



INTERNATIONAL

## FINAL REPORT

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# *Ex Post* Merger Review: An Evaluation of Three Competition Bureau Merger Assessments

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## 1. EXECUTIVE SUMMARY

CRA International was awarded a contract from the Competition Bureau (“Bureau”) to undertake an independent review of one of the Bureau’s past merger assessments. This *ex post* merger review is a case study of the Bureau’s merger assessment process. It is implemented as part of the Bureau’s continuing efforts to learn from past decisions, and make improvements, if needed, to its review procedures.

Our mandate with this study is:

- 1) To review the Bureau’s analysis of one merger, chosen to have raised important competition issues but that did not, in the opinion of the Bureau, merit a challenge before the Competition Tribunal or require remedies;
- 2) To determine if the Bureau’s expectations about market conditions after the merger outcome were borne out or not, and;
- 3) To evaluate the Bureau’s merger investigation process in light of this *ex post* merger review and recommend improvements as warranted.

To undertake this review, we collected information from market participants through interviews, other studies and from public sources about post-merger market conditions. We compared our results from analyzing and reviewing this information with the predictions discussed in the Bureau case files that were developed at the time of the transaction.

We reviewed three past cases, with greater attention paid to one main case study. The three cases chosen for study all raised significant competition issues at the time of the review, but which were not substantial enough to warrant the seeking of remedies. The cases for study were chosen following consultation with the Bureau, and all occurred more than three years ago.

The main transaction studied occurred in 2000 in commercial radio broadcasting. Corus Media (“Corus”), a company formed by Shaw Communications in 1998, acquired the assets of WIC Broadcasting (“WIC”), a Vancouver-based broadcaster. The market overlap was in commercial broadcast radio. The second case (the “Fording” transaction) involved a merger in 2003 of a number of coal companies based in western Canada. There were two competition issues raised at the time of this transaction: (i) the provision of a certain type of coal, called mid-volatility coal, that is used by steel makers in eastern Canada; and

(ii) Fording's interlocking ownership interest<sup>1</sup> in two key coal terminals in the Vancouver area (Westshore Terminals and Neptune Terminals). The third case is the joint venture between Carmeuse and Lafarge, both large suppliers of concrete and other building materials. Like the Fording transaction, this joint venture would also affect steel industry customers as following the transaction there would be only one potential supplier of dolimitic quicklime ("dolime"), an essential input into steel making, to steel mills in Ontario and Quebec. These three cases were selected from a short list compiled by Bureau staff.

For the commercial radio case, we undertook additional work beyond interviewing customers. Most of our interviews were of large advertising agencies or very large customers. Our sample was drawn mostly from those that appeared in the case file and we did not attempt to obtain a representative random sample. To augment this information, we collected data in order to perform statistical analyses. We are able to examine how the merger and changes in concentration in general in the industry affected listening levels, radio station revenues, and format variety with the data analysis. We also looked to research in the U.S. on the effect of radio consolidation there on similar industry characteristics as well as prices, which were not available for our analysis.

In general we find that the Bureau's analyses were quite accurate in terms of their predictions of market conditions into the future, given the information that was available at the time of the review. By closely following the *Merger Enforcement Guidelines* and obtaining a significant amount of relevant information at the time of the review the Bureau's predictions, given the fact that these cases were among the most difficult, were very good. The main insights from each transaction are highlighted below.

- Corus-WIC: The Bureau correctly identified that new entry as a result of a change in Canadian Radio-television and Telecommunication Commission ("CRTC") rules would be important to how the markets developed. The Bureau could have given this factor greater weight as it turned out to be critical. Through our statistical work (but not the interviews) we find some evidence that the merger (and subsequent transactions) affected radio markets in a number of ways, perhaps more than the Bureau's analysis would have predicted. Those advertisers and advertising agencies we interviewed could not identify any substantial impact of the merger except for an early attempt to tie sales of time on one station with sales on another station, something that was unwanted by advertisers and not sustained for any period of time.

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<sup>1</sup> Fording had an ownership interest in the Neptune Terminal and, as a result of the transaction, the Westshore Terminal would acquire a small ownership interest in Fording.

- Fording: The international coal market changed dramatically after the transaction in a way that the Bureau could not have been expected to anticipate at the time of the transaction. World prices of coal increased substantially due to high Asian demand and this had significant effects in Canada. Canadian steel companies at first felt they had to shift to Appalachian coal sources as Fording focused on Asian markets. A number of competitors to Fording entered into production in western Canada and are supplying into eastern Canada. The Bureau correctly identified the ability of Canadian steel producers to source their input requirements from the U.S. Given the substantial price changes induced by changes in world market conditions we cannot determine if the merger would have raised coal prices for domestic steel companies had these international changes not taken place. In respect of Vancouver terminal services, despite some concerns at the time of the merger by some coal producers, there were no harmful impacts identified by those coal producers whom we interviewed.
- Carmeuse-Lafarge: The Bureau noted that dolime prices might increase as a result of the merger but that the buyers, the larger steel companies, would be able to tolerate such price increases. The potential entry of alternative suppliers was predicted to provide some constraint and the countervailing market power of the steel companies (with the ability to source product from the U.S. if forced to) were also factors cited as to why the transaction should not be challenged. From our interviews, some customers have faced significant price increases over time. These customers do not attribute these price increases to cost changes, but instead attribute the increases to the willingness of Carmeuse (the joint venture has since been dissolved) to exercise market power. An alternative supplier was induced to enter after being out of the dolime industry for a long time, but interviews suggest that prices continue to be high. The Bureau correctly anticipated this possibility.

## **2. INTRODUCTION**

CRA International was awarded a contract from the Competition Bureau (“Bureau”) to undertake an independent review of one of the Bureau’s past merger assessments. This *ex post* merger review is a case study of the Bureau’s merger assessment process. It is implemented as part of the Bureau’s continuing efforts to learn from past decisions, and make improvements, if needed, to its review procedures.

Our mandate with this study is:

- 1) To review the Bureau’s analysis of one merger, chosen to have raised important competition issues but that both did not, in the opinion of the Bureau, merit a challenge before the Competition Tribunal or require remedies;
- 2) To determine if the Bureau’s expectations about market conditions after the merger outcome were borne out or not, and;
- 3) To evaluate the Bureau’s merger investigation process in light of this *ex post* merger review and recommend improvements as warranted.

To undertake this review, we collected information from market participants through interviews, other studies and from public sources about post-merger market conditions. We compared our results from analyzing and reviewing this information with the predictions that were developed at the time of the transaction discussed in the Bureau case files. We used the results of our analysis in conjunction with our own expertise in competition economics to review the economic analysis in the case file.

While our mandate was to review only one transaction, after consulting with the Bureau, we have chosen to review three past cases, with greater attention paid to one main case study. This provides the Bureau with additional information on its review procedures. Further to the mandate for this study, the three cases chosen for study all raised significant competition issues at the time of the review, but which were not substantial enough to warrant the seeking of remedies. The cases for study were chosen following consultation with the Bureau, and all occurred more than three years ago. The merging parties were not consulted prior to commencement of this study; however, their counsel were contacted to advise them of the study and to seek their voluntary participation. Not all merging firms chose to participate.

The main transaction studied occurred in 2000 in commercial radio broadcasting. Corus Media (“Corus”), a company formed by Shaw Communications in 1998, acquired the assets of WIC Broadcasting (“WIC”), a Vancouver-based broadcaster. The market overlap was in commercial broadcast radio. We refer to this as the “Corus-WIC” transaction. The second case involved a merger in 2003 of a number of coal companies based in western Canada, collectively referred to at the time as the Fording group (or just “Fording”). There were two competition issues raised at the time of the Fording transaction: (i) the provision of a certain

type of coal, called mid-volatility coal, that is used by steel makers in eastern Canada; and (ii) Fording's interlocking ownership interest<sup>2</sup> in two key coal terminals in the Vancouver area (Westshore Terminals and Neptune Terminals). The third case is a joint venture between Carmeuse and Lafarge, both large suppliers of concrete and other building materials. Like the Fording transaction, this joint venture also would affect steel industry customers as following the Carmeuse/Lafarge transaction there would be only one potential supplier of dolimitic quicklime ("dolime"), an essential input into steel making, to steel mills in Ontario and Quebec. We refer to this case as "Carmeuse-Lafarge".

These cases were selected from a short list compiled by Bureau staff. The shortlist was created to limit the number of possible cases for review to those that: (i) raised important competition issues (rated as complex or very complex) but not enough for the Bureau to conclude that the case merited a challenge before the Competition Tribunal or required remedies; and (ii) occurred sufficiently long ago that enough time had passed to allow the market to adjust to the merger but not so long ago that it would be hard to find anyone in the industry that remembers what conditions were like before the merger.<sup>3</sup>

A substantial part of our analysis is drawn from interviews of customers and, to a lesser extent, the merged companies and competitors.<sup>4</sup> We would like to sincerely thank all those who agreed to participate. In exchange for their information and time (interviews took from 10 minutes to over an hour) we could only offer our gratitude and the knowledge that their valuable input would be put to good use. Interview questions were provided in advance along with a letter explaining the purpose of the study. The questions were only used as a guide and we let the respondent determine the best way to provide us with his/her views of post-merger market conditions and the effect, if any, of the merger on the market. Most interviews were conducted over the phone but several were conducted in person.

For the two mergers with potential impact on steel companies, the interviews provided most of the information that we report here. The steel company representatives we spoke with were very knowledgeable about their industry and the relevant issues and, for the most part, provided us with a detailed understanding of conditions in their market and a thoughtful assessment of the likely effects of the merger to the extent these could be discerned from changes in other market conditions. As there are only a small number of steel companies

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<sup>2</sup> Fording had an ownership interest in the Neptune Terminal and, as a result of the transaction, the Westshore Terminal would acquire a small ownership interest in Fording.

<sup>3</sup> Another consideration was that the Bureau did not want to give the impression that it was considering reviewing a case with the purpose of potentially challenging it in light of new market developments, which it has the right to do within three years of the transaction. Thus any merger occurring in the last three years was excluded.

<sup>4</sup> Of some disappointment was the reluctance of some rivals and the merged parties to participate in the study due to confidentiality concerns. We made it clear to all those that participated that we would not attribute any comments to any person or company or list any names. Between five and ten customers were interviewed per transaction.

within Ontario and Quebec, we were able to conduct a small number of interviews in order to obtain a representative sample of the mergers' potential impacts on the market.<sup>5</sup>

For the commercial radio case, we undertook additional work beyond interviewing customers. Most of our interviews were of large advertising agencies or very large customers. Our sample was drawn mostly from those that appeared in the case file and we did not attempt to obtain a representative random sample. To augment this information, we collected data in order to perform statistical analyses. We are able to examine how the merger and changes in concentration in general in the industry affected listening levels, radio station revenues, and format variety with the data analysis. While the empirical analysis is very informative about a number of important characteristics of radio markets, unfortunately we do not have data on advertising prices or the number of advertisements per hour. To overcome this lack of data, we looked to the substantial research on the effect of concentration in radio advertising in the United States. Since many of our results are in line with those in the U.S., it seems reasonable that other U.S. findings would also hold in Canada notwithstanding higher radio listening per capita and greater radio station concentration in Canada compared to the United States. The U.S. research is also useful because it reveals a number of competition issues that could be important in assessing radio mergers, but which were absent from the Bureau case file.

In general we find that the Bureau's analyses were quite accurate in terms of their predictions of market conditions into the future, given the information that was available at the time of the review. By closely following the *Merger Enforcement Guidelines* and obtaining a significant amount of relevant information at the time of the review the Bureau's predictions, given the fact that these cases were among the most difficult, were very good. The main insights from each transaction are highlighted below.

- Corus-WIC: The Bureau correctly identified that new entry as a result of a change in Canadian Radio-television and Telecommunication Commission ("CRTC") rules would be important to how the markets developed. The Bureau could have given this factor greater weight as it turned out to be critical. Through our statistical work (but not the interviews) we find some evidence that the merger (and subsequent transactions) affected radio markets in a number of ways, perhaps more than the Bureau's analysis would have predicted. Those advertisers and advertising agencies we interviewed could not identify any substantial impact of the merger except for an early attempt to tie sales of time on one station with sales on another station, something that was unwanted by advertisers and not sustained for any period of time.

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We interviewed a total of 19 companies.

- Fording: The international coal market changed dramatically after the transaction in a way that the Bureau could not have been expected to anticipate at the time of the transaction. World prices of coal increased substantially due to high Asian demand and this had significant effects in Canada. Canadian steel companies at first felt they had to shift to Appalachian coal sources as Fording focused on Asian markets. A number of competitors to Fording entered into production in western Canada and are supplying into eastern Canada. The Bureau correctly identified the ability of Canadian steel producers to source their input requirements from the U.S. Given the substantial price changes induced by changes in world market conditions we cannot determine if the merger would have raised coal prices for domestic steel companies had these international changes not taken place. In terms of Vancouver terminal services, despite some concerns at the time of the merger by some coal producers, there were no harmful impacts identified by those coal producers we interviewed.
- Carmeuse-Lafarge: The Bureau noted that dolime prices may increase as a result of the merger but that the buyers, the larger steel companies, would be able to tolerate such price increases. The potential entry of alternative suppliers was predicted to provide some constraint and the countervailing market power of the steel companies (with the ability to source product from the U.S. if forced to) were also factors cited as to why the transaction should not be challenged. From our interviews, some customers have faced significant price increases over time. These customers do not attribute these price increases to cost changes, but instead attribute the increases to the willingness of Carmeuse (the joint venture has since been dissolved) to exercise market power. An alternative supplier was induced to enter after being out of the dolime industry for a long time, but interviews suggest that prices continue to be high. The Bureau correctly anticipated this possibility. The parties' Guelph dolime plant was closed after the merger.

The remainder of this report is organized as follows. Section 3 briefly reviews the economic considerations of the merger review process as outlined in the *Merger Enforcement Guidelines* ("MEGs"). We emphasize those sections of the MEGs that are particularly relevant to the cases analysed here. Section 4 describes each of the cases and the Bureau's assessment of each transaction. Section 5 presents the findings of our interviews for each of the cases. Section 6 provides a more detailed analysis of the Corus-WIC merger, including a review of the U.S. academic research and our statistical analysis. Section 7 provides an assessment of the Bureau's reviews and our recommendations.

### 3. MAIN ELEMENTS OF THE MERGER REVIEW PROCESS

The decision of whether to challenge a merger depends on predictions of the level of competition that will exist if the merger is undertaken relative to what would exist if the merger was not pursued. Many mergers can yield overall net benefits, but a merger can result in harm to consumers through higher prices (or poor service, fewer choices, less innovation) that arise either because of the exercise of enhanced unilateral market power (i.e. market power arising from the independent pricing and other business decisions of the merged firm) or coordinated market power (i.e. market power arising from pricing and other business decisions made in concert, either explicitly or tacitly, with competitors).<sup>6</sup> The effect of a merger may be immediate or, to the extent it reduces the amount of competition that will develop in the future, delayed.<sup>7</sup>

Typically the first step to a merger analysis is to define the relevant market. The relevant market is considered along two dimensions, product and geography. In order to determine which products and geographies are parts of the relevant market a hypothetical monopolist test is employed. The test defines the relevant market as the smallest set of products and smallest geographic region in which a monopolist controlling all the products in that geographic market could profitably raise price by around 5% to 10% for one year or longer. In cases where a seller can price discriminate by charging a higher price to a subset of buyers who cannot easily switch to other products or buy from other locations and who cannot engage in arbitrage with other customers buying at lower prices, the market would be defined more narrowly. The potential for price discrimination is a relevant consideration in both the Corus-WIC and Carmeuse-Lafarge cases.<sup>8</sup> To apply the hypothetical monopolist test the analysis may rely on statistical analysis such as the estimation of own-price and cross-price elasticities (i.e. the demand response to a change in prices of the product or related products) or non-statistical analysis such as evidence of functional substitution and the past behaviour of customers in terms of willingness to substitute as evidenced from surveys, interviews, documents from the merging parties and the like.

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6 The exercise of coordinated market power differs from the exercise of unilateral market power in that it requires a coordinated response of rivals that takes the form of a tacit or explicit agreement to act in the collective interest of the coordinating companies. Certain conditions are necessary for firms to be able to coordinate their activities and sustain an agreement (tacit or not), including the incentive and ability to punish any party to the agreement that cheats on the agreement in the hope of making additional profits by stealing customers from others by undercutting prices, the type of practice that is expected in competitive markets where firms do not coordinate their activities.

7 Of course, more often than not, in the long run the effect of a merger is significantly reduced as new entrants are attracted to the high profits a dominant firm enjoys.

8 Note that market definition does not usually consider substitution possibilities on the supply side. The ability of some suppliers to switch production to the products in question is important but is to be considered when examining supply responses in a subsequent step.

Once the relevant product and geographic markets are defined the analysis turns to consider which firms could, without incurring substantial sunk costs, supply the defined markets. Based on the set of included firms, market shares are calculated to determine the post-merger share of the merging parties and the four largest firms. The former provides an important indication of the likelihood that unilateral market power could be exerted after the merger and the second provides information about the likelihood of the exercise of coordinated market power post-merger.<sup>9</sup> Mergers where the merging parties together have less than 35% market share are usually not challenged.<sup>10</sup>

If market shares are sufficiently large to raise concerns the analysis continues, and other factors such as entry are considered. If entry is found to be likely, timely and of sufficient competitive importance, then the merger is not likely to lead to a significant increase in price. Past evidence of entry provides evidence of the likelihood of future entry. Significant sunk costs, costs to exit, regulatory barriers, and scale economies make entry less likely. All three cases provide interesting insight into the role of entry post merger. In two cases, Corus-WIC and Fording, post merger entry has had a significant impact on markets. In the Carmeuse-Lafarge case, the fact that entry was insufficient (but also the threat of entry) is important.

Another consideration is that large buyers may be able to exercise countervailing market power that would limit any price increase by the merged entity. A large buyer who can vertically integrate or sponsor *de novo* entry limits the market power of the merging firms. When price discrimination occurs, it may be that only large customers are able to constrain price increases through use of countervailing market power so that small customers are still susceptible to price increases. All three cases provide interesting examples of the role of countervailing market power. Carmeuse-Lafarge, in particular, provides some interesting insights into the extent to which countervailing power is effective.

If one of the merging firms is expected to fail and its assets withdrawn from the relevant market, then any potential competitive repercussions from the merger may be attributable to the firm's failure rather than the merger. To make use of the "failing firm defence", there needs to be evidence that the firm is failing, such as that it is insolvent or in bankruptcy proceedings, and that it is not likely to be restructured or its assets purchased and used by other competitors. This issue arose in the Carmeuse-Lafarge case.

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9 For coordinated behaviour to result in a sustained price increase, other conditions, and not just concentration, play a role. These include cost symmetries, the degree of product differentiation, the stability of costs and demand, the amount of excess capacity, and, more generally, the ability, incentives and speed with which coordinating members can detect and punish a member that deviates from the agreement.

10 Market shares are not the only indication of the likely change in intensity of competition post merger. Other factors are important, such as whether the merging parties are vigorous and effective competitors. When considering coordinated behaviour, factors such as the similarity in cost structures across firms and the ability of firms to detect and punish deviations from legal tacit agreements or illegal explicit agreements have to be taken into consideration.

Finally, where a merger is expected to impose harm on consumers because of an increase in market power it is possible that other benefits from the merger such as lower costs can offset this harm. The efficiency exception was not invoked in any of the cases that we examined; however, efficiencies are relevant in the radio merger, though in a way that is different from how the efficiency exception is usually considered. We discuss the efficiency issues at some length when we review the Corus transaction.

## 4. OVERVIEW OF STUDIED CASES

In this section we describe the three cases based on the information contained in the case files and summarize the Bureau's assessment of each transaction. The case files include interview notes of customers, the parties' submissions, an expert report in one case, and the Bureau's written assessments and internal documentation. Thus a fairly complete and balanced understanding of the case can be obtained from the Bureau's internal case files.

### 4.1. CORUS-WIC

Corus was created in 1999 out of the radio assets of Shaw Communications Inc. and is controlled by the JR Shaw family. Shortly after its creation, in 2000 Corus Entertainment Inc. ("Corus") acquired the radio assets, as well as some premium television assets, of WIC Western International Communications Ltd. ("WIC"). There was no overlap in television so only the radio assets raised competition concerns. As part of the transaction, Corus would acquire two stations in each of Vancouver, Calgary, Edmonton, Winnipeg, Hamilton and Toronto. Corus did not own any stations in Winnipeg but owned two stations in each of Vancouver and Edmonton and one station in each of Calgary, Toronto and Burlington/Hamilton.

The change in concentration, assuming the relevant market was commercial radio broadcasting in a city – the assumption that was made by the Bureau but that is nonetheless an assumption that is not universally accepted – as measured by audience shares was 44% in Edmonton, 40% in Calgary, 33% in Vancouver, 29% in Hamilton/Burlington and 10% in Toronto.<sup>11</sup> As the market shares in both Edmonton and Calgary exceeded the 35% threshold identified in the MEGs and Vancouver was just below, these are the markets that we focus on in examining post-merger effects.

In order to assess this merger it is important to understand the context in which it occurred. On the heels of similar development in the United States, in 1998 the CRTC revised its common ownership radio policy, allowing companies to own more radio stations in a given geographic market. In particular, the Commercial Radio Policy of 1998, which is still in force today, allows a person or company to own or control up to three stations in a market and a given language where there are less than eight stations in the market, but only two can be in the same service (i.e. AM or FM). In a market with eight or more stations a single owner can have up to four stations, with at most two in each service. The CRTC's prior policy had allowed ownership of a maximum of one AM and one FM station in each market. Thus the policy change was a relaxation of rules over ownership and is a major reason the Corus merger (and other mergers post-1998) took place.

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<sup>11</sup> Shares are based on hours tuned to each station as reported by BBM Canada in their Spring 2000 survey.

The policy change was a response to low profitability in the industry. Consolidation was expected to improve profitability and enhance the ability of radio broadcasters to compete with other forms of media. Broadcasters also argued that consolidation would lead to an increase in the diversity of formats, though the CRTC was not fully convinced of the extent of such an effect. At the same time the CRTC allowed more concentration, “to encourage competition and choice” the CRTC also revoked its Radio Market Policy, which restricted entry based on an examination of profitability of a market (and the existing stations in that market) and revenue growth.<sup>12</sup> As a result, the CRTC relaxed its control over market concentration and entry, allowing market forces to play a greater role in determining competitive outcomes. The resulting increased entry has been as important as increased consolidation within the industry, with the CRTC rule changes resulting in more rather than less competitive markets.

#### **4.1.1. Market Definition**

Geographic market definition was not contentious in this case. The majority of radio advertisers are local and local advertisers are generally only interested in advertising in their local area since most of their customers and potential customers live in or very near their city. A local area could be defined as a metropolitan area or the signal contour of a station – it generally does not matter as they tend to closely correspond. Signal spillover into another jurisdiction was only important in the case for a Corus station licensed to serve Burlington. Since this station spilled over into Hamilton the Bureau chose to define Hamilton/Burlington as a relevant geographic market.<sup>13</sup>

Unlike geographic market definition, product market definition in radio advertising is complex and is often the focus of attention in antitrust analysis. The parties maintained that other media advertising, such as television, print and outdoor, were part of the same relevant product market. The parties provided examples of advertisers switching to other media as well as references to several studies supporting a larger product market definition.<sup>14</sup>

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<sup>12</sup> Public Notice CRTC 1998-41, Commercial Radio Policy 1998. Nevertheless, the CRTC may still limit entry into a market if the market is considered too small to profitably support a new entrant and the existing stations. For example, in December 2006 the CRTC denied a broadcasting license in Salaberry-de-Valleyfield, Quebec as it agreed with the existing licensee that the local advertising market could not profitably support two radio stations (Broadcasting Decision CRTC 2006-685).

<sup>13</sup> The unspoken assumption was that the cities are close enough together that many listeners would be willing to purchase products and services in the more distant city.

<sup>14</sup> One cited U.S. study used statistical analysis to test if in response to mergers in the radio industry the market value of rival stations not part of any merger increased, a result that would be expected if the main effect of the merger was to increase prices since higher prices benefit both merging and non-merging stations (Ekelund, R., Ford, G., and Koutsky, T. (2000), “Market Power in Radio Markets: An Analysis of Local and National Concentration”, *Journal of Law and Economics*, 157-184). The Bureau interpreted this result as evidence that antitrust authorities have been doing a good job in screening competitively harmful mergers from those that led to substantial efficiency gains rather than as evidence that the relevant product market should include other forms of advertising media.

The Bureau took the view that radio is a separate market from other media. In forming its view, the Bureau considered the positions taken by the Australian Trade Practices Commission and the U.S. Department of Justice (“DOJ”). It also considered the fact that the characteristics of radio advertising are different from those of other media advertising, which makes other forms of advertising either more distant substitutes or even complements to radio advertising. The Bureau interpreted the examples of advertisers switching between advertising media as evidence of a shift in preference over the mode of delivery rather than a reflection of substitutability. For the purposes of market share calculations, the Bureau did not pursue a more narrow definition of product markets by reference to a format or demographic target group. Nonetheless, some consideration was given to more narrow definitions because the Bureau considered the share of major market demographic segments that could be reached at a reasonable frequency level without buying advertising on the parties’ stations.

#### **4.1.2. Entry and Other Considerations**

The Bureau recognized that barriers to entry were modest and that changes in CRTC policy had reduced regulatory barriers to entry. The Bureau also took note that stations could change format without making an application to the CRTC and cited an example of the ability to successfully reformat a station. Indeed, the post-merger data shows considerable evidence of reformatting and entry.

#### **4.1.3. Conclusions**

The Bureau concluded that though market shares in Calgary and Edmonton were sufficiently high to raise concerns, there were other factors that attenuated such concerns. These included that effective competition remained in these markets, and that entry was likely in light of actions taken by the CRTC.

Not apparent in the Bureau’s conclusions was any concern over potential price discrimination, whereby advertisers with inelastic demand that could be identified by radio stations may be more vulnerable to potential price increases as a result of the merger. Another factor missing from consideration was radio station listeners. Radio broadcasting is a two-sided market, with both advertisers and listeners. Perhaps because advertisers pay an explicit price to advertise and listeners only pay an implicit price (willingness to listen to advertisements) the welfare of listeners are not considered in the analysis. However, listeners are also potentially affected by the merger. A merger may affect the number of advertisements per hour, the number and types of formats, and the quality and composition of playlists, for example, of both the merging companies and rivals and thereby affect the entertainment value for a listener.

If listeners were to be considered, the relevant product market might need to be considered separately from what would be appropriate for advertisers. For listeners, the relevant product market depends on listeners’ willingness to switch from radio listening to other forms of

entertainment or other activities in response to an increase in advertising levels on radio (or changes in other radio characteristics). This willingness to substitute to other media or other activities may vary by demographic group, or by time of day (commuting drivers have fewer options than evening listeners) making product market definition more complicated.

#### **4.2. CARMEUSE-LAFARGE**

The Carmeuse-Lafarge transaction was a joint venture that combined, among other things, the Ontario lime producing capabilities of the two companies. The primary overlap was in the production of dolime, which is used by the steel industry.

At the time, Carmeuse owned three plants in Canada: BeachvilLime Limited located in Ingersoll; Guelph Dolime located in Guelph; and, Northern Lime Ltd. located in Blind River (close to Sault Ste. Marie). All three plants are close to large steel producers. The Guelph plant produced dolime while the BeachvilLime plant produced a different type of lime called high-calcium lime. The Guelph plant was ultimately closed.

##### **4.2.1. Product Market Definition**

The Bureau defined the relevant product market as dolime. Steel makers also use calcitic lime but have preferences for a given proportion of the two types of lime. Based on interviews the Bureau concluded that a major steel producer would not change its steel making practices in response to a 5% dolime price increase.

##### **4.2.2. Geographic Market Definition**

The geographic market was defined as Ontario and Quebec plus one small plant in Detroit. There are more dolime producers in the United States, in particular, in Ohio. However, transportation costs are high partially because dolime reacts with water and humidity, and hence special storage is required. As well, the product is heavy relative to its value per unit of mass. The Bureau did examine a number of facts, such as examples of longer distance transportation of dolime in other regions, as well as examples of spot shipments in the past to Ontario from Ohio. The parties argued that the relevant geographic market included U.S. suppliers.

Market shares depended significantly on which geographic market definition was used. If one adopted the parties' definition then the combined market share of the merging firms was only just over 35%, while the Bureau's definition that did not include U.S. suppliers implied a combined share of more than double this.

#### 4.2.3. Countervailing Power, Failing Firm and Entry

Important to the assessment was the fact that the large steel companies are the largest consumers of dolime in Quebec and Ontario.<sup>15</sup> Several steel companies had contracts with the parties in place at the time of the transaction. The steel producers had alternative suppliers, albeit requiring greater transportation costs, which could be used in negotiations with the parties. Loss of a major steel customer would amount to a significant loss in revenue to the joint venture. Smaller buyers without the countervailing power of the large steel companies would be more at risk.

Entry was considered difficult because of limited dolime deposits but the main barrier is overcoming environmental issues and obtaining permits to build and run kilns.

In the end, it was the combination of alternative U.S. suppliers and countervailing power of large buyers that led the Bureau to conclude that a successful challenge before the Competition Tribunal would be unlikely.

#### 4.3. FORDING

The Fording Coal Partnership was formed through the combination of thermal and metallurgical coal assets as well as terminal facilities located in or near Vancouver of a number of coal companies. The primary players were Fording Inc., Teck Cominco Limited, Luscar Ltd., and CONSOL Energy Inc. Fording Inc. contributed its metallurgical coal operations in the Elk Valley region of southeastern British Columbia. Fording purchased from Luscar and affiliates of CONSOL two metallurgical mines in western Canada and an interest in the Neptune terminal. Teck (and its partners) contributed Elkview coal mine in southeastern British Columbia, which produces metallurgical coal. Also, Westshore Terminals Income Fund, which owns the partnership that operates the Westshore coal storage and loading terminal, acquired a minority position in Fording Canadian Coal Trust, whose subsidiary Fording Inc. has a majority position in the Partnership. There were other parts of this transaction, but they are not pertinent to the competition issues which the Bureau considered. The partnership is now called Elk Valley Coal but was referred to as the Fording Coal Partnership in the case file.

There were two main areas of concern. One was the combination of metallurgical coal assets which could impact steel makers in Ontario that buy coal from western Canada to produce coke, an input into steel making. The other was the significant interlocking ownership interest the partnership would have in both the Neptune and Westshore<sup>16</sup> terminals, which could potentially affect small coal producers not part of the partnership.

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15 Canadian Minerals Yearbook 2003, *Natural Resources Canada*.

16 Westshore would have an interest in the partnership.

Steel producers combine different grades of coal to produce the desired quality of coke at the lowest possible cost. Some of the coal is sourced from the U.S. Appalachians, but starting in the late 1990s a certain type of coal (mid-volatility), which is much more abundant in western Canada and has some desirable properties not found in U.S. coal grades, was used in combination with U.S. sourced coal by the larger Canadian steel producers.<sup>17</sup>

Most of the metallurgical coal (or coking coal) mined in western Canada was and still is exported overseas. Western Canadian coal leaves the country via one of three ports, the two in and around Vancouver and a federally owned terminal, Ridley Terminals Inc., located in Prince Rupert, on the coast of northern British Columbia. Customers are located in Asia and Europe and the Canadian companies compete in a world market for coal. Australia is a significant coal exporter and has the envious position of good access from coal mines to deep water ports. Canadian coal companies are competitively disadvantaged by higher overseas shipping costs. In North America, Canadian coal mines also have a transportation cost disadvantage in reaching Ontario steel producers vis-à-vis U.S. coal suppliers because of the further shipping distance.

#### **4.3.1. Market Definition**

Market definition was straightforward in this case. In the case of coal, the relevant product was metallurgical coal and the relevant geographic region from the perspective of Canadian steel makers was North America. The finer issue related to competition between different grades of coal was left to the competitive effects analysis.<sup>18</sup> For coal terminals the relevant geographic market depended on where coal mines were located. For some mines that meant all three terminals and for others it meant the Neptune and Westshore terminals.

#### **4.3.2. Competitive Effects**

In terms of coal supplied to Ontario steel companies, understanding the competitive effects requires an expert understanding of the technical characteristics of how coal is used in steel making and the available sources of coal. To obtain this expertise the Bureau retained an expert in the industry. Broadly speaking, metallurgical coal comes in three varieties – low volatility, mid volatility, and high volatility – and western Canadian coal supplied by Fording is mostly a mid-volatility grade. Even within a grade there are differences so that western

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<sup>17</sup> The depreciation of the Canadian dollar relative to the U.S. dollar in the late 1990s made Canadian coal more attractive to domestic buyers since coal prices denominated in Canadian dollars would have to increase to maintain parity with U.S. prices while domestic transportation costs would not.

<sup>18</sup> The Bureau's analysis about the degree to which Canadian steel producers could substitute U.S. grades of coal for Western Canadian mid-volatility coal is described in the competitive effects section. Alternatively, the detailed analysis could have been put in the market definition section (product and geographic markets would need to be defined simultaneously in this case) and then the competitive effects analysis would have been very brief. For this particular case it does not matter which approach is taken.

Canadian mid-volatility coal is not identical to U.S. mid-volatility coal mined in the Appalachians. At issue was the degree to which U.S. metallurgical coal mixes could be used as substitutes for western Canadian coal and thus discipline the merged entity from raising prices.

Canadian steel producers source low- and high-volatility coal from the U.S. The mid-volatility coal produced in the U.S. is much less abundant than western Canadian mid-volatility coal. Steel producers use a blend of coals for their operations and it is possible to alter the volatility mix to some extent in response to a change in availability or relative prices, though determining the effect of different mixes on production costs requires a careful analysis. Prior to the mid-1990s western Canadian coals were not used in southern Ontario, but changes in Ontario steel companies requirements, reduced availability of appropriate U.S. coals, and the depreciating Canadian dollar, which reduced the freight disadvantage for western Canadian coal suppliers, caused Ontario steel companies to source some of their coal requirements from western Canada.

As an alternative to using only U.S. coals, another possible substitute is to import coke, the direct product of the coal that steel makers require. Doing so would involve foregoing the use of existing coke oven batteries. For coke oven batteries that are old and need to be refurbished, such an option may be attractive in the face of a price increase as a result of the merger.

The Bureau obtained information from interviews of steel companies and made use of the retained industry expert to understand the costs of using only U.S. coals if steel companies did not purchase Canadian mid-volatility coal. Without question U.S. coal grades are functional substitutes for western Canadian coal but the key question for antitrust analysis is whether they are close enough economic substitutes to constrain the pricing of the merged entity, which would control almost all of the production of mid-volatility western Canadian coal. The expert's analysis provided an example showing the estimated cost per tonne of not using Canadian mid-volatility coal. The result showed the cost was small, though it was unclear what price assumptions were used in the analysis. Concerns were expressed at the time of the transaction that western Canadian coal prices to Canadian steel companies could increase.

The parties contended that new entry would occur as various coal projects moved forward so that there would be future competition. The Bureau's expert was doubtful of this claim, noting that projects often do not reach the production stage and that smaller coal producers would not be able to secure advantageous rates for shipping to eastern Canada. As we will see, entry, and a lot of it, did occur in response to much higher coal prices (the higher prices were due to other world developments and not the increase in Canadian concentration), with some of the new entrants supplying Canadian customers.

The Bureau concluded that, given what appeared to be a reasonably close substitution possibility with U.S. coal, there was not sufficient evidence to challenge the merger on this issue.

The second competition concern related to the terminals and in particular the interlocking ownership interest that the merged company would have in both the Westshore and Neptune terminals in Vancouver. Some coal producers' preferred choice was the Ridley terminal (the Crown owned terminal at Prince Rupert) and, provided that the Ridley terminal stayed open and in the hands of the Crown (which it has), these coal producers could obtain reasonable pricing there. Several coal producers had a preference for either the Neptune or Westshore terminals, though they could reach Ridley at additional cost. Part of the reason for their preference for one terminal or the other was due to rail costs that depended on the location of the mines. Another reason for a preference for the Vancouver situated terminals was the large number of vessels picking up coal which meant it was possible to fill ships only partially with one company's coal thereby providing flexibility on delivery times and amounts, which is particularly useful to small coal producers. There was some concern that non-shareholder coal producers might face higher terminal prices because the Fording partnership would have an ownership stake in the Neptune terminal and the Westshore terminal would have an ownership stake in the Fording partnership. However capacity was, and still is, plentiful so even though terminal shareholders enjoyed a right of first refusal, they would be unlikely to use it credibly to shut out a rival coal producer. Furthermore, given that the small producers had little impact on the world price of coal there was little incentive to try to keep them out of the export market.

Given this, the Bureau concluded that the ownership change was not that important and that there were not strong incentives to keep third party mines from using the Neptune or Westshore terminals post-merger.

## **5. POST-MERGER MARKET OUTCOMES**

In this section we examine what actually happened after each merger. Ideally we would like to know how the merger affected prices and other market conditions. This presents an empirical challenge in that we do not observe what would have happened absent the merger. For the Corus-WIC transaction we can get around this problem somewhat by using other markets as controls. For the other two mergers affecting steel company customers those we interviewed were generally willing to provide us with their own conjectures, though many pointed out that they too could not say for certain how things would have evolved absent the merger.

A practical challenge was the limited data available. We obtained some anecdotal information on price changes from our interviews but not the kind or amount needed to conduct a rigorous statistical analysis. Pricing data is considered confidential by most buyers and sellers in these markets and they are usually unwilling to provide it or will only provide it on a limited basis. Thus while we can report anecdotal information on prices, we cannot provide a robust analysis of how the mergers affected prices.

Fortunately, there is a large amount of data that can be obtained in respect of the radio industry and, as mentioned above, there has been extensive research using such data in the U.S. radio broadcasting industry and, in particular, on the effect of concentration. Owing to a lack of advertising transaction price data much of this research is focused on non-price aspects of competition, such as format positioning, variety and listening levels. Similar data to that used in the U.S. studies exists in Canada and we have collected it to examine the effect of both the Corus-WIC transaction and changes in radio broadcasting concentration more generally.

In addition to formal statistical analysis of the radio industry, the interviews provided information about what happened to other aspects in the market after the merger. We first summarize what we learned from the interviews and then proceed to the statistical analysis of the radio industry.

### **5.1. CORUS-WIC INTERVIEWS**

Our interviews for the Corus-WIC transaction were advertisers, advertising agencies and radio stations. We contacted 66 advertisers, advertising agencies and radio stations and 8 agreed to participate in an interview. Most of these were advertising agencies. The few small advertisers we spoke with could not provide us with very much information since advertising is not their main focus and recalling conditions seven years ago proved to be difficult. However all the representatives of advertising agencies and large advertisers we spoke with had a very good understanding of the industry, were in a similar position at the time of the merger, and recalled the circumstances of the merger.

Everyone we interviewed thought the merger had had little impact on the market overall. While prices have increased generally, most attributed this to inflation (though prices are rising faster recently in Calgary due to demand pressure), and no one we interviewed attributed any price changes to the merger. Radio owners reported that pricing per rating point over the past 11 years has been rising at a rate below inflation, rising from around \$90 to \$130. It is important to recognize, however, that an advertiser's (or radio owner's) ability to determine if the merger had a small to moderate effect on advertising prices is limited given the dynamic nature of the industry, including a significant amount of entry and format changes in recent years in many markets.

While there can be significant swings in any particular advertiser's budget year over year, on average individual customer budgets for advertising have been growing at about the rate of inflation (or slightly more). Overall, radio advertising demand is tied to the strength of retail business. Radio owners noted that radio advertising demand has increased as television has become more regional leaving more opportunities for advertising in local markets.

In terms of service quality, most advertisers and agencies found little change after the merger. A few thought that Corus' service improved slightly because the sales representatives of larger stations are better trained and more focused on serving the needs of existing clients rather than winning new clients. One interview respondent had the opposite experience finding that some more experienced representatives were replaced by younger less experienced representatives, but found that the change was nonetheless small. Most felt that business continued as usual after the merger.

Similarly, contracts with radio stations were also not perceived to be affected much by the merger. There is variation in the types of contracts that advertisers enter into with radio stations and the manner in which they are negotiated. In general, an advertiser or an agent can purchase from a "rep house" or buy directly by negotiating with a representative of a particular station. Dealing directly with the station allows for more customer involvement but, when there are multiple stations that are part of negotiations, also results in higher transaction costs for the customer. However, transaction costs have been declining as technologies such as email facilitate the exchange of information. There has been consolidation in rep houses, but this is unrelated to the merger. Radio owners also noted that advertising agencies have consolidated, increasing their buying power.

There is a significant amount of autonomy given to station managers in negotiating with advertisers. Station managers may get some general directions from corporate headquarters in terms of negotiations, but individual manager style is important and radio station owners

confirm that stations have significant autonomy.<sup>19</sup> Pricing differs among buyers and knowledge of different buyers' willingness to pay is important as prices are negotiated; hence, pricing decisions need to be kept local.

Where the merger may have had an impact, albeit temporary, was on tied selling. Two stations are tied when an advertiser who buys time on one station is forced to buy time on another. A concern was expressed that after the merger there would be an increased ability to tie, which did not prove to be evident. Very small advertisers do not find it profitable to advertise on more than one station, which makes it difficult to profitably tie two radio stations together when selling to small advertisers.<sup>20</sup> Other advertisers we spoke with were also concerned about tying and were happy to find that it was not sustainable. While radio stations have an incentive to tie stations together, and stations will offer some discounts to larger buyers who buy on multiple stations, they are not able to force advertisers to advertise on multiple stations.

All interview respondents commented that format changes occur very often. None, though, could attribute any particular change to the merger or noticed if the frequency of changes was affected by the merger. Shifts in demographics and owners looking to reposition stations with low profitability were two reasons cited by advertisers for changes in formats. (The shift has been to adults in the 25-54 year range and away from teens, young adults and older audiences.) One interview respondent noted that format changes are more frequent now than in the past and this creates problems for advertisers as they must constantly reassess the desirability of different stations. Another interview respondent noted that competition is generally more intense between similar formats that target the same demographics. Some formats are harder to enter, such as sports, since listeners develop a strong preference for certain radio personalities and contractual arrangements to obtain broadcasting rights can be hard to replicate. Some interview respondents thought that the entry of new stations leads to market fragmentation as an entrant often gains more market share by stealing business from rivals rather than increasing overall listening. Fragmentation was confirmed by radio station owners and has been documented in the academic literature (see, for example, Berry and Waldfogel, 1999a).

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19 One interview respondent noted that a station owned by a larger publicly owned company does not have the flexibility of a smaller privately owned station in terms of offering special pricing discounts or other incentives as a result of new financial reporting requirements that require the public company to have internal controls in place to reduce the incidence of financial misreporting with the side effect of reduced individual station flexibility. However, a larger station could find ways to provide value added benefits.

20 A few interview respondents did mention that there can be some modest benefits when buying advertising from two or more stations from the same owner, but that these are not generally sufficient to sway an advertiser to use the second station of the same owner unless the advertiser is already almost indifferent between that station and the best alternative. Advertisers and agencies are not usually interested in the ownership of a station; instead, ratings and demographics are critical.

Radio station owners indicated that format change positioning is complex; some formats are easier to successfully move into than others, some require significant long-term investments to build an audience, and when format changes are made, they are made strategically, taking into account not only changes in listener preferences but interactions with existing formats in the market. The entry of new stations has a significant effect on format changes as existing stations adjust in response to new entrants. Competitors tend to target popular formats and other than some formats such as sports, there are no substantial barriers to entry, such as those created by highly popular radio personalities in the U.S. Radio stations did not feel that commercial loads had increased because of the Corus-WIC merger. Overall profitability within the markets had improved because of consolidation but now has suffered set backs because of increased competition due to entry. Competition also caused costs to rise as more resources are needed to make a sale and scarce talent can demand higher salaries.

While radio stations felt that synergies existed, they are often less tangible than in other industries and are therefore difficult to define. The opportunity to apply the talents of the best employees across more stations is one possible synergy. However, applying elements of programming and playlist selection that work well on one station to other stations was downplayed. Such economies of scope may be more important in the U.S., but there has been less homogenization of stations in Canada. One advertiser noted that a potential benefit of consolidation of radio stations was that it allowed longer term relationships to be created, which the advertiser told us were important, though the benefits are difficult to measure.<sup>21</sup>

Innovations since the time of the Corus-WIC merger have had a small effect on the radio advertising market. Internet advertising has so far only had a very modest impact on radio advertising, according to advertising agents. One agent estimated budget shares for internet advertising are in the 1% to 5% range, but this share is due to growth in the past two year and further growth is expected. Another advertising agent noted that the use of MP3 files and other digital technologies have reduced the costs of providing the advertising material to radio stations.

In respect of entry, advertisers were generally aware of a few entries and thought there had not been any exits of note. One advertiser noted the recent approval by the CRTC for four new FM stations in Calgary.<sup>22</sup> There are in fact other cases of entry across Canada in recent years as noted by radio station owners.

We asked advertisers about competition between various media. Advertisers described a multi-stage budgeting process that is sometimes used where the total advertising spend is

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<sup>21</sup> For example, consolidation can enhance long-term relationships because some advertisers need to change stations as the demographic profile of their consumers change (e.g. aging of loyal beer customers) and the advertiser has a greater chance of finding an appropriate new station with the same owner if that owner owns more stations in a given market.

<sup>22</sup> Broadcasting Decision CRTC 2006-326.

first decided and then the allocation is made between the various media. Of greatest importance is the purpose of the advertising campaign as different media have different abilities (often complementary) to affect consumer decisions. Some substitution may occur because of changes in relative prices, but campaign purpose and effectiveness is seen as considerably more important, especially for large advertisers that make use of multiple media. Advertising agents also stressed that the target demographic is extremely important to their clients, especially their larger clients. Thus, competition between radio stations (or other media) that target different demographic segments will be much less intense than between those that target the same demographic segments. There is clearly some level of substitution between the various media; however, this is well understood and the relevant questions for antitrust analysis – the definition of the relevant product market – cannot be adequately answered through information obtained from interviews alone.

Overall, other than an initial concern about tying, which was never sustained, no advertiser or agent we interviewed attributed any harmful effect to the merger, not even in the markets of Calgary or Edmonton where the increases in concentration were greatest.

## 5.2. CARMEUSE-LAFARGE INTERVIEWS

We interviewed a number of steel makers. The representatives' views varied considerably depending on the steel maker's circumstances. Because of factors such as contracts and alternative sources of supply, two of the steel makers we interviewed thought the merger had little effect on the pricing of their dolomite supply. In contrast, several other steel makers told us that prices have increased substantially since the merger. Prices increased initially by a significant amount more than 5% (the amount that is considered to be material in many mergers) and they have continued to increase since.

Guelph Dolime was closed after the transaction and there is only one local supplier for some steel makers. There are substantial additional transportation costs to get material from non-local suppliers and the availability of alternatives is, not unexpectedly, important in determining prices.<sup>23</sup> As contracts come up for negotiation steel companies attempt to use size and the availability of alternative supply sources to improve their negotiating position.

Both large and small steel producers have considered alternative sources of supply and some, despite higher transportation costs, are using an alternative supplier. While the access of some customers to alternative suppliers may have slowed price increases it has not prevented them. Natural Resources Canada provides some data on pricing based on quoted prices, with prices on an FOB basis beginning in 2002. Prior to the merger the data is for prices of high-calcium quicklime. Between 2002 and 2005 prices increased from

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Transporting dolimitic lime, especially when it is in small particles, is very expensive because it requires shipment in a pneumatic truck to prevent the dolime from reacting with humidity.

\$96.05/tonne to \$110.00/tonne.<sup>24</sup> The steel company representatives we spoke with did not know why prices had increased more recently, but did not believe that the increases were related to rising costs.

Carmeuse is described as being in a very strong negotiating position and is able to make take-it-or-leave-it offers. In terms of alternatives for customers, building a plant would not be technically difficult but dolimitic stone of the required type is not abundantly available at locations that would make building and operating a plant heretofore profitable, though this is starting to change as prices continue to escalate. Obtaining the necessary permits and financing to build a plant and obtain a dolomite source are two barriers to entering the Ontario market. As well, the fact that Carmeuse already had sufficient capacity to meet demand in Ontario deters any expansion into Ontario to serve Ontario steel makers.

Overall, based on customer interviews, it appears that Carmeuse has significant market power and it appears that Carmeuse has been willing, at least recently, to exercise this market power. Prices are rising for at least some customers. Customers have made use of alternative suppliers, threats to build capacity, and their size in an attempt to keep prices down. However, regardless of size, their bargaining position is still determined based on the next-best alternatives and these have not been good enough for a number of steel companies to keep prices from rising significantly.

One question that cannot be easily answered is whether the Guelph plant would have been closed as early as it was had the merger not been allowed. Given current price increases, had it been left in a state where there was an incentive to reopen it, it might have been reopened.

### **5.3. FORDING INTERVIEWS**

There were two relevant markets for the Fording case. Thus we interviewed representatives of steel companies and coal producers.

We begin with mid-volatility coal and the interviews of steel producers. What was unanticipated at the time of the merger but significantly affected the market was the meteoric growth in Asian markets (China in particular), which drove international coal prices up to very high levels. Prices rose from US\$55/tonne in 2004 to US\$125/tonne in 2005, and have come down slightly to US\$115/tonne in 2006. Prices have since fallen to below US\$100/tonne. Chinese steel production rose from 80 million tonnes per year ten years ago to 240 million tonnes in 2006. The high prices resulted in many new coal mines in western Canada and, thus, increased competition to Fording. As a result of these developments and entry in particular, we cannot disentangle the merger's potential impact on pricing from other events.

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There is not a separate price for dolimitic lime and so prices should only be considered suggestive. Furthermore, prices that individual buyers pay may differ significantly due to the effect of contracts and differences in bargaining power.

The dramatic change in international conditions is a development that could not have easily been foreseen by the Bureau.

In the 1990s there had been a number of competitors producing coal but the market collapsed in the late 1990s forcing most to exit and Fording was left as one of the few remaining producers in western Canada. This did not last however because of the huge surge in international demand and prices, prompting entry and re-entry. Respondents did not believe the merger had affected prices and believed that all of the dramatic increase in coal prices could be attributed to changing international market conditions. Service levels remained good after the merger, though negotiations were more difficult given the favourable opportunities for coal suppliers in Asia that improved bargaining positions.

The rise in international coal prices resulted in Canadian steel companies sourcing mid-volatility coal from the U.S. rather than from western Canada as western Canadian producers focused on Asian markets. There were some transitional difficulties in switching to U.S. coal that lasted around one year. Currently, some steel companies are once again sourcing part of their coal needs from various western Canadian producers.

Along with rising coal prices, production costs have also been rising. As explained to us by one coal producer, the western Canadian coal industry currently faces rising local costs and significant shortages of skilled labour. A significant part of this skill shortage is due to oil sands developments in Alberta. Equipment costs have also risen because of the strong international markets.

Turning to terminal access, based on our interviews, it is clear that the merger did not adversely affect competing coal producers' access, pricing or service levels at terminal facilities. Coal exports have risen significantly, yet there is ample capacity at the three terminals. While some (though not all) of those interviewed had concerns at the time of the merger about having efficient access to terminals, none of these concerns materialized. The coal producers have found service levels to be more than adequate. And while for some coal mines determining which terminal to use is a complex process that depends on transportation logistics and the level of activity at the terminal, the coal mines have been able to secure access to their preferred locations and feel that they have been given access on reasonable terms. One respondent stressed the importance of Ridley Terminal remaining government owned to help discipline pricing.<sup>25</sup>

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By January 30, 2004 Westshore Terminals Income Fund had sold its interest in Fording Canadian Coal Trust so that after this time there were no longer interlocking ownership interests in the Neptune and Westshore terminals.

In summary, the market for coal changed in such a fundamental way after the merger that had it been anticipated the merger analysis would have been very different. The high coal prices resulted in entry and this has provided alternatives to steel producers. The merger may have had a short-lived effect prior to and during the initial increase in world coal prices, leading to increased sourcing of mid-volatility coal from the U.S. The merger has not had any negative impact on terminal access for the coal mines we interviewed.

## 6. ANALYSIS OF CONSOLIDATION IN RADIO AND THE CORUS-WIC MERGER

In this section we look more closely at the Corus-WIC merger. We first review the regulatory changes that prompted both this and other mergers in the sector as well as new entry. Next, we discuss the results of a significant amount of research that has investigated the effects of consolidation in radio in the U.S. as a result of regulatory changes there. Finally, we present the results of our empirical analysis of consolidation and entry in Canadian markets.

### 6.1. THE EFFECTS OF CHANGES IN THE REGULATORY REGIMES

The Commercial Radio Policy of 1998, which allowed individuals and companies to own more radio stations in a market, initiated a wave of consolidation in the industry. In 1998 and the first quarter of 1999, 58 transactions took place compared to only eight transactions two years earlier.<sup>26</sup> The revenue share of the five largest broadcasters increased from 41% in 1997 to 46% in 1999, and by 2005 had reached 64%. Tuning share of the five largest broadcasters also increased substantially rising from 54% in 1997 to 63% by 2005. Overall radio advertising revenue rose by 54% between 1997 and 2005, faster than for other media, resulting in radio's share of media advertising revenues increasing from 14% to 15.4%.<sup>27</sup>

This recent period of consolidation was also, paradoxically, accompanied by increased entry of stations. Recall that the Commercial Radio Policy allowed for more consolidation but also made entry easier by eliminating the Radio Market Policy.<sup>28</sup> Thus, at the same time that overall concentration has increased (as measured by the share of revenues going to the largest owners) the total number of stations has also increased.<sup>29</sup> In 1997 there were 479 private radio stations and in 2005 there were 722.<sup>30</sup>

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<sup>26</sup> Broadcast Dialogue, *Canadian Radio Deregulation: The First Wave of Consolidation*, June 1999.

<sup>27</sup> Canadian Radio-television and Telecommunications Commission, *Broadcasting Policy Monitoring Report*, 1996 & 2006.

<sup>28</sup> Also, two years prior, the CRTC allowed stations playing pop, rock, dance or country format to change between formats without making an application to the CRTC.

<sup>29</sup> The Canadian Association of Broadcasters ("CAB") argues that over-licensing has occurred, especially in small markets. They note that the number of FM licenses increased by over 50% between 1999 and 2004 and by 60% for English-language stations. There is also more competition from other new media such as Internet radio, digital radio, satellite radio, cell phone radio, iPods, podcasting and peer-to-peer file sharing. Such developments have led the CAB to call for the Radio Market Policy, or rather some modified form of it as a market entry test, to be brought back into effect. *Public Notice CRTC 2006 – 1 Call for Comments – Review of the Commercial Radio Policy*, CAB, March 15, 2006.

<sup>30</sup> *Ibid.*

The result of increased consolidation and entry is resolved by examining large and small markets separately. In large markets (with eight or more stations in 1998) by 2004 there were 1.1 fewer owners on average and 1.5 more stations. In small markets there were also more stations per market (0.8) but also more owners per market (0.2).<sup>31</sup> Thus we observe the number of stations per owner increased more in large markets than in small markets.

The fact that the Corus-WIC transaction took place after significant regulatory changes creates both a challenge and an opportunity for any analysis of the merger. The challenge is that in order to isolate the impact of the merger – what ultimately matters when trying to determine whether the Bureau made the correct decision in allowing the merger to proceed unchallenged – the influences of other factors need to be held constant and this is difficult when other markets that would otherwise serve as controls are also potentially undergoing changes in their market structure. The opportunity is that the regulatory change provides a natural experiment that can be used to evaluate the impact of consolidation because the transactions that took place as a result of the regulatory change are more likely to be exogenous to the merger. Our empirical analysis both seeks to control for these changes and exploit the natural experiment, much like the analyses that have been undertaken with U.S. data.

## 6.2. THE EFFECT OF CHANGES IN CONCENTRATION IN THE U.S.

In the U.S., the *Telecommunications Act* of 1996 allowed more radio stations to be jointly owned in a market. Owners had previously been limited to owning only three or four radio stations in a market. The *Telecommunications Act* allowed joint ownership to increase from five to eight stations per market, depending on the size of the market, and three to five stations (again depending on market size) could be in the same frequency band (i.e. AM or FM). Also, a previous limit that no more than 20 AM and 20 FM stations could be owned nationwide was relaxed. The deregulation led to significant consolidation in the U.S., providing an excellent opportunity for researchers to study the impact of consolidation on the radio industry.

While interest here is in the Corus-WIC merger there are several reasons to also examine the impact of consolidation more generally in both Canada and the U.S. First, the considerable research related to the U.S. market provides a wealth of thoughtful analysis and insight into how consolidation affects the radio industry. Most of the hypothesized effects that researchers have tested are not specific to the U.S. radio industry so there is no fundamental reason why they cannot be extrapolated to Canada, though there are differences between the countries so that care is needed when extrapolating. Second, in terms of conducting a statistical analysis, by virtue of its size the U.S. radio industry provides far more observations than the Canadian industry. This allows researchers to detect more subtle relationships by averaging out idiosyncratic effects unrelated to a change in market concentration over more

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These estimates are based on an analysis of BBM Canada data, which is described below.

observations. Third, just as an analysis of U.S. radio can be done using far more observations than an analysis of Canadian radio, an analysis of changes in concentration in a large number of Canadian cities provides more information than an analysis of just a few cities: Calgary, Edmonton, and, possibly, Vancouver being the only three that likely would have been affected by the Corus-WIC merger, if there were any effects.<sup>32</sup>

Another good reason to look at the U.S. research is that researchers have given careful consideration to the underlying economic forces at play in formulating testable hypotheses.

### **6.2.1. Economic Theories of Mergers in Broadcasting**

One important characteristic of radio broadcasting is that it is a differentiated product. No two stations have exactly the same content, and preferences vary among listeners. Stations can be positioned along the continuum of possible formats, playlists, disk-jockeys, etc. and can also be repositioned, something that is observed often as stations make both micro adjustments, such as changes to playlists, and macro adjustment, such as reformatting. Changing the positioning of a station is not costless, though it is easier to position a station on some parts of a continuum than others. Another important characteristic of radio is that there are two markets that interact: the market for advertisers and the market for listeners. Commercial radio earns revenues by selling advertising. Advertisers pay radio stations in order for listeners to hear their commercials and ultimately to increase sales, and listeners purchase radio broadcasting content by listening to the commercials (and, at least some, responding to them). In choosing the number of commercials to play in any given time slot, a radio station must balance the gain in revenues from playing an additional commercial with the loss in revenues from listeners who turn the radio off or switch to another station if they have to listen to another commercial.

One standard way to model differentiation is to assume consumers' preferences are scattered uniformly around a circle. A firm can locate its radio station on the circle – one could equate this with the reformatting or adjusting playlists – and consumers whose preferences are closer to where the station is located will, all other things equal, prefer it to a station that is further away.<sup>33</sup> Firms must decide where to locate their stations. Entry and

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<sup>32</sup> As with any statistical analysis, the strength of inferences depends on the number of subjects or observations and the degree to which other influencing factors can be controlled for. For example, while we can describe what happened in the Calgary market, it is much more difficult to know whether the merger was responsible for these changes or other factors than when we look at the whole Canadian market. As our analysis focuses on the three cities it will necessarily become more descriptive of the change in various market conditions and we can say less about whether the merger was responsible for the changes since the effects of idiosyncratic market developments unrelated to the merger are not averaged out.

<sup>33</sup> To make things more concrete, one can also imagine differentiation on a line segment rather than a circle and think of the line as being a city street with many consumers living in apartments along the street. Convenience stores, the radio stations, can be located anywhere along the street, and a given consumer will prefer the convenience store closer to him or her if prices are the same as at other stores.

positioning will potentially depend on numerous factors including the cost of entry, the timing of entry, the position of rival stations and how the stations compete on price once the stations are positioned.

Sweeting (2006), Berry and Wagfoldel (2003), and Romeo and Dick (2005), among others, provide sketches of the strategic effects at play when there is common ownership in a market. We first start with Sweeting's paper. The framework is one of differentiation, and the stylized setting has three stations, called A, B and C. Stations B and C are already positioned within the product space, and Station A must choose where to position itself relative to the other stations. The price charged to advertisers per listener is a function of the commercial load. The number of listeners depends on the location of the three stations and the commercial load with more commercials resulting in fewer listeners. Within this framework, Sweeting considers two cases: one where stations A and B are commonly owned and one when they are separately owned. Station C is always assumed to be separately owned.

The model indicates there are several competing effects at play. If stations A and B are commonly owned then there is a greater incentive to increase the commercial load at station A since some lost listeners will be captured by station B. Station C may under some conditions increase its commercial load in response to a common owner increasing the load and this would induce the common owner to increase the load further. On the other hand, there is also an offsetting incentive for a common owner of stations A and B to raise the advertising price (which would decrease the commercial load), since some advertisers will switch to station B. Thus it is unclear how advertising prices and commercial loads may adjust to a common owner.

As well, there are competing effects at play when considering the station positioning. According to Sweeting there are two effects of common ownership at work. The first effect, a "cannibalization effect", causes, for a given commercial load, common ownership to move station A away from station B and towards station C so that station A steals fewer listeners from station B and more from station C. The second effect is strategic. A common owner will want to strategically differentiate station A from station C but not from station B, and this will tend to push station A toward station B in order to induce station C to increase its commercial loads. But, on the other hand, by pushing station B towards C and inducing C to reduce its commercial loads the advertising price may increase. Sweeting concludes that the results are ambiguous though conjectures that given evidence of inelastic listenership the strategic effects may be dominated by the cannibalization effect so that common ownership increases differentiation.

Sweeting's model assumes that station C is already in the market and will not exit. However, common ownership may also affect entry and exit decisions. Berry and Waldfogel (2001) use the "linear city" model to discuss how common ownership affects variety. They describe three effects of a merger to monopoly. First, the post-merger monopolist may increase variety by moving commonly-owned stations away from each other in product space. This is the same as the cannibalization effect described by Sweeting. Second, the merged firm may

decrease variety by shutting down stations if this can be done in a way so that entry does not occur. Third, the post-merger monopolist may close some stations but reposition some of the remaining stations closer together to remove opportunities for profitable entry.

In terms of empirical results, Sweeting finds that a common owner differentiates the playlists of its own stations in the same format category from each other but also makes them more similar to rival stations and overall variety does not change much. Sweeting also finds that commonly owned stations play more commercials, indicating that market power is exercised over the market for listeners but not over the market for advertisers. Owners that combine stations are also able to realize some economies of scope which appears as a limited homogenization of programming across markets, though without a loss of listeners, which Sweeting takes as evidence of an increase in quality. While Sweeting does not find an overall increase in variety based on his examination of playlists, Berry and Waldfogel find that increased concentration as a result of the 1996 *Telecommunications Act* did not lead to a loss of variety and perhaps even an increase in aggregate variety. Berry and Waldfogel argue that the effects can be attributed to positioning of commonly owned stations to preempt entry and suggest that while a welfare analysis is not possible using their data, the results suggest that increased concentration can reduce the cost of excess entry without hurting listeners.

Mooney (2006) is able to directly address welfare issues by estimating a structural model of the commercial radio industry that accounts for both listeners' and advertisers' preferences. However, Mooney assumes that there is perfect competition for advertising so that her analysis cannot address the exercise of market power in the market for advertising. Mooney finds that between 1998 and 2003 the utility of listeners decreased, advertisers were worse off because of an increase in prices and a decrease in audience size (though this was partially offset by an increase in the value of radio advertising to advertisers), and per station revenue fell while per firm profits grew because the average number of stations owned per firm increased. However, her model is able to show that much of this change is explained by decreases in demand for radio by listeners. If demand for radio by listeners had remained constant rather than fallen the results indicate that the improvements to programming after consolidation would have led to more listeners, greater advertiser surplus and greater radio station surplus. Mooney predicts that advertising prices would not have increased very much at all.

Could it be that consolidation actually increases overall welfare? Berry and Waldfogel (1999b) provide a simple model that shows that when there are substantial fixed costs, which is the case in radio, and entry primarily leads to business stealing rather than a growth in listening free entry can lead to too much entry from the perspective of overall efficiency. Berry and Waldfogel conduct an empirical analysis that suggests that in the U.S. there has likely been too much entry in radio. This result is interesting as it provides some support for the CRTC to control entry and suggests that savings in fixed costs can dominate any efficiency loss from higher prices to advertisers. Berry and Waldfogel's analysis focuses on advertisers and the welfare impacts on listeners are not closely examined. But Mooney's analysis does take into account listeners' welfare and still she finds that listeners were not hurt by consolidation because of the enhanced ability of stations to deliver better

programming, a result that seems consistent with observations of Sweeting, and of Berry and Waldfogel (2001).

There have been other investigations into the effects of the 1996 *Telecommunications Act* on the commercial radio industry. Brown and Williams (2002) find that increased local concentration led to a small increase in advertising prices. Romeo and Dick (2001) focus on concentration within a radio market format and ask the question of whether a common owner crowds its stations into one format or spreads them among a variety of formats. They show that owners have not tried to crowd formats and that while successful entry into a format is less likely when the format is crowded ownership concentration in a format does not itself affect the likelihood of successful format entry. Thus increased concentration in a format does not preclude competitors from entering and competing for advertisers and listeners in that format.

One shortcoming of many of the studies is that negotiated advertising prices are generally not available. As a result, the academic research has either focused on non-pricing issues or has made use of aggregate data for advertising prices. The price data that is available in the U.S. is either based on estimates that make use of rate cards and other indicators or, in the best case, are city level averages based on transaction prices. From an antitrust perspective, the lack of transaction price data is unfortunate as another feature of radio advertising is that prices are separately negotiated for each buyer and as a result a merger may affect different advertisers differently. In particular, advertisers that are likely to have a strong preference for radio and for a particular demographic group may find that after a merger the merged radio station is able to charge them higher prices. Of course, in order to price discriminate effectively the station manager or sales person must identify those advertisers with inelastic demand.<sup>34</sup>

The regulatory changes in the U.S. and Canada significantly affected market structure. Because these policy changes were implemented on a national level they are exogenous to any particular market. Thus, they provide experimental like conditions for testing how an increase in concentration affects firm behaviour.<sup>35</sup>

### **6.3. THE CANADIAN EXPERIENCE**

While the U.S. results are useful and interesting, there are differences between the Canadian and the American radio industries. For one, the Canadian market is already much less fragmented than American market, partially the result of the CRTC's Radio Market Policy.

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<sup>34</sup> We expect that any successful sales person will develop some expertise for doing this.

<sup>35</sup> This was not a true experiment since in neither country did policy makers keep aside a group of randomly selected cities that would keep the existing policy so as to serve as a control group. But the fact that consolidation occurred because of an exogenous change in policy conditions makes it substantially easier to isolate the true impact of increased concentration.

Also, Canadians listen to more radio than Americans so that potentially the reaction of a marginal Canadian listener to changes in commercial load rates, format changes, playlist changes, etc. could be different. Furthermore, Canadian programming is more highly regulated. For instance, the CRTC imposes requirements for Canadian content. One would expect that the restriction in content would reduce the ability of stations to differentiate themselves from each other. Furthermore, despite the removal of the Radio Market Policy the CRTC still regulates entry. When a proposal for a new station is put forward the CRTC will put out a call for competing proposals. A representative of a large broadcaster indicated that the CRTC will tend to favour a smaller broadcaster when there are multiple bids. Most importantly, the fact that consolidation and entry have occurred in Canada suggests that the effect of temporary increases in ownership as a result of consolidation could be offset by new entry.

### **6.3.1. Data**

We collected listening, ownership, format and revenue data for Canada in order to examine how consolidation has affected the Canadian industry generally and the specific effects of the Corus-WIC merger. We obtained yearly listening and format data from BBM for 58 Canadian markets from 1998 to 2004. BBM collects rating data for a large number of radio and television broadcasters using information recorded in diaries by a sample of listeners or viewers. We identified the owner of each station in the sample for each year using information from the CRTC, the Broadcaster (a directory of Canadian radio stations), and the Canadian Communications Foundation. We also obtained total commercial radio advertising revenues and operating expenses for 11 cities and all provinces from Statistics Canada for the period 1999 to 2004. The number of stations included in the Statistics Canada city totals is greater than that of BBM as BBM does not sample all commercial stations. Unfortunately, for confidentiality reasons Statistics Canada will not provide data on more cities. We do not have data on advertising prices. While some data related to rate cards is available, the transaction data that is necessary to determine how a merger affects advertising prices is not publicly available. Thus our analysis focuses on the effect of entry and consolidation on revenues and variety.

### **6.3.2. Large Markets Have Become More Concentrated**

The Corus-WIC merger was one of the largest and earliest transactions induced by the Commercial Radio Policy of 1998 ("Policy"). However, there were more transactions, such as the merger of Astral Media Inc. and Télémédia Radio Inc in the province of Quebec in 2002. Table 1 below shows the change in various market characteristics for the set of cities included in the analysis. Small markets, defined as those with less than eight stations in a given language in 1998, saw an increase in the number of owners, formats and stations. Large markets also experienced an increase in formats and stations, but the average number of owners (included in the BBM survey) decreased. The fact that the number of owners increased in small markets is not all that surprising since many of these markets only have one or two stations. The fact that large markets experience both a decrease in the number of

owners and an increase in the number of stations is consistent with the CRTC policy changes.

**Table 1: Changes in Market Characteristics by Small and Large Markets**

	Small Market*		Large Market	
	1998	2004	1998	2004
Owners	2.0	2.2	6.9	5.8
Formats	2.4	3.3	7.1	9.5
Stations	2.8	3.6	11.4	12.9
Cities	50	50	8	8

\* Less than eight stations in a given language in 1998

### 6.3.3. Consolidation Increases Station Revenue and Entry Decreases It

We would generally expect that increased concentration would increase advertising prices, holding aside the effect of reductions in costs, and entry would reduce prices. We do not have advertising prices so we cannot directly test how the Corus-WIC merger or more generally the CRTC Policy affected prices. However, we can examine the effect on revenues.

Revenues are equal to the number of advertisements multiplied by the price per listener (or rating point) multiplied by the number of listeners (or rating points). Thus a change in overall revenues in a city can be due to an increase in the average commercial load, an increase in price, or an increase in the number of listeners. In fact, based on U.S. findings, it is possible that a merger could increase the quality of stations allowing the station to increase the commercial load without losing listeners. Thus an analysis of revenues cannot determine if there were harmful or beneficial effects to advertisers or listeners but it will indicate if there were any effects (provided changes in individual components do not offset each other).

We examine revenues per station. Revenues should increase as population per station increases, either through an increase in population or the exit of a station. An increase in retail expenditures of listeners may affect revenues, though it could either increase revenues if higher expenditures imply a more lucrative listening audience, or decrease it if higher expenditures imply less time spent listening to radio. Thus we include average retail expenditures obtained from Statistics Canada. Finally, a decrease in the number of owners in a given market is expected to increase revenues either by allowing the remaining owners to exert market power over advertisers or listeners, or by increasing the quality of programming and thereby increasing commercial loads or listening.

While the CRTC Policy change was exogenous, we cannot treat changes in the number of owners or the number of stations as exogenous. Some changes may not have been due to

the change in policy and thus if included may mask the true effect. To account for the endogeneity problem we employ instrumental variable techniques where the instrumental variables are chosen to be correlated with, in this case, the number of stations and the number of owners, but that are not affected by the revenue per station.<sup>36</sup> Following Berry and Waldfoegel's analysis of the policy change in the U.S., we exploit the fact that the CRTC Policy applied differently to large and small markets. Since more stations can be owned in larger markets the impact of the policy change will be greater there, as was shown to be the case in Table 1. Thus a large market post-1999 indicator variable serves as an instrumental variable for ownership changes. We also use population and population squared as additional instruments necessary to also identify population per station. Since the number of observations is very small (102) it is hard to separately identify the two effects with these instruments. Thus we used the operating cost per station as an additional instrument.<sup>37</sup>

Table 2 below presents the regression results.<sup>38</sup> Column one shows the results using ordinary least squares ("OLS").<sup>39</sup> An increase in the number of owners decreases revenues per station and an increase in population per station increases revenues per station, which is as expected. An increase in average retail expenditures also results in higher revenues per station. The OLS specification estimates that there is a further increase in revenues in Calgary and Edmonton, though not in Vancouver, after the Corus-WIC merger that is not fully explained by a decrease in the number of owners. However, this result goes away in the instrumental variable ("IV") specification. The IV results show a much more significant effect

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36 Generally, the change in the number of owners can itself be caused by unexplained changes in the left-hand side variable, i.e. the variable we are trying to explain. For instance, if the change in revenue per station is low in a particular region this could result itself in consolidation. In order to isolate the impact of consolidation on revenue per station (or another variable of interest) it is important that such cases of reverse causality are removed. The instrumental variable technique does this by isolating those changes in the right-hand side variable (in this case, the change in concentration) that are not correlated with unexplained changes in the left-hand side variable.

37 One reason for not using cost per station as an instrument is that it could be that higher costs result in higher revenues as either overall higher costs are passed on to advertisers or additional spending, such as on highly paid radio personality, results in greater revenues through an increase in overall market ratings. However, a large component of costs is fixed and any constant differences between cities in cost levels are accounted for by a city fixed effect in the regression. Furthermore, when cost per station was included as a regressor it had no explanatory power and the coefficients on number of owners and population per station remained similar, though the standard errors were higher.

38 The regression specification is:

$$\text{Revenue per station}_{it} = \alpha_1 + \beta_1 \times \text{number of owners}_{it} + \beta_2 \times \text{population per station}_{it} + \beta_3 \times \text{average retail expenditures}_{it} + \beta_4 \times \text{Vancouver dummy}_{it} + \beta_5 \times \text{Alberta city dummy}_{it} + (\text{other city effects}_i) + (\text{year effects}_t) + \epsilon_{it}$$

where  $t$  subscripts years and  $i$  subscripts cities. The number of owners is instrumented by whether the city has eight or more stations after 1999, population, population squared, and operating cost per station.)

39 OLS is a regression technique that does not take in account that an explanatory variable may be endogenous (correlated with the regression error term), as concentration may be here. OLS will yield biased and inconsistent results if there is an endogeneity problem. However, if there is not such a problem, OLS will use the available information more efficiently.

of the number of owners in a market on station revenues. The coefficient estimate of -408 implies that for the Calgary market the removal of one owner would result in about an 8% increase in revenues.<sup>40</sup> The coefficients also imply that the combination of lower revenues per station and fewer owners results in revenues increasing in Calgary by about 11% between 1998 and 2001 but then decreasing by around 20% per station between 2001 and 2004 as *de novo* entry occurs and population per station falls.<sup>41</sup>

This result is consistent with the views expressed by the radio station representatives who we interviewed; the initial improvements in station revenues have not been sustained with the enhanced entry. However, as mentioned above, we cannot form conclusions about the welfare effects of the merger since we observe revenues and not prices; in light of results about the U.S. and our interviews of advertisers, it is quite possible that higher revenues due to increased concentration are a consequence of improved programming quality and increased commercial loads rather than higher prices for advertisers. Nevertheless, the results reveal that changes in concentration and entry have had substantial effects on a station's financial performance and the effects of changes in market structure on the Calgary, Edmonton and Vancouver markets due to the Corus-WIC transaction were not extraordinary.

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40 Calgary revenues per station in 2001 were about \$5.1 million, and 8% of this is \$0.41 million.

41 These results are obtained by calculating the change in the number of owners and in the population per station over the relevant time interval, multiplying these by -408.5 and 21.7, respectively, summing the results, and then dividing the sum by the average revenues per station at the beginning of the time interval.

**Table 2: Regression of Revenues per Station\* (p-values in parentheses)**

	OLS	IV
Number of Owners	-72.5 (.014)	-408.5 (.002)
Population per Station	32.8 (.00)	21.7 (.055)
Average Retail Expenditures	.036 (.036)	.046 (.116)
Calgary-Edmonton Post Merger	285.8 (.043)	-13.8 (.96)
Vancouver Post Merger	-81.0 (.626)	-112.5 (.688)
City Fixed Effects	Jointly Sig.	Jointly Sig.
Year Fixed Effects	Jointly Sig.	Jointly Sig.
Observations	102	102
Adjusted R <sup>2</sup>	0.99	0.97

\* Revenues are in thousands of dollars.

#### 6.3.4. Effect of Mergers on Entry

The analysis above ignores the possibility that consolidation affected entry. In a more consolidated market where incumbents own more stations there is a greater incentive and opportunity to change or adjust the format and other station characteristics in order to reduce opportunities for profitable entry. Thus while entry was encouraged by the CRTC's withdrawal of the Radio Market Policy and substantial entry has taken place in many markets, it is possible that more entry would have happened if consolidation had not occurred. As mentioned above, even if this is the case, the welfare effects are ambiguous given the possibility that free entry can result in a market with too many stations from the standpoint of overall welfare.

To test the effect of a merger on entry we examine the relationship between the change in the number of stations per market between 1998 and 2004 and the change in the number of owners over this period. As with our regressions above, as part of our instrumental variables strategy we use the fact that the CRTC regulatory changes applied differently to small and large markets. We also use population and population squared as additional instrumental variables, which is found to be necessary to identify any effect given the small number of observations. We follow Berry and Waldfogel (2001) in this subsection and the next. Here

we look to explain changes in the number of stations with exogenous changes in the number of owners and changes in population.

**Table 3: Regression of Change in the Number of Stations Per Market Between 1998 and 2004 (p-values in parentheses)**

	OLS	IV
Constant	1.23 (.00)	1.14 (.001)
Change in Owners	.839 (.00)	.577 (.026)
Change in Population (thousands)	.0098 (.003)	.0089 (.011)
Change in Average Retail Expenditures	-.0001 (.093)	-.0001 (.23)
Observations	58	58
Adjusted R <sup>2</sup>	.511	.460

\* Instruments are a dummy variable indicating a large market, population, population squared, change in population, average retail expenditures, average retail expenditures squared, and change in average retail expenditures.

Table 3 shows the regression results for both ordinary least squares and instrumental variables. Both specifications show that a decrease in the number of owners (consolidation) results in a decrease in entry. The estimates are statistically significant although the estimate is smaller in magnitude for the IV specification. These results are similar to Berry and Waldfoegel. Their estimated coefficient from the IV specification is 0.318 compared to our estimate of 0.577. The difference is not statistically significant. The coefficient on change in population has the expected positive sign and is highly significant. The coefficient on change in retail expenditures is not statistically significant.<sup>42</sup> We also ran a specification with a dummy variable equal to one for the cities of Vancouver, Edmonton and Calgary. However, the coefficient on this dummy was not statistically significant (results not shown) so it appears that there was no unusually large or small change in the number of stations in these cities that is not explained by changes in population or in the number of owners.

Our earlier estimates of the effect of consolidation on revenues held constant the number of stations. In light of these findings, the overall effect of consolidation may be larger due to the indirect effect of limiting entry, which itself increases per station revenues. In other words, consistent with economic theory, consolidation affects both subsequent entry decisions and competition among existing market participants.

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Including a variable to capture the amount of French language listening did not have any effect on the results.

### 6.3.5. Effect of Mergers on Variety

As discussed above, consolidation can affect how firms strategically position their stations, which, in turn, affects the amount of variety. Consumers value variety in radio. As Rogers and Woodbury (1996) find, when markets become larger, new stations are created and new formats are added as competition among existing formats becomes too intense. Advertiser-supported broadcasting can have too little variety generally because even if a small audience has a strong preference for a certain format, radio owners' interests are to provide the largest listening audience to advertisers and so owners may choose not to serve that small audience. Consistent with this view, Rogers and Woodbury find that a 10% increase in the number of stations results in only a 1.9% increase in the number of formats.

There is no standard way to measure product variety in radio broadcasting. Thus one needs to determine an adequate measure that captures the degree to which stations are differentiated. Formats provide only a rough guide as some formats are very similar to each other while others are very different. Playlist information has been used by a number of researchers to more precisely measure differences between stations, even those with the same format. However, we do not have playlist data so we focus on formats.<sup>43</sup> BBM maps various format labels to format codes, though these codes were not available for earlier years so we mapped these ourselves based on the format descriptions. Format labels include, for example, "All Hits", "Young Country", and "Classical". There are 20 different possible format codes. The number of format codes in use increases by about one third between 1998 and 2003.

Referring back to Table 1, the number of formats per market increased in large markets by more than in small markets. These differences are statistically significant and they cannot be explained by a larger increase in the number of stations in large markets; large markets experienced on a percentage basis half the increase in the number of stations but a similar percentage increase in the number of formats as small markets. We also know from Table 1 that larger markets experienced a greater increase in concentration. However, these changes do not take into account differences in the rates of growth in population across markets, which is important in Canada since population is increasingly being concentrated in the larger cities.

Table 4 below shows the estimated response of two simple measures of variety to changes in concentration after accounting for population change as in Berry and Waldfogel (Table II). The OLS results are very similar to the IV results so only the IV results are reported. The first measure is the number of formats per station. It holds constant the effect of consolidation on the number of stations. Unlike the results found by Berry and Waldfogel, which show a negative relationship, our regression results shown in column one show no relationship at all between the change in the number of owners and the change in the number of formats per

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Interviews with representatives of one large radio station suggested that in Canada formats were the main source of differentiation between stations and not playlists.

station. The lack of a statistically significant relationship may reflect the smaller sample size or the small number of large markets in Canada. The results are similar if a dummy variable for Vancouver, Edmonton and Calgary is included so these results are not reported in the table.

The second measure is the number of formats. This measure accounts for the indirect effect of consolidation on variety – a decrease in the number of owners results in fewer stations which in turn results in fewer formats. The results reported in column 2 of Table 4 also differ from those found by Berry and Waldfogel. We find a strong positive relationship between the number of owners and the number of formats, whereas Berry and Waldfogel find a negative relationship. Thus, whereas Berry and Waldfogel find that the increase in variety among stations that remain after consolidation offsets the loss from a reduced number of stations, we do not find that variety increases among the remaining stations so the loss of variety from a reduction in the number of stations dominates. Using different approaches to measuring variety, the results of Sweeting (2006) and Chambers (2003) also show that increased concentration does not increase variety.

If a dummy variable for Vancouver, Edmonton and Calgary is included (column 3) the estimated impact of a change in owners increases. This is the one case where it appears that there was a larger change in these three markets than can be explained by changes in population or the number of owners. Calgary and Edmonton to a lesser degree have been considered underserved markets and this may explain the increase in variety. Given the size of the estimated coefficients, the effect on aggregate variety of the reduction of one owner because of the merger is more than offset by the effect specific to these markets. Thus the Corus-WIC merger does not appear to have reduced aggregate variety or subsequent market changes have offset the effects of the merger.

**Table 4: IV Regressions of Change in the Number of Formats and the Number of Formats Per Station Between 1998 and 2004 (p-values in parentheses)**

	Change in Number of Formats per Station	Change in Number of Formats	Change in Number of Formats
Constant	.026 (.28)	.775 (.00)	.688 (.00)
Change in Owners	.020 (.60)	.658 (.015)	.923 (.001)
Change in Population (thousands)	.0007 (.21)	.017 (.00)	.016 (.00)
Vancouver, Edmonton and Calgary dummy			1.98 (.011)
Observations	58	58	58
Adjusted R <sup>2</sup>	.000	.458	.488

\* Instruments are a dummy variable indicating a large market, population, population squared, change in population, average retail expenditures, average retail expenditures squared, change in average retail expenditures.

Some formats are more alike than others so a count of the number of formats may be too simple to adequately measure variety. We construct a more precise alternative measure based on the degree to which a new format reduces the average quarter hour listening (aqh) of other formats. In particular, we run a regression for each format at the city level including city fixed effects, year fixed effects, the number of stations and dummy variables for each alternative format. If the coefficient on a particular format dummy is statistically significant at the 10% level, we subtract the coefficient estimate from one, the normalized distance assigned to two unrelated formats; otherwise we set the coefficient to one.<sup>44</sup> Thus if the introduction of Format A causes Format B to lose 20% of its listening then we would measure the distance as 0.8. For each pair of formats we obtain two estimates, one where the first in the pair is the dependant variable and one where the second in the pair is the dependant variable. We take the average of the two estimates as the estimated distance between two formats, ranging from zero (the same format) to one (most distant formats). Total variety is then measured as the average distance between all format pairs in a market.

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The dummy variables are likely endogenous in the regression: other things being equal, a station is likely to choose a format that does not compete closely with the other available formats. Thus the estimates may understate the degree to which one format steals listeners from another.

**Table 5: Regressions of Change in Format Variety Between 1998 and 2004 (p-values in parentheses)**

	OLS	IV	IV (Excluding Toronto)
Constant	.043 (.15)	.042 (.17)	.025 (.032)
Change in Owners	.053 (.021)	.069 (.148)	.103 (.055)
Change in Population (thousands)	.00046 (.467)	.00051 (.433)	.0026 (.091)
Observations	58	58	57
Adjusted R <sup>2</sup>	.064	.055	.029

\* Instruments are a dummy variable indicating a large market, population, population squared, change in population, average retail expenditures, average retail expenditures squared, change in average retail expenditures.

Table 5 reports the results using this alternative measure of variety. The OLS results indicate that an increase in the number of owners is associated with increased variety. However, for the IV estimates the coefficient on the change in the number of owners is similar, but is no longer statistically significant. It is possible that the results are affected by saturated markets where there is no room for additional formats and very little opportunity for further differentiation. In Canada, Toronto is the only market where saturation of the radio spectrum may be an issue. The third column in Table 5 reports the IV results excluding Toronto. Now the coefficient on the change in ownership concentration is statistically significant, and almost twice as large as when Toronto is included. The coefficient on the change in population is also now statistically significant, indicating that an increase in population results in greater variety, consistent with the findings of Rogers and Woodbury.<sup>45</sup> Including a dummy variable for Vancouver, Edmonton and Calgary results in a statistically insignificant coefficient and the other coefficient estimates change little. Thus based on the results in Table 4 and Table 5 it appears that while there was an increase in the number of formats in Calgary, Edmonton and Vancouver that is not explained by population changes or changes in the number of owners the added formats were sufficiently similar to existing formats that variety did not increase.

<sup>45</sup> The other regression results reported in previous tables do not change much when Toronto is excluded.

## 7. EVALUATION OF THE BUREAU'S ASSESSMENTS

Merger reviews can be complex undertakings. We have selected three mergers where the merger analysis was particularly difficult. The fact that these were all marginal cases – that is, had almost but not quite met the Bureau's requirements to seek remedies or to challenge the merger – means that they were among the most likely to result in post merger outcomes that in hindsight would appear to have warranted a challenge before the Tribunal. For two of the cases (Corus-WIC and Fording) the available evidence suggests that the Bureau did not err. For the Carmeuse-Lafarge case it is more difficult to say.

The Bureau's analysis in all three cases was thorough and identified, in our opinion, most (and often all) of the relevant issues. Furthermore, the economic reasoning employed in these three cases was sensible and the analysis closely followed the Merger Enforcement Guidelines. We found no instance where the Bureau made a significant error in logic or made use of an erroneous assumption or measurement.

However, this analysis has also indicated that there are places where incremental improvements might be made. In particular, there are two areas where the analysis can shed some light on the competition analysis: entry and countervailing market power.

We also can provide some suggestions in terms of the types of analysis that the Bureau undertakes. In particular, in some cases the business insight and the anecdotal information that customer interviews can provide is invaluable. In other cases, customer interviews are useful for understanding the industry, but cannot provide much specific information on the likely effects of the merger. In such cases, more reliance needs to be placed on economic reasoning and, when possible, empirical analysis.

We start first by summarizing the net results of the merger and contrasting these with the Bureau's predictions.

### 7.1. OUTCOMES VERSUS PREDICTIONS

The Bureau predicted in the Corus-WIC merger that there would not be any significant negative impacts on advertisers as a result of the merger, not even in the more concentrated markets of Edmonton and Calgary. Defining the market more narrowly to be stations targeting certain demographic groups did also not raise general concerns since it was possible in most cases to reach those groups adequately without buying from the parties' stations. The increased ease of entry due to CRTC rule changes and the ability for stations to change formats were also taken into consideration.

Based on our interviews of advertisers and agencies there was no indication that the merger resulted in any harmful lasting effects for advertisers. This evidence, however, is somewhat limited owing to the fact that many changes were happening in radio markets making it

difficult even for very knowledgeable customers to isolate the impact of the merger, especially after a number of years. Concern about tying did arise, and is possibly an area that the Bureau could have paid more attention to, but in the end tying has not generally been possible. Unlike the interviews, our empirical analysis reveals that mergers generally but also the Corus-WIC merger were not neutral. They did result in an increase in revenues, both through a direct effect and through an indirect effect by reducing entry. We also find some evidence of a decrease in variety. However, these results isolate the impact of the merger, which is theoretically interesting but for the purposes of merger analysis it is the aggregate results that matter. Any effects of concentration appear to be more than offset by the effects of entry. Furthermore, the impacts on revenues cannot be equated with changes in prices and, in fact, the evidence from U.S. studies indicates that it is quality improvements that allow for greater commercial loads without a loss in tuning that could explain most of an increase in revenues rather than an exercise of market power over advertisers. Unfortunately, our analysis cannot reveal what happened to prices or to overall welfare. We also cannot determine if more price sensitive advertisers would have been affected more by both the merger and by entry.

For the Fording case the Bureau predicted that steel manufacturers in eastern Canada would have sufficient options sourcing coal from the U.S. if Fording raised its prices of mid-volatility coal too much. What happened was that coal prices increased dramatically due to the growth in demand in Asia and, as a result, Canadian steel makers turned to the U.S. for much or all of their mid-volatility coal requirements. What is unclear is how much of a price increase was needed to induce the switch since U.S. Appalachian coal prices also rose in response to rising world prices. The fact that eastern Canadian steel makers sourced more coal from the U.S. Appalachians is consistent with the economic forces that would determine the pattern of movement: rapidly rising demand in Asia would attract all international coal sources that were closest, e.g. western Canada and Australia, and other centers of coal demand would have to shift away from these regions of Asian supply. As entry in western Canada occurred, more production was available to supply to eastern Canada and as coal prices have come down this coal is once again being shipped back to eastern Canada. However, now Canadian steel producers have alternative suppliers. Thus competition between western Canadian coal producers and not just with U.S. Appalachian suppliers seems to play a role.

Clearly in this case had the Bureau known that coal markets would take off it would have been more obvious to let the merger proceed. In this case it seems that there was no way the Bureau could have made such a prediction. However, in other cases it could be possible to foresee how markets were likely to evolve and this could be critical to the analysis.

Another thing that emerges from the Fording case is that countervailing power held by the large steel producers depends critically on the alternatives they have and the supplier has, as economic theory would predict.<sup>46</sup> In this case, the size of the steel producers does not seem

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In the language of economic bargaining models, two sides to a negotiation use "threat points", the next best alternative should negotiations fail, as a key determinant of the outcome to bargaining.

to matter much. Fording had many opportunities in Asia and has been willing to give up some eastern Canadian customers to either U.S. competitors or western Canadian competitors.

The terminal aspect of the Fording case arose because of some customer concerns. The Bureau concluded that there was not enough indication that customers would be poorly served. It turns out that the Bureau's predictions were correct. The terminals had no incentive to offer poor service or limit access. There are substantial fixed costs to operating a terminal and thus significant incentives to obtain more volume given the excess capacity.

The Carmeuse-Lafarge case is the only one of the three studied cases where some customers have commented that there have been significant price increases that they attribute to the exercise of market power. Both large and small customers claim to be willing to use whatever alternatives they have, such as sponsoring or considering sponsoring entry, and turning to other more distant suppliers in order to obtain better prices. However, these alternatives appear to not have offered sufficient competitive restraints to keep prices from rising. Size itself plays a relatively minor role, and it is the availability (or lack of availability) of substitute sources of supply that determine the extent of price increases. Carmeuse is a large international company, a sophisticated negotiator, and can presumably withstand the risk of losing dolimitic business, which is small relative to the size of the company. Countervailing market power does not, therefore, in this case seem to be effective. (For steel makers with contracts in place or limited need for dolimitic third-party supply, the merger has not been an issue.) The Bureau may have given countervailing market power too much weight.

However, the Bureau also did note in its final review that there was the possibility that dolimitic lime prices could increase but that large steel companies could weather these increases. Such a position is not without economic support. If demand is very inelastic, as it is with dolimitic lime, the welfare loss from higher prices is small. That is, there is little distortion in the use of the input – steel makers buy the same amount but at a higher price and there is only a transfer of wealth between one large producer and another. However, there is some danger in applying this reasoning across many merger cases over and over again. If the prices of inputs with very inelastic short run demand were allowed to all increase then over the medium to longer run, more production of commodities like steel that are traded internationally will shift to other countries where inputs are cheaper. This would be a direct loss to Canada and also an inefficient reallocation of resources since the reallocation takes place as a result of allowing too much market power in input markets and not because those inputs are fundamentally too scarce to provide at a sufficiently low cost. Thus it is important to consider the cumulative longer run impacts of isolated decisions that may appear to have no short-run distortionary impacts of their own when viewed in isolation.

## 7.2. ENTRY

Entry or the lack of entry was important in all three cases. For the Corus-WIC merger, the CRTC policy changes resulted in considerable entry in the post merger period and this was of sufficient magnitude to offset any negative effects of the merger. Bureau staff correctly noted the likelihood of entry, but its importance in hindsight seems underweighted relative to its actual importance in the market. To be fair, it would have been difficult for the Bureau to predict how much entry would occur or the timing of this entry. However, it might have been useful to investigate further the extent to which the previous CRTC policy had limited entry. Interviews of past entrants and a review of CRTC decisions may have been helpful in determining just how important the relaxation of the CRTC entry policy would be.

In the Fording case, entry was very important in the post-merger outcome. As with the radio merger, the importance of entry was underestimated but in this case it would have been even more difficult to predict the rising coal prices induced by surging demand in China and that led to entry. In neither case is it the merger itself that likely caused entry to occur. Thus while for the purposes of antitrust analysis entry is usually thought of as a response to increased concentration, entry for other reasons can be just as important, though possibly harder to predict. Thus as a general rule it is likely worth investigating the likelihood that entry may occur in the future as a result of other market changes. In this case, had the merger been a year or so later, there would have been much more information about changing world markets that would have been very relevant.

Entry also occurred in the Carmeuse-Lafarge case. The possibility was recognized correctly by the Bureau. This case was more typical in that entry has been in response to rising prices that may, at least in part, be attributed to the merger. What remains unclear is whether absent the merger there would still have been only one supplier in Ontario after a number of years. However, putting that uncertainty to one side, interviews of customers suggest that the lack of competition is directly responsible for higher prices. Entry has been limited and, it has been claimed, has had only a modest effect on curtailing price increases. At some point, prices are high enough that turning to a much more costly U.S. supplier or building a new plant would be preferable and this would almost certainly put a cap on the extent to which prices can rise. However, this cap for some buyers appears to be well above pre-merger price levels.

A straightforward remedy might have been possible in this market. If it had been concluded that there was a substantial lessening or prevention of competition, the parties could have been forced to divest the now closed Guelph plant and quarry to the steel producers, provided that the steel producers would be willing to take the plant. A minimum reserve price equal to the scrap value of the plant could have been established and then the plant could have been sold to the highest bidder among the steel companies.

### 7.3. COUNTERVAILING MARKET POWER

We see evidence of large buyers, whether large advertisers or large steel companies, using their size in an attempt to keep prices down or resist business practices that are unwanted, such as tying. In some cases, size is important because it creates more opportunities for long-term relationships with the supplier, potentially in other markets, that can deter a supplier with market power in one market from exercising it; though even such a multi-market relationship provides no guarantee that prices will not increase. Smaller customers do not generally have such opportunities and are not individually of much importance to the seller if they turn to another source. However, size is only a proxy for the strength of a negotiating position and not per se the basis for a strong negotiating position. The next best alternative available to the seller and buyer are more important. Much of this information about next best alternatives is already captured in the analysis of product and geographic market definitions. Identifying that the buyer and seller meet in multiple markets can also be useful in understanding the type of relationship that is likely to exist post merger. But as mentioned, for the two mergers affecting the steel industry even the large size of some buyers may not have been sufficient to prevent the possible exercise of market power.

One element that could have been pursued further in the Bureau's analysis of the Fording and Carmeuse-Lafarge cases was a quantification of the next-best alternatives. In the former case, the Bureau's retained expert provided valuable insight into the cost difference in using Appalachian blends if Canadian mid-volatility coal was unavailable or too expensive. What appears to be missing from this analysis is a determination of the current pricing base that went into this analysis and, importantly, whether Appalachian coal was currently constraining the price of western Canadian mid-volatility coal paid by eastern Canadian steel companies and if not, what was currently determining the price differentials. Pushing this analysis a bit further could have provided a clearer view of just how much prices could be increased. Actual transaction or contract data from the steel companies would have been useful in this regard.<sup>47</sup> In the case of Carmeuse-Lafarge, the extent to which sponsoring entry or turning to another supplier can constrain significant price increases requires a detailed numeric analysis of the profitability and feasibility of entry. Qualitative information is useful, but it often cannot differentiate between a likely 5% price increase and a 15% price increase. In this case, it appears that such alternatives may not have provided a tightly binding constraint on

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It can be difficult to get the right type of data and enough of it. For example, Appalachian prices may have played a role in determining the pre-merger prices for Canadian mid-volatility coal, but this may not be evident if fixed-price or fixed-escalation contracts have been in place for extended periods of time and if there are also not very many customers. With very few observations it would not be possible to use statistical analysis to associate the changes in prices of, in this case, one type of coal with another. That said, counsel to Fording did submit its own pricing analysis comparing the difference in costs of using a blend that included western Canadian mid-volatility coal and another that included only U.S. coals. Average transaction prices were provided for some of the inputs into this comparison and published trade journal prices were used for others. The Bureau's expert provided his report several days before Fording's submission. In this case, the expert's analysis may have benefited from the company's price data.

Carmeuse. Conducting a more quantitative analysis likely would require the help of an outside expert.<sup>48</sup>

#### 7.4. ADDITIONAL SUGGESTIONS ARISING FROM THE REVIEW OF THE CORUS-WIC TRANSACTION

The Fording and Carmeuse-Lafarge cases were more straightforward in terms of the economic issues at play. Corus-WIC is a more complex case. We offer the following suggestions to take into consideration:

- Identify whether price discrimination needs to be taken into account
- Consider including in the analysis listeners (or other market segments) that are affected by the merger even when payment is in kind rather than with currency
- Recognize that in markets with differentiated products and the ability to reposition products that the dynamics can be complex and a straightforward application of market shares may miss some key aspects of the merger that need to be considered
- When possible, turn to existing empirical studies in other markets or conduct an empirical study

Price discrimination is important in industries like radio broadcasting where prices are negotiated and identifiable (to a seller) characteristics of buyers vary considerably from each other. In fact, product market and geographic market definition may need to be done at a more refined customer segment level, to the extent that this is possible. The alternative is to take the most narrow market definition and conduct the analysis on that basis. To a large extent, this was done in this case as the Bureau's analysis took into account the ability of advertisers to reach a target demographic without using the parties' stations. The more the Bureau's analysis can identify potential differences between customer segments, the more accurate the analysis will be. For instance, it would have been useful to see a breakdown of the percentage of advertisers that feel it is important to reach a certain demographic group. Of the advertisers and agencies we interviewed, all of them (except the one small one) felt it was extremely important.

The welfare of listeners was completely excluded from the analysis. While academics have been interested in the impact of mergers on listeners, antitrust agencies have typically focused on advertisers. However, we do not fundamentally see any reason why this should

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To the extent that the Bureau does not believe that the higher prices would be a significant burden to the buyer and also would not result in a substantial distortion in how inputs or outputs are used, such detailed numeric analyses would not be necessary. But in such cases much of the qualitative analysis to assess alternative sources for buyers or to identify the possibility of entry or, more generally, to define relevant markets would also be irrelevant.

be the case. We do not have a measure of the benefits generated to listeners from radio, but it seems safe to assume that it is very large and on the order of importance as the benefits to advertisers. The available evidence, including that presented here, clearly suggest that listeners are impacted by mergers. Of course, in Canada there are jurisdictional issues since the CRTC is the main regulator of radio and is mandated to consider the interests of listeners among other stakeholders. However, unless a joint analysis between the CRTC and the Bureau is undertaken, it seems reasonable that the Bureau would consider both the welfare of advertisers and listeners in its analysis. There is certainly the possibility that radio stations could exercise market power over listeners by increasing commercial loads, and it is also possible that listeners could benefit from mergers if quality improves.

Even if the welfare of listeners is not considered in the analysis, recognizing that there are two markets still matters to the analysis. How prices are set for advertisers depends on the positioning of radio stations and the responses of listeners to changes in commercial loads. These depend on the ownership structure and the entry and exit decisions made by radio station owners anticipate these complex positioning and pricing decisions. What the economic models indicate is that the effects of a merger on pricing and variety can be very difficult to determine based on theory alone. This is a valuable result because it means that a straightforward application of an analysis of market shares may be incorrect and because it indicates that more empirical evidence is required. Of course, at the time of the Corus-WIC merger much of the empirical analysis of U.S. markets had not yet been undertaken and there had not been enough time since the change in CRTC rules to assess the impact on the Canadian market. However, the analysis of future mergers in complex industries like radio could benefit from empirical studies when they are possible.

Since such studies can take a long time to undertake, it would be useful to conduct them independently of any specific merger. One potential important issue with any such study is that the mergers are not likely exogenous; thus, cases where there are natural experiments like in radio are particularly illuminating.

Our research here also reveals that even very well informed customers can find it impossible to identify the effect of a merger in a dynamic market where many other factors are changing unless that effect is very large. Where we identify effects of mergers through statistical analysis those we interview report none that they attribute to the merger. Certainly, customers can alert the Bureau to specific features of a particular market that might make it more susceptible to the effects of the merger, but the customer (and the parties and competitors) are not likely able to disentangle the myriad of factors affecting their industry. That said, overall we found that the Bureau attached an appropriate level of importance to concerns raised by customers.

When dealing with a merger where the economic aspects of the case are complex it is, in our opinion, productive for the Bureau to thoroughly review the most recent academic research. In the radio industry there has been substantial relevant research published in peer reviewed journals related to the effects of mergers. Since this literature is often technical in nature, the

in-house economists can play an important role in reviewing the literature and explaining its relevance to the case team.

Overall, the Bureau's predictions have been very good for these difficult cases. In only one case, Carmeuse-Lafarge, was there a price increase that may have been the result of the merger – it is not possible to determine whether the Guelph plant would have been shut down in the absence of the merger – and, in any event, the Bureau was willing to tolerate such a price increase given that most of the product was a small input component consumed by large customers. In the Corus-WIC merger, more emphasis could have been given to the importance of entry and less to the amount of remaining competition, as we tend to find that the merger did affect revenues, but also that any effects were more than offset by later entry. Finally, in the case of Fording, the Bureau did correctly predict that steel producers could switch to U.S. suppliers, though the reasons they switched were not due to the merger. The Bureau failed to predict the importance of entry of coal producers in western Canada, but only because there was no way to have predicted that international coal prices would increase so much after the merger.

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