THE COMPETITION TRIBUNAL

IN THE MATTER OF THE *COMPETITION ACT,* R.S.C. 1985, c.C-34, and the *Competition Tribunal Rules* SOR 94-290, as amended;

AND IN THE MATTER OF an inquiry pursuant to subsection 10(1)(b) of the *Competition Act* relating to the proposed acquisition of ICG Propane Inc. by Superior Propane Inc.

AND IN THE MATTER OF an application by the Commissioner of Competition under section 92 of the *Competition Act.*

B E T W E E N:

THE COMMISSIONER OF COMPETITION

Applicant

- and -

SUPERIOR PROPANE INC. and ICG PROPANE INC.

Respondents

AFFIDAVIT OF DENNIS W. CARLTON
AND GUSTAVO E. BAMBERGER

I, DENNIS W. CARLTON, of the City of Glencoe, in the State of Illinois, economist, and I, GUSTAVO E. BAMBERGER, economist, of the City of Chicago, in the State of Illinois, economist, MAKE OATH AND SAY:

1.   We have been asked by counsel to Superior Propane Inc. and ICG Propane Inc. to

evaluate the expert reports served by the Commissioner of Competition (the

"Commissioner") on September 14, 1999 (the "September 14, 1999 Reports").

2.   Attached hereto and marked as Exhibit "A" is a true copy of our report, which

represents the work we have done and analyses made with respect to the
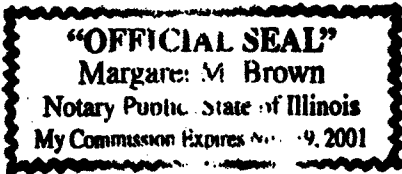
Commissioner's September 14, 1999 Reports.
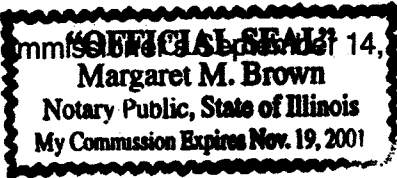
"OFFICIAL SEAL"
Margaret M. Brown
Notary Public, State of Illinois
My Commission Expires Nov. 19, 2001

Subscribed and sworn to before me,   )   _____
this *19* day of *Sept* , 1999.   )   Dennis W. Carlton
)
)
)   _____
)   Gustavo E. Bamberger

_____
          Notary Public

My Commission expires: *2001*

This is Exhibit "A" to the Affidavit of Dennis W. Carlton and Gustavo E. Bamberger

Subscribed and sworn to before me,
this *19* day of *Sept.*, 1999.

_____
Notary Public

My Commission expires: *2001*

)
)
)
)
)

_____
Dennis W. Carlton

_____
Gustavo E. Bamberger

REPLY REPORT OF DENNIS W. CARLTON AND GUSTAVO E. BAMBERGER

I. INTRODUCTION.

1. Dennis Carlton previously submitted a Report ("Carlton Report"), dated August 18, 1999, and we previously submitted a Rebuttal Report ("Carlton/Bamberger Report"), dated September 14, 1999, in this proceeding on behalf of Superior Propane Inc. ("Superior") and ICG Propane Inc. ("ICG"). Copies of our curriculum vitae, which describe our professional qualifications and prior experience, are attached to these reports.

2. We have reviewed three rebuttal reports filed by the Commissioner (the "Rebuttal Reports") that criticize the Carlton Report. The Carlton Report reviewed and analyzed a variety of types of evidence. Each of the analyses in the Carlton Report demonstrated that the empirical evidence is inconsistent with the Commissioner's claim that the proposed merger will lead to a substantial lessening of competition in the Canadian retail propane industry. In this report, we respond to the criticisms raised by the Commissioner's experts.

3. The Commissioner's Rebuttal Reports raise numerous objections to the analyses in the Carlton Report. However, as we explain in detail in this report, the Rebuttal Reports contain numerous flaws. In particular:

- They mischaracterize the findings of the Carlton Report.

- They raise issues as "new" that were already recognized and addressed in the Carlton Report.

- They provide a laundry list of criticisms of the Carlton Report's econometric analysis but, except for Professor Ward, they fail to perform their own analyses that show that the evidence supports their claim that the proposed transaction will harm competition.

- Even Professor Ward's empirical analysis of pricing evidence yields results that are consistent with those in the Carlton Report and contradict the Commissioner's claims that only ICG constrains Superior's retail propane prices. Moreover, Professor Ward's analysis fails to address that the evidence shows that where ICG has a substantial presence in an area, its presence has a different effect on Superior's prices than does the substantial presence of independent retailers. That is, the

evidence shows that ICG does not significantly constrain Superior's prices, but there is evidence that independents in the aggregate do. Even though Professor Ward's results show that competition can lead to lower retail propane prices (as do the results in the Carlton Report), Professor Ward fails to investigate the key question of whether ICG constrains Superior's prices. That is the precise question that the Carlton Report addresses, and Carlton finds that ICG, as opposed to independents, does not constrain Superior's prices.

- Finally, even if Professor Ward's estimates of the effect of the propane merger on prices were accepted, his analysis (combined with the analysis in his earlier report, served August 30, 1999) demonstrates that the claimed dead weight loss associated with the proposed merger is far smaller than the likely efficiencies that would be generated by the merger.

4.   The remainder of our report is organized as follows. In Section II, we respond to the Commissioner's experts' criticisms of the Carlton Report's comparisons of Canadian and U.S. retail propane margins. In Section III, we respond to their criticisms of the Carlton Report's econometric analysis of the effect of ICG's presence on Superior's prices. In Section IV, we respond to their criticisms of the Carlton Report's analysis of entry. Finally, in Section V, we respond to their criticisms of the Carlton Report's econometric analysis of the effect of a prior acquisition.

II.   OUR RESPONSE TO THE COMMISSIONER'S EXPERTS' CRITICISMS OF THE CARLTON REPORT'S COMPARISONS OF CANADIAN AND U.S. RETAIL PROPANE MARGINS.

5.   Based on available empirical evidence, the Carlton Report came to the conclusion that "Superior and ICG's gross margins and [earnings before interest, taxes, depreciation and amortization ("EBITDA")] (i.e., prices, after adjusting for costs) as a percentage of revenue are similar to (or not systematically higher than) those received in the United States by major propane retailers, which typically face substantially more major competitors per local area than do Superior and ICG" (Carlton Report, ¶ 22). Professors Schwindt and Globerman, and Professor West, criticize the Carlton analysis.[1]

---

1. We note, however, that they fail to provide any evidence that is inconsistent with the Carlton Report's findings.

6.   Professors Schwindt and Globerman claim that "Professor Carlton's disregard of fundamental differences in product mix between the U.S. and Canadian industries . . . seriously undermines the relevance of his findings" (Schwindt and Globerman, at 3). According to Professors Schwindt and Globerman, these product mix differences are important because margins in certain end uses (e.g., residential and commercial) are substantially higher than in other end uses (e.g., industrial and auto).

7.   In fact, the Carlton Report explicitly recognized that differences in business mix could affect gross margin comparisons. In particular, Carlton explained that "[b]ecause secondary distribution costs, which are not reflected in gross margins, likely vary across end uses, a retailer's gross margins can depend on its business mix." Carlton also reported that "[f]or U.S. retailers where business mix information is available, . . . adjusting for business mix differences does not substantially alter" the results of the analysis (Carlton Report, ¶ 14, fn. 2).

8.   We review the results of adjusting gross margins for end use mix here. We collected business mix information in 1998 for three of the U.S. retailers in our analysis – Amerigas, Suburban and Star Gas. Based on this information, we calculated what Superior's average margin would have been if it had had the same business mix as each of the U.S. retailers.[2] If Superior had had the same business mix information as Amerigas, we estimate that its gross margin as a percentage of revenue would have been 53.1 percent.[3] Using the Suburban business mix, Superior's gross margin as a percentage of revenue would have been 53.4; and using the Star Gas business mix, Superior's gross margin as a percentage of revenue

---

2. We calculate Superior's margins by end use using the same data that underlie the Carlton Report's regression analyses. Based on these data, Superior's overall gross margin as a percentage of revenue was 53.7 in 1998. See Appendix A. This figure is slightly higher than the 51.8 percent implied by the information reported in the Superior Propane Income Fund Annual Report for 1998 (we understand that the Annual Report information reflects costs not included in the branch-level information). Because we are interested in comparing the gross margin, adjusted for business mix, to the 51.8 percent margin actually earned by Superior, we adjust each of our estimates of Superior's business-mix adjusted margin by the ratio 51.8/53.7.

3. The Amerigas business mix in 1998 was: wholesale (which we treat as agent), 21 percent; agriculture, 7 percent; auto, 11 percent; commercial/industrial, 29 percent; and residential,

would have been 54.4 percent.[4] The average of these three margins is 53.6 percent, only 1.8 percentage points higher than the 51.8 percent actually earned by Superior in 1998.

9.   Moreover, the observed differences in margins by end use that Schwindt and Globerman discuss are differences in gross margins (as a percentage of revenue). For example, residential end use gross margins are higher than auto end use gross margins as a percentage of revenue. (Professors Schwindt and Globerman report gross margins in their Table 1.) These gross margin differences across end uses reflect differences in secondary distribution costs across end uses. Secondary distribution costs are not subtracted from revenue when gross margins are calculated, but they are subtracted from revenues when EBITDA is calculated. There is no reason to believe that prices for residential and auto end uses differ substantially after all (not just primary distribution) costs are accounted for.[5] Thus, Professor Schwindt and Globerman's "business mix" criticism is not applicable to the Carlton Report's analysis of EBITDA margins as a percentage of revenue.

III.   OUR RESPONSE TO THE COMMISSIONER'S EXPERTS' CRITICISMS OF THE CARLTON REPORT'S ECONOMETRIC ANALYSIS OF THE EFFECT OF ICG'S PRESENCE ON SUPERIOR'S PRICES.

10.   The Commissioner's experts criticize several aspects of the Carlton Report's empirical analysis of the effect of ICG's presence on Superior's retail propane prices. Only Professor Ward attempts his own analysis, and he fails to address the question raised by this proceeding – whether ICG, as opposed to independents in the aggregate, constrains Superior's

---

(...continued)
       32 percent (Amerigas 1998 10-K, at 3).
4. The Suburban business mix in 1998 was: wholesale, 29 percent; agent, 4.7 percent; auto, 8.2 percent; commercial, 17.8 percent; industrial, 2.2 percent; residential, 26.8 percent; and other (which we combine with industrial), 11.3 percent (Suburban 1998 10-K, at 4). The Star Gas business mix in 1998 was: wholesale, 21 percent; agriculture, 15 percent; auto, 6.3 percent; commercial/industrial, 15 percent; and residential 42.7 percent (Star Gas 1998 10-K, at 8).
5. Indeed, as we discussed in the Carlton/Bamberger Report, Professors Schwindt and Globerman concede that the empirical evidence is not consistent with "end use" markets.

prices. None of the Commissioner's experts perform an econometric analysis, or rely on anything other than anecdotal evidence, to address this issue.

A.   Our Response to Professor West's Criticisms.

11.   Professor West claims that the "market share variables that are used by Professor Carlton in his regression analysis are . . . problematic" (West, ¶ 20). In particular, he claims that "Carlton's market share figures are not the same as those reported by [Superior] on its branch templates" (West, ¶ 27). Professor West compares two sets of market share estimates in his Table 1.

12.   Professor West appears not to have considered that the Superior branch templates report <u>two</u> sets of share estimates -- one for "overall" share and one for each of the six end uses identified by the Commissioner in his Notice of Application.[6] Because the Commissioner had suggested in his Notice of Application that the identified end uses comprised separate markets, the Carlton Report calculated aggregate shares using the end use share data from the templates.[7] That report was completed before we learned that the Commissioner's experts have apparently abandoned the Commissioner's claim of end use markets.

13.   Thus, instead of showing that Carlton used incorrect market shares, Professor West's Table 1 shows only that the branch template survey produced two sets of estimates that

---

(...continued)
> See, for example, the first Globerman and Schwindt Report, at 51.

6.   Notice of Application, "In the Matter of the *Competition Act*, R.S. 1985, c.C-34, as amended, and the *Competition Tribunal Rules*, SOR/94-290, as amended (the *"Rules"*); And in the Matter of the *Competition Act* relating to the proposed acquisition of ICG Propane Inc. by Superior Propane Inc.; And in the Matter of an Application by the Director of Investigation and Research for an interim order pursuant to section 100 of the *Competition Act*. Between: The Director of Investigation and Research and Superior Propane, Inc., Petro-Canada Inc., The Chancellor Holdings Corporation and ICG Propane Inc.", ¶ 9.

7.   The computer programs that calculated the Carlton market shares from the end-use specific shares were provided to the Commissioner. As discussed in the Carlton/Bamberger Report, the original analysis was based on a data set that contained a few data entry errors. Professor West discusses these in his report (e.g., the Smithville branch). As the Carlton/Bamberger Report shows, correcting these errors has no material effect on the Carlton finding that there is no systematic evidence that the substantial presence of ICG

imply somewhat different overall shares. To maintain consistency between overall and end-use specific shares (because the Carlton Report investigated Superior's overall and end-use specific margins), the Carlton Report relied on estimates of end use shares. However, the differences between the two sets of share estimates reported in Professor West's Table 1 have no material effect on the Carlton analysis. Professor West apparently did not investigate whether the differences between the two sets of shares affected the Carlton results. We have repeated the Carlton analysis using the overall share estimates (i.e., those in the first three columns of Professor West's Table 1). Using these shares has no material effect on the Carlton results.[8] See Tables 1 and 2.

14.   Professor West further claims that "Professor Carlton may also have compromised his analysis by using 1998 share estimates in his 1997 regressions" (West, ¶ 4). Professor West thus apparently believes that the 1997 results are less reliable than the 1998 results. In fact, the Carlton Report made the same point: "I rely on 1998 share estimates by branch for 1998 for both the 1997 and 1998 regression analyses. For this reason, I regard the 1998 results as more reliable" (Carlton Report, ¶ 34, fn. 28).[9] That being said, the 1997 results are similar to those for 1998, and thus provide further evidence that the 1998 results are reliable and that there is indeed no systematic evidence that ICG constrains Superior's prices. If the Commissioner were correct that this merger will substantially reduce competition, we would have expected that Superior's pre-merger prices would be lower in areas where ICG has a

---

(...continued)
      significantly reduces Superior's retail propane prices.
8.   Full regression results are reported in Appendix B.
9.   Professor West points out that Superior also made share estimates for 1997. We were informed that the 1997 estimates were less reliable than 1998's and for that reason the Carlton analysis used only the 1998 share estimates. However, the differences between the 1997 and 1998 share estimates (which are reflected in Professor West's Table 3) are often relatively small. We have repeated the 1997 Carlton analysis using the 1997 template share estimates (for those branches where we could merge price and share estimate information) and find that using these shares has no material effect on the Carlton results. Full regression results are reported in Appendix C.

Table 1

Effect of Rival's Presence on Superior Margins, 1998
(In Cents Per Liter)

Supplier	Substantial Presence Defined as Share Greater Than:			
	15 Percent	20 Percent	25 Percent	30 Percent
ICG	1.99*	1.89*	1.02*	1.65*
	(7.40)	(7.25)	(3.96)	(5.95)
Independent	-1.41*	-1.38*	-1.32*	-1.11*
	(-5.47)	(5.37)	(4.94)	(4.24)

t-statistics are listed below coefficient estimates.
* Statistically significant at the five percent level.

Market shares are based on overall shares reported in Spring 1999 SPI Template data.

Table 2

Effect of Rival's Presence on Superior Margins, 1997
(In Cents Per Liter)

Supplier	Substantial Presence Defined as Share Greater Than:			
	15 Percent	20 Percent	25 Percent	30 Percent
ICG	0.84*	0.89*	0.62*	1.11*
	(3.15)	(3.47)	(2.52)	(4.36)
Independent	-0.87*	-0.82*	-0.45	-0.67*
	(-3.24)	(-3.04)	(-1.64)	(-2.50)

t-statistics are listed below coefficient estimates.
* Statistically significant at the five percent level.

Market shares are based on overall shares reported in Spring 1999 SPI Template data.

substantial presence than in those areas where it does not. The results for both 1997 and 1998 show that that is not the case.

B.   Our Response to Professor Schwindt and Globerman's Criticisms.

15.   Professors Schwindt and Globerman claim that "a number of [Carlton's] findings are inconsistent with economic theory and the characteristics of the propane industry. As a consequence, his specific findings with respect to pricing behaviour are unreliable" (Schwindt and Globerman, at 1).[10] However, they fail to show (or even attempt to show) how the empirical evidence is consistent with their claims that the proposed merger will lead to higher propane prices.

16.   Professors Schwindt and Globerman claim that the Carlton results show that "one can conclude with 85 or 90 percent confidence that ICG's market presence constrains [Superior's] margins but not with 95 percent confidence" (Schwindt and Globerman, at 8). This claim is based solely on some of the 1997 results and not others, and not on the 1998 results at all. It is not appropriate, as a matter of statistical methodology, for Professors Schwindt and Globerman to suggest that the evidence supports their claim on the basis of a few coefficients that are statistically insignificant (at normal confidence levels) and negative, particularly without recognizing that the 1998 results (which both we and, apparently, Professor West, believe are more reliable) show no such support, and without recognizing that conclusions based on statistically insignificant results are suspect. Contrary to Professors Schwindt and Globerman's claim, there is no systematic evidence that the substantial presence of ICG in an area substantially constrains Superior's prices. Indeed, they do not posit any empirical analysis to the contrary. Instead, they suggest that because the evidence is not consistent with their theory, the Carlton findings, which are based on actual pricing data, are suspect. Professors Schwindt

---

10. Professors Schwindt and Globerman also criticize the Carlton "gain/loss" analysis. Their criticism is based on the unsupported assumption that one Superior branch in Quebec is

and Globerman's appropriate response to the Carlton findings would be to reconsider their theoretical analysis, not to dismiss the empirical evidence.

17.   Professors Schwindt and Globerman also misinterpret the Carlton Report's 1998 findings. They claim that "[o]ne possible interpretation of [the finding that a substantial market presence of ICG leads to significantly higher Superior margins] is that higher market concentration leads to higher prices" (Schwindt and Globerman, at 9). However, areas in which ICG has a substantial presence (holding constant the presence of independents' share) will tend to be less concentrated than areas in which ICG does not have a substantial presence. For example, consider a market in which Superior has a 50 percent share, ICG has a 40 percent share and independents have an aggregate share of 10 percent. Compare that market to one where Superior has an 80 percent share, ICG has a 10 percent share and independents have an aggregate share of 10 percent. ICG has a substantial presence in the first market, but not in the second (as "substantial presence" is defined in the regression analyses). However, the first market is less, not more, concentrated than the second.

18.   Professors Schwindt and Globerman argue that many of the estimated coefficients on alternate fuel prices in the Carlton analysis are inconsistent with economic theory and therefore they are "led to conclude that the basic regression model used by Professor Carlton is itself questionable" (Schwindt and Globerman, at 11). However, including these variables in the regression analysis has no material effect on the Carlton analysis. Professors Schwindt and Globerman, like Professor West, have not investigated whether their criticisms, even if valid, affect the Carlton Report's empirical results. When we exclude the alternate fuel prices from the Carlton analysis, as we have done for the purpose of investigating Professor

---

(...continued)
        representative of Superior's entire business in Canada.

Schwindt and Globerman's criticism, we find that doing so has no material effect on the Carlton results.[11] See Tables 3 and 4.

19.   Although Professors Schwindt and Globerman claim that the Carlton analysis of Superior's pricing is unreliable, the results in Tables 1-4 of this report show the robustness of the Carlton Report's finding that there is no systematic evidence that the substantial presence of ICG significantly constrains Superior's prices. Professors Schwindt and Globerman present no systematic empirical evidence that shows otherwise.

C.   Our Response to Professor Ward's Criticisms.

20.   Unlike the Commissioner's other experts, Professor Ward does present an alternate empirical analysis, and claims to show that his alternate approach implies "that the merger could raise Superior's margins" (Ward, at 11). However, Professor Ward appears to misinterpret his own findings. Instead of rebutting the Carlton results, Professor Ward's results are consistent with the Carlton Report's findings and contradict the Commissioner's claims.

21.   The Carlton Report found that Superior's prices fall as independent retailers in an area increase in importance – that is, prices fall as industry concentration falls. Professor Ward draws exactly the same conclusion. But unlike the Carlton analysis, Professor Ward's analysis cannot distinguish the effect of ICG's presence in an area on Superior's prices from the effect of independents' presence. Thus, Professor Ward's results do not show that Superior's prices are constrained by ICG's presence.

22.   Professor Ward claims that Superior's prices are lower in markets where there are more competitors. In particular, one of his regressions shows that Superior's margins fall as the number of firms in the local market increases so that, for example, Superior's prices are lower when it faces five competitors than when it faces four; lower when it faces four competitors than when it faces three; and so on. This result shows that the presence of

---

11. Full regression results are reported in Appendix D.

Table 3

Effect of Rival's Presence on Superior Margins, 1998
(In Cents Per Liter)
Excluding Alternative Fuels

Supplier	Substantial Presence Defined as Share Greater Than:			
	15 Percent	20 Percent	25 Percent	30 Percent
ICG	1.97*	1.71*	1.49*	0.56
	(7.19)	(6.19)	(4.97)	(1.96)
Independent	-0.58	-0.80*	-1.49*	-1.62*
	(-1.94)	(-2.82)	(-6.06)	(-6.36)

t-statistics are listed below coefficient estimates.
* Statistically significant at the five percent level.

Table 4

Effect of Rival's Presence on Superior Margins, 1997
(In Cents Per Liter)
Excluding Alternative Fuels

Supplier	Substantial Presence Defined as Share Greater Than:			
	15 Percent	20 Percent	25 Percent	30 Percent
ICG	0.83*	0.62*	0.51	0.42
	(2.93)	(2.12)	(1.66)	(1.51)
Independent	-0.39	-0.30	-1.07*	-1.05*
	(-1.22)	(-0.99)	(-4.15)	(-3.93)

t-statistics are listed below coefficient estimates.
* Statistically significant at the five percent level.

independents – not just ICG, as the Commissioner claims – constrains Superior's retail propane prices. Thus, Professor Ward's results are consistent with Carlton's findings.

23.   Professor Ward's analysis says nothing about the effect of ICG's presence on Superior's prices. In his "Number of Firms" analysis, Professor Ward tests whether the number of rivals faced by Superior affects Superior's prices, but he assumes that the identity of the rivals is irrelevant. For example, Professor Ward's analysis implies that Superior's prices are higher where it faces two rivals than where it faces three rivals, whether or not any of the rivals is ICG. Indeed, in each of his three analyses (Number of Firms, C4 and HI), Professor Ward assumes that the identity of the rivals in an area has no effect on Superior's prices. But the issue in this case is whether, pre-merger, ICG constrains Superior's price. If not, the proposed merger will not substantially lessen competition. For this reason, the Carlton Report separately analyzed the effect of ICG's presence, and the effect of independents' presence in the aggregate, on Superior's prices.

24.   To distinguish the effect of independents' presence on Superior's prices from the effect of ICG's presence on Superior's prices, we add the Carlton measure of ICG share and his measure of aggregate independents' share to each of Professor Ward's analyses.[12] That is, we analyze whether Professor Ward's measures of market structure – Number of Firms, C4 and HI – have a statistically significant effect on Superior's prices if we control for the presence of ICG and independents separately. We find no systematic evidence that Professor Ward's market structure measures are statistically significantly related to Superior's prices after one accounts for the effect of ICG and independents separately. See Table 5 (which reports both Ordinary Least Squares ("OLS") and Two-Stage Least Square ("2SLS") results).[13] These results are

---

12. Because we revised the data set underlying the Carlton analysis (as discussed in the Carlton/Bamberger Report), we repeat Professor Ward's analyses on the revised data set and find that his results are substantially unchanged. Full regression results are reported in Appendix E.
13. Full regression results are reported in Appendix F. For the 2SLS specifications, we include Market Size cubed as an instrument. In two of the OLS specifications, Professor Ward's HI

Table 5

Estimated Effects of Professor Ward's Market Structure Variables Controlling for the Presence of ICG and Independents Separately

| | OLS Estimates | | | | | 2SLS Estimates | | | | |
| | Substantial Presence of: | | | | | Substantial Presence of: | | | | |
Cutoff	ICG	Independents	Number of Firms	C4	HI	ICG	Independents	Number of Firms	C4	HI
15 Percent	1.741 *	-0.423	-0.069			-1.569	-3.516 *	-0.006		
	(6.559)	(-1.439)	(-1.949)			(-1.394)	(-2.047)	(-0.023)		
	1.702 *	-0.309		0.031 *		-1.574	-3.442		0.004	
	(6.376)	(-1.018)		(2.266)		(-1.587)	(-0.800)		(0.023)	
	1.913 *	0.641			4.895 *	-2.008	-7.010			-6.015
	(7.246)	(1.480)			(3.569)	(-0.094)	(-0.040)			(-0.020)
20 Percent	1.514 *	-0.608 *	-0.085 *			-1.043	-3.819 *	0.072		
	(5.684)	(-2.177)	(-2.422)			(-0.886)	(-2.540)	(0.263)		
	1.476 *	-0.480		0.035 *		-0.771	-4.858		-0.073	
	(5.530)	(-1.639)		(2.478)		(-0.635)	(-0.912)		(-0.252)	
	1.599 *	-0.081			3.141 *	-1.131	-0.741			5.624
	(5.954)	(-0.211)			(2.429)	(-0.871)	(-0.072)			(0.276)
25 Percent	1.167 *	-1.377 *	-0.026			0.007	-2.236	-0.143		
	(3.948)	(-5.524)	(-0.714)			(0.004)	(-1.938)	(-0.545)		
	1.206 *	-1.455 *		-0.003		-61.516	71.283		5.908	
	(4.044)	(-5.207)		(-0.210)		(-0.034)	(0.033)		(0.034)	
	1.174 *	-1.561 *			-0.754	1.607	-5.136			-7.082
	(3.979)	(-4.696)			(-0.595)	(0.698)	(-1.095)			(-0.508)
30 Percent	0.349	-1.461 *	-0.042			1.224	-2.302 *	-0.240		
	(1.228)	(-5.753)	(-1.146)			(0.478)	(-2.593)	(-0.845)		
	0.397	-1.461 *		0.007		-0.360	-1.983		0.080	
	(1.396)	(-5.211)		(0.451)		(-0.210)	(-1.729)		(0.867)	
	0.396	-1.618 *			-0.537	-1.178	-1.209			4.729
	(1.385)	(-4.723)			(-0.422)	(-0.592)	(-0.611)			(0.856)

t-statistics are listed below coefficient estimates.
* Statistically signficant at the five percent level.

further evidence that there is no systematic empirical support for the Commissioner's claim that the proposed merger will lead to higher retail propane prices.

25.   Our regression results show that it is important to distinguish between the effects of the presence of ICG and the presence of independents on Superior's prices. Alternatively, a simple comparison of average gross margins also suggests that the presence of ICG and the presence of independents can have different effects on Superior's margins. In particular, we have calculated an average business-mix adjusted 1998 gross margin for each branch in our analysis.[14] We then compare Superior's average gross margin in those branches where ICG has a substantial presence but independents do not, to Superior's average gross margin in those branches where independents have a substantial presence but ICG does not. Our findings are summarized in Table 6. For each definition of substantial presence, we find that Superior's margins are higher (by 1.4 to 2.6 cents per liter) in areas where it competes with ICG but not independents than in areas where it competes with independents but not ICG. This evidence is inconsistent with the Commissioner's claim that only ICG constrains Superior's prices and underscores the importance of distinguishing between the effect of ICG and independents on Superior's prices, as the Carlton Report does, and Professor Ward does not.

(...continued)
    measure is positive and statistically significant. However, to evaluate the effect of the proposed merger on Superior's retail propane prices using these specifications, the coefficient on the ICG presence variable must be accounted for. Because it is positive in both specifications, removing ICG as a rival has an offsetting effect on Superior's retail propane prices. For example, in a market where the HI increases by 1,911 (the average merger-caused HI increase reported by Professor Ward), the regression using a 15 percent cutoff (to define substantial market presence) implies that the merger will lead to a fall in price (by one cent per liter). The change in price equals the change in HI (0.1911) times the coefficient on HI (4.895) minus the coefficient on the ICG effect (1.913) – that is, 0.93 minus 1.913 cents per liter. Similarly, the results from the 20 percent cutoff analysis also imply that the proposed merger will lead to a price reduction of one cent per liter in a market where the merger causes an HI increase of 1,911 (i.e., 0.1911 times 3.141, minus 1.599).

14. For each branch, we calculate an average annual gross margin for each end use. We weight each end use margin by that end use's share of total volume for all the branches in the analysis. Thus, the weight assigned to an end use is the same across all branches, so that differences in business mix across branches cannot affect the results of our analysis. Some branches have no sales in one or more end uses; these branches are excluded from our analysis.

Table 6

**Superior's Average Gross Margin in 1998
Branches Where it Competes with ICG but not Independents Compared to
Branches Where it Competes with Independents but not ICG
(In Cents Per Liter)**

Cutoff Value	Branches where Superior Competes With:	
	ICG, but not Independents	Independents, but not ICG
15 Percent	18.0	15.5
20 Percent	17.7	15.6
25 Percent	16.3	14.9
30 Percent	16.5	14.6

Note: Based on branches where Superior has a substantial presence (e.g., for the
analysis using the 30 percent cutoff, only Superior branches where Superior
has at least a 30 percent share are included). "ICG, but not Independents"
refers to branches where ICG has a substantial presence (e.g., share greater
than 30 percent) but independents do not have a substantial presence.
"Independents, but not ICG" is defined analogously.

It is the ability to distinguish the effect of ICG on Superior's prices from the effect of independents on Superior's prices that allows Carlton to conclude that there is no systematic evidence that ICG constrains Superior's prices. This key question cannot be addressed within Professor Ward's framework.

26. Professor Ward claims that the Carlton analysis fails to account for the reasons why market structure may differ across markets and this failure leads to statistical problems. The issue Professor Ward raises is known in econometrics as "endogeneity." This issue is discussed in the Carlton Report: "I do not include ICG's (or independents') share at a location as an explanatory variable in my regression models because the inclusion of variables that may depend on Superior's price at that location raises a potential statistical problem – referred to as "endogeneity." Measuring whether ICG's or independents' share exceeds a certain value reduces endogeneity concerns" (Carlton Report, ¶ 41, fn. 38).[15]

27. Professor Ward criticizes Carlton for relying on monthly data, and claims that the Carlton analysis should have been based on annual instead of monthly data. Curiously, he repeats the Carlton analysis using annual data and reports that the Carlton and annual data versions "yield similar results" (Ward, at 9). Indeed, Professor Ward's Table 2 shows that the effect of substituting annual for monthly data has almost no effect on his results.

28. Professor Ward claims that "[e]conomic theory implies that, in less competitive markets, firms are able to charge higher prices" (Ward, at 1). Professor Ward's claim is incorrect – economic theory shows that less competitive markets can be associated with lower prices if those markets are also associated with lower costs. None of the Commissioner's experts has disputed that the merger will lead to lower costs. Indeed, in a rebuttal report to

---

15. We also repeat our analysis assuming that the market structure variables in the Carlton Report are endogenous. That is, we employ a two-stage least squares approach (we use Professor West's instruments – market size and market size squared). We find that the two-stage least squares results also provide no systematic support for the Commissioner's claim that ICG significantly constrains Superior's retail propane prices. Full regression results are reported in Appendix G.

- 13 -

Superior's efficiency analysis (by Schwindt, Globerman and Kemp), the Commissioner's experts concede that the merger could generate cost savings of about $20 million per year.[16] Notwithstanding this concession, none of the Commissioner's experts has analyzed the price-reducing effect of likely efficiencies associated with the proposed merger on propane prices – Professor Ward, for example, explicitly ignores the effect of efficiencies on price (see, for example, Ward, at 10). Economic theory predicts, however, that even a monopolist will find it profitable to reduce its price if its marginal costs decline. None of the Commissioner's experts has addressed this point. Thus, Professor Ward (and the Commissioner's other experts) cannot, on theoretical grounds, claim that the proposed merger will lead to higher retail propane prices.

29.   Even if Professor Ward's price effect estimates are accepted (and they should not be, because he fails to distinguish between the effect of ICG and independents on Superior's prices, and he ignores efficiencies), his results, combined with the methodology in his prior report, imply that the dead weight loss associated with the merger is far smaller than the likely cost savings generated by the proposed merger.

30.   In his rebuttal report, Professor Ward claims that the proposed merger could lead to a price increase of 0.12 to 2.07 cents per liter. We will respond more fully to Professor Ward's prior report by September 27, 1999, but we note that in that report, Professor Ward claimed that the proposed merger would lead to a larger price increase – he uses an estimate of about eight percent, which implies a price increase of about 2.25 cents per liter (i.e., eight percent of 28.1 cents per liter; this estimate, as Professor Ward concedes, also ignores the effect of entry, supply-side substitution and efficiencies). In his prior report, Professor Ward estimated that the proposed merger would lead to an annual dead weight loss of $3.8 million per year. The estimates in this report therefore imply a dead weight loss of less than $3.8 million per year (again, ignoring potential entry or expansion, supply-side substitution and

_____

16. Superior claims that the cost savings will be about $40 million per year.

efficiencies). Thus, even the Commissioner's experts' annual cost savings estimates of $20 million per year are more than five times higher than Professor Ward's dead weight loss estimate.

IV. OUR RESPONSE TO THE COMMISSIONER'S EXPERTS' CRITICISMS OF THE CARLTON REPORT'S ANALYSIS OF ENTRY.

31. Professor West claims that "Professor Carlton has . . . inappropriately characterized the possibility of entry by U.S.-based propane dealers into a Canadian retail propane market" (West, ¶ 2). In particular, he claims that the lack of entry into Canada by U.S. retailers "suggests that there are some entry barriers that Professor Carlton has not discussed" (West, at 2). Professor West has mischaracterized the Carlton Report's conclusions.

32. The Carlton Report's empirical analysis showed that Superior's prices (adjusted for costs) were not systematically higher than propane prices in the United States. There may be several explanations for this result. One possible explanation is the threat of entry (by U.S. or other retailers) if prices in Canada were to rise: "propane prices in Canada may be constrained by the threat of entry if prices relative to costs in Canada were to become substantially higher than in the United States" (Carlton, ¶ 20).

33. Professor West's criticism ignores the Carlton Report's findings that prices (adjusted for costs) in Canada and the United States are similar. Thus, U.S. firms may have no incentive to enter Canada at current Canadian price levels.[17] But if margins were to increase substantially after the proposed merger, as the Commissioner claims they will, entry into Canada would become substantially more attractive to U.S. firms.

34. For example, if propane prices in Canada increased by about two cents per liter as a result of the proposed merger -- as Professor Ward suggests in his report -- EBITDA as a

---

17. Amerigas -- the largest U.S. propane retailer -- "has been identified as a potential purchaser of ICG pre-closing," and thus a potential entrant into Canada, even at today's prices. Statement of William Katz, at 3.

percentage of revenue in Canada and the United States would no longer be similar. Table 3 of the Carlton Report shows that EBITDA as a percentage of revenue for 1998 for Superior was 18.0 percent. If the average price of propane in 1998 was 28.1 cents per liter (see Ward, at 10), Superior's EBITDA per liter in 1998 was about 5.1 cents. An increase of two cents per liter would increase EBITDA margins by about 40 percent (i.e., from 5.1 to 7.1 cents per liter). That is, a two cents per liter increase in price would increase the EBITDA as a percentage of revenue for Superior from 18.0 percent to about 25.1 percent. Superior's EBITDA as a percentage of revenue would then be about 25 percent <u>higher</u> than the <u>highest</u> EBITDA as a percentage of revenue earned by any of the major U.S. retailers analyzed in the Carlton Report over the last five years, and likely would provide a substantial incentive to U.S. firms to enter local markets in Canada. For example, EBIDTA as a percentage of revenue for Amerigas – the largest retailer in the United States – varied between 14.3 and 18.9 percent during the years 1994-1998, so a 25.1 percent margin would represent an increase of 33 to 76 percent (e.g., 25.1 is 76 percent higher than 14.3).

35.   Professor West also suggests that the entry that has occurred is not competitively significant because the "majority of new entrants have only been able to acquire a one or two percent share of sales in the branch trade area that they enter" (West, ¶ 3). But the Carlton Report shows that it is the <u>aggregate</u> share of independents that affect Superior's price, not the size of each individual independent retailer.

V.   **OUR RESPONSE TO THE COMMISSIONER'S EXPERTS' CRITICISMS OF THE CARLTON REPORT'S ANALYSIS OF THE EFFECT OF A PRIOR ACQUISITION ON RETAIL PROPANE PRICES.**

36.   Professors Schwindt and Globerman suggest that the Carlton Report's analysis of the effect of Superior's acquisition of Premier on propane prices provides no evidence on the likely effect of the proposed ICG acquisition – they claim that "an analogy between the Premier and ICG mergers is inappropriate" because "there were still competitors in Premier's markets

after its acquisition" (Schwindt and Globerman, at 1). But that observation applies to many markets at issue in this proceeding as well. Nonetheless, the Commissioner maintains his claim here that the proposed merger of Superior and ICG will substantially lessen competition even in markets where independent retailers have a substantial presence – that is, where the merged firm will continue to face rival sellers. If that is so, an analysis of the Premier acquisition should provide relevant evidence for at least those local markets where the merged firm would continue to face rivals.

37.   Professors Schwindt and Globerman claim that "Professor Carlton's findings are an artifact of a changing product mix for [Superior] as a result of the merger, rather than (exclusively) improved efficiency following the merger" (Schwindt and Globerman, at 1). They appear to have misunderstood the Carlton Report analysis – it explicitly controls for month-by-month changes in business mix.[18] Furthermore, the end-use specific margin regressions are not affected by business mix changes, and each of those end use regressions shows that Superior's prices did not increase after the Premier acquisition – indeed, prices for three of the end uses fell significantly.[19]

38.   Finally, notwithstanding their criticisms of the Carlton Report's Premier analysis, Professors Schwindt and Globerman provide no evidence that the Premier acquisition led to higher retail propane prices. This is an important omission because they apparently believe that economic theory predicts that a merger between major rivals leads to price increases, yet they fail to confront the evidence from the Premier transaction that shows otherwise.

---

18. The titles in Appendix H to the Carlton Report contain a typographical error. The period covered by the analysis begins in May 1993, not May 1994. The programs that generated these tables, which show that data from 1993 through 1995 were included in the analysis, were provided to the Commissioner.
19. The Carlton Report's analysis compares Superior's prices before and after the Premier acquisition at eight Superior branches where Superior competed with Premier prior to the acquisition to Superior's other branches in Alberta and British Columbia. The eight branches at which Superior competed with Premier were identified for us by Superior personnel.

VI.   CONCLUSION.

39.   In this report, we have responded to the Commissioner's Rebuttal Reports' criticisms of the Carlton Report. We find that their criticisms are without merit and, in any event, do not affect the Carlton Report results when we rerun the Carlton analyses under the assumption that their criticisms are valid. Furthermore, the Commissioner's experts still have not presented any systematic evidence to support their claim that retail propane prices will increase as a result of Superior's proposed acquisition of ICG. We conclude that the empirical evidence provides no support for the Commissioner's claim that competition between ICG and Superior constrains Superior's retail propane prices.