Show Me the Money: An Analysis of Georgia's State Film Tax Credit Program

Wesley Meares[1] and Aaron Hutton, Savannah Brown, and Rachel Morris[2]

[1]Associate Professor of Political Science and Public Administration, Augusta University
[2]Graduate Students, Masters of Public Administration, Augusta University

ABSTRACT

Incentives for the motion picture industry are relatively new and popular among U.S. states. Due to the relative age of state film incentives, little research has been performed concerning the effectiveness of these programs and of the studies that exist; their findings are mixed. We seek to add this literature by conducting a case study of Georgia's film tax credit program. The State of Georgia has one of the most generous state film incentive programs in the country (Trubey 2016). Yet, little is known about the effectiveness of this program, because the state lacks a process for evaluating the incentive program (Pew 2017). The purpose of this study is to examine the ability of Georgia's film tax credit program at attracting film production and creating industry jobs. The findings help to better understand the outcomes of the program for the state and add to the discourse on targeted economic development programs for the motion picture industry.

Introduction

Targeted economic development programs are a common tool of state and local governments to attract specific industries to their region in hopes of driving economic development. There are a various number of strategies found in these programs, such as enterprise zones, empowerment zones, tax credits (both transferable and nontransferable), grants, hiring incentives and tax increment financing (Leigh and Blakely 2017). Overall, the number of total incentives being offered to firms has grown significantly over the past three decades. In 2015, it was estimated that state and local governments' incentive programs cost $45 billion dollars (Bartik 2017). Despite questions regarding their efficacy and the mixed results in the literature (Button 2018; Swenson 2017; Taylor 2012; Zhang 2015), targeted incentive programs have been more heavily applied by states. One of the more recent popular targets of state incentive programs is the film industry. State film incentives (SFI) were first adopted by Louisiana in 1992. In 2005 only five states offered SFI, now 45 states are offering some type of SFI. According to Button (2018), SFIs on average reduce the cost of qualifying expense by 20%. Due to the popularity and size of these programs it is important to understand what, if any, impact they are having on the local economy. A survey of the literature shows that few academic studies have been conducted on targeted economic development programs that focus on the film and television industry (Bradbury 2019; Button 2018, 2019; O'Brien and Lane 2017; Thom 2018; Swenson 2017). While target economic development programs focusing on other industries have been examined, a majority of the research focuses on immobile industries that are unable to quickly relocate in response to changes in incentive structures (Thom 2018). This leaves a gap in the literature concerning mobile industries that can more easily react to incentive structures.

Our intention with this research is to address this void and advance the literature on target economic development programs by analyzing the State of Georgia's SFI program. In 2005 the State of Georgia created its own SFI program, which was later revised in 2008 and again in 2012 (Small and Wheeler 2016). Georgia has been recognized by other states and the movie industry as having one of the largest and most successful tax incentive programs, with up to a 30% reduction in qualifying expenses. The film tax credit is Georgia's single largest tax credit (Georgia Department of Audits and Accounts 2020). Georgia provides an excellent case study due to the age of the program and the profile of the state's SFI. Furthermore, little is known about the effectiveness of Georgia's SFI program. Our intention is to examine the effect of Georgia's SFI on production spending, employment, wages, and business establishments in the state's motion picture industry. Business attraction, film and television attractions, and employment gains are all critical goals of the program. In order to quantify filming occurring in the state, we used Internet Movie Database (IMDb) Pro database. To quantify employment, wages and business establishments we used the Quarterly Census of Employment and Wages (QCEW). To quantify Georgia's SFI investment, we used the Georgia Department of Revenue's yearly tax data and the Georgia Office of Planning and Budgeting. Furthermore, to better gauge the SFI program in Georgia, we compare Georgia to Alabama, Louisiana, North Carolina, and Vermont.

The rest of this article is organized as follows. First, we give an overview of relative literature. This is followed by a summary of Georgia's SFI. Then we describe the data and the methodology used. Next, we analyze how Georgia SFI performed

compared to control cases. Then we conclude with a discussion of our findings.

Background

There are two mainstreams of literature that are related to SFI programs. The first related stream of literature concerns the film industry, including an overview of the industry and a discussion of how it has become more mobile and more easily able to respond to SFI. The second related stream of literature is state film incentives and their use as economic development tools.

Film Industry

The film industry is known for clustering production companies and workers in particular areas, most notably Los Angles and New York City (Florida, Mellander, and Stolarick 2011; Miller 2017). Historically, it was economically necessary for this industry to have significant agglomeration. There are still many benefits from clustering, including: cost savings by sharing and renting needed space, such as sound stages; creating markets with more buyers and sellers (Christopherson and Rightor 2010); creating a specialized labor pool (Florida, Mellander, and Stolarick 2011); and knowledge spillovers in which individuals more easily share ideas and best practices (Florida 2014; Glaeser 2011). Current data still supports the notion of significant agglomerations. Additionally, a significant portion of feature films and occupations are still shot in established agglomerations such as Los Angeles and New York, but these established clusters share of these films has been shrinking over the last two decades.

In the 1980s, the film industry shifted away from established clusters. This was due in part to technological advances in filming, particularly the newfound mobility of production equipment, as well as pioneering developments in data storage and film transmission.

As a result, the film industry has become more mobile outside of established clusters and has led to some decentralization of the industry (Miller 2017; Sewordor and Sjoquist 2016). Now production companies that are geographically mobile can more easily film on location instead of being confined to a stage. This allowed filming to be more insensitive to location. While iconic landmarks and certain identifiers are needs for a film, these can easily be reproduced by one of three common methods: props or set construction to disguise a location, computer graphic post-production, or an establishing shot. Therefore, if it is more cost efficient to film in Atlanta than New York, a filmmaker can fake the location to make Atlanta look like New York in the film instead of going to New York. Another reason for the semi-migration out of established clusters was the growth of independent production companies and the growing demand of home video and cable television movies. Currently, this trend is being accelerated with the growth of broadband internet and streaming services like Netflix and Hulu. The independent companies seeking new ways to save costs did not have as strong a geographically-restricted affinity toward established agglomerations as their blockbuster counterparts (Sewordor and Sjoquist 2016). For their part states, like Louisiana and New Mexico, capitalized on this newfound demand for filming on location and began to open film offices to help attract and promote filming in their borders in hopes of revitalizing their struggling economies and attempting to grow their service industry (Miller 2017; Sewordor and Sjoquist 2016; Webb 2015). As some states became more popular, they were able to develop local concentration of workers, businesses and services that were important to film production thus becoming more attractive as on-site locations.

Studios seek to reduce costs as much as possible since film production and development is a high-risk business, which explains the boom of utilizing state film incentives (Thom 2019). For wide-release blockbuster flicks, budgets will regularly be in the $100 to $200 million range. Then there are marketing costs, which quickly add to that total. While the cost of equipment may have gone down, marketing and labor costs have only increased. As far as success at the box office goes, star power, film making, and especially advertising are considered the biggest predictors of success (Feng and Liu 2018). Yet, it is an investment at the end of the day since consumer reception is prone to change. Additionally, political instability in overseas markets, currency changes, and various counterfeiting, black-market industries represent challenges and liabilities for any given film's success at the box office. Therefore, film producers, who have high risk and a large investment, seek ways to reduce risk, and film incentives which lower costs are a major method of risk reduction (Thom 2019).

State Film Incentives

Through film incentives, state governments seek to spur economic development by attracting films to create jobs, attract new industry and to create a local film industry, in addition to branding their region as a tourism destination where people will subsequently spend money and states will benefit from tax revenue growth (Button 2018; Thom 2018; Miller 2017). Film incentives can take the form of tax incentives, grants, tax credits, cash rebates, sales tax exemptions, lodging cost exemptions, and favorable tax structures (Button 2018; Thom 2019; Small and Wheeler 2016; Swenson 2017). In 1992, Louisiana became the first state to offer film incentives and by 2010, 44 states had followed their lead (Adkisson 2013). The surge in the number of states offering film credits represents a policy convergence effect as states have aligned in their mission to attract Hollywood into their borders, competing with each other to score the coveted films (Adkisson 2013; Sewordor and Sjoquist 2016; Leiser 2017). During this timeframe an assortment of incentives were made available by states. Tennessee, Virginia, and Texas offered

tax grants of up to 17% of costs; 28 states provided sales tax exemptions; 27 offered tax credits (sometimes transferable); 17 gave out cash rebates for approved purchases, and a few provided postproduction grants (Swenson 2017). These incentives are often made up primarily of various subsidies, which vary widely from state to state. The subsidies correspond to film input costs and include categories such as: non-labor expenditures (excluding marketing, advertising), payroll of nonresidents, and payroll of residents (Button 2019; Thom 2018). Additionally, these subsidies may be transferable, meaning the film's tax credits received may be sold to third party bidders through brokers (Wright, Karlinsky, and Tarantino 2009; Button 2019). Moreover, they can be nontransferable but refundable, allowing the filmmakers to receive money back from the state upon selling it to them (Button 2019).

There are a number of studies conducted on targeted economic incentive programs. Bartik (2017), Blakely and Leigh (2017), Rickman and Wang (2018) and Buss (2001) synthesized the literature and have found that tax incentives have mixed impacts. Proponents argue these incentives generate revenue, expand their economic bases, increase jobs, as well as result in various spillover effects (Adkisson 2013; Button 2019; O'Brien and Lane 2017; Tannenwald 2010). There are studies that found evidence to support these arguments (for example Lee 2008; Strauss-Kahn and Vives 2009; Wilson 2009). Critics of these incentives point to other studies that have little to no effect these programs have on business location and job creation (for example Calcagno and Thompson 2004; Freedman 2013; Thom 2018).

When it comes to specifically SFI programs the findings have also been mixed, but most studies that do show benefits also point to a cost-benefit ratio and many lack the promised economic spillover effects (Button 2018, 2019; Dabney 1991; Luther 2010; Miller 2017; Swenson 2017). In 2015, Louisiana reported a return on investment of roughly 18 cents and New Mexico 14 cents on the dollar (Miller 2017). McHugh (2013) stated North Carolina spent $30 million to create 50-75 jobs. Massachusetts reported that between 2006 and 2012 the state has spent $118,857 per job created for a state resident (Massachusetts Department of Revenue 2014). Button (2018) argued that New Mexico and Louisiana, two early adapters of SFI, have seen little economic impact since implementing these generous programs. The main benefit the states have seen has been the statistically significant increase in feature films shot within the state. However, this did not translate into economic benefit (Button, 2018). As Button (2018) and Thom (2018) showed: the data does not support SFIs alone as a sustainable solution to create local film industries, which are characterized by wage growth, industry concentration, gross state product, or employment increases. A recent Florida Office Economic and Demographic Research (2018) study examined Florida's former film incentive program and found the state's program consisting of tax credits and exemptions to be positively associated with economic benefit of creating jobs, increases in state gross domestic product, but the study also found the tax generation did not pay for the cost of the incentive programs. Thom (2018) looked at over 40 states and their incentive packages from the years 1998 to 2013 only to find that the incentives' benefits were limited. For instance, lodging and sales tax waivers boasted no economic benefit, while refundable tax credits had temporary wage effects without influence on employment; transferable tax credits did not have an influence on employment but did have a temporary effect on wages (Thom, 2018). Others cite incentives as having modest to sizable economic benefits (Button 2019; Bartik 1985; Freedman 2013; O'Brein and Lane 2017). Miller (2017) posited television shows offer far more benefit to a specific region considering the longer period of time the industry will be in town offering employment opportunities and that states should seek these opportunities over films.

While there has been increased competition over the past two decades, the effectiveness of the incentive structures themselves began to be called into question (Small and Wheeler 2016; Miller 2017). Thom (2018) and Button (2018) both found evidence suggesting that the average state cannot create a sustainable local film industry using SFIs. In 2015, Louisiana scaled back its SFI program, while states like Alaska and Michigan completely abandoned their film incentive programs (Small and Wheeler 2016). Other states, such as Georgia and New York, have expanded their programs.

Case Study: GA Film Incentives

A number of large budget movies and television series have been recently filmed in Georgia (Bradbury 2019; Mays 2017). In a report that analyzed the top 100 best box office-performing films in 2017 and their respective filming locations, Canada came in first with 20 of these films shot within its borders, while Georgia came in second with 15 (Film L.A. 2016). Georgia has been given the highest rating from industry rankings, including Film Production Capital, and has been dubbed the Hollywood of the South. One of the main reasons behind this rating and high praise from the industry is Georgia's uncapped 20 percent base transferable tax credit for productions that spend a minimum of $500,000 in the state with the ability to apply for an additional 10 percent to embed a Georgia logo[1].

While Georgia did have a film commission office to help promote filming in the state, Georgia did not start offering film tax incentives until 2005 when The Georgia Entertainment and Industry Investment Act (GEIIA)[2] was passed. GEIIA was designed to entice productions to the state (Mays 2017; Meeks 2019; Small and Wheeler 2016). The 2005 GEIIA required that

[1] As Sewordor and Sjoquist (2016) state this additional 10% is relatively easy to obtain, thus the tax credit should be considered 30%.
[2] Georgia House Bill 539 (HB 539).

a production company must invest at least $500,000 in order to be eligible for a nine percent transferable tax credit (Small and Wheeler 2016). Furthermore, the GEIIA provided the following complementary transferable tax credits: three percent for the employment of Georgia residents, three percent credit for investments in certain counties that met the qualifications of being economically-disadvantaged, and two percent for expenditures of at least $20 million in the state (Small and Wheeler 2016). In 2008, GEIIA was redesigned as an attempt to attract even more productions to the state. The update eliminated the complementary credits, but it otherwise expanded the nine percent credit to 20 percent for productions that spend at least $500,000 in Georgia. It also included an additional incentive of 10 percent for the Georgia Entertainment Promotion (GEP) uplift for projects approved by the Georgia Department of Economic Development (Small and Wheeler 2016). The GEP approved projects must include an embedded logo advertising the product was made, or at least a portion was made, in Georgia.

In 2012, more amendments came to the Georgia SFI program. In addition to minor changes regarding the Georgia promotion, the credit was extended to apply to gaming companies (Small and Wheeler 2016). It still allows credits to be transferred, and there is no cap in place for film or television productions but there is one for the video game industry (Small and Wheeler 2016). Outside of the state tax incentives, the state has established other programs to enhance the industry locally, such as: Camera Ready Communities, a program launched by the state to train and certify local film liaisons for GA counties; and the Georgia Film Academy, which trains people to work in the film industry by partnering with the University System of Georgia and the Technical College System of Georgia to offer classes.

Methodology and Data

For the purpose of this study, we employed a case study of the State of Georgia. We develop a pre-posttest design comparing data prior to the state film incentive adaptation to data from post adaptation (Schutt 2010). Additionally, we compared the findings from the State of Georgia to other states to better understand how the Georgia program performed in attracting productions, businesses, and jobs. For developing an understanding of whether or not Georgia's state film incentive has created jobs and attracted businesses a case study is most appropriate. As Thom (2018) and Button (2018) stated an average state cannot just create an SFI program alone and expect it to be effective. By examining what has been deemed by the motion picture industry and others as a successful film location (Dockterman 2018; Film L.A. 2016; Trubey 2016), we can provide more context to the literature about whether SFIs are effective. We also compared the data for Georgia to four control states, three of which did have film tax incentives during this time period: Alabama, North Carolina, Louisiana and one that did not have such a program, Vermont. Table 1 lists the details of the states' SFI programs.

To quantify Georgia's investment in attracting the industry, we used the Georgia Department of Revenue's yearly tax data and information from the Georgia Office of Planning and Budgeting. The Georgia Department of Revenue collects data on the amount of tax credits claimed for offsetting taxes each year. These data were available from 2005 through 2016. This data provided some insight, but because there is a 5-year period to use tax credits once they are issued this measure is not as accurate as a year to year measure of investment. A more accurate measurement is the amount of tax credits issued during a given year. This data was provided by the Georgia Office of Planning and Budgeting but is only available from 2009 to 2018. Additionally, in order to track the film industries direct spending in the state we relied on data from the Georgia Department of Economic Development.

In order to quantify the number of productions in Georgia and the control states we used the Internet Movie Database (IMDb) Pro. IMDb is an online database with information concerning film and television productions. It contains information on over 4 million productions. IMDb Pro allows users to search titles based upon a number of features including film location, type of production (TV series, TV Movie, Feature Film, etc.) and year of release. Since we were unable to access the year of production, we assume it was filmed one year prior to the release date[3]. Data is presented from 2002 to 2017. Additionally, some productions were filmed in multiple states, therefore if a film was shot partially in Georgia or one of the control cases we counted that production as occurring in the state.

To quantify employment, wages, and business establishments, we used the Quarterly Census Employment and Wages (QCEW). QCEW is collected by the Bureau of Labor statistics for the years 2002-2017. For the purpose of this study we used the specific North American Industry Classification Codes (NAICS) of 5122110, "motion picture and video production." The QCEW will only capture the workers and establishments that are classified as motion picture and video production. While the QCEW data are seen as valid, these do not include employees that are in contract positions and thus receive a 1099 tax form rather than a W-2. While these jobs do occur in the motion picture industry, these tend to be for individuals in "above the line" positions (writers, producers, directors, and the main cast) and these jobs are less likely to be given to locals. As Button (2019) states, the contract jobs are a very tiny portion of the total possible employment effects in the motion picture industry and these contract jobs are more likely going to be filled by individuals outside of the state in already existing film clusters. Additionally, the QCEW reports full time and part time employment together and does not allow the user to separate it.

[3]This method was also used by Button (2018, 2019).

Table 1. Film Incentive Program by State

State	Film Incentive Program
Georgia	The Entertainment Industry Investment Act offers a one-time tax credit of 20% with a minimum investment of $500,000. An added 10% credit can be earned by using a fixed animated Georgia logo on approved projects. Georgia also offers a sales and use tax exemption that allows qualified organizations to get up to 8% on below-the-line materials and resources. There is no annual program cap for the film incentives and no sunset date.
Alabama	This state has an annual cap of $20 million. Qualified production organizations are allowed 25% credit on all state expenditures and a 35% rebate on payroll paid to Alabama residents for the production. The state offers sales tax and lodging tax exemptions, but an in-state audit must take place before incentives are awarded.
Louisiana	The new incentive program offers up to a 40% tax credit met with specific criteria. They have a minimum $50,000 expenditure requirement for screenplay productions and $300,000 for all other productions. Credits issued cannot exceed $150 million per fiscal year. The state also offers refundable tax credit for other digital interactive media and software development, such as games, mobile applications, etc. An in-state audit of production activities must also be performed to receive the tax incentives.
North Carolina	The incentive program was replaced with the North Caroline Film and Entertainment Grant Program in January of 2015. It offers a 25% rebate on certain expense or production purchases. The minimum expenditure to meet depends on the type of production: $1 million per television episode, $5 million for feature length films, and $250,000 for commercials. The state has no sunset date and requires an in-state audit to be awarded tax incentives.
Vermont	No program existing during the time period under examination.

Source: National Conference of State Legislatures.

Furthermore, the QCEW data understates employment due to the presence of the motion picture and film industry because it does not include data for employment and establishments that are subcontracted by the motion picture and video industry, such as caterers and electricians. Despite these limitations, QCEW is seen as an appropriate data source to capture employment and business establishments.

Analysis

Tax Credits and Film Investments in Georgia

The State of Georgia has invested heavily into its tax credit program. Figure 1 details the amount of tax credits used to offset tax liability from 2005 to 2016.[4] This is not the total value of tax credits generated in a year, but the amount of taxes offset by film tax credits in a given year.[5] This is an indication of the amount of tax credits that have been issued and used to offset tax liability in the State of Georgia. As one can see in the Figure 1, in 2005 less than $5 million worth of film tax credits were used to offset tax liability, but in 2016 this number was substantially more, over $283 million. From 2005 to 2016, the tax liability offset from tax film credits used was over $1.8 billion.

Figure 2 offers a perspective of the amount of film tax credits that were certified or issued to the industry by the states between 2009 and 2018.[6,7] Since 2009, there has been a steady increase in the amount of film tax credits certified by the Georgia Department of Economic Development. According to the Governor's Office of Planning and Budget, in 2009 $89 million of tax credits were certified and in 2018, $801 million of tax credits were certified. From 2009 to 2018, there were over $4 billion in tax credits issued. This was a significant increase in the amount of tax credits, which indicates that there was growth in the amount of money that productions were spending in the State of Georgia. Furthermore, when compared to the other states, the Georgia tax credits issued were significantly higher. In 2018, Georgia issued roughly $650 million more in tax credits than the second highest state, Louisiana. After 2013 when Alabama, North Carolina, and Louisiana seemed to offer fewer tax incentives, Georgia rapidly increased the number of tax credits issued.

Since the introduction of the film tax credits, the film industry has significantly increased its spending in Georgia from 2005 to 2018, as depicted in Figure 3. The data shows that in 2005 the new direct investment into the state from the film industry was $78 million. This increased considerably, in 2018 the new direct investment into the state was $2.7 billion. The growth of production spending in the state coincides with the introduction and revision made to the film tax credit program, with the largest increases in spending following the 2008 revision.

Figure 4 reports the number of movies, television series, television specials and television miniseries filmed in Georgia between 2002 and 2017. Prior to the introduction of film tax credits few were productions in the state. The number of movies, including TV movies, ranged from 14-29, TV series ranged from 3-14, and TV specials and miniseries ranged from 2-4. However, after tax credits were introduced, the number of productions noticeably increased. The number of films ranged between 38-153, TV series 15-70, and TV specials and miniseries 3-21. When looking at the data, with the exception of the years 2006 and 2013, there was steady growth every year in the total number of productions in the state.

Furthermore, we compared Georgia's film and television productions to other states, three with SFI programs (Alabama, North Carolina, and Louisiana) and one without SFI (Vermont) from 2002 to 2017. Figure 5 details the number of movies and television productions shot in each state during this time period. Georgia saw an increase in the number of productions almost every year, with the exception of 2006 and 2013, with the largest increase between 2009 and 2010. Interestingly between 2003 and 2009 Louisiana, with the exception of 2004, had more productions than Georgia. After 2009, the year after the first amendment to the Georgia film tax credits, the State of Georgia surpassed Louisiana. Louisiana's peak in productions was in 2012. This was followed by a steady decline in productions from 2015 to 2017. North Carolina, with a few exceptions, saw steady growth in movie productions but experienced a decline in 2016 and 2017. Over this time period Alabama experienced slow, steady growth, and Vermont's film and television industry remained relatively flat.

Additionally, we compared the efficiency of the program in terms of movies and television productions per dollars of tax credits issued. During the time period under examination, Georgia experienced a steady increase in the amount of tax credits per production per year, with the exception of 2012. In 2009 Georgia averaged $864,000 per production and in 2017 this increased to nearly $3.3 million per production. However, Georgia only averaged the highest per production cost in 2010, 2014 and 2017. In all other years Louisiana outspent Georgia per production, the lowest average for Louisiana was in 2013 which was $1.07 million per production and the most spent by Louisiana was in 2016 when they spent nearly $3.2 million per production. North

[4] According to the GA Department of Revenue, for year 2005-2014 this was calculated using Schedule 2 from the GA 500 firm and years 2005-2008 were calculated manually. In 2015 the Department Business Credit manager was introduced and improved the reliability of the data from 2015 forward.

[5] This information provides an insight into the tax credits, but since a company has five years from date of issue to use them this will not accurately reflect the amount of tax credits issued each year.

[6] While this is the preferred measure, the data is only available from 2009 forward.

[7] These number are reported on Georgia's 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 2017 extends from July 1, 2016 through June 30, 2017).

Figure 1. Film Tax Credit Utilized GA Department of Revenue

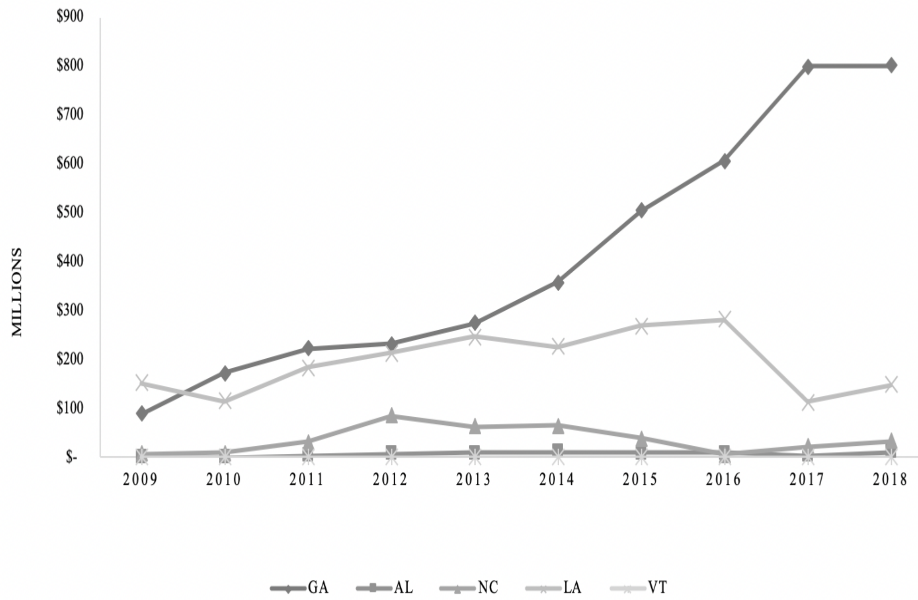

Figure 2. Tax Credits Certified

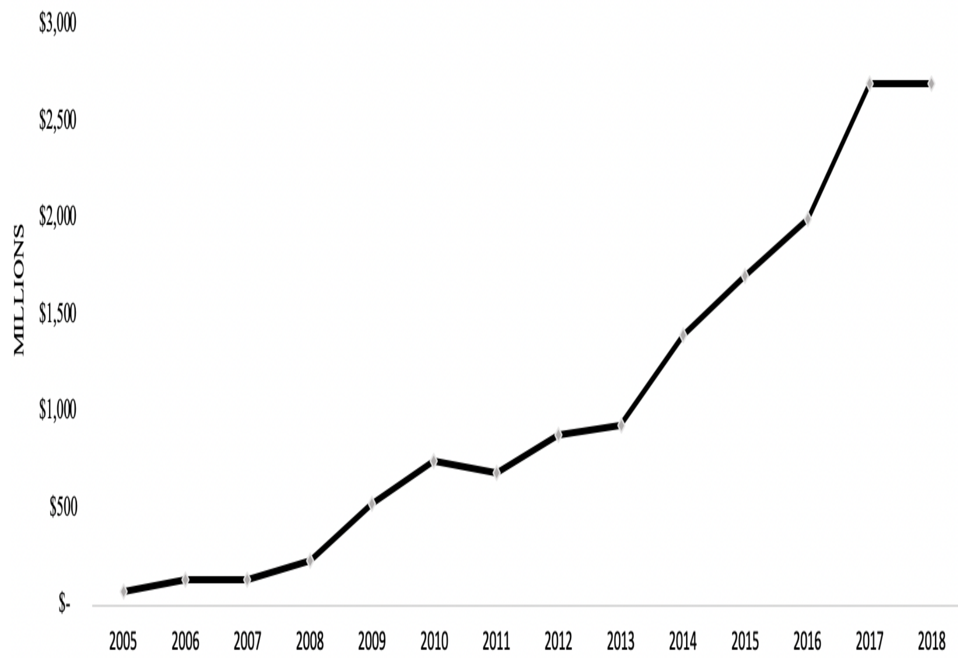

Figure 3. Film Industry New Direct Spending in GA

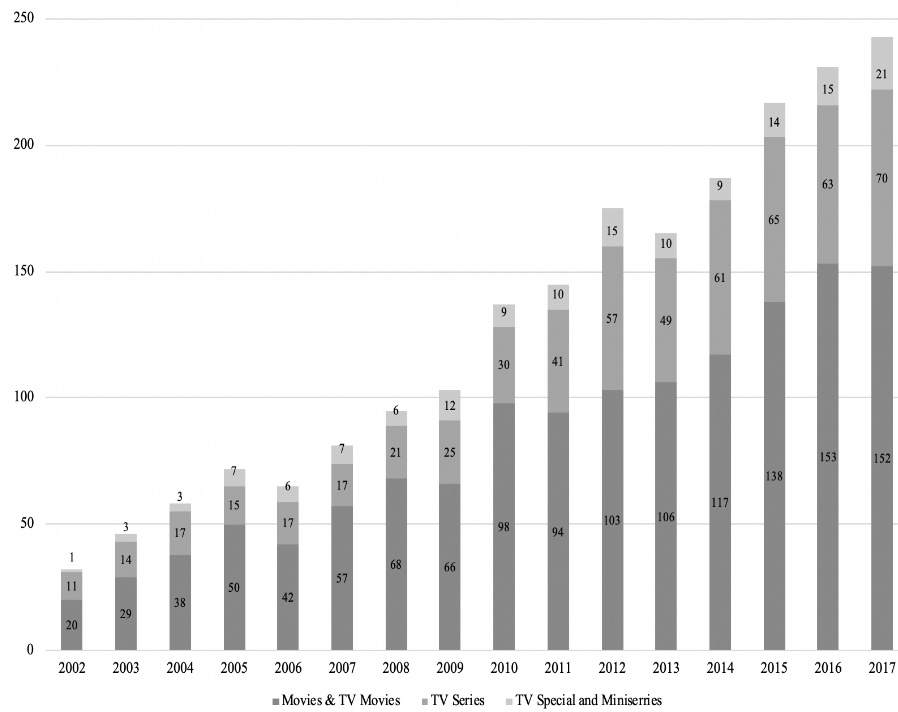

Figure 4. Movie and Television Productions in the State of Georgia

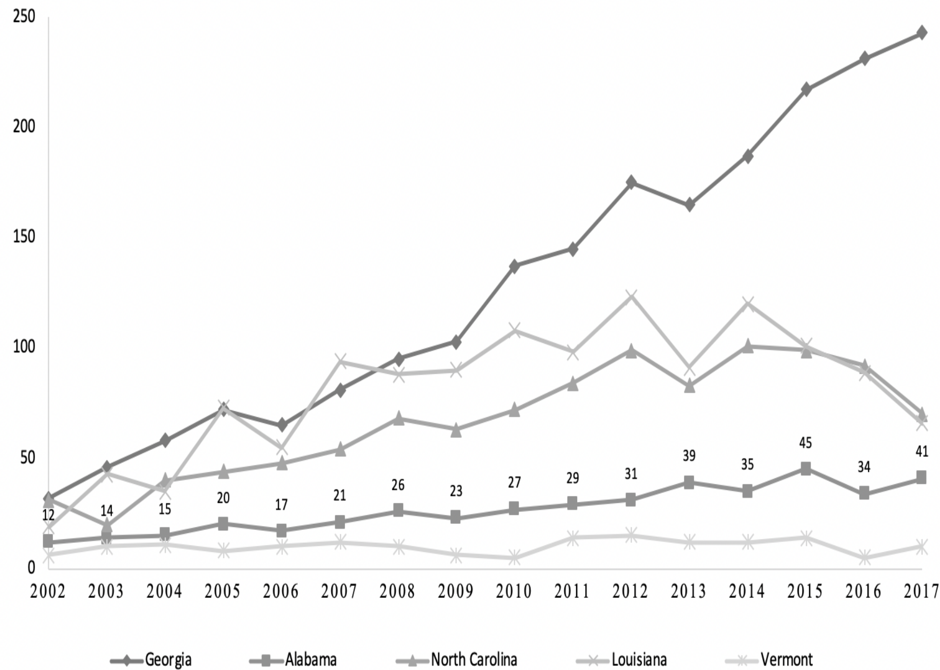

Figure 5. Number Movie and Television Productions by State

Carolina and Alabama comparatively had a lower ratio, never exceeding $857,000. North Carolina's tax credit per production was the highest in 2012, but following 2012 North Carolina had a steady decrease in the average cost of production. Alabama saw a relative growth in the tax credits issued per film from 2009-2014 but saw a decrease in 2015 and 2017.

Based upon the data, it appears that the film tax credits have contributed to the growth in the number of productions and the direct spending of the productions in Georgia. With this growth, there were large increases in the amount of tax credits Georgia was issuing and that are being used to offset liability. Furthermore, when compared to other states in this study Georgia was able to attract a larger number of productions to the state and spent significantly more in tax incentives. In order to understand this growth in Georgia, it is important that we examine employment in the film and movie industry.

Employment, Wages and Establishments

In addition to attracting more films into the state, SFI programs also have goals related to job creation. Table 2 lists the states and the employment per year in the motion picture and video production. Georgia had the largest number of employees in 2002 and in 2017. However, Georgia did not always lead the states under examination in the number of employees in this sector. Louisiana was the leader of employment in this sector when compared to the other states from 2006-2008 and 2012-2014. Georgia eventually surpassed Louisiana and in 2017, Georgia had roughly five times employment of Louisiana in this industry. From 2002 to 2017 Georgia experienced a 482% growth in the number of jobs in motion picture and video production, one of the fastest growing sectors for jobs in the State of Georgia during this time period. This was the second highest percentage of growth out of the states under examination behind Louisiana, which had the highest percentage of growth at 504%.

Furthermore, we compared the efficiency of the program in terms of jobs per dollars of tax credits issued. From 2009-2017 Georgia ranged between $34,178.19 and $85,293.42. Out of the states under examination Georgia had the highest ratio in four out of the nine years (2010, 2014, 2015 and 2017). Louisiana's ratio ranged from $36,300.58 to $101,635.64. Louisiana had the highest ratio in 2009, 2011, and 2016. North Carolina had a steady increase the ratio of credits per job between 2009 and 2012. However, from 2013 to 2017 the ratio tended to decrease. North Carolina ranged between $3,086.42 and $107,045.13. In 2012, North Carolina had the highest ratio of tax credits per job than any other state under examination in this time period. Alabama's ratio ranged from $535.97 to $42,140.71. Alabama experienced a steady increase in the ratio from 2009 to 2014, after 2014 the ratio tended to decrease.

Another consideration for the program is the type of income that employees will receive in these jobs. Table 3 lists each state along with the average annual wage for employees in motion picture and video production. In 2002 and 2017, Georgia

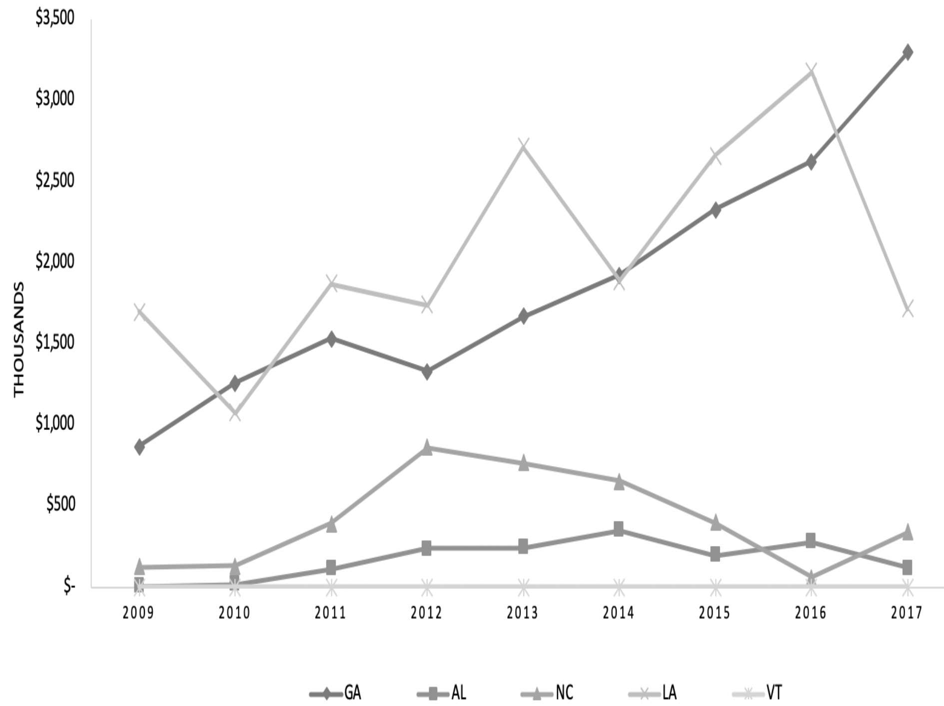

Figure 6. Tax Credits Dollars per Movie and Television Production

Table 2. Employment in Motion Picture and Video Production

	GA		AL		NC		LA		VT	
Year	#	% Change	#	% Change	#	% Change	#	% Change	#	% Change
2002	2638		258		995		516		58	
2003	2038	-23%	248	-4%	929	-7%	993	92%	72	24%
2004	1936	-5%	255	3%	850	-9%	1281	29%	85	18%
2005	1976	2%	254	0%	673	-21%	1971	54%	83	-2%
2006	1834	-7%	268	6%	632	-6%	1875	-5%	79	-5%
2007	1867	2%	303	13%	693	10%	2737	46%	76	-4%
2008	1935	4%	299	-1%	772	11%	3005	10%	83	9%
2009	2604	35%	269	-10%	747	-3%	1504	-50%	82	-1%
2010	2486	-5%	261	-3%	767	3%	2334	55%	114	39%
2011	2701	9%	250	-4%	821	7%	2221	-5%	126	11%
2012	3125	16%	276	10%	792	-4%	3610	63%	106	-16%
2013	3864	24%	262	-5%	847	7%	5513	53%	77	-27%
2014	4209	9%	291	11%	882	4%	4945	-10%	88	14%
2015	8380	99%	446	53%	1133	28%	5948	20%	102	16%
2016	10919	30%	383	-14%	1620	43%	3732	-37%	98	-4%
2017	15341	40%	409	7%	1448	-11%	3118	-16%	92	-6%

Source: Bureau of Labor Statics, QWEC

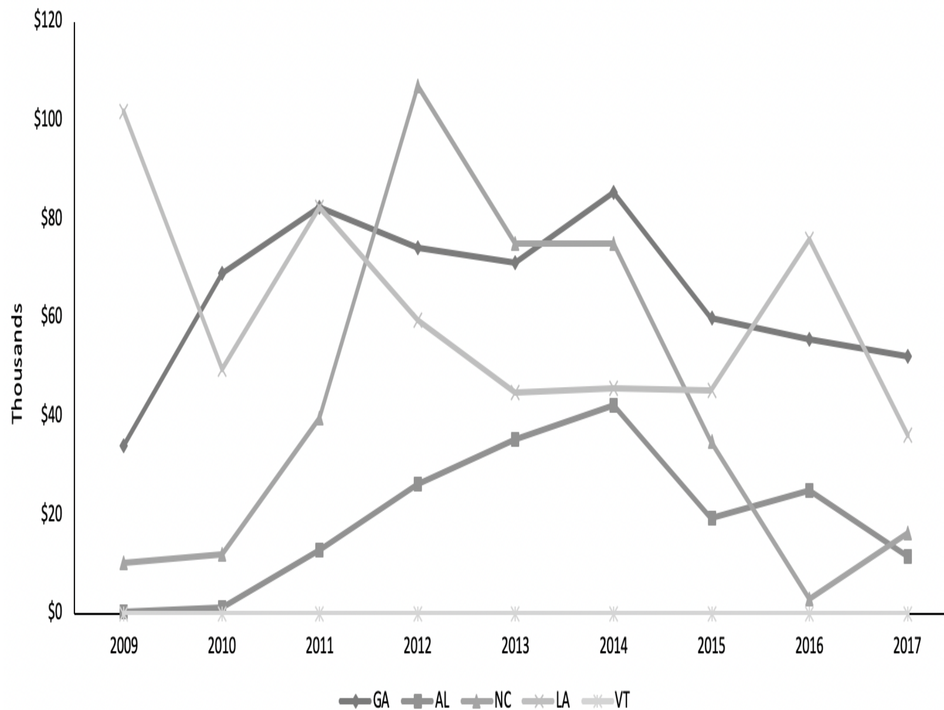

Figure 7. Tax Credits Dollars per Motion Picture and Television Production Job

employees had the highest average annual wage when compared to the other states. In 2017, Georgia was paying almost $12,000 more than the next highest state, North Carolina. The average annual salary for motion picture and video production employee in Georgia during 2017 was roughly $13,000 higher than the average annual wage for employees across all sectors, which was $52,189. During this time-frame the average annual wage for employees in Georgia increased 95%, however two states in this study, North Carolina and Louisiana, experienced larger percent increases from 2002 to 2017, 120% and 104% respectively. Georgia also did not have the highest average annual wage every year. The highest annual wage recorded during this time frame was North Carolina in 2015 with an annual average wage of $72,244.

The last consideration for the film incentive program was the number of motion picture and video production establishments in each state. Table 4 contains the number of motion picture and video establishments in each of the states under examination from 2002 to 2017. During the time period under examination, Georgia had more motion picture and video production establishments compared to the other states every year. In 2017, Georgia had 492 establishments which was 157 more than North Carolina, the state with the second most establishments. However, North Carolina (77%) and Louisiana (65%) experienced higher percentage of growth in motion picture and video production establishments than Georgia (46%).

When examining the effect of film tax incentives in Georgia, one can see the growth of film industry in Georgia in terms of employment, number of films and television shows, establishments and wages. The growth of the industry does coincide with the high cost of film tax credits. From 2009 to 2018, Georgia spent more than any other state in this study in film tax credits, over $4 billion. Furthermore, when examining the cost per job in 2017, Georgia spent $52,216.86 per position in motion picture and video production. The cost per job figure does not differentiate between full and part time workers and whether or not the worker is a citizen of Georgia.

It is important to note that this examination looked at the direct benefits and not indirect or induced benefits of the film industry. It does not account for job and establishment creation outside of the motion picture and video production or jobs and establishments created to service the film industry's presence. Additionally, a limitation of this type of analysis is that we are unable to indicate what percentage of film and motion picture productions produced are due to the SFI. However, a number of reports indicate that the film tax credits are an inducement for a number of film and motion picture productions in the state (Bradbury, 2019; East 2019). Still, one must consider the efficiency of the program as it relates to the direct benefits of the program. As the evidence demonstrates, the state did perform well on attracting the industry and creating jobs. However, the cost of the program raises questions about return on investment, which is relatively low, and the sustainability of a high cost program.

Table 3. Average Annual Wage for Employees in Motion Picture and Video Production

	GA		AL		NC		LA		VT	
Year	$ in 1000s	% Change	$ in 1000s	% Change	$ in 1000s	% Change	$ in 1000s	% Change	$ in 1000s	% Change
2002	33,305		37,958		24,121		23,350		35,607	
2003	39,411	18%	47,209	24%	25,959	8%	16,114	-31%	34,502	-3%
2004	44,061	12%	33,711	-29%	30,085	16%	14,827	-8%	33,964	-2%
2005	44,681	1%	36,803	9%	41,692	39%	37,092	150%	37,615	11%
2006	54,709	22%	40,758	11%	47,727	14%	32,462	-12%	43,510	16%
2007	60,625	11%	38,552	-5%	52,502	10%	38,582	19%	46,042	6%
2008	64,896	7%	39,834	3%	58,772	12%	41,086	6%	36,876	-20%
2009	61,544	-5%	39,026	-2%	55,852	-5%	62,825	53%	35,948	-3%
2010	60,001	-3%	41,429	6%	62,439	12%	65,809	5%	32,194	-10%
2011	3,041	5%	45,194	9%	59,833	-4%	70,598	7%	28,066	-13%
2012	66,487	5%	39,421	-13%	64,262	7%	48,047	-32%	28,232	1%
2013	69,587	5%	37,946	-4%	63,887	-1%	38,559	-20%	32,770	16%
2014	41,588	-40%	48,445	28%	67,490	6%	48,579	26%	34,761	6%
2015	46,161	11%	42,986	-11%	72,244	7%	47,590	-2%	39,170	13%
2016	65,352	42%	46,604	8%	55,110	-24%	43,277	-9%	41,549	6%
2017	65,014	-1%	46,738	0%	53,115	-4%	47,669	10%	34,709	-16%

Source: Bureau of Labor Statics, QWEC

Table 4. Establishments in Motion Picture and Video Production

	GA		AL		NC		LA		VT	
Year	#	% Change	#	% Change	#	% Change	#	% Change	#	% Change
2002	331		79		189		96		37	
2003	325	-2%	79	0%	171	-10%	88	-8%	35	-5%
2004	296	-9%	88	11%	176	3%	84	-5%	36	3%
2005	314	6%	87	-1%	161	-9%	123	46%	35	-3%
2006	329	5%	86	-1%	165	2%	139	13%	32	-9%
2007	347	5%	93	8%	175	6%	161	16%	34	6%
2008	364	5%	98	5%	178	2%	170	6%	36	6%
2009	399	10%	92	-6%	188	6%	172	1%	35	-3%
2010	394	-1%	94	2%	211	12%	181	5%	35	0%
2011	401	2%	92	-2%	225	7%	186	3%	32	-9%
2012	402	0%	93	1%	245	9%	195	5%	31	-3%
2013	416	3%	92	-1%	257	5%	197	1%	28	-10%
2014	450	8%	132	43%	278	8%	193	-2%	30	7%
2015	494	10%	159	20%	310	12%	205	6%	33	10%
2016	545	10%	130	-18%	348	12%	175	-15%	32	-3%
2017	492	-10%	115	-12%	335	-4%	158	-10%	33	3%

Source: Bureau of Labor Statics, QWEC

Conclusion

The intention of our research was to address the void in understanding SFI programs and advance the research on target incentive programs by examining Georgia's film tax incentives. Prior to this study little work had been done to understand the impact of Georgia's SFI program, which is one of the more revered programs by film industry stakeholders. After reviewing the literature, we examined Georgia's program and compared it to Alabama's, North Carolina's, Louisiana's, and Vermont's. We found that after adopting film tax incentives Georgia saw increases in terms of employment gains, wages for employees, the number of productions as well as the amount of money productions spent in the state, and in industry business establishments. This growth accelerated rapidly after Georgia revised the SFI program in 2008. As detailed above, Georgia also enacted a number of programs to bolster its efforts to attract and retain the film industry, such as Camera Ready Communities and the Georgia Film Academy. The evidence presented demonstrates Georgia's film tax incentive program was associated with benefits for the state. Comparatively, Georgia funds a larger amount of tax credits and has a larger film industry. Additionally, Georgia has consistently been ranked as one of the top sites in the world for blockbuster productions, these types of productions are associated with larger budgets and spending (Bradbury 2019; Dennis 2020; Film L.A. 2016). More tax credits issued in the state are associated with more films and employment in the film industry. Albeit those benefits were costly and not at the level claimed by others. The SFI program did not generate the level of benefits that was touted by the Motion Picture Association of America's report claiming that Georgia's film industry has generated 92,000 jobs and had a $9.5 billion dollar impact on the economy.

Georgia's program does raise questions concerning cost-effectiveness. In 2017, Georgia spent $801 million on tax credits, which translates to $52,216.86 for every job in motion picture and video production. From 2009 to 2018 Georgia spent over $4 billion on tax film incentives. This is a significant transfer of resource from taxpayers to the film industry, with large opportunity cost. Overall, the Georgia program does produce direct benefits, though the direct benefits do come at a high cost. As East (2019) noted, the film industry in Georgia seems reliant on these incentives. Thus, the loss or alteration of the incentives could lead to a significant decline of this industry considering its mobility. This leads to more questions about the sustainability of such a high-cost program to retain this highly mobile industry. In 2015, Louisiana had to cap its program due to the rising costs compared to the generated benefits, and while this appears to have negatively impacted the film industry in Louisiana the film industry is still present. In a recent report the Georgia Department of Audits and Accounts (2020) recommended that the state explores caps to reduce the financial risk of the state. It would be beneficial for future research to focus on the impact of caps, such as Louisiana's, on the local film industry to understand the effects of capping SFI on the industry's presence.

This research contributes to the broader literature on targets economic development incentives. Specifically, targeted incentives, such as Georgia's SFI program, may have costly benefits. Which leads to the larger question, even if SFI programs do meet the goals of creating jobs, attracting business, improving wages and increasing film production, is the cost worth the benefit? Proponents of film tax incentives argue that the incentives stimulate the economy more broadly, and spillover effects can be found in local services. However, Button (2018) estimates that the spillover effects from SFI programs are relatively small. In order to answer the question, one must consider the opportunity costs for pursuing these incentives. Instead of investing in other industries, public education, infrastructure, or cutting taxes, this money is disbursed to the film industry. Evaluating the competing priorities of states, it is imperative to understand the full impact of these programs. As with any program that is requiring a large amount of limited resources, it is important for states, including Georgia, to frequently evaluate the effectiveness and efficiency of SFI and other targeted economic development incentive programs.

References

Adkisson, R. V. (2013). Policy Convergence, State Film-Production Incentives, and Employment: A Brief Case Study. *Journal of Economic Issues (Taylor and Francis Ltd)*, *47*(2), 445–454.

Bartik, T. J. (2017). A new panel database on business incentives for economic development offered by state and local governments in the United States. *W.E. Upjohn Institute for Employment Research Report*. Retrieved from: http://research.upjohn.org//reports/225

Bartik, T. J. (1985) Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States. *Journal of Business and Economic Statistics, 3*(1), 14-22.

Blakely, E. J., and N. G. Leigh. (2017). *Planning local economic development*. Thousand Oaks, CA: Sage.

Bradbury, J.C. (2019) "Film Tax Credits and the Economic Impact of the Film Industry on Georgia's Economy". Bagwell Center for the Study of Markets and Economic Opportunity. Kennesaw State University. Retrieved from:

https://coles.kennesaw.edu/econopp/docs/GA 1-1.pdf

Button, P. (2018). Can tax incentives create a local film industry? Evidence from Louisiana and New Mexico. *Journal of Urban Affairs*. DOI: https://doi.org/10.1080/073 52166.2018.1530570

Button, P. (2019). Do tax incentives affect business location and economic development? Evidence from state film incentives. *Regional Science and Urban Economics*.
DOI: https://doi-org.ezproxy.augusta.edu/10.1016/j.regsciurbeco.2019.06.002

Buss, T. F. (2001). The effect of state tax incentives on economic growth and firm location decisions: An overview of the literature. *Economic Development Quarterly*, *15*(1), 90-105.

Calcagno, P. T., and H. Thompson. (2004). State economic incentives: Stimulus or reallocation?. *Public Finance Review*, *32*(6), 651-665.

Dabney, D. Y. (1991), Do enterprise zone incentives affect business location decisions? *Economic Development Quarterly*, 5 (4), 325-334.

Dennis, R. (2020 March 11th). Georgia is the number one location for filming blockbusters. *11 Alive*.

Dockterman, E. (2018, July 26). "How Georgia Became the Hollywood of the South: TIME Goes Behind the Scenes". *TIME.* Retrieved from: https://time.com/longform/hollywood-in-georgia/

East, M. (2019). An Examination of Georgia's Film Tax Incentive: Is There No Business-like Show Business in Georgia? *Mercer Law Review*, *70*(3), 749–781. Retrieved from:
http://search.ebscohost.com.ezproxy.augusta.edu/login.aspx?direct=true&db=a9h&AN=136195946&site=eds-live&scope=site

Feng, J., and B. Liu. (2018). Goodwill and System Dynamics Modeling for Film Investment Decision by Interactive Efforts. *Discrete Dynamics in Nature and Society*, 1–10. https://doi-org.ezproxy.augusta.edu/10.1155/2018/7521689

Film L.A., (2016). 2016 Feature Film Study 5. Retrieved from: https://www.filmla.com/wp-content/uploads/2017/05/2016_film_study

Florida, R. (2014). *The rise of the creative class–revisited: Revised and expanded*. New York: Basic Books.

Florida, R., C. Mellander, and K. Stolarick. (2011). Geographies of scope: An empirical analysis of entertainment. *Journal of Economic Geography*, 12 (1), 1–22.

Freedman, M (2013). Targeted business incentives and local labor markets. *Journal of Human Resources*, 48 (2), 311-344.

Georgia Department of Audits and Accounts. (2020). Impact of the Georgia Film Tax Credit. *Georgia Department of Audits and Accounts*.
Retrieved from: https://www.audits.ga.gov/rsaAudits/report/index

Georgia Department of Economic Development. (2018). Fiscal Year 2018 in Review. *Georgia Department of Economic Development*. Retrieved from: https://online. lowpaper.com/79590748/FYl7GeorgiaYearInReview/.

Georgia Department of Economic Development. (2019). "Incentives and Applications". *Georgia Department of Economic Development.* Retrieved from:
https://www.georgia.org/industries/film-entertainment/georgia-film-tv-production/production-incentives

Glaeser, E. L. (2011). *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. New York: Penguin.

Lee, Y. (2008). Geographic redistribution of US manufacturing and the role of state development policy. *Journal of Urban Economics*, 64, 436–450.

Leiser, S. (2017). The Diffusion of State Film Incentives: A Mixed-Methods Case Study. *Economic Development Quarterly*, *31*(3), 255–267.

Luther, W. (2010) "Movie Production Incentives: Blockbuster Support for Lackluster Policy." Tax Foundation Special Report no. 173.

Massachusetts Department of Revenue. (2014). "Report on the Impact of the Massachusetts Film Industry Tax Incentives Through Calendar Year 2012". Retrieved from: https://archives.lib.state.ma.us/bitstream/handle/2452/217709/ocn898214406-2012.pdf?sequence=3&isAllowed=y

Mays, S. (2017). What Sustains Georgia's Film Industry? *U.S. News - The Report*, C16–C21. Retrieved from: http://search.ebscohost.com.ezproxy.augusta.edu/login.aspx?direct= true&db=fth&AN=125960529&site=eds-live&scope=site

McHugh, P. (2013). "Film Tax Credits." Fiscal Research Division, North Carolina General Assembly. Retrieved from: http://wwwcache.wral.com/asset/news/state/nccapitol/2013/08/16/12784762/201308161256.pdf

Meeks, A. (2019). The Economic Impact of the Film Industry in Georgia. Center for Economic Development Research.

Miller, J. L. (2017). Louisiana Disguised: Film Tax Incentives and Location Representation in Contemporary Hollywood Films. *Journal of Popular Culture*, 50 (3), 466-489.

National Conference of State Legislatures. (2018). State Film Production Incentives and Programs. Retrieved From: http://www.ncsl.org/research/fiscal-policy/state-film-production-incentives-and-programs.aspx

O'Brien, N.F., and C.J. Lane. (2018). Effects of Economic Incentives in the American Film Industry: An Ecological Approach. *Regional Studies*, *52*(6), 865–875.

Pew (2017). "Georgia Tax Incentive Evaluation Ratings". The Pew Charitable Trust. Retrieved from: https://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2017/05/state-tax-incentive-evaluation-ratings-georgia

Rickman, D., & Wang, H. (2018). US State and Local Fiscal Policy and Economic Activity: Do We Know More Now?. *Journal of Economic Surveys*, 34 (2), 424-465.

Schutt, R.K. (2011). *Investigating the social world: The process and practice of research*. Pine Thousand Oaks, CA: Forge Press.

Sewordor, E., and D.L. Sjoquist. (2016). Lights, camera, action: The adoption of state film tax credits. *Public Budgeting and Finance*, 36(2), 5-25.

Small, O., and L. Wheeler. (2016). A Description of the Film Tax Credit and Film Industry in Georgia. Fiscal Research Center. Retrieved from: https://frc.gsu.edu/files/2016/02/ Georgia-Film-Tax-Credit-February-2016.pdf

Strauss-Kahn, V., and X. Vives. (2009). Why and where do headquarters move? *Regional Science and Urban Economics*, 39(2), 168-186.

Swenson, C. W. (2017). Preliminary Evidence on Film Production and State Incentives. *Economic Development Quarterly*, *31*(1), 65–80.

Tannenwald, R. (2010). State film subsidies: Not much bang for too many bucks. *Center on Budget and Policy Priorities*. Retrieved from: https://www.cbpp.org/research/state-film-subsidies-not-much-bang-for-too-many-bucks

Taylor, C. D. (2012). Conservation easement tax credits: A viable policy for stimulating donations? *State and Local Government*

Review, 44, 101-112.

Thom, M. (2018). Lights, camera, but no action? Tax and economic development lessons from state motion picture incentive programs. *The American Review of Public Administration*, 48(1), 33-51.

Trubey, S. (2016) “Georgia’s Movie Industry Surges in 2016,” The Atlanta Journal-Constitution. Retrieved from: http://www.myajc.com/news/local/georgia-movie-industry-surges-2016/ jnZPM97YDdRsz70rzXl7pO

Webb, L. (2015). *The Cinema of Urban Crisis: Seventies Film and the Reinvention of the City*. Amsterdam UP.

Wilson, D. J. (2009). Beggar thy neighbor? The in-state, out-of-state, and aggregate effects of R and D tax credits. *The Review of Economics and Statistics*, 91(2), 431-436.

Wright, K. K., S.S. Karlinsky, and K.A. Tarantino. (2009). Lord of the Rings Impact on Federal and State Film Industry Tax Incentives and Their Tax Treatment. *ATA Journal of Legal Tax Research*, *7*, 57–75.

Zhang, S. (2015). Impacts of enterprise zone policy on industry growth: New evidence from the Louisville program. *Economic Development Quarterly*, 29, 347-362.