

# Market Structure of the Domestic Music Recording Industry, 1890–1988

PETER J. ALEXANDER

*Media Bureau*

*Federal Communications Commission*

**Abstract.** The author constructed measures of market structure for the music recording industry for the years 1890 to 1988. This measure can be used both to test a variety of hypotheses about the industry itself and to serve as part of a broader study of culture-based industries. For example, data were used to test a hypothesis relating market structure to the diversity of products issued by the industry (P. J. Alexander 1997). The main finding was that a moderately concentrated market structure provided greater product diversity than an atomistic or monopolistic market structure. Whereas census data and previous studies of the industry provide some information about industry structure, these sources are severely limited in scope and detail. Finally, similar rankings in other culture-based industries (e.g., broadcast television, radio, cable television) might provide a useful index of concentration in those industries.

**Keywords:** music recording industry, market share, market structure, concentration ratios, media industries

## Sources and Methods

For the years from 1890 to 1954, the primary source was information derived from *Pop Memories: 1890–1954* (Whitburn 1986), a compendium of products that made the popular music charts during that period. For the period from 1955 to 1988, information from the *Billboard Book of Top 40 Hits* (Whitburn 1983), along with ancillary publications, forms the foundation for share figures.

The total database for the years 1890–1988 contains over 20,500 observations. The observations were sorted by firm, and market share was assigned on the basis of the number of hit songs. This procedure is typical of the way market share figures have been constructed for the industry (a comparison with other data sources is made later). Each observation was weighted equally, regardless of chart position or longevity. The observations could have been weighted by chart position (e.g., the number one hit is divided by one, the number two by two, and so forth), but this makes an implicit, and unrealistic, assumption about the relative value of any given chart position. In fact, close correspondence could exist

between groups of observations, even though there were significant discrepancies between groups.

Moreover, weighting by weeks on the chart would imply a greater overall share for more weeks on the chart (rather than fewer), but this result is not necessarily appropriate or accurate. For instance, a popular product might move quickly to the top of the chart and then disappear shortly thereafter, while another less popular product might cycle around a lower position for a longer period of time. Thus, a more popular product that earned a greater share overall might be weighted less than a marginal but chart-resilient product. In any event, it is not feasible to weight all the data. To do so, we would need the rank of each song for each week, and I have not found a source that provides such information.

Thus, all observations were weighted equally. If total market share for the industry is equal to  $N$ , then any individual firm's share equals  $N_i/N$ . Finally, if one firm had an arrangement with another for pressing (fabrication of the physical product) and distribution (relatively rare before 1970 but common for smaller firms in the late seventies and eighties), then the former's share was added to the latter's.

## Market Share Data Reliability

To evaluate the level of accuracy of the structural data, I compared the compiled market share figures with reliable extant sources for the industry. First, I contrasted the figures with those of Greer (1984). Greer was an expert witness in *FTC v. Warner Communications* and had access to industry sources of market share data. I compared the six-firm concentration ratios for the years 1970–1983 (all that Greer reported) with my estimates. The simple correlation between the sets of data for those years was .952. Regression analysis yielded a coefficient of .988, with a  $t$  statistic of 40.40 and a standard deviation of .024.

Next, I tested the data against CBS internal data, presented in the affidavit of Joan Griewank, FTC Exhibit 14 in *FTC v. Warner Communications*. In this instance, four-firm

concentration ratios were reported for the years 1970–1980. The simple correlation between the CBS data and my own was .936. Regression analysis yielded a coefficient of .865, with a *t* statistic of 47.15 and a standard deviation of .018.

Finally, I compared the data with confidential, disaggregated Warner Communications figures for the years 1979–1983 presented during the *FTC v. Warner Communications* lawsuit. The Warner data are compiled from Billboard's Top 200 Chart Action (Greer 1984, Exhibit 13, Attachment 5). Because the data were disaggregated, I had a rare opportunity to compare, on a firm-by-firm basis, my own estimates with an industry source.

The results of the comparison of the Warner data and my own are shown in table 1 and, as can be seen from the table, the data fit well. In fact, for the top three firms (five reported in toto), the data match was nearly perfect. For the bottom two firms, the spread in the figures was slightly greater but in nearly every case, extremely close.

No direct comparisons can be made with pre-1970 data sets, because these estimates, if they exist, are not public.

However, the methodology for compiling the market share figures produced good estimates in periods when direct tests were possible, so it is reasonable to assume that the remaining series is accurate.

**A Time-Series Graphic and Data Table**

Both the four-firm concentration ratio (CR4) and the Hirshman-Herfindahl index (HHI) are shown in figure 1.

**TABLE 1**  
A Comparison of Warner Communications and Alexander Firm-Specific Data Using Mean Absolute Difference and Simple Correlation, 1979–1983

	Year				
	1979	1980	1981	1982	1983
MAD	1.74	2.60	2.28	1.46	1.40
CORR	.930	.939	.972	.991	.976

*Note:* MAD = mean absolute difference; CORR = simple correlation.

**FIGURE 1**  
Time-Series of the Four-Firm Concentration Ratio (CR4) and the Hirshman-Herfindahl Index (HHI) for the Music Recording Industry, 1890–1988



TABLE 2  
Annual Market Share Figures for the Music Recording Industry, 1890–1988

Year	CR4 (%)	HHI	Year	CR4 (%)	HHI
1890	100.00		1940	95.58	2418.12
1891	100.00	3727.81	1941	99.39	2501.49
1892	94.44	2530.86	1942	97.90	2533.86
1893	100.00	4591.84	1943	88.76	2453.60
1894	100.00	3828.13	1944	86.64	2741.16
1895	100.00	7551.02	1945	94.62	2433.55
1896	100.00	5537.19	1946	88.50	2047.49
1897	95.65	5652.17	1947	81.98	1741.83
1898	93.94	4233.24	1948	77.26	1630.70
1899	100.00	3585.72	1949	75.85	1607.70
1900	100.00	2947.66	1950	80.45	1884.05
1901	100.00	2613.11	1951	77.14	1716.90
1902	100.00	3745.77	1952	79.50	1699.59
1903	100.00	3672.22	1953	68.53	1337.49
1904	100.00	3446.20	1954	67.04	1308.54
1905	100.00	3788.57	1955	63.93	1272.36
1906	100.00	4263.25	1956	54.51	961.34
1907	100.00	4074.07	1957	44.74	709.06
1908	100.00	5420.83	1958	39.33	547.21
1909	100.00	4315.70	1959	27.43	366.57
1910	99.35	4540.39	1960	30.48	387.36
1911	100.00	5088.15	1961	23.61	286.94
1912	100.00	5602.84	1962	25.72	333.18
1913	100.00	5347.90	1963	33.21	482.43
1914	100.00	4485.71	1964	34.16	469.73
1915	100.00	4873.08	1965	34.53	478.84
1916	100.00	4739.06	1966	32.41	472.11
1917	99.36	4629.36	1967	43.52	667.96
1918	98.14	4542.65	1968	47.41	738.00
1919	97.22	3912.04	1969	41.04	578.36
1920	89.83	3259.92	1970	46.56	683.67
1921	89.53	2976.61	1971	42.62	611.06
1922	88.69	2816.75	1972	45.02	783.16
1923	86.90	2446.15	1973	47.03	726.63
1924	97.94	3114.57	1974	44.96	720.64
1925	94.19	2783.94	1975	42.34	645.16
1926	97.81	3545.34	1976	48.61	892.92
1927	100.00	3849.49	1977	47.83	855.33
1928	99.15	3798.48	1978	60.62	1129.30
1929	100.00	3724.30	1979	63.08	1187.00
1930	100.00	3325.69	1980	62.27	1238.84
1931	100.00	3320.01	1981	60.59	1047.59
1932	100.00	3251.49	1982	59.53	1041.21
1933	99.10	3245.39	1983	69.65	1353.18
1934	97.77	2892.21	1984	68.23	1443.14
1935	97.66	2452.66	1985	70.81	1388.93
1936	94.51	2657.46	1986	66.49	1287.35
1937	92.37	2574.90	1987	64.65	1225.53
1938	100.00	2823.22	1988	59.07	1199.50
1939	95.00	2451.38			

Note: CR4 = four-firm concentration ratio; HHI = Herfindahl index.

The four-firm concentration ratio is simply the sum of the market shares (percentage of sales) of the top four firms in the industry. The HHI is the sum of the squared market shares of all the firms in the industry. Both measures are standard methods of determining market structure.

The raw data used to derive figure 1 are given in table 2. Year-by-year individual firm data are also available from the author (palexand@fcc.gov).

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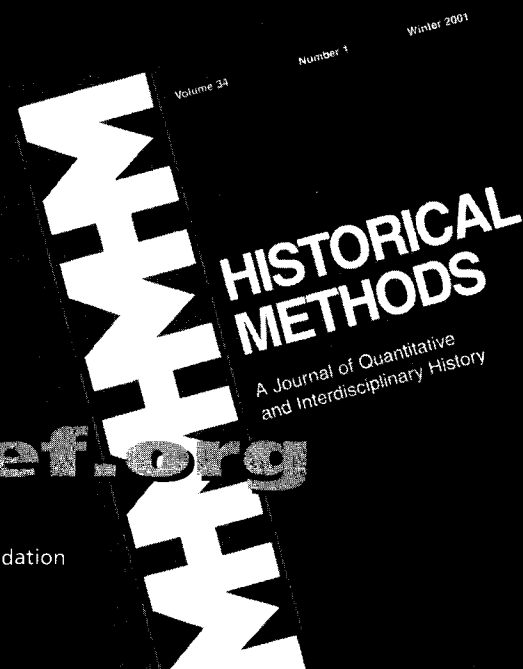
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