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Economists

International comparisons of grocery prices – further report

A report for Foodstuffs

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1. Introduction

1. We have been asked to prepare this further report on international comparisons of grocery prices by the two Foodstuffs cooperatives, ie, Foodstuffs North Island (FSNI) and Foodstuffs South Island (FSSI).

2. The context for this further report is the market study into the retail grocery sector being undertaken by the Commerce Commission (the Commission) and the preliminary finding expressed in the Commission's draft report that:[1]

> While it is difficult to compare grocery prices internationally, a range of data appears to show that New Zealand ranks in the top 10 most expensive grocery markets out of all 38 OECD countries.

3. In undertaking such international price comparisons in its draft report, Commissioner John Small confirmed in the course of the conference proceedings following its draft report that the Commission:[2]

   a. viewed the data published by the OECD and the World Bank as being 'more likely to be reliable since they were sourced from statistical agencies in the different countries; and

   b. converted currencies into a common unit at market exchange rates, rather than purchasing power parity (PPP) indices, 'because grocery products are tradable'.

4. Of particular significance for this report, in discussion as to the use of market as distinct from PPP exchange rates, Commissioner Small also indicated during the conference that:[3]

> I think we'd agree with you that those [grocery retailing services] costs, those [grocery retailing services] functions, and the financial resources used in them and the prices of those resources, so those resources themselves are not readily tradable and so I think we would agree with you. It sounds reasonable to convert those things using PPP exchange rates since they're not tradable.

5. The purpose of this report is to examine in further detail the international comparisons of grocery prices relied upon by the Commission in its draft report and related matters arising from the conference proceedings. In particular, this report examines in further detail:

   a. the suitability of the underlying international price comparisons data and analysis relied on by the Commission as a basis from which to draw conclusions about the state of grocery competition in New Zealand; and

   b. to the extent that any international comparisons of grocery prices are to be made, the considerations that should apply in any decision to apply market exchange rates to that portion of the retail cost of groceries for which it may be concluded that the relevant resources are 'readily tradable'.

6. This report should be read in conjunction with our earlier report on the same subject, the substantive elements of which we do not reproduce here.[4]

7. The remainder of this report is structured as follows:

[1] Commerce Commission, *Market study into retail grocery sector Draft report – Executive summary*, 29 July 2021, p 8.

[2] Commerce Commission, *Day 4 - Transcript of grocery market study conference*, 27 October 2021, p 5.

[3] Commerce Commission, *Day 4 - Transcript of grocery market study conference*, 27 October 2021, p 6.

[4] HoustonKemp, *International comparisons of grocery prices*, 9 September 2021.

a. in section 2, we discuss the suitability of the international price comparisons data as a basis from which to draw conclusions about the state of grocery competition in New Zealand; and

b. in section 3, we explain that the Commission's analysis would be improved by adjusting prices using purchasing power parity (PPP) rather than market exchange rates.

2. International data sources

8. The Commission undertook a comparison of the price of groceries in New Zealand and the price in several other countries, which it used to inform the preliminary findings of its market study. The Commission notes that it is difficult to compare price levels between countries, but nevertheless concludes that the prices for groceries in New Zealand are high by international standards, ie:[5]

> While it is difficult to compare grocery prices internationally, a range of data appears to show that New Zealand ranks in the top 10 most expensive grocery markets out of all 38 OECD countries.

9. In this section we explain the findings of further research as to the nature of the underlying data on which the Commission's international price comparisons rely, and our conclusion that these data have intrinsic shortcomings that limit the ability to draw any conclusions as to the nature and extent of competition in New Zealand's retail grocery sector.

2.1 Average price comparisons do not account for country differences

10. The comparisons presented by the Commission of grocery prices in New Zealand against those in member countries of the Organisation for Economic Co-operation and Development (OECD) are primarily drawn from:[6]

    a. OECD data for national annual average prices and expenditures for various classes of products, inclusive of tax, most recently available for 2017 (for prices) and 2019 (for expenditures);[7] and

    b. the World Bank's International Comparisons Program (ICP) data for national annual average prices and expenditures for various classes of products, inclusive of tax, most recently available for 2017 (for both prices and expenditures).[8]

11. The OECD and ICP datasets were constructed primarily to assist with measuring economic activity. For example, the principal objective of the ICP is to provide the means for converting national estimates of gross domestic product (GDP) into a common currency.[9] Consequently, prices reported in the datasets are average prices that aim to estimate the average price paid by consumers,[10] rather than illustrating the range of prices that may be available to consumers.

12. In its draft report, the Commission acknowledged that the absence of homogeneity between grocery products makes international comparisons of prices difficult:[11]

> …variation of quality and range of goods across grocery products may mean that apparently similar price levels mask substantially different outcomes for consumers

13. Our further analysis of these data suggests that the Commission's observation does not fully acknowledge the significance of the inherent limitations of cross-country comparisons that rely on these datasets. The principal theme of our comments stem from our observation that these datasets

[5] Commerce Commission, *Market study into the retail grocery sector Draft report – Executive summary*, 29 July 2021, p 8.

[6] The Commission also draws data from Numbeo and the United States Department of Agriculture. See: Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 401, paras D6 and D9.

[7] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, pp 401-402, paras D5 and D10.

[8] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, pp 401-402, paras D5 and D10.

[9] The World Bank, *Measuring the real size of the world economy, The framework, methodology, and results of the International Comparison Program – ICP,* 2013, p 197; Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, pp 401-402, paras D5 and D10.

[10] The World Bank, *Purchasing power parities and the size of world economies: Results from the 2017 International Comparison Program*, 2020, p 79.

[11] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 54, para 3.86.2.

are designed to measure economic activity and therefore to answer questions such as 'how much do consumers spend on groceries?' This is subtly distinct from the question being asked when undertaking a price comparison, ie, 'how much do groceries cost?'

14. The ICP dataset requires countries to collect prices on a range of products that the country deems:[12]

    a. 'representative' or 'important', being those captured in the country's consumer price index (CPI), or otherwise identified through expert judgement or common knowledge as products that represent a large expenditure share in the product's subgroup in that country; and

    b. 'less important', being those products that do not represent a large expenditure share in the product's subgroup in that country.

15. Products that are deemed 'important' in a country are given higher weight in calculating average price at the 'basic heading' level. Specifically, 'important' products are assigned a weight of three and 'less important' products are assigned a weight of one.[13] Significantly for the purposes of the Commission's analysis, goods determined as 'important' can differ across countries. The ICP explains that:[14]

> For example, cheddar cheese might be sold in almost all food shops, but Brie is available only in specialty shops [in a particular country]. Cheddar, then, is important, and Brie is less important [in that country]. Kleenex facial tissues are sold in every supermarket and pharmacy [in a particular country]. A "100 piece box of Kleenex facial tissues" is thus an important product and other types of tissues are less important [in that country].

16. However, products deemed 'important' are likely to differ across countries, especially where consumer preferences and incomes also differ. For example, the process underpinning the collection of data for Finland, Iceland and Israel may well determine that some products in those countries are 'less important', whereas those same products may be deemed 'important' in New Zealand, and vice versa.

17. The principal consequence of these judgements – which are not readily open to outside scrutiny – is that the ICP data used by the Commission places different weight on different products across different countries.

18. Moreover, the price data do not take full account of differences in income levels across countries, which can be expected to feed back into consumer demand.

19. Put simply, the average prices reported in the ICP data are not made on a like-with-like basis, because the average prices reflect different weights for different products, in accordance with different consumer demand patterns. More generally, the average prices reported in these datasets reflect consumer incomes and preferences, and the range of options available to consumers in exercising their preferences. It follows that average prices in wealthier areas or countries are likely to be higher than in less-wealthy areas, purely as a result of the outworking of stronger consumer demand.

20. One simple example of this is in the average price for eggs.[15] Many countries now have a range of eggs available, from free-range to caged hen eggs. In more wealthy countries, one might expect more consumers to buy higher-priced, more sustainably farmed egg products, although low-priced cage eggs may be available. Nevertheless, the average price of eggs (paid by consumers) captured by the

[12] The World Bank, *Measuring the real size of the world economy, The framework, methodology, and results of the International Comparison Program – ICP,* 2013, pp 205-206.

[13] Vigil-Oliver, W and Chauhan, S, *Demystifying ICP purchasing power parity calculations using Python*, 7 April 2021, available at https://blogs.worldbank.org/opendata/demystifying-icp-purchasing-power-parity-calculations-using-python, accessed 2 December 2021.

[14] The World Bank, *Measuring the real size of the world economy, The framework, methodology, and results of the International Comparison Program – ICP,* 2013, p 206.

[15] 'Eggs and egg-based products' is a 'basic heading' classification in the ICP. The World Bank, *Measuring the real size of the world economy, The framework, methodology, and results of the International Comparison Program – ICP,* 2013, p 82.

ICP data would be higher in wealthier countries than in less wealthy countries, even though a similar low price for (cage) eggs may be equally available in each country.

2.2 Comparing average prices does not inform the intensity of competition

21. The Commission notes that the OECD and ICP datasets are created with price data collected by each participating country's national statistical organisation (in New Zealand, by Stats NZ).[16] It is therefore unsurprising that analysis of the ICP and OECD datasets result in rankings that are 'generally consistent' – the two datasets draw on mostly the same data sources.[17]

22. The reported average price of a product available at multiple stores or in multiple regions across a country is intended to represent the weighted average of prices at those stores/regions, reflecting the relative frequency with which the item is purchased at each store.[18] The aggregation of price data by this principle means that the data represent the average price paid by consumers,[19] rather than the range of prices – and associated service level options – that may be available to consumers.

23. In practical terms, this means that if the same grocery item is available at a 'no frills' retail outlet for a relatively low price, and at a specialist, high-service retail outlet at a much higher price, the datasets will draw on both price observations to establish a blended price, weighted according to some form of assessment as to relative expenditure at each type of store.[20] Again, the process by which such weighting occurs is not readily open to scrutiny, and cannot be presumed to be consistent as between one country and another.

24. An important consequence of measuring prices in this way is that movements in observed (average) prices cannot necessarily be expected to correlate with changes in the intensity competition. By way of example, the observed average price after entry into a local market by a high-quality and higher-priced supermarket that had previously been served by an incumbent monopolist is likely to be *higher* following entry of the new supermarket, because some consumers would reduce purchases at the incumbent supermarket in favour of the higher priced entrant offering much better service and/or product quality.

25. Such an outcome would be expected even if the incumbent, monopoly supermarket did not change its prices. In other words, annual average prices may be observed as increasing, even though competition in a local market had increased upon entry of a high-quality supermarket.

26. Higher observed average prices may therefore be consistent with, for example:

    a. vigorous competition with differentiated retailers offering different price, quality, range and service options;

    b. low competition with a local monopoly changing prices above cost; or

    c. neither of the above.

27. Put simply, any observations derived from the average price datasets relied upon by the Commission are potentially consistent (and not inconsistent) with a wide range of competition outcomes.

[16] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 56, para 3.92.

[17] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 57, para 3.100.

[18] The World Bank, *Guidance note: Meeting ICP price data requirements during the COVID-19 pandemic*, 3 February 2021, p 3.

[19] The World Bank, *Purchasing power parities and the size of world economies: Results from the 2017 International Comparison Program*, 2020, p 79.

[20] The World Bank describes national average annual prices as 'ideally…an adequately stratified design and a hierarchical weighting scheme to average prices accordingly based on sales volume per item, outlet and geographical area', but notes that in practice weighting is often undertaken on a simpler basis. The World Bank, *Guidance note: Meeting ICP price data requirements during the COVID-19 pandemic*, 3 February 2021, p 3.

28. Consistent with the inherent difficulties in international comparisons of grocery prices – including those recognised by the Commission – similar market studies or inquiries undertaken in other jurisdictions did not lend much weight to price comparisons. For example, in its 2008 grocery market investigation the United Kingdom's Competition Commission (now Competition and Markets Authority) discussed the limited value of cross-country comparisons for the purposes of informing an assessment of competition:[21]

> International comparisons of prices and price trends are another means of looking at the effectiveness of competition between grocery retailers. There are, however, several problems associated with international price comparisons. Different countries have different consumer tastes and shopping behaviour, for example, that lead to substantial differences in the structure of grocery retailing. Further, exchange rate issues, difficulties in the comparability of products and pack sizes, differences in the role of tax in food prices, and different property markets and planning regimes all impact differentially on the prices of groceries in different countries. Moreover, price is only one aspect of the grocery retail offer, and grocery retailer margins may provide a better indication of the effectiveness of competition. (We discuss grocery retailer margins in paragraphs 3.20 to 3.23.)
>
> …
>
> While the Eurostat data may indeed give a valid picture of relative price levels, given the issues set out in paragraph 3.43, we believe that there is only limited value to be gained from an extensive cross-country comparison of grocery prices for the purposes of informing an assessment of the effectiveness of competition in UK grocery retailing. As a result, we have not sought to further inform our investigation through such an analysis.

29. In its 2008 inquiry into groceries, the Australian Competition and Consumer Commission (ACCC) identified that grocery prices in Australia had been increasing at a faster rate than in many other OECD countries, but cautioned that food prices can increase for reasons other than the level of competition in the grocery sector.[22]

30. When it did use international price data, the ACCC used data on *changes* in price levels from the OECD or from consumer price index (CPI) sources, ie, it normalised prices across countries at a given point in time and compared the changes across countries.[23] Finally, the ACCC identified that comparisons across countries are difficult but that more insight can be derived when otherwise uncontrolled for factors are similar, such as between Australia and New Zealand.[24] This is consistent with the analysis set out in our previous report.[25]

[21] Competition Commission, *The supply of groceries in the UK market investigation*, Final report, 30 April 2008, pp 42-43, paras 3.43 and 3.45

[22] ACCC, *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries*, July 2008, pp 13-14.

[23] ACCC, *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries*, July 2008, pp 25-29.

[24] ACCC, *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries*, July 2008, pp 27.

[25] See: HoustonKemp, *International comparisons of grocery prices*, 9 September 2021, paras 67-70.

3. Market versus PPP exchange rates

31. In undertaking its international comparisons of grocery prices in its draft report, the Commission used market exchange rates to compare prices between countries, rather than PPP.[26] It set out that:[27]

> The market exchange rate is the rate of conversion between currencies that is offered on the foreign exchange market. This rate is used to convert currencies involving transactions overseas, as it reflects the actual prices paid by importers and exporters for foreign goods.
>
> PPP is a rate for converting currencies that aims to remove price differences between countries. It is calculated by dividing the market exchange rate by the overall price level of the economy. This means that when prices are converted using PPP, the same amount of currency in one country would be able to purchase, on average, the same amount of goods in all other countries. PPP is often used when comparing the relative size of economies because it compares all currencies in terms of the amount of goods that an economy can purchase.

32. In a previous report, we explained that although international price comparison analysis allows for limited findings in relation to competition (see the previous section), the analysis would be improved by adjusting prices using a PPP index rather than market exchange rates, because:[28]

    a. retail grocery services in New Zealand are not traded with those in other countries and other large components of the retail cost of supplying groceries are also not traded across countries, including: labour, land, distribution services, professional services and grocery items that are locally produced;

    b. high-income countries such as New Zealand are likely to have higher costs for such non-traded products and services, which are likely to bias prices upwards when using a market exchange rate; and

    c. groceries are only a small part of a country's gross domestic product (GDP), and so calculating a PPP using expenditure across the economy should not substantially reduce the price effects being investigated, ie, those between grocery items.

33. In the conference proceedings following the Commission's draft report, Commissioner Small observed that although the Commission initially used only market exchange rates to compare prices in its draft report:[29]

> …I think we'd agree with you that those [grocery retailing services] costs, those [grocery retailing services] functions, and the financial resources used in them and the prices of those resources, so those resources themselves are not readily tradable and so I think we would agree with you. It sounds reasonable to convert those things using PPP exchange rates since they're not tradable.

34. Mr Houston noted that a grocery item being 'tradable' is not sufficient to conclude that a market exchange rate is appropriate, because:[30]

> …if something's not traded then usually there's a reason for that.

35. Building on these principles, it is uncontroversial that if a product or service is highly traded, is not subject to local tax differentials and its associated transport costs are relatively low or nil, then it is appropriate for an international price comparison process to adopt the market exchange rate. By way

[26] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 55, para 3.90.

[27] Commerce Commission, *Market study into the retail grocery sector Draft report*, 29 July 2021, p 55, para 3.89.

[28] HoustonKemp, *International comparisons of grocery prices*, 9 September 2021, para 57.

[29] *Day 4 - Transcript of grocery market study conference*, 27 October 2021, p 6.

[30] *Day 4 - Transcript of grocery market study conference*, 27 October 2021, p 7.

of illustrative example, the use of a market exchange rate would clearly be appropriate if one was to compare the price of a barrel of oil in one country with another. The same considerations would apply to, say, financial products, for which transport and transactions costs are either nil or very small.

36. However, for the purpose of comparing the average retail price of grocery products, the relevant economic considerations remain heavily weighted towards a PPP exchange rate being the preferred or default basis for undertaking international price comparisons. In simple terms, most retail grocery items are not actively traded, at least in the form at which they appear in a retail store.

37. The use of a market exchange rate for a proportion of the average retail grocery prices being compared using the OECD and ICP datasets would only be valid to the extent that the Commission could be satisfied that:

    a. the 'law of one price' could reasonably be taken to apply to a particular grocery product, ie, cross-country arbitrage can be expected to ensure that the price of the product will be equal in all countries after conversion at the market exchange rate;[31] and

    b. even then, the scope for the appropriate adoption of a market exchange rate would be limited to:

        i. that component of the supply cost faced by the supermarket for the particular product that could be expected to be governed by the law of one price; and

        ii. the weight the particular product(s) occupy in the average price calculation that is being compared.

38. In other words, for a market exchange rate-based comparison for a particular grocery item to be economically valid, the Commission would need to satisfy itself that transaction and transportation costs, as well as taxes and quarantine/biosecurity laws for that item, are sufficiently modest that cross-country arbitrage could be expected to apply, and that any multinational suppliers with market power are not engaging in geographic price discrimination.

39. By way of example, this would involve being satisfied that a particular retail grocery item was actively traded (ie, exported from or imported into New Zealand) and that international transportation costs are sufficiently low to facilitate trade at a common domestic and international price.

40. Candidate grocery items to which a market exchange rate could potentially be applicable may include, for example:

    a. dairy or meat products, on the basis that they are major exports from New Zealand; and/or

    b. bulk grains, on the basis that they are largely imports into New Zealand.

41. However, even for these products, a market exchange rate should only by applied to the component of the cost of those goods that is routinely traded, and not to any local-only costs, such as local processing and packaging for retail sale, or local storage and distribution costs.

42. In summary, the economic considerations relevant to the choice between the adoption of a market as distinct from PPP exchange rate for the purpose of undertaking international price comparisons suggest that the Commission should:

    a. by default, convert international price data into a common currency unit by means of a PPP; and

    b. apply a market exchange rate only to the relevant proportion of those specific grocery products for which the law of one price can be expected to apply.

[31] Eurostat, *Eurostat-OECD methodological manual on purchasing power parities*, 2012, p 15, para 15.

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