow pressure on suppliers.

If these recommendations were implemented, Exchange for Change would require an overdraft facility, and security for this facility would need to be provided by the NSW Government. However, this would not impact on the NSW Government budget, as the cost of obtaining and servicing the overdraft (interest and any fees) would be an additional scheme cost payable by all beverage suppliers. We estimate that payment terms of 14 days would have a small impact on the scheme's direct cost, increasing this cost by around 0.06 cents per container.

Third, the CDS may place NSW retailers located near the Victorian border at a competitive disadvantage with Victorian retailers because Victoria does not have a similar scheme. The Government addressed this issue with a transitional assistance package for small to medium sized businesses in the border region that could demonstrate they have been adversely affected by competition with Victorian retailers as a result of the CDS.⁶

1.1.3 No specific evidence of unintended market impacts on consumers but scheme efficiency should be improved

To assess whether the CDS has resulted in any other unintended market impacts on consumers, we analysed consumers' beverage purchasing and consumption behaviours since the scheme was introduced, and considered feedback from stakeholders.

We identified some changes in behaviour that are attributable to the CDS. Overall, it appears that consumers have reduced their overall consumption of container beverages, which has partly offset the impact of the price increases due to the scheme on their total spending on container beverages. For example, we found:

- ▼ A decrease in the consumption of non-alcoholic beverages in NSW of around 950 mL (or 6.7%) per household per month.⁷
- ▼ An increase in average household expenditure on non-alcoholic beverages of around 63 cents (or 3.2%) per household per month.

However, we consider these impacts are in line with what could be expected given the scheme's impact on the prices of container beverages, and with the impacts being felt by suppliers.

⁶ NSW Government, Media Release, Assistance for Border Businesses Impacted by Container Deposit Scheme, 8 June 2018 and NSW Small Business Commissioner, *Assistance extended for Border Businesses Impacted by Container Deposit Scheme*, Available from: <https://www.smallbusiness.nsw.gov.au/news/dispute-resolution/assistance-extended-for-border-businesses-impacted-by-container-deposit-scheme>, accessed 12 December 2018.

⁷ We have not been able to draw conclusions about the impact of the CDS on the consumption of and expenditure on alcoholic beverages as there is no equivalent data set available for alcoholic beverages.

Several stakeholders raised concerns about the efficiency of the scheme's costs, including those incurred by the EPA, Exchange for Change and TOMRA Cleanaway. Because the EPA appointed the latter two companies using a competitive market-testing process, we consider their costs are likely to be reasonably efficient given the scheme's design. However, we engaged The CIE to review the efficiency of the costs incurred by the EPA in undertaking its regulatory compliance and enforcement activities. These costs are recovered through the scheme compliance fee, which makes up around 1-2 per cent of the total direct costs.

We found that these costs are currently higher than is efficient, and that the scheme compliance fee should be reduced so that it only recovers the efficient level of costs. Based on The CIE's advice, we are recommending that the monthly scheme compliance fee be reduced from its current level of \$300,000 to \$284,000 from 2020-21, and then to \$157,000 from 2022 - 23.⁸ A copy of The CIE's report is available on our website.

Stakeholders also argued that differences between the CDS and similar schemes in other jurisdictions increase the administrative complexity and costs for suppliers and ultimately prices for consumers. We are recommending that the EPA and Exchange for Change work with their counterparts in other jurisdictions to arrive at a uniform approach to administering the definition of first suppliers and export protocols, and that the EPA recognise container registrations from other jurisdictions.

Finally, we found that key elements of the CDS lack transparency. We are recommending that the EPA publish a contract summary of each of its agreements with Exchange for Change and TOMRA Cleanaway to improve transparency.

1.1.4 No need for ongoing price monitoring

We consider that our findings overall indicate that the CDS has not had any undue effects on prices or material impacts on competition in the NSW container beverage market. While we identified some issues of concern and scope for improvement, we consider that these can be addressed through our recommended actions. Therefore, we consider that ongoing annual monitoring and reporting on the impacts of the CDS is not necessary. We are recommending that this monitoring not be extended beyond the initial one-year period.

1.2 Our process for this review

In conducting this review, we have collected information and undertaken detailed analysis and public consultation:

- ▼ Since December 2017, when the CDS started, we have collected information from consumers and suppliers (including manufacturers, wholesalers and retailers) on individual changes in prices, and on unfair or unjustified supplier behaviour through our website feedback form. We received around 30 comments, most of which related to operational elements of the scheme that were outside the scope of this review.
- ▼ In February 2018, we released an Issues Paper that set out our proposed approach for the review and invited submissions from stakeholders. We received 61 submissions.

⁸ \$ 2018-19

- ▼ In April 2018, we released a Progress Report setting our preliminary findings and recommendations based on the first three months of the scheme’s operation. We invited further submissions, and received 11.
- ▼ We also met with and received information from Exchange for Change, TOMRA Cleanaway, and the EPA,⁹ and held discussions with the Small Business Commissioner and the Cross Border Commissioner.
- ▼ We appointed The CIE to provide expert advice on whether the CDS has had an effect on market shares and household expenditure on container beverages, and on the efficient costs of the EPA’s regulatory and compliance activities. The CIE’s reports are available on our website.
- ▼ In September 2018, we released a Draft Report setting out our draft findings and recommendations based on the first 9 months of the scheme, and invited stakeholder submissions. We received 12 submissions.
- ▼ In October 2018, we held a public hearing in Sydney to provide stakeholders with a further opportunity to comment on our Draft Report. A copy of the transcript is available on our website.

1.3 How this report is structured

The rest of this report provides more information on this review, and discusses our findings and recommendations and the analysis that underpins them in detail:

- ▼ Chapter 2 provides contextual information on the CDS and the container beverage industry.
- ▼ Chapter 3 explains the approach we used to monitor and report on the impact of the CDS.
- ▼ Chapters 4 and 5 discuss our findings on the direct costs of the CDS, and the changes in container beverage prices that are attributable to the scheme.
- ▼ Chapter 6 discusses our assessment of whether these changes in prices are in line with what could be expected in a competitive market.
- ▼ Chapters 7 and 8 focus on our findings on whether changes in other indicators suggest the CDS has led to a material reduction in competition, or resulted in other unintended impacts on suppliers and consumers.
- ▼ Chapter 9 discusses our findings on the need for ongoing monitoring of the impacts of the CDS on container beverage prices.

1.4 List of findings and recommendations

For convenience, a complete list of our findings and recommendations is provided below.

⁹ IPART required Exchange for Change, TOMRA Cleanaway and the EPA to provide information under section 22 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act).

Findings on scheme costs and impacts of the CDS on beverage prices

- 1 The direct cost of the CDS averaged around 9.3 cents per container (including GST) during the first year of the scheme's operation. 30
- 2 The direct costs of the CDS have fluctuated substantially from month to month, ranging from around 1.0 cents per container in March 2018 (including GST) to around 15.1 cents per container in December 2017 (including GST). 30
- 3 The substantial volatility in monthly direct costs is a result of the scheme's payment and contribution methodology of billing first suppliers in advance. 30
- 4 On average, prices of all eligible container beverages increased by 7.7 cents per container (including GST) during the first year of the scheme's operation. The CDS had a larger impact on non-alcoholic beverage prices than alcoholic beverage prices: 51
 - Non-alcoholic beverage prices increased by 10.1 cents per container due to the CDS. 51
 - a. Bottled water prices rose by an average of 11.6 cents per container due to the CDS. 51
 - b. Soft drink prices rose by an average of 10.8 cents per container due to the CDS. 51
 - c. Fruit juice prices rose by an average of 5.3 cents per container due to the CDS. 51
 - Alcoholic beverage prices increased by 5.1 cents per container due to the CDS. 51
 - d. Beer prices rose by an average of 4.2 cents per container due to the CDS. 51
 - e. Cider prices rose by an average of 6.9 cents per container due to the CDS. 51
 - f. RTD prices rose by an average of 10.0 cents per container due to the CDS. 51
- 5 The introduction of the CDS did not have any indirect price effects on container beverages not covered by the scheme such as wine and spirits. 51
- 6 The changes in container beverage prices that are due to the CDS are consistent with a workably competitive market. That is: 66
 - There is no evidence of sustained, systemic increases in beverage prices above the costs of the CDS. 66
 - Beverage suppliers have incurred other costs, in addition to the direct costs, to participate in and comply with the requirements of the scheme, and have passed some of these on to consumers through higher prices. 66
 - Differences between the monthly direct costs of the scheme and the monthly price increases in each beverage category were a result of the scheme's payment and contribution methodology. 66

Findings on impacts on competition

- 7 There is no specific evidence that the CDS has imposed a material restriction on competition in beverage markets. 71
- 8 The CDS has not resulted in changes in supplier behaviour that would indicate a reduction in competition. That is, there is no specific evidence of a reduction in product choice or information available to consumers. 71
- 9 The CDS has not resulted in material changes in market share or market composition in beverage markets. 71
- 10 The introduction of the CDS has had an adverse impact on independent retailers located near the Victorian border, in particular those retailers with a large proportion of their container beverage sales revenue from multipack products (such as cases of soft drink and beer). 76

The NSW Government has provided a transitional assistance package for small to medium sized businesses in the NSW-Victoria border region that showed they had been adversely impacted by competition with Victorian retailers as a result of the introduction of the CDS. 76
- 11 The CDS has reduced consumption of non-alcoholic beverages by around 950mL per household per month, representing a reduction of around 6.7 per cent, in average household non-alcoholic beverage consumption. 79
- 12 The CDS has increased expenditure on non-alcoholic beverages by around 63 cents, representing an increase of around 3.2 per cent, per household per month. 79

Recommendations on reducing cost volatility

- 1 To reduce the volatility in scheme costs, the NSW Environment Protection Authority and Exchange for Change implement an arrears scheme payments methodology with payment terms of 14 days. 66
- 2 That the arrears scheme payments methodology requires Exchange for Change to invoice suppliers using a fixed price per container by material type and actual supply volumes. 66
- 3 That the arrears scheme payments methodology requires Exchange for Change to set a price per container so that scheme revenues do not exceed costs using an 'Unders and Overs' account. 66
 - Initially, the price per container by material type would be fixed for a period of 3 months. 66
 - From 2020-21 (following further maturity of the scheme), the price per container by material type would be fixed for a period of at least 6 months. 66
- 4 To improve the transparency of scheme costs, Exchange for Change publish its price per container by material type and the underlying assumptions used to estimate the

- price (including the balance of the 'Unders and Overs' account from the previous period) in the month before the price takes effect. 66
- 5 The NSW Government provide the security for the overdraft required to implement an arrears scheme payments methodology. The cost of the overdraft should be included as a scheme cost to be recovered from first suppliers. 67
- 6 Exchange for Change and TOMRA Cleanaway vary their payment terms such that the Network Operator invoices the Scheme Co-ordinator two weeks in advance with payment in seven days, rather than the current four weeks in advance with payment within 10 business days. 67
- 7 To reduce the ongoing cost volatility and administrative burden associated with adjustments to supplier volumes continuing in perpetuity, the period against which adjustments can be made should be limited to 12 months after an invoice is issued. 67

Recommendations to ensure markets remain competitive

- 8 The EPA's container registration approval fee be set at \$13.70 to recover the variable costs of assessing applications for container approvals. Under this approach: 75
- the remaining unrecovered fixed costs associated with the CDS Portal, and its annual maintenance and licence costs, are recovered through the Scheme Compliance Fee, and 75
 - the current cap on annual application fees for smaller beverage suppliers should be removed. 75
- 9 All CDS related fees to be indexed by the change in the CPI (All groups, Australia) to March of that year. 75
- 10 That containers be registered for the CDS once, with no expiry. Approval for currently registered containers should also not expire. 75

Recommendations to address other market impacts of the CDS

- 11 That the monthly Scheme Compliance Fee be set to recover the EPA's efficient costs associated with the CDS as (\$2018-19): 82
- \$300,000 in 2018-19 and 2019-20 82
 - \$284,000 in 2020-21 and 2021-22, and 82
 - \$157,000 in 2022-23. 82
- 12 To reduce the costs to beverage suppliers of registering containers in multiple jurisdictions, the EPA recognise containers registered in other Australian container deposit schemes by 1 July 2019. 83
- 13 That the EPA and Exchange for Change work with their counterparts in other jurisdictions which have a container deposit scheme to arrive at a uniform approach to administering the definition of first suppliers and export protocols. 85

-
- 14 That the EPA publish a contract summary of its agreements with the Scheme Coordinator and the Network Operator including the roles and responsibilities and the number of collection points to be delivered in each geographic zone in NSW. 93
 - 15 Ongoing monitoring of the impacts of the CDS on container beverage prices and competition is not required beyond the initial one-year monitoring period. 96

2 Context

To understand the impact of the CDS on prices, competition and consumers, we needed to understand how the scheme works, and the regulatory and market environments that it operates in. The sections below outline the context for the scheme.

2.1 How the scheme works

The CDS aims to reduce the volume of litter in NSW by encouraging people to collect and return beverage containers for recycling. It does this by paying consumers (or others) a 10-cent refund for every empty container covered by the scheme they return to an authorised Collection Point.

To cover this and other scheme costs, the beverage industry pays fees to the Scheme Coordinator – Exchange for Change. The industry can increase container beverage prices to recover these costs from consumers.

The scheme works alongside the kerbside recycling programs operated by NSW councils. However, when consumers place eligible containers in kerbside recycling bins, they do not receive the refund. Instead, the businesses that process materials collected through kerbside programs – known as Material Recovery Facilities (MRFs) – can claim this amount. Alternatively, the local council, MRF and other players involved in providing the recycling program may share the refund.¹⁰

The sections below outline what beverage containers are covered by the scheme, and the key scheme participants and their roles and responsibilities.

2.1.1 What beverage containers are covered

Most beverage containers sized between 150 mL and 3 L are covered by the scheme (eligible containers). These include containers made from:

- ▼ glass
- ▼ plastic (eg, PET, HDPE)
- ▼ aluminium
- ▼ steel, and
- ▼ liquid paperboard (eg, certain milk and juice cartons).¹¹

¹⁰ Waste Avoidance and Resources Recovery Amendment (Container Deposit Scheme) Regulation. In order for MRFs to continue claiming processing refunds after 1 December 2018, they must have entered into a new processing agreement with the council or a refund sharing agreement that the council considers to be fair and reasonable. Alternatively, the council can notify the EPA that they consider it to be fair and reasonable to not have a sharing arrangement.

¹¹ Return and Earn – Containers, at <https://returnandearn.org.au/how-it-works/containers/>, accessed 6 December 2018.

The containers **not** covered by the scheme are generally those in sizes or containing beverages that people typically consume at home, which rarely end up in the litter stream (Table 2.1).¹²

Table 2.1 Beverage containers not covered by the CDS

Plain milk or milk substitutes containers	Wine and water casks of 1 L or more
Flavoured milk containers of 1 L or more	Wine sachets of 250 mL or more
Pure fruit and vegetable juices containers of 1 L or more	Cordials, concentrated fruit juice and vegetable juice containers
Glass wine and spirits bottles	Registered health tonic containers

Source: Return and Earn – Containers, at <https://returnandearn.org.au/how-it-works/containers/>, accessed 6 December 2018.

2.2 Key participants and their roles and responsibilities

The key participants in the CDS are the NSW Environment Protection Authority (EPA), the Scheme Coordinator, the Network Operator, and the ‘first suppliers’¹³ of eligible beverage containers in NSW.

2.2.1 EPA, Scheme Coordinator and Network Operator

The EPA is responsible for regulating the CDS, including designing and developing the scheme, and managing registration of all eligible beverage containers supplied in NSW and managing the contracts with the Scheme Coordinator and Network Operator and various associated deeds. It has appointed other organisations to perform the roles of the Scheme Coordinator and Network Operator.

The Scheme Coordinator – Exchange for Change – is responsible for administering the scheme, including:

- ▼ entering into Supply Arrangements with the first suppliers of eligible container beverages in NSW
- ▼ calculating and collecting fees from the first suppliers to cover the cost of the scheme
- ▼ distributing these funds to operate the scheme,
- ▼ sampling and validating materials collected by MRFs, and
- ▼ auditing and marketing the scheme.

The Network Operator – TOMRA Cleanaway – is responsible for establishing and managing a network of Return and Earn collection points across NSW, the collection of returned containers and payment of refund amounts and handling fees. It can build or operate the collection points itself or contract other organisations to do so, and contracts recycling companies to recycle the collected containers.

¹² Return and Earn – Containers, at <https://returnandearn.org.au/how-it-works/containers/>, accessed 6 December 2018.

¹³ Section 2.2.2 explains who first suppliers are.

2.2.2 First suppliers

The supply chain for beverages in NSW includes the following participants:

- ▼ **manufacturers**, who produce and package the beverages in NSW
- ▼ **importers**, who supply beverages produced in other states or countries to wholesalers or retailers
- ▼ **wholesalers**, who supply beverages from manufacturers or importers to retailers, and
- ▼ **retailers**, who supply beverages to consumers.

The **'first supplier'** is the participant that first supplies beverages in eligible containers to the NSW market. In most cases, this is either the manufacturer or the importer.¹⁴ However, because the supply chain operates differently across the beverage industry it can also be the wholesaler or retailer, as the examples in Table 2.2 show.

Table 2.2 Examples of first suppliers

Beverage is:	Supplied from:	First supplier in NSW is:
Manufactured in NSW	Manufacturer to wholesaler or retailer in NSW	Manufacturer
Manufactured in NSW	Manufacturer to wholesaler or retailer in another state	None (as no supply in NSW)
Manufactured outside NSW	From manufacturer to wholesaler outside NSW then to retailer in NSW	Wholesaler
Manufactured outside NSW	From manufacturer to retailer outside NSW then to that retailer's outlets in NSW	Retailer

Source: EPA, NSW Container Deposit Scheme Information Session, 4 August 2017, pp 20-21.

Under the CDS, first suppliers are required to enter into a Supply Arrangement with the Scheme Coordinator and contribute to the costs of the scheme (which includes the Network Operator's costs). This Supply Arrangement requires the first supplier to:

- ▼ Register each class of eligible container it supplies with the EPA (and pay the appropriate container approval fee).¹⁵
- ▼ Report on the volume of its own first supplies of beverages in each class of container in NSW.
- ▼ Pay fees to the Scheme Coordinator to contribute to the costs of the scheme. The amount of these fees is based on the volume of the supplier's first supplies as a proportion of the total volume of all eligible containers first supplied in NSW.

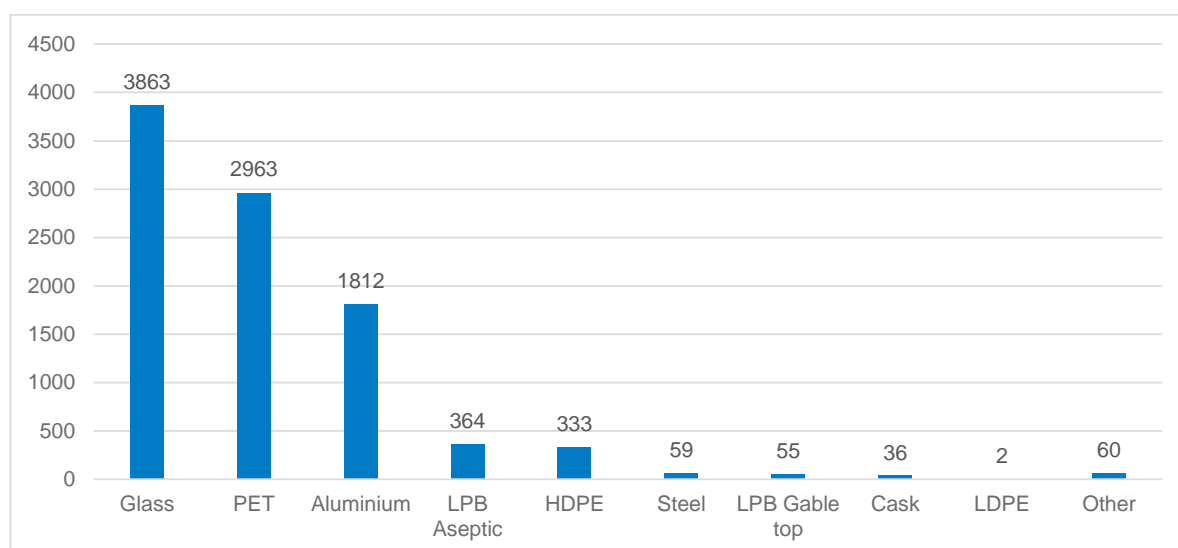
¹⁴ Exchange for Change, Container Deposit Scheme Update for Australian Beverages, 25 August 2017, slide 11.

¹⁵ An application fee of \$80 applies to register per class of eligible container. Individual container registrations are valid for five years. See <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/role-of-first-suppliers-of-drink-containers> accessed on 6 December 2018.

First suppliers must also ensure their containers are marked or labelled with the refund marking – *10c refund at collection depots/points in participating State/Territory of purchase* – in clear and legible characters, and the required barcode, on or before 1 December 2019.¹⁶

As of November 2018, there were 758 registered first suppliers.¹⁷ There were 9,547 registered container classes at the end of November¹⁸ and glass, PET and aluminium make up the largest number of registered containers (Figure 2.1).

Figure 2.1 Registered container classes by material type (November 2018)



Note: Polyethylene Terephthalate (PET), High-density polyethylene (HDPE) and Low-density polyethylene (LDPE) are types of plastic, LPB is liquid paperboard, LPB Aseptic is UHT or long life packs, Cask can be cardboard, foil and/or plastic.

Data source: Information provided by EPA to IPART, November 2018.

2.3 Regulatory environment

There is no price regulation in the NSW beverage industry. All participants in the supply chain can determine how to allocate their costs and set the price of their products.

Previous assessments of the NSW beverage industry have not revealed substantial concerns about competition or have found there is ‘workable competition’ in the industry.¹⁹ Workable competition means there is enough rivalry between firms to ensure that, over time, prices are determined by underlying costs rather than any market power. In turn, this means there is no need for any government intervention in relation to prices.

¹⁶ These requirements are set out in the *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Amendment (Supply and Collection) Regulation 2017, Part 3, Division 1, Clause 22B*. See Return and Earn Update, November 2017 #3, p 1. See <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/waste/container-deposit/17p0410-cds-return-and-earn-newsletter3-november17.pdf>, Accessed 20 September 2018.

¹⁷ Information provided by Exchange for Change, November 2018.

¹⁸ Information provided by EPA to IPART, June 2018.

¹⁹ The CIE, Monitoring the impacts of the NSW Container Deposit Scheme, January 2018, pp 19-20. Also see, ACCC, Grocery Inquiry 2008, available from <https://www.accc.gov.au/publications/report-of-the-accc-inquiry-into-the-competitiveness-of-retail-prices-for-standard-groceries-july-2008>, p xiv, Accessed 20 September 2018, Harper, I., P. Anderson, S. McCluskey, M. O'Bryan 2015 (The Harper Review 2015), Competition Policy Review, Final Report, March 2015, p 89.

However, all participants are subject to consumer and competition law.

2.3.1 All supply chain participants are subject to consumer law

All participants in the NSW beverage industry are subject to Australian Consumer Law (ACL).²⁰ This law aims to protect consumers and ensure fair trading. It provides ‘consumer guarantees’ and establishes businesses’ obligations and responsibilities. For example, under the ACL, businesses cannot mislead consumers about the price, value or quality of goods.

The Australian Competition and Consumer Commission (ACCC) and NSW Fair Trading regulate businesses’ compliance with the ACL. Generally, the Fair Trading’s focus is on individual consumers or small business disputes, while the ACCC has a broader focus on the competitive process, widespread consumer detriment and national issues.²¹ Australian courts and tribunals (including those in NSW) can also enforce the ACL. For example, they can order that an unfair contract term is not binding.²²

2.3.2 Aspects of CDS are exempt from competition law

Some aspects of the CDS are exempt from Part IV of the CCA, which prohibits certain anti-competitive behaviour, including making a contract, arrangement or understanding, or engaging in a concerted practice, that has the purpose or likely effect of substantially lessening competition.

Section 45(1) of the *Waste Avoidance and Resource Recovery Act 2001* (WARRA) specifically authorises certain conduct that would otherwise be prohibited by Part IV. In particular, it authorises:

- ▼ a Scheme administration agreement and any Scheme arrangement
- ▼ the entering into or making of a Scheme administration agreement or Scheme arrangement
- ▼ conduct of the parties to a Scheme administration agreement or Scheme arrangement in negotiating the agreement or arrangement
- ▼ the grant or refusal of a container approval, and
- ▼ conduct authorised or required by or under the terms or conditions of a Scheme administration agreement, Scheme arrangement or container approval.²³

²⁰ The Australian Consumer Law is contained in Schedule 2 to the *Competition and Consumer Act 2010* (Cth)

²¹ Australian Competition and Consumer Commission, 2017 ACCC Compliance and Enforcement Policy 2017, p 2, at <https://www.accc.gov.au/system/files/ACCC%20Compliance%20and%20Enforcement%20Policy%202017.pdf>, accessed on 24 January 2018.

²² NSW Fair Trading website, at http://www.fairtrading.nsw.gov.au/Consumers/Contracts/Unfair_contract_terms.html, accessed 2 February 2018.

²³ Section 45(1) of the *Waste Avoidance and Resource Recovery Act 2001* (WARRA) specifically authorises certain conduct for the purposes of competition law. It permits these to the extent that it would, but for section 45(1), otherwise be prohibited by Part IV of the CCA.

The 'Scheme administration agreements' under the CDS are the agreement between the Government and the Scheme Coordinator (Exchange for Change) and the agreement between the Government and the Network Operator (TOMRA Cleanaway).²⁴

The "scheme arrangements" under the CDS are agreements between:

- ▼ the Scheme Coordinator and suppliers of beverages sold in a container, requiring the suppliers to pay to the Scheme Coordinator contributions towards the cost of the management, administration and operation of the Scheme
- ▼ the Scheme Coordinator and the network operator, requiring the Scheme Coordinator to pay to the operators refund amounts and associated administration and handling costs for containers that are collected at the collection points, and
- ▼ the Network Operator and persons who operate collection points, requiring the Network Operator to pay to those persons refund amounts and associated handling costs.²⁵

A 'container approval' is an approval from the EPA to supply a beverage in a container in NSW. The WARRA creates an offence of supplying a container without a container approval.²⁶

2.4 Market environment

The market for recyclable materials is currently undergoing change. Until recently, China had been the world's largest importer of recyclable paper and plastics. However, since 2011 it has introduced a range of policies and programs aimed at reducing contamination in imported materials.²⁷

In 2017, it launched its 'National Sword' campaign, including banning the importation of certain materials, introducing contamination thresholds for others, and announcing that it would phase out imports of materials that can be substituted by domestic resources by the end of 2019. In 2018, it indicated it would enforce this policy. In 2018, it began to enforce these measures.²⁸

In March 2018, the NSW Government announced a \$47 million support package to address this issue. The support package will:

- ▼ enable councils to off-set some extra costs associated with kerbside recycling collections subject to guidelines
- ▼ improve council tendering processes to increase the production and use of recycled products, and

²⁴ Waste Avoidance and Resource Recovery Act 2001 (WARRA) section 24.

²⁵ Waste Avoidance and Resource Recovery Act 2001 (WARRA) section 26.

²⁶ Waste Avoidance and Resource Recovery Act 2001 (WARRA) section 38.

²⁷ China National Sword: the role of Federal Government, MRA Consulting Group, 2018, Available from : http://www.mraconsulting.com.au/PDFs/MRA_China_National_Sword.pdf, p 1, Accessed 7 September 2018.

²⁸ China National Sword: the role of Federal Government, MRA Consulting Group, 2018, Available from : http://www.mraconsulting.com.au/PDFs/MRA_China_National_Sword.pdf, Accessed 7 September 2018.

- ▼ fund community education initiatives to reduce kerbside recycling contamination.²⁹

The NSW Government has established an inter-governmental Taskforce to progress a longer-term strategic response to National Sword. The Taskforce is led by the NSW EPA. The Taskforce includes representatives from the Department of Premier and Cabinet, including the Cross-Border Commissioner, NSW Treasury, Department of Finance, Services and Innovation, Roads and Maritime Services, Fire & Rescue NSW, Department of Planning and Environment, Office of Local Government, Department of Industry, and the Office of the Small Business Commissioner. Its focus is examining the use of recycled products and developing opportunities to increase the use of recycled products, pursuing a national policy, and examining long term recycling strategies and support requirements.³⁰

The Senate Standing Committee on Environment and Communications References has completed an inquiry into the waste and recycling industry in Australia.³¹ The inquiry considered issues related to landfill, markets for recycled waste and the Australian Government's role in providing a coherent approach to the management of solid waste. The Committee recommended that the Australian Government implement a national container deposit scheme.³²

2.5 Other Australian container deposit schemes

Container deposit schemes have operated in South Australia since 1977 and the Northern Territory since 2012. Since the CDS commenced in NSW, the Australian Capital Territory and Queensland have also introduced schemes. Western Australia has announced that it will introduce a scheme in early 2020.³³

All schemes offer a 10 cent refund to consumers for the return of eligible containers, and the types of containers eligible for refunds are almost identical across the different schemes.

However there are differences between the schemes in terms of: governance arrangements; invoicing and reporting; the requirements to register containers and recognition of containers registered in other schemes; the definition of first suppliers; and types of collection points available. These difference can create administrative burdens and costs for beverage suppliers operating across Australia as discussed in Chapters 6 and 8.

²⁹ NSW EPA, Media Release, \$47 million to support recycling in NSW, 20 March 2018, Available from: - [https://www.epa.nsw.gov.au/news/media-releases/2018/epamedia180320-\\$47-million-to-support-recycling-in-nsw](https://www.epa.nsw.gov.au/news/media-releases/2018/epamedia180320-$47-million-to-support-recycling-in-nsw) , Accessed 17 April 2018.

³⁰ EPA website, <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/response-to-china-national-sword>, Accessed 11 April 2018.

³¹ Senate Standing Committees on Environment and Communications, https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/WasteandRecycling/Report, accessed on 13 September 2018.

³² See Recommendation 11

³³ WA Container Deposit Scheme, Available from <https://www.der.wa.gov.au/our-work/programs/111-wa-container-deposit-scheme> , Accessed 7 December 2018.

3 Our approach

The purpose of this review was to monitor the effects of the CDS in its first year of operation. Our terms of reference for this review (Appendix A) asked us to:

- ▼ monitor and report on:
 - the effect of the CDS on prices for container beverages in NSW over the period 1 November 2017 to 1 December 2018
 - the effect of the CDS on competition in the container beverage market in NSW over this period, and
 - any other market impacts on consumers over this period.
- ▼ recommend actions to address any adverse effects our monitoring identifies
- ▼ recommend whether price monitoring should continue beyond the initial one-year period.

To make our findings and recommendations, we assessed the effects of the CDS over the first year of the scheme's operation using an approach consistent with the framework established in our Progress Report. The approach was designed to identify any systemic, ongoing impacts arising from the operation of the scheme, and distinguish them from one-off, transitional impacts due to its introduction or retailers' competitive behaviour to gain customers or market share.

The sections below provide an overview of this approach, and then discuss each step in more detail.

3.1 Overview of our approach

Our approach for this review comprised the following 6 steps:

1. Estimate the direct costs of the CDS, based on information from the Scheme Coordinator on the monthly costs per container.
2. Estimate the changes in container beverage prices that are attributable to the CDS by analysing price changes before and after the introduction of the scheme using several methods and data sources.
3. Assess whether these changes in container beverage prices are inconsistent with a competitive market (ie, whether more than the costs of the CDS have been passed through to consumers) by comparing them with the direct costs of the scheme. We also recognised that beverage suppliers have incurred other costs in addition to the direct costs of the scheme, some of which have been passed on to consumers through higher prices.
4. Assess whether changes in other indicators suggest the CDS has led to a material reduction in competition by applying a method similar to the 'competition tests' included in regulatory impact statements.

5. Assess whether there have been other unanticipated market impacts on consumers that require Government action by considering stakeholder feedback and assessing changes in consumers' purchasing behaviour.
6. Assess the need for ongoing price monitoring beyond the initial one year period by considering the results of the first five steps.

3.2 Estimate the direct costs of the CDS

The first step in our approach was to estimate the direct costs of the CDS per container. These are the costs that the Scheme Administrator, Exchange for Change, recovers from first suppliers through monthly fees, as shown in Table 3.1. In line with the billing method set out in the Scheme Payment and Contribution Methodology, we calculated this cost by summing:

- ▼ **The monthly advance contributions** paid by first suppliers, which are based on forecasts of container volumes and material types that will be returned to collection points and recovered from MRFs in that month.
- ▼ **The periodic 'true up' adjustments** paid to first suppliers to reconcile any differences between the advanced contributions paid in a previous month and the actual fees for that month, based on actual container volumes and material types returned to collection points and recovered from MRFs in that month.

Table 3.1 CDS costs recovered from first suppliers

Cost item	Description	Recovered through
Administration costs	Scheme Coordinator costs for administering the scheme - determined through a competitive tender process.	Monthly administration fee
Regulatory compliance costs	EPA costs for monitoring compliance with the scheme	Monthly scheme compliance fee
Collection costs	Network Operator costs for paying the 10-cent refund per container returned to collection points and operating a network of Collection Points. The network fees for operating the Collection Points were determined through a competitive tender process.	Monthly network fee per container collected. This fee varies by container material type. <i>(Refund Amount (10c) + Network Fee) × Estimated monthly volume of containers recovered through Network Operator collection network</i>
Refunds to Material Recovery Facilities (MRFs)	Costs of paying the 10-cent refund per container delivered for reuse or recycling by MRFs	Monthly refund fee <i>(Refund amount (10c) × forecast volume of containers recovered through MRFs)</i>
Other	Other costs of the scheme such as interest earned on Scheme Payments accounts and recovery of bad debts	Monthly fee

Source: Exchange for Change, at https://returnandearn.org.au/wp-content/uploads/2018/05/ReturnandEarn_SchemeCosts.pdf, accessed on 17 September 2018.

We recognise that first suppliers and other supply chain participants also incur other costs in participating in and complying with the CDS. We have not been able to quantify these costs in our analysis as they vary from supplier to supplier. Nevertheless they are an impost on all businesses which may be passed on to consumers.

3.3 Estimate the changes in container beverage prices that are attributable to the CDS

Our second step was to analyse how retail prices of container beverages changed in the periods before and after the introduction of the CDS to identify the price changes that are attributable to the scheme. We used a difference-in-differences approach described in Box 3.1 to quantify the extent to which the costs of the CDS are being passed through to retail beverage prices.

Box 3.1 Our difference-in-differences approach

Difference-in-differences is a statistical technique commonly used to evaluate a policy impact. The base case is where outcomes are observed for two groups over two time periods – one group is exposed to a treatment in the second period but not in the first period (ie, treatment group) while the other group is not exposed to the same treatment during either period (ie, control group).

The difference-in-differences method compares the changes in outcomes between the treatment group and the control group over time. By taking the difference of the differences, the method eliminates biases in the difference between the treatment and control group in the second period (ie, treatment period) that could be driven by permanent differences (that do not change over time) between those groups, as well as biases from changes over time in the treatment group that could be due to trends.

In the context of our review, the treatment is the introduction of the CDS, and the difference-in-differences method identifies changes in beverage prices in NSW that are due to the CDS, by:

1. calculating the change in beverage prices in NSW before and after the CDS
2. calculating the change in beverage prices in a comparison group over the same period, and
3. calculating the difference between 1 and 2. We used Victoria as the comparison group for our difference-in-differences analysis.

We adopted the Victorian beverage market as the comparison group for this analysis. We think it is an appropriate comparison market, as it is comparable in size to the NSW market, Victoria does not have a CDS, and the prices for non-alcoholic beverages in these states tend to move together.

To apply the difference-in-differences approach, we first identified beverage categories in alcoholic and non-alcoholic beverage markets which are relevant to the CDS (see Figure 3.1). Then, for each beverage category, we looked at how retail prices changed during the first year of the scheme using the regression model(s) shown in Appendix B. Separate analyses for each beverage category allow us to account for differences in the price elasticity of demand across beverage types, and differences in the underlying production costs of different beverage types.

Our analysis also included beverage categories which are *not* covered by the scheme (ie, wine and spirits) to evaluate whether the scheme had any indirect impact on their prices.

Our data sample consisted of monthly prices of container beverages sold in NSW and Victoria over the period January 2016 to October 2018 using datasets outlined in Box 3.2. We categorised products by manufacturer (or brand), product description, pack type (ie, multi pack or single pack), size (eg, 350 ml, 600 ml, etc), price type (ie, promotional or non-promotional price), retailer, and retailer location. We excluded bottled water drink containers

of 3 litres or more, pure fruit or vegetable juice containers of 1 litre or more and RTD containers of more than 600 ml from our sample because they are not eligible for a refund under the CDS. We also excluded products that were not available for sale in both states to avoid different product compositions having an effect on our price analysis.

Box 3.2 Datasets used for analysis of the CDS impact on beverage prices

Non-alcoholic beverages

Our analyses of non-alcoholic beverage prices are based on transactional prices from Nielsen's Homescan. The Homescan consists of a nationally representative panel of consumer purchases in terms of region, household size, life stage, and income. Its panel comprises 10,000 households across Australia.

Participating households are provided with a hand-held scanner (or use Nielsen's mobile app) and are required to scan all items following a purchase. The scanner scans the barcode of the product and records all product specific information for each purchase. In addition, households manually record the price and quantity for the purchase. For each transaction, households are also asked whether they perceived the purchase to have been made on promotion or off promotion. The scanned data is then sent automatically to Nielsen. Participating households receive points exchangeable for gifts and store vouchers.

We obtained two sets of data from Nielsen:

- ▼ **Aggregated reports** containing average 4-weekly prices for each group of products where a group is given by a combination of beverage category, pack size, manufacturer, pack type, price type and retailer. For example, an aggregated report provides that for a 4 week period from 3 January 2016 to 30 January 2016, the average price paid for *single pack 1 L soft drink* manufactured by *Coca Cola Amatil* sold at a *Retailer A* in *NSW* is \$3.
- ▼ **Transactional data** containing individual transactions made across the categories by the Homescan panel. This contains price paid, price type (ie, promotional or non-promotional price), manufacturer, pack type (ie, multi pack or single pack), beverage size, retailer and region (ie, Sydney Metro, Northern NSW and Southern NSW for NSW, and Melbourne Metro and regional Victoria for Victoria).

Alcoholic beverages

Our analyses of alcoholic beverage prices are based on retail prices collected by Invigor Group (Invigor) Insights Retail datasets. Invigor collects prices for beer, cider, RTD, spirits and wine from 27 retailer websites a number of times each day, and has provided aggregated monthly prices such as mean, median, maximum, minimum and mode prices.

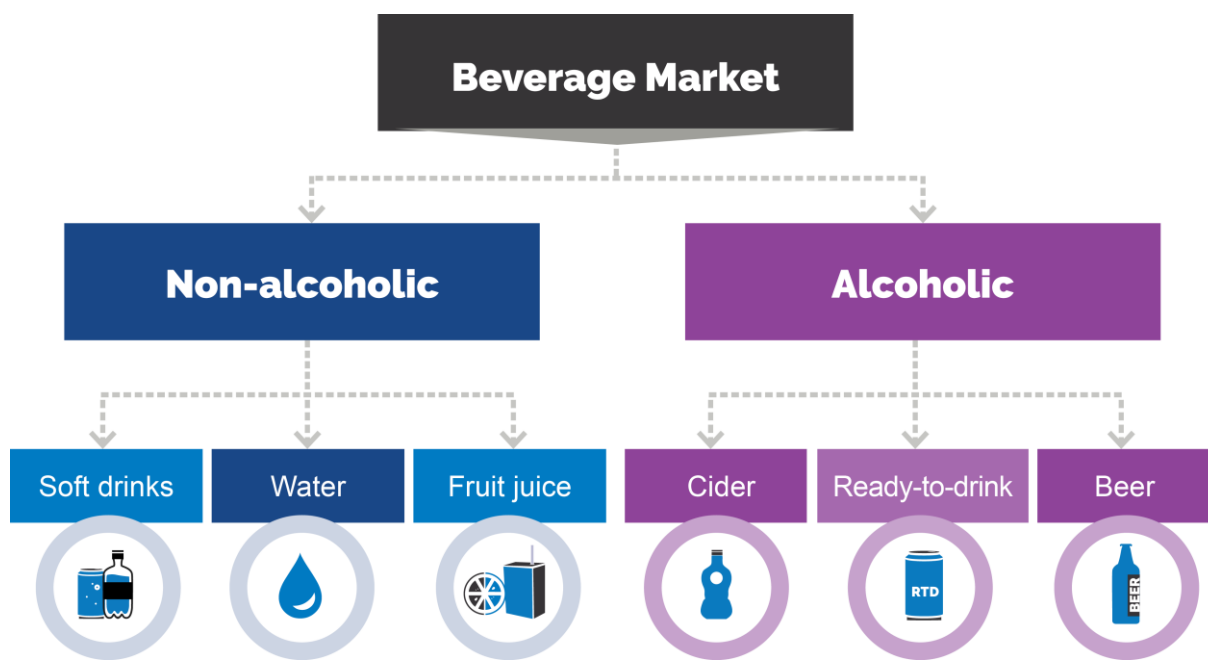
Based on information provided by Invigor, of the 27 retailers, Dan Murphy's, First Choice Liquor, Liquorland, Thirsty Camel, and Vintage Cellars have state-based pricing (ie, different prices for different states). Within each state, Dan Murphy's is the only retailer which has different prices at a postcode level.

In quantifying the impact of the CDS on beverage prices, we analysed:

- ▼ **Overall impacts**, that is how much of the price changes, if any, in the overall post-CDS period as a whole (ie, November 2017 to October 2018) relative to the pre-CDS period (ie, January 2016 to October 2017) can be attributed to the introduction of the CDS, and

- ▼ **Monthly impacts**, that is how much of the price changes, if any, in each month after the introduction of the CDS, relative to the pre-CDS period, can be attributed to the introduction of the CDS.

Figure 3.1 Beverage categories for difference-in-differences approach



We note that the regression model for our difference-in-differences analysis requires that, for a product to be included in our sample, its price must be available every month since June 2017. In the case of alcoholic beverages, requiring prices to be available every month eliminated all temporary, promotional prices from our datasets. Therefore, using the regression-based difference-in-differences approach, we were able to analyse the CDS impact on non-promotional prices only for alcoholic beverages.

To analyse the CDS impact on promotional prices for **alcoholic beverages**, we have adopted a **portfolio-based** difference-in-differences approach. This approach does not require prices to be available every month.³⁴ For more detail on our portfolio analysis, see Appendix C.

Since the Draft Report, we have made two minor changes to our methodology to improve our measurement of the changes in promotional prices. For the Draft Report, we analysed small-sized beverages (less than 600 mL) sold in multipack with no requirement for a minimum number of observations. However, we found that our alcoholic beverage dataset contains a very small number of promotional prices for some recent months. For example, in the case of cider and RTD, there were only a few price observations in months since April 2018. As a small sample size could affect the reliability of monthly average price estimates, we decided to exclude months in which there were less than three observations, but expanded the sample to include all sizes of CDS eligible beverages to obtain as many prices as possible.

³⁴ Specifically, we construct monthly portfolios consisting of prices of identical products sold by the same retailer(s) operating in both NSW and Victoria. We then compute the average price difference between the NSW portfolio and the Victoria portfolio in each month of the sample period, and test whether those monthly price differences are statistically different from zero for the pre-CDS period (January 2016 to October 2017) and for the post-CDS period (December 2017 to October 2018).

Once we estimated price changes for non-promotional prices using the regression approach, and those for promotional prices using the portfolio approach, we calculated the average price change for each alcoholic beverage as a weighted average of our estimated price changes for promotional and non-promotional prices of the respective beverage type, using weights of 75% and 25% for promotional and non-promotional prices, respectively.³⁵

As in all competitive markets, beverage suppliers, wholesalers and retailers can allocate their costs and change their prices at any time. This means that the change in prices of individual beverage products that can be attributed to the CDS may be more or less than these averages.

As a cross check on the results of the difference-in-differences analysis, we also analysed overall price changes using price indices for beverages published by the Australian Bureau of Statistics (ABS).

In addition, we also considered individual prices changes since the introduction of CDS reported by consumers and scheme participants via our website, and price complaints about the CDS made to other regulators, such as NSW Fair Trading and the NSW Small Business Commissioner. This allowed us to assess the extent to which individual prices differed from the average changes.

3.4 Assess whether the changes in container beverage prices are inconsistent with a competitive market

Our third step was to assess whether the changes in container beverage prices that are due to the CDS are inconsistent with a workably competitive market, by comparing our findings on these price changes (step 2) to our findings on the direct costs of the scheme (step 1). We also considered whether beverage suppliers have incurred other costs to participate in and comply with the requirements of the scheme, in addition to the direct costs, and whether suppliers have passed some of these on to consumers through higher prices.

Evidence that beverage prices have increased by more than the combined direct and other costs of the scheme, and that these higher prices have been sustained over time, could indicate that supply chain participants are seeking to raise the price of beverages above the costs of the scheme. In turn, this could indicate that competition is not working effectively to protect consumers' interests. This is because when competition is working well, a business cannot sustain prices above the costs of supply without being outcompeted and losing customers to other businesses.

3.5 Assess whether changes in other indicators suggest CDS has led to a material reduction in competition

Our fourth step was to examine other potential indicators to assess whether the CDS has led to a material reduction in competition.

³⁵ We determined the weights based on a survey conducted by the Foundation for Alcoholic Research and Education which found that 76% of Australian drinks have been influenced by a promotion when purchasing alcohol. Foundation for Alcoholic Research and Education, *Annual Alcohol Poll 2018 – Attitudes & Behaviours*, P22, available at <http://fare.org.au/wp-content/uploads/FARE-Annual-Alcohol-Poll-2018-web.pdf> accessed on 21 November 2018.

As noted above, we used a method similar to the ‘competition tests’ included in regulatory impact statements.³⁶ This included:

- ▼ defining the relevant markets
- ▼ assessing whether there have been systemic changes in supplier behaviour since the introduction of the CDS (other than the price changes assessed in step 3) such as an increase in barriers to entry or a reduction in the product choice or information available to consumers.
- ▼ assessing whether there have been systemic changes in market shares or market composition, and
- ▼ assessing whether there have been one-off instances of unfair or unjustified supplier behaviour with the potential to harm the competitive process.

3.5.1 Defining the relevant markets

The main issues we considered in defining the relevant markets were:

- ▼ the **product classes and types** (which we identified as part of step 2) and how readily they can be substituted for each other
- ▼ the **geographic space** in which this substitution can occur (eg, Australia, NSW, or regions)
- ▼ the **functional** level of production in which competition occurs (eg, manufacturing, wholesaling or retailing).

We also considered information on the beverage industry, and the findings of recent econometric studies and other regulators’ market definitions in relation to the beverage industry.

3.5.2 Assessing whether there have been systemic changes in supplier behaviour

Changes in supplier behaviour provide information on whether the market is becoming more or less competitive. We assessed whether suppliers have increased retail prices of container beverages by more than the costs of the CDS as part of step 3.

For this step, we considered whether there have been other changes in supplier behaviour that could indicate a reduction in the competitiveness of the market, such as an increase in barriers to entry or a reduction in the product choice or information available to consumers.

³⁶ These tests reflect the principle that legislation and regulation should not restrict competition unless it can be demonstrated that a) the benefits of the restriction to the community as a whole outweigh the costs, and b) the objectives of the regulation can only be achieved by restricting competition. Regulations can restrict competition in several ways – for example, by limiting the number or types of suppliers in a market (through raising costs for business etc); limiting the ability of suppliers to compete; and reducing the incentive of suppliers to compete.

3.5.3 Assessing whether there have been systemic changes in market shares or market composition

Changes in market share provide information about whether the market is becoming more or less concentrated and whether there are more or less suppliers in the market. We engaged the Centre for International Economics (The CIE) to provide advice on the impact of the CDS on market shares and quantities and consumption of container beverages. To provide its advice, The CIE used data from the Scheme Coordinator on container quantities by material type to analyse changes in the total quantities and market shares of container beverage suppliers since the introduction of the CDS.

3.5.4 Assessing whether there have been one-off instances of supplier behaviour with the potential to harm the competitive process

The extent and nature of individual instances of unfair or unjustified supplier behaviour since the CDS was introduced can also provide information about whether there has been a material reduction in the competitiveness of beverage markets. Throughout our review we monitored behaviours and outcomes in the beverage market to assess whether or not the alleged behaviour or market outcome had an unfair or unjustified impact on consumers or scheme participants.

3.6 Assess whether there have been other unanticipated market impacts on consumers

The fifth step in our approach was to assess whether there have been other unanticipated market impacts on consumers that require Government action. This involved:

- ▼ considering whether consumers have changed their beverage purchasing or consumption behaviours since the CDS was introduced.
- ▼ collecting and considering feedback from stakeholders on any aspects of the scheme that could be changed to reduce the costs of the scheme, improve its efficiency, and help the NSW Government achieve its policy objectives.

We engaged The CIE to provide advice on whether consumers are buying fewer container beverages overall or shifting their consumption into non-CDS container beverages. It used data from Nielsen's Homescan survey to conduct its analysis.

3.7 Assess the need for ongoing price monitoring

The final step in our approach was to assess the need for ongoing price monitoring beyond the initial one-year monitoring period. This involved considering the findings of the first five steps in our approach and deciding whether there are any ongoing, systemic impacts on beverage prices or competition in beverage markets as a result of the CDS.

4 Direct costs of the CDS

We estimated the direct costs of the scheme per container using data provided by Exchange for Change on:

- ▼ **the advance contributions** that it invoiced first suppliers for each month from the commencement of the scheme to October 2018. These contributions are based on Exchange for Change forecasts of the volume of containers of each material type that will be returned to TOMRA Cleanaway collection points and recovered from MRFs in the coming month
- ▼ **the periodic 'true up' adjustments** that it applied to first suppliers' invoices to reconcile any differences between the advance contributions they paid in a previous month and the actual fees they were liable for in that month, based on actual container volumes and material types returned to collection points and recovered from MRFs in that month.

We calculated **monthly direct costs per container** as the sum of the advance contribution and true up for each month divided by the forecast number of containers supplied in that month. Under the current advance payment methodology, this is the cost invoiced to first suppliers each month. The **overall direct cost per container** is calculated as the total scheme cost after true up (ie, the sum of all advance contributions and periodic true ups) divided by the actual total number of container supplied over the period from the commencement of the scheme to October 2018.

The sections below summarise our final findings on the direct costs, and then discuss these findings in more detail.

4.1 Summary of final findings on direct costs

We found that during the first year of the scheme's operation the average direct cost of the CDS was **9.3 cents per container** (including GST). These costs have fluctuated substantially from month to month from around **1.0 cent per container** to around **15.1 cents per container** (including GST).

As discussed in the Draft Report, we consider the substantial variation in monthly direct costs is a result of the scheme payment and contribution methodology of billing first suppliers one month in advance, based on forecasts of the container volumes and types for that month, and then 'trueing up' later once the actual volumes and types are known.

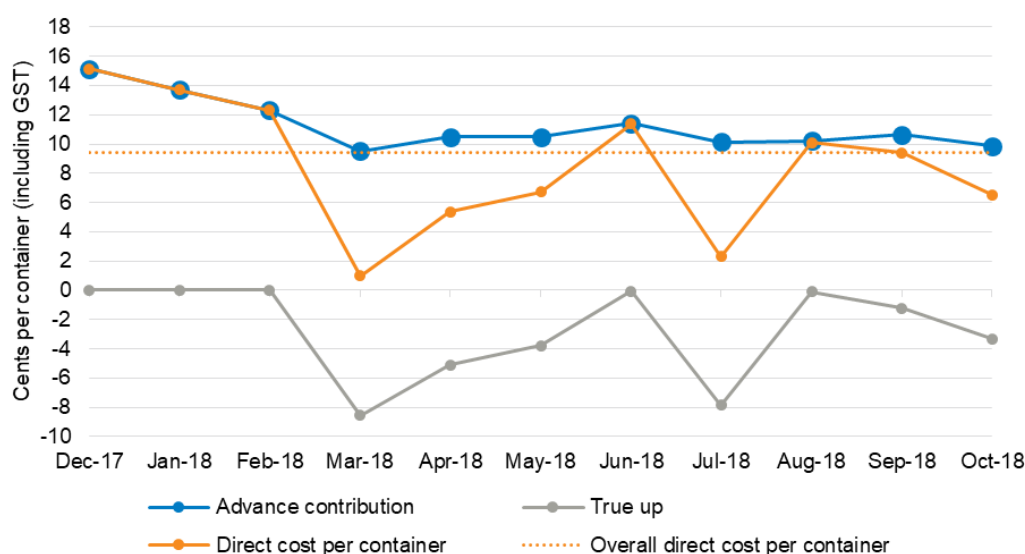
4.2 Direct costs averaged 9.3 cents per container with substantial monthly volatility

Figure 4.1 shows the monthly advance contributions, periodic true ups and monthly direct costs during the first year of the scheme's operation. We found that the overall direct cost of the scheme averaged around **9.3 cents per container** (including GST) over this period. Also, we found that direct costs have become more aligned with advance contributions with smaller

true ups being made as the scheme progresses. Our final finding on the overall average direct cost of the scheme is not materially different from that estimated for the Draft Report, which was **9.2 cents per container**.

As was the case for the Draft Report, we found that monthly direct costs per container had been volatile from around **1.0 cent per container** to around **15.1 cents per container** (including GST) over the period from the commencement of the scheme to July 2018.³⁷ However, the volatility in the direct costs of the scheme has reduced since August 2018 as the differences between Exchange for Change's forecasts and actual container volumes returned via network operator have reduced substantially.

Figure 4.1 Direct costs per container, December 2017 to October 2018 (including GST)



Note: Exchange for Change issues invoices monthly in advance. For example the March advanced contribution was contained in an invoice issued in February. We have shown the 'True up' in the 'Advance contribution' month rather than the month in which the invoice was issued or the month to which the true up relates.

Data source: IPART analysis based on data provided by Exchange for Change, November 2018.

4.3 Substantial volatility in monthly direct costs is driven by billing suppliers in advance and truing up later

As discussed in the Draft Report, we consider the substantial volatility in monthly direct costs is a result of the scheme's payment and contribution methodology where first suppliers are billed one month in advance, based on forecasts of the container volumes and types for the next month, and then 'truing up' later once the actual volumes and types are known.

Exchange for Change makes two types of true-up adjustments that have had a substantial impact on cost volatility:

- ▼ **Network operator true ups**, which reconcile any differences between the forecast and actual volumes of containers returned through Return and Earn collection points (including reverse vending machines, over the counter, and automated depots)

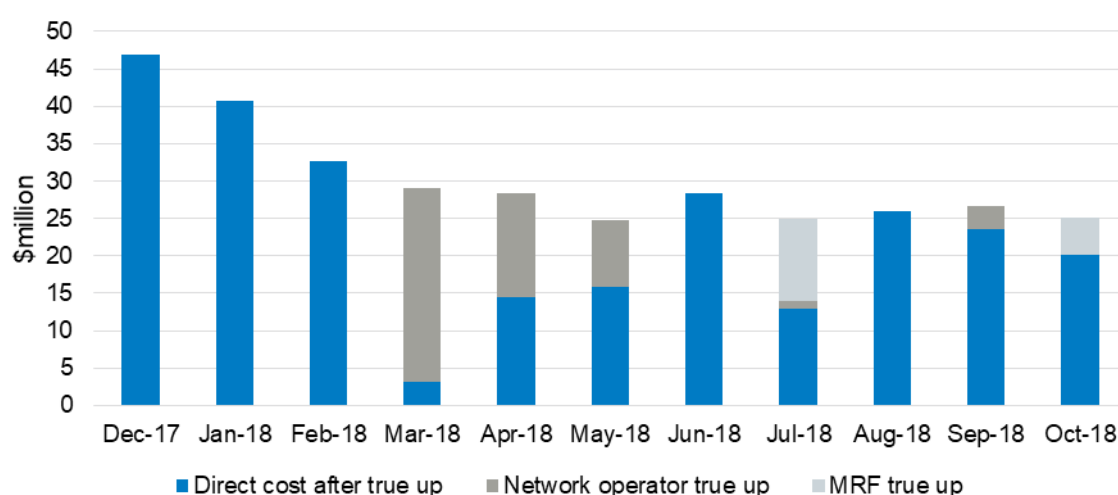
³⁷ IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, pp 27-28.

- ▼ **MRF true ups**, which reconcile any differences between the forecast and actual volumes of containers returned via kerbside recycling and to the MRFs.

As Figure 4.2 shows, from December 2017 to February 2018, Exchange for Change made no true ups, so the direct scheme costs were equal to the advance contributions. Since March 2018, Exchange for Change has made network operator true ups each month. These true ups lag by two months, as it takes this time for actual volumes to be known (ie, February volumes are known in April). In July and October 2018, Exchange for Change made its quarterly MRF true up.

The largest network operator true up occurred in the February 2018 invoice for March 2018, with the network operator true up relating to the actual costs in December 2017 accounting for around 89% of the total advance contribution. From April 2018 to June 2018, and from August 2018 to October 2018, the network operator true up amounts have decreased substantially as the differences between Exchange for Change's forecasts and actual container volumes returned via network operator have reduced materially (see Figure 4.3).

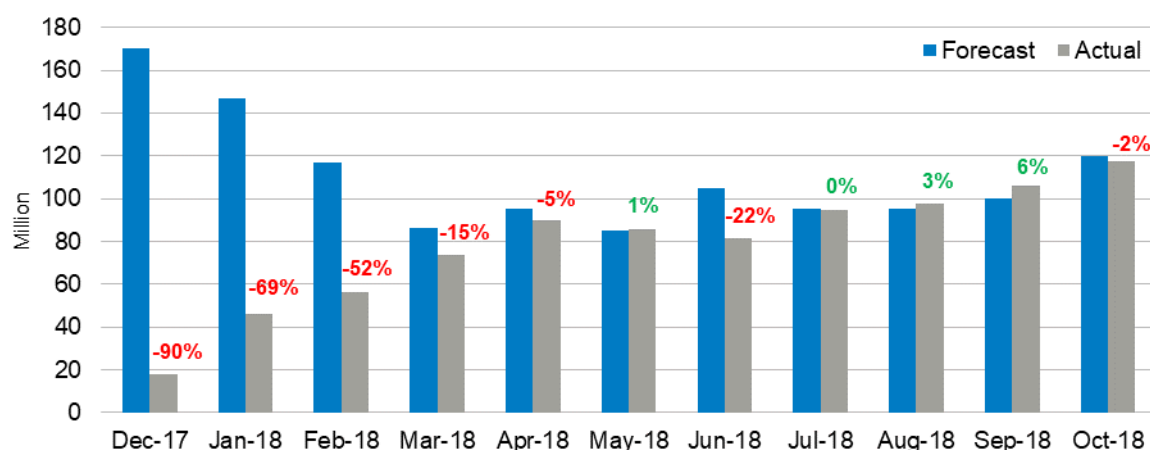
Figure 4.2 Total direct cost of the scheme and total true ups (\$million, ex-GST)



Data source: IPART analysis based on data provided by Exchange for Change, November 2018.

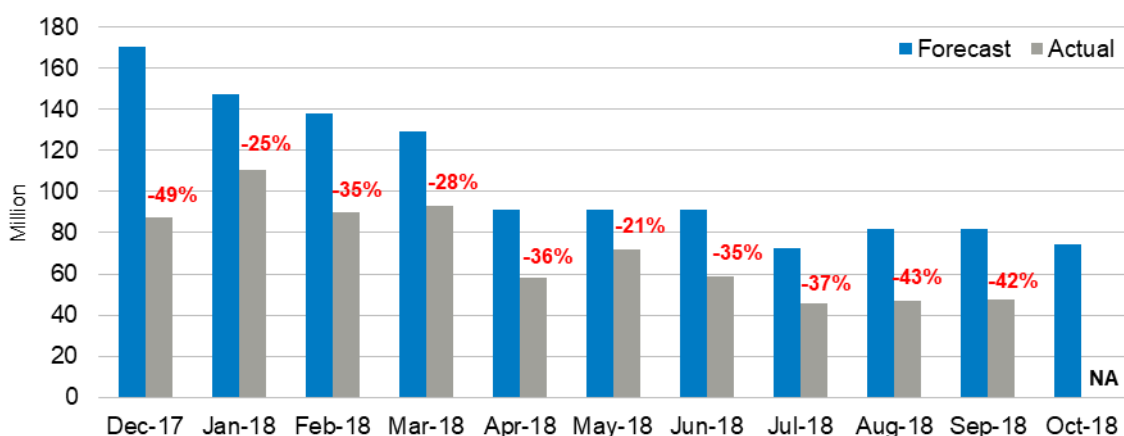
In July 2018, Exchange for Change made its first MRF true up. The total MRF true up amount was around 44% of the total advance contribution for July 2018. MRF true ups are also lagged and occur one quarter after the relevant quarter ends. The July true up adjusted for differences in forecast and actual volumes of containers returned via MRFs for the four months from December 2017 to March 2018 (see Figure 4.4). The next MRF true up occurred in the September invoice for October 2018, covering the period from April 2018 to June 2018.

Figure 4.3 Containers returned via collection points – forecast and actual (million)



Data source: IPART analysis based on data provided by Exchange for Change, November 2018.

Figure 4.4 Containers returned via MRF – forecast and actual (million)



Note: Actual volume of containers returned via MRF in October 2018 is not yet available.

Data source: IPART analysis based on data provided by Exchange for Change, November 2018.

Findings

- 1 The direct cost of the CDS averaged around 9.3 cents per container (including GST) during the first year of the scheme's operation.
- 2 The direct costs of the CDS have fluctuated substantially from month to month, ranging from around 1.0 cents per container in March 2018 (including GST) to around 15.1 cents per container in December 2017 (including GST).
- 3 The substantial volatility in monthly direct costs is a result of the scheme's payment and contribution methodology of billing first suppliers in advance.

5 Price changes attributable to the CDS

To estimate the changes in container beverage prices that are attributable to the CDS, we followed the approach we adopted in the Draft Report when analysing how retail prices changed in the periods before and after the introduction of the scheme. Specifically, we:

- ▼ quantified price changes, if any, that are attributable to the scheme using a difference-in-differences approach
- ▼ considered changes in price indices for beverages published by the ABS, and
- ▼ considered individual price changes since the introduction of the CDS reported by consumers and scheme participants via our website, and price complaints about the CDS made to other regulators (eg, NSW Fair Trading and the NSW Small Business Commissioner).

5.1 Summary of findings on price changes attributable to the CDS

During the first year of the scheme's operation,³⁸ the price of all eligible container beverages increased by an average of 7.7 cents per container due to the CDS.³⁹ However, as Table 5.1 shows, the average price increase varied across beverage markets and categories. On average:

- ▼ Non-alcoholic beverage prices increased by **10.1 cents per container** due to the CDS.
 - Bottled water prices rose by an average of 11.6 cents per container due to the CDS.
 - Soft drink prices rose by an average of 10.8 cents per container due to the CDS.
 - Fruit juice prices rose by an average of 5.3 cents per container due to the CDS.
- ▼ Alcoholic beverage prices increased by **5.1 cents per container** due to the CDS.
 - Beer prices rose by an average of 4.2 cents per container due to the CDS.
 - Cider prices rose by an average of 6.9 cents per container due to the CDS.
 - RTD prices rose by an average of 10.0 cents per container due to the CDS.
- ▼ The CDS did not have a statistically significant impact on the prices of beverage categories which are not covered by the scheme such as wine and spirits.

³⁸ As discussed in Chapter 3, we analysed prices during the first year of the scheme's operation (November 2017 to October 2018) relative to the prices before the scheme commenced (January 2016 to October 2017)

³⁹ All figures in this report include GST unless stated otherwise.

Table 5.1 Average retail price increases due to the CDS – Comparison of Draft and Final Report (cents per container, inc-GST)

Beverage market	Beverage category	Draft Report (updated to July 2018)	Final Report (updated to October 2018)
All		7.5	7.7
Non-alcoholic		9.5	10.1
	Water	10.0	11.6
	Soft drink	10.4	10.8
	Fruit Juice	4.8	5.3
Alcoholic ^a		5.4	5.1
	Beer	4.5	4.2
	Cider	11.3	6.9
	Ready-to-drink	7.6	10.0

^a Alcoholic beverage average is based on a weighted average of our estimated price changes for promotional and non-promotional prices, where the weights are 75% and 25% for promotional and non-promotional prices, respectively.

Note: The overall average retail price increases for all, non-alcoholic and alcoholic beverages are weighted by market share sourced from the following IBIS reports: G4123 Liquor Retailing in Australia Industry Report, C1211A Soft Drink Manufacturing in Australia Industry Report, C1211B Bottled Water Manufacturing in Australia Industry Report, and C1211C Fruit Juice Drink Manufacturing in Australia Industry Report.

Source: IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, p 32; IPART analysis using Nielsen Homescan and Invigor Insights Retail.

At the beverage category level, the estimated price increases for cider and RTD for the Final Report are different from those for the Draft Report mainly due to changes made to improve our methodology for measuring changes in promotional prices as discussed in Chapter 3.3.

Consistent with the findings above, our analysis of the changes in price indices for beverages published by the ABS indicates that the CDS increased the prices of beverages covered by the scheme, had a larger impact on non-alcoholic beverage prices than alcoholic beverage prices, and did not have any indirect impact on the prices of beverages outside the scheme such as wine and spirits.

5.2 Difference-in-differences approach shows container beverage prices rose by an average of 7.7 cents due to the CDS

Our difference-in-differences approach using the econometric model shown in Box 5.1 indicated that retail prices of all eligible container beverages increased, on average, by **7.7 cents per container** during the first year of the scheme's operation. However, the average increase varied by product type, by product market, and from month to month.

On average, bottled water prices rose the most, while beer prices rose the least. In the alcoholic beverage market, average price increases were lower because suppliers passed on only a small part of the scheme's direct costs in non-promotional prices for beer, cider and RTD and promotional beer prices. Average prices for wine and spirits – which are not covered by the CDS – were not affected by the introduction of the scheme.⁴⁰

⁴⁰ See Appendix B for further information.

The sections below discuss the results of our regression analysis for each product type in more detail, including our findings on the CDS's impact on the overall and monthly price changes due to the CDS. In the first figure in each section (CDS impact on prices), the coloured dots represent the average changes in container beverage prices attributable to the CDS based on our three sets of sample data. The shaded bars represent the likely ranges for the changes in beverage prices attributable to the CDS at a 95% confidence level based on our main sample, **Sample A**.

As discussed in Section 3.3, we have adopted a portfolio-based difference-in-differences approach to analyse the CDS impact on promotional prices for alcoholic beverages. Once we estimated price changes for non-promotional prices using the regression approach, and those for promotional prices using the portfolio approach, the average price change for each alcoholic beverage is calculated as a weighted average of our estimated price changes for promotional and non-promotional prices of the respective beverage type, where the weights are 75% and 25% for promotional and non-promotional prices, respectively.⁴¹

For more technical detail on our sample and analysis, see Appendix B.

⁴¹ We applied weights based on a survey conducted by the Foundation for Alcoholic Research and Education which found that 76% of Australian drinks have been influenced by a promotion when purchasing alcohol. Foundation for Alcoholic Research and Education, *Annual Alcohol Poll 2018 – Attitudes & Behaviours*, P22, available at <http://fare.org.au/wp-content/uploads/FARE-Annual-Alcohol-Poll-2018-web.pdf> accessed on 21 November 2018.

Box 5.1 Regression model used to quantify the CDS impact on beverage prices

For each beverage category, we quantified price changes due to the CDS using the following regression model:

$$P_{it} = \beta_0 + \beta_1 \times NSW + \beta_2 \times TIME + \beta_3 \times NSW \times TIME + \gamma X_{it} + \varepsilon_{it}$$

where

- ▼ P_{it} is the price of product i in month t , expressed in \$ per container.
- ▼ NSW equals 1 if product i is sold in NSW, and 0 otherwise.
- ▼ $TIME$ equals 1 if month t is from December 2017 to October 2018 (ie, treatment period in which the CDS is in place), and 0 otherwise.
- ▼ $NSW \times TIME$ equals 1 if $NSW = 1$ and $TIME = 1$.
- ▼ X_{it} comprises a set of variables that are likely to affect beverage prices. Beverage prices may vary across different sizes, package types, manufacturers, etc. Also, they are likely to vary over time or across region. We included these factors as control variables to isolate the impacts of these confounding variables on beverage prices, which are captured in the coefficient(s), γ , and
- ▼ ε_{it} is the error term.

We conducted the regression analysis described above for each sample set within each beverage category:

- ▼ **Sample A**, which included the products for which there is continuous monthly price information from January 2017
- ▼ **Sample B**, which included only the products with continuous monthly price information from January 2016, and
- ▼ **Sample C**, which included only the products with continuous monthly price information from June 2017

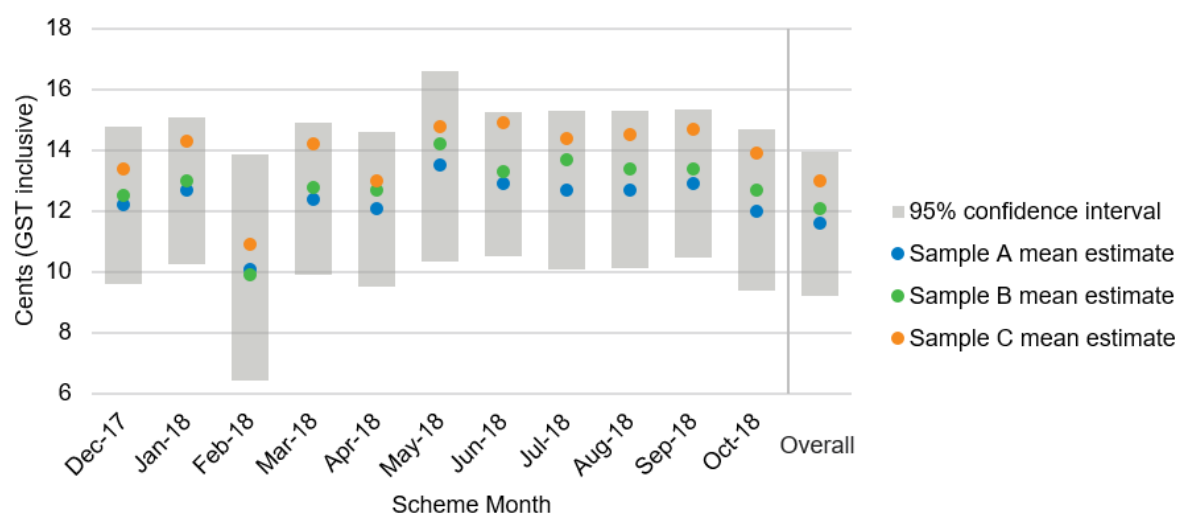
5.2.1 Bottled water prices rose by an average of 11.6 cents due to the CDS

On average, we found that the introduction of the CDS has resulted in a statistically significant increase in bottled water prices in every month since the introduction of the CDS. The estimated average increases in prices are similar across the three sets of sample data.

During the first year of the scheme's operation bottled water prices increased on average by 11.6 cents per container. This is higher than our draft finding of 10 cents per container.⁴² At a 95% confidence level, we found that the average increase in bottled water prices over this period was likely to range between 9.2 cents and 13.9 cents per container.

⁴² IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, p 33.

Figure 5.1 CDS impact on bottled water prices (cents per container, including GST)



Note: 95% confidence intervals are based on regression results from Sample A.

Data source: IPART analysis using Nielsen Homescan data.

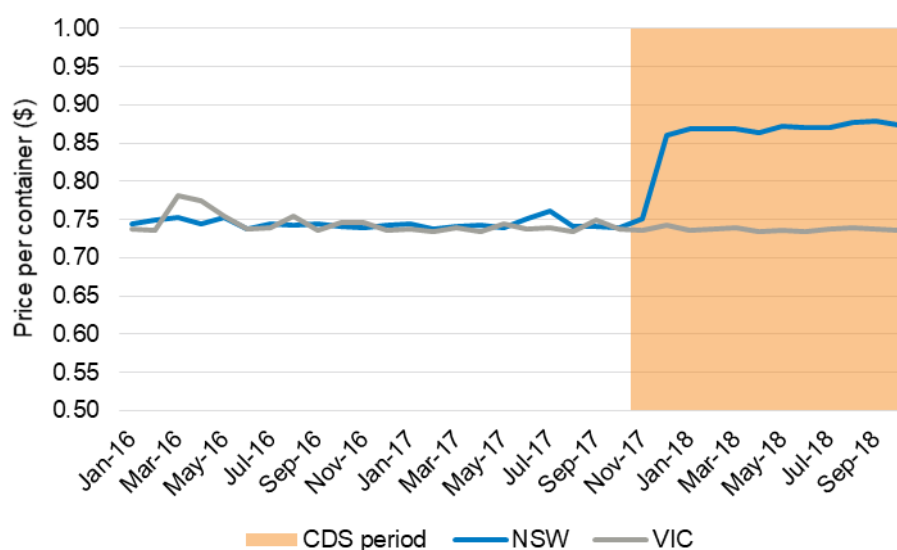
When looking at monthly price changes, price increases due to the CDS have been stable at around 12 cents to 13 cents per container each month except for February – this is consistent with comments from beverage suppliers that while costs fluctuate retailers are reluctant for prices to fluctuate.⁴³

Consistent with the Draft Report, we categorised bottled water products into three size groups – Small, Medium and Large, where a product is defined as Small if its size is less than or equal to 600 ml, Medium if its size is between 600 ml and 1 L (inclusive), and Large if its size is greater than 1 L.

Figure 5.2 shows monthly average prices in NSW and Victoria for bottled water products in the Large category. Bottled water prices between NSW and Victoria were generally comparable prior to the introduction of the CDS. Since the introduction of the CDS, however, bottled water prices in NSW have increased by between 12 and 14 cents, compared to Victoria.

⁴³ IPART, *NSW Container Deposit Scheme – Public Hearing Transcript*, 21 October 2018, p 17; p 26.

Figure 5.2 Monthly average bottled water prices in NSW and Victoria (including GST)



Note: Based on sample of products with prices available for each month from January 2017 (Sample A). Average prices tend to differ between non-promotion and promotional prices – the figure shows non-promotional prices.

Data source: IPART analysis using Nielsen Homescan data.

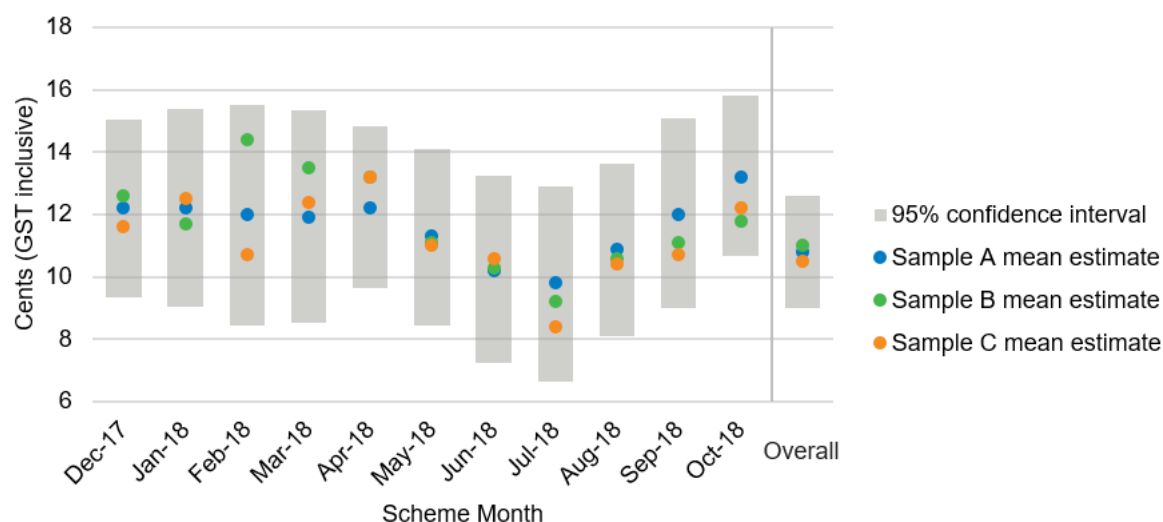
5.2.2 Soft drink prices rose by an average of 10.8 cents due to the CDS

We found that soft drink prices rose by a statistically significant amount as a result of the CDS. As Figure 5.3 shows, soft drink prices increased by an average of 10.8 cents per container during the first year of the scheme's operation. This is similar to our draft finding of 10.4 cents per container.⁴⁴ Our 95% confidence interval suggests the likely increase in soft drink prices ranged by between 9.0 cents and 12.6 cents per container over this period.

On a monthly basis, soft drink prices increased by between 9.8 cents and 13.2 cents per container as a result of the CDS. In the first five months of the scheme's operation, soft drink prices were around 12 cents higher per container due to the CDS. The estimated price increases in the recent two months (ie, September and October 2018) have been higher than in June and July 2018 when prices increased by around 10 cents per container due to the CDS.

⁴⁴ IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, p 35.

Figure 5.3 CDS impact on soft drink prices (cents per container, including GST)



Note: 95% confidence intervals are based on regression results from Sample A.

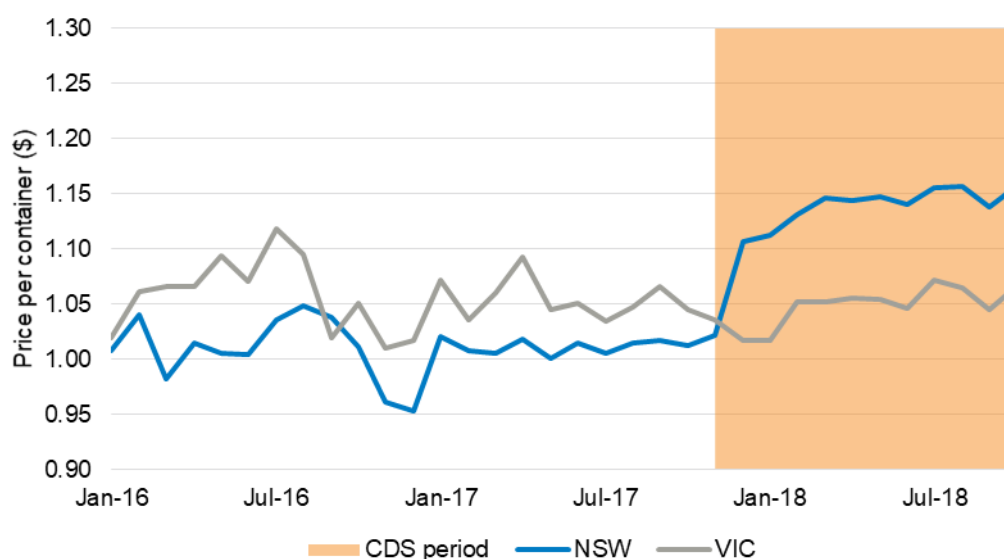
Data source: IPART analysis using Nielsen Homescan data.

Figure 5.4 shows monthly average prices for soft drink products in NSW and Victoria. We grouped soft drinks based on their size where a product is defined as Small if size is less than 500 mL, Medium if size is between 500 mL (inclusive) and 1 L, and Large if size is greater than or equal to 1 L. The figure shows the monthly averages for soft drinks in the Large category.⁴⁵

As shown in the figure, soft drink prices in the Large category were around 7.9 cents to 9.5 cents per container during the first year of the scheme's operation. Interestingly, soft drink prices in NSW were noticeably lower than those in Victoria prior to the introduction of the CDS. However, after the introduction of the CDS prices in NSW are higher than in Victoria.

⁴⁵ This is because the sample size for the Medium and Small categories is too small (less than 10 products in each state per month).

Figure 5.4 Monthly average soft drink prices in NSW and Victoria (including GST)



Note: Based on sample of products with prices available for each month from January 2017 (Sample A). Average prices tend to differ between non-promotion and promotional prices – the figure shows non-promotional prices.

Data source: IPART analysis using Nielsen Homescan data.

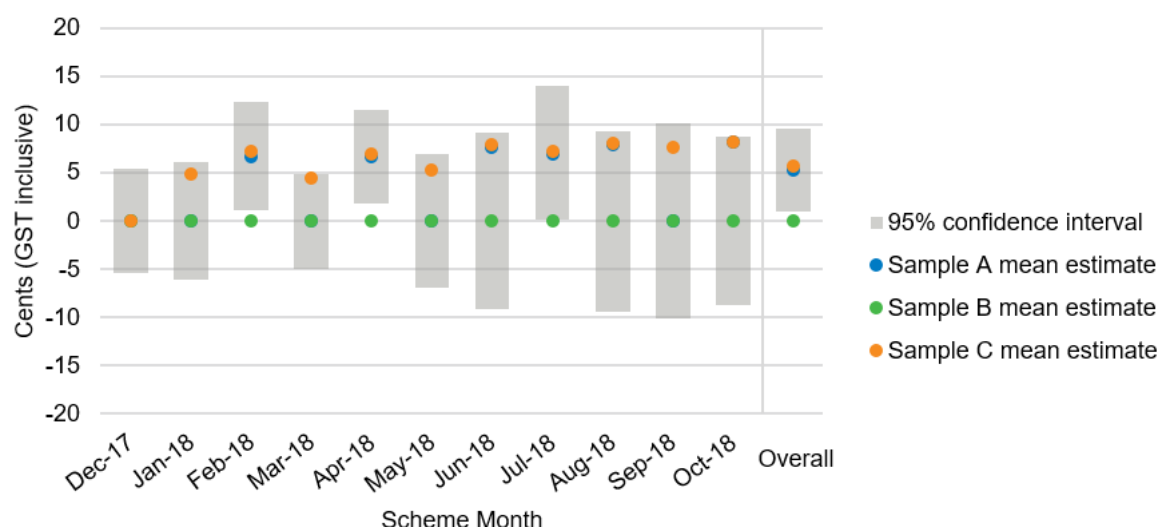
5.2.3 Fruit juice prices rose by an average of 5.3 cents due to the CDS

Fruit juice prices increased by an average of 5.3 cents per container during the first year of the scheme's operation based on Sample A. When looking at monthly price changes, fruit juice prices increased by between 6.6 cents and 8.2 cents per container in most months since February 2018.

We found stronger results based on Sample C. As shown in Figure 5.5 based on Sample C, fruit juice prices increased by 5.7 cents per container, on average. On a monthly basis, the CDS resulted in a price increase ranging from 4.9 cents to 8.2 cents per container in every month since January 2018.

Our results based on Sample B are materially different from those based on Sample A and Sample C. This is likely due to the small number of available observations in our fruit juice samples. Sample A and C consisted of 1,125 and 1,229 product-month observations, and Sample B consisted of only 476 observations, affecting the standard errors of the estimated coefficients.

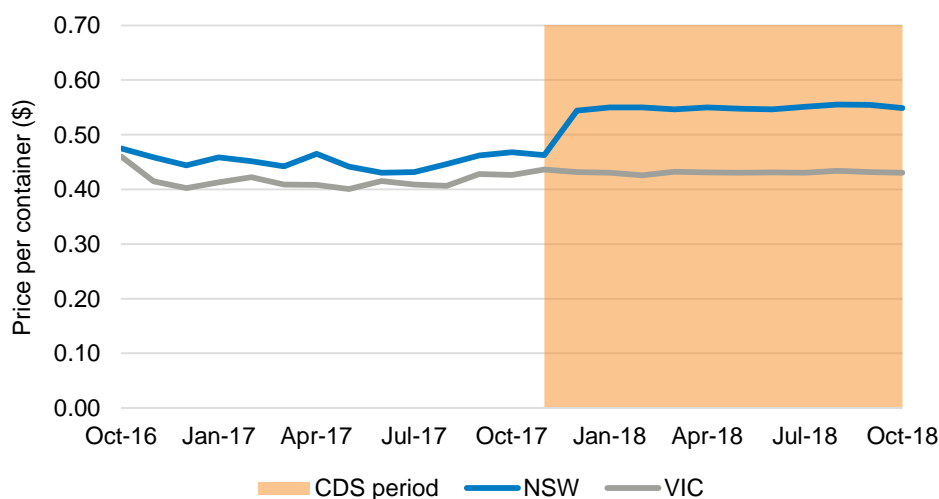
Figure 5.5 CDS impact on fruit juice prices (cents per container, including GST)



Data source: IPART analysis using Nielsen Homescan data.

Figure 5.6 provides some evidence that the average prices of fruit juices in NSW increased compared to those in Victoria following the introduction of the CDS. As shown in Figure 5.6, the average prices of fruit juices in the Small size category have increased by between 11 cents and 12 cents per container since December 2018.

Figure 5.6 Monthly average fruit juice prices in NSW and Victoria (including GST)



Note: Based on sample of products with prices available for each month from January 2017 (Sample A). Average prices tend to differ between non-promotion and promotional prices – the figure shows non-promotional prices. The figure shows the prices of fruit juices in the Small size category from October 2016 as there are a small number of observations prior to October 2016.

Data source: IPART analysis using Nielsen Homescan data.

5.2.4 Beer prices rose by an average of 4.2 cents due to the CDS

Overall, we found that beer prices increased by an average of 4.2 cents per container as a result of the CDS – the estimated price increase is 0.3 cents lower than our draft finding. We found that:

- ▼ promotional prices increased by an average of 4.6 cents per container due to the CDS,
- ▼ non-promotional prices increased by an average of 2.9 cents per container due to the CDS.

Promotional beer prices rose by an average of 4.6 cents due to the CDS

Based on our portfolio approach, we found that before the CDS was introduced in NSW, there was no statistically significant difference in promotional beer prices in NSW and Victoria (Table 5.2). However, after the scheme was introduced, promotional prices in NSW were, on average, 4.6 cents per container higher than in NSW.

Our final finding on the change in promotional prices for beer is 1.4 cents lower than our draft finding – this is because there has been little difference in promotional prices for beer between NSW and Victoria from August to October 2018 as shown in Figure 5.7, lowering the average price difference over the entire period.

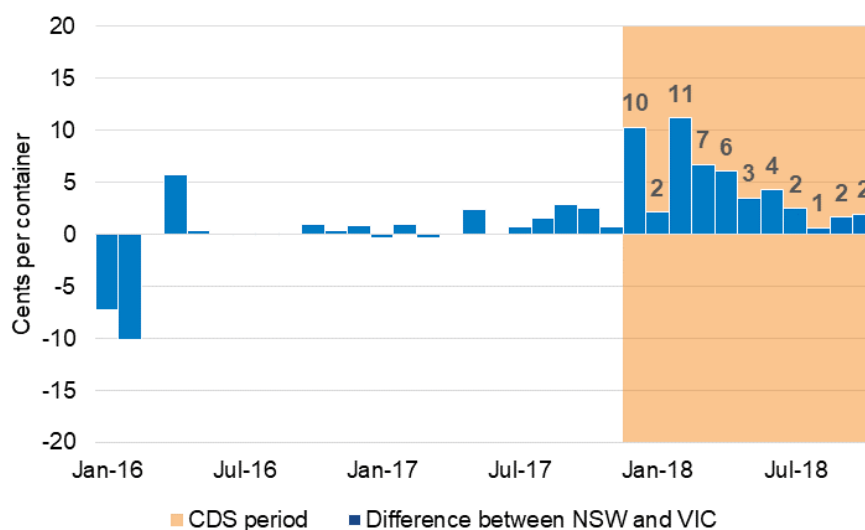
Table 5.2 Pre- and post-CDS average beer promotional prices in NSW and Victoria (\$ per container)

	Pre-CDS			Post-CDS		
	NSW	VIC	Difference	NSW	VIC	Difference
\$ per container	2.32	2.32	0.00	2.55	2.51	4.63***

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Analysis is based on beverages sold in multipack. The Pre-CDS period is from January 2016 to October 2017 and the Post-CDS period is from December 2017 to October 2018.

Source: IPART analysis using Invigor Insights Retail.

Figure 5.7 Monthly average promotional beer price differences between NSW and Victoria



Note: Analysis is based on all beverages sold in multipack.

Data source: IPART analysis using Invigor Insights Retail data.

Non-promotional beer prices rose by an average of 2.9 cents due to the CDS

Figure 5.8 shows the results of our regression analysis for non-promotional beer prices during the first year of the scheme's operation. Non-promotional beer prices were on average 2.9 cents higher due to the CDS. In the Draft Report, we found that non-promotional prices were not affected by the introduction of the scheme.⁴⁶

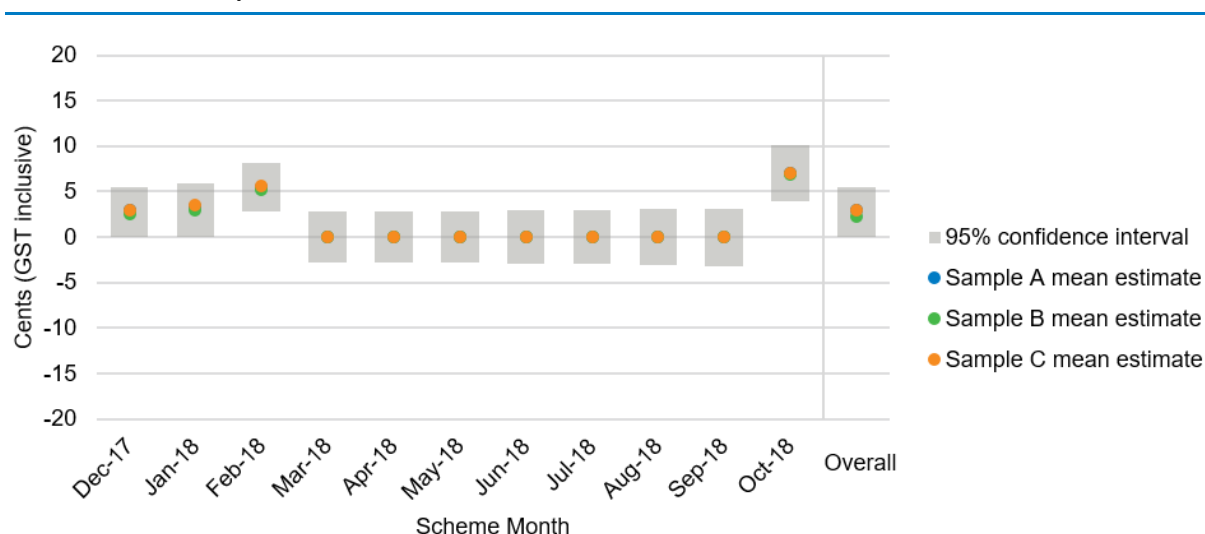
On a monthly basis, we found that the introduction of the CDS resulted in a statistically significant increase in non-promotional beer prices in some months. Non-promotional beer prices were 2.9 cents to 5.5 cents per container higher due to the CDS in the first three months of the scheme's operation from December 2017 to February 2018. From March 2018 to September 2018, there was no statistically significant increase in these prices due to the CDS. October 2018 saw the largest increase in prices due to the CDS of 7 cents per container. In the Draft Report, we found a statistically significant price increase only in February 2018.⁴⁷ The results are consistent across the three samples.

The difference between our final and draft finding is driven by relatively larger price increases due to the CDS in October 2018. In addition, updating our dataset to October 2018 resulted in our sample including a different set of products relative to our Draft Report. This is because some products which were previously included in the Draft Report analysis were no longer included in the Final Report due to missing prices between August 2018 and October 2018.

⁴⁶ IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, pp 39-40.

⁴⁷ *Ibid.*, p 39.

Figure 5.8 CDS impact on non-promotional beer prices (cents per container, including GST)



Note: 95% confidence intervals are based on our regression analysis using Sample A.

Data source: IPART analysis using data from Nielsen Homescan and Exchange for Change

5.2.5 Cider prices rose by an average of 6.9 cents due to the CDS

We found that cider prices increased by an average of 6.9 cents per container due to the CDS during the first year of the scheme's operation. Specifically we found that:

- ▼ promotional prices rose by an average of 9.2 cents per container
- ▼ non-promotional prices were not affected by the introduction of the scheme.

Promotional cider prices rose by an average of 9.2 cents due to the CDS

We found no statistically significant difference between promotional cider prices in NSW and Victoria before the CDS was introduced. However, promotional prices were an average of 9.2 cents per container higher in NSW after the introduction of the scheme. This is around 6 cents lower than our previous draft finding, which indicated that promotional cider prices increased by an average of 15 cents per container due to the CDS.⁴⁸ The difference is mainly due to the changes made to improve our methodology for measuring changes in promotional prices, discussed in Chapter 3.3.⁴⁹ In addition, analysing the updated dataset results in the CDS having no impact on promotional cider prices in September and October 2018 (see Figure 5.9). This results in a lower overall price increase during the first year of the scheme's operation.

⁴⁸ Ibid., pp 40-41.

⁴⁹ In the Draft Report, we included April 2018, in which prices in NSW were on average 17 cents higher than those in Victoria. Based on our updated methodology, this observation is now excluded from our test, resulting in a lower overall price increase.

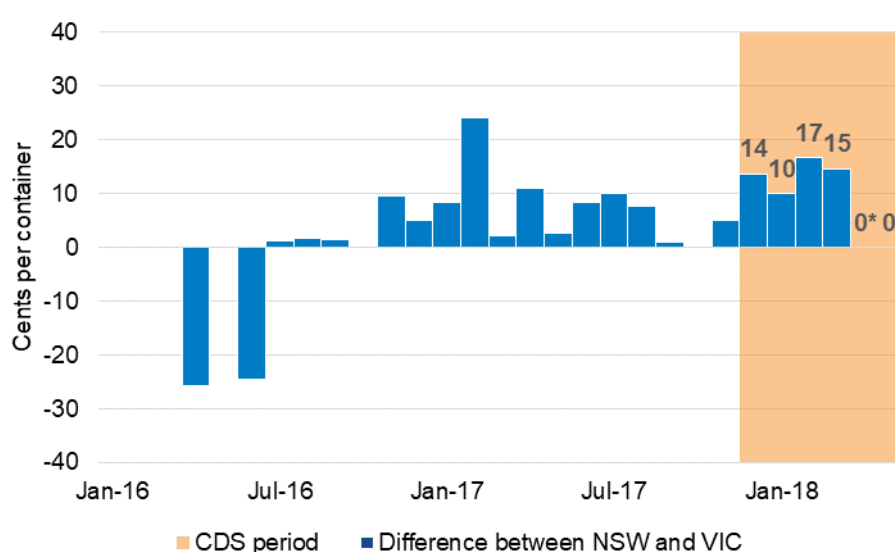
Table 5.3 Pre- and post-CDS average cider promotional prices in NSW and Victoria (\$ per container)

	Pre-CDS			Post-CDS		
	NSW	VIC	Difference	NSW	VIC	Difference
\$ per container	3.06	3.04	0.00	3.05	2.96	9.18***

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Analysis is based on beverages sold in multipack. The Pre-CDS period is from January 2016 to October 2017 and the Post-CDS period is from December 2017 to October 2018.

Source: IPART analysis using Invigor Insights Retail.

Figure 5.9 Monthly average promotional cider price differences between NSW and Victoria



Note: The sample period excludes April 2018 to August 2018 as there were less than three matching cider products (ie, same products sold by the same retailers in both NSW and Victoria). The last two observations in the orange shaded area relate to September and October 2018. Analysis is based on all beverages sold in multipack.

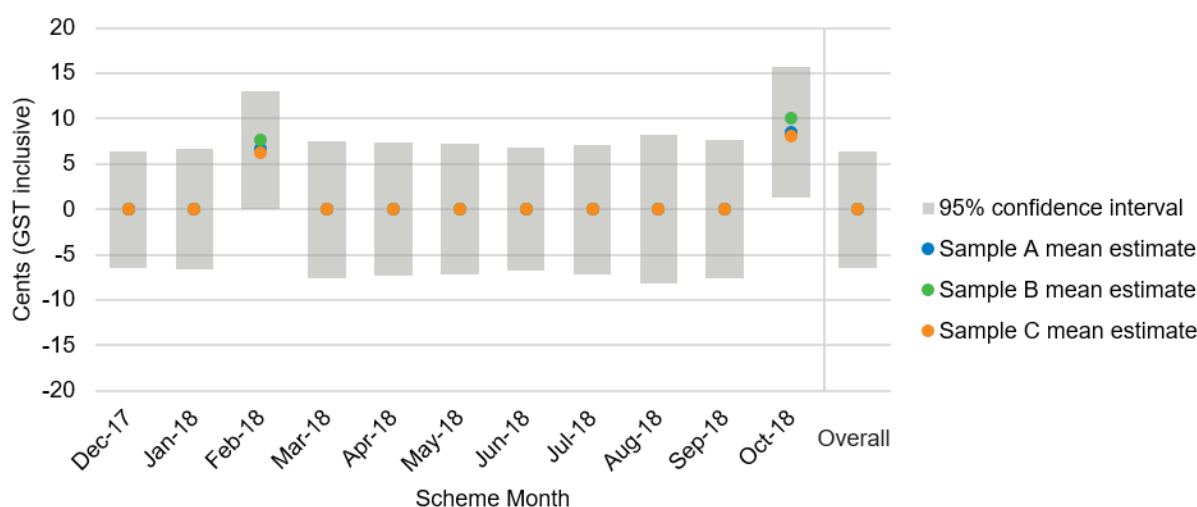
Data source: IPART analysis using Invigor Insights Retail data.

Non-promotional cider prices were not affected by the CDS

Figure 5.10 shows the results of our regression analysis for non-promotional cider prices during the first year of the scheme's operation. Overall the CDS did not have a significant impact on non-promotional cider prices. When looking at monthly price changes, we found that cider prices were 8 cents per container higher in February 2018 and 10 cents per container higher in October 2018 as a result of the CDS. For all other months we found no statistically significant increase in prices due to the CDS. Our results are consistent across the three samples.⁵⁰

⁵⁰ For alcoholic beverages, we analysed the impact of the CDS on various monthly price types, namely average price, median price, maximum price, minimum price and most common price. We found that the estimated price increases due to the CDS, if any, are larger for average and most common prices than for median, maximum and minimum prices. Our main results are based on average prices.

Figure 5.10 CDS impact on cider prices (cents per container, including GST)



Note: 95% confidence intervals are based on regression results from Sample A. Sample A, Sample B and Sample C mean estimates are indicated at a significance level of 10%.

Data source: IPART analysis using Invigor Insights Retail data.

5.2.6 Ready-to-drink prices rose by an average of 10 cents due to the CDS

We found that RTD prices increased by an average of 10 cents per container during the first year of the scheme's operation:

- ▼ Promotional RTD prices rose by 12 cents per container
- ▼ Non-promotional RTD prices rose by 4.2 cents per container.

Promotional RTD prices rose by 12 cents per container

We found no statistically significant difference between promotional RTD prices in NSW and Victoria before the CDS was introduced. However, promotional prices were an average of 12 cents per container higher in NSW after the scheme was introduced. This is around 3 cents per container higher than our draft finding.⁵¹ The difference is due to the changes made to our methodology to improve measuring changes in promotional prices, as discussed in Section 3.3.⁵²

⁵¹ IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, pp 42-43.

⁵² We note that there were less than three matching RTD products from July 2018 to October 2018 – we therefore excluded those months when analysing the overall increase in promotional prices in NSW due to the CDS.

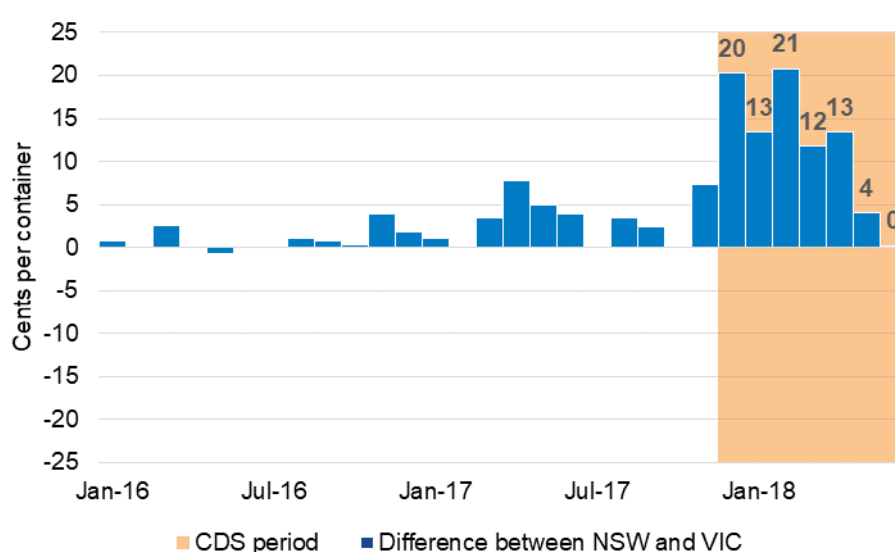
Table 5.4 Pre- and post-CDS average cider promotional prices in NSW and Victoria (\$ per container)

	Pre-CDS			Post-CDS		
	NSW	VIC	Difference	NSW	VIC	Difference
\$ per container	3.45	3.43	1.73	3.97	3.85	11.99***

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Analysis is based on beverages sold in multipack. The Pre-CDS period is from January 2016 to October 2017 and the Post-CDS period is from December 2017 to October 2018.

Source: IPART analysis using Invigor Insights Retail.

Figure 5.11 Monthly average difference in promotional prices between NSW and VIC for ready-to-drink



Note: The sample period excludes July 2018 to October 2018 as there were less than three matching RTD products (ie, same products sold by the same retailers in both NSW and Victoria). Analysis is based on all beverages sold in multipack.

Data source: IPART analysis using Invigor Insights Retail data.

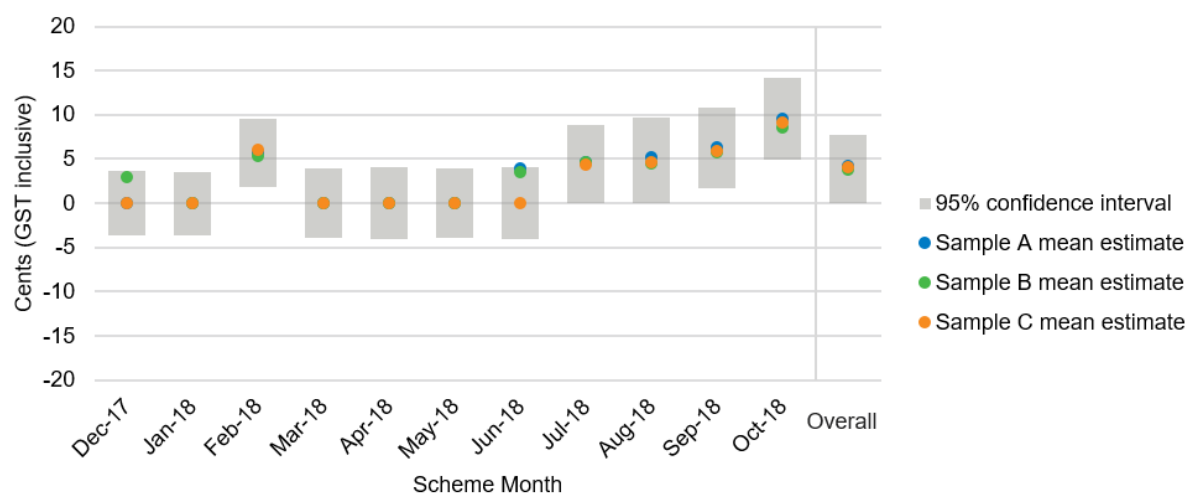
Non-promotional RTD prices rose by 4.2 cents per container

Figure 5.12 shows our regression analysis of non-promotional prices for RTD. Based on our main sample, we found that these prices were an average of 4.2 cents per container higher during the first year of the scheme's operation. This is similar to our draft finding, which showed that over the nine months to July 2018, non-promotional RTD prices increased by 3.4 cents per container due to the CDS.⁵³

When considering the monthly impacts, we found that the CDS has not had a significant impact on prices during the early stages of the scheme except for February 2018. However, RTD prices increased by around 4.6 cents to 6.3 cents per container from June to September 2018 as a result of the CDS. The CDS resulted in a bigger price increase in October 2018 with prices increasing by around 9.5 cents per container.

⁵³ IPART, *NSW Container Deposit Scheme: Monitoring the impacts on container beverage prices and competition – Draft Report*, September 2018, p 43.

Figure 5.12 CDS impact on ready-to-drink prices (cents per container, including GST)



Note: : 95% confidence intervals are based on regression results from Sample A. Sample A, Sample B and Sample C mean estimates are indicated at a significance level of 10%.

Data source: IPART analysis using Invigor Insights Retail data.

5.2.7 Wine and spirit prices were not affected by the CDS

Consistent with our Draft Report, we analysed the prices of red wine, white wine, and spirits to assess whether the CDS had any indirect price effects on container beverages not covered by the scheme using a regression-based difference-in-differences approach. We found no statistically significant impact of the CDS on these prices in any month during the first year of the scheme's operation.

5.3 Changes in price indices indicate the CDS had a material impact on beverage prices

To cross-check the findings of our regression analysis (discussed above), we also considered the changes in price indices for beverages published by the ABS. Consistent with these findings, the changes in these indices indicate that the CDS

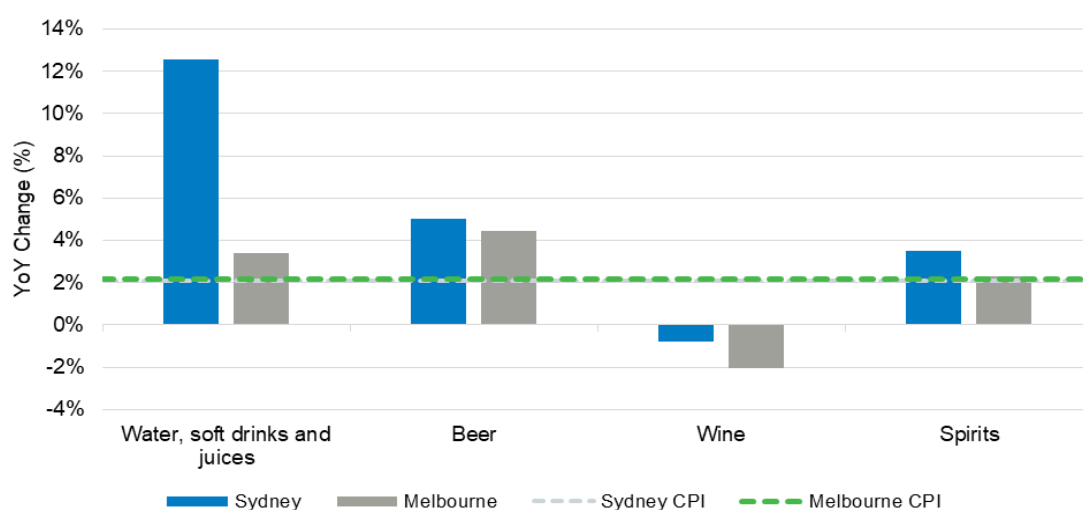
- ▼ increased the prices of beverages covered by the scheme
- ▼ had a larger impact on non-alcoholic beverage prices than alcoholic beverage prices, and
- ▼ did not have any indirect impact on the prices of beverages outside the scheme such as wine and spirits.

Figure 5.13 to Figure 5.15 show changes in waters, soft drinks and juices, beer, spirits, and wine price indices in Sydney and Melbourne in the March 2018, June 2018 and September 2018 quarters, relative to the previous corresponding quarters before the introduction of the CDS. These changes confirm that the introduction of the CDS had an impact on prices of all eligible container beverages, and that the impact was larger for non-alcoholic beverages than for alcoholic beverages.

For example, in the year to the March 2018 quarter (Figure 5.13):

- ▼ Water, soft drink and juice prices rose by 12.5% in Sydney year on year, which was more than 10% higher than the rate of inflation for Sydney, whereas in Melbourne these prices rose by only 1.2% higher than the rate of inflation for Melbourne.
- ▼ Beer prices increased similarly in Sydney and Melbourne, suggesting price increases in Sydney may not have been driven solely by the introduction of the CDS.
- ▼ Wine prices declined in both cities, and spirits prices increased by slightly more than rate of inflation in Sydney and around the rate of inflation in Melbourne.

Figure 5.13 March 2018 on March 2017 changes in beverage prices measured by the ABS Consumer Price Index



Data source: IPART analysis using ABS CPI data.

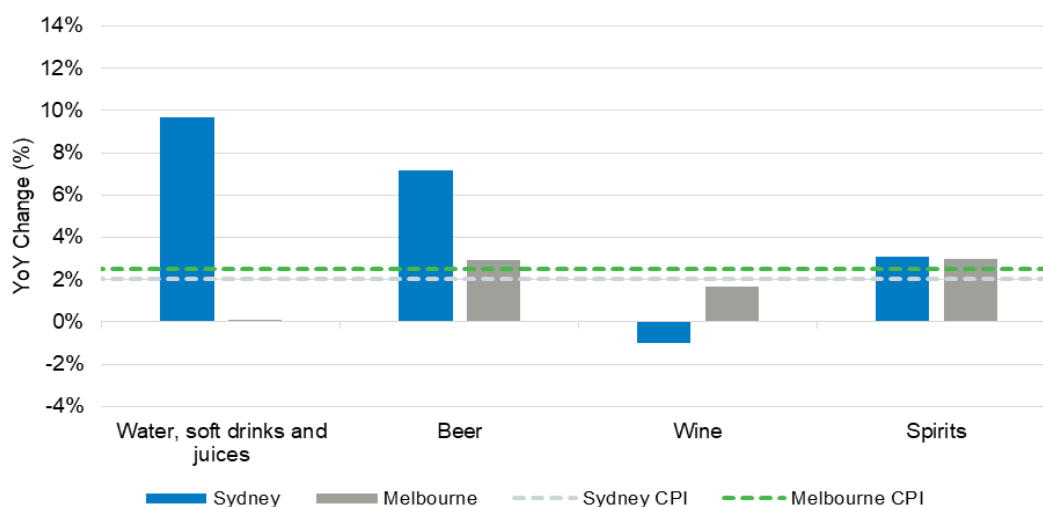
In the year to the June 2018 quarter (Figure 5.14):

- ▼ Water, soft drink and juice prices in Sydney increased by 9.7%, compared to no change in Melbourne.
- ▼ Beer prices in Sydney increased by 7.2%, compared to 2.9% in Melbourne.
- ▼ Wine and spirits prices did not change by more than the rate of inflation in both cities.

Similarly, in the year to the September 2018 quarter (Figure 5.15):

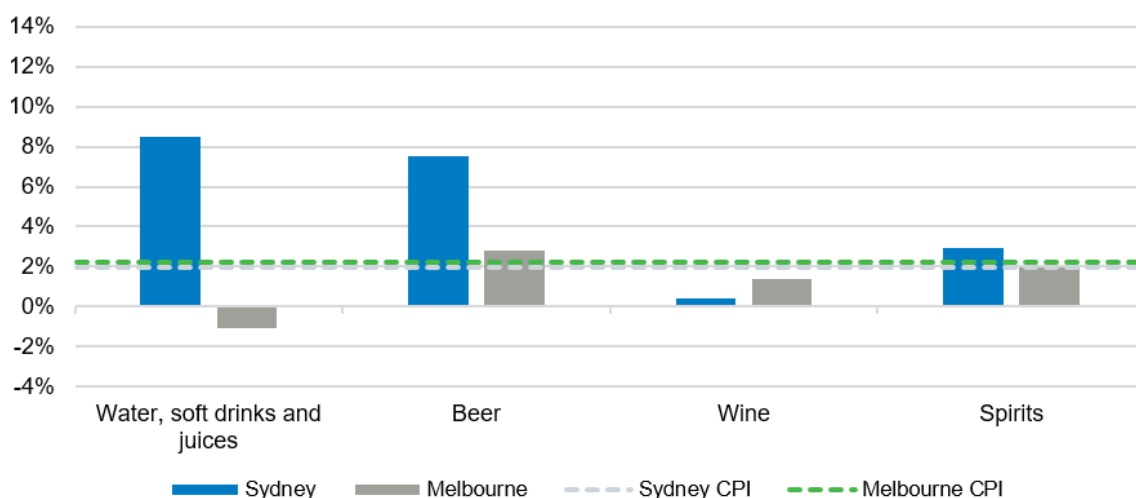
- ▼ Water, soft drink and juice prices rose by 8.5% in Sydney year on year, which was 6.5% higher than the rate of inflation for Sydney, whereas in Melbourne these prices declined by 1.1%.
- ▼ Beer prices increased by 7.5%, which was around 5% above the rate of inflation for Sydney, whereas in Melbourne these prices increased by around 2.8%, which was 0.6% higher than the rate of inflation for Melbourne.
- ▼ Wine prices increased by less than the rates of inflation in both cities, and spirits prices increased by slightly more than rate of inflation in Sydney and around the rate of inflation in Melbourne.

Figure 5.14 June 2018 on June 2017 changes in beverage prices measured by the ABS Consumer Price Index



Data source: IPART analysis using ABS CPI data.

Figure 5.15 September 2018 on September 2017 changes in beverage prices measured by the ABS Consumer Price Index



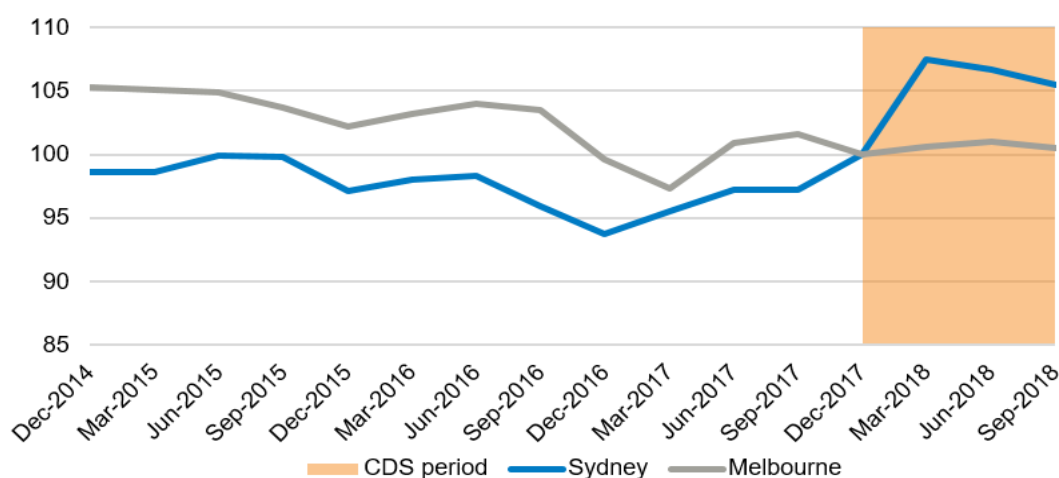
Data source: IPART analysis using ABS CPI data.

Figure 5.16 and Figure 5.17 show changes in water, soft drinks and juices and beer price indices over the period from December 2014 to September 2018. To separate prices before and after the introduction of the CDS, we set the index value in December 2017 equal to 100, which is the quarter in which the CDS was introduced in NSW.

Since December 2014, water, soft drinks and juices, and beer price indices in Sydney and Melbourne had been trending roughly in parallel to each other until the CDS was introduced in the December 2017 quarter. After the CDS was introduced in NSW, prices in Sydney increased noticeably:

- ▼ Water, soft drink and juice prices in Sydney rose by 7.5%, 6.7% and 5.5% in the March, June and September 2018 quarters respectively, relative to the December 2017 quarter. In comparison, prices in Melbourne remained fairly stable.
- ▼ Beer prices in Sydney remained in line with those in Melbourne during the March 2018 quarter. But, in the June and September 2018 quarter, they increased by 5.1% and 6.5%, respectively, relative to the December 2017 quarter. Those in Melbourne increased by around 1.8% in the March and June 2018 quarters, and by 2.3% in the September 2018 quarter.

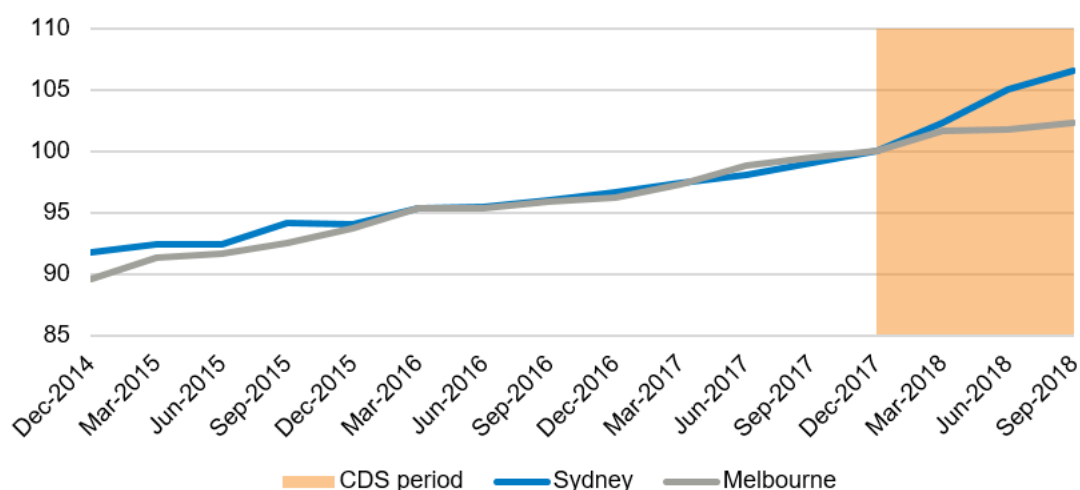
Figure 5.16 Changes in water, soft drinks and juices prices measured by the ABS Consumer Price Index



Note: Index value in December 2017 is set to 100.

Data source: IPART analysis using ABS CPI data.

Figure 5.17 Changes in beer prices measured by the ABS Consumer Price Index

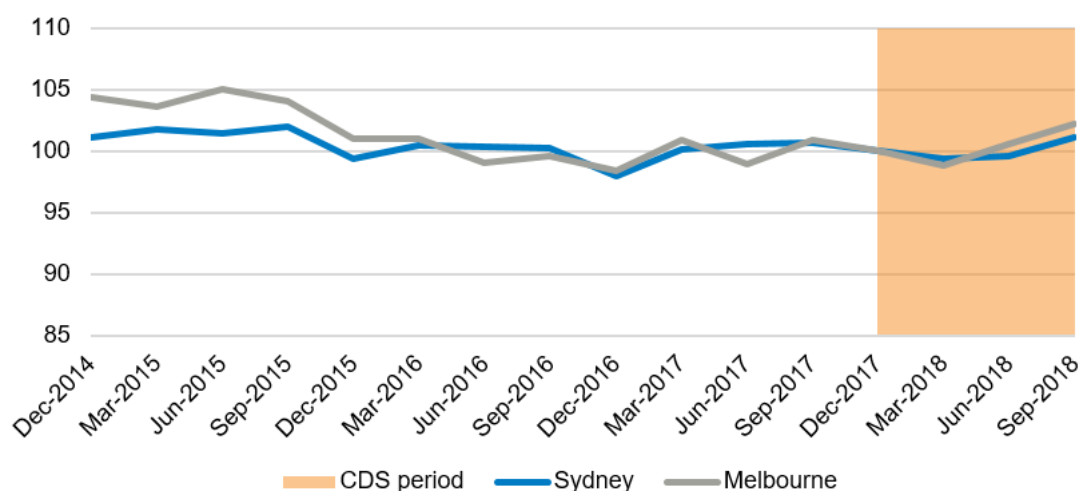


Note: Index value in December 2017 is set to 100.

Data source: IPART analysis using ABS CPI data.

Figure 5.18 and Figure 5.19 indicate that the changes in wine and spirits prices were not significant after the introduction of the CDS, and were not materially different in Sydney and Melbourne.

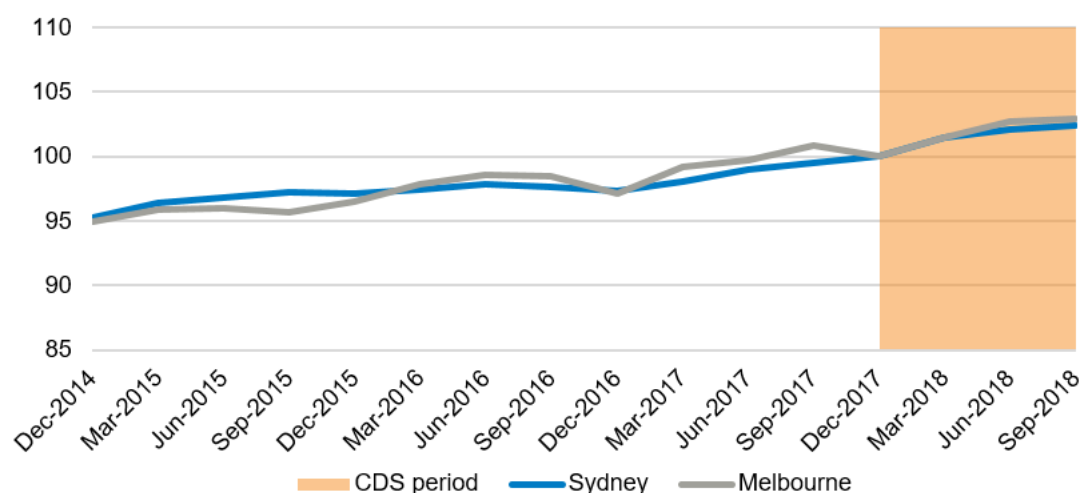
Figure 5.18 Changes in wine prices measured by the ABS Consumer Price Index



Note: Index value in December 2017 is set to 100.

Data source: IPART analysis using ABS CPI data.

Figure 5.19 Changes in spirits prices measured by the ABS Consumer Price Index



Note: Index value in December 2017 is set to 100.

Data source: IPART analysis using ABS CPI Data.

5.4 A small number of customer complaints about prices

Since we began this review, we have been monitoring complaints from customers and suppliers about the pricing response and market impacts of the CDS. Prior to releasing our Progress Report in April, we received a few complaints from consumers and scheme participants on individual instances of price changes in the first three months of the scheme. However, we have not received additional complaints about price changes since then.

We also received a small number of comments about individual price changes through our online feedback form. These comments generally fell into two categories:

- ▼ Consumers explaining how the price of a particular beverage product (eg, a bottle of mineral water or a carton of beer) increased at a specific retail location, or
- ▼ Consumers objecting to paying for a beverage price increase due to the CDS and then finding it difficult or costly to obtain a refund. Most of these consumers consider that that they are out-of-pocket due to the poor design and implementation of the scheme.

Since the CDS commenced on 1 December 2017, NSW Fair Trading has received a small number of complaints and enquiries about price increases of beverage products.⁵⁴

We consider that the small number of complaints indicates that in most cases, individual price increases after the introduction of the CDS have been in line with the average increases attributable to the scheme discussed in Section 5.2 above.

Findings

- 4 On average, prices of all eligible container beverages increased by 7.7 cents per container (including GST) during the first year of the scheme's operation. The CDS had a larger impact on non-alcoholic beverage prices than alcoholic beverage prices:
 - Non-alcoholic beverage prices increased by 10.1 cents per container due to the CDS.
 - a. Bottled water prices rose by an average of 11.6 cents per container due to the CDS.
 - b. Soft drink prices rose by an average of 10.8 cents per container due to the CDS.
 - c. Fruit juice prices rose by an average of 5.3 cents per container due to the CDS.
 - Alcoholic beverage prices increased by 5.1 cents per container due to the CDS.
 - d. Beer prices rose by an average of 4.2 cents per container due to the CDS.
 - e. Cider prices rose by an average of 6.9 cents per container due to the CDS.
 - f. RTD prices rose by an average of 10.0 cents per container due to the CDS
- 5 The introduction of the CDS did not have any indirect price effects on container beverages not covered by the scheme such as wine and spirits.

⁵⁴ Correspondence from NSW Fair Trading on 12 December 2018.

6 Changes in prices consistent with competitive markets

Our third step was to assess whether the changes in container beverage prices that are due to the CDS are consistent with a competitive market.

To assess whether the changes in container beverage prices that are due to the CDS are consistent with a competitive market, we compared our findings on beverage price changes attributable to the scheme discussed in Chapter 5 to our findings on the direct costs of the scheme discussed in Chapter 4. We also considered whether beverage suppliers have incurred other costs to participate in and comply with the requirements of the scheme.

The sections below summarise our overall final findings and recommendations, and then discusses them in more detail.

6.1 Summary of findings and recommendations

Previous assessments of the beverage industry in NSW have either not revealed substantial concerns about competition, or have found there is ‘workable competition’ in the industry. Workable competition means there is enough rivalry between firms so that prices are determined by underlying costs rather than any market power.

As is the case for any business operating in a workably competitive market, suppliers may choose to pass all or some of the CDS costs onto their customers. However, if there are sustained, systemic increases in prices above the costs of the CDS beyond a reasonable time, this may indicate a change in the competitiveness of the beverage market.

Our analysis shows that the price increases attributable to the scheme are consistent with a workably competitive market and hence the CDS has not had any undue effects on the prices of container beverages.

Overall, the price increase across all beverages is less than the overall direct cost of the scheme. During the first year of the scheme’s operation we found that the overall prices across all eligible container beverages increased by an average of 7.7 cents per container (including GST). This is less than the direct costs of the CDS which have averaged around 9.3 cents per container (including GST).

However, the average price increase varied across beverage markets and categories. In the bottled water, soft drink and ready-to-drink categories, this increase was between 0.7 cents and 2.3 cents per container **higher** than the average direct cost of the scheme. For the cider, fruit juice and beer categories, it was 2.4 cents to 5.1 cents per container **lower** than this cost.

Although average price increases for some beverage categories exceeded the **overall** direct cost, we found the price impacts of the CDS are consistent with a workably competitive market. This is because beverage suppliers have incurred other costs, in addition to the direct

costs, to participate in and comply with the requirements of the scheme,⁵⁵ and have passed some of these on to consumers through higher prices. The level of these other costs varies across businesses, depending on their size and nature, and for some businesses they can be substantial. Although we were not able to estimate them directly, in the presence of these other costs we consider that average price increases of between 0.7 cents and 2.3 cents per container higher than the average direct cost of the scheme are reasonable.

We also found that the difference between the **monthly** direct costs of the scheme and the **monthly** price increases in each beverage category varied substantially during the first year of the scheme's operation. For example, in February 2018 bottled water prices were around 1.1 cents **lower** than the direct costs of the scheme. However, in March 2018 bottled water prices were around 11.5 cents **higher** than the direct costs of the scheme because Exchange for Change issued its first and largest 'true up' under the scheme's payment and contribution methodology.

We consider that the scheme's payment and contribution methodology creates undesirable cost volatility for suppliers and reduces the transparency of the CDS's direct costs. A scheme payment methodology that bills suppliers in arrears would assist with removing this volatility and provide greater transparency around scheme costs.

6.2 Beverage price increases reflect scheme costs

As discussed above, the overall price increase across all beverage categories is less than the overall direct cost of the scheme. However, non-alcoholic beverage prices increased by more than the direct cost of the scheme, while alcoholic beverage prices increased by less than the direct cost of the scheme.

6.2.1 Bottled water and soft drink contributed to higher price increases in non-alcoholic beverages

Overall, the CDS resulted in an increase of **10.1 cents per container** in non-alcoholic beverage prices during the first year of the scheme's operation which is around **0.8 cents** per container **higher** than the direct cost of the scheme.

Figure 6.1 to Figure 6.3 show, for bottled water, soft drinks and fruit juices:

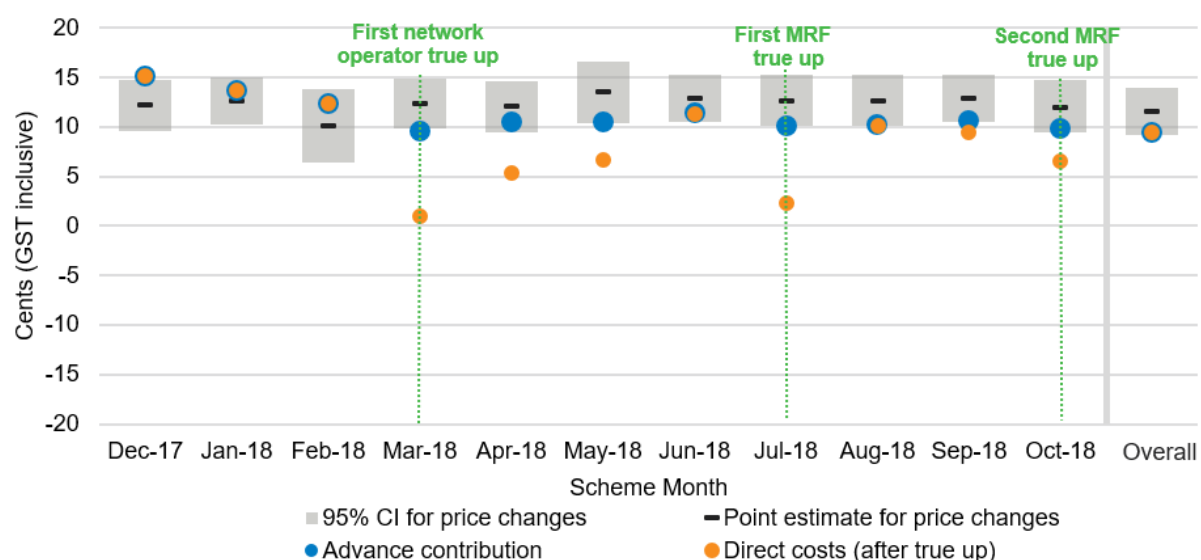
- ▼ our estimated range of the average price increase (ie, 95% confidence interval), the average increase as a point estimate (based on 5% significance level), and the average direct cost of the scheme during the first year of the scheme's operation, and
- ▼ monthly advance contributions and direct costs of the scheme per container, and our estimated ranges for monthly price changes, which are attributable to the introduction of the scheme.

We found that during the first year of the scheme's operation, price increases that are attributable to the scheme were higher in bottled water and soft drink than in fruit juice.

⁵⁵ For example, information from stakeholders indicated these include IT and reporting system upgrade costs, and administration and reporting costs.

- ▼ The overall average increase in bottled water prices was 11.6 cents per container with a 95% confidence interval of between 9.2 cents per container and 13.9 cents per container. The overall average increase of 11.6 cents is 2.3 cents per container **higher** than the average direct cost of the scheme although based on the lower bound of the confidence interval (ie, low end of the grey shaded area), the average price increase is marginally less than the direct cost of the scheme.
- ▼ The overall average increase in soft drink prices was 10.8 cents per container with a 95% confidence interval of between 9.0 cents per container and 12.6 cents per container. The overall average increase of 10.8 cents is around 1.5 cents per container **higher** than the direct cost of the scheme. Similar to bottled water, based on the lower bound of the confidence interval, the price increase is slightly less than the direct cost of the scheme.
- ▼ The overall average increase in fruit juice was 5.3 cents per container with a 95% confidence interval of between 1 cent and 9.6 cents per container. The overall average increase of 5.3 cents is substantially **lower** than the direct cost of the scheme.

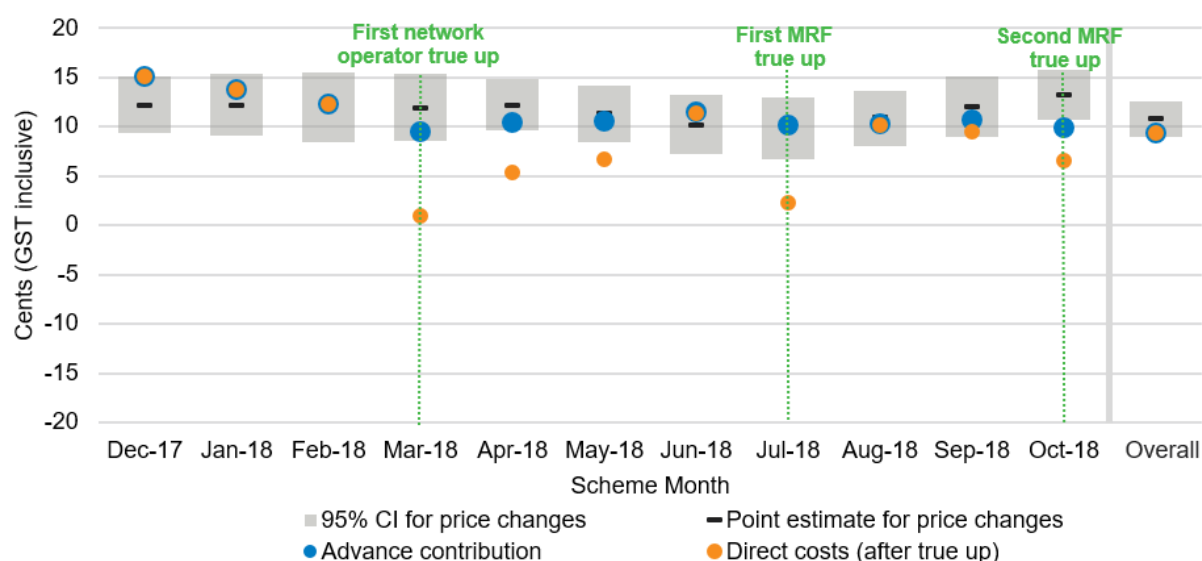
Figure 6.1 Price increases and scheme costs comparison for bottled water



Note: 95% confidence intervals and point estimates (at the 5% significance level) are based on our regression analysis using Sample A.

Data source: IPART analysis using data from Nielsen Homescan and Exchange for Change.

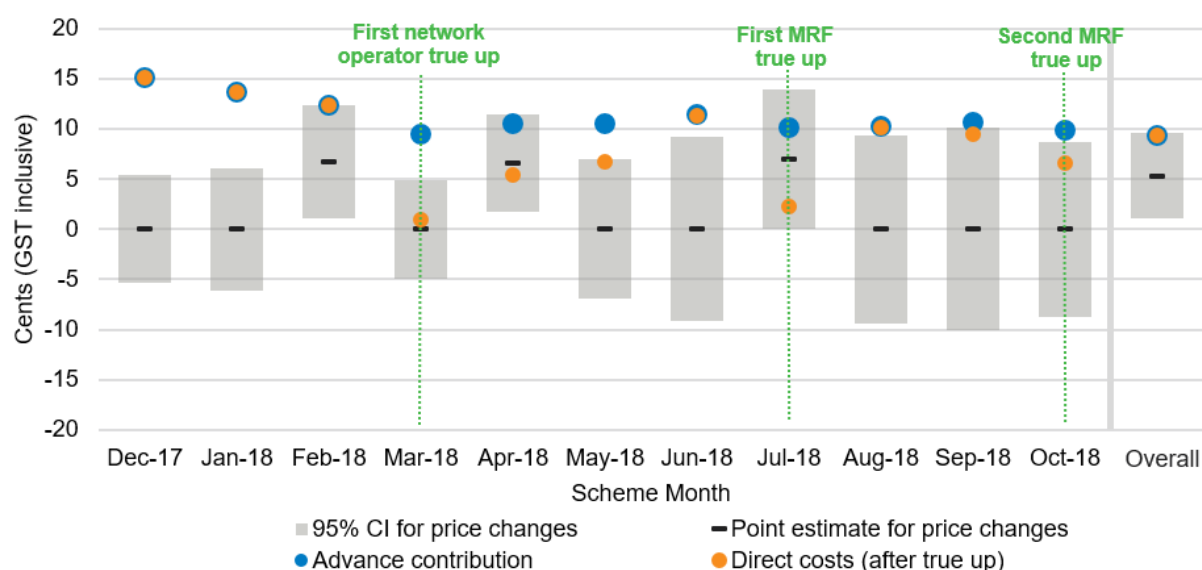
Figure 6.2 Price increases and scheme costs comparison for soft drinks



Note: 95% confidence intervals and point estimates (at the 5% significance level) are based on our regression analysis using Sample A.

Data source: IPART analysis using data from Nielsen Homescan and Exchange for Change.

Figure 6.3 Price increases and scheme costs comparison for fruit juices



Note: 95% confidence intervals and point estimates (at the 5% significance level) are based on our regression analysis using Sample A.

Data source: IPART analysis using data from Nielsen Homescan and Exchange for Change.

6.2.2 Cider and beer contributed to lower price increases in alcoholic beverages

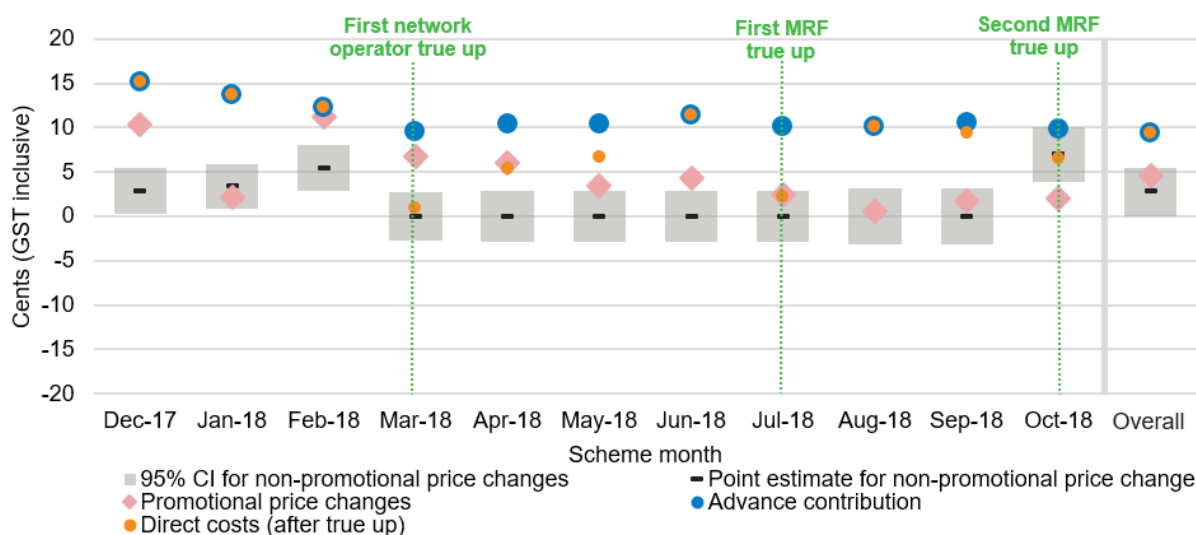
Overall, the CDS resulted in an increase of **5.1 cents per container** in alcoholic beverage prices during the first year of the scheme's operation which is less than the overall direct cost of the scheme of **9.3 cents per container**. Figure 6.4 to Figure 6.6 show, for beer, cider and RTD:

- ▼ our estimated range for the average price increase, and the average direct cost of the scheme during the first year of the scheme's operation, and
- ▼ monthly advance contributions and direct costs of the scheme per container, and our estimated ranges for monthly price changes, which are attributable to the introduction of the scheme.

We found that during the first year of the scheme's operation:

- ▼ The overall average price increase in beer was 4.2 cents per container, which is less than the overall direct cost of the scheme.
- ▼ The overall average price increase in cider was 6.9 cents per container, which is less than the overall direct cost of the scheme.
- ▼ The overall average price increase in RTD was 10.0 cents per container, which is 0.7 cents per container higher than the overall direct cost of the scheme.

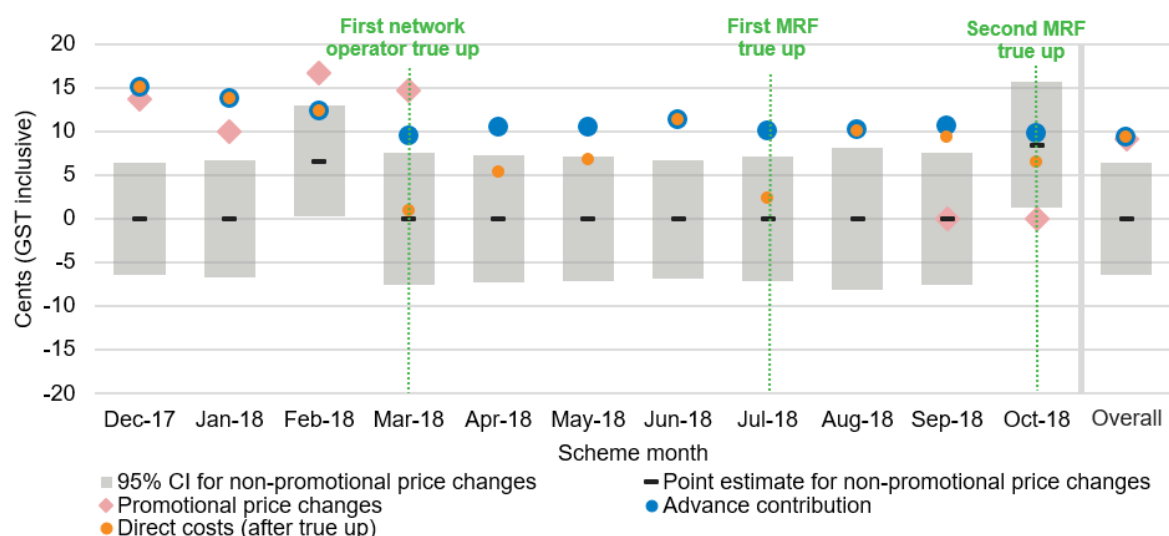
Figure 6.4 Price increases and scheme costs comparison for beer



Note: Monthly and overall changes in non-promotional prices are at the 5% significance level and are from our regression analysis using Sample A. For promotional prices, monthly increases are based on the observed monthly differences in prices between NSW and Victoria, and the overall increase is significant at the 5% level based on two sample t-test for mean difference.

Data source: IPART analysis using Invigor Insights Retail data and information from Exchange for Change.

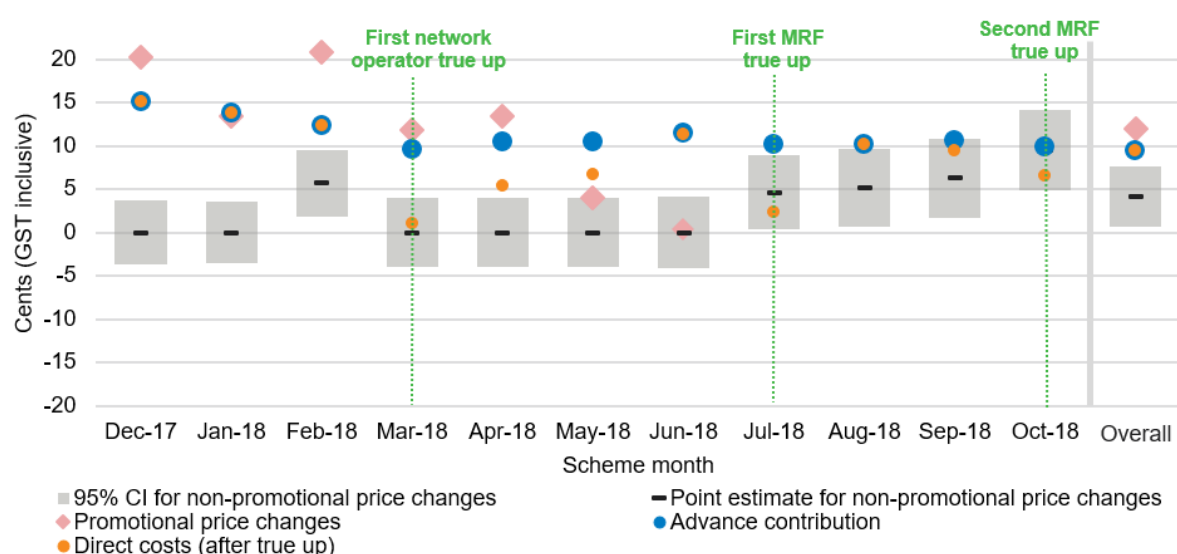
Figure 6.5 Price increases and scheme costs comparison for cider



Note: Monthly and overall changes in non-promotional prices are at the 5% significance level and are from our regression analysis using Sample A. For promotional prices, monthly increases are based on the observed monthly differences in prices between NSW and Victoria, and the overall increase is significant at the 5% level based on two sample t-test for mean difference.

Data source: IPART analysis using Invigor Insights Retail data and information from Exchange for Change.

Figure 6.6 Price increases and scheme costs comparison for ready-to-drink



Note: Monthly and overall changes in non-promotional prices are at the 5% significance level and are from our regression analysis using Sample A. For promotional prices, monthly increases are based on the observed monthly differences in prices between NSW and Victoria, and the overall increase is significant at the 5% level based on two sample t-test for mean difference.

Data source: IPART analysis using Invigor Insights Retail data and information from Exchange for Change.

6.2.3 Higher price increases in bottled water, soft drink and RTDs are a result of other scheme costs

We consider that higher price increases for bottled water, soft drink and RTD beverages are the result of beverage suppliers passing on some of the other costs incurred to participate in and comply with the requirements of the scheme through higher prices.

In addition to the direct costs shown in the figures above, first suppliers and other supply chain participants have incurred other costs of participating in and complying with the scheme. These include operating costs from additional administration and reporting as well as one-off capital costs from IT and reporting system upgrades. Our analysis indicates that first suppliers and other supply chain participants have passed some of these 'other' costs onto consumers through higher prices.

These costs vary from business to business, and depending on the nature of the business could be substantial. Although we were not able to estimate them directly, in the presence of these other costs we consider that average price increases of between 1.5 cents and 2.3 cents per container higher than the average direct cost of the scheme for non-alcoholic beverages are reasonable.

Consistent with our view, several stakeholders submitted that there are other costs of the scheme that are not captured by the direct cost of the scheme. The Liquor Stores Association argued that our analysis should include a broader set of costs, which would include costs of setting up and coordinating the logistics, transport, handling, regular auditing, to ensure that containers are recycled, plus managing the cash flow. It argued that for bottled water, these costs are significant and can equate to price increases of around 60%.⁵⁶

The Distilled Spirits Industry Council of Australia (DSICA) submitted that suppliers have incurred other additional costs to participate in the scheme including:

- ▼ internal administrative costs to register all products and any new products
- ▼ label changes
- ▼ maintenance of multiple pricing systems to deal with different state pricing
- ▼ negotiation costs with customers
- ▼ tracking product shipped to interstate warehouses but for eventual sale in NSW
- ▼ increases in per unit costs as production scale is lost due to reduced volume flowing from price increases, and
- ▼ losses incurred by suppliers in having their containers included unfairly in the scheme, and accordingly prohibited from sale in various states (for example, premixed spirits in casks).⁵⁷

Also, in its submission to our Progress Report, Coca-Cola Amatil commented that it incurred significant costs to participate in the scheme, and that it had passed on some of these costs to its customers. These costs included costs for IT system changes, label changes, communications with customers, training field teams, and tracing the flow of its containers to

⁵⁶ Liquor Stores Association, Submission to IPART Issues Paper, March 2018, pp 6-7.

⁵⁷ Distilled Spirits Industry Council of Australia, Submission to IPART Issues Paper, March 2018, p 1.

ensure it complies with the scheme.⁵⁸ Coca-Cola Amatil's 2017 annual report reported that it incurred restructuring costs of approximately \$19 million which included, among others, costs associated with the introduction of the CDS in NSW.⁵⁹

6.2.4 Differences between beverage price increases and direct costs vary substantially from month to month

Figures 6.1 to 6.5 above also show that the difference between the **monthly** direct costs of the scheme and the **monthly** price increases in each beverage category varied substantially during the first year of the scheme's operation.

For example:

- ▼ For bottled water, water prices in February 2018 were around 1.1 cents lower than the direct costs of the scheme but in March 2018 prices were around 11.5 cents higher than the direct costs of the scheme. This is because Exchange for Change issued its first and largest 'true up' under the scheme's payment and contribution methodology in February 2018. In the first three months of the scheme's operation before 'true ups' started, price increases were consistent with the direct costs of the scheme.
- ▼ For beer, increases in non-promotional prices, if any, were less than monthly direct costs of the scheme in all months except for October 2018. Also, increases in promotional prices were generally in line with monthly direct costs of the scheme – promotional prices increased by more than monthly direct costs in March, April and July 2018.
- ▼ For cider, increases in non-promotional prices, if any, were less than monthly direct costs of the scheme in all months except for October 2018. We estimated promotional price changes only for six of the months since the scheme commenced due to data limitations (see Figure 6.5). Promotional prices increased by more than monthly direct costs in two months.
- ▼ For RTD, increases in non-promotional prices, if any, were less than monthly direct costs of the scheme in all months except for July 2018 and October 2018. Similar to cider, we estimated promotional price changes only for seven of the 11 months due to data limitations (see Figure 6.6). During the seven months, promotional prices increased by more than monthly direct costs of the scheme in five months.

This variation was due to volatility in the monthly costs of the scheme, which was a result of the scheme's payment and contribution methodology. Under this method, first suppliers are billed one month in advance, based on forecasts of the container volumes and types expected to be supplied, returned and recycled in the next month. Their bill amounts are then 'trued up' later, once the actual container volumes and types for that month are known.

As noted at the public hearing, consumers prefer price stability and as a result suppliers typically cannot change prices as costs fluctuate.⁶⁰ We found that different suppliers have responded to cost volatility in different ways. For example:

⁵⁸ Coca Cola Amatil submission to IPART Progress Report, August 2018, pp 2-3.

⁵⁹ Coca Cola Amatil Annual Report 2017, p 89.

⁶⁰ Ms Wienand, Coca-Cola Amatil, Transcript of Public Hearing, Sydney, 23 October 2018, p 26.

- ▼ Lion Nathan halved its CDS charges to customers from 12 to 6 cents per container in March 2018 (ex-GST).⁶¹
- ▼ Coca-Cola Amatil announced on 3 July that from 1 August 2018 it will reduce its CDS rate from 13.59 cents to 10.91 cents (ex GST).⁶²

Coca-Cola Amatil also advised that it is using a 'reinvestment program' to return any surplus to consumers through greater use of promotional prices.⁶³ In its submission to our Progress Report, Coca-Cola Amatil provided an example of Coca Cola promotional prices in NSW and Victoria before and after the introduction of the CDS and before and after the implementation of the reinvestment program:

- ▼ Prior to the introduction of the CDS, the price was the same in NSW and Victoria.
- ▼ After the introduction of the CDS and prior to the reinvestment program, the price in NSW was 15 cents higher per container than in Victoria.
- ▼ After the reinvestment program (ie, current), the price is the same in NSW and Victoria.

Analysis of promotional prices using Nielsen Homescan data also provides some evidence of price reductions in more recent months, particularly for small sized soft drinks sold in multipacks. Figure 6.7 shows average monthly promotional prices for the following four groups over the period January 2016 to July 2018. The figure shows:

- ▼ Soft drinks manufactured by Coca-Cola Amatil and sold in NSW
- ▼ Soft drinks manufactured by Coca-Cola Amatil and sold in Victoria
- ▼ Soft drinks manufactured by all other manufacturers and sold in NSW, and
- ▼ Soft drinks manufactured by all other manufacturers and sold in Victoria.

We found that promotional prices of soft drinks manufactured by Coca-Cola Amatil in NSW have increased since the commencement of the scheme, while those in Victoria remained relatively unchanged. The average price difference between NSW and Victoria has been up to 15 cents since the commencement of the scheme to April 2018, but has narrowed down to less than 10 cents from May to July. We consider that as more price stability is provided to first suppliers, the need to return any over-recovery from true ups using promotional pricing should be reduced.

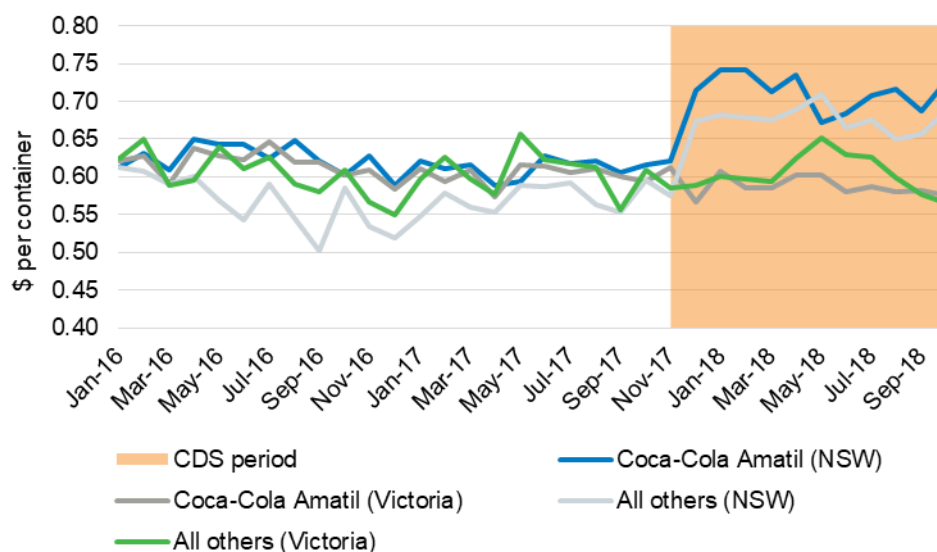
Our analysis also shows that in June and July 2018, the average promotional prices of soft drinks produced by other manufactures decreased, and the price difference between NSW and Victoria has reduced substantially.

⁶¹ The Shout, Lion to halve NSW CDS charges, at <https://www.theshout.com.au/news/lion-halve-nsw-cds-charges/> 5 February 2018, accessed on 30 November 2018.

⁶² Coca-Cola Amatil, Media Release CDS: Change to the 'Return and Earn' rate in NSW and ACT, 3 July 2018.

⁶³ Australian Financial Review, Coca-Cola Amatil profit falls 6pc, SPC under review, at <https://www.afr.com/business/retail/cocacola-amatil-profit-falls-6pc-spc-under-review-20180820-h148ej>, 22 August 2018, accessed on 30 November 2018.

Figure 6.7 Monthly average promotional prices of small-sized soft drinks sold in multipacks (including GST)



Note: Based on sample of products with prices available for each month from January 2017 (Sample A). A product is defined as Small if size is less than or equal to 600 ml.

Data source: IPART analysis using Nielsen Homescan data.

6.3 Invoicing first suppliers in arrears to improve cost stability and transparency and reduce administrative burden

We recommend moving to an arrears payment model to reduce the volatility in the direct costs of the scheme,⁶⁴ increase transparency of CDS costs, and reduce the administrative burden of the scheme for first suppliers by reducing the need for true-ups and the costs of forecasting and reconciling payments.

Stakeholders supported moving to arrears payments. There are various ways an arrears payment methodology could be implemented. Exchange for Change proposed a 'Revenue and Cost' model which it considers would provide greater price stability, reduce the administrative burden, and move the NSW scheme payment methodology in line with those of other jurisdictions.⁶⁵

Our final recommendations for the NSW scheme's payment methodology capture most of the features of Exchange for Change's 'Revenue and Cost' model where suppliers are invoiced using a price multiplied by quantity approach for each material type. However, unlike Exchange for Change's model, we do not recommend allowing for a cap and collar as this would mean that revenues would not align with costs over time. We consider our recommended approach would improve price stability and transparency, ensure that scheme revenues do not exceed costs over time and reduce administrative burden on scheme participants.

⁶⁴ The 'direct' costs of the scheme are those that Exchange for Change recovers from first suppliers and include scheme administration costs, regulatory compliance costs, network operator collection costs and refunds to material recovery facilities (MRFs).

⁶⁵ Exchange for Change submission to IPART Draft Report, November 2018.

6.3.1 Stakeholders support moving to an arrears invoicing model

The arrears model we recommended in our Draft Report built upon an option put forward by Exchange for Change in its submission to our Progress Report in June 2018. Stakeholders supported moving to an arrears methodology:

- ▼ ALDI agreed with our draft recommendation to implement an arrears invoicing model and concurred with our finding that current arrangements increase cost volatility and can result in consumers paying more for container beverages. ALDI considered that the payment and reconciliation system under the CDS is significantly more complicated than necessary, particularly with respect to the monthly 'true up' adjustment process.⁶⁶ ALDI also supported our draft recommendation to limit the period against which true ups can be made to 12 months after an invoice is issued.⁶⁷
- ▼ The Australian Beverage Council Limited (ABCL) agreed that an arrears model should be adopted and in doing so all endeavours should be made to replicate and align the with Queensland scheme. It also considered that the scheme payments methodology should be attributed to the EPA rather than Exchange for Change.⁶⁸
- ▼ The Office of the Small Business Commissioner (OSBC) argued that while implementing an arrears invoicing model would require an overdraft resulting in a small additional cost to participants, it considered that the benefits are likely to justify the costs.⁶⁹ It also supported in principle our draft recommendation to limit the period against which true ups can be made to 12 months after an invoice is issued.⁷⁰

Since the release of our Draft Report, Exchange for Change has updated its preferred option and now proposed a 'Revenue and Cost' model to provide greater price stability, reduce administrative burden, and move the NSW scheme payment methodology in line with those of other jurisdictions with container deposit schemes.⁷¹

Under this model:

- ▼ Exchange for Change forecasts the scheme costs and container volumes by material type and sets a price per container for each material type for a fixed period, for example one quarter.
- ▼ Suppliers report actual container volumes at the end of each month and Exchange for Change generates an invoice by multiplying the number of containers supplied by the price per container for the quarter. This creates the revenue for the scheme.
- ▼ Costs are separately managed by Exchange for Change and are paid from the revenue raised from suppliers.
- ▼ The same process is repeated for the next quarter. If the scheme account was outside the target cap or collar (ie, revenue exceed costs), the calculated price per container would be reduced for the next quarter to return the scheme account to the target range, and vice versa. If the scheme account is within the cap and collar, no adjustment would be made.

⁶⁶ ALDI submission to IPART Draft Report, November 2018, p 2.

⁶⁷ ALDI submission to IPART Draft Report, November 2018, p 2.

⁶⁸ ABCL submission to IPART Draft Report, November 2018, p 9.

⁶⁹ OSBC submission to IPART Draft Report, November 2018, p1.

⁷⁰ OSBC submission to IPART Draft Report, November 2018, p 1.

⁷¹ Exchange for Change submission to IPART Draft Report, November 2018.

Coca-Cola Amatil supported this model proposed by Exchange for Change, listing its benefits as confirmation of fixed costs of the scheme, stability of scheme costs and simplified accounting processes.⁷²

Exchange for Change argued that an advantage of this model is that no true up would be required.⁷³ However we note that the use of a cap and collar creates a ‘dead band’ whereby revenue and costs may not match over time. Exchange for Change did not discuss the size of the ‘dead band’ between cap and collar.

As revenue is collected in arrears of costs, the scheme would require an overdraft, the size of which would vary depending on payment terms. Exchange for Change has estimated that an overdraft of \$53.5 million (assuming 7-day payment terms) up to \$76 million (assuming 28-day payment terms) would be required, adding between 0.05 cents and 0.07 cents per container to the cost of the scheme.⁷⁴

We maintain our recommendation that the NSW Government provide security for the overdraft to fund the proposed arrears model. This is consistent with the approach taken in other jurisdictions where the initial cash reserve for the scheme has been funded by government. Providing this security would not impact on the NSW Government budget as the cost of obtaining and servicing the overdraft (interest and any fees) would be an additional scheme cost met by all beverage suppliers

6.3.2 Objectives and key features of arrears payment methodology

Changes to the current scheme payment methodology are needed to simplify current arrangements, provide price stability to first suppliers, match revenue to costs and minimise the cash flow burden on suppliers. We have considered the different options proposed by stakeholders and our recommended approach focuses on the key features that would achieve these objectives.

We recommend that the EPA and Exchange for Change make changes to the scheme payment methodology to achieve these objectives. Our recommended approach has the same key features as Exchange for Change’s ‘Revenue and Cost’ model except that it does not apply any cap and collar arrangements. Instead, we recommend that the methodology should adjust for any differences in revenue and costs over time using an ‘Unders and Overs’ account. This would be similar to the arrangements IPART has used when regulating RailCorp’s Hunter Valley Coal Network.

Box 6.1 provides an overview of the key features of our recommended methodology and a worked example of how it would be applied.

Simplifying current arrangements and improving transparency

Billing suppliers based on a price per container by material type would be significantly simpler and provide greater transparency than the current arrangements. Supplier invoices are currently made up of multiple line items covering advanced contributions and true up

⁷² Coca-Cola Amatil submission to IPART Draft Report, November 2018.

⁷³ Exchange for Change submission to IPART Draft Report, November 2018.

⁷⁴ Exchange for Change submission to IPART Draft Report, November 2018.

adjustments for container volumes reported by the supplier as well as adjustments due to changes in market shares resulting from volumes reported by other suppliers. Currently, true ups adjustments for changes in market share flow through to all suppliers and can take place into perpetuity.

Under our proposed approach, all costs and any adjustments for differences in revenues and costs over time would be captured in the price per container. This price would be published by Exchange for Change in its monthly newsletter in the month before taking effect. Suppliers would be invoiced at the end of each month and charged for the containers supplied - this is the primary feature of an arrears model.

We also consider that our recommended model better aligns to the approach used in Queensland which operates on an arrears basis. The Queensland scheme uses a similar approach of setting a price per container by material type for a fixed period (initially 5 months from November 2018).

Box 6.1 Key features of an arrears payment methodology

1. Exchange for Change forecasts the scheme costs and container volumes by material type and publishes a price per container by material type for a fixed period, say one quarter.

For example, for the period Jan-March, if Exchange for Change forecast costs of \$67 million for aluminium containers supplied of 900 million there would be a fixed price of 7 cents per aluminium container. This would be published prior in December prior to the period commencing.

2. Suppliers report actual aluminium container volumes at the end of each month.
3. Exchange for Change invoices suppliers by multiplying the number of aluminium containers supplied each month by the price per aluminium container for the quarter.

For example, a business that supplies 1 million aluminium containers in January would receive an invoice for \$70,000 in February.

4. At the end of the quarter, Exchange for Change compares the total revenue collected from all suppliers to the total costs of the scheme and includes any differences between revenues and costs in an 'Unders and Overs' account.

For example, if 800 million aluminium containers were supplied during the period Jan-March, the total revenue of the scheme would be \$56 million (800 million x 7 cents per aluminium container). If actual costs over this period were \$61 million, then the 'Unders and Overs' account would have a balance of -\$5 million.

5. Exchange for Change includes any balance from the 'Unders and Overs' account (as well as any associated interest- interest would be paid on Overs and a cost for Unders) as an additional scheme cost for the next quarter.

For example, the -\$5 million plus interest costs under recovered for Jan-March is added to the forecast costs for April-June when calculating a price per aluminium container for April-June.

Improving cost stability

The current billing arrangements have resulted in a cost per container that has fluctuated significantly from month to month (ranging between 1 and 15 cents per container inc-GST). The major fluctuations have occurred in April 2018 and August 2018 after network operator and MRF volumes were trued up. Under our proposed approach, suppliers would be

provided with greater price stability. Differences between forecast and actual costs are smoothed over a three month price per container.

We have maintained the recommendation from our Draft Report to limit the period against which adjustments can be made to 12 months after an invoice is issued. For example corrections made against an invoice issued in June 2018 could only be made up until June 2019. Currently, true ups can occur in perpetuity, resulting in adjustments made for one beverage supplier flowing through to other beverage suppliers, particularly for the costs that are based on their relative market share, such as the monthly compliance fee and the monthly administration fee. This can contribute to the administrative complexity of the scheme and increase volatility in costs.

Matching revenue to costs over time

The EPA stated that an important factor in the NSW design of the scheme was that no-one is ever charged for something they have not consumed.⁷⁵ We recommend that this objective is maintained by an arrears approach that ensures revenues do not exceed costs over time.

The current methodology ensures that scheme revenues do not exceed costs over time using true ups. We propose achieving this objective using an 'Unders and Overs' account. The balance in this account (and any interest on this balance) would be included as an additional cost in the next quarter. If the cap and collar, as outlined by Exchange for Change, involves a 'dead band' within which prices are not adjusted, this would mean that revenues and costs would not match when forecasts and actual costs are within the cap and collar.

We are recommending that the price per container by material type is initially fixed for a three month period, increasing to at least six months once the scheme has further matured. We note that using a three month price and an arrears methodology creates some mismatch between when the costs are incurred for the scheme and the suppliers that are funding these costs. Nevertheless, we consider that fixing the price per container for three months appropriately balances the objectives of price stability and matching revenues to costs over time. From 2020-21 following further maturity of the scheme, and closer alignment of MRF forecast and actual volumes, we recommend the price per container by material type be fixed for at least six months.

Reducing cash flow burden on suppliers

We maintain the view that the current payment terms of 7 days place unnecessary cash flow pressure on first suppliers. However, given that our recommended arrears methodology provides more certainty and price stability to suppliers, we are recommending payment terms of 14 days rather than 30 days as set out in our Draft Report.

The number of days provided in the payment terms impacts on the size of the overdraft required to move to an arrears methodology. We consider that payment terms of 14 days combined with our proposed arrears methodology would appropriately balance the objectives of price stability, reducing cash flow pressures on suppliers and matching revenue to costs. Payment terms of 14 days would reduce the size of the overdraft (from the \$76 million

⁷⁵ Mr Sanjay Sridher, Environment Protection Authority, Transcript of Public Hearing, Sydney, 23 October 2018, p 20.

estimated for 28-day payment terms (or around 0.07 cents per container)⁷⁶ to around \$60 million (or around 0.06 cents per container)).

Combined with invoicing in arrears, extending payment terms to first suppliers to 14 days will help ease cash flow pressures on beverage businesses as discussed in Chapter 7.

We also recommend that Exchange for Change and TOMRA Cleanaway vary their payment terms such that the Network Operator invoices the Scheme Co-ordinator two weeks in advance with payment in seven days, rather than the current four weeks in advance with payment within 10 business days. This would reduce the size of the overdraft required to implement an arrears invoicing model arrangement for first supplier contributions to the CDS, whilst ensuring TOMRA Cleanaway continues to be able to provide refunds to consumers at collection points.

Finding

- 6 The changes in container beverage prices that are due to the CDS are consistent with a workably competitive market. That is:
 - There is no evidence of sustained, systemic increases in beverage prices above the costs of the CDS.
 - Beverage suppliers have incurred other costs, in addition to the direct costs, to participate in and comply with the requirements of the scheme, and have passed some of these on to consumers through higher prices.
 - Differences between the monthly direct costs of the scheme and the monthly price increases in each beverage category were a result of the scheme's payment and contribution methodology.

Recommendations

- 1 To reduce the volatility in scheme costs, the NSW Environment Protection Authority and Exchange for Change implement an arrears scheme payments methodology with payment terms of 14 days.
- 2 That the arrears scheme payments methodology requires Exchange for Change to invoice suppliers using a fixed price per container by material type and actual supply volumes.
- 3 That the arrears scheme payments methodology requires Exchange for Change to set a price per container so that scheme revenues do not exceed costs using an 'Unders and Overs' account.
 - Initially, the price per container by material type would be fixed for a period of 3 months.
 - From 2020-21 (following further maturity of the scheme), the price per container by material type would be fixed for a period of at least 6 months.
- 4 To improve the transparency of scheme costs, Exchange for Change publish its price per container by material type and the underlying assumptions used to estimate the price (including the balance of the 'Unders and Overs' account from the previous period) in the month before the price takes effect.

⁷⁶ Exchange for Change submission to IPART Draft Report, November 2018. Exchange for Change estimated the size of overdraft required and estimated cost per container for 7-day and 28-day payment terms.

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- 5 The NSW Government provide the security for the overdraft required to implement an arrears scheme payments methodology. The cost of the overdraft should be included as a scheme cost to be recovered from first suppliers.
 - 6 Exchange for Change and TOMRA Cleanaway vary their payment terms such that the Network Operator invoices the Scheme Co-ordinator two weeks in advance with payment in seven days, rather than the current four weeks in advance with payment within 10 business days.
 - 7 To reduce the ongoing cost volatility and administrative burden associated with adjustments to supplier volumes continuing in perpetuity, the period against which adjustments can be made should be limited to 12 months after an invoice is issued.

7 Other effects of the CDS on competition

To assess whether the CDS has imposed a material restriction on competition in the container beverage market, we applied an approach similar to the ‘competition tests’ included in regulatory impact statements. This involved defining the relevant markets and then, in each market, assessing whether there have been:

- ▼ systemic changes in supplier behaviour since the introduction of the CDS other than price changes (discussed in Chapter 5) such as an increase in barriers to entry or a reduction in the product choice or information available to consumers
- ▼ systemic changes in market shares or market composition
- ▼ one-off instances of unfair or unjustified supplier behaviour with the potential to harm the competitive process.

The sections below summarise our findings and recommendations then discusses these in more detail.

7.1 Summary of findings and recommendations on effects on competition

We found no specific evidence that the CDS has had a material impact on competition in overall beverage markets to date. For example, there is no evidence that the scheme has impacted on market shares differently for larger or smaller suppliers, or that the CDS has resulted in a reduction in product choice or information available to consumers.

However, we did identify three issues related to the operation of the CDS that we consider have the potential to reduce the competitiveness of some market participants – particularly smaller businesses and boutique beverage suppliers. We found:

- ▼ the container beverage approval fee of \$80 per product has a disproportionate impact on small businesses and boutique beverage suppliers, and creates a potential barrier to entry and may restrict the ability of existing participants to compete in the long term
- ▼ the 7-day payment terms on Exchange for Change’s invoices to suppliers may impose cash flow pressures on small and medium size businesses
- ▼ the 5-year term for which product registrations are valid creates an additional cost and administrative burden for first suppliers and the EPA, which is not outweighed by the benefit of an up-to-date list of registered containers.

To ensure that the competitiveness of market participants is not affected, we are recommending the container approval fee be reduced to \$13.70 per container, the payment terms on Exchange for Change’s invoices to suppliers be increased to 14 days, and that there be no expiry date on container registrations.

In addition, we found that the CDS has had an adverse impact on independent NSW retailers located near the Victorian border, because these retailers incur additional CDS-related costs that their Victorian competitors do not. To address these findings, in June 2018 the NSW

Government announced a transitional financial assistance package for small to medium sized businesses in the NSW-Victoria border region that can demonstrate they have been adversely affected due to the CDS.⁷⁷ The Government has now extended its financial assistance until December 2020.⁷⁸

7.2 Separate markets for alcoholic and non-alcoholic container beverages

In defining the relevant markets for analysing whether the CDS has materially restricted competition, we considered:

1. the **product classes and types** being offered (eg, non-alcoholic and alcoholic container beverages, beer and cider, soft drinks and water) and how readily they can be substituted for each other
2. the **geographic space** in which substitution can occur (eg, Australia, NSW, or regions)
3. the **functional** level of production in which competition occurs (eg, manufacturing, wholesaling or retailing).

We found that for the purposes of assessing the effect of the CDS on competition, there are separate markets – alcoholic container beverages and non-alcoholic container beverages – as well as subcategories within each. This applies across the manufacturing, wholesaling and retailing sectors of the market. We note that there is a degree of vertical integration in the industry with some businesses operating across the manufacturing, wholesale and retail sectors.

In general, the geographic market is Australia-wide for manufacturing and wholesaling, but in the retail market there are smaller regional or local submarkets, particularly in the retail market along the NSW border with Victoria. Appendix D contains more detail about defining the relevant markets.

7.3 No specific evidence of material impact on competition due to CDS

To assess whether the CDS has had a material impact on competition in the container beverage markets in its first year of operation, we examined a range of competition indicators. For example, we looked for evidence of systemic and one-off changes in supplier behaviour since the scheme was introduced, such as reductions in innovation or rivalry between market participants, or in information and choice for consumers. We engaged The CIE to analyse whether the CDS has led to changes in the market shares of small and large beverage suppliers (ie, manufacturers) and retailers.

⁷⁷ NSW Government, Media Release, Assistance for Border Businesses Impacted by Container Deposit Scheme, 8 June 2018.

⁷⁸ NSW Government, Small Business Commissioner, *Assistance extended for border businesses impacted by container deposit scheme*, at <https://www.smallbusiness.nsw.gov.au/news/dispute-resolution/assistance-extended-for-border-businesses-impacted-by-container-deposit-scheme>, accessed on 12 December 2018.

7.3.1 No specific evidence of changes in supplier behaviour due to CDS

We found no specific evidence of either systemic or one-off changes in supplier behaviour due to the CDS to date. We did not receive any reports from consumers of one-off or unjustified supplier behaviour with the potential to harm the competitive process. Nor did we receive reports to suggest the CDS is limiting the information available to consumers or reducing the choice of products available. While there were some initial reports of larger than expected prices increases, we consider that these were a result of consumers not understanding that the scheme has additional costs (both the direct scheme costs and other costs incurred by beverage suppliers participating in the scheme) which means that prices may increase by more than the 10-cent refund per container provided to consumers.

We analysed the Invigor Insights Retail dataset on the number of products and brands available in the beverage market for beer, cider and ready to drink (RTD) drinks to see if there has been a substantial reduction in product and brand choice following the introduction of the CDS. We did not find any material change in the number of products and brands available after the scheme was introduced. In addition, the proportions of product offering by major and non-major liquor manufacturers remained unchanged.

We considered market reports from IBISWorld on the various beverage markets affected by the CDS. In several recent reports, IBISWorld noted that although beverage markets can be highly concentrated, they remain competitive with a trend of new smaller niche operators playing larger roles in the market. For example, competition in the beer market is becoming more intense due to the growing market shares of craft beer makers. It is also becoming less price-related, and more driven by branding and beer consumption trends.⁷⁹ Similarly, many smaller fruit juice suppliers are releasing premium products, increasing competition in some segments and growing the share of niche operators.⁸⁰

7.3.2 There is no specific evidence that the CDS has impacted on market shares

We engaged The CIE to analyse whether the CDS has impacted on market shares in the container beverage markets. By comparing the year-on-year changes in total beverage supply in periods before and after the introduction of the CDS, it found that these changes were quite volatile in both periods, so it is not possible to identify any impact from the CDS.⁸¹

Although there is no specific evidence to suggest total beverage supply in NSW has changed due to the CDS, individual beverage suppliers may have made different supply changes in response to the scheme, and the supply decisions of smaller beverage suppliers are likely to be masked by larger beverage suppliers. However, there is no clear evidence that the CDS has impacted on market shares differently for larger or smaller suppliers or retailers.

The market share for non-alcoholic beverage supply is highly concentrated. Using data from Exchange for Change, to examine supply changes before and after the CDS, The CIE was not

⁷⁹ IBISWorld, Beer Manufacturing in Australia March 2018, p 20.

⁸⁰ IBISWorld, Fruit Juice Manufacturing in Australia, May 2018, p 20.

⁸¹ The CIE, *NSW Container Deposit Scheme, Impacts on beverage expenditure and consumption*, Final Report, September 2018, p 26.

able to find any evidence of changes in market share between different sized suppliers, irrespective of container type, since the introduction of the CDS.⁸²

The market for alcoholic beverages is similarly concentrated. Again, The CIE found that there was weak evidence for changes in alcoholic beverage supply between different sized suppliers since the introduction of the CDS.⁸³

Findings

- 7 There is no specific evidence that the CDS has imposed a material restriction on competition in beverage markets.
- 8 The CDS has not resulted in changes in supplier behaviour that would indicate a reduction in competition. That is, there is no specific evidence of a reduction in product choice or information available to consumers.
- 9 The CDS has not resulted in material changes in market share or market composition in beverage markets.

7.4 Action required to ensure markets remain competitive

Although we found no specific evidence that the CDS has imposed a material restriction on competition in the beverage market, we have heard from stakeholders that various aspects of the CDS have the potential to affect the competitiveness of some market participants – in particular smaller businesses and boutique beverage suppliers. To address these concerns, we are making draft recommendations aimed at alleviating cash flow pressures and removing potential barriers to entry for small beverage suppliers.

7.4.1 Extending payment terms to 14 days will reduce cash flow pressures

We consider the EPA and Exchange for Change should amend the payment terms for first supplier contributions to the CDS from seven to 14 days. This is necessary to ensure the CDS does not put cash flow pressure on beverage businesses, particularly small and medium size businesses.

The number of days provided in the payment terms impacts on the size of the overdraft required to move to an arrears methodology. We consider that payment terms of 14 days combined with our proposed arrears methodology would appropriately balance the objectives of price stability, reducing cash flow pressures on suppliers and matching revenue to costs.

In our Draft Report, we recommended longer payment terms of 30 days. We maintain the view that the current payment terms of seven days place unnecessary cash flow pressure on first suppliers. However, given that our recommended arrears methodology provides more certainty and price stability to suppliers, we are recommending payment terms of 14 days rather than 30 days as set out in our Draft Report.

⁸² The CIE, *NSW Container Deposit Scheme, Impacts on beverage expenditure and consumption*, Final Report, September 2018, p 30.

⁸³ The CIE, *NSW Container Deposit Scheme, Impacts on beverage expenditure and consumption*, Final Report, September 2018, p 30.

Increasing payment terms from Exchange for Change's proposed seven days to 14 days would be an additional scheme cost for first suppliers, however we consider these costs would be outweighed by the benefit to first suppliers of improved cash flows.

7.4.2 Container approval fees could create barriers to entry for smaller suppliers

Currently, the EPA charges suppliers an \$80 container approval fee to register each different container product covered by the CDS that they supply to NSW. This registration is valid for five years, and is capped annually at \$3,200 for small suppliers.⁸⁴

Many stakeholders submitted that this fee created a competitive disadvantage for smaller businesses wanting to sell into NSW. We agreed with stakeholders that the nature of the container approval fee means that it will have the biggest impact on first suppliers that are small businesses and have a relatively large number of eligible beverage containers. This is often the case for craft beer manufacturers or small beverage importers that offer a large variety of products and regularly introduce new products, often in relatively small quantities.

This suggests that the fee could act as a barrier to entering or remaining in the NSW market for these small businesses and, over time, could lead to systemic changes in market composition. It could also discourage product innovation, particularly for small businesses that produce boutique beverages, which could impact on the competitiveness of markets.

We engaged The CIE to review the costs the EPA recovers through its container approval fee. The CIE found that the \$80 application fee charged to first suppliers for each 'class of container' comprised an amount to recover the fixed cost of the CDS Portal, and a smaller amount to recover the variable cost of EPA staff assessment time. The \$80 application fee was set based on estimates of the number of container approval applications that would be received in the first year, and each year thereafter, and a payoff period for the upfront IT costs of 5 years.⁸⁵

The CDS Portal enables many aspects of supplier registration and container registration approval processes to be automated, reducing administration time and costs for first suppliers and the EPA. It also receives applications for collection point arrangements. To date, approximately 80% of the total development cost of the CDS Portal has been recovered through the container approval fee.⁸⁶

In response to our Draft Report, the Australian Beverages Council argued there should be no container approval fee, and that responsibility for registering and maintaining container registration be transferred to Exchange for Change with any costs absorbed as a part of their normal operating costs and recovered through Scheme charges to manufacturers.⁸⁷ We note that in the recently introduced schemes in the ACT and Queensland no fee is charged for container registrations.

⁸⁴ See *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017*, NSW Government Gazette No 1 of 5 January 2018, p 3. A small supplier supplies 2.5 million beverage containers or less in a financial year.

⁸⁵ The CIE, *NSW Container Deposit Scheme, EPA fees for monitoring, compliance and approving containers*, Final Report, November 2018, p 19.

⁸⁶ The CIE, *NSW Container Deposit Scheme, EPA fees for monitoring, compliance and approving containers*, Final Report, November 2018, pp 23-24.

⁸⁷ Australian Beverages Council submission to IPART Draft Report, November 2018, pp 10-11.

We do not agree that the container approval fee should be set to zero. We consider that is appropriate that the costs associated with container approvals are subject to cost recovery. However, only the variable cost of the EPA staff's assessment time is directly related to the approval of the container, and as such should be recovered through the container application fee.

The CIE estimated that for years 2 to 5 of the scheme, the efficient EPA staff cost (including on-costs) per container registration approval is \$13.40 (\$2017-18).⁸⁸ Therefore, we consider that the container application fee should be \$13.70 (\$2018-19). This would reduce the impact on smaller businesses wanting to sell beverages into NSW. Under this amended cost recovery arrangement, the current cap on the application fee for small businesses could be removed, thereby reducing administrative complexity. As discussed in Chapter 8, we also recommend that containers registered in other Australian container deposit schemes be recognised as eligible containers in the NSW container deposit scheme by 1 July 2019.

We consider it is more appropriate that the remaining fixed costs of the CDS Portal (approximately \$150,000) are recovered from first suppliers through the scheme compliance fee, as these costs are not clearly linked to the suppliers charged the application fee and they do not vary with the number of containers. Similarly, the CDS Portal maintenance costs and user licences should also be recovered through the scheme compliance fee during the initiation phase.

We have included these costs in our recommended scheme compliance fee, discussed in Chapter 8.

7.4.3 The EPA's fees should be indexed by the CPI

The EPA's main costs are labour costs. Therefore, as an alternative to changes in the CPI, we considered constructing a cost index that uses changes in the WPI (public sector, NSW) for labour costs and the change in CPI for all other costs. However, there are two disadvantages associated with using the change in the WPI as the main component of an industry-specific cost index:

- ▼ the change in the WPI may not reflect changes in the EPA's costs.
- ▼ the change in the WPI does not capture changes in productivity. We would need to make a judgement about labour productivity to make provision for efficiency gains.

On balance, we consider that changes in the CPI will capture changes in the EPA's CDS costs. We therefore recommend that fees are updated on 1 July each year using changes in the CPI.

⁸⁸ The CIE, *NSW Container Deposit Scheme, EPA fees for monitoring, compliance and approving containers*, Final Report, November 2018, p 19.

7.4.4 Renewal of container approvals should not be required

In contrast to the NSW CDS, container approvals under the South Australian scheme do not expire,⁸⁹ and no container approval fees are charged under the Northern Territory and ACT schemes or proposed under the Queensland scheme.

ALDI, the Office of the Small Business Commissioner and the Australian Beverages Council all supported removing the expiry date for containers registered for the CDS in NSW, with ALDI noting that this change would bring the NSW CDS into line with other interstate schemes and help to reduce the administrative burden on scheme participants.⁹⁰

The EPA advised that the container renewal process was to ensure the database of containers does not become cumbersome and overburdened with containers no longer in use. It understands that the South Australian scheme has a database of 40,000 containers, and there is no clarity about how many of these are active in the scheme. However, we consider while there may be some benefit in having an accurate up-to-date database of containers, this is unlikely to outweigh the cost to suppliers and the EPA of renewing container approvals every five years. Therefore we are recommending that containers be registered for the CDS once only, with no expiry.

Currently, the NSW scheme requires each 'class of container' to be registered, rather than the unique container characteristics (dimensions and material type). That is, each container must be registered for each type or flavour of beverage it contains. Therefore in many cases containers with the same structure are registered multiple times by first suppliers. For example, Schweppes has registered 89 'classes of containers' in the PET soft drink category for only 10 unique containers based on the structure of the container.⁹¹ This approval process duplicates the EPA's assessment of container characteristics when only the product and barcode vary.

However, the scheme design requires eligible containers to be recognised at collection points by the barcode of each product. We understand this is to reduce fraud in the scheme. Given this, we do not propose to recommend changing the requirement to register each 'class of container'. We consider that setting the application fee to recover only the efficient variable costs of assessment, estimated at \$13.70 per application, with no expiry, would mean the requirement to register each 'class of container' will have less impact on beverage suppliers than currently, particularly for smaller boutique beverage suppliers. We consider that this would be the case even with the removal of the current cap for small beverage suppliers.⁹²

⁸⁹ We note that the SA registration fees are higher than NSW for applications up to 15 containers, but the average fees are lower for applications of more than 15 containers: for applications with 1 label \$307.50; 2-5 labels \$512.50; 6-10 labels \$758.70; 11-20 labels \$1,250.50; and more than 20 labels \$2,234.50. Application for beverage container approval at https://www.epa.sa.gov.au/environmental_info/container_deposit/resources, accessed on 19 September 2018.

⁹⁰ ALDI Stores submission to IPART Draft Report, November 2018, p 2; OSBC submission to IPART Draft Report, November 2018, p 2; and Australian Beverages Council submission to IPART Draft Report, November 2018, p 11.

⁹¹ NSW Government Return and Earn Container Search, <https://cde.epa.nsw.gov.au/CDSContainerSearchPage> accessed on 22 August 2018.

⁹² Current cap is for more than 40 applications for suppliers of 2.5 million beverage containers or less in the preceding financial year.

Recommendations

- 8 The EPA's container registration approval fee be set at \$13.70 to recover the variable costs of assessing applications for container approvals. Under this approach:
 - the remaining unrecovered fixed costs associated with the CDS Portal, and its annual maintenance and licence costs, are recovered through the Scheme Compliance Fee, and
 - the current cap on annual application fees for smaller beverage suppliers should be removed.
- 9 All CDS related fees to be indexed by the change in the CPI (All groups, Australia) to March of that year.
- 10 That containers be registered for the CDS once, with no expiry. Approval for currently registered containers should also not expire.

7.4.5 The CDS has had an adverse impact on NSW retailers in the NSW-Victoria border area

In our Progress Report we considered that retailers located close to NSW's border may face a competitive disadvantage if the bordering state does not have a similar container deposit scheme – as is the case in the Albury-Wodonga area. In May, the NSW Government asked us to further investigate and report on the impact of the introduction of the CDS on NSW businesses in this area.

We found that the introduction of the CDS has had an adverse impact on independent retailers located near the Victorian border, and particularly on retailers that earn a large proportion of their container beverage sales revenue from multipack products (ie, products with seven or more containers, such as cases of soft drink and beer). This is because NSW retailers in this area incur additional CDS costs, which Victorian retailers do not.

For example, over a two-week period in May, we observed price differences between NSW and Victorian retailers in the border area of between 10 cents for a single container and around \$4.15 for a multipack of 30 cans. We considered that price differences towards the end of this range are sufficiently large to motivate customers who purchase multipack products to change their purchasing behaviour and adversely impact NSW independent retailers located near the Victorian border.

To address the findings of our investigation, the NSW Government announced a temporary assistance package for small to medium sized businesses in the NSW-Victoria border region that can show they have been adversely impacted by competition with Victorian retailers as a result of the introduction of the CDS. The package provided financial support and business advice to assist businesses in adjusting to the introduction of the CDS.⁹³

At the request of the NSW Government, we assessed applications for assistance and made recommendations to the Government on the levels of assistance to be provided to eligible businesses. Applications for financial assistance closed on 31 August 2018.

⁹³ NSW Government, Media Release, Assistance for Border Businesses Impacted by Container Deposit Scheme, 8 June 2018.

Finding

- 10 The introduction of the CDS has had an adverse impact on independent retailers located near the Victorian border, in particular those retailers with a large proportion of their container beverage sales revenue from multipack products (such as cases of soft drink and beer).

The NSW Government has provided a transitional assistance package for small to medium sized businesses in the NSW-Victoria border region that showed they had been adversely impacted by competition with Victorian retailers as a result of the introduction of the CDS.

8 Other market impacts on consumers

To assess whether there have been other unintended or unanticipated market impacts on consumers due to the CDS that require Government action, we considered whether consumers have changed their beverage purchasing or consumption behaviours since the scheme was introduced.

We also collected feedback from stakeholders on any aspects of the CDS that could be changed to reduce the costs of the scheme, improve its efficiency, and help the NSW Government achieve its policy objectives. The design and operation of the CDS affects the underlying costs for scheme participants and ultimately container beverage prices for consumers. Based on stakeholder feedback, we examined:

- ▼ the efficiency of the EPA's scheme compliance fee – which makes up around 1-2 per cent of the CDS' direct costs to suppliers
- ▼ the potential for harmonisation between container deposit schemes in different jurisdictions to reduce costs
- ▼ other changes to scheme design that affect the costs and effectiveness of the CDS, and
- ▼ the availability of and consumers' access to TOMRA Cleanaway collection points to return beverage containers, particularly in regional NSW.

The sections below summarise our findings and recommendations and then discusses them in more detail.

8.1 Summary of findings and recommendations on other market impacts on consumers

Overall, we found that consumers have reduced their overall consumption of container beverages, which has partly offset the impact of the price increases due to the scheme on their total spending on container beverages. For example, we found:

- ▼ A decrease in the consumption of non-alcoholic beverages in NSW of around 950 mL (or 6.7%) per household per month.
- ▼ An increase in average household expenditure on non-alcoholic beverages of around 63 cents (or 3.2%) per household per month.

However, we consider these impacts are in line with what could be expected given the scheme's impact on the prices of container beverages, and with the impacts being felt by suppliers.

We have not been able to draw conclusions about the impact of the CDS on the consumption of and expenditure on alcoholic beverages as there is no equivalent data set available for alcoholic beverages.

We also found that the NSW EPA's scheme compliance fee should recover the efficient costs it incurs in undertaking its regulatory and enforcement activities only. In line with The CIE's findings on the efficient costs of these activities, we are making a recommendation to reduce the monthly scheme compliance fee from its current level of \$300,000 to \$284,000 from 2020 - 21, and then to \$157,000 from 2022-23.⁹⁴

Stakeholders supported greater harmonisation of the various container deposit schemes that currently operate across Australia as differences between schemes increase the costs and administrative complexity for beverage suppliers and ultimately prices for consumers. We recommend that the EPA and Exchange for Change work with their counterparts in other jurisdictions to harmonise how the definition of first supplier is applied, export policies and, importantly, the recognition of container registrations to reduce complexity and costs for beverage suppliers and prices for consumers.

During the early stages of our review, stakeholders raised the issue of limited access to collection points, particularly in some regional areas. If beverage consumers are unable to easily get their refund from collection points it means they are bearing these costs through higher prices.

The costs of establishing and operating collection points differ between locations and the type of collection point (i.e. RVM, automated depots and over the counter collection points). Any changes to the current arrangements that require changes to TOMRA Cleanaway's obligations would need to be reflected in the network operator fees that are charged to first suppliers and recovered from consumers.

Finally, we found that key elements of the CDS lack transparency, and are making a recommendation that the EPA publish a contract summary of each of its agreements with Exchange for Change and TOMRA Cleanaway to improve transparency.

8.2 CDS has reduced consumption of non-alcoholic beverages and increased expenditure

As previous chapters have discussed, the CDS has increased the costs of supplying beverages into the NSW market. The extent to which these costs have been passed onto consumers in the form of higher retail prices depends on the beverage category. To assess the impact of this on consumers' consumption of container beverages, we engaged The CIE to estimate whether, as a result of the scheme, consumers are buying less container beverages or shifting their consumption to non-CDS beverages.

The CIE could only assess the impact on non-alcoholic beverages, as suitable data for assessing the impact on alcoholic beverages was not available. It used household-level data on consumption and expenditure on non-alcoholic beverages from the Nielsen Homescan Consumer Panel to compare the behaviour of NSW households before and after the introduction of the CDS with a control group (Victorian households).

The CIE found that the CDS may have reduced consumption of non-alcoholic beverages by around 950mL per household per month. This represents a reduction of around 6.7% in

⁹⁴ \$ 2018-19

average household non-alcoholic beverage consumption and has been driven by reductions in soft drink and bottled water.⁹⁵ These consumption impacts are largest for multi-pack beverage products rather than single beverages.

The CIE also found the CDS may have increased expenditure on non-alcoholic drinks by around 63 cents (3.2 per cent) per household per month.⁹⁶ This increase was driven by increases in soft drink expenditure. CIE noted that there was much greater variation around the average change in household expenditure compared to consumption which resulted in a less significant result for expenditure. We consider these impacts are in line with what could be expected given the scheme's impact on the prices of container beverages and are consistent with the impacts being felt by suppliers.

Findings

- 11 The CDS has reduced consumption of non-alcoholic beverages by around 950mL per household per month, representing a reduction of around 6.7 per cent, in average household non-alcoholic beverage consumption.
- 12 The CDS has increased expenditure on non-alcoholic beverages by around 63 cents, representing an increase of around 3.2 per cent, per household per month.

8.3 Some changes to CDS design can be made now, however redesigning the roles of the scheme's operators would take longer to achieve

Our role in reviewing the CDS in its first year of operation has involved monitoring its impact on beverage prices and competition and recommending actions to address any adverse effects arising from the operation of the scheme. Where appropriate, this has involved recommending changes to the scheme's design. For example, we found that the scheme payments methodology had resulted in cost volatility and are recommending moving to an arrears invoicing model to address this. However we have not made recommendations on issues of a more operational nature, such as whether an RVM was able to crush or shred containers.

The Australian Beverages Council Ltd (ABCL) does not believe that IPART "should be permitted to choose to review matters which are convenient to it, while determining not to review other aspects relevant to the price of the Scheme and the impacts of these on consumer pricing."⁹⁷ In particular the ABCL considers IPART should review the roles of the EPA, the Scheme Coordinator and the Scheme's Network Operator as these form part of the price structure of the Scheme and, by extension, impact consumer pricing.

In our Progress and Draft Reports we noted that as the Scheme Coordinator and the Network Operator had been appointed following a competitive tender, the fees that these organisations receive have been market tested. We engaged the CIE to review the efficient costs of the EPA's current regulatory and compliance costs and recommend the efficient costs to be recovered through the scheme compliance fee; and we have made recommendations regarding these

⁹⁵ The CIE, NSW Container Deposit Scheme: Impacts on beverage expenditure and consumption, Final Report, 3 December 2018, p 2.

⁹⁶ The CIE, NSW Container Deposit Scheme: Impacts on beverage expenditure and consumption, Final Report, 3 December 2018, p 2.

⁹⁷ Australian Beverages Council Ltd submission to IPART Draft Report, November 2018, p 6.

costs. The ABCL considered this review should have gone further and that “IPART’s analysis should assess whether the role (and cost) of the EPA and its involvement, has supported an effective scheme design and whether its involvement on an ongoing basis is warranted and necessary.”⁹⁸

The ABCL proposed that all functions, other than statutory decision making and prosecutions be transferred from the EPA to Exchange for Change noting the reduced number of staff required by Container Exchange (CoEx, the equivalent of Exchange for Change) to undertake these functions in the Queensland scheme.⁹⁹

We are not making recommendations about the respective roles of the EPA, Exchange for Change and TOMRA Cleanaway as part of this review. However this could be considered as the scheme matures and before the current contracts with Exchange for Change and TOMRA Cleanaway expire.

8.4 Scheme compliance fee should reflect efficient costs

As Chapter 2 discussed, the EPA is responsible for regulating the CDS. Among other things, this role includes administering the regulation, monitoring and enforcing compliance of the Scheme Coordinator and Network Operator with their contractual obligations, and undertaking performance audits of these participants’ activities at the Minister’s request.

The costs the EPA incurs in undertaking these activities are recovered through a scheme compliance fee paid by Exchange for Change (as Scheme Coordinator), which it in turn recovers from first suppliers. The monthly scheme compliance fee is currently \$300,000. This represents 1% to 2% of the total annual costs of the scheme.

In our Progress Report, we found that the scheme compliance fee should be set to reflect the efficient level of regulatory and compliance costs only.¹⁰⁰ We engaged The CIE to review the EPA’s current regulatory and compliance costs and recommend the efficient costs to be recovered through this fee. (The CIE’s final report is available on our website.)

The CIE sought to identify which of the EPA’s ongoing regulatory activities were suitable for cost recovery, the efficient costs of these activities, and whether the efficient costs should be recovered through the scheme compliance fee. The EPA identified its ongoing compliance and enforcement activities (since the scheme’s implementation) vary, depending on the phase of the scheme’s operation:

1. **Initiation phase (July 2018 to June 2020)** – activities include intense engagement with the contractors, scheme participants and other stakeholders to ensure the scheme is established, systems are in place, funds are flowing and suppliers are actively participating.

⁹⁸ Australian Beverages Council Ltd submission to IPART Draft Report, November 2018, p 7.

⁹⁹ Ibid

¹⁰⁰ IPART, *NSW Container Deposit Scheme, Monitoring the impacts on container beverage prices and competition*, Progress Report, April 2018, p 53.

2. **Scheme stabilisation phase (from July 2020 to June 2022)** – activities include monitoring and managing contractor performance, evaluating scheme performance, gathering stakeholder feedback, identifying and resolving gaps through refining processes or amending the scheme operation and/or legislation, monitoring regulatory compliance and addressing structural issues to minimise non-compliance.
3. **Steady-state phase (from July 2022 onwards)** – represents the business as usual (BAU) phase, where the scheme operation is stable and relationships with scheme participants are transactional.

The CIE estimated the efficient cost of undertaking the activities in each phase through both a top down approach using available benchmarks (such as other CDS schemes in Australia and overseas, and noting differences between the schemes), and a bottom up approach using the EPA's activity descriptions and FTE estimates and considering whether these were reasonably efficient and appropriate for cost recovery.

The CIE estimated the reasonably efficient costs suitable to be recovered through the scheme compliance fee as set out in Table 8.1.

Table 8.1 Reasonably efficient costs for EPA's ongoing regulatory activities (\$2017-18)

Financial Year	Reasonably efficient costs	Monthly scheme compliance fee
2018-19	\$348 200	\$348,000
2019-20	\$314 800	\$315,000
2020-21	\$234 100	\$234,000
2021-22	\$234 100	\$234,000
2022-23	\$154 200	\$154,000
2023-24	\$154 200	\$154,000
Ongoing	\$154 200	\$154,000

Note: Includes \$14,255 per annum to recover remaining efficient capital costs of the Portal. Assumes the remaining fixed capital costs are recovered over 10 years. Also includes Portal maintenance costs and user licences of \$86,000 per annum in 2018-19 and 2019-20.

Source: The CIE, NSW Container Deposit Scheme, *EPA's fees for monitoring, compliance and approving containers*, Final Report, November 2018, pp 3, 32 and 33.

We consider that the scheme compliance fee should be set to recover these efficient costs, however rather than increasing the fee above the current rate of \$300,000 per month, we have smoothed the monthly fees over the four years from 2018-19 to 2021-22 using a discount rate of 7 percent.¹⁰¹ Accordingly, we are making a recommendation that the monthly scheme compliance fee be set at (\$2018-19):

- \$300,000 in 2018-19 and 2019-20
- \$284,000 in 2020-21 and 2021-22, and
- \$157,000 in 2022-23.

¹⁰¹ NSW Treasury recommends using a discount rate of 7 per cent, *NSW Government Guide to Cost-Benefit Analysis*, March 2017, p 45 at https://arp.nsw.gov.au/sites/default/files/TPP17-03_NSW_Government_Guide_to_Cost-Benefit_Analysis_0.pdf accessed on 19 September 2018. We have smoothed the monthly fee over the four years 2018-19 to 2021-22 to be net present value neutral and holding the fee at \$300,000 for 2018-19.

These fees should be indexed by the change in the CPI (All groups, Australia) to March of that year (as is the case for the container approval fee discussed in Chapter 7).

Coca-Cola Amatil welcomed our proposed approach to recovering the EPA's costs.¹⁰²

Recommendation

- 11 That the monthly Scheme Compliance Fee be set to recover the EPA's efficient costs associated with the CDS as (\$2018-19):
- \$300,000 in 2018-19 and 2019-20
 - \$284,000 in 2020-21 and 2021-22, and
 - \$157,000 in 2022-23.

8.5 Increasing harmonisation between container deposit schemes would reduce costs

In the past 12 months container deposit schemes have commenced in NSW, the Australian Capital Territory (ACT) and Queensland, while schemes have operated in South Australia and the Northern Territory for many years. For beverage suppliers operating across jurisdictions this can mean:

- ▼ dealing with different invoicing arrangements
- ▼ having to register containers in each jurisdiction
- ▼ different definitions of first supplier, and
- ▼ true-ups for exports into different container deposit schemes – eg, between ACT and NSW.

This increases the costs and administrative complexity for beverage suppliers and ultimately prices for consumers. This was a key concern raised by stakeholders in submissions and at the public hearing.

The sections below consider harmonisation across jurisdictions for container registrations, the definition of a first supplier, and container exports into different schemes. In Chapter 6 we considered invoicing arrangements and have recommended an arrears payment methodology, which would bring NSW into line with other jurisdictions.

8.5.1 Containers registered in other schemes should be recognised in the NSW container deposit scheme

Beverage suppliers operating across Australia have to register all eligible containers that are supplied in NSW with the EPA. The recently commenced schemes in Queensland and ACT are recognising containers registered in NSW.¹⁰³

¹⁰² Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 2.

¹⁰³ Mr Peter Bruce, Exchange for Change, Transcript of Public Hearing, Sydney, 23 October 2018, p 23.

Coca-Cola Amatil submitted that a single national container registration and database would ensure that there is an efficient scheme that avoids duplicating costs across the states.¹⁰⁴ They suggest that entities such as GS1¹⁰⁵ could potentially administer such a database or alternatively one of the states could own the responsibility for the nation. At the public hearing TOMRA Cleanaway commented that the GSI barcode database was considered for container registration for the NSW scheme but it only covered 30-40 per cent of registered containers.¹⁰⁶

In its submission to the Draft Report, the ABCL notes that the schemes in the ACT and Queensland do not charge manufacturers for registration of beverage containers and that both these schemes recognise containers registered in any Australian jurisdiction with a similar container registration scheme.¹⁰⁷ However, it is possible for these new schemes to ‘piggy back’ the container registration process because NSW or South Australia have already done the work to register the container.¹⁰⁸

National registration of containers would remove duplication of costs for beverage suppliers and duplication of the registration process. While the EPA has had discussions with the ACT and Queensland schemes about sharing the NSW database of registered containers, NSW does not currently recognise containers registered in other jurisdictions.¹⁰⁹

The same types of containers (size and material) are eligible in the NSW, Queensland and ACT container deposit schemes however the South Australian scheme doesn’t have a minimum size of container and includes containers of less than 150mL.¹¹⁰ We consider this difference is minor and could be managed.

We support mutual recognition of beverage container registration across the different container deposit schemes in Australia to reduce administration costs for beverage suppliers and recommend that the NSW scheme recognise containers registered in other Australian container deposit schemes by 1 July 2019.

Recommendation

- 12 To reduce the costs to beverage suppliers of registering containers in multiple jurisdictions, the EPA recognise containers registered in other Australian container deposit schemes by 1 July 2019.

8.5.2 Reducing administrative complexity and costs between jurisdictions

Stakeholders commented on the administrative complexity and regulatory costs associated with different definitions of first supplier and export protocols between jurisdictions.

¹⁰⁴ Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 3.

¹⁰⁵ GS1 is a not for profit organisation that develops and maintains global standards for business communication including the barcode.

¹⁰⁶ Mr Markus Fraval, TOMRA Cleanaway, Transcript of Public Hearing, Sydney, 23 October 2018, pp 22-23.

¹⁰⁷ Australian Beverages Council Ltd submission to IPART Draft Report, November 2018, p 10.

¹⁰⁸ Mr Peter Bruce, Exchange for Change, Transcript of Public Hearing, Sydney, 23 October 2018, p 23.

¹⁰⁹ Mr Alex Young, NSW EPA, Transcript of Public Hearing, Sydney, 23 October 2018, p 24.

¹¹⁰ An example is a Yakult fermented milk bottle.

Definition of first supplier

A key priority for ALDI Stores (ALDI) is the simplification of the definition of a first supplier for the NSW scheme.¹¹¹ ALDI is concerned that the first supply approach is unnecessarily complex and is leading to suboptimal outcomes for retailers and consumers. Coca-Cola Amatil supports a consistent definition of first supplier across jurisdictions to reduce compliance costs.¹¹²

There are currently different definitions of a supplier of beverages for the various container deposit schemes, including:

- ▼ South Australia: a supplier is a manufacturer, distributor or importer¹¹³
- ▼ Queensland: a supplier is the beverage manufacturer (and this can include importers and distributors)¹¹⁴
- ▼ ACT: a supplier is a manufacturer or importer¹¹⁵
- ▼ NSW: the first supplier could be could be the manufacturer, importer, wholesaler, or retailer.

Some stakeholders have commented that within NSW it is not always clear *who* is the first supplier.¹¹⁶ For example, a large number of small participants in the NSW CDS are contract bottlers who are engaged by brand owners to manufacture a specific amount of product. For example, a major retail chain may engage a contract bottler to produce their home brand drinks. In a number of circumstances, the contract bottler is the first supplier, and therefore required to pay the CDS. Under the current advance invoicing arrangements, a further complexity can arise if the brand owner switches to another contract bottler or varies the quantity of containers from month to month. We note that in other jurisdictions such as Queensland the brand owner is the first supplier and liable to pay the CDS.

ALDI commented that the definition of a first supplier in NSW is complex to administer and leads to additional costs of complying with Exchange for Change reporting requirements on container volumes. This is because they must differentiate products and sales data depending on the supply arrangement, location of the distribution centres from which the product is supplied, and store location.¹¹⁷

Coca-Cola Amatil further comments that if definitions are not consistent then container declarations are complicated for first suppliers which adds to the costs of scheme compliance.¹¹⁸

The definition of a beverage supplier is a key element in the design of a container deposit scheme and is fundamental to how the scheme operates. Any changes to the current definition

¹¹¹ ALDI Stores submission to IPART Draft Report, November 2018, p 4.

¹¹² Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 3.

¹¹³ See definition of a beverage supplier https://www.epa.sa.gov.au/environmental_info/container_deposit, accessed on 19 November 2018.

¹¹⁴ Containers for Change, Beverage Manufacturers at <https://www.containersforchange.com.au/beverage-manufacturers>, accessed on 21 November 2018.

¹¹⁵ See definition of a supplier https://actcds.com.au/wp-content/uploads/2018/09/Definition_of_a_Supplier_into_ACT.pdf, accessed on 19 November 2018.

¹¹⁶ Mr Peter Bruce, Exchange for Change, Transcript of Public Hearing, Sydney, 23 October 2018, p 28.

¹¹⁷ ALDI Stores Submission to IPART Draft Report, November 2018, p 3.

¹¹⁸ Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 3.

of a first supplier in NSW would require legislative change and is likely to create winners and losers for existing scheme participants. For example, making the retailer the first supplier would impose a burden on small and medium sized NSW retailers. Further, changing the definition of first supplier is likely to affect how data on container volumes is collected and reported under the scheme and this may also change auditing and compliance activities. As the regulator, the EPA would need to assess the impacts on scheme participant of changes to the definition of a first supplier and consult on these impacts.

While we are not recommending how first suppliers should be defined, we are recommending that the EPA and Exchange for Change work with their counterparts administering other container deposit schemes to harmonise how the definition of a first supplier is applied to reduce administrative complexity, costs and the impact on consumers.

We acknowledge that some of these changes will take time to achieve as each state based scheme is different and this is reflected in legislation and contractual arrangements.

Export protocols

Many retailers and beverage suppliers operate across Australia and the different state based CDS regimes add complexity and cost to their business models. For example, in NSW the export policy introduced in August 2018 requires suppliers to sign an Export Supply Deed Poll to claim back the scheme costs for containers supplied into NSW which are then exported.¹¹⁹ While there are different schemes operating across Australia, and states without container deposit schemes, an export policy is required to manage the differences in costs of supplying beverages.

Coca-Cola Amatil argues that the recognition of container declarations across states would be favourable to the current export policy across the borders. This is because containers crossing state borders create significant complexity and administration for retailers, state scheme operators and manufacturers.¹²⁰

We understand that Queensland and the ACT are expected to implement export policies to mirror the NSW policy.¹²¹ This will allow sharing of information between jurisdictions and the recognition of container declarations. We recommend that the EPA and Exchange for Change continue to work with their counterparts in other jurisdictions to reduce the administrative complexity for beverage supplies in accounting for exports of containers into different state schemes.

Recommendation

- 13 That the EPA and Exchange for Change work with their counterparts in other jurisdictions which have a container deposit scheme to arrive at a uniform approach to administering the definition of first suppliers and export protocols.

¹¹⁹ NSW Government, NSW Container Deposit Scheme Information for exporters, at <https://returnandearn.org.au/wp-content/uploads/2018/05/18p0977-cds-information-for-exporters.pdf>, accessed on 21 November 2018.

¹²⁰ Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 3.

¹²¹ Discussions with Exchange for Change.

8.6 Assessing the availability and accessibility of collection points

Consumers need to be able to return their eligible beverage containers to collection points and receive their 10-cent refund per container. Consumers can find out the location of their closest collection point by searching on the Return and Earn website.¹²² Locations and real time status of RVMs can be found on the myTOMRA app that is available for to download for free.

During our review, a range of stakeholders raised concerns through our online feedback form about that availability of and access to collection points, particularly in regional NSW during the early months of the scheme. In its submission to our Progress Report, the National Retail Association argued that the Auditor-General should review the EPA agreement with TOMRA Cleanaway. It considered that the final number of RVMs proposed was the worse-case option from the original Regulatory Impact Statement, and should be scrutinised as to whether the NSW taxpayer has benefited from this option.¹²³ In submissions to our Draft Report, some stakeholders commented on insufficient RVMs in rural areas.¹²⁴

To consider this feedback, we looked at the current regulatory requirements for community access to collection points, the current number and types of collection points in each geographic zone, and the commercial framework that influences the network of collection points.

8.6.1 Current regulatory requirements for access to collection points

TOMRA Cleanaway is responsible for establishing and managing the network of collection points¹²⁵ for eligible beverage containers across NSW. It has contracted with TOMRA to build or operate the collection points (as it does with reverse vending machines) or contracted with other organisations to do so (such as over the counter collection points operated by small businesses). The types of collection points have different characteristics in terms of the number of containers accepted and payment options offered to consumers (see Table 8.2).

¹²² <https://returnandearn.org.au/return-points/>, accessed on 11 September 2018.

¹²³ National Retail Association submission to IPART Progress Report, June 2018, p 3.

¹²⁴ B. Matthews submission to IPART Draft Report, October 2018, p 1 and J Rindfleish submission to IPART Draft Report, October 2018, p 1.

¹²⁵ A collection point is defined as any facility or premises for the collection and handling of containers delivered to the facility or premises in consideration of the payment of refund amounts. See section 20 of *Waste Avoidance and Resource Recovery Act 2001 (NSW)*.

Table 8.2 Collection points: container collection and payment options

Type of Collection Point	Container collection	Payment options
Reverse Vending Machine (RVM)	Typically accepts up to 500 containers in any one transaction	1. Paypal 2. Retail voucher 3. Donate to charity
Donation Station - a small RVM (eg Service NSW Offices or train station)	Small number of containers	4. Donate to charity (State-wide or local community group)
Over the Counter Collection	Typically accepts less than 100 containers	5. Cash refund
Automated Depot	Typically accepts volumes more than 500 containers	6. Cash refund 7. Electronic transfer (only in some depots)

Source: EPA return and earn website <https://returnandearn.org.au/return-points/return-point-types/> accessed on 20 June 2018.

The operating requirements for collection points are specified in the network operator agreement and the *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 (NSW)*.¹²⁶ These requirements include meeting community access principles for the number of collection points and their hours of operation. In addition, these requirements vary depending on the location of collection point, ie major urban area, regional area or remote area (see Box 8.1).

According to the EPA, the network includes 682 collection points across NSW and more than 1,178 reverse vending machines.¹²⁷ To ensure the community has convenient access to collection points across NSW, TOMRA Cleanaway is required to have in place:

- ▼ one collection site for towns of 500 people or more in remote NSW (such as far western NSW) – 15 collection sites
- ▼ one collection site for towns of 1,000 people or more in regional NSW, with an additional site for each additional 20,000 people in a town – 150 collection sites
- ▼ one collection site for each 20,000 people in the Greater Sydney Region - at least 270 collection sites.¹²⁸

¹²⁶ See Schedule 1, *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 (NSW)*.

¹²⁷ Information provided by EPA, 24 September 2018.

¹²⁸ <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn/how-return-and-earn-works>, accessed on 11 September 2018.

Box 8.1 Requirements for container collection points

Community access principles are defined in terms of the number of collection points and their hours of operation. These requirements vary depending on where the collection point is located (ie a major urban area, regional or remote area).

Number of collection points

Major urban area

- ▼ The number of collection points is calculated by dividing the population of the major urban area by 20,000. If the result is not a whole number then it is rounded down to the nearest whole number.

Regional or remote area

- ▼ The number of collection points in each target area should be no less than the number calculated by dividing the population of that target area by 20,000 and then adding 1. If the result is not a whole number then it is rounded down to the nearest whole number.
- ▼ Each collection point operating in a target area should be located within a 10 km radius of any target town within that target area.

Target area means:

- (a) in relation to the regional area—an area within a 30 km radius of any target town in the regional area, or
- (b) in relation to the remote area—an area within a 50 km radius of any target town in the remote area

Hours of operation

Major urban area – minimum of 35 ordinary hours each week, including at least 8 weekend hours

Regional area – minimum of 24 ordinary hours each week, including at least 8 weekend hours

Remote area – minimum of 16 ordinary hours each 2-week period, including at least 8 weekend hours

Source: Schedule 1 of *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017*.

The Network Operator Agreement also includes collection targets for the number and location of container collection points, and the hours of operation of those collection points.¹²⁹ Each collection point arrangement must be approved by the NSW EPA according to the arrangements specified in the regulation.¹³⁰

We have considered the nature of the performance targets for collection points in the Network Operator Agreement. We note that these targets do not differentiate between the different

¹²⁹ See section 9A Performance targets, *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 (NSW)*.

¹³⁰ See collection point arrangements in Division 2 of *Waste Avoidance and Resource Recovery (Container Deposit Scheme) Regulation 2017 (NSW)*. The EPA may consider a number of matters in determining an application for collection point arrangement approval, including compliance with the requirements of the Waste Avoidance and Resource Recovery Act 2001 and Regulation, whether there are adequate provisions for environmental protection measures, whether any necessary development consent or approval of a local council has been obtained or is likely to be obtained, and whether the collection point operator is a fit and proper person to fulfil obligations under the proposed arrangement.

types of collection points for each geographic zone. Nor does the Agreement distinguish between a reverse vending machine, an over the counter collection point or an automated depot. While this arrangement provides flexibility for TOMRA Cleanaway in establishing a network of collection points, it could also lead to the types of collection points provided in a geographic zone not meeting community expectations for access and availability.

8.6.2 Current number and types of collection points in each geographic zone

From a consumer's perspective, different types of collection points provide a different service experience in terms of convenience, ease of use, the number of containers that can be returned, and payment options. Consumers living in different locations across NSW may also have preferences for certain types of collection points.

We considered the current number and types of collection points in each geographic zone across NSW. As Table 8.3 shows, in rural and regional NSW (Zones 1 to 6) there are a small number of automated depots and in two geographic zones there are none. We expect that people living in rural and regional areas are more likely to travel long distances when returning eligible containers and return them in bulk. In line with stakeholder comments there seems to be less opportunity to drop off beverage containers in bulk in rural and regional NSW. We understand that TOMRA Cleanaway continue to add collection points across the state. TOMRA Cleanaway advised that these will include automated depots.

Table 8.3 Collection points by type in each geographic zone, November 2018

Zone	RVM	Over the Counter	Automated Depot	Donation Station	Total
1 Central & Western	13	24	2	1	40
2 Mid North Coast	17	12	2	1	32
3 North Coast	15	3	2	1	21
4 New England	14	8	0	3	25
5 Murray Murrumbidgee	14	16	1	2	33
6 Southern	16	4	1	1	22
7 Greater Sydney, Newcastle & Wollongong	230	253	12	14	509
Total	319	320	20	23	682

Source: Data supplied by EPA at 5 December 2018.

We note that there are different costs and lead times associated in setting up and operating the four types of collection points. For example, the process of establishing automated depots and RVMs requires negotiation of commercial contracts (known as Collection Point Agreements) and planning approvals which can potentially take a number of months to complete. Whereas over the counter collection points generally take less time and effort to establish as small businesses can apply using a standard application process.

8.6.3 Current framework for establishing collection points

Under the Network Operator Agreement, TOMRA Cleanaway is paid a fixed amount per container collected regardless of the type or location of the collection point. It has to manage several parameters including:

- ▼ **Regulatory requirements for community access to collection points.** These include requirements for community access principles in the regulation (see Box 8.1) and performance targets for each geographic zone in the Network Operator Agreement.
- ▼ **Costs of establishing collection points.** As discussed above there are costs for TOMRA Cleanaway in negotiating contracts with collection point operators, and in some cases arranging planning approvals for the collection sites. Depending on the type of collection point there can be substantial upfront capital costs such as providing reverse vending machines and automated depots.
- ▼ **Costs of operating collection points.** These include costs of operating the site, transport and logistics. The relatively large distances and smaller quantities of containers collected in rural and regional areas means the unit cost of collecting containers in regional areas would be higher than in metropolitan areas where economies of scale can be achieved.
- ▼ **The frequency of servicing reverse vending machines (RVMs).** RVMs make up over 40 per cent of the collection point network and currently account for over 80% of containers collected.¹³¹ There is a trade-off between the frequency of servicing RVMs and the availability of the machine for consumers to return containers. TOMRA Cleanaway needs to regularly collect containers from RVMs to ensure the machines are not full and consumers can return containers. However we note that RVMs are typically open 15 hours per day or 105 hours per week, which is three times the regulated requirement.¹³²

Any variations to the Network Operator Agreement to require collection points in different geographic locations and additional collection points would have cost implications. The costs of establishing and operating collection points differ between locations and RVMs, automated depots and over the counter collection points. Therefore, any changes to current arrangements that require changes to TOMRA Cleanaway's obligations would need to be reflected in the network operator fees that are charged to first suppliers and recovered from consumers.

Over time the collection point network may change as, for example, some over the counter operators decide not to participate in the scheme. This presents TOMRA Cleanaway with an opportunity to select the most effective and efficient type of collection point to replace it with. For example, a community may have preferences as to when they want to return containers (eg weekend versus weekday and time of day) and the type of collection point they want to use (machine versus manual collection or bulk container drop off versus smaller quantities).¹³³

We also note that the Office of the Customer Service Commissioner has undertaken surveys to assess awareness of and support for the scheme as well as satisfaction amongst users. These

¹³¹ IPART meeting with Tomra Cleanaway on 16 August 2018.

¹³² TOMRA Cleanaway, Information provided to IPART, 21 September 2018.

¹³³ The CDS has been designed to count every container and so the numbers of containers returned at an individual collection point can be analysed in terms of the time of day, frequency and costs of collection.

surveys have indicated that four out of five users are satisfied with their use of the scheme, with those outside of major cities amongst the most satisfied.¹³⁴

We note that the EPA is responsible for approving collection points and it also monitors the performance of collection points under the Network Operator Agreement. Any information that EPA collects on community preferences for using collection points could be used to inform decision making about the most effective and efficient mix of collection points to service a particular community.

Any changes to current obligations that increase or decrease TOMRA Cleanaway's costs would need to be reflected in the network operator fees that are charged to first suppliers and ultimately recovered from consumers. As a result, the EPA and TOMRA Cleanaway should assess whether the benefits of changing access and availability of collection points exceed the costs.

8.7 Stakeholders seek greater transparency on scheme contract information, network operator costs and key performance data

In our Progress and Draft Reports, we recommended that the EPA publish a contract summary of each of the agreements with the Scheme Coordinator and the Network Operator.¹³⁵ This was in response to some stakeholder concerns about the implications of the appointment of a single network operator and its partnership with particular retailers (eg, Woolworths) in rolling out RVMs.

The National Retail Association was uncertain as to what a contract summary would achieve and was concerned about publication of confidential information. It requested that stakeholders are directly consulted before making any decision to publish details.¹³⁶

We consider that the EPA should publish a contract summary of its agreements with the Scheme Coordinator and Network Operator to provide transparency around key elements of the scheme. This can be done in consultation with the relevant parties to protect any commercially sensitive information. For example, a contract summary for the Network Operator Agreement could include roles and responsibilities and the number of collection points to be delivered in each geographic zone in NSW. In its submission to our Draft Report, the Office of the NSW Small Business Commissioner (OSBC) supported the recommendation to publish a contract summary.¹³⁷ We have maintained this recommendation.

The OSBC also requested that our Final Report include key performance data including the proportion of eligible containers returned relative to sales of equivalent containers, reduction in types of litter, rates of recycling of different containers.¹³⁸ We have not previously reported this information in our Progress or Draft Reports as it has not been the focus of our price or competition analysis. We consider that it is more appropriate for the EPA as the regulator of the CDS to report key performance data on the scheme.

¹³⁴ Information provided to IPART by the EPA, 21 September 2018.

¹³⁵ IPART, *NSW Container Deposit Scheme, Monitoring the impacts on container beverage prices and competition*, Progress Report, April 2018, p 56 and IPART, *NSW Container Deposit Scheme, Monitoring the impacts on container beverage prices and competition*, Draft Report, August 2018, p 82.

¹³⁶ National Retail Association, submission to Progress Report, June 2018, p. 2-3.

¹³⁷ Office of the NSW Small Business Commissioner submission to IPART Draft Report, November 2018, p 2.

¹³⁸ Office of the NSW Small Business Commissioner submission to IPART Draft Report, November 2018, p 2.

Coca-Cola Amatil¹³⁹ and the ABCL¹⁴⁰ are seeking greater transparency on the fees paid to the Network Operator (TOMRA Cleanaway) as part of the scheme. Coca-Cola Amatil argue that transparency would be further improved if the Network Operator's costs were made available to suppliers in the Exchange for Change Annual Statements. Further they would like to see more information about the Network Operator business model and whether their revenue reflects the costs they incur.¹⁴¹

While this is a decision for the EPA as the administrator of the Network Operator contract, we would encourage greater reporting of the Network Operator's performance and prices.

In our Progress Report, we considered that changes to the condition in which containers can be returned to collection points may improve the CDS' effectiveness.¹⁴² Currently, to be eligible for a refund, containers must be returned uncrushed, not damaged, and with the original label attached. Eligibility is checked at the collection point, and the infrastructure is designed to reject containers that are crushed, damaged or missing a label.

In its submission to our Progress Report, the National Retail Association argued that the CDS should accept containers that are damaged or missing a label.¹⁴³ However, we understand that this maintains the integrity of the scheme to ensure that containers cannot be redeemed multiple times and prevents systematic and large scale fraud. We note that other jurisdictions such as South Australia do not necessarily accept damaged or crushed containers.¹⁴⁴

The National Retail Association also raised concerns relating to the costs and effectiveness of the CDS, including:¹⁴⁵

- ▼ The handling fee adjustment should occur every six months not every month. This would reduce the administrative burden for industry and help keep prices stable.
- ▼ That NSW should accept the container product registration from other jurisdictions and visa-versa. The EPA should return fees incurred by stakeholders.
- ▼ Prohibit RVMs and depots from accepting more than 100 containers from a single person in a single day to prevent people raiding kerbside bins and undermining local Council collection.

We have considered how fees are billed to first suppliers and the network true up mechanism and have made recommendations in Chapter 6. We have also made recommendations on the mutual recognition of containers. In terms of the number of containers accepted by RVMs and depots, this is a policy decision for the EPA but we note that infrastructure has been designed to accept certain quantities of containers.

¹³⁹ Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 2.

¹⁴⁰ Mr Shae Courtney, Australian Beverages Council, Transcript of Public Hearing, Sydney, p. 16.

¹⁴¹ Coca-Cola Amatil submission to IPART Draft Report, November 2018, p 2.

¹⁴² IPART, *NSW Container Deposit Scheme, Monitoring the impacts on container beverage prices and competition*, Progress Report, April 2018, p 58.

¹⁴³ National Retail Association, submission to Progress Report, June 2018, p 3.

¹⁴⁴ In South Australia collection depots are not obliged to accept containers that do not have a refund statement clearly visible. See Frequently Asked Questions at https://www.epa.sa.gov.au/environmental_info/container_deposit/faqs accessed on 5 September 2018.

¹⁴⁵ National Retail Association submission to IPART Progress Report, June 2018, p 3.

Recommendation

- 14 That the EPA publish a contract summary of its agreements with the Scheme Coordinator and the Network Operator including the roles and responsibilities and the number of collection points to be delivered in each geographic zone in NSW.

9 No need for ongoing price monitoring

The final step in our approach was to assess the need for ongoing price monitoring beyond the initial one-year monitoring period. This involved considering the findings of the first five steps in our approach and deciding whether there are any ongoing, systemic impacts on beverage prices or competition in beverage markets as a result of the CDS.

The sections below set out our recommendation, summarises the reasons that led to it, and then discusses them in more detail.

9.1 Summary of recommendation

We recommend that ongoing annual monitoring of the impacts of the CDS on container beverage prices and competition does not take place beyond the initial one-year monitoring period. This position is supported by stakeholders.

Our analysis in Chapter 6 shows that the price increases attributable to the scheme are consistent with workably competitive markets and hence the CDS has not had any undue effects on the prices of container beverages. We also found no undue or material, systemic effects on the prices of container beverages, but did identify some monthly volatility in costs which we consider is transitional and can be addressed through our recommended changes to the scheme payments methodology.

As discussed in Chapter 7, we found no specific evidence of material reduction in competition, but identified some potential impacts. Any transitional or potential impacts on price or competition that we identified can be addressed, and we have made recommendations to address them.

We also consider that other regulatory bodies or agencies have monitoring and enforcement powers that could address ongoing or emerging concerns about the impact of the CDS on beverage prices or competition.

9.2 Beverage markets are workably competitive

Unnecessary price monitoring in workably competitive markets increases costs for market participants that are not outweighed by the benefits of regulation.

As we noted in Chapter 6, previous assessments of the beverage industry in NSW have either not revealed substantial concerns about competition, or have found there is 'workable competition' in the industry. Like other regulators,¹⁴⁶ we think that this competition, together with Australian consumer law and compliance regulation, best protects consumers.

¹⁴⁶ For example, NSW Fair Trading, Compliance and Enforcement Policy, July 2013, p 2, available from http://www.fairtrading.nsw.gov.au/biz_res/ftweb/pdfs/About_us/Compliance_and_enforcement_policy.pdf, p 2, accessed on 6 February 2018.

As set out in Chapter 6, we have not found any evidence of sustained increases in prices in excess of costs of the CDS, and our finding is that the changes in container beverage prices that are due to the CDS are consistent with a workably competitive market. We therefore consider that the costs of ongoing price monitoring would outweigh the benefits.

9.3 Impacts on prices we identified are transitional and can be addressed

As set out in Chapter 6, we found that scheme cost volatility has led to prices increasing by more than costs in some months. We consider that this volatility would reduce over time but that a more effective way to reduce volatility more quickly and ensure consumers are not paying more than the costs of the scheme is to move to a system where first suppliers are invoiced for scheme costs in arrears.

9.4 Potential impacts on competition we identified can be addressed

As discussed in Chapter 7, while we found no evidence of a material reduction in competition, we identified two issues related to the operation of the CDS that have the potential to reduce the competitiveness of some market participants – the level of the container beverage approval fee, and the payment terms for invoices to suppliers. We consider that both these potential impacts can be overcome and have made recommendations to address them.

9.5 Ongoing monitoring of the impacts of the CDS on beverage prices or competition would overlap with monitoring functions of other agencies

Other agencies have an ongoing role in promoting and monitoring competition and fair trading. For example, the ACCC, an independent Commonwealth statutory authority, accepts and records reports of information about business practices that are of concern, and investigates alleged breaches of the *Competition and Consumer Act 2010*. NSW Fair Trading, part of the NSW Department of Finance, Services and Innovation, investigates complaints about misleading conduct such as claiming that price increases are due to the CDS when they are not.

We consider that ongoing monitoring of the impacts of the CDS on beverage prices or competition would overlap with the roles of these agencies.

Overall we consider that our findings indicate that the CDS has not had any undue effects on prices or material impacts on competition in the NSW container beverage market to date. While we identified some issues of concern and scope for improvement, we consider that these can be addressed through our recommended actions. Therefore, we consider that ongoing annual monitoring and reporting on the impacts of the CDS is not necessary.

In submissions to our Draft Report, the ABCL¹⁴⁷ and ALDI¹⁴⁸ both agreed that ongoing monitoring of the impacts of the CDS on container beverage prices and competition is not needed beyond the initial one-year monitoring period.

¹⁴⁷ Australian Beverages Council Ltd submission to IPART Draft Report, November 2018, p 8.

¹⁴⁸ ALDI Stores submission to IPART Draft Report, November 2018, p 2.

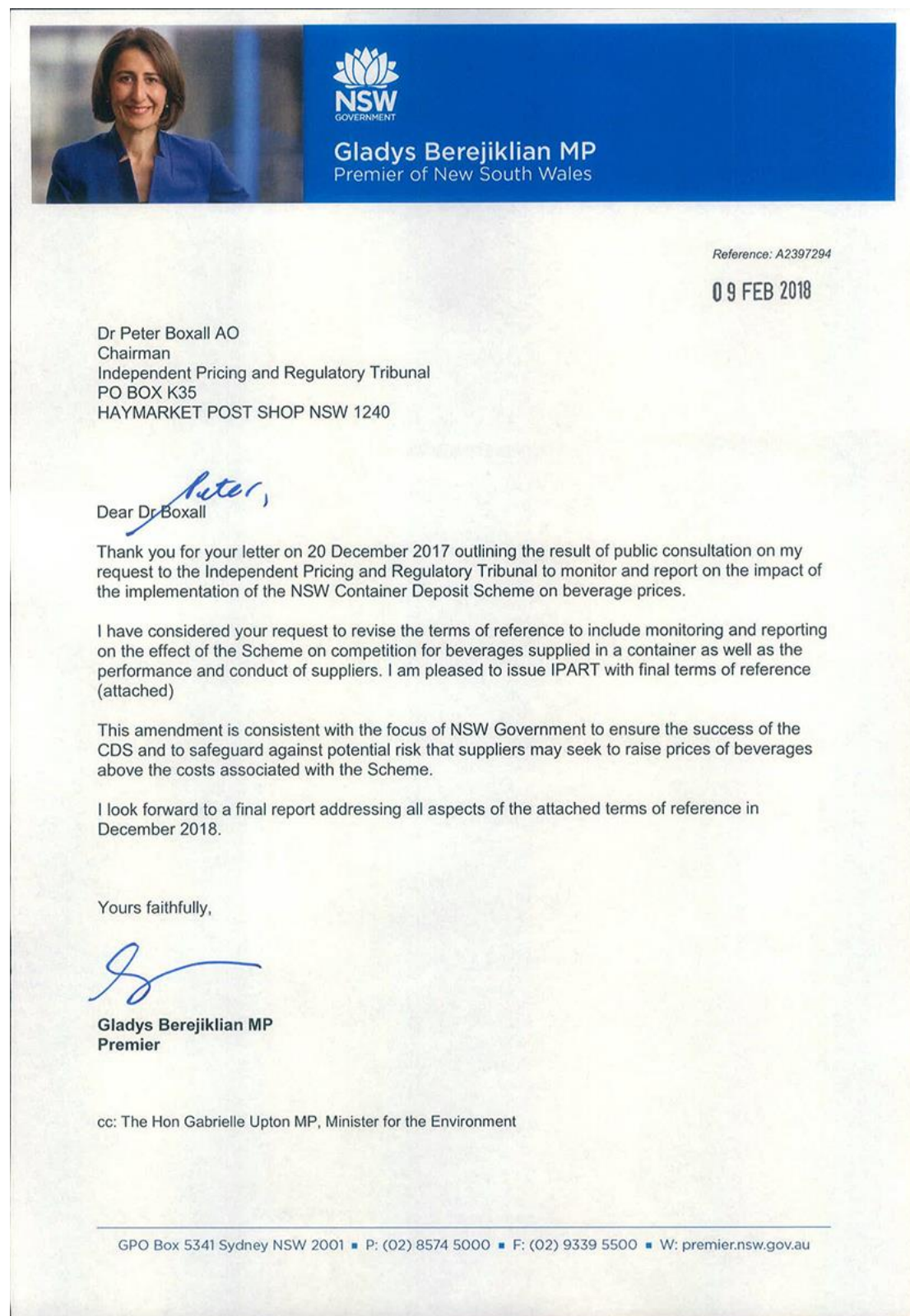
However, ALDI considers that future reviews of the overall CDS performance are necessary to ensure that the scheme operates efficiently and is in the best interest of consumers and other stakeholders.¹⁴⁹ We consider that it is good regulatory practice to review whether the container deposit scheme is meeting its objectives at least every five years.

Recommendation

- 15 Ongoing monitoring of the impacts of the CDS on container beverage prices and competition is not required beyond the initial one-year monitoring period.

¹⁴⁹ ALDI Stores submission to IPART Draft Report, November 2018, p 2.

A Terms of reference



Terms of Reference for IPART to monitor and report on matters relating to the Container Deposit Scheme

I, Gladys Berejiklian, Premier of New South Wales, under Section 12A of the *Independent Pricing and Regulatory Tribunal Act 1992*, request that the Independent Pricing and Regulatory Tribunal (IPART) monitor and report on the Container Deposit Scheme in accordance with these terms.

Task

IPART is to monitor:

1. the effect of the Container Deposit Scheme on prices of beverages supplied in a container;
2. the effect of the Container Deposit Scheme on competition for beverages supplied in a container and the performance and conduct of suppliers; and
3. any other market impacts on consumers that arise from the commencement of the Scheme, for the period from 1 November 2017 and 1 December 2018 (monitoring period)

IPART is to provide a report to the Premier and the Minister for the Environment regarding:

1. the effect of the Container Deposit Scheme on prices of beverages supplied in a container for the period from 1 November 2017 to 1 December 2018;
2. the framework for monitoring the Container Deposit Scheme including the behaviour of suppliers;
3. the effect of the Container Deposit Scheme on suppliers; and
4. any recommendations for actions by government to address any adverse effects or behaviours arising from the operation of the Scheme.

In undertaking the monitoring, IPART should have regard to:

1. any changes in prices of beverages before or after 1 November 2017 that purport to be in response to the Scheme;
2. any information provided by Scheme participants and consumers;
3. the behaviour of suppliers and major retailers before and after 1 November 2017 including whether beverage prices have increased beyond the amount suppliers are charged by the Scheme Coordinator;
4. the manner in which suppliers are recovering the costs of the Container Deposit Scheme; and
5. any other matters considered relevant.

Public consultation

IPART should undertake public consultation.

Timeframe

IPART is to release a progress report in April 2018 which provides a draft framework for the review and reports on the first three months of the Container Deposit Scheme. IPART is to provide a final report to the Premier and the Minister for the Environment in December 2018. The final report is to also recommend whether subsequent monitoring is necessary.

At any time during the monitoring period, if the Premier or the Minister for the Environment or IPART considers that any behaviour or market outcomes have arisen that appear unfair or unjustified on consumers or Scheme participants, IPART is to:

1. Investigate the matter immediately at its own discretion or on request from the Premier or the Minister, and
2. Provide an interim report to the Premier and the Minister as soon as practicable.

Definitions

Act means the *Waste Avoidance and Resource Recovery Act 2001*.

Beverage has the meaning given to the term under the Act.

Container has the meaning given to the term under the Act.

Container Deposit Scheme means the scheme established by the Act.

Scheme Coordinator has the meaning given to the term under the Act.

Scheme participant has the meaning given to the term under the Act.

Supplier means a supplier, as defined in the Act, who is required under the Act to enter into a supply arrangement with the Scheme Coordinator.



The Hon Gladys Berejiklian MP
Premier

Dated at Sydney  2018

B Regression analysis of the CDS impact on all beverage prices

As discussed in Chapter 5, as part of our approach for monitoring the effects of the CDS, we assessed whether there have been any significant increases in beverage prices above the costs of the scheme.

This appendix provides details of our data and the econometric models we used to analyse the impact of the CDS on beverage prices and provides complete regression results from our analysis.

B.1 Data and methodology

B.1.1 Data

We estimated price changes that are attributable to the introduction of the CDS for each of the following beverage categories in the alcoholic and non-alcoholic beverage markets which are relevant to the CDS:

- ▼ bottled water
- ▼ soft drink
- ▼ fruit juice
- ▼ beer
- ▼ cider, and
- ▼ ready-to-drink (RTD).

Our analysis also included beverage categories which are not covered by the scheme (ie, wine and spirits) to evaluate whether the scheme had any indirect impact on their prices.

Our sample consists of monthly prices of beverages sold in NSW and Victoria over the period January 2016 to October 2018. In our analysis, a beverage product is defined by its manufacturer (or brand), product description, pack type (ie, multi pack or single pack), size (eg, 350 ml, 600 ml, etc), price type (ie, promotional or non-promotional price), retailer, and retailer location.

In analysing the CDS impact on beverage categories which are relevant to the CDS, we excluded from the sample the following beverages supplied in containers which are not eligible for a refund under the CDS:

- ▼ bottled water drink containers of 3 litres or more,
- ▼ pure fruit or vegetable juice containers of 1 litre or more, and
- ▼ RTD containers of more than 600 ml.

We excluded products that were not available for sale in both states to avoid different product compositions having an effect on our price analysis. We also excluded beverage products with missing prices from our dataset. Specifically, we required that for a product to be included in our sample, its prices must be available every month since June 2017. This filter is necessary as to identify the impact of the CDS on beverage products at a product level we must track the prices of the same product over time.

Nielsen's Homescan database contains the prices of products purchased by its panel households. By imposing a condition that products must have prices every month since June 2017, we eliminated products that were not regularly purchased by the panel households. This condition also removes the majority of the products with temporary promotional prices from the Homescan dataset. This filtering also eliminated all products with promotional prices from the Insights Retail dataset.

We note that these filters result in a relatively small sample size for bottled water and fruit juice products.

We also winsorised the data at the 1st and 99th percentile to reduce the impact of possibly spurious outliers. For each product within each beverage size category, we calculated the distributions of prices and replaced all prices below the 1st percentile or above the 99th percentile with the respective percentile.

B.1.2 Methodology

Our first econometric model takes the generic form shown below.

$$P_{i,t,r,s} = \beta_0 + \beta_1 NSW + \sum_{\tau=Nov\ 2017}^{Jul\ 2018} \beta_{2,\tau} NSW \times TIME_{\tau} + \gamma X_{i,t,r} + \delta M_t + \varepsilon_{i,t,r,s}$$

where:

- ▼ $P_{i,t,r,s}$ is the price (expressed in dollar per container) of product i in month t sold in a retail shop r in state s
- ▼ NSW equals 1 if product i is sold in NSW, and 0 otherwise
- ▼ $TIME$ refers to the months of the CDS implementation period from November 2017¹⁵⁰ to October 2018 and equals 1 if month t is any month in the period, and 0 otherwise
- ▼ $NSW \times TIME$ equals 1 if $NSW = 1$ and $TIME = 1$, and 0 if either NSW or $TIME = 0$
- ▼ $X_{i,t,r}$ comprises a set of beverage and retailer characteristics that are likely to affect prices
- ▼ M_t is month dummy variables from January 2016 to October 2018, and
- ▼ $\varepsilon_{i,t,r,s}$ is the error term.

Specifically, we run a pooled OLS regression with month dummy variables to control for time-series variations in prices, for example to control for general price increases over time. T-statistics are based on clustered standard errors by product to account for time series

¹⁵⁰ Note that while the CDS commenced officially on 1 December 2017, we included November 2017 as the first month of the CDS period as first suppliers were issued the first invoice a month prior to the commencement of the scheme (ie, November 2017).

correlation of residuals for a given product – if there are variables that are not controlled for in our regressions which are correlated over time within a product, they are addressed through the calculation of the clustered standard errors.

- ▼ β_1 captures possible differences in beverage prices between NSW and VIC prior to the introduction of the CDS (ie, pre-treatment period), and
- ▼ $\beta_{2,\tau}$ is the difference-in-differences estimate, which captures the price impact of the CDS attributable to the scheme itself in each of the relevant months. This is our main coefficient of interest. In our regression results presented in Section B.2 and Section B.3, these coefficients are shown as CDS_{NOV} , CDS_{DEC} , CDS_{JAN} , CDS_{FEB} , CDS_{MAR} , CDS_{APR} , CDS_{JUN} , CDS_{JUL} , CDS_{AUG} , CDS_{SEP} , and CDS_{OCT} .

The dependent variable in our regression is the monthly price of a product. We obtained monthly mean, median, maximum, minimum and mode prices for each alcoholic beverage sold by a retailer in NSW and Victoria. For non-alcoholic beverage prices obtained from Nielsen's Homescan transactional data, we calculated monthly average prices for each product sold in a shop in a region (as defined by Nielsen) in each state. For example, to obtain a monthly price of a 350 ml Coca Cola sold at *Retailer A* in the *Sydney* metro area, we averaged the prices paid for all transactions associated with a 350 ml Coca Cola at all *Retailer A* stores in the *Sydney* metro area in a given month.

Both the Homescan and Insights Retail datasets report the total price for multi-pack products (eg, 24-pack 350 ml Coca Cola or 30-pack 375 ml Victoria Bitter). In this case, we computed the price per container by dividing the total price of the multi-pack product by the number of units per pack.

Beverage price per container may vary across different dimensions such as time, size, package type, price type, retailer, region, etc. To isolate the impacts of these confounding factors on beverage prices, we control for several product characteristics, which are captured in the coefficient(s), γ .

The model presented above is designed to capture the impact of the CDS on beverage prices for each month of the CDS period from November 2017 to October 2018. In addition to this, we also applied the following model to estimate the overall impact of the CDS on beverage prices for the entire CDS period from November 2017 to July 2018:

$$P_{i,t,r,s} = \beta_0 + \beta_1 NSW + \beta_2 TIME + \beta_3 NSW \times TIME + \gamma X_{i,t,r} + \delta M_t + \varepsilon_{i,t,r,s}$$

where $TIME$ equals 1 if month t is from December 2017 to October 2018 (ie, treatment period in which the CDS is in place), and 0 otherwise. All other variables are defined as above.

In this model, β_3 is our main coefficient of interest which captures the average change in beverage prices in NSW that is due to the CDS. In our regression results presented in Section B.2 and Section B.3, this coefficient is shown as $CDS_{NOV-JUL}$.

In presenting our results, we refer to the first model as **Monthly** model, and to the second model as **Overall** model.

We conducted the regression analysis described above for each sample set within each beverage category:

- ▼ **Sample A**, which included the products for which there is continuous monthly price information from January 2017
- ▼ **Sample B**, which included only the products with continuous monthly price information from January 2016, and
- ▼ **Sample C**, which included only the products with continuous monthly price information from June 2017.

B.2 Non-alcoholic beverages

B.2.1 Variable definitions

As discussed above, we included a set of product and retailer characteristics as a control variable in our regression analysis. Using Nielsen's Homescan data, we have created the following variables:

- ▼ beverage size
- ▼ brand
- ▼ retailer,
- ▼ pack type (ie, multi pack), and
- ▼ price type (ie, promo price).¹⁵¹

Beverage size

For bottled water, products are categorised into three size groups – Small, Medium and Large, where a product is defined as Small if its size is less than or equal to 600 ml, Medium if its size is between 600 ml and 1 L (inclusive), and Large if its size is greater than 1 L.

For soft drinks, a product is defined as Small if its size is less than 500 ml, Medium if its size is between 500 ml (inclusive) and 1 L, and Large if its size is greater than or equal to 1 L.

Fruit juice is defined as Small if its size is less than or equal to 300 ml, Medium if its size is between 300 ml and 750 ml, and Large if its size is greater than or equal to 750 ml.

Brand

Brand is a categorical variable to indicate whether a product is a major, private label or any other brand.

For bottled water and soft drinks, *Brand* is set to *Major brand* if a product is manufactured by Asahi Holdings (Asahi) or Coca Cola Amatil (CCA), and to a *Private label* if it is Aldi-, Coles- or Woolworth-branded. A product that is neither a major brand nor a private label is grouped as "*Other Brand*".

CCA and Asahi are the two major companies in the bottled water and soft drink manufacturing industries in Australia:

¹⁵¹ These variables were created by IPART.

- ▼ In bottled water manufacturing, the market shares of CCA and Asahi are 47.7% and 13.7%, respectively.¹⁵²
- ▼ In soft drink manufacturing, CCA and Asahi hold 53.7% and 25.5% of the total market share, respectively.¹⁵³

For fruit juices, *Brand* is set to *Major brand* if a product is manufactured by Asahi, Lion or Heinz Wattie's, and to a *Private label* if it is Aldi-, Coles- or Woolworth-branded. A product that is neither a major brand nor a private label is grouped into the "*Other*" category.

Asahi, Lion and Heinz Wattie's are the three major players in fruit juice manufacturing, holding a market share of 22.8%, 25.6% and 15.9%, respectively.¹⁵⁴

Retailer

Retailer type is a categorical variable to indicate whether a product is sold at a major retailer or a non-major retailer. *Retailer* is set to *Major Retailer* if a product is sold at either Coles or Woolworths, and to a *Second-Tier* if it is sold at Aldi or IGA. A product that is sold neither at *Major Retailer* nor *Second-Tier Retailer* is grouped into the "*Other Retailer*" category.

Pack Type

Multi Pack is a binary variable that is equal to 1 if a product is a multi-pack and zero, otherwise.

Price Type

Promo is a binary variable that is equal to 1 if a product was on promotion and zero, otherwise.

B.2.2 Regression results

This section provides full regression results for non-alcoholic beverages:

- ▼ all soft drinks in Table B.1
- ▼ bottled water in Table B.2, and
- ▼ fruit juices in Table B.3.

¹⁵² IBISWorld Industry Report C1211b – Bottled Water Manufacturing in Australia, August 2017, pp 23-24.

¹⁵³ IBISWorld Industry Report C1211a – Soft Drink Manufacturing in Australia, June 2017, pp 23-24.

¹⁵⁴ IBISWorld Industry Report C1211c – Fruit Juice Drink Manufacturing in Australia, August 2017, pp 23-24.

Table B.1 Impact of the CDS on soft drinks (\$ including GST)

	Sample A		Sample B		Sample C	
	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.005	0.005	0.017	0.017	0	0
Time	0.002		-0.002		-0.026	
CDS _{NOV-OCT}	0.108**		0.11**		0.105**	
CDS _{NOV}		0.015		0.02		0.022
CDS _{DEC}		0.122**		0.126**		0.116**
CDS _{JAN}		0.122**		0.117**		0.125**
CDS _{FEB}		0.12**		0.144**		0.107**
CDS _{MAR}		0.119**		0.135**		0.124**
CDS _{APR}		0.122**		0.132**		0.132**
CDS _{MAY}		0.113**		0.111**		0.11**
CDS _{JUN}		0.102**		0.103**		0.106**
CDS _{JUL}		0.098**		0.092**		0.084**
CDS _{AUG}		0.109**		0.106**		0.104**
CDS _{SEP}		0.12**		0.111**		0.107**
CDS _{OCT}		0.132**		0.118**		0.122**
Medium	1.112**	1.112**	1.17**	1.17**	1.091**	1.091**
Small	-1.1**	-1.1**	-1.126**	-1.126**	-1.03**	-1.03**
Other Brand	-0.848**	-0.848**	-0.83**	-0.83**	-0.714**	-0.714**
Private Label	-1.334**	-1.334**	-1.284**	-1.284**	-1.284**	-1.284**
Other Retailer	-0.541**	-0.541**			-0.546**	-0.546**
Second Tier Retailer	0.42**	0.42**	0.17	0.17	0.377**	0.377**
Promo	-0.358**	-0.358**	-0.276**	-0.276**	-0.352**	-0.352**
Intercept	2.119**	2.119**	2.067**	2.067**	2.068**	2.068**
Month Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
N	9544	9544	6970	6970	11610	11610
Adj. R squared	83.74%	83.73%	84.51%	84.50%	80.86%	80.86%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Source: IPART analysis using Nielsen Homescan data.

Table B.2 Impact of the CDS on bottled water (\$ including GST)

	Sample A		Sample B		Sample C	
	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.008	-0.008	-0.013	-0.013	-0.042	-0.042
Time	-0.019*		-0.023		-0.045**	
CDS _{NOV-OCT}	0.116**		0.121**		0.13**	
CDS _{NOV}		0.027**		0.033*		0.033**
CDS _{DEC}		0.122**		0.125**		0.134**
CDS _{JAN}		0.127**		0.13**		0.143**
CDS _{FEB}		0.101**		0.099**		0.109**
CDS _{MAR}		0.124**		0.128**		0.142**
CDS _{APR}		0.121**		0.127**		0.13**
CDS _{MAY}		0.135**		0.142**		0.148**
CDS _{JUN}		0.129**		0.133**		0.149**
CDS _{JUL}		0.127**		0.137**		0.144**
CDS _{AUG}		0.127**		0.134**		0.145**
CDS _{SEP}		0.129**		0.134**		0.147**
CDS _{OCT}		0.12**		0.127**		0.139**
Medium	1.903	1.903	1.905**	1.905**	1.912**	1.912**
Small	-0.423**	-0.423**	-0.491**	-0.491**	-0.197*	-0.197*
Promo	-0.035	-0.035	0.011	0.011	-0.176*	-0.176*
Intercept	0.761**	0.761**	0.763**	0.763**	0.801**	0.801**
Month Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
N	1508	1508	1054	1054	1798	1798
Adj. R squared	97.33%	97.34%	99.43%	99.44%	66.45%	66.27%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Source: IPART analysis using Nielsen Homescan data

Table B.3 Impact of the CDS on fruit juices (\$ including GST)]

	Sample A		Sample B		Sample C	
	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.088	0.088	0.135**	0.135**	0.079	0.079
Time	-0.001		-0.032		0	
CDS _{NOV-OCT}	0.053**		0.034		0.057**	
CDS _{NOV}		-0.041		-0.054		-0.036
CDS _{DEC}		0.027		-0.027		0.035
CDS _{JAN}		0.048		-0.005		0.049*
CDS _{FEB}		0.067**		0.045		0.072**
CDS _{MAR}		0.038		-0.005		0.045*
CDS _{APR}		0.066**		0.061		0.07**
CDS _{MAY}		0.048		0.005		0.053*
CDS _{JUN}		0.077*		0.065		0.079*
CDS _{JUL}		0.07**		0.069		0.072**
CDS _{AUG}		0.079*		0.081		0.081*
CDS _{SEP}		0.074		0.069		0.076*
CDS _{OCT}		0.082*		0.1		0.082**
Multipack	-0.636**	-0.636**	-0.52**	0.081	-0.633**	-0.633**
Small	-1.025**	-1.025**	-1.097**	0.069	-1.028**	-1.028**
Other Brand	-0.581**	-0.581**	-0.294**	0.1	-0.574**	-0.574**
Private Label	-0.091**	-0.091**			-0.09**	-0.09**
Second Tier Retailer	-0.002	-0.002			0.002	0.002
Intercept	2.02**	2.02**	1.961**	1.961**	2.026**	2.026**
Month Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
N	1125	1125	476	476	1229	1229
Adj. R squared	93.06%	93.01%	96.29%	96.24%	93.43%	93.40%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Source: IPART analysis using Nielsen Homescan data

B.3 Alcoholic beverages

B.3.1 Variable definitions

As discussed above, we included a set of product characteristics as control variables in our regression analysis such as beverage size, pack type, subcategory, retailer, vintage, production region.

Beverage size

For both beer and cider, *Size* is defined as Small if beverage size is less than or equal to 375 ml, Small to Medium if beverage size is between 375 ml and 600 ml, Medium if beverage size is between 600 ml (inclusive) and 1 L, and Large if beverage size is greater than or equal to 1 L. This variable is included in all regressions except for wine.

Pack Type

Multipack is a binary variable that is equal to 1 if a product is a multi-pack and zero, otherwise. This variable is included in all regressions.

Sub-category

We included dummy variables for sub-category in our regressions for beer. In the Progress Report we included a categorical variable, *Craft*, to indicate whether a product is a craft (premium) beer. For the Draft Report, we included dummy variables for beer sub-category, which include craft beer, pale ale, lager, pilsner etc.

Retailer

We included dummy variables for each alcoholic beverage retailer in all regressions – the number of retailers varies across alcoholic beverages.

Vintage

We included dummy variables for wine vintage years in our regressions for wine as a proxy for quality.

Production region

We included dummy variables for production region in our regressions for spirit and wine as a proxy for quality.

B.3.2 Regression results

This section provides full regression results for alcoholic beverages:

- ▼ beer in Table B.4 to Table B.6
- ▼ cider in Table B.7 to Table B.9

-
- ▼ RTD in Table B.10 to Table B.12
 - ▼ red wine in Table B.13 to Table B.15
 - ▼ white wine in Table B.16 to Table B.18, and
 - ▼ spirits in Table B.19 to Table B.21.

Table B.4 Impact of the CDS on beer using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.016	0.016
Time	0.274**		0.241**		0.304**		0.241**		0.267**	
CDS _{NOV-OCT}	0.029**		0.026*		0.026*		0.026*		0.029**	
CDS _{NOV}		0.014		0.01		0.023*		0.01		0.011
CDS _{DEC}		0.029**		0.029**		0.029**		0.029**		0.029**
CDS _{JAN}		0.034**		0.033**		0.033**		0.033**		0.033**
CDS _{FEB}		0.055**		0.05**		0.046**		0.05**		0.057**
CDS _{MAR}		0.016		0.017		0.017		0.017		0.016
CDS _{APR}		0.016		0.017		0.015		0.017		0.015
CDS _{MAY}		0.017		0.017		0.02		0.017		0.015
CDS _{JUN}		0.022		0.022		0.023		0.022		0.024
CDS _{JUL}		0.024		0.02		0.024		0.02		0.022
CDS _{AUG}		0.025		0.028*		0.023		0.028*		0.027*
CDS _{SEP}		0.026		0.028*		0.026		0.028*		0.025
CDS _{OCT}		0.07**		0.041**		0.035**		0.041**		0.079**
Medium	0.147	0.147	0.14	0.14	0.148	0.148	0.14	0.14	0.146	0.146
Small	-5.306**	-5.306**	-5.321**	-5.321**	-5.296**	-5.296**	-5.321**	-5.321**	-5.305**	-5.305**
Small to Medium	-3.955**	-3.955**	-3.966**	-3.966**	-3.957**	-3.957**	-3.966**	-3.966**	-3.955**	-3.955**
Multi Pack	-1.304**	-1.304**	-1.337**	-1.337**	-1.274**	-1.274**	-1.337**	-1.337**	-1.301**	-1.301**
Intercept	9.702**	9.702**	9.709**	9.709**	9.69**	9.69**	9.709**	9.709**	9.709**	9.709**
N	62216	62216	62216	62216	62216	62216	62216	62216	62216	62216
Adj. R squared	63.18%	63.18%	63.51%	63.50%	62.80%	62.80%	63.51%	63.50%	63.08%	63.08%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, beer sub-categories and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.5 Impact of the CDS on beer using a sample of products with prices available from January 2016 (Sample B, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009	-0.009
Time	0.258**		0.224**		0.291**		0.224**		0.249**	
CDS _{NOV-OCT}	0.022**		0.018**		0.019*		0.018**		0.023**	
CDS _{NOV}		0.006		0.002		0.019**		0.002		0.001
CDS _{DEC}		0.025**		0.024**		0.027**		0.024**		0.026**
CDS _{JAN}		0.029**		0.029**		0.028**		0.029**		0.029**
CDS _{FEB}		0.052**		0.046**		0.042**		0.046**		0.057**
CDS _{MAR}		0.007		0.008		0.008		0.008		0.007
CDS _{APR}		0.007		0.008		0.007		0.008		0.007
CDS _{MAY}		0.008		0.009		0.008		0.009		0.008
CDS _{JUN}		0.012		0.011		0.013		0.011		0.013
CDS _{JUL}		0.013		0.008		0.014		0.008		0.011
CDS _{AUG}		0.016		0.02		0.014		0.02		0.018
CDS _{SEP}		0.019		0.02		0.019		0.02		0.019
CDS _{OCT}		0.069**		0.034**		0.028**		0.034**		0.079**
Medium	-0.383	-0.383	-0.389	-0.389	-0.384	-0.384	-0.389	-0.389	-0.384	-0.384
Small	-5.289**	-5.289**	-5.305**	-5.305**	-5.279**	-5.279**	-5.305**	-5.305**	-5.288**	-5.288**
Small to Medium	-3.834**	-3.834**	-3.846**	-3.846**	-3.835**	-3.835**	-3.846**	-3.846**	-3.833**	-3.833**
Multi Pack	-1.375**	-1.375**	-1.407**	-1.407**	-1.344**	-1.344**	-1.407**	-1.407**	-1.372**	-1.372**
Intercept	9.691**	9.691**	9.697**	9.697**	9.678**	9.678**	9.697**	9.697**	9.699**	9.699**
N	50082	50082	50082	50082	50082	50082	50082	50082	50082	50082
Adj. R squared	70.67%	70.66%	70.87%	70.87%	70.35%	70.35%	70.87%	70.87%	70.55%	70.55%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, beer sub-categories and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.6 Impact of the CDS on beer using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.016	0.016	0.015	0.015	0.015	0.015	0.015	0.015	0.016	0.016
Time	0.27**		0.235**		0.301**		0.235**		0.263**	
CDS _{NOV-OCT}	0.029**		0.026*		0.026*		0.026*		0.029**	
CDS _{NOV}		0.014		0.01		0.024*		0.01		0.011
CDS _{DEC}		0.03**		0.03**		0.03**		0.03**		0.03**
CDS _{JAN}		0.035**		0.034**		0.035**		0.034**		0.035**
CDS _{FEB}		0.056**		0.052**		0.047**		0.052**		0.059**
CDS _{MAR}		0.015		0.017		0.016		0.017		0.015
CDS _{APR}		0.015		0.016		0.014		0.016		0.014
CDS _{MAY}		0.016		0.016		0.019		0.016		0.015
CDS _{JUN}		0.022		0.022		0.023		0.022		0.024
CDS _{JUL}		0.024		0.021		0.024		0.021		0.022
CDS _{AUG}		0.022		0.025		0.02		0.025		0.025
CDS _{SEP}		0.024		0.025		0.024		0.025		0.023
CDS _{OCT}		0.07**		0.04**		0.032**		0.04**		0.08**
Medium	0.1	0.1	0.095	0.095	0.105	0.105	0.095	0.095	0.099	0.099
Small	-5.29**	-5.29**	-5.304**	-5.304**	-5.279**	-5.279**	-5.304**	-5.304**	-5.289**	-5.289**
Small to Medium	-3.925**	-3.925**	-3.935**	-3.935**	-3.926**	-3.926**	-3.935**	-3.935**	-3.925**	-3.925**
Multi Pack	-1.324**	-1.324**	-1.357**	-1.357**	-1.293**	-1.293**	-1.357**	-1.357**	-1.32**	0.099
Intercept	9.686**	9.686**	9.692**	9.692**	9.674**	9.674**	9.692**	9.692**	9.693**	9.693**
N	64638	64638	64638	64638	64638	64638	64638	64638	64638	64638
Adj. R squared	63.79%	63.79%	64.10%	64.09%	63.44%	63.43%	64.10%	64.09%	63.69%	63.68%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, beer sub-categories and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.7 Impact of the CDS on cider using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.011	0.011	0.012	0.012	0.008	0.008	0.012	0.012	0.008	0.008
Time	0.261**		0.23**		0.269**		0.23**		0.266**	
CDS _{NOV-OCT}	0.017		0.01		0.02		0.01		0.027	
CDS _{NOV}		-0.026		-0.016		-0.018		-0.016		-0.028
CDS _{DEC}		-0.002		-0.012		-0.002		-0.012		0.013
CDS _{JAN}		0.03		0.01		0.027		0.01		0.034
CDS _{FEB}		0.066**		0.069*		0.072**		0.069*		0.082**
CDS _{MAR}		0.012		-0.001		0.014		-0.001		0.024
CDS _{APR}		0.002		0.017		0.004		0.017		0.008
CDS _{MAY}		0.007		0.008		0.01		0.008		0.017
CDS _{JUN}		-0.005		-0.009		0.002		-0.009		0.002
CDS _{JUL}		-0.003		-0.005		0.006		-0.005		-0.001
CDS _{AUG}		0.01		0.001		0.017		0.001		0.02
CDS _{SEP}		0.028		0.014		0.045		0.014		0.043
CDS _{OCT}		0.085**		0.05		0.061		0.05		0.113**
Small to Medium	3.167**	3.167**	3.196**	3.196**	3.139**	3.139**	3.196**	3.196**	3.157**	3.157**
Multi Pack	-1.424**	-1.424**	-1.474**	-1.474**	-1.384**	-1.384**	-1.474**	-1.474**	-1.414**	-1.414**
Intercept	3.853**	3.853**	3.877**	3.877**	3.86**	3.86**	3.877**	3.877**	3.845**	3.845**
N	6785	6785	6785	6785	6785	6785	6785	6785	6785	6785
Adj. R squared	78.77%	78.74%	78.72%	78.69%	78.69%	78.66%	78.72%	78.69%	78.55%	78.52%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.8 Impact of the CDS on cider using a sample of products with prices available from January 2016 (Sample B, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.009	0.009	0.01	0.01	0.005	0.005	0.01	0.01	0.006	0.006
Time	0.252**		0.215**		0.266**		0.215**		0.259**	
CDS _{NOV-OCT}	0.026		0.021		0.031		0.021		0.038	
CDS _{NOV}		-0.026		-0.015		-0.003		-0.015		-0.031
CDS _{DEC}		0.012		0		0.009		0		0.03
CDS _{JAN}		0.036		0.027		0.029		0.027		0.039
CDS _{FEB}		0.077**		0.081**		0.08**		0.081**		0.095**
CDS _{MAR}		0.012		0.004		0.016		0.004		0.023
CDS _{APR}		0.007		0.018		0.011		0.018		0.015
CDS _{MAY}		0.012		0.014		0.016		0.014		0.025
CDS _{JUN}		0.007		0.003		0.014		0.003		0.014
CDS _{JUL}		0.011		0.015		0.021		0.015		0.015
CDS _{AUG}		0.032		0.02		0.04		0.02		0.045
CDS _{SEP}		0.037		0.021		0.058		0.021		0.058
CDS _{OCT}		0.1**		0.057		0.076*		0.057		0.133**
Small to Medium	3.265**	3.265**	3.303**	3.303**	3.23**	3.23**	3.303**	3.303**	3.252**	3.252**
Multi Pack	-1.454**	-1.454**	-1.512**	-1.512**	-1.41**	-1.41**	-1.512**	-1.512**	-1.443**	-1.443**
Intercept	3.594**	3.594**	3.612**	3.612**	3.609**	3.609**	3.612**	3.612**	3.585**	3.585**
N	5474	5474	5474	5474	5474	5474	5474	5474	5474	5474
Adj. R squared	86.18%	86.15%	86.24%	86.22%	85.89%	85.86%	86.24%	86.22%	85.85%	85.82%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.9 Impact of the CDS on cider using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.012	0.012	0.013	0.013	0.009	0.009	0.013	0.013	0.009	0.009
Time	0.261**		0.231**		0.27**		0.231**		0.267**	
CDS _{NOV-OCT}	0.013		0.007		0.016		0.007		0.024	
CDS _{NOV}		-0.029		-0.018		-0.022		-0.018		-0.031
CDS _{DEC}		-0.006		-0.015		-0.006		-0.015		0.009
CDS _{JAN}		0.027		0.007		0.024		0.007		0.031
CDS _{FEB}		0.063*		0.066*		0.069**		0.066*		0.079**
CDS _{MAR}		0.009		-0.003		0.011		-0.003		0.021
CDS _{APR}		-0.001		0.014		0.001		0.014		0.005
CDS _{MAY}		0.004		0.005		0.007		0.005		0.014
CDS _{JUN}		-0.008		-0.013		-0.002		-0.013		-0.001
CDS _{JUL}		-0.007		-0.009		0.002		-0.009		-0.004
CDS _{AUG}		0.005		-0.003		0.012		-0.003		0.016
CDS _{SEP}		0.024		0.01		0.041		0.01		0.039
CDS _{OCT}		0.081**		0.046		0.057		0.046		0.108**
Small to Medium	3.169**	3.169**	3.198**	3.198**	3.141**	3.141**	3.198**	3.198**	3.16**	3.16**
Multi Pack	-1.423**	-1.423**	-1.474**	-1.474**	-1.384**	-1.384**	-1.474**	-1.474**	-1.414**	-1.414**
Intercept	3.852**	3.852**	3.876**	3.876**	3.859**	3.859**	3.876**	3.876**	3.844**	3.844**
N	6819	6819	6819	6819	6819	6819	6819	6819	6819	6819
Adj. R squared	78.83%	78.80%	78.78%	78.74%	78.75%	78.72%	78.78%	78.74%	78.61%	78.58%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.10 Impact of the CDS on RTD using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.004	-0.004	-0.004	-0.004	-0.007	-0.007	-0.004	-0.004	-0.005	-0.005
Time	0.227**		0.194**		0.238**		0.194**		0.242**	
CDS _{NOV-OCT}	0.042**		0.035*		0.049**		0.035*		0.047**	
CDS _{NOV}		0.016		0.007		0.037**		0.007		0.009
CDS _{DEC}		0.029		0.031		0.037*		0.031		0.031
CDS _{JAN}		0.024		0.028		0.031*		0.028		0.027
CDS _{FEB}		0.057**		0.035		0.066**		0.035		0.074**
CDS _{MAR}		0.027		0.021		0.037*		0.021		0.031
CDS _{APR}		0.023		0.023		0.035*		0.023		0.02
CDS _{MAY}		0.027		0.023		0.035*		0.023		0.042*
CDS _{JUN}		0.039*		0.032		0.047**		0.032		0.032
CDS _{JUL}		0.046**		0.048**		0.055**		0.048**		0.052**
CDS _{AUG}		0.052**		0.041*		0.055**		0.041*		0.078**
CDS _{SEP}		0.063**		0.054**		0.065**		0.054**		0.066**
CDS _{OCT}		0.095**		0.078**		0.089**		0.078**		0.102**
Small to Medium	1.544**	1.544**	1.603**	1.603**	1.498**	1.498**	1.603**	1.603**	1.535**	1.535**
Multi Pack	-1.452**	-1.452**	-1.539**	-1.539**	-1.391**	-1.391**	-1.539**	-1.539**	-1.433**	-1.433**
Intercept	6.071**	6.071**	6.12**	6.12**	6.061**	6.061**	6.12**	6.12**	6.049**	6.049**
N	32897	32897	32897	32897	32897	32897	32897	32897	32897	32897
Adj. R squared	41.34%	41.33%	42.98%	42.96%	39.77%	39.75%	42.98%	42.96%	40.50%	40.49%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.11 Impact of the CDS on RTD using a sample of products with prices available from January 2016 (Sample B, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.002	-0.002	0	0	-0.007	-0.007	0	0	-0.005	-0.005
Time	0.202**		0.161**		0.219**		0.161**		0.219**	
CDS _{NOV-OCT}	0.038**		0.03*		0.046**		0.03*		0.046**	
CDS _{NOV}		0.013		0.006		0.036**		0.006		0.007
CDS _{DEC}		0.029*		0.031		0.036**		0.031		0.03
CDS _{JAN}		0.027		0.029		0.032*		0.029		0.032*
CDS _{FEB}		0.054**		0.037*		0.068**		0.037*		0.076**
CDS _{MAR}		0.023		0.016		0.032		0.016		0.032
CDS _{APR}		0.017		0.015		0.031		0.015		0.016
CDS _{MAY}		0.021		0.015		0.031		0.015		0.039*
CDS _{JUN}		0.035*		0.024		0.044**		0.024		0.028
CDS _{JUL}		0.047**		0.047*		0.051**		0.047*		0.06**
CDS _{AUG}		0.045**		0.026		0.051**		0.026		0.077**
CDS _{SEP}		0.058**		0.042*		0.062**		0.042*		0.063**
CDS _{OCT}		0.086**		0.076**		0.077**		0.076**		0.092**
Small to Medium	1.432**	1.432**	1.498**	1.498**	1.381**	1.381**	1.498**	1.498**	1.421**	1.421**
Multi Pack	-1.465**	-1.465**	-1.553**	-1.553**	-1.405**	-1.405**	-1.553**	-1.553**	-1.447**	-1.447**
Intercept	5.247**	5.247**	5.23**	5.23**	5.284**	5.284**	5.23**	5.23**	5.238**	5.238**
N	26724	26724	26724	26724	26724	26724	26724	26724	26724	26724
Adj. R squared	39.19%	39.16%	40.96%	40.94%	37.54%	37.51%	40.96%	40.94%	38.35%	38.33%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.12 Impact of the CDS on RTD using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.004	-0.004	-0.005	-0.005	-0.007	-0.007	-0.005	-0.005	-0.007	-0.007
Time	0.259**		0.229**		0.268**		0.229**		0.279**	
CDS _{NOV-OCT}	0.041**		0.034*		0.051**		0.034*		0.049**	
CDS _{NOV}		0.017		0.008		0.038*		0.008		0.015
CDS _{DEC}		0.028		0.031		0.037*		0.031		0.031
CDS _{JAN}		0.022		0.026		0.03		0.026		0.026
CDS _{FEB}		0.06**		0.035		0.071**		0.035		0.081**
CDS _{MAR}		0.033		0.025		0.044**		0.025		0.039*
CDS _{APR}		0.027		0.026		0.041*		0.026		0.022
CDS _{MAY}		0.03		0.018		0.041*		0.018		0.049**
CDS _{JUN}		0.037		0.029		0.047**		0.029		0.03
CDS _{JUL}		0.044*		0.043		0.058**		0.043		0.05**
CDS _{AUG}		0.046*		0.039		0.052**		0.039		0.075**
CDS _{SEP}		0.059**		0.046*		0.064**		0.046*		0.065**
CDS _{OCT}		0.092**		0.076**		0.091**		0.076**		0.098**
Small to Medium	1.74**	1.74**	1.812**	1.812**	1.683**	1.683**	1.812**	1.812**	1.723**	1.723**
Multi Pack	-1.604**	-1.604**	-1.676**	-1.676**	-1.56**	-1.56**	-1.676**	-1.676**	-1.603**	-1.603**
Intercept	5.962**	5.962**	6.002**	6.002**	5.977**	5.977**	6.002**	6.002**	5.961**	5.961**
N	26826	26826	26826	26826	26826	26826	26826	26826	26826	26826
Adj. R squared	37.14%	37.12%	38.29%	38.27%	35.86%	35.83%	38.29%	38.27%	36.46%	36.43%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months and retailers.

Source: IPART analysis using Invigor Insights Retail data.

Table B.13 Impact of the CDS on red wine using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.063	-0.063	-0.081	-0.081	-0.043	-0.043	-0.081	-0.081	-0.051	-0.051
Time	3.269**		3.047**		3.521**		3.047**		3.253**	
CDS _{NOV-OCT}	-0.124		-0.124		-0.129		-0.124		-0.124	
CDS _{NOV}		-0.044		-0.026		-0.092		-0.026		-0.052
CDS _{DEC}		-0.095		-0.119		-0.054		-0.119		-0.093
CDS _{JAN}		-0.099		-0.083		-0.104		-0.083		-0.1
CDS _{FEB}		-0.053		-0.044		-0.104		-0.044		-0.053
CDS _{MAR}		-0.088		-0.083		-0.084		-0.083		-0.093
CDS _{APR}		-0.14		-0.091		-0.123		-0.091		-0.152
CDS _{MAY}		-0.139		-0.206		-0.136		-0.206		-0.125
CDS _{JUN}		-0.245		-0.227		-0.247		-0.227		-0.235
CDS _{JUL}		-0.157		-0.26		-0.164		-0.26		-0.138
CDS _{AUG}		-0.139		-0.167		-0.137		-0.167		-0.138
CDS _{SEP}		-0.133		-0.075		-0.139		-0.075		-0.153
CDS _{OCT}		-0.151		-0.105		-0.162		-0.105		-0.16
Intercept	52.083**	52.083**	51.731**	51.731**	52.487**	52.487**	51.731**	51.731**	52.158**	52.158**
N	36813	36813	36813	36813	36813	36813	36813	36813	36813	36813
Adj. R squared	48.23%	48.21%	48.28%	48.26%	48.10%	48.08%	48.28%	48.26%	48.21%	48.19%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.14 Impact of the CDS on red wine using a sample of products with prices available from January 2016 (Sample B, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.76	-0.76	-0.77	-0.77	-0.754	-0.754	-0.77	-0.77	-0.752	-0.752
Time	0.178		0.021		0.534**		0.021		0.189	
CDS _{NOV-OCT}	-0.008		0.02		-0.021		0.02		-0.013	
CDS _{NOV}		0.004		0.026		-0.069		0.026		-0.006
CDS _{DEC}		-0.041		-0.089		-0.014		-0.089		-0.012
CDS _{JAN}		0.056		0.086		-0.012		0.086		0.068
CDS _{FEB}		0.049		0.088		-0.031		0.088		0.049
CDS _{MAR}		-0.001		0.098		0.021		0.098		-0.023
CDS _{APR}		-0.064		-0.047		-0.043		-0.047		-0.054
CDS _{MAY}		-0.041		-0.053		-0.058		-0.053		-0.038
CDS _{JUN}		-0.042		0.018		-0.053		0.018		-0.059
CDS _{JUL}		-0.013		-0.058		0.021		-0.058		-0.018
CDS _{AUG}		-0.069		-0.018		-0.082		-0.018		-0.06
CDS _{SEP}		0.012		0.097		0		0.097		-0.066
CDS _{OCT}		0.052		0.097		0.062		0.097		0.067
Intercept	44.957**	44.957**	43.417**	43.417**	46.382**	46.382**	43.417**	43.417**	44.954**	44.954**
N	23528	23528	23528	23528	23528	23528	23528	23528	23528	23528
Adj. R squared	51.57%	51.55%	51.18%	51.15%	51.64%	51.62%	51.18%	51.15%	51.50%	51.48%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.15 Impact of the CDS on red wine using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.458	-0.458	-0.474	-0.474	-0.439	-0.439	-0.474	-0.474	-0.448	-0.448
Time	3.64**		3.413**		3.887**		3.413**		3.632**	
CDS _{NOV-OCT}	-0.177		-0.177		-0.182		-0.177		-0.179	
CDS _{NOV}		-0.09		-0.075		-0.14		-0.075		-0.09
CDS _{DEC}		-0.126		-0.154		-0.092		-0.154		-0.12
CDS _{JAN}		-0.123		-0.11		-0.132		-0.11		-0.119
CDS _{FEB}		-0.097		-0.079		-0.146		-0.079		-0.102
CDS _{MAR}		-0.099		-0.094		-0.096		-0.094		-0.104
CDS _{APR}		-0.2		-0.106		-0.206		-0.106		-0.225
CDS _{MAY}		-0.203		-0.268		-0.217		-0.268		-0.182
CDS _{JUN}		-0.311		-0.301		-0.316		-0.301		-0.298
CDS _{JUL}		-0.238		-0.354		-0.233		-0.354		-0.216
CDS _{AUG}		-0.192		-0.264		-0.143		-0.264		-0.211
CDS _{SEP}		-0.218		-0.097		-0.234		-0.097		-0.26
CDS _{OCT}		-0.23		-0.217		-0.232		-0.217		-0.217
Intercept	54.363**	54.363**	53.811**	53.811**	55.011**	55.011**	53.811**	53.811**	54.469**	54.469**
N	37685	37685	37685	37685	37685	37685	37685	37685	37685	37685
Adj. R squared	54.99%	54.98%	55.04%	55.03%	54.95%	54.93%	55.04%	55.03%	54.95%	54.93%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.16 Impact of the CDS on white wine using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.089	0.09	0.09	0.091	0.084	0.085	0.09	0.091	0.092	0.093
Time	2.284**		2.279**		2.224**		2.279**		2.318**	
CDS _{NOV-OCT}	-0.017		-0.019		-0.011		-0.019		-0.019	
CDS _{NOV}		0.025		0.024		0.027		0.024		0.025
CDS _{DEC}		0.034		0.034		0.036		0.034		0.031
CDS _{JAN}		0.034		0.032		0.038		0.032		0.033
CDS _{FEB}		0.031		0.036		0.039		0.036		0.026
CDS _{MAR}		-0.002		0.005		0.001		0.005		-0.009
CDS _{APR}		-0.003		-0.001		-0.002		-0.001		-0.002
CDS _{MAY}		-0.011		-0.012		-0.001		-0.012		-0.014
CDS _{JUN}		-0.059		-0.072		-0.05		-0.072		-0.066
CDS _{JUL}		-0.058		-0.066		-0.063		-0.066		-0.057
CDS _{AUG}		-0.054		-0.06		-0.054		-0.06		-0.052
CDS _{SEP}		-0.067		-0.071		-0.052		-0.071		-0.07
CDS _{OCT}		-0.073		-0.079		-0.057		-0.079		-0.074
Multipack	-2.53*	-1.626	-2.525*	-1.368	-2.531*	-1.8	-2.525*	-1.368	-2.532*	-1.72
Intercept	159.52**	160.527**	158.702**	159.706**	160.204**	161.211**	158.702**	159.706**	159.633**	160.641**
N	87659	87659	87659	87659	87659	87659	87659	87659	87659	87659
Adj. R squared	49.13%	49.02%	49.28%	49.17%	49.03%	48.91%	49.28%	49.17%	49.08%	48.97%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.17 Impact of the CDS on white wine using a sample of products with prices available from January 2016 (Sample B, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	-0.12	-0.119	-0.119	-0.118	-0.125	-0.124	-0.119	-0.118	-0.116	-0.115
Time	0.801**		0.779**		0.743**		0.779**		0.838**	
CDS _{NOV-OCT}	-0.033		-0.038		-0.025		-0.038		-0.036	
CDS _{NOV}		0.027		0.015		0.02		0.015		0.027
CDS _{DEC}		0.027		0.022		0.03		0.022		0.029
CDS _{JAN}		0.03		0.02		0.035		0.02		0.031
CDS _{FEB}		0.035		0.037		0.042		0.037		0.039
CDS _{MAR}		-0.019		-0.014		-0.012		-0.014		-0.029
CDS _{APR}		-0.025		-0.027		-0.02		-0.027		-0.029
CDS _{MAY}		-0.034		-0.036		-0.019		-0.036		-0.034
CDS _{JUN}		-0.077		-0.094		-0.064		-0.094		-0.086
CDS _{JUL}		-0.077		-0.083		-0.078		-0.083		-0.085
CDS _{AUG}		-0.085		-0.089		-0.079		-0.089		-0.086
CDS _{SEP}		-0.096		-0.103		-0.075		-0.103		-0.102
CDS _{OCT}		-0.102		-0.105		-0.084		-0.105		-0.109
Multipack	-2.414**	-3.987	-2.42**	-3.72	-2.411**	-4.161	-2.42**	-3.72	-2.413**	-4.077
Intercept	150.627**	151.551**	149.802**	150.728**	151.337**	152.26**	149.802**	150.728**	150.736**	151.659**
N	72590	72590	72590	72590	72590	72590	72590	72590	72590	72590
Adj. R squared	60.65%	60.52%	60.78%	60.64%	60.56%	60.42%	60.78%	60.64%	60.60%	60.46%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.18 Impact of the CDS on white wine using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.104	0.105	0.105	0.106	0.099	0.1	0.105	0.106	0.107	0.108
Time	2.324**		2.322**		2.26**		2.322**		2.358**	
CDS _{NOV-OCT}	-0.027		-0.029		-0.021		-0.029		-0.029	
CDS _{NOV}		0.015		0.015		0.017		0.015		0.015
CDS _{DEC}		0.024		0.024		0.026		0.024		0.021
CDS _{JAN}		0.023		0.022		0.028		0.022		0.022
CDS _{FEB}		0.021		0.025		0.028		0.025		0.015
CDS _{MAR}		-0.012		-0.006		-0.009		-0.006		-0.019
CDS _{APR}		-0.013		-0.012		-0.013		-0.012		-0.013
CDS _{MAY}		-0.021		-0.023		-0.011		-0.023		-0.024
CDS _{JUN}		-0.068		-0.083		-0.06		-0.083		-0.075
CDS _{JUL}		-0.068		-0.077		-0.072		-0.077		-0.067
CDS _{AUG}		-0.064		-0.071		-0.063		-0.071		-0.062
CDS _{SEP}		-0.076		-0.08		-0.062		-0.08		-0.08
CDS _{OCT}		-0.082		-0.089		-0.065		-0.089		-0.084
Multipack	-2.531*	-1.468	-2.526*	-1.217	-2.533*	-1.636	-2.526*	-1.217	-2.533*	-1.561
Intercept	159.374**	160.383**	158.562**	159.569**	160.054**	161.064**	158.562**	159.569**	159.485**	160.495**
N	88360	88360	88360	88360	88360	88360	88360	88360	88360	88360
Adj. R squared	49.11%	49.00%	49.26%	49.15%	49.01%	48.89%	49.26%	49.15%	49.06%	48.94%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers, vintages and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.19 Impact of the CDS on spirits using a sample of products with prices available from January 2017 (Sample A, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.044	0.044	0.041	0.041	0.04	0.04	0.041	0.041	0.046	0.046
Time	1.314*		1.141		1.512**		1.141		1.267*	
CDS _{NOV-OCT}	0.206		0.205		0.213		0.205		0.214	
CDS _{NOV}		0.246		0.258		0.255		0.258		0.255
CDS _{DEC}		0.228		0.223		0.251		0.223		0.211
CDS _{JAN}		0.252		0.238		0.257		0.238		0.241
CDS _{FEB}		0.276		0.254		0.216		0.254		0.276
CDS _{MAR}		0.165		0.217		0.183		0.217		0.16
CDS _{APR}		0.191		0.192		0.184		0.192		0.253
CDS _{MAY}		0.174		0.165		0.172		0.165		0.185
CDS _{JUN}		0.16		0.179		0.165		0.179		0.165
CDS _{JUL}		0.181		0.153		0.263		0.153		0.176
CDS _{AUG}		0.185		0.18		0.203		0.18		0.204
CDS _{SEP}		0.198		0.22		0.192		0.22		0.184
CDS _{OCT}		0.222		0.181		0.209		0.181		0.256
Medium	52.88**	52.88**	53.056**	53.056**	52.669**	52.669**	53.056**	53.056**	52.848**	52.848**
Small	-22.629**	-22.629**	-21.678**	-21.678**	-23.527**	-23.527**	-21.678**	-21.678**	-22.769**	-22.769**
Small to Medium	-8.112**	-8.112**	-7.504**	-7.504**	-8.747**	-8.747**	-7.504**	-7.504**	-8.188**	-8.188**
Multipack	-12.876**	-12.876**	-12.975**	-12.975**	-12.872**	-12.872**	-12.975**	-12.975**	-12.839**	52.848**
Intercept	18.975**	18.975**	16.396**	16.396**	21.158**	21.158**	16.396**	16.396**	19.282**	19.282**
N	115743	115743	115743	115743	115743	115743	115743	115743	115743	115743
Adj. R squared	6.80%	6.79%	6.81%	6.80%	6.80%	6.79%	6.81%	6.80%	6.80%	6.79%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.20 Impact of the CDS on spirits using a sample of products with prices available from January 2016 (Sample B, \$ including GST)]

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.144	0.144	0.136	0.136	0.142	0.142	0.136	0.136	0.152	0.152
Time	4.05**		3.797**		4.309**		3.797**		3.992**	
CDS _{NOV-OCT}	0.007		0.013		0.009		0.013		0.004	
CDS _{NOV}		0.012		0.022		0.016		0.022		0.009
CDS _{DEC}		0.013		0.022		0.007		0.022		0.005
CDS _{JAN}		0.014		0.029		0.01		0.029		0.003
CDS _{FEB}		0.031		0.037		0.019		0.037		0.032
CDS _{MAR}		0.021		0.038		0.018		0.038		0.021
CDS _{APR}		0.035		0.045		0.016		0.045		0.08
CDS _{MAY}		-0.008		-0.003		0.007		-0.003		-0.012
CDS _{JUN}		-0.017		-0.008		-0.012		-0.008		-0.021
CDS _{JUL}		-0.013		-0.003		0.057		-0.003		-0.064
CDS _{AUG}		-0.017		-0.024		-0.006		-0.024		-0.001
CDS _{SEP}		-0.012		0		-0.021		0		-0.026
CDS _{OCT}		0.03		0.001		-0.001		0.001		0.026
Medium	59.659**	59.659**	59.818**	59.818**	59.365**	59.365**	59.818**	59.818**	59.635**	59.635**
Small	-18.078**	-18.078**	-17.132**	-17.132**	-19.091**	-19.091**	-17.132**	-17.132**	-18.209**	-18.209**
Small to Medium	-6.527**	-6.527**	-5.905*	-5.905*	-7.284**	-7.284**	-5.905*	-5.905*	-6.593**	-6.593**
Multipack	-12.997*	-12.997*	-13.102*	-13.102*	-13.005*	-13.005*	-13.102*	-13.102*	-12.958*	-12.958*
Intercept	56.96**	56.96**	56.15**	56.15**	57.759**	57.759**	56.15**	56.15**	57.137**	57.137**
N	98226	98226	98226	98226	98226	98226	98226	98226	98226	98226
Adj. R squared	5.99%	5.98%	6.00%	5.99%	5.98%	5.97%	6.00%	5.99%	5.99%	5.97%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers and production regions.

Source: IPART analysis using Invigor Insights Retail data.

Table B.21 Impact of the CDS on spirits using a sample of products with prices available from June 2017 (Sample C, \$ including GST)

	Mean Price		Median Price		Maximum Price		Minimum Price		Most Common Price	
	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly	Overall	Monthly
NSW	0.085	0.085	0.081	0.081	0.081	0.081	0.081	0.081	0.087	0.087
Time	2.036**		1.862**		2.236**		1.862**		1.993**	
CDS _{NOV-OCT}	0.039		0.038		0.045		0.038		0.047	
CDS _{NOV}		0.096		0.111		0.106		0.111		0.104
CDS _{DEC}		0.087		0.079		0.117		0.079		0.07
CDS _{JAN}		0.11		0.091		0.119		0.091		0.104
CDS _{FEB}		0.121		0.105		0.043		0.105		0.121
CDS _{MAR}		-0.015		0.057		-0.005		0.057		-0.026
CDS _{APR}		0.002		0.011		-0.009		0.011		0.06
CDS _{MAY}		-0.014		-0.019		-0.023		-0.019		-0.005
CDS _{JUN}		-0.032		-0.014		-0.026		-0.014		-0.025
CDS _{JUL}		-0.007		-0.036		0.072		-0.036		-0.012
CDS _{AUG}		0.005		-0.025		0.057		-0.025		0.035
CDS _{SEP}		0.038		0.063		0.028		0.063		0.023
CDS _{OCT}		0.074		0.031		0.062		0.031		0.11
Medium	52.113**	52.113**	52.292**	52.292**	51.896**	51.896**	52.292**	52.292**	52.078**	52.078**
Small	-22.534**	-22.534**	-21.582**	-21.582**	-23.436**	-23.436**	-21.582**	-21.582**	-22.676**	-22.676**
Small to Medium	-8.99**	-8.99**	-8.375**	-8.375**	-9.632**	-9.632**	-8.375**	-8.375**	-9.069**	-9.069**
Multipack	-13.186**	-13.186**	-13.287**	-13.287**	-13.182**	-13.182**	-13.287**	-13.287**	-13.149**	-13.149**
Intercept	18.693**	18.693**	16.113**	16.113**	20.874**	20.874**	16.113**	16.113**	19.001**	19.001**
N	116986	116986	116986	116986	116986	116986	116986	116986	116986	116986
Adj. R squared	6.42%	6.41%	6.43%	6.42%	6.42%	6.41%	6.43%	6.42%	6.42%	6.41%

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level. Each model includes dummy variables for individual months, retailers and production regions.

Source: IPART analysis using Invigor Insights Retail data.

C Portfolio analysis of the CDS impact on alcoholic beverage prices

As discussed in Chapter 3, to analyse the CDS impact on promotional prices for alcoholic beverages, we have conducted additional analysis using a **portfolio-based** difference-in-difference approach. This approach does not require prices to be available every month. Specifically, we constructed monthly portfolios consisting of prices of identical products sold by the same retailer(s) operating in both NSW and Victoria. We then computed the average price difference between the NSW portfolio and the Victoria portfolio in each month of the sample period, and evaluated whether the price difference, if any, is statistically significant for the pre-CDS period and for the post-CDS period. The post-CDS period for the portfolio analysis is from December 2017 to October 2018.

One retailer's products dominate the sample used for our portfolio analysis, accounting 73% for beer, 61% for cider and 63% for ready-to-drinks. To rule out the possibility that our results are driven by the concentration of a specific retailer(s) in our sample, we have assessed the average price difference for a number of different retailer groups:

- ▼ **All retailers** sample includes products sold by all retailers
- ▼ **Large Retailer** sample includes products sold by the largest retailer in our sample
- ▼ **All ex Large Retailer** sample includes products sold by all retailers except for those by the largest retailer
- ▼ **Major ex the Large Retailer** sample includes products sold by major liquor retailers except for those by the largest retailer.

D Defining the relevant markets

As discussed in Chapter 7, in defining the relevant markets for analysing whether the CDS has materially restricted competition, we considered:

1. the **product classes and types** being offered and how readily they can be substituted for each other
2. the **geographic space** in which substitution can occur
3. the **functional** level of production in which competition occurs (eg, manufacturing, wholesaling or retailing).

D.1.1 Separate markets for alcoholic and non-alcoholic container beverages

We consider there are separate markets for alcoholic and non-alcoholic container beverages. Recent econometric studies have found a high degree of substitutability between non-alcoholic beverages. For example, sugar sweetened beverages including soft drinks, flavoured mineral waters, energy drinks, fruit juices and cordials are substitutes for diet soft drinks and bottled water.¹⁵⁵ There is also evidence of a high degree of substitutability among alcoholic beverages, including beer, wine and ready-to-drink or pre-mixed spirits.¹⁵⁶

There also appear to be separate subcategories for boutique beverages that are produced or supplied in small volumes but a wide range of types, flavours or styles. For example, craft beers often release multiple product types in small batches throughout a year. We consider that these products are targeted at niche markets and so are not as readily substituted by large volume mass market beers. Similarly, boutique non-alcoholic products form a distinct subcategory of non-alcoholic container beverages.

D.1.2 Distinction between alcoholic and non-alcoholic applies across all sectors

We also consider that the distinction between alcoholic and non-alcoholic container beverage markets applies across the manufacturing, wholesale and retail sectors of these markets. For example:

- ▼ Businesses that manufacture alcoholic drinks require different equipment to those producing non-alcoholic drinks.

¹⁵⁵ Duckett, S., Swerissen, H. and Wiltshire, T. 2016, *A sugary drinks tax: recovering the community costs of obesity*, Grattan Institute, p 58; Sharma S, Hauck K, Hollingsworth B, Siciliani L, *The Effects of taxing sugar-sweetened beverages across different income groups*, Health Economics 23(9) 2014 pp 1159-1184.

¹⁵⁶ Srivastava P, McLaren K, Wohlgenant M and Zhao X, *Econometric Modelling of Price Response by Alcohol Types to Inform Alcohol Tax Policies*, Monash University Department of Econometrics and Business Statistics Working Papers, February 2014, p 20.

- ▼ In the wholesaling space, businesses that supply non-alcoholic beverages are typically small family-run firms that focus on niche food and drink products. The major supermarkets and retailers generally purchase directly from manufacturers rather than using wholesalers.¹⁵⁷ In contrast, the alcoholic beverage wholesale market is dominated by two firms, Metcash Ltd and Independent Liquor Group.¹⁵⁸
- ▼ In the retailing market, businesses that sell alcoholic beverages require a licence with their local authority¹⁵⁹ while those that retail only non-alcoholic drinks do not.

We note however that there is a degree of vertical integration in the industry with some businesses operating across the manufacturing, wholesale and retail sectors.

D.1.3 Geographic market is Australia-wide for manufacturing and wholesaling but there are smaller regional or local submarkets for retailing

We found that the geographic market for manufacturing and wholesaling container beverages is not restricted to NSW but extends Australia-wide. This is consistent with the ACCC's position when it has considered market definitions in relation to the beverage industry in the context of proposed mergers and acquisitions. For example, in 2012, it considered a proposed acquisition by Coca-Cola Amatil Pty Ltd of the non-alcoholic beverages business of Foster's Group Limited. In this case, it found there were separate markets for national production and national wholesale supply of carbonated soft drinks, bottled water, fruit beverages and cordial.¹⁶⁰

However, when considering retail beverage markets, we found that the CDS has had an impact on small NSW retail businesses close to the Victorian border, where consumers may seek to avoid the costs of the CDS by shopping over the border (as discussed in section 7.4.5). The introduction of a container deposit scheme in the ACT in July 2018 and the scheme due to commence in Queensland on 1 November 2018 mean that similar impacts are unlikely to continue in these border areas.

¹⁵⁷ The CIE, *Monitoring the Impacts of the NSW Container Deposit Scheme*, January 2018, p 9.

¹⁵⁸ IBISWorld Industry Report F3606a Liquor Wholesaling in Australia, August 2017, pp 21-22

¹⁵⁹ In NSW this is the Department of Industry - Liquor and Gaming.

¹⁶⁰ ACCC Public Register: Coca-Cola Amatil – Proposed Acquisition for Foster's Non-Alcoholic Beverage Assets, at <http://registers.accc.gov.au/content/index.php/itemId/1069965/fromItemId/751043>, accessed on 19 April 2018.

E List of submissions

Table E.1 List of submission to IPART Issues Paper

Submitter	Date received
Individual – Anonymous (Confidential)	13 February 2018
Individual – Anonymous (Confidential)	13 February 2018
Individual – Anonymous (Confidential)	15 February 2018
Individual – Anonymous (Confidential)	16 February 2018
Organisation – Anonymous (Confidential)	12 March 2018
Organisation – Anonymous (Confidential)	13 March 2018
Organisation – Anonymous (Confidential)	13 March 2018
Organisation – Anonymous (Confidential)	13 March 2018
Individual – T Allport (Confidential)	14 February 2018
Sternwin TA Firstwater Springs (Confidential)	13 March 2018
Individual – Anonymous	13 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	14 February 2018
Individual – Anonymous	15 February 2018
Individual – Anonymous	15 February 2018
Individual – Anonymous	15 February 2018
Individual – Anonymous	15 February 2018
Individual – Anonymous	15 February 2018
Individual – Anonymous	16 February 2018
Individual – Anonymous	17 February 2018
Individual – Anonymous	23 February 2018
Individual – Anonymous	24 February 2018
Individual – A Zaunders	15 February 2018
Individual – B. Batten	16 February 2018
Individual – F. Shaw	15 February 2018
Individual – G. O'Riley	13 February 2018
Individual – J Connell	6 March 2018
Individual – J. Ellis	1 March 2018
Individual – J. Haddon	4 March 2018
Individual – J. Moffitt	16 February 2018

Submitter	Date received
Individual – J. Parry	15 February 2018
Individual – J. Singh	15 February 2018
Individual – L. Townsend	25 February 2018
Individual – M. Bowen	25 February 2018
Individual – M. Ingram	16 February 2018
Individual – M. Thompson	21 February 2018
Individual – R. McKay	15 February 2018
Individual – S. Smith	14 February 2018
Individual – T. Caldwell	28 February 2018
Individual – V. Clayton	17 February 2018
Individual – V. Nielson	15 February 2018
Organisation - Anonymous	24 February 2018
Australian Beverages Council	13 March 2018
DSICA	12 March 2018
Liquor Stores Association NSW ACT	13 March 2018
Mathews IGA Supermarkets	5 March 2018
MGA Liquor	27 March 2018
National Retail Association	13 March 2018
NSW Business Chamber	21 March 2018
Office of the NSW Small Business Commissioner	16 March 2018
Restaurant Catering Industry Association	14 March 2018
The Two Metre Tall Company Pty Ltd	12 March 2018
Thirst for Life	27 February 2018

Table E.2 List of submissions to IPART Progress Report

Submitter	Date received
Individual - Anonymous	27 April 2018
Individual - L Hume	4 May 2018
Individual - R Hunter	8 May 2018
Individual - D Noacco	12 May 2018
Individual – P Dorrian (Confidential)	21 May 2018
Australian Hotels Association NSW – J Green	30 May 2018
Australian Beverages Council Ltd – A Taylor	6 June 2018
Lion – S Barr	8 June 2018
Exchange for Change – P Bruce	8 June 2018
National Retail Association – D Stout	12 June 2018
Coca-Cola Amatil	6 August 2018

Table E.3 List of submissions to IPART Draft Report

Submitter	Date received
Individual - Anonymous	28 September 2018
Individual - Anonymous	3 October 2018
Organisation - Anonymous	28 September 2018
Organisation - Anonymous	1 October 2018
Organisation – Anonymous (Confidential)	21 October 2018
Individual – B. Matthews	30 October 2018
Individual – J. Rindfleish	19 October 2018
ALDI Stores	2 November 2018
Australian Beverages Council	11 November 2018
Coca-Cola Amatil	1 November 2018
Exchange for Change	2 November 2018
Office of the NSW Small Business Commissioner	2 November 2018