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## *Restoring Internet Freedom as an example of How to Regulate*

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### ABSTRACT

Thomas Lambert's *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 an example of how to apply those principles in practice. 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.

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<sup>1</sup> This working paper reflects the views of the author, and does not represent an official position of the GW Regulatory Studies Center or the George Washington University. The Center's policy on research integrity is available at <http://regulatorystudies.columbian.gwu.edu/policy-research-integrity>.

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## I. Introduction

Thomas Lambert's book, *How to Regulate*,<sup>3</sup> is a highly readable and cogent guide to fundamental principles of regulatory analysis. Key principles include (1) diagnose the extent and cause of the problem regulators seek to solve, (2) identify alternative solutions, and (3) compare the benefits and costs of the alternatives.<sup>4</sup> As Lambert notes, on the federal level these principles are enshrined in the executive orders that govern regulatory analysis in executive branch agencies.<sup>5</sup> Some independent agencies have adopted the same or similar principles to guide their regulatory analysis.<sup>6</sup>

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.”<sup>7</sup> A research program in economics and political science, public choice, explains how public officials' decisions are affected by the incentives and knowledge constraints created by the government institutions within which they function.<sup>8</sup> The fact that government officials, like private citizens, can be expected to respond to the incentives and constraints they face may create unintended 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.<sup>9</sup> 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.<sup>10</sup> 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.<sup>11</sup>

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<sup>3</sup> Thomas Lambert, *HOW TO REGULATE: A GUIDE FOR POLICYMAKERS* (2017).

<sup>4</sup> *Id.* at 14.

<sup>5</sup> *Id.* at 252.

<sup>6</sup> See, e.g., Securities and Exchange Commission, Division of Risk, Strategy, and Financial Innovation, and Office of General Counsel, Memorandum: Current Guidance on Economic Analysis in SEC Rulemakings (2012).

<sup>7</sup> Lambert, *supra* note 3, at 33.

<sup>8</sup> For nontechnical explanations of public choice by two of its founders, see James M. Buchanan, *PUBLIC CHOICE: THE ORIGINS AND DEVELOPMENT OF A RESEARCH PROGRAM* (2003), <http://www.gmu.edu/centers/publicchoice/pdf/links/Booklet.pdf>; Gordon Tullock, “Public Choice,” in *THE NEW PALGRAVE DICTIONARY OF ECONOMICS* [1987] (2008).

<sup>9</sup> Federal Communications Commission, *In the Matter of Restoring Internet Freedom: Declaratory Ruling, Report and Order* (Adopted Dec 14, 2017; Released Jan. 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.

<sup>10</sup> See Lambert, *supra* note 3, at 175-83.

<sup>11</sup> This paper draws heavily on 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. IND. ORG. 681 (2018). However, any statements or conclusions that go beyond what is contained in that article are solely the author's.

The 2015 *Open Internet* order prohibited ISPs from blocking or throttling content or offering content providers paid prioritization of their traffic.<sup>12</sup> An ISP blocks content when it prevents the content from reaching subscribers; it throttles content when it deliberately slows or otherwise degrades the quality of transmission. The order also imposed a “general conduct rule” that prohibited any business practices that would create “unreasonable interference or disadvantage.”<sup>13</sup> A prior court decision said that imposition of these rules amounts 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.<sup>14</sup> To ensure that it had legal authority to impose these rules, the FCC reclassified broadband as a telecommunications service under Title II of the Act.<sup>15</sup> 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. In the 2015 order, the FCC forbore from imposing these other types of common carrier regulations and associated recordkeeping and reporting requirements.<sup>16</sup>

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

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.

## 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

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<sup>12</sup> Federal Communications Commission, *In the Matter of Protecting and Promoting the Open Internet: Report and Order on Remand, Declaratory Ruling, and Order* 46-47 (Adopted Feb. 26, 2015; released March 12, 2015). (Hereinafter “*Open Internet Order*.”)

<sup>13</sup> *Id.* at 47.

<sup>14</sup> *Verizon v. FCC*, 740 F.3d 623 (D.C. Cir. 2014).

<sup>15</sup> FCC, *supra* note 12, at 134.

<sup>16</sup> *Open Internet Order*, *supra* note 12, at 214-254.

<sup>17</sup> *Restoring Internet Freedom*, *supra* note 9, at 147-160.

<sup>18</sup> *Id.* at 142-47.

<sup>19</sup> *Id.* at 209-239.

<sup>20</sup> *Id.* at 20-206.

content consumers want to access diminishes consumer welfare.<sup>21</sup> One paper that examines 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.<sup>22</sup>

Throttling has been less explicitly examined in the economics literature. But 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.<sup>23</sup> If ISPs face competition, an ISP that blocks or throttles runs the risk of losing subscribers to the competition.<sup>24</sup> The *Restoring Internet Freedom* order therefore examined the extent of competition in broadband to determine whether competition is strong enough to constrain blocking or throttling that would harm consumers.

Broadband competition does not meet the economics textbook ideal of "perfect competition."<sup>25</sup> But the data show that many ISPs face noticeable competitive constraints. Table 1 shows the percentage of the US 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.

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<sup>21</sup> Mark A. Jamison et al, "Economic Scholars' Summary of Economic Literature Regarding Title II Regulation of the Internet." *In the Matter of Restoring Internet Freedom, WC Docket No. 17-108* (2017) at 8, <https://www.fcc.gov/ecfs/filing/107150597330219>.

<sup>22</sup> Sebastian Broos and Axel Gauthier, *The Exclusion of Competing One-Way Essential Complements: Implications for Net Neutrality*, 52 INTL. J. IND. ORG. 358 (2017).

<sup>23</sup> "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." FCC, *supra* note 12, 158-59, footnotes omitted. See also Maureen Ohlhausen, "Comment of Maureen K. Ohlhausen, Acting Chairman, Federal Trade Commission," *In the Matter of Restoring Internet Freedom, WC Docket No. 17-108* (2017) at 9-10.

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

<sup>25</sup> FCC, *supra* note 9, at 75, fn 464.

**Table 1: Percent of US population in developed census blocks with wireline 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 9, 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, even two ISPs face strong incentives to compete vigorously.<sup>26</sup> This inference is consistent with empirical research showing that the addition of a second competitor has the largest impact on prices,<sup>27</sup> and the addition of a fourth broadband competitor has negligible impact.<sup>28</sup>

Broadband ISPs also face competitive constraints from entities other than wireline ISPs. Table 2 shows the percentage of the US population living in developed census blocks with various numbers of fixed broadband ISPs. Fixed ISPs include wireline ISPs plus 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 percent 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.

<sup>26</sup> Dennis W. Carlton and Jeffrey M. Perloff, *MODERN INDUSTRIAL ORGANIZATION* 59-60, (4<sup>th</sup> ed. 2005); Jonathan E. Nuechterlein & Philip J. Weiser, *DIGITAL CROSSROADS: TELECOMMUNICATIONS LAW AND POLICY IN THE INTERNET AGE* 8-10 (2nd ed. 2013); Jerry Hausman & J. Gregory Sidak, *Telecommunications Regulation: Current Approaches with the End in Sight*, in *ECONOMIC REGULATION AND ITS REFORM: WHAT HAVE WE LEARNED?* 345, 353-54 (Nancy L. Rose, ed. 2005); Organization for Economic Co-operation and Development, *THE DEVELOPMENT 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)

<sup>27</sup> Howard A. Shelanski, *Adjusting Regulation to Competition: Toward a New Model for U.S. Telecommunications Policy*, 24 *YALE J. REG.* 55 (2007), 89-93; Timothy F. Bresnahan & Peter C. Reiss, *Entry and Competition in Concentrated Markets*, 99 *J. POL. ECON.* 977 (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.* 200-01 (2003).

<sup>28</sup> 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 9, 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 percent of the US population, including 69 percent of rural areas.<sup>29</sup> One in five households use only mobile broadband at home, including 15 percent of households with incomes exceeding \$100,000 annually.<sup>30</sup> The Order also notes, “With 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.”<sup>31</sup>

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.<sup>32</sup>

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.<sup>33</sup> 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.<sup>34</sup> 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 and also for unfair or deceptive business practices under the Federal Trade Commission Act.<sup>35</sup> 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.<sup>36</sup>

<sup>29</sup> *Restoring Internet Freedom*, *supra* note 9, at 77

<sup>30</sup> *Id.* at 77-78.

<sup>31</sup> *Id.* at 78.

<sup>32</sup> *Id.* at 72.

<sup>33</sup> *Id.* at 85.

<sup>34</sup> *Id.* at 125-35.

<sup>35</sup> Ohlhausen, *supra* note 23, at 10-11.

<sup>36</sup> “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

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 prosecuted as antitrust or consumer protection cases. *Madison River* involved a local phone company that provided DSL service but blocked ports used by VOIP applications, thus preventing VOIP providers from competing with its telephony business.<sup>37</sup> Comcast's throttling of BitTorrent streams could have been pursued as a consumer protection case, because Comcast failed to disclose the throttling and initially denied it was throttling.<sup>38</sup> The FTC requires businesses to disclose material information to consumers if failure to disclose would mislead consumers, and failure to provide the product or service the consumer purchased is considered an unfair or deceptive trade practice.<sup>39</sup> 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.<sup>40</sup>

Use of the antitrust and consumer protection laws to thwart anti-consumer blocking or throttling is not just a theoretical possibility. In 2015, the Federal Trade Commission successfully prosecuted TracFone for claiming that its plans provide unlimited data but then throttled customers who used 1–3 GB of data a month and cut off customers who used 4–5 GB a month.<sup>41</sup>

### 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.<sup>42</sup> A zero price for edge providers is the efficient price only under special conditions.<sup>43</sup> When competition exists among ISPs, the possibility that paid prioritization could

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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.

<sup>37</sup> *Restoring Internet Freedom*, *supra* note 9, at 66.

<sup>38</sup> *Id.* at 88.

<sup>39</sup> Ohlhausen, *supra* note 23, at 10-11. (“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.”)

<sup>40</sup> *Restoring Internet Freedom*, *supra* note 9, at 88.

<sup>41</sup> *Id.* at 84, fn. 501.

<sup>42</sup> Jameson et al, *supra* note 21, at 4-8.

<sup>43</sup> 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](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 II Order*, 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-Line Restrictions with an Application to the Network Neutrality Debate*, 19 *Info. Econ. & Pol.* at 215-48 (2007)

harm consumers is less likely.<sup>44</sup> The 2017 order's competition analysis (described above) found that broadband ISPs face material competitive constraints.

There are two possible reasons related to market power to be concerned 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 supra-competitive price. Second, an ISP of any size might possess a “terminating access monopoly” – that is, a monopoly over access to its subscribers. 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 supra-competitive price to access subscribers.<sup>45</sup> The FCC therefore examined competition in the market for access to subscribers. The largest wireline broadband ISP, Comcast, serves approximately one-quarter of subscribers in the US.<sup>46</sup> Even if Comcast was willing and able to extract a supra-competitive 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.<sup>47</sup> The larger edge providers, such as Netflix, Google, and Amazon, have significant bargaining leverage of their own.<sup>48</sup>

Indeed, it is not even clear whether an ISP that possesses some power over prices to edge providers would choose to charge a supra-competitive 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.<sup>49</sup>

#### B. Terminating access monopoly

A conceptually separate question is whether any ISP, regardless of size, could charge edge providers a supra-competitive price because it has a monopoly over access to its particular subscribers.<sup>50</sup> Telecommunications economists call this phenomenon “terminating access

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(demonstrating that regulations that require a platform owner to provide a single quality of service can reduce economic welfare).” *Restoring Internet Freedom*, *supra* note 9, at 150 fn. 927.

<sup>44</sup> Victoria Kocsis & Paul Bijl, *Network Neutrality and the Nature of Competition Between Network Operators*, 4 INT'L ECON. & ECONOMIC POL'Y 159, 180-181 (2007); Bykowsky & Sharkey, *Id* at 6.

<sup>45</sup> Shane Greenstein et al., *Net Neutrality: A Fast Lane to Understanding the Trade-Offs*, 30 J. ECON. PERSP. 127, 135, 137-139 (2016), <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.30.2.127>.

<sup>46</sup> *Restoring Internet Freedom*, *supra* note 9, at 79.

<sup>47</sup> *Id.*

<sup>48</sup> *Id* at 80.

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*



monopoly.”<sup>51</sup> Terminating access monopoly is the primary economic justification for regulation cited in the 2015 *Open Internet* order.<sup>52</sup>

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.<sup>53</sup> 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.<sup>54</sup> 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, supra-competitive profits earned from edge providers will likely be dissipated by competing for subscribers – offering subscribers lower prices or quality improvements.<sup>55</sup>

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.

Under some circumstances, paid prioritization could run afoul of the antitrust laws. For example, “a paid prioritization agreement offered to one edge provider but not others could be challenged as exclusionary.”<sup>56</sup> Similarly, offering an affiliated edge provider more favorable terms than a non-affiliated edge provider could be challenged as anticompetitive.<sup>57</sup>

If challenged under the antitrust laws, a paid prioritization arrangement would most likely be evaluated under the antitrust “rule of reason.” 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.<sup>58</sup> Under the rule of reason, a paid prioritization agreement could be found to be anticompetitive if the ISP has substantial market power, the agreement excludes the edge provider’s competitors, and the anticompetitive harm exceeds any improvement in economic efficiency or consumer welfare.<sup>59</sup> This is precisely the test one would want in order to distinguish paid prioritization arrangements that do more harm than good from those that do more good than

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<sup>51</sup> Jerry Ellig, *Intercarrier Compensation and Consumer Welfare*, 2005 J. LAW, TECH., & POLICY 97, 103 (2005).

<sup>52</sup> *Open Internet Order*, *supra* note 12, at 33.

<sup>53</sup> Ellig et al, *supra* note 11, at 687.

<sup>54</sup> *Restoring Internet Freedom*, *supra* note 9, at 79.

<sup>55</sup> *Id.* at 81-82.

<sup>56</sup> *Id.* at 156, fn. 957, citing Federal Trade Commission, BROADBAND CONNECTIVITY AND COMPETITION POLICY 127 (2007).

<sup>57</sup> *Restoring Internet Freedom*, *supra* note 9, at 88.

<sup>58</sup> *Id.* at 87, fn. 519.

<sup>59</sup> Ohlhausen, *supra* note 24, at 136.

harm. 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 favor affiliated traffic over non-affiliated traffic. Disclosure was explicitly justified both as a way to assist consumers in making informed choices and to discourage anticompetitive, unfair, or deceptive conduct.<sup>60</sup>

#### IV. General Conduct

Under the general conduct rule adopted in 2015, the FCC claimed authority to investigate and prohibit unspecified business practices that it might decide in the future violate open Internet principles.<sup>61</sup> 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.<sup>62</sup> 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. 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 a payment by the sender. In effect, "Carriers found themselves under investigation for offering consumers a lower-cost option."<sup>63</sup>

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. 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: "The rule simply warns carriers 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."<sup>64</sup> The antitrust and

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<sup>60</sup> "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." *Restoring Internet Freedom*, *supra* note 9, at 129, footnotes omitted.

<sup>61</sup> *Open Internet Order*, *supra* note 12, at 59-60.

<sup>62</sup> *Id.* at 61-64.

<sup>63</sup> Ellig et al, *supra* note 11, at 689.

<sup>64</sup> *Restoring Internet Freedom*, *supra* note 9, at 143.

consumer protection laws, on the other hand, 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 or would not be permitted.<sup>65</sup> 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.”<sup>66</sup>

## 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.<sup>67</sup> To elicit the optimal amount of investment, regulators need to offer a credible commitment that they will not expropriate the investment. If regulators cannot make a credible commitment, investment will fall below the optimal level due to the increased risk of expropriation.

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.<sup>68</sup> The 2017 order suggests that this commitment may not be credible. The 2015 order did not forbear from *ex post* regulation of charges to subscribers.<sup>69</sup> In addition, although the 2015 order claimed to forbear from *ex ante* price regulation, it effectively imposed a price of zero on charges to content providers by banning paid prioritization.<sup>70</sup>

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

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<sup>65</sup> Id at 144.

<sup>66</sup> Id at 144.

<sup>67</sup> Graeme Guthrie, *Regulating Infrastructure: The Impact on Risk and Investment*, 44 J. ECON. LIT. 925, 950-51 (2006).

<sup>68</sup> *Open Internet Order*, *supra* note 12, at 214-254.

<sup>69</sup> *Restoring Internet Freedom*, *supra* note 9, at 60.

<sup>70</sup> Id.

The *Restoring Internet Freedom* order notes that broadband investment fell slightly in 2015 and 2016, including a careful discussion of various analysts' estimates.<sup>71</sup> It also correctly emphasized that this before-and-after comparison "can only be regarded as suggestive," because eyeballing a few year's 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.<sup>72</sup> A more reliable analysis would compare observed outcomes to a relevant counterfactual that assesses what likely would have happened in the absence of Title II regulation.<sup>73</sup> 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.

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*.<sup>74</sup> 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. Ford's measure of investment was the Bureau of Economic Analysis' data series on broadcasting and telecommunications investment. 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. Ford found that broadcasting and telecommunications investment did indeed deviate from investment by the control group after 2010. He estimated that annual broadcasting and telecommunications investment was approximately \$30–40 billion lower after Title II regulation became a possibility. The FCC noted that because the measure of investment Ford used includes more than just broadband investment, Ford's estimate may over-state the size of the effect on broadband investment.<sup>75</sup>

The other empirical study was conducted by Thomas Hazlett and Joshua Wright and published in the *Review of Industrial Organization*.<sup>76</sup> 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. DSL subscribership also grew at a much faster rather than cable modem

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<sup>71</sup> Id at 56.

<sup>72</sup> Id.

<sup>73</sup> Id at 57.

<sup>74</sup> George S. Ford, *Net Neutrality, Reclassification and Investment: A Counterfactual Analysis*, *Phoenix Center Perspectives* (2017), <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf>; George S. Ford, *Regulation and Investment in the U.S. Telecommunications Industry*, 50 *APPLIED ECON.* 6073 (2018).

<sup>75</sup> *Restoring Internet Freedom*, *supra* note 9, at 57.

<sup>76</sup> Thomas W. Hazlett & Joshua D. Wright, *The Effect of Regulation on Broadband Markets: Evaluating the Empirical Evidence in the FCC's 2015 'Open Internet' Order*, 50 *REV. INDUS. ORG.* 487 (2017).

subscribership after these changes. These results imply that phone companies became more willing to invest in their DSL networks when Title II regulations were lifted.<sup>77</sup>

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.<sup>78</sup>

## 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 an example 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.

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<sup>77</sup> *Restoring Internet Freedom*, *supra* note 9, at 56.

<sup>78</sup> *Id.* at 60.