

**THE EQUITIES AND ECONOMICS OF
PROPERTY INTERESTS IN TV SPECTRUM LICENSES**

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January 2014

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EXECUTIVE SUMMARY

There is a rich legal literature on the extent to which spectrum licenses issued by the Federal Communications Commission (FCC) confer property or property-like rights on licensees, but as a practical matter, it is widely agreed that licensees have *de facto* ownership interests in their spectrum. The extent and significance of licensees' interests is often the topic of public policy debate, particularly with regard to broadcast television licenses. This study assesses these issues from the perspectives of equity and of economics.

From an equity perspective, those opposed to according television broadcasters strong property interests in their licenses often argue that doing so could generate a "windfall" since they "got their spectrum for free." As an initial matter, this argument overlooks the fact that broadcast television licensees are not unique in the sense that they hold licenses originally granted without direct payment to the government. Prior to the congressional grant of auction authority to the FCC, all spectrum licenses were issued for nominal payments of application fees. Today's largest wireless carriers, for example, received their initial licenses for free, as did direct broadcast satellite providers.

Moreover, as the evidence presented below demonstrates, nearly all of today's broadcast television licensees have paid market prices for their spectrum licenses through television station transactions. This study presents new data showing that 92 percent of all full power TV station licenses have changed hands since they were first issued, and estimates the cumulative value of those transactions, in present value terms, at over \$50 billion. Current television broadcasters, in short, did not receive their spectrum "for free," and there is no sense in which they would receive a windfall by being accorded strong property-like interests in their licenses.

The economic arguments for strong property interests in spectrum rights are very strong, as the FCC, the courts and the Congress have increasingly realized. *De facto* property rights in spectrum licenses of all types have grown significantly over the course of the past several decades, and now include expectations of virtually perpetual renewal, alienability, and flexibility in use. Going forward, continuing to recognize strong property interests in television broadcast licenses is necessary to promote efficient spectrum utilization, provide efficient incentives for innovation and investment, and maximize consumer welfare.

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I. INTRODUCTION

While the Communications Act of 1934 includes language stating that spectrum licenses do not convey property rights *per se*, the rights they do convey certainly have property-like characteristics, including permanence. Although spectrum licenses are technically limited in duration, they are routinely renewed; and, when they are not renewed (for example, when spectrum is reallocated from one use to another), it is commonplace for license holders to receive some form of compensation. For example, the Middle Class Tax Relief and Job Creation Act of 2012 (Spectrum Act), which gave the FCC authority to conduct incentive auctions to reallocate television broadcast spectrum for mobile broadband use, requires the FCC to compensate television broadcasters in return for relinquishing their licenses on a voluntary basis.

As explained below, the Spectrum Act is the most recent in a long string of statutory and administrative actions that have both expanded the scope and deepened the permanence of license holders' rights. This evolution has been widely acknowledged by legal authorities and policy experts, but a debate nevertheless continues over the extent to which television broadcasters have (or should have) *de facto* property rights in their spectrum licenses, and how those rights compare with the rights of other license holders, such as those for mobile wireless services.

In this context, it is sometimes asserted that television broadcasters "received their spectrum for free," and that their property interests in broadcast licenses are therefore weaker than those of licensees who paid for spectrum licenses at auction. There are at least two factual problems with this thesis. First, as the data presented below demonstrates, the vast majority of full power television broadcast licenses – more than nine out of ten – have changed owners at least once through station sales, where the value of the license was embedded in the price paid for the station. Thus, the contention that current television license holders received their

spectrum licenses “for free” is simply inaccurate – in fact, nearly all paid full market price. Second, broadcast licensees are not the only licensees holding licenses that were granted without direct payment to the government. While most recent mobile wireless licenses have been assigned through auctions, the initial cellular licenses were issued in the 1980s, prior to the auction era, either through lotteries (to new entrants) or simply by designation (to incumbent wireline carriers). Yet no one suggests mobile wireless carriers’ rights to these licenses are diluted or impaired because they “got them for free.”¹ Similarly, direct broadcast satellite licensees received initial licenses prior to the creation of the FCC’s auction authority and thus without making direct payments to the government.²

The economic case for recognizing a property-like interest in broadcast TV licenses is also compelling. Broadcasters have, in effect, entered into a regulatory contract with the government under which they have made investments, provided services and incurred costs on the reasonable expectation that their licenses would be consistently renewed absent serious and/or repetitive violations of their responsibilities.³ For the government to alter that contract, whether by statute or regulation, would weaken its ability to entice partners into similar contracts in the future and would discourage licensees from investing in their stations and incurring costs to improve their services to the public.

The remainder of this paper is organized as follows. Section II presents a brief history of how property interests in broadcast spectrum have evolved over time in the direction of more extensive and robust property interests for licensees. Section III demonstrates directly that

¹ In fact, some broadcast television licenses have been auctioned as well. FCC Auction 64 in 2006 garnered some \$23 million for ten licenses and Auction 90 in 2011 netted \$2.6 million for two VHF TV licenses. (See http://wireless.fcc.gov/auctions/default.htm?job=auctions_home.)

² See, e.g., Federal Communications Commission, *Inquiry into the Development of Regulatory Policy in Regard to Direct Broadcast Satellites, Report and Order* (90 FCC 2d 676 (1982)); and, *In the Matter of Revision of Rules and Policies for the Direct Broadcast Satellite Industry, Report and Order* (11 FCC Rcd. 9712 (1995)).

³ See 47 U.S.C. § 309(k)(1).

today’s television broadcast license holders have indeed paid for their spectrum rights, presenting new data showing that more than nine out of ten full-power television broadcast licenses have been exchanged in the secondary market, representing a sunk cost investment by current licensees of approximately \$50 billion; it also presents data showing that many of today’s mobile wireless (and satellite) licenses still reside with the original owners – who, like the handful of original broadcast licensees, also “got it for free.” Section IV discusses the normative arguments for recognizing robust property interests in broadcast licenses and the resulting policy implications. Section V provides a brief summary of the analysis and conclusions.

II. BROADCAST TV LICENSES CONVEY STRONG PROPERTY INTERESTS

While Section 301 of the Communications Act of 1934 expressly denies “ownership” rights to holders of communications licenses,⁴ a virtually uninterrupted series of administrative rulings, court decisions, statutory changes – and common practice – have since created a robust *de facto* property interest in broadcast television licenses. This section presents a brief review of the key developments.

To begin, the concept of property is properly understood as embracing a bundle of rights or, as Huber and Shelanski put it in a 1998 article, “an array of entitlements.”⁵ As a practical matter, even the purest property rights are constrained at the margins by the power of the state to tax, regulate, and even expropriate (though with compensation). On the other hand, even a lease or a license conveys certain rights (most clearly, exclusive use) typically associated with

⁴ 47 U.S.C. §301 (“It is the purpose of this Act, among other things, to maintain the control of the United States over all the channels of radio transmission; and to provide the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any such right, beyond the terms, conditions, and period of the license.”) In addition, Section 304 of the Act provides that licensees must waive expectations of automatic license renewal. See 47 U.S.C. § 304.

⁵ Howard A. Shelanski and Peter W. Huber, “Administrative Creation of Property Rights to Radio Spectrum,” *Journal of Law and Economics* 41; S2 (October 1998) 581-609 at 583, citing *Dolan v. City of Tigard*, 512 U.S. 374, 384 (1994).

property. Thus, “although there are important differences between licensing and ownership, those alternatives are not as discrete as often portrayed.”⁶

Most spectrum licenses have always conveyed the right of exclusive use; indeed, their very purpose is to establish exclusivity in order to prevent electromagnetic interference from competing signals. Over the years, however, the array of entitlements embodied in spectrum licenses, including broadcast television licenses, has expanded far beyond exclusivity, and now includes: (a) the strong expectation of consistent renewal (or of compensation for non-renewal); (b) the ability to transfer spectrum usage rights to third parties; and, (c) flexibility in terms of both the technologies employed and the services offered. Taken together, these rights are for practical purposes indistinguishable from the bundle of rights traditionally associated with “property.”

A. Broadcast Licensees Reasonably Have a Strong Renewal Expectancy

Broadcast television licensees’ expectations of renewal have increased as a result of a series of administrative, judicial and statutory developments. During the 1960s and 1970s, the FCC wrestled with concerns that some challenges to license renewals were often filed with the goal of using the renewal process to extract concessions from existing licensees. In a series of administrative decisions, the Commission scaled back the conditions required for license renewal to strongly favor incumbent licensees.⁷ Writing in 1977, Richard Posner concluded that broadcast licenses were “for all practical purposes perpetual”;⁸ ten years later, economist Douglas Webbink – then a senior staff member at the FCC – stated that “Whatever the

⁶ Shelanski and Huber at 583; see also Douglas W. Webbink, “Radio Licenses and Frequency Spectrum Use Property Rights,” *Communications and the Law* 9 (June 1987) 3-29 at 4 (“For individuals and companies to have private property rights, at least three conditions are necessary: (1) the individuals must have the right to exclusive use of the resource; (2) individuals must have the right to receive income from the use of that resource; and (3) individuals must be allowed to transfer voluntarily that right in whole or in part to others.”)

⁷ See Shelanski and Huber at 587-88.

⁸ Richard A. Posner, *Economic Analysis of Law* 33 (2d ed. 1977) at 33. Thus, Posner concluded, “In economic, though not in formal legal terms, then, there are property rights in broadcast frequencies.”

Communications Act may say, once an applicant has received a license, he or she can expect it to be renewed without much difficulty.”⁹

The FCC did not act alone in strengthening renewal expectations. In 1981, Congress extended the length of broadcast television license terms from three years to five.¹⁰ In the Telecommunications Act of 1996, Congress extended the license term to eight years¹¹ and required the Commission to grant a broadcast station’s renewal application if (A) the station has served the public interest convenience and necessity; and (B) the licensee has committed “no serious violations” of the Communications Act or FCC rules, or (C) no other violations that “taken together, would constitute a pattern of abuse.”¹² It also specifically stated that the Commission cannot refuse to renew a license based on a finding that some other licensee would better meet the licensing criteria – either the current licensee is meeting the standard, or not.¹³ Most recently, as noted above, Congress passed the Spectrum Act, which provides for broadcasters to relinquish their licenses in an incentive auction only if offered a price sufficiently high to induce them to do so voluntarily.¹⁴

The current state of affairs is summarized well by Musey: “Currently, all FCC license holders expect that their licenses will be renewed absent an egregious violation of the license

⁹ Webbink at 7.

¹⁰ 47 U.S.C.A. § 307(c).

¹¹ 47 U.S.C. § 307(c)(1).

¹² 47 U.S.C. 309(k)(1).

¹³ See J. Armand Musey, “Broadcasting Licenses: Ownership Rights and the Spectrum Rationalization Challenge,” *The Columbia Science & Technology Law Review* 13 (Spring 2012) 307-370 at 317 (“Nonetheless, to deny a renewal pursuant to the 1996 Act without running afoul of the clear text of section 204, the FCC must first find that the broadcaster is not using the spectrum in the ‘public interest, convenience, and necessity.’ The FCC must make this determination and deny the renewal before seeking an alternative party to use the spectrum.”)

¹⁴ See Federal Communications Commission, *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, Notice of Proposed Rulemaking* (October 2, 2012) at ¶3 (“Incentive auctions are a voluntary, market-based means of repurposing spectrum by encouraging licensees to voluntarily relinquish spectrum usage rights in exchange for a share of the proceeds from an auction of new licenses to use the repurposed spectrum.”)

terms.”¹⁵ Licensees reasonably expect more than just renewal of their licenses, but also continuity of license terms. While the FCC retains the right to reallocate spectrum to alternative uses, courts have found that licensees enjoy protection against “fundamental change.” As Verizon recently argued before the Court of Appeals for the District of Columbia Circuit (in its appeal of the FCC’s data roaming order):

[W]hatever the outer limits of the FCC’s licensing authority under Title III, it is well established that such authority does not include the power to “fundamental[ly] change” the terms of an existing license.¹⁶

The Court agreed, finding that “Verizon is right that the Commission’s section 316 power to ‘modif[y]’ existing licenses does not enable it to fundamentally change those licenses.”¹⁷

B. Broadcast Licenses Convey the Right of Alienation

The right of alienation – of spectrum licensees to convey license rights to others through transfer or assignment – has also expanded over the years, largely as a result of a deliberate, long-run effort by policymakers to rely more heavily on market mechanisms (secondary markets) to reallocate spectrum rights.¹⁸

As with renewals, policies towards the transfer of broadcast television licenses in the past were quite restrictive.¹⁹ A combination of administrative, judicial and statutory decisions has resulted in substantive standards for transfers that mirror those for renewals.²⁰ As a practical

¹⁵ Musey at 324 (also stating, “The increased ease of renewal suggests the process was becoming more of a formality and bolsters the argument that spectrum holders could expect to have long-term rights to the spectrum.”).

¹⁶ Opening Brief of Cellco Partnership in *Cellco Partnership v. FCC*, 700 F.3d 534 at 49-50 (citing *Cnty. Television, Inc. v. FCC*, 216 F.3d 1133, 1141 (D.C. Cir. 2000) and *MCI Telecomms. Corp. v. Am. Tel. & Tel. Co.*, 512 U.S. 218, 228 (1994) (explaining that “authority to ‘modify’ does not contemplate fundamental changes”).

¹⁷ *Cellco Partnership v. FCC*, 700 F.3d 534 (D.C. Cir. 2012) at 543 (also citing *Community Television*, 216 F.3d at 1141).

¹⁸ For a review of the development of secondary markets, see Jeffrey A. Eisenach, “Spectrum Reallocation and the National Broadband Plan,” *Federal Communications Law Journal* 64; 1 (2011).

¹⁹ For example, prior to 1952, transfers of broadcast television licenses involved comparative hearings, in which interveners could argue that they – rather than the transferee chosen by the incumbent license holder – would better serve the public interest. See Huber and Shelanski at 589-90.

²⁰ Huber and Shelanski at 590-591.

matter, with the exception of major transactions, broadcast license transfers – like transfers of mobile wireless licenses – are handled routinely and without controversy.²¹

C. Broadcast Licenses Permit Flexible Use

After more than two decades of progressive liberalization, mobile broadband licenses in the U.S. now permit licensees to use virtually any non-interfering technology and to provide virtually any service. While it perhaps less well recognized, broadcast television licenses also enjoy substantial flexibility. FCC issued rules giving television broadcasters permission to use subcarrier frequencies and the “vertical blanking interval” to provide ancillary services beginning in the 1980s.²² In the Telecommunications Act of 1996, Congress went further, granting television broadcasters the right to “offer such ancillary or supplementary services on designated frequencies as may be consistent with the public interest, convenience, and necessity.”²³ In 1997 the FCC determined that this provision includes but is not limited to, “subscription television programming, computer software distribution, data transmissions, teletext, interactive services, audio signals, and any other services that do not interfere with” the one free over the air video programming stream they are required to broadcast as a condition of their licenses.²⁴

²¹ For an analysis of the FCC’s review procedures for mobile wireless licenses, see Jeffrey A. Eisenach and Hal J. Singer, “Avoiding Rent-Seeking in Secondary Market Spectrum Transactions,” *Federal Communications Law Journal* 65;3 (2013) 262-296 at 271-273.

²² See Huber and Shelanski at 595-596; see also Webbink at 10-11.

²³ 47 U.S.C. § 336(a)(2) (2006).

²⁴ *Advanced TV Systems and Their Impact upon the Existing Television Broadcast Service, Fifth Report and Order*, 12 F.C.C.R. 12809 (1997) at ¶29. Section 336 also addressed the notion that flexible rights result in incumbent licensees receiving a “windfall.” Congress provided that advanced TV licensees who use their spectrum for ancillary or supplemental services must pay a fee to the U.S. Treasury, set to “recover for the public an amount that, to the extent feasible, equals but does not exceed (over the term of the license) the amount that would have been recovered” had the spectrum been auctioned. 47 U.S.C. § 336(e)(2)(B) (2006) (referencing 47 U.S.C. § 309(j) (2009)). In 1998, the FCC set the fee at five percent of revenues. See *Fees for Ancillary or Supplementary Use of Digital TV Spectrum Pursuant to Section 336(e)(1) of the Telecommunications Act of 1996, Report and Order*, 14 F.C.C.R. 3259, 14 Comm. Reg. (P & F) 126 (1998).

III. TELEVISION BROADCASTERS HAVE PAID FOR THEIR LICENSES

Arguably, the question of how broadcasters acquired their licenses is both legally and economically irrelevant from a property rights perspective. Musey, for example, concludes that “Under a strict legal analysis, whether a license is purchased, or granted by application, is immaterial to whether the license confers property rights.”²⁵ From an economic perspective, payments made for licenses are sunk costs, and do not affect incentives going forward.

Law and economics aside, the payment issue has been and remains an important element in the public policy debate. As Nuechterlein and Weiser explain, “Some policymakers have ... made the essentially political objection that if an incumbent did not pay ‘the public’ for its spectrum at auction, it should be denied the ‘windfall’ it would receive if it were permitted to sell its license for millions of dollars on the newly privatized market.”²⁶ Senator John McCain, in opposing passage of the Spectrum Act put it more bluntly: “A television broadcaster got the spectrum for free.... Now, we’re supposed to ask the taxpayers to give them \$1 billion to give back the spectrum that we own.”²⁷

The fundamental problem with this argument, as Nuechterlein and Weiser explain, is that “many broadcasters have paid large sums to *prior broadcast licensees* through mergers and acquisitions.”²⁸ Broadcasters can hardly be said to be receiving a “windfall” from their spectrum

²⁵ Musey at 349-350. But see also at 347, suggesting that the “significant investment” made by broadcasters may strengthen their legal argument under a collateral estoppel/takings theory (“[F]airness principles and the significant investment made by broadcasters could theoretically support an easement by estoppel argument by the broadcasters.”)

²⁶ Jonathan E. Nuechterlein and Philip J. Weiser, *Digital Cross Roads: Telecommunications Law and Policy in the Internet Age*, 2d (MIT Press, 2013) 106-107; see also Musey at 350 (“There is some political debate, however, about whether license purchasers have a stronger claim to property rights in their licenses than do assignees, on fairness grounds.”).

²⁷ See Michael Grotticelli, “McCain Says Selling Broadcasters’ Spectrum is a ‘Cop Out,’” *Broadcast Engineering* (August 1, 2011) (available at <http://broadcastengineering.com/news/mccain-says-selling-broadcasters-spectrum-cop-out>).

²⁸ Jonathan E. Nuechterlein and Philip J. Weiser, *Digital Cross Roads: Telecommunications Law and Policy in the Internet Age*, 2d (MIT Press, 2013) 106-107 (emphasis in original); see also Musey at n. 172 (“Although no

licenses just because the checks they wrote to pay for those licenses were made out to private companies, rather than to “Uncle Sam.”

Given the significance of this point in the overall debate, it is surprising that there appears to be no recent, publicly accessible data on how many television broadcast licenses have changed hands, over what period of time, at what prices, and so forth. Indeed, a careful search of the literature suggests that the most recent (if not the only) data bearing on these questions was published by FCC economists Evan Kwerel and Alex D. Felker nearly 30 years ago, in a 1985 FCC working paper. They reported that “in 1983, sixty-five percent of commercial television licenses were held by someone other than the initial licensee.”²⁹ The analysis below updates and expands on this assessment.

A. Current Television Broadcasters Have Paid over \$50 Billion for their Licensed Stations

Data on license transfers and assignments is available from several sources, the most comprehensive and easily accessible source of which is the database on full-power and Class A commercial television stations maintained by BIA/Kelsey. For each station, the BIA/Kelsey database includes the date the station was first licensed by the FCC as well as information about the eight most recent license transfers. The data reported here are compiled primarily from the BIA/Kelsey database, and cross-referenced against the FCC’s Universal Licensing System (ULS) database, data from SNL/Kagan, and other sources.³⁰

broadcasters paid the government for their spectrum licenses, many broadcasters bought their licenses in the secondary market.”)

²⁹ Evan Kwerel and Alex D. Felker, “Using Auctions to Select FCC Licensees,” Federal Communications Commission Office of Plans and Policy Working Paper 16 (May 1985) at 9 (“A study of ownership of radio and television stations (licenses and construction permits) was conducted by FCC staff in July 1983. Records of 995 commercial television stations were examined. Of these, 650 (65%) licenses were assignments rather than original grants.”) (available at http://transition.fcc.gov/Bureaus/OPP/working_papers/oppwp16.pdf).

³⁰ One such source is AmericanRadioHistory.com, which makes available downloadable copies of the “Broadcasting Yearbook” from 1935 through 2010. Taken together, the yearbooks contain a comprehensive record

Table 1 below shows the number and proportions of full-power and Class A stations involved in transactions. As the table shows, 1,230, or 92 percent, of the 1,344 currently licensed full-power commercial television stations listed in the FCC’s ULS database as of August 2013 have changed hands since receiving their initial licenses. Moreover, despite the fact that Class A stations only came into existence in 2000,³¹ more than half (210) have changed hands since receiving their initial licenses.³² Altogether, of the total of 1,754 currently licensed commercial stations, 1,440 (82 percent) have changed hands since their initial licensing by the FCC. Thus, the data confirm that the vast majority of current television broadcast licensees have paid for their licenses through station transactions.

**TABLE 1:
COMMERCIAL STATIONS INVOLVED IN TRANSACTIONS
SUBSEQUENT TO ISSUANCE OF INITIAL LICENSE**

Category	Total Stations	Stations in Transactions Subsequent to Initial License	Proportion of Stations in Transactions Since Initial License
Full Power	1,344	1,230	92%
Class A	410	210	51%
Total	1,754	1,440	82%

While data is not available on the purchase price for every station involved in a historical transaction, SNL/Kagan estimates station values for nearly all transactions from 2001 to

of radio and television station transactions dating back to the late 1930s (see http://www.americanradiohistory.com/Broadcasting_Yearbook_Summary_of_Editions_Page.htm).

³¹ See http://transition.fcc.gov/Bureaus/Mass_Media/News_Releases/2000/nrmm0006.html

³² Of the 1,344 full-power commercial stations in the ULS, BIA/Kelsey lists 144 as satellite stations and 43 as “dark.” These stations are nevertheless included in Table 1. BIA/Kelsey also lists an additional 20 full-power stations which are not classified as full power stations in ULS database. Of these, the ULS shows thirteen as having a construction permit or pending application, but no license, four as having had their licenses cancelled, and one as a digital distributor (“DD”). Two stations listed by BIA/Kelsey as “new” are not found in the ULS at all. These 20 stations are excluded from Table 1 and the analysis below. BIA/Kelsey’s listing of Class A stations includes all 410 stations found in the ULS, but also includes 43 additional stations. Of these, 42 are listed by the FCC as translator/LPTV (“TX”), low power (“LD”), or as having Class-A construction permits and/or applications pending; one station listed by BIA/Kelsey had its license cancelled by the FCC in 2013. These 43 stations are excluded from the analysis here. The percentages shown in Table 1 are not appreciably affected by the inclusion/exclusion of these stations.

present.³³ This data includes estimated valuations for 707 of the 1,440 transacted stations identified in Table 1. Table 2 displays the average sales prices (in net present value terms) of the most recent transaction for the 707 stations for which prices are available.³⁴ It shows that the average station transaction for full power stations was valued at nearly \$40.1 million, and that the average across all stations (including Class A stations) was more than \$34.9 million.

**TABLE 2:
MOST RECENT SALES PRICES OF STATIONS INVOLVED IN TRANSACTIONS**

Category	Total Stations Transacted	Obs.	Average Station Price (\$000s)
Digital (Full Power)	1,230	610	\$40,087
Class-A	210	97	\$2,512
Total	1,440	707	\$34,932

Multiplying these values over the total number of stations transacted indicates a cumulative transaction value of approximately \$24.7 billion for the 707 stations for which transaction prices are available ($707 * \$34.9$ million), nearly all of which (\$24.5 billion) is accounted for by full power stations. Assuming further that the 707 stations for which prices are reported are typical (in valuation terms) of all stations involved in transactions yields an estimate across all transactions of \$50.3 billion ($1,440 * \34.9 million). That is, based on the transactions for which valuations are available, current licensees have paid, in net present value terms, approximately \$50 billion to purchase their stations.³⁵

This transaction price data can also be used to estimate the total value of broadcast stations based on recent sales prices – i.e., the value of the sunk cost investments made by station owners in their current licenses. Before doing so, however, it is necessary to determine whether

³³ Many of the transactions reported by SNL/Kagan involved multiple stations.

³⁴ Station values reflect the net present value of the station, i.e., the sales price as estimated by SNL/Kagan at the time of the transaction, adjusted at a five percent annual discount rate.

³⁵ The proportion of a station's valuation accounted for the license depends on a variety of factors. In today's market, license values in many cases appear to exceed valuations based on cash flows and other financial metrics.

the stations involved in transactions are representative of all stations. As shown in Table 3, compared with non-transacted stations, the stations that have been involved in transactions tend to be larger stations, and to be located in larger markets. Looking at full power stations only, for example, the average revenue of non-traded stations is about half that of traded stations (\$8.8 million vs. \$17.2 million). Moreover, non-traded stations are less likely to be located in top-25 markets (as defined by market-wide revenues) than those which have changed hands. Similar patterns emerge when Class A stations are included.

**TABLE 3:
COMPARISON OF EXCHANGED VS. ORIGINAL OWNER TELEVISION STATIONS**

Category	All Stations	Stations Not Involved in Transactions	Stations Involved in Transactions
<i>Full Power Stations</i>			
Annual Revenues (\$ 000s) ³⁶	\$16,590	\$8,808	\$17,150
Market Revenues (\$ 000s) ³⁷	\$168,985	\$138,712	\$171,790
Top 25 Markets ³⁸	23%	18%	24%
Average On-Air Year	1973	1984	1972
<i>All Stations (Full Power and Class A)</i>			
Annual Revenues (\$ 000s) ³⁹	\$15,441	\$6,486	\$16,339
Market Revenues (\$ 000s) ⁴⁰	\$167,244	\$141,311	\$172,899
Top 25 Markets ⁴¹	23%	18%	24%
Average On-Air Year	1979	1992	1976

The relatively small size of non-transacted stations has two important implications. First, as noted above, these data can be used to adjust the sales price data reported in Table 2 to reflect the fact that stations involved in transactions tend to be larger than those not involved in

³⁶ Average estimated gross station revenues 2012. Data were not available for 168 full power stations. Of these, 113 were classified as satellite stations by BIA/Kelsey.

³⁷ Average estimated gross market Over the Air revenues 2012.

³⁸ Percentage of stations in top 25 markets.

³⁹ Average estimated gross station revenues in 2012. Data were unavailable for 314 Class A stations and 168 full power stations. Of the full power stations, 113 were classified as satellite stations by BIA/Kelsey.

⁴⁰ Average estimated gross market Over the Air revenues 2012.

⁴¹ Percentage of stations in top 25 markets.

transactions. Using annual station revenues as a proxy for relative valuations,⁴² it is straightforward to estimate a total value across all currently licensed stations. Specifically, Table 3 shows that the average annual revenue of the 1,440 stations involved in transactions is about six percent higher (at \$16.3 million) than for all stations (\$15.4 million). Adjusting the \$34.9 million average sales price for transacted stations downward by six percent, to \$33.0 million, and applying this value across all 1,754 stations, yields an implied total valuation of current broadcast TV stations of approximately \$57.9 billion.⁴³ Thus, the 82 percent of stations involved in transactions represent 87 percent of the value (\$50.3 billion/\$57.9 billion) of all currently licensed stations. Performing a similar calculation for full power stations yields a similar result: The 92 percent of full power stations involved in transactions represent 95 percent of the value of all currently licensed full power stations. In each case, the difference between the valuation of all stations and the valuation of stations involved in transactions represents an opportunity cost incurred by original licensees, i.e., the value they have foregone by holding on to their stations instead of selling.⁴⁴

⁴² The assumption of a consistent relationship between station revenues and valuations is a commonly applied rule of thumb. See, e.g., Coleman Bazelon, Charles L. Jackson and Giulia McHenry, “An Engineering and Economic Analysis of the Prospects of Reallocating Radio Spectrum from the Broadcast Band through the Use of Voluntary Incentive Auctions” (September 2011) at 14.

⁴³ Some might respond to this analysis by noting that station values have tended to decline in recent years (though they have rebounded lately) and suggesting that the historical sales data used here overstate station values. To the extent the issue is “windfalls,” however, the backward-looking approach used here is appropriate: While it seems entirely fair that broadcasters who may have paid higher prices for their stations in the past should bear the losses associated with their ill-timed investments, it is not reasonable to accuse them of receiving a “windfall” if station prices go back up!

⁴⁴ More broadly, the stations that remain in the hands of original licensees tend to be smaller stations in smaller markets. To the extent concerns about supposed windfalls are motivated by the possibility that original licensees could benefit from receiving high prices in the FCC’s incentive auction, it appears that very few original licensees are located in markets in which there is a shortage of broadcast spectrum for reallocation – that is, markets in which broadcasters will have any opportunity to sell. To the extent these broadcasters are affected at all, the effect will be felt in the form of forced relocation to new channels as part of the repacking exercise.

B. Other Spectrum Licenses Were Not Auctioned

The notion that licenses acquired at auction should be accorded stronger property rights than those acquired through other mechanisms is not consistent with U.S. spectrum policy or practice. To the contrary, most spectrum licensees have been accorded robust property or property-like rights regardless of how they received their licenses.

The original cellular telephone licenses, awarded in 1983, are a case in point. The licenses were divided into two blocks (A and B), each consisting of 25 MHz of spectrum in the 800 MHz band.⁴⁵ The A Block was awarded primarily through lotteries, which were won by new entrants like Craig McCaw with no payments to the government except application fees. The B Block was awarded at no charge to incumbent landline telephone companies. Just as with television licenses, the majority of those licenses have since changed hands, either as part of stand-alone spectrum transfers or, perhaps more commonly, through mergers and acquisitions (such as AT&T's \$11.5 billion acquisition of McCaw Cellular in 1994). Many of these licenses, however, remain in the hands of the original licensees and their successor firms – who, just like the handful of broadcasters who are original licensees, “got them for free.”⁴⁶ Nevertheless, all of these original cellular licenses – which together constitute about 11 percent of all mobile wireless spectrum as defined by the FCC⁴⁷ – are subject to the same liberal secondary market rules that apply to all mobile wireless licenses, meaning that they can be used to provide practically any

⁴⁵ The initial licenses were for 20 MHz, but an additional 5 MHz was added in 1986.

⁴⁶ Of the 30 B-Block licenses awarded to Southwestern Bell, the FCC currently lists AT&T Mobility as the contact for 28, while Verizon is listed as the current contact for all eight of the B-Block licenses awarded to Bell Atlantic. See Paul Kagan and Associates, *Cellular Investor* 6 (August 25, 1988) at 11-16, and FCC ULS Databases (available at <http://wireless.fcc.gov/uls/>).

⁴⁷ See FCC, *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services, Sixteenth Report*, WT Docket 11-186 (March 21, 2013) at ¶106.

service, using practically any technology, and can be freely transferred and assigned in cash transactions.⁴⁸

Similarly, the FCC granted initial spectrum allocations for direct broadcast satellite (DBS) television service in 1982, long before Congress granted the authority to auction spectrum.⁴⁹ While a few of those allocations were subsequently revoked as a result of licensees' failures to meet buildout or other license conditions, most (following numerous FCC-approved license transfers) are now held by one of the two major DBS providers, DirecTV and Dish Network.⁵⁰

As discussed further below, there are strong economic arguments in favor of recognizing strong property interests in broadcast television licenses: To do so is in the public interest because it maximizes consumer welfare. The data presented above, however, demonstrates that broadcasters cannot reasonably be denied property rights on equity grounds.⁵¹

⁴⁸ As should be clear, the point here is not to suggest that mobile carriers property interests in these licenses should be in any way limited or reduced, but rather to point out that the conveyance of strong property interests in spectrum licenses does not generally depend on whether a license was purchased at auction or acquired through assignment or awarded for free.

⁴⁹ See *In the Matter of Applications of CBS, Inc., Direct Broadcasting Satellite Corporation, Focus Broadcast Satellite Company, Graphic Scanning Corporation, RCA American Communications, Inc., United States Satellite Broadcasting Company, Inc., Video Satellite Systems, Inc., Western Union Telegraph Company for Authority to Establish Interim Direct Broadcast Satellite Systems*, Order, 92 FCC2d 64 (1982); the initial allocations were revised, and additional licenses issued, in 1989. See *In re Applications of Continental Satellite Corporation, Echostar Satellite Corporation, Directsat Corporation, Orbital Broadcasting Company, Tempo Satellite, Inc., Direct Broadcast Satellite Corporation, for Construction Permits for New Direct Broadcast Satellite Systems; Advanced Communications Corporation, United States Satellite Broadcasting Company, Inc., Hughes Communications Galaxy, Inc. for modification of construction permits for direct broadcast satellite systems; In re permit of Dominion Video Satellite, Inc. Modification of Construction Permit for Direct Broadcast Satellite System Continental Satellite Corp.*, 4 FCC Rcd 6292 (1989).

⁵⁰ For a comprehensive review of the development of the DBS industry, including the original spectrum license allocations and subsequent transactions, see A. Grant and J. Meadows, *Communication Technology Update* 10th Ed. (Elsevier, 2006) at 83-105. See also FCC, *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, Second Annual Report* (CS Docket No. 95-61, December 11, 1995) at ¶¶ 49-54; and, *In the Matter of Revision of Rules and Policies for the Direct Broadcast Satellite Service, Report and Order* (IB Docket No. 95-168; December 15, 1995).

⁵¹ See, e.g., *United States v. Fuller*, 409 U.S. 488, 490 (1973) (“[T]he constitutional requirement of just compensation derives as much content from the basic equitable principles of fairness, as it does from technical concepts of property law.”) (also cited in Musey at 347).

IV. STRONG PROPERTY INTERESTS PROMOTE EFFICIENT SPECTRUM UTILIZATION

The economic case for strong property interests in broadcast television spectrum consists of three primary elements. First, the failure to do so would violate a “regulatory contract” between broadcasters and the government and thus make it more difficult for the government to enter into such contracts in the future. Second, property rights are essential to facilitate market-based reallocation of spectrum among users, which is a more efficient and timely means of reallocating spectrum than reallocation by administrative fiat. Third, according broadcasters property interests provides incentives for innovation and the development of inter-modal competition.

A. The Public Interest is Served by Honoring the Regulatory Contract

Government enters into regulatory contracts in a variety of contexts and for numerous purposes. Government contractors make sunk cost investments on the expectation of continuing work; regulated utilities invest in power plants and other infrastructure on the expectation of earning a fair return; ranchers build businesses on the expectation of continuing access to government lands, etc.

The government’s obligations in such regulatory contracts are defined, in the legal sphere, by a complex web of precedent and doctrine implicating both statutory and constitutional concerns, up to and including the Takings Clause of the Fifth Amendment.⁵² A full discussion of how those doctrines might apply in the various potential cases involving broadcast television licenses is beyond the scope of this paper. From a policy perspective, the more important question is whether it is in the public interest to honor the regulatory contract or, conversely, what the costs would be of failing to do so.

⁵² For a full treatment of the law and economics of “deregulatory takings,” see J. Gregory Sidak and Daniel F. Spulber, *Deregulatory Takings and the Regulatory Contract: The Competitive Transformation of Network Industries in the United States* (Cambridge University Press, 1998).

The answer lies in the fact that regulatory contracting is what game theorists refer to as a “game with repeated plays,” meaning simply that government’s ability to entice parties into regulatory contracts in the future depends on its track record in upholding regulatory contracts in the past. As Musey notes, in this instance, the FCC has been an active participant in broadcasters’ businesses, having not only “stood by and watched [broadcasters] invest large amounts of money in their broadcasting businesses based on their spectrum rights,” but also “approved sales of spectrum at prices that would only make sense if there was an expectation of renewal.”⁵³ The FCC may take the legal position that it has the ultimate authority to revoke or fail to renew broadcasters’ licenses, and thereby devalue their investments. But if it were actually to do so, it would have a significantly more difficult time persuading the next group of license holders to enter into similar deals in the future. As Musey recognizes, the FCC would need to “maintain a delicate balance to avoid devaluing the spectrum rights” and thus undermining “its ability to maximize the revenue it might receive from re-auctioning the spectrum in the future.”⁵⁴

Just as with any long-run contract involving what economists refer to as “quasi-rents,” government has the option of behaving opportunistically. Such a strategy is inherently short-sighted, however, as it harms the government’s ability to enter into welfare-enhancing contracts in the future.

B. Market-Based Mechanisms are the most Efficient Means to Reallocate Spectrum

Two decades of spectrum policy reform efforts, up to and including the Spectrum Act of 2012, have focused on replacing administrative approaches to spectrum reallocation with more market-based approaches. As the National Broadband Plan explained, “the process of revisiting

⁵³ Musey at 343-344.

⁵⁴ Musey at 367.

or revising spectrum allocations has historically taken 6-13 years.” Thus, it concluded, “In general, a voluntary approach [to reallocation] that minimizes delays is preferable to an antagonistic process that stretches on for years.”⁵⁵ Nuechterlein and Weiser agree: “[F]rom a consumer-welfare perspective, granting spectrum incumbents an alleged ‘windfall’ – if that is the only quick way to free up the spectrum at issue for more efficient uses – is usually superior to letting the incumbents tie up that spectrum in perpetuity with the less efficient uses specified in their licenses.”⁵⁶

Where secondary spectrum markets have been permitted to operate – most notably in the U.S. market for mobile wireless spectrum – spectrum worth literally billions of dollars has been exchanged. These trades have allowed spectrum to be transitioned between technologies and uses (e.g., AT&T’s 2011 acquisition of spectrum Qualcomm had been using for its ultimately unsuccessful MediaFlo service) or even from owners who were not using all their spectrum to those who would could put it quickly to productive use (as in Verizon’s 2012 acquisition of spectrum from SpectrumCo).⁵⁷ The benefits of market-based spectrum reallocation mechanisms depend on giving incumbents incentives to put their spectrum to the highest valued use, either in their own businesses or by leasing or selling it to others.

C. Property Rights Provide Economically Efficient Incentives for Innovation

According spectrum licensees strong property interests also creates economically efficient incentives for innovation. In developed industries (such as broadcasting and mobile wireless service), innovation is path dependent – the most efficient path forward depends upon the embedded infrastructure. Moreover, innovation between competing technology platforms

⁵⁵ FCC, *Connecting America: The National Broadband Plan* at 79.

⁵⁶ Nuechterlein and Weiser at 106-107 (emphasis added).

⁵⁷ See generally Eisenach and Singer, reporting over \$250 billion in major spectrum transactions between 2003 and 2012.

and business models depends upon the ability of market participants to recoup investments, which in turn depends upon their ability to retain and deploy property rights in the necessary inputs. Simply put, if mobile wireless carriers enjoy strong property rights in their spectrum licenses but television broadcasters do not, the result can only be to bias investment in favor of the mobile wireless platform and against the television broadcast platform.⁵⁸

Of course, it will always be possible to find “experts” willing to predict the outcomes of competitions between technology platforms. Not long ago, for example, many experts (as well as such sophisticated backers as Google and Intel) believed that Wi-Max would be the dominant 4G mobile wireless technology, until LTE proved to be technologically and commercially superior. By the same token, some believe broadcasting-over-LTE will prove superior to next generation advanced television technology for providing mobile video of popular programming to large audiences. They may or may not be correct.⁵⁹ The point here is simply that the battle between competing technology platforms should be decided in the marketplace by innovators and customers, not in the halls of the FCC by discriminatory spectrum policy.

V. SUMMARY AND CONCLUSIONS

Over the past several decades, U.S. spectrum policy has evolved dramatically in favor of recognizing property interests in spectrum licenses, to the point where it is widely agreed that spectrum licensees hold *de facto* property rights in their licenses. One area of remaining contention is with respect to television broadcasters. While it has become popular to argue that television licensees were “given their spectrum for free” and thus would benefit from a “windfall” if accorded strong property interests, the evidence clearly shows otherwise. Current

⁵⁸ Musey at 327, n.74 (“The FCC’s use limitations on television broadcasters inflict a considerable social cost because these limits constrain the spectrum from being used for its most valuable applications.”)

⁵⁹ At least some experts believe next generation television broadcast technology, or “ATSC 3.0,” will compete effectively with mobile-wireless-based technologies for such applications. See, e.g., Marci Ryvicker *et al.* *Broadcast: Monetization of Spectrum is Coming*, Wells Fargo Securities (September 9, 2013).

television broadcast license holders paid an estimated \$50 billion dollars when purchasing their licensed stations, and fewer than one in ten full power licenses is still in the hands of an original licensee. Thus, there is no sensible equity argument against according television broadcasters strong property interests. The economic arguments for doing so are very strong.