More on Multipliers in Evaluating the Economic Impact of Movies

The North Carolina Film Office no doubt had the best of intentions when it began applying a generic $3 multiplier to dollars spent on movie production originating outside North Carolina. Office director Bill Arnold wanted to get across that films made here had a greater economic impact than just the actual dollars spent.

Thus, Arnold began counting $3 for every $1 dollar actually spent by Hollywood production companies in North Carolina. Arnold says when the Film Office was established in 1980, a Department of Commerce Survey showed the majority of states employed a multiplier of three to determine estimated economic impact of filmmaking.

Studies on *tourism* conducted for the N.C. Department of Commerce by a Tennessee economist named Lewis Copeland in 1977, 1978, and 1979 supported the use of a multiplier of three, he says. Those studies found that every out-of-state dollar spent by visitors, whether traveling for business or pleasure, generated the expenditure of two additional dollars.

Multipliers are a widely used tool for estimating the potential economic impact of anything from minor league baseball franchises to convention centers, so the fact that Arnold employs a multiplier is not unusual.[1] But the multiplier was not based on a study of the

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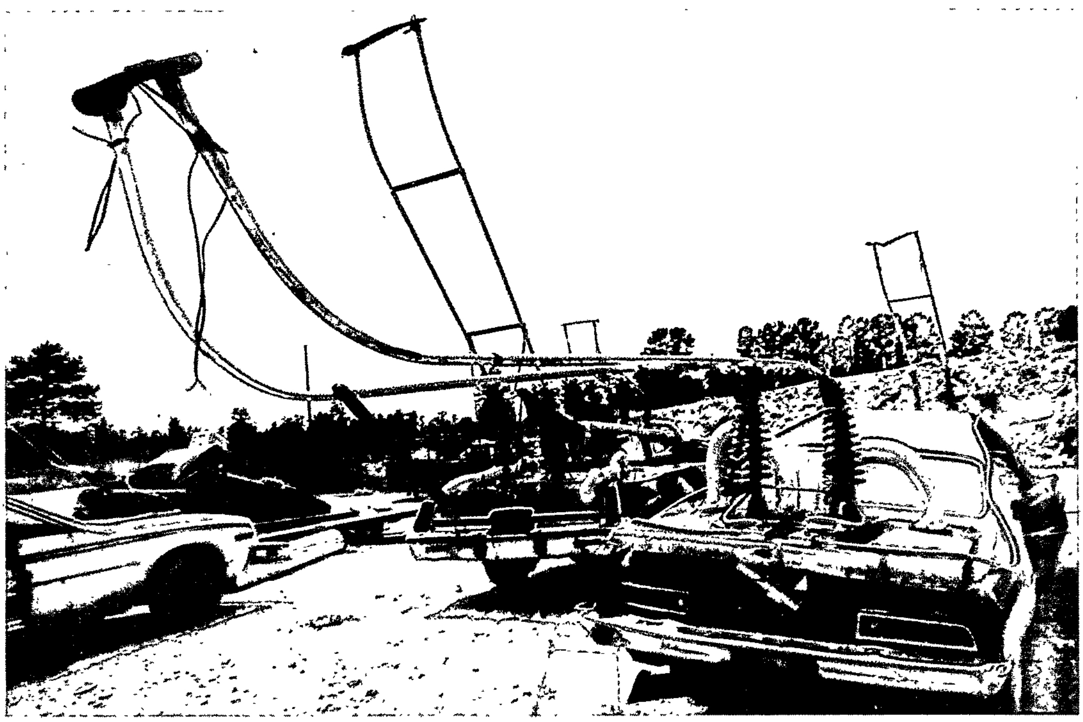
The movie business created a market for these old cars, which played a role in "Super Mario Brothers" in Wilmington.



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Hollywood royalty Lauren Bacall on the scene of "Painting Churches" in Raleigh's Oakwood neighborhood.

motion picture industry in North Carolina, and the Film Office has gotten fairly casual about informing the public of its use. The result is that the Film Office's $2.9 billion estimate of the motion picture industry's contribution to the North Carolina economy (through Dec. 31, 1992) has slipped into circulation as though it were an estimate of actual spending.

The real figure is little more than a third that much, but the multiplier-inflated figures may have helped boost the state's standing in national rankings of motion picture production.[2] And Commerce Department officials have used the higher figure to claim a whopping return on the investment of state dollars in the Film Office budget—as high as 2,000-to-1 in one news release.[3]

At first, the Department of Commerce would publicize both actual spending and economic impact using the $3 multiplier. But over the years, the real number got lost in the shuffle. In a news release reporting 1991 figures, for example, the Film Office touts "$202.5 million total estimated expenditures from all production...."[4] The release never mentions the multiplier.

The same holds true for the release covering film industry revenue in 1990, which announces in its lead paragraph that "52 major movie and TV projects and millions of dollars in commercial production pumped an estimated all-time record high $426 million directly into the state's economy in 1990."[5] There is no indication in the three-page release that the $426 million is anything other than an estimate of real spending, nor is any distinction made between actual spending estimates and economic impact for releases covering 1989 or 1988.

A release covering 1987 claims $384.1 million in economic impact. While this release also fails to mention the multiplier, it does include a figure of $128 million in "total direct spending" for filmmaking in North Carolina.[6] This figure times three equals the $384.1 million in claimed economic impact.

From 1988 through 1992, however, news releases touting the film industry's North Carolina performance failed to acknowledge the use of a multiplier. A March 1987 release covering the 1986 production year prominently mentions the multiplier and explains how the Film Office prepares its spending estimates. "An economic impact multiplier of three is used to estimate what economists refer to as the 'ripple effect' of film spending," reads the release. "For direct spending of $88,835,000, the estimated economic impact is $255.6 million."

The release says the multiplier is "comparable to those used by other states." It adds that estimates of actual spending are developed "using a direct spending formula generally accepted by most state film offices, which indicates that most films shot on location spend approximately a third of their production budget in the vicinity."[7]

This sounds simple enough, but Arnold says estimating *actual* spending upon which to apply the multiplier is a difficult task. The Film Office tries to isolate the production portion of a motion picture's budget and uses a third of that total as the amount spent in North Carolina.

Production figures are known in industry jargon as "below-the-line" costs. There are also "above-the-line" costs, such as salaries for high-dollar actors who can guarantee a big take at the box office. "They don't tell you above- and below-the-line costs," says Arnold. "They only give you one figure, and sometimes they lie about that."

Producers hoping to woo a community for a location shoot may talk up their project as a big-budget film. On the other hand, if they worry about local merchants and suppliers jacking up prices, they may down-play the size of a movie's production budget. That, says Arnold, makes the process of estimating the share of a production budget that gets spent in North Carolina "very dicey," and it calls into question the Film Office estimates of actual spending.

One might also question the *size* of the multiplier the Film Office applies to these estimates. The Bureau of Economic Analysis in the U.S. Department of Commerce says the multiplier it has developed *for the film industry in North Carolina* is 1.662. Bureau Economist Carmen Pigler says the agency's industry-specific multipliers are developed by applying a mathematical model to the national input-output table in order to adjust for regional differences in earnings.[8] Pigler describes the table as an accounting framework that incorporates data from 600 U.S. industries on the commodities these industries purchase to produce output.

There are other ways of looking at the multiplier effect, Pigler says, but they are not cumulative. An example is the *employment multiplier.* For each $1 million spent on movie production in North Carolina, 34.8 jobs are created, says Pigler. A variation on this theme is the *direct employment multiplier.* For every two people employed directly in the movie business, a third job is created in the local economy. There is also the *earnings multiplier.* A dollar spent by a worker employed in movie production generates 91 cents in additional earnings.

"Each one of the multipliers I gave you is a different way of looking at what is going on," says Pigler. "It's not a cumulative effect." To maintain the multiplier effect, Pigler says, the spending must be constant. "It's only for as long as that injection into the economy lasts," she says. "It's easier to see in Los Angeles where it's happening all the time, but in North Carolina, it only lasts a couple of months at a time." California, with its more developed infrastructure and constant stream of film projects, has a multiplier of 2.580, says Pigler. In New York, another state with more developed infrastructure, Pigler says the multiplier is 2.354. New York City uses a multiplier of 2.3, according to its Film Office.

Arnold, however, says the Bureau's multiplier of 1.662 for North Carolina is "inconsistent with the actual level of filmmaking activity and investment in North Carolina." He says a substantial amount of infrastructure has been developed in the state to support filmmaking, and the industry has been built entirely on generated spending, rather than direct production spending.

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Arnold wonders whether all of this has been taken into account. "It is not clear what sources were used by the Bureau of Economic Analysis to determine its computations on North Carolina filmmaking activity," says Arnold. "There has been no communication with the N.C. Film Office, or, as far as can be ascertained, with any element of the state's industry."

Arnold also takes issue with Pigler's statement that film activity in North Carolina "only lasts a couple of months at a time." He says this comment reveals "considerable unfamiliarity with the level of filmmaking in the state."

"North Carolina has averaged more than 18 features a year since 1985, as well as hundreds of yearly television programs and commercial shoots," Arnold says. "The average length of a feature production can extend from 10 weeks to three months. Some last considerably longer. Filmmaking has occurred in 54 of the state's 100 counties and has created more than 70,000 short-term jobs for North Carolinians, by Film Office estimates."

Pigler says the Bureau's multipliers are "very widely accepted," but that doesn't mean the Film Office multiplier is wrong. "I don't know what they based their multiplier on, so I don't know whether it's right or wrong," she says. "You can't compare multipliers unless you use the same methodology."

The Bureau's multiplier, Pigler says, is based on the state's 1982 industrial structure for filmmaking. The state's infrastructure for filmmaking has developed considerably since then, but most of the work of finishing a film still occurs elsewhere. That means there is leakage of economic impact to other states that would reduce the size of the North Carolina multiplier, Pigler says.

A multiplier for tourism in general, she says, would tend to be larger than the Bureau's more narrowly focused film industry multiplier. Still, Pigler says the Film Office multiplier, at three, seems high. The true multiplier—even if based on tourism—is probably closer to two, she says. The Film Office, she says, should be able to produce a copy of the study upon which its multiplier is based for those who wish to evaluate its merit.

Recommendations

No one disputes that Hollywood production companies drop a lot of dollars into a local economy when they come calling to shoot a movie, and that this spending has some impact on the local economy greater than the actual dollar amount spent. But the impact cannot be gauged by applying a generic multiplier to an imprecise estimate of actual spending. The Film Office estimate of a $2.9 billion contribution to the state's economy over a 13-year period is at best an educated guess.

Accuracy would be best served if the Film Office would stop using its multiplier altogether, but the Center acknowledges that this is an unlikely prospect. If the Film Office is going to continue to use a multiplier, the Center offers the following recommendations to make its figures more credible:

1 The Film Office should include its estimate of real spending in any news releases highlighting motion picture production in North Carolina, and clearly indicate and explain its use of a multiplier. That way the public would be less likely to confuse estimates of real spending by out-of-state production companies with estimates of economic impact that may or may not be correct.

2 The Film Office should develop its own multiplier or consider replacing the multiplier it now uses with the multiplier for the N.C. film industry developed by the Bureau of Economic Analysis in the U.S. Department of Commerce. Either of these options could provide a more realistic picture of the impact of filmmaking in North Carolina.

The Film Office could commission its own study of the economic impact of movies shot on location in different regions of the state and base its multiplier on actual experience. But the burden would be on the Film Office to win the public's confidence through use of a credible, explainable multiplier, rather than one employed to produce an impressive sounding number. That multiplier might well be smaller than the one currently used by the Film Office, but it would have the advantage of being based on real economic activity in North Carolina, directly traceable to the film industry.

Alternatively, the Film Office could adopt the multiplier used by the Bureau of Economic Analysis. The fact that the Bureau's multiplier is *film-industry specific* makes it a better bet for gauging economic impact than the Film Office multiplier, which was developed for *tourism.* The Bureau's multiplier—due for an update in 1994—also takes into account regional economic differences. Finally, the Bureau's multiplier is smaller, which suggests a more cautious approach. When using a tool as esoteric as a multiplier, it's better to err on the side of caution.

Pursuing either option would enhance the public's understanding of the film industry in

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Richard Dreyfuss at a wedding scene at the Governor's Mansion in "Once Around."

North Carolina, and ultimately work to the industry's benefit. Armed with an accurate estimate of the economic impact of filmmaking, state policymakers would be better positioned to gauge the amount of state resources needed to nurture this important industry. The result could be a Hollywood ending for both the Film Office and the state's budding motion picture industry.

—Mike McLaughlin

FOOTNOTES

[1] For more on the use and misuse of multipliers, see J. Barlow Herget and Mike McLaughlin, "Not Just Fun and Games Anymore: Pro Sports as an Economic Development Tool," *North Carolina Insight*, September 1992 (Vol. 14: No. 2), pp. 2-25.

[2] Arnold says while some states may not use multipliers, they have other ways of boosting their estimates of annual spending on filmmaking. California and New York City, for example, count certain commercial television and video production in their figures. North Carolina does not count this activity, although it could boost the state's figures substantially, Arnold says. Raycom Sports, which produces sporting events for broadcast, and SAS Institute, which uses computer technology to produce special effects videos, are two such North Carolina operations.

[3] North Carolina Film Industry Revenues Top $314 million in 1989," news release issued by the Governor's Communications Office, Jan. 18, 1990, p. 3. The remark is attributed to Gov. Jim Martin. A similar observation is attributed to then-Commerce Secretary Jim Broyhill in "North Carolina Reports Record Movie Revenues," a release issued by the Department of Commerce Public Affairs Office, Feb. 12, 1991.

[4] "North Carolina Film Industry Revenues Down in 1991," news release issued by the Department of Commerce Public Affairs Office, Jan. 21, 1992, p. 1.

[5] "North Carolina Reports Record Movie Revenues," news release issued by the Public Affairs Office, North Carolina Department of Commerce, Feb. 12, 1991, p. 1.

[6] "Governor Reports Record Year for North Carolina Moviemaking," news release issued by the Governor's Communications Office, Jan. 13, 1988, p. 1.

[7] "Governor Announces Record Movie Making year for North Carolina," Governor's Communications Office, March 19, 1987, p. 2. Whether other states use a multiplier, as the release maintains, is debatable. In a telephone survey of the top 10 film commissions for 1991, only one outside North Carolina, the New York City film commission, acknowledged using a multiplier in its figures. That commission uses a multiplier of 2.3. Still, estimating film production dollars spent on location is no science, and it may be stretching things to call it an art. The commissions have in common a strong interest in depicting their locations as popular places to shoot movies, and the figures they provide probably reflect that interest.

[8] For more on the Bureau's multipliers, see U.S. Department of Commerce, Bureau of Economic Analysis, *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*, second edition, Washington, D.C.: U.S. Government Printing Office, May 1992.

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writer, surrounded by posters of movies shot in the state: "Reuben, Reuben," "Being There," "No Mercy," "Blue Velvet." He doesn't look like the kind of guy you'd expect to find wheeling and dealing in Hollywood. He wears a rumpled suit. A perpetual cigarette dangles between his fingers.

Arnold, who made his name in tourism as the guy who launched the slogan "Virginia is for lovers," runs the North Carolina Film Office on a shoestring budget. Until 1992, when the legislature nearly doubled the Film Office budget, state appropriations hovered around $250,000. The budget increase brought North Carolina in line with Florida, Illinois, and Utah, to mention just three competing states.

North Carolina never has advertised in the movie trade magazines or spent a lot on promotions. Other states go to extremes to reach Hollywood decision-makers. The Illinois Film Commission, for example, had lighted signs installed above the exits in the Forum for Los Angeles Lakers basketball games, ran a full-page ad in the Lakers' program, and put a billboard on Sunset Strip.[5] North Carolina also doesn't offer tax credits or rebates, as Arnold says states such as Arkansas, South Carolina, and Virginia have done, as an incentive for movies to locate here.[6]

What the North Carolina Film Office staff does do is scour scripts for scenes it can match with North Carolina locations. "If we've got photographs, we send them," says Arnold. "If we don't, we go out and shoot them." The Film Office also sends information on essential services such as proximity to an airport, area hotel rooms, and catering availability.

"The next step is, if they like the photographs, they send people in to actually look," says Arnold.