

Consolidation and Efficiencies in the Radio Industry

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Why Radio Ownership Matters

If you're like a majority of Americans, you spend at least part of your day listening to broadcast radio [Hull, 2000, 122; RAB, 2000, 5]. Radio reaches into every American home and place of business -- a reach that exceeds that of any other medium. Given its role as a source of entertainment and news, its economic impact, and broadcasters' role as trustees of the public airwaves, the "ownership" of the airwaves is a significant issue. Our question is this: Is concentrated radio ownership socially efficient?

A special report published in the industry trade publication Broadcasting and Cable illustrates the level of ownership concentration now visible in the radio industry:

[T]he list testifies to the rapid consolidation of radio. The Top 25 controlled just 7.3% of all stations a scant four years ago. Then, of course, came the deregulation of 1996 and the station feeding frenzy. Digest this: The Top 25 now control 23.4% of all stations (2,471 of 10,549) and 57% of all revenue (\$9.16 billion of \$16 billion).

[Broadcasting and Cable, 2000a, 50]

Ownership concentration is also striking even within the echelons of the largest and most powerful ownership groups. Judged by revenues, number-one Clear Channel Communications is 61 times the size of number-twenty-five Barnstable; number-two Infinity produces five times the revenues of the third-largest group, ABC [Broadcasting and Cable, 2000a, 50]. In terms of stations owned, Clear Channel dominates the second-largest group (Cumulus Media) by four times [Broadcasting and Cable, 2000a, 50]. Concentration has certainly taken place, but it is not evident whether consolidation has been efficient. Historical perspective on the situation is in order.

Historical Perspective

Radio emerged as a mass medium during the 1920s [Boyd, 1999, par. 1]. The first

commercial broadcasters were located on the AM band, where a handful of major stations retain “heritage” status as the most important and well-recognized in their own markets. WABC in New York, WGN in Chicago, and WSB in Atlanta fit this mold; they at or near the top of the ratings [Radio and Records, 2001] and set market standards for ideas and local sentiment – and have for almost a century.

Many of the early stations took substantial amounts of programming from the major radio networks – CBS, NBC-Red, NBC-Blue, and Mutual [Danna, 2001]. These networks provided news and entertainment content to their member stations, and it was from the first three that the modern “major” television networks (CBS, NBC, and ABC, respectively) arose. Network broadcasting thus was an invention of commercial radio’s first decade of existence.

The emergence of television just after World War II posed a threat to radio as an entertainment medium, though radio was never fully eclipsed [Boyd, 1999, par. 6]. The nature of listening changed substantially when the FM band arose as the preferred format for music broadcasts in the 1970s [Whitaker, 1989, par. 12]; FM became dominant as AM waned, though the AM band has experienced a small Renaissance in recent years with the surging popularity of news-talk programming [Boyd, 1999, par. 7].

History of Broadcast Regulation

Concerns about consolidation have followed radio for much of its history, and the industry has been the subject of close scrutiny from the very start. The FCC introduced ownership restrictions in 1953 with its “7-7-7 Rule,” which prohibited owners from controlling more than seven AM stations, seven FM stations, and seven television stations. These ownership caps were progressively raised during the 1980s and had reached a cap of twenty

AM and twenty FM stations in 1990 [Hull, 2000, 125]. Station ownership restrictions as of the early 1990s consisted of the national ownership cap as well as restrictions on the number of stations a given entity could own within any individual market – usually three or four stations, depending on the size of the market.

The Telecommunications Act of 1996 was the single most sweeping act of deregulation in radio's history. Congress removed national ownership caps (including the 20-20 Rule) and raised local ownership limits to one-half of the stations in a market [Hull, 2000, 125].

Ownership dynamics have changed dramatically in the short time since.

The Nature of Radio Broadcasting Today

Industry watchers continue to evaluate the results of the Telecommunications Act of 1996, but it is clear that the ownership structure has changed. The largest group owner in the country is now Clear Channel Communications, which owns or is in the process of purchasing more than one thousand stations across the United States [Broadcasting and Cable, 2000b, 52]. The industry trade publication Broadcasting and Cable features a weekly accounting of station purchases and exchanges. In the first eleven months of 2000, sales and exchanges of radio stations were valued at more than \$5 billion [2000c, 114] – and had taken place at a rate of more than one station per day. It is our assumption that consolidation is precipitated by the existence of economies of scale [Pindyck, 1998, 353].

Broadcasting appears to satisfy the primary condition for natural monopoly power: its average total costs are dominated by high fixed costs. A study of free entry into the radio industry by Barry and Waldfogel hinged upon the assumption that “[T]here is a fixed cost, F, of setting up a radio station and that the costs of a station do not vary with the number of

listeners” [1999, 399]. One listener’s consumption of a broadcast interferes in no way with any other consumer’s, and the number of potential listeners for any given station is limited only by the population within the station’s broadcast “footprint.”

Technology allows for radio broadcasts to reach a virtually unlimited audience, so the supply of broadcasting may be considered to have a fixed cost function; however, demand for any particular style of programming is limited, and it is with programming that we encounter rivalness. In a market with a single station, the technological audience reach may be 100%, but experience shows that fewer than 100% of the potential audience members will actually listen. If, for example, that single station broadcasts only country music, a listener who prefers to listen exclusively to talk programming will simply not consume any radio broadcasting.

Suppose that in this hypothetical market there are only two kinds of listeners: country-music listeners and talk-show listeners. If, as in this example, only one station is present, the station may choose to broadcast country music twelve hours a day and talk programming for the other twelve. While the station again has 100% technological potential reach and the potential to reach 100% of the market’s audience through programming, half of the market will be dissatisfied with the programming at any point in the day. A single station cannot simultaneously offer two separate forms (“formats”) of programming. The market for the supply of radio is characterized again by fixed costs, but listeners have a form of monopsony power, in that they will not consume the programming of a format they do not like.

How Broadcasting Has Become Concentrated

Commercial radio broadcasting was originally authorized by the Communications Act of 1934. As broadcasting matured, regulators feared that concentration in the industry would

have a negative impact on the listening public. In 1953, the FCC issued the "7-7-7 Rule," which prohibited any owner from simultaneously possessing seven stations on the AM band, seven on the FM band, and seven television stations. Ownership caps were raised over time, reaching twenty AM and twenty FM stations per owner by 1990 [Hull, 2000, 125]. In 1996, Congress removed national ownership caps, releasing owners to purchase and operate an unlimited number of stations nationwide. While limits were placed on ownership within individual radio "markets" (mainly the 250 largest cities and their surrounding areas), the Telecommunications Act of 1996 (or "Telecom '96") initiated the most widespread wave of consolidation in the history of commercial broadcasting.

The Herfindahl-Hirschman Index may be used here to analyze the concentration of the industry. While it would be unwieldy to calculate the value of the Index for every market in the country or to find the accumulated Index totals for every station owner in the country, it is illustrative to calculate the Index for the top fifteen owners for in 1997, 1998, and 1999.

The Index is calculated as the sum of the squares of market share. Thus, a higher index value represents greater market consolidation; a market consisting of 100 businesses, each with 1% market share would have a Herfindahl-Hirschman Index value of $1^2 + 1^2 + 1^2 + \dots + 1^2 = 100$. On the other hand, a market with one firm holding 100% market power would have an Index value of $100^2 = 10,000$.

For the years 1997, 1998, and 1999, the Herfindahl-Hirschman Index rose by about 6% based on revenues earned by the fifteen largest group owners (see Appendix A). A closer analysis of the elements creating this result makes it clear that concentration has had an impact at the very top of the group-ownership "food chain." In 1997, the largest owner (Infinity) controlled 31% of top-15 revenues; in 1999, Clear Channel brought in about 36%. But Infinity

had 1997 revenues of \$1.6 billion, while Clear Channel in 1999 brought in \$2.9 billion. Entry into the top 15 became more difficult as well; the number-15 entrant in 1997 had revenues of \$6 million, but in 1999 the fifteenth brought in \$68.2 million. The Herfindahl-Hirschman Index illustrates that concentration took place over that three-year period, though the impact of consolidation seems more glaring when simply “eyeballed.”

Concerns About Consolidation

The fundamentals of radio ownership make consolidation appear favorable – concentrated fixed costs lead to natural monopolies, which provide the product to a large market more efficiently than a large number of small firms. Several concerns have emerged in opposition to the process of consolidation. Prime among these:

Local control of the airwaves. A political trend favoring decentralization may be indicative of the public’s attitude favoring local control over the things that matter to them, and broadcasting is certainly one of them. As evidence that the federal government considers broadcasters extensions of their communities, take the FCC’s indecency standards, which have been created in part by the courts. “Community standards” for taste and decency are the rule of thumb.

Rising costs of advertising. If radio is viewed as an industry in which listeners are “sold” to advertisers [Berry and Waldfogel, 1999, 399], concentrated ownership may tend to lead to monopoly pricing. Popular discussion in the industry at the start of the consolidation process sometimes emphasized the potential for advertisers to economize by purchasing more-effective advertising campaigns at “one-stop shops.” It is still unclear whether consolidation has led to greater efficiencies overall for advertisers, or whether it simply creates greater

market power for the broadcasters [Shaver, 2000, M-8].

Programming diversity. If consolidation and the reduction of fixed costs is what makes radio consolidation appealing, the logical inference is that inputs will be used in more than one product; that is, the same programming may be used on more than one station, either within the same market or in different markets. Sensitivity to this issue arises in part out of the radio industry's sense of self. Because fixed costs are much higher for television stations than radio stations, there are fewer U.S. television stations (about 4,000) than radio stations (nearly 13,000) [FCC, 2000, table]. Small communities cannot support television stations in the same way they can support radio stations. Within larger communities, radio stations are also able to cater to specialized populations in ways that television stations cannot. It is feared that consolidation may tend to reduce this programming diversity.

First Amendment concerns. The FCC's regulatory role in broadcasting was originally justified on the basis of "public interest, convenience, or necessity" [Hull, 2000, 125]. One of the FCC's most significant concerns has been the public's access to news and information via the airwaves (at one time regulated by the Fairness Doctrine and news-content requirements). Opponents of consolidation argue that the public's exercise of First Amendment rights is limited by the decline in the number of broadcast license owners.

Justifications for Consolidation

Those favoring consolidation respond to the concerns in these ways:

Local control is not always efficient. While local stations may be deemed "community resources," they are also the consumers of a valuable public good (the broadcast spectrum). It may not be in society's best interests to allocate that good on the basis of geography, especially

if concentrated ownership utilizes that resource more efficiently. Owners choosing to sell their stations may simply be less efficient than those buying them.

Advertising may benefit from economies of scale. Advertisers may benefit from the reduced transaction costs of dealing with concentrated ownership. If an owner is willing to “bundle” advertising on different stations within a market, the advertiser gains efficiencies that would not have been present prior to the combination.

Programming diversity may be less socially efficient than thought. The argument levied against government support for public broadcasting has long emphasized that those who wish to consume that format should not force those who do not consume it to share in the cost. Similarly, while “programming diversity” may sound like a useful social good, it may reduce the utility that listeners would gain from the programming that the consolidated owners may choose to provide. That is, if concentrated owners are assumed to be more concerned with high profits (as created by delivering high listenership) than those who are more concerned with delivering diverse programming, total social utility may be greater from concentrated ownership than from local ownership.

Evidence from other industries. Radio and newspaper advertising are considered close substitutes by many advertisers. Both media have well-defined geographic target areas and offer low barriers to entry for the advertiser (television advertising, on the other hand, requires significant costs to produce a single commercial). A study of consolidation among metropolitan daily newspapers suggests that consolidation is favorable for advertisers. The author assumed that advertisers seek to reach the largest audience possible at the lowest cost per audience member and concluded:

[A]dvertisers actually benefit from the geographic concentration of the newspaper industry. Because fixed costs dominant [sic] variable costs, the newspaper industry is most efficient under

the monopoly case.
[Reimer, 1992, 65]

This inquiry provides useful guidance for considering the impact of consolidation in radio, where fixed costs again dominate the average total cost curve and hint at the existence of tendencies toward natural monopoly.

Is the Current Rate of Consolidation Efficient?

In “Free Entry and Social Inefficiency in Radio Broadcasting,” Steven Berry and Joel Waldfogel examine the social welfare effects of free entry into the radio-ownership market [1999]. Berry and Waldfogel conclude that when radio is measured as a means of delivering listeners to advertisers, free entry (that is, ease of ownership) leads to social losses on the magnitude of 45% [1999, 397]; that is, advertisers and broadcasters (who are considered the two actors in the market for listeners) lose 45% against potential revenues in a market where free entry by new broadcasters were limited.

Berry and Waldfogel used a measurement known as “AQH,” or average-quarter-hour listenership, which estimates the number of people listening to a particular station for at least five minutes of any quarter-hour [1999, 401]. They used the industry’s broadest standard for listenership: average quarter-hour listeners Monday through Friday, from 6:00 a.m. through midnight. Ratings are important to radio in that they establish the cost of advertising; simply put, higher ratings mean higher advertising prices.

In most industry measurements (as well as the analysis by Berry and Waldfogel), we consider the listener “share”; that is, the number of people listening to a given station out of the number of people listening to all radio stations in a market. It is reasonable to assume (as Berry and Waldfogel did) that advertising prices will be proportional to the station’s average

“share” [1999, 406]. While differences do exist among listener types – and advertisers will pay premiums to reach certain demographic groups of listeners – the amount of data needed to reasonably differentiate among those groups would severely complicate the analysis, and the data that is available is unreliable.

Berry and Waldfogel concluded that overlap among formats (caused by free entry into the radio industry in any given market) caused social losses equal to 45% of revenue [1999, 412]. They concluded that programming diversity would need to be worth three times the market rate (which advertisers pay to reach those listeners) in order to be socially efficient [1999, 414] – a cost of almost \$900 per year to the listener. This conclusion may be tested in the very near future with the initiation of satellite radio services, which will offer some 100 programming choices for a monthly cost of \$10 [XM Satellite Radio, 2001].

Berry and Waldfogel make their most penetrating remark on the efficiency of consolidation as follows: “Interestingly, monopoly would generate outcomes closer to the social optimum than free entry does” [1999, 412]. Anecdotal evidence seems to reinforce this suggestion; as radio has become increasingly consolidated over the past five years, radio advertising revenues have grown substantially.

According to the Radio Advertising Bureau, combined local and national advertising sales were almost double in 2000 what they were in 1994 [RAB, 2001b, par. 1], and in November 2000 the industry was proclaiming its 99th straight month of increased revenues [RAB, 2001a, par. 3]. It seems reasonable to expect that in the absence of new monopoly power by radio over advertising in general, advertisers are willingly paying for more advertising time, or are paying more for the advertising time they already consume. Without considerable further study, it would not be possible to determine whether this greater spending is the result

of increased monopoly power by broadcast owners or if it is instead the result of greater efficiencies created (as promised) by consolidated station groups offering more effective media buys.

Empirical Analysis of Consolidation Efficiency

It is even more difficult to estimate the social costs related to First Amendment and local-control concerns as discussed earlier. However, extending the work by Berry and Waldfogel, it is possible to analyze the factors behind recent station purchases in order to determine whether those purchases are valued at the rate of market efficiency.

Our analysis is based on an analysis of station purchases by Clear Channel Communications during the five-month period between late June and late November 2000. Clear Channel, the largest station ownership group in terms of both revenue and stations owned, heavily promotes its emphasis on “synergy.” In its 1999 annual report to shareholders, Clear Channel appeals to the example of retailing to explain its emphasis on consolidation:

National retailers have long exploited the advantages of size: using the leverage of volume to reduce product costs, spreading promotional costs across multiple regions, reducing administrative overhead through regional administrative offices, and creating more efficient distribution networks to reduce expense. This may be a new ballgame for radio but it is certainly not a new sport.

[Clear Channel, 1999]

Later in the report, the company again affirms its faith in cooperation by its member stations:

“Create it once, use it often.” That is the credo of the cluster. Clear Channel is perfecting the state news network concept that provides high quality, professional newscasts to all stations on the network, including many small market stations that could not normally afford live news.

[Clear Channel, 1999]

The hypothesis being tested is this: If consolidation is truly driven by market

efficiencies, then Clear Channel would be expected to purchase stations based on a standard price per listener; that is, just as advertisers were expected under the Berry and Waldfoegel analysis to pay a standard price per listener for advertising time, the suppliers of those listeners would be expected to bargain to “purchase” listeners from the previous owner for some predictable price.

Most of the station purchases made by Clear Channel during this period involved groups of stations; thus, it was impossible to estimate the price per listener for a given station with great precision. We divided the total price paid for each station or station group by the estimated listener reach of all of the stations combined. This we estimated from the same basic data used by Berry and Waldfoegel (average quarter-hour share), multiplied by the reported size of the audience in the market. We assumed that the average quarter-hour share represented a significant portion of the total audience within a market, based on industry claims that about 95% of adults listen to radio during a given week [RAB, 2000, 5].

Conclusions on Clear Channel Purchases

Analysis of the resulting price-per-listener estimates yields intriguing results (see Appendix B). Prices per listener ranged from just \$53.94 to nearly \$8000. The use of this method is well-founded; cable-television systems, for example, are ordinarily sold on a basis of price per subscriber. The AT&T purchase of TCI cable-television systems came at a cost of \$1300-\$3000 per subscriber [Cable Datacom News, 1998, par. 12]. While the radio industry tends to base valuations on multiples of certain cash-flow values, those values would be reasonably expected to be related directly to advertising revenues, which form the basis for our price per listener estimate.

There is no clear reason available to explain why Clear Channel appears willing to pay such varying prices per listener. Were the decision to purchase based exclusively on expectations of future revenues from a station, station prices would be expected to follow a clear relationship to the price per listener. There is no statistically reliable method to determine whether variances in station prices were related to the expected value of “synergy,” because only three purchases took place in states where Clear Channel did not already have a presence.

Failing to yield a clear linear relationship for station pricing involving price per listener, our conclusion is that some other factor is involved in station pricing. Among other possibilities, the market for station purchases may simply be too “sticky” for effective competitive analysis; with limited spectrum space available in any given market, only a limited number of stations may exist. This number may simply be too small (and the number of buyers and sellers also too small) for an efficient station-transaction market to exist.

Overall Conclusions and Suggestions for Further Study

There is no question that the radio industry has undergone unprecedented consolidation since 1996. It is also evident that efficiency theories suggest that radio broadcasting is an industry best suited to competitive oligopoly or natural monopoly. What is not clear is whether total social costs (created as the number of “voices” owning the airwaves declines) exceed the social benefits created by greater efficiency in the industry. The evidence does suggest that programming diversity is an insufficient argument for limiting station ownership, as it fails to allocate resources efficiently.

Additionally, though, it is unclear what factors are involved in station pricing. An efficient market for stations would be expected to value stations based on price per listener, but

the evidence appears to suggest that station values are influenced by some other factor or set of factors altogether unrelated to audience reach. Overall, consolidation appears unambiguously favorable on a private cost/benefit basis and possibly favorable on a social cost/benefit basis (though with a bias toward “favorable”). The empirical data, though, suggests that neither basis forms the foundation for current station valuations.

Further study into the costs of concentrated ownership on the free exchange of ideas is warranted, as is further analysis of station purchases by Clear Channel and others, to determine whether the market for stations is itself efficient enough to be analyzed, and whether that market efficiently affixes station prices.

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