CT-2022-002

IN THE MATTER OF the *Competition Act*, R.S.C. 1985, c. C-34;

AND IN THE MATTER OF the proposed acquisition by Rogers Communications Inc. of Shaw Communications Inc.;

AND IN THE MATTER OF an application by the Commissioner of Competition for one or more orders pursuant to section 92 of the *Competition Act*.

B E T W E E N :

COMMISSIONER OF COMPETITION

Applicant

- and -

ROGERS COMMUNICATIONS INC. AND SHAW COMMUNICATIONS INC.

Respondents

- and -

ATTORNEY GENERAL OF ALBERTA AND VIDEOTRON LTD.

Intervenors

REPLY WITNESS STATEMENT OF NATHAN H. MILLER

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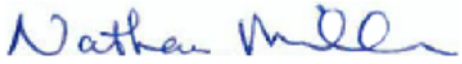
1. I, Nathan H. Miller, signed a witness statement on September 21, 2022 attaching my expert report for use in this proceeding.

2. I attach as Exhibit “A” to this witness statement my rebuttal expert report.

Signed this 19th day of October, 2022.



Nathan H. Miller

THE COMPETITION TRIBUNAL

IN THE MATTER OF *the Competition Act*, R.S.C. 1985, c.C-34;

AND IN THE MATTER OF the proposed acquisition of Shaw Communications Inc. by Rogers Communications Inc.;

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BETWEEN:

COMMISSIONER OF COMPETITION
Applicant

- and -

ROGERS COMMUNICATIONS INC.
SHAW COMMUNICATIONS INC.
Respondents

- and -

ATTORNEY GENERAL OF ALBERTA
VIDEOTRON LTD.
Intervenors

REBUTTAL EXPERT REPORT OF NATHAN H. MILLER

October 19, 2022

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1. Background and assignment

1. [redacted][1]

2. [redacted] [2] The divestiture proposal was finalized by Rogers, Shaw, and Quebecor on August 12, 2022 ("Videotron divesture proposal" or "divestiture proposal").[3]

3. On May 6, 2022, at the request of counsel for the Commissioner of Competition, I completed an expert report which was filed in the context of the proceedings related to the Application by the Commissioner of Competition for an interim order pursuant to section 104 of the Competition Act, to which I refer in what follows as my "104 Report."[4]

4. On September 21, 2022, at the request of counsel for the Commissioner of Competition, I completed an expert report which was filed in the context of the proceedings related to the Application by the Commissioner of Competition for an order pursuant to section 92 of the Competition Act, to which I refer to in what follows as my "Opening Report."[5] On the same date, I also signed a witness statement to which my Opening Report was attached.[6]

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[1] Letter from [redacted] p. 5.

[2] RBCH00034_000000003, p. 1.

[3] Share Purchase Agreement, Videotron Ltd., and Quebecor Inc., and Rogers Communications Inc., and Shaw Communications Inc., and Shaw Telecom Inc., and Freedom Mobile Inc., August 12, 2022 ("Share Purchase Agreement"), Title Page.

[4] Affidavit of Nathan H. Miller (Affirmed May 6, 2022), Exhibit A – Expert Report of Nathan H. Miller ("104 Report").

[5] Witness Statement of Nathan H. Miller (September 21, 2022), Exhibit A – Expert Report of Nathan H. Miller ("Opening Report").

[6] Witness Statement of Nathan H. Miller (September 21, 2022). The statement includes my qualifications.

5. I was asked by counsel for the Commissioner of Competition to respond to the critiques of my report dated May 6, 2022 (filed in the context of Commissioner's application for an interim order pursuant to section 104 of the Competition Act) found in the reports of Drs. Israel and Johnson herein dated September 23, 2022.[7]

6. I was also asked to examine the marginal cost savings alleged in Dr. Israel's report and their impact, if any, on my assessment of the proposed acquisition and divestiture in the event they are considered relevant by the Tribunal.

2. Summary of opinions

7. Dr. Israel's critiques of my merger simulation do not warrant any changes to the model. In particular:

- Dr. Israel is wrong to suggest that my merger simulation ignores wireline competition. The merger simulation does incorporate the relevance of wireline bundles for wireless competition, both in estimating harm and assessing which party will inherit the potential to offer the equivalent of a Shaw Mobile product after the proposed divestiture. Specifically:
  - » Dr. Israel is incorrect to assume that competition between Rogers and Shaw Mobile is limited and that the model should incorporate attenuated competition between them.
  - » He is also incorrect to assume that Shaw Mobile's bundle prevents the analysis of wireless service competition without formally including wireline products in the model.
  - » And, his characterization of my divestiture model ignores the fact that the assets that make Shaw Mobile a distinctive competitor are indeed transferred to Rogers after the divestiture. (**Section 3.1**)
- Share of gross adds is the proper reflection of customers actively participating in the market. Nonetheless, Dr. Israel appears to misunderstand that the simulation model is premised on an economic theory representing economic choices, and as a result he inappropriately insists on judging the model as an explanation of each brand's percentage of subscribers. (**Section 3.2**)

[7] Affidavit of Mark A. Israel and supporting materials, dated September 23, 2022, ("Israel Report"); Witness Statement of Paul A. Johnson and supporting materials, dated September 23, 2022, ("Johnson Report").

- My procedure to calibrate margins works as intended. What Dr. Israel sees as unrealistic margins for Freedom are the result of a calibration that is allowing Shaw's incentives to reflect the value of its Shaw Mobile bundle for wireline customer retention. Moreover, economic theory indicates that the average price effects predicted by the model would be close to correct even if calibrated markups are overstated for some brands and understated for others but correct on average. As that is the case in my model, the model is able to predict effects reliably even if calibrated margins for Freedom do not replicate pre-merger economic margins. (**Section 3.3**)

8. Dr. Israel's claims of quantifiable cost savings have no material effect on my finding of unaddressed harm from the proposed acquisition and divestiture. The cost savings that Dr. Israel quantifies from Freedom's integration into Quebecor are rearrangements of existing contractual agreements, not resource savings arising from a change in the structure of the industry. As such, they appear to have limited relevance to the acquisition or to the divestiture proposal. In addition, Dr. Israel does not appear to have established that these are credible cost savings that should be recognized as a consequence of the proposed acquisition and divestiture. Even so, when I incorporate into the merger simulation the predicted marginal cost savings that have some foundation and relevance, I still find that the acquisition with the proposed divestiture leaves a significant portion of the competitive harm unaddressed. Dr. Israel also claims that the divestiture will create several types of other unquantified cost savings and synergies, which, upon closer examination, imply additional harms, generate resource losses, or, like the quantified savings he claims, could have occurred outside of the proposed divestiture. (**Section 4**)

9. Dr. Israel's claims that coordination is unlikely are inconsistent with the facts of the industry and do not change my conclusions as to coordinated effects that may arise from the proposed acquisition and divestiture. Provinces lacking a strong fourth competitor historically have exhibited behavior and outcomes consistent with coordination that has been suggested to exist between the Big 3 carriers in such provinces. The industry characteristics that Dr. Israel claims make coordination unlikely in Canadian wireless markets have not pre-empted this behavior in the past and are unlikely to do so in the future. Despite Dr. Israel's assertions to the contrary, the proposed divestiture will not lead to a strong fourth competitor as Freedom Mobile under Videotron's ownership would be a weaker fourth competitor than Shaw is currently. At the same time,

Shaw Mobile in Rogers' hands would be less likely to continue pursuing strategies that enhanced competition in the provinces in which it operates and made them less prone to coordination. (**Section 5**)

10. Dr. Israel's empirical analyses do not invalidate my conclusion that the launch of Shaw Mobile prompted responses from competitors. I have examined the factual record to reach this conclusion and complemented my review of the factual record with a data analysis showing that the competitive reactions seen in documents had widespread effects in the marketplace. Dr. Israel follows a different approach. He solely relies on analyzing data in an attempt to disprove the existence of an effect of the Shaw Mobile launch in the marketplace. Dr. Israel, however, overinterprets limited data while his results appear not to be robust and include errors. (**Section 6**)

11. Dr. Johnson also attempts to discredit the competitive constraints that Shaw Mobile exerted on the competition with unreliable and uninformative analyses. First, Dr. Johnson misinterprets my study of the 2020 Shaw Mobile launch as an attempt to prove from the data alone that Shaw Mobile had an impact on competitive outcomes. As I explained above, my data analysis complements my review of the factual record. Second, Dr. Johnson suggests that the data allows for comparisons between treated and untreated groups—either by relying on new subscribers from other years as a benchmark or new subscribers in Ontario as control group. Both, however, are unsuitable benchmarks and controls, because they were likely contaminated by other competitive events or directly by Shaw Mobile's launch. Consequently, Dr. Johnson's suggestion that the launch of Shaw Mobile was not significant probably results from this contamination. Finally, Dr. Johnson presents an analysis of historical trends for Telus subscribers. This analysis, however, is uninformative because he analyzes data aggregated across all Telus subscribers rather than new subscribers, making it hard to identify an effect of Shaw Mobile's launch since only a minority of subscribers actively change plans each month. (**Section 7**)

3. Dr. Israel's critiques of my merger simulation do not warrant any changes to the model

12. In this section I address the critiques that Dr. Israel made to my merger simulation model. I find that his critiques do not warrant any changes to the model. Moreover, the assumptions on which he relies for his critiques are often

inconsistent with the evidence I presented in my 104 Report and in my Opening Report. Specifically:

- Dr. Israel incorrectly asserts that the merger simulation ignores wireline competition and that it depends on a transfer of wireless assets to Rogers. **(Section 3.1)**
- Dr. Israel appears to misunderstand that the simulation model is premised on an economic theory representing economic choices which leads him to make a series of incorrect and unfounded claims about whether the model fits (or describes) customers that are not currently engaged in any economic choice between wireless options. Consequently, his insistence on judging the model as an explanation of each brand's percentage of subscribers rather than a share of gross adds, which is the proper reflection of customers actively participating in the market, is inappropriate. **(Section 3.2)**
- Dr. Israel's assertions that the merger simulation model generates unreasonable margins and marginal costs are flawed. **(Section 3.3)**

3.1. Dr. Israel fails to appreciate that the merger simulation does incorporate the relevance of wireline bundles for wireless competition both in estimating harm and in assessing which party will inherit the potential to offer the equivalent of a Shaw Mobile product after the proposed divestiture

13. Despite evidence of high substitution between Rogers and Shaw Mobile, and despite numerous ordinary course documents indicating a high degree of competition between Rogers and Shaw Mobile, Dr. Israel speculates, without support, that competition between Rogers and Shaw Mobile is limited because Rogers does not offer bundled products. Indeed, Dr. Israel not only assumes away the evidence of close competition, he perversely interprets it as evidence that the two products will someday be particularly distant competitors. He speculates that the high substitution between Rogers and Shaw Mobile (prior to Shaw's pricing change in November 2021)[8] must end at some future point when the Rogers subscribers who also have Shaw wireline have finished converting to the bundle. That is, he assumes, based on how high substitution between them is, that the future must be different—that competition between Rogers and

[8] I discuss Shaw's November 2021 pricing change in Appendix 8.4 of my Opening Report.

Shaw Mobile should be forecast as the opposite of what is currently observed between their products.

14. Dr. Israel builds a reason to dispute the reliability of my merger simulation model from this speculation that the facts will reverse themselves. However, Dr. Israel does not offer analysis nor documentary evidence to support his speculation. My modelling approach recognizes that the history of actual competition in the market is the best foundation for predicting the future. In the following paragraphs, I discuss the analysis and documentary evidence that directly refute Dr. Israel's speculative claim and any basis to ignore the history of actual competition.

3.1.1. Dr. Israel ignores porting data and ordinary course documents that indicate that Rogers and Shaw Mobile are significant competitors

15. Dr. Israel's assumption that a Shaw Mobile wireless-wireline bundle does not compete closely with Rogers' wireless offerings is inconsistent with evidence from porting data, which shows high substitution in both directions between the parties, including well after the launch of Shaw Mobile.

16. Shaw Mobile received a high percentage of Rogers port-outs when it launched. Dr. Israel argues this is because these subscribers were already Shaw wireline subscribers, so switching to a bundled product should be expected as soon as that option became available.[9] However, Dr. Israel ignores that the percentage of port-outs to Shaw Mobile remained high well after the launch, and only dropped significantly when Shaw increased prices for Shaw Mobile. As I showed in Exhibit 33 of my Opening Report, Shaw's share of port-outs from Rogers spiked from close to [redacted] percent to approximately [redacted] percent in Alberta and British Columbia following the launch of Shaw Mobile in July 2020.[10] Following the launch, Shaw's share in these two provinces stayed relatively high over a sixteen-month period, tapering gradually to just below [redacted] percent at the lowest, and only experienced a significant decline after Shaw raised prices for Shaw Mobile in November 2021.[11] I note that such a response to a change in

[9] Israel Report, ¶ 45.

[10] Normal course documents produced by Rogers confirm this impact. See ROG00186068, p. 7 ([redacted]

[11] I discuss this price increase in detail in Appendix 8.4 of my Opening Report.

price is consistent with close substitutability.[12] Additionally, the share of Rogers' port-outs going to Telus in Alberta and British Columbia from 2017 up to the launch of Shaw Mobile, and again shortly following the launch of Shaw Mobile, are [redacted] to Shaw's share of Rogers port-outs after the launch of Shaw Mobile and prior to Shaw's November 2021 price change.[13] So, Dr. Israel's presumption that porting from Rogers to Shaw must be accounted for by unique and temporary conversion of Shaw wireline subscribers in fact corresponds to a level of substitution that, while high, is not distinct from porting to a more established wireless carrier that would presumably not have had the same sorting of customers scenario with Rogers.

17. Dr. Israel also ignores that by the end of FY 2021 only [redacted] percent of the [redacted] Shaw Internet households eligible for Shaw Mobile had bundled mobile and internet.[14] That is, nearly a year and a half following the launch of Shaw Mobile, [redacted] percent of Shaw's eligible wireline households had not yet switched to a bundle.[15] Dr. Israel nonetheless claims that "those [Rogers wireless subscribers] who wanted a bundle switched soon after the launch—or at least as soon as their Rogers wireless contract expired."[16] He does not indicate how he can conclude that the remaining Shaw wireline subscribers (approximately [redacted] households) can be presumed to have such a different attitude towards Rogers and Shaw Mobile than the first [redacted] customers that switched.

18. Dr. Israel's claim that Rogers and Shaw Mobile do not compete closely with one another is at odds with the fact that, throughout the period that Shaw Mobile existed as an independently competitive product (and not a product awaiting a merger with Rogers), competition was ongoing between the two and was demonstrated by a high rate of port-outs in both directions.[17] As I showed in Exhibit 4 of my Opening Report, over the period from January to April 2021, half a year after the launch of Shaw Mobile, [redacted] percent of port-outs from

[12] I also note that the percentage of port-outs from Rogers to Shaw in Ontario does not follow the same pattern. Over the entire period July 2020 to November 2021, the share of port-outs from Rogers to Shaw in Ontario ranges approximately between [redacted] and [redacted] percent. See Opening Report, Exhibit 33. This indicates that it was the competition between Shaw Mobile and Rogers that drove these large changes in the percentage of port-outs in Alberta and British Columbia—a conclusion that Dr. Israel appears to accept although his interpretation of it is then clouded by his supposition of a future reversal of the facts.

[13] See Workpaper 3.1.1.a.

[14] SJRB-CCB00814711, at p. 22.

[15] SJRB-CCB00814711, at p. 22. In my Opening Report, I incorrectly described the numbers in this document as the households with bundled wireless and wireline accounting for [redacted] percent of [redacted] total eligible households, when it is [redacted] households that remain.

[16] Israel Report, ¶ 45.

[17] Israel Report, ¶ 46.

Shaw went to Rogers in Alberta ([redacted] percent of port-outs from Rogers went to Shaw), and [redacted] percent of port-outs from Shaw went to Rogers in British Columbia, higher than the [redacted] percent of port-outs from Rogers going to Shaw.[18] This evidence of close competition in both directions was still present half a year or more after the launch of Shaw Mobile.

19. Further, ordinary course documents produced by Rogers and Shaw that I discussed in my Opening Report confirm that Rogers and Shaw Mobile compete vigorously.[19] For example, Rogers documents indicate that [redacted] [20] A [redacted] [21] [redacted] [22] These documents, like the porting trends discussed above, are consistent with substitutability and vigorous competition (at least when the two products were not linked by a pending merger). They do not demonstrate Dr. Israel's presumed eventual reversal of the current competitive facts is a reasonable forecast of future competition.

20. It is not surprising that there is vigorous competition between Shaw Mobile and Rogers. As Dr. Israel observes, prior to the launch of Shaw Mobile there would have been a subset of subscribers of Shaw wireline service who were also subscribers of Rogers wireless service.[23] As Dr. Israel recognizes, with the

[18] I also examine port-outs from the launch of Shaw Mobile in July 2020 to the announcement of the proposed acquisition in March 2021, and find qualitatively similar results. See Workpaper 3.1.1.b.

[19] See Opening Report, Section 6.1.3 and Appendix 8.4.

[20] ROG00333914 [redacted]

[21] SJRB-CCB00421464 [redacted]

[22] ROG00697616 [redacted]

[23] Israel Report, ¶ 45.

launch of Shaw Mobile, both Rogers and Shaw were positioned to use their existing customer relationships with this shared customer base to sell their respective wireless services. An implication of Dr. Israel's observations, with which I agree, is that competition for wireless customers in this shared customer base would have been fierce as existing customer relationships likely lower the acquisition cost each firm faces for these particular customers.[24]

3.1.2. Dr. Israel's critique that my model does not account for the incentives that bundling creates for Shaw Mobile is incorrect

21. Dr. Israel opines that my merger simulation model is flawed because it does not account for "the interplay between the wireless and wireline industry," or the incentives and efficiencies "arising from the fact that Shaw Mobile is sold as part of a bundle."[25] This is incorrect.

22. Economists recognize that firms which offer a bundle of products often compete with firms that offer only one or the other of the products in that bundle. An analysis of competition would be incomplete if it artificially restricted market definitions or the scope of relevant competition only to products which have the same business model. My simulation model is consistent with this standard practice. Both wireless-only products and the wireless products included in wireless-wireline bundle offerings are incorporated into my model. To the extent that being part of a bundle may affect, say, Shaw Mobile's competitiveness, the model calibration process addresses the interconnection. By fitting parameters to the share of gross adds, in particular, the calibration allows the model to reflect the available evidence on customer demand for bundled or unbundled variations of wireless service, meaning that the modeling I have done is appropriate for incorporating the wireline product.

23. Additionally, in order to let the calibration of the model also reflect Shaw's incentives that derive from a bundled product's implications for wireline revenue, I do not include data on marginal costs from Shaw Mobile in my calibration. This approach allows the calibrated marginal costs for Shaw Mobile to incorporate the expectation of wireline revenue—the possibility that Shaw

[24] Israel Report, ¶ 36. Dr. Israel identifies this as a reduction in switching costs, which is consistent with the usual economic framework that generalizes acquisition costs as a part of customers switching between providers.

[25] Israel Report, ¶ 15.

has distinct incentives to sell its wireless service to preserve wireline revenue through bundling.[26] This approach is similar to any other situation where measures of the revenues directly related to sales of a product exclude additional revenues that follow from that sale (e.g., where an initial sale is expected to generate follow-on sales of related products that are not measured in the data for direct revenues).[27] That is, my model infers markups for Shaw Mobile in Alberta and British Columbia that are commensurate with Shaw's overall market share, leading to markups which exceed the average price that Shaw receives for its wireless products and reflecting the incremental profits that Shaw receives from the wireline side of the bundle.[28]

24. Consequently, the relevant aspects of Shaw's bundled product are present and reflected in the merger simulation. They enter through the data to which my model is calibrated.[29] That is, by allowing for a calibration of relatively low marginal costs for Shaw's wireless products in Alberta and British Columbia, the model incorporates the bundling strategy adopted by Shaw and the revenue that Shaw earns on its wireline products.[30] In short, my model evaluates the effects of the proposed acquisition, as well as those of the proposed divestiture, in a market context wherein wireless-only and wireless-wireline bundles do in fact coexist and compete with one another, and therefore accounts for the "interplay between the wireless and wireline industry."[31]

[26] Opening Report, ¶ 163.

[27] A similar practice has been followed in the academic literature in that simulation can be conducted using markup estimates that absorb indirect revenues captured in adjacent markets. See for example, Nathan H. Miller, Gloria Sheu, and Matthew C. Weinberg, "Oligopolistic Price Leadership and Mergers: The United States Beer Industry," *American Economic Review*, 111(10), 2021, pp. 3123–3159, Online Appendix F available at http://www.nathanhmiller.org/priceleadership.pdf.

[28] Opening Report, ¶ 174.

[29] As I discuss in Section 6.1.1. of my Opening Report, the implication of a bundling strategy (whereby a provider earns the smaller margins on a low-price wireless service, but also earns additional profits through bundling of these customers to the wireline service) is that bundling, from an economics perspective, allows the provider to price its wireless service in a way that is similar to a reduction in the marginal cost of providing that service. Opening Report, ¶ 82.

[30] As I state in my Opening Report, "[a]s adding new subscribers is more profitable if marginal costs are lower, all else equal, having low (or even negative) marginal costs is economically equivalent to having an additional source of revenue that is captured by the firm from other products that are not part of the relevant market. Thus, I interpret the markups and marginal costs calibrated in the model as reflecting the relevant economic tradeoffs faced by Shaw." Opening Report, ¶ 175.

[31] Israel Report, ¶ 15.

3.1.3. Dr. Israel's assertion that my model overstates diversion between Rogers and Shaw Mobile is based on his unsupported speculation that competition between Rogers and Shaw Mobile is limited

25. Based on the speculative contention that Shaw Mobile is "likely a closer substitute to Telus than to Rogers,"[32] Dr. Israel asserts that the model should have included a "nest" to accommodate his conviction that diversions between Shaw and Telus ought to be higher than those predicted by the logit model,[33] and, relatedly, that the diversions between Shaw and Rogers ought to be lower.[34] He concludes that failure to account for this assumed closeness with Telus overstates diversions between Shaw and Rogers and thus the predicted effects of the merger.

26. As I have discussed above, Rogers and Shaw Mobile are substitutes and, contrary to Dr. Israel's assertions, compete with one another vigorously. And, while Dr. Israel contends that Shaw Mobile is likely a closer substitute to Telus than Rogers because both offer wireless-wireline bundles, he has not provided any evidence of this supposed closeness nor its extent.[35] Thus, Dr. Israel does not demonstrate that a grouping of products into some predefined "nests" does anything more than perpetuate his preconceptions nor that it would improve the simulation or even affect it significantly. Indeed, as I found in examining the predicted diversions relative to the data on porting behavior, the assumption is not necessary to fit the observed behavior, which generally indicates that actual diversion (based on porting data) is comparable to diversion predicted by share of gross adds for all carriers and does not point to a need for separate nests.[36] Accordingly, introducing the complexity of predefined "nests" to allow for such a possibility would impose an artificial structure on relationships among the competitors that is contrary to other evidence—a poor practice for merger simulation.

27. In fact, my model may underestimate the effects of the acquisition. Dr. Israel points out that, with respect to the combined subscriber base of Shaw wireline and Rogers wireless subscribers prior to the launch of Shaw Mobile, competition should have been expected to be intense between Rogers and Shaw

[32] Israel Report, ¶ 15.

[33] Israel Report, ¶¶ 42–43.

[34] Israel Report, ¶ 47.

[35] Dr. Israel offers no analysis of porting or switching trends, nor does he discuss ordinary course documents suggesting higher diversions between Shaw and Telus compared to those between Shaw and Rogers.

[36] See Opening Report, Exhibit 34. Additionally, between Rogers and Shaw specifically, diversions based on the porting data are comparable to diversions based on share of gross adds, which particularly indicates against putting them in different nests. See Workpaper 3.1.3.

following the launch of Shaw Mobile.[37] Indeed, competition was intense according to the ordinary course documents I discussed above. These documents, along with the over [redacted] eligible Shaw wireline subscribers that have not yet bundled Shaw Mobile wireless products, indicate that this intense level of competition over shared customers is not likely to erode in the future, as Dr. Israel assumes. Additionally, to the extent that competition with Rogers was more intense than with Bell or Telus, as Dr. Israel's discussion of the shared subscriber base may suggest, the effect of the proposed acquisition is potentially *larger* than my model indicates.

3.1.4. Contrary to Dr. Israel's claims, the merger simulation model does not implicitly assume all assets associated with Shaw Mobile are transferred to Rogers; further, Dr. Israel's assumption that Shaw Mobile customers will "revert back" to Quebecor is unreasonable and unsupported

28. My merger simulation framework models consumers' preferences with respect to the available brands of wireless service as well as carriers' incentives to price the services offered under such brands. The perfect transfer scenario used to provide a quantification of the minimum harm that remains unaddressed with the Videotron divestiture proposal assumes that:

- Rogers inherits Shaw's incentive and ability to offer an aggressively-priced bundle of wireless service with the wireline assets it would acquire from Shaw.
- Consumer preference for such a bundle of wireless service with Shaw wireline is reflected in the calibrated preference for the Shaw Mobile brand.
- Regardless of how this product might be branded, it would be an addition to the potential products of Rogers—one that is captured by assuming Rogers inherits the low marginal costs calibrated for the Shaw Mobile brand as one of the products it controls after merger and divestiture.

29. The model is agnostic with respect to the assets that Rogers will use to offer the Shaw Mobile brand in the perfect transfer scenario. To the extent that Rogers has higher costs than Shaw currently does to provide those services

[37] Israel Report, ¶ 45.

using its own wireless infrastructure (e.g., adding the Shaw Mobile customers as a source of congestion on its existing wireless network), the perfect transfer scenario *understates* the harm that remains unaddressed by the proposed divestiture.

30. In addition, as I explained in my Opening Report, Rogers is indeed likely to have lower incentives to offer wireless-wireline bundles that are as generous as Shaw currently does, which again means that the perfect transfer scenario I considered *understates* the harms left unaddressed by the proposed divestiture.[38] Indeed, current Rogers plans indicate that generous bundled products currently offered by Shaw Mobile will be abandoned following the proposed acquisition.[39] Further, if Dr. Israel is right that Rogers will not continue the Shaw Mobile product following the proposed acquisition, then the acquisition will have effectively eliminated that product as an option for consumers, which has additional loss-of-welfare implications.

31. Dr. Israel also asserts that because all the wireless assets used to operate Freedom and Shaw Mobile will be transferred to New Freedom, consumers of Shaw Mobile would follow those assets, choose the Freedom product, and no adverse effects would arise.[40] As Dr. Israel himself explains, consumers will self-sort after the proposed divestiture based on their preferences for the various brands and these brands' attributes—which include whether the product is bundled with wireline service and its price.[41] As Rogers will be the firm positioned to offer the combination of attributes associated currently with Shaw Mobile, then, to the extent that Rogers does so, customers that currently choose this option and would be transferred to Rogers seem particularly likely to stay with that service. Unless Freedom Mobile changes its wireless strategy and offers a price and a combination of attributes that is superior to the one offered by any other brands in the eyes of all current Shaw Mobile consumers,

[38] Opening Report, ¶¶ 245–246. In the Opening Report I also explained that bundles with a TPIA service that may be offered by New Freedom would be unlikely to convey similar competitiveness as those of Shaw Mobile and noted that New Freedom will likely face higher costs of providing the wireline service via TPIA compared with a facilities-based wireline provider such as Shaw Mobile. See Opening Report, ¶¶ 241–244. In his witness statement, Jean-François Lescadres, Vice-President of Finance at Videotron, explains that building a wireline network makes business sense when those costs can be spread over a large enough customer base. Conversely, he explains that when building costs cannot be spread over as many customers that approach may be more expensive than buying wholesale internet access. See Witness Statement of Jean-François Lescadres, September 23, 2022, ¶ 187. This suggests that New Freedom, when relying on TPIA, is likely to have reduced incentives to offer wireless-wireline bundles—to face higher costs of such a product than a facilities-based provider (with a wireline network already built up) such as Shaw would.

[39] Opening Report, ¶ 245.

[40] Israel Report, ¶¶ 15, 34.

[41] Israel Report, ¶ 39.

these consumers will not "revert" to Freedom. Additionally, Dr. Israel's assertion is inconsistent with the way the Logit-Bertrand framework works. The model tracks the intuition I describe above. That is, it does predict some price reduction by Freedom Mobile, so some customers will be "won back" competitively, but that is not the same as Dr. Israel's presumption of a widespread "transfer back" initiated by the customers outside of the competitive modelling.

32. The assertion is also inconsistent with Dr. Israel's position that Shaw Mobile service is almost always purchased as part of a bundled product and that consumers are less likely to switch between wireline providers.[42] As I explained in my Opening Report, New Freedom is not likely to replicate the wireless-wireline bundles which, according to Dr. Israel, nearly all Shaw Mobile consumers prefer.[43] In addition, those consumers would need to abandon their Shaw wireline service for a hypothetical New Freedom Internet service based on TPIA.

3.2. Contrary to Dr. Israel's claims, the use of share of gross adds is compatible with the merger simulation model and is the proper market share to calibrate consumer choices and competitive strength of companies in markets with fast-growing new entrants, such as Shaw Mobile

33. For the purposes of my merger simulation I rely on gross adds as the best representation of the competitive significance of the carriers, in particular Shaw Mobile. This approach is consistent with the *Merger Enforcement Guidelines* ("*Guidelines*") which state that in a setting where incumbents face "enhanced competition" from new entrants, "shares based on new customer acquisitions may be a better indicator of competitive vigor than are shares based on existing customers,"[44] and that one should use "the best indicators of sellers' *future* competitive significance" when calculating market shares.[45]

[42] Israel Report, ¶¶ 15, 36.

[43] Opening Report, ¶¶ 241–244.

[44] Competition Bureau Canada, "Merger Enforcement Guidelines," October 6, 2011 ("Guidelines"), ¶ 5.4 ("When a regulated or historical incumbent firm is facing deregulation or enhanced competition, shares based on new customer acquisitions may be a better indicator of competitive vigor than are shares based on existing customers.").

[45] Emphasis added. Guidelines, ¶ 5.3 ("When calculating market shares, the Bureau uses the best indicators of sellers' future competitive significance.").

34. As a recent entrant, Shaw Mobile's gross adds share exceeds its current percentage of subscribers. The mathematical relationship between these two measures and churn means that, for Shaw Mobile, the percentage of subscribers is moving toward a long-run state where it will be higher than it currently is. However, because its percentage of subscribers has not yet reached this long-term level, the situation presents the issue envisioned in the *Guidelines*. The percentage of subscribers is currently too low to reflect the competitiveness of the Shaw Mobile product and the shares of new sales are, therefore, a better measure.

35. Nevertheless, Dr. Israel claims that my use of gross adds is incorrect because, according to Dr. Israel, shares of gross adds: (1) are not a valid measure of market share to be used in a logit model, (2) do not appropriately measure the shares of actively shopping consumers, and (3) overstate the competitive significance of Shaw Mobile by incorporating high gross adds that are attributable to the newness of Shaw Mobile. Dr. Israel further contends that (4) a recent decline in Shaw Mobile's gross adds confirms that the particular gross adds I used to calibrate the logit model were high because Shaw Mobile was still new. As I explain in what follows, Dr. Israel is incorrect and ignores or inappropriately dismisses evidence that contradicts his assertions.

3.2.1. Dr. Israel incorrectly asserts that share of gross adds is not a valid measure of market share to calibrate the logit model.

36. Dr. Israel first asserts that a logit model should be calibrated using the percentage of subscribers.[46] Dr. Israel appears to misunderstand what a model like logit does. Logit is a form of "choice model" (a family of economic models describing how consumers choose between discrete options). A choice model, like logit, describes the probability with which the consumers that are making purchasing decisions at a given point in time choose among the different products and brands available in the market at that time. As I explain in my Opening Report, the market shares appropriate to the logit model will be the shares that correspond to these choices (or to the probability of each possible choice). This aspect of the model is consistent with using market shares that best reflect the choices of consumers who are actively making purchase

[46] Israel Report, ¶¶ 15, 44, 52.

decisions.[47] And, as I discuss in my Opening Report, share of gross adds is the best available metric to calculate such market shares in the relevant markets.[48]

37. The economics literature frequently considers products where particular customers only make a purchasing decision infrequently. In such cases, it is common to focus not on the sales made in prior periods (e.g., all the cars on the road), but only on the new sales (e.g., the percentage of new car sales in 2022 that were Tesla).[49] To the extent that choices made at an earlier point in time reflect a different choice environment and, in the case of a new product, a different competitive situation, overall shares are likely to misrepresent the economic decision of interest. Consequently, academic papers ordinarily use the same sort of shares I have used in this case to estimate or calibrate choice models like logit rather than considering choices made in the past even where those past decisions may still be reflected in an installed base of products that are in the hands of customers.[50]

38. Wireless carriers actively track data that inform them about how consumers are making choices at a given point in time, including share of gross adds, porting data, and net additions (i.e., *changes* in the number of subscribers),[51] and make pricing decisions based on that information.[52]

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[47] Opening Report, ¶ 167.

[48] Opening Report, ¶ 168.

[49] For example, academic literature that analyzes car purchases usually relies on data on annual purchases (instead of data on the stock of available vehicles) to estimate discrete choice models, considering in some cases a single year of purchase data. See for example, Steven Berry, James Levinsohn, and Ariel Pakes, "Automobile Prices in Market Equilibrium," *Econometrica*, 63(4), 1995, pp. 841–890, at pp. 868–871; Steven Berry, James Levinsohn, and Ariel Pakes, "Differentiated Products Demand Systems from a Combination of Micro and Macro Data: The New Car Market," *Journal of Political Economy*, 112(1), 2004, pp. 68–105, at pp. 79–80. See also Paul L. E. Grieco, Charles Murry, and Ali Yurukoglu, "The Evolution of Market Power in the US Automobile Industry," Working Paper, 2022, pp. 1–41, available at: https://web.stanford.edu/~ayurukog/CarMarkups_April2022.pdf, at p. 6 ("[t]hese data sets provide observations on a sample of new car purchasers for each year."). Although I recognize that there may be different levels of switching costs between whether to buy a new car and whether to change wireless plans, the same economic concept applies, and the use of annual car purchases plays the same role as gross adds in capturing the best available information about choices made by actively shopping consumers at a given point in time.

[50] In addition to the academic research on car purchase decision discussed in the prior footnote, contributions studying the purchase of other goods, e. g., college textbooks and healthcare plans, have also relied on purchase data for a given period of time to estimate or calibrate discrete choice models. See Judith Chevalier and Austan Goolsbee, "Are Durable Goods Consumers Forward-Looking? Evidence from College Textbooks," *The Quarterly Journal of Economics*, 124(4), 2009, pp. 1853–1884, at pp. 1856–1859, 1868; M. Kate Bundorf, Jonathan Levin, and Neale Mahoney, "Pricing and Welfare in Health Plan Choice," *The American Economic Review*, 102(7), 2012, pp. 3214–3248 at p. 3220 ("We examine data from 11 employers who purchased coverage from the intermediary in a single metropolitan area in the western United States during 2004 and 2005.").

[51] Opening Report, ¶¶ 61, 72.

[52] [redacted] See ROG00341090 ([redacted] and Opening Report, ¶

3.2.2. Dr. Israel's preferred metric, percentage of subscribers, is a worse metric than share of gross adds because it largely reflects choices made by consumers when Shaw Mobile was not an available option in the marketplace

39. Dr. Israel also asserts that share of gross adds does not appropriately measure the shares of actively shopping subscribers because it may not fully reflect the choices of shoppers that decided to remain with their current provider.[53] As I explained in my Opening Report, gross adds are indeed an approximation, the best available, of the percentage of all customers who are shopping, and they do not include a measurement of customers that may engage in some shopping and then decide to stay with their current provider.[54] This can lead the share of gross adds to overstate the competitive significance of a newer firm, like Shaw, if, as Dr. Israel assumes, the established firms such as Rogers, Bell, and Telus, have a base of customers whose loyalty to those firms makes them more likely to choose their current provider than the customers seen in the gross adds figures. In that case, the inability to observe how often these sorts of customers go to the market and choose to stay with their current provider omits their particular preference from the overall probability of a customer choosing these carriers. However, Dr. Israel does not establish that this is the case nor that there is a large enough group of such subscribers with such different preferences that it would meaningfully affect the extent to which share of gross adds measures competitive significance.

40. While the share of gross adds is limited to the customers that are known to be actively shopping, Dr. Israel does not articulate why this share would be worse than a share calculated from the percentage of subscribers—particularly in terms of measuring the competitive significance of a new product such as Shaw Mobile. The shares of gross adds that I calculated reflect the choices of consumers that all had Shaw Mobile as an available option as well as all of the other brands. Shaw Mobile and other brands' percentage of all subscribers, conversely, would largely reflect the choices of consumers that were actively shopping when Shaw Mobile was *not* available as an option. Dr. Israel does not explain why a metric that largely reflects choices made when Shaw Mobile was

72. [redacted] See SJRB-CCB00856040 ([redacted], SJRB-CCB00830448 ([redacted] See SJRB-CCB00827944 [redacted]

[53] Israel Report, ¶¶ 59, 61.

[54] Opening Report, footnote 114.

not available would provide more meaningful insights than a metric that only reflects choices made when Shaw Mobile was an available option.

41. While neither measure is perfect, the likely error involved in basing shares on gross adds is much more limited than the likely error of basing them on total subscribers. As I discussed above, the potential error from share of gross adds only relates to the unproven possibility that shoppers who decide to stay with their current supplier do so in greater proportions than shoppers who are switching from another provider. The error from shares based on total subscribers involve the entire population that has not yet gone to the marketplace at a point in time when they could have chosen Shaw Mobile.

42. Dr. Israel's Table 2 of his report illustrates the difference. In this table, Dr. Israel reports a "share of active shoppers" that he calculates as a function of how often customers shop for new wireless service. That share differs from the share of gross adds because Dr. Israel assumes a group of customers (that is, in actuality, unmeasured) is identifiable from his assumption of how often customers shop. This group is the customers who actively shop among wireless services but end up choosing to stay with their current provider. That is an unknown number of subscribers because many customers simply roll their contract beyond its term rather than engage immediately in the act of shopping, and some of those customers will defer shopping for a considerable period.[55]

43. However, Dr. Israel's Table 2 is also useful for examining how well his preferred approximation (i.e., percentage of subscribers) performs relative to his computed "share of active shoppers." In this table, he does not report the shares based on the percentage of current subscribers. The percentages of all current subscribers that I calculated for Shaw Mobile in Alberta and British Columbia over the period January 2021 – April 2021 are [redacted] and [redacted] respectively. Comparing those values to the values of Dr. Israel's "share of active shoppers" in the first row, where he assumes that all consumers actively shop once a year, we see that Dr. Israel would claim the correct "share of active shoppers" to be [redacted] the shares one would get from the percentages of all subscribers. The reason share of subscribers is so low is that, under the assumptions used for this row (i.e., all consumers actively shop once a year),

[55] Israel Report, ¶ 62. Dr. Israel cannot directly observe the "share of active shoppers" he presents in the table. He reconstructs these shares based on the share of gross adds and a number of assumptions about how often consumers shop as well as assumptions about the choices of "active shoppers" that decide to stay with their current brand. See Israel Report, ¶ 62 ("I include in a brand's share its current subscribers who are active shoppers but who decided not to switch brands.").

Shaw Mobile could only add to its subscriber count each month 1/12th of the subscribers it could add if every subscriber was shopping in every month. But, that is exactly what shares based on percentages of subscribers assume—that every subscriber is actively shopping in every month.

44. In the other rows of Dr. Israel's Table 2, which consider longer intervals between consumers' shopping, this issue is more pronounced. The ratio of subscribers Shaw Mobile can add each month (which was 1/12th in the first row) becomes 1/24th and 1/36th in subsequent rows and the "share of active shoppers" gets farther and farther from the shares based on percentage of current subscribers. Rogers' data on its postpaid consumer subscribers in 2021 identifies that [redacted] [56] Of the no-term subscribers, Rogers does not give data to identify when they last shopped and how many rolled over a contract purchased at a time when Shaw Mobile was not available. However, a reasonable interpretation of these statistics is that the true rate of shopping is overstated by Dr. Israel [redacted] Even by Dr. Israel's own projection of the "share of active shoppers" for these time horizons, a large fraction of subscribers will not have actively shopped for a wireless plan since the launch of Shaw Mobile, therefore his preferred measure of share—percentage of subscribers—is forced to be too low.[57]

3.2.3. Dr. Israel incorrectly dismisses share of gross adds on the grounds that Shaw Mobile is a new product

45. Dr. Israel's third point is a rejection of the standard reasoning in the *Guidelines*. He claims that Shaw Mobile's share of gross adds "inflates Shaw Mobile's steady state market share…*only because it is new*," and that as a result Shaw Mobile gross adds do "not reflect the product's competitive significance as reflected in its ultimate steady-state market share."[58] Dr. Israel notes the advice from the *Guidelines* above but rejects it due to this newness argument.[59] Taken

[56] See [redacted]

[57] Recall that the gap between Dr. Israel's computed "share of active shoppers" and gross adds is an assumption about the unmeasured consumers. This difference between "active shoppers" and all subscribers is a straightforward mechanical artifact of how few of the current subscribers would have made choices when their available choices included the option to choose Shaw Mobile.

[58] Israel Report, ¶ 56.

[59] Israel Report, ¶ 57.

literally, Dr. Israel's point seems to be that there can be *no* accurate measure of shares for new products. He does not engage with the fact that shares of new sales that are above the current percentage of subscribers for such a product inherently means that the product is growing every period and therefore that number of customers currently subscribed to it is necessarily too low to reflect competitive significance.

46. Dr. Israel's unsubstantiated belief that gross adds are not reflective of competitive significance ignores the obvious problem that the current percentage of subscribers is a *worse* measure of competitive significance for a new entrant like Shaw Mobile. A new entrant begins from zero percent of subscribers and may continue to grow its percentage toward the steady-state level for a substantial period of time. Anecdotally, Videotron, which launched services in 2006 as an MVNO and deployed its own network infrastructure in 2010, currently has [redacted] percent of subscribers in Quebec, which is still below its share of gross adds.[60]

3.2.4. Shaw Mobile's shares of gross adds recently declined because Shaw Mobile changed its pricing strategy not because it lost its "newness"

47. To the extent that Dr. Israel is making a narrower critique—that a new entrant may see a decline in its share of new sales after an initial bump—he does not discuss the fact that I do not consider the months immediately following Shaw Mobile's entry in calculating share of gross adds. This is because Dr. Israel and I agree that it would not make sense to measure competitive significance "shortly after a one-off entry event."[61] I instead use data from January through April 2021, as "gross adds obtained in or after January 2021 allows me to exclude the first few months after Shaw Mobile's

[60] RBCH00034_000000003, pp. 6–7 [redacted]
Consistent with its gross adds exceeding its percentage of subscribers, Videotron has exhibited quarterly growth in its subscriber base over the last year ranging from 1.5 percent to 2.7 percent per quarter. See Videotron Ltd., "Quarterly Report for the Period Ended September 30, 2021," November 10, 2021, p. 5; Videotron Ltd., "2021 Annual Report," March 31, 2022, p. 55; Videotron Ltd., "Quarterly Report for the Period Ended March 31, 2022," May 18, 2022, p. 5; Videotron Ltd., "Quarterly Report for the Period Ended June 30, 2022," August 10, 2022, p. 3.

[61] Israel Report, ¶ 57.

launch in July 2020, to better reflect Shaw's ongoing competitive significance after the initial months of particularly high subscriber additions."[62]

48. Dr. Israel claims, however, that "[t]rends in gross adds after the time period" I use for my merger simulation "*directly refute*" the shares of gross adds I use,[63] as the time period I use, according to Dr. Israel, still "captures the newness of Shaw Mobile."[64] Dr. Israel's claim is in reference to a decline in gross adds for Shaw Mobile t[redacted] [65] which I discuss in Appendix 8.4 of my Opening Report, and which Dr. Israel assumes is a reflection of the competitive significance of Shaw Mobile. However, as my discussion makes clear, the facts surrounding this reduction of Shaw Mobile's gross adds show that Dr. Israel's claim is incorrect.

49. As I have explained in Appendix 8.4 of my Opening Report, [redacted]

50. As a general matter, across his various critiques, Dr. Israel dismisses additional evidence of the competitive significance of Shaw Mobile that further supports the use of share of gross adds as an appropriate metric to assess the effects of the acquisition. In particular, he dismisses the informativeness of porting data as "a tautology,"[66] and completely ignores evidence from ordinary course documents produced by Rogers and Shaw. First, comparison to porting is not tautological. Rather, it provides a different lens for subscriber switching. Gross adds capture the full picture of total new subscribers, but do not show from where those subscribers come. Porting data, on the other hand, provide a more limited snapshot of new subscribers, but have the advantage of capturing subscriber switching between carriers. These are not the same, and the porting data show not only that Shaw took subscribers from Rogers, but that Rogers

[62] Opening Report, ¶ 299.
[63] Israel Report, ¶ 64.
[64] Israel Report, ¶ 67.
[65] [redacted] See Opening Report, Appendix 8.4.
[66] Israel Report, ¶ 58.

continued to compete vigorously with Shaw.[67] Similarly, ordinary course documents are consistent with Rogers and Shaw competing vigorously with one another, as I discuss in my Opening Report.[68] The porting data and ordinary course documents are consistent with substantial competition between Rogers and Shaw, and consistent with the shares of gross adds. Shares based on the percentage of current subscribers, in contrast, would fail to capture this level of competition as Shaw continues to have a long way to grow towards its ultimate steady-state percentage of subscribers.

3.3. Dr. Israel's assertions that the merger simulation model generates unreasonable margins and marginal costs are flawed

51. Dr. Israel contends that, because, in his opinion, calibrated margins for Freedom in Alberta and British Columbia are too high and do not closely match the empirical margins used as an input for the calibration, the model cannot be trusted to replicate pre-merger economic margins. Dr. Israel, therefore, concludes that the model also cannot be trusted to predict the effects of the proposed acquisition and divestiture.[69]

52. Dr. Israel's critiques amount to nothing more than a recognition that the model is calibrating markups. They are not an indication of how well the model predicts price effects. As discussed above, the calibration stage is where the model incorporates evidence consistent with the interplay between wireless and wireline products. Consequently, assessing whether this stage is adjusting inputs, such as the margins, is not a meaningful assessment of whether the model is able to adequately capture carriers' pricing incentives before and after the proposed acquisition and divestiture have taken place. As I explain in what follows, a closer examination of Freedom's empirical and calibrated margins in Alberta, British Columbia *and* Ontario demonstrates that the calibration routine is working as intended and that the model is able to predict the price effects of the merger reliably, as well as to capture the specific incentives that Shaw's bundling strategy creates for the pricing of both of its wireless brands in Alberta and British Columbia.

[67] Workpaper 3.1.1.b; Opening Report, Exhibit 4.
[68] Opening Report, ¶¶ 71–72.
[69] Israel Report, ¶¶ 75–76.

53. I calculate empirical markups for Rogers, Fido, and Freedom as I detailed in my Opening Report and use these markups as inputs to calibrate the model.[70] A brand's markup measures the difference between the price and the marginal cost for that brand and is equal to the margin for that brand multiplied by the price. I designed the calibration routine to match the empirical markups of Rogers, Fido, and Freedom correctly on average in each of the relevant provinces.[71] While it would be possible to calibrate the model to match one of these markups exactly, matching them on average makes fuller use of the available information that is relevant to ensure a better match to market conditions overall.

54. Economic theory indicates that the average price effects predicted by the model would be close to correct even if calibrated markups are overstated for some brands and understated for others but correct on average. To the extent that the calibrated markup for brand A is overstated, the model would predict a larger price effect for brand B merging with brand A. But, being correct on average means that the overstated brand A is offset by an understatement on another brand C. The model would predict a smaller price effect for brands that merge with brand C. If brand A and brand C are merging, the model predicts price effects that are essentially correct on average.[72]

55. Dr. Israel's observation that the calibrated markup of Freedom seems higher than the empirical markup is consistent with Exhibit 36 in my Opening Report.[73] That exhibit also shows Freedom's calibrated markup as higher than

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[70] Other calibration inputs include market shares, ARPU (used as measure of price), and the market elasticity. See Opening Report, Section 6.2.4.

[71] Opening Report, ¶¶ 164 ("I observe a price for each Rogers and Shaw brand (its ARPU), and use accounting data to calculate marginal costs for Rogers Wireless, Fido, and Freedom. Thus, I am able to calibrate the model using the markups for those three brands. I do not include Shaw Mobile because its effective marginal costs incorporate the wireline revenue that it preserves through bundling—thus, the accounting data do not provide an accurate measure of its effective marginal costs."), 267 ("Because I fit multiple markups (those of Rogers Wireless, Fido, and Freedom), these markups are not fit exactly, but rather the quadratic sum of the differences between predicted and actual markups is minimized:"), and 270 ("Each markup in the system could theoretically be used to inform calibration. However, as I discuss in Section 6.2.4, I only use markups of particular Rogers and Shaw brands in the calibration because the cost data available to me are more reliable for these products. These data are sufficient to calibrate the system and avoid problems of reconciling parameter implications between more and less reliable data.").

[72] The following example illustrates this point. Consider a merger of two companies, R and S, each of which has a single product. The pre-merger market shares of S and R are 20 and 25 percent respectively. If their calibrated markups are both $20 but the empirical markups of S and R are $10 and $30, respectively, then the UPP estimated from the model for S equals 0.25 / (1-0.20) * $20 = $6.25 whereas its UPP based on the empirical markups is 0.25 / (1-0.20) * $30 = $9.38. Likewise, for R, the model's UPP equals 0.2 / (1-0.25) * $20 = $5.33 whereas the empirical markups give UPP for R of 0.2 / (1-0.25) * $10 = $2.67. The UPP of S is underestimated by $3.13 and the UPP of R is overestimated by $2.67. The weighted average UPP, however, is close in the model [($6.25*0.2 + $5.33*0.25)/0.45 = $5.74] and based on empirical markups [($9.38*0.2 + $2.67*0.25)/0.45 = $5.65], only differing by 9 cents.

[73] Opening Report, Exhibit 36.

the empirical markup used for Freedom as an input for both Alberta and British Columbia. It also shows that the calibrated markup for Fido is close to the average and, consequently, that the calibrated markup for Rogers is the one offsetting Freedom's to achieve a match of the average across all three products.[74] So, this exhibit is also revealing that the situation in each of the provinces where Dr. Israel finds fault with Freedom's calibrated markup is the one described above where the model is still expected to generate a correct prediction of price effects from the acquisition on average. Rogers is the "brand C" to Freedom's "brand A" in the example above.

56. Indeed, what Dr. Israel is observing is that the calibration procedure is working as intended. In Section 3.1.2 above, I have discussed the fact that the calibration stage adjusts Shaw Mobile's markup to reflect incentives related to the bundle's effect on revenues in the wireline business of Shaw. As part of the same company, even though it is not the brand offered in the bundle, the Freedom markup is adjusted so that the calibration can incorporate these Shaw Mobile incentives. Thus, the magnitude of this calibration adjustment (and the offsetting calibration adjustment to Rogers' markup) shows that the model is reflecting the significance of Shaw Mobile's incentives.

57. This interpretation of the Freedom markups is further supported by comparing the calibrated markups in Alberta and British Columbia, which Dr. Israel focused on, to the calibrated markup in Ontario, which he does not consider. Freedom's calibrated markups are lower in Ontario where Shaw Mobile is not offered and where the bundling incentive is also not present. Thus, rather than a conclusion that the model is unreliable, a closer inspection of the calibrated markups for Freedom across all three relevant provinces demonstrates that the model can differentiate between provinces in which Shaw pursues a bundling strategy (and has revenue incentives that equate to higher markups) and provinces where it does not (and effectively has lower markups). Thus, the model is differentiating appropriately between the distinct sets of economic trade-offs that Shaw faces in the different provinces.

58. The implication of this Freedom markup for the analysis of effects from the acquisition is, at most, that the allocation of effects between Rogers and Shaw products is somewhat off, but the average effect across the two sets of products

[74] Incidentally, the exhibit also demonstrates that the markups of these three products are being matched well, on average, to the calibrated values. The average actual markup vs the average calibrated markup is, [redacted] See Workpaper 3.3.

is reliable. For the divestiture version of the model, however, this difference may mean that the model is likely to underestimate harm.

59. In the perfect-transfer divestiture model, Dr. Israel's argument that Freedom's markups are high in Alberta and British Columbia means that the model likely understates the price increase. As I discussed, this scenario involves a price decrease as the Freedom product is separated from Shaw Mobile. This effect is essentially the upward pricing pressure of combining Shaw Mobile with Freedom being reversed. If that upward pricing pressure is overstated because Freedom's markup is overstated, there will be less price reduction when the two products are no longer internalizing the diversion of customers between them. Put another way, if the Freedom product actually has a higher marginal cost than the model's calibration of its markup would suggest, then when Videotron is facing that marginal cost as a competitor in the market, it will not price as aggressively as the model assumes.

4. Dr. Israel's claims of quantifiable cost savings have no material effect on my finding of unaddressed harm from the proposed acquisition and divestiture

60. Dr. Israel asserts that Freedom's integration into Quebecor will generate quantifiable "efficiencies." He claims that with the proposed divestiture Freedom's marginal costs will decrease due to savings on roaming costs and handset acquisition costs.[75] As I explain below, these cost savings claims are not resource savings predicted to flow from the changed structure of the industry. They are, instead, rearrangements of existing contractual agreements. As such, their relevance to the acquisition or to the divestiture proposal appears to be limited. And, Dr. Israel does not appear to have established that these are credible cost savings that should be recognized as a consequence of the proposed acquisition and divestiture. Even so, when I incorporate into the merger simulation the predicted marginal cost savings that have some foundation and relevance, I find that they do not materially change my conclusions. The acquisition with the proposed divestiture leaves a significant portion of the competitive harm unaddressed.

[75] Israel Report, ¶¶ 87–94. If I include the amount Dr. Israel attributes to handset savings in the exercise I undertake below, the change in deadweight loss associated with the acquisition and the divestiture is on the order of [redacted] which is equivalent to a rounding error in the large predicted deadweight loss for Alberta and British Columbia. See Workpaper 4.

61. Dr. Israel asserts that Freedom's marginal costs will be reduced because [redacted] [76] His assertion appears speculative. In particular, Dr. Israel does not offer any analysis of t[redacted]

62. Even if Dr. Israel had supported his claim that savings on handsets should be considered as a legitimate marginal cost reduction from the proposed acquisition and divestiture, it would be a reduction related to the sale of handsets. However, the sale of handsets (at wholesale) and their distribution through wireless carriers (among other channels) is a line of business that is distinct from the sale of wireless service to consumers. I have not considered revenues from the distribution of handsets in my model nor the associated costs of obtaining them at wholesale.[77] Accordingly, this purported cost saving would be part of a different analysis—whether the proposed acquisition and divestiture harm a wholesale market for handsets or a market for handset distribution—and not pertinent to the analysis I've conducted.

63. Dr. Israel asserts that marginal costs for subscribers will decrease in Alberta, British Columbia, and Ontario following the divestiture because [redacted] [78] Dr. Israel also states [redacted]

[76] Israel Report, ¶¶ 93–94.

[77] I discussed the sale of handsets and its distinction from wireless services in my Opening Report, ¶¶ 329, 335.

[78] Israel Report, ¶ 90.

[redacted][79] [redacted][80] He then suggests that these roaming "efficiencies" significantly offset the welfare effects of lost competition.

64. This suggestion is incorrect. First, it is based on Dr. Israel's version of the merger simulation, which incorporates the mistakes I discussed above, including an improper calibration based on the percentage of subscribers. It also inappropriately incorporates handset cost savings, [redacted] (which I discuss more below). Nevertheless, even with all of these "corrections" by Dr. Israel, the welfare effects resulting from the proposed acquisition and divestiture are negative.[81] Incorporating the roaming cost savings into a version of my model without all of Dr. Israel's other changes demonstrates that the impact of these roaming cost savings on the predicted negative welfare effects are minimal.

65. [redacted]

66. [redacted]

[79] Israel Report, ¶¶ 88–89.

[80] Israel Report, ¶ 92.

[81] I note, however, that Dr. Israel does get a positive welfare effect when he assumes there is no competitive effect from the acquisition and divestiture, which he labels as the scenario where "none" of Shaw Mobile is transferred to Rogers. This is despite the fact that, if neither Rogers nor Freedom Mobile can offer the current Shaw Mobile product (or have the incentive to offer a bundle with Shaw wireline), then the proposed acquisition and divestiture would have larger welfare effects from the elimination of this product than the effects estimated in any simulation in which the product is retained.

[redacted]

67. [redacted][82]

68. Even so, the cost savings that Dr. Israel claims from improved roaming costs are not significant. In what follows I will consider the impact that the claimed roaming cost savings have on the model's prediction about prices and welfare in Alberta and British Columbia. I do not consider the effects in Ontario and Quebec as these provinces are already treated as if they are unaffected after the divestiture and [redacted] that might make consumers in those provinces better off does not help a consumer in Alberta or British Columbia.

69. Dr. Israel presents a range of roaming savings projections that accrue annually from 2023 to 2027.[83] Upon examination of Dr. Israel's backup materials, only the 2023 projections cite directly to ordinary course documents.[84] [redacted][85]

[82] See Opening Report, Section 7.

[83] See Israel Report, ¶¶ 89–92; VID00379276; VID00320438.

[84] Specifically, Dr. Israel cites to Share Purchase Agreement, Schedule A, Table 1; SJRB-CCB00665009; and RBCL00005_000006406.

[85] [redacted] VID00379276, [redacted]

70. Most of Dr. Israel's claimed roaming cost savings appear too speculative to be credited. Nevertheless, in order to assess the magnitude of the claim's effect, I have considered what would happen to my simulation result if $[redacted] per subscriber in marginal cost savings—the most conservative of the combined cost savings Dr. Israel projected for 2023, and the only cost savings that are traceable to what appears to be ordinary course of business documentation—were recognized.[86] Below, I examine the effect of incorporating these claimed cost savings in Alberta and British Columbia into a model properly calibrated using share of gross adds as market shares, under the perfect-transfer scenario I used in my Opening Report.[87] I present the welfare effects predicted by the model in Exhibit 1 below.[88]

[redacted] VID00379276 [redacted]

[86] I [redacted] See Israel Report, ¶¶ 89–92.

[87] Dr. Israel uses a version of my model calibrated using the percentage of subscribers. However, as I explained in Section 3.2 this approach is not proper.

[88] Aside from the credited marginal cost savings, Exhibit 1 corresponds to the simulation presented in Exhibit 23 of my Opening Report. Similar to the approach taken by Dr. Israel, I do not consider as welfare gains the portion of the claimed marginal cost savings that constitute a transfer between the firms. See Israel Report, footnote 94.

Exhibit 1
Annual Welfare Results in Millions of Dollars Predicted by the Model with a "Perfect Transfer" Divestiture, and $[redacted] Per Subscriber in Roaming Cost Savings

[redacted]

Source: [redacted] Rogers Communications Inc., 2020 Annual Report; Shaw Communications Inc., 2020 Annual Report; Israel Report

Note: All dollar values in millions of dollars annually. This analysis uses data ranging from January 2021 through April 2021, except for the value of savings in marginal costs which are 2023 projections taken from Section VI of the Israel Report. The 8-brand model includes Rogers Wireless, Fido, Chatr, Freedom, Shaw Mobile, Bell Mobility, Virgin Mobile, Telus Mobility, and Koodo Mobile. The 11-brand model includes those brands as well as the prepaid brands: Chatr, Lucky Mobile, and Public Mobile. Both models are calibrated using market elasticities of [redacted] in Alberta and [redacted] in British Columbia. See Appendices 8.1, 8.3, and 8.6 of Opening Report for additional information on the data inputs, the calibration procedure, the simulation procedure, and the deadweight loss calculation.

71. As the exhibit shows, all of my findings regarding unaddressed harm resulting from the proposed acquisition remain unchanged by these claimed roaming cost savings. The deadweight loss numbers reported in Exhibit 1 are nearly identical to the numbers I reported in Exhibit 23 of my Opening Report. For example, in the 8-brand model, the deadweight loss in this simulation is $[redacted] million per year in Alberta and $[redacted] million per year in British Columbia, adding up to $39 million per year for the relevant provinces. The corresponding numbers in Exhibit 23 of my Opening Report are $[redacted] million per year for Alberta and $[redacted] million per year in British Columbia, resulting in the total deadweight loss of $42 million per year.

72. As the results of Exhibit 1 demonstrate, Dr. Israel's claimed marginal cost savings, applied within the proper model, have no effect on unaddressed harm.

The estimates presented in Exhibit 1 are still best interpreted as a lower bound of harm that remains unaddressed by the proposed divestiture. As I explained in my Opening Report, [redacted] [89] Moreover, the short-run effects on competition of Dr. Israel's claimed cost savings, which this iteration of the merger simulation model identifies, are potentially offset by longer-term dynamic competition concerns. That is, access to [redacted] [90] thus making for a potentially weaker competitor to Rogers and the other Big 3 over the long-term.

73. In addition to the above, Dr. Israel claims several types of unquantified cost savings.[91] First, Dr. Israel states that [redacted] Rogers will benefit by replacing its use of microwave backhaul with Shaw's wireline backhaul in Western Canada.[92] I explained in Section 7 of my Opening Report why separation of [redacted] from New Freedom generates unquantified harms and makes New Freedom a weaker competitor.[93] Dr. Israel's claim appears to recognize that there is indeed a difference [redacted] [94] Indeed, these claimed cost savings confirm that Freedom Mobile would be worse off than it currently is because [redacted]

[89] Opening Report, ¶ 235.

[90] [redacted]

[91] Israel Report, ¶¶ 96–105.

[92] Israel Report, ¶¶ 83, 101–102.

[93] Opening Report, ¶¶ 222–223, 234.

[94] See, e.g., ROG00841347; Affidavit of Andrew Harington, dated September 23, 2022, ¶¶ 161–164.

[redacted]

74. [redacted]

75. Lastly, Dr. Israel claims "efficiencies" from spectrum synergies.[96] In Section 7 of my Opening Report, I explained why Videotron's ownership of 3.5GHz spectrum in Ontario indicates the existence of additional unquantified harm.[97]

5. Dr. Israel's claims that coordination is unlikely are inconsistent with the facts of the industry and do not change my conclusions

76. Dr. Israel asserts that the proposed acquisition and divestiture does not create any coordinated effects, but rather makes the Canadian wireless telecommunications industry more competitive by reducing any scope for coordination.[98] As I explain below, Dr. Israel's conclusion rests on industry characteristics that are not new and are not likely to insulate the industry from coordination in the future any more than they have in the past. Consequently, my conclusion as to coordinated effects of the acquisition and after the proposed divestiture is unaffected by Dr. Israel's claims.

[95] Israel Report, ¶ 83, 104–105.
[96] Israel Report, ¶¶ 106–108.
[97] Opening Report, footnote 302.
[98] Israel Report, ¶ 15.

77. As discussed in my Opening Report, provinces that lack a strong fourth competitor historically have exhibited behavior and outcomes that are consistent with coordination that has been suggested to exist between the Big 3 in such provinces.[99] Importantly, this behavior has not been pre-empted in the past by the industry characteristics that, according to Dr. Israel, make coordination unlikely in Canadian wireless markets.[100] It is therefore unlikely that this behavior would be pre-empted in the future by such characteristics, as Dr. Israel contends,[101] in particular because, as explained below, Freedom Mobile in Videotron hands would not be the strong fourth competitor that Shaw was. Indeed, among Dr. Israel's characteristics, the only one that is potentially new is the introduction of 5G which he speculates will make coordinating behavior harder and effectively eliminate risks of coordination.[102] However, this change in technology is not a new phenomenon in the industry. The behavior and observations of likely coordination among the Big 3 that I discussed in my Opening Report[103] occurred after the introduction of 4G, the prior iteration of industry-wide technological changes.[104] If the conversion to 4G did not affect the ability of the Big 3 to coordinate, it is not clear why the conversion to 5G will be any different in this respect.

78. Dr. Israel also recognizes that Freedom Mobile under Videotron's ownership would be a weaker fourth competitor than Shaw is currently—though Dr. Israel interprets the resulting unused capacity of the Freedom Mobile network as a reason to expect Freedom Mobile to be more aggressive and, therefore, to disrupt any attempted coordination among the Big 3. However, Freedom Mobile's change in utilization of its network will reflect its weakened ability to compete. As I discussed in my Opening Report, the terms of the proposed divestiture, [redacted] .[105] Indeed, the incentives to compete with and invest in the Freedom product under Videotron's ownership [redacted] will resemble those of Wind Mobile

[99] Opening Report, Sections 4.3 and 6.3.2.
[100] Israel Report, ¶¶ 122–127.
[101] Israel Report, ¶ 130.
[102] Israel Report, ¶¶ 15, 128–129.
[103] Opening Report, ¶¶ 26–29, 203–204.
[104] Opening Report, footnote 338.
[105] Opening Report, Sections 7.2, 7.3.

before the acquisition by Shaw.[106] And, it was only after Shaw's acquisition of Wind Mobile and the launch of Big Gig data plans that [redacted][107] [redacted]"[108]

79. Dr. Israel's claims that Freedom, in Videotron's hands, will reduce the scope of coordination, must be examined against this history of the industry. In particular, this history includes [redacted] Wind might have had a similar incentive to compete as aggressively as Dr. Israel contends Freedom Mobile would in the future, yet that impetus did not translate into the sort of outcomes seen in provinces with a strong fourth competitor. Accordingly, because the proposed acquisition and divestiture would remove such a competitor and set Freedom Mobile back in its evolution into one that is not, coordinated behavior will become more likely, not less.[109]

80. Dr. Israel further contends that the proposed acquisition and divestiture would not increase the likelihood of coordination [redacted]

[106] Opening Report, ¶ 237–238.

[107] ROG00192359 at p. 12.

[108] ROG00192359 at p. 11. As I explain in my Opening Report, this change identified by Rogers suggests that Freedom got a substantial benefit from its association with Shaw. See Opening Report, ¶ 238 ("This change suggests that Freedom got a substantial benefit from its association with Shaw. That efficiency benefit of their integration may be in the form of access to wireline infrastructure on terms that can only be achieved within the same company, or the incentive Shaw had to invest in Freedom as part of a larger plan to compete for both wireless and wireline, or the assurances customers got from the fact that Freedom was part of Shaw.").

[109] [redacted] See Opening Report, Section 7.4. [redacted] See Israel Report, ¶ 138. [redacted]

[redacted] [110]

81. Dr. Israel's assertion that Shaw Mobile had limited impact in the marketplace is based on a flawed empirical analysis, as I explain in Section 6 of this report. [redacted] [111] What is relevant to assessing coordinated effects in these provinces is whether a strong fourth competitor survives after the proposed acquisition and divestiture. The divestiture would not lead to such a fourth strong competitor. As discussed in my Opening Report, [redacted] [112] As a result, the transfer of Shaw Mobile to Rogers would tend to eliminate the strategies that enhanced competition in the relevant provinces and made them less prone to coordination.[113]

6. Dr. Israel's empirical analyses of the effects of Shaw Mobile's launch on competition are flawed and are inconsistent with the factual evidence on the record

82. Dr. Israel claims that his analysis of Shaw Mobile's launch proves that there was no increased usage or reduced price associated with the launch.[114] He claims that the lower prices per gigabyte and higher data consumption for Bell Mobility and Virgin Mobile that I identified with the Shaw Mobile launch in Western Canada are the result, not of this increased competition, but of trends that started before the entry. Dr. Israel further argues that these "trends" in prices and data usage from new Bell Mobility and Virgin Mobile subscribers result from customers choosing "plans that existed before SM launch (and whose prices haven't changed)…with larger data allowances and therefore lower

[110] Israel Report, Section V.C.
[111] Israel Report, ¶ 163.
[112] Opening Report, ¶¶ 209-211, 245.
[113] Opening Report, ¶ 211.
[114] Israel Report, ¶¶ 147, 156.

prices per GB."[115] As I explain below, Dr. Israel's analysis of this event is flawed and unreliable.

83. Before delving into the flaws of Dr. Israel's analysis, I highlight that Dr. Israel and I follow different approaches when evaluating the impacts of Shaw Mobile's Launch. While Dr. Israel solely relies on analyzing data in an attempt to disprove the existence of an effect, I have examined the factual record and concluded from it that Shaw Mobile's launch prompted reactions from competitors. My data analysis complements the review of the factual record by showing that the competitive reactions seen in documents had widespread effects in the marketplace.

84. [redacted][117][redacted][118][redacted][119][redacted]

[115] Israel Report, ¶ 158.
[116] Witness Statement of Blaik Kirby, September 23, 2022 ("Witness Statement of Blaik Kirby"), ¶ 19.
[117] Opening Report, ¶ 114.
[118] Witness Statement of Blaik Kirby, ¶ 22.
[119] Witness Statement of Blaik Kirby, ¶ 22.

6.1. Dr. Israel's trend analyses do not invalidate the finding that Shaw Mobile's launch prompted responses from competitors

85. Dr. Israel presents his critiques starting with a misleading theoretical example, summarized by Figure 4 of his report, that shows prices trending down before the event and no further reductions afterward. However, billing data from Bell Mobility and Virgin Mobile show a very different picture [redacted] It is easier to visualize these issues from Dr. Israel's price charts.

Exhibit 2
Average Price per GB by Activation Cohort, Bell Mobility (Israel Figure 7)

[redacted]

Source: Israel Report, Figure 7.

Exhibit 3
Average Price per GB by Activation Cohort, Virgin Mobile (Israel Figure 8)

Source: Israel Report, Figure 8.

86. Figure 7 from Dr. Israel's report shows [120]

[120]

87. [redacted] Dr. Israel jumps to the incorrect conclusion that whatever caused these changes before the launch is the driver for the changes observed post-launch.[121] He seems to infer trends from prior events without any investigation of the causes for such changes in prices and data usage. These events could have been driven by different reasons or by different competitive events, but Dr. Israel completely ignores this possibility. [redacted] However, as I explain below, his methodology cannot distinguish between his assumed trend and these discrete changes. Moreover, his results are not robust to minor variations in the methodology.

88. Dr. Israel introduces a regression model to analyze variation in prices and data usage. He finds that the model attributes minimal changes in price per gigabyte and data usage to the Shaw Mobile launch event when trend variables are incorporated.[122] Such a result is, however, overinterpreting limited data. A quick inspection of Figure 7 shows [redacted] The model cannot infer the causes for price or data usage changes, nor can it attribute the effects post-launch as

[redacted] See Opening Report, ¶ 114.

[121] Israel Report, ¶ 147.

[122] Israel Report, ¶ 157.

necessarily being driven by the same causes (a trend) that drove changes in the pre-period, nor can it deny that Shaw Mobile's launch affected these metrics.

89. In addition, Dr. Israel's findings are not robust to minor variations in the data used for his regressions. As discussed above, August 2020 is the first month after Shaw Mobile's launch, [redacted] I examined how sensitive Dr. Israel's results are when the August cohort is excluded from the post-period sample. When I do so, the results are not as favorable to Dr. Israel's conclusions. Exhibit 4 shows that the exclusion of new subscriber cohorts from August resulted in [redacted]

Exhibit 4
Dr. Israel Regressions Excluding August New Subscriber Cohorts

Source: [redacted]
Notes: Each column titled "Table 9" represents my replication of Dr. Israel's regressions displayed in Table 9 of his opening report. Because of apparent differences in how Dr. Israel and I processed Bell's billing data, our regressions samples have minor differences which do not noticeably affect the results. Each column titled "Table 9 + No August Cohort" represents my replication of Dr. Israel's Table 9 regressions excluding from the sample subscribers who first joined Bell in August 2020.

6.2. Dr. Israel's explanation for the data trends is flawed

90. Dr. Israel relies on faulty data in his attempt to explain that competition is not the driver behind his assumed "trends" in the average price per gigabyte and average data usage. He provides three potential explanations, of which two are consistent with a competitive response. Dr. Israel purports to rule these two out based on his observation that "of the subscribers who joined Bell after SM

launch, [redacted] chose plans that existed before SM launch," and "[t]he analogous number for Virgin is [redacted] "[123] These percentages are incorrect.

91. As I explain in what follows, this claim appears to stem from a mistake Dr. Israel commits when identifying new vs. existing plans. Rather than simply looking at the earliest date a plan was chosen by any subscriber to determine when it was introduced, Dr. Israel attempts to date a plan's introduction by the date subscribers to that plan joined Bell. The difference this makes is significant. If one existing subscriber switched into a plan that was newly introduced, the date Dr. Israel identifies for the plan will be backdated to that subscriber's date of joining Bell.[124] Consequently, he will identify plans that are new as existing plans when it is the customer who was in place and not the plan.

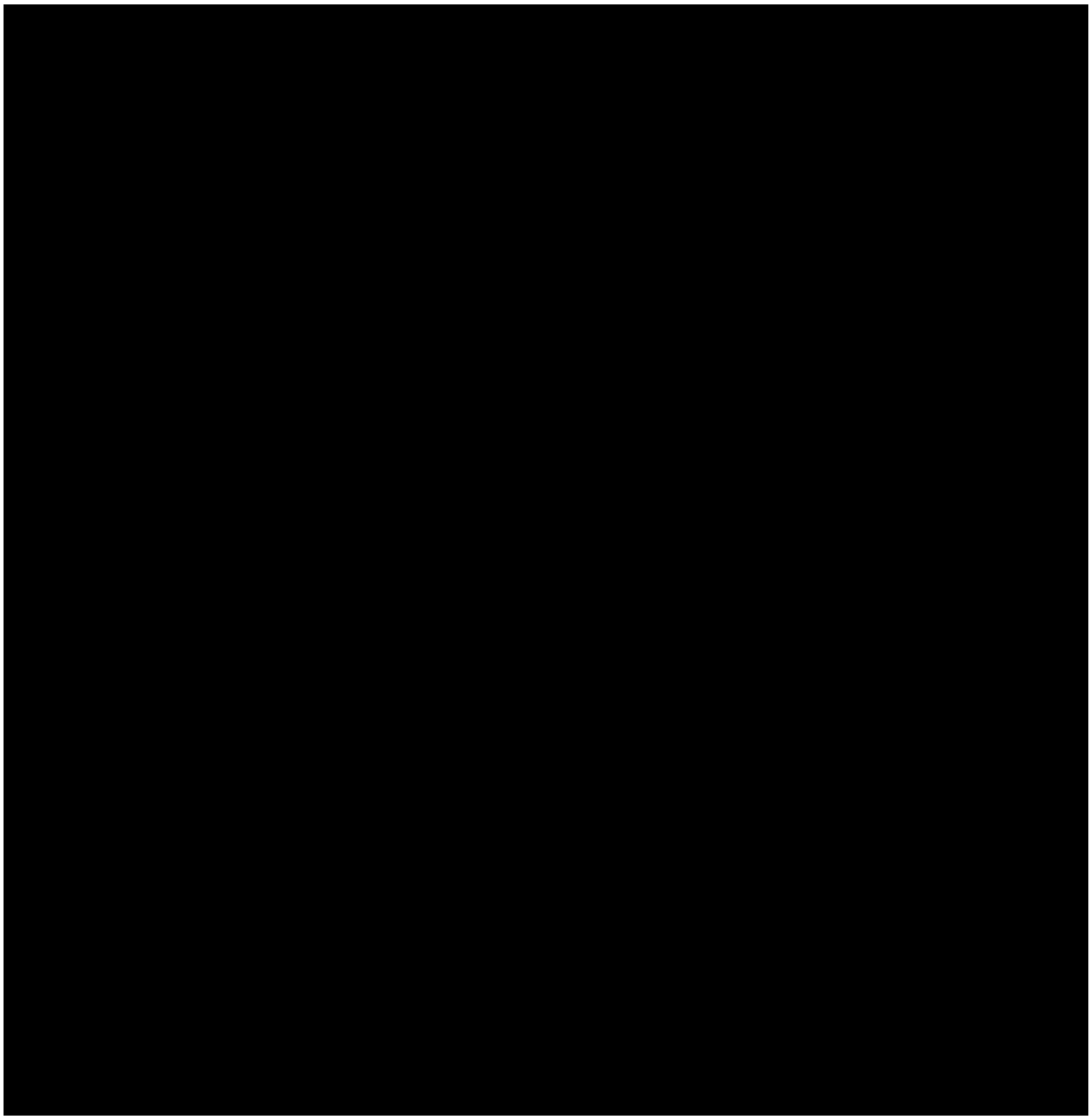
92. When I rectify this error, I find that the percentage of Bell Mobility subscribers that joined a plan that had not existed before the launch of Shaw Mobile is [redacted] percent ([redacted] percent for Virgin Mobile) rather than [redacted] percent ([redacted] percent for Virgin Mobile), as Dr. Israel reports.[125] This indicates that, consistent with the factual record, the changes in data usage and price per gigabyte are best interpreted as the result of a competitive response. Moreover, this implies that the regression analysis that Dr. Israel performs using information about consumers' plan choices cannot be interpreted in the way that he does.

[123] Israel Report, ¶ 159.

[124] [redacted]

[125] See Workpaper 6.2.a. In my calculation of the proportion of new subscribers who joined a plan that had not existed before Shaw Mobile's launch, I weigh each subscriber equally instead of following Dr. Israel's approach of over-weighting subscribers who joined earlier. However, this correction is not the main driver for the large differences I found, which, as I explained, are primarily driven by Dr. Israel's mistake when identifying new vs. existing plans.

Exhibit 5
Newly Added Subscribers by Newly Added Subscriber Cohort



Source:

Notes: Only subscribers with plans including at least 0.5 GB of data are included. All subscribers without record of a past active line are considered new, and their plan identifier is observed in the month of activation. A plan identifier is considered new if it first appears in Bell's billing data in August 2020 or later, and it is considered existing if it first appears in July 2020 or earlier. Bell's monthly added data subscribers include postpaid subscribers for the Bell Mobility and Virgin Mobile brands.

93. Exhibit 5 illustrates the effects of Dr. Israel's data mishandling and shows a much higher proportion of new subscribers joining new plan identifiers (ones available only after Shaw Mobile's launch) than Dr. Israel anticipated. The proportion of new subscribers to Bell Mobility with a new plan identifier is increasing in the months following the launch of Shaw Mobile. In August,

percent of Bell Mobility's new subscribers signed up to plan identifiers that did not exist before Shaw Mobile's launch. That number grew to [redacted] of new subscribers in October, reaching [redacted] percent of new subscribers in November. For Virgin Mobile, those choosing new plan identifiers were [redacted] percent of Virgin Mobile's new subscribers in August, [redacted] percent in September, [redacted] percent in October, and [redacted] percent in November.[126]

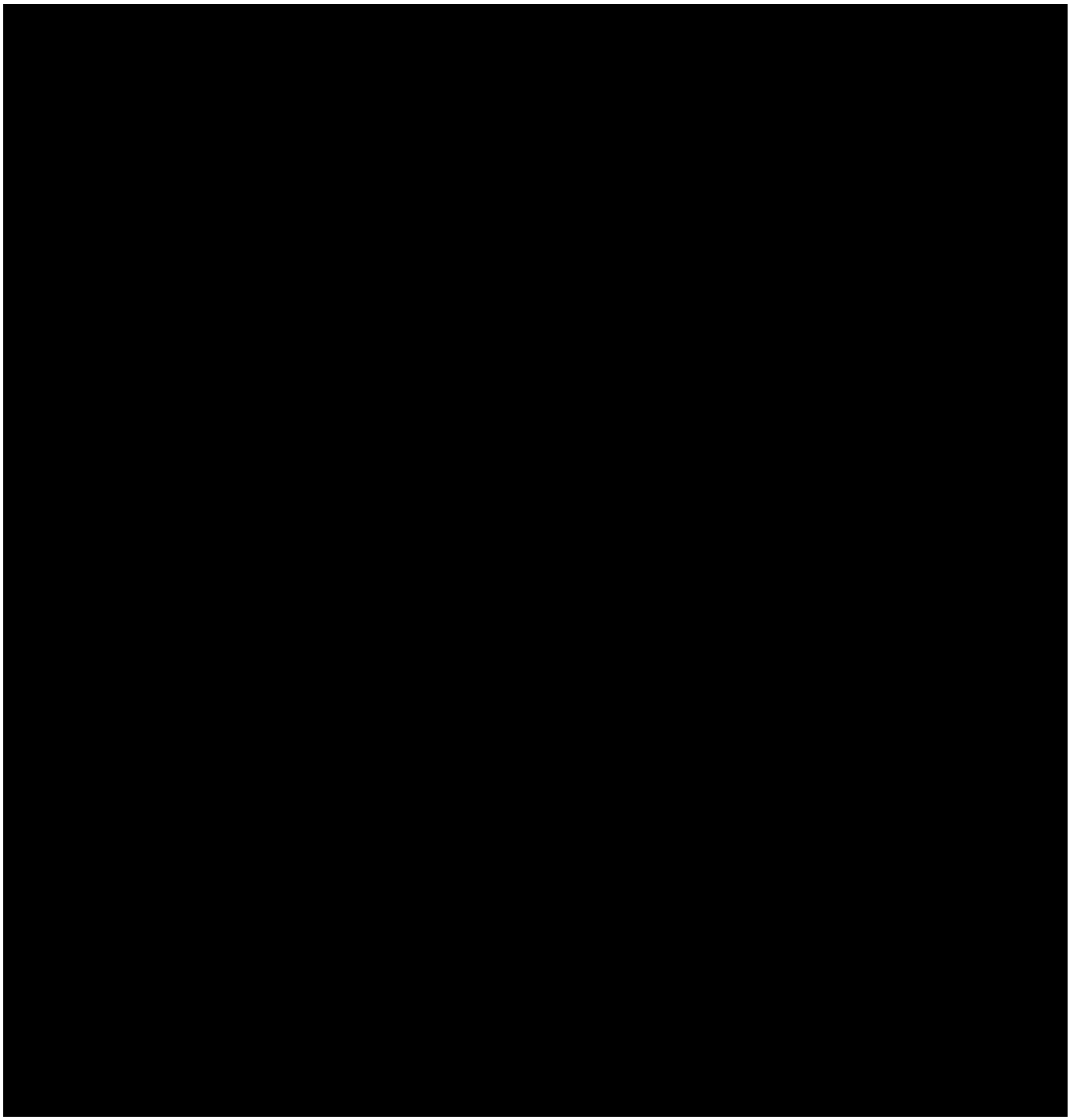
94. Furthermore, an analysis of prices paid by new subscribers after Shaw Mobile's launch shows that ones who joined new plan identifiers paid [redacted] less on average than those who joined plans available before Shaw Mobile's launch.[127] Exhibit 6 shows the average price per gigabyte per new subscriber cohort for new plan identifiers (green) vs. existing plans, i.e., ones introduced before the Shaw Mobile's launch (blue). [redacted]

95. As Exhibits 5 and 6 demonstrate, the data do not support Dr. Israel's conclusion that the vast majority of Bell's new subscribers joined plans introduced before Shaw Mobile's launch, nor his denial of the existence of a competitive reaction from Bell Mobility and Virgin Mobile.

[126] See Exhibit 5.

[127] See Workpaper 6.2.b.

Exhibit 6
Average Price per GB by Newly Added Subscriber Cohort



Source:

Notes: Only subscribers with plans including at least 0.5 GB of data are included. All subscribers without record of a past active line are considered new, and their plan identifier is observed in the month of activation. Only subscribers with the same plan identifier in the first and second month are included. A plan identifier is considered new if it first appears in Bell's billing data in August 2020 or later, and it is considered existing if it first appears in July 2020 or earlier. Bell's monthly added data subscribers include postpaid subscribers for the Bell Mobility and Virgin Mobile brands.

96. Because Dr. Israel mishandles the data and incorrectly assumes that neither Bell Mobility nor Virgin Mobile offered new plans post-Shaw Mobile launch, he draws incorrect inferences from his product fixed-effect regressions. By adding plan fixed-effects, Dr. Israel is in fact controlling for both existing and new plans introduced after Shaw Mobile's launch. As a result, the negligible effects he finds in data usage and the small price effect with the inclusion of such plan fixed-effects are not a surprise. Due to his data-handling mistake, Dr. Israel would not have seen the need to consider that the new plans he controls for will coincide with and confound his interpretation of the effect from Shaw Mobile's launch. In fact, however, the new plan variables introduced in the regression are not distinguishable from the effects that would otherwise be captured by Shaw Mobile's launch. Therefore, Dr. Israel's product fixed-effects regressions are flawed and unreliable and cannot be interpreted as he does to refute the existence of competitive reactions from wireless carriers to Shaw Mobile's launch.

7. Dr. Johnson attempts to discredit the competitive constraints that Shaw Mobile exerted on the competition with unreliable and uninformative analyses

97. Dr. Johnson claims that I failed to isolate confounding effects in my analysis of Shaw Mobile's launch, casting doubt on whether any of the impacts I find on data consumption and prices post-Shaw Mobile launch are causal.[128] Dr. Johnson makes two errors.

98. First, Dr. Johnson misinterprets my event study as an attempt to prove from the data alone that Shaw Mobile had an impact on competitive outcomes. In reality, I have examined the factual record and concluded that the launch of Shaw Mobile prompted reactions from the Big 3 wireless carriers.[129] My data analysis complements my review of the factual record by showing that the competitive reactions seen in the documents had a widespread effect in the marketplace.

99. Second, Dr. Johnson suggests that the data allows for comparisons between treated and untreated groups—either by relying on new subscribers from other

[128] Johnson Report, ¶ 21.

[129] See for example my Opening Report, ¶¶ 114, 120. [redacted]

years as a benchmark or new subscribers in Ontario as control group.[130] As I explain below, both are unsuitable benchmarks and controls, because they were likely contaminated by other competitive events or directly by Shaw Mobile's launch. Consequently, Dr. Johnson's suggestion that the launch of Shaw Mobile was not significant probably results from this contamination.

100. In addition, Dr. Johnson's analysis of Telus data based on historical records is uninformative. He claims that, [redacted][131] However, Dr. Johnson analyzes data aggregated across all Telus subscribers rather than new subscribers, making it hard to see "visually" an effect, since only a minority of subscribers is actively changing plans in each month.

7.1. New subscriber pricing and data usage metrics from 2019 and 2021 are likely contaminated from other competitive events and, as a result, are improper benchmarks; as such, Dr. Johnson's comparisons are unreliable

101. Dr. Johnson contends that seasonal variation can explain the changes in the price per gigabyte and data usage for Freedom, Bell Mobility and Virgin Mobile that, as I documented in my Opening Report, followed the launch of the Shaw Mobile brand in 2020.[132]

102. To support his contention, Dr. Johnson calculates the difference in average data usage and price per gigabyte between subscribers who signed up with these brands from January to July 2020 and ones who signed up from August to December 2020. He compares these differences with changes in the same metrics between subscribers who signed up in spring and fall of 2019.[133] Based on this comparison, Dr. Johnson concludes that the changes in prices per gigabyte and data usage observed before and after Shaw Mobile's launch in

[130] Johnson Report, Section IV.

[131] Johnson Report, ¶ 117.

[132] Johnson Report, ¶ 53.

[133] Spring subscribers are defined as subscribers who signed up in January – July of the calendar year. Fall subscribers are defined as subscribers who sign up in August – December. Note that Johnson relies on August – December signups, which is different from the groups I use in Exhibit 14 and 16 of my Opening Report.

2020 may not be due to the launch itself but rather seasonal factors that would, he presumes, also explain the changes observed in 2019.[134]

103. Dr. Johnson's conclusion is premised on the assumption that 2019 reflects a "normal" year, i.e., a year with no competitively significant events of its own. That assumption is critical to his approach of comparing the differences between spring and fall subscriber groups between the two years. This premise, however, appears to be incorrect. In the summer of 2019, all Big 3 carriers introduced unlimited plans that eliminated overage fees,[135] a change that has been considered a transformative event for the industry. Mr. Kirby, president of Bell Mobility at the time, describes the launch of unlimited plans as "one of the most significant events in the wireless industry in recent years."[136] Along these lines, Dr. Israel characterizes the event as "the most recent major quality improvement in the industry."[137] Additional documentary evidence further supports that this one-time event was the sort of substantial change to the industry that would make 2019 an unsuitable candidate for a "normal" or "benchmark" year.[138]

104. As a result, Dr. Johnson's analysis is likely contaminated by Bell Mobility's launch of unlimited plans in 2019. Unlimited plans removed overage charges and thus likely lowered the price per gigabyte and incentivized higher data usage.[139] In the spring of 2019, new subscribers to Bell Mobility did not have the option of subscribing to an unlimited plan, but all new fall subscribers did. Therefore, the difference in data usage and price per gigabyte between the spring and fall of 2019 likely reflects this unusual change and is not a proper benchmark for ordinary seasonal variation—i.e., a difference between the kind of customers that sign up in the spring and fall whether there is a competitively significant event or not.

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[134] Johnson Report, ¶¶ 72, 81.

[135] Opening Report, ¶ 110.

[136] Witness Statement of Blaik Kirby, ¶ 16.

[137] Israel Report, ¶ 134.

[138] [redacted] See TELUS00067777, p.3. [redacted] See ROG00193378, p.4. See also ROG00203588, p. 3 [redacted]

[139] Once the data allocation has been filled, Bell Mobility's unlimited plans are designed to "throttle" data to a lower speed rather than charging overage fees. Two subscribers, one on a regular plan and one on an unlimited plan, with identical plan rates and data allocations who consumed the same amount of data in excess of their allocation would have different total bills for the same data usage, and therefore different prices per gigabyte. Furthermore, unlimited plans remove the disincentive to use data beyond their data allocation as they do not charge overage fees.

105. As further evidence that Dr. Johnson's results are likely contaminated by the launch of unlimited plans, [redacted][140] [redacted][141] [redacted][142] [redacted][143] However, these comparisons, like all of Dr. Johnson's comparisons, should be taken with a grain of salt as the industry-wide change in pricing in 2019 makes it an unreliable benchmark as a general matter.

106. For Freedom, Dr. Johnson also relies on 2021 as an additional benchmark year.[144] As I discussed in Appendix 8.4 of my Opening Report, the 2021 data for Shaw is affected by changes in strategy made in the course of the merger investigation. [redacted][145] It is possible that consumers who would have otherwise subscribed to Shaw Mobile may instead have chosen high-data plans offered by Freedom, which contaminates interpretation of the increase in Freedom data usage in 2021. Dr. Johnson does not investigate this possibility, nor any other potential cause for an abnormal change in data usage and price per gigabyte between the spring and fall of his "benchmark" years.

7.2. Ontario is not a suitable control and, as a result, Dr. Johnson's regressions are flawed and unreliable

107. Dr. Johnson also claims that my event study should have used Ontario as a control market because Shaw Mobile is not offered in Ontario.[146] However, for Ontario to be a valid control region, it must provide a representation of what would have happened to Alberta and British Columbia absent the launch of

[140] Dr. Johnson Report, ¶¶ 71, 80.
[141] SJRB-CCB00120495, [redacted]"
[142] Johnson Report, Figure 11 and Figure 12.
[143] Johnson Report, Figure 10.
[144] Johnson Report, Figure 8.
[145] Opening Report, ¶¶ 348–349.
[146] Johnson Report, ¶ 84.

Shaw Mobile. One critical requirement to use Ontario in this fashion is that Ontario would need to be insulated from any consequences of the launch.[147] As I explained in my Opening Report, that is not the case. Shaw Mobile's launch in 2020 prompted competitive reactions in Alberta and British Columbia that continued to play out over the remainder of the year and also spilled over into Ontario and nationally.[148] The spillover effects of Shaw Mobile's launch in Ontario means that Ontario cannot be used as a "control region." As a result, Dr. Johnson's difference-in-difference regressions are flawed and unreliable, and they cannot be interpreted as Dr. Johnson does.

7.3. Dr. Johnson's analysis of historical trends among all subscribers is uninformative

108. Dr. Johnson analyzes historical trends in data usage and price per gigabyte to claim that, [redacted][149] Because Dr. Johnson relies on data aggregated across all Telus subscribers for this exercise rather than new subscribers, it is no surprise that [redacted] As I discuss in my Opening Report and in Section 3.2 of this rebuttal report, only a fraction of subscribers is actively engaging in the marketplace—making economic choices among the currently available wireless plans in any given month.[150] This means that when the carriers launch a new menu of data allowances and prices, the average prices and quantities across all subscribers will *slowly* change as subscribers gradually shift off their old contracts and onto new plans. Hence, competitive events can significantly affect prices per gigabyte, but would only show up in Dr. Johnson's aggregated data as a small downward trend realized over a long period of time in prices averaged over all subscribers. The equivalent would be true for events increasing data allowances. As a result, Dr. Johnson's charts of historical trends

[147] Dr. Johnson's "difference-in-difference" method depends on the assumption that in absence of the launch of Shaw Mobile, the market would have acted as it did in Ontario. If, however, the Ontario market was also affected by the launch of Shaw Mobile, subscribers in Ontario are also "treated" and the results of this exercise would not be valid. See, for example, James H. Stock and Mark W. Watson, *Introduction to Econometrics*, 3rd edition (Pearson: 2015), pp. 480–481.

[148] Opening Report, ¶ 114.

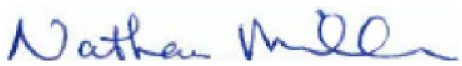
[149] Johnson Report, ¶¶ 117–118.

[150] See Opening Report, ¶ 59. In this market, many plans are offered on a 2-year contract, which reduces the share of subscribers who may be shopping in any given month. See Opening Report, ¶ 14.

are not inconsistent with my conclusion that Shaw Mobile did have a significant effect on the average price per gigabyte for new Telus Mobility subscribers.

109. Further, Dr. Johnson's criticisms of my selection of promotional plans as restrictive and not being properly motivated are unfounded. Unlike Bell and Shaw data, the structure of Telus's data makes it impossible to identify the price and data usage among new subscribers, as I did in my analyses of Bell Mobility, Virgin Mobile, and Freedom. Hence, I identified types of plans that were promoted by Telus Mobility following the launch of Shaw Mobile based on the record of active promotions at the time.[151] This allowed me to emulate what I have done in the other case studies—i.e., focusing on the effect on consumers that are active in the marketplace, and in this case, on the plans and promotions they would have seen from Telus.[152]

Signed this 19th day of October, 2022.



Nathan H. Miller

[151] See Opening Report, footnotes 199 and 207, where I describe the process to identify these promotional plans in the Telus data.

[152] The promotional plans I identify for such analysis represent [redacted] percent of all gross adds associated with data plans with at least 0.5 gigabytes of allocated data in Alberta, British Columbia, and Ontario from August to November 2020. See Workpaper 6.1.3.c of my Opening Report.

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- SJRB-CCB00830448
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Data

Rogers

[redacted]

Shaw

[redacted]

Bell

[redacted]

[redacted]

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- Witness Statement of Nathan H. Miller and supporting materials, dated September 21, 2022.
- Affidavit of Andrew Harington, dated September 23, 2022.
- Affidavit of Mark A. Israel and supporting materials, dated September 23, 2022.
- Witness Statement of Paul A. Johnson and supporting materials, dated September 23, 2022.
- Witness Statement of Blaik Kirby, dated September 23, 2022.
- Witness Statement of Jean-François Lescadres, dated September 23, 2022.

Letters

- Letter from [redacted]

Other Documents

- Share Purchase Agreement, Videotron Ltd., and Quebecor Inc., and Rogers Communications Inc., and Shaw Communications Inc., and Shaw Telecom Inc., and Freedom Mobile Inc., August 12, 2022.