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Market Study into the Retail Fuel Sector

Working paper on assessing profitability

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Executive Summary

- X1. This paper discusses our proposed approach to assessing the profitability of firms participating in the retail fuel markets. It discusses the conclusions we might be able to draw from our profitability assessment, and the potential limitations of it.

Why we propose to assess the profitability of firms supplying fuel to retail fuel markets

- X2. The terms of reference for the retail fuel study require us to consider whether wholesale and retail prices for petrol and diesel are consistent with those expected in workably competitive markets.
- X3. Profitability analysis is one way of assessing prices. Levels of profitability which persistently exceed a normal level of return may indicate that competition has not been effective in delivering competitively priced fuel to retail consumers.

Potential conclusions from, and limitations of, profitability analysis

- X4. Profitability tends to vary over time. High levels of profitability over short periods of time do not necessarily indicate a problem with competition. In a market economy prices and profits provide the signals that direct resources to their most valuable use.
- X5. Of more concern from a competition perspective would be indications that levels of profitability have significantly and persistently exceeded a normal rate of return. Estimates of the cost of capital provide an estimate of a normal rate of return.
- X6. The assessment of profitability by itself will not demonstrate that competition in the retail fuel sector is or is not effective, but it can be one indicator of effectiveness. We are also undertaking analyses in a range of other areas. These are set out in the Focus Areas Working Paper, also released today.

How we propose to assess profitability

- X7. To assess profitability in this study we propose to rely on a range of measures including, for example:
- a. margins;
 - b. return on capital employed;
 - c. expectations of returns on new investment; and
 - d. cash-flow based techniques such as internal rates of return.
- X8. The choice of measure will be influenced by the availability of suitable information. We propose to look at the profitability of a range of firms in the sector, looking at backward-looking assessments of profitability and, where information is available, at forward-looking assessments too.
- X9. Judgement will be required to assess the available evidence on the levels of profitability and to reach any conclusions on how that evidence should be interpreted.

- X10. The discussion in this paper is specific to this market study of the retail fuel sector, and it is not necessarily reflective of how we would assess profitability for other sectors in future market studies, or in respect of other parts of the Act.

Introduction

Purpose of this paper

1. This paper discusses our proposed approach to assessing the profitability of firms participating in retail fuel markets. Profitability means the size of firms' profits relative to the size of their businesses. For example, the amount of profit relative to the amount of fuel sold, or to the amount of investment that has been made in the business.
2. Specifically, this paper:
 - 2.1 sets out why we propose to assess the profitability of firms supplying fuel to the retail markets;
 - 2.2 outlines what conclusions we might draw from this assessment and potential limitations on these conclusions; and
 - 2.3 explains how we propose to assess profitability.

Background

3. We administer the Commerce Act 1986 (the Act). The purpose of that Act is to promote competition in markets for the long-term benefit of consumers within New Zealand.¹ The Act defines competition as workable or effective competition, and this paper uses the words effective or workable interchangeably when describing competition.
4. The Minister of Commerce and Consumer Affairs has asked us to undertake a competition study (or market study) into New Zealand retail fuel markets. This is the first market study under the new Part 3A of the Commerce Act. We have previously explained [our statement of process](#) and set out [our view on the preliminary issues](#).²

Why we have released this paper on assessing profitability

5. We have issued this paper on our approach to assessing profitability in the retail fuel markets for the following reasons.
 - 5.1 This is our first market study under Part 3A, and profitability assessment is not a tool we use generally in our work in assessing competition under Part 2 of the Commerce Act.

¹ Section 1A.

² Commerce Commission "Market Study into the Retail Fuel Sector – Statement of Process: Our intended process and how you can contribute" (12 December 2018). Commerce Commission "Market study into the retail fuel sector – Invitation to comment on preliminary issues" (31 January 2019).

- 5.2 Given this is not a competition investigation, references to a “market” in this paper do not necessarily refer to a formally defined market for the purposes of Part 2 and 3 of the Commerce Act.³
- 5.3 Our profitability assessment may influence the conclusions of our market study.
- 5.4 Assessing profitability is not a mechanical process and judgement is required. There are limitations due to data availability and the methodology applied. These limitations affect the strength of the conclusions which can be drawn.
- 5.5 Stakeholders expressed a range of comments on the potential use of profitability assessments in assessing competition in the retail fuel markets in their comments on our preliminary issues paper.

6. This paper sets out our proposed approach.

Profitability assessment in subsequent market studies

- 7. This paper focuses on assessing profitability in retail fuel markets.
- 8. Differences between markets may mean that alternative approaches are required to assess profitability in other markets we may study under Part 3A of the Act. For example, some techniques discussed in this paper may not be appropriate for industries with low levels of fixed assets, such as some service-based industries.
- 9. Further, the terms of reference may differ for subsequent market studies. While assessing profitability is a key part of this market study, the focus on (and extent of) any profitability assessment in subsequent studies may differ significantly.

Profitability analysis under other parts of the Act

- 10. Profitability is relevant to other parts of our work, such as the sector-specific regulation we apply under Part 4 of the Act. However, the context for that work differs from our retail fuel study.
- 11. For example, under Part 4 of the Act we can:
 - 11.1 use sector-specific regulation to, among other things, limit the ability of monopoly providers of services to extract excessive profits; and
 - 11.2 undertake inquiries to see whether regulation should be extended to cover additional services for which there is little or no competition, and little or no likelihood of a substantial increase in competition.
- 12. In Part 4 inquiries we are required to assess whether there is scope to exercise substantial market power in relation to the goods or services, and whether the

³ Commerce Commission “Mergers and acquisitions guidelines” (July 2013), Chapter 3.

benefits of regulating the goods or services under Part 4 would materially exceed the costs of regulation.⁴ The potential benefits of regulation include limiting suppliers' ability to extract excessive profits. Therefore, we may seek to quantify the extent of excessive profits as part of a cost-benefit analysis required in a Part 4 inquiry.

13. In contrast, there is competition between multiple suppliers in retail fuel markets. Our study is focused on assessing whether there are factors which are affecting or hindering that competition. We are not required to undertake cost-benefit analysis, and therefore we are not required to quantify the level of excessive profits being earned in the retail fuel sector (if any).

Parties can comment on this working paper

14. We are not seeking further formal submissions on this topic at this time. However, if interested parties wish to provide feedback on this paper, they can do so by sending written comments to:

Keston Ruxton

c/o marketstudies.submissions@comcom.govt.nz

15. Any written comments on this paper should be provided no later than **5pm, Tuesday 7 May 2019**.
16. Interested parties will have an opportunity to formally make submissions on our approach to assessing profitability when we issue our draft report.

Format for providing feedback

17. If you choose to provide comments on this paper, please include your company name, or the name of the person providing the comments, and "Feedback on working paper – Focus areas" in the subject line of your email. We prefer that comments are provided in both a format suitable for word processing (such as a Microsoft Word doc), and a 'locked' format (such as a PDF) for publication on our website.

Disclosure of your feedback

18. We request confidential and public versions of your comments, so that a public version may be published on our website.
19. We offer guidance below where interested parties wish to provide information in confidence.
- 19.1 Where confidential information is included, such information should be clearly marked.

⁴ Section 52G and section 52H.

- 19.2 Both confidential and public versions of your comments should be provided.
- 19.3 The responsibility for ensuring that confidential information is not included in a public version rests on the party providing the comments.

Why we propose to assess profitability

20. We propose to consider the profitability of players involved in the retail fuel markets as:
 - 20.1 the terms of reference direct us to look at features of the markets that are not in the long-term interest of consumers, and to consider whether the prices for retail fuel are consistent with those expected in workably competitive markets;
 - 20.2 levels of profitability that are persistently above competitive levels may be an indicator that competition is ineffective in delivering competitively priced petrol and diesel to consumers; and
 - 20.3 assessing profitability may help identify the factors affecting competition and inform any recommendations we make.
21. We discuss each of these reasons in turn below.

The long-term interest of consumers and prices in workably competitive markets

22. The terms of reference for our study were issued by the Minister of Commerce and Consumer Affairs. Among other things, the terms of reference require us to consider whether:
 - 22.1 there are features of retail petrol and diesel markets that are not in the long-term interests of consumers; and
 - 22.2 the wholesale and retail prices of petrol and diesel are consistent with those expected in workably competitive markets.
23. The terms of reference are set out below.

Terms of reference for competition study into retail fuel markets

I, Kris Faafoi, Minister of Commerce and Consumer Affairs, pursuant to section 51(1) in Part 3A of the Commerce Act 1986, require the Commerce Commission to carry out a competition study into any factors that may affect competition for the supply of retail petrol and diesel used for land transport throughout New Zealand.

Matters to be considered in the study include, but are not restricted to:

1. the structure of the industry;
2. the extent of competition at the refinery, wholesale and retail levels, including the role of imports;
3. any factors that may hinder competition between industry participants;
4. the conditions for entry by potential competitors, including independent suppliers, and/or the conditions for expansion;
5. whether wholesale and retail price and service offerings of petrol and diesel are consistent with those expected in workably competitive markets; and
6. features of retail petrol and diesel markets that are not in the long-term interests of consumers.

The Commerce Commission must make its final report for this study publicly available by 5 December 2019.

24. Excessive prices are not in the long-term interest of consumers as fuel for land transport is an essential purchase for many New Zealanders. It is also a significant cost with average petrol costs of around \$1500 per passenger vehicle per annum.⁵
25. In a workably competitive market the prices for goods and services will tend toward efficient costs. That is, prices will tend towards long run marginal costs over time. Firms that cannot achieve efficient costs, will be undercut by rivals offering lower prices, and will lose market share.

Persistently high levels of profitability may be an indicator that competition is ineffective

26. In a competitive market, in the long run an efficient firm would achieve profits that, after covering its costs, are sufficient to compensate the providers of debt and equity capital (i.e., the cost of capital). When profits are higher than the cost of capital, a firm earns “excess” profits.

⁵ Using data from the Ministry of Transport’s website (<https://www.transport.govt.nz/mot-resources/vehicle-fleet-statistics/>) and assuming a travel distance of 10,300 km per annum, fuel efficiency of 7.6 litre per 100 km travelled, and an average 2017 fuel price of 199 cents per litre.

27. When firms' profits are persistently above a normal return (the cost of capital), this may indicate that competition is not working effectively for the long-term interests of consumers. When businesses face effective competition, suppliers have strong incentives to deliver goods and services which reflect consumers demands at efficient costs. If firms can maintain high prices and persistently earn excess returns, that may indicate competition is not effective.
28. However, as we discuss more fully below, high levels of profitability do not by themselves demonstrate that competition is not working and is not effective. This was reflected in the High Court's discussion of the nature of workable competition in the Wellington International Airport decision.⁶

In our view, what matters is that workably competitive markets have a tendency towards generating certain outcomes. These outcomes include the earning by firms of normal rates of return, and the existence of prices that reflect such normal rates of return, after covering the firms' efficient costs.

Of course, firms may earn higher than normal rates of return for extended periods. On the other hand, firms may earn rates of return less than they expected and less than commensurate with the risks faced by their owners when they made their investments. They may even make losses for extended periods. Prices in workably competitive markets may never exactly reflect efficient costs, including a normal rate of return.

But the tendencies in workably competitive markets are towards such returns and prices.

Assessing profitability may help identify the factors affecting competition and inform any recommendations we make

29. Assessing profitability may also assist in the following.
- 29.1 Identifying the source of high profits. For example, high levels of profitability at one level of the supply chain (e.g., the wholesale level), or one area (e.g., the South Island), may suggest the factors affecting competition are more significant in that level or area.
- 29.2 Determining the impact of high profitability on the price paid by retail fuel consumers. While the terms of reference for this study do not require us to do a cost-benefit analysis of any options we may identify to improve competition, we would want to consider the potential benefit to consumers in framing any recommendations we may eventually make.

Potential conclusions from, and limitations of, profitability analysis

30. This section outlines:
- 30.1 what conclusions we might draw from our profitability analysis; and

⁶ Wellington International Airport & Others v Commerce Commission [2013] NZHC 3289 [11 December 2013], paragraphs 18-20.

30.2 limitations on our profitability analysis for the retail fuel markets.

What conclusions can be drawn from profitability analysis

31. This section discusses the possible conclusions that could be drawn from our profitability assessment, noting:
- 31.1 the approaches taken by other competition agencies;
 - 31.2 the possible reasons why profitability may be high; and
 - 31.3 that profitability analysis is only one indicator of the level of competition in a market.

Approaches taken by other competition agencies

32. Competition agencies can look at profitability to draw insights about the level of competition in a market. For example, the OECD's roundtable on *Market Studies Methodologies for Competition Agencies* notes that profitability and cost pass-through analyses can be a helpful tool to address consumer concerns by investigating:⁷
- 32.1 potential tacit collusion or co-ordination (when conducted at the industry level);
 - 32.2 barriers to entry or exclusionary conduct (when conducted at the firm level); and
 - 32.3 fairness concerns associated with cross-subsidisation among consumers (when conducted at the product level).
33. The UK Competition Commission's guidelines for market investigations state that:⁸
- Firms in a competitive market would generally earn no more than a 'normal' rate of profit—the minimum level of profits required to keep the factors of production in their current use in the long run, i.e. the rate of return on capital employed for a particular business activity would be equal to the opportunity cost of capital for that activity.
34. In a recent market investigation, the UK Competition and Markets Authority considered that:⁹

⁷ OECD's Market Studies Methodologies for Competition Agencies "Executive Summary of the Roundtable on Methodologies for Conducting Market Studies" (Working Party No. 3 on Co-operation and Enforcement June 2017 Roundtable), page 4. Dr Helen Jenkins, makes the same point: Jenkins, "Analytical techniques for market studies" (20 June 2017), p.3.

⁸ Competition Commission "CC3: Guidelines for market investigations: their role, procedures, assessment and remedies" (April 2013), paragraph 116, adopted by the UK Competition and Markets Authority.

⁹ Competition and Markets Authority "Energy Market Investigation, Approach to Financial and profitability analysis" (8 December 2014), paragraph 8.

The purpose of conducting profitability analysis, therefore, is to understand whether the levels of profitability (and therefore prices) achieved by the firms in the reference markets are consistent with levels we might expect in a competitive market. If excess profits have been sustained over a relatively long time period, this could indicate limitations in the competitive process.

35. The OECD roundtable notes that excess profitability is not in itself proof of a competition problem.¹⁰

Possible reasons why profitability may be high

36. As explained above, although high levels of profitability may indicate weak or ineffective competition, analysis of firm and industry profitability cannot by itself support a conclusion as to whether competition is or is not effective in meeting the long-term interest of consumers.
37. Even where competition is effective, the profitability of some suppliers may be above normal or competitive levels. For example, this may occur for the following reasons.
- 37.1 A firm has introduced some new or improved product or service, or otherwise differentiated themselves to attract more customers. Over time, competitors may respond by improving their own offers to more effectively compete for customers' spending.
- 37.2 One (or more) firm's superior management of costs may secure higher returns for itself at prevailing market prices. Over time, other firms in the industry may seek to replicate the cost advantage, such that the higher returns from superior cost management does not endure in the medium-long term.
- 37.3 High profitability can be a signal for additional resources to be allocated to the market. Firms may enter, expand, or innovate to increase supply. This may increase competition, improve the range of offers to consumers, lead to a better combination of price and quality for consumers, and ultimately the profitability of suppliers reduces toward normal levels.
- 37.4 If too much additional capital enters an industry the returns to suppliers may decline below normal levels. If that was sustained it may result in some players contracting or leaving the industry. Their contraction or exit may allow the remaining suppliers to increase prices and improve their margins.
- 37.5 As a result, profitability in the short term may be above, below or around normal levels (the cost of capital) even if competition is workable or effective.

¹⁰ OECD's Market Studies Methodologies for Competition Agencies "Executive Summary of the Roundtable on Methodologies for Conducting Market Studies" (Working Party No. 3 on Co-operation and Enforcement June 2017 Roundtable), page 4.

38. Examples of these scenarios may be present, to some extent, in the retail fuel industry.
- 38.1 Z and BP point to their strategies of increase in their high-value product offerings (including, for example, fuel additives, fast pay initiatives, food and coffee offerings) as examples of why they have been able to attract more customers.¹¹ Other players such as Gull, Waitomo and NPD, have developed unmanned sites offering attractively-priced fuel in locations even where the volumes of fuel sold are considerably lower.
- 38.2 Z and BP point to the efficiencies of their shared ownership of midstream infrastructure (including terminals, primary distribution).¹²
- 38.3 Fuel prices have also varied materially over time as firms have entered, expanded, contracted or left the industry. This is evidenced by comparisons of New Zealand fuel prices and margins with those in other countries.
- 38.3.1 New Zealand’s retail fuel prices were high relative to those in other countries prior to the arrival of Challenge and Gull from 1998.¹³
- 38.3.2 Prices and margins declined in the 2000s to a point where several players felt they were not sufficient to attract investment (leading to some divestment).¹⁴
- 38.3.3 After that point, prices and margins rose to a point where NZ retail fuel prices, expressed on a pre-tax basis, were among the highest in the OCED (and higher than in most Pacific Island nations).¹⁵
- 38.3.4 in recent years there has been a growing number of new retail sites, retailers, and increased investment in the industry – this entry and expansion may reduce future profitability.
39. Superior profitability can also come from early mover advantages such as securing key retail sites, and the ownership and preferential access to key infrastructure. This may provide significant cost advantages and superior profitability.

¹¹ Z Energy “Market Study into the Retail Fuel Sector: Z Energy’s Response to Invitation to Comment on Preliminary Issues” (21 February 2019), para 30.1, 164. BP “Market Study in the retail fuel sector – BP New Zealand Comment on Preliminary Issues” (21 February 2019), page 2.

¹² BP, *ibid*, page 7. Z, *ibid*, para 103-104, 113.

¹³ Max Bradford, Minister of Energy and Commerce, “Opening Of Gull (Terminals NZ Ltd) Petroleum Tank Farm” (20 April 1999). Available at <https://www.beehive.govt.nz/speech/opening-gull-terminals-nz-ltd-petroleum-tank-farm>.

¹⁴ BP, *ibid*, page 1. Z, *ibid*, para 20, 34.

¹⁵ MBIE, “Report back on the findings and recommendations of the Fuel Market Financial Performance Study” (23 November 2017), page 11.

40. However, these early-mover advantages may also generate market power, which could result in above competitive levels of return. Analysis of profitability by itself may not distinguish whether higher than competitive levels of profits are due to cost advantages, the exercise of market power, or a mix of both. As such, analysis focusing on the effectiveness of competition is also required.
41. Therefore, in assessing profitability of the fuel industry we should seek to:
- 41.1 consider the broader context, including the factors which may be affecting competition in the market;
 - 41.2 not place too much weight on estimates of profitability over short time periods (as noted above, short term profits can be above or below normal levels even when there is workable competition);
 - 41.3 consider forward-looking profitability. While backward looking profitability may reflect sunk costs and historic cost advantages, forward looking profits would tend towards normal levels; and
 - 41.4 not consider the profitability of only one or a small number of firms (because profitability can be affected by factors which may be unique to a firm or small number of firms).

Profitability analysis is only one indicator of the level of competition

42. Profitability analysis is simply one indicator to assist us in determining whether there are factors affecting competition to the long-term detriment of consumers. That is, an assessment of profits needs to be done in combination with an analysis of the conditions for competition, and the specific factors which may be affecting competition.
43. Similarly, evidence that the level of profitability is around normal or competitive levels does not necessarily mean that there are no factors adversely affecting competition in the market. For example:
- 43.1 weak or ineffective competition could still cause adverse outcomes to consumers including cost inefficiency, or a lack of innovation; and
 - 43.2 firms may be expending resources to build or retain market power, to the detriment of short-term profit.
44. The following quote from Schmalensee summarises the considerations in using profitability analysis to assess the effectiveness of competition.¹⁶

There are, however, three serious problems with using profitability to gauge market power. First, it is very difficult in practice to measure actual profitability, and it may be even more

¹⁶ Schmalensee, R., "Another Look at Market Power". Harvard Law Review, [1982] p.1805-1806.

difficult to measure excess profits. There are no simple, generally valid techniques for obtaining accurate estimates of these quantities, though advances have been made in this area recently and continued progress is likely. Second, the absence of significant excess profit does not establish the absence of significant market power. The costs of obtaining or keeping such power, as well as waste caused by managers not subject to competitive pressures, reduce observed profits, but represent real social costs of market power. Finally, substantial excess profits can arise in the short run even in perfectly competitive markets. Such profits provide essential signals to guide the flow of investment funds in market economies.

Even if all measurement problems are solved, therefore, profitability is an unreliable measure of short run market power. Nevertheless, *persistent* excess profits provide a good indication of long run power; they show clearly that there is some impediment to effective imitation of the firm in question.

45. In summary, we consider that our assessment of the profitability of participants in New Zealand retail fuel markets is likely to be more suggestive that competition is not working effectively when one or more of the following conditions is observed. The conclusions from our analysis are likely to be stronger as more of these conditions are observed.
 - 45.1 The profitability being achieved or anticipated is materially above normal rates of return (estimates of the cost of capital).
 - 45.2 The returns expected or earned on additional investment, by a new entrant or an existing player expanding, clearly exceed the cost of capital.
 - 45.3 The evidence points to a sustained pattern or trend, and a persistence of results. For example, across products or markets, across firms, over time.
 - 45.4 The conclusions are consistent across different analytical approaches and techniques (that is, the results are not a function of one particular analytical approach or the use of one dataset).
 - 45.5 Analysis of the conditions for competition, and of the factors which may be affecting competition, identifies impediments to effective competition.

What are the limitations on the profitability analysis in the retail fuel sector

46. Several considerations are likely to impact on the reliability of any assessment of profitability in the New Zealand retail fuel sector. These include:
 - 46.1 data held by companies does not match specific requirements of the terms of reference, or the data may not exist;
 - 46.2 techniques for assessing profitability are imperfect; and
 - 46.3 some companies are subsidiaries of international conglomerates.

Data held by companies does not match specific requirements of the terms of reference

47. Many fuel companies undertake a range of activities, in various markets, that are broader than the scope of our study, the New Zealand retail fuel sector. For example, these activities may include:
 - 47.1 selling jet fuel, fuel oil, bitumen and other products derived from refining crude;
 - 47.2 selling petrol and diesel to commercial customers; and
 - 47.3 selling non-fuel products through service stations.
48. Fuel companies' information and reporting systems are focused on this broader range of activities and markets. Therefore, these systems may be incapable of generating all the information needed to support a robust analysis focused solely on retail fuel markets.
49. Absent detailed methodologies and reporting requirements akin to that applying under Part 4 of the Act (which we discuss further below), there is an inevitable degree of compromise involved in a study such as this.

Techniques for assessing profitability are imperfect

50. The techniques for assessing profitability have various strengths and weaknesses. While some may be superior conceptually, they may not be appropriate or useful for this study if the required data is not available. The suitability of various approaches is discussed further below.

Some companies are subsidiaries of international conglomerates

51. Several New Zealand fuel firms are subsidiaries of larger international energy groups.
52. This may limit the operational autonomy of these businesses, and their financial results may not reflect the financial performance of the New Zealand business on a stand-alone basis. For example, key decisions may be made to maximise returns globally, regardless of how they affect the returns achieved and reported in New Zealand.

How we propose to undertake our profitability analysis

53. To undertake an assessment of profitability, we will need to:
 - 53.1 consider what is a reasonable or normal level of profitability – in other words, what sort of return is required to satisfy the expectations of investors;
 - 53.2 estimate the profitability of firms in the New Zealand retail fuel sector; and
 - 53.3 consider what is a persistent level of high return.
54. Each of these factors is discussed in turn below.

How we propose to estimate a reasonable or normal level of profitability

55. A normal level of profitability allows a firm to cover all its costs, including the cost of capital, over time.
56. The cost of capital cannot be observed, and accordingly it needs to be estimated. For this study we propose to:
- 56.1 estimate the cost of capital using our standard methodology for this; and
 - 56.2 to consider relevant, publicly available estimates of the cost of capital, where they are available.
57. Our methodology for estimating the cost of capital has been developed since 2001 and has been formalised through our cost of capital input methodologies. The cost of capital input methodologies apply, for example, to suppliers of electricity lines business and specified airport services in our work in respect of Part 4 of the Act.¹⁷
58. We consider that our normal methodology for estimating the cost of capital is appropriate for the current study. The cost of capital input methodologies have been consulted on heavily, with many parties over many years. They were reviewed and accepted by the High Court.¹⁸
59. However, application of our cost of capital methodology will need to reflect the specific features of the fuel sector. We propose to produce an indicative range for the weighted average cost of capital (WACC) by:
- 59.1 Estimating an asset beta for the retail fuel sector. We intend to follow the six-step methodology we have applied previously. However, for this market study a range of asset beta estimates is proposed, given:
 - 59.1.1 we do not need a single point estimate of asset beta, as is required for Part 4 regulation (for example, to set a price-quality path); and
 - 59.1.2 different parts of the retail fuel supply chain may have a different exposure to systematic risk. Using a range might better reflect that variation in systematic risk, without the effort and complexity required to estimate separate asset betas for each part of the supply chain.

¹⁷ See, for example: Commerce Commission, “Electricity Distribution Services Input Methodologies Determination 2012” which is available at https://comcom.govt.nz/_data/assets/pdf_file/0017/60542/Electricity-distribution-services-input-methodologies-determination-2012-consolidated-January-2019-31-January-2019.pdf The cost of capital input methodology was last reviewed during 2016/18, for further details see: <https://comcom.govt.nz/regulated-industries/input-methodologies/projects/201516-im-review>.

¹⁸ Wellington International Airport & Others v Commerce Commission [2013] NZHC 3289 [11 December 2013], Part 6.

- 59.2 Estimating a premium on debt finance, potentially using the observed yields on Z Energy's bonds. We acknowledge that smaller companies, and companies with weaker credit standings, will incur a higher debt premium than larger, longer-standing companies. As discussed in the input methodologies reasons paper, our focus would be on what returns investors would seek from an efficient firm.¹⁹
- 59.3 Using an estimate of the risk-free rate and debt premium with a long term.
60. We do not intend to make an additional adjustment to our WACC estimate, to reflect any potential risks of estimation error. Unlike in a regulatory context, the consequences of getting this estimate wrong are unlikely to have any material asymmetric impact on investment, to the detriment of consumers.²⁰ However, use of an estimate of WACC above our best estimate of it may be appropriate for any subsequent cost-benefit analysis of whether to impose regulation.²¹
61. Existing estimates of the cost of capital may also be available, for example, for firms which are publicly-listed (Z and NZ Refining). For example, these may be included in broker reports.

How we propose to estimate profitability of firms in the New Zealand retail fuel sector

62. After estimating a benchmark cost of capital, we then need to estimate the profitability of New Zealand fuel companies.
63. We propose to first consider approaches generally used by companies in the sector. The two most commonly used measures of financial performance in the fuel sector appear to be:
- 63.1 profit margins, specifically gross margins; and
- 63.2 return on capital employed.
64. We consider that these measures are likely to be appropriate for our study of the sector.
65. We have also considered applying an approach like that adopted in respect of services regulated under Part 4 of the Act. This approach involves:
- 65.1 defining the services which are included in the analysis;

¹⁹ Commerce Commission, Input Methodologies (Electricity distribution and gas pipeline services) Reasons Paper (December 2010), paragraphs 6.2.2-6.2.7.

²⁰ We do use an estimate above the mid-point estimate when we set maximum prices under Part 4 regulation, but not necessarily for the purposes of information disclosure regulation. See Commerce Commission "Amendment to the WACC percentile for price-quality regulation for electricity lines services and gas pipeline services (30 October 2014) section 5, and Commerce Commission, Input Methodologies Review Decisions Topic paper 6: WACC percentile for airports" (20 December 2016), paragraphs 133-140.

²¹ Lally "The Weighted Average Cost of Capital for Gas Pipeline Businesses" (28 October 2008), page 94.

- 65.2 specifying detailed methodologies to ensure appropriate and standardised valuation of assets, and prescribed methodologies for allocating shared and common costs and assets; and
 - 65.3 specifying detailed rules for reporting performance information including revenues, capex and expenses (and breakdowns of these items, as they relate to the scope of the defined services).
66. This Part 4-style approach would be attractive if it could produce relevant and valuable information, precisely targeting the retail fuel markets, which is comparable across suppliers. However, we do not think it is achievable within the time and cost constraints of this study.

Margins

67. Profit margins measure profit relative to revenue. Profits can be stated in terms of gross profits, net profits, operating earnings, or other measures of profit. The retail fuel industry generally uses gross margins expressed either as a percent of sales, or as cents per litre of fuel sold.
68. Gross margins are generally easy to calculate. However, they are an incomplete measure of performance in that they do not reflect the following factors.
- 68.1 All operating costs – Gross margins are net of the cost of goods sold only and not other operating costs (such as property-related costs, staff costs, and marketing costs).
 - 68.2 Differences in volume sold at each location – Retail fuel is sold from a variety of locations into many geographic markets. The volumes achieved per site vary enormously, ranging from the large multi-pump sites servicing large metropolitan areas, to small unmanned sites in rural locations. Ideally, an analysis of retail profitability would include consideration of the volumes of fuel sold, as well as margins (and capital and risk, as discussed next).
 - 68.3 Capital – Gross margins do not reflect the amount of capital required to generate the margins. The more capital that is required, the greater the revenue and margin that is required to offset all the costs of supply.
 - 68.4 Risk – The more risk the investment is exposed to, the higher the return an investor and the firm would expect, and the higher the margins would need to be.
69. Notwithstanding those limitations, gross margins are a widely used and important metric in the fuel industry. We expect that margins achieved on each dollar (or litre) of fuel sold are a key determinant of overall profitability, given the large volume of fuel sold and the fixed costs involved.
70. While gross margins are a useful indicator of aspects of profitability, and a key value driver for the industry, we cannot rely solely on them to assess profitability.

Therefore, we consider additional approaches, including assessing returns on capital employed, are also required.

Return on capital employed

71. Return on capital employed (ROCE) is typically defined as operating earnings as a percentage of capital employed, although the definitions of those items can vary slightly between analysts. The calculation can use either values of opening or closing capital employed, or averages of opening and closing capital (known as Return on average capital employed, ROACE). In this paper there is no practical difference between references to ROCE and ROACE.
72. Unlike margins, ROCE reflects all operating costs, volumes, and the amount of capital employed. It can be compared against estimates of WACC which can reflect differences in the risk investors are exposed to. ROCE is therefore a more complete measure of performance than margins.
73. ROCE is a widely used measure of financial performance in the fuel industry, both domestically and internationally. It was also the measure of profitability proposed by MBIE in the 2017 fuel market financial performance study.²² Examples of fuel companies using ROCE include:
 - 73.1 BP Plc, ExxonMobil Corp, and Shell Plc;²³ and
 - 73.2 Some New Zealand fuel companies also use ROCE from time to time, for example to assess returns on individual projects or to express a corporate or business unit financial target.
74. ExxonMobil states that:²⁴

... it views [ROCE] as the best measure of historical capital productivity in our capital-intensive, long-term industry, both to evaluate management's performance and to demonstrate to shareholders that capital has been used wisely over the long term.
75. Despite being widely used, submissions on our preliminary issues paper raised several concerns over the possible use of ROCE as a measure of profitability in this market study.
76. Ireland & Wallace Associates (IWA) submitted that an economic value added (EVA) approach should be used instead of ROCE, as this would explicitly account for the

²² NZIER, Grant Thornton and Cognitus Economic Insight "Fuel Market Financial Performance Study" (29 May 2017), page 115.

²³ BP Plc "Annual Report and Form 20-F" 2017, page 103. ExxonMobil Corp, "Financial & Operating Review" 2017, page 105. Shell Plc "Investor's Handbook Financial Statements Information" 2013-2017, page 71.

²⁴ ExxonMobil Corp, "Financial & Operating Review" 2017, page 105.

cost of capital. The Major Energy Users Group made the same point. IWA included an example of such an analysis using publicly available data for BP, Mobil, and Z.²⁵

77. We note the following points in response to IWA's submission.
- 77.1 It is possible to compare estimates of ROCE with estimates of WACC (among other proxies for a normal return) and in this way explicitly account for differences in the risks of investment.
- 77.2 Doing so can produce a return spread (ROCE less WACC) and multiplying this spread by the estimate of capital employed will produce an estimate of excess returns (which is what IWA estimates). As such, the ROCE approach which is generally used in the fuel industry can therefore also provide a basis for estimating excess returns that is comparable with the approach proposed by IWA.
- 77.3 IWA's approach does quantify the cumulative excess returns over time, which may be insightful given the desire to focus on profitability over the long term.
- 77.4 IWA's initial EVA analysis predominantly uses historical values of assets and is therefore subject to the same criticism as ROCE analysis. This is discussed further in paragraphs 85 to 90 below.
78. Mobil submitted that comparison of ROACE across companies is challenging given different business structures which are competing at different levels of the market.²⁶
79. In response to Mobil's submission, we note that the primary purpose of assessing profitability in this context is to assist in drawing conclusions about the effectiveness of competition in the market, not to examine differences in profitability between different business models. We are interested in returns on investment over time across a range of players and business models.
80. Z identified three challenges regarding the use of ROACE, namely the difficulty in comparing businesses of fundamentally different scale and/or structure, understanding the contributions of multiple product lines, and assessing a period that properly accounts for economic and investment cycles.²⁷

²⁵ Ireland, Wallace & Associates Limited "Market study into the retail fuel sector: Invitation to comment on preliminary issues Commerce Commission New Zealand – A submission on Question 9: Trends in profits" (21 February 2019), p. 5 and 8. Major Electricity Users' Group, "Submission on Market Study into the Retail Fuel Market" (21 February 2019).

²⁶ Mobil Oil New Zealand Limited "Submission to the Commerce Commission New Zealand in response to the Statement of Preliminary Issues for the Market Study into the Retail Fuel Sector" (21 February 2019), para 6.

²⁷ Z Energy "Market Study into the Retail Fuel Sector: Z Energy's Response to Invitation to Comment on Preliminary Issues" (21 February 2019), para 49.

81. The first of Z's concerns is similar to Mobil's point above. None of the other challenges mentioned by Z are specific to the use of ROACE – rather, they reflect more generic issues potentially associated with assessing profitability.
82. BP submitted that analysis of ROACE “will not be capable of supporting meaningful conclusions in relation to reasonableness of prices or margins”. BP argued that this is due to:²⁸
- 82.1 issues identifying a benchmark against which to compare ROACE – for example, how to obtain a reasonable estimate of the cost of capital;
 - 82.2 the need to reflect returns over the longer term (exceeding 10 years) to reflect changing conditions in the market and the entry and exit of retail fuel outlets; and
 - 82.3 measurement issues, including valuing intangible assets, estimating replacement costs, allocating shared costs, distortions from accounting conventions and practices, and the need to assess all or most suppliers in a market.
83. In response to the first two points raised by BP we:
- 83.1 have explained in paragraphs 55 to 61 above how we might estimate a benchmark cost of capital; and
 - 83.2 agree that there is value in estimating returns over the long term, and will seek to do so, having regard to the availability of data and being mindful of the costs to firms from sourcing data over long periods of time. Engagement with NZ fuel firms indicates that there are practical and cost limitations on their ability to supply data over extended historic time periods.
84. In respect of the measurement issues highlighted by BP, we note the following points.
- 84.1 The level of intangibles in NZ fuel companies does not appear to be large as evidenced by post-acquisition accounting for the fair value of assets acquired.²⁹ We also note submissions from suppliers (for example Z), that there are a number of loyalty schemes, that these are easy for customers to join, that many consumers are members of multiple schemes, that the schemes have no purchase commitments, and consumers can switch easily

²⁸ BP “Market Study in the retail fuel sector – BP New Zealand Comment on Preliminary Issues” (21 February 2019), pages 4-5.

²⁹ Z Energy “Annual Report 2017”, page 75. Caltex Australia “Annual Report 2017” page 109.

between these schemes (which in turn suggests brand values and goodwill are not particularly valuable intangible assets in this market).³⁰

- 84.2 As noted above, we do not seek to allocate shared and common costs where firms have not previously done so. Instead we propose to rely on existing information, including how those costs were treated.
- 84.3 There may be distortions in the accounting treatments, but this should be offset in part by using a range of different techniques and approaches. We also intend to focus on a range of players, rather than relying on a single preferred approach and subject of analysis (which may be more affected by any particular accounting choice).
- 84.4 We agree with BP that we should look at profitability for a range of players in the industry (and ideally for as wide a range as possible), having regard to time and cost considerations, as well as the availability of data.

The importance of estimates of replacement cost

85. A fundamental weakness of ROCE analysis, and of the EVA approach proposed by IWA, concerns how assets are valued.
86. Estimates of ROCE typically use historic cost information to determine the value of capital employed. Historic information on the cost of assets might provide limited information about what it costs to buy those assets today in order to enter a market. When assessing profitability in a competition study a more informative approach is to consider the level of profitability against the current cost of buying the assets required to compete. If a firm or firms can earn above competitive levels of profitability having regard to the current costs of assets, that can suggest that the market is not competitive because new entrants would have an incentive to enter the market and increase output, which would lower prices.
87. A superior approach is to use estimates of replacement cost to determine the value of assets. In the fuel sector, the relevant assets include inventory (that is, petroleum products for on sale), and fixed assets (including terminals, pipelines, stations, tanks, pumps, and signs).
88. In the case of inventory, the choice of historic or replacement cost estimates gives rise to timing adjustments (inventory gains or loses value according to post-purchase changes in commodity prices). Such gains and losses can reverse and can be expected to balance out over time.
89. Appropriately valuing fixed assets is a more significant issue for assessing profitability in the fuel sector. In this context, the use of historic cost valuations for long-lived fixed assets could lead to several challenges, as set out below.

³⁰ Z Energy “Market Study into the Retail Fuel Sector: Z Energy’s Response to Invitation to Comment on Preliminary Issues” (21 February 2019), para 63-65.

- 89.1 Use of historic valuations may materially understate the economic value to the owner of these assets given the benefit the owner will receive from using those assets. Similarly, such valuations may understate the cost of replacing them. As a result, using historic cost valuations will likely tend to increase the estimate of ROCE.
 - 89.2 Historic cost valuations are likely to understate the investment required by a player seeking to expand or enter the fuel market.
 - 89.3 Differences between replacement cost and historic valuations for fixed assets are not timing adjustments which could be expected to net out over time.
90. Ideally, we would consider estimates of ROCE which use replacement cost values for fixed assets to determine the value of capital employed. However, we understand that such valuations are not used as part of most fuel firm's performance reporting. We will seek to incorporate such information into our analysis where it is available and where possible.

Other approaches we propose to rely on

- 91. Given the limitations on using gross margins and ROCE to assess competition in the retail fuel industry, we have looked for additional indicators of profitability.
- 92. We propose to rely on a broad range of evidence and approaches to assess profitability. We propose to use those as indicators from which we can make an overall assessment of the level of profitability in the retail fuel markets. Judgement will be required to:
 - 92.1 assess the strengths and limitations of each indicator;
 - 92.2 assess how much weight should be according to each indicator; and
 - 92.3 decide which approaches should be implemented given the time and resource constraints for this study.
- 93. Specifically, we also propose to consider the following as indicators of profitability in this study.
 - 93.1 **The returns being achieved on recent and proposed investment both by new entrants, and by existing participants expanding their operations, in the retail fuel markets.** Even if backward looking assessments of the returns in the industry are above (or below) normal levels (because, for example, established players enjoy enduring cost advantages over subsequent entrants), we would expect returns on more recent investment to approximate the cost of capital if competition is workable and effective. Forward looking profits would be expected to tend towards normal levels.
 - 93.2 **Analytical approaches which use estimates of cash flows, to minimise the reliance on estimates of asset valuations.** We propose to consider estimates of the internal rate of return (IRR) for entrants who have entered or

expanded into the market, and on the returns from new investments, where the relevant information is available.³¹

- 93.3 **Extensions to our analysis to reflect any available replacement cost estimates of key fixed assets.** For example, we will consider adjusting estimates of capital employed to reflect available information on the current cost of new assets. Recent investment in fixed assets by firms may provide indicative estimates of the costs of entry for some assets.
- 93.4 **Look at any other relevant evidence.** For example:
- 93.4.1 how firms assess and manage their own financial performance and decisions to invest in new sites; and
- 93.4.2 inferences from market transactions.
94. We propose to place greater weight on the results of firms which are locally owned, and those whose activities are most focused on the retail fuel markets.
95. The [Fuel Market Financial Performance Study](#), commissioned by MBIE, proposed adopting the New Empirical Industrial Organisation (NEIO) approach to assess the level of competition in the market.³²
- 95.1 This approach seeks to estimate the statistical relationship between demand for fuel at each station and its price, by having regard to the various characteristics of each station which may affect how consumers purchase fuel (including the availability of other services, payment choices, etc).
- 95.2 The NEIO approach combines those estimates with assumed models of firm behaviour to estimate price-cost margins, to determine which of the models (eg, competitive, collusive, etc) is most consistent with the data.
96. At this stage we are not proposing to adopt the NEIO approach in this study, but we would welcome comments on this point. While this approach has been used in some published academic papers, we are not aware that it has been used to date by any competition agency. The NEIO approach is novel and is computationally and conceptually demanding. It will likely be resource intensive, and the approach and results may not be well understood by stakeholders.

³¹ Where the length of an investment is short such that information on cash flows is available for all periods, then an IRR analysis would not involve any reliance on asset valuations. However, where the investment is long such that information on cash flows is not available it may be necessary to truncate the analysis and use some estimates of asset value as part of the analysis (truncated IRR analysis).

³² NZIER, Grant Thornton and Cognitus Economic Insight “Fuel Market Financial Performance Study” (29 May 2017), section 6.3.

When are excess returns persistent?

97. If we find that excess returns are being earned, we will then consider whether they have persisted over time.
98. In considering whether the excess returns are persistent we propose to look at factors such as:
 - 98.1 the extent to which the returns exceed a normal return;
 - 98.2 the length of time over which excess returns are earned; and
 - 98.3 any reliable forward-looking information which indicate that high returns can, or cannot, be expected to continue.
99. We note that there is no bright line threshold for concluding whether excess returns are persistent. We do not need to reach a firm decision on this question, given the profitability assessment is only one indicator to inform our study.