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"Film Tax Credits and the Economic Impact of the Film Industry on Georgia's Economy"

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Executive Summary

Georgia offers the most generous incentives for motion picture and video production in the United States, providing a tax credit of up to 30 percent of qualified expenditures for film and video production within the state. Though the tax credits represent a significant cost to Georgia's treasury in terms of forgone tax revenue—$800 million in 2018 and over $4 billion total over the past decade—the subsidy is often justified as providing a significant economic impact to the state. The Georgia Department of Economic Development reports that the film industry had a $9.5 billion impact on the state's economy in 2018. The Motion Picture Association of America reports that the motion picture and television industry is responsible for more than 92,000 jobs in Georgia. However, these estimates rely on incredible multipliers and dubious data. This report examines these commonly reported economic impact estimates and provides alternate estimates of the film industry's contribution to Georgia's economy. Though tax credits have incentivized filming in the state, film production remains a rather small part of Georgia's economy ($3 billion, approximately 0.5 percent). Official government employment statistics indicate that Georgia's film and video industry employs approximately 16,000 workers. More realistic (though still speculative) multipliers that account for potential additional economic activity throughout the economy indicate that the film industry produces no more than $4.2 billion and 32,000 jobs. However, even these lower estimates should be interpreted with caution due to uncertainties surrounding multipliers. Assuming every film job in Georgia is the result of the tax credits approved, the cost is $64,000 (full-time and part-time) to $119,000 (FTE) in tax credits per job. The $800 million subsidy through tax credits in 2018 is equivalent to 3 percent of Georgia's state-funded budget or $220 per household.

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1. Introduction

The growth of film production in Georgia during the past decade is undeniable. The state's popularity as a filming destination has earned it nicknames such as the "Hollywood of the South" and "Y'allywood." Georgia's prominence in the film industry in the United States (US) is the result of a popular strategy employed by most states to attract production with incentives offered through grants, tax credits, or other means. The stated intent of offering movie studios incentives to film in the state is to stimulate growth by attracting new spending that ripples through other industries into the broader economy.

There exist several measures of the film industry's economic impact on Georgia which are often used to justify the subsidization of the industry. The Georgia Department of Economic Development estimates that the film industry generated a total economic impact of $9.5 billion to Georgia in 2018. In addition, the Motion Picture Association of America (MPAA) reports that the motion picture and television industries are responsible for more than 92,000 jobs in the state.[1] Though these numbers seem impressive, the estimates are dubious. One reason these numbers are repeated so often is that there exist few other estimates of the impact of the film industry or the associated tax credits on Georgia's economy.

In its 2017 report "How States Are Improving Tax Incentives for Jobs and Growth," Pew Charitable Trusts notes that Georgia lacks a process for evaluating its film tax credits program, and that despite providing billions of dollars in film tax credits, "the state has not rigorously studied the results of the program" (p. 47). Thus, an investigation of Georgia's film industry and the effect of its tax credits is needed to assess the incentive program. I write this report to provide an accurate and objective analysis of Georgia's film tax credit program and its effect on the state's economy. My general findings are as follows.

- Georgia's film industry contributes approximately $3 billion of Georgia's $588 billion GDP, which represent 0.5 percent or 1/200th of the state's economy.

[1] Georgia Department of Economic Development (August 16, 2018). "Georgia was home to a record 455 Film and Television projects in FY 18: Productions generated $9.5 billion for Georgia's economy." Press release. (https://www.georgia.org/newsroom/press-releases/georgia-was-home-record-455-film-and-television-projects-fy-18).

- The Georgia film industry directly employs approximately 16,000 workers.
- Georgia's Department of Economic Development's estimate of the film industry contributing $9.5 billion to the state's economy is based on a multiplier of 3.57, which lacks any economic justification.
- The MPAA's claim that the film industry supports over 92,000 in Georgia is not consistent with available government employment statistics. The figure is derived from an aberrant industry employment estimate and a multiplier that overstates the industry's impact the overall economy.
- Using more realistic multipliers, I estimate that the film industry's total contribution to the Georgia economy is *no greater than* $4.2 billion, and film industry activity may support *up to* 32,000 jobs. However, multiplier effects remain speculative, and thus these high-end estimates should be interpreted with caution.
- Studies of film incentive programs on state economies find little to no impact of incentives on the film industry, and there is no evidence of any additional impact on the broader economy. The lack of an observable relationship between film incentives and state economies indicates that large multipliers for the film industry are unlikely.
- Georgia has approved over $4 billion in tax credits in the past decade. In terms of tax credits, the cost per film job is between $64,000 (full-time and part-time) and $119,000 (FTE) per job. The $800 million in tax credits approved in 2018 represents a cost of 3 percent of Georgia's state-funded budget or $220 per Georgia household.

2. Georgia's Film Tax Credits and the Economy

In 2005, Georgia's General Assembly and Governor approved the Georgia Entertainment Industry Investment Act, which created tax credits for movie production spending within the state. The legislation provided a base tax credit of 9 percent of a production company's spending in the state for projects with total expenditures of $500,000 or more.[2] Qualified production activities eligible for the tax credit include film, video, or digital projects such as feature films, series, pilots, movies for television, commercial advertisements, music videos, interactive entertainment or sound recording for these projects. The law went into effect following the Governor's approval on May 9, and it applied to qualified expenditures retroactive to January 1.[3] In 2008, lawmakers amended the act to increase the tax credit to 20 percent of qualified expenditures, with an additional 10 percent for including a promotional logo; thus, the total value of tax credit is now 30 percent of qualified in-state expenditures.[4] While some minor modifications have been made to the act, the general incentive format has remained similar to the 2008 law.

A key feature of Georgia's film tax credits is that they are transferable. Any tax credit earned in excess of tax liability incurred by the film production company can be transferred to any other Georgia taxpayer to cover its tax liability to the state. This allows the recipient to submit tax credits in lieu of cash payments owed to the Georgia treasury to cover its tax obligations. Tax credits are transferred via private market brokers at a discount of approximately 10 percent.[5] For example, an entity facing a state tax liability of $1 million could purchase $1 million in tax credits from a film production company for around $900,000. The buyer purchasing the credits submits the tax credits to the treasury rather than making a tax payment of $1 million. The lost revenue from tax credits represents a real cost to the state, while taxpayers still face the tax burden of engaging in economic activity in the state—that burden is met by transferring revenue to a private film company rather than the treasury. Tax credits can be carried forward for up to five years and the only limit to their value is the availability of willing purchasers, as the tax credits are not subject to a legislated budget constraint or spending caps.[6]

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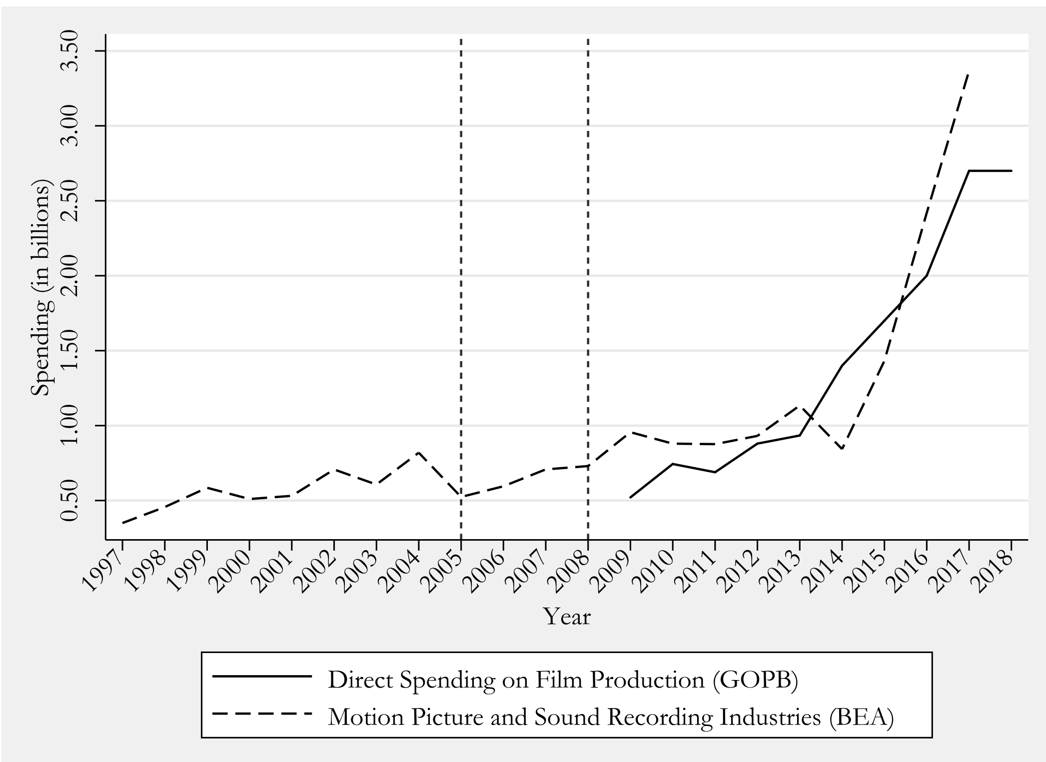
[2] HB-539. The legislation also provided additional credits for employing resident labor, investments greater than $20 million, and investments in less-developed counties.
[3] "Governor Perdue Signs Georgia Entertainment Industry Investment Act." Press release. (https://sonnyperdue.georgia.gov/00/press/detail/0%2C2668%2C78006749_79688147_93038510%2C00.html).
[4] HB-1100.
[5] Leslie, J. (December 22, 2017) "Why most filmmakers sell off their Georgia tax credits." *11Alive.com*. (https://www.11alive.com/article/news/local/why-most-filmmakers-sell-off-their-georgia-tax-credits/85-501688103).
[6] Aggregate program and company caps were introduced for interactive entertainment in 2012. HB 1027.

Since Georgia implemented its tax credit program, its film industry has flourished. Figure 1 maps film-related economic activity in Georgia from 1997 to 2018 using two measures, with vertical lines marking the introduction of the initial and improved tax credit incentives. The solid line reports the direct capital investment into the state as reported by the Georgia Governor's Office of Planning and Budget (GOPB), which began recording this metric in fiscal year 2009 after the state began issuing tax credits.[7] In the past decade, film industry spending has increased substantially while Georgia has approved $406 million in tax credits per year, on average.

Figure 1. Film Industry Size in Georgia (1997-2018)



[7] Georgia operates on a fiscal year budget that runs from July 1 to June 30. The fiscal year date denotes the actual year the budget cycle ends (e.g., fiscal year 2018 extends from July 1, 2017 through June 30, 2018). The GOPB reports direct spending on film production and tax credits approved in the Governor's annual Agency Performance Measures report. (https://opb.georgia.gov/agency-performance-measures).

The dashed line reports the economic output produced by the motion picture and sound recording industry by the US Bureau of Economic Analysis (BEA).[8] Although the industry classification includes sound recording, it has the advantage of being reported before Georgia offered film tax credits and tracks closely with the GOPB measure to capture the output of the film industry. In 2005, when its initial tax credit program was implemented, Georgia's film and sound industries had an output of $524 million, which grew to $3.37 billion in 2017 (2018 data is not yet available). As a share of Georgia's economy, the film industry grew from 0.14 percent to 0.6 percent of the state's $588 billion GDP. Despite its substantial growth, the film industry still represents a rather small share of the state's economy, approximately 0.5 percent or 1/200th of its GDP based on the GOPB and BEA estimates.

Employment in the film industry has grown similarly. Figure 2 reports two employment estimates for Georgia's film industry. Unlike the economic output estimates above, the employment estimates are limited to film and video production. The solid line measures employment as reported by the state GOPB, which records employment in terms of workdays created by film and television production. I normalize this estimate to full-time-equivalent (FTE) jobs using the standard calculation of dividing the number of workdays by 260 (52 five-day weeks). Though the GOPB report does not provide a source for estimated workdays, it likely comes from the Georgia Expenditures Form, which must be submitted to the Georgia Film Office within 90 days of a film company's last qualified expenditure. This form (see Appendix 1) requests employment in terms of number of days. Thus, this figure appears to be self-reported by film companies applying for tax credits who have an incentive not to underreport days worked. It is likely that this estimate overreports film jobs because partial days of work may be reported as integers that are rounded up. The estimate using GOPB data shows an increase in employment from 1,277 FTE jobs in 2010 to 16,790 FTE jobs in 2018.[9]

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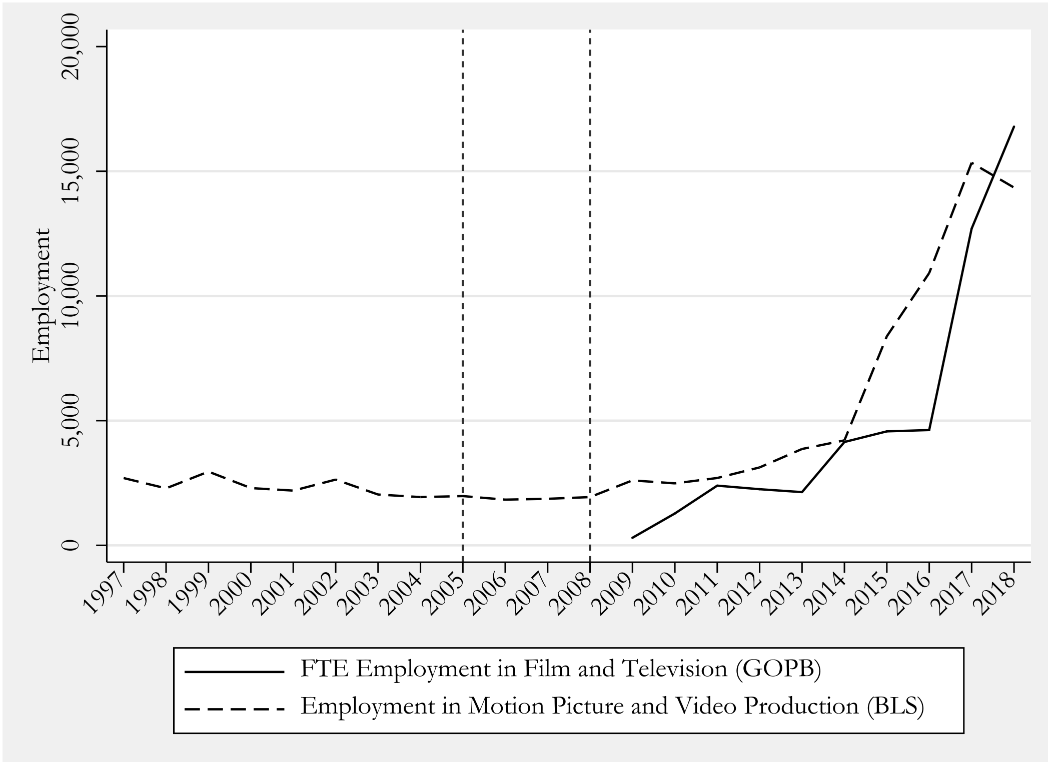
[8] The motion picture and sound recording industry is the smallest NAICS (North American Industrial Classification System) classification relevant to this industry for which state-level Gross Domestic Product (GDP) is available on an annual basis.

[9] In 2009, the number of reported workdays translates to 302 jobs. It is likely that this number is low due to the newness of the tax credit program and the delay in reporting protocol. This conjecture is consistent with the stability of the BLS estimate from 2009 to 2010.

Figure 2. Film Industry Employment in Georgia (1997-2018)



The second estimate is the average annual employment in motion picture and video production (NAICS: 512110) from the Quarterly Census of Employment and Wages administered by the Bureau of Labor Statistics (BLS).[10] This estimate is available for a longer period of time than the GOPB estimate; however, it includes both full-time and part-time employment and does not represent FTE jobs. From 1997 to 2004, before tax credits were available to filmmakers, Georgia supported an average of 2,381 film industry jobs per year. The film industry increased from 2,604 jobs in 2005 to 14,327 jobs in 2018 (full-time and part-time).

For 2018, the average of the GOPB and BEA estimates is 15,569, which suggest that a reasonable estimate for film and television jobs in Georgia in 2018 is approximately 16,000 jobs.[11] Even though this estimate is

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[10] BLS. Quarterly Census of Employment and Wages. QCEW Data Files. CSVs By Area, Annual Averages (various years). (https://www.bls.gov/cew/datatoc.htm and https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables).

[11] The large increase in employment measured by the GOPB in 2017 and 2018 relative to the BEA estimates is curious. Some potential explanations include a lag in reporting, accounting for partial workdays, and changes in recording workdays.

likely biased upward due to the use of full-time and part-time workers (BLS) and reporting partial workdays as full workdays (GOPB), this estimate is far less than the 92,000 jobs touted by the MPAA.

3. Explaining $9.5 Billion and 92,000 Jobs

The estimates presented in the previous section are far below estimates commonly reported in the media. In this section, I examine the reasons for the discrepancies between these estimates and the ones presented above.

A Google search for "Georgia film 9.5 billion impact" returns 680,000 search results. This number is likely so widely reported because it is commonly stated by Georgia officials. Each year, the Georgia Department of Economic Development releases its estimate of the film industry's economic impact on the state. In 2018, agency included the following language in its press release.

> "Gov. Nathan Deal today announced that Georgia-lensed feature film and television productions generated a total economic impact of $9.5 billion during FY 2018. The record 455 film and television productions shot in Georgia represent $2.7 billion in direct spending in the state."[12]

The release of an economic impact report has become an annual routine. In 2015, the state estimated the economic impact to be "more than $6 billion," which prompted *Atlanta Journal-Constitution* reporter April Hunt to investigate the claim for the fact-checking website *PolitFact.*[13] The article provides the insight needed to translate $2.7 billion in direct spending (noted in the previous section and in the state's press release) into $9.5 billion for the economy in 2018. Deputy Commissioner of the Georgia Film, Music & Digital

[12] Georgia Department of Economic Development (August 16, 2018). "Georgia was home to a record 455 film and television projects in FY 18." Press release. (https://www.georgia.org/newsroom/press-releases/georgia-was-home-record-455-film-and-television-projects-fy-18-0).

[13] Georgia Department of Economic Development (July 9, 2015). "Film industry generates $6 billion for Georgia's economy." Press release. (https://www.georgia.org/newsroom/press-releases/film-industry-generates-6-billion-for-georgias-economy). Hunt, A. (August 7, 2015). "Claim overstates film industry's impact on Georgia economy." *PolitiFact.* (https://www.politifact.com/georgia/statements/2015/aug/07/georgia-department-economic-development/film-industrys-impact-georgia-economy-overstated/). *PoliFiact* rated the claim to be "Half True": "There is accuracy in the claim, especially in the carefully tracked direct spending from film and TV production in the state. But it leaves out important information that could better prove, or disprove, the statement."

Entertainment Office Lee Thomas explained that the economic development department multiplies the direct spending by 3.57. Hunt reports the following, "Thomas acknowledged that the state doesn't know what sorts of spending that multiplier originally counted, or why the 3.57 estimate was used. But keeping the same multiplier allows to track progress over time, comparing apples to apples, [Thomas] said." In short, the state's use of a 3.57 multiplier is not grounded in any economic reasoning. This justification is uncompelling and irresponsible. Multipliers may have a role in estimating economic impact, but they require sufficient economic justification, which I address in the next section.

In the press release, the state also reports "the motion picture and television industry is responsible for more than 92,100 jobs and nearly $4.6 billion in total wages in Georgia, including indirect jobs and wages" and credits the Motion Picture Association of America (MPAA) as the source. A Google search for "Georgia film 92000 jobs" returns 129,000 results. This figure is substantially greater than the estimated 16,000 film jobs in Georgia presented above. The MPAA offers some cryptic guidance as to the origin of the estimate on its website (see Appendix 2), where it reports that the film industry is responsible for 92,494 jobs.[14] A separate summary document includes a methodology paragraph in which the MPAA states that it uses 2016 employment data from the BLS and constructs a measure direct jobs from the film and television industry "as well as industry-related jobs."[15] The report does not state clearly what these "related" industries are; however, it lists direct jobs in these industries as 28,472, which is well above the number of jobs the BLS estimated to be working in motion picture and video production in Georgia in 2016 (10,919). The direct jobs number plays a vital role in calculating the 92,000 figure; yet; its origin and composition are a mystery. I discuss the derivation of the 92,000 number further in the multiplier section below; however, before introducing a

[14] MPAA. "What We Do: Driving Economic Growth." (https://www.mpaa.org/what-we-do/driving-economic-growth/).

[15] MPAA. "The Economic Contribution of the Motion Picture and Television Industry to the United States." (https://www.mpaa.org/wp-content/uploads/2019/03/Economic_contribution_US_infographic_Final.pdf). "Direct jobs are calculated from classification codes fully associated with the film and TV industry, as well as industry-related jobs and wages from codes partially associated with the industry estimated by using adjustment factors based on SIC-NAICS bridges, and other updates."

multiplier to capture a potentially broader economic impact, the MPAA is putting forth an incredible inflated direct jobs number without appropriate documentation.

4. Realistic Multipliers

In the economic development policy world, it is common to use multipliers to estimate the impacts of direct spending and direct employment produced by an industry, project, event, etc. on the broader economy. In most cases, multipliers derive from regional input-output models, which use industry accounts that measure how the goods and services produced by each industry affect all other local industries and final users. The methods for generating multipliers are quite complicated and rely on a host of potentially unrealistic assumptions (e.g., fixed purchase patterns, industry homogeneity, no price adjustments to account for supply constraints) that are employed for simplicity. This does not mean that multipliers are useless; but, in general, economists do not have strong confidence in multiplier estimates, because multipliers often overstate economic impacts. For example, in a study of multipliers, economist Enrico Moretti concluded that 'Input-Output tables are unlikely to produce meaningful estimates of local multipliers."[16] A recent study by economists Timothy Bartik and Nathan Sotherland has determined that standard multipliers are overstated by one-quarter (e.g., closer to 1.5 than 2.0), and "Average multipliers should generally be assumed to be *at most* 2.0 at the state level" (emphasis added).[17]

The 3.57 multiplier used by the Georgia Department of Economic Development to estimate the economic impact of the film industry is ad hoc with no known origin. Its size is not grounded by any appropriate criteria and should be dismissed, prima facia. The MPAA states that it uses a multiplier from the BEA's Regional Input-Output Modelling System (RIMS II) for its multiplier. RIMS II provides multipliers for estimating the impact of direct industry spending and employment on the regional economy's spending and employment, and it provides two "types" of multipliers. The Type I multiplier includes the wealth effects

[16] Moretti (2010).
[17] Bartik and Sotherland (2019a) is the actual study, and the quote is located on page 69. Bartik and Sotherland (2019b) provides a layman's summary of their research.

from the first round of direct spending and the successive rounds of indirect spending on inputs by supporting industries. The Type II multiplier is intended to capture an additional "induced" effect that includes the increased earnings by all workers whose wages are affected by the change in demand.[18]

While acknowledging the limitations and uncertainty regarding multiplier estimates of economic impact, I proceed to use RIMS II industry multipliers to estimate the potential economic impact of film spending and jobs in Georgia.[19] I do so only to demonstrate what the estimated total economic impacts of the film industry using the most realistic available multipliers might be. I do not have confidence that these estimates are correct or even reasonable estimates, and I suspect that they are likely to be biased upwards for reasons I discuss in the following section.

The top two rows of Table 1 report the nominal RIMS II multipliers and multipliers reduced by one-quarter as suggested by Bartik and Sotherland for the Motion Picture and Sound Recording industries. The output multipliers range from 1.61 to 2.07, well below the 3.57 estimate that the Georgia Department of Economic Development uses for estimating economic impact. Damping the multiplier by one-fourth reduces the multipliers to between 1.21 and 1.55. Thus, the 3.57 multiplier is two to three times larger than is realistic, and the nominal and adjusted RIMS II multipliers produce far lower estimates of the economic impact of film industry spending on Georgia's economy, ranging from $3.3 billion to $5.6 billion. Applying Bartik and Sotherland's correction to produce a more realistic multiplier (reducing the RIMS II estimate by one-quarter) indicates an effect of *no more than* $4.2 billion, less than half the impact that the state reports.

[18] See the RIMS II user's guide (BEA 2013) for a more thorough explanation.
[19] RIMS II. (https://apps.bea.gov/regional/rims/rimsii/).

Table 1. Multiplier-Estimated Impacts of Georgia's Film Industry (2018)

	RIMS II		Bartik-Sotherland	
	Type I	Type II	Type I	Type II
Multiplier				
Output Multiplier	1.61	2.07	1.21	1.55
Employment Multiplier	2.11	3.20	1.58	2.00
Industry Impact				
Direct Spending (billions)	$2.70	$2.70	$2.70	$2.70
Direct Jobs	16,000	16,000	16,000	16,000
Total Economic Impact				
Output (billions)	$4.35	$5.58	$3.26	$4.19
Jobs	33,766	51,230	25,325	32,000

RIMS II employment multipliers range from 2.11 to 3.2, and the more realistic Bartik-Sotherland adjusted multipliers (reducing the RIMS II multiplier by one-quarter and state-level multipliers are no greater than 2.0) range from 1.58 to 2.0. Using the 16,000 jobs estimate from the previous section, the total jobs impact ranges from 25,000 to 51,000. However, the more realistic Bartik-Sotherland adjusted multiplier estimates that the film industry's job impact through all industries is *no larger than* 32,000, nearly one-third of the employment impact estimated by the MPAA.

Why are the MPAA's job estimates so much higher than those presented in Table 1? The answer lies in the 28,472 direct jobs estimate that the MPAA reports. Multiplying 28,472 times the unadjusted Type II multiplier 3.2 produces an estimate of just over 91,000 jobs, which is close to the touted 92,000 jobs. Thus, the MPAA's estimate appears to be less the result of an exaggerated output through a multiplier (though it is a contributor); instead, the more significant error is that the direct jobs number used is 2.6 times the actual number of direct jobs working in the Georgia film industry in 2016 (10,919).

It is also important to note that the MPAA should not be viewed as an objective source of data. The MPAA is an industry advocacy group that represents the five major Hollywood studios and Netflix.[20] Its stated

[20] The MPAA members are Walt Disney Studios Motion Pictures Netflix Studios LLC, Paramount Pictures Corporation, Sony Pictures Entertainment Inc., Universal City Studios LLC, and Warner Bros. Entertainment Inc. (https://www.mpaa.org/who-we-are/).

mission includes: "Maintaining and growing a thriving U.S. film and television industry requires the continuation of supportive policies, including …production incentive programs to encourage investment."[21] The MPAA seeks to promote film incentive programs by touting the economic impact of films, and thus it has the incentive to inflate the film industry's impact on state economies to encourage lawmakers to fund incentives (e.g., Georgia's in tax credits). For this reason, the 92,000 number should be interpreted with skepticism; and, as the analysis above indicates, it does not reflect observed reality.

5. Studies of Film Incentives in US States

Using multipliers to project a hypothetical impact on the broader economy represents only one way to estimate the economic impact of an industry. This method is sometimes used in advance of a new business venture or policy to predict what its hypothetical impact might be. However, another method is to observe what has occurred historically when other similar ventures have taken place. This method has the advantage of not having to rely on strict and potentially unrealistic assumptions used to produce multipliers. Using statistical methods, economists may observe changes to the economy that might not be accounted for in input-output models. Retrospective evaluation is, in fact, the dominant form of empirical evaluation used by academic economists for assessing economic impacts. In the case of the film industry, the wide use of film production incentives to subsidize film production across US states creates a natural laboratory for observing the economic response to policies that favor film industries in certain states. Several researchers have recently estimated the economic impact of film incentives on state economies and find that the impact is quite weak, indicating that large multipliers used for estimating the economic impact of the film industry are not justified.

In examining the impact of state film incentive programs on film activity and industry employment, economist Patrick Button found some employment gains from incentives but describes the effects as "very small" and "weak."[22] In a subsequent study of Louisiana and New Mexico—two states that have relatively

[21] MPAA Research & Policy (https://www.mpaa.org/research-policy/).
[22] Button (2019b)

large film incentives programs—he found some evidence of increased in filming but no employment effects.[23] Political scientist Michael Thom compared states with and without film incentives and found no effect on industry employment or output, but that there may have been a temporary boost in wages to film workers.[24] He also examined California's program and found no impact on film industry employment.[25] Accountant Charles Swenson identified increases in film employment in New York and California (two states with large film sectors); however, the gains were not present in other states.[26] Economists Mark Owens and Adam Rennhoff did not find strong evidence of incentives creating a permanent movie industry and conducted a cost-benefit analysis that indicated film incentive programs were revenue-negative for every state offering film incentives.[27] In my own examination of film incentives on state economies, I found minimal evidence of positive impacts on the film industry, and that film incentives were not associated with statewide economic levels or growth.[28]

In summary, the consensus of the economics literature regarding the economic impact of film incentives is that they have not been successful drivers of economics growth. If the film industry has a large multiplier effect on the broader economy, then incentives that encourage filming should produce observable positive impacts. The lack of evidence that film incentives play a strong role in the economy at the industry or macroeconomic levels casts doubt on the existence of a large multiplier for the film industry.

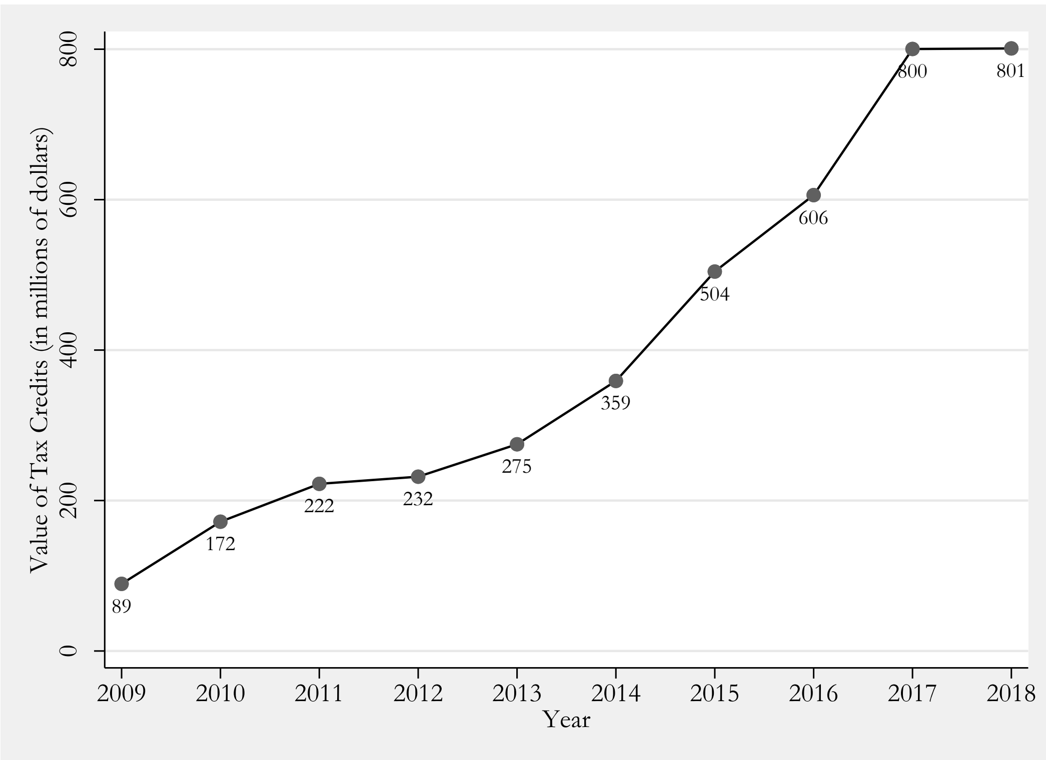
6. The Cost of Film Tax Credits

Figure 3 maps the tax credits approved since the introduction of 30-percent tax credits in fiscal year 2009. The value of tax credits has grown substantially from $89 million in 2009 to $801 million in 2018, which represents and average annual growth rate of 25 percent. In total, Georgia has approved over $4 billion

[23] Button (2019a)
[24] Thom (2018a)
[25] Thom (2018b)
[26] Swenson (2017)
[27] Owens and Rennhoff (2019)
[28] Bradbury (2019)

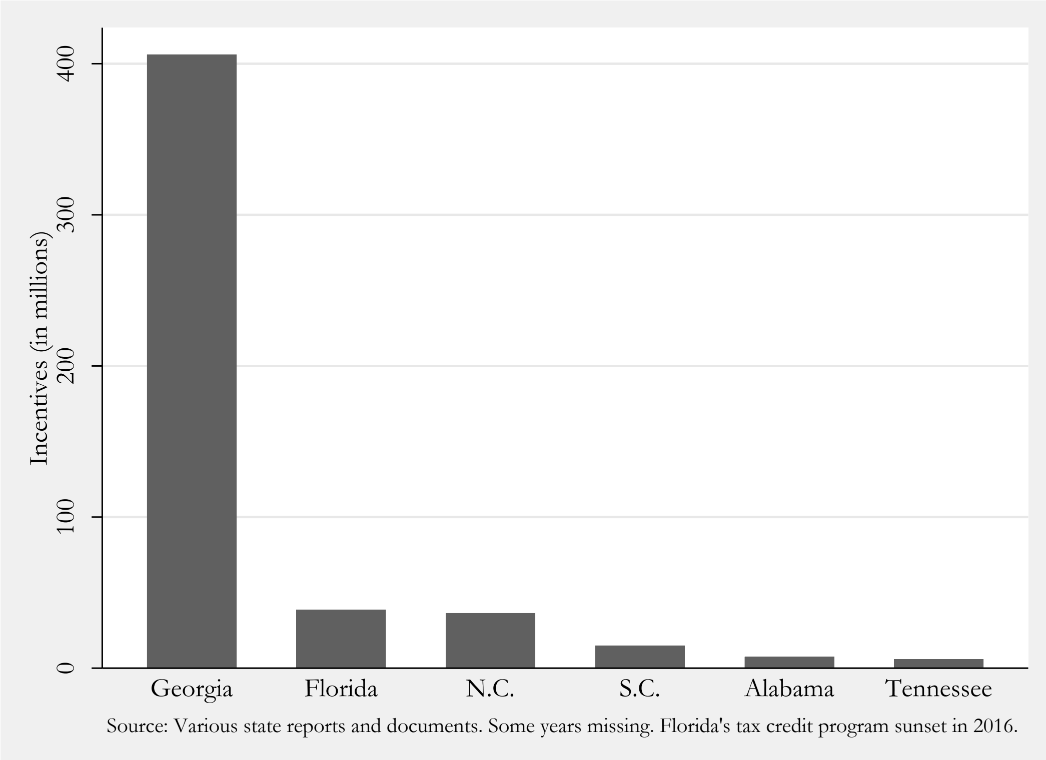
dollars in tax credits for film production in the state during this span, and the opportunity cost of tax credits is the forgone tax revenue otherwise owed to the state or returned to taxpayers. To put this in perspective, the $800 million in tax credits is equivalent just over 3 percent of the $26.2 billion state-funded portion of the 2018 budget that lawmakers could have used to fund government projects. $800 million represents approximately $220 per household in Georgia that residents could have injected into the economy through their own purchases. Tax credits may attract more film business to the state, but the cost of subsidizing nearly one-third of filming expenses in the state is substantial.

Figure 3. Georgia Film Tax Credits Approved (2009-2018)



Georgia is not alone among states in offering film incentives to encourage production in the state. However, Georgia's incentives dwarf its neighboring states, which are most likely to serve as competitors for films. Figure 4 graphs average annual incentives offered by Georgia and its contiguous neighbors since 2009. Georgia's $406 million average dwarfs the film incentives offered by its border states, offering annual subsidies of nearly five times the value of the incentives offered by all the other states combined.

Figure 4. Average Annual Film Incentives, Georgia and Border States (2009-2018)



As a tool of job creation, the tax credits have not been particularly cost effective. Table 2 lists the total film credits certified by the Georgia Department of Economic Development per year along with annual film industry employment from the BLS and GOPB reported in Figure 2. In terms of tax credits issued, the average cost ranges from $64,000 to $119,000 per job. This is a wide interval, but the GOPB estimate is normalized in terms of full-time jobs, while the BLS estimate includes both full-time and part-time jobs.

The Quarterly Census of Employment and Wages that the BLS uses to estimate industry employment also reports an average wage for industry workers in the state, which is estimated to be $61,000 per year, less than the lower bound of the cost-per-job estimates. But even this estimate is somewhat misleading: the average (mean) wage includes the compensation of a few exceptionally high-paid employees (e.g., actors, directors, and producers), and thus the mean is not representative of the typical wage earned by a Georgia resident working in the film industry. The BLS reports that the median wage (which is less biased by extreme observations) for workers in the motion picture and video industry is $18.89 per hour, which translates to just over $39,000 per year on an FTE basis; however the BLS employment estimate includes both full-time and part-time jobs, and thus the typical annual wage is lower.[29] In addition, many film workers, especially the highly paid individuals, are not necessarily Georgia residents; therefore, a significant portion of their compensation is likely spent outside the state, further limiting any multiplier impact that the film industry might have on the state's economy.

Table 2. Tax Credits and Film Industry Employment in Georgia (2009-2018)

Year	Value of tax credits certified by Georgia Dept of Economic Development	Film Industry Employment GOPB (FTE)	Film Industry Employment BLS (FT+PT)	Cost per Job GOPB (FTE)	Cost per Job BLS (FT+PT)	Average Annual Wage BLS
2009	$89,246,214	302	2,604	$295,153	$34,273	$61,544
2010	$171,865,421	1,277	2,486	$134,636	$69,133	$60,001
2011	$222,211,344	2,394	2,701	$92,802	$82,270	$63,041
2012	$231,704,930	2,252	3,125	$102,905	$74,146	$66,487
2013	$274,800,000	2,136	3,864	$128,679	$71,118	$69,587
2014	$358,980,880	4,145	4,209	$86,604	$85,289	$41,588
2015	$504,402,595	4,571	8,380	$110,357	$60,191	$46,161
2016	$606,026,394	4,624	10,919	$131,059	$55,502	$65,352
2017	$800,277,268	12,697	15,341	$63,031	$52,166	$65,014
2018	$801,058,816	16,790	14,347	$47,709	$55,835	$67,427
Total	$4,060,573,862	51,187	67,976			
Mean	$406,057,386			$119,294	$63,992	$60,620

7. Conclusion

Since 2005, Georgia has offered filmmakers tax credits for producing motion picture and video projects in the state. The state has approved more than $4 billion in tax credits over the past decade, which represents a substantial transfer of resources from Georgia taxpayers in terms of fewer government services or private spending. Supporters of the film tax credit program argue that the expenditures are justified due to the economic stimulus provided by the film industry. Georgia's Department of Economic Development reports that the film industry contributes $9.5 billion to the state's economy, and the Motion Picture Association of American claims that the film industry supports more than 92,000 jobs in Georgia. However, close

[29] May 2018 National Industry-Specific Occupational Employment and Wage Estimates, NAICS 512100 - Motion Picture and Video Industries (https://www.bls.gov/oes/current/naics4_512100.htm).

investigation of these figures reveals that they are a product of aberrant multipliers and/or specious job numbers used in the calculation.

Georgia's film industry represents approximately $3 billion of the state's $588 billion economy (approximately 0.5 percent) and supports around 16,000 jobs. Using more appropriate multiplier estimates, the film industry's impact on Georgia's economy is no larger than $4.2 billion and 32,000 jobs; however, these estimates should be interpreted with caution. Multipliers are generated using complex methods that require simplifying assumptions that may not be realistic. Studies of film incentives in US states do not find strong impacts on the film industry or the broader economy, which indicates that film industry multiplier effects on the economy are small. There is no doubt that many complementary industries (construction, transportation, food services, etc.) serve the needs of local film companies. However, these other industries might be otherwise engaged in other economic activity if the film industry was absent, especially if the revenue lost to tax credits was returned to the local economy.

The cost of tax credits in terms of jobs associated with the film industry is high. Georgia's film tax credits increased from $89 million in 2009 to over $800 million in 2018. $800 million represents approximately 3 percent of the state-funded budget or $220 per Georgia household. On average, the value of tax credits to film industry jobs ranges from $64,000 (full-time and part-time) to $119,000 (FTE), which indicates a poor return on investment.

In summary, this report examines the film industry's contribution to Georgia's economy and the impact of its film tax credit program. Findings indicate that commonly reported estimates of the film industry's impact on Georgia's economy are grossly overstated, and this report provides more plausible estimates. In addition, while film tax credits have increased the film industry's presence in Georgia, the return on investment appears to be quite small, indicating that resources devoted to the tax credits may have superior alternative uses.

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Appendix 1. Georgia Expenditures Form

GEIIA (10-18)

Georgia Film

GEORGIA EXPENDITURES FORM

PRODUCTIO

In-State Community Spend Report for the Georgia Film Tax Credit Incentive Program

A completed Georgia Expenditures form is due within 90-days of the last qualified Georgia expenditure.

Project Title: ____________________ **Production Company:** ______________________

Accountant Name Completing Form: __________________ Acct.Email: _____________________

Project Prep Start Date: _____________ Project Wrap Date (last day in Georgia): ____________

Total Days: ______ Prep: __________ Shoot: _________ Wrap: _________

GRAND TOTAL:

VENDORS

SPACE

CAST & CREW

Lodging (Hotels, Condos, etc.)	Room Days: _______	$ _____________
Car Rental (Non Resident)	Rental Days: _______	$ _____________
Transportation/Truck Rentals/Gasoline/Car Svcs:		$ _____________
Airfare Purchase:		$ _____________
Catering/Crafty:		$ _____________
Construction Hardware/Lumber/Supplies:		$ _____________
Office Equipment Rentals and Purchases:		$ _____________
Camera: Package/Rentals/Expendables		$ _____________
Grip/Electric: Package/Rentals/Expendables		$ _____________
Sound: Package/Rentals/Walkies/Expendables		$ _____________
Set Dressing/Props: Rentals/Purchases/Expendables		$ _____________
Wardrobe: Rentals/Purchases/Dry Cleaning/Laundry		$ _____________
Makeup/Hair/Special Effects Purchases:		$ _____________
Location Fees/Permits:		$ _____________
Faciltity Rental: Office		$ _____________
Faciltity Rental: Stage/Warehouse		$ _____________
Post Editing in Georgia:		$ _____________
Original Music Scored:		$ _____________
Other: (not included in a category listed)	_______________	$ _____________
Off-Duty Government Personnel: (Police/Fire)		$ _____________
Security Personnel:		$ _____________
Georgia Crew Hires: (to include fringes)		$ _____________
Georgia Cast Hires: (to include fringes)		$ _____________
Georgia Extras Hires:		$ _____________
Per Diem Payments Cast & Crew:		$ _____________

Resident #: ______ Daily Rate Average $ _________ No. of Days Paid: _____

Non-Resident #: ______ Daily Rate Average $ _________ No. of Days Paid: _____

GRAND TOTAL SPENT: $ _____________

# of Local Hires

Cast: _____ Security: _____ Off Duty Govt. Personnel: _____

Crew: _____ Extras: _____ Office Personnel: _____

Completed form should be emailed to taxcredit@georgia.org

Appendix 2. Screen Capture of MPAA Estimate of Jobs Impact in Georgia