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TELECOMMUNICATIONS

The Proposed Performance Rights Act Would Result in Additional Costs for Broadcast Radio Stations and Additional Revenue for Record Companies, Musicians, and Performers





Highlights of GAO-10-826, a report to congressional requesters

Why GAO Did This Study

The recording and broadcast radio industries touch the lives of most Americans through the development and distribution of music. Congress is considering legislation, the proposed Performance Rights Act (H.R. 848), that would expand copyright protection for the public performance of sound recordings. The proposed act would require AM/FM radio stations that broadcast music to pay a royalty, and this royalty would be distributed to the copyright holder, performers, and musicians.

This report addresses (1) the benefits received by the recording and broadcast radio industries from their current relationship, (2)the possible effects of the proposed act on the broadcast radio industry, and (3) the possible effects of the proposed act on the recording industry. To address these objectives, GAO analyzed data on music sales, broadcast radio airplay, and broadcast radio stations' revenues; calculated potential royalty payments; and interviewed stakeholders from both industries as well as experts and government officials.

The Federal Communications Commission (FCC) and the U.S. Copyright Office of the Library of Congress reviewed a draft of this report. FCC noted that it has an interest in legislation that might have an adverse impact on radio stations. The Copyright Office addressed certain methodological approaches and findings in our draft report.

View GAO-10-826 or key components. For more information, contact Mark Goldstein at 202-512-2834 or goldsteinm@gao.gov

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What GAO Found

Broadcast radio benefits from the use of sound recordings to generate advertising revenue and the recording industry may benefit from radio airplay that can promote sales. Radio stations use sound recordings to attract listeners and generate revenue from advertisers. GAO found that, on average, radio stations with a music format generate \$225,000 more in annual revenues than nonmusic stations, such as talk or sports stations. Stations serving large populations receive more revenue from music content compared to stations serving a small population. Most industry stakeholders believe that radio airplay promotes sales for the recording industry, and past and current business practices support this conclusion. However, GAO found the relationship between airplay and music sales to be unclear. The presence of other promotional outlets, such as the Internet and special events, and growth of music piracy create a more nuanced environment wherein the relationship between airplay and music sales is less clear than in the past.

The proposed act would result in additional costs for the broadcast radio industry. Under the proposed act, the royalty paid by a radio station would vary according to the station's gross annual revenues and status as commercial or noncommercial. Because the royalty paid by some radio stations would be negotiated or determined subsequent to passage of the proposed act, the total cost to the broadcast radio industry, including the costs to minority and female radio station owners, cannot be determined at this time. If broadcast radio stations with revenues of \$1.25 million or more pay a royalty based on a percentage of station revenues, every 1 percentage point would cost the broadcast radio industry \$101 million per year. For example, a 2.35 percent rate paid by these stations would entail total annual costs to the radio industry of over \$258 million. GAO also estimated that with a 2.35 percent rate, the 25 percent of stations with revenues of \$1.25 million or more would pay over 90 percent of the total royalties. According to broadcast industry stakeholders, these costs could lead some stations to reduce staff, switch to a nonmusic format, or discontinue operations.

The proposed act would result in additional revenue for recording industry stakeholders. Several factors would influence the revenues a stakeholder receives, including the total royalty payments, the stakeholder's role (copyright holder, performer, or musician), and the amount of airplay the stakeholder's music receives. Since the total royalty payments cannot be determined at this time, the additional revenue for recording industry stakeholders is also unknown. However, assuming a 2.35 percent royalty rate, GAO estimated that 56 percent of performers would receive \$100 or less per year, and fewer than 6 percent of performers would receive \$10,000 or more per year in royalties from airplay in the top 10 markets; music radio stations in these markets generate about 21 percent of industry revenues. Some experts and the Copyright Office believe that the additional revenue would promote investment in music and greater employment, although this opinion is not universally held.

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Abbreviations

ASCAP	American Society of Composers, Authors, and Publishers
BDS	Broadcast Data Systems
BMI	Broadcast Music, Inc.
CD	compact disc
DMA	designated market area
FCC	Federal Communications Commission
NABOB	National Association of Black Owned Broadcasters
PRO	performing rights organization
RIAA	Recording Industry Association of America
SDARS	satellite digital audio radio services

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United States Government Accountability Office Washington, DC 20548

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Congressional Requesters

The recording and broadcast radio industries touch the lives of most Americans, creating and delivering music to people in their homes, cars, and workplaces. As such, these industries provide a popular form of entertainment and contribute to the everyday American experience. In addition to their influence on American culture, the recording and broadcast radio industries contributed over \$25 billion to the U.S. economy in 2008. These industries provide jobs for a range of skilled workers, including songwriters, producers, engineers and technicians, and radio announcers, among others. Recording studios and radio stations allow musicians and performers to share their talents with listeners across the nation, in addition to creating employment opportunities.

Congress is considering legislation that would expand copyright protection for sound recordings. In particular, the proposed Performance Rights Act¹ would eliminate an exemption that currently allows analog, nonsubscription AM and FM radio stations (broadcast radio stations) to broadcast a sound recording without acquiring permission from and paying a royalty to the copyright holder, performers, and musicians. The proposed act would amend the statutory license for nonsubscription transmission services to include broadcast radio stations. Under the amendments to the statutory license, a radio station would pay a royalty based on its revenue and its status as a commercial or noncommercial station (see table 1). The proposed act would also exempt some uses of music, such as music in broadcasts of religious services and the incidental use of music by nonmusic stations, while providing a per program license option for radio stations that make limited use of sound recordings, such as broadcasting sound recordings on an infrequent basis.

¹H.R. 848, 111th Cong., as marked by the House Committee on the Judiciary (2009). The Senate has a companion bill—S. 379. While the House and Senate bills differ in some detail, both bills include a statutory royalty with a tiered structure where all broadcast radio stations with revenue below \$1.25 million would pay a flat annual fee. A separate analysis of S. 379 can be found in appendix II. S. 379, 111th Cong. (2009).

Type of broadcast radio station	Radio station annual revenue	Proposed royalty
Commercial	\$1.25 million and above	Royalty rate to be negotiated between broadcast radio stations and copyright holders or set by the Copyright Royalty Judges ^a
	\$500,000 to \$1,249,999	\$5,000 per year
	\$100,000 to \$499,999	\$2,500 per year
	Less than \$100,000	\$500 per year
Noncommercial	\$100,000 and above	\$1,000 per year
	Less than \$100,000	\$500 per year

Table 1: Statutory License Royalty in the Proposed Performance Rights Act (H.R. 848)

Source: GAO analysis of H.R. 848.

^aThe Copyright Royalty Judges are housed in the Copyright Royalty Board, an establishment created within the Library of Congress for this purpose. The judges are responsible for determining and adjusting the rates and terms of statutory copyright licenses and determining the distribution of royalties from the statutory license pools.

Under the proposed act, revenues from the proposed statutory royalty would be divided among recipients as follows: 50 percent would be paid to the copyright holder,² 45 percent would be paid to the featured performer or musician, 2.5 percent would be paid to background musicians, and 2.5 percent would be paid to background performers and vocalists.³ A designated third party would collect and distribute royalties directly to the featured performer or musician.⁴ Other provisions of the proposed act provide that existing royalties paid to publishers, songwriters, and composers are to be unaffected by the proposed royalty. Broadcast radio stations would not be required to begin paying the royalty immediately. If a radio station has annual revenues below \$5 million annually, it would

²The sound recording copyright holder is often the record company, but may also be the featured musician or performer.

⁴While the proposed statutory license requires direct payment to musicians and performers, agreements between record companies and artists could take into consideration this additional source of revenue. Record companies and others in the recording industry have signed a Memorandum of Understanding agreeing that those signing the memorandum will not attempt to recover any performance royalties from the musicians or performers.

³Statutory royalties for background musicians would be paid to the American Federation of Musicians and distributed to its members according to their performance on sound recordings. Statutory royalties for background vocalists and performers would be paid to the American Federation of Television and Radio Artists.

begin paying a royalty 3 years after the proposed act becomes law; if the radio station has revenues above \$5 million annually, it would begin paying a royalty after 1 year.

You requested that we determine the potential effects of the proposed act. On February 26, 2010, we issued a preliminary report on these issues.⁵ In this final report, we reviewed (1) the benefits the broadcast radio and recording industries receive from their current relationship with each other, (2) the potential effects of the proposed act on the broadcast radio industry, and (3) the potential effects of the proposed act on the recording industry.

To meet the objectives of this report, we analyzed data on broadcast radio station revenues, airplay on broadcast radio stations, and total number of physical and digital albums sold. We analyzed data on broadcast radio stations' annual revenues from 2008 and with a regression model, used the reported annual revenues for radio stations to estimate revenues for stations without reported revenues. We also classified commercial broadcast radio stations as either music or nonmusic based on the station's format categories or the station's primary, secondary, and tertiary formats. Based on the revenues and music or nonmusic classification of all radio stations, we regressed revenues on variables thought to influence revenues, such as population coverage and format, to identify the difference in annual revenues of music and nonmusic radio stations. We also identified the total amount of airplay for specific sound recordings in the top 10 designated market areas (DMA)⁶ and sales of the associated digital singles in the same markets. Using this information, we calculated the sales per spin for digital singles.⁷ We identified newly released albums from the first 2 weeks of February 2010, and compared the album sales and spins for each. We also regressed the percentage change in album sales on the percentage change in airplay, the percentage change in prior sales, and cumulative airplay and sales for 8 weeks during February to

⁵See GAO, Preliminary Observations on the Potential Effects of the Proposed Performance Rights Act on the Recording and Broadcast Radio Industries, GAO-10-428R (Washington, D.C.: Feb. 26, 2010).

⁶DMA is a term used by Nielsen Media Research to identify an exclusive geographic area of counties. Nielsen ranks DMAs according to television viewership, not radio audience size; however, the ten largest DMAs identified by Nielsen are comparable to the ten largest broadcast radio markets identified by Arbitron.

⁷Spins, which refers to the number of times a song is played on a broadcast radio station, is a broadcast industry measurement for airplay.

April 2010, for albums at the top of five different sales categories to determine any effect airplay could have on album sales. We calculated the number of commercial stations that would be required to pay a royalty at each of the royalty levels. Using the number of stations and each station's revenues, we estimated the potential total cost of royalties under three different royalty rates set as a percentage of radio station revenues for stations with revenues of \$1.25 million and above; we used royalty rates considered in previous rate-setting decisions-2.35, 7.25, and 13 percent. We also calculated the total royalties to be paid by broadcast radio stations paying a flat annual rate or fee. Using the 2.35 percent royalty rates and the resulting estimated total cost to the radio industry, we calculated the potential annual royalties for featured musicians and performers based on airplay on radio stations in the top 10 DMAs. We also calculated the total annual royalty for all sound recordings receiving airplay in the top 10 DMAs. We assessed the reliability of the data used in this report and determined the databases were sufficiently reliable for our purposes. We also reviewed relevant reports and analyses about the broadcast radio and recording industries and interviewed stakeholders from both industries, as well as officials from government agencies. From the recording industry, we met with the four largest record companies, as well as independent record companies and trade associations that represent the industry, such as the Recording Industry Association of America. We also interviewed performing rights organizations that distribute existing royalties. We interviewed recording industry experts and individuals that work in the industry such as managers, accountants, lawyers, and unions that represent musicians and performers, as well as musicians and performers themselves. From the broadcast radio industry, we met with station owners and operators, broadcast industry experts, and officials from trade associations that represent the industry, such as the National Association of Broadcasters. Furthermore, we interviewed officials from the Federal Communications Commission's (FCC) Media Bureau to understand FCC's involvement in broadcast radio, and the U.S. Copyright Office of the Library of Congress to understand its role in copyright matters.

We conducted this performance audit from June 2009 through August 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. A more detailed description of our scope and methodology is contained in appendix I of this report.

Background

Copyrights and the Music Industry	A copyright is an intellectual property interest in an original work of authorship fixed in any tangible medium of expression, including books, movies, photographs, and music, from which the work can be perceived, reproduced, or otherwise communicated either directly or with the aid of a machine or device. The Copyright and Patents' clause of the U.S. Constitution ⁸ authorizes Congress to "promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." In the music industry, copyrights confer on their owners certain exclusive rights, such as the right to authorize or control the reproduction, distribution, and public performance of a piece of music. The reproduction and distribution of recorded music includes the sale of copies in a variety of formats, such as compact discs (CD), vinyl records, and digital downloads. The public performance of music may include broadcast radio transmissions or
	digital transmission, such as transmissions on AM or FM radio or satellite radio. ⁹
	Copyright law applies to recorded music in two ways: the musical work and the sound recording of that work. The musical work refers to the notes and lyrics of a song, and the copyright holder is often the publisher, songwriter, or composer. The performance of the lyrics and melody in a fixed recording, such as the recording on a CD or vinyl record, are protected as the sound recording. Record companies are often the owners of the copyright to the sound recording. Typically, separate individuals or entities hold the copyrights for the musical work and sound recording of a piece of music, although one individual or entity can hold both copyrights. For example, the song, "I Will Always Love You," was part of the soundtrack for the movie, The Bodyguard, in 1992. The copyright holder of the musical work is the songwriter, Dolly Parton, who owns both the words and music. However, the copyright holder of the sound recording, as performed by Whitney Houston, is the record company, Sony Music, to whom the soundtrack is registered.

Copyright holders may use a license to grant third parties legal permission to use musical works and sound recordings. A license provides legal

⁸U.S. CONST, art. I, § 8, cl. 8.

⁹In this report, "satellite radio" refers to SiriusXM.

permission for the use of copyrighted material by a group or an individual other than the copyright holder. Permission for the use of the material typically requires the payment of a royalty and compliance with other conditions of the license. As shown in table 2, third parties, such as AM and FM broadcast radio, satellite radio, and Internet radio, must obtain a license for the public performance of a copyrighted musical work. However, under current law, copyright protection does not apply and, therefore, a license is not required to play sound recordings over broadcast radio.¹⁰

Table 2: Legal Protection of Public Performance of Copyrighted Material by Type of Transmission

	Type of copyright license needed and royalty paid		
Type of radio transmission	Musical work	Sound recording	
Broadcast radio	\checkmark		
Satellite radio	\checkmark	\checkmark	
Internet radio, including simulcasts of broadcast radio	√	✓	
Cable radio	\checkmark	\checkmark	

Source: GAO.

Royalties for the public performance of musical works and sound recordings are collected and distributed by performing rights organizations (PRO) and Sound Exchange, respectively. PROs such as The American Society of Composers, Authors, and Publishers (ASCAP), Broadcast Music, Inc. (BMI), and SESAC, negotiate licenses and distribute royalties for the public performance of musical works. These PROs represent songwriters, publishers, and other copyright holders of musical works. Sound Exchange, which was originally established by the Recording Industry Association of America (RIAA), is now an independent nonprofit organization that negotiates and administers licenses and royalties for the public performance of the sound recording for digital

¹⁰The Digital Performance Right in Sound Recordings Act of 1995 created, for the first time, an exclusive public performance right for copyright owners of sound recordings, limited to certain performances made by then-existing satellite and cable digital subscription services, but exempted broadcast radio. Although the Digital Millennium Copyright Act (1998) expanded protection for the public performance of sound recordings by Webcasters and new subscription services, it did not expand protection for the public performance of sound recordings by AM or FM radio broadcasts.

transmissions, such as satellite radio. Sound Exchange represents record companies, featured musicians and performers, and other copyright holders of sound recordings.

Various individuals and groups from the recording industry are involved with the creation of music and receive revenues from royalties and sales. The featured musicians and performers are the bands and artists whose work is heard on broadcast radio and whose sound recordings are available for purchase. Session or background musicians and performers are the individuals who primarily work in recording studios and perform the music heard on a recording or provide background vocals to a recording. In addition, songwriters, composers, and publishers are involved with writing the words and melody of a song. These individuals and groups share in the revenues generated through royalties paid by broadcast radio and digital music services, and from record sales.¹¹ Figure 1 shows how recording industry revenues are distributed among the various entities involved in the creation of a recording.

¹¹The recording industry receives revenue from additional sources, but the sources we discuss represent the largest and most relevant for our reporting. For example, restaurants and bars must also pay a royalty to PROs for the right to broadcast music or host live music.





Source: GAO.

^aThe record company is required to pay a royalty to the copyright holder of the musical work for each record made and distributed. This is typically paid directly to the copyright holder or through the Harry Fox Agency, a third party entity.

Current Economic Environment of the Recording and Broadcast Radio Industries

According to RIAA, since the late 1990s, the recording industry has experienced declining album sales. As shown in figure 2, revenue from the sale of physical albums, such as CDs and cassettes, has declined by approximately 60 percent from 1999 to 2008. Several factors related to the development of digital technology have contributed to this decline.¹² First, consumers increasingly purchase singles instead of albums. The sale of digitally downloaded music, which represented approximately 30 percent of sales in 2008, has partially offset the decline in physical sales; however, the revenue generated from digital sales has not fully offset the revenue lost due to the decline in physical album sales because most digital downloads are single songs, which often sell for 99 cents, and not albums, which often sell for \$10 or more. Second, stakeholders with whom we spoke said that illegal downloading, and the ability to acquire music ondemand, without paying for a copy to be retained, has led to a culture where younger listeners may expect to obtain music at no or minimal cost. Third, technologies, such as the Internet, enable listeners to hear music on-demand without buying it; this technology has shifted listeners' behavior to music "access" and away from the purchasing behavior that historically supported the recording industry. According to the Copyright Office, these factors appear to represent permanent changes, and not temporary changes caused by current economic conditions.

¹²GAO-10-428R.



Figure 2: Total Revenues and Revenues from Physical Album Sales Based on Units Shipped, 1999-2008

As of November 2009, the broadcast radio industry in the United States consists of 14,441 licensed broadcast radio stations in operation. Of all licensed stations in operation, nearly 70 percent of stations have music formats, and almost 20 percent have nonmusic formats such as news, talk, or sports; 77 percent of stations are commercial and 23 percent are noncommercial (see table 3).¹³

¹³For this report, we identified all broadcast radio stations as music or nonmusic based on their format category, except for the religion and Spanish format categories. For these format categories, we used the more granular primary, secondary, and tertiary formats. Some Spanish and religious radio stations report formats that do not clearly indicate music programming and we, therefore, did not include these in the count of stations that would pay a royalty.

Type of station	Commercial	Noncommercial	Total
Music ^ª	8,176	1,900	10,076
Nonmusic⁵	2,294	579	2,873
Other [°]	692	800	1,492

Table 3: U.S. Broadcast Radio Stations in Operation

Source: GAO analysis of BIA/Kelsey data.

[®]Our count of "Music" stations includes stations reporting format categories that indicate music programming, such as Rock, Urban, and Country, as well as some stations in the Spanish, Religion, and Ethnic format categories that also have secondary or tertiary formats that indicate music programming, such as Rock, Gospel, and Country.

^bOur count of "Nonmusic" stations includes stations reporting Talk, News, Sports, and Education format categories, as well as some stations in the Spanish, Religion, and Ethnic format categories that do not have any primary, secondary, or tertiary formats that indicate music programming, but have at least one primary, secondary, or tertiary format that indicates nonmusic programming, such as Talk or Sports.

[°]Our count of "Other" stations includes stations that are off-the-air and some stations in the Spanish, Religion, and Ethnic format categories that do not report any primary, secondary, or tertiary formats that clearly indicate either music or nonmusic programming.

Since 2006, the broadcast radio industry has experienced declining advertising revenue. As shown in figure 3, from 2003 through 2009, radio industry annual revenues have declined 24 percent from their peak of \$18.1 billion.¹⁴ For commercial broadcast radio stations, advertising represents the primary source of revenue, and stakeholders indicated two factors that have contributed to the decline in the radio industry's advertising revenue: the current decline in the economy and the fragmentation of consumers across a greater number of media platforms, such as the Internet and mobile devices.

¹⁴Reported annual revenues are nominal and are not adjusted for inflation.





Broadcast Radio Benefits from the Use of Sound Recordings to Generate Advertising Revenue and the Recording Industry May Benefit from Airplay that Can Promote Sales The broadcast radio industry benefits from its relationship with the recording industry by using sound recordings to attract listeners which, in turn, generates advertising revenue for commercial radio stations. Advertising is the primary source of revenue for commercial radio stations, and the average annual revenues of music stations are \$225,000 higher than the average annual revenues of nonmusic stations. The recording industry may benefit by receiving broadcast radio airplay, which can promote music sales. Industry stakeholders believe that radio airplay can promote sales, and past and current business practices support this conclusion. However, we found the relationship between radio airplay and sales to be unclear.

The Broadcast Radio Industry Benefits from the Use of Sound Recordings, Which Generates Advertising Revenue

Broadcast radio stations use content to attract listeners and generate revenue from advertisers that seek to reach listeners. As mentioned earlier, advertising is the primary source of revenue for commercial broadcast radio stations, and sound recordings are a form of content that can attract listeners.¹⁵ Radio stations use content to attract as many listeners as possible and an audience whose demographics will appeal to advertisers, as this will help stations maximize revenues. The rates that a station obtains for advertising time depend on the station's ability to attract listeners in the advertiser's target demographic segment, the length of the advertisement spot, and the size of the market, with stations in larger markets typically receiving higher rates than those in smaller markets. For example, a station that attracts a large market share of adult female listeners will be more desirable to advertisers selling a product targeted to adult females.

Broadcast radio stations generate more revenue from music than other types of content, notably in markets with a large audience. At an aggregate level, we found that approximately 70 percent of commercial radio stations broadcast music, itself an indication of the popularity of music radio, and that these stations generated approximately 80 percent of all commercial broadcast radio revenues. Thus, at an aggregate level, radio stations that broadcast music generate more revenues than stations using other forms of content. We also estimated revenues at the station level. Controlling for factors that influence a station's revenues, such as strength of the station's signal, we found that, on average, stations with a music format generated approximately \$225,000 more in annual revenues than nonmusic stations. However, this difference can vary based on the size of the population that the station serves. As shown in table 4, a music station with a coverage population of approximately 313,000 or more individuals (representing the top quartile of stations based on coverage population), will generate, on average, approximately \$826,000 more in annual revenues than a nonmusic station, while a music radio station with a coverage population of approximately 26,000 individuals or less (representing the smallest quartile of stations based on coverage

¹⁵Broadcast radio stations also use other forms of content, such as talk, sports, and news and information.

population), will earn on average approximately \$206,000 more in annual revenues than a nonmusic station. $^{\rm 16}$

 Table 4: Difference in Average Annual Revenues for a Commercial Broadcast Radio

 Station with Music Content Compared to a Commercial Broadcast Radio Station

 with Nonmusic Content

Broadcast radio station rank by size of coverage population	Music station predicted annual revenues	Nonmusic station predicted annual revenues	Difference in predicted annual revenues
Top quartile (top 25 percent)	\$2,110,000	\$1,284,000	\$826,000
Bottom quartile (bottom 25 percent)	372,000	166,000	206,000
All commercial broadcast radio stations	675,000	450,000	225,000

Source: GAO analysis.

Note: We predicted annual revenues using a regression analysis.

Broadcast radio industry stakeholders acknowledged that they benefit from using music as content, but said that they already provide remuneration by purchasing musical work licenses. As previously indicated, music has two types of copyright protections, the musical work and the sound recording. Broadcast radio stations purchase a license for the use of the musical work, which allows radio stations to legally broadcast music. The cost for individual radio stations to purchase a musical work license varies, but we estimate the industry pays approximately 3 percent of its annual revenues to purchase musical work licenses.¹⁷

Broadcast radio stations also benefit from and provide compensation for nonmusic content, such as syndicated programming. The mechanism that broadcast radio stations use to provide compensation for nonmusic content differs from that of music content. Broadcast radio industry

¹⁶We analyzed the revenues of the top 25 percent and lowest 25 percent of stations, based on the population served—i.e., stations serving 313,191 or more people and stations serving 26,137 or fewer people.

¹⁷To determine the percentage of revenue paid by the broadcast radio industry for the musical work licenses, we expressed the annual licensing fees received by ASCAP and BMI as a percentage of radio industry revenue.

stakeholders with whom we spoke said that the cost of syndicated programs, such as those hosted by Rush Limbaugh and Alan Colmes, are typically negotiated with each station by the programmer. The negotiated price depends on the station's audience size, among other factors. According to one broadcast industry stakeholder, radio stations with smaller audiences generally pay lower licensing fees. Industry stakeholders also told us that in addition to the licensing fee, some syndicated programs require stations to provide advertising time during the program with the programmer receiving revenues from the advertising. Because these contracts are private and stations do not report revenues for specific programs, we are unable to determine the relative costs and benefits stations derive from syndicated programs.

The Recording Industry May Benefit from Airplay That Can Promote Album Sales, but the Extent of the Benefit is Unclear

Stakeholders from both the recording and broadcast radio industries agree that broadcast radio airplay can promote music sales, and past and current industry practices support this conclusion. A 2010 Arbitron study, as well as stakeholders from both the recording and radio industries, indicates that broadcast radio is the most common means by which listeners discover new sound recordings.¹⁸ Broadcast radio stations facilitate this discovery process by announcing artists' new albums before or after broadcasting sound recordings. Also, repeated airplay increases exposure and raises awareness of sound recordings. Stakeholders told us that as listeners' awareness increases, record companies and musicians benefit from corresponding increases in album sales. Furthermore, record companies' past and current business practices imply that the recording industry benefits from broadcast radio airplay. The historical record of illegal payola activity shows that the recording industry has been willing to compensate the broadcast radio industry for airplay.¹⁹ In addition, record companies employ staff dedicated to the promotion of music to radio stations.

¹⁸Arbitron, *The Infinite Dial 2010: Digital Platforms and the Future of Radio.* Arbitron reported that 39 percent of survey respondents 12 years and older reported that they turned to radio first to learn about new music; 31 percent of respondents cited the Internet.

¹⁹According to FCC, payola is the practice of payment of money or other consideration to a station in exchange for airplay of music. Under Section 317 of the Communications Act of 1934, as amended (47 U.S.C. § 317), and Section 73.1212 of FCC's rules (47 CFR § 73.1212), a station that plays a musical selection in exchange for such consideration must air an announcement at the time the song is broadcast disclosing the arrangement and identifying who furnished or on whose behalf the consideration was furnished.

To assess the relationship between broadcast radio airplay and music sales, we conducted several empirical analyses, and found the relationship to be unclear.

• *Airplay and sales of digital singles.* We found no consistent pattern between the cumulative broadcast radio airplay and the cumulative number of digital single sales. We tracked the spins and sales of 12 songs selected based on age and genre, among other factors, in the 10 largest DMAs for the first quarter of 2010 (see table 5). The songs consisted of sound recordings by different artists, across different genres, and of different ages. We compared each song's spin count against the digital sales of the single. Although the current songs in our sample consistently received more airplay than catalog (i.e., older) songs of the same genre, we found that the digital single sales per spin vary widely. For example, a recently released Latin song was played on broadcast radio over 4,600 times but sold less than 1 digital single per spin. In contrast, an R&B/Hip Hop song released more than 9 years ago received fewer than 1,100 spins but sold almost 13 digital singles per spin.

				Digital single
Song (artist)	Genre	Age of song ^a	Number of spins	sales per spin⁵
White Liar (Miranda Lambert)	Country	Current	4,574	11.53
Fearless (Taylor Swift)	Country	Catalog	3,575	7.99
Mountain Music (Alabama)	Country	Deep catalog	452	5.69
Carita de Angel (Larry Hernandez)	Latin	Current	4,667	0.68
Estos Celos (Vicente Fernandez)	Latin	Catalog	2,243	0.70
Hoja en Blanco (Monchy y Alexandra)	Latin	Deep catalog	980	1.54
Hold my Heart (Tenth Avenue North)	Christian/Gospel	Current	3,009	3.22
You are Everything (Matthew West)	Christian/Gospel	Catalog	1,119	1.99
Forever (Chris Tomlin)	Christian/Gospel	Deep catalog	380	2.67
Rude Boy (Rihanna)	R&B/Hip Hop	Current	12,618	35.67

Table 5: Digital Single Sales per Spin in the Top 10 DMAs

Song (artist)	Genre	Age of song [®]	Number of spins	Digital single sales per spin⁵
The Way I Are (Timbaland)	R&B/Hip Hop	Catalog	1,917	10.19
Ride Wit Me (Nelly)	R&B/Hip Hop	Deep catalog	1,069	12.98

Source: GAO analysis of Nielsen data.

Notes:

We selected sound recordings from the 200 most-frequently played songs on 4 radio formats in the top 10 DMAs. Our sample was chosen so as to provide one current, one catalog, and one deep catalog song in each of the four genre categories. Some sound recordings were not selected due to data limitations, such as songs whose titles include multiple misspellings or were not available to purchase as both an album and a single.

^aFor this analysis, the age of a song was determined according to the number of months between when the song was added to Nielsen SoundScan and April 2010, when we conducted our analysis. We defined "current" songs as those added to SoundScan less than 2 years ago, "catalog" songs as those added 2-4 years ago, and "deep catalog" songs as those added more than 4 years ago.

^bWe determined the digital single sales by summing the sales of the three best-selling digital versions of each sound recording. We could not calculate the physical single sales for all sound recordings and, therefore, excluded these sales.

• *Airplay and initial album release.* We found the relationship between national sales of a newly released album and national airplay of all songs on the album to be unclear. We examined a sample of six albums released between February 1 and February 14, 2010 (for a full description of all albums sampled, see appendix III). We found that album sales peaked shortly after the album's release then decreased, irrespective of artist. For example, as shown in figure 4 below, Sade's "Soldier of Love" album sold more than nine times as many copies in the week it was released as were sold 1 month later.





The relationship between (1) the broadcast radio airplay preceding and immediately following the album release and (2) these album sales is unclear. While the sound recordings from each album received airplay prior to the albums' releases, we are unable to quantify how much, if any, of the initial spike in album sales was attributable to broadcast radio airplay. Further, in the weeks following the release of the album, national radio airplay varied widely and did not follow the same pattern as national album sales. In the example above, the broadcast radio airplay of Sade's album remained relatively constant preceding and immediately following the release of the album although the album sales did not follow the same pattern. Another album, H.I.M's "Screamworks", had sales decrease 72 percent the week after sales peaked, while airplay in the weeks following fluctuated and even increased.

• *Changes in airplay and sales.* We found the relationship between changes in national airplay and changes in national album sales to be unclear. We gathered airplay and sales data on the top songs receiving

airplay from five categories of music—Current Album, Current Country, R&B, Latin, and New Artists. Using these data, we first examined the correlation between album sales and airplay. We found the sales of albums to be slightly correlated with past airplay only for country albums;²⁰ however, these correlations do not imply that airplay contributed to album sales. Second, we conducted an econometric analysis where we regressed the percentage change in weekly sales on the percentage change in the present and prior week's airplay, the percentage change in the prior week's sales, the total airplay received by an album since its release, and the total physical and digital sales since its release. (See appendix IV for full information on the econometric analysis.) We performed this analysis using data from an 8 week period from February to April, 2010. We found that the percentage change in weekly airplay during the present and prior week generally did not have an impact on the percentage change in weekly sales. In particular, the estimates of the effect of the percentage change in the prior week's airplay on the percentage change in sales were mixed (some positive and some negative) and not statistically significant, and the estimates of the effect of the percentage change in the present week's airplay were positive but not statically significant.²¹ We also examined whether cumulative airplay since the album's release had any effect on sales and found it did not generally have a significant effect.

• Other outlets. Musicians and performers whose music is featured on television or other outlets may have increased sales as a result of that promotion. For example, the week that The Who performed during the 2010 Super Bowl halftime show, digital single sales of four featured songs increased between 223 percent and 329 percent;²² digital single sales increased for all four songs the week following the Super Bowl as well. As shown in figure 5 below, digital single sales of "Baba O'Riley" increased from fewer than 5,000 sales in the week before the Super Bowl to nearly 25,000 in the week following the event. Broadcast radio airplay for the four songs only increased 4.5 percent during the week of the performance and

²⁰The degree of correlation between sales and spins, among both present and lagged values of the variables, is about 60 percent for country albums but is less than 30 percent for all other albums.

²¹We found that the percentage change in the present and prior weeks' airplay did have a statistically significant and positive effect on changes in sales for the "Latin" category.

²²The Who played a medley of songs at the Super Bowl, including "Who are You," "Won't Get Fooled Again," "Baba O'Riley," and "Pinball Wizard." Multiple versions exist for each song. To calculate digital single sales, we combined data from the three best-selling versions of each song. The Who also performed a truncated version of "See Me, Feel Me," that we did not include in our analysis.

decreased during the week when sales peaked. In addition to television, according to one stakeholder, dance club DJs are also important for promoting music. A Grammy winning hip-hop performer stated that for his most recent music, club DJs promoted his sales more than broadcast radio.

Figure 5: Total Digital Single Sales of Four Songs Performed by The Who during the Halftime Show for Superbowl XLIV



While industry stakeholders and practices indicate that the recording industry receives some promotional benefit from broadcast radio airplay, we are unable to quantify this benefit, in part because of the complex and changing nature of the relationship between the recording and broadcast radio industries. Broadcast radio remains the most common place to discover new music. However, this reliance is decreasing and younger

	audiences now rely primarily on the Internet to learn about new music. ²³ Thus, the Internet and other platforms, such as television, are contributing to the promotion of sound recordings. However, due to the complexities of the industries, it is not clear to what degree, if any, these other promotional outlets impact sales in conjunction with one another, in conjunction with broadcast radio airplay, or independently. Furthermore, the recording industry faces changes that make piracy much easier and more frequent, which stakeholders indicate contributes to decreasing sales. According to the Copyright Office, piracy reduces revenues that may have been generated by the promotional benefit of broadcast radio or one of the other platforms.
The Proposed Performance Rights Act Would Result in Additional Costs for Most Broadcast Radio Stations	The proposed act would result in both financial costs, in the form of royalty payments for the use of sound recordings, and administrative costs, in the form of potential reporting requirements. Although the total cost to the broadcast radio industry is unknown, if the 25 percent of radio stations with revenues at or above \$1.25 million pay a royalty equal to 2.35 percent of their annual revenue, their payments would account for more than 90 percent of all royalty payments. According to broadcast industry stakeholders, these financial and administrative costs may lead some stations to make adjustments, such as discontinuing operations, reducing staff, or changing to nonmusic formats. Because of a lack of data, the impact of the proposed act on minority, female, and religious stations and the ability of various outlets (such as broadcast radio, satellite radio, and webcasters) to pay royalties is unclear.
Broadcast Radio Stations Would Pay Different Royalties, but Radio Stations with Revenues of \$1.25 Million or More Would Pay the Most	Under the proposed act, the statutory royalty paid by broadcast radio stations would vary according to the station's gross annual revenues and status as commercial or noncommercial. As previously mentioned, as of November 2009, there were 14,441 licensed broadcast radio stations in operation, of which 10,076 are commercial and noncommercial radio stations that would pay a royalty under the proposed act because they

 $^{^{23}}$ In a 2010 report, Arbitron reported that the percent of survey respondents 12 years and older who reported that they turn first to radio to learn about new music decreased from 63 percent in 2002 to 39 percent in 2010. Further, among respondents 12 to 34 years old, 52 percent report using the Internet to first learn about new music, compared to 32 percent for radio. See Arbitron, *The Infinite Dial 2010: Digital Platforms and the Future of Radio*.

have some music content (see table 6); the remaining 4,365 stations would not pay a royalty.

Type of broadcast radio station	Amount of proposed annual royalty	Number of stations	Percentage of all stations paying a royalty
Commercial	To be negotiated or set by the Copyright Royalty Judges	2,566	25%
	\$5,000	2,589	26
	\$2,500	2,485	25
	\$500	536	5
Noncommercial ^a	\$500 or \$1,000 based on revenues of radio station	1,900	19

Table 6: Broadcast Radio Stations Paying Statutory License Royalties under the Proposed Performance Rights Act (H.R. 848)

Source: GAO Analysis of H.R. 848 and BIA/Kelsey data.

^aDue to the lack of data on the revenue of noncommercial stations, we could not determine the number of stations paying each noncommercial statutory license royalty.

The total royalties paid by the broadcast radio industry would vary, but radio stations with revenues greater than \$1.25 million would pay the majority of the total royalty if the rate is set as a percentage of annual revenues. Royalty rates for commercial stations with revenues of \$1.25 million or more would be negotiated or set by the copyright royalty judges after the enactment of the proposed act; therefore, we are unable to determine this rate.²⁴ In previous decisions, the copyright royalty judges based the royalty for satellite and cable radio on annual revenues because no method exists to determine the size of the listening audience at any point in time; the same problem exists with broadcast radio. Therefore, if stations with revenues of \$1.25 million or more pay a royalty rate based on a percentage of their annual revenue, each percentage point increase in the rate would cost the industry an additional \$101 million in total royalties annually. We also calculated the potential annual payments using various rates considered in a previous Copyright Royalty Judges

²⁴Prior to a rate being set by the copyright royalty judges, both the broadcast radio and recording industries will have the opportunity to present evidence and arguments about the rate.

decision—2.35, 7.25, and 13 percent (see table 7).²⁵ Total annual costs to the industry could range from \$258 million to \$1.3 billion based on these rates. Flat fee payments by commercial stations with annual revenue less than \$1.25 million would generate approximately \$19 million.²⁶ Payments by noncommercial stations could range from \$950,000 to \$1.9 million, but due to the lack of data on the revenue of noncommercial stations, we could not determine the number of stations paying each noncommercial statutory license royalty and the overall royalty payments.

Table 7: Potential Annual Royalty Payments for All Broadcast Radio Stations with Music Format

Station revenue ranges	Stations pay 2.35 percent of annual revenue or flat fee	Stations pay 7.25 percent of annual revenue or flat fee	Stations pay 13 percent of annual revenue or flat fee
Commercial			
\$1.25 million or more ^a	\$237,596,000	\$733,009,000	\$1,314,360,000
\$500,000 to \$1,249,999	12,945,000	12,945,000	12,945,000
\$100,000 to \$499,999	6,213,000	6,213,000	6,213,000
Less than \$100,000	268,000	268,000	268,000
Noncommercial [®]	1,425,000	1,425,000	1,425,000
Total	\$258,447,000	\$753,860,000	\$1,335,211,000

Source: GAO analysis.

^aRates for stations with annual revenues of \$1.25 million or more will be established after passage of the proposed act. We calculated potential payments for these stations as 2.35 percent, 7.25 percent, and 13 percent of their annual revenues—the three rates considered by the Copyright Royalty Judges in previous statutory rate-setting proceedings for SDARS and pre-existing subscription services.

²⁵In the 2006 rate setting proceeding for satellite digital audio radio services (SDARS), the copyright royalty judges created a zone of reasonableness of potential marketplace benchmarks. The lower and upper bounds in this zone were set at 2.35 percent and 13 percent of annual revenues, respectively. The median rate paid by SDARS for the licensing periods beginning January 1, 2008, is 7.25 percent of annual revenues. We used these rates for illustrative purposes only, and not as a recommendation of a potential royalty rate.

²⁶To increase the precision of our analysis, we included in this calculation stations with religious formats that program music. As a result of including these religious stations, the total amount of royalties paid by all commercial stations paying flat fees is higher than the \$18.7 million we reported in GAO-10-428R.

^bWe calculated noncommercial fees by multiplying half of noncommercial stations by the lower flat fee (\$500) and half by the higher flat fee (\$1,000). A lack of data on noncommercial stations' revenues prevents us from knowing the exact amount these stations will pay.

If the rate is structured as a percentage of annual revenues, broadcast radio stations with annual revenues of \$1.25 million or more would pay the majority of royalties, but payments for these radio stations would vary widely. For example, if these stations pay a rate equal to 2.35 percent of their annual revenue, their payments would account for more than 90 percent of all royalty payments and total over \$237 million. However, as previously mentioned, these radio stations only represent 25 percent of all stations paying a royalty. Within this group of stations, the payments would vary significantly; some of these stations would pay less than \$30,000 while other stations would pay over \$1.5 million.

Stakeholders Identified Several Potential Effects Arising from the Proposed Performance Rights Act

In addition to making royalty payments, the proposed act would result in additional costs for broadcast radio stations in the form of reporting requirements. Radio stations that broadcast music would have to track and report each sound recording.²⁷ While some radio stations have automated systems for this, representatives of commercial and noncommercial stations said that others cannot afford this technology or the additional staff to track and report sound recordings.

Due to the burdens associated with the royalty and reporting requirements, stakeholders from the broadcast industry identified the following potential effects:

• *Discontinued operation.* Some stakeholders reported that broadcast radio station operators currently struggling to earn a profit may go out of business entirely. Experts with whom we spoke agreed that some marginal stations—those radio stations already facing financial difficulties—would

²⁷The performance royalty for the sound recording paid by digital broadcasters would require most digital broadcasters track and report all sound recordings played. We assume this would be a similar requirement for broadcast radio.

likely discontinue operations.²⁸ Although radio station licensees encountering financial difficulties can sell their stations, according to FCC, this may not be a feasible alternative for many. Due to the financial state of the broadcast industry, the values and sale prices of radio stations have declined, as has the availability of financing for the purchase of stations, making the option to sell less attractive to licensees. Alternatively, if a station returns its license to the commission, FCC officials said the process of selecting a licensee may be lengthy, possibly resulting in a temporary loss of service to the community. However, FCC officials also told us that the commission continues to receive a high volume of applications for licenses.

- *Staff reductions.* Broadcast radio stations might reduce staff, which represents the largest cost for many radio stations. While some radio stations have already reduced staff as a result of the declines in revenues, stakeholders indicated that other stations may be forced to lay off additional staff.
- *Changing to nonmusic formats.* According to broadcast radio stakeholders, broadcast radio stations might switch from a music format to a nonmusic format, such as talk or news, to avoid the additional costs of a royalty. However, the feasibility of switching from a music format to a nonmusic format would also be determined by market factors. For example, if there are many talk radio stations in a market, a station may not switch to talk radio because the market cannot support another station of that format. While switching to nonmusic formats may occur, among stations retaining a music format, a royalty should not cause stations to change the genre of music it plays or the variety of music because stations already make these decisions based on rating data and market research. Furthermore, the proposed royalty does not vary based on the genre or music played by a radio station.

²⁸While somewhat different in nature, the digital television transition was another government policy that imposed a cost on broadcasters. We previously found that some stakeholders said the digital television transition could force some television broadcasters to sell their stations. According to FCC, seven broadcasters discontinued operations and did not transition to digital television around the transition date, though it was not entirely clear if the closure was due to the transition. Another 10 stations have yet to complete the transition, may be unable to transition, and may lose their license. See GAO, *Telecommunications: Many Broadcasters Will Not Meet May 2002 Digital Television Deadline*, GAO-02-466 (Washington, D.C.: Apr. 23, 2002).

The Proposed Act's Impact on Minority and Female Broadcast Radio Station Owners and Broadcast Radio Stations Ability to Pay Is Unclear

Minority, Female, and Religious Stations. Because of a lack of comprehensive data and several weaknesses that limit the usefulness of the data on the ownership of broadcast radio stations, we cannot determine the impact of the proposed act on minority, female, and religious broadcast radio station owners. FCC collects ownership information from radio station licensees; however, it lacks comprehensive data on the ethnicity, gender, and race of all radio station owners and it does not collect information necessary to identify religious owners. We previously reported on the weaknesses in the usefulness of FCC's Form 323, which is the commission's mechanism for collecting information on gender, race, and ethnicity of broadcasters.²⁹ FCC has updated its Form 323 based on our recommendation, and intends to require all broadcast radio station owners to complete the revised form by July 2010.

While we lack comprehensive data on the ethnicity, gender, and race of all radio station owners, we examined, on a limited basis, the impact that minority ownership and minority-targeted programming has on radio station revenues.

- We conducted a regression analysis of radio station revenues that controlled for stations' membership in the National Association of Black Owned Broadcasters (NABOB). In particular, we regressed radio stations' revenues on variables thought to influence revenues, including membership in NABOB. We found that NABOB-member stations' revenues were no different than the revenues of all other stations. Thus, for this select group of stations, minority ownership does not appear to affect the stations' revenues.
- We also conducted a regression analysis of radio station revenues that controlled for radio stations that target minority audiences.³⁰ Again, we regressed radio stations' revenues on variables thought to influence revenues, including formats that target minority audiences. We found that some radio stations with formats that target minority audiences—stations with ethnic and Spanish formats—have lower revenues compared with other stations. However, other stations that target minority audiences—stations with gospel formats—do not have revenues that differ

²⁹See GAO, Media Ownership: Economic Factors Influence the Number of Media Outlets in Local Markets, While Ownership by Minorities and Women Appears Limited and Is Difficult to Assess, GAO-08-383 (Washington, D.C.: Mar. 12, 2008).

³⁰Some formats that attract minority audiences include the Ethnic, Spanish, Urban, and Gospel formats.

significantly from other stations, and stations with urban formats have higher revenues compared to other stations. These results illustrate that in some instances, radio stations targeting minority audiences may have lower revenues than other stations but this is not consistent across all these types of stations.

Ability of Various Outlets to Pay a Royalty. We are also unable to compare the ability of broadcast, satellite, and webcast radio stations to pay a royalty because of limited data.³¹ To assess the ability of these outlets to pay a royalty, we need revenue and cost data for these outlets, which are generally unavailable. The broadcast radio, satellite radio, and webcast industries generally have different sources of revenue and cost structures, which affect their ability to pay a royalty. For example, satellite radio derives its revenue through consumer subscriptions and some advertising, but must invest in satellite technology to provide service to its customers. Webcasters, on the other hand, derive revenue from both advertising and subscriptions and pay for bandwidth to distribute streaming content. As previously mentioned, commercial broadcast radio stations rely primarily on advertising for revenue, and broadcast radio stations' costs include building or renting a tower for broadcasting. Other costs are similar across platforms, including personnel, facilities, and licensing for musical works. However, as previously mentioned, webcasters and satellite radio have the additional cost of the license for the sound recording, which the Copyright Royalty Judges established during rate-setting proceedings.

The Proposed Performance Rights Act Would Result in Additional Revenue for Copyright Holders, Musicians, and Performers The proposed act would result in additional revenue for the recording industry. However, we estimated that most featured performers and musicians would receive less than \$100 per year from airplay in the top 10 markets. This new revenue could come from two sources: royalties paid by broadcast radio in the United States and royalties paid by broadcast radio in foreign countries.

U.S. royalties. Several factors will influence the amount of royalty payments a copyright holder, musician, or performer receives. First, the royalty payment will depend on the individual's or organization's role in the creation of the sound recording. As mentioned previously, 50 percent

³¹While music services other than SiriusXM may be transmitted by satellite, including DMX and Music Choice, these have different business models.

of the revenue will be paid to the copyright holder, typically the record company; 45 percent will be paid to the featured musicians and performers; and the remaining 5 percent will be shared by the background musicians and performers. Second, the royalty payment will depend on the total amount of royalties paid by the broadcast radio industry. As we mentioned earlier, for stations with revenue of \$1.25 million or more, the royalty rate will be determined through negotiation or by the copyright royalty judges; therefore, total royalties paid by the broadcast radio industry are unknown at this time. Finally the royalty payment will depend on the amount of airplay a sound recording receives. A sound recording that matches a genre with many broadcast radio stations, such as adult contemporary, may receive more airplay and, therefore, more royalties, compared to a sound recording that matches a genre with only a few radio stations, such as jazz. While these factors would affect the royalty earned by those in the record industry, the race or gender of the musician or performer would not be a factor affecting any earnings.

We conducted an analysis to estimate the total annual royalties each sound recording would earn and determined that most sound recordings would earn less than \$100 from airplay in the top 10 markets. To estimate these annual royalties, we used actual spins received during the first quarter of 2010 on 199 commercial broadcast radio stations in the top 10 DMAs; these commercial radio stations generate approximately 21 percent of the revenues for commercial radio stations with a music format nationwide. We then identified which of these radio stations would pay a flat fee and which would pay an undetermined rate. For those paying an undetermined rate, we calculated a royalty at 2.35 percent of the station's annual revenues.³² As figure 6 shows, we found that 79 percent of sound recordings would receive a royalty of less than \$1,000 annually. While approximately 21 percent of sound recordings would earn over \$1,000, the sound recording with the most spins, "Bad Romance", by Lady Gaga, would earn over \$446,000.³³

³²Sound Exchange, the organization that distributes digital royalties, distributes royalties paid by satellite radio to performers, musicians, and record companies based on how often their sound recordings are played and the total royalties paid. We assume any performance royalty from broadcast radio would be paid in a similar manner and not based on a predetermined per-song rate.

³³As the primary musician on this sound recording, Lady Gaga would receive 45 percent of the total royalty, almost \$201,000. The copyright holder would earn 50 percent, or over \$223,000, and the background musicians and performers would share 5 percent, over \$22,000.



Figure 6: Annual Royalty per Sound Recording Based on Spins in the Top 10 DMAs

Source: GAO analysis.

Note: This analysis looks at each sound recording separately and does not combine earnings of musicians and performers that have multiple sound recordings receiving airplay.

Using the data on royalties per sound recording, we also determined the total royalties featured musicians or performers could earn based on estimated airplay in 2010 in the top 10 DMAs. Many musicians and performers are the featured musicians for multiple sound recordings and, as table 8 shows, when combining their share of royalties for each of these sound recordings, we found that 56 percent would receive a royalty of less than \$100 annually.³⁴ Further, less than 6 percent of performers would receive over \$10,000 or more annually in royalties for all sound recordings. The musician with the most royalties, Lady Gaga, generated almost \$300,000 in annual royalties for 13 sound recordings that received over 46,000 total spins. While copyright holders are often a record company, we were unable to determine the aggregate share of royalties for each copyright holder as we could not group sound recordings with their copyright holder. We did determine that the four major record companies are affiliated with most sound recordings receiving royalties, but we were unable to determine if they hold the copyright for these sound recordings.

³⁴This only accounts for the 45 percent share of the full royalty that would go to the featured musicians and performers. If the featured musicians were also the copyright holder, their share would increase.

We were also unable to identify background musicians and performers on these sound recordings to estimate their share of the royalty revenue.

Royalty range	Percentage of total musicians and performers
Less than \$10	21%
\$10-49	26
\$50-99	9
\$100-499	17
\$500-999	6
\$1,000-9,999	16
\$10,000-99,999	5
\$100,000 or more	<1

 Table 8: Aggregate Royalty Range for All Sound Recordings of a Musician or

 Performer Based on Estimated Number of Annual Spins in the Top 10 DMAs

Source: GAO analysis.

International royalties. Another possibility, if the proposed act were to pass, is that the recording industry may begin to receive royalties from broadcast radio in foreign countries. Currently, musicians and performers from foreign countries may receive a performance royalty when their music is broadcast over radio in other countries. Musicians and performers from the United States whose music is broadcast on foreign radio outlets typically do not receive these performance royalties because the United States does not have a reciprocal performance royalty. If passed, the proposed act could signal a change in U.S. policy, allowing U.S. musicians and performers to begin receiving royalties from foreign countries. However, existing trade agreements and foreign laws would influence these international royalties and it is unclear when U.S. musicians and performers would begin receiving these royalties. While it is also unclear how much musicians and performers would receive from international royalties, in 2007, the U.S. Copyright Office testified that the recording industry estimated the loss of about \$70 million, and two stakeholders with whom we spoke indicated that the loss could exceed \$100 million.

Stakeholders and experts have differing views on whether the total revenue from U.S. and international royalties would affect the creation of music. As a \$9 billion industry, the royalty payments to the recording industry previously estimated—\$258 million to \$1.3 billion—would represent a significant inflow of revenues. Stakeholders and the U.S. Copyright Office both indicated that this revenue could contribute to

	additional investments in music and help keep record companies operating. While some experts and stakeholders indicated the proposed act would primarily benefit established musicians and performers and would not impact new musicians, others indicated that it may be harder for new musicians to receive radio airplay. Others indicated this would lead to record companies working harder to promote their musicians to broadcast radio stations leading to more royalties for musicians signed to a record company. While views on the proposed act and its effects diverged, most stakeholders in the industry agreed that older artists who no longer benefit from performing live concerts would greatly benefit from any royalty. Further, stakeholders and background musicians and performers with whom we spoke also noted the importance of the royalties for them.
Agency Comments and Our Evaluation	We provided a draft of this report to FCC and the U.S. Copyright Office of the Library of Congress. FCC and the Copyright Office provided technical comments that we incorporated as appropriate. FCC's and the Copyright Office's written comments appear in appendices V and VI, respectively. In its letter, FCC noted that it has a substantial interest in any proposed legislation that might have an adverse impact on radio stations. FCC also suggested that we more clearly explain the nature and scope of the commission's collection of ownership information from broadcast licensees, stating that it collects information on ethnicity, gender, and race. However, we found that FCC does not collect comprehensive information on the ethnicity, gender, and race of all radio station owners sufficient for our analysis. Therefore, we did not revise the report based on this suggestion.
	In its letter, the Copyright Office addressed certain methodological approaches and findings in our draft report. First, the Copyright Office suggested changes and additions to our analysis of digital singles sales and radio station revenues. In particular, the Copyright Office suggested discounting digital single sales attributable to music services other than radio, analyzing sales by age groups, and removing radio stations' revenues attributable to certain nonmusic programming and services. Because we do not have transaction-level data necessary to identify how a digital single was purchased, who made the purchase, or why he or she purchased the digital single, we could not perform such analyses, but believe this would not have a material effect on our findings. Regarding radio station revenues, our work did not substantiate that removing radio stations' revenues not associated with music programming would
significantly affect our results because advertising associated with a station's programming generates most of its revenue. Second, the Copyright Office also noted that tracking and reporting of sound recordings may not be a significant burden for radio stations because many stations might be exempt from this requirement and many other radio stations already track and report sound recordings. We assumed that most stations would have to track and report each sound recording played because other platforms that currently pay a royalty for the use of sound recordings track and report this information. Further, we do not believe that this assumption significantly affects our findings because most of the costs arising from the proposed act will be associated with the royalty payment and not the tracking and reporting of sound recordings. In addition, the Copyright Office noted that several analysts have reported that the broadcast radio industry's revenues are increasing and that the royalty we estimated only represents a small fraction of the industry's total revenues. We chose to include reported revenues, rather than rely on analysts' forecasts, to ensure the reliability of our information. Finally, the Copyright Office noted that our finding that some performers would receive significantly higher royalties than other performers was not a surprise and represents that some performers are played on broadcast radio more than others and should, therefore, receive more royalties. The Copyright Office also noted that the small amount of royalty that many performers would receive should not discount the importance of the additional income for those performers and the recognition of the property right in the sound recording.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Chairman, FCC; Register of Copyrights, Library of Congress; and interested congressional committees. In addition, the report will be available at no charge on the GAO Web site at http://www.gao.gov.

If you have any questions about this report, please contact me at (202) 512-2834 or goldsteinm@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix VII.

Matt

Mark L. Goldstein Director, Physical Infrastructure Issues

List of Congressional Requesters

The Honorable John Conyers, Jr. Chairman The Honorable Lamar Smith Ranking Member Committee on the Judiciary House of Representatives

The Honorable Jason Chaffetz House of Representatives

The Honorable Charles Gonzalez House of Representatives

The Honorable Sheila Jackson-Lee House of Representatives

The Honorable Dan Lungren House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to address the following questions: (1) What are the benefits the broadcast radio and recording industries receive from their current relationship with each other? (2) What are the potential effects of the proposed Performance Rights Act on the broadcast radio industry? (3) What are the potential effects of the proposed Performance Rights Act on the recording industry?

To assess the benefits the broadcast radio industry receives from its current relationship with the recording industry, we analyzed data from 2008 on broadcast radio revenues. Using the BIA Media Access Pro database, we determined the annual revenues of all commercial broadcast radio stations. Before conducting our analysis, we addressed certain features and limitations of the data to enhance the precision of our results. We identified commercial and noncommercial stations, their primary and secondary formats for each station, as well as "dark" stations not currently broadcasting. We classified commercial broadcast radio stations as either music or nonmusic based on the station's format category, except for stations with religion or Spanish as their format categories. For stations with these format categories, we looked at the primary, secondary, and tertiary formats, a more granular level of analysis. If any of these three formats were a music content, then we considered the station a music station; otherwise, we identified the radio station as a nonmusic station. We did this in order to compare revenue for music versus nonmusic stations and to eventually determine the royalty rate each station would pay. Next, we imputed station revenue for sister stations that did not report revenue information.¹ We accomplished this by identifying the sister stations that reported revenue and allocating the total reported revenue between that station and its nonreporting sister station. We also imputed the total revenues for nonreporting stations that were not sister stations, which accounted for approximately 40 percent of the stations. In order to do this, we ran a regression using the primary license coverage population, format category, license class, and whether it was an Arbitron market, as the explanatory variables. Based on this regression, we were able to develop predicted revenues for the nonreporting stations and scaled this to \$4 billion, the unaccounted-for total revenues of the broadcast radio industry. Using the revenue data, we estimated the marginal effect of a station being a music or nonmusic station.

¹Sister stations are stations owned by the same individual or group of owners in the same market area.

To assess the benefits the recording industry receives from its current relationship with the broadcast radio industry, we conducted three analyses using information obtained from AC Nielsen's SoundScan, Broadcast Data Systems (BDS), and Insight databases. First, using the SoundScan and BDS databases, we identified the quantity of digital singles of sound recordings sold for 12 sound recordings during the first quarter of 2010, and reported the total sales per spin.² Before conducting our analysis, we addressed certain limitations of the data. We identified genres of music based on Nielsen's "Core Genre" definitions. We identified the age of the music based on the date the sound recording was added to the SoundScan database. We compared the digital single sales to how often the sound recordings were played on broadcast radio and identified the sales per spin.³ To calculate digital single sales, we combined the sales of the three best-selling versions of each song. We did this because some songs have multiple versions. We limited this analysis to data in the top ten designated market areas (DMA). For our second analysis, we randomly selected six albums released between February 1 and February 14, 2010, and compared the national broadcast radio airplay received by the album to the national sales of those albums during a 15-week period. For our final analysis, we developed correlations and a regression model to analyze the relationship between weekly airplay and sales of sound recordings. We looked at the top songs receiving airplay in five categories of music, "Current Album," "Current Country," "Latin Overall," "R&B Current-Overall," and "New Artists." We also looked at the sales of the albums associated with the top songs in these categories. We conducted a correlation analysis of the album sales and airplay to identify any relationship between airplay and sales. To further analyze any relationship between changes in airplay and sales, we developed a regression model. We regressesed weekly change in sales on present and past weekly changes in airplay, on past weekly changes in sales, on total airplay received by an album since its release, and on its total physical and digital sales since its release. We performed this analysis for each of the five categories of albums during an 8-week period determining any impact on changes in airplay during the initial weeks had against changes in sales during the final week. We also tested to see if cumulative airplay since the

²Spins are a broadcast industry measurement for airplay. The term refers to the number of times a song was played on a broadcast radio station.

³Nielsen reports sales and airplay on a weekly basis, beginning on Mondays. January 4, 2010 was the first Monday of the year; hence, in Nielsen's databases, this date represents the start of the first quarter.

album's release had any effect on sales for any of the 5 weeks. See appendix IV for additional information on these analyses.

To assess potential effects of the proposed act on the broadcast radio industry, we used the revenue analysis described above and the previous analysis that classified broadcast radio stations as either music or nonmusic to calculate estimated costs for both commercial and noncommercial radio stations. Using these data, we calculated the number of commercial stations that would be required to pay each of the royalty levels. To illustrate potential royalty payments for commercial stations with annual revenues of \$1.25 million or more, we calculated potential royalty payments using rates of 2.35, 7.25, and 13 percent of annual revenues, which are rates previously considered by copyright royalty judges in statutory rate setting proceedings for satellite digital audio radio services (SDARS).⁴ To determine the potential royalty payments for stations with revenues below \$1.25 million that would be required to pay an annual flat royalty, we multiplied the number of stations in each rate category by the respective rate and summed these figures to arrive at a partial estimation of the cost to these broadcast radio stations. We calculated potential royalty payments for noncommercial stations by multiplying equal numbers of noncommercial stations by each of the respective rates for noncommercial stations described in H.R. 848; however, a lack of data on noncommercial stations' revenues prevents us from determining the exact number of noncommercial stations paying each rate. To determine if revenue generated by minority-owned stations and stations that serve minority audiences differ from other broadcast radio stations' revenue, we first identified stations in each of these categories. We identified black-owned stations by their owners' membership in the National Association of Black Owned Broadcasters (NABOB). We classified the Ethnic, Spanish, Urban, and Gospel formats as targeting minority audiences based on data reported by Arbitron and other sources' reporting on audience demographics. We then compared revenue for these music stations to revenue for nonmusic stations.

To assess the potential effects of the proposed act on the recording industry, we conducted two analyses based on airplay during the first quarter of 2010 on 199 broadcast radio stations in the top 10 DMAs. We used the BDS database to identify all sound recordings that were played on these stations in the first quarter of 2010 and the total number of spins

⁴For more information on the SDARS proceeding, see 73 Fed. Reg. 4080 (Jan. 24, 2008).

each sound recording received across all these sample stations. We then identified the number of spins on each broadcast radio station and the radio station's 2008 revenues we had previously estimated. Based on the broadcast radio station's 2008 revenues, we identified whether the radio station would pay a flat fee or had revenues above \$1.25 million. If the station had revenues above \$1.25 million, we estimated a royalty of 2.35 percent of total revenues. Based on each station's estimated royalties, we divided the royalty amongst all sound recordings receiving airplay during 2010 based on the number of spins a sound recording received. This methodology mimics how Sound Exchange, the entity responsible for distributing digital performance royalties, distributes performance royalties for airplay over satellite radio. For our second analysis, we estimated the total royalty a featured musician or performer would receive from all sound recordings for which that individual or band are the featured musicians or performers. As in the previous analysis, we used airplay on all broadcast radio stations in the top 10 DMAs from first quarter of 2010. We totaled all estimated royalties from the previous analysis by featured musician or performer.

To address all objectives, we spoke with relevant stakeholders from both the broadcast radio and recording industry, as well as government agencies. To identify relevant stakeholders from the recording industry, we constructed a judgmental sample that consisted of the four largest U.S. record companies, as well as independent record companies that varied with respect to the number of artists signed to each company, the genres of music produced, and the geographic location of each company. We also interviewed trade associations that represent the industry, such as the Recording Industry Association of America. We also interviewed performing rights organizations that distribute royalties for the musical work licensees and the digital performance of sound recording licensees. We interviewed industry experts and individuals that work in the industry, such as managers, accountants, lawyers, and union groups who represent musicians and performers, as well as musicians and performers. We also constructed a judgmental sample of stakeholders from the broadcast radio industry, including station owners and operators that varied with respect to station revenue, market size, geographic location, and genre. We interviewed broadcast industry experts and trade associations that represent the industry, such as the National Association of Broadcasters. Furthermore, we interviewed officials from the Federal Communications Commission's (FCC) Media Bureau to understand FCC's involvement in broadcast radio, including licensing, regulation, and oversight; to gain information about available data on broadcast station ownership; and to identify broadcast industry and other stakeholders to execute the

engagement. We obtained relevant legislation and federal regulations that established FCC's rules for broadcast radio and obtained FCC reports on broadcast license requirements and ownership. We also interviewed officials from the Library of Congress' Copyright Office to understand its role in copyright matters, to gather information on laws relevant to the proposed act, to discuss Congress' previous legislative activities involving music and copyrights, to review relevant copyright history, to identify stakeholders to execute the engagement, and to understand how the proposed act could affect the Library of Congress. We also spoke with a copyright royalty judge to understand the rate-making process. We gathered information on other industries that pay performance rights for the use of sound recordings, including digital and satellite radio and television, as well as information on how royalties are assessed and distributed in these industries. We reviewed independent and industry analyses of the value of sound recordings to radio and the value radio provides to sound recordings. We also reviewed previous congressional considerations of a performance royalty for broadcast radio in the United States and gathered information about the existence of performance royalties in countries outside the United States. We assessed the reliability of both the Nielsen and BIA data by (1) performing electronic testing of required data elements; (2) reviewing existing information about the data and the system that produced them; and (3) interviewing officials from both companies about measures taken to ensure the reliability of information. On the basis of our review, we determined that the data were sufficiently reliable for the purposes of our report.

We conducted this performance audit from June 2009 through August 2010 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Analysis of the Effect on the Broadcast Radio Industry of the Senate Version of the Performance Rights Act

The Senate version of the proposed Performance Rights Act¹ would expand the public performance right of sound recordings for copyright holders in a manner similar to the House version;² however, some differences exist between the two versions. While each version has similar thresholds and royalty levels for radio stations with annual revenues under \$1.25 million, the Senate version has one additional threshold. In particular, the Senate version proposes a \$100 annual flat rate, or flat fee, for commercial and noncommercial broadcast radio stations with revenues less than \$50,000 (see table 9), while the House version does not include this threshold and royalty. The two versions also include other differing provisions, but those differences do not affect the royalty payments.

Type of broadcast radio station	Radio station annual revenue	Proposed royalty
Commercial	\$1.25 million and above	Royalty rate to be negotiated between broadcast radio stations and copyright holders or set by the Copyright Royalty Judges ^a
	\$500,000 to \$1,249,999	\$5,000 per year
	\$100,000 to \$499,999	\$2,500 per year
	\$50,000 to \$99,999	\$500 per year
	Less than \$50,000	\$100 per year
Noncommercial	\$100,000 and above	\$1,000 per year
	\$50,000 to \$99,999	\$500 per year
	Less than \$50,000	\$100 per year

Table 9: Statutory License Royalty in the Proposed Performance Rights Act (S. 379)

Source: GAO analysis of S. 379.

^aThe Copyright Royalty Judges are housed in the Copyright Royalty Board, an establishment created within the Library of Congress for this purpose. The judges are responsible for determining and adjusting the rates and terms of statutory copyright licenses and determining the distribution of royalties from the statutory license pools.

The total royalties paid by the broadcast radio industry under S. 379 is unknown at this time. In table 10, we report the number of radio stations that would pay the different levels of royalties under the Senate version. Seventy-five percent of stations that would pay a royalty would pay an

¹S. 379, 111th Cong. (2009).

²H.R. 848, 111th Cong., as marked by the House Committee on the Judiciary (2009).

annual flat fee, ranging from \$100 per year to \$5,000 per year under the Senate version. Twenty-five percent of stations, those with revenue of \$1.25 million or more, would pay a royalty based on a negotiated rate or a rate set by the copyright royalty judges. Because these royalties will be negotiated or determined subsequent to passage of the proposed act, we cannot determine the total cost to the radio industry at this time. In addition, due to the lack of data on the revenues of noncommercial stations, we can not determine the number of stations paying each noncommercial statutory license royalty.

Type of broadcast radio station	Proposed royalty	Number of stations	Percentage of all stations paying a royalty
Commercial	Rate to be negotiated or set by Copyright Royalty Judges	2,566	25%
	\$5,000	2,589	26
	\$2,500	2,485	25
	\$500	338	3
	\$100	198	2
Noncommercial	\$100, \$500, or \$1,000 based on revenues of radio station	1,900	19

Table 10: Broadcast Radio Stations Paying Statutory License Royalties under the Senate Version of the Proposed Performance Rights Act (S. 379)

Source: GAO Analysis of S. 379 and BIA/Kelsey data.

Note: The number of stations paying each noncommercial statutory license royalty is unknown.

To provide estimates of the total costs to the broadcast radio industry under S. 379, we assumed that stations with revenues of \$1.25 million or more would pay a royalty structured as a percentage of a station's annual revenue. If stations with annual revenues of \$1.25 million or more pay a royalty rate based on a percentage of their annual revenue, each percentage point increase in the rate would result in an additional \$101 million in total royalty payments. We also calculated the potential annual payments using various rates considered in previous Copyright Royalty Board decisions—2.35, 7.25, and 13 percent (see table 11). Total annual costs for the industry could range from \$257 million to \$1.3 billion based on these rates. Annual flat fee payments by commercial stations with annual revenue less than \$1.25 million would generate approximately \$19 million and payments by noncommercial stations could range from \$190,000 to \$1.9 million.

Table 11: Potential Royalty Payments for All Broadcast Radio Stations under S. 379

Revenue range	Stations pay 2.35 percent of annual revenue or flat fee	Stations pay 7.25 percent of annual revenue or flat fee	Stations pay 13 percent of annual revenue or flat fee
Commercial			
\$1.25 million or more ^a	\$237,596,000	\$733,009,000	\$1,314, 360,000
\$500,000 to \$1,249,999	12,945,000	12,945,000	12,945,000
\$100,000 to \$499,999	6,213,000	6,213,000	6,213,000
\$50,000 to \$99,999	169,000	169,000	169,000
Less than \$49,999	20,000	20,000	20,000
Noncommercial ^b	1,013,000	1,013,000	1,013,000
Total	\$257,956,000	\$753,369,000	\$1,334,720,000

Source: GAO analysis.

^aRates for stations with annual revenues of \$1.25 million or more will be established after passage of the proposed act. We calculated potential payments for these stations as 2.35 percent, 7.25 percent, and 13 percent of their annual revenues—three rates considered by the Copyright Royalty Judges in previous statutory rate setting proceedings for SDARS and pre-existing subscription services.

^bWe calculated noncommercial fees by multiplying one-third of noncommercial stations by each of the three flat fees described in S. 379 (\$100, \$500, and \$1000), but a lack of data on noncommercial stations' revenues prevents us from knowing the exact amount these stations will pay.

Appendix III: Airplay and Sales for Albums Released During 2 Week Period in February, 2010

In our sample of six randomly selected albums released between February 1 and February 14, 2010, sales spiked immediately upon each album's release and then decreased following the initial week of sales. For example, as shown in figure 8, Lil' Wayne's "Rebirth" album sold more than five times as many copies in the week it was released as were sold 1 month later. We found that album sales decreased substantially after their peak, irrespective of how many times the album's songs were played on broadcast radio (i.e., how many "spins" all songs from the album received). For example, sales of Sade's "Soldier of Love" album decreased by 62 percent during its second week of sales; however, broadcast radio airplay actually increased by 2 percent the same week. In the weeks following release, radio airplay varied widely from album to album, but did not follow the same trends as album sales, as shown in figures 7-12.





Percentage change in airplay four weeks after sales peak

Source: GAO analysis of Nielsen data.

-2%





Percentage change in airplay one week after sales peak

Percentage change in airplay four weeks after sales peak

Source: GAO analysis of Nielsen data.

-4%

-14%





Source: GAO analysis of Nielsen data.

Percentage change in airplay four weeks after sales peak

-5%





Percentage change in airplay four weeks after sales peak Source: GAO analysis of Nielsen data. -21%





Source: GAO analysis of Nielsen data.

Percentage change in airplay four weeks after sales peak

2%





Percentage change in airplay four weeks after sales peak Source: GAO analysis of Nielsen data.

Appendix IV: Correlation and Regression Analyses of Airplay and Sales

	This appendix describes the model we developed to analyze the relationship between airplay and sales of individual albums. Specifically, we discuss (1) the background and past economic literature, (2) our analytical framework, (3) the data we used in the analysis, (4) the estimation methodology and results, and (5) alternative regression specifications.
Background and Past Literature	The generally accepted hypothesis in the music industry is that radio airplay promotes music sales. Stakeholders from both the recording and broadcast radio industries agree that broadcast radio airplay can promote music sales. In fact, broadcast radio can be an important means by which many listeners discover new sound recordings; a 2010 study conducted by Arbitron found that 39 percent of survey respondents aged 12 years and older reported that they turned to radio first to learn about new music. ¹ Repeated airplay and the announcement of artists' new albums before or after broadcasting sound recordings has been argued to increase album sales for the musicians. Further, the historical record of illegal payola activity shows that the recording industry has been willing to compensate the broadcast radio industry for airplay. ² In addition, record companies employ staff dedicated to the promotion of music to radio stations. The relationship between aggregate airplay and aggregate sales has been empirically analyzed in the past, and one author found that radio airplay substitutes for sales and, therefore, has a negative impact on sales while a second author found a positive relationship between airplay and sales.
	¹ Arbitron, <i>The Infinite Dial 2010: Digital Platforms and the Future of Radio</i> . Thirty-one percent of respondents cited the Internet, the second most cited platform to learn about new music.
	² According to FCC, payola is the practice of payment of money or other consideration to a station in exchange for airplay of music. Under Section 317 of the Communications Act of 1934, as amended (47 U.S.C. § 317), and Section 73.1212 of FCC's rules (47 CFR § 73.1212), a station that plays a musical selection in exchange for such consideration must air an announcement, at the time the song is broadcast, disclosing the arrangement and identifying who furnished or on whose behalf the consideration was furnished.
	³ Stan J. Liebowitz, "Don't Play it Again Sam: Radio Play, Record Sales, and Property

"Stan J. Liebowitz, "Don't Play it Again Sam: Radio Play, Record Sales, and Property Rights," School of Management, University of Texas at Dallas, Draft, Jan. 5, 2007.

that songs receiving high airplay and new songs that listeners get an opportunity to experience can increase demand. However, he also argues that the time spent listening to radio becomes a substitute for time spend listening to albums. He estimated a regression model with record sales per capita as the dependent variable. He regressed this variable on the average time spent listening to music radio and other demographic variables such as income, Internet usage, age, and education which can influence record sales. He estimated his model using the first differences approach to control for underlying differences in populations and cities that are time invariant. He finds that radio airplay has a negative impact on sales of compact discs. Since the time spent listening to radio could represent time taken away from other activities, he also tests the impact of time spent listening to talk radio versus time spent listening to music radio on sales to see whether radio airplay actually substitutes for sales rather than just time spent listening. His results confirm his hypothesis that music radio is a direct substitute for sound recordings.
• Dertouzos, in a study sponsored by National Association of Broadcasters, conducted an empirical study to quantify the relationship between radio airplay and the sale of albums and digital tracks from 2004 to 2006 in the 99 largest designated market areas in the United States. ⁴ In his model, he expressed logarithms of total sales as a function of music exposure, measured by the number of listeners multiplied by the number of "spins" or plays, of a sound recording and various other local market factors, and demographic and economic characteristics. He found the estimated impact of radio exposure to be positive and significant for all functional specifications that he used, implying that airplay leads to higher sales of albums.
Our analytical framework differs from the previous research in that we tested to see if there is any relationship between sales and airplay for individual albums. As discussed above, the previous research attempts to measure the positive promotional effect or negative substitution effect of radio airplay on record sales and relied on aggregate airplay and sales data. In our analysis, we relied on the airplay and sales of individual albums of different music genres at the top of the charts. The lack of evidence of any relationship between airplay and sales in our analysis would not imply that a positive or a negative impact does not exist for any sound recording, but rather that it does not universally exist for each and

 4 James N. Dertouzos, "Radio Airplay and the Record Industry: An Economic Analysis," a paper prepared for the National Association of Broadcasters, June 2008.

every sound recording. For example, one may expect radio's promotional effect to be much less for a song released 2 or 3 years ago or for some very popular current artists.⁵ In our analysis, it may be the case that for the particular albums we analyzed, which are already at the top of the charts and, therefore, enjoy a certain level of popularity, additional airplay does not affect their sales.

Data Source

To conduct our analysis, we acquired data from The Nielsen Company. In particular, we used airplay and sales data on the top songs receiving airplay for five categories of music—Current Album, Current Country, R&B, Latin, and New Artists.⁶ These categories are based on chart criteria in Nielsen's SoundScan database, which tracks album sales, and are based around Album genres. We used data from six weekly reports from March 7, 2010, to April 11, 2010.⁷ Each report contained data for 3 weeks and contained information on the following elements:

- Physical and digital sales for the albums listed.
- Airplay data for the albums, where airplay for each song on an album is counted and the airplay for all the songs is aggregated to determine the total airplay for the album.
- The cumulative sales and airplay since the albums' release dates.

⁷For example, the report for the week ending March 7, 2010, contained information for the weeks ending March 7, 2010, the previous week—the week ending February 28, 2010, and 2 weeks prior—the week ending February 21, 2010.

⁵In our analysis, the particular albums we looked at were already at the top of the charts in the time frame of the data that we obtained. Therefore, it is possible that because they already enjoyed a certain level of popularity, one might not expect that additional airplay will have a big effect on sales.

⁶The Current Album category is based on the Current chart criteria, defined as titles less than 18 months old (or 12 months with respect to classical, jazz, and holiday) or within the top 100 ranks; this category includes the top 100 albums. The Current Country category has the same definition as Current, but for the Country genre only and includes the top 50 albums. The R&B category has the same definition as Current, but only for the R&B genre and includes the top 50 albums. The Latin category includes the top 50 albums coded within the Latin genre. The New Artists category includes any artist who has never reached the top 100 in album sales; once an artist reaches that level, they are ineligible for the new artist chart. This category includes the top 50 albums.

Estimation Methodology and Results To examine the relationship between airplay and sales, we first conducted a correlation analysis. We simply looked at the degree of correlation between past, as well as present, values of airplay and sales across

different categories of albums. A simple lack of correlation between airplay and sales would imply that the variables are not related to each other and, therefore, one variable does not affect another. However, high correlation between two variables and even between a variable and the lagged value of the variable expected to affect it, does not always imply a causal effect. For example, airplay and sales may be correlated simply because a popular song receives both high airplay as well as sales and one series may lag another without any apparent reason. Therefore, we next analyzed the degree of correlation between weekly changes in sales with both present and past weekly changes in airplay. Using our correlation analyses, we found the following: Sales and airplay are not correlated for any of the categories except Current Country. The degree of correlation between sales and airplay, among both present and lagged values of the variables, is about 60 percent for Current Country albums and less than 30 percent for all other categories of albums. The percentage change in sales and airplay are not correlated for any • category except Latin. For albums in the Latin category, percentage changes in airplay in the past week are correlated with current percentage change in sales at around 60 percent. We also examined the relationship between airplay and sales using a regression model. We estimated a model in first differences in which we regressed the change in sales from week 2 to week 3 on a contemporaneous change in airplay (that is, from week 2 to week 3), on lagged changes in both sales and airplay (that is, from week 1 to week 2), total airplay received by an album since its release, and total physical and digital sales since release. We included the total airplay variable to see the effect of cumulative airplay on sales and total physical and digital sales variables to proxy for the quality of a particular album. Our regression equation is specified below: Change-in-sales, = β_0 + β_1 *change in spins, + β_2 *change in spins, + β_3 *change in sales_t + β_4 *to-date-spins_t + β_5 *to-date-sales_t + β_6 *to-datedigital-sales, $+ \varepsilon$ where t is the week and t-1 is the prior week.

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We found that the change in airplay in the current and prior week did not have any effect on change in sales in the current week, except in the case of Latin albums where the relationship is positive and significant (see table 12).

Table 12: Regression Results

Variable	Current Album	Current County	R&B	Latin	New Artists
Intercept	47.556°	48.794 ^ª	3.257	0.142	4.599 ^b
	[0.005]	[0.040]	[0.345]	[0.817]	[0.066]
Current week's airplay	45.818	140.695	19.247	4.174ª	5.952
	[0.374]	[0.187]	[0.173]	[0.001]	[0.275]
Prior week's airplay	36.626	24.187	-8.868	9.200ª	0.717
	[0.575]	[0.778]	[0.276]	[0.000]	[0.539]
Prior week's sales	-0.011	-0.014	0.259ª	-0.001	-0.003
	[0.730]	[0.749]	[0.000]	[0.627]	[0.699]
Cumulative airplay	0.000⁵	-0.000	-0.000	-0.000	0.000
	[0.073]	[0.565]	[0.716]	[0.988]	[0.619]
Cumulative sales	-0.000	-0.000	-0.000	0.000	-0.000
	[0.163]	[0.542]	[0.608]	[0.939]	[0.576]
Cumulative digital sales	-0.000	0.000	0.000	-0.000	-0.000
	[0.127]	[0.847]	[0.735]	[0.956]	[0.622]
Observations	515	278	269	151	168
R-square	0.017	0.012	0.304	0.422	0.022

Source: GAO analysis

Note: P-values in [].

^aSignificance at a 5 percent level.

^bSignificance at a 10 percent level.

Alternative Regression Specifications We tested several other specifications of the model and our results did not change. We ran a set of regressions with all categories of albums stacked together and another that included dummy variables for the different categories of albums and their interaction with other variables. We then performed regressions with the percentage of change in sales from week 4 to week 5 on the percentage of change in airplay from week 4 to week 5 as well as lagged weekly changes in both sales and airplay in the preceding month. We did this for two different models: separately for each category of album and a combined dataset with album category specific fixed effects and with dummy variables for formats and their interaction with other variables as additional regressors. Neither of these resulted in any notable findings different from the ones above. Lastly, we regressed sales in each of the 5 weeks on cumulative airplay, and digital and physical sales. We did not find cumulative airplay to have a significant and positive effect on sales.

Appendix V: Comments from the Federal Communications Commission





	The following are GAO's comments on the Federal Communications Commission letter dated July 21, 2010.
GAO's Comments	1. We acknowledge that FCC collects information on ownership of all broadcast radio station licensees. However, FCC does not collect comprehensive information on the ethnicity, gender, and race of all radio station owners. Therefore, we cannot empirically examine how female or minority ownership affects radio stations' revenues and operations. Based in part on our recommendation in GAO-08-383, ¹ FCC has revised its Form 323, which it uses to gather information on ethnicity, gender, and race, and the procedures for its filing. Based on these changes, an analysis of radio station ownership by ethnicity, gender, and race may be possible in the future.

¹GAO, Media Ownership: Economic Factors Influence the Number of Media Outlets in Local Markets, While Ownership by Minorities and Women Appears Limited and Is Difficult to Assess, GAO-08-383 (Washington, D.C.: Mar. 12, 2008).

Appendix VI: Comments from the U.S. Copyright Office of the Library of Congress







		ne following are GAO's comments on the U.S. Copyright Office of the brary of Congress letter dated July 21, 2010.
GAO's Comments	1.	We agree that some sales of digital singles may arise because consumers hear a single on a digital music service or a platform other than broadcast radio. However, to discount digital single sales that are specifically and directly attributable to other music services as the Copyright Office suggests would require transaction-level data that would identify whether the consumer reached an online retailer via a link from a digital music service or other platform. We do not have these data. Further, even if the consumer reached the online retailer via a link from a digital music service or other platform, the consumer might have originally heard the single on broadcast radio and, therefore, removal in this instance would be inappropriate. As we note in the report, it is not clear to what degree, if any, the various promotional outlets impact sales individually or in conjunction with one another.
	2.	To analyze sales of sound recordings by age groups would require transaction-level data that would identify the age of the consumer. We do not have these data.
	3.	We agree that the Copyright Royalty Judges will set the reporting requirements. However, we assumed that most stations will have to track and report each sound recording played because other platforms that currently pay a royalty for the use of sound recordings track and report this information.
	4.	Our data source included total gross revenues, including perhaps some revenues attributable to nonmusic programming and service, for radio stations and we, therefore, performed our analysis using this measure. We do not believe that removing radio stations' revenues not associated with music programming would significantly affect our results because advertising associated with a station's programming generates most of its revenue.

Appendix VII: GAO Contact and Staff Acknowledgments

GAO Contact	Mark Goldstein, (202) 512-2834 or goldsteinm@gao.gov
Staff Acknowledgments	In addition to the individual named above, Mike Clements, Assistant Director; Amy Abramowitz; Namita Bhatia-Sabharwal; Christine Hanson; Alison Hoenk; Eric Hudson; Bert Japikse; Susan Offutt; Jonathon Oldmixon; and Andrew Stavisky made key contributions to the report.

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