THE ECONOMIC IMPACT OF THE BRAVES ON ATLANTA: 1966

by William A. Schaffer · George D. Houser · Robert A. Weinberg

FEBRUARY, 1967

Industrial Management Center

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I / INTRODUCTION AND SUMMARY OF FINDINGS

THE purpose of this study is to assess the economic impact of the Atlanta Braves baseball team on Atlanta. In addition, the study includes a variety of information, ranging from game starting times to hot dog expenditures, which will help the Braves management better understand their fans and provide Atlanta with a closer and more up-to-date look at the economic importance of major league baseball in Atlanta. A similar study is being conducted to assess the impact of the Falcons on the city. The combined reports should serve to underline the contributions of professional sports to a growing Atlanta.

The study is divided into six parts. A summary is provided in this section. Then the survey technique is briefly described. Third, the characteristics of the fans are outlined. Fourth, an analysis of expenditures made in connection with the Braves is presented, followed by an examination of the flow of income as these expenditures are spent and respent. Finally, the noneconomic impact of the Braves on Atlanta and Georgia is discussed. (A technical appendix is also provided to supplement findings summarized in the text.)

In summary, the Braves had a significant economic impact on

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the city of Atlanta in 1966. Over 9 million dollars were spent in Atlanta in direct connection with the baseball season. As this money circulates, up to 30 million dollars in income for Atlantans will be generated.

Two-thirds of the initial expenditures were made by the 174,000 different visitors to Atlanta who made up 41 per cent of the official attendance of 1,539,801. Over half of the expenditures by out-of-towners went for food, entertainment and lodging, although significant amounts were also spent at the game itself, for gasoline, and on transportation.

Attendance by an estimated 107,000 Atlantans reached over 905,000. In contrast to the pattern set by out-of-town fans, two-thirds of the expenditures of local fans were made at the Stadium itself, with food and entertainment, parking, gasoline, shuttle bus and other transportation expenditures following in importance.

A hard core of baseball fans has been uncovered in Atlanta. The typical local fan expected to see 16 to 25 games while the out-of-town fan expected to see four games over the season. While 82 per cent of season attendance was drawn from within 150 miles of Atlanta, over half of the out-of-town fans came from 23 other states, primarily Alabama, Tennessee, South Carolina and North Carolina. A majority of the fans came with their families, although a large number of fans came in organized groups from as far as Los Angeles, Chicago, and Ottawa, Canada. And no matter where their homes, the Braves fans were loyal both in and out of the Stadium, with 73 per cent of all fans admitting to regularly following the Braves on the radio.

While the economic impact has been substantial, the non-economic contribution of the Braves to Atlanta is no less important. Some partial indicators of this contribution are available. Thus, Atlanta was mentioned over 280,000 times in daily newspapers, four games were televised nationally from Atlanta, 20 games were televised over the Southeast, and 39 regional radio stations carried regular broadcasts of the Braves. If other teams have similar networks, then the Atlanta Braves played before millions across the nation every week of the season. Further, Braves personnel appeared over 395 times as speakers throughout the state and made preseason visits to 24 major cities in the Southeast. Finally, the Braves have contributed substantially to programs at schools in the neighborhood of the Stadium.

II / PROCEDURES

THIS study describes the characteristics of Atlanta Braves fans through the application of standard sampling procedures. The analysis of a small, carefully selected segment of a population will yield information almost as accurately as if the entire population had been studied. The technique used is outlined here; details are presented in the Appendix.

Sampling

THE population for this study is defined as all persons who attended an Atlanta Braves game in the Atlanta Stadium. Since seating by section appeared to be proportionately stable from game to game, the proportional method of sampling was chosen. That is, the size of the sample for each section was proportional to its population. These proportions, initially based on the first 13 home games, were adjusted as necessary later in the summer.

Within each section of the stadium the sampling was random. Each member of the population in a section had an equal chance of being interviewed. Locations for interviews were based on a mathematical formula and the interviewers were not permitted to make decisions based on their own desires and observations. This insured a reasonable objectivity in the survey results.

The sample games were selected to include each team, day of

the week and starting time and were played over a three-month period from mid-May to mid-August. The sample itself consisted of a total of 1479 fans interviewed at 16 games.[1]

Interviews

APPROXIMATELY 90 to 100 interviews were conducted at each sample game by carefully trained students and members of the faculty of Georgia Tech. Each interviewer carried an identification card indicating the purpose of the interview and authorizing his presence in the Stadium. The interviews were conducted according to a preset format and usually could be completed in less than two minutes each. Interviews were begun 30 minutes before game time and stopped before play commenced.

As a technique for data collection, personal interviewing yields good results. It allows the respondent to relax, requires a minimum of effort in answering questions and provides a larger proportion of usable replies than other methods.

The interview form was carefully constructed to avoid bias, and each question was selected for a specific purpose.[2] The questions did not probe into the personal background of the respondents; as a result, there was little or no reluctance in answering them. Several interviews were conducted with the questionnaire in a rough-draft form to insure that each question was easily answerable. Once the format was established, the questions and answers were number-coded so that responses could be keypunched directly from the questionnaire. This facilitated analysis of the results through the Rich Electronic Computer Center at Georgia Tech. Many questions were eliminated prior to the start of the study because of the availability of information from other sources; were it not for access to these sources, the time involved would have become excessive and both fans and interviewers would have suffered unnecessarily. Throughout the survey, the cooperation and willingness of fans to participate in the study greatly simplified the interview task.

Reliability

WHILE the nature of the questionnaire prevents the determination of a degree of accuracy for the questionnaire as a whole, an

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[1]*The schedule of games sampled is presented in section C of the appendix.*
[2]*The interview questionnaire is reproduced in section A of the appendix.*

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expected error can be stated for selected questions. Computations based on standard statistical techniques indicate that there is 95 per cent probability that the population means will lie within the intervals shown in Table 1.[3] Where only a yes or no answer is involved (i.e., where the distribution is binomial), the per cent of the population possessing the characteristic in question is expected to differ no more than 4 per cent from the corresponding per cent of the sample. Where the answer is subject to more variation (e.g., distance from Stadium, expenditures, length of stay, etc.), the maximum expected error rises, particularly when the number of observations is small. Thus, the mean entertainment expenditure of all out-of-town parties may vary from the mean based on our sample by as much as $6.61.

In general, the usual cautions in the interpretation of survey results apply, but estimates based on this sample should reasonably approximate the characteristics of fans of the Atlanta Braves in 1966.

Table 1: Confidence Intervals for Selected Questions

Topic of question	Maximum expected error	Confidence interval Lower limit	Upper limit
Asked of everyone:			
Desirability of starting time (proportion)	.01	.90	.92
Number in party	.48	4.29	5.25
Local or out-of-town resident (proportion)	.03	.56	.62
Asked of local fans:			
Distance of home from Stadium (miles)	.37	8.00	8.74
Game-connected entertainment (proportion) . .	.03	.27	.33
Entertainment expenditure (dollars)	.61	4.64	5.86
Number of games expect to see	1.34	22.53	25.21
Asked of out-of-town fans:			
Distance of home from Atlanta (miles)	11.02	150.00	172.00
Game-connected entertainment (proportion) . . .	.04	.37	.41
Entertainment expenditure (dollars)	6.61	27.71	40.93
Overnight visit (proportion)	.04	.43	.51
Number of nights stayed	.50	2.47	3.47
Gas and oil purchase in Atlanta (proportion) . .	.04	.49	.57
Gas and oil expenditure (dollars)	.54	6.68	7.76
Games expect to see this trip	.15	1.48	1.78
Games expect to see for season	.81	7.11	8.73

[3]*See section E of the appendix.*

Representativeness

To demonstrate its representativeness, the sample is compared with the population in several key areas in Table 2. The sample and population proportions according to these classifications are very close. Most of the relatively high differences in attendance proportions in the population and sample for the various teams played can be explained by an inability to adjust the survey schedule to account for changes in the popularity of teams as the season progressed. But even these are slight enough to be disregarded.

Thus, the survey appears to be adequate in size and composition to yield reasonably accurate results.

Table 2: Comparison of Population and Sample

Classification	Per cent of population	Per cent of sample
Attendance, by day of week		
Week game	56	57
Weekend game	44	43
Attendance, by opposing team		
Los Angeles	21	20
Philadelphia	8	7
New York	11	11
Cincinnati	8	6
Houston	8	12
St. Louis	8	13
San Francisco	18	13
Chicago	7	14
Pittsburgh	11	4
Attendance, by section of Stadium[a]		
General admission	21	24
Field level	34	39
Loge	3	5
Pavilion	7	4
Upper level	35	28
Games scheduled, by day of week[b]		
Weekday afternoon	1	0
Weekday evening	45	44
Friday evening	17	19
Saturday afternoon	11	12
Saturday evening	9	6
Sunday afternoon	17	19

Notes: a. The population percentages in sections of the Stadium are based on actual attendance for the first 13 home games.
b. Doubleheaders are counted as one game.

III / CHARACTERISTICS OF FANS

AN expected outcome of any survey of baseball fans would be a description of the average fan. Unfortunately, much of the information required to draw a good fan profile is confidential (age, income, education, etc.) and a direct query into these topics is likely to be answered in an exaggerated or biased manner. To protect answers more pertinent to the central purpose of the study, questions of this type were eliminated during the initial testing of the questionnaire. But several items of general interest were compiled and are presented below. The next two sections then provide discussions of the characteristics of local and out-of-town fans.

General

ATTENDANCE. There is little doubt that the 1966 baseball season has been highly successful. Official season attendance was 1,539,801, and the highest for the Braves since 1959. Playing in the smallest metropolitan area with a National League team and spending most of the season in the lower division, the team still ranked sixth in total attendance ahead of Pittsburgh, Philadelphia, Cincinnati, and Chicago. Attendance at home games appears to have depended in part on the standing of opponents,

with Los Angeles (first place) drawing over 330,000 followed by San Francisco (second place) with over 270,000 and Pittsburgh (third place) with over 200,000. This stands in contrast with attendance of less than 100,000 for games with Chicago (tenth place) and 111,000 with Cincinnati (seventh place). Average attendance also varied by month, with games played in July and August drawing large crowds. While those are vacation months, school, football and other activities tend to reduce baseball attendance in May and September.[4]

According to the survey, roughly two out of every five fans were from out of town and accounted for a total attendance of

Table 3: Makeup of Attendance at Games

Type of game	Per cent local fans	Per cent out-of-town fans in Atlanta for:	
		Ball game	Other reasons
Week	62	27	11
Weekend	55	39	6
Total	59	32	9

634,398. Table 3 shows that most out-of-town fans (78 per cent) were in Atlanta primarily to see a game and attended more games on weekends than otherwise.[5]

Auto registration (or home)	Per cent of total:		
	August 8	August 10	Survey
Other states	24	19	22
Other Georgia counties	14	16	16
Metropolitan Atlanta Counties	62	65	62
(Fulton Co.)	(37)	(33)	—
(DeKalb Co.)	(16)	(21)	—
(Cobb, Clayton, Gwinnett Cos.)	(9)	(11)	—

The tag counts did not include fans arriving by shuttle bus; our interviewers (when asked) defined Atlanta as within 15 miles of downtown. If these differences counterbalance each other, the results are virtually identical.

[4]*See section C of the appendix for details.*

[5]*Our results are remarkably close to those of surveys conducted by the Research Department of the Atlanta Chamber of Commerce. While their complete study is not yet available, they have provided preliminary results of two counts of automobile license plates in the Stadium parking lots. Both counts were conducted on week nights with the Los Angeles Dodgers as the opposing team. The first (1,814 cars) was on August 8 and the second (4,967 cars) on August 10. Compared with our survey, the results are as follows:*

RADIO FOLLOWING. As evidenced by the interest with which fans follow the Braves on radio, baseball is not just a sport of passing fancy. One of the questions asked of fans was designed to determine whether they followed the Braves by radio regularly, occasionally, or not at all. As Table 4 indicates, a large proportion of fans follows the Braves regularly. While most of the regular

Table 4: Radio Following

Type of fan	Per cent of attendance following radio broadcasts:		
	Regularly	Occasionally	Never
Local fans	82	12	6
Out-of-town fans	59	22	19
All fans	73	16	11

listeners are local fans, the out-of-town following is still substantial (81 per cent) and is probably closely associated with the 78 per cent of out-of-town fans in Atlanta primarily to see a ball game.

PARKING. Anyone who attended a game during the 1966 season was reminded of Atlanta's parking problems and expressway traffic jams. The Atlanta Transit Company established a convenient shuttle bus service from downtown to the Stadium to supplement the limited number of parking spaces at the Stadium. Nevertheless, as shown in Table 5, 81 per cent of the fans inter-

Table 5: Mode of Transportation

Mode	Per cent of attendance
Drove car to Stadium	81
Drove car to town and walked	1
Drove car to town and took bus	7
Drove car to other and took bus	1
Took bus only	4
Charter bus	2
Taxi	2
Walked	2

viewed chose to drive their cars and either park in the Stadium lots or use one of the bootleg parking facilities which have sprung up around the Stadium. Some 12 per cent of the fans elected to use the shuttle bus service; this figure was generally lower during

games with smaller attendance and increased markedly as attendance approached sellout proportions.[6]

SEAT PREFERENCE. One of the interviewers' tasks was to code each questionnaire according to section of the Stadium and type of fan (local or out-of-town). This was done as an interest item to determine out-of-town seat preferences. As Table 6 indicates, there were no sharply drawn preferences, with the exception that

Table 6: Seat Preference

Section of Stadium	Per cent local fans	Per cent out-of-town fans
Loge	50	50
Upper level	60	40
General admission	70	30
Field level	52	48
Pavilion	68	32

70 per cent of the general admission tickets was sold to local fans and that the out-of-town fans, in general, tended to gravitate toward the more expensive reserved seats. All it ever took during the season was a glance at the grandstand area with its "Hammering Hank" and "Go Joe" banners to know that the hard-core baseball fan was firmly entrenched in the grandstands.

Local Fans

ATTENDANCE. Baseball is not just a novelty for Atlanta fans: the typical fan expected to see 16 to 25 games, and 16 per cent of the local fans planned to see 40 or more games before the season was over. Attendance expectations are presented in Table 7. If

Table 7: Attendance Expectations of Local Fans

Number of games	Per cent
Less than 3	4
3 to 6	10
6 to 11	19
11 to 16	15
16 to 26	22
26 to 41	14
41 or more	16

[6]While official figures are not available from the Atlanta Transit Company, their estimates parallel ours.

these expectations held true, over 107,000 different Atlantans had attended a game by the end of the season for a local season attendance of over 905,000.[7]

RESIDENCE. While 40 per cent of local fans live in the Northeast section of the city, the remainder are drawn fairly evenly from the other quadrants of the city (20 per cent from the Northwest, 19 per cent from the Southeast, and 21 per cent from the Southwest). The average distance traveled from home to Stadium was 8.4 miles. As Table 8 shows, this average is heavily weighted by

Table 8: Estimated Distance Traveled by Local Fans

Miles traveled (one way)	Per cent of local fans
Less than 4	18
4 to 7	23
7 to 10	14
10 to 13	26
13 or more	20

the large proportion of fans traveling ten miles or more. The most frequently estimated distance traveled was 10 to 13 miles.

GROUP COMPOSITION. Baseball is a family sport in Atlanta. 52 per cent of the local fans attended games with their families, 30 per cent with friends, 16 per cent by themselves, and 2 per cent with an organized group. The average group size was four.

Out-of-Town Fans

ATTENDANCE. In measuring the impact of the out-of-town fan, this study has directed its attention to the out-of-town fan who was in Atlanta primarily to see a ball game. 78 per cent of the out-of-town fans (or 32 per cent of all fans) interviewed were in this category. As shown in Table 9, the remainder were in town for a variety of different reasons and simply selected the ball game as one form of entertainment. By the time the season ended approximately 634,000 out-of-town visitors had been to a Braves game. This total includes a number of fans who came to several

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[7]For computation, see section D of the appendix.

Table 9: Reasons for Visit to Atlanta by Out-of-Town Fans

Reason	Per cent of out-of-town fans
To see a baseball game	78
On business	7
On vacation	6
Visiting friends	4
Just passing through	1
Conventioneering	1
Other	3

different games (the average out-of-town fan planned to see four games during the season). On a non-repeat basis, approximately 174,000 different out-of-towners were drawn to Atlanta by the Braves.[8]

STATES REPRESENTED. Of this 174,000 total, 75,000 came from other towns and cities in Georgia, and the remaining 99,000 came from 23 other states. While the greatest number of out-of-state fans came from Alabama and Tennessee, it was quite common to encounter fans from Florida, North Carolina and South Carolina. Table 10 shows the attendance breakdown for the major contributing states.[9]

Table 10: States from Which Out-of-Town Fans Were Drawn

State	Per cent of out-of-town fans
Georgia	43
Alabama	13
Tennessee	11
South Carolina	9
North Carolina	9
Florida	5
Other	10

DISTANCE TRAVELED. Although more than half of the out-of-town fans live within 150 miles, the average one-way distance traveled by out-of-town fans in Atlanta primarily to see a game was 161 miles. According to Table 11, the median distance traveled is 100 to 150 miles. 92 per cent of these fans traveled by car, 5 per cent

[8]For computation, see section D of the appendix.

[9]The 17 other states from which fans interviewed came were (in order of frequency) Mississippi, Ohio, Texas, Kentucky, Pennsylvania, Virginia, West Virginia, Indiana, Louisiana, South Dakota, Maryland, Illinois, California, Minnesota, New Jersey, Nebraska, and Missouri.

Table 11: Distances Traveled by Out-of-Town Fans to See Game

Distance	Per cent of out-of-town fans
Less than 50 miles	16
50 to 100 miles	21
100 to 150 miles	18
150 to 200 miles	12
200 to 300 miles	16
300 miles or more	12

by bus, 1 per cent by airplane, and the remaining 2 per cent used some other means of travel. (One fan insisted that he had driven from Alabama in the family truck and flatly refused to have it classified as anything but "other.")

GROUP COMPOSITION. Baseball for the out-of-town fan is also a family occasion: 55 per cent of the fans interviewed were with their families, 33 per cent were with friends, 7 per cent were by themselves, and 6 per cent were with organized groups.

A tabulation of group ticket sales provides an interesting aside, in addition to confirming our survey results. Table 12 shows that,

Table 12: Organized Group Ticket Sales, by State

State	Cities	Number of Groups	Fans
Georgia	95	246	17,546
Alabama	46	152	9,420
South Carolina	30	91	4,375
Tennessee	24	86	3,388
North Carolina	23	77	6,507
Florida	6	15	441
Kentucky	4	5	539
Louisiana	2	2	68
Mississippi	1	4	293
Ohio	1	2	800
California	1	1	50
Illinois	1	1	130
Ontario (Canada)	1	2	33
Total	235	684	43,590

excluding groups from Metropolitan Atlanta, a total of 684 groups from 235 cities ordered tickets to games this season, representing 6.9 per cent of estimated out-of-town attendance. This compares favorably with survey results (6 per cent), even though the distribution among states is not the same as for all out-of-town fans. The average organized group size was 64.

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IV / ANALYSIS OF EXPENDITURES

THE study now turns to the monetary impact of the Braves on Atlanta. The discussion will show the effect of the Braves on funds flowing through Atlanta's economy, the sources of these funds and where, specifically, they entered Atlanta's economic stream. In addition to new funds from other areas, locally-held funds spent due to the presence of the Braves will be considered.

Sources of Expenditures

LET us first consider new money introduced into the economy

from outside of Atlanta. There are several possible sources of these funds:

1. Money spent by out-of-town fans on tickets to games;
2. Money spent by out-of-town fans (in Atlanta for the specific purpose of seeing the Braves) on transportation, food, entertainment, lodging, shopping, parking, concessions, etc.;
3. Money earned by the Braves outside of Atlanta (The Braves receive remuneration for playing in other cities based on attendance.);
4. Money spent by other baseball teams in Atlanta;
5. Money spent by baseball scouts, reporters and other support personnel in Atlanta.

All money spent by out-of-town fans on tickets and at the games represents an inflow to the economy of Atlanta directly attributable to the Braves. But it is reasonable to consider any other expenditures made by out-of-town fans attributable to the Braves only if the out-of-town fan was in Atlanta primarily to see a game.

The enumeration of induced local expenditures is more difficult. Local expenditures are simply the sum of local ticket expenditures, local moneys spent prior to or following games on meals or entertainment, and moneys spent at games on concessions, programs, etc. But would this direct spending on entertainment have existed without the Braves? If the Braves were not in Atlanta, would the local fan have selected a movie or local theater group to provide his entertainment for the evening? This issue cannot be resolved with complete satisfaction. The questionnaire was designed, in so far as possible, to limit the measurement of local expenditures to those directly attributable to the Braves. Since it is a purpose of this section to point out the tremendous purchasing power of one and a half million fans, we have assumed that local expenditures made in connection with baseball were induced by the presence of the Braves. While some error might be involved, we feel that the exclusion of local expenditures would be even more erroneous.

Table 13 delineates sources of expenditures and indicates their points of entry into the economic stream. The following comments briefly explain the summary amounts provided in the table.

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Expenditures of Local Fans

As pointed out earlier, over 107,000 Atlantans attended games at the Stadium more than 905,000 times. These local fans introduced funds directly into Atlanta's economic stream through their ticket purchases and expenditures on food and entertainment before and after games, on concessions, on transportation, and on parking.[10]

Table 13: Summary of Expenditures

Object of expenditure	Local fans	Out-of-town fans	Visiting teams	Visiting scouts	Total
Game (tickets) . . .	$1,576,000	$1,195,000	—	—	$2,771,000
Food and entertainment . .	202,000	2,276,000	41,000	8,000	2,527,000
Concessions . . .	905,000	634,000	—	—	1,539,000
Gasoline	56,000	473,000	—	—	529,000
Parking	115,000	63,000	—	—	178,000
Buses	54,000	38,000	14,000	—	106,000
Taxis	35,000	9,000	—	—	44,000
Lodging	—	1,479,000	31,000	5,000	1,515,000
Other	—	—	41,000	4,000	45,000
Total . . .	2,943,000	6,167,000	127,000	17,000	9,254,000

TICKETS. While Atlantans spent over $2,078,000 for admission to games, only $1,576,000 has been included in the tabulation of direct expenditures.[11] This is the share of expenditures of the Braves which is attributable to local attendance. About 24 per cent of ticket revenue leaves Atlanta in partial support of the farm system (four clubs, each of which requires a substantial subsidy), spring training, and other activities.

FOOD AND ENTERTAINMENT. 30 per cent of all local fans attending a game stopped on their way to or from the game for food and entertainment. Specifically, 4.5 per cent of these fans attended the games by themselves and spent an average of $3.63 per person, 14.1 per cent were with their families (average size of 3) and spent a total of $5.41, and 11.4 per cent attended the games with

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[10]*Most of the calculations for this section are reproduced in section F of the appendix.*

[11]*This statement is based on our estimate of ticket sales. The Braves provided a summary of their expenditures in Atlanta which has been prorated on the basis of the proportion of local fans.*

friends and spent an average of $5.73 on two persons. The total food and entertainment expenditures (not including concessions) of local fans for the season is estimated at over $202,000.

Concessions. According to Automatic Retailers of America, the concessionaires at the Stadium, the typical fan spent about $1 per game on refreshments for a total of $905,000 from local fans.

Gasoline, parking and other transportation. The sample indicates that the local fan lived an average distance from the Stadium of 8.4 miles. Further, 89 per cent of those interviewed drove to the Stadium or parked in town and took a bus. As a result, over 2,400,000 miles were driven by local fans in connection with a game. Ignoring depreciation, oil consumption, tire wear and other measurable (but important) expenses and using information supplied by the American Petroleum Institute, the total expenditure by local fans on gasoline alone is estimated at over $56,000.

89 per cent of the Atlanta fans parked either downtown or at the Stadium with an average of 3.5 fans per car. Assuming a fee of $0.50 per car, over $115,000 was spent by local fans for parking.

12 per cent of the local fans used a bus at some point in their trip to the Stadium. At $0.50 per round trip, the Atlanta Transit Company took in over $54,000 due to the presence of the Braves in Atlanta.

2 per cent of the fans arrived at the Stadium by taxi. Assuming an average of 3.5 fans in each party traveling 8 miles (one-way) and using rates of $0.50 for the first ¾ miles and $0.10 per additional ¼ mile, the expenditure for taxis by Atlantans was over $35,000.

Expenditures of Out-of-Town Fans

The 174,000 different out-of-town fans attending Braves games in Atlanta introduced new money into the local economy in several different ways. But expenditures of these fans on such things as food and entertainment and gasoline may properly be, and are, attributed to the Braves only when the out-of-town fans came to Atlanta primarily to see a game (78 per cent of out-of-town attendance, or 494,830, were in that category).

Tickets. By our estimates, out-of-town fans spent over $1,576,000

for tickets to games. But, as explained for local fans, only $1,195,000 should be included as first-round spending. This is the portion of direct expenditures by the Braves in Atlanta attributable to out-of-town fans.

FOOD AND ENTERTAINMENT. 37 per cent of the out-of-town fans here to see a game spent money on food and entertainment. Of this group, 4 per cent were by themselves and spent an average of $13.75 each, 55 per cent were with their families (average size of 4) and spent $35.97 per family, and 41 per cent were with friends and spent an average of $33.84 on two people. These figures include all food and entertainment expenses (excluding concessions) for the entire length of an out-of-town fan's visit. For the season, out-of-town fans spent over $2,276,000 on food and entertainment in Atlanta.

CONCESSIONS. With an average expenditure of $1.00 per fan, out-of town fans spent over $634,000 on concessions.

LODGING. A large number of visitors stayed overnight. Many came for several days or a weekend to see more than one game. Specifically, 37 per cent of the out-of-town fans stayed overnight; the average visit extended over two nights and the average size of party was five. As shown in Table 14, visitors most frequently stayed downtown. Using rates provided by the Georgia Hotel-

Table 14: Lodging Preferences of Out-of-Town Fans

Location	Per cent
Downtown hotel or motel	51
Motel in outlying or suburban areas	6
Home of friend or relative	41
Elsewhere (campers, etc.)	2

Motel Association (downtown—$13.00 for double and $10.00 for single room; suburban area—$11.00 for double and $8.50 for single room), out-of-town fans here to see a game spent about $1,479,000 for lodging.

GASOLINE, PARKING, AND OTHER TRANSPORTATION. 53 per cent of out-of-town fans in Atlanta to see a game spent money on gasoline. The average amount spent per party of four was $7.22 for a

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season total of over $473,000. While this amount may seem high, it should be remembered that many fans stayed in Atlanta for more than a single day and may have purchased gasoline on several occasions.

89 per cent of all out-of-town fans paid parking fees in connection with a game. With an average of 4.5 persons per car, over $63,000 was shared by the downtown parking lots and the Atlanta Stadium Authority.

12 per cent of all out-of-town fans traveled to the Stadium by bus at $0.50 per round trip for a total of $38,000.

2 per cent of all out-of-town fans arrived at the Stadium by taxi. Assuming their trips started in the downtown area and were $1.40, one way, out-of-town fans spent about $9,000 for taxi transportation.

Expenditures of Baseball Teams

DIRECT expenditures were made in Atlanta not only by fans and the Braves but also by visiting teams and scouts. The total first-round spending by baseball clubs (including the Braves) is estimated at $2,914,000. This figure is based on estimates provided by members of the staff of the Atlanta Braves. The Braves spent about $2,771,000 in Atlanta for such items as salaries and wages, utilities, local sales taxes, public relations, supplies and equipment, the Stadium Club, travel, and rent. Visiting teams are estimated to have spent about $127,000 for lodging, food, entertainment, transportation, miscellaneous personal items, and tips for clubhouse personnel. Visiting baseball scouts spent about $17,000 for similar items.

Summary of Direct Expenditures

FIGURE 1 contrasts the spending patterns of local and out-of-town fans. The local fan clearly spends most of his money at the Stadium itself, while the out-of-town fan spends substantial amounts in other parts of the city for food, entertainment and lodging.

A total of $9,254,000 in first-round expenditures may be credited to the presence of the Braves in Atlanta. Of this amount, 68 per cent was new money introduced into Atlanta's economy by sources outside of the city, and 32 per cent was induced local spending attributable to the presence of the Braves. But to say

that total first-round spending represents the economic impact of the Braves on Atlanta is not entirely correct. To determine the total impact, consideration must be given to the multiplier effect which occurs as this money is spent and respent.

Figure 1
Expenditures of Fans

EXPENDITURES OF LOCAL FANS
$2,943,000

Concessions
$905,000
31%

Transportation
$260,000
9%

Food and Entertainment
$202,000
7%

Game
$1,576,000
53%

EXPENDITURES BY OUT-OF-TOWN FANS
$6,311,000

Concessions
$643,000
10%

Lodging
$1,515,000
24%

Transportation
$697,000
11%

Game
$1,195,000
19%

Food and Entertainment
$2,325,000
36%
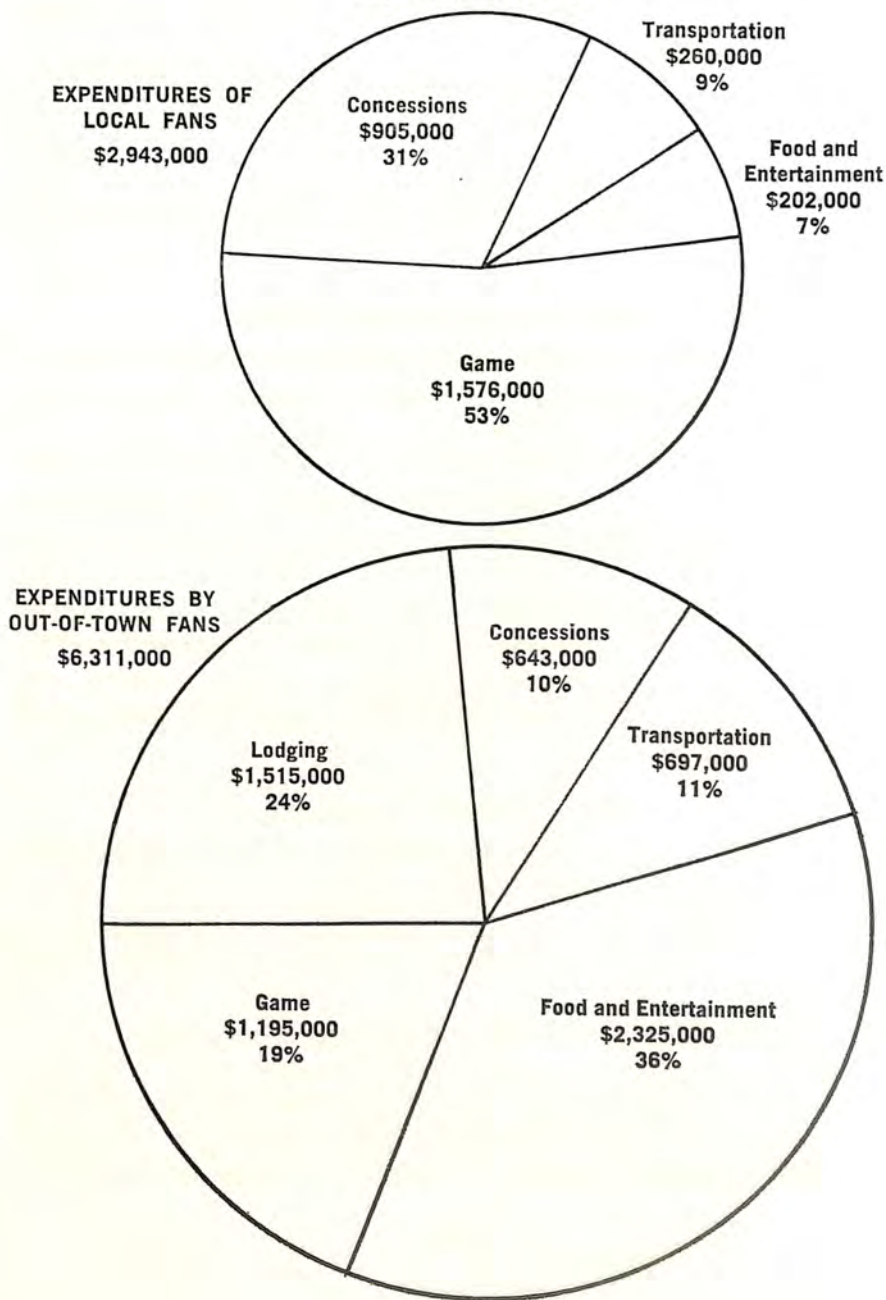
V / THE MULTIPLIER EFFECT

A commonly-held theory of urban growth states that a city must export goods and services if it is to prosper economically. Called economic base theory, it depends on a division of the city's economy into two sectors, the export (or basic) sector and the local (or support) sector.[12] Exporters such as automobile and aircraft manufacturers, hotels, restaurants, service stations, department stores and recreation centers obtain income from customers outside the city. This export income then enters the local economy in the form of wages and salaries, purchases of materials, dividends, etc., and becomes income to other local citizens. But unless the economy is entirely self-sufficient, a portion of this circulating income leaks out of the local economy with each transaction in payment for other goods, supplies and services which are imported. With each round of expenditures, local incomes increase in a continuing but diminishing chain. The impact of the original export sale tends to decrease with each successive round of expenditures as leakages continue. The series of events following the initial injection of income is known as the "multiplier effect" and traces the indirect effects of the injection.

A crude estimate of this effect can be made by calculating the local and export employment (income figures would be better

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[12]*For details of economic base studies, see Charles M. Tiebout,* The Community Economic Base Study *(Washington: Committee for Economic Development, 1962), and Walter Isard,* Methods of Regional Analysis: an Introduction to Regional Science *(New York: John Wiley and Sons, Inc., 1960), chapter 6. Economic base multipliers have been replaced in recent years by more sophisticated, and more costly, input-output studies and can be justified ". . . only when crude, hurried research is required . . ." (ibid., p.221). The multiplier computed here is of the crude and hurried sort. More detailed work is in progress and will be included in the study of the economic impact of the Falcons. But a more sophisticated multiplier for the Atlanta area is not available and awaits adequate funding.*

Figure 2—The Multiplier Effect for Braves-Related Income in Atlanta

$9.25 M

$6.31 M $6.42 M

Out-
of-
town
fans $4.37 M $4.46 M

$3.10 M

$3.03 M

$2.15 M

$2.10 M

$2.94
Local
fans $2.05 M $1.46 M $1.49 M

$1.43 M $1.01 M $1.03 M

$1.00 M $0.70 M $0.72 M

$0.69 M $0.49 M

$0.48 M

$+ \ldots = \$30.54$ total

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | . . . |

Rounds of Spending
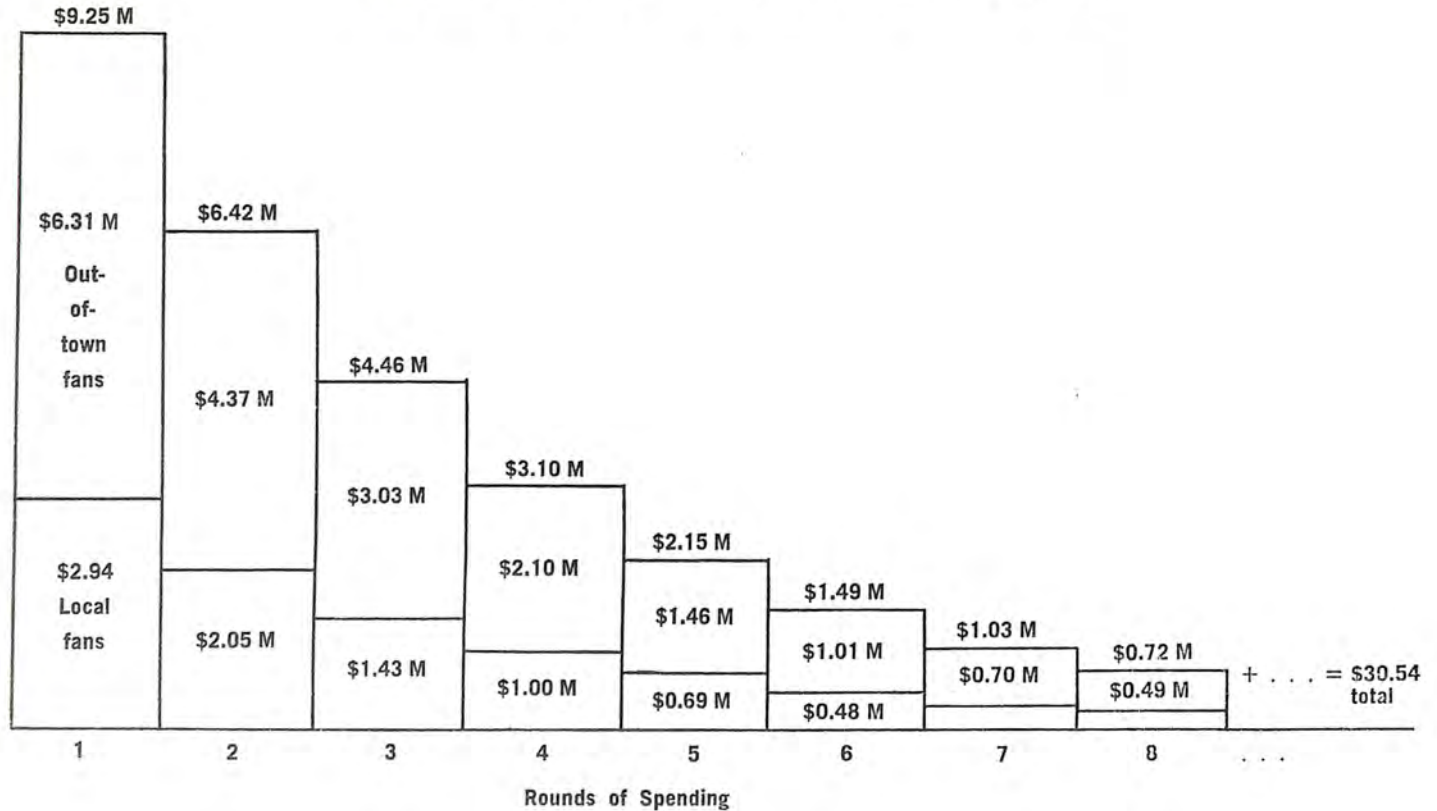
but are not available) in the city and using them to determine the proportions in which support and export activities tend to exist. Table 15 shows the proportion of Metropolitan Atlanta's employment in 1964 and in 1954 which may be considered export-oriented. The estimates are based on the assumption that employees of Atlanta industries which are concentrated here in heavier proportions than are employees in either Georgia or Atlanta are employed in the production of goods or services for export to state or national markets.[13]

In 1964 Atlanta relied heavily on the transportation equipment, wholesale trade, printing and publishing, and finance, insurance and real estate industries for its export income. Approximately 3 out of every 10 workers were employed in export production. In 1954 the primary metals and other durable industries were also prominent in the city's export base but have declined in importance. But the proportion of workers producing for export was about the same. With these data, the economic base multiplier is computed as follows:

$$\text{Multiplier, 1964} = \frac{\text{Total employment}}{\text{Basic employment}} = \frac{445.3}{131.9} = 3.4$$

$$\text{Multiplier, 1954} = \frac{\text{Total employment}}{\text{Basic employment}} = \frac{303.3}{88.5} = 3.4$$

$$\text{Change Multiplier, 1954-64} = \frac{\text{Change in total employment}}{\text{Change in basic employment}} = \frac{142.0}{43.4} = 3.3$$

If the multiplier ratio tends to remain constant (as it apparently has) and if it applies to income as well as employment, then a one unit increase in export activities will tend to increase total activities 3.3 times as successive rounds of expenditures are made and the Atlanta economy adjusts to accommodate the additional expenditures. This means that about 70 per cent of each dollar spent is retained within the economy to be recirculated, with 30 per cent immediately leaving the local area. Figure 2 illustrates this process.

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[13]*The computations are roughly based on a method described in Gerald E. Thompson, "An Investigation of the Local Employment Multiplier,"* Review of Economics and Statistics, *XLI (1959), pp. 61-7. For details, see section I of the appendix.*

Table 15: Estimates of Metropolitan Atlanta Employment Producing for Export, 1954 and 1964

(in thousands)

Industry	1954 Total employment	1954 Export employment	1964 Total employment	1964 Export employment
Contract construction	16.0	.32	29.3	7.56
Lumber	2.9	—	2.2	—
Furniture and fixtures	4.2	2.70	3.5	.88
Stone, clay, and glass products	1.0	—	3.8	—
Primary metal industries	2.7	2.37	2.6	.87
Fabricated metal products	2.5	.94	4.2	—
Machinery, except electrical	2.5	.31	3.9	.44
Transportation equipment	22.1	21.19	28.3	24.28
Other durables	3.7	2.16	5.1	.46
Food and kindred products	10.9	—	13.1	—
Textile mill products	8.3	1.84	6.1	—
Apparel and other textile products	7.4	—	8.0	—
Paper and allied products	3.0	—	5.9	.91
Printing and publishing	4.8	1.92	6.6	3.96
Chemicals and allied products	2.9	.29	3.5	—
Leather and leather products	.4	—	2.1	.84
Other nondurables	.2	—	1.0	—
Transportation and public utilities	32.0	12.99	41.4	18.26
Wholesale trade	81.1	22.46	48.2	34.37
Retail trade			69.3	4.85
Finance, insurance, and real estate	21.4	13.87	32.3	16.83
Service, miscellaneous, and mining	37.8	5.14	62.4	13.85
Federal government	35.5	—	21.2	3.54
State and local government			41.3	—
Total	303.3	88.50	445.3	131.90

The additional income brought into Atlanta by the Braves in 1966 has been estimated at $9,254,000. As this income is spent and respent, the total income accruing to citizens in the Metropolitan Atlanta area should approach 3.3 times this amount, or $30,538,000.[14]

[14]If only expenditures by out-of-town fans were included in the "new money" category, their expenditures of $6,311,000 would mean up to $20,826,000 in additional incomes for Atlantans.

VI / THE NONECONOMIC IMPACT OF THE BRAVES

WHILE this study is specifically devoted to an examination of the impact of the Braves on Atlanta in terms of measurable monetary outlays, it would be remiss if some of the noneconomic impact of the Braves were not included. The impact of the Braves in terms of public relations is perhaps more important than that measured in terms of dollars and cents.

In 1966 there were over 1,750 daily newspapers in the United States. If these papers reported scores for baseball games, then Atlanta was mentioned over 280,000 times during the course of the season.

The Braves TV Network, composed of 21 stations in the Southeast, telecasted 20 games during the season and 4 home games were carried on the NBC network. Further, 39 radio stations in the Southeast regularly carried Braves games. And as the Braves traveled to other parts of the nation, an undetermined number of stations broadcasted their games.

Braves personnel from both the front office and the playing field appeared on over 395 occasions as speakers at service clubs, church groups, athletic banquets, etc. The majority of these functions took place in the state of Georgia. In addition, many personal visits by players were made to hospitals, children's homes and other charitable institutions.

In February a Caravan of Braves personnel traveled throughout the Southeast. In each city, with the help of local people, a press luncheon, a sports night, and visits to children's and veterans' hospitals were conducted. Cities visited included: Nashville, Knoxville, and Chattanooga in Tennessee; Asheville, Greensboro, Charlotte, Salisbury, Durham, and Gastonia in North Carolina; Charleston, Columbia, Greenville, and Anderson in South Carolina; Birmingham, Mobile, and Montgomery in Alabama; Jacksonville, Florida; and Augusta, Savannah, Dalton, Athens, Columbus, Albany, and Rome in Georgia.

It is apparent that this aspect of the Braves' presence is important but cannot clearly be quantified.

APPENDICES

A. Questionnaire

Questions for Everyone

Do you follow the Braves on radio?
1-regularly, 2-occasionally, 3-seldom

Are you pleased with the starting time for this game? 1-yes, 2-should start earlier, 3-should start later

With whom did you come to the game? 1-yourself, 2-friends, 3-family, 4-organized group

How many are in your party?

How did you get to the stadium? 1-car, parked at stadium; 2-car to town, shuttle bus; 3-car to town, walked; 4-car to other, bus; 5-taxi; 6-charter bus; 7-busses only; 8-walked

Do you live within the greater Atlanta area (within a 15-mile radius of town)? 1-yes, 2-no

Questions for Locals

How far do you live from the stadium (in miles)? (00-less than one mile)

In what quadrant of the city do you live? 1-NE, 2-NW, 3-SE, 4-SW

Did you stop for food or some form of entertainment on the way to the stadium or do you expect to after the game? 1-yes, on way to game; 2-yes, after game; 3-yes on way to and after game; 4-no

If yes, can you give us some idea of how much you expect to spend, not including what you will spend at the stadium? 1-0-$5; 2-$5-$10; 3-$10-$15; 4-$15-$20; 5-$20 or more; 6-no estimate

How many games do you expect to see in total this season?

Questions for Out-of-Towners

What state are you from? 01-Georgia, 02-Alabama; 03-Tennessee, 04-South Carolina, 05-North Carolina, 06-Florida. Other states—see Instructions.

How far do you live from Atlanta (miles)? 0001-less than 50, 0002-50-100, 0003-100-150, 0004-150-200, 0005-200-300. Over 300 enter actual distance.

How did you travel to Atlanta? 1-car, 2-airplane, 3-bus, 4-train, 5-other

Are you in Atlanta primarily to 1-see a ball game, 2-vacation, 3-passing through, 4-business. 5-convention, 6-shopping, 7-visiting friends, 8-other

Do you plan to take advantage of any other forms of entertainment while in the Atlanta area? 1-yes, 2-no

If yes, can you estimate your anticipated expenditures? 1-0-5, 2-$5-$10, 3-$10-$15, 4-$15-$20, 5-$20-$50, 6-$50 or more, 7-no estimate

Do you intend to stay overnight? 1-yes, 2-no

If yes, how many nights?

If yes, are you staying in 1-downtown hotel or motel; 2-suburban hotel or motel; 3-with friends or relatives; 4-other

Do you think you'll need to buy gas and oil while in town: 1-yes, 2-no

If yes, can you estimate how much you will spend? 1-0-$3, 2-$3-$6, 3-$6-$9, 4-$9-$15, 5-$15 and over, 6-no estimate

How many games do you expect to see this trip? (00-no estimate)

How many games in total do you expect to see this season? (00-no estimate)

B. Computer Print-Out of Survey Results

1. Out-of-town fans are from the following states:

Georgia	262	43%
Florida	32	5%
Alabama	80	13%
Tennessee	66	11%
South Carolina	53	9%
North Carolina	53	9%
Other	63	10%

2. Frequency with which fans follow Braves on radio:

	Reg.	Occ.	Never
Out-of-town fans	59%	22%	19%
Local fans	82%	12%	6%
All fans	73%	16%	11%

3. Starting time:

	Night Game		Day Game		Sun	DH	Sat	Ngt.
Starting time okay								
Local fans	460	88%	195	92%	65	88%	55	89%
Out-of-town fans	298	93%	199	97%	34	92%	44	98%
Should start earlier								
Local fans	55	11%	9	4%	5	7%	7	11%
Out-of-town fans	22	7%	3	1%	2	5%	1	2%
Should start later								
Local fans	8	2%	0	0%	4	5%	0	0%
Out-of-town fans	2	1%	3	1%	1	3%	0	0%

4. Group composition: Fans came to game with—

	Self		Friends		Family		Org. Gp.	
Out-of-town fans	42	7%	198	33%	335	55%	34	6%
Local fans	138	16%	260	30%	453	52%	19	2%

5. Modes of transportation:

Drove to stadium	81%
Drove car to town and took bus	7%
Drove car to town and walked	1%
Drove car to other and took bus	1%
Took taxi	2%
Charter bus	2%
Took bus only	4%
Walked	2%

6. Distances local fans live from stadium:

Less than one mile	16	2%
One mile	13	1%
Two miles	50	6%
Three miles	74	9%
Four miles	57	7%
Five miles	75	9%
Six miles	57	7%
Seven miles	47	5%
Eight miles	71	8%
Nine miles	11	1%
Ten miles	128	15%
Eleven miles	14	2%
Twelve miles	81	9%
Thirteen miles	20	2%
Fourteen miles	10	1%
Fifteen miles	146	17%

7. Draw from quadrants of the city:

Northeast	40%
Northwest	20%
Southeast	19%
Southwest	22%

8. Number of games local fans expect to see:

Less than 3	33	4%
3 to 5	86	10%
6 to 10	168	19%
11 to 15	131	15%
16 to 25	188	22%
26 to 40	125	14%
More than 40	139	16%

(Average number of games a local fan expects to see is 24.)

9. Distances out-of-town fans traveled primarily to see a game:

Less than 50 miles	74	16%
50 to 99 miles	99	21%
100 to 149 miles	87	18%
150 to 199 miles	57	12%
200 to 300 miles	74	16%
More than 300 miles	58	12%

(Average distance traveled by an out-of-town fan primarily to see a game is 161 miles.)

10. Out-of-town fans interviewed were in Atlanta for the following reasons:

To see a game	476	78%
On vacation	38	6%
Passing through	4	1%
On business	41	7%
For a convention	5	1%
On a shopping trip	1	0%
Visiting friends	22	4%
Other	22	4%

11. Out-of-town fans in Atlanta primarily to see a game traveled by the following means to Atlanta:

Car	440	92%
Bus	24	5%
Airplane	6	1%
Train	0	0%
Other	6	1%

12. Of the out-of-town fans in Atlanta primarily to see a game, 253 or 53% spent an average of $7.22 on gas and oil. This accounted for a party of average size = 4.

A rough breakdown of these expenditures is as follows:

$0 to $3	11	4%
$3 to $6	113	46%
$6 to $9	68	28%
$9 to $15	28	11%
$15 and over	26	11%

13. Number of games out-of-town fans primarily in Atlanta to see a game expect to see:

Games	This Trip		For Season	
1	297	62%	40	8%
2	95	20%	39	8%
3	50	11%	41	9%
4-7	31	7%	177	37%
8-15	1	0%	115	24%
16-25	1	0%	42	9%
26-50	1	0%	15	3%
Over 50	0	0%	7	1%

14. Number of games out-of-town fans not primarily in Atlanta to see a game expect to see:

Games	This Trip		For Season	
1	69	52%	28	21%
2	27	20%	25	19%
3	12	9%	11	8%
4-7	23	17%	48	36%
8-15	2	2%	16	12%
16-25	0	0%	2	2%
26-50	0	0%	1	1%
Over 50	0	0%	2	2%

15. Makeup of attendance at games:

		Out-of-Town Fans in Atlanta	
Game	Local Fans	To See Game	For Other Reason
Week	62%	27%	11%
Weekend	55%	39%	6%

16. Per cent of out-of-town fans in Atlanta primarily to see a game, classified by lodging preference, length of stay and section of stadium

Stadium Section	Length of stay (in nights)								Total	
	One		Two		Three		More			
DOWNTOWN HOTEL OR MOTEL										
1	0	0%	0	0%	1	11%	1	11%	2	22%
2	13	38%	6	18%	3	9%	0	0%	22	65%
3	7	19%	5	14%	1	3%	1	3%	14	39%
4	26	28%	13	14%	5	5%	5	5%	49	53%
5	1	50%	1	50%	0	0%	0	0%	2	100%
TOTAL	47	27%	25	14%	10	6%	7	4%	89	51%
SUBURBAN HOTEL OR MOTEL										
1	1	11%	1	11%	0	0%	0	0%	2	22%
2	1	3%	0	0%	0	0%	0	0%	1	3%
3	2	6%	0	0%	0	0%	0	0%	2	6%
4	3	3%	0	0%	1	1%	1	1%	5	5%
5	0	0%	0	0%	0	0%	0	0%	0	0%
TOTAL	7	4%	0	0%	0	0%	0	0%	10	6%

HOME OF FRIEND OR RELATIVE

1	1	11%	2	22%	0	0%	2	22%	5	56%
2	7	21%	2	6%	0	0%	1	3%	10	29%
3	7	19%	5	14%	2	6%	3	8%	17	47%
4	20	22%	11	12%	6	6%	2	2%	39	42%
5	0	0%	0	0%	0	0%	0	0%	0	0%
TOTAL	35	20%	20	11%	8	5%	8	5%	71	41%

ELSEWHERE

1	0	0%	0	0%	0	0%	0	0%	0	0%
2	0	0%	0	0%	0	0%	1	3%	1	3%
3	3	8%	0	0%	0	0%	0	0%	3	8%
4	0	0%	0	0%	0	0%	0	0%	0	0%
5	0	0%	0	0%	0	0%	0	0%	0	0%
TOTAL	3	2%	0	0%	0	0%	1	1%	4	2%

(302 or 63 per cent of those in Atlanta primarily to see a game did not stay overnight.)

17. Average number of persons in parties interviewed

	Friends	Family	Organized Group
Local fans	3.50	3.43	27.63
Out-of-town fans here to see game	6.88	3.93	33.39
Out-of-town fans here to see game and staying overnight	5.50	3.96	32.25
Out-of-town fans here for other reasons	4.75	3.98	56.50

(Of those who came to see a game and stayed overnight, 7% were by themselves.)

18. Overnight stays in connection with a game:

37% of the people here to see a game stayed overnight. The average length of time stayed was 2 nights. This accounted for a party of average size = 5.

19. Food and entertainment expenditures of local fans:

30% of the local fans spent money on the way to or from the game on food and entertainment. The average amount spent was $5.25. 15% of these people were by themselves and spent an average of $3.63. 47% of these people were with family and spent an average of $5.41. This accounted for a party of average size = 3. 37% of these people were with friends or a group and spent an average of $5.73. This accounted for a party of average size = 2.

20. Food and entertainment expenditures of out-of-town fans:

37% of the out-of-town fans here to see a game spent money on other entertainment in the Atlanta area. The average amount spent was $34.32. 3% of these people were by themselves and spent an average of $13.75. 55% of thse people were with family and spent an average of $35.97. This accounted for a party of average size = 4. 41% of these people were with friends or a group and spent an average of $33.84. This accounted for a party of average size = 2.

21. Standard error of the mean for selected questions:

GENERAL QUESTION	Mean or Proportion	Standard Error of the mean
3. Starting time okay	.91	.007
6. Distance traveled, local fan	8.37	.191
8. Number of games, local fan	23.87	.682
9. Distance, out-of-town fan	161.00	5.620
12. Stopped for gas and oil	.53	.021
gas and oil expenditure	7.22	.276
13. Number of games this trip	1.63	.074
14. Number of games for season, out-of-town fan	7.92	.411
15. Local residence	.59	.013
17. Number in party	4.77	.245
18. Stayed overnight [all fans]	.47	.021
number of nights	2.97	.258
19. Stopped for entertainment, local fan	.30	.016
entertainment expenditure, local fan	5.25	.312
20. Stopped for entertainment, out-of-town fan	.36	.020
entertainment expenditure, out-of-town fan	34.32	3.367

C. Interview Schedule and Attendance Summaries

1. *Interview schedule*

Date	Day	Opposing team	Attendance
May 22	Sunday	Chicago	24,302
May 31	Tuesday	Los Angeles	27,310
June 4	Saturday evening	St. Louis	11,298
June 15	Wednesday	New York	14,842
June 16	Thursday	New York	15,514
June 19	Sunday	Pittsburgh	17,758
June 26	Sunday	Los Angeles	51,632
June 27	Monday	Chicago	10,517
July 15	Friday	Houston	(Rain)[1]
July 16	Saturday afternoon	Houston	14,208
July 17	Sunday	Cincinnati	37,782
July 26	Tuesday	St. Louis	18,101
July 29	Friday	San Francisco	31,716
July 30	Saturday afternoon	San Francisco	30,365
Aug. 10	Wednesday	Los Angeles	28,824
Aug. 12	Friday	Philadelphia	(Rain)[2]

1. Game played September 2. Attendance: 9,145.

2. Game played August 13. Attendance: 27,770.

36

2. *Average game attendance, by month*

Month	Average att.
April	25,464
May	17,077
June	21,204
July	25,167
August	23,503
September	16,242

3. *Attendance at Braves games, by opposing team*

	Attendance	
Opp. team	In Atlanta	On road
Chicago (10th)	99,162	57,739
Cincinnati (7th)	110,999	58,769
Houston (8th)	120,181	209,818
Los Angeles (1st)	332,483	263,225
New York (9th)	160,897	211,705
Philadelphia (4th)	118,917	119,908
Pittsburgh (3rd)	200,081	107,679
St. Louis (6th)	124,606	197,034
San Francisco (2nd)	272,475	172,491
Total	1,539,801	1,398,368

4. *Attendance at home games for National League teams, 1966*

City	Att.	Met. Area pop., 1960
Los Angeles	2,617,029	6,038,771
New York	1,932,693	10,694,633
Houston	1,872,108	1,243,158
St. Louis	1,712,980	2,104,669
San Francisco	1,657,192	2,648,762
Atlanta	1,539,801	1,017,188
Pittsburgh	1,196,618	2,405,435
Philadelphia	1,108,201	4,342,897
Cincinnati	742,958	1,268,479
Chicago	635,891	6,220,913

5. *Miscellaneous*

Season ticket sales: 3,000

Children's tickets: 41,716

Passes (press, clergy, teachers, police, and other special nights): 105,665

D. Estimation of Number of Different Persons Attending Games and Average Number of Games Seen

To begin, several summary figures are computed based on survey results:

Total number of Atlantans at games = .588 (1,539,801) = 905,403

Total out-of-town fans at games = .412(1,539,801) = 634,398

Out-of-town fans in Atlanta to see game = .78(634,398) = 494,830

Average attendance by Atlantans = 905,403/78 = 11,608

Average attendance by out-of-town fans = 634,398/78 = 8,133

Calculation of the number of different persons seeing a game over the season is best explained with an example. Suppose a team plays before 10,000 fans at each of 4 games and 30 per cent of those attending see all 4 games, 50 per cent see 2 games, and 20 per cent see just 1 game. Then 3,000 hardcore fans will see each game, 10,000 different fans will see 2 games, and 8,000 will see only 1 game, for a total of 21,000 different fans. A pictorial representation is as follows:

Per cent of attendance new at each game

100				
80	2,000	2,000	2,000	2,000
	10,000		10,000	
30				
	3,000			
0				
	Game I	Game II	Game III	Game IV
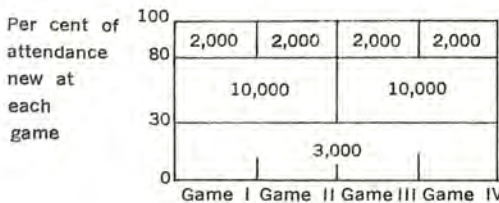
Thus, the number of different fans attending games can be computed as average attendance times the sum of the per cent of attendance in each category multiplied by the number of games at which the category was new.

Using this method, proportions from section A, and midpoints for each of the attendance categories, the number of different Atlantans and out-of-town fans attending games can be estimated:

Number of different Atlantans attending a game = 107,561 [= 11,608[.04 (78) + .10(19.5) + .19(9.75) + .15(6) + .22(3.9) + .14(2.36) + .16(1.60)]]

Number of different out-of-town fans attending a game = 174,143 [= 8.133 [.11(78) + .10(39) + .09(26) + .37 (13) + .22(6.5) + .07(3.9) + .03(2.1) + .01(1.6)]]

Number of different Georgia (other than Atlanta) fans = 74,881
[= .43(174,143)]

We should note that these estimates are based upon the plans of fans. If the fans were optimistic in their responses to our questions, then the numbers of different persons attending games should be greater than our estimates.

The number of games seen by the typical out-of-town fan is approximated by the weighted average of their expectations as 8.3 games [= .11(1) + .09(3) +.37(6) + .22(11) + .07(20) + .03(38) + .01(50)].

The number of games seen by the typical Atlanta fan is estimated in section B.

E. Confidence Limits of Sample

The confidence intervals for statistics in this study are based on standard statistical procedures. We assume that the amount of bias in the sample is so small as to have a negligible effect on the precision of the sample and that the sampled population is distributed about its arithmetic mean in an approximately normal manner. The assumption of normality is safe where proportions are involved, since the binomial distribution approaches a normal form as sample size increases. For items such as distance traveled or entertainment expenditures, the distributions may be skewed, but this deviation from normality should not seriously affect our results.

In the case of proportions, the standard error of the proportion is computed as $s_p = \sqrt{\frac{pq}{N}}$, where p is the proportion of items in the sample possessing the characteristic in question, q is the proportion not possessing the characteristic, and N is the number of items in the sample.

In the case of variables which may take on several values, the standard error of the sample mean is computed as $s_{\bar{x}} = \sqrt{\frac{V}{N}}$, where V is the sample variance. For continuous variables, V = $(\Sigma x^2 - N\bar{x}^2)/(N - 1)$; for grouped data, V = $[\Sigma(x^2 f) - N\bar{x}^2]/(N - 1)$, where x is the class midpoint, f is the number of observations in each class, and $\bar{x}$ is a simple weighted mean. When a class interval is not closed, we have arbitrarily assigned a midpoint. Thus, we have assumed that expenditures for gas and oil in excess of $15 average $17.50, that entertainment expenditures by local fans in excess of $20 average $35, and that entertainment expenditures by out-of-town fans in excess of $50 average $60. For distances traveled by out-of-town fans in excess of 300 miles, the actual mean for the category is used.

The confidence limits for a confidence coefficient of 95 per cent are the sample mean plus or minus 1.96 times the standard error of the sample mean. These limits are reported in Table 1 of the text and are interpreted

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to mean that, for a large number of samples, the chances are that the true mean will be within the stated interval 95 per cent of the time. For example, the survey indicates that 59 per cent of the fans are Atlantans, but if a large number of similar samples had been taken, we would expect their conclusions to range between 56 and 62 per cent for 95 per cent of the samples.

References:

Ferber, Robert. *Statistical Techniques in Market Research.* New York: McGraw-Hill Book Co., 1949, chapter 6.

Tintner, Gerhard. *Mathematics and Statistics for Economists.* New York: Holt, Rinehart and Winston, Inc., 1953, pp. 245-51.

F. Expenditures of Local Fans

1. *Estimate of ticket purchases*[3]

In the following, the first figure is the per cent of those in a section who were Atlantans, the second is the per cent of total attendance sitting in the section, the third is total attendance (excluding children's admissions, which are listed separately), and the fourth is the price of a seat in the section.

Field level:	52 x	34.3 x	1,539,801 x $3.50 =		$ 961,236
Loge level:	50 x	2.4 x	1,539,801 x $3.50 =		64,672
Upper level:	60 x	36.2 x	1,539,801 x $2.00 =		668,455
Pavilion:	68 x	7.1 x	1,539,801 x $2.00 =		148,683
General admission:	69 x	21.0 x	1,539,801 x $1.00 =		223,117
Children:	39 x 100. x		41,716 x $0.50 =		12,360
Total expenditure by local fans on tickets =					$2,078,523

2. *Food and entertainment*

271,621, or 30 per cent of local attendance, spent money on food and entertainment while traveling to or from a game. Using this and the proportions reported in the text, the following calculations show expenditures on food and entertainment by local fans:

Individuals:	.045 x 271,621 x $3.63 =	$ 44,369
Families:	.141 x 271,621 x $5.41 / 3 =	68,937
Friends:	.114 x 271,621 x $5.73 / 2 =	89,024
Total food and entertainment expenditure by local fans		$202,330

3. *Concessions*

The estimate of $1.00 per person in concession expenditures used in the text was provided by Mr. Ray Carr of Automatic Retailers of America.

4. *Gasoline, parking and other transportation*

According to the survey, 89 per cent of local fans either drove to the Stadium or parked downtown and arrived at the game by foot, bus or taxi. Further, local fans lived an average of 8.37 miles from the Stadium and the average number of people per car was 3. This resulted in 2,248,206 driven

3. We asked the Atlanta Braves staff to provide only summary expenditure figures for our use and avoided requests for revenue figures which might be of confidential nature.

miles [.89 x (905,403 local attendance / 3 fans per car) x 8.37 miles per car] in direct connection with the Braves.

Mr. John E. Hodges, Director, Department of Statistics, American Petroleum Institute, provided the following statistics:[4]

Average gasoline consumption (1964): 14.34 miles per gallon

Premium-grade sales in Atlanta as proportion of total sales: .54

Gasoline prices in Atlanta area (1965): premium, $0.379 per gallon; regular, $0.339, and sub-regular, $0.319.

On the basis of averages provided by the regional offices of several oil companies, we have assumed that 30 per cent of local sales were of regular grade and 16 per cent of sub-regular grade. Gasoline expenditures for local fans are computed as follows:

Premium grade:	.54 x $0.379 x 2,248,806 / 14.34 =	$32,095
Regular grade:	.30 x $0.339 x 2,248,806 / 14.34 =	15,949
Sub-regular:	.16 x $0.319 x 2,248,806 / 14.34 =	8,004
Total gasoline expenditure by local fans		$56,048

With the average taxi fare in Atlanta set at $0.50 for the first ¾ mile and $0.10 for each additional ¼ mile, and with the average local fan living 8 miles from the Stadium, we have estimated his round trip taxi fare at $6.80. If 2 per cent of local fans were transported by taxi in parties of average size of 3.5, taxi expenditures in connection with games should equal $35,325 [= .02 x 905,403 x $6.80 / 3.5].

12 per cent of local fans used a bus at some point in their journey to the Stadium. With one-way fare at $0.25, expenditures by local fans for bus transportation should amount to $54,335 [= .12 x 905,403 x $0.50].

89 per cent of fans had to pay for parking facilities either downtown or at the Stadium. Assuming a uniform rate of $0.50 per car with an average of 3.5 fans per car, parking fees should total $115,239 [= .89 x 905,403 x $0.50 / 3.5].

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4. In a personal letter dated August 12, 1966.

G. Expenditures of Out-of-Town Fans

1. Estimate of ticket purchases

As in section F.1, ticket purchases of out-of-town fans can be estimated as follows:

Field level:	.48 x .345 x 1,539,801 x $3.50 =	$ 887,295
Loge level:	.50 x .024 x 1,539,801 x $3.50 =	64,672
Upper level:	.40 x .362 x 1,539,801 x $2.00 =	445,949
Pavilion:	.32 x .071 x 1,539,801 x $2.00 =	69,969
General admission:	.31 x .21 x 1,539,801 x $1.00 =	100,241
Children:	.41 x 1.00 x 1,539,801 x $0.50 =	8,551
Total expenditure by out-of-town fans for tickets		= $1,576,676

2. Food and entertainment

183,087, or 37 per cent of out-of-town attendance, spent money on food and entertainment. Proceeding as in section F.2, their expenditures are estimated as follows:

Individuals:	.04 x 183,087 x $13.75 =	$ 100,698
Families:	.55 x 183,087 x $35.97 / 4 =	905,526
Friends:	.41 x 183,087 x $33.84 / 2 =	1,270,112
Total food and entertainment expenditure by out-of-town fans		$2,276,336

3. Concessions

(As in section F.3)

4. Lodging

Several assumptions are necessary to estimate lodging expenditures of out-of-town fans. Since the average size of parties staying overnight was 5, we assume that each party occupied two double rooms and one single. On the basis of several inquiries of hotels and motels which are members of the Georgia Hotel-Motel Association, we assume that the average rate for a double room in the downtown area is $13.00 and in a suburban area is $11.00, and that the average rate for a single room is $10.00 in the downtown area and $8.50 in a suburban area. Thus for a party of five, the cost of lodging for two days (average length of stay) is $72.00 in the downtown area and $61.00 in a suburban area. Estimates of expenditures are as follows:

Downtown:	.51 x 183,087 x $72.00 / 5 =	$1,344,592
Suburban:	.06 x 183,087 x $61.00 / 5 =	134,020
Total lodging expenditure		$1,478,612

5. Gasoline, parking and other transportation

With 53 per cent of out-of-town attendance spending for gasoline a total of $7.22 for a party of four, their total expenditure amounts to $473,379 [= .53 x 494,830 x $7.22 / 4].

Using the same percentages as in the computation of the expenditures of local fans for bus and taxi service (separate percentages for out-of-town fans were not calculated), these expenditures for out-of-town fans are computed, along with parking costs, as follows:

Bus:	.12 x 634,398 x $0.50	=	$38,064
Taxi:	.02 x 634,398 x $2.80 / 4	=	$ 8,882
Parking:	.89 x 634,398 x $0.50 / 4.5	=	$62,735

(The average taxi fare from a downtown hotel or motel to the Stadium is assumed to be $1.40 each way)

H. Expenditures of Baseball Teams

1. The Atlanta Braves

According to a statement provided by the Atlanta Braves, their expenditures in Atlanta over the baseball season will exceed $2,771,000. This total includes salaries and wages, utilities, local sales taxes, public relations, supplies and equipment, Stadium Club, and Stadium rental. Since the details are not necessary for a study of this level, they were not requested.

2. Visiting teams

Estimates by members of the Braves staff indicate that visiting teams should spend the following in Atlanta:

Hotel (26 rooms/day at $16/day for 75 days)	= $ 31,200
Meals (40 men/day at $12/day for 75 days)	= 36,000
Miscellaneous personal expenditures (40 men/day at $10/day for 75 days)	= 30,000
Transportation for baggage, equipment and team ($500/trip for 27 trips)	= 13,500
Miscellaneous entertainment expenditures ($200/trip for 27 trips)	= 5,400
Tips for clubhouse personnel ($400/trip for 27 trips)	= 10,800
Total expenditures in Atlanta by visiting teams	= $126,900

3. Visiting scouts

Similar estimates for visiting scouts are as follows:

Hotel (5 rooms/day at $14/day for 75 days)	= $ 5,250
Meals and entertainment (5 scouts at $20/day for 75 days)	= 7,500
Miscellaneous personal expenditures (5 scouts at $10/day for 75 days)	= 3,750
Total expenditures in Atlanta by visiting scouts	= $16,500

I. Calculation of the Economic Base Multiplier

The method used to compute the economic base multiplier for this study roughly corresponds to the method described in G. E. Thompson, "An Investigation of the Local Employment Multiplier," *Review of Economics and Statistics*, vol. XLI (1959), pp. 61-7. The method is also outlined in the *Monthly Review*, Federal Reserve Bank of Kansas City, March, 1960, and may be called the "primary market area" method. We describe below the steps involved in constructing Table 15.

1. Employment in 1954 and 1964 in each industry for Atlanta, Georgia less Atlanta, and the continental United States less Atlanta is obtained from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings Statistics for States and Areas, 1939-65*, BLS Bulletin No. 1370-3, and *Employment and Earnings Statistics for the United States, 1909-65*, BLS Bulletin No. 1312-3.

2. Location quotients for each of the industries are computed as follows:

$$\text{Location quotient} = \frac{\text{Industry employment as per cent of total in Atlanta}}{\text{Industry employment as per cent of total in primary market area candidate}}$$

The primary market area candidate is defined first for Georgia less Atlanta and then for the U.S. minus Atlanta.

3. Location quotients are compared. If the location quotient for either primary market area candidate is greater than one, the industry is considered to have some export employment and the area with the largest location quotient is designated the benchmark economy.

4. The specialization ratio for each export industry is then computed using the location quotient for the benchmark economy as:

Specialization ratio = 1 - 1/location quotient.

This ratio indicates the proportion of employment in the industry in Atlanta producing for export.

5. Employment in each export industry in Atlanta is multiplied by its specialization ratio and summed. The resulting figure is export employment in Atlanta.

As indicated in the text, this method yields an estimate of the economic base multiplier for Atlanta of 3.3. Other variations on this method show different results. One variation (used by Thompson) computes the location quotients with the benchmark economies including the subject areas (in this case, simply Georgia and the U.S.). This approach leads to a multiplier of 5.03 for Atlanta and means that 80 per cent of each dollar spent would remain in the area for recirculation. Another variation uses the United States as the benchmark economy in each case, and results in a multiplier of 4.2. In this case the propensity to spend locally would be 76 per cent.

But the primary market area approach, with a propensity to spend locally of less than 70 per cent, not only appears to be the most appropriate of this techniques—it also yields a multiplier in keeping with estimates for other cities. Thus, quoting from various sources, Isard and Czamanski report the following multipliers as typical of economic base studies: [5]

City	Year	Multiplier
New York	1944	3.2
Chicago	1950	2.99
Detroit	1950	3.16
Pittsburgh	1950	3.55
New York	1950	3.91
San Francisco	1950	3.93
Cleveland	1950	3.97
Boston	1950	4.16
Los Angeles	1950	4.18
Baltimore	1950	4.35
St. Louis	1950	4.89
Philadelphia	1950	5.47
Wichita	1952	2.60
Los Angeles	1961	2.80
Wilmington	1963	2.50

While the above multipliers are taken from a variety of sources and may be computed in completely different ways from ours, they still indicate reasonable limits for our conclusions.

For a discussion of the conceptual basis, application, limitations and criticisms of the economic base multipliers, the interested reader is referred to Charles M. Tiebout, *The Community Economic Base Study* (Washington: Committee for Economic Development, 1962) and Walter Isard, *Methods of Regional Analysis: an Introduction to Regional Science* (New York: John Wiley and Sons, Inc., 1960).

5. Walter Isard and Stanislaw Czamanski, "Techniques for Estimating Local and Regional Multiplier Effects of Changes in the Level of Major Governmental Programs," *Peace Research Society, Papers*, vol. III (1965), p. 22.