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Restoring Internet Freedom as an Example of How to Regulate

*Jerry Ellig**

ABSTRACT

Thomas Lambert's *How to Regulate* urges regulators to diagnose the extent and causes of the problems they seek to solve and consider the benefits and costs of alternative solutions. It also warns that government officials are affected by the incentives and knowledge constraints they face, and regulations should be designed to mitigate this problem. The Federal Communications Commission's *Restoring Internet Freedom* order provides examples of these principles in practice. In its assessment of blocking, throttling, paid prioritization, and other general business conduct of broadband providers, the order first utilized economic research to identify the extent and causes of the underlying problems the FCC sought to solve, then selected alternative solutions tailored to address the problems. In deciding whether to classify broadband as a Title I information service or a Title II telecommunications service, the FCC took note of regulators' incentives under Title II to extend regulation to include regulation of prices, unbundling requirements, and other types of regulation that the FCC had imposed on telecommunications carriers in the past. Reclassifying broadband under Title I reduced the risk of expanded regulation that would expropriate broadband firms' sunk investments.

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I. INTRODUCTION

Thomas Lambert's book, *How to Regulate*,¹ is a highly readable and cogent guide to fundamental principles of regulatory analysis. Key principles include (1) diagnosing the extent and cause of the problem regulators seek to solve, (2) identifying alternative solutions, and (3) comparing the benefits and costs of the alternatives.² As Lambert notes, on the federal level, these principles are enshrined in the executive orders that govern regulatory analysis in executive branch agencies.³ Some independent agencies have adopted the same or similar principles to guide their regulatory analysis.⁴

Lambert also suggests an important principle that gets less attention from regulatory agencies: "[G]overnment officials do not shed their self-interested nature when they step into the public square."⁵ Public choice, a research program in economics and political science, explains how public officials' decisions are affected by the incentives and knowledge constraints created by the government institutions within which they function.⁶ The fact that government officials, like private citizens, can be expected to respond to the incentives and constraints they face may create adverse consequences that should be taken into account when choosing whether or how to regulate.

This article presents a practical application of these principles in action by describing the economic analysis in the Federal Communications Commission's ("FCC") 2017 *Restoring Internet Freedom* order.⁷ The FCC's decision to repeal and replace the net neutrality rules adopted in 2015 is largely consistent with Lambert's own recommendations on net neutrality.⁸ As one might expect, however, the FCC's order offers a much more extensive explanation based on the public record in the proceeding and relevant economic literature.⁹

The 2015 *Open Internet* order prohibited Internet Service Providers ("ISPs") from blocking or throttling content, or offering content providers paid prioritization of their traffic.¹⁰ An ISP blocks content when it prevents the content from

1. THOMAS LAMBERT, *HOW TO REGULATE: A GUIDE FOR POLICYMAKERS* (2017).

2. *Id.* at 14–15.

3. *Id.* at 252.

4. See, e.g., SECURITIES & EXCH. COMM'N, DIV. OF RISK, STRATEGY, & FIN. INNOVATION, AND OFFICE OF GEN. COUNSEL, MEMORANDUM: CURRENT GUIDANCE ON ECONOMIC ANALYSIS IN SEC RULEMAKINGS 1–2 (2012).

5. Lambert, *supra* note 1, at 33.

6. See generally James M. Buchanan, *Public Choice: The Origins and Development of a Research Program*, PUBLIC CHOICE SOCIETY (2003), <https://publicchoicesociety.org/content/general/PublicChoiceBooklet.pdf>; Gordon Tullock, *Public Choice*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS 5234–39 (Stephen N. Durlauf & Lawrence E. Blume eds., 2008) (These sources provide nontechnical explanations of public choice by two of its founders).

7. In the Matter of Restoring Internet Freedom, 33 FCC Rcd. 311 (F.C.C. January 4, 2018) [hereinafter *Restoring Internet Freedom*]. This Article refers to the order as the "2017 order" because it was adopted at the December 2017 commission meeting.

8. See Lambert, *supra* note 1, at 175–83.

9. See generally Jerry Ellig et al., *Economics at the FCC, 2017–2018: Internet Freedom, International Broadband Pricing Comparisons, and a New Office of Economics and Analytics*, 53 REV. INDUS. ORG. 681 (2018) (This Article draws heavily on work from that previous article. However, any statements or conclusions that go beyond what is contained in that article are solely the author's).

10. Protecting and Promoting the Open Internet, 30 FCC Rcd. 5601, 5607 (F.C.C. Mar. 12, 2015) [hereinafter *Open Internet Order*].

reaching subscribers; it throttles content when it deliberately slows or otherwise degrades the quality of transmission.¹¹ The order also imposed a “general conduct rule” that prohibited any business practices that would create “unreasonable interference or disadvantage.”¹² A prior court decision said that imposition of these rules amounted to common carrier regulation, which the FCC lacked legal authority to impose so long as broadband was classified as an information service under Title I of the Communications Act.¹³ To ensure that it had legal authority to impose these rules, the FCC reclassified broadband as a telecommunications service under Title II of the Communications Act.¹⁴ This reclassification made broadband eligible for the full panoply of common carrier regulations, including regulation of entry, prices, network unbundling, interconnection, discontinuance of service, and quality of service.¹⁵ In the 2015 order, the FCC forbore from imposing these other types of common carrier regulations and associated recordkeeping and reporting requirements.¹⁶

The 2017 *Restoring Internet Freedom* order removed the prohibitions on blocking, throttling, and paid prioritization.¹⁷ It also repealed the general conduct rule.¹⁸ ISPs were required to disclose whether they engage in any blocking, throttling, or paid prioritization.¹⁹ Broadband was reclassified as a Title I information service, making it ineligible for common carrier regulation.²⁰

The 2017 order’s decisions on blocking and throttling, paid prioritization, and the general conduct rule are informed by an extensive diagnosis of the problems the regulations are intended to solve and an assessment of the merits of alternative solutions. The decision to reclassify broadband from Title II to Title I takes into account the public choice incentives that could lead regulators to behave in a less-than-optimal way.

The rest of this article proceeds as follows: Part II demonstrates how the FCC’s analysis of blocking and throttling assessed the extent and cause of the problem and evaluated alternative solutions. The FCC concluded that broadband providers often have financial incentives to avoid blocking and throttling, and when they do not, a combination of disclosure, consumer protection, and antitrust regulation was more carefully tailored to prevent blocking and throttling when they harm consumers. Part III shows why the FCC decided that “rule of reason” antitrust enforcement would be superior to an outright ban: the published mainstream economics literature showed that paid prioritization could either advance or harm consumer welfare depending on the specific facts and circumstances. Part IV explains why the FCC decided that the general conduct standard was vague and was likely to deter pro-consumer innovation. The FCC determined that, because they are guided by an established body of precedent, the general antitrust and consumer protection laws would do a better job of deterring as-yet-

11. Shane Greenstein et al., *Net Neutrality: A Fast Lane to Understanding the Trade-Offs*, 30 J. ECON. PERSP. 127, 128 (2016), <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.30.2.127>.

12. *Restoring Internet Freedom*, *supra* note 7, at 5661.

13. *Verizon v. FCC*, 740 F.3d 623, 628 (D.C. Cir. 2014).

14. *Open Internet Order*, *supra* note 10, at 134–35.

15. *Id.* at 214–54.

16. *Id.* at 217–19.

17. *Restoring Internet Freedom*, *supra* note 7, at 147–60.

18. *Id.* at 142–47.

19. *Id.* at 217–18.

20. *Id.* at 4.

unimagined, anti-consumer business practices while leaving broadband firms greater freedom to innovate. Part V shows how the reclassification of broadband from Title II to Title I was explicitly intended to reduce the risk created by regulators' public choice incentive to expropriate broadband providers' sunk investments. Part VI concludes.

II. BLOCKING AND THROTTLING

The published economics literature assessing whether blocking can harm consumers consists of theoretical modeling. The preponderant result from these models is that blocking the content that consumers want to access diminishes consumer welfare.²¹ One paper that examines the blocking of content that competes with the ISP's own services finds that prohibiting this blocking can either increase or decrease consumer welfare, depending on the circumstances.²²

Throttling has been less explicitly examined in the economics literature. If throttling is severe enough that it makes an application or content unusable, then logically it is tantamount to blocking. Thus, there is a possibility of consumer harm if ISPs choose to block or throttle. But to demonstrate that a significant systemic problem exists that regulation might solve, one must determine whether ISPs are likely to block or throttle.

It is clear that openness (i.e., the absence of blocking or throttling) is important to many stakeholders, including ISPs' subscribers.²³ If ISPs face competition, one that blocks or throttles runs the risk of losing subscribers to competing ISPs.²⁴ As a result, the *Restoring Internet Freedom* order examined the extent of competition in broadband to determine whether it is strong enough to constrain blocking or throttling that would harm consumers.²⁵

Broadband competition does not meet the economics textbook ideal of "perfect competition."²⁶ However, the data show that many ISPs face noticeable competitive constraints. Table 1 shows the percentage of the U.S. population living in census blocks with various numbers of residential wireline broadband ISPs as of December 2016. A majority of Americans live in census blocks with two or more wireline ISPs offering service of at least 25 megabits per second ("Mbps") download and 3 Mbps upload. Two-thirds live in census blocks with two or more wireline competitors offering service of at least 10 Mbps download and 1 Mbps upload.

21. Mark A. Jamison et al., Economic Scholars' Summary of Economic Literature Regarding Title II Regulation of the Internet 8 (July 15, 2017), <https://www.fcc.gov/ecfs/filing/107150597330219>.

22. Sébastien Broos & Axel Gautier, *The Exclusion of Competing One-Way Essential Complements: Implications for Net Neutrality*, 52 INT'L. J. INDUS. ORG. 358, 361 (2017).

23. "Stakeholders from across the Internet ecosystem oppose the blocking and throttling of lawful content, including ISPs, public interest groups, edge providers, other content producers, network equipment manufacturers, government entities, and other businesses and individuals who use the Internet." Restoring Internet Freedom, *supra* note 7, at 468 (footnotes omitted); *see also* Maureen K. Ohlhausen, Comment Letter on FCC's Notice of Proposed Rulemaking on Restoring Internet Freedom 9 (July 17, 2017).

24. Maureen K. Ohlhausen, *Antitrust over Net Neutrality: Why We Should Take Competition in Broadband Seriously*, 15 COLO. TECH. L.J. 119, 146-47 (2016).

25. Restoring Internet Freedom, *supra* note 7, at 383-94.

26. *Id.* at 385 n.464.

Table 1: Percent of US population in developed census blocks with fixed residential broadband ISPs as of December 31, 2016

| Speed of at least | Number of providers | | | |
|-------------------------------|---------------------|-------|-------|------|
| | 3+ | 2 | 1 | 0 |
| 3 Mbps down and 0.768 Mbps up | 12.1% | 67.2% | 16.2% | 4.4% |
| 10 Mbps down and 1 Mbps up | 9.0% | 58.5% | 26.3% | 6.2% |
| 25 Mbps down and 3 Mbps up | 5.9% | 45.2% | 39.6% | 9.2% |

Source: Restoring Internet Freedom, *supra* note 7 at 73.

Two wireline ISPs are likely to create significant competitive pressure. Since most of an ISP's investment is sunk and the marginal cost of adding an additional customer is low, as few as two ISPs face strong incentives to compete vigorously.²⁷ This inference is consistent with empirical research showing that the addition of a second competitor has the largest impact on prices,²⁸ and the addition of a fourth broadband competitor has negligible impact.²⁹

Broadband ISPs also face competitive constraints from entities other than wireline ISPs. Table 2 shows the percentage of the U.S. population living in developed census blocks with various numbers of fixed broadband ISPs. Fixed ISPs include wireline ISPs as well as fixed satellite and fixed wireless. Including these competitors, virtually all Americans live in census blocks served by two competitors offering service at a speed of at least 10 Mbps download and 1 Mbps upload, and more than 90% live in census blocks with three competitors. Three-quarters of Americans live in census blocks with at least two competitors offering speeds of 25 Mbps download and 3 Mbps upload.

27. See Dennis W. Carlton & Jeffrey M. Perloff, *MODERN INDUS. ORG.* 59–60 (4th ed. 2005); Jonathan E. Nuechterlein & Philip J. Weiser, *DIGITAL CROSSROADS: TELECOMM. LAW AND POL'Y IN THE INTERNET AGE* 8–10 (2nd ed. 2013); Jerry Hausman & J. Gregory Sidak, *Telecommunications Regulation: Current Approaches with the End in Sight*, *ECON. REG. AND ITS REFORM: WHAT HAVE WE LEARNED?* 345, 353–54 (Nancy L. Rose ed. 2005); Org. for Econ. Co-operation and Dev., *THE DEV. OF FIXED BROADBAND NETWORKS* 11 (Jan. 8, 2015), [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/CISP\(2013\)8/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/CISP(2013)8/FINAL&docLanguage=En).

28. Howard A. Shelanski, *Adjusting Regulation to Competition: Toward a New Model for U.S. Telecommunications Policy*, 24 *YALE J. REG.* 55, 91 (2007); Timothy F. Bresnahan & Peter C. Reiss, *Entry and Competition in Concentrated Markets*, 99 *J. POL. ECON.* 977, 1006 (1991); Allan Collard-Wexler, *Demand Fluctuations in the Ready-Mix Concrete Industry*, 81 *ECONOMETRICA* 1003, 1008 (2013); Paul A. Pautler, *Evidence on Mergers and Acquisitions*, 48 *ANTITRUST BULL.* 119, 200–01 (2003).

29. See generally Mo Xiao & Peter F. Orazem, *Does the Fourth Entrant Make Any Difference? Entry and Competition in the Early U.S. Broadband Market*, 29 *INT'L J. INDUS. ORG.* 547 (2011).

Table 2: Percent of US population in developed census blocks with fixed residential broadband ISPs as of December 31, 2016

| Speed of at least | Number of providers | | | |
|-------------------------------|---------------------|-------|-------|------|
| | 3+ | 2 | 1 | 0 |
| 3 Mbps down and 0.768 Mbps up | 97.0% | 2.8% | 0.1% | 0.1% |
| 10 Mbps down and 1 Mbps up | 93.6% | 5.7% | 0.6% | 0.1% |
| 25 Mbps down and 3 Mbps up | 43.9% | 32.6% | 19.1% | 4.4% |

Source: Restoring Internet Freedom, *supra* note 7 at 73.

Fixed broadband does not exhaust the competitive possibilities. As of 2017, four wireless broadband carriers offering speeds of 3G or better covered 92% of the U.S. population, including 69% of rural areas.³⁰ One in five households use only mobile broadband at home, including 15% of households with incomes exceeding \$100,000 annually.³¹ The 2017 order also notes that “[w]ith the advent of 5G technologies promising sharply increased mobile speeds in the near future, the pressure mobile exerts in the broadband marketplace will become even more significant.”³²

As an alternative to regulatory prohibitions, the FCC considered whether mandatory disclosure, consumer protection laws, and antitrust laws can prevent blocking or throttling that harms consumers.³³

A key prerequisite for effective consumer choice is consumer knowledge of whether an ISP engages in blocking or throttling. Some ISPs have voluntarily declared that they do not block or throttle—either due to competitive pressures or fear of public shaming.³⁴ Others have not. To ensure that consumers know whether their ISPs block or throttle, the FCC retained a rule that requires ISPs to disclose blocking, throttling, paid prioritization, and other business practices.³⁵ If an ISP claims that it does not block or throttle but then does so anyway, it can be prosecuted for failing to obey the disclosure rule as well as for conducting unfair or deceptive business practices under the Federal Trade Commission Act.³⁶ If an ISP acknowledges that it blocks or throttles, it could be liable under the antitrust laws if the blocking or throttling produces consumer harm with no offsetting consumer benefits.³⁷

It is instructive to note that the two most significant cases of alleged blocking or throttling discussed in the 2015 *Open Internet* order could arguably have been

30. Restoring Internet Freedom, *supra* note 7, at 387.

31. *Id.* at 75.

32. *Id.* at 75–76.

33. *Id.* at 72–73.

34. *Id.* at 87–92.

35. *Id.* at 125–35.

36. Ohlhausen, *supra* note 23, at 128.

37. “The rule of reason adopts an all-encompassing inquiry, paying close attention to the consumer benefits and downsides of the challenged practice based on the facts at hand. If that inquiry shows that a particular act of paid prioritization, throttling, or blocking enhanced consumer welfare, then that should be the end of the matter from a competition standpoint.” Ohlhausen, *supra* note 24, at 142.

prosecuted as antitrust or consumer protection cases. *Madison River* involved a local phone company that provided Digital Subscriber Line (“DSL”) service but blocked ports used by Voice over Internet Protocol (“VOIP”) applications, thus preventing VOIP providers from competing with its telephony business.³⁸ Comcast’s throttling of BitTorrent streams could have been pursued as a consumer protection case, because Comcast failed to disclose the throttling and initially refused to characterize it as such.³⁹ The Federal Trade Commission (“FTC”) requires businesses to disclose material information to consumers if failure to do so would mislead consumers, and failure to provide the product or service the consumer purchased is considered an unfair or deceptive trade practice.⁴⁰ Since BitTorrent enabled users to view video they would otherwise have had to purchase through Comcast’s On Demand service, an anticompetitive foreclosure claim may also have been possible.⁴¹

Use of the antitrust and consumer protection laws to thwart anti-consumer blocking or throttling is not just a theoretical possibility. In 2015, the FTC successfully prosecuted TracFone for claiming that its plans provide unlimited data, only to later throttle customers who used 1–3 gigabytes (“GB”) of data a month and cut off customers who used 4–5 GB a month.⁴²

The FCC concluded that the potential harm to consumers from blocking and throttling is real. However, the FCC’s diagnosis of the problem found that the likelihood that broadband providers will engage in blocking or throttling is substantially mitigated because consumers value openness and broadband ISPs often face significant competition. Mandatory disclosure of blocking or throttling would facilitate consumer choice and enforcement of the consumer protection and antitrust laws, which prohibit false, misleading, or anticompetitive business practices.

III. PAID PRIORITIZATION

No ISP has implemented paid prioritization. Therefore, all the economics literature evaluating the consumer welfare effects of paid prioritization consists of theoretical models. This economics literature shows unambiguously that under some plausible conditions, paid prioritization could harm consumers, and under other plausible conditions, paid prioritization could benefit consumers.⁴³ A zero price for edge providers is the efficient price only under special conditions.⁴⁴

38. Restoring Internet Freedom, *supra* note 7, at 66.

39. *Id.* at 88.

40. Ohlhausen, *supra* note 23, at 84, n.501. (“The practices that concern advocates of net neutrality regulation involve consumer protection issues. For example, much of the concern about Comcast’s alleged treatment of certain BitTorrent streams was that it was not apparent to consumers, and therefore Comcast allegedly deceived consumers about the service they purchased.”).

41. Restoring Internet Freedom, *supra* note 7, at 88.

42. *Id.* at 84, n.501.

43. Jameson et al, *supra* note 21, at 361–365.

44. See generally Mark Bykowsky and William W. Sharkey, *Welfare Effects of Paid for Prioritization Services: A Matching Model with Non-Uniform Quality of Service* (2014), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2468202. The *Restoring Internet Freedom* order notes, “The *Title II Order* cited three papers by [former FCC chief] economist Michael Katz to support its conclusions about paid prioritization—fully half of the economic literature cited in favor of the ban. See *Title Order II*, 30 FCC Rcd at 5655, para. 126 & nn.296–97. In response, Katz has written that his papers simply “do not” support the conclusions of the *Title II Order*. Katz, *Wither U.S. Net Neutrality Regulation?* at 459. See also Benjamin E. Hermalin and Michael L. Katz, *The Economics of Product-*

When competition exists among ISPs, the possibility that paid prioritization could harm consumers is less likely.⁴⁵ The 2017 order's competition analysis (described above) found that broadband ISPs face material competitive constraints.

There are two possible reasons market power raises concerns about allowing ISPs to charge content providers as well as subscribers. First, an ISP could theoretically have a large enough market share that it could charge the content provider a supracompetitive price.⁴⁶ Second, an ISP of any size might possess a "terminating access monopoly"—that is, a monopoly over access to its subscribers.⁴⁷ Consider each in turn.

A. *ISP with Large Market Share*

In theory, an ISP with a very large market share of subscribers could charge edge providers a supracompetitive price to access subscribers.⁴⁸ Therefore, the FCC examined competition in the market for access to subscribers.⁴⁹ The largest wireline broadband ISP, Comcast, serves approximately one-quarter of subscribers in the US.⁵⁰ Even if Comcast was willing and able to extract a supracompetitive price from an edge provider, that provider could still access the remaining three-quarters of the market via ISPs with smaller market shares and less ability to influence prices.⁵¹ The larger edge providers, such as Netflix, Google, and Amazon, have significant bargaining leverage of their own.⁵²

Indeed, it is not even clear whether an ISP that possesses some power over prices to edge providers would choose to charge a supracompetitive price. The value of the ISP's platform to subscribers increases when subscribers can access more content, so even an ISP with market power over edge providers has a countervailing incentive to keep prices to edge providers competitive in order to offer more content that will attract subscribers.⁵³

B. *Terminating Access Monopoly*

A conceptually separate question is whether any ISP, regardless of size, could charge edge providers a supracompetitive price because it has a monopoly over access to its particular subscribers.⁵⁴ Telecommunications economists call this phenomenon "terminating access monopoly."⁵⁵ Terminating access monopoly is

Line Restrictions with an Application to the Network Neutrality Debate, 19 INFO. ECON. & POL. 215, 48 (2007) (demonstrating that regulations that require a platform owner to provide a single quality of service can reduce economic welfare)." Restoring Internet Freedom, *supra* note 7, at 150 fn. 927.

45. Viktória Kocsis & Paul Bijl, *Network Neutrality and the Nature of Competition Between Network Operators*, 4 INT'L ECON. & ECON. POL'Y 159, 180–181 (2007); Bykowsky & Sharkey, *supra* note 44, at 6.

46. Restoring Internet Freedom, *supra* note 7, at 78–80.

47. *Id.* at 80–82.

48. Greenstein et al., *supra* note 11 at 135, 137–39.

49. Restoring Internet Freedom, *supra* note 7, at 78.

50. *Id.* at 79.

51. *Id.*

52. *Id.* at 80.

53. *Id.*

54. *Id.*

55. Jerry Ellig, *Intercarrier Compensation and Consumer Welfare*, 2005 J. LAW, TECH., & POL'Y 97, 103 (2005).

the primary economic justification for regulation cited in the 2015 *Open Internet* order.⁵⁶

However, if subscribers use more than one broadband platform—such as one fixed and one mobile, as many do—then there is no terminating access monopoly.⁵⁷ Many subscribers use both fixed and mobile broadband connections at home, and they have access to additional platforms at work and various Wi-fi connections at restaurants and shops.⁵⁸ Thus, in many (if not most) cases, edge providers have multiple platforms by which they can reach the same subscriber.

Even if some ISPs have market power over some edge providers due to a terminating access monopoly over some portion of their subscribers, that does not necessarily mean that allowing ISPs to charge edge providers will diminish overall economic welfare. Since ISPs compete for subscribers, supracompetitive profits earned from edge providers will likely be dissipated by competing for subscribers—offering subscribers lower prices or quality improvements.⁵⁹

Given these findings, a complete ban on paid prioritization (i.e., a zero price for edge providers) is very unlikely to be the efficient rule. Therefore, the FCC considered antitrust as an alternative means of preventing forms of paid prioritization that harm consumers.⁶⁰

Under some circumstances, paid prioritization could run afoul of antitrust laws. For example, “a paid prioritization agreement offered to one edge provider but not others could be challenged as exclusionary.”⁶¹ Similarly, offering an affiliated edge provider more favorable terms than a non-affiliated edge provider could be challenged as anticompetitive.⁶²

If challenged under the antitrust laws, a paid prioritization arrangement would most likely be evaluated under the antitrust “rule of reason.”⁶³ Under the rule of reason, a paid prioritization agreement may be found to be anticompetitive if (1) the ISP has substantial market power, (2) the agreement excludes the edge provider’s competitors, and (3) the anticompetitive harm exceeds any improvement in economic efficiency or consumer welfare.⁶⁴ Essentially, the rule of reason amounts to a welfare test. There is some disagreement as to whether the focus is overall economic welfare (economic efficiency) or consumer welfare, but it is clearly a welfare evaluation using the tools of economics.⁶⁵ This is precisely the test one would want in order to distinguish paid prioritization arrangements which result in net positive effects from those which result in net negative effects. It is thus tailor-made to deal with business practices whose effects on economic welfare, as demonstrated by the published academic literature, vary depending on the specific facts and circumstances of the situation.

As with blocking and throttling, the FCC chose in its 2017 order to require that ISPs disclose any paid prioritization arrangements and any practices that fa-

56. Open Internet Order, *supra* note 10, at 33.

57. Ellig et al., *supra* note 9, at 687.

58. Restoring Internet Freedom, *supra* note 7, at 79.

59. *Id.* at 81–82.

60. *Id.* at 87–93.

61. *Id.* at 156 n.957 (citing FEDERAL TRADE COMMISSION, BROADBAND CONNECTIVITY AND COMPETITION POLICY 127 (2007)).

62. Restoring Internet Freedom, *supra* note 7, at 88.

63. *Id.* at 87.

64. Ohlhausen, *supra* note 24, at 136.

65. Restoring Internet Freedom, *supra* note 7, at 87, n. 519.

vor affiliated traffic over non-affiliated traffic.⁶⁶ Disclosure was explicitly justified both as a way to assist consumers in making informed choices and to discourage anticompetitive, unfair, or deceptive conduct.⁶⁷

The FCC's assessment of paid prioritization demonstrates how economic reasoning can more carefully identify the nature of a problem and aid in selection of an appropriately tailored solution. Economic research clearly demonstrates that paid prioritization can either benefit or harm consumers under plausible circumstances. For that reason, an outright ban cannot be the policy that best promotes consumer welfare. Antitrust's rule of reason, which assesses whether business conduct is anticompetitive in light of specific facts and circumstances, is much better designed to assess this type of business practice.

IV. GENERAL CONDUCT

Under the general conduct rule adopted in 2015, the FCC claimed authority to investigate and prohibit unspecified business practices that might arise in the future.⁶⁸ The 2015 order provided a non-exhaustive list of factors the FCC would consider in evaluating a challenged practice, including whether the practice permitted end-user control; effects on firms offering services that compete with the ISP; whether the practice is unfair or deceptive; the effect on innovation, investment, and broadband deployment; the effect on free expression; whether the practice is application agnostic; and whether the practice is consistent with best practices or technological standards from open, broadly representative, and independent Internet engineering or standards organizations.⁶⁹ The only business practice ever investigated under this standard was mobile carriers' practice of "zero rating," which allowed subscribers to receive certain types of content without having it count against their monthly data allowance.⁷⁰ In some cases, the subscriber agreed to receive the content at a lower resolution that used less bandwidth; in other cases, the content was sponsored via payment by the sender.⁷¹ In effect, "[c]arriers found themselves under investigation for offering consumers a lower-cost option."⁷²

In its 2017 order, the FCC compared the likely effects of the general conduct rule to the effects of using the antitrust and consumer protection laws to police new anti-consumer business practices.⁷³ It found that the general conduct standard is vague and likely deters pro-consumer innovation because ISPs cannot tell in advance what practices are permitted or prohibited: "[t]he rule simply warns carri-

66. *Id.* at 128–32.

67. "What is more, disclosure increases the likelihood that ISPs will abide by open Internet principles by reducing the incentives and ability to violate those principles, that the Internet community will identify problematic conduct, and that those affected by such conduct will be in a position to make informed competitive choices or seek available remedies for anticompetitive, unfair, or deceptive practices." *Id.* at 129 (footnotes omitted).

68. Open Internet Order, *supra* note 10, at 59–60.

69. *Id.* at 61–64.

70. Restoring Internet Freedom, *supra* note 7, at 145.

71. Wireless Telecommunications Bureau, *Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Content and Services*, FCC at 2–3 (2017), http://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0111/DOC-342987A1.pdf.

72. Ellig et al., *supra* note 9, at 689.

73. Restoring Internet Freedom, *supra* note 7, at 143–44.

ers to behave in accordance with what the Commission *might* require, without articulating any actual standard. Even ISP practices based on consumer choice are not presumptively permitted; they are merely ‘less likely’ to violate the rule.”⁷⁴ On the other hand, the antitrust and consumer protection laws are flexible enough to address new business practices but are also guided by a body of precedent that makes it easier for firms to predict what practices would be permitted.⁷⁵ The FCC also preferred the antitrust/consumer protection approach because enforcement decisions are grounded in welfare economics rather than a “non-exhaustive grab bag of considerations that are much broader and hazier than the consumer welfare standard.”⁷⁶

The *Restoring Internet Freedom* order takes seriously the possibility that broadband providers could invent new anti-consumer business practices in the future. But it also recognizes that requiring ISPs to seek permission to innovate could chill innovation. Given these competing possibilities, the FCC decided that the antitrust and consumer protection laws could adequately protect consumers, while their established precedents could give ISPs adequate guidance as to what kinds of conduct would be prohibited.

V. RECLASSIFICATION

In reclassifying broadband as a Title I information service instead of a Title II common carrier, the FCC explicitly considered the public choice incentives that can affect regulators’ behavior when they implement Title II regulation. Broadband shares an important characteristic with other types of infrastructure that are often subjected to public utility regulation: a broadband network requires a large, irreversible investment that is “sunk”—that is, the investment has no good alternative use. After the investment is made, regulators have an incentive to apply additional price or other regulations that expropriate part of the investment to benefit some favored class of customers.⁷⁷ To elicit the optimal amount of investment, regulators need to offer a credible commitment that they will not expropriate the investment.⁷⁸ If regulators cannot make a credible commitment, investment will fall below the optimal level due to the increased risk of expropriation.⁷⁹

The FCC’s reclassification of broadband under Title II in 2015 made broadband potentially eligible for regulation of prices, unbundling requirements, and other types of regulation that the FCC had imposed on telecommunications carriers in the past. At the time, the FCC stated that it was forbearing from these types of common carrier regulation for broadband.⁸⁰ The 2017 order suggests that this commitment may not be credible.⁸¹ The 2015 order did not forbear from *ex post* regulation of charges to subscribers.⁸² In addition, although the 2015 order

74. *Id.* at 143.

75. *Id.* at 144.

76. *Id.* at 144.

77. Graeme Guthrie, *Regulating Infrastructure: The Impact on Risk and Investment*, 44 J. ECON. LIT. 925, 950–51 (2006).

78. *Id.* at 949.

79. *Id.* at 950–51.

80. Open Internet Order, *supra* note 10, at 215.

81. Restoring Internet Freedom, *supra* note 7, at 60.

82. *Id.*

claimed to forbear from *ex ante* price regulation, it effectively imposed a price of zero on charges to content providers by banning paid prioritization.⁸³

Whether the *Open Internet* order decreased broadband investment by increasing regulatory risk is ultimately an empirical question. Consequently, the FCC examined relevant empirical evidence.

The *Restoring Internet Freedom* order notes that broadband investment fell slightly in 2015 and 2016, including a careful discussion of various analysts' estimates.⁸⁴ It also correctly emphasized that this before-and-after comparison "can only be regarded as suggestive" because eyeballing a few years' worth of data does not control for other factors that could affect broadband investment, such as the overall state of the economy, technological change, and the fact that it takes time for companies to alter their capital expenditure plans.⁸⁵ A more reliable analysis would compare observed outcomes to a relevant counterfactual that assesses what would have likely happened in the absence of Title II regulation.⁸⁶ Because there were insufficient empirical data to conduct a controlled study of the effects of the 2015 order, the FCC examined economic studies that assessed the effects of similar policies in other time periods.⁸⁷

One study, by George Ford, was submitted to the FCC as a working paper and was later published in the peer-reviewed journal *Applied Economics*.⁸⁸ Ford used a difference-in-difference event study methodology to determine whether there was any correlation between broadband investment and FCC Chairman Genachowski's 2010 announcement that Title II regulation was a possibility.⁸⁹ Ford's measure of investment was the Bureau of Economic Analysis' data series on broadcasting and telecommunications investment.⁹⁰ His study assessed whether investment by this industry segment deviated significantly from investment by a control group of several other industries with which it was highly correlated before 2010.⁹¹ Ford found that broadcasting and telecommunications investment did indeed deviate from investment by the control group after 2010.⁹² He estimated that annual broadcasting and telecommunications investment was reduced by approximately \$30–40 billion after Title II regulation became a possibility.⁹³ The FCC noted that because the measure of investment Ford used includes more than just broadband investment, Ford's estimate may overstate the size of the effect on broadband investment.⁹⁴

83. *Id.*

84. *Id.* at 56.

85. *Id.* at 56.

86. *Id.* at 57.

87. *Id.* at 56–58.

88. George S. Ford, *Net Neutrality, Reclassification and Investment: A Counterfactual Analysis*, PHOENIX CTR.

PERSPECTIVES (2017), <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf>; George S. Ford, *Reg. and Inv. in the U.S. Telecomm. Industry*, 50 APPLIED ECON. 6073 (2018).

89. See George S. Ford, *Reg. and Inv. in the U.S. Telecomm. Industry*, 50 APPLIED ECON. 6073 (2018).

90. *Id.* at 6075.

91. *Id.* at 6077.

92. *Id.* at 6078.

93. *Id.* at 6080.

94. *Restoring Internet Freedom*, *supra* note 7, at 57.

Another empirical study was conducted by Thomas Hazlett and Joshua Wright and published in the *Review of Industrial Organization*.⁹⁵ They examined subscribership growth for DSL versus cable modems after the FCC lifted Title II line-sharing regulations in 2003 and then reclassified DSL broadband as a Title I information service in 2005. At that time, phone companies still had to make substantial investments to make copper phone lines capable of carrying the DSL signal, so any substantial increase in subscribership required an increase in investment. Hazlett and Wright found that DSL subscribership grew at a much higher rate than its past trend following both regulatory changes.⁹⁶ DSL subscribership also grew at a much faster rate than cable modem subscribership after these changes.⁹⁷ These results imply that phone companies became more willing to invest in their DSL networks when Title II regulations were lifted.⁹⁸ Thus, the empirical studies that did the best job of comparing observed outcomes to a relevant counterfactual suggest that Title II regulation depresses investment by increasing risk.⁹⁹

The FCC's analysis of reclassification clearly recognized that regulators could have incentives to expropriate ISPs' sunk investments through price or open access regulation—a clear application of public choice logic. The *Restoring Internet Freedom* order reduces this risk by reclassifying broadband under Title I, making it ineligible for these forms of regulation.

VI. CONCLUSION

How to Regulate contains some simple but critical pieces of advice for regulators: (1) diagnose the problem before settling on a solution, (2) compare the merits (benefits and costs) of alternatives, and (3) recognize that regulators, like the rest of us, respond to the incentives created by the organization in which they are embedded. The FCC's *Restoring Internet Freedom* order presents examples of how to apply those principles in practice. Moreover, it demonstrates how to apply those principles even when data are not available to conduct a conventional, quantified benefit-cost analysis.

95. Thomas W. Hazlett & Joshua D. Wright, *The Effect of Reg. on Broadband Mkt.: Evaluating the Empirical Evidence in the FCC's 2015 "Open Internet" Order*, 50 REV. INDUS. ORG. 487 (2017).

96. *Id.*

97. *Id.* at 499–500.

98. *Restoring Internet Freedom*, *supra* note 7, at 56.

99. *Id.* at 60.