

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
Expanding Consumers' Video Navigation Choices)	MB Docket No. 16-42
Commercial Availability of Navigation Devices)	CS Docket No. 97-80

COMMENTS OF THE CONSUMER FEDERATION OF AMERICA

**Mark Cooper
Director of Research
Consumer Federation of America
1620 I Street, NW – Suite 200
Washington, DC 20006**

**Glushko-Samuelson Intellectual Property Law Clinic
American University Washington College of Law
4300 Nebraska Ave., NW
Washington, D.C. 20016**

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I. INTRODUCTION

A. Statement of Interest — The Consumer Federation of America

The Consumer Federation of America (CFA) is the nation's largest consumer advocacy organization. We are a non-profit association of several dozen national advocacy groups, more than 100 state and local advocacy and education groups, about 100 public power and cooperative groups, a couple dozen state and local consumer protection agencies, and other pro-consumer groups.

CFA was established in 1968 to advance the consumer interest through research, advocacy, and education. As a research organization, CFA investigates consumer issues, behavior, and attitudes through surveys, focus groups, investigative reports, economic analysis, and policy analysis. The findings of such research provide an important basis for the policy positions and work of the organization. As an advocacy organization, CFA works to advance pro-consumer policies on a variety of issues before Congress, the White House, federal and state regulatory agencies, state legislatures, and the courts. CFA communicates and works with public officials to promote beneficial policies, oppose harmful ones, and ensure a balanced debate on issues important to consumers. As an education organization, CFA disseminates information on consumer issues to the public and news media, as well as to policymakers and other public interest advocates.

We appreciate the opportunity to comment on the important consumer issues and impacts addressed in this proceeding.¹

¹ Federal Communications Commission, Notice of Proposed Rulemaking and Memorandum Opinion and Order, In the Matter of Expanding Consumers' Video Navigation Choices Commercial Availability of Navigation Devices, MB Docket No. 16-42CS Docket No. 97-80, February 18, 2016. (Hereafter Navigation NPRM)

CFA has been involved in communications, media and Internet policy for decades in legislative, regulatory and judicial arenas and has advanced the consumer view in policy and academic publications. For example, CFA was active in supporting the Cable Consumer Protection Act in 1992,² which provides the basis for some of the economic analysis in Attachment A.

Similarly, CFA was among the first public interest groups to recognize the unique consumer value and importance of the emerging digital economy. In a paper published in January 1990, CFA described the key elements of the emerging model as follows: “[t]he fact that a great deal of the intelligence is currently located on the periphery of the information age network has led to a pragmatic, decentralized pattern of development.”³ CFA warned that the effort to assert centralized control over the Internet by telephone and cable companies “could set the information age development back by undermining the diversified, innovative process of the current decentralized approach.”⁴

In the quarter century since CFA first looked at the digital revolution from the consumer and public interest point of view, we have not only participated in virtually every regulatory proceeding involving the important issue of access to the Internet, we have also published over four dozen research reports, conference papers, journal articles, chapters, and books on these and other closely related topics.⁵ The study of cable market power in Attachment A and many of the footnotes in these comments reflect this expertise.

² Mark Cooper, *Cable Mergers and Monopolies* (Economic Policy Institute, 2002) (summarizing much of that analysis).

³ Mark Cooper, *Expanding the Information Age for the 1990s: A Pragmatic Consumer Analysis*, January 11, 1990:ES-1.

⁴ Cooper, 1990:12.

⁵ The full extent of CFA’s work may be found online. CONSUMER FEDERATION OF AMERICA, Communications, <http://consumerfed.org/issues/communications/> (last visited Apr. 22, 2016).

B. Executive Summary

CFA not only applauds the Commission's decision to issue a Notice of Proposed Rulemaking dealing with set-top boxes, we fully support the substance and direction of the proposed rules. The cable market is in dire need of competition⁶ and opening up the set-top box is a welcome step to promoting innovation in the multichannel video programming distribution ("MVPD") market.

The digital programming market has innovated at a rapid pace over recent years, offering numerous options for access to content and the entire digital communications ecosystem has innovated at an even faster rate, providing consumers with a wide range of new products and services. In contrast, the set-top box market and the MVPD market, of which it is a part, has been comparatively stagnant.

The set-top box is a key chokepoint in the delivery of MVPD services and plays a role in perpetuating that market power and to the detriment of consumers. Without the incentives inherent in a competitive marketplace, the cable industry has had little reason to listen to user needs and adapt accordingly. Opening up the set-top box market finally places the consumers in a more advantageous position when dealing with the cable industry.

We fully support the Commission's efforts to unlock the set-top box with the proposed rules, based on recommendations from the Downloadable Security Technology Advisory Committee Report in 2015.⁷ The Commission has the clear legal authority to adopt the proposed rules under section 629 and CFA agrees with the Commission's statutory analysis.⁸ Congress clearly intended, when enacting section 629, for the Commission to promote competition in the

⁶ Consumers are overcharged for cable service and their range of choice is severely restricted by cable market power. See Attachment A, pp. 37-41, 46-47.

⁷ Downloadable Security Technology Advisory Committee Report at 242-244 (Aug. 28, 2015) (*DSTAC Report*), available at <http://apps.fcc.gov/ecfs/document/view?id=60001515603>.

⁸ 49 U.S.C. 549 (A).

market for MVPD devices, and the language should be interpreted broadly to include the set-top box. The Commission's authority is further bolstered by the White House's recent Executive Order directing federal agencies to investigate and promote competition.⁹

This Comment will ask and answer three questions: 1) what is the problem, 2) what authority does the Commission have to address this problem, and 3) what steps has the Commission taken to ensure that the rule is effective. Section II shows that Congress desired the set-top box to be competitive and gave the Commission clear authority to take steps to make it so. Section III shows that these proposed rules will not only be effective in introducing competition, but also in stimulating innovation and preserving the smooth function of the video distribution network. Section IV shows how innovation was encouraged by opening chokepoints in the communication sector. Section V shows that there is a severe lack of competition in the MVPD and set-top box markets, resulting in the abuse of market power, and that there is no inherent technological reason that competition cannot flourish in this market. Finally, Section VI concludes that these proposed rules are in the interest of consumers.

II. THE COMMISSION HAS THE CLEAR LEGAL AUTHORITY TO ENACT THE PROPOSED RULES.

The Telecommunications Act (the “Act”) of 1996 seeks to promote a competitive marketplace for communications in the United States. Congress specifically recognized the

⁹ White House, Executive Order -- Steps to Increase Competition and Better Inform Consumers and Workers to Support Continued Growth of the American Economy, April 15, 2016. The signing of the Executive Order was accompanied by a general discussion of the problem of market power and a discussion of the problem of market power in set-top boxes. *See* The Council of Economic Advisors, *Benefits of Competition and Indicators of Market Power*, (Apr. 2016); Jason Furman and Jeffrey Zients, *Thinking Outside the Cable Box: How More Competition Gets You a Better Deal*, THE WHITE HOUSE (Apr. 15, 2016).

importance of competition in the marketplace for navigation devices when enacting this law, and directed the Commission to act in a regulatory capacity to further this goal.¹⁰

CFA believes that the rules are fully supported by section 629.¹¹ Section 629 of the Act directs the Commission to adopt regulations to assure the commercial availability of "converter boxes, interactive communications equipment, and other equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems, from manufacturers, retailers, and other vendors not affiliated with any multichannel video programming distributor."¹² CFA agrees that this section of the Act should be interpreted broadly to include the authority to regulate the set-top box market as equipment to access multichannel video programming.

The proposed rules to open the set-top box are directly within the legislative intent of section 629, with Congress explicitly stating that section 629 "helps[s] ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator."¹³

¹⁰ H.R. Rep. No. 104-204, at 112 (1995) ("The Committee believes that the transition to competition in network navigation devices and other customer premises equipment is an important national goal. Competition in the manufacturing and distribution of consumer devices has always led to innovation, lower prices and higher quality. Clearly, consumers will benefit from having more choices among telecommunications subscription services arriving by various distribution sources. A competitive market in navigation devices and equipment will allow common circuitry to be built into a single box or, eventually into televisions, video recorders, etc.").

¹¹ The Commission sought additional comment on its authority under sections 624A and 335 of the Telecommunications Act. While CFA believes that section 629 provides sufficient authority for these proposed rules, we believe these sections offer further support. Section 624a warns that restricting consumer access to the newest and most innovative devices de-incentivizes electronics equipment manufacturers from further innovation. See 47 U.S.C. 544(A).

¹² 47 U.S.C. 549(A).

¹³ S. Rep. 104-230 (1996).

The Commission has relied on this authority in the past. In 1998, the Commission took its first steps to increase competition in this area when it implemented its first integration ban pursuant to section 629.¹⁴ This authority to regulate navigation devices in an effort to increase competition for MVPD equipment has since been upheld in several cases decided by the D.C. Circuit.¹⁵ The advance of technology does not negate the Congressional intent; it requires the Commission to keep its regulation up to date with the technology, as it has proposed for the set-top box rule.

Opponents of these proposed rules argue that the term “navigation device” should be interpreted narrowly and only apply to “tangible, physical hardware.”¹⁶ CFA argues that section 629 should not be limited to physical hardware, but should encompass navigational devices as defined by the Commission’s proposed rules.¹⁷ We can either interpret the law in light of the state of technology in 1996, or the Commission can fulfill the purpose of the Act to promote competition in the communications marketplace untethered by dictate of technology at a specific time.

The Commission's authority is further bolstered by President Obama's recent Executive Order to promote competition in the American Economy.¹⁸ The White House encouraged the

¹⁴ In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996 Commercial Availability of Navigation Devices, CS Docket No. 97-80, Report and Order, 13 FCC Rcd 14775 (1998).

¹⁵ *Comcast Corp. v. FCC*, 526 F.3d 763 (D.C. Cir. 2008); *Charter Comms., Inc. v. FCC*, 460 F.3d 31 (D.C. Cir. 2006); *Gen. Instrument Corp. v. FCC*, 213 F.3d 724 (D.C. Cir. 2000).

¹⁶ Expanding Consumers’ Video Navigation Choices, Notice of Proposed Rulemaking and Memorandum Opinion and Order, MB Docket No. 16-42, FCC 16-18 (rel. Feb. 18, 2016), available at http://apps.fcc.gov/edocs_public/attachmatch/FCC-16-18A1.pdf (O’Rielly, dissenting).

¹⁷ The FCC defines navigation device to refer to “hardware, software (including applications), and combinations of hardware and software that consumers could use to access multichannel video programming.” *See id.* at 2.

¹⁸ Executive Order, *supra* note 8.

Commission to act and open up the set-top box market, citing the set-top box as a “mascot” for the new initiative.¹⁹

III. THE PROPOSED RULES ARE IN THE INTEREST OF ALL CONSUMERS.

Our analysis leads us to conclude that the Commission’s decision to open up the set-top box market to competition will result in increased innovation, consumer sovereignty, and consumer savings. In evaluating standards and rules, we have identified a series of characteristics that promote effective standards.

A. Clear Market Failures Must Be Addressed Through Regulation.

Our analysis shows that rules work best when they address a clear market imperfection and are technology-neutral, product-neutral and pro-competitive, allowing producers flexibility in developing compliance strategies.²⁰ Effective rules establish a minimum set of operational efficiency thresholds but they do not dictate the technology. Rules work best when the producers can design to meet the standard as they see fit. Producers will do so by choosing the least cost approach available to them. Different producers will have different skill sets or different product lines and choose different technologies. Producers will not address the problem on their own (because it reflects a market imperfection), but once the problem is defined and they have to address it, normal market incentives drive least cost, consumer-friendly solutions.

¹⁹ Comments of the National Telecommunications & Information Administration, *Expanding Consumers' Video Navigation Choices*, MB Docket No. 16-42, available at <http://apps.fcc.gov/ecfs/document/view?id=60001569830>; THE WHITE HOUSE, *Thinking Outside the Cable Box: How More Competition Gets You a Better Deal* (Apr. 15, 2016), <https://www.whitehouse.gov/blog/2016/04/15/ending-rotary-rental-phones-thinking-outside-cable-box>.

²⁰ Mark Cooper, Energy Efficiency Performance Standards: Driving Consumer and Energy Savings in California, California Energy Commission's Energy Academy, February 20, 2014.

Rules like these give market certainty that is necessary to stimulate adoption of effective technologies. Each producer will set out to meet the standard in the most cost effective way that it can without the fear that it will be undercut by cheap, inefficient products that do not meet the standard. Once standards are in place, the products will either succeed or fail on the merits.

Rules must also be reasonable in relationship to what can be technologically accomplished and what consumers are most likely to use. If they go too far, impose costs that are too large, require technologies that cannot be developed or delivered in the necessary time frame, or are not consumer-friendly, they can do more harm than good. Recognizing the need to keep the target levels in touch with reality, the goals should be progressive and moderately aggressive, set at a level that is both beneficial and achievable. The approach to standards should be consumer-friendly and facilitate compliance.

B. These Proposed Rules Will Adequately Address the Clear Failures in the Set-Top Box Market.

Large and persistent market imperfection leading to market failure has been evident in the MVPD market for decades. The Commission’s proposal to open the set-top box addresses this failure and therefore fits the bill. Opening the market is both a symbol of where the 21st century communications network should go and an important step in that direction. We are confident that innovative entrepreneurs will seize the opportunity to meet consumer needs, just as they have repeatedly done in the past.

The MVPD market is reliant on cable companies to provide necessary access to the content transmission stream, giving them substantial control. The cable industry abuse of market power has already cost consumers over \$100 billion in the past two decades. Americans pay substantially more each year in cable subscription fees, with minimal choices to avoid their cable company and “cut the cord.”

It is also clear that opening the set-top box market to competition will promote the full range of goals of the Communications Act, beyond promoting competition and protecting consumers. Innovation without permission is the key – allowing set-top box manufacturers to sell directly to the public without being “certified” by the cable operators.

While CFA recognizes the concerns expressed from the content perspectives, it is critical to note that technological innovation and change have been met at every stage with cries from the content industry, having seen such identical arguments with the introduction of the VCR, DVD, online streaming, and more. The historical record is replete with examples of the content and cable industry expressing similar doomsday arguments.²¹ However, rather than killing the television industry, every iteration of technological innovation has only opened the market further and allowed consumers to consume more content lawfully.

The absence of competition and the abuse of market power is evident in the case of set-top boxes. The Commission passed the Cable Consumer Protection Act in 1992, which allowed the Commission to directly regulate cable rates, including service and equipment rates. The rates were based on actual costs and the rates were an average of \$2.60 per month.²² However, this changed in 1996 under the Act and the Commission abandoned its direct regulation scheme, replacing it with marketplace reforms. The average cost has jumped to \$7.43 per month, an increase of 185% since 1994. This subsequent increase in overall rates, including those for set-top boxes, show that these reforms were not enough to protect against abuse by the dominant cable companies.

²¹ See Kate Forscey, *Zombies, Pirates, and Why the Latest Copyright Fray Over Set-Top Box Undermines Itself*, PUBLIC KNOWLEDGE, (Apr. 13, 2016), <https://www.publicknowledge.org/news-blog/blogs/zombies-pirates-and-why-the-latest-copyright-fray-over-set-top-box-undermines-itself>.

²² Comments of Consumer Federation of America and Public Knowledge, *Media Bureau Request for Comment on DSTAC Report*, MB Docket No. 15-64 (2016), available at <https://www.publicknowledge.org/documents/pk-and-mark-cooper-set-top-box-letter-to-fcc>.

In the past quarter century, the price of every major consumer device that provides functionalities like a set-top box has declined by over 10% per year compounded. This includes PCs, laptops, tablets, modems, cell phones, telephones, and televisions. In contrast, set-top box prices have increased by 5% per year and the technological capacity and functionality of the set-top box has improved far more slowly than other devices. The proposed rules will allow further innovation in the market — lowering prices and accelerating improvements.

In addition to lowering prices, the proposed rules will also reduce the instances of rental fees. Currently, the average household spends \$231 a year on set-top box rental fees for their cable company to deliver content.²³ By this estimate, consumers are overpaying between \$6 and \$14 billion annually.

Increased competition will necessarily lead to increased innovation. As we've seen time and again with telephones, LCD TVs, modems, etc., competition incentivizes companies to innovate more rapidly. The proposed rules will do more than simply allow the expansion of alternative set-top boxes by companies like TiVo or Roku. The rules will likely lead to fewer remotes and easier navigation, allowing consumers to exercise greater control over their TV-watching experience. Arguably the most significant effect will be that the market will progress beyond the physical set-top box to app-based access for all providers. The cable companies are already moving in this direction, albeit very slowly, by offering online viewing to paying customers. Time Warner Cable (TWC) even initiated a limited trial last November where it will

²³ Press Release, *Market, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace*, Jul. 30, 2015, <http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace>.

ship customers a free Roku 3 box running its TWC television app instead of the traditional set-top box.²⁴ The proposed rules will accelerate these changes.²⁵

The innovation that will undoubtedly result is also likely to lead to products that will better serve the needs of those with disabilities. As we have seen with the telephone, innovation has led to the production of telephones that are much more accessible to the disabled, from large push buttons to hearing aid compatibility. We can expect the same to happen with innovation of the set-top box, with the result being increased audiovisual capabilities — closed captioning and signing for the deaf, audio description and audio captions for the blind or visually impaired, and accessible remote controls for those with limited dexterity.

C. These Proposed Rules Will Promote Increased Consumer Sovereignty.

The proposed rules will not only increase the pace of innovation, but will also open the market to more producers, thereby lessening the monopoly that cable providers have so long held over this industry. The rules will consequently allow consumers, rather than cable companies, to dictate what devices they wish to use to access cable.

The effect on consumer choice will likely mimic the effect the *Carterfone* decision and the divestiture had on the telephone. Consumers will no longer be limited to one set-top box that they have to rent from their cable service provider. Instead, consumers will be able to choose their set-top box based on individual needs and preferences. Consumers will be able to make these choices based on what device gives them better access to their preferred cable and/or streaming service at their specific price point.

²⁴ TIME WARNER CABLE (last visited Apr. 13, 2016), <http://www.timewarnercable.com/en/enjoy/roku.html>.

²⁵ CFA recognizes that Comcast announced that it will begin to offer its cable service through Roku and Samsung Smart TVs. This does not negate the need for Commission intervention in the set-top box market. Cable companies should not dictate consumer choice.

Opening up the set-top box market will also increase viewer's access to diverse and independent online programming. Specifically, minority programmers primarily reach consumers over the Internet. Most minority programming does not make it to mainstream ratings-based television.²⁶ Instead, it is mostly streamed over the Internet, where consumers have to intentionally search for their desired programs. By allowing for a single-viewing experience, where consumers can easily switch between live television and streaming providers, consumers will more easily be able to access these niche programs. Rather than being limited to a handful of minority channels, consumers will have access to a broad spectrum of minority programming, in addition to the channels they had access to before this rule. Additionally, consumers will likely be able to program their set-top boxes to recognize what programs they like and generate additional programs they might like based on those preferences.

D. These Proposed Rules Will Not Undermine Other Important Consumer Protection Goals.

The Commission has recognized and made clear that technological change does not require us to abandon our fundamental social values and goals. On the contrary, technological innovation makes it possible to realize those goals at higher levels, which is what progress is all about.

The proposed rules also protect the privacy interests of consumers. The Commission has stated in the rules that it will require viewers who utilize third-party set-top boxes to have the same privacy protections as those who use cable operator-owned set-top boxes. The Commission has made it clear that the policies it adopts under other sections of the act must not be undermined by competition in the set-top box market. That should apply to advertising,

²⁶ Hiawatha Bray, *FCC Plan Would Give Consumer Control of Set-Top Box*, BOSTON GLOBE, (Jan. 31, 2016), <https://www.bostonglobe.com/business/2016/01/31/fcc-plan-would-give-consumer-control-set-top-box/07egxGkGX2nFqtr60rs2xH/story.html>.

inappropriate content, and privacy. The set-top box proceeding will not preclude whatever conclusions the Commission reaches in the ongoing privacy proceeding. In the event of a potential conflict between the mandates under different sections, the other sections will take precedence, which is clearly what Congress intended in section 629.

Beyond the baseline privacy protections that reign in the severe threat to privacy that network operators pose because of their ability to see a wide range of consumer activities, a competitive marketplace that unbundles the set-top box devices might develop competition around privacy. Privacy is a shrouded attribute of the bundle of services and network operators have a stronger incentive to hide it than an independent, third-party provider.²⁷

Implementing an open standard that includes the requirement to comply with privacy would stimulate the development of better privacy practices. This approach is not only technologically feasible, but it is also competitively neutral. Each provider has the same obligations and can design approaches to comply that play to its strength.

IV. HISTORY HAS SHOWN THAT OPENING CHOKEPOINTS IN THE COMMUNICATIONS INDUSTRY LEADS TO INCREASED INNOVATION AND CONSUMER CHOICE.

Cable operators and programmers say the system will collapse if third party devices are attached to the network and competition is introduced. Because this unfounded technological claim has been a favorite of the network operators in their efforts to resist and impeded competition, history is important here. The long history of these issues in the communications space supports the Commission's conclusion.

²⁷ An example of an important shrouded attribute analyzed by CFA is energy consumption of computers (see Comments of Consumer Federation of America, Consumers Union, Consumer Action and Consumer Federation of California, Docket Number: 14-AAER-02, Project Title: Computer, Computer Monitors, and Electronic Displays, TN #: 20385333, Date: 5/29/2015).

The proposed rules only continue the tradition carried out by the Commission to ensure a competitive marketplace for communication services. This is clearly evident in the case of the Commission's actions concerning the telephone and unlicensed spectrum. In both of these cases, the Commission removed barriers to open the market and the resulting competition led to increased consumer sovereignty and innovation.

A. The Commission's Action in the Telephone Market After *Carterfone* Led to the Bell System Divestiture.

AT&T introduced the Western Electric 500-type rotary telephone in 1949. As with most telephones of the time in the United States, these telephones were owned by the local AT&T subsidiary and leased to consumers on a monthly basis.²⁸ Choices for telephone styles and colors were limited. Until 1953, only black was available with a metal rotary dial. By 1954, consumers were given eight color options. AT&T, working together with wholly-owned subsidiary Western Electric,²⁹ strictly enforced policies against buying and using telephones by other manufacturers on their network - partially to ensure the technical integrity of their network, but mostly to avoid competition.

Most phones made by Western Electric included the disclaimer "BELL SYSTEM PROPERTY--NOT FOR SALE." Telephones were also sometimes labeled with a sticker or ink stamp marking the name of the operating company that owned the telephone. After the Commission's 1968 *Carterfone* decision allowing consumers to attach third-party equipment to

²⁸ Glen O. Robinson, *The Titanic Remembered: AT&T and the Changing World of Telecommunications*, 5 YALE J. REG. 17 (1998).

²⁹ WESTERN ELECTRIC, (last visited Apr. 13, 2016), <http://www.westernelectric.com/history/WEandBellSystemBook.pdf> (overview of relationship between AT&T and Western Electric).

the network, AT&T was forced to change its policy by selling consumers the telephone housing but retaining ownership of the electrical components.³⁰

On January 1, 1984, after the court ordered the Bell System Divestiture, eight separate entities were created.³¹ AT&T started selling telephones outright to the public through its newly created American Bell (later changed to AT&T Information Systems) division. Many consumers were then offered the option to buy the telephones they had been leasing.

The telephone underwent radical changes after the *Carterfone* decision and the divestiture. Not only were consumers introduced to many color options, but the technology itself improved vastly. The rotary phone finally became obsolete. Cordless phones were born, quickly followed by the first mobile phone. Telephones were modified to cater to senior citizens and persons with disabilities.

Carterfone was only the beginning and the resulting innovation was not limited to the telephone. The Commission's decision in *Carterfone*, and subsequent deregulation of customer-premises equipment, led to the creation of the modem.³²

The modem marketplace illustrates how allowing increased innovation can directly benefit consumers. Consumers may rent a modem from their Internet Service Provider, akin to renting a set-top box from their cable provider, incurring additional rental fees. These fees run an average of \$10 per month. Unlike cable boxes currently, there is a standard called "Data Over Cable Service Interface Specification ("DOCSIS") which lets consumers use their own

³⁰ *In the Matter of Use of the Carterfone Device in Message Toll Telephone Service*, 14 F.C.C. 2d 571 (1968).

³¹ *United States v. AT&T*, 552 F. Supp. 131 (D.D.C. 1982).

³² Jason Oxman, Working Paper, FCC (July 1999), https://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp31.txt.

hardware.³³ With increased innovation, the cost of modems has significantly decreased in recent years and it is now substantially cheaper for consumers to purchase their modems independently. The purchase will usually end up paying itself off within a year.³⁴ Further, there are multiple choices for the modem, allowing consumers to define what their Internet service needs are, independent from their relationship with their Internet Service Provider.³⁵

B. The Commission’s Action in the Spectrum Industry Led to Increased Innovation and Consumer Choice.

One of the most underappreciated examples of open-access policies that was device centric is WiFi devices.³⁶ The mobile communications revolution, by far the most dramatic communications revolution in human history, has been built upon two very different and successful approaches to the management of spectrum that were made possible by a remarkable,

³³ Rob Pegoraro, *It’s Still a Mistake to Rent a Cable Modem*, USA TODAY, (Mar. 28, 2016), http://www.usatoday.com/story/tech/columnist/2016/03/28/mistake-to-rent-cable-modem/82334894/?utm_campaign=Newsletters&utm_source=sendgrid&utm_medium=email

³⁴ Jose Pagliery, *Comcast and Time Warner Cable Hikes Modem Fees as Much as 33%. Time to Buy Your Own*, CNN MONEY, (Jan. 5, 2015), <http://money.cnn.com/2015/01/02/technology/comcast-time-warner-cable-modem/>.

³⁵ CFA has emphasized that the development of the modem and fierce competition in that market resulted from the combination of FCC policy to remove barriers to entry by opening chokepoints and the vigorous response of the private sector in seizing the opportunity. We also not that, while many tech-savvy consumers may be able to properly set up such modems, avoiding rental can still be beyond the reach of some users. Further, Internet Service Providers are not incentivized to promote such use and consumers must figure out compatibility flaws on their own. Internet Service Providers do not offer technical support and warn the consumers they are “on their own” for security settings. *See* TIME WARNER CABLE, *Should I Lease or Buy a Modem?* (last visited Apr. 14, 2016), <http://www.timewarnercable.com/en/support/internet/topics/lease-or-buy-modem.html>. This is why CFA supports Commission intervention to ensure that standards are created to support compatibility and interoperability with the third-party device and the cable provider, as it has done in the past.

³⁶ This section draws from Mark Cooper, *Efficiency Gains And Consumer Benefits Of Unlicensed Access To The Public Airwaves*, *The Dramatic Success of Combining Market Principles and Shared Access*, January 2012; Mark Cooper, “The Central Role of Wireless in the 21st Century Communications Ecology: Adapting Spectrum and Universal Service Policy to the New Reality,” *Telecommunications Policy Research Conference*, September 2011.

U.S. led, real-world experiment. In the early days of radio communications, policymakers chose to manage interference in radio transmission by granting an exclusive license to one user to transmit signals on specific frequencies, called bands, in a specific geographic area for a specific purpose. For three quarters of a century, this approach led to the dominance of broadcasting in the commercial use of the airwaves. In the mid-1980s the Commission altered the regulatory regime for access to spectrum and created the opportunity for dramatic improvements and changes in the use of spectrum for communications purposes.

The Commission identified specific bands where there would be no licensee and interference would be avoided by the use of new technologies (spread spectrum) and restrictions on the amount of power devices could use. Anyone and everyone could transmit in these unlicensed bands as long as the devices obeyed the rules.

It can be argued that the license-exempt approach is more market-oriented than the flexible exclusive licensed approach because it invites much greater entry and competition at the device and service levels. At the same time, the license-exempt model is far from a free-for-all, since the Commission certifies devices that must comply with very specific rules for their operation (in effect “licensing” devices rather than uses or users). Indeed, the Commission still administers the regime of rights enjoyed by spectrum users under both of the newer models.

From the point of view of traditional economic analysis, compared to exclusive licenses, the unlicensed model is extremely, even radically, deregulatory. It captures what would be externalities with respect to licensed approaches:

- The unlicensed model removes the spectrum barrier to entry, which is the primary obstacle by allowing anyone to transmit signals for any purpose, as long as the devices used abide by the rules.
- Removing this barrier to entry removes the threat of hold up, in which the firm that controls the bottleneck throttles innovation by either refusing to

allow uses that are not in its interest, or appropriating the rents associated with innovation.

- It lowers the hurdle of raising capital by eliminating the need for a network and focusing on devices.
- It fosters an end-user focus that makes innovation more responsive to consumer demand, instead it allows direct end-user innovation.
- It de-concentrates the supply of services compared to the exclusive licensed model, especially for high bandwidth services which tend to result in a very small number of suppliers, particularly in lower density markets.

Unlicensed spectrum lowers transaction costs. If the rules are written leniently, many people will be able to transmit for many purposes. If the rules are written well, interference will be avoided. The Commission's approach to setting aside spectrum for shared use exhibits several characteristics that accomplish the task of managing the common pool resources in a light-handed manner:

- The use rules were simple and established an easy set of conditions with which devices had to comply.
- They did not require intensive, continuous monitoring and coordination.
- There were no membership rules. Anyone could enter and use the shared resource.

Beyond these traditional economic factors, the unlicensed model creates a much more diverse sector. Diversity has come to be recognized as a uniquely important characteristic of economies and economic systems because it reinforces desirable economic traits of the system. Diversity creates value, enhances innovativeness and builds resilience, as well as promoting other social values like pluralism. Diversity is created by three systemic characteristics – variety (the number of firms), balance (market shares of firms), and disparity (the differences between the firms). Adding an additional cellular service provider may increase variety and may improve balance if the new provider gains market share, but it does not increase disparity. The diversity that a different ownership model introduces into the communications ecology provides

the uniquely significant benefit of introducing a different perspective that is ideal for enhancing diversity.

The Commission sought to open up additional spectrum through the recent incentive auctions. In 2007, the Commission opened up wireless networks with open access requirements governing the spectrum auction winners. Previously, wireless carriers dictated which websites, download services, and search engines that customers could access on their cell phones by limiting what devices were available on each network. The winners of the \$15 billion auction of public airwaves were required to build a network that would open up to all devices and services. The winners of the “C Block” chunk of the 700 MHz spectrum are precluded from denying, limiting, or restricting the ability of their customers to use the devices and applications of their choice on the licensee's C Block network, subject to certain technical standards. This allowed consumers to choose the smartphone or tablet they want, regardless of their wireless carrier.

V. ARGUMENTS AGAINST THE PROPOSED RULES ARE UNFOUNDED.

As with every iteration of technological change, the cable industry has dredged up old arguments against Commission intervention to promote competition. They claim that the MVPD market is competitive, that there is no need for an independent market for the set-top box, and that opening up the set-top box market would lead to massive piracy of copyrighted content. These claims merely serve as a distraction and do not preclude the need for the proposed rules.

A. CFA Disputes Claims that the MVPD Market is Sufficiently Competitive.

This Section draws on the empirical analysis contained in Attachment A, which provides a thorough, rigorous, and up-to-date review of the lack of competition in the cable and MVPD markets. As the Commission points out in the NPRM, cable operators and broadcasters, who

adamantly oppose competition in the MVPD space, have made a series of claims about the broad competitiveness of the market. They have trotted out their tired, worn out claims of competition based on erroneous definitions of the MVPD product market and the extent of competition within it. These have been repeatedly rejected by the Commission.³⁷

The claim that the broader MVPD market is competitive is merely an effort to divert attention away from the monopoly in the set-top box market by opponents of this proceeding. This claim rests on a product market definition that is fundamentally flawed,³⁸ as discussed in Attachment A.³⁹ It incorrectly sweeps in a series of streaming devices that are simply not good substitutes for the MVPD product that cable operators deliver. The MVPD market is a distinct product defined by multiple, new, first-run marquee content that cannot be obtained with the same quality, quantity, and price from anyone other than the operator of a cable or satellite system. Streaming services do not deliver anywhere near the range of programming included in the MVPD market. Because they have raised these bogus definitions of competition in the MVPD market, the attached analysis examines market definition and concentration in detail.

That analysis shows that the market is not only highly concentrated, but this is a particularly important moment to finally deliver competition to the set-top box market. Cable

³⁷ The most recent and thorough example is the rejection of the Comcast-Time Warner merger, Department of Justice, Comcast Corporation Abandons Proposed Acquisition of Time Warner Cable After Justice Department and the Federal Communications Commission Informed Parties of Concerns, April 24, 2015; Petition to Deny of Consumer Federation of America, et al., In the Matter of Applications of Comcast Corporation, Time Warner Cable Inc. and Charter Communications Inc. For Consent to Transfer Control of Licensees and Authorization, Federal Communications Commission, MB Dkt No. 14-57, August 25, 2014. The complaints in the Comcast-NBCU merger provide detail on these issues (Complaint, Competitive Impact Statement, United States v. Comcast Corp., 808 F. Supp. 2d 145 (D.D.C. 2011) (No. 1:11-cv-00106; Memorandum Opinion and Order, In re Applications of Comcast Corp., General Electric Co. and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, FCC MB Docket No. 10-56 (adopted Jan. 18, 2011).

³⁸ Navigation NPRM, *supra* note 1, at ¶ 13.

³⁹ Attachment A, pp. 33-37.

operators have emerged as the overwhelmingly dominant providers of true Broadband Internet Access Service (“BIAS”) and they are integrating their BIAS and MVPD services. Allowing them to maintain their set-top box monopoly gives them another tool to strangle competition in the broader market for bundled services. Opening the set-top box market to competition cannot, by itself, overcome the massive market power that cable operators have in the combined MVPD/BIAS market. However, it does allow new entrants to innovate in part of the video space, differentiating and defining new services around the video stream, which can help to loosen the grip of cable market power.

Despite repeated efforts to promote competition in the MVPD market, the market power of cable remains as strong as ever and its abuse continues.⁴⁰ Instead of engaging in direct competition, the major players have opted to buy each other out, resulting in an implicit “non-compete” agreement in physical space. MVPD operators and content providers have attempted to extend this anticompetitive structure into cyberspace by developing a system of private “passports” called TV Everywhere. Each MVPD issues a passport to its customers in its physical space service territory that must be authenticated by other MVPD operators before content is allowed to pass its borders.

Consumers are left with severely limited options for a cable provider. The Commission reported that 83.9 million of the 132.5 million homes reviewed in 2013 had access to only a single cable service provider, with some rural areas not serviced at all.⁴¹ This significant lack of competition has also deterred new entrants in the market, due to the necessity to interact and bypass chokepoints in the digital distribution medium. Public policy must create the conditions

⁴⁰ Attachment A, for general pricing pp. 37-41, for set-top box pricing, pp. 41-42, for income and profits, pp. 42-45.

⁴¹ Kate Cox, *Here’s What the Lack of Broadband Competition Looks Like on a Map*, CONSUMERIST (March 7, 2014), <http://consumerist.com/2014/03/07/heres-what-lack-of-broadband-competition-looks-like-in-map-form/> (citing the National Broadband Map project).

for competition and entry, rather than leaving it to the incumbents to dictate delivery to consumers.⁴² The convergence and bundling of MVPD and broadband services has made the market power problem worse, as bundling becomes dominant and the concentration of the bundled market is even higher than the individual markets.

The abuse of cable market power in the MVPD is particularly rampant. Cable companies hold the exclusive domain over how content is transmitted to the public. There is no incentive to change their business practice to work with other content providers to consolidate applications within a single device.⁴³

Opponents of the proposed rules have trotted out tangential arguments to obscure the failure of competition in the set-top box market. These arguments are wildly incorrect and intended to disguise the truth: the set-top box market is a stone-cold monopoly.⁴⁴ The evidence that the set-top box market is thoroughly uncompetitive is overwhelming. Properly defined, the Commission cites evidence that the market share of the cable operators is about 99%. As a result, the cable operators have the capability to set the prices of, and control the speed of innovation in, set-top boxes. Their refusal to allow third-party boxes to connect to the network with reasonable rates and terms forecloses competition. Consumers do not need, or want,

⁴² The Supreme Court has previously emphasized the necessity of competitive marketplace to the public wellbeing. *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594, 605 (1953) (“[b]asic to the faith that a free economy best promotes the public weal is that goods must stand the cold test of competition; that the public, acting through the market’s impersonal judgment, shall allocate the Nation’s resources and thus direct the course its economic development will take.”).

⁴³ See NTIA, *supra* note 19, at 3 (“although MVPDs deserve credit for expanding the ways in which their subscribers can access the video programming they purchase, the fact remains that those subscribers still typically have limited competitive choice in the ways that they may access or navigate programming or integrate complementary features and services. In other words, although the proliferation of MVPD-provided applications does produce significant consumer benefits, it does not address - let alone resolve - the competitive concerns at the heart of Section 629”).

⁴⁴ *Navigation NPRM*, *supra* note 1, at ¶ 7 (stating that the cable card market share is approximately 1% of the cable MVPD subscribers).

multiple devices to access their content. However, without a market for set-top boxes, consumers often need to have multiple devices and remotes. With consumers choosing Internet service subscriptions such as Netflix or Hulu at a rapid rate,⁴⁵ it does not make sense that these “cord shavers” are not able to consolidate all services into a single device, customizable to their preferences.

B. CFA Disputes Claims That There Cannot Be an Independent Market for Set-Top Boxes.

Defenders of this monopoly argue that there is and can be no market for set-top boxes because it is and should be a component of the integrated service they deliver.⁴⁶ This is the same argument that the Commission rejected in the *Carterfone* decision fifty years ago. By breaking the stranglehold of AT&T and their Regional Bell Operating Companies, the Commission opened the door to an explosion of innovation, most notably and dramatically the development of the Hayes Modem.⁴⁷ This experience has been repeated time and time again in the communications space.⁴⁸ Opening the bottleneck creates the opportunity for innovation and competition, and new entrants rush in. The ability to attached a wide range of devices to communications networks of all types in the digital age – voice, video, data, wireline, cellular

⁴⁵ Editorial Board, *Preparing for Life After Cable*, N.Y. TIMES (Aug. 21, 2015), available at <http://mobile.nytimes.com/2015/08/21/opinion/consumers-arecutting-the-cord-to-gain-choices-and-pay-less.html>.

⁴⁶ Navigation NPRM, *supra* note 1, at ¶¶ 16-18, pointing out that negotiations take place for access to MVPD programming, George Ford, the Communicators, Friday Apr. 15, 2016.

⁴⁷ Mark Cooper, 2015, “The ICT Revolution in Historical Perspective: Progressive Capitalism as a Response to Marxist Complaints, Piketty Pessimism and Free Market Fanaticism About the Deployment Phase of the Digital Economy,” Telecommunications Policy Research Conference, September, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587085.

⁴⁸ Examples involving customer premise equipment include telephones (FCC, 1968, DOJ, 1984), video recorders (courts, 1984), unlicensed spectrum (FCC, 1984), MP3 players (court, 1999). Examples involving access to content include the nondiscriminatory treatment of data in the Computer Inquiries (FCC, 1968), prime time access for independent programmers provided by the Financial and Syndication rules (DOJ and the FCC 1970), the compulsory license for cable operators (Congress, 1976), satellite program access (Congress, 1992).

and WiFi – without interfering with the smooth operation of those networks is one of the great strengths of digital communications.

We understand that the cable operators do not want to connect third-party devices to their networks for the same reason that AT&T did not want to connect “foreign exchange equipment” – they want to control the customer as best they can and dictate the pace of innovation and change. Their economic interest does not equate to a technological necessity for integration. On the contrary, their economic interests are at odds with the technological capabilities and the direction of change. Because they have raised this integration objection to competition in the set-top box market, the attached analysis examines the behavior of devices that have similar functionalities and are connected to communications networks on a routine basis.⁴⁹ Independent third-party supply has not caused the network to collapse by any stretch of the imagination and has resulted in a tidal wave of consumer-friendly innovation, increased functionality, and declining prices.

C. CFA Disputes Claims That Opening the Set-Top Box Would Undermine Rights under Copyright Law.

The copyright holders have regurgitated their standard set of arguments against technological change, insisting that competition and technology will inevitably undermine their rights. This argument is over a century old, reaching back to piano rolls.⁵⁰ They’ve repeated this

⁴⁹ See Attachment A, pp. 30-31, 38, 41-42.

⁵⁰ CFA has analyzed these issues at length in a series of paper and regulatory filings in the music sector, Mark Cooper, Consumer Federation of America Reply to the Department of Justice, Request for Comments in the Review of *ASCAP* and *BMI* Consent Decrees, August 6, 2014; Mark Cooper, Comments of the Consumer Federation of America on, Copyright Policy, Creativity and Innovation in the Digital Economy, United States Department of Commerce, Patent and Trademark Office, November 13, 2013; Mark Cooper, *Digital Disintermediation and Copyright in the 21st Century: Lessons from the Transformation of the Music Sector*, Attachment Consumer Federation of America Response to the Department of Commerce Green Paper on Copyright, November 13, 2013.

argument in the video space for at least 40 years, since they tried, and failed, to kill the cable industry by withholding content⁵¹ and home video recorders, rendering them useless.⁵²

The proposed rules do not preclude the deployment of measures such as conditional access systems (CAS) and digital rights management (DRM) to protect the transmission streams of copyrighted content, long relied on by cable operators.⁵³

In fact, broadcasters have repeatedly tried to ban technologies that afford consumers choice in how they enjoy the content that has been legally obtained. While the courts have upheld their rights to protect their works from infringement under the Copyright Act, they have rejected their efforts to ban, impair, or disfigure distribution technologies in defense of those rights.⁵⁴ The VCR,⁵⁵ the MP3 player,⁵⁶ and file sharing⁵⁷— all of which the copyright holders

⁵¹ The Copyright Act of 1976 gave them the right of access to programming with a compulsory license, Brief Of Amicus Curiae The Consumer Federation Of America In Support Of Defendants-Appellants Supporting Reversal, In The United States Court Of Appeals For The District Of Columbia Circuit Fox Television Stations, Inc., et al., Plaintiffs-Appellees, v. Filmon.TV Networks Inc., et al. Defendants-Appellants. On Appeal From The United States District Court For The District Of Columbia, Case No. 13-7145 (consolidated with 13-7146), Glushko-Samuelson Intellectual Property Law Clinic, April 4, 2016.

⁵² *Sony Corp. Of America v. Universal City Studios*, 464 U.S. 417 (1984) (rejecting copyright owner's claim that the Betamax home videotape recorder would be used to engage in massive infringing activity); *Universal City Studios v. Sony Corp. Of America*, 480 F.Supp. 429 (C.D. Ca. 1979), 468 ("Harm from time-shifting is speculative and, at best minimal . . . No likelihood of harm was show at trial, and plaintiff admitted there that been no actual harm to date.").

⁵³ DSTAC Summary Report at 33 (Aug. 28, 2015) (DSTAC Report), *available at* <http://apps.fcc.gov/ecfs/document/view?id=60001515603>.

⁵⁴ *See, e.g., Fox Broad. Co. v. Dish Network LLC*, No. CV 12-4529 DMG (SHx), 2015 WL 1137593 (Jan. 20, 2015) (rejecting Fox's copyright claims that Dish's Hopper device, which allows consumers to automatically skip over commercials, infringes Fox's exclusive right to publicly perform its copyrighted works).

⁵⁵ *Supra* note 52.

⁵⁶ *Recording Indus. Ass'n of America v. Diamond Multimedia Sys.*, 180 F.3d 1072 (9th Cir. 1999) (holding that RIAA's efforts to enjoin the manufacture and distribution of the Rio portable music player fail because the Rio is not a digital audio recording device subject to the restrictions of the Audio Home Recording Act of 1992).

⁵⁷ *MGM Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005); *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001).

would have banned or distorted, have played a key role in defining the more consumer-friendly media space in which consumers live today. When the Commission was asked by the broadcasters to distort video technology with the Broadcast flag, it too rejected the attack on competition.⁵⁸ While the transformation of the music space is viewed as the “Nightmare on Elm Street,” for consumers it has created a much more friendly, lower cost space, but that dramatic success has stiffened the resistance of the MVPD and content companies who fear technological change and hate competition.⁵⁹

VI. CONCLUSION

CFA fully supports the Commission’s decision to open up the set-top box market. We not only agree with the decision to issue the rules opening up the set-top box market, but we also applaud the substance and direction of the proposed rules. The proposed rules will lower costs, increase innovation of the long-stagnant set-top box, and increase consumer sovereignty. Given the overwhelming evidence of market imperfection and market failure, congressional support for increased competition in the set-top box market, and strong consumer interests, CFA fully supports these proposed rules.

⁵⁸ The Commission formally eliminated the "broadcast flag" digital copy protection rule in 2011 which was previously overturned by courts. *Am. Library Ass'n v. FCC*, 406 F.3d 689 (D.C. Cir. 2003).

⁵⁹ Declaration of Mark Cooper, In re Applications of Comcast Corp., General Electric Co. and NBC Universal, Inc. for Consent to Assign Licenses and Transfer Control of Licensees, FCC MB Docket No. 10-56, June 2010. Mark Cooper, *The Negative Effect of Concentration and Vertical Integration on Diversity and Quality In Video Entertainment*, 2010.

Dated: April 22, 2016

Respectfully submitted,

/s Mark Cooper

Director of Research

CONSUMER FEDERATION OF AMERICA

1620 I Street, NW, Suite 200

Washington, DC 20006

Glushko-Samuelsan Intellectual Property Law Clinic

AMERICAN UNIVERSITY WASHINGTON COLLEGE OF LAW

4300 Nebraska Ave., NW

Washington, D.C. 20016

CABLE MARKET POWER

THE NEVER ENDING STORY OF CONSUMER OVERCHARGES AND EXCESS CORPORATE PROFITS IN VIDEO AND BROADBAND

MARK COOPER

APRIL 2016

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I. INTRODUCTION

CONTEXT AND PURPOSE

This paper recounts the never-ending story of the abuse of market power in the multi-channel video programming market (MVPD), a story in which cable TV is the central actor.¹ This episode takes place at a moment when there is a flicker of hope that competition might break out, if policies set the conditions that make it possible.

- The Open Internet Order will prevent cable operators for using their control of the video distribution network from creating barriers to competition from program distributors who use the Internet to deliver programming “over-the-top” services. Two of the major combatants in the Open Internet proceeding were Comcast and Netflix.
- The FCC has also issued a notice of proposed rulemaking that would address another chokepoint in the video distribution network. Congress intended for the set top box, which controls the flow of programming, to be provided in a competitive market, but the FCC had failed to adopt rules that would make it so and cable operators continued to have a near monopoly over those devices.
- Similarly, after repeated failures to diminish the market power of the cable operators, the case of Fox Television Stations, Inc. v Filmon X LLC, et al., at the 9th Circuit federal appeals court, provides an opportunity to open the door to a new entrant into the MVPD product space.

Unfortunately, in the three decades since cable was deregulated, there have been numerous flickers like these, but they never burst into real flames of competition.

It has been widely noted that 2016 is the twenty-year anniversary of the Telecommunications Act of 1996, recognized as one of the most important amendments to the Communications Act of 1934. Other milestones on the tortured route to the abuse of market power in the MVPD industry are less well recognized.

Thirty-years ago cable rates were fully deregulated (two years after the Cable Act was signed). Forty-years ago the 1976 Copyright Act, recognized as one of the most important amendments to the Copyright Act of 1911, created a compulsory license to give cable access to TV content, which the broadcasters had withheld in an effort to prevent the entry of cable in the video distribution space. Similarly, 2016 is the 50th anniversary of the beginning of the computer inquiries, which required the telephone companies to treat data communications in a nondiscriminatory manner.

All of these important policies reflect the constant struggle and ultimate failure in the effort to introduce greater competition into the video market. Indeed, over the course of forty years, no industry has been the source of greater hope for competition than the MVPD market and no market has been the source of greater frustration over the failure of competition to end the abuse of market power. These policies targeted the two key bottlenecks in the video product space where competition has been choked off.

The Copyright Act of 1976 addressed the problem of access to content. Competitors must have access to the product that consumers want to buy in order to compete. Denial of access to “marque” content, controlled by a small number of dominant incumbent firms, can doom, and has doomed, competition. After decades of trying, it had become clear that cable could not succeed as a competitor to over-the-air broadcasting without access to the “marque” content that the broadcasters controlled. Congress enacted a compulsory license that made that programming available on fair, reasonable and non-discriminatory (FRAND) rates, terms and conditions.²

The 1984 Cable Act deregulated cable based on the hope that two forms of competition would grow based on new transmission networks. Supporters of the 1984 Cable Act declared that head-to-head competition between cable operators using similar wireline transmission technologies (intramodal competition) would grow. Intermodal competition between cable and satellite (based on wireless transmission technology) was supposed to reinforce the competition.

By 1992, it was clear that neither form of competition was working to prevent that widespread abuse of cable market power. The Cable Consumer Protection and Competition Act of 1992, addressed the abuse of market power in three ways.

- It directly regulated cable prices, since competition had failed to discipline cable pricing abuse.
- It ordered cable operators, who had been withholding content, to make programming available to satellite on FRAND terms.
- In 1976, the ability of the broadcasters to withhold content undermined the ability of cable to compete, but by 1992, the tables had turned. Cable was now the dominant distribution technology and its ability to deny carriage threatened broadcasters. Congress granted broadcasters special access to the cable transmission network (retransmission rights).

The Telecommunications Act of 1996 addressed the problem of access to the audience. In order for a new entrant to win customers, competitors must be able to reach them. Even if the entrant has content, it must have access to the transmission networks over which the content will flow. Denial of access to transmission networks, can doom, and has doomed, competition. Competition was far too weak to discipline cable’s market power, so the act sought to increase the number of competing transmission networks. In the Telecommunications Act of 1996, the rate regulation part of the 1992 Act was swept away, replaced by another round of policy that hoped to stimulate competition. Cable operators were encouraged to compete against one another and telephone companies were invited to enter the video business. Congress also mandated that the sale of set-top boxes, which received the video signal from the cable network and deliver it to the television, should be competitive. The compulsory license, program access and retransmission rules remained in place, however.

This paper shows that, twenty-years later the market power of cable remains as strong as ever and its abuse continues, largely because the dominant incumbents, who were the best candidates for entry, have refused to compete with one another. In twenty-years no incumbent franchise cable company has overbuilt one of its neighbors to engage in head-to-head

competition. Instead, they bought one another out and have tried to extend their physical space “no compete” model to cyberspace with “TV Everywhere.”³ This is an agreement among dominant MVPD companies and content providers in which each MVPD issues a passport that every other MVPD must verify before they allow content to pass the borders of their physical space service territory. Cable operators have also become the dominant providers of true broadband Internet access service (BIAS).

Twenty-years after the 1996 Telecommunications Act opened the door to competition no Baby Bell has ever overbuilt one of its neighbors to engage in head-to-head competition. They entered the video market late in their service territories, hesitantly and on a narrow basis. The FCC magnified the threat of the abuse of market power by erroneously classifying BIAS as an unregulated information service, rather than a telecommunications service, and by approving a series of mergers that undermined competition.

Hope for competition does, indeed, spring eternal. The massive excess profits in the cable industry attracts new technologies to butt heads with the cable monster. Unfortunately, new entrants face the same old problems. It remains true today as it has been over the past forty years that the chokepoints must be opened if competition is to grow. The digital distribution medium combined with the network neutrality rules may effectively open the transmission bottleneck. Potential over-the-top competitors, whether they stream single channels or provide full MVPD bundles still need effective access to customer and content. The set-top box is another tool for incumbents to control the customer.

The battle over network neutrality under the Open Internet Order (even as it is being litigated). Last year we saw one approach to cable competition (Aereo) fail under the broadcast performance standard of the Copyright Act. Filmon X LLC is an Internet-based cable operator, using the Internet protocol for switching. It still needs to pass through the content chokepoint. Ironically, it seeks to use exactly the same legal principle that made cable possible forty-years ago. As shown in Figure I-1, today, Filmon seeks to use the compulsory license to gain access to content without which it cannot possibly compete.

This paper focuses on the demonstration of the continuing exercise of market power. It is the persistence of that market power that makes it so urgent that policy support the entry of new competitors into the MVPD space. This paper shows that the economic conditions and principles that motivated the enactment of strong policies to enable competitors to enter the MVPD/BIAS market still apply.

OUTLINE

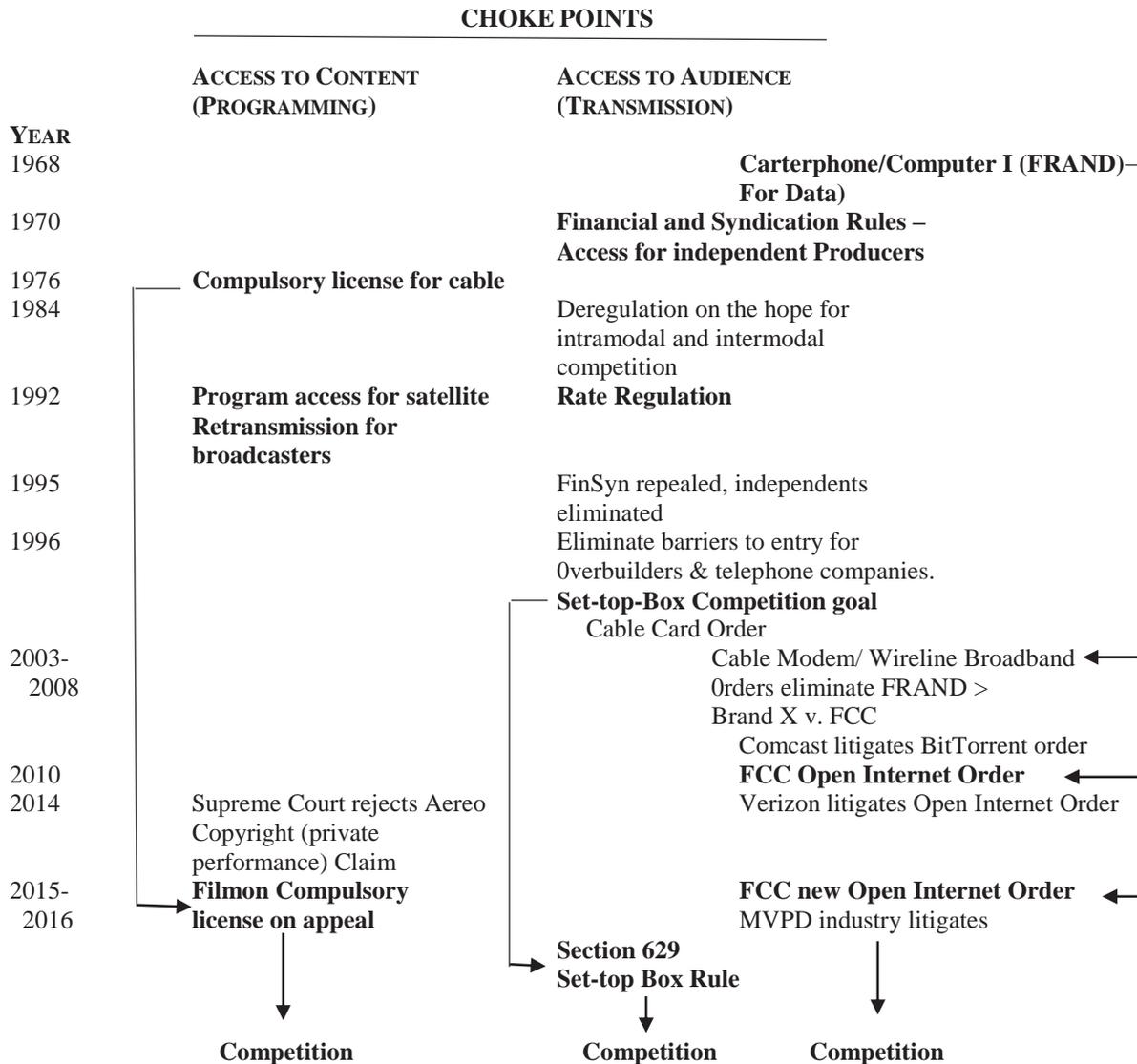
The paper has three sections after this introduction.

Section II establishes the analytic framework. It reviews both the broad economic principles that underlie market structure analysis and the specific conditions that obtain in communications (MVPD/BIAS) markets.

Section III identifies the tools that are used to examine the structure of specific markets. These are based the approach to market structure analysis traditionally conducted by the Department of Justice.

Section IV demonstrates the high degree of concentration in the combined MVPD/BIAS market. It shows that, in the absence of workable competition, the abuse of market power will impose billions of dollars of excess costs on consumers, result in monopoly profits for companies, and significantly reduce national economic output.

TABLE I-1: THE NEVER ENDING STRUGGLE TO OPEN COMMUNICATIONS CHOKE POINTS IN THE MVPD/BIAS MARKET



II. MARKET PERFORMANCE AND MARKET POWER

A TRADITIONAL VIEW

Although my focus is on the empirical evaluation of the performance of key sectors and the impact of specific policy choices, it is necessary to start with a little theory and method to provide a grounding for the empirical analysis. I have to explain why and how I measure performance and outcomes.

This paper takes a traditional and standard approach to economic analysis. The structure of the market is affected by basic economic conditions. Market structure is assumed to have a major impact on the conduct of sellers and buyers in the market. Conduct determines the performance of the market to a significant degree. This is not only traditional, but also non-partisan. Progressive/liberal analysts, like Scherer, Ross and Shepherd, and *laissez faire*/conservative analysts, like Posner, Landes and Viscusi et al. all take this approach. I use the concepts to describe industry structure and focusses on three key aspects of the traditional approach to economic analysis – concentration, price and profits, which are addressed by these analysts.

This is much more than a theoretical exercise, however. Across a broad range of issues and agencies, the communications companies have either provided erroneous definitions of products and market to claim much more competition than actually exists or advanced theories of potential competition that argue that the analytic framework that has formed the basis of much policy analysis, no longer applies. In this section I lay out the correct framework for analyzing market power. In the next section I discuss measures frequently used to conduct empirical analysis.

A Progressive View of Market Analysis

Examining competition, concentration, prices and profits as the focal points of analysis reflects the basic analytic framework that has defined U.S. economic policy for a century. As shown in Figure II-1, it accepts the prominent role that markets play and the fact that markets may not perform well. This opens the door to an important role for policy to correct market imperfections and failures.

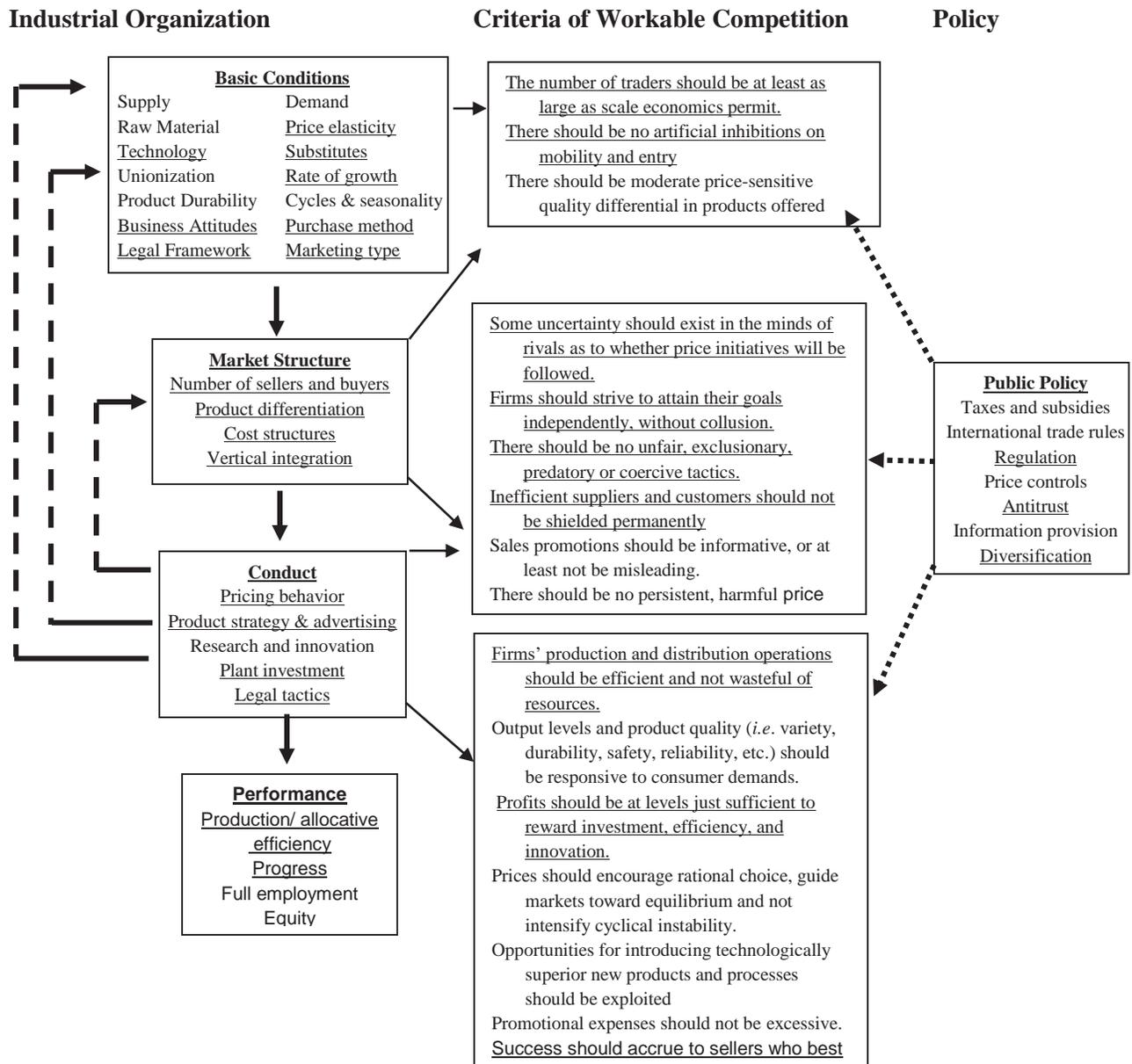
Scherer and Ross argued that “what society wants from producers of goods and services is good performance. Good performance is multidimensional.”⁴ They concluded that markets should

- be efficient in the use of resources and responsiveness to consumer demand,
- be progressive in taking advantage of science and technology to increase output and provide consumers with superior new products,
- promote equity in the distribution of income so that producers do not secure rewards in excess of what is needed to call forth services supplied and consumers get reasonable price stability and

- facilitate stable full employment of resources, especially human resources.

At the center of the framework, as shown in Figure II-1 is market structure, defined primarily by the number and size of sellers. Figure II-1 highlights the elements of the structure conduct performance paradigm (underlined text) that will be called on in the remainder of this paper to describe the market for MVPD and BIAS and evaluate its performance.

FIGURE II-1: THE STRUCTURE-CONDUCT-PERFORMANCE PARADIGM: KEYED TO CABLE



Source: Gene Kimmelman and Mark Cooper, *Antitrust and Economic Regulation: Essential and Complementary Tools to Maximize Consumer Welfare and Freedom of Expression in the Digital Age*, Harvard Law & Policy Review, 2015:9, based on F. M. Sherer & David Ross, *Industrial Market Structure and Economic Performance* (3d ed. 1990), pp. 5, 53–54.

Scherer and Ross note that “Measuring the degree to which the goals have been satisfied is... not easy, but relevant indicators include price-cost margins, rates of change in output... and price levels.”⁵ These are the primary measures analyzed in this paper. In a workably competitive market firms are constrained by competitive market forces to earn only a “normal” rate of profit. They do not have the power to set prices unilaterally, through collusion or coordination of their conduct to gain excess profits. They are also driven to invest and innovate, to win and hold customers, who have the ability to choose which products to consume. This forces firms to be responsive to consumer needs that evolve over time.⁶

However, where markets are not workably competitive firms can set prices far above costs to obtain excess earnings, slow innovation, restrict consumer choice and deliver inferior goods and service. The concentration of a market – the number of firms and their relative size – is a focal point of market structure analysis. The fewer the number and the larger the size of leading firms, the greater is the ability to set prices up and earn excess profits.⁷

A Conservative Perspective

In a seminal 1981 *Harvard Law Review* article,⁸ William Landes and Robert Posner, two of the leading Chicago school law and economics practitioners use similar concepts. They ask “what degree of market power should be actionable? They respond: “the answer in any particular case depends on the interaction of two factors: the size of the market (total volume of sales) and the antitrust violation alleged.”⁹ In a section entitled *Market Share Alone is Misleading*, Landes and Posner argued that antitrust authorities should take market fundamentals into account. In assessing the potential impact of market power “the proper measure will attempt to capture the influence of market demand and supply elasticity on market power.”¹⁰ Their intention was to convince antitrust authorities to ease up on enforcement, but the proposition should work in both directions. Markets that have low elasticities of supply or demand or high total dollar stakes could certainly demand more scrutiny, not less.¹¹ Infrastructure industries deliver service with relatively low elasticities. In fact, they can be considered “necessities” since they have a combination of low price elasticity and moderate income elasticity.

My purpose in this paper is not to debate whether or not the decision to pursue economic and social goals through the market approach is the preferable approach, although I have argued elsewhere that progressive capitalism is.¹² Here, I take the market paradigm as given and evaluate the performance of the communications markets in terms of the goals and processes of the market model.

In a sense, the contemporary debate over economic policy is a debate over how well that shift has worked and it is particularly intense in industries that are considered infrastructural (communications, finance, transportation, energy). Their size, great importance to the functioning of the economy and underlying economic characteristics suggest that the existence and persistence of market power is a particular problem and has made them the target of a great deal of public policy.

THE WELFARE ECONOMIC OF MARKET POWER

The incentive for dominant firms to raise prices and increase profits is basic to a balanced economic evaluation of market performance and public policy. When a firm with market power raises prices, it loses some sales (determined by the elasticity of demand). Why would it risk that? It will do so if the increase in revenue from the remaining sales is larger than the lost revenue from foregone sales, net

of costs. The framing of the answer, as shown graphically in Figure II-2, appears in every basic textbook on economics, including all of the sources cited above.

FIGURE II-2: ABUSE OF MARKET POWER RAISES PRICES, SHIFTS SURPLUS AND IMPOSES EFFICIENCY LOSSES



Source: F. M. Scherer, F. M. and David Ross, *Industrial Market Structure and Economic Performance* (Boston: Houghton Mifflin, 1990). pp. 34; Kip Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 79; William G. Shepherd, *The Economics of Industrial Organization*, 1985, p. 31.

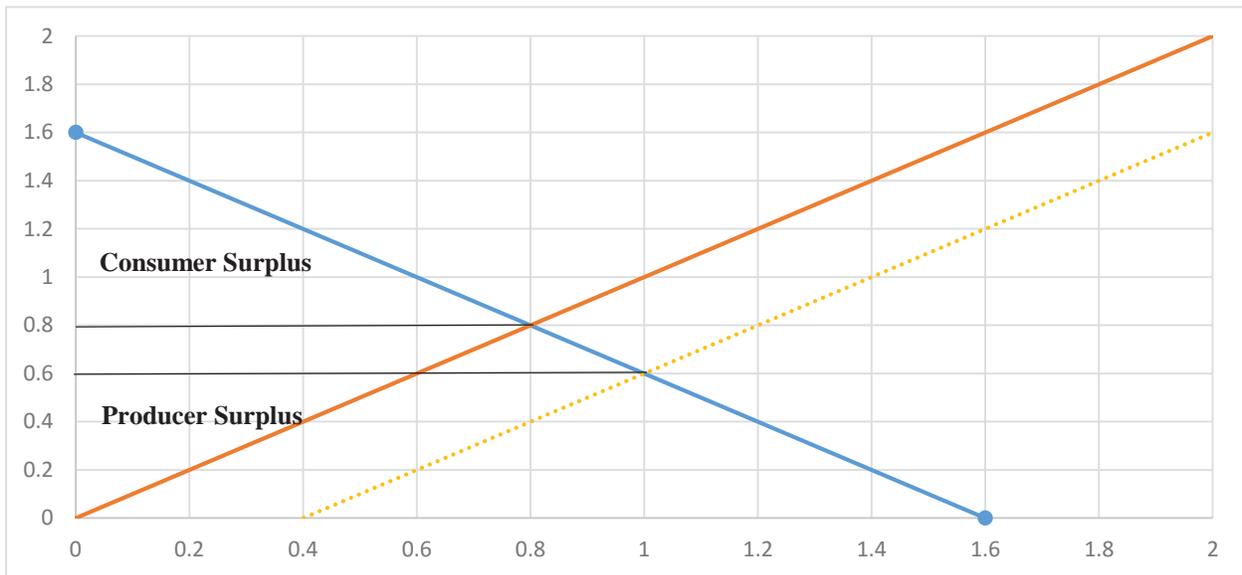
As Figure II-2 shows, in a competitive market, firms must sell at the competitive price, which “shares” the economic surplus between the consumer and the producer. Firms with market power raise prices to the point where the marginal revenue equals marginal costs. This maximizes their profits. This lowers consumer surplus, but increases producer surplus. It creates some deadweight loss (inefficiency) and the total social surplus is diminished, but that is not the concern of the producers. They care only about their profits.

Figure II-3 shows the pattern of change in a competitive market when the cost of producing goods declines through, for example, technological progress. As the supply curve shifts, the total surplus expands. Both consumers and producers enjoy an increase in surplus. The distribution of the gains (called the incidence and frequently analyzed as tax incidence) is determined by the elasticities of demand and supply. If demand were more elastic, consumers would get a larger share (producers would compete harder to keep their business by passing through more of the cost savings).¹³

EXPANDING THE STRUCTURE CONDUCT PERFORMANCE PARADIGM

The previous discussion of market structure, conduct and performance reflects the traditional approach to industry structure analysis and focuses on concentration, price and profits, although that performance can be examined along other dimensions, “product quality, service or innovation.”¹⁴ As noted, that approach remains entirely within the bounds of traditional approach.

FIGURE II-3: THE INCIDENCE OF TECHNOLOGICAL PROGRESS ON THE SUPPLY-SIDE



Source: A graph focusing on the division of surplus and the most complete discussion can be found in Kip Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 77-78; William G. Shepherd, *The Economics of Industrial Organization*, 1985, pp. 19-21; F. M. Scherer, F. M. and David Ross, *Industrial Market Structure and Economic Performance* (Boston: Houghton Mifflin, 1990). pp. 24-29;

Over the course of the last several decades, however, a broad critique of the underlying assumptions about how markets work (or fail) has come into existence. One can chart the growth of more than just criticism in a series of over a dozen Nobel prizes.¹⁵ The criticism expands the scope and strengthens the analytic foundation for the analysis of market imperfections and market failures. The major lines of critique have grown into major school of thought that can be seen as expanding and deepening the analysis in each of the major areas that constitute the structure-conduct-performance paradigm.

- **Basic Conditions**
 - **New Institutional/Transaction Cost Economics:** Ronald Coase, 1992; Douglas North, 1993; Robert Fogel, 1993, Oliver Williamson 2009; Elizabeth Ostrom, 2009
 - **Endemic Flaws:** Joseph Stiglitz, 2001; Michael Spence, 2001
- **Market Structure**
 - **Deeper Critique of Structural Imperfections:** Paul Krugman, 2008; Jean Tirole 2014; James Heckman, 2008; Angus Deaton, 2015
- **Conduct:**
 - **Behavioral Economics:** George Akerloff, 2001; Daniel Kahneman, 2002; Vernon Smith 2002; Robert Shiller, 2013.
- **Performance:**
 - **End of Value Free Economics:** Amartya Sen, 1998
 - **Policy: Return of Political Economy:** All of the above

Each of the schools of thought is built upon the identification and demonstration of the importance of numerous imperfections and flaws in markets and erroneous assumption made about market in the neoclassical, *laissez faire model*. The pervasive market imperfections in the cable industry were identified in Figure II-I, above. Imperfections from every major category will be noted in the discussion below, showing how the failure to institute appropriate policies to deal with market failure or promote market success creates economic harm economic losses. In many respects this broadening of the view of the factors that affect market performance expands the critique beyond the simple and too frequent focus on the negative effect of the incentive, willingness, and ability of producers to gain and abuse market power. It brings in the imperfections and costs that are social and highlights the importance of policy in promoting market success.

III. EMPIRICAL ANALYSIS OF MARKET STRUCTURE AND MARKET POWER

Having established the framework for analyzing market structure, I next turn to the empirical measures used to evaluate specific markets. While many aspect of the market structure can affect conduct, one of the most important and frequently studied market structural characteristics is the nature and extent of competition in the market. In particular, the number and relative size of producers – the degree of concentration – is seen as a major determinant of conduct and performance. While the performance of the market can be evaluated in many ways, one of the most important and frequently analyzed measures of performance are the prices paid by consumers. In particular, the relationship between prices and profits of the sellers has been a focal point of attention.

The key market characteristics identified above, concentration, price, cost and profits have been captured in two indices that are interrelated – the Lerner Index (L) and the Herfindahl-Hirschmann index (HHI). Table I-1 presents a series of key formulas that have been developed by both progressive and conservative economists to analyze industry structure and the exercise of market power.

TABLE III-1: KEY MATHEMATICAL FORMULAS IN THE ANALYSIS OF MARKET STRUCTURE AND MARKET POWER

Lerner Index Traditional Formulation

$$L = \frac{(P - MC)}{P} = \frac{1}{E^d}$$

Where: P = price, MC = marginal cost, E = the market elasticity of demand

Landes and Posner Formulation of the Lerner Index

$$L = \frac{(P - C)}{P} = \frac{1}{E^d} = \frac{S_i}{e_m^d + e_j^s (1 - S_i)}$$

where: S_d = the market share of the dominant firm, e_m^d = elasticity of demand in the market
 e_j^s = elasticity of supply of the competitive fringe, s_i = market share of the fringe

The HHI Index

$$HHI = \sum_{i=1}^n s_i^2 * 10,000$$

Relating the HHI to Market Power through the Lerner Index

$$S_1 \frac{(P^1 - MC^1)}{P^1} + S_2 \frac{(P^2 - MC^2)}{P^2} + \dots + S_n \frac{(P^n - MC^n)}{P^n} = \frac{HHI}{10000 * E^d}$$

Scherer, F. M. and David Ross, *Industrial Market Structure and Economic Performance* (Boston: Houghton Mifflin, 1990). pp. 70-71; William M. Landes and Richard A. Posner, “Market Power in Antitrust Cases,” *Harvard Law Review* (94), 1981; Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 149

OPERATIONALIZING KEY ANALYTIC CONCEPTS

The Lerner index is a measure of how much prices exceed costs in the market. Scherer and Ross describe the attractiveness of the Lerner index as follows:

Its merit is that it directly reflects the allocatively inefficient departure of price from marginal cost associated with monopoly. Under pure competition, [The Lerner Index equals zero (LI)=0]. The more a firm's pricing departs from the competitive norm, the higher is the associated Lerner Index value.¹⁶

In words, the following formula says that the Lerner Index is a ratio. It is the markup above cost (P-MC) divided by the price. The Lerner Index is frequently expressed as the inverse of the elasticity of demand. If consumers have the ability to switch to other products, sellers will not be able to increase the price above costs significantly, since they will lose their customers.

$$L = \frac{(P - MC)}{P} = \frac{1}{E^d}$$

Where: P = price,
 MC = marginal cost
 E = the market elasticity of demand

While the Lerner Index is attractive from a theoretical point of view, there are generally uncertainties about the estimation of marginal cost. Even in antitrust proceedings where data is subject to subpoena, it is difficult to calculate.¹⁷ Therefore, economists frequently consider several other measures of monopoly profits that are the aggregate manifestation or the result of the underlying pricing abuse.

One long-run approximation to the Lerner index is the ratio of supranormal profits to normal cost and profits. The rate of profit is calculated by starting with revenues and subtracting operating costs, depreciation and capital costs, which is then divided by the assets invested. However, while profit margins are readily available, they present some problems, because the cost of capital is not recorded in a firms' accounting statements. It can only be imputed with difficulty. Economists seeking to avoid this difficulty have usually opted for second-best surrogates like the accounting rate of return on stockholders' equity or capital, before interest. To be most instructive, these estimates must be compared to a normal rate of return. This involves finding a set of companies chosen to be comparable, but lacking in market power, which is itself a challenging task.

Landes and Posner rendered the Lerner Index in a somewhat different formulation that is useful in the analysis below. In evaluating mergers and market structures, it is necessary (and preferable) to consider the market power of individual firms and sum these across all firms in the market.

In words the following formula says that the markup of price over cost will be directly related to the market share of the dominant firm and inversely related to the ability of consumers to reduce consumption (the elasticity of demand) and the ability of other firms (the competitive fringe) to increase output (the elasticity of this supply).

$$L = \frac{(P - C)}{P} = \frac{1}{E^d} = \frac{S_i}{e_m^d + e_j^s (1 - S_i)}$$

where:

S_d = the market share of the dominant firm
 e_m^d = elasticity of demand in the market
 e_j^s = elasticity of supply of the competitive fringe
 S_i = market share of the fringe.

There was an extensive debate over this formulation that was resolved with recourse to the Herfindahl-Hirschmann index (HHI).¹⁸ The HHI is a measure of market concentration. Viscusi, et al., note that “The HHI has the advantage of incorporating more information about the size distribution of sellers than the simple concentration ratio does.”¹⁹ It is calculated by taking the market share of each firm in the market, squaring it and summing across all firms. The index is converted to a whole number by multiplying by 10000.

$$HHI = \sum_{I=1}^n s_i^2 * 10,000$$

where s = the market share of each individual firm expressed as a ratio.

The HHI and the Lerner index can be directly related in the analysis of market power. As Viscusi et al. put it “the HHI is directly related to a weighted average of firms’ price-cost margins for the Cournot [oligopoly] solution.”²⁰

In words the following formula says that the markup of price over cost in a market will be directly related to the market share of the firms (as captured by the HHI) and inversely related to the ability of consumers to reduce consumption (the elasticity of demand).

$$S_1 \left[\frac{(P^1 - MC^1)}{P^1} \right] + \left[\frac{S_2 (P^2 - MC^2)}{P^2} \right] + \dots + \left[\frac{S_n (P^n - MC^n)}{P^n} \right] = \frac{HHI}{10000 * E^d}$$

Jerry Hausman, in a volume on *The Economics of New Goods*, published by a very mainline press (University of Chicago in a series for the National Bureaus of Economic Research), argued that

the implicit assumption... that price equals marginal cost need not hold in most new product situations. Combined with the fact that most new-introductions are undertaken by multiproduct firms with existing competing brands... I adopt the most widely used solution concept for my analysis... set the price for a given product according to the “marginal revenue equals marginal cost” rule.²¹

He estimated the demand elasticity at -2.0 for the product he was studying and estimated that market power had consumed 15% of the increase in consumer surplus that could have resulted from the introduction of a new product in a competitive market.²²

CONCERN ABOUT MARKET POWER

Calculating the HHI tells us how concentrated a market is, but not whether it is “too” concentrated, which would result in the abuse of market power. The identification of when a small number of firms can exercise market power is not a precise science. Nevertheless, when the number of significant firms falls into the single digits there is cause for concern.

Up to six firms one has oligopoly, and with fifty firms or more of roughly equal size one has competition; however, for sizes in between it may be difficult to say. The answer is not a matter of principle but rather an empirical matter.²³

The analysis of market structure conducted by the Department of Justice and Federal Trade Commission in the course of merger reviews is particularly relevant for two reasons. First, the anti-trust laws are the primary statutes that are intended to prevent abuse of market power in the economy. Second, merger review is one of the few areas where the antitrust laws empower the agencies to be proactive in their job of ensuring the economy remains competitive. Restraints on trade are the bread and butter of antitrust policy and mergers are ideal tools to restrain trade by removing competitors, so here antitrust authorities can act to prevent abuse, rather than try to clean it up after it has imposed harm.

The *Merger Guidelines* issued by the Department of Justice (DOJ) and the Federal Trade Commission (FTC) describe the concern of the antitrust authorities with market power as follows.

Market power to a seller is the ability profitably to maintain prices above competitive levels for a significant period of time.^{*/} In some circumstances, a sole seller (a “monopolist”) of a product with no good substitutes can maintain a selling price that is above the level that would prevail if the market were competitive. Similarly, in some circumstances, where only a few firms account for most of the sales of a product, those firms can exercise market power, perhaps even approximating the performance of a monopolist, by either explicitly or implicitly coordinating their actions. Circumstances also may permit a single firm, not a monopolist, to exercise market power through unilateral or non-coordinated conduct — conduct the success of which does not rely on the concurrence of other firms in the market or on coordinated responses by those firms. In any case, the result of the exercise of market power is a transfer of wealth from buyers to sellers or a misallocation of resources.

^{*/} Sellers with market power also may lessen competition on dimensions other than price, such as product quality, service or innovation.²⁴

The *Merger Guidelines* recognize that market power can be exercised with coordinated, or parallel activities and even unilateral actions in situations where there are small numbers of market players.

“The rule of thumb reflected in all iterations of the Merger Guidelines is that the more concentrated an industry, the more likely is oligopolistic behavior by that industry.... [T]he inference that higher concentration increases the risks of oligopolistic conduct seems well grounded. As the number of industry participants becomes smaller, the task of coordinating industry behavior becomes easier. For example, a ten-firm industry is more likely to require some sort of coordination to maintain prices at an oligopoly level, whereas the three-firm industry might more easily maintain prices through parallel behavior without express coordination.”²⁵

CHARACTERIZING MARKETS

Under the *Merger Guidelines*, the consideration of proposed mergers begins with a straightforward analysis of market concentration.

Definition: The first step in the effort to examine the extent of competition for a product is to define the market to be evaluated. The key is to identify products that are close substitutes. This has two dimensions. The attributes of the product must be such that they can replace one-another with similar qualities and functionalities at similar prices. If they do not provide the desired functionality or they are much more costly, they are not good substitutes. The products must also be available in the geographic location of the market. In many cases, the geographic dimension is defined by transportation costs. If transportation costs are high or the ability to move products non-existent, out of market products cannot compete on price. The same is true of communications services.

In fact, for many communications service the geographic definition is simpler. In order to transmit communications, the consumer needs to have a local connection to the network (first mile) and a connection to a point where the traffic can be widely distributed, regionally or nationally (middle mile). Connectivity has a strong local component on both the originating and terminating ends.

Structure: The second step in the analytic process is to describe the market structure. The objective is to understand how the firms in the market behave. The smaller the number and the larger their size, the less likely they are to compete. The extent of concentration is frequently measured by the Hirschmann-Herfindahl Index (HHI) for the reasons discussed above. Other factors are considered too, including factors like unique barriers to entry, history (e.g. long term dominance by incumbent firms, other distinctive patterns of anti-competitive practices) or the presence of disruptive firms (mavericks).

Performance: The performance of the market is measured primarily by price, cost and profits. Prices that greatly exceed costs yield excess profits. We do not expect to observe supranormal profits in competitive markets. We expect any sign of supranormal profits to elicit quick responses from firms in the market or new entrants attracted by the profit opportunity. They offer substitutes at lower prices to steal customers, thereby quickly competing away excess profits. If the supranormal profits are sustained, they indicate the existence and persistence of market power.

After the product and geographic market is defined, concentration is measured by the Hirschman-Herfindahl Index (HHI) because that index has a direct relationship to the existence of market power, as discussed above. The thresholds at which concern is felt about mergers were raised substantially in the recent revision of the Guidelines. As shown in Table III-2, the thresholds used in the *Guidelines* have “common sense” referents.

For most of the period of this analysis (i.e. until the revision of the *Guidelines* in 2010), an HHI above 1,800 was considered a highly concentrated market. A market with 6 equal-sized competitors would have an HHI of 1,667. A market with an HHI below 1000 was considered unconcentrated. A market with ten equal-sized competitors would have an HHI of 1,000. It is competitive. A market was considered moderately concentrated when it fell between the highly concentrated and unconcentrated thresholds. It is one that exhibited an HHI between 1,000 and 1,800. Under the recently revised guidelines, the unconcentrated threshold was raised to 1,800, while the highly concentrated threshold was raised to 2,500, or the equivalent of 4-equal sized firms.

TABLE III-2: DESCRIBING MARKET STRUCTURES

Department of Justice Merger Guidelines	Type of Market	HHI	Equivalents in 4-Firm Terms of Equal Sized Firms	Share CR4
	Monopoly ^{a/}	10,000	1	100
	Duopoly ^{b/}	5,000	2	100
(Old) Dominant Firm	65% share	4650	2	100
<u>New Highly concentrated</u>		2,500	4	100
<u>New moderately concentrated</u> (Old) highly Concentrated		1,800	5.5	72
	Tight Oligopoly			60
(Old) moderately concentrated Unconcentrated	Loose Oligopoly	1,000	10	40
	Atomistic Competition	200	50	8

Sources and Notes a = Antitrust practice finds monopoly firms with market share in the 65% to 75% range. Thus, HHIs in “monopoly markets can be as low as 4200; b = Duopolies need not be a perfect 50/50 split. Duopolies with a 60/40 split would have a higher HHI. Sources: U.S. Department of Justice, *Horizontal Merger Guidelines*, revised August 2010, for a discussion of the HHI thresholds; William G. Shepherd, *The Economics of Industrial Organization* (Englewood Cliffs, NJ: Prentice Hall, 1985), for a discussion of four firm concentration ratios.

Not only can the HHI be directly related to the Lerner Index, as noted above, it also has an easy interpretation.²⁶ These thresholds (old and new) correspond to long standing characterization of the ability of firms to increase prices to raise profits. Shepherd describes these thresholds in terms of four-firm concentration ratios as follows:

- Tight Oligopoly: The leading four firms combined have 60-100 percent of the market; collusion among them is relatively easy.
- Loose Oligopoly: The leading four firms, combined, have 40 percent or less of the market; collusion among them to fix prices is virtually impossible.²⁷

The upper bound of a moderately concentrated market would correspond to a tight oligopoly, which was defined as a market where the top four firms (the four firm concentration ratio, or CR4) had more than 60 percent of the market.²⁸ The lower bound of a moderately concentrated market with ten equal-sized firms would fall at this threshold. The leading firm proviso appears to have been dropped not because such a firm is not a source of concern but because that concern was subsumed in the broader analysis of “unilateral effects.”²⁹

Figure III-1 presents graphic representations of market structures at key thresholds in this analysis, using the “equal-sized” approach. At high levels of concentration, the ability of firms to abstain from price competition by parallel behavior grows as the number of firms declines. The dominant firm case highlights the importance that large players can have in a market.

FIGURE III-1: GRAPHIC REPRESENTATION OF MARKET STRUCTURES



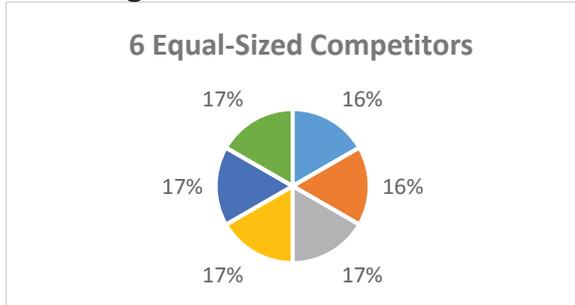
IDENTIFYING MARKET POWER TRIGGERS

During merger review, a merger is evaluated by examining the level of concentration of the post-merger market and the impact of the merger on the level of concentration in the market, as shown in Figure III-2. The higher the level of post-merger concentration and the larger the increase in concentration, the greater the threat to competition and the more likely the antitrust authorities are to block a merger or demand remedies to mitigate the potential harms of increased market power.

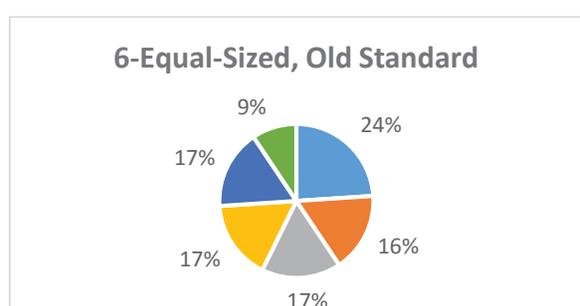
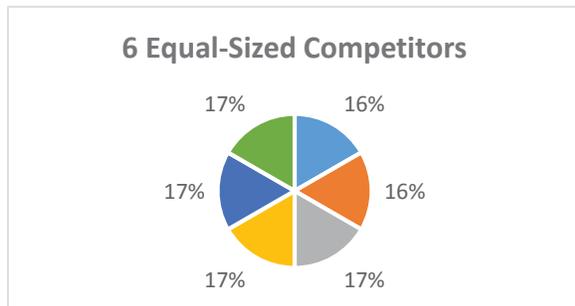
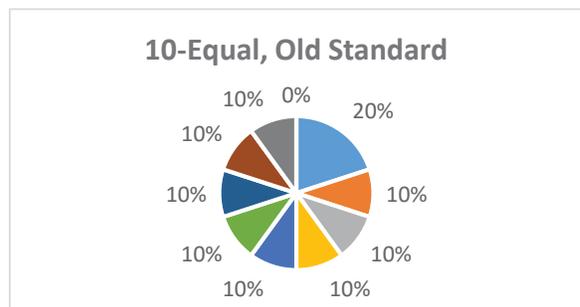
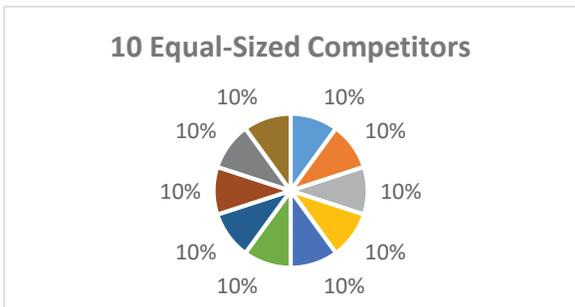
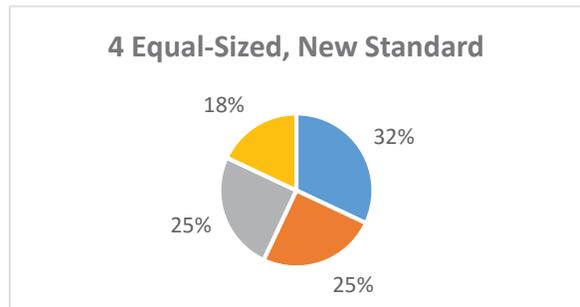
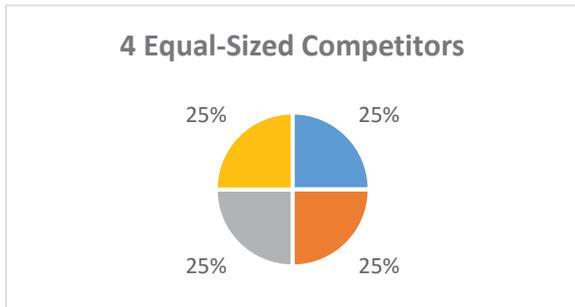
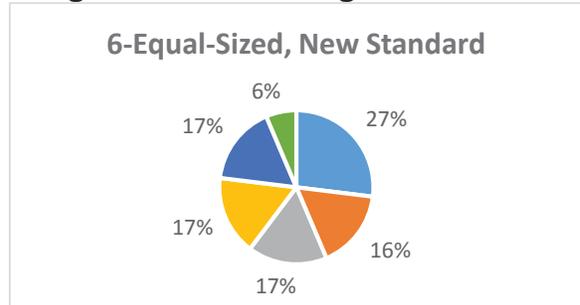
Moderately Concentrated Markets: Mergers resulting in moderately concentrated markets that involve an increase in the HHI of more than 100 points potentially raise significant competitive concerns and often warrant scrutiny.

**FIGURE III-2: GRAPHIC REPRESENTATION OF MERGERS AND MARKET STRUCTURES:
MERGERS THAT EXCEED THE THRESHOLDS**

Pre-Merger Structure



Merger-Induced Changes of Concern



Highly Concentrated Markets: Mergers resulting in highly concentrated markets that involve an increase in the HHI of between 100 points and 200 points potentially raise significant competitive concerns and often warrant scrutiny. Mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power. The presumption may be rebutted by persuasive evidence showing that the merger is unlikely to enhance market power (DOJ/FTC, 2010: 19).

In evaluating the impact of mergers, for example, antitrust authorities focus on a small but significant, nontransitory increases in price (SSNIP). The price increases that trigger concern are relatively small (5-10%) sustained for a relatively short period (two years).

Figure III-2 gives a graphic representation of these *Guideline*. On the left side are the market structures at the threshold prior to the merger. On the right side are the minimum changes in market structure that would trigger concern under the *Guidelines* discussed above.

The increases in concentration that trigger concerns about the impact of a merger reveal a great deal about the underlying problem of market power in concentrated markets. In order to raise a “potentially significant competitive concern” a merger in a moderately concentrated market as currently defined would involve a firm with an 17% market share increasing to 27%. In a highly concentrated market, a firm with a 25% market share increasing to a 32% market share through merger would be “presumed to be likely to enhance market power.”

Under the *Guidelines* in place throughout most of the period of this analysis, given the lower thresholds, mergers would have to be larger to trigger concerns, but more market would to be scrutinized because of the lower thresholds. In a market with 10 equal-sized firms, one of the firms would have to buy out another (doubling its market share from 10% to 20%) to raise concerns. In a market with six equal-size firms the merger would have to raise the market share of one firm by about 7%. Under either set of thresholds, a merger involving a dominant firm would create great concern, even though the *Guidelines* had dropped explicit reference to this situation. A mere two percent increase in concentration exceeds the threshold.

While the DOJ is deeply concerned about changes in market concentration above the thresholds that result from a merger, it should be clear that markets that are above those levels without a merger contain the threat of the abuse of market power. Evidence of the abuse of market power should trigger policy concerns, not only by antitrust authorities but regulatory authorities that have the mandate to protect consumers of promote competition more actively than antitrust does. Policies that deregulate highly concentrated markets where the abuse of market power is likely to be released are a particular concern.

IV. ENDEMIC PROBLEMS OF MARKET POWER IN THE COMMUNICATIONS SECTOR

In adopting this framework to evaluate market structure it is important to note at the beginning that the *Merger Guidelines* only provide the tools for analysis, they do not dictate the policy that should be pursued. Antitrust prefers competition as the policy tool to correct or prevent a specific market failure – the abuse of market power. There are other market imperfections that antitrust does not address. There are also situations in which market conditions will not support sufficient competition to prevent the abuse of market power. Therefore, competition and antitrust cannot solve the problem; regulation is necessary.³⁰

BASIC CONDITIONS AND STRUCTURE

The communications sector is a very good example of an area of the economy in which antitrust has been deemed to be inadequate. Regulation has been deemed necessary because the market structure tends to result in a very small number of very large firms dominating the market and because communications is a large sector that is important, i.e. it has a big impact on a wide range of activities. The two factors that Landes and Posner identified as requiring close attention, elasticities and size, point toward greater oversight, not less.

As I argued in a recent article, under these circumstances antitrust and regulation go hand-in-hand.³¹ The broad purposes and functions of antitrust and regulation in the economy are magnified when applied to the communications sector. From an economic point of view, the communications sector is one of the most important resource systems in an advanced economy, since market efficiency depends on the ability to gather and process information.³²

Communications networks possess two characteristics that make them ideal candidates for economic regulation—their infrastructural nature and economies of scale. Kahn identified these characteristics in his seminal work, *Economics of Regulation*. Making the case for economic regulation, Kahn pointed to the fact that because communications networks exhibit economies of scale, the market will support only a small number of large firms compared to other sectors of the economy.³³ In addition, because of the essential inputs they provide, they influence the growth of other sectors and the economy.³⁴ Kahn added two other characteristics: “natural monopoly” and “for one or another of many possible reasons, competition does not work well.”³⁵ Although Kahn was skeptical of the monopoly rationale for regulation, he later argued that the nature and extent of competition is an empirical question:

The question is not simply one of *how much* competition to allow—how much freedom of entry or independence of decision making with respect to price, investment, output, service, promotional effort, financial, and the like. It is a question also of what, in the particular circumstances of each regulated industry, is the proper *definition*, what are the *prerequisites*, of effective competition.³⁶

Of course, as noted above, Sherer and Ross also believe that the implementation of policy in pursuit of competition as the desired structure for markets must reflect the fundamentals of economic structure and the reality of markets.

The desire of the 1996 to introduce greater competition into the communications sector and decades of rhetoric about the superiority of competition have led to neglect of important realities in communications markets. The harm that unregulated market power can impose on consumers was ignored amid the euphoric praise of competition.

Infrastructure industries deliver service with relatively low elasticities. In fact, they can be considered “necessities” since they have a combination of low price elasticity and moderate income elasticity.³⁷ The low price elasticity means it is difficult to go without communications or find good substitutes. The moderate income elasticity means the good commands a significant part of the household budget all the way up and down the income distribution, but the percentage declines as income rises. The important role of communications in the broader economy and for households magnifies the ability to exercise and the impact of the abuse of market power.³⁸

The communications sector provides a fertile ground for the abuse of market power. Its size, great importance to the functioning of the economy and underlying economic characteristics suggest that the existence and persistence of market power is a particular problem and has made them the target of a great deal of public policy.³⁹ Elasticities of demand and supply are low compared to other sectors. Deployment of facilities to compete with an incumbent communications network is costly and difficult. Network effects, the ability to reach large numbers of customers to make the network more valuable to each individual customer, are important.

Fundamental economies of scale, scope and network effects that the communications sector exhibits would have been an obstacle to competition under any circumstances. But, the 1996 Act’s competition policy was launched from a condition in which monopoly power existed, having been built behind decades of franchise monopoly that shielded the incumbents from competition and endowed them with a vast communications network whose sunk costs had been paid by captive consumers. They did not win their dominant position, they were gifted it by public policy. The economic fundamentals combined with a ubiquitous network deployed behind the protective wall of a franchise monopoly to give the incumbent local telephone companies an insurmountable advantage. The difficulty of overcoming the advantage that had been bestowed on the incumbents was vastly underestimated.

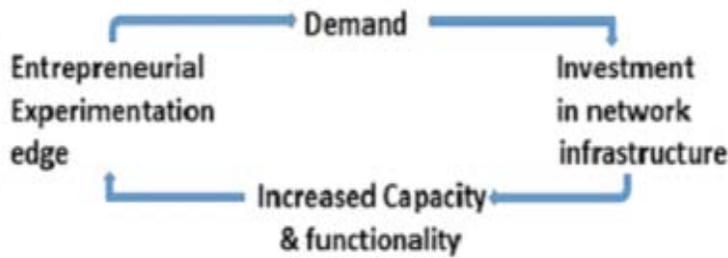
THE UNIQUE POWER OF THE VIRTUOUS CYCLE IN DIGITAL COMMUNICATIONS

The economics of the abuse of market power and the broader view of market imperfections and market success are magnified by contemporary digital technologies. This is particularly evident in broadband services, where the cable operators have become the dominant providers of true broadband Internet access service and have been in the forefront of opposition to obligations for network operators to provide non-discriminatory access to the network. Here the abuse of market power by cable operators takes on greater significance. The economics of the abuse of market power and the broader view of market imperfections and market success are magnified by contemporary digital technologies.

The FCC argued in the National Broadband Plan, and a wide range of analysts agree, that a “virtuous” cycle typifies the digital communications network. As I have described it in Figure IV-1, the virtuous cycle framework posits that innovation and investment at the edge of the network are inextricably linked to innovation and investment in the communications network itself in a recursive, reinforcing feedback loop. Development of applications, devices, and content stimulates demand for communications that drives innovation and investment in the supply of communications network capacity and functionality. In turn, improving network functionalities and expanding capacity make new

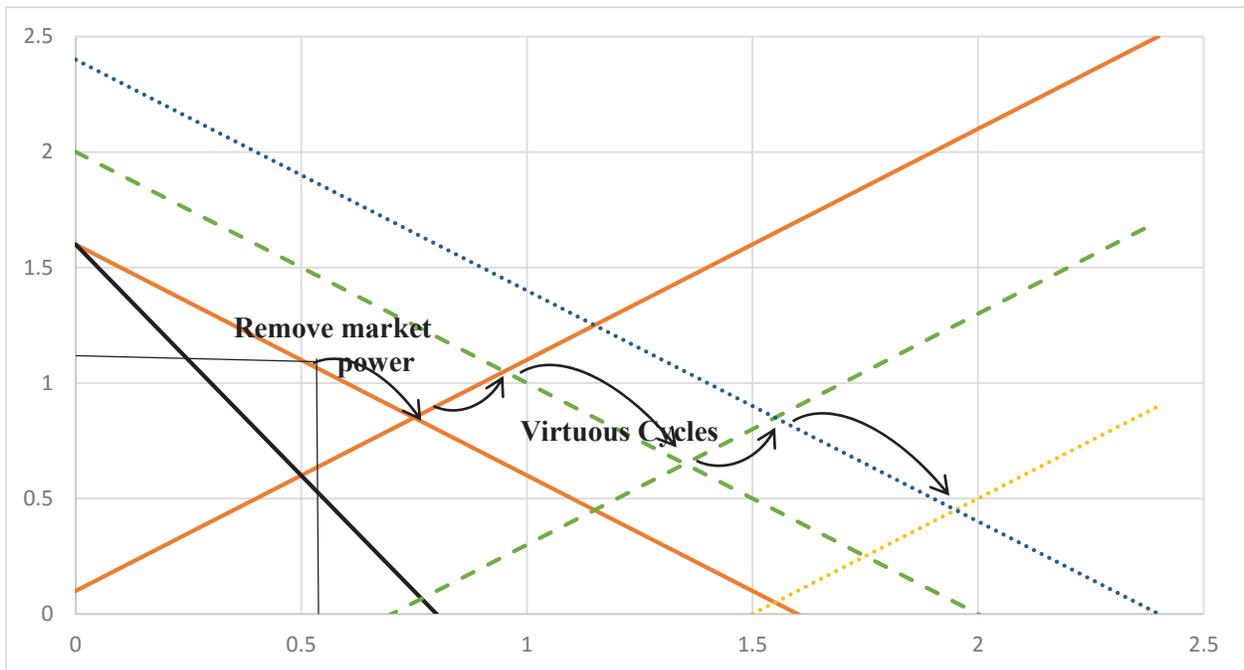
applications possible, which stimulates new demand and allows the cycle to repeat.⁴⁰ The virtuous cycle is the particularly powerful heart of the digital industrial revolution.

FIGURE IV-1: THE VIRTUOUS CYCLE OF INNOVATION AND INVESTMENT



The welfare economics of the virtuous cycle can be explained by extending the analysis in Figure IV-2 above in two directions. There is a shift in both the demand curve and the supply curve. The process unfolds in a recursive pattern that has been sustained for several decades.

FIGURE IV-2: DYNAMIC EFFECT OF THE VIRTUOUS CYCLE IN A COMPETITIVE MARKET



ANTICOMPETITIVE PATTERNS OF ABUSE

Protection and promotion of the virtuous cycle magnifies the importance of policy. While increasing profits is the primary motive behind the abuse of market power, dominant incumbents have a strong interest in using their market power to control and direct the process of innovation where it poses a threat to their dominance. Traditional concerns about large incumbents abusing market power have received a great deal of attention, too much in the sense that other sources of market failure which undermine or weaken competition and innovation deserve equal attention. Indeed, in a dynamic sector with dominant incumbents controlling key

choke points, their inventive and ability to weaken competition and control or diminish long term change may be even more important.

Incumbent network operators face weaker competition than edge companies, which means they

- have the ability to extract rents, where they possess market power or where switching costs are high, but they also
- face less pressure to innovate,
- have the ability to influence industrial structure to favor their interests at the expense of the public interest, and
- can use vertical leverage to gain competitive advantage over independent edge entrepreneurs and complementary products.

Incumbent network operators have a conservative, myopic bias and are less innovative and dynamic than the edge based on

- a preference for preserving the old structure
- pursuit of incremental, process innovation rather than radical, product innovation
- a proprietary culture that prefers restrictions on the flow of knowledge.

Incumbent network operators can dampen the willingness and ability of the edge to experiment by

- imposing counterproductive “worry” about the network and its devices
- increasing costs substantially by forcing edge entrepreneurs to engage in bilateral negotiations
- undermining interoperability
- chilling innovation by threatening the “hold up” of successful edge activities.

While traditional concerns about pricing abuse are raised there is a recognition in the literature of the barrier to entry and the threat to experimentation that network owner market power may pose.⁴¹

Carriers also can choose to enter service markets where they can use their discretion to disadvantage a potential competitor...First, a carrier can use preinnovation contracting to generate market conditions that limit entry of innovative content providers. Second, carriers can use post innovation bargaining to strategically aid their competitive position.⁴²

The fundamental point is that “[l]eading incumbent firms and new entrants face different incentives to innovate when innovation reinforces or alters market structure.”⁴³ The incumbents

will invest in innovation that supports the platform and their leading role in it. ⁴⁴ In particular, incumbents will prefer proprietary standards,⁴⁵ and “larger firm size may come at the cost of the benefits of technological diversity.”⁴⁶

The incentive and ability to implement these strategies will vary from market-to-market and product-to-product. The above list was developed with respect to the opposition of the dominant incumbent communications companies to nondiscriminatory access to the communications network for data transmission (network neutrality). Incumbents have been willing to push to the edge of network neutrality and beyond, and to litigate even modest constraints on their behavior despite the issue being under close public scrutiny. This strongly suggests that they will behave in ways that harm the public and the dynamism of the virtuous cycle if it serves their interest. Their steadfast opposition to unbundled network elements, which was the cornerstone of the effort in the Telecommunications Act of 1996 to promote competition by opening the most critical choke point, is an earlier and even more striking example, with direct implications for the special access market.

OTHER MARKET POWER CONCERNS

While the *Guidelines* use an HHI based approach to screen mergers for scrutiny, other factors are considered. While I use the antitrust *Guidelines* to identify these concerns, it should be noted that the substantive content of concern in these areas goes well beyond competition. Given the infrastructural nature of communications networks and their special role in democratic discourse, regulation frequently goes beyond antitrust in promoting open networks.

Unique Bottlenecks and Other Entry Barriers

Unique barriers to entry – like spectrum licenses or franchising restriction are an important consideration because they can insulate incumbents from competition. Open access policies are grounded in this concern.

Vertical Integration and Leverage

A second key characteristic of many industries is the extent of vertical integration. In many industries the act of producing a product can be readily separated from its distribution and sale. Production is referred to as the upstream, distribution and sale are referred to as the downstream. The classic concern is that suppliers of applications or content distributed over communications networks, who are also owners of those networks, will favor their own content at the expense of the content of unaffiliated producers. Cross-owned products succeed, not because they win on the merits, but because they are favored by their owners who control a key choke point.

Because vertical integration involves the elimination of a (presumably market-based) transaction between two entities it has been the focal point of a great deal of analysis. Economic efficiencies are frequently claimed for vertical integration due to the elimination of transaction costs. Others fear inefficiency and potential abuse of the ability to leverage vertical market power that can result from excessive or unjustified vertical integration. Vertical integration may become the norm in the industry, making it difficult for unintegrated producers to survive. Vertically integrated entities may capture the market for inputs, making it difficult for independent entities to obtain the factors of production necessary to produce product. Also, with vertically integrated entities dominating a sector, reciprocity and forbearance rather than competition may become the norm.

One of the key aspects of the network neutrality debate is the problem of vertical leverage that the incumbent network operators have, when they are vertically integrated into complementary product markets. Their incentive and ability to frustrate competition in those complementary market is substantial and several of the key disputes swirled around behaviors that appeared to have anticompetitive effects.

Vertical integration occurs when both activities are conducted by one entity. Antitrust examination of these issues has been “checked” at best.⁴⁷ However, because these communications networks are frequently a choke point, bottleneck, or essential facilities that control the access to consumers by controlling the flow of communications, vertical integration and leverage are a heightened concern.⁴⁸

Buyer (Monopsony) Market power

A third economic concept that plays an important part in the communications sector, buyer market power called monopsony power, is the flip side of seller (monopoly) market power. Monopoly power is the power of a seller to dictate prices, terms and conditions as a seller of goods and services to the public. Monopsony power is the power of downstream buyers of inputs to create products to sell to the public and to dictate the prices, terms and conditions on which they buy those inputs. If the upstream suppliers lack alternatives, they may be forced to accept terms that under compensate them or force them to bear extra risk. The downstream buyers have market power over the upstream sellers of the product. This can result in the production of fewer or inferior products for sale downstream.

Enhancement of market power by buyers, sometimes called “monopsony power,” has adverse effects comparable to enhancement of market power by sellers. The Agencies employ an analogous framework to analyze mergers between rival purchasers that may enhance their market power as buyers... (2) A merger between two competing sellers prevents buyers from playing those sellers off against each other in negotiations. This alone can significantly enhance the ability and incentive of the merged entity to obtain a result more favorable to it, and less favorable to the buyer, than the merging firms would have offered separately absent the merger. (22)

Although monopsony has not been the focal point of much antitrust action, it is more likely in precisely the type of sector like the video entertainment product space, where inputs are specialized

Monopsony is thought to be more likely when there are buyers of specialized products or services. For example, a sports league may exercise monopsony (or oligopsony) power in purchasing the services of professional athletes. An owner of a chain of movie theaters, some of which are the sole theaters in small towns, may have monopsony power in the purchase or lease of movies. Cable TV franchises may exercise monopsony power in purchasing television channels that will be offered to their subscribers.⁴⁹

Thus, in addition to the traditional problem of concentration and market and market power, communications networks possess characteristics that raise broad concerns about market imperfections and the policies needed to correct them in order to ensure market success.

THE IMPACT OF A MAJOR TECHNOLOGICAL REVOLUTION ON COST TRENDS

Broad Cost Trends

The background for all of these analysis is the remarkable technological revolution that is taking place in the communications space. While many aspects of that revolution can be examined, the one that is most central, given the analysis of market performance, is the movement of costs in the economy. As Figure IV-3 shows, the decline in costs of communications equipment has been remarkable, unparalleled in the history of the industrial revolution, not to mention human history.

Figure IV-3 shows two key categories of costs for communications equipment, network equipment and customer premise equipment. It is important to keep in mind that these are estimates of input costs, not the prices charged to consumers. The extent to which the cost reductions are passed through depends on the market structure.

The upper graph shows the average annual changes over three periods of importance to the historical analysis – prior to 1984, which is a period before the break-up of AT&T and the deregulation of cable; the decade before the passage of the Telecommunications Act of 1996, and the years since the 1996 Act. The lower graph shows the cumulative price changes since the 1996 Act, adding in the cost of cellular equipment.

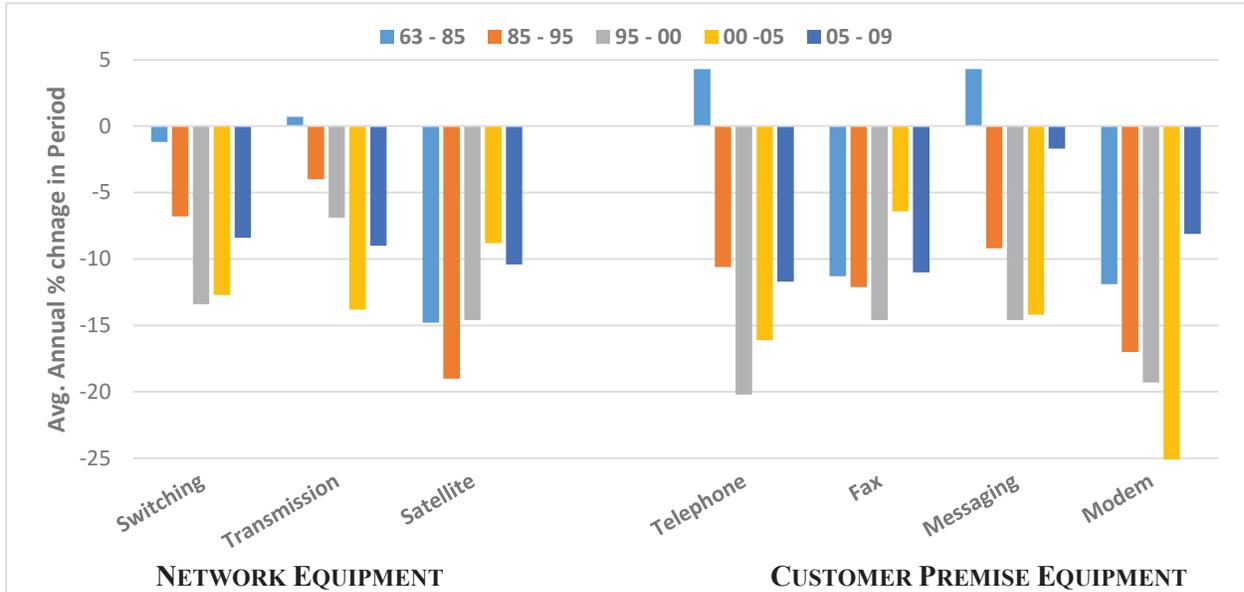
The authors of the price indices point out the importance of investment in communications equipment, noting that “IT capital services have historically made outsized contributions to labor productivity. Consequently, greater IT capital investment augurs well for future productivity gains.”⁵⁰ They then note the strength of the revolution in terms of declining costs.

Last with respect to the debate about whether the impetus for the “IT Revolution” has petered out, we observe that prices for communications equipment have continued to fall rapidly in recent years. Price declines accelerated significantly in the mid-1980s and again in the mid-1990s. Since that time, prices for communications equipment – a general purpose technology central to the economy – have been falling 11 percent on average for 20 years running, and price declines have shown no sign of slowing.⁵¹

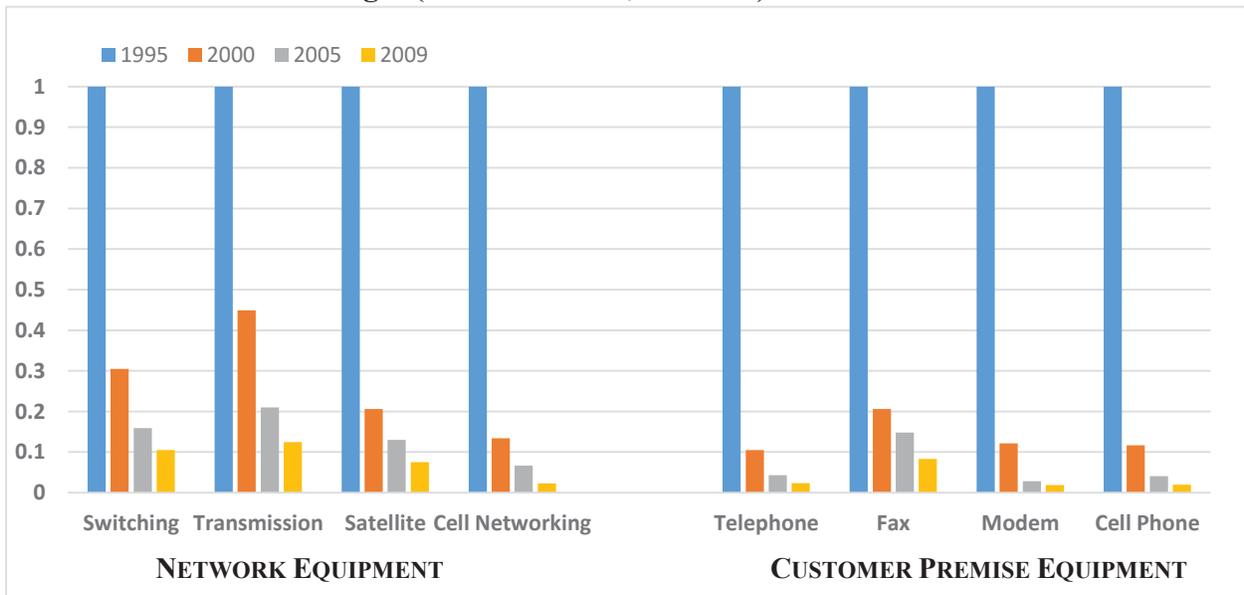
In an age when we have become used to a doubling of capacity on silicon chips every eighteen months (Moore’s Law), we may have become somewhat indifferent to a rate of decline that cuts prices in half every 76 months, but placed in the context of industrial revolutions, this rate of decline is truly historic. This is a rate of decline that is substantially higher (two to three times) than products that have come to symbolize previous industrial revolutions – cotton cloth, light, heat power, automobiles.⁵² Following from the conceptual analysis, we would expect to see a significant part of these cost savings passed through to consumers, if the markets for communications services are competitive. In Section V, I show that they have not because of the abuse of market power.

FIGURE IV-3: DECLINING COST OF COMMUNICATIONS EQUIPMENT IN THE DIGITAL REVOLUTION

Long Term Annual Rates of change



Post- 1996 Act Price Changes (Index of Prices, 1995 = 1)



Sources: David M Byrne and Carol A. Corrado, *Prices for Communications Equipment: Rewriting the Record*, February 2012, Recent Trends in Communications Equipment Prices, *FEDS Notes*, September 29, 2015. The Anticompetitive Pattern of Abuse in the Communications Sector

Multiple Indicators of Excess Profits

As noted above, while the Lerner Index is the central conceptual tool if framing the market power analysis, it is empirically difficult to estimate. The key challenge is always to identify the underlying costs to estimate the markup above costs. Companies control the data and, more importantly especially with firms producing many products, decide how to allocate the costs. Through pricing and cost allocation decisions where they have market power, they can choose which services appear profitable and which do not. For example, they will apply an inverse elasticity rule, seeking to recover joint and common costs from those with the lowest elasticity of demand, and shift costs into the regulated accounts, where they are least likely to face competition and high rates of profits are most likely to raise eyebrows, if not trigger price reductions.

The difficulty of directly calculating the Lerner Index has been the motivation for the search for alternatives that are conceptually linked to it and are easier to estimate. That is where the HHI and accounting rates of profit come in. But this analysis is not limited to those two measures. To quantify pricing abuse, I present three different approaches. Putting a dollar figure on abusive pricing or poor service quality is always challenging because knowing the right price and quality are difficult. To quantify pricing abuse, I present four different approaches to establish a reasonable range.

- I identify periods in which pricing abuse was restrained, either by competition or regulation and project these to the present.
- Where possible, I compare the performance of similar products over the same time period.
- I offer some international comparisons.
- I examine rates of profit to identify excess earnings by companies that are exercising market power in their behaviors.

Another challenge in the analysis of consumer harm is the period over which the calculations are made. Many of these abuses are long standing. They build up as market power is acquired and abused. For the purpose of this analysis I look back over the past five years. This period is recent enough to be rich with reliable data. It also post-dates the debate over the National Broadband Plan, which was Congressionally mandated in 2009, which stimulated an intense period of data gathering and analysis.

V. CABLE CONCENTRATION AND EXCESS PROFITS

POLICY DEVELOPMENTS

Like all of the major communications networks, the cable companies were granted local franchises to provide service. Combining local franchises with the compulsory license not only allowed them to compete, but gave them substantial market power. Their franchise was originally exclusive and, where a potential competitor was allowed to enter, they put up vigorous resistance. Overbuilders, as the intramodal competitors came to be known, never represented more than a very small fraction of the local Multi-channel Video Programming Distribution market.⁵³ When cable was deregulated in 1984, there was a great deal of talk about multiple cables in every neighborhood and the potential for satellite to compete. By 1992, when rapid increases in cable prices led to the reregulation of cable, the cable monopoly was as strong as ever.

Reregulation of cable under the Cable Consumer Protection and Competition Act of 1992 (the Cable Act) had three effects on cable. First, it subjected rates to regulation, which will be discussed below. The second effect flowed from the program access rules. One of the main arguments in support of deregulation of cable in 1984 was that there would soon be competition for MVPD service from satellite transmission. The cable operators acted aggressively to frustrate this competition by vertically integrating into programming and refusing to allow satellite to deliver that programming over their medium. Satellite could not compete without the programming and the 1992 Cable Act required cable operators to make the programming available on reasonable terms and conditions. With the value of programming as an anti-competitive weapon reduced, cable operators stepped back from programming development, although they continued to favor the programming that they owned with carriage on their own systems. Third, cable market power also threatened the broadcasters, so congress granted broadcasters a new set of retransmission rights.

With this programming choke point opened, satellite penetration increased, but it never proved to be an effective direct competitor for cable.⁵⁴ Satellite expanded rapidly, but, in the beginning, primarily in rural areas where cable was not available. Later, when satellite expanded into urban areas, the difference in technologies made it unable to compete down the price of cable. Intermodal competition was no replacement for head-to-head, intramodal competition.

Cable operators did respond to the threat of satellite, not by competing on price (because satellite could not force prices down) but by digitizing their systems to increase the number of channels they could offer (matching satellite). However, the digitization of cable systems had the consequence, unintended at the time, of making broadband, cable modem Internet service possible. Cable began to offer broadband Internet Access Service (BIAS) alongside video service. Bundles of MVPD and BIAS service became the norm, with subscribers to cable modem service exceeding cable MVPD subscribers in 2014. Satellite could not deliver this bundled service, so any chance it might have had of being able to compete with cable was further reduced, if not eliminated. Counting TV and broadband subscriptions separately, cable has four times the number of subscribers as satellite.⁵⁵

The 1996 Act allowed telephone companies to go into the MVPD business, but they were slow to do so. They spent the first few years after the 1996 Act fending off local competition in voice service and exploiting their advantage in wireless service. The advantages they enjoyed stemmed from the fact that they were given licenses to use much higher quality spectrum for free, they control the local telecommunications network to which all wireless services connect and they have the broad customer base and brand recognition from the monopoly period. Their entry into video, was slow, halting and partial.

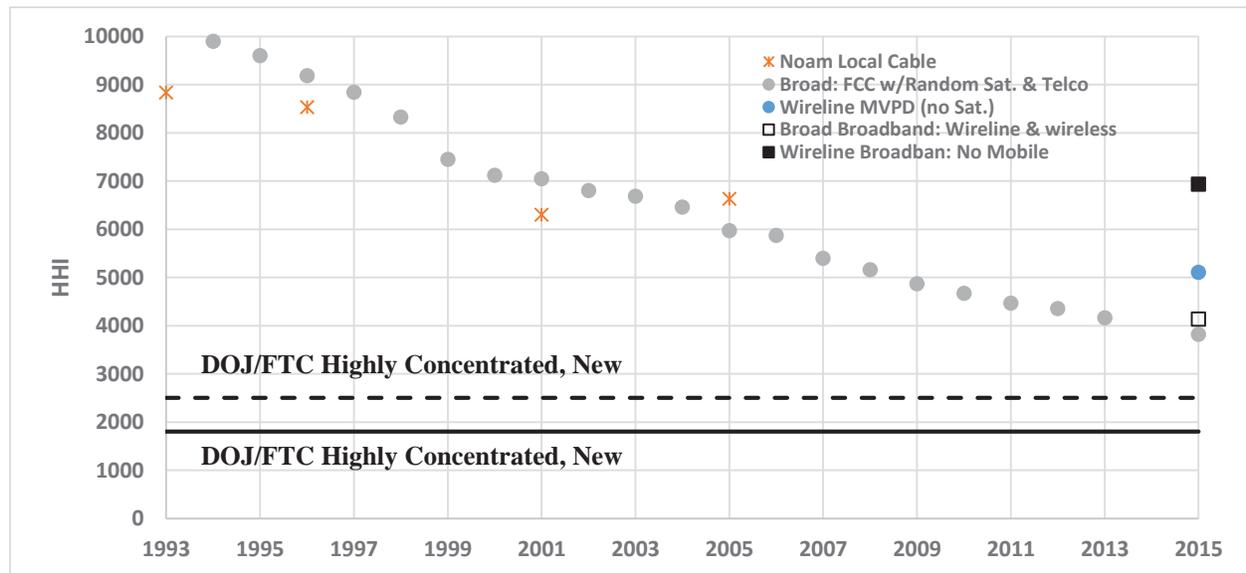
EXTREME LOCAL CONCENTRATION

The net result of the absence of intramodal and ineffective intermodal competition was to leave the local MVPD market highly concentrated throughout the period. As noted above, in the *Merger Guidelines* the definition of the relevant market is the first step and a critically important one.

Video

Figure V-1 shows several approaches and sources for calculating the HHI in the MVPD /BIAS markets, treating them as local markets. The local market is relevant for analyzing market power in setting monthly charges for service, since consumers must have a local connection to receive service. The national market is relevant for the purposes of assessing monopsony power in the programming market (e.g. program access as noted above).

FIGURE V-1: CONCENTRATION OF LOCAL MVPD AND BIAS MARKETS



Source: Ellie Noam, *Media Concentration*, Table 4.9, Federal Communications Commission, *Annual Report on Cable Competition*, various issues. Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, MoffettNathanson, January 13, 2016, for cable and telephone company broadband subscribers. Pew Center for American Life, *Internet Trends, Broadband at Home*, various reports.

The older measures of concentration are from Noam’s work on *Media Concentration*. Until the programming barrier to access was removed, making satellite entry feasible, a single cable operator was the only MVPD option. Cable operators never competed with one another. Even after all the legal barriers to head-to-head competition were eliminated, they simply would not “overbuild” one-another. Eventually, a small number of new entrants did come into the market, but they never achieved a market

share above a couple of percent, in part because cable operators continued to oppose their entry in local regulatory proceedings and withhold marquee programming when they could.

Therefore, Figure V-1 uses the geographic aspect of market definition to estimate local concentration recognizing that there is almost no head-to-head competition between cable companies. It assumes that satellite and telecommunications competition is randomly spread across the nation. It shows two approaches to the definition of the product market.

One approach is to adopt a very broad definition of competition that includes both wireline and wireless, even though the functionality and cost of the wireline and wireless technologies differs significantly. Using this overly broad definition of the product market, we calculate the shares of cable broadband subscribers and telephone broadband subscribers and include the number of smartphone only (no wireline broadband), in the denominator to calculate market shares. As Figure V-1 shows, this method yields a close approximation to Noam's calculation for early years. The result is that we have gone from a crappy monopoly to a crummy duopoly – from an HHI of 9,000 to an HHI of 4,000. Even the latter figure is well above the highly concentrated threshold.

I believe the wireline MVPD/BIAS market is the relevant video market. Satellite has never been able to discipline cable pricing power and is at a severe disadvantage vis-à-vis cable because of the emerging dominance of bundles. The bundled product is clearly the product that Comcast promotes, “According to Comcast 79 percent of its video customers at the end of 2013 subscribed to two services while 44 percent subscribed to all three.”⁵⁶ Satellite cannot provide bundles. Focusing on the wireline MVPD market we see that the HHI is about 5,000. It works out to a duopoly, but as we have seen, two is not enough to create workable competition. Four would still be few; six is okay and ten would be vigorously competitive.

Broadband Market Concentration

In analyzing the market for broadband service (referred to as broadband Internet Access Service, or BIAS) the second aspect of market definition – product definition – plays an even larger role. Internet access started out as a fairly slow speed data service, delivered to the consumer over the telephone utility plant. Dial-up Internet access service spread rapidly, exceeding one-third of the market in about 15 years, in contrast to telephone service, which had taken about 25 years to reach that level, and radio, television, and wireless, which achieved that level in about 5 years. Dial-up service was generally monopoly service, offered by the franchise telephone company.

Cable operators entered the Internet Access market after the 1996 Act with a much higher speed broadband service using a cable modem technology that ran over the digital network they had deployed to match the quantity of programming offered by satellite. Wireless Internet access service was also available, but the capacity it could offer fell between the slow speed dial-up and broadband. The competitive role of wireless broadband is also clouded by the fact that the dominant incumbent local telephone companies, were also the dominant wireless providers in the local service territories.

Without paying attention to the capacity of the Internet access service or the market shares of the service providers, one can be misled into claiming that the emergence of a competitive market. That is, the FCC began to count the number of people who had access to more than one service provider. Even with this very narrow and inadequate view of market structure, there was good news and bad news. The good news was that 99% of households had access to three service providers (although the dominant incumbent wireline providers captured the lion's share of the market). The bad news is that we find that only one-third of subscribers has 4 competitors available and the market shares are not evenly divided

between the four by any stretch of the imagination. Even with an unjustifiably broad definition, competition is extremely weak. The HHI is about 4,000.

Even more troubling, is the fact that the more careful the analysis of competition, the less there appears to be. The key point here is that the functionality and capacity of wireless and wireline broadband are radically different. Wireline broadband has much high capacity, but lacks mobility. Wireless has mobility but much lower capacity. They are not treated as substitutes by consumers.

The second approach to market definition, which I believe is the correct approach, recognizes the major difference between the technologies. The differences in the technologies are reflected in marketplace behavior. Five-sixths of subscribers who have wireline broadband at home, also take wireless.⁵⁷ They are either different products or complements, which means they do not compete. Moreover, the dominant telephone companies that deliver wireline broadband, are also the dominant wireless companies. They do not compete with themselves. The level of concentration is extremely high, way above the DOJ/FTC thresholds, with an HHI of about 7,000.

After a decade of misrepresenting market structure by relying on a constant, low threshold for defining high speed, the FCC was compelled to take a more realistic look at broadband. Properly evaluating the nature of the service is grounded in the Communications Act in three ways.

- First, the purpose of the Act is to “make available” services with “adequate facilities at reasonable charges.”
- Second the universal service language in the 1996 Act defines services that are eligible for support from the universal service fund according to what is being deployed and subscribed to in the market place.
- Third, the 1996 Act requires the FCC to assess whether the deployment of infrastructure is adequate for a variety of purposes under Section 706 and to take action to accelerate deployment if it finds that it is not adequate.

The FCC defined the threshold for broadband at 4 megabits per second (mbs) down and 1 mbs up after the National Broadband Plan report. This level was over five times the level that had been used before the 2009 amendments to the Communications Act. Using the definitions in the Act and taking a forward looking view of adequate facilities and deployment, the FCC then raised the threshold to 25 mbps down and 3 up.

The most important product market here is the True Broadband Market. I define the True Broadband Market to include cable modem service and telephone company high speed service. Verizon FIOS and ATT U-verse. I do not include telephone company DSL in the product market. True broadband is the product that can deliver large amounts of high quality video to consumers, which makes it the primary area for potential competition. Comcast’s own advertising and executive statements make it clear that DSL is not a good substitute.⁵⁸

I do not include wireless (mobile) broadband in this product definition. As deployed, it generally lacks the ability to deliver large quantities of high quality video that can compete with the MVPD product. Comparisons of speed and price make it clear that wireless broadband is not a good substitute when it comes to professional MVPD video. Compared to Verizon and AT&T, the dominant wireless broadband service providers, Comcast offers services at roughly the same fixed monthly charge but the speed is two to three times as fast and the cap is over 100 times higher. At the level of Comcast’s cap, AT&T and Verizon wireless broadband is ten times as expensive. Streaming of HD video, which is the

direction of video service, will overwhelm wireless broadband and household budgets who try to use it for MVPD service.

If we look at the true broadband market defined in this way and recognize the fundamental difference in capacity, function and pricing between wireless and wireline, we conclude that cable is the overwhelmingly dominant providers of true broadband. The HHI is about 7,000, higher than any communications market, except cable before the 1996 Act. This result reflects the thoroughly uncompetitive DNA of the industry. Since the dominant incumbents never compete by overbuilding one-another, competition in the true BIAS market is confined almost entirely to the dominant incumbent cable franchisee, with some competition from telephone companies who have chosen to selectively deploy fiber optic cables to the home and an occasional overbuilder (older cable overbuilders who have gone digital and Google in a few cities).

This nuanced situation is clearly unfolding in the BIAS market with respect to video competition. Video delivered through the Internet – Over the Top (OTT) – could pose a threat to cable operator market power in the video market. But OTT video providers have to reach consumers through a wireline Internet connection if they are going to compete with cable on quality, quantity and price. Unfortunately, the majority of consumers that the OTT video providers must reach to succeed get the BIAS service from cable operators. In other words, the OTT video service providers are dependent on their competitors to succeed. Wireline network operators have a great deal of experience at using bottlenecks to choke off competition. The network neutrality debate reflects this underlying reality.

The level of concentration makes two important points. First the very high level of concentration in the MVPD market two decades after deregulation casts a harsh light on the promises and claims that competition would protect consumers. Simply saying competition would happen or even removing formal barriers to competition does not make it so. Incumbents will resist competition and exploit their market power as long as they have it. Second, thirty years after deregulation, the MVPD market remains extremely concentrated. An obvious lesson here is that if consumers are to be protected from the abuse of market power in the transition to a competitive model, removal of barriers to entry should precede deregulation of powerful incumbents. Deregulation should not be allowed until there are clear findings that competition is already workable, as defined above. Given the repeated failure of competition in the MVPD space and the high likelihood that it will never develop in the BIAS market, and especially the bundled MVPD/BIAS market, if policy makers continue to hope for competition in this space, it is critical that public policy use all the tools possible to create the conditions for competition, which is exactly the opportunity that *Fox v. Filmon* provides.

Given the thresholds identified by the antitrust authorities, both the MVPD and the BIAS markets are extremely concentrated. Theory predicts that this extreme level of concentration should create a great deal of market power and result in very substantial pricing abuse and high levels of excess profits. Moreover, the video and broadband markets have become thoroughly intertwined in the sense that cable operators provision both services with one infrastructure and market them both in bundles. Potential OTT video competitors are threatened by cable control of the choke points. The technological and economic structure of the market dictates that we consider video and broadband simultaneously in examining the financial performance of the market.

PRICES FOR MVPD AND BIAS SERVICES

U.S. Price Trends

Because competition has been so weak in the MVPD/BIAS market throughout its history, we do not have examples of a competitive period or a viable disruptive competitor to use to gauge the extent of pricing abuse as in the wireless market. Therefore we look to similar or related markets to evaluate cable pricing. Moreover, given the lack of a direct competitive example, we will look at different pieces of the bundle to add perspective.

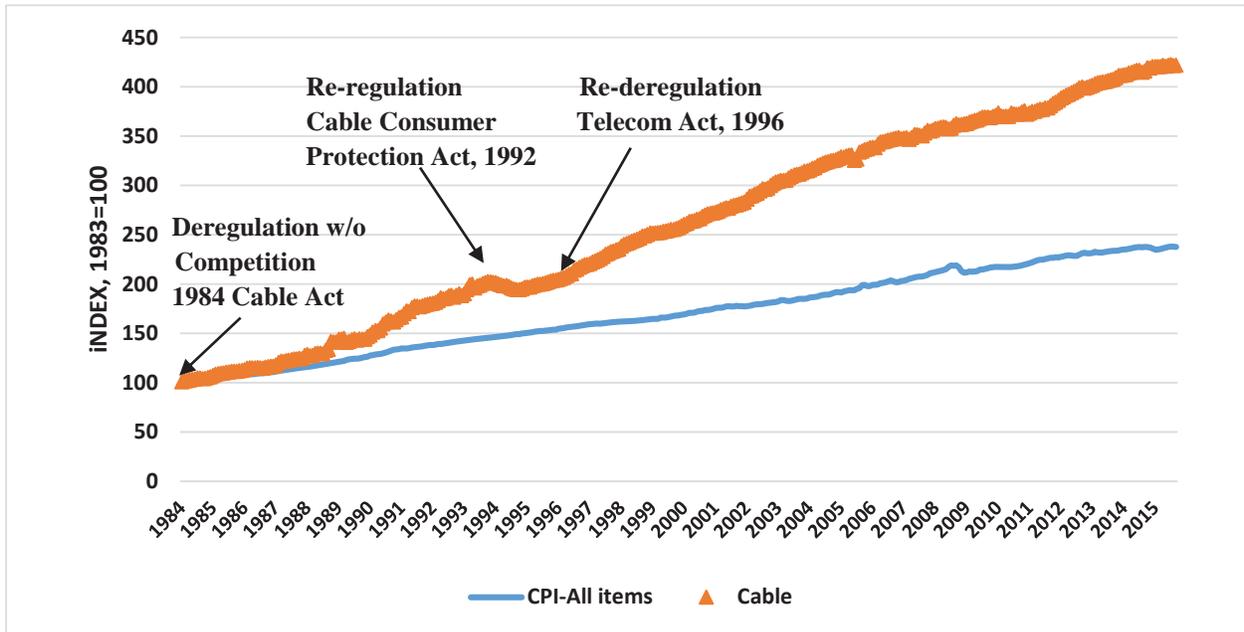
The Cable Act of 1992 had three effects on cable, as noted above. The impact of relevance to this discussion is that, as shown in the upper graph of Figure V-2, it subjected rates to regulation. After an initial rate reduction, the FCC adopted a price cap approach to regulation, which would have allowed cable rates to rise at the rate of inflation. The 1996 Act repealed that regulation and cable rates, undisciplined by regulation or competition, returned to their relentless upward march. Cable rates have increased twice as fast as inflation, except for the period before full deregulation (1984-1986) and during the brief period of regulation in the early 1990s.

As shown in the lower graphs of Figure V-2, the price of the other three services we identify all are flat and did not keep pace with inflation. Interestingly, telecommunications service was generally regulated with price cap regulation (wherein the cost of service is presumed to change with productivity increases and those increases are “shared” between the companies and the consumer). Internet service providers and mobile services were not regulated, but were undergoing significant growth and technological change.

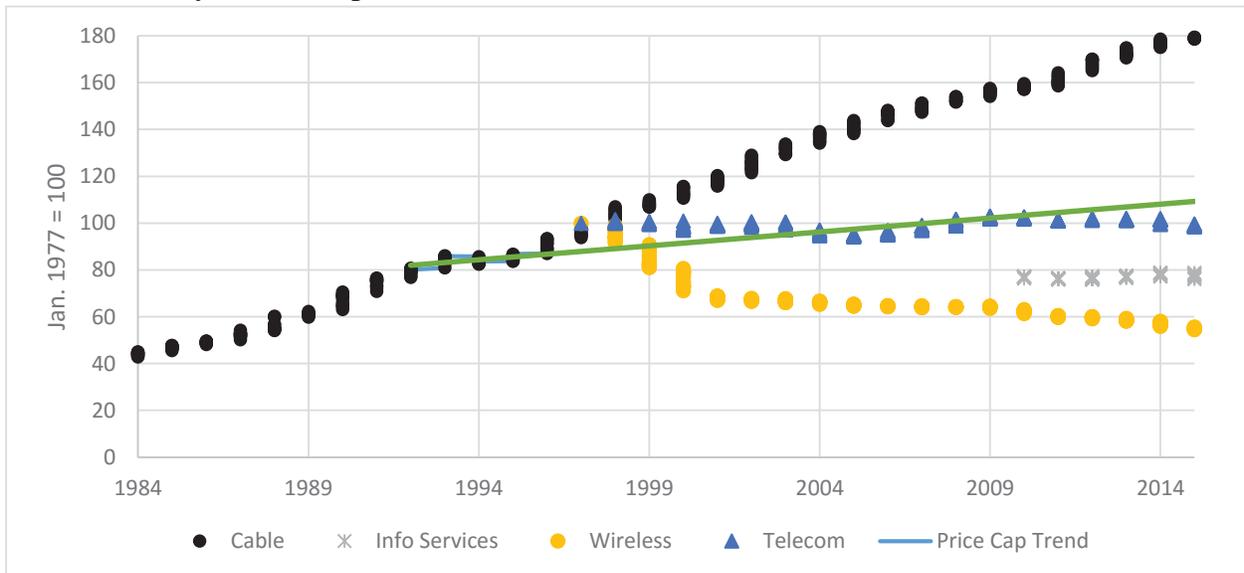
Based on this simple starting point, one can argue that if prices should have just kept pace with inflation, current rates are almost twice as large as they should be. Put more precisely, the current excess is about 44 percent of the current price, based on the rate of inflation.

FIGURE V-2: LONG TERM: DEREGULATION WITHOUT EFFECTIVE COMPETITION UNLEASHES MARKET POWER – PRICE INCREASE FAR IN EXCESS OF INFLATION

Regulatory Policy and Price



Cable Monthly Bills Compared to other Services



Sources: FCC, Cable Competition and Price Reports, Various Issues, Bureau of Labor Statistics. Consumer Price Index.

Price Comparisons of Bundles Across Nations and Ownership Types

International comparisons of cable/broadband access rates have been a very hot bone of contention for several years. As shown in Figure V-3, they strongly support the conclusion that market power is being exercised. The driver in these comparisons was the notion that the marketplace was better regulated in these other nations through a variety of interconnection and rate setting policies that would have resulted in lower prices, while the U.S. allowed the unfettered abuse of market power by dominant service providers, under the theory that competition would prevent abuse.

As shown in the upper graph of Figure V-3, the international comparison provides additional evidence that the theory competition was wrong. The U.S. has higher prices in every bundle of service compared to the broad set of advanced economies. The national and international rate analyses put the average excess at around 40% of the monthly bill.

The lower graph in Figure V-3, breaks out two subsets of OECD nations to highlight and correct for some of the pitfalls in these comparisons. Costs in telecommunications are driven significantly by population density, while prices are influenced by income (what the market will bear). Australia and Canada are very low density nations – the U.S. density is about 9 times as dense as those nations.⁵⁹ Germany and France are high density nations – the U.S. density is one fifth of the average of those two nations. All of the nations are large geographically and wealthy, although the U.S. is the largest and wealthiest.⁶⁰ In spite of the fact that the U.S. is more dense and wealthier than the low density nations, prices in the low density nations are almost 20% lower. The high density nations have prices that are over 50% lower. Placed in this context, the average difference of 40% in the upper graph, seems reasonable.

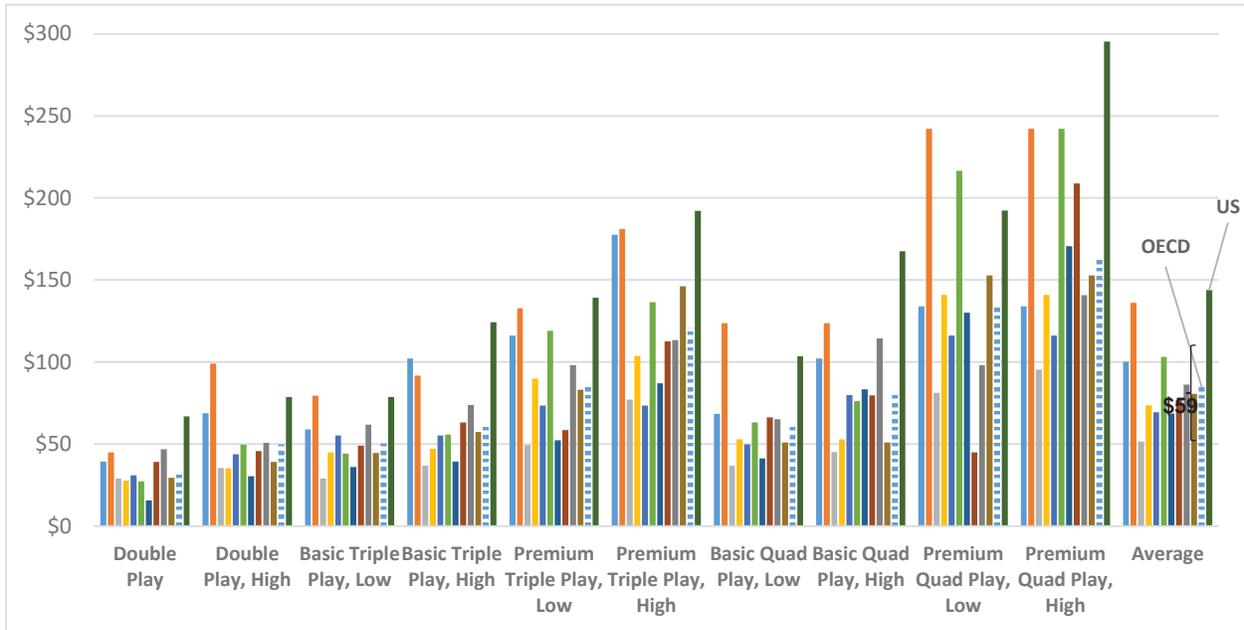
Comparisons have also been made between ownership types, under the belief that different types of owners have different incentives. Analysts who generally supported the cable/telco point of view were particularly adamant in criticizing publicly owned (generally municipal) providers of MVPD/BIAS services. Yet, as pressures mounted on the set top box issue, one of those organizations, the Phoenix Center, resorted to a comparison of charges for set top boxes between investor owned MVPD/BIAS companies and munis.⁶¹

A quick and dirty survey of unnamed communities, without matched comparisons, produced the finding that munis charge similar prices for set top boxes. Ironically, the analysis of the survey noted that “perhaps the prices provide very little information, since the customer cares only about the sum of the cost of video and any related equipment. In many cases, at least one set-top box is provided at no costs, indicating that the cost of that box is rolled into rates.”⁶²

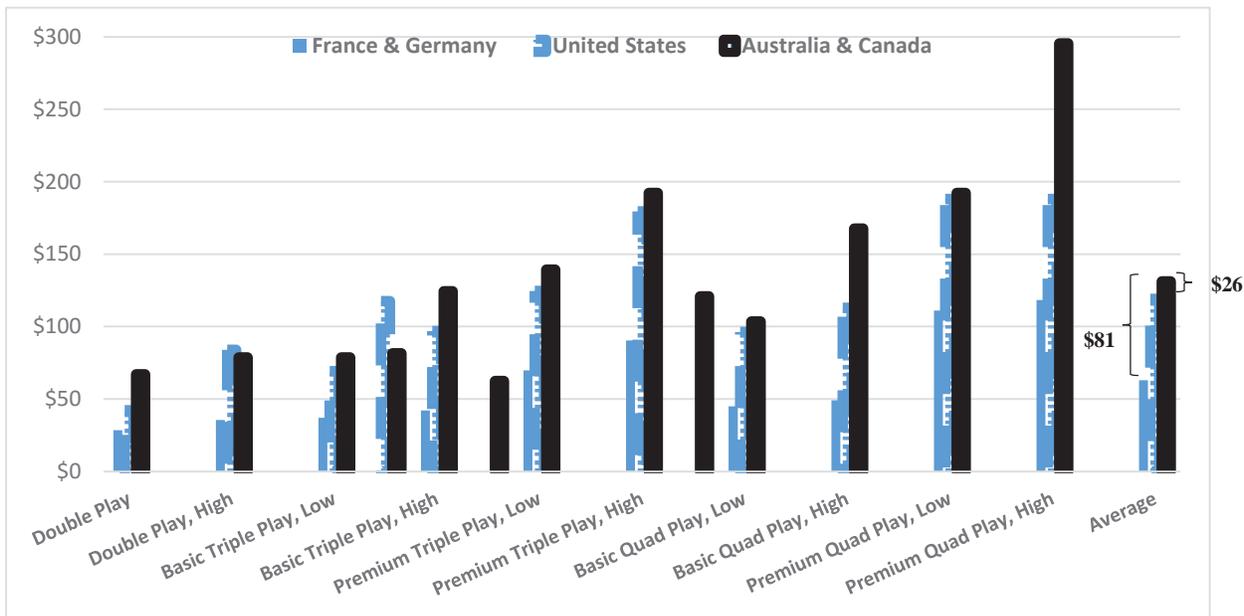
Invoking a comparison between investor owned MVPDs and munis and suggesting that the total monthly bill is what matters opens a line of analysis that the MVPD/BIAS operators and their supporters have tried aggressively to close. They continually debunk and belittle comparisons between the two different types of organization. The reason they do so is simple, the munis consistently have lower rates. Ironically, although the Phoenix center paper comparing set top box rates noted that full cost comparisons may be more relevant, it did not present any such analysis. Since the survey was based on prices available at web sites, it would have been easy to compare the total service prices advertised.

FIGURE V-3: INTERNATIONAL AVERAGE MONTHLY CHARGES: ALL BUNDLE OFFERINGS

Broadband Bundles in Eleven OECD Nations



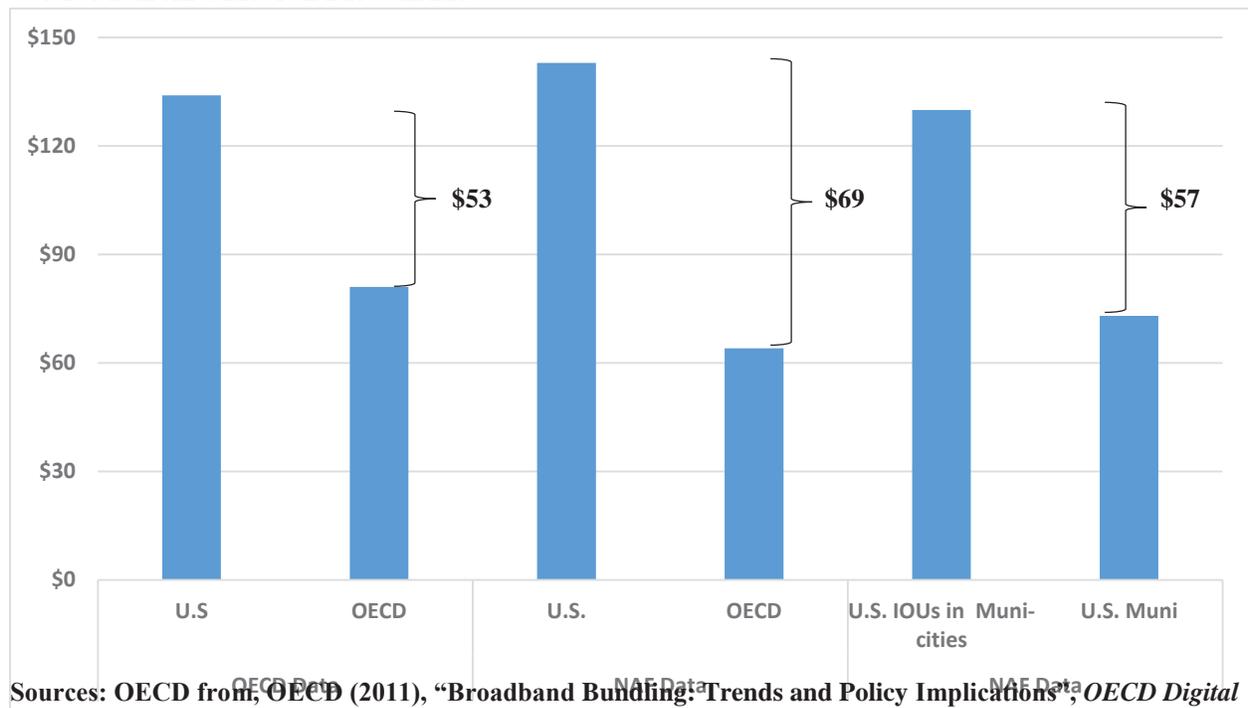
U.S. Compared to High Density (France & Germany) and Low Density (Australia and Canada) Advanced Economies



Sources: OECD (2011), “Broadband Bundling: Trends and Policy Implications”, *OECD Digital Economy Papers*, No. 175, OECD Publishing. <http://dx.doi.org/10.1787/5kghtc8znnbx-en>;

Figure V-4 shows why they did not make such a comparison – the rate comparison would have been devastating to the investor owned MVPDs. Figure V-4 shows the results of a CFA analysis of data gathered by the New America Foundation (NAF) to explore both the cross national and cross-ownership questions. Since the timing of that survey was similar to the OECD data discussed above, we have included that as well. Moreover, we focus on triple play bundles because that is what the municipal providers specialize in. This introduces a control for bundles. We also show cities in which both munis and investor owned MVPDs are found, another form of control.

FIGURE V-4: COMPARISON MONTHLY BILLS FOR TRIPLE PLAY SERVICE: U.S. v OECD, IOUS v. MUNICIPAL SERVICE PROVIDERS



Sources: OECD from: OECD (2011), “Broadband Bundling: Trends and Policy Implications”, *OECD Digital Economy Papers*, No. 175, OECD Publishing. <http://dx.doi.org/10.1787/5kghtc8znnbx-en>; NAF from: Mark Cooper, *Comparing Apples-to-Apples: Municipal Wireline And Non-Baby Bell Wireless Service Providers Deliver Products That Are More Consumer-Friendly*, Consumer Federation of America, November 21, 2013.

We find that the U.S. rates identified in the OECD data and the NAF data are similar. In the full NAF sample, U.S. prices are a little higher, while OECD prices are a little lower. In the subsample of cities where munis operate, we find that the rate charged by “well-regulated” OECD service providers are similar to those charged by municipal providers. Across these comparative analyses we observe a range of estimates of excess charges, but the central tendency is slightly over 40% of the average monthly bill.

SET TOP BOXES

In the introduction we noted that Congress explicitly extended the policy of relying on competition to the set top box market, because the set top box can operate as an independent chokepoint and barrier to competition. By controlling how programming is presented and complementary information the MVPDs and the programming providers exercise control over

the customer and the pace of innovation in both hardware and software. There is no incentive to innovate new complementary services, if they cannot access the content.

The failure of the FCC to develop an effective space for competition in the set-top box market has resulted in a near monopoly by the MVPDs.⁶³ It has also resulted in pricing abuse that equals or exceeds the abuse in pricing of monthly MVPD/BIAS service. The evidence of this abuse parallels the evidence we have reviewed for the pricing of monthly service.

The pay TV industry collects around \$20 billion in box rental fees per year, a large enough sum to explain the industry opposition to reform in this area. While that number by itself is enough to demonstrate that something is amiss in the set-top box market, it is possible to more precisely quantify the scale of the set-top box rip-off, as the attached analysis shows.

With the Cable Consumer Protection Act of 1992, Congress directed the Commission to directly regulate cable rates (including equipment rates). Under the Act, the rates for set top boxes and remote controls were to be reasonable and based on actual costs, and consumers paid (on average) about \$2.60 per month. With the 1996 Telecommunications Act, Congress changed its approach, and decided to remedy cable consumer harms primarily through marketplace reforms and competition. Competition is indeed preferable to direct rate regulation when it is possible—and when it works. Unfortunately, that is not the case in the MVPD, BIAS and the set-top box markets.

But the numbers show that the reforms of the 1996 Act were insufficient to prevent pricing abuse by cable companies (see Figure V-5). Rates went through the roof. The dramatic increase in rates afflicted all aspects of cable service, including set-top boxes. Today, the average charge for a set top box is \$7.43 per month,⁶⁴ an increase of 185% since 1994. This is over three times the increase in the Consumer Price Index (CPI) over that same period.⁶⁵ In real terms the price was increasing at almost 3% per year.

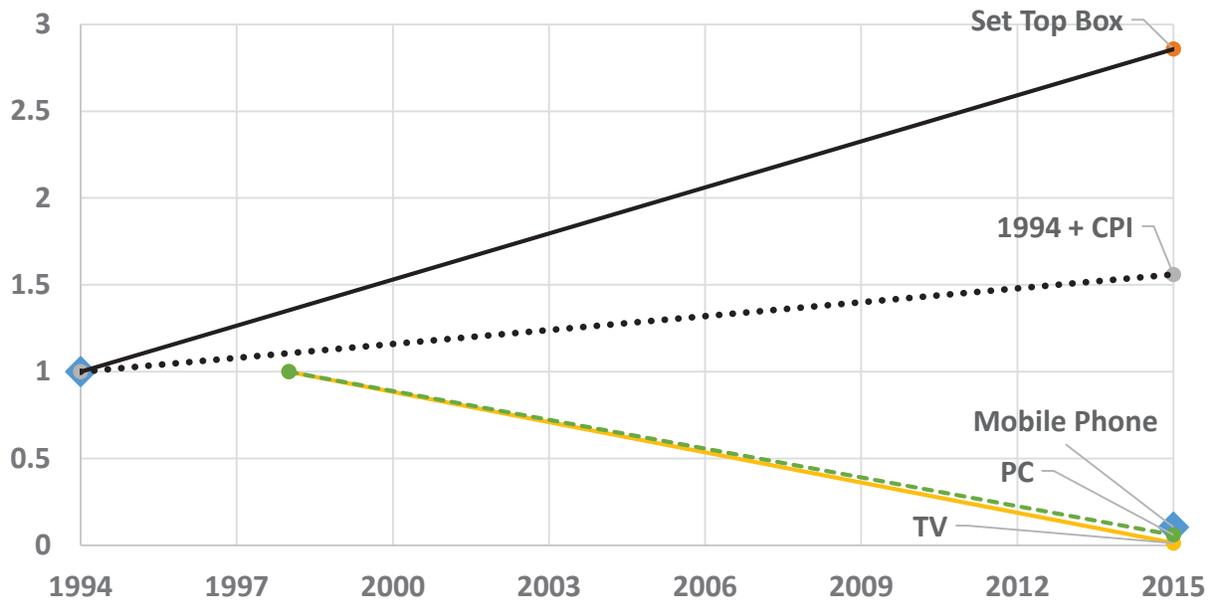
The comparison that is even more damning in Figure V-5 is with the pricing of other types of customer premise equipment. The prices for these pieces of equipment were plummeting, by about 19% per year in real terms. This is consistent with the earlier results on price indices for telephones, fax machines, modems and cellular phones. These other devices provide functionalities that are similar to and probably more complex than the functionalities provided by set-top boxes, yet their price was falling.

EXCESS PROFITS

Earnings

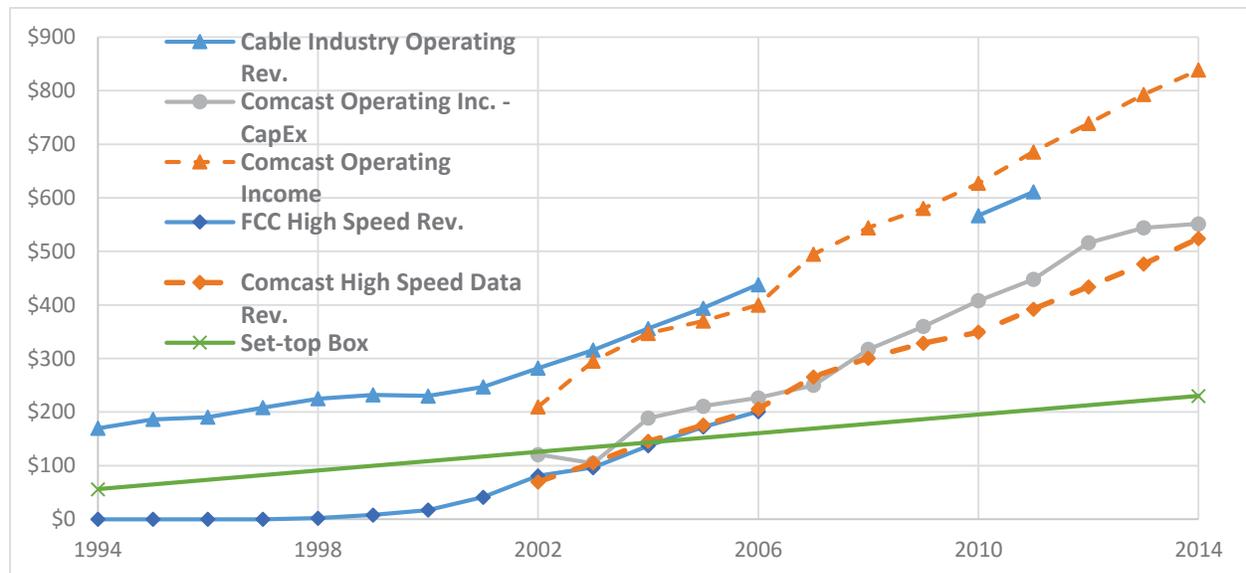
In Figure V-6 I show trends of operating income for total cable operations and BIAS. Because the FCC stopped reporting EBDITA (Earnings Before Interest, Taxes, Depreciation and Amortization) and the cable operators have shifted to OIBDA (Operating Income before Depreciation and Amortization), I have calculated operating income per video subscriber for Comcast, as the dominant cable operator by far. It matches up quite well with the earlier FCC series. I show it on an annual basis per video subscriber. The operating income includes the excess of operating revenue over operating costs, plus depreciation and amortization, before interest or taxes are paid.

FIGURE V-5: THE PRICE OF CUSTOMER PREMISE EQUIPMENT: SET-TOP BOX V. OTHER CPE



Sources and Notes: Cell Phone: 1994: \$950 (average of 1993 and 1995) from <http://www.gottabemobile.com/2011/12/28/history-of-cellphones-shrinking-sizes-and-prices-infographic/>; 2015: \$100 (widely available from “Smartphones connect users with many of the functions of a laptop computer”, <http://electronics.costhelper.com/smartphone.html>, Set top Box, 1994: \$2.60 (FCC, DA94-767), Regulated systems in the top 25 markets were charging \$2.48 in equipment per month, per the chart on page 11 of FCC document DA 94-767. All systems in the top 25 markets were charging \$2.59 per the chart on page 12. We use \$2.60 as a conservative estimate; 2015: \$7.43 (Jon Brodtkin. Cable TV Box Rental Fees,” <http://arstechnica.com/business/2015/07/cable-tv-box-rental-fees-cost-average-household-232-a-year/> Inflation from FCC, 2014, *Report On Cable Industry Prices*, MM Docket No. 92-266, p. 10.

FIGURE V-6: CABLE OPERATING REVENUE & INCOME WITH BROADBAND REVENUE PER SUB.

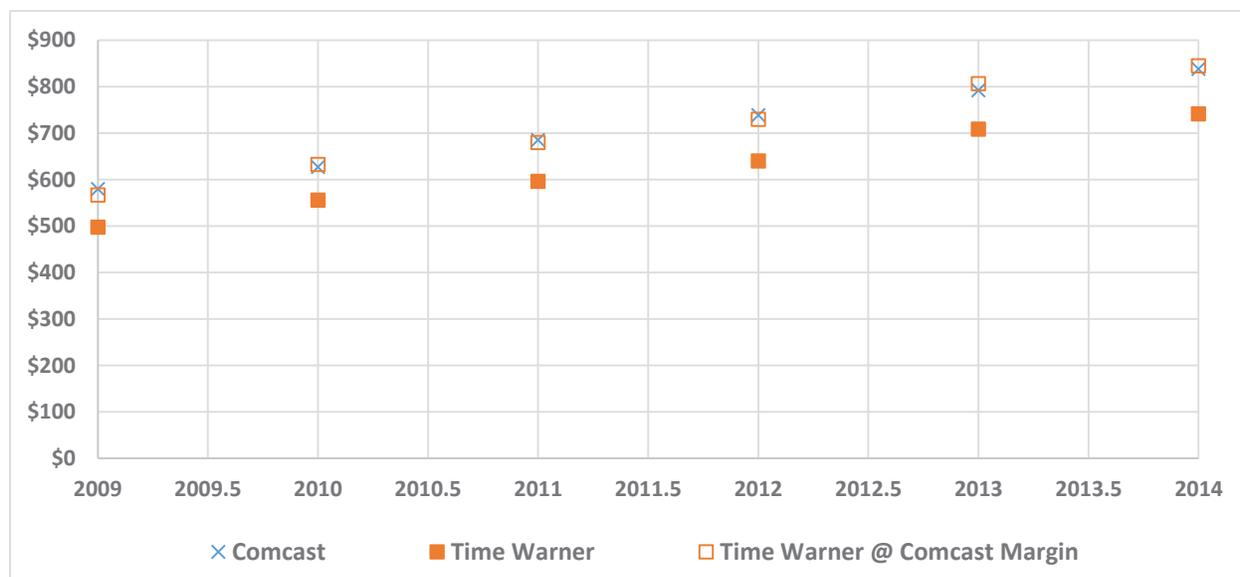


Sources: Federal Communications Commission, Annual Video Competition Reports; Comcast Annual Reports.

Earnings increased at an extremely rapid pace, about twice as fast as cable prices. I have identified the cause of this difference earlier. Costs were falling in a period when total subscribers were expanding. Economies of scale and scope were realized in a network where BIAS was added. By the end of the period, revenue from BIAS is equal to half of total revenue. In the absence of competition, cable operators increased rates and pocketed the excess profits.

While the calculations based on the Comcast financials provides a good fit with the long term FCC data, I also examined the financials of Time Warner Cable, the second largest cable operator, over the recent period. Using the same method (Operating Income/video subscribers), Figure V-7, shows that Time Warner’s earnings increased at roughly the same rate as Comcast, but from a lower base. The explanation for the difference is also suggested in Figure V-6. Time Warner is less “efficient” at turning revenue into earnings – it has a lower margin. If we apply the Comcast margin to the Time Warner revenue, the two streams are almost identical. Of course, it is differences in margins that drive mergers like the proposed (rejected) Comcast-Time Warner merger. Comcast can pay a premium for Time Warner’s systems, since it believes it can squeeze more out of them

FIGURE V-7: OPERATING INCOME (OBIDA) PER VIDEO SUBSCRIBER



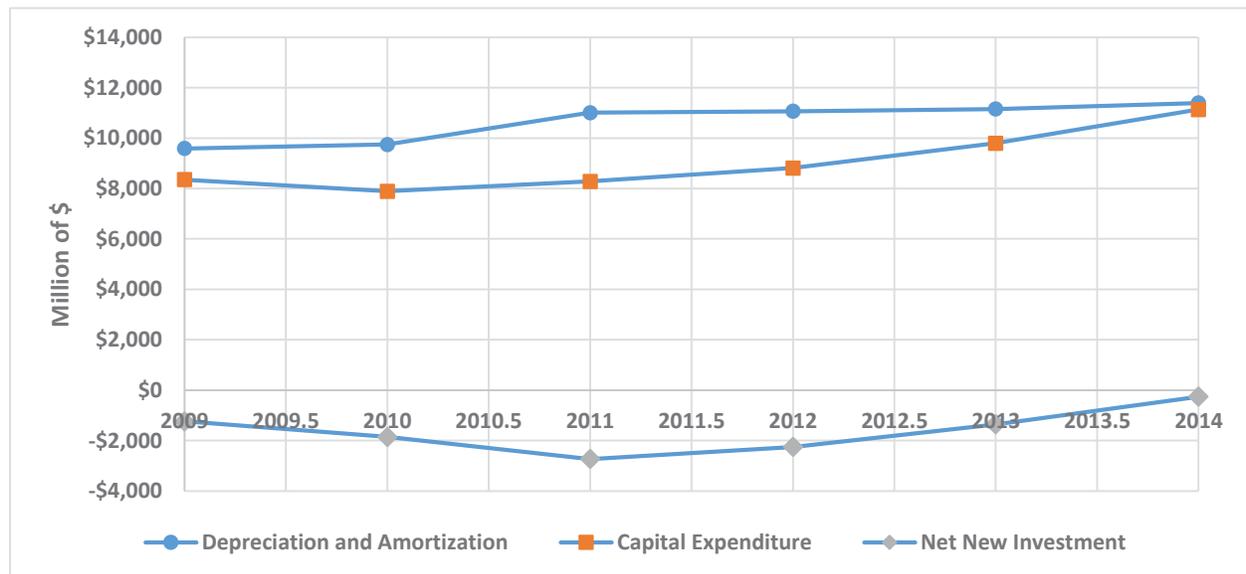
Source: Annual Reports

The calculation of excess profits suggested in Figure V-6 by the operating income minus capital expenditures underestimates the abuse of consumers. As shown in Figure V-8, over the period studied, the two largest cable operators, who account for over 60 percent of all cable subscribers, brought no new capital to the industry. That is, the depreciation and amortization of existing capital and assets provided more cash than the outlays for capital expenditures. Given this, if we were to adjust the earnings net of capital expenditure in Figure V-4 to better reflect the price-cost margin concept underlying the Lerner Index, it would be larger by almost \$10 billion.

While net new investment was essentially flat, operating income was increasing by 7.6% per year. Because net investment was flat, operating income minus CapEx was growing at over

13% per year. The increase in income was much larger than technical labor and production costs, which were growing at less than 4% per year (3% and 3.9%, respectively). Customer service was growing at 5.5% per year. The fastest growing expense was marketing, at 11.2% per year and programming, at 9.6% per year. Looking back at the indicators of workable competition, excessive promotion is identified as a concern.

FIGURE V-8: COMCAST & TIME WARNER: DEPRECIATION AND CAPITAL EXPENDITURES



Source: Comcast and Time Warner Cable Annual Reports

The aggregate magnitude of the abuse depends on the extent of the mark-up of prices over costs and the size of the market. Focusing here on the set-top box issue, Table V-1 shows, a low estimate assumes that costs increased at the rate of inflation and a market limited to cable subscribers (about 53 million).⁶⁶ The resulting overcharge is \$6 billion per year. A high estimate assumes costs declining as they did in cellular/PC markets and a large market include all wireline MVPD subscribers (65 million). The resulting overcharge is \$14 billion.

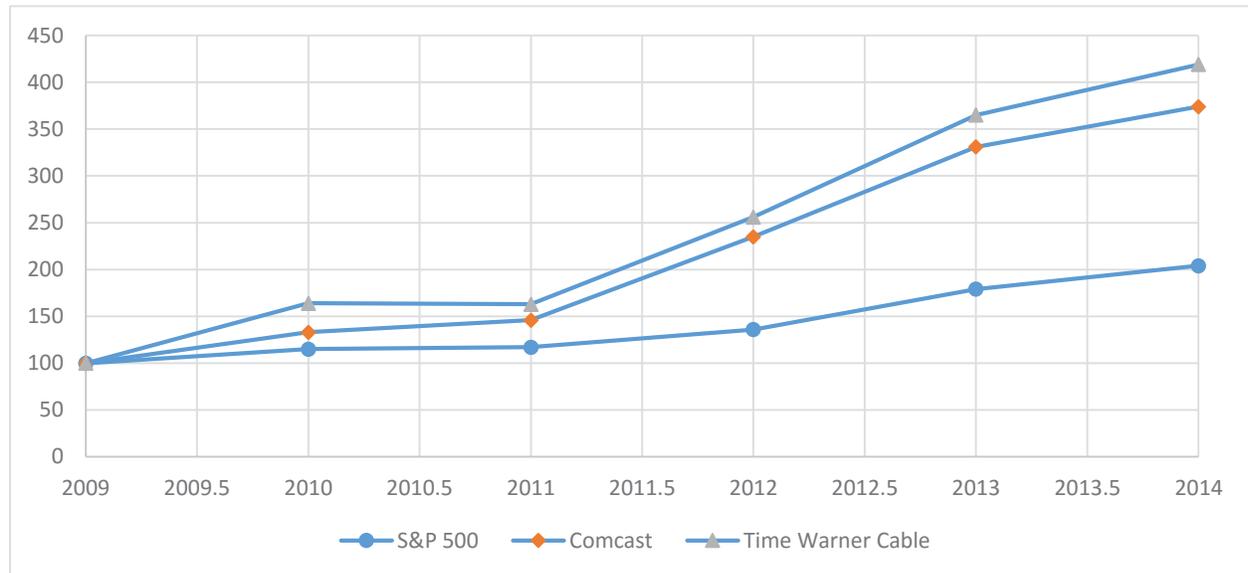
TABLE V-1: CALCULATING THE ANNUAL EXCESS COST OF SET-TOP BOXES

	<i>Overcharge per household</i>			<i>Total Annual Overcharge</i>		
	Cost	Monthly per box	Annual per box	Annual, 2.5 boxes	53 million subscribers	65 million subscribers
1994 + CPII	\$4.10	\$3.34	\$40.10	\$100	\$6.0 billion	\$6.5 billion
1994 Flat	\$2.60	\$4.84	\$58.70	\$147	\$7.8 billion	\$9.6 billion
Highest of other CPE	\$0.31	\$7.13	\$85.60	\$214	\$11.3 billion	\$13.9 billion

Sources and Notes: 2.5 television sets per household ((Jon Brodtkin. Cable TV Box Rental Fees,” <http://arstechnica.com/business/2015/07/cable-tv-box-rental-fees-cost-average-household-232-a-year/>), Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, Exhibit 5, Moffet/Nathanson, January 13, 2016, estimates cable subscribers at just over 53 million, Teclio video subscribers at just over 11 million.

To underscore that this dramatic increase in earning constitutes excess profits, I turn to the same measure that the companies use when touting their performance to stockholders – the total return to stockholders.⁶⁷ Comcast and Time Warner both report the five-year total return in each annual report, as shown in Figure V-9. They include the Standard and Poors 500 as a point of comparison. The total return to investors for Comcast and Time Warner has grown about twice as fast as the S&P 500, even though the compound annual growth rate of total return was a very respectable 15%. Given the huge excess returns, the earlier estimate that rates are 20% - 40% above costs may be too low.

FIGURE V-9: FIVE YEAR TOTAL RETURNS



Source: Annual Reports, Source: Comcast Annual Report 2013, 2014, p. 44; Time Warner, 2014, Corporate Officers page (140).

With this massive overcharge and excess profits, where does all the money go, if not into the industry? The cable companies use the ill-gotten gains they have extracted from consumers to pump up the total return with big dividends, massive stock repurchases acquisitions and retained earnings. In the period studied in this paper, Comcast and Time Warner Cable, who represent about 60% of the cable/BIAS industry, have spent about \$90 billion on these four uses of funds.

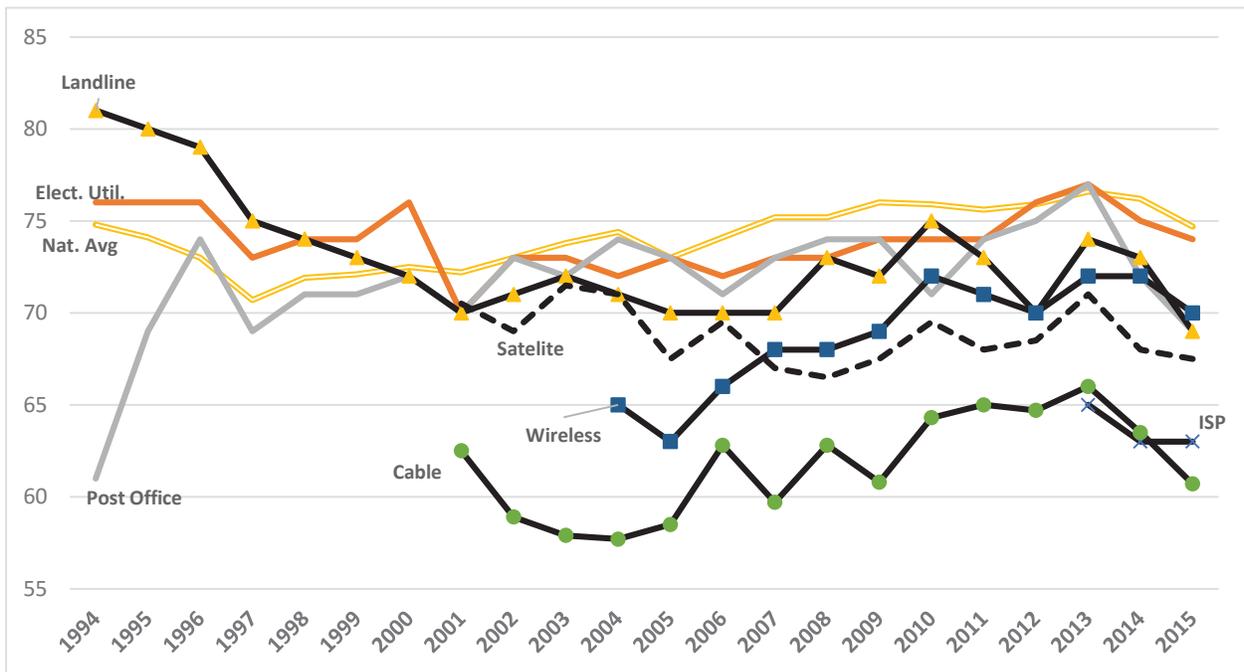
CONSUMER DISSATISFACTION

Stockholders love this strategy of pumping up their value with excess profits; consumers not so much. The finding of substantial direct harm resulting from the abuse of market power is reinforced by a broad qualitative finding that consumers are not very satisfied with these services, as shown in Figure V-10.

Cable has long been ranked at the bottom of over 40+ individual sectors that have been evaluated, 20% below the national average. Internet Service Providers (ISP), overwhelmingly broadband service by the time they were first covered by the survey, entered at the very low level of cable. This is not surprising, since cable is the dominant provider of broadband landline

service. Wireless entered the survey somewhat higher than cable and has been steadily improving, although it is still below the national average. Landline telephone service was well above the national average but was declining before the passage on the 1996 Act. It continued its decline for a while but has stabilized somewhat below the national average. I include electric utilities as a point of comparison for a network service that imposes significant costs on the household. It was above the national average but stabilized just below the national average. The post office has been around the national average, well above cable and ISP. Cable's extremely poor performance with respect to consumer satisfaction, is consistent with its massive excess profits, both of which reflect the substantial underlying market power that results from high concentration.

FIGURE V-10: AMERICAN CONSUMER SATISFACTION INDEX SINCE THE 1996 ACT



Source: American Consumer Satisfaction Index, Annual except 2015, which is 2q. Cable calculated as the (weighted average) of subscription television service minus satellite. Satellite is average of DIRECTV and DISH

ENDNOTES

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- ¹ In 1998, at the press conference announcing the opposition of the Department of Justice to the proposal of cable operators to acquire satellite assets, the Assistant Attorney General, Joel Klein, declared cable to be “the most persistent monopoly in the American Economy.” The written DOJ press release declared DBS, “the first real threat to the cable monopoly... Cable prices continue to increase rapidly, and unless this acquisition is blocked, consumers will be denied the benefits of competition—lower prices, more innovation, and better services and quality.” Justice Department Sues to Block Primestar’s Acquisition of News Corp./MCI’s Direct Broadcast Satellite Assets: Unless Deal is Blocked, Consumers Could Face Higher Cable Rates, https://www.justice.gov/archive/atr/public/press_releases/1998/1758.htm. As I discuss below satellite could not drive price, but it did stimulate cable to digitize, which had the unintended consequence of strengthening its market power, so that today, in the broadband Internet access service market, the most important transmission market, for video/broadband services, it has more than when Klein spoke.
- ² Jean Tirole, who received the 2014 Nobel prize in economics, has emphasized the importance of this principle in network industries. Although Tirole’s argument is nuanced and cautious, it animated by a concern for market power exercised by entities that control choke points (traditionally called essential facilities). The first slide in the first substantive section of his Laureate presentation was entitled “Curbing Market Power to Benefit Consumers,” and the policy implication of the second slide was “Fair access creates downstream competition and low prices for end users.” (http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2014/tirole-lecture-slides.pdf) The lecture made the point that “The more general message is clear: under unfettered bilateral negotiations, downstream competition erodes the upstream firm’s market power.” (http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2014/tirole-lecture.html). FRAND is frequently used in conjunction with intellectual property, while even stronger obligations of nondiscriminatory access (common carriage) are applied to infrastructure networks. I use the weaker term here in recognition of the dynamic nature of the digital communications sector, an issue that I have explored at length in Mark Cooper, 2015, “The ICT Revolution in Historical Perspective: Progressive Capitalism as a Response to Marxist Complaints, Piketty Pessimism and Free Market Fanaticism About the Deployment Phase of the Digital Economy,” Telecommunications Policy Research Conference, September, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587085; ICT, Mark Cooper, 2014, The Long History and Increasing Importance of Public Service Principles For 21st Century Public Digital Communications Networks, *Journal on Telecommunications and High Technology Law*; Mark Cooper, 2013, “Why Growing Up is Hard to Do: Institutional Challenges for Internet Governance in the “Quarter Life Crisis of the Digital Revolution,” *Journal on Telecommunications and High Technology Law*, 2013. 11(1).
- ³ Mark Cooper and Adam Lynn, 2010, *Supplementary Affidavit Of Mark Cooper And Adam Lynn In Support Of Replies To Opposition Of Public Interest Petitioners, before the Federal Communications Commission, In the Matter of Applications for Consent to the Transfer of Control of Licenses General Electric Company, Transferor, To Comcast, Transferee, Docket No. 10-56, May*
- ⁴ F. M. Sherer & David Ross, *Industrial Market Structure and Economic Performance* (3d ed. 1990), pp. 4.
- ⁵ Id.
- ⁶ With the emphasis on the impersonal process of competitive markets and freedom to choose, competitive economic markets are also preferred because they provide a strong basis for democratic political systems.
- ⁷ Landes, W. M. and R. A. Posner, “Market Power in Anti-trust Cases,” *Harvard Law Review*, 19: 1981, two of the leading Chicago school law practitioners of *laissez faire* economics. They focus in on the key question from the point of view of competition in markets, asking “what degree of market power should be actionable?”
- ⁸ Landes, W. M. and R. A. Posner, “Market Power in Anti-trust Cases,” *Harvard Law Review*, 19: 1981,
- ⁹ Landes and Posner acknowledged this in some respects. In all of the examples, the effect of adopting the approach advocated in this paper was to reduce or eliminate the inference of market power drawn from market share data. This will probably be the result in most cases of using our approach, simply because exclusive and uncritical focus on market share data tends to produce an exaggerated impression of market power. In some cases, however, our approach will result in correcting an underestimation of market power based on market share, Id.
- ¹⁰ Id.
- ¹¹ Id.
- ¹² Cooper, 2015, see also, Mark Cooper, 2014, “The Digital Past as Prologue: How a Combination of Active Public Policy and Private Investment Produced the Crowning Achievement (to Date) of Progressive American

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- Capitalism, Regulating the Evolving Broadband Ecosystem,” *AEI/University of Nebraska Forum, Federal Communications Commission*, September 10; Mark Cooper, “Building a Progressive Media and Communications Sector,” in Elliot Cohen (Ed.) *New Incorporated: Corporate Media Ownership and Its Threat to Democracy* (Prometheus Books, 2005) Mark Cooper, 2002, “Restoring the Balance of Public Values and Private Incentives in American Capitalism,” Too Much Deregulation or Not Enough, *Cato Institution*, November 1; Mark Cooper, 2000, “Progressive, Democratic Capitalism In The Digital Age,” *21st Century Technology and 20th Century Law: Where Do We Go from Here? The Fund for Constitutional Government*, Conference on Media, Democracy and the Constitution, September 27.
- ¹³ John B. Taylor, 1998, *Economics*, pp. 380. The elasticity of supply acts in the opposite direction, making the outcome a result of the combination of the two, suggesting a sharing, but the elasticity of the demand curve is larger than the elasticity of the marginal revenue curve, so market power “distorts” the sharing. The lower the elasticity of demand, the higher the mark up of price over cost (p. 278).
- ¹⁴ U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, 1997 section 0.1.
- ¹⁵ Sources: Nobel Laureate lecture can be found at: http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/
- ¹⁶ Scherer and Ross, 1990, pp. 70-71, “A related performance-oriented approach focuses on some measure of the net profits realized by firms or industries.”
- ¹⁷ Landes and Posner, p. 941, “If marginal cost were known, the Lerner Index could be determined directly (assuming the price is observable), without measuring the firm’s elasticity of demand. But because marginal cost is a hypothetical construct, -- the effect on total cost of a small change in output – it is very difficult to determine in practice, especially by the methods of litigation.
- ¹⁸ “Landes and Posner on Market Power: Four Responses,” *Harvard Law Review*, 94 (5),
- ¹⁹ Taylor, 1998, p. 147.
- ²⁰ Viscusi, John M. Vernon, and Joseph E. Harrington, Jr., *Economics of Regulation and Antitrust* (Cambridge: MIT Press, 2000), p. 149
- ²¹ Jerry Hausman, 1997, “Valuation of New Goods under Perfect and Imperfect Competition,” in Timothy F. Bresnahan and Robert J. Gordon (Eds.), *The Economics of New Goods*, p. 231.
- ²² Given the cost structure of the industry and the fact that he was analyzing the introduction of a new brand, the decision to ask what markup was necessary to cover fixed costs seems reasonable.
- ²³ J. W Friedman, *Oligopoly Theory* (Cambridge: Cambridge University Press, 1983), p. 8-9.
- ²⁴ U.S. Department of Justice and the Federal Trade Commission, *Horizontal Merger Guidelines*, 1997 section 0.1.
- ²⁵ *Horizontal Merger Guidelines*, at section 0.1.
- ²⁶ The HHI can be converted to equal-sized equivalents as follows:
Equal-sized voice equivalents = $(1/HHI)*10,000$.
- ²⁷ William G. Shepherd, *The Economics of Industrial Organization*, 1985, p. 4.
- ²⁸ In the case of 5.5 equal-sized firms, the four firm concentration ratio would be 72%.
- ²⁹ Jonathan B. Baker, 1996, Unilateral Competitive Effects Theories in Merger Analysis Antitrust Developments Program, American Bar Association Section of Antitrust Law, Annual Meeting, August 6. published in *Antitrust*, vol. 11, Spring 1997, pp. 21-26. Unilateral theories are now by far the most common, at least in the memoranda Associate Director Gary Roberts and I have written to the Commission. This was not always the case. The first Chicago-school era merger guidelines, issued by the Justice Department in 1982, highlighted factors facilitating collusion; that discussion was the predecessor to the current Guidelines’ discussion of coordinated competitive effects. Although the 1982 Guidelines also contained a “leading firm proviso” that dealt with the creation or enhancement of the market power of a dominant firm, the application of this unilateral theory of potential adverse competitive effects of mergers was very narrow. As late as 1986, the leading survey of antitrust policy issues raised by horizontal mergers, this Section’s publication *Horizontal Mergers: Law and Policy*, essentially ignored unilateral theories.
- ³⁰ Gene Kimmelman and Mark Cooper, Antitrust and Economic Regulation: Essential and Complementary Tools to Maximize Consumer Welfare and Freedom of Expression in the Digital Age,” *Harvard Law & Policy Review*, 2015:9,
- ³¹ Gene Kimmelman and Mark Cooper, Antitrust and Economic Regulation: Essential and Complementary Tools to Maximize Consumer Welfare and Freedom of Expression in the Digital Age,” *Harvard Law & Policy Review*, 2015:9,
- ³² See Erick Brynjolfsson, MIT Center for Digital Business, Address at NITRD Symposium: Impact of Networking and Information Technologies on Productivity and Innovation (Feb. 16, 2012), slides available at

<http://perma.cc/M3W7-YKKD>; see also STANDARD CHARTERED, TECHNOLOGY: RESHAPING THE GLOBAL ECONOMY (2015), available at <https://perma.cc/Y634-PKR2>.

³³ Alfred Kahn, *The Economics of Regulation: Principles and Institutions*, 1988, p. 11.

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.* at 114.

³⁷ Lester D. Taylor, 1994, *Telecommunications Demand in Theory and Practice*, p. 262, “Taylor identifies three characteristics of necessities – inability to replace the good, large relative size of the expenditure, and importance of the good in a broad sense. ‘The point of departure will be to remind ourselves of a point this is probably too often forgotten: that price elasticity consists of two components, an income effect and a substitution effect. The substitution effect is a measure of the extent to which goods and services can substitute for one another when there is a price change without making the consumer any worse off in terms of consumer welfare. The income effect, on the other hand is a measure of the extent to which the consumer’s real income is changed when there is a change in price. Ordinarily, the importance of the income effect is represented by the importance of the good whose prices has changed in the consumer’s budget. Goods whose expenditure account for a small proportion of the consumer’s total expenditures will have a small (or even tiny) income effect, while a good whose expenditures account for a large portion of total expenditure will have a possibly large income effect. Goods that in ordinary discourse are seen as necessities (such as heating fuels and telephone service) will also have relatively larger income effects the lower the level of income.”

³⁸*Id.*, p. 262, “In assessing income effects, however, a point that is usually overlooked is the effect on the consumer’s welfare of not consuming a good because of a price increase. In the case of making or not making a phone call because it has become more expensive, the question that needs to be asked is what are the consequences (not necessarily in monetary terms) of not making the call. For residential consumers, this cost is usually cast in term of the utility (or satisfaction) that is given up by the call not being made. For many calls, however, this is not the correct measure of cost, for the call may be important to the *earning* of income. In this case, the actual income effect of not making a telephone call may be large, although the decrease in real income, (as customarily measured), occasioned by the price increase may be extremely small.

³⁹ Alfred Kahn, *The Economics of Regulation: Principles and Institutions*, Vol 1, p. 11 (1988).

⁴⁰ Cooper, 2015.

⁴¹ Greenstein, 2010:497, The flow of events during more recent experience has also depended on the choice made by incumbent firms... In each platform, it is rare to observe more than a small number of firms acquiring leadership positions. It is unsurprising, then, that questions about how incumbent firms react to new entry and defend existing positions in valuable markets have attracted antitrust scrutiny

⁴² Greenstein, 2007:93...94.

⁴³ Greenstein, 2010: 479.

⁴⁴ Cohen, 2010:137-138...139. [P]latform leaders have incentives to expand the scope of platforms from which they profit, and they have incentives to aspire to continuity in the use of that platform. Entrants, in contrast have incentives to consider whether to commit to an existing platform, or to join another that might compete with it. In turn, that translates into high incentives for incumbents to support design of new proprietary standards for an existing platform, but not nonproprietary standards that might lead to more competition between platforms. On the other hand, entrants of applications prefer to make them compatible with as many platforms as possible, which leads to incentives to work toward non-proprietary standards, or other technological tools to reduce the cost of supporting cross-platform applications.... As a result, the nature of the innovation the large incumbents firms pursue will be different. [L]arger, incumbent firms tend to pursue relatively more incremental and relatively more process innovation than smaller firms... [E]vidence from the personal computer software industry that new firms tend to create new software categories, while established firms tend to develop improvements in existing categories... [T]he implication that larger firms pursue relatively more incremental innovation is consistent with previously cited findings.

⁴⁵ Greenstein, 2010: 492-493, that translates into high incentives for incumbents to support design of new proprietary standards for an existing platform, but not nonproprietary standards that might lead to more competition between platforms. On the other hand, entrants of applications prefer to make them compatible with as many platforms as possible, which lead to incentives to work toward nonproprietary standards, or other technological tools to reduce the costs of supporting cross-platform applications.

⁴⁶ Cohen, 2010:154.

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- ⁴⁷ Robert Pitofsky, 1997, *Vertical Restraints and Vertical Aspects of Mergers--A U.S. Perspective* (Fordham Corporate Law Institute, 24th Annual Conference on International Antitrust Law and Policy, October 16); Steven Salop, 2008, "Economic Analysis of Exclusionary Vertical Conduct: Where Chicago has Overshot the Mark," in Robert Pitofsky (Ed.), *How the Chicago School Overshot the Mark*.
- ⁴⁸ Scherer and Ross, pp. 526-527; Shepherd, p.2890 – 304; Asch, Peter and Rosalind Senaca, *Government and the Marketplace* (Dryden Press, Chicago: 1985), p. 248; Krattenmaker, T.G. and S. C. Salop, "Anti-competitive Exclusion: Raising Rivals' Costs to Achieve Power Over Prices," *The Yale Law Journal*, 92:2 (1986); Ordoover, J., A. O. Sykes and R.D. Willig, "Non-price Anti-Competitive Behavior by Dominant Firms Toward the Producers of Complementary Products," in F. M. Fisher (Ed.), *Antitrust and Regulation* (Cambridge: MIT Press, 1985). On the cable industry see Ordoover, J.A. and R. D. Willig, "Herfindahl Concentration, Rivalry, and Mergers," *Harvard Law Review*, 95: 1982.
- ⁴⁹ Lawrence Sullivan and Warren S. Grimes, *The Law of Antitrust: An Integrated Handbook*, Hornbook Series, 2000, p. 138.
- ⁵⁰ David M Byrne and Carol A. Corrado, "Recent Trends in Communications Equipment Prices," *FEDS Notes*, September 29, 2015, p. 3.
- ⁵¹ *Id.*
- ⁵² Benjamin, K, Sovacool and Michael H. Dworkin, *Global Energy Justice* (Cambridge University Press, 2014, pp. 48, 312; Bureau of the Census, U.S. Department of Commerce, *Historical Statistics of the United States: Colonial Times to the Present*; Robert C. Allen, 1981, "Accounting for Price Changes: American Steel Rails, 1879-1910, *Journal of Political Economy*, 89(3); Knick Harley, 1998, "Prices and Profits in Cotton Textiles During the Industrial Revolution," *Economic History Review*, 51(1)
- ⁵³ In 2004, on the eve of entry by the telephone companies, overbuilders accounted for only 1 percent of the market (FCC 11th annual report).
- ⁵⁴ Cooper, 2002, Section 111, has a section entitled, "The Repeated Failure of Cross-technology Competition Under the Communications Act, (p. 154), which discusses the evidence on the ineffectiveness of satellite to compete on price. As noted in the text, the bundling of cable and broadband has reduced its potential to compete against cable.
- ⁵⁵ According to the third quarter 2015 reports of the Leichtman Research Group, satellite has about 34 million subscribers, out of 95 million total MVPD subscribers. There are an additional 90 million broadband subscribers.
- ⁵⁶ <http://www.gurufocus.com/news/268374/3-reason6s-to-invest-in-comcast-for-the-long-run>
- ⁵⁷ Pew Center for American Life, *Internet Trends, Broadband at Home*, various reports.
- ⁵⁸ Allen P. Grunes and Maurice E. Stucke, *The Beneficent Monopolist*, March 26, 2014, p. 4, cite cable industry "veteran" John Malone who states that "In broadband, other an in the FIOS area, cable's pretty much a monopoly," a sentiment expressed by Comcast CEO Brian Roberts.
- ⁵⁹ https://en.wikipedia.org/wiki/List_of_countries_and_territories_by_population_density
- ⁶⁰ [https://en.wikipedia.org/wiki/List_of_countries_by_GDP_\(nominal\)_per_capita](https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal)_per_capita)
- ⁶¹ George Ford, *Are Government-Owned Networks Abusing Market Power in the Set-Top Box Market? A review of Rates*, Phoenix Center, April 14, 2016.
- ⁶² *Id.*, p. 4
- ⁶³ Federal Communications Commission, Notice of Proposed Rulemaking and Memorandum Opinion and Order, In the Matter of Expanding Consumers' Video Navigation Choices Commercial Availability of Navigation Devices, MB Docket No. 16-42, CS Docket No. 97-80, February 18, 2016. (Hereafter FCC Navigation Order), ¶ 7, puts the cable card market share are approximately 1% of the cable MVPD subscribers.
- ⁶⁴ Markey, Blumenthal Decry Lack of Choice, Competition in Pay-TV Video Box Marketplace, July 30, 2015, <http://www.markey.senate.gov/news/press-releases/markey-blumenthal-decry-lack-of-choice-competition-in-pay-tv-video-box-marketplace>.
- ⁶⁵ 2015: Inflation from FCC, 2014, *Report On Cable Industry Prices*, MM Docket No. 92-266, p. 10.
- ⁶⁶ Craig Moffett, *U.S. Cable & Satellite: A Funny Thing Happened on the Way to the Graveyard*, Exhibit 5, Moffet/Nathanson, January 13, 2016, estimate cable subscribers at just over 53 million, and telco video subscribers at just over 11 million.
- ⁶⁷ Comcast and Time Warner Cable, *Annual Reports*, various years.