PUBLIC

CT-2022-002

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 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 INC.

Intervenors

WITNESS STATEMENT OF DAVID S. EVANS, PHD

I, DAVID S. EVANS, of the City of Boston, in Essex County, Massachusetts, MAKE OATH AND SAY:

1. I am the Chairman of Global Economics Group, LLC, based in Boston. I have taught classes on antitrust economics and related topics at various universities over the last 30 years. I have conducted extensive research concerning industrial organization and industrial economics. I have testified before federal courts in the United States, the European General Court, and the Supreme People's Court of China. My work was cited extensively by the Supreme Court of the United States.

2. I was retained by Davies Ward Phillips & Vineberg LLP, on behalf of Shaw Communications Inc., to provide an independent expert report related to the evaluation of efficiencies under section 96 of the *Competition Act* that could assist the Tribunal in assessing the economic evidence presented by the Commissioner of Competition in this matter.

3. My Report is attached to this Witness Statement as **Exhibit "1"**. I have appended to my Report my curriculum vitae, Acknowledgement of Expert Witness and a list of the materials that I relied upon to prepare the Report.

SWORN remotely by David S. Evans of the City of Boston, Essex County, Massachusetts, before me at the City of Toronto, in the Province of Ontario on October 20, 2022 in accordance with O. Reg. 430/20 Administering Oath or Declaration Remotely.

Sarah Cormack

SARAH CORMACK

David Evans

DAVID S. EVANS

This is Exhibit “1” referred to in the Affidavit of DAVID S. EVANS sworn by DAVID S. EVANS of the City of Boston, in the Essex County, Massachusetts, before me at the City of Toronto, in the Province of Ontario, on October 20, 2022 in accordance with O. Reg. 431/20, Administering Oath or Declaration Remotely.

Sarah Cormack

Commissioner for Taking Affidavits (or as may be)

SARAH CORMACK

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RESPONDING EXPERT REPORT of DAVID S. EVANS

(October 20, 2022)

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I. Introduction

A. Qualifications

1. My name is David S. Evans. I am the Chairman of Global Economics Group, LLC, based in Boston. I have BA, MA, and PhD. degrees in economics, all from the University of Chicago. I have authored, sometimes with co-authors, nine books (including two award winners) and more than 200 scholarly articles, which have been widely cited in the professional literature.[1] A substantial portion of my research, writing, and teaching concerns industrial organization and antitrust economics. I have been commissioned to write various handbook chapters on antitrust economics including by the American Bar Association and the Organization for Economic Cooperation and Development ("OECD"). A number of my scholarly articles on antitrust have focused on principles for the design of antitrust policy. My work was cited by the U.S. Supreme Court in the *American Express* decision[2] and has been cited by other courts.

2. Over the last 30 years, I have taught classes on antitrust economics and related topics at the University of Chicago Law School, University College London Faculty of Laws, and Fordham University Law School. Between 2004 and 2022, at University College London, as a Visiting Professor, I taught intensive courses for the graduate sequence on antitrust economics as well as specialized courses on platforms and the digital economy.[3] I was also one of the

[1] My Google Scholar page lists my publications and citation history. My personal website davidsevans.org provides more detail on my publications and professional background.

Google Scholar, "David S. Evans," https://scholar.google.com/citations?hl=en&user=x4_fWfoAAAAJ; David Evans, "David Evans," davidsevans.org.

[2] *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2280-81, 2285-89, 2300 (2018).

[3] In the last several years, a number of competition authorities around the world, including the European Commission and the Federal Trade Commission, have assembled staff to participate in these classes remotely.

executive directors of the Jevons Institute for Competition Law and Economics at University College London, which I co-founded in 2006 as a policy forum and meeting point between academia and practice. Between 2006 and 2016, I taught an annual advanced seminar on antitrust economics at the University of Chicago. I have taught various aspects of antitrust economics to judges in the European Union and the People's Republic of China.[4]

3. Over the course of my career, I have testified before federal courts in the United States, the European General Court, and the Supreme People's Court of China, and made presentations and submissions to a number of competition authorities. In addition to private clients, I have worked as an expert for the U.S. Federal Trade Commission and the U.S. Department of Justice. My curriculum vitae is attached as **Appendix "A"**.

4. I confirm that I prepared this Report in accordance with my duty to provide opinions that are fair, objective and non-partisan, and that relate only to matters that are within my areas of expertise. I confirm that I have no stake, directly or indirectly, in the outcome of this matter. I also confirm that my fees for this engagement are not contingent in any way on the opinions and conclusions expressed in this Report or on the outcome of this proceeding.

5. In this regard, I have signed an Acknowledgment of Expert Witness, and appended it to this Report as **Appendix "B"**.

[4] In 2009 and 2010, I taught classes for judges, including basic economic principles and intellectual property, in the European Union for a program sponsored jointly by the University College London and the Toulouse School of Economics. At the request of the Chinese State Ministry of Industry and Information Technology (MIIT), in 2013, 2014, and 2015, I taught certain aspects of antitrust economics, including Internet-based and platform-based industries, to judges from China's Supreme People's Court and provincial appeal courts.

B. Assignment

6. I have been retained by Davies Ward Phillips & Vineberg LLP ("Davies"), counsel to Shaw Communications Inc. ("**Shaw**") as an independent expert in connection with an Application commenced by the Commissioner of Competition (the "**Commissioner**") under section 92 of the *Competition Act* to block a proposed business combination between Shaw and Rogers Communications Inc. ("**Rogers**") following a sale by Shaw of its subsidiary, Freedom Mobile Inc. ("**Freedom Mobile**"), to Videotron Ltd. ("**Videotron**"). I have been asked to provide economic analysis and opinions related to the evaluation of efficiencies under section 96 of the Competition Act that could assist the Competition Tribunal ("**Tribunal**") in assessing the economic evidence presented by the Commissioner in this matter.

7. I am not a lawyer and am not offering any legal opinion, including with respect to the proper interpretation of section 96 of the *Competition Act*. Rather, I approach the matters discussed within this Report solely from my perspective as an economist. Although I describe below my understanding of the Canadian framework pertaining to section 96 of the *Competition Act*, I do so only by way of background to my economic analysis and opinions (and not to urge my understanding of the framework upon the Tribunal).

8. In preparing this Report, I have consulted several sources, principally publicly available information as well as confidential versions of witness statements and expert reports filed in connection with this proceeding. I have included in **Appendix "C"** a list of the documents that I have referred to in this Report or otherwise relied upon.

1. Background

9. In the United States and many other jurisdictions, economic efficiencies are one of many factors that are considered in evaluating whether a merger should be blocked. My

understanding is that Canada has a unique framework, set out in section 96 of the *Competition Act*, which specifically requires that the Tribunal allow a merger if it finds that the gains in efficiency brought about by the merger are likely to outweigh and offset the merger's likely anticompetitive effects.[5] I understand that the gains in efficiencies to be considered include ones that would be passed on to consumers, thereby directly reducing anticompetitive effects of the merger, as well as efficiencies that would be retained to the benefit of the merging parties.[6,7] The section 96 efficiencies framework has been interpreted, as I understand it, as giving economic efficiencies more weight in Canadian merger law than in many other jurisdictions I am familiar with, and that is due to distinctive characteristics of the Canadian economy that have rendered overall economic efficiency an important objective of Canadian competition policy.[8]

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[5] S. 96 (1) The Tribunal shall not make an order under section 92 if it finds that the merger or proposed merger in respect of which the application is made has brought about or is likely to bring about gains in efficiency that will be greater than, and will offset, the effects of any prevention or lessening of competition that will result or is likely to result from the merger or proposed merger and that the gains in efficiency would not likely be attained if the order were made.

(2) In considering whether a merger or proposed merger is likely to bring about gains in efficiency described in subsection (1), the Tribunal shall consider whether such gains will result in

(a) a significant increase in the real value of exports; or

(b) a significant substitution of domestic products for imported products.

(3) For the purposes of this section, the Tribunal shall not find that a merger or proposed merger has brought about or is likely to bring about gains in efficiency by reason only of a redistribution of income between two or more persons.

R.S., 1985, c. 19 (2nd Supp.), s. 45

[6] See, Tervita Corp. v. Canada (Commissioner of Competition) 2015 SCC 3 ¶¶ 91–101.

[7] Economics shows that gains in efficiencies that result in reductions in marginal costs may be passed on to consumers thereby reducing any unilateral incentives by merging parties to raise prices. The part of the gain in efficiency that is not passed on is left with the merging parties. In the United States, the part of the gain in efficiency that is not passed on to consumers would typically not be considered a relevant factor in deciding whether to block the merger.

[8] I have addressed some of the reasons why some countries may find it socially optimal to adopt different antitrust rules than other countries. *See* David S. Evans, "Why Different Jurisdictions Do Not (and Should Not) Adopt the Same Antitrust Rules," *Chicago Journal of International Law* 10, no. 1 (2009): 161– 187.

10. When a merger is found to be likely to substantially lessen competition, the framework in Canada, where efficiencies are relied on by the merging parties, necessitates weighing the value of costs incurred by consumers relative to the value of the benefits received by producers and allows for different approaches to evaluating and weighing efficiencies and anticompetitive effects. My understanding is that the *Competition Act* does not instruct how to weigh these values but that the Tribunal and the courts have addressed this issue in a number of cases. Taken together, it is my understanding that the starting point for the analysis should be based on the total surplus standard, which counts dollars the same regardless of whether they are received by producers or consumers (the "principle of neutrality"). However, the Commissioner of Competition may claim that the merger has socially adverse effects even if it is found to benefit the economy as a whole under the principle of neutrality. In this situation, the Tribunal may consider a balancing-weights approach which could weight the loss to consumers differently than the gain to producers in evaluating whether the value of the increased efficiencies outweigh and offset the value of the anticompetitive effects.[9]

2. Economic Approach to Assignment

11. To assist the Tribunal in evaluating efficiencies in this proceeding, I explain the economics of the balancing-weights approach and the total surplus approach, and their relative merits, for weighing efficiencies and anticompetitive effects. As I will show below, there is no basis, as a matter of pure economic theory, to say that one approach is superior to the other. The choice between them, as is often the case when economists must address public policies, comes down to practical considerations, such as whether it is feasible to implement the

[9] As I understand it, the Commissioner of Competition has in this proceeding taken the approach that the weights should differ between consumers and producers.

balancing-weights approach with available information and whether such an approach would, as a matter of economics, achieve the intended purpose.

C. Conclusions Concerning the Evaluation of Efficiencies

12. I have reached three principal findings based on economic analysis.

Finding 1: There are sound reasons why competition policy focuses on pursing economic progress and leaves distributional concerns to other government policies and agencies.

13. Competition policy is one of many tools that governments have for dealing broadly with ensuring economic progress and addressing various other issues including the distribution of income and wealth. As practiced internationally, competition policy typically focuses on making competition work well—by acting, in effect, as a referee that calls out fouls and imposes penalties and restrictions—thereby enabling long-run economic progress.

14. Even when competition authorities can address other issues, such as distributional concerns, they typically focus on their core mission. That focused approach is consistent with an important economic principle for government policies: pursuing a single objective rather than multiple ones leads to better results by reducing conflicts and overlaps.

15. Implicitly, competition policy relies on dynamic competition among firms to advance economic progress. That is particularly important when economic progress is driven by innovation and the diffusion of new technologies, as it is in telecommunications.

Finding 2: There is no consensus in economics for determining reliable balancing weights, including inferring them from other government policies such as the tax system. The

balancing-weights approach is not typically used in practical applications, or by governments, including Canada, in evaluating proposed regulatory policies.

16. The balancing-weights approach is based, in economics, on the idea that there is a "social-welfare function" which aggregates and weights measures of well-being for members of society. Despite much effort, economists have not developed a consensus on a reliable approach for coming up with the balancing weights, and this failure, to date, is well-recognized in the literature.

17. The economic literature does not support a consensus on inferring balancing weights from particular government policies such as the tax system. The balancing-weights approach is not typically used in practice in evaluating the distributional effects of government policy including for considering proposed regulation in Canada.

18. In practice, economists use "cost-benefit analysis" which adopts the principle of neutrality—a dollar-is-dollar—in calculating the benefit, cost, and net benefit of government policies, including in Canada. The cost-benefit approach is similar to the total surplus approach in adopting equal weighting.

Finding 3: The Commissioner lacks sound economic support for departing from the total surplus approach. Adopting the Commissioner's proposed approach could undermine the purpose of section 96 of the Competition Act in valuing efficiencies.

19. Although Professor Osberg advocates using the social-welfare function approach, and balancing weights, he provides no support for a consensus for deriving those balancing weights or for using them in the actual evaluation of government policies. Nor does Professor Cuff.

20. One of three citations Professor Osberg provides to the literature in support of the social-welfare function approach is a favorable review of a book by Professor Matthew Adler, an economist. That book contains a detailed discussion explaining why it is problematic to infer the balancing weights for the social welfare function from government policies, including the tax system—the approach advocated by the Commissioner in this matter.

21. Balancing weights that depart materially from equal weighting (following the principle of neutrality) could undermine the purpose of section 96 of the Competition Act, which seeks to weight efficiencies against anticompetitive effects for the purposes of Canadian economic policy. I have seen no economic support in the expert reports of Professors Osberg and Cuff, and I know of none in the relevant economic literature, for a departure from the total surplus standard in favor of the balancing-weights calculations put forward by the Commissioner. To the extent those balancing weights are used they would be based on value judgments and not on sound economics.

D. Organization of Report

22. The report has four sections including this Introduction. Each of the next three sections details the economic analysis for each of the above three conclusions.

23. Section II shows that competition policy, as currently practiced internationally, has a specific focus on ensuring economic progress by making sure companies, in effect, play by the

rules. Distributional concerns such as inequality are left to other policies and agencies. Even when competition authorities could address distributional concerns, they usually do not.

24. Section III explains the economics of the total surplus and balancing-weights approaches. The total surplus method is consistent with "cost-benefit analysis," which is the standard method used by governments to evaluate regulatory policies. The balancing-weights approach is based on the notion of a social welfare function," which weights the well-being of different members of society. I show that there is no consensus in economics on measuring those weights and that the social-welfare approach is not typically used in practice. In particular, there is no reliable economic basis for using the tax code or other particular policies to infer those weights.

25. Section IV considers the application of the economics presented in Section III to evaluating efficiencies for the purpose of section 96. I show that evaluating efficiencies using balancing weights that depart significantly from the equal weighting under the total surplus standard could undermine the purpose of section 96. I also show that the expert reports of Professors Osberg and Cuff do not contain economic support for the particular balancing-weight approach put forward by the Commissioner in this matter.

II. Competition Policy Typically Does Not Address Distributional Concerns, Leaving Those to Other Policies and Agencies

A. Competition Policy Has a Specific Focus and Works in Concert with Other Government Policies

26. Modern competition law and policy reflects legislative, court, and enforcement decisions to defer to market forces rather than intervene in most business decisions. Competition authorities referee the game of competition. They call out fouls and, when

necessary, impose penalties or restrictive orders. Competition policy in most countries I am familiar with, including Canada, does not prevent firms from obtaining or having market power, including monopoly power, or becoming big and important, organically.[10] Firms just have to behave themselves on their path to whatever success they achieve and as they participate in markets.

27. Implicitly, competition policy relies on dynamic competition among firms to advance economic progress.[11] That is particularly important when economic progress is driven by innovation and the diffusion of new technologies. In the telecommunications industry, for example, substantial innovation and investment by cellular carriers over time in most countries have resulted in the successive deployment of 3G, 4G, and most recently 5G networks which in turn have supported the widespread use of smartphones and app-based businesses.[12] In some countries, including Canada, investments by telephone companies in fixed networks, based on

[10] In Canada, for example, the Competition Bureau has observed that "a firm would not contravene the Act if it attains its market power solely by possessing a superior product or process, by introducing an innovative business practice or by other reasons of exceptional performance." Competition Bureau "Intellectual Property Enforcement Guidelines," March 13, 2019, section 2.2, https://www.ic.gc.ca/eic/site/cb-bc.nsf/eng/04421.html. The Competition Bureau's Abuse of Dominance Enforcement Guidelines state that "simply being a dominant firm, or even a monopoly, does not in and of itself engage the abuse of dominance provisions of the Act." Competition Bureau, "Abuse of Dominance Enforcement Guidelines," https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04420.html.

[11] According to the Competition Bureau, "IP and competition laws are both necessary for the efficient operation of the marketplace. IP laws provide property rights comparable to those for other kinds of private property, thereby providing incentives for owners to invest in creating and developing IP and encouraging the efficient use and dissemination of the property within the marketplace. …. The promotion of a competitive marketplace through the application of competition laws is consistent with the objectives underlying IP laws." Competition Bureau, "Intellectual Property Enforcement Guidelines," March 13, 2019, section 3.4, https://www.ic.gc.ca/eic/site/cb-bc.nsf/eng/04421.html.

[12] Cellular carriers work with standard development organizations, to promote the development of new technologies, such as the upcoming 6G standard. For example, Rogers is a member of the European Telecommunications Standards Institute, part of the consortium that develops and maintains mobile telecommunications standards. Each of these standards is vastly faster and more efficient than its predecessor. Cellular carriers then invest in deploying these new technologies through their networks which typically requires investment in new equipment and software. European Telecommunications Standards Institute, "Membership of ETSI," https://www.etsi.org/membership.

fibre to the home, have enabled internet service provided by such companies to leapfrog that provided by cable companies, and increase competition.[13]

28. Competition policy works in concert with many other policies, including intellectual property, sectoral regulation, taxation, social welfare and employment, trade, and others to promote economic progress and address societal concerns.[14] As in most activities, it makes sense for each of these policies to specialize and work together rather than for each policy to achieve many or all objectives. Economists have shown that it is challenging and may be counterproductive for policies, or agencies, to pursue multiple competing objectives.[15]

B. Competition Policy Typically Does Not Address Distributional Issues Involving Consumers and Producers

29. Many factors, including markets, may result in outcomes that that are unsatisfactory for certain members of society. Governments take various steps to address these distributional concerns. Modern competition policy, as practiced in most countries, generally does not serve

[13] Competition Bureau, "Delivering Choice: A Study of Competition in Canada's Broadband Industry," August 7, 2019, *available at* https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/vwapj/CSBP-BR-Main-Eng.pdf/$file/CSBP-BR-Main-Eng.pdf, p. 7 ("These providers, which are typically telephone and cable companies, serve the significant majority of Canadians, while at the same time making the substantial investments necessary to deploy, maintain, and upgrade the physical networks that connect Canadian homes to the internet. These competitors engage in an important form of dynamic competition, working to outdo each other in order to offer the highest speeds and most reliable networks.").

[14] The Industry, Science and Economic Development section of the Government of Canada states that "Competition policy is the responsibility of the Investment, Insolvency, Competition and Corporate Policy Directorate, which is part of the Marketplace Framework Policy Branch." Government of Canada, "Competition policy," May 16, 2013, https://www.ic.gc.ca/eic/site/693.nsf/eng/h_00035.html. The Marketplace Framework Policy Branch is responsible for coordination of policies, laws and regulations in many areas, including IP, foreign investment, "traditional knowledge" (relating to aboriginal issues) and privacy. Government of Canada, "Marketplace Framework Policy Branch," May 16, 2013, https://www.ic.gc.ca/eic/site/693.nsf/eng/h_00024.html.

[15] For instance, economists have found that central banks that are less independent—that is, pursue political objectives other than minimizing inflation – are less effective at minimizing inflation. *See, e.g.,* Alberto Alesina and Roberta Gatti "Independent Central Banks: Low Inflation at No Cost," *American Economic Review*, May 1995, 85(2) 196–200; *See also* Jeffrey Clemens and Benedic Ippolito, "Uncompensated Care and the Collapse of Hospital Payment Regulation: An Illustration of the Tinbergen Rule," *Public Finance Review* 47, no. 6 (2019): 1002–1041.

as a tool for doing so, choosing instead to focus on promoting overall consumer welfare or economic efficiency. The OECD, which works with the competition authorities of 38 countries (Canada and the U.S. are longstanding members), has noted that "even when the laws in OECD Member countries allow merger decisions to be based on public interest considerations, this rarely occurs in practice. The main policy and enforcement argument for considering competition-only objectives in merger assessment is that other public interests may be promoted through market efficiency, and thus there is no room, or need, for their specific consideration within the competition system."[16]

30. By design, competition policy typically leaves distributional issues outside its mandate. I noted earlier that competition policy does not prevent firms from acquiring substantial market power including monopoly power so long as, in effect, firms play by the rules. Consistent with this approach, competition policy usually does not require monopolies, or other firms with significant market power, to lower their prices from monopoly levels. Competition policy in some jurisdictions, such as the European Union, can find that firms have abused a dominant position by charging "excessive prices." In practice, however, competition authorities in these jurisdictions have rarely chosen to do so.[17] Transfers between producers and consumers, and

[16] OECD, "Executive Summary of the Roundtable on Public Interest Considerations in Merger Control," June 14, 2016, p.2, *available at* https://one.oecd.org/document/DAF/COMP/WP3/M(2016)1/ANN5/FINAL/en/pdf.

[17] The European Commission has noted that "It is nonetheless important to recognise that high profits may often be the result of superior innovation and risk taking, which should not be penalised as this would work as a disincentive to innovate and invest…. [T]his does not mean that intervention against exploitative conduct should necessarily be totally excluded but it indicates that it may be better to tilt the balance in favour of addressing exclusionary conduct." European Commission, "Article 102 and Excessive Prices," OECD Policy Roundtables: Excessive Prices (2011), 311, *available at* http://www.oecd.org/competition/abuse/49604207.pdf. The Commission has in fact brought very few excessive pricing cases. The US Department of Justice has summarized the situation in the US: "U.S. antitrust law allows lawful monopolists, and *a fortiori* other market participants, to set their prices as high as they choose. This central tenet of U.S. antitrust law is well supported by court decisions that have held, for example, that '[a] pristine monopolist…may charge as high a rate as the market will bear'…for the antitrust laws are not a price-control statute or a public utility or common-carrier rate-regulation statute." U.S. Federal Trade Commission

thus distributional concerns, are left to, among other things, corporate and individual tax policy to address.

31. John Pecman, former Commissioner of the Canadian Competition Bureau, provided, when he was Commissioner, a summary of the risks competition policy faces in departing from its specific focus:

> The right question is whether antitrust is the appropriate tool to remedy social issues like inequality and unemployment. And I am greatly concerned by any suggestion that competition law should transition away from an economics-based, consumer welfare standard toward a value-based public interest standard. The rationale for my concern is simple: competition law is most effective when it operates with clear and objective criteria and injecting public interest concerns into competition law prevents that from happening. Moreover, doing so injects politics into the process and politics, as we know, is best left to the people we elect to do that job—politicians. Competition authorities—as unelected bodies—are particularly unsuited to making value judgments; in fact, it's the very antithesis of our role, which is to perform objective, rigorous analysis. There are other policy instruments that are far better suited to addressing social and cultural objectives.[18]

C. Most Countries, Including Canada, Have Policies and Agencies That Deal with Distributional Concerns

32. Governments have numerous policies and agencies that address general distributional concerns. These efforts include tax policies for persons and corporations that impose differential burdens. Tax revenue, of course, funds the government. Those funds are used to finance various programs, such as childcare and welfare, that benefit different groups. A large portion of the government budget in most countries goes to tax and spending efforts that are

and Antitrust Division of the U.S. Department of Justice, "Excessive Prices," OECD Policy Roundtables: Excessive Prices (2011): 299, *available at* https://www.oecd.org/competition/abuse/49604207.pdf.

[18] Competition Bureau Canada, "Populism, Public Interest and Competition," April 27, 2018, https://www.canada.ca/en/competition-bureau/news/2018/05/john-pecman-commissioner-of-competition---populism-public-interest-and-competition.html.

ultimately distributional. In Canada, for example, about 20-30 percent of the federal budget is spent on social protection programs.[19]

33. Many countries have sectoral regulators, including for telecommunications, that have mandates for addressing specific distributional concerns, such as universal service. In Canada, for example, the Canadian Radio-television and Telecommunications Commission ("**CRTC**") is the sectoral regulator for telecommunications. The CRTC regulates and supervises broadcasting and telecommunications in the public interest.[20] For example, I understand that in Telecom Regulatory Policy 2016-496, the CRTC outlined its plans to ensure that Canadians in urban, rural, and remote areas can access affordable, high-quality telecommunications services.[21] Recently, the CRTC Broadband Fund allocated $20.5 million to support the introduction of fourth-generation LTE or LTE-A mobile wireless access on roads and highways and improved internet and wireless access for 2,250 households in 35 communities, including five Indigenous communities and one official language minority community, in Manitoba,

[19] Social protection includes programs such as Old Age Security, family benefits, disability payments and unemployment benefits.

Statistics Canada, "Expenses of government classified by function, 2020," November 26, 2021, *available at* https://www150.statcan.gc.ca/n1/en/daily-quotidien/211126/dq211126a-eng.pdf?st=MJ6lQH9K.

[20] Canadian Radio-television and Telecommunications Commission, "About us," https://crtc.gc.ca/eng/acrtc/org.htm.

[21] Canadian Radio-television and Telecommunications Commission, "Telecom Regulatory Policy CRTC 2016-496," https://crtc.gc.ca/eng/archive/2016/2016-496.htm.

Quebec, and Newfoundland and Labrador.[22] The government has also recently indicated that it would impose rate regulation if wireless prices do not come down.[23]

34. For wireless markets, I understand that the Canadian Government itself, through the Minister of Innovation, Science and Industry (the "**Minister**"), an elected official, has the authority to approve or reject any transfer or change in control of spectrum licenses. I also understand that in assessing such transfer applications, the Minister considers the policy objective of maximizing both the economic and social benefits that Canadians derive from the use of spectrum. As Shaw's subsidiary, Freedom Mobile, owns spectrum licenses, I understand that the Minister will review the proposed deemed license transfers contemplated by the proposed sale of Freedom Mobile to Videotron in light of the government's policy objective to "maximize the economic and social benefits that Canadians derive from the use of the radio frequency spectrum resource, including the efficiency and competitiveness of the Canadian telecommunications industry, and the availability and quality of services to consumers."[24] I understand that the Minister has said that he will not approve a wholesale transfer of Shaw's

[22] Canadian Radio-television and Telecommunications Commission, "CRTC Broadband Fund to allocate $20.5 million for mobile wireless and Internet access services in Manitoba, Quebec and Newfoundland and Labrador," August 4, 2022, https://www.canada.ca/en/radio-television-telecommunications/news/2022/08/crtc-broadband-fund-to-allocate-205-million-for-mobile-wireless-and-internet-access-services-in-manitoba-quebec-and-newfoundland-and-labrador.html.

[23] Government of Canada, "Offering Canadian consumers more affordable options for their wireless services," March 5, 2020, https://www.canada.ca/en/innovation-science-economic-development/news/2020/03/offering-canadian-consumers-more-affordable-options-for-their-wireless-services.html; Government of Canada, "Government of Canada tracks progress on reducing prices of wireless services," July 28, 2020, https://www.canada.ca/en/innovation-science-economic-development/news/2020/07/government-of-canada-tracks-progress-on-reducing-prices-of-wireless-services.html; Government of Canada, "Government of Canada delivers on commitment to reduce cell phone wireless plans by 25%," January 28, 2022, https://www.canada.ca/en/innovation-science-economic-development/news/2022/01/government-of-canada-delivers-on-commitment-to-reduce-cell-phone-wireless-plans-by-25.html.

[24] *See* Government of Canada, "CPC-2-1-23 — Licensing Procedure for Spectrum Licences for Terrestrial Services." October 2015, Section 5.6.4, https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01875.html.

Government of Canada, "SPFC — Spectrum Policy Framework for Canada," June 2007, *available at* https://www.ic.gc.ca/eic/site/smt-gst.nsf/vwapj/spf2007e.pdf/$FILE/spf2007e.pdf.

spectrum licenses to Rogers.[25] I also understand that the proposed acquisition of Shaw by Rogers will not proceed unless Freedom Mobile is first sold to Videotron.

III. Economics Points to Several Practical Considerations in Comparing the Relative Merits of the Total Surplus and the Balancing-Weight Approaches

35. As I noted, section 96 of the Competition Act provides for weighing the likely efficiencies brought about by a merger against its likely anticompetitive effects when the merger is found likely to substantially lessen or prevent competition. I understand that when a merger is found likely to substantially lessen or prevent competition, the Commissioner may choose to submit evidence in an effort to persuade the Tribunal that the anticompetitive effects should have a greater weight than the productive efficiencies thereby departing from the neutrality principle in the total surplus approach. As I understand it, the Tribunal could accept those weights, form its own weights, or adopt the total surplus approach (whereby the appropriate weights are equal).[26]

36. The logic of the weighting approach is that the decrease in consumer surplus suffered by consumers should, in certain circumstances, be weighted more heavily than the increase in producer surplus as a result of the merger. In making the comparison, it is important to recognize that some reductions in marginal cost may be passed on to consumers in the form of lower prices. The pass-on of marginal cost savings reduces the magnitude of any

[25] Government of Canada, "Minister of Innovation, Science and Industry reaffirms that competitiveness is central to a vibrant telecommunications sector," March 3, 2022, https://www.canada.ca/en/innovation-science-economic-development/news/2022/03/minister-of-innovation-science-and-industry-reaffirms-that-competitiveness-is-central-to-a-vibrant-telecommunications-sector.html.

[26] I understand that these matters are addressed in Tervita Corp. v. Canada (Commissioner of Competition) [2015] 1 S.C.R. 161, at par. 99; Canada (Commissioner of Competition) v. Superior Propane Inc. (C.A.) 2001 FCA 104 ("Superior Propane II"), ¶¶ 139, 159–160; and Canada (Commissioner of Competition) v. CCS Corp. 2012 Comp. Trib. 14, ¶¶ 281–283.

anticompetitive effects and loss to consumers and should therefore enter the consumer surplus side of the ledger. Some productive efficiencies are retained by the firm as profits, which are ultimately distributed to shareholders. These are typically reductions in fixed costs and should therefore enter the producer surplus side of the ledger. Some of the profits retained by the firm could be used for investment and research and development, however, which would ultimately benefit consumers as well and should therefore also be counted on the consumer surplus side of the ledger. In the following, I will use the terms consumer surplus and producer surplus to refer to the values that would be weighed against each other after any wealth transfer from producers to consumers has been accounted for.

37. As a pure matter of economic theory, it is not possible to say whether the balancing-weights approach, with different weights across members of society, is superior to the total surplus approach, with equal weights. Several practical economic considerations are important for assessing the relative merits of each approach that may help inform the Tribunal. An important one to which economists have devoted substantial work is whether it is feasible to derive reliable balancing weights from available information. Another that I have touched on concerns the extent to which distributional issues should be dealt with (or are effectively dealt with) as part of merger analysis rather than being dealt with by other policies and agencies. Finally, a practical consideration concerns the extent to which an approach advances or conflicts with the goals of section 96 of the Competition Act.

38. Similar issues have been addressed by economists extensively in debates over the appropriate tools for evaluating government policies. Since at least the 1980s, economists have used "cost-benefit analysis" ("**CBA**") to provide advice on whether particular proposed policies should be pursued. CBA typically adds up the benefits and costs under the principle of

neutrality where a dollar is a dollar regardless of who gets it or loses it. Some economists have instead advocated using a "social welfare function" approach for evaluating policies. The idea is that policies may have socially adverse effects, such as harming those who are less well off, and that costs and benefits should be weighted to account for this. There is no debate over the potential importance of distributional concerns, only over whether economists have practical methods for weighting different members of society and whether taxation and other policies should deal with these concerns instead of the particular policy under consideration.

A. Cost-Benefit Analysis, Which Is Consistent with the Total Surplus Approach, Does Not Balance the Welfare of Different People

39. Governments often have occasion to determine whether particular policies are worth implementing. As described above, there is a well-developed body of economics—"cost-benefit analysis"—that assists with such policy assessments.[27] I understand that in Canada, the Government first instituted a policy in November 1999 that cost-benefit analysis be performed for all significant regulatory proposals.[28] Regulatory authorities "must demonstrate not only that the benefits to Canadians outweigh the costs, but also that they have structured the regulatory program so that the excess of benefits over costs is maximized."[29] Cost-benefit analysis is based on the Pareto principle that society should adopt policies that make at least

[27] Edward J. Mishan, *Cost-Benefit Analysis* (Holt Rinehart & Winston; Pencil Underlining edition, 1976); *Also see*, Arnold C. Harberger, "Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay," *Journal of Economic Literature* 9, no. 3 (1971): 785–797; Arnold C. Harberger, "The Measurement of Waste," *The American Economic Review* 54, no. 3 (1964): 58–76.

[28] Government of Canada, "Chapter 24: Federal Health and Safety Regulatory Programs," Report of the Auditor General of Canada – December 2000 (2000): 38, *available at* https://publications.gc.ca/collections/Collection/FA1-2000-3-9E.pdf.

[29] Treasury Board of Canada Secretariat, "Canadian Cost-Benefit Analysis Guide: Regulatory Proposals," p. 1, *available at* https://www.tbs-sct.canada.ca/rtrap-parfa/analys/analys-eng.pdf.

one person better off without making anyone worse off and the Kaldor-Hicks principle that a policy improves welfare if the winners could compensate the losers.[30]

40. There are two objections to the CBA approach in the economic literature. The first is that there may be no mechanism for the winners to compensate the losers. The other is that it ignores distributive considerations, such as the possibility society may care more about the losers than the winners of a policy. Although certainly not a perfect answer, tax policy provides an efficient mechanism for dealing with both concerns. In fact, one could think of progressive tax policy as a mechanism to deal with the overall imbalances that result in the economy. In addition, as one leading textbook puts it, "making sound decisions across the entire spectrum of regulatory policies will make almost all of us better off."[31]

41. Professor Dennig has explained the popularity of the cost-benefit approach.[32]

> The logic is as follows. First maximise the total monetary surplus, without consideration of where it falls, as this gives you the largest economy that is feasible. Then use the most efficient mode of redistribution to achieve the level of equality deemed desirable in the society. It is easy to see that this will yield a better outcome than accounting for distributive goals within each individual policy, unless all policies are equally efficient at redistributing. This provision, and the use of progressive income taxation in most developed countries, has meant that distributional weights have not played a big role in applied CBA, even amongst practitioners who are inclined to think that distributional issues warrant being considered. It also has the big advantage of being informationally less demanding. Aggregate variables can be used to estimate the dollar values of the impacts without the need to attribute these to individuals in different socio-economic strata. The resulting low informational requirement was an important factor in the successful spread of the use of CBA.

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[30] Nicholas Kaldor, "Welfare Propositions of Economics and Interpersonal Comparisons of Utility," *The Economic Journal* 49, no. 195 (1939), 549–552; and J. R. Hicks, "The Foundations of Welfare Economics," *The Economic Journal* 49, no. 196 (1939), 696–712.

[31] W. Kip Viscusi, Joseph E. Harrington, Jr., and David E. M. Sappington, *Economics of Regulation and Antitrust* (Cambridge, MA: MIT Press, 2018), 5th Edition, p. 61.

[32] Francis Dennig, "Climate Change and the Re-evaluation of Cost-Benefit Analysis" *Climatic Change* 151, no. 1 (2018): 48

42. Cost-benefit analysis has been used widely to evaluate policies. In the United States, the use of cost-benefit analysis to evaluate regulations was mandated by an Executive Order, under President Reagan, in 1981.[33] It has remained a significant part of policy evaluation through Republican and Democratic administrations. Professor Cass Sunstein, who was Obama's "regulatory czar," has written a book on the value of using the approach, and its practical advantages, though noting its imperfections.[34]

43. To guide the application of CBA in Canada, the Canadian Government publishes a "Cost-Benefit Analysis Guide for Regulatory Proposals" to help departments and agencies "produce high quality cost-benefit analysis across the federal government."[35] The Guide is mainly about implementing cost-benefit analysis under the standard neutrality principle. The Guide describes how to design cost-benefit analyses that quantify direct and indirect costs to all Canadian individuals, businesses, and the government that are affected by proposed regulation.[36]

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[33] Executive Order 12291, February 17, 1981, https://www.archives.gov/federal-register/codification/executive-order/12291.html ("regulatory action shall not be undertaken unless the potential benefits to society from the regulation outweigh the potential costs to society").

[34] MIT Press, "The Cost-Benefit Revolution," https://mitpress.mit.edu/9780262538015/the-cost-benefit-revolution/#:~:text=In%20The%20Cost%2DBenefit%20Revolution,consideration%20of%20costs%20and%20benefits.

[35] Government of Canada, "Canada's Cost-Benefit Analysis Guide for Regulatory Proposals," https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html.

[36] Examples of costs that may be considered include capital, labor, and materials costs incurred by businesses; direct financial costs such as fees; lost producer and consumer surplus; restriction of consumer choice; and government enforcement costs. Examples of benefits that may be considered include better health outcomes, improved safety, a wider variety of available products, and more recreational space.

The Guide states that indirect costs and benefits, which "are defined in the literature as the subsequent second or higher round effects that may occur in the regulated sector, and other sectors of the economy, as sectors adjust to the changed regulatory environment," "can be important in providing decision-makers with information on impacts that may occur as a result of the proposed regulation, but which are not directly intended by the

44. In a very short section, the Guide acknowledges that "it is important to provide an analysis of the distribution of the costs and benefits among stakeholder groups to help decision-makers understand the differentiated impacts of the regulation."[37] The Guide does not prescribe a method for evaluating distributional effects, and in particular it does not suggest using the tax code to conduct distributional analysis.[38] In fact, the Guide has noted the difficulty in quantifying distributional issues as part of a cost-benefit analysis.[39]

> There is no doubt that the impacts of policy actions on disadvantaged or vulnerable groups should be properly assessed and documented by analysts. However, incorporation of these impacts quantitatively into a cost-benefit analysis is nonetheless controversial. This reflects the complexity involved in trying to disentangle society's distributional preferences.

45. To take one example of the application of CBA, in 2016 the Canadian Employment and Social Development agency published the results of its cost-benefit analysis of Employment Benefits and Support Measures (EBSMs) delivered under Labour Market Development Agreements (LMDAs) between 2002 and 2012.[40] Specifically, the study quantified the costs

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regulation." Indirect impacts are included in the cost-benefit analysis if there is "[s]trong empirical evidence linking the requirements of the regulation to such impact."

Government of Canada, "Canada's Cost-Benefit Analysis Guide for Regulatory Proposals," https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html.

[37] Government of Canada, "Canada's Cost-Benefit Analysis Guide for Regulatory Proposals," Section 8, https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html.

[38] Government of Canada, "Canada's Cost-Benefit Analysis Guide for Regulatory Proposals," Section 8, https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html.

[39] Treasury Board of Canada Secretariat, "Canadian Cost-Benefit Analysis Guide: Regulatory Proposals," p. 33, *available at* https://www.tbs-sct.canada.ca/rtrap-parfa/analys/analys-eng.pdf

[40] Andy Handouyahia et al., "Cost-Benefit Analysis of Employment Benefits and Support Measures," Employment and Social Development Canada, May 2016, *available at* https://publications.gc.ca/collections/collection_2017/edsc-esdc/Em20-66-2017-eng.pdf.

and benefits associated with active and former Employment Insurance (EI) claimants who started their EBSM participation between 2002 and 2005.[41] The analysis quantified the program cost, the marginal social cost of public funds (i.e., "the loss incurred by society when raising additional revenues such as taxes to fund government spending"), employment earnings, fringe benefits, federal and provincial income taxes, sales taxes, and Social Assistance (SA) and EI benefits collected.[42] The study found that benefits for active claimants exceeded costs within six years for two of the four programs analyzed and that benefits for former claimants exceeded costs for one program.[43] The study did not evaluate the costs and benefits accruing to different groups, such as income cohorts, even though lower income Canadians are more likely to be EI claimants. In particular, although the study quantified the costs and benefits to individuals and the government, the authors noted that it is "important to consider costs and benefits from the individual and government perspectives combined (i.e., social perspective) in order to have a good appreciation of program efficiency in achieving its objective."[44]

46. Cost-benefit analysis (based on the principle of neutrality and without welfare balancing) is the approach that economists have, in fact, used in practice and that decision

[41] Andy Handouyahia et al., "Cost-Benefit Analysis of Employment Benefits and Support Measures," Employment and Social Development Canada, May 2016, *available at* https://publications.gc.ca/collections/collection_2017/edsc-esdc/Em20-66-2017-eng.pdf, at iv.

[42] Andy Handouyahia et al., "Cost-Benefit Analysis of Employment Benefits and Support Measures," Employment and Social Development Canada, May 2016, *available at* https://publications.gc.ca/collections/collection_2017/edsc-esdc/Em20-66-2017-eng.pdf, at v, 5.

[43] Andy Handouyahia et al., "Cost-Benefit Analysis of Employment Benefits and Support Measures," Employment and Social Development Canada, May 2016, *available at* https://publications.gc.ca/collections/collection_2017/edsc-esdc/Em20-66-2017-eng.pdf, at v–vi.

[44] Andy Handouyahia et al., "Cost-Benefit Analysis of Employment Benefits and Support Measures," Employment and Social Development Canada, May 2016, *available at* https://publications.gc.ca/collections/collection_2017/edsc-esdc/Em20-66-2017-eng.pdf, at 10.

makers have relied on for several decades now, and still do. Using CBA, it is generally possible to assess policies from available information and at least recommend policies that increase gross unweighted welfare and meet the Pareto-Kaldor-Hicks requirements. The progressive tax code and other government policies can address distributional concerns. In practice, in Canada and elsewhere, the government can use the tax code to address distributional concerns across all policies.

B. There is no Consensus for Determining a Social Welfare Function for Society as a Whole and the Relative Weights to Place on Different Groups within Society

47. Most modern economics is based on assuming that there is a measure of welfare, called utility, for each person, which they seek to maximize.[45] Economists often assume that for an individual, the value of an additional dollar of income (the marginal utility of income) declines with greater income. As it happens, this framework provides an approximate model of how people behave and leads to powerful and useful predictions. This approach, however, is not based on any assumption that there is a common measure of utility—like the measurement of height—for people that would allow economists to compare one person's utility to another.

48. As a matter of pure theory, economists can posit that there is a common measure of utility that could be summed across people into a "social welfare function" where the utilities of different people are given different weights. There are many economic theory papers that consider a social welfare function and its properties. A practical problem faced by economists, however, is how to move from theory to practice which requires finding the actual weights for

[45] *See, e.g.*, Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995), 8–9 ("In economics, we often describe preference relations by means of a *utility function*. A utility function $u(x)$ assigns a numerical value to each element in X, ranking the elements of X in accordance with the individual's preferences.").

the utilities of different people. Professor Schmidt recently noted that these efforts have failed to come up with a widely accepted method for assigning weights to balance the utility of different people:[46]

> It would be very helpful to have a method of establishing the relative value of money to different people; these could be used as weights in cost-benefit analysis, so that it would recommend policies which create net value, rather than those which create net dollar benefits. … One way to do this, widely discussed, is to use a social welfare function that explicitly accounts for the differences in the amount of well-being or welfare that different people get from a marginal dollar of income … This requires making interpersonal comparisons of welfare. Much effort … has gone into finding a method to establish objectively valid interpersonal comparisons of welfare. This research agenda has been extremely fruitful, but has not produced its ultimate goal; a means of comparing the value of money or goods to different people that is widely accepted.

49. Professor Hendren has also recently noted the lack of consensus around the weights for a social welfare function:[47]

> Deciding whether the alternative environment is better than the status quo…requires resolving these interpersonal comparisons: how should society weight the gains to the winners against the losses to the losers? A common method for resolving these tradeoffs posits a set of social welfare weights… However, the downside of this approach is that it generates conclusions that depend on the social welfare weights. Because these weights reflect ethical and philosophical tradeoffs about which there is no consensus, this approach can fail to generate universal agreement about whether the alternative environment should be preferred to the status quo.

50. It may come as some surprise that economists still have not arrived at a consensus as to how to calculate social welfare function weights. The problem is that we do not have a common metric for comparing utility, or well-being, between two people, similar to using meters to compare their heights. There is no obvious or reliable way to infer that Bob's utility

[46] Stephen J. Schmidt, "Making Interpersonal Comparisons of the Value of Income with a Hypothetical Auction" (working paper, 2019), 3.

[47] Nathaniel Hendren, "Measuring economic efficiency using inverse-optimum weights," *Journal of Public Economics* 187, (2020): 1–2

counts for more than John's, or that the utility of a member of one societal group counts for more than a member of another group.

51. That challenge of comparing utility extends to people at different points on the income distribution. To understand the analytical problem, consider comparing the value of an extra $100 to two people at different points in the income distribution. Economists can infer that the additional utility from going from a weekly income of $1,000 to $1,100 is smaller than going from $900 to $1,000 for a particular individual, call her Paula.[48] However, economists cannot state that $100 is worth more to Paula, going from $1,000 to $1,100, than for another person, Rick, going from $10,000 to $10,100, or how much more the $100 is worth to Paula versus Rick.[49] Again, that is because there is no commonly accepted measure of utility for comparing people, in this case Paula and Rick, or more generally less affluent versus more affluent people. Economists could make a comparison if we knew what the social welfare function was, but that surfaces the issue of identifying the weights without economists imparting their own value judgements.[50]

C. There Are Challenges Associated with Using the Personal Tax System for Arriving at Balancing Weights

52. A hypothetical solution to comparing the marginal utility of people at different points on the income distribution continuum would be to defer to society's personal income tax

[48] Economists can make this inference for individuals because we have empirical evidence that people have diminishing marginal utilities; economists lack that empirical evidence for comparing the utilities between people.

[49] That is, even if we assumed that the $100 was worth more to the less affluent than more affluent person, we still would not know how much more the money was worth to one than the other.

[50] Economists provide substantial research that can inform public policy discussions concerning various social issues, such as income inequality, poverty, discrimination, health, and so forth. Governments can use this research to inform their decisions on adopting or reforming policies.

system. The idea is that the relative tax burden borne by people at different points in the income distribution measures the weights that society has chosen to assign to those people.[51] Given that the income tax is progressive in many countries, including Canada, one could infer that since less affluent people pay a lower marginal tax rate than more affluent people, society ascribes a higher value to the extra dollar going to the poor person, and use the relative marginal tax rates as the social welfare weights.

53. A court or tribunal can consider the distributional effects of a merger and it could weight those distributional effects using progressive income tax rates. The resulting multiplication may be informative to the court and reflect its value judgments. However, as the quotations from the literature set out above established, there is no consensus in economics that the tax code could be used to establish balancing weights for the social welfare function for society as a whole. While I understand that the Tribunal has previously indicated that the tax system may be one of several sources from which a proper weighting can be inferred,[52] inferring balancing weights from the tax system has not been endorsed in the Canadian CBA guide for the purposes of addressing distributional concerns.[53]

[51] The use of the tax code is an application of the "inverse optimum" approach for determining social welfare weights. The idea is to infer the weights from the policy choices that have been made. An early contribution to this literature which suggested taking this approach noted the challenge: *See* Jean Drèze and Nicholas Stern, "The Theory of Cost-Benefit Analysis," in *Handbook of Public Economics*, ed. A.J. Auerbach and M. Feldstein (North-Holland: Elsevier Science Publishers, 1987), 960 ("If the inverse optimum is to be used as a method for finding welfare weights it must be applied with considerable care. First, the calculated welfare weights may be sensitive to the model of the economy and to which tools are assumed optimally chosen. Secondly, the assumption that the government has optimised must be examined critically.")

[52] Canada (Commissioner of Competition) v. Superior Propane Inc., Comp. Trib. 16, ¶¶ 110–113.

[53] Government of Canada, "Canada's Cost-Benefit Analysis Guide for Regulatory Proposals," Section 8, https://www.canada.ca/en/government/system/laws/developing-improving-federal-regulations/requirements-developing-managing-reviewing-regulations/guidelines-tools/cost-benefit-analysis-guide-regulatory-proposals.html.

54. Inferring balancing weights from the tax system for the purposes of a society-wide weighting is challenging as a matter of economics for at least four reasons, which I describe below.[54]

1. Welfare weights depend on all government policies, not just the tax system

55. Whatever weights society, through the political process, attaches to the welfare of individuals, including based on income, depends on the full constellation of policies and not just on the tax code. Various benefits in kind, such as funding of airports, higher education, and subsidies for electric vehicles may disproportionately benefit higher income people, while various government policies that target benefits to particular kinds of businesses, such as dairy firms, could disproportionately harm low-income people (e.g., restrictions on dairy imports may raise consumer prices).

56. It is straightforward to see that the social welfare function weights could be neutral even though the tax system is progressive. Suppose the economy has two kinds of people, As and Bs, and society adopts two policies, one of which makes "As the winners/Bs the losers", and another which makes "Bs the winners/As the losers." Society could design these policies so that the As and Bs are weighted the same after both policies are taken into consideration. Similarly, if both policies favor As, but to differing degrees, then neither policy on its own reflects the social welfare function. With a multitude of policies, including the tax system, creating winners and losers, there is no basis for taking a particular policy, such as the tax

[54] These same considerations would apply to an effort to infer the balancing weights from any other specific policy. See, for example, Matthew Adler, *Measuring Social Welfare: An Introduction* (Oxford: Oxford University Press, 2019), pp. 223–225 of Kindle edition.

system, and claiming that particular policy produces the right set of weights, while ignoring all other policies.[55]

2. Individual tax code may already account for distributional effects of other policies

57. The progressive individual tax code has been developed in the context of other government policies and therefore may already account for the distributional consequences of those policies. The progressive individual tax code along with the corporate tax code facilitates the redistribution of income among members of society.

58. Suppose in devising the tax legislation and regulations, the Canadian Parliament and government representatives are aware that other policies may disproportionately harm lower-income people. The progressive or "graduated" income tax system (or "tax code" for short) can be seen as a response to that concern and to other policies. When one of those other policies could result in an outcome that disproportionately harms lower-income people it would not make economic sense to use the progressive tax code as a justification for preventing that outcome to the extent the progressive tax code itself is a remedy for such outcomes.

59. From an economics perspective, it is therefore questionable whether the progressive tax code should be used as a basis for blocking mergers under section 96 given that the progressive tax code and section 96 coexist, along with many other policies that impact the income and wealth distributions and are determined pursuant to legislation passed by Parliament. In

[55] Jan Tinbergen illustrates that to achieve a desired multi-pronged policy target (for example, efficiency and equity), multiple policy instruments, each with differing trade-offs between policy targets, are required. *See* Jan Tinbergen, "Logical Structure of Simplest Quantitative Policy Problem (Targets and Instruments in Equal Numbers); Directives" in *On the Theory of Economic Policy* (Amsterdam: North-Holland Publishing Company, 1952), 27–36. In particular, it may be necessary to use two policies that are ostensibly opposed. *See* example f. of Peter V. Schaeffer, "A Note on the Tinbergen Rule" (working paper, 2020): 7–8.

addition, I understand that Parliament has amended Canada's progressive tax code many times since 1986 when the Competition Act was amended to include section 96. As reflected on a Canadian government website identifying previous versions of the *Income Tax Act*, that Act has been amended or changed over 90 times since 2004.[56]

3. Tax code is generally not used to formulate welfare weights for evaluating policies

60. The government has not generally chosen to use the progressive tax code to devise social welfare function weights for the purpose of evaluating regulatory policies. The argument for inferring social weights from the tax code is that the tax code reflects society's decisions on how to weight people at different income levels. Were that the case we would expect that the government would then generally use these weights to evaluate policies. As I noted above, Canada's cost-benefit guidelines are based on the neutrality principle. The guidelines allow for the possibility that decision makers consider adverse social effects, but the guidelines have not adopted the progressive tax code weights as a means of doing so.[57]

4. Individual marginal tax rates ignore long-run policy impacts

61. Reliance on the marginal tax rates that individuals are subject to at a point in time ignores long-run considerations including the impact of policies on long-term economic performance. People maximize long-run utility over their lifespans, and not short-run utility. They also consider family and intergenerational effects.[58] There is also considerable mobility of

[56] Government of Canada, "Justice Laws Website: Full Documents available for previous versions of Income Tax Act (R.S.C., 1985, c. 1 (5th Supp.))," https://laws-lois.justice.gc.ca/eng/acts/i-3.3/PITIndex.html.

[57] See ¶ 44 above.

[58] This is well recognized in the economics literature. *See, e.g.*, Helmuth Cremer and Pierre Pestieau, "Non-linear taxation of bequests, equal sharing rules, and the tradeoff between intra-family and inter-family inequalities," *Journal of Public Economics* 79 (2001), 35-53, discussing optimal estate taxes under different assumptions about how parents' utility functions incorporate their children's utility.

people over the income and wealth distribution over their lifespans.[59] The result of these considerations is that some lower-income people at a point in time could be worse off from distributional policies that benefit them in the short run but reduce economic opportunities and progress for themselves and loved ones in the long run. This point is relevant for considering productive efficiencies under section 96, which appears to be designed to achieve long-term economic gains for Canada.

IV. Balancing-Weights Approach Could Undermine the Purpose of Section 96, and the Commissioner's Calculations of the Balancing Weights Lack Sound Economic Support

A. Using Balancing Weights that Value Anticompetitive Effects More than Productive Efficiencies Could Undermine the Purpose of Section 96

62. The total surplus approach is consistent with cost-benefit analysis in that it is based on the principle of neutrality under which all members of society are weighted equivalently. An increase in total surplus is welfare-improving under the standard Pareto-Kaldor-Hicks approach.

63. For the purposes of section 96 of the Competition Act, the total surplus approach places the same weight on producer surplus as on consumer surplus and therefore fully credits the efficiencies from the merger. The total surplus approach therefore recognizes that increasing business efficiency can increase economic growth through the better allocation of scare economic resources and thereby benefit society overall. To the extent that the purpose of

[59] For example, of Canadians in the bottom quintile of the income distribution in 1990, 83 percent were in a higher quintile by 2009, and nearly a third were in the top two quintiles. *See* Charles Lammam, Amela Karabegovíc, and Niels Veldhuis, "Measuring Income Mobility in Canada," Fraser Institute Studies in Economic Prosperity, November 2012, Table 5.

efficiencies in merger law is to promote mergers that generate productive efficiencies even though they raise consumer prices, the total surplus approach will tend to accomplish that goal.

64. The balancing-weights approach departs from the total surplus approach to the extent that the weights differ across members of society. To the extent greater weight is placed on consumer surplus than on producer surplus, the analysis puts less weight on productive efficiencies and thereby makes it more likely that mergers that create productive efficiencies will be blocked. That raises the question of whether choosing balancing weights that depart significantly from neutrality is consistent with what appears to be the purpose of section 96 from an economics perspective. In considering that question, as a matter of economics, one would also need to account for the extent to which the progressive tax code, which co-exists with section 96, already deals with potential distributional concerns, at least to some degree.

B. Professors Osberg and Cuff Do Not Cite Any Support for the Assertion that the Balancing-Weights Approach Advocated by the Commissioner is Consistent with Sound Economics or Used in the Practice of Quantifying the Distributional Consequences of Proposed Policies

65. I understand that the total surplus standard is effectively the default approach for measuring efficiencies for the purposes of section 96. There are sound economic reasons why that standard should not be departed from unless there is a principled approach for doing so supported by reliable evidence for using the balancing-weights approach.

66. I reviewed the expert reports of Professors Osberg and Cuff submitted by the Commissioner in this proceeding for the purpose of assessing their opinions on the use of a

balancing-weights approach.[60] Professor Osberg advocates using a social welfare function, informed by his description of welfare approaches based on "utilitarianism" or "Rawlsianism," which could be used for weighting the distribution of different types of people. He states:[61]

> Economists have therefore developed the "Social Welfare Function" literature as a methodology for ascertaining whether a given policy or institutional or market change has made society "better off". Since a Social Welfare Function is defined as a weighted aggregation of individual utilities, it embodies the utility value of the consumer surplus of all households."

67. That is true, but it is an old literature, and it has largely "sputtered out" according to Professors Adler and Posner.[62] As I noted earlier, the social welfare function literature has not resulted in any generally accepted practical method for determining the balancing weights.

68. In his discussion of the social welfare function approach, Professor Osberg does not cite to any literature that would substantiate the claim that there is either a consensus on the determination of balancing weights or that this approach is commonly used in practice for quantifying distributional effects.[63] He cites to possibly relevant literature in three footnotes. In the first two footnotes on the social welfare function, aside from an old textbook, he has two cites to recent work. One citation is to a review of a book on measuring social welfare by Professor Adler.[64] The review itself does not assert that there is a consensus on determining the

[60] I am not offering any opinion of the empirical information they present on the distributional effects of the proposed transaction or the marginal tax rates paid by people at different points on the income distribution.

[61] Expert report of Lars Osberg, September 21, 2022, ¶ 53.

[62] Matthew D. Adler and Eric A. Posner, *New Foundations for Cost-Benefit Analysis,* (Cambridge, MA: Harvard University Press, 2006), 10–11. Based on my own review of the literature, I find no evidence that this situation has materially changed since this statement was written.

[63] Professor Osberg's discussion of the social welfare function approach—including his discussion of utilitarianism and Rawlsianism—is at pp. 29–36 of his report. He cites relevant literature in footnotes 46 and 56. *See* Expert Report of Lars Osberg, September 21, 2022.

[64] Noel Semple, "Review of Matthew D. Adler's *Measuring Social Welfare: An Introduction,*" *Erasmus Journal for Philosophy and Economics* 13, no. 1 (2020): 115–121; Walter Bossert and Kohei Kamaga, "An Axiomatization of the Mixed Utilitarian-Maximin Social Welfare Orderings," *Economic Theory* 69, no. 2 (2020): 451–473.

balancing weights or that the approach is widely used in practice. The review mentions that Professor Adler's book contains a chapter on application of the social welfare principles to a "hypothetical case study."[65]

69. Professor Adler's book, however, rejects inferring the social welfare function (SWF), and therefore balancing weights, from actual policies, such as the tax code.[66] He summarizes several arguments put forward for the "Revealed SWF" research. He observes that "'Revealed SWF' research … is problematic—at least in democratic societies." It is also based on a "problematic understanding of ethics." He says that "Revealed SWF research could perhaps inform Gov[ernments'] deliberations…. But there are major caveats. The chain of causation from citizens' ethical preferences in a given society to enacted policies is quite complex." All of these statements apply to trying to infer the social welfare function, and balancing weights, from the tax code. In addition to rejecting that approach, Professor Adler's book does not show that there is a consensus on how to apply SWF approach or that it is used to any extent in practice. His "hypothetical" case study of the application of the SWF approach is the only case study on the use of the SWF approach in the book.

70. The second citation is to an economic theory paper that "axiomatize[s] the class of mixed utilitarian-maximin social welfare ordering." This paper does not address the practical use of the social welfare function approach or the determination of balancing weights.[67]

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[65] Matthew Adler, *Measuring Social Welfare: An Introduction* (Oxford: Oxford University Press, 2019), pp. 161–202 of Kindle edition.

[66] Matthew Adler, *Measuring Social Welfare: An Introduction* (Oxford: Oxford University Press, 2019), pp. 223-225 of Kindle edition.

[67] According to the abstract of the paper Bossert and Kamaga "axiomatize the class of mixed utilitarian–maximin social welfare orderings. These orderings are convex combinations of utilitarianism and the maximin rule. Our first step is to show that the conjunction of the weak Suppes–Sen principle, the Pigou–Dalton transfer principle, continuity and the composite transfer principle is equivalent to the existence of a continuous and monotone

71. The third footnote cites Professor John Rawls, a famous 20th century American political philosopher, who was not an economist. Professor Rawls advocated that social welfare should be measured on the welfare of the worst-off individual in society and that, to maximize social welfare, one should seek to maximize the utility of the worst-off individual.[68] These are value judgments by a moral philosopher. Professor Osberg, however, does not show that the Rawlsian approach has been widely adopted by economists, that it is possible to estimate balancing weights based on it, or that it is used in practice.

72. Professor Cuff's report contains a footnote that references the optimal taxation literature,[69] but cites to nothing that would establish that there is any consensus for using relative marginal tax rates as social-welfare weights or that this approach is commonly used in practice.

73. I understand that counsel to the Commissioner has provided a spreadsheet advising of alleged socially adverse wealth transfers likely to arise from the challenged transaction, the weight the Commissioner alleges the transfer of wealth should be given, and the total amount

ordering of pairs of average and minimum utilities that can be used to rank utility vectors. Using this observation, the main result of the paper establishes that the utilitarian–maximin social welfare orderings are characterized by adding the axiom of cardinal full comparability. In addition, we examine the consequences of replacing cardinal full comparability with ratio-scale full comparability and translation-scale full comparability, respectively. We also discuss the classes of normative inequality measures corresponding to our social welfare orderings." Walter Bossert and Kohei Kamaga, "An axiomatization of the mixed utilitarian–maximin social welfare orderings," *Economic Theory* 69 no. 2 (2020): 451–473.

[68] John Rawls, "Social Unity and Primary Goods," in *Utilitarianism and Beyond*, ed. Amartya Sen and Bernard Williams (Cambridge, UK: Cambridge University Press, 1982), 159–186 and John Rawls, *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971). The Rawlsian approach results in a SWF that is a "maximin." For a formal discussion see Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (New York: Oxford University Press, 1995), 827–828.

[69] *See* Expert Report of Katherine Cuff, September 21, 2022 at n. 106.

of anticompetitive effects that the Commissioner is alleging.[70] That spreadsheet includes tabs calculating a "Socially Adverse Transfer" and a "Weighted Surplus."

74. In their expert reports, Professors Osberg and Cuff do not provide any support for the proposition that the derivation and use of the particular balancing weights advocated by the Commissioner in such "Social Adverse Transfer" or "Weighted Surplus" calculations are based on generally accepted methods in economics or a generally accepted practice of evaluating proposed government policies. Those balancing weights may reflect a value judgment on how to weight different members of society, but those weights are not based on sound economics.

[70] Email from John Tyhurst to Crawford Smith, October 12, 2022, Subject: RE: Commissioner of Competition v. Rogers and Shaw/CT-2002-002, attaching spreadsheet titled "2022-10-12-anticompetitive effects.xlsx."

David S. Evans

Curriculum Vitae

January 2022

Contact Details

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SSRN: SSRN Home Page for David S. Evans
IDEAS: IDEAS Home Page for David S. Evans

Professional Summary

My academic work has focused on industrial organization, including antitrust economics, with a particular expertise in platform businesses and the digital economy. I have authored six major books, including two award winners, and more than 100 articles and handbook chapters in these areas. The U.S. Supreme Court cited my work on multisided platforms and payment systems extensively in *State of Ohio v. American Express*.

I have developed and taught courses related to antitrust economics, multisided platforms, and the digital economy, primarily for graduate students, officials, judges, and practitioners. I have also have authored handbook chapters on various antitrust subjects.

My expert work has focused on antitrust, mergers, and regulation. I have served as a testifying expert on numerous antitrust matters in the United States, and other jurisdictions, including several landmark cases. I have made submissions to, and appearances before, antirust and regulatory authorities with respect to mergers, investigations, and regulation in the US and other jurisdictions.

I have also served as an expert on a variety of non-antitrust matters, particularly related to digital and platform businesses, intellectual property, financial markets, and payment systems.

Representative Matters

Epic Games v. Apple. Lead testifying economic expert for Epic Games on market definition, monopoly power, and anticompetitive effects related to Apple's conduct concerning app distribution and payment methods. Expert reports, deposition testimony, written testimony, and trial testimony. (2020-2021)

T-Mobile acquisition of Sprint. Economic expert for T-Mobile and Deutsche Telekom. Submitted declarations to the FCC concerning the effects of the proposed merger on consumer welfare. (2018-2019)

Qualcomm matters. Economic expert for Qualcomm on a series of matters in the US (Apple v. Qualcomm, *In re* Qualcomm Antitrust Litigation), China (NDRC v. Qualcomm), and South Korea (KFTC v. Qualcomm) on various antitrust and intellectual property issues. Expert reports and deposition testimony in Apple and expert reports in NDRC and KFTC matters. (2013-2019)

Federal Trade Commission v. 1-800 Contacts. Testimony on behalf of the FTC concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. Expert report and trial testimony on the economics of search engines and search advertising, market definition, and competitive effects. (2016-2017).

Comcast's Proposed Acquisition of Time Warner Cable. On behalf of Netflix, submitted multiple declarations to the Federal Communications Commission in opposition to the merger and made appearances before the Federal Communications Commissions and U.S. Department of Justice. Participated in debate, organize by the FCC, of economists for and against the merger. (2014-2015).

Qihoo 360 v. Tencent. Written testimony in support of Tencent before the Supreme People's Court, People's Republic of China, concerning Qihoo 360's market definition and abuse of dominance claims against Tencent. This was the first antitrust matter decided under the Anti-Monopoly Law by the Supreme Court of China. (September 2013)

Microsoft matters. Oral testimony and written submissions before the Grand Chamber, European General Court on various antitrust issues related to Microsoft's appeal of the EC decision with regard to media players and server interoperability. (April 2006). Lead team of economic experts for U.S. vs. Microsoft including original district court case and remand. (1998-2006).

U.S. v. AT&T. On behalf of U.S Department of Justice, lead team of economic experts in preparation of rebuttal testimony to AT&T's economists in landmark case leading to the break-up of AT&T. Work summarized in *Breaking Up Bell: Essays in Industrial Organization.* (1979-1981).

Professional Positions

Global Economics Group, LLC (2011-present)
Chairman and Co-Founder

Market Platform Dynamics, Inc. (2004-present)
Chairman and Founder

Competition Policy International, Inc. (2004-present)
Founder and Publisher
Editorial Board Chair, *CPI TechREG Chronicle*

University College London (2004-present)
Executive Director, Jevons Institute for Competition Law and Economics
Visiting Professor in the Faculty of Laws

University of Chicago Law School (2006-2016)
Lecturer

LECG, LLC (2004-2011)
Vice Chairman, LECG Europe
Head, Global Competition Policy Practice
Member of the Boards of Directors of various subsidiaries

NERA Economic Consulting (1988-2004)
Senior Vice President
Member of the Management Committee
Member of the Board of Directors

Fordham University (1983-1995)
Professor of Law, Fordham University Law School (1985-1995)
Associate Professor of Economics (1983-1989) (tenured as of 1988)

Charles River Associates (1975-1979)
Senior Consultant

Education

Ph.D., MA	Economics, University of Chicago, 1983
B.A.	Economics, University of Chicago, 1975 (completed first year of graduate program)

Teaching and Training

Teaching

University College London: "Multisided Plaforms: Business Economics & Competition Policy," intensive course taught annually since 2014; "Digital Economy: Economics, Antitrust & Regulation," intensive course taught annually since 2016; "The Role of Economics in Competition Law and Economics", two-trimester course taught 2005-2011.

University of Chicago, "EC Competition Law and Economics," focusing on advanced topics in antirust. Spring quarter seminar course taught 2006-2016.

Competition Policy International, "Antitrust Economics," 32 lecture online course, offered in 2013-2014.

Fordham University School of Law: Taught Law and Economics, and co-taught Antitrust Law, 1985-1995.

Training for Judges and Officials

Faculty, Training courses on antitrust law and economics for European Judges, sponsored by University College London and University of Touslouse, 2009-2010; lectures on basic economics and antitrust and intellectual property.

Training courses on antitrust law and economics for Chinese Supreme Court and High Court Judges, sponsored by Ministry of Industy and Information Technology, 2013-15; lectures on market definition, tying, platforms, dynamic competition and innovation, and antitrust of online industries.

Honors, Rankings, and Keynotes

Gold Medal Winner, Economics, 2017 Axiom Business Books Awards, for *Matchmakers: The New Economics of Multisided Platforms* (with R. Schmalensee).

Winner of the Business, Management & Accounting category in the 2006 Professional/Scholarly Publishing Annual Awards presented by the Association of American Publishers, Inc. for *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries* (with R. Schmalensee).

Top 2% of published economists, IDEAS/RePEC, based on quality-weighted citations (January 2022); ranked among top 20 economists, and top 20 law professors, on SSRN based on total downloads of papers (January 2022).

Keynote, Swedish Competition Authority Pro's and Con's, November 2019.

Keynote, 2019 Competition Law and Policy Institute of New Zealand, Sepember 2019.

Baxt Lecture, University of Melbourne, October 2018.

Keynote, UniSA & ACCC Competition Law & Economics Workshop, October 2018.

Special Keynote, CRESSE 2018 Conference on Advances in the Analysis of Competition Policy and Regulation, Crete, Greece, June 2018.

Keynote, Competition Law Conference, Singapore Academy of Law and Competition Commission of Singapore, August 2014.

Beesley Lecture, London Business School, October 2007.

Appearances in Competition and Regulatory Matters

Trial Testimony (including all matters in last four years)

Epic Games v. Apple, Case No. 4:20-cv-05640-YGR-TSH. Testimony on behalf of Epic Games addressing two primary topics: (1) To define the relevant antitrust markets for examining the app distribution and payment processing practices and assess Apple's market power in those markets, and (2) assessing whether the restrictions at issue foreclose competitors from operating in those relevant markets and harm competition and consumers in those relevant markets and related ones. (Written testimony filed April 20 and April 27, 2021. Oral testimony May 10, May 11, and May 14, 2021).

Seoul High Court Case No. 2017u48 (Claim for cancellation of corrective order imposed by Korea Fair Trade Commission on Qualcomm). Written testimony in support of Qualcomm before the Seoul High Court concerning the KFTC's claims of abuse of dominance. (Written testimony filed July 5, 2019).

In the Matter of 1-800 Contacts, Before the Federal Trade Commission, Office of Administrative Law Judges, Docket No. 9372. Testified in support of the Federal Trade Commission, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (April 2017).

In the Matter of the Application of Securities Industry and Financial Markets Association For Review of Actions Taken by Self-Regulatory Organizations Administrative Proceeding File No. 3-15350. Testified in support of the Securities Industry and Financial Markets Association (SIFMA), concerning whether securities exchanges face significant competitive constraints in setting their fees for depth-of-book data products. (April 2015).

Qihoo 360 v. Tencent. Written testimony in support of Tencent before the Supreme People's Court, People's Republic of China, concerning Qihoo 360's market definition and abuse of dominance claims against Tencent. (Written testimony filed for September 2013 trial). Also testified before the Guangdong High Court. (Written submission, April 2012)

Presidential Emergency Board No. 243, National Mediation Board, Case Nos. A-13569, A-13570, A-13572, A-13573, A-13574, A-13575, and A-13592. Testified in support of the National Railway Labor Conference concerning wages, benefits, and work rules for railroad workers. (October 2012).

Case T-201/04, *Microsoft v. Commission of the European Communities*. Testified in support of Microsoft before the Grand Chamber, European General Court of the European Union concerning the Commission's determination that Microsoft had abused its dominant position by refusing to license certain information regarding its operating system and by tying a media player to its Windows operating system. (April 2006).

Microsoft v. Commission of the European Communities. Testified before the President, European General Court of European Union in support of Microsoft's application for a suspension of remedies during its appeal of a Commission decision. (October 2004).

Microsoft v. Commission of the European Communities. Testified before Hearing Officer of the European Commision concerning the Commission's determination that Microsoft had abused its dominant position by refusing to license certain information regarding its operating system and by tying a media player to its Windows operating system. (October 2003).

I have also testified before US federal and state courts, and arbitration panels, as an expert on numerous non-antitrust matters.

Deposition Testimony (including all matters in last four years)

Federal Trade Commission v. Surescripts, LLC Case No. 19-cv-1080 (JDB). Testimony on behalf of the Federal Trade Commission concerning market definition, market power and antitcompetitive effects related to loyalty, exclusive, and non-compete contracts entered into by Surescripts for its e-prescribing networks. (January 2022).

TravelPass Group LLC, Partner Fusion, Inc., and Reservation Counter v. Caesars Entertainment Corporation, et al. Case No. 5:18-cv-153-RWS-CMC. Testimony on behalf of TravelPass concerning the competitive effects of agreements to restrict bidding on brand name keywords in search-engine auctions. (April 2021).

Epic Games v. Apple, Case No. 4:20-cv-05640-YGR-TSH. Testimony on behalf of Epic Games addressing two primary topics: (1) To define the relevant antitrust markets for examining the app distribution and payment processing practices and assess Apple's market power in those markets, and (2) assessing whether the restrictions at issue foreclose competitors from operating in those relevant markets and harm competition and consumers in those relevant markets and related ones. (March 2021).

In re Blue Cross Blue Shield Antitrust Litigation, Master File No. 2:13-CV-20000-RDP. Testified for the defendants concerning whether the Blue Cross Blue Shield platforms are two-sided platforms; whether the experts for the platforms had properly accounted for indirect networks, and related two-sided platforms issues, in the analyses of harm and damages; and whether certain Association rules harm competition in a properly defined relevant market. (January 2021).

J Thompson, et al., v. 1-800 Contacts, Inc., et al., Case No. 2:16-CV-1183-TC. Testified for class plaintiffs, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (February 2020).

In re Qualcomm Antitrust Litigation, Case No. 5:17-md-2773-LHK. Rebuttal testimony on behalf of Qualcomm addressing, from the standpoint of antitrust and intellectual property economics, whether the methodology and calculations presented by Plaintiffs were relevant or reliable. (December 2018).

Apple, Inc. v. Qualcomm, Incorporated, Case No. 17-cv-0108-GPC-MDD. Testified for Qualcomm concerning the economic impact of modern cellular technologies on the growth of the smartphone ecosystem, it's economic relevance to licensing negotiations concerning patents involving modern cellular technologies that are subject to a fair, reasonable, and non-discriminatory (FRAND) commitment under European Telecommunications Standards Institute (ETSI) intellectual property rights (IPR) policies, and to evaluate the impact of modern cellular technologies on Apple's revenues and the profits. (October 2018).

In the Matter of 1-800 Contacts, Before the Federal Trade Commission, Office of Administrative Law Judges, Docket No. 9372. Testified for the Federal Trade Commission, concerning the competitive effects of agreements between 1-800 Contacts and other online sellers of contact lenses that restricted certain forms of search advertising. (March 2017).

MarchBanks Truck Service, Inc., et al. v. Comdata Network, Inc., et al., Case No. 07-1078-JKG. Testified for defendant concerning allegations of anticompetitive behavior with respect to Comdata's agreements with certain truck stop chains. (August 2013).

Meredith Corporation et al. v. SESAC, Case No. 09 Civ. 9177 (PAE). Testified for defendant concerning allegations of anticompetitive behavior with respect to the blanket licensing of local television music performance rights. (May 2013).

I have also testified before federal and state courts and arbitration panels, including Presidential Emergency Boards, on matters related to employment discrimination, including class certification, and affirmative action.

Mergers

T-Mobile/Sprint Transaction, WT Docket 18-197, Federal Communications Commission, submitted declaration to the FCC concerning the dynamic effects of the proposed merger on cellular data prices and capacity, the competitive investment of other carriers, and the likely value of 5G capacity.

Comcast/Time Warner Cable Transaction, MB Docket No. 14-57, Federal Communications Commission. On behalf of Netflix, submitted multiple declarations to the Federal Communications Commission in opposition to the merger and made appearances before the Federal Communications Commissions and U.S. Department of Justice. Participated in debate, organize by the FCC, of economists for and against the merger.

AOL/Yahoo Transaction. Economic expert for AOL. Prepared economic studies of relevant market and impact of merger on shares, for submissions to the FTC.

Monster/HotJobs Transaction. Economic expert for Monster. Prepared economic studies on the relevant antitrust market for assessing the merger and the impact of the proposed merger impact of the proposed merger on the price of job ads. Met and made presentations to the FTC.

Google/DoubleClick Transaction. On behalf of Microsoft conducted economic studies of market definition and competitive effects of the proposed transaction, which were submitted to the FTC, European Commission, and other regulatory authorites, and made presentations to the FTC, European Commission, and ACCC.

Other Significant Antitrust Matters

NACHA Same-Day ACH. On behalf of NACHA, an association of most banks in the US, prepared economic study of the interchange fee between originating and receiving banks necessary for the launch of a new same-day ACH system in the US. Made presentations to the senior staff of the Federal Reserve Board.

U.S. v. Visa et al. concerning alleged exclusionary rules and duality and *U.S. v. Visa et al.* concerning alleged tying of credit and debit cards. On behalf of Visa, lead consulting economics team and worked with testifying experts.

U.S. v. Microsoft concerning alleged monopolization. On behalf of Microsoft, lead consulting economics team, including recruiting and working with testifying experts, for the 1998-1999 original trial and the 2002 trial concerning remedies.

U.S. v. AT&T concerning alleged monopolization. On behalf of the U.S. Department of Justice, lead consulting economics team, and worked with testifying expert, on rebuttal economics testimony.

Amicus Briefs

Brief of Amici Curiae of David S. Evans and Richard Schmalensee in Support of Respondents, *State of Ohio, et al., v. American Express Company, et al.* U.S. Supreme Court, 2018.

Brief of Amici Curiae of David S Evans and Richard Schmalensee in Support of Appellants-Cross Appellees, *US Airways v. Sabre Holdings Corp.*, 2nd Circut, 2017.

Brief of Amici Curiae Economists in Support of Petitioners, *Bell Atlantic v. Twombly,* U.S. Supreme Court, 2007 (Principal Author and Signatory).

Brief of Amici Curiae Economists in Support of Petitioners, *Leegin Creative Leather Products, Inc. v. PSKS, Inc.*, U.S. Supreme Court, 2007 (Contributor and Signatory)

Appearances and Submissions Before Competition and Regulatory Authorities

Australian Competition and Consumer Commission
Competition Commission of Singapore
Directorate General for Competition, European Commission
Federal Cartel Office, Germany
Korean Fair Trade Commission
Ministry of Commerce, People's Republic of China
National Development and Reform Commission, People's Republic of China
U.K. Competition and Markets Authority
U.S. Department of Justice
U.S. Federal Communications Commission
U.S. Federal Trade Commission
U.S. Securities and Exchange Commission
U.S. Federal Reserve Board

Publications

Books

The Evolution of Antitrust in the Digital Era: Essays on Competition Policy (Boston, MA: Competition Policy International, 2020), co-editor with A. Fels and C. Tucker.

Antitrust Analysis of Platform Markets: Why the Supreme Court Got It Right in *American Express* (Boston, MA: Competition Policy International, 2019), with R. Schmalensee.

Matchmakers: The New Economics of Multisided Platforms (Cambridge, MA: Harvard Business School Press, 2016), with R. Schmalensee. Published translations in Chinese, French, Japanese, Korean, andVietnamese. Gold Medal Winner, Economics, 2017 Axiom Business Book Awards.

Platform Economics: Essays on Multi-Sided Businesses, (Boston, Competition Policy International, 2011), with R. Schmalensee, M. Noel, H. Chang, and D. Garcia-Swartz. (Published in Chinese in 2016 by Economic Science Press.)

Interchange Fees: The Economics and Regulation of What Merchants Pay for Cards, (Boston, Competition Policy International, 2011), with R. Schmalensee, R. Litan, D. Garcia-Swartz, H. Chang, M. Weichert, A. Mateus.

Trustbusters: Competition Authorities Speak Out (Boston: Competition Policy International, 2009), co-editor with F. Jenny.

Catalyst Code: The Strategies of the World's Most Dynamic Companies (Massachusetts: Harvard Business School Press, 2007), with R. Schmalensee. Translated into Chinese, Korean, Polish, and Russian.

Invisible Engines: How Software Platforms Drive Innovation and Transform Industries, (Massachusetts: MIT Press, 2006), with A. Hagiu and R. Schmalensee. Translated into Chinese and Korean.Winner of the Business, Management & Accounting category in the 2006 Professional/Scholarly Publishing Annual Awards presented by the Association of American Publishers, Inc.

Paying with Plastic: The Digital Revolution in Buying and Borrowing (Massachusetts: MIT Press, first edition 1999, second edition 2005), with R. Schmalensee. Translated into Chinese.

Microsoft, Antitrust and the New Economy: Selected Essays (New York: Kluwer Academic Publishers, 2002), editor.

The Economics of Small Businesses: Their Role and Regulation in the U.S. Economy (New York: Holmes and Meier, 1986), with W. Brock.

Breaking Up Bell: Essays on Industrial Organization and Regulation (New York: Elsevier, 1983), editor and co-author of eight of ten chapters.

Articles, Book Chapters, and Working Papers

(Note: links to most of my publications since 2001 appear on my SSRN Home page and links to most of my publications before 2001 appear on my IDEAS Home page.)

"Tech Reg: Rules for the Digital Economy," *CPI TechREG Chronicle*, December 2021

"The Economics of Attention Markets," Working Paper, 2019.

"What Caused the Smartphone Revolution?," (with H. Chang and S. Joyce) Working Paper, 2019.

"Deterring Bad Behavior on Digital Platforms," in Evans, Fels, and Tucker, eds., *The Evolution of Antitrust in the Digital Era: Essays on Competition Policy* (Boston, MA: Competition Policy International, 2020), vol. 1.

"Vertical Restraints and the Digital Economy," in Evans, Fels, and Tucker, eds., *The Evolution of Antitrust in the Digital Era: Essays on Competition Policy* (Boston, MA: Competition Policy International, 2020), vol. 1.

"Basic Principles for the Design of Antitrust Analysis for Multisided Platforms," *Journal of Antitrust Enforcement,* Vol. 7, Iss. 3 (2019).

"Two-Sided Red Herrings," (with R. Schmalensee), *Antitrust Chronicle*, October 2018.

"The Role Of Market Definition in Assessing Anticompetitive Harm in Ohio v. American Express," (with R. Schmalensee) *Antitrust Chronicle,* June 2019.

"Attention Platforms, the Value of Content, and Public Policy," *Review of Industrial Organization* Vol. 54 (June 2019).

"What *Times-Picayune* Tells Us About the Antitrust Analysis of Attention Platforms," *Competition Policy International Antitrust Chronicle*, April 2019

"Ignoring Two-Sided Business Reality Can Also Hurt Plaintiffs," (with R. Schmalensee), *Antitrust Chronicle,* April 2018.

"Applying the Rule of Reason to Two-Sided Platform Businesses," *University of Miami Business Law Review* (with R. Schmalensee), Vol. 26, Iss. 2 (2018).

"Multi-Sided Platforms," *New Palgrave Dictionary of Economics Online*, 2017 (with R. Schmalensee) (forthcoming).

"Economic Findings Concerning the State of Competition for Wired Broadband Provision to U.S. Households and Edge Providers," Working Paper, 2017.

"Network Effects: March to the Evidence, Not to the Slogans," *Antitrust Chronicle*, September 2017 (with R. Schmalensee).

"Why the Dynamics of Competition for Online Platforms Leads to Sleepless Nights, But Not Sleepy Monopolies," in N. Charbit, ed., *Douglas H. Ginsburg Liber Amicorum: An Antitrust Professor on the Bench*, 2017.

"The Emerging High-Court Jurisprudence on the Antitrust Analysis of Multisided Platforms," *Antitrust Chronicle*, February 2017. Also in D. Gerard, E. Morgan de Ribery and Bernd Meyring, *Dynamic Markets, Dynamic Competition and Dynamic Enforcement* (Brussels: Bruyland, 2018)

"The Businesses That Platforms Are Actually Disrupting," *Harvard Business Review*, September 21, 2016 (with R. Schmalensee).

"Mobile Advertising: Economics, Evolution, and Policy," *Antitrust Chronicle,* June 2016.

"A Deep Look Inside Apple Pay's Matchmaker Economics," *Harvard Business Review,* June 17, 2016 (with R. Schmalensee).

"The Best Retailers Combine Bricks and Clicks," *Harvard Business Review,* May 30, 2016 (with R. Schmalensee).

"What Platforms Do Differently than Traditional Businesses," *Harvard Business Review,* May 11, 2016 (with R. Schmalensee).

"Why Winner-Takes-All Thinking Doesn't Apply to the Platform Economy," *Harvard Business Review*, May 4, 2016 (with R. Schmalensee).

"Some of the Most Successful Platforms Are Ones You've Never Heard Of," *Harvard Business Review*, March 28, 2016 (with R. Schmalensee).

"How We Learned (Almost) Everything That's Wrong with U.S. Census Data," *Harvard Business Review*, March 11, 2016 (with R. Schmalensee).

"Multisided Platforms, Dynamic Competition and the Assessment of Market Power for Internet-based Firms," *Competition Policy International*, Spring 2016.

"The Move to Smart Mobile and Its Implications for Antitrust Analysis of Online Market," *UC Davis Business Law Journal*, 2016 (with Hemant Bhargava and Deepa Mani).

"An Empirical Examination of Why Mobile Money Schemes Ignite in Some Developing Countries but Flounder in Most," *Review of Network Economics*, 2015.

"The Impact of the U.S. Debit Card Interchange Fee Caps on Consumer Welfare: An Event Study Analysis," (with H. Chang and S. Joyce), *Journal of Competition Law and Economics*, 2015.

"The Antitrust Analysis of Multi-Sided Platform Businesses," (with R. Schmalensee), in *Oxford Handbook on International Antitrust Economics*, R. Blair and D. Sokol, eds., Oxford: Oxford University Press, 2015.

"Assessing Unfair Pricing Under China's Anti-Monopoly Law for Innovation-Intensive Industries," University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 678. Competition Policy International, Spring 2014. Chinese version published in the NDRC Price Journal (with V. Zhang and X. Zhang).

"Economic Aspects of Bitcoin and Other Decentralized Public-Ledger Currency Platforms," University of Chicago Coase-Sandor Institute for Law and Economics Research Paper No. 685, May 2014.

"The Antitrust Analysis of Rules and Standards for Software Platforms," *Competition Policy International*, Autumn 2014.

"Market Definition Analysis in Latin America with Applications to Internet-Based Industries," (with E. Mariscal), Working Paper (University of Chicago Law School and Centro de Investigacion y Docencia Economica), 2013.

"Paying with Cash: A Multi-Country Analysis of the Past and Future Use of Cash for Payments by Consumers," (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

"Payments Innovation and the Use of Cash," (with K. Webster, G. Colgan, and S. Murray), Working Paper (University of Chicago Law School and Market Platform Dynamics), 2013.

"The Consensus Among Economists on Multisided Platforms and Its Implications for Excluding Evidence that Ignores It," *Antitrust Chronicle*, 2013, 6(1).

"Analzying Competition among Internet Players: Qihoo 360 v. Tencent," (with V. Y. Zhang and H. Chang), *Antitrust Chronicle,* 2013, 5(1).

"Attention Rivalry among Online Platforms", *Electronics Intellectual Property, MIIT China,* 2013, 9, 30-41(in Chinese).

"Attention Rivalry among Online Platforms and Its Implications for Antitrust Analysis," *Journal of Competition Law and Economics,* 2013, 9(2), 313-357.

"Economics of Vertical Restraints for Multi-Sided Platforms," *Competition Policy International,* 2013, 9(1).

"The Role of Keyword Advertising in Competition among Rival Brands," (with Elisa Mariscal). *Antitrust Chronicle,* 2012, 12(1).

"Will the Wheatley Recommendations Fix LIBOR?" (with R.M. Abrantes-Metz). *Antitrust Chronicle,* 2012, 11(2).

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ACKNOWLEDGEMENT OF EXPERT WITNESS

I, David Evans, acknowledge that I will comply with the Competition Tribunal's code of conduct for expert witnesses which is described below:

1. An expert witness who provides a report for use as evidence has a duty to assist the Tribunal impartially on matters relevant to his or her area of expertise.

2. This duty overrides any duty to a party to the proceeding, including the person retaining the expert witness. An expert is to be independent and objective. An expert is not an advocate for a party.

10/06/2022 

(Date) David Evans, PhD, MA, Economics

Appendix C: Materials Relied Upon

I. Litigation

A. Case filings and legislation

- Canada (Commissioner of Competition) v. CCS Corp. 2012 Comp. Trib. 14. ¶¶ 281–283.
- Canada (Commissioner of Competition) v. Superior Propane Inc. (C.A.) 2001 FCA 104 ("Superior Propane II"). ¶ 139, ¶¶ 159–160.
- Canada (Commissioner of Competition) v. Superior Propane Inc., Comp. Trib. 16. ¶¶ 110–113.
- Competition Tribunal Act, R.S.C., 1985, c. 19 (2nd Supp.), s. 45.
- Executive Order 12291, Feb. 17, 1981, https://www.archives.gov/federal-register/codification/executive-order/12291.html.
- Government of Canada, "Justice Laws Website: Full Documents available for previous versions of Income Tax Act (R.S.C., 1985, c. 1 (5th Supp.))," https://laws-lois.justice.gc.ca/eng/acts/i-3.3/PITIndex.html.
- Ohio v. Am. Express Co. 138 S. Ct. 2274, 2280-81, 2285-89, 2300 (2018).
- Tervita Corp. v. Canada (Commissioner of Competition) [2015] 1 S.C.R. 161. ¶ 99.

B. Discovery

- Email from John Tyhurst to Crawford Smith, Subject: RE: Commissioner of Competition v. Rogers and Shaw/CT-2002-002, attaching spreadsheet titled "2022-10-12-anticompetitive effects" (October 12, 2022).

C. Expert reports and declarations

- Expert Report of Katherine Cuff, September 21, 2022.
- Expert Report of Lars Osberg, September 21, 2022.

II. Publicly available documents

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