Growing an Industrial Cluster: Movie Production Incentives and the Georgia Film Industry

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Abstract

The competition for film and television production has heated up considerably in the last decade. According to the Georgia Film, Music and Digital Entertainment Office, 333 film and television productions spent about $880 million in the state in fiscal year 2012, with another $2.2 billion in indirect spending in the state (Bluestein, 2012), employing about 25,000 workers (Gibbons, 2012). Georgia is now ranked in the top five states nationally for U.S. film production. This is often attributed to generous tax credits, beginning with the 2005 Georgia Entertainment Investment Act, which were expanded in 2008 to as much as 30 percent of base investment if the production included an animated logo promoting Georgia's entertainment industry.

Given what we know about film and television production, what might make Georgia competitive in this mobile, project-based industry? After over six years of subsidies, four of them since the 2008 increase, I will look at the established networks of firms and workers currently operating in the state to gauge the likelihood of sustainable industry and employment growth in Georgia. In particular, I will use a combination of state employment data and directories of film industry companies and workers to track the growth of Georgia-based film production companies and employees between 2000 and 2011.

More specifically, I will consider three overarching questions regarding the film industry in Georgia. First, what does the Georgia film industry network look like? I will attempt to get a sense of the scale, connectedness, and geography of the industry in the state. Second, does the Georgia film industry possess the "critical components" for a sustainable industry—the presence of the industry decision makers, specialized business services, smaller service businesses catering to the film industry, training and education programs in specialized fields, studios and other production, rehearsal, and sound-recording spaces, and industry-specific events such as trade shows and film festivals (Christopherson & Rightor, 2010)—or is it likely to in the near future? By assessing the size and embeddedness of the industry network in the state, I hope to address these questions. And finally, I will consider the question of the role of public policy in building and sustaining the film industry. More specifically, can tax incentives build a self-sustainable film industry that can remain competitive even when the incentives are removed?

Introduction

Much attention has been given to the attraction of film and other entertainment industries as a means to local economic development. To this end, policymakers at the state and local level have used traditional and non-traditional attraction strategies, including most significantly, tax credits and other financial incentives.

The theoretical basis for these attraction strategies brings together components of several traditional and more contemporary theories of regional economic development: *location* theories (comprised themselves of *growth-pole* and *cumulative causation* theories), the *product-cycle theory*, and *entrepreneurship* theories (Blakely & Leigh, 2009; Malizia & Feser, 1999). The cumulative causation and entrepreneurship explain how regions can gain a competitive advantage in economic development, while the growth-pole and product-cycle theories focus on the specific industries targeted. The competitive advantage in this case derives from combining an entrepreneurial environment with increased agglomeration within the industry sector.[1] Entertainment industries are targeted here because they are growing industries with innovative products. I will focus here on only the theories related to regional advantage.

Therefore, these theories conclude, attracting entertainment industries will lead to long-term employment growth. One challenge unique to these industries is the mobile nature of film and entertainment production. This mobility leads to both short-term projects spending and fierce competition between state and municipal entities. One theory as to why financial incentives work despite this mobility is that local networks of qualified workers are built up over time, and become an attracting force for more production (Christopherson & Rightor, 2010). These local networks attract production in two ways: by offering mobile productions a qualified, stable crew base that doesn't need to be imported to the production site, and by creating contacts leading to bringing and basing production in the area.

I would like to test these theories by using state and federal employment data to look at establishment and employment patterns in the motion picture industry and related industries. I will then use data from the IMDb Pro database of films and industry professionals, supplemented by the *2012 Georgia Film, Video & Digital Entertainment Sourcebook* (Georgia Department of Economic Development, 2010a), cross-checking it with *Oz Magazine's* "Creative Index 2011-2012" [2], (Powell & Powell, 2011) to measure the number of films, firms, and individuals comprising the state's motion picture industry. The results may suggest whether the hypothesis of attracting mobile productions in order to generate long-term employment in a region has some validity, at least in Georgia.

Theory and Literature

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[1] For a more detailed explication of these theories, see Malizia & Feser (1999) and Blakely & Leigh (2009, pp. 76-98)

[2] The *2012 Georgia Film, Video & Digital Entertainment Sourcebook* will henceforth be referred to simply as the *"Sourcebook,"* and the "Creative Index 2011-2012" simply as the "Creative Index."

product-cycle theory, and *entrepreneurship* theories (Blakely & Leigh, 2009; Malizia & Feser, 1999), with the relatively recent social network theory of economic development.

In attempting to evaluate the effectiveness of MPIs, I bring together three streams of literature. First, I consider the literature on industry incentives in general, especially those dealing with tax incentives, which attempt to evaluate their effect on industry location decisions, employment growth, economic welfare and efficiency. Second, I look at the literature around the analysis of industry clusters and their role in regional economic development. And finally, I bring these two together with the literature on the unique nature of the motion picture industry.

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These theories conclude, therefore, that attracting entertainment industries will lead to sustainable long-term employment growth. One challenge unique to these industries, however, is the mobile nature of film and entertainment production. This mobility leads to both short-term projects spending and fierce competition between state and municipal entities. One theory as to why financial incentives work, despite this mobility, is that local networks of qualified workers are built up over time, and become an attracting force for more production (Christopherson & Rightor, 2010; Weinstein & Clower, 2000). These local networks attract production in two ways: by offering mobile productions a qualified, stable crew base that doesn't need to be imported to the production site, and by creating contacts leading to bringing and basing production in the area. In the following section, I will briefly describe each or these theories, and why none fully explain the phenomena of entertainment industry-based economic growth. By exploring the social network theory more closely I hope to pull together these various strains of theory into a single cohesive of development for creative industries.

Economic Development Theories

Growth-Pole and Cumulative Causation Theories

Growth-pole and cumulative causation theories both share the common component of spatial disparity in economic development, though the mechanism behind such disparities differs somewhat. The rationale for growth-pole theory is based in four strategies: a focus on specific locations in limited periods of time, a limited number of such locations, selectivity among spaces based on pre-ordained criteria, and the modification of the spatial structure of both labor and the population (Parr, 1999). In contrast, the logic behind cumulative causation based on the endogeneity of technology to growth and the

[3] For a more detailed explication of these theories, see Malizia & Feser (1999) and Blakely & Leigh (2009, pp. 76-98)

dynamic externalities associated with that growth, including specialization, diversity, and knowledge spillovers (Choi, 2003). Areas that are successful in attracting capital because of some competitive advantage tend to draw human and physical capital from less-advantaged areas, leading to increased inequality between these locations (Blakely & Leigh, 2009). This creates a self-reinforcing cycle, as advantaged areas gain and disadvantaged areas lose in the competition for capital. These advantages also contribute to innovation, and ultimately, more economic growth.

Product Cycle Theory and Entrepreneurship Theory

The product cycle theory of economic development, sometimes referred to as *industrial filtering* (Blair & Premus, 1993) focuses on the outputs of the industries of interest. The theory is relatively straightforward, in that growth is a direct result of innovation, therefore policy to encourage innovation, especially in early-stage products in growth industries, is where the value proposition is found (Blakely & Leigh, 2009). New products require highly skilled entrepreneurs and designers, constant market feedback and flexible production facilities, all of which lead to locations providing this mix of resources and risk minimization (Goldstein & Luger, 1993). Markusen and McCurdy point out, however, that innovation alone is insufficient for growth (1989). In their case study of the defense industry in Chicago, they demonstrate that other factors, most notably the lack of a critical mass for specialized firms and labor, have caused policies designed to attract such industries to fail.

Finally, the entrepreneurship theory relates to these theories, especially the product cycle theory, because an environment attractive to entrepreneurship is considered necessary for innovation (Goldstein & Luger, 1993; Malizia & Feser, 1999). Therefore, communities are encouraged to create conditions leading to a critical mass of entrepreneurs, and that these entrepreneurial ventures can survive through their early stages to become viable enterprises in the long run (Goldstein & Luger, 1993). Space is an important factor here, because firms whose networks are beyond the metropolitan region, the tendency for leakage is greatly increased (Goldstein & Luger, 1993). Locations can enact policies which create and/or strengthen "knowledge networks" that will in turn attract more entrepreneurs to that locality (Blakely & Leigh, 2009).

Industry clusters and regional development

Michael Porter, largely acknowledged as the originator of the concept of industrial clusters, defined them as a geographic concentration of related firms, suppliers, customers, and supporting institutions that both compete and cooperate (Blair & Carroll, 2009; Motoyama, 2008; Porter, 1998). These firms gain competitive advantage precisely because of their colocation based on agglomeration effects, industrial complex effects, and social network effects (McCann, 2009)[4]. This theory has led to cluster-based economic development (CBED), which uses the competitive advantage industrial clusters represent to develop a pro-active strategy for attracting and growing competitive industrial clusters (Blair & Carroll, 2009). One problem with this approach, however, is that it uses existing clusters as models, and these are often already located in

[4] This section was largely based on three summaries of cluster theory by Blair (Blair & Carroll, 2009), McCann (2009), Motoyama (2008), and Perry (2009).

economically advantaged areas, making replication without detailed comparative analysis difficult if not highly unlikely (Perry, 2009). Other issues with CBED are the lack of explanatory data for how clusters form (i.e., go from a smattering of similar firms to being a functioning cluster), at least some of the advantages of clusters conflict with each other (e.g., competing clusters can diminish the competitive advantages of each), and it doesn't allow for the majority of industries for whom cluster development seems unnecessary (Perry, 2009).

Cluster-based economic development has led to industry targeting, which Voytek and Ledebur point out can be problematic as well. They note that we still know too little about location decisions for non-manufacturing sectors for CBED to work, about how to integrate this strategy into comprehensive economic development plans, the techniques to use one targeted industries are identified, nor the expertise, talent, experience and knowledge to implement effective targeting strategies (Voytek & Ledebur, 1997). Others argue that targeting is still beneficial despite these limitations (Iannone, 1997).

Industry Location Incentives

State and local governments have a long history of using government policies to lure businesses to their jurisdictions, but the rapid proliferation of such policies since in the last thirty years has led to an increase in interregional competition that some have termed a "new war between the states" (Buss, 2001; Holmes, 1995; Ledebur & Woodward, 1990; LeRoy, 2007). However, while these policies have been popular among policymakers and voters as potential job creators (Buss, 2001; Holmes, 1995; Markusen & Nesse, 2007; Rolnick, 2007), some economists and urban planners have been skeptical of their efficacy and efficiency (Holmes, 1995; Markusen & Nesse, 2007; Rolnick, 2007). Tax incentives have been a particularly popular tool for economic development in recent years, especially after the passage of the North American Free Trade Agreement and other national policies that have forced states to become even more aggressive in competing for business (Buss, 2001).

Economists generally have evaluated tax incentives using three criteria: fiscal and economic impacts, location efficiency, and tax equity. Most studies of industry tax incentives have focused on the first criterion. Fiscal and economic impacts are related, and though the relationship is complex, one would generally expect the two to move in the same direction in response to government incentives to specific businesses or industries. In other words, positive economic impacts would be expected lead to positive fiscal impacts and vice versa, since as business revenues rise, tax revenues would rise as well.

This renewed interest in supply-side attraction strategies is surprising, however, given the evolution of economic development tools leading up to it. Ted Bradshaw and Edward Blakely wrote of a "third wave" of economic development policies (Bradshaw & Blakely, 1999). The first wave emphasized direct payments to firms to attract them to the region. The second wave focused on developing existing local firms and entrepreneurship, and the third wave emphasizes the importance of creating a "supportive economic development marketplace." (Bradshaw & Blakely, 1999, p. 230). Fitzgerald and Leigh (Fitzgerald & Leigh, 2002) described a similar evolution, and the two were later merged

by Blakely and Leigh (2009). So what has created this seeming reversal of a decades-long trend? The final of the combined five phases of economic development strategies described by Blakely and Leigh is then criticized by the authors, because the reliance of market solutions based on industrial clusters, especially in key growth industries, can lead to concerns about sustainability and equity (Blakely & Leigh, 2009).

Hysteresis and the labor market growth

If the goal of incentives is to increase employment in the long-run, can this be achieved by the short-term employment gains that most incentives offer? According to Bartik, the answer is yes (1991, pp. 11-12). Economists borrowed the term *hysteresis*[5] from the natural sciences to describe this phenomenon, and Bartik showed that it seemed to fit. According to his research, a one-time impact on the employment rate had effects rippling out for at least eight years following, affecting unemployment rates, labor force participation, and upgrades in occupational status. But while such incentives can have positive long-term effects, he later cautions against overestimating these gains and allowing business interests dominate in the debate on incentive policies (Bartik, 2007). The empirical evidence on the efficacy of local incentives remains mixed, however, and seems to suggest relatively modest gains in some specific situations (Hissong, 2003).

Critiques of Incentives

Fiscal and economic impacts are not the only criteria on which economic development incentive programs have been judged. As incentive programs aimed at certain firms have morphed into programs to develop industrial clusters, several key criticisms remain. In particular, I wish to highlight concerns about location efficiency, rent-seeking behavior, opportunity costs and tax inequality.

Location inefficiency

One of the strongest economic arguments is that short-term incentives can't make up for long-run location disadvantages. Many studies have suggested that tax rates and tax incentives represent a low priority for firm location decisions. (Mackay, 1994; Markusen & Nesse, 2007). This is largely because the advantages they represent are small relative to other more important factors in determining the most efficient firm location. This argument suggests one of two outcomes: that if attraction policies are successful in bringing economic activity to inefficient locations, eventually the firm will move to a more efficient location, or at least harm more efficient producers not receiving subsidies (Thomas, 2007); or that incentives can only succeed when the location decision is between equally efficient locations. The former is clearly bad policy for sustained economic growth, but the latter may only succeed if not subjected to other issues, such as rent-seeking behavior, inefficient allocation of public resources, and tax inequality.

Rent-seeking behavior and a "race to the bottom"

A major concern of many types of incentive programs is the concern that it encourages rent-seeking behavior, with businesses seeking policy changes that benefit individual

[5] In the natural sciences, the term refers to magnetic and elastic properties of certain materials, and is typically used in economics to refer to a change in equilibrium after an economic shock such as a major recession (Martin, 2012).

firms or industries, rather than the economic gains derived from competition. This concern views rent seeking as assuming a zero-sum game, in which powerful interests simply redistribute existing economic activity rather than creating new wealth (Markusen & Nesse, 2007).

Related to rent seeking is the issue of a "race to the bottom," where jurisdictions merely compete to redistribute existing economic activity from rent-seeking firms and industries by outbidding others while increasingly reducing the long-term tax revenues and economic welfare of each jurisdiction, and ultimately the general welfare (Fisher, 2007; Fisher & Peters, 1997; Markusen & Nesse, 2007; Peters & Fisher, 1995). Models based on the "prisoner's dilemma" and game theory suggest that this may be the case (Holmes, 1995).

Opportunity costs
Some critics have pointed out that even seemingly successful incentive programs may replacing policies that could use those same resources to achieve a greater impact on local economic development (Markusen & Nesse, 2007). This common counterfactual argument suggests the importance of considering several possible uses of public funds, and the outcomes likely with each, before choosing one approach. Those who advocate for more sustainable policies might argue that public funds would be better spent on improving the overall business climate of the jurisdiction by focusing on workforce development, infrastructure, and the regulatory regime (Blakely & Bradshaw, 2002; Blakely & Leigh, 2009).

Tax inequality
Tax incentives for firms also have distributional effects on tax fairness. Tax incentives shift the tax burden from taxpayers to corporate ownership (Thomas, 2007). In addition, they represent an increasing regressivity in state and local tax systems, as progressive taxes like the income tax has been cut while more regressive taxes such as consumption taxes and fees for government services have been raised (Fisher, 2007).

Motion Picture Industry Organization

The way creative industries are organized is different from other sectors such as manufacturing or retail. These industries, especially those as complex as the motion picture industry, require many working parts to come together for specific projects that may last anywhere from a few days to a few months, but rarely longer than a year. In addition, projects vary widely in their location depending on exterior scenery requirements. The heavy use of subcontractors and individuals makes existing networks especially important for this project-based, variable-location production scheme.

Networks and Project-based Production in Creative Industries

Flexible specialization, project-based work and contingent labor arrangements are especially important in the film and entertainment industries (Christopherson & Storper, 1989; Storper & Christopherson, 1987). Another related industry in which this is true is the new media industry. A study of new media workers in New York showed that, given the project-based nature of the work and the non-traditional work arrangements of the work force, local social networks were the most important source for employment

opportunities (Batt, Christopherson, Rightor, & Van Jaarsveld, 2001). The importance of social networks for project-based production was further substantiated by Neff et al. (Neff, 2005; Neff, Wissinger, & Zukin, 2005). The significance of networks in these industries represents an opportunity for local economic development, since networks are more difficult to move than large firms and footloose production (Batt et al., 2001; Christopherson & Storper, 1989). Finally, it is worth noting that arts and entertainment industry workers tend to, as Batt et al. found with new media workers, colocate (Currid & Williams, 2010). Florida et al. call this phenomenon "geographies of scope" (Florida, Mellander, & Stolarick, 2009), which they define as "significant, large-scale concentrations of key related skills, inputs and capabilities" (Florida, Mellander, & Stolarick, 2012, p. 198). They found a close spatial connection between many segments of the entertainment industry, though these connections seem to be diminishing over time. Studies in California, Texas and New York seem to confirm the importance of labor and firm networks for the film industry. Christopherson and Storper noted the importance of fairly closed networks in the Southern California film industry, especially given the familial and social contacts necessary to break into Hollywood (1986). When Texas began to target the film industry in the 1990s, they found both dramatic growth and increased competition by other states (Weinstein & Clower, 2000). The authors concluded that only areas capable of maintaining strong human and physical infrastructure could be competitive in the industry. And as recently as 2010, Christopherson and Rightor suggested that, among other things, New York's comparative advantage in the industry was largely due to the concentration of creative talent located there (2010).

Citing earlier studies of Los Angeles and New York , Christopherson and Rightor identified what they described as six "critical components" for a sustainable film industry. These include

- The presence of the industry decision makers (studio executives, producers, etc.),
- specialized business services such as attorneys, investment bankers, location scouts, and agents,
- smaller service businesses catering to the film industry,
- training and education programs in specialized fields,
- studios and other production, rehearsal, and sound-recording spaces,
- and the research and development that comes from industry-specific events and programs such as trade shows and film festivals (Christopherson & Rightor, 2010, pp. 345-346).

A seventh oft-cited critical factor is location. Locational advantages are not only economic in nature. Despite the digital magic available to the twenty-first century filmmaker, location still does matter. First, there are specific locations that are difficult to replicate, either because they are iconic, or unique in other ways (Lukinbeal, 2004). But even more important for building a sustainable industry is having a variety of locations that can stand in for other locations, ideally located in close proximity (Gasher, 2002). Other factors, such as the quality of natural light and a moderate climate, can also be attractive to filmmakers, as these were considered among the attractions that lead to the

rise of Hollywood (Scott, 2005).

The question is, can locations outside of Los Angeles and New York create and sustain these components, and thus nurture a competitive, self-sustaining industry cluster?

"Runaway production"

Technology and globalization has made industries in general more "footloose" than they have been previously (Bartik, 2007), but this is especially true in the motion picture industry (Christopherson & Storper, 1989; Lukinbeal, 2004; Scott, 2002; Weinstein & Clower, 2000). The concern about "runaway production" began in the 1980s and 1990s, as vertical disintegration was deconcentrating the power of a few firms (Storper & Christopherson, 1987), while Canada and other locations began seriously competing for film industry production (Gasher, 2002; Lukinbeal, 2004), and this in turn led many states in the U.S. to bid for work which might otherwise go abroad (Christopherson & Rightor, 2010).

Storper and Christopherson found that even as the actual filming moved to other locations, employment and firms in the motion picture industry reconcentrated the Los Angeles area (Storper & Christopherson, 1987), a pattern that has not changed dramatically since (Christopherson & Rightor, 2010). Some have argued, however, that the "hegemony of Hollywood" may be threatened in global markets, especially as other countries increase their support for indigenous cultural production (Scott, 2002).

The debate about "runway production" has evolved over time, becoming less about major studios controlling production and forcing "independents" to work in established locations, and more about the freedom of producers to shoot wherever they found it most cost-advantageous (Christopherson & Clark, 2007). The results, as Scott and others have found earlier, has been a continued concentration of the high-wage, high-skilled employment in Los Angeles, while shooting locations increasingly move out based on cost and aesthetic considerations (Christopherson & Clark, 2007).

Need for specialized infrastructure

As the studies by Storper, Christopherson, Scott and Lukinbeal have suggested, the complex of specialized resources in the Los Angeles region, and to a somewhat lesser extent, in New York City, are a key component in building and reinforcing them as industry centers. But the sheer scale and sexiness of the industry has made it seem possible for other states to get a piece of this lucrative pie. The question is, can these remote film production centers ever become more than just an expansion of the old studio back lot? Obviously some policymakers believe they can.

The bid for a local film industry is a challenging strategy. Lacking the labor organization so important to Hollywood, which relies on social networks, trade unions and established training institutions such as University of Southern California and UCLA (Storper & Christopherson, 1987), replicating this milieu will be a long and tedious process (Weinstein & Clower, 2000). Or as Christopherson, S., & Rightor point out, "Without

this infrastructure, a state that subsidizes footloose film or TV production projects has little chance of building a sustainable local industry." (2010, p. 346)

Hong (2010) developed a series of indices to represent man-made and natural amenities deemed attractive to film industry production. Hong found that man-made infrastructure such as those cited by Christopherson and Rightor and Weinstein and Clower had the greatest positive effects on film production, along with the state's tax incentive policies (Hong, 2010).

Impacts of the Film Industry and MPIs

Many studies have attempted to value the effectiveness of movie production incentives, and the results have been notably varied. This may be in part because the vast majority has been conducted by or at the behest of industry representatives and/or advocates. Following is a brief summary of several studies, which fall roughly into three categories: general studies, looking at the nation as a whole or several states; state studies, usually done in advance of or following the implementation of MPIs, and academic studies in peer-reviewed journals with no sponsorship by interested parties. My research suggests that this last category represents only a handful among the dozens undertaken.

Previous studies: fiscal & economic impact analyses

General summaries

Reports on multiple states tend to represent entrenched interests. Of the four such reports I discovered since 2009, one represented industry interests—the Motion Picture Association of America (MPAA)—while two others represented anti-tax or anti-business research organizations—the Tax Foundation and the Center on Budget and Policy Priorities (CBPP) respectively. The fourth, a report by the National Governors Association, relied heavily on the MPAA report (Motion Picture Association of America, 2009) by as the basis for the economic impact of the motion picture and television industry. Not surprisingly it reported that

> studies have shown that the motion picture industry benefits state and local economies by attracting out-of-state investments; creating high-paying jobs; contributing to the economic and civic vitality of communities; and stimulating cultural tourism. (Pierce, 2008)

The report also cited ten state-level reports, most of which were funded by film offices or related entities, and seems to encourage states to compete for mobile film production.

The Tax Foundation and the CBPP, groups more skeptical of using tax money for industry-specific subsidies, provided two other studies in 2010. In the Tax Foundation report did not conceal its message, entitling it "Movie Production Incentives: Blockbuster Support for Lackluster Policy" (Luther, 2010). In it they give detailed breakdowns on the types of MPIs used, their growth over time, and estimates on their costs to states and their taxpayers. The report is especially critical of the transferable and/or refundable tax credits offered by (at the time) some 29 states and Puerto Rico, as well as a more recent innovation, direct cash rebates. It also suggests that jobs created are often either simply shifted from other employment, filled by out-of-state residents, or short-term, and that the

revenue gains shown were either illusory or non-existent. It cites political "rent-seeking" and an "arms race" mentality with encouraging MPI growth, and ultimately recommends federal, multilateral, or if necessary, unilateral, moratoria on MPI competition. Similarly, the CBPP report is subtitled "Not Much Bang for Too Many Bucks," and cites many of the same problems as the Tax Foundation report (Tannenwald, 2010). This report also includes a detailed critique of one key state study, the Ernst & Young study commissioned by New Mexico to replace the earlier, less sanguine report by New Mexico State University's Arrowhead Center, which they say exaggerated the tourism impact, counted much of the payroll spending twice, and lacked methodological transparency.

Lack of transparency and corruption are yet more reasons to be concerned with MPIs. *Governing* magazine reported that not only was it virtually impossible to get reliable data from anyone other than industry or film office sources, but that in at least two states, Iowa and Louisiana, film office officials and film producers have been convicted on charges of inflating film expenditures ("Former Iowa Film Office head gets deferred judgment, probation," 2011; "Judge sentences film producer to prison for Iowa film tax credit scandal," 2011; Patton, 2010).

Louisiana

After nearly four years of offering 25% tax credits for filmmakers, a 2006 Louisiana Film Office-commissioned report by Economics Research Associates (ERA) showed weak growth. At that point, although production activity did increase, there were no indications that a "homegrown, local film market" had been established (Christopherson & Rightor, 2010). Updates in 2009, also by ERA, and in 2011 by BaxStarr Consulting Group, showed progress toward that end. In 2009, ERA indicated that "a majority of production activity occurring in the state of Louisiana is indigenous," meaning by local production companies and service providers (Economics Research Associates, 2009). The 2011 reported a large shift in the proportion of production budgets spent in the state, from 34% in 2006 to 64% in 2010, presumed to be a result of the change in the tax credit law which applied the credits only to in-state spending. The report went on to say that

> This shift in spending is significant because it reflects the growing maturity of the film industry in Louisiana. For example, services that once had to be performed in Los Angeles can now be secured in Shreveport, and jobs that were once found only in Burbank, CA are now based in New Orleans. (Baxter, 2011)

New Mexico

As was noted earlier, controversy erupted with competing reports in New Mexico. First, the Arrowhead Center of NMSU was asked to study the impact of the film industry on the state's economy (Popp & Peach, 2008), but the results painted a very negative picture, showing only 14 cents in return for every dollar spent in state incentives. Enter Ernst & Young, brought in to "revise" the Arrowhead Center report by the state film office unhappy with the earlier report (Francis, 2009). This report showed a much more respectable 93 cents on the dollar in state taxes, and $1.50 in all taxes in the state. But the controversy continued with mutual challenges to the methodology of each (Kamerick, 2009), including a memo from the chief economist of the Legislative Finance Committee

which challenged the Ernst & Young study point-by-point, ultimately showing a return of 25 cents on the dollar, much closer to the Arrowhead Center study (Francis, 2009).

Florida

A study commissioned by The Governor's Office of Film & Entertainment showed a surprising, if somewhat obscured, moment of honesty in the section on "Growing the Indigenous Industry": "… anecdotal evidence points to Florida as a being seen as a *poor place for industry business.*" [italics added] (Harper, 2009, p. 21) Maybe less surprising were the suggestions for improvements, which included "better, *more consistent incentives*; increased infrastructure; an improved business climate and better marketing of what the state has to offer." [italics added] (Harper, 2009, p. 21) The SWOT analysis included strengths like industry infrastructure and existing production centers, and threats by competing states and countries.

North Carolina

For some thirty years, the biggest film center outside of Los Angeles and New York had been in southeastern North Carolina. After seeing its preeminence challenged by Louisiana and other states offering MPIs, the regional film commission ordered a study from the UNCW Center for Business and Economic Services (Hall, Dumas, & Schuhmann, 2009). This fairly straightforward economic impact analysis was based on the typical cost structure of four "mid-major" film productions per year, defined as productions with budgets of approximately $25 million, and showed an estimated annual impact of $75 million in the three-county MSA, with an associated estimated $2.1 million in property taxes (p. 15).

A more recent report from Ernst & Young (2009)(Ernst & Young, 2009) showed a return-on-investment of $0.98-$1.30 for each dollar spent at the 15 percent tax credit level, with the higher number representing the addition of local tax revenues. But despite the estimate that raising the tax credit to 25 percent would lower that ROI to $0.69-0.92 in 2010 and to $0.67-0.89 in 2011, the report issued this ominous statement:

> North Carolina's 15% film credit attracted a significant number of productions in 2007, but has grown increasingly less effective as other states have adopted more competitive film credit rates ranging from 25% to 42%. (p. 13)

Not surprisingly, the state legislature promptly increased the tax credit to a capped 25 percent in July 2010 (FilmNC, 2012).

Academic studies

One of the earliest academic works on the impact of the film industry and policies to promote it predated the tax credit boom of the 2000s, using Texas as a case study. In their conclusion, Weinstein and Clower (2000) answered the question "What can or should states do to attract the film and video industry?" by offering three pieces of advice: have a professional, well-funded film commission, fund the training of human resources and a "fiscal environment that is attractive to filmmakers," and focus on assisting indigenous producers (Weinstein & Clower, 2000, p. 393). They quoted Christopherson and Storper to support their view that, regarding the ability for states to attract film production, "only

those states that have in place the requisite human and physical infrastructure will succeed. (Weinstein & Clower, 2000, p. 392)."

A more recent study of the New York film industry is one of the more comprehensive studies not funded by industry advocates or opponents, and like the Texas study, distinguishes between locations with existing human capital and location amenities and those lacking the same (Christopherson & Rightor, 2010). Drawing on previous state studies, they warn of weak and variable results for states other than California and New York, and cite issues about transparency, negative impacts on state revenues, concerns about tax equity, picking industry winners and losers, and the "race-to-the-bottom mentality" that state competition creates. Because of these reasons, they warn against subsidies even when states like New York have a distinct competitive advantage already.

In addition to the peer-reviewed articles, one dissertation addressed the question of MPIs and their impact on film production activities as well. Hong (2010) used a detailed set of statewide amenities to measure the impact of these as well as tax incentives on film production locations, first for all states, and then in a quasi-experimental study of Louisiana and New Mexico. He found that nationally, tax incentives had the greatest effect on film production activity, though in the study of matched states, the overall economic impact of such policies was negligible.

Georgia's Entertainment Industry Tax Incentives

The State of Georgia has a long history of working with the entertainment industries, having established the Georgia Film, Video & Music Office (now called the Film, Music and Digital Entertainment Office), in 1973. The state passed its first film and video tax incentive package, HB 539, in 2005. In 2008, the bill expanded the level of incentives and included eligibility for the music and digital entertainment industries. The 2008 legislation, known as the "Georgia Entertainment Industry Investment Act" (HB 1100), covers many aspects of these industries, but this study will focus only on the direct tax incentives offered by the program (Georgia Department of Economic Development, 2010b).

Program Intention

A press release from Governor Sonny Perdue offered the following as the motivation for the 2005 bill:

> HB539 increases Georgia's competitiveness in the entertainment industry and positions the state as a premiere location for film, music and entertainment technology. The legislation will help attract and grow traditional film and video companies and projects, as well as lay the foundation to grow the next generation of entertainment companies in this state (GA Office of the Governor, 2005).

How It Works

The 2008 law boosted the state tax credit for qualified production and post-production expenditures to as much as 30%, from the previous cap of 9-12%. It also expanded the credit from only applying to traditional motion picture projects such as feature films, television series, commercials and music videos, to digital entertainment industries such as game development and animation (Georgia Department of Economic Development,

2010b).

The program offers an across the board flat tax credit of 20% of production costs on projects with a total minimum investment of $500,000 on certified productions in Georgia. Productions can earn an additional 10% Georgia Entertainment Promotion (GEP) uplift if they include an embedded animated Georgia logo on the final products. The tax credits are fully transferable for up to five years, and must be sold to another Georgia taxpayer for no less than 60% of face value (Georgia Department of Economic Development, 2010b).

The Georgia Film, Music and Digital Entertainment Office must certify projects, and producers are required to provide a description of qualified production activities and expenditures. Other requirements include a list of employees' names, Social Security numbers and Georgia wages and the amounts being claimed for the current and previous tax years, including credits previously claimed against withholding and credits from previous years (Georgia Department of Economic Development, 2010b).

Research Questions

The primary goal of this research is to describe the growth and scope of the film industry in Georgia over the last decade, and to evaluate the extent to which this industry has the supportive infrastructure in place to be self-sustaining into the future. To that end, I will seek to first describe the industry, then to identify the infrastructure already in place which might constitute elements of the "critical components" identified by Christopherson and Rightor.

Research questions will include the following:

- What is level and growth of film production in Georgia since the implementation of state tax incentives?
- What are the levels and growth of film industry employment and establishments in Georgia since the implementation of state tax incentives?
- Do the "critical components" required for a sustainable motion picture industry exist in Georgia?
- Does the combination of the scale of production and the scope of the industry with the critical components in place suggest a currently sustainable industry, or one which is moving toward sustainability in the near future?

Data and Methodology

I will use a combination of data from the previously collected data CBP on employment and firm growth, the Covered Employment Where Wages (CEW) data, and the IMDb Pro and Georgia *Sourcebook* directories. The purpose of this study will be largely descriptive, focusing on the presence and growth of film industry firms and workers. I will not be comparing these metrics with those in other states at this stage.

Once I have cleaned the IMDb Pro and *Sourcebook* data, and linked them to the CEW data, I will use these databases to identify the scope and growth of the industry, as well as its sustainability. Because IMDb Pro allows me to view all participants by project, I can

get a list of individual and company names associated with each project, their location, and their role in the production. In doing this, I hope to estimate the effects of local government MPIs. This has been a weakness in previous studies (Hong, 2010), and by focusing on a single state, I hope to be able to address this issue.

Quantitative Data Sources

My primary resources for constructing my social network map will be the Covered Employment Where Wages (CEW) data, the IMDb Pro database, the *Sourcebook* (Georgia Department of Economic Development, 2012) and the "Creative Index" (Powell, Powell, & Harless). The Covered Employment Where Wages (CEW) data, formerly (and still commonly) known as ES202 data, provides county-level data at full NAICS code detail from 2000 to 2011, with imputations for undisclosed data.

The Internet Movie Database (IMDb) has a fee-based professional version called IMDb Pro that, among other things, has listings for individuals and firms for hire. IMDb Pro has become the *de facto* industry standard for professional contacts since the service began in 2001, claiming to have data on over two million movies, television and entertainment programs and over four million cast and crew members (IMDb.com, 2012). What will be most useful about this service is that, in addition to being able to search by location and project, searching by project shows all participants on that project, and therefore allows me to make connections between individuals and firms who work together over time.

The *Sourcebook* and "Creative Index," combined with IMDb Pro and the online database of the former, provide the most comprehensive listings of individuals and companies in the film and digital entertainment industries. Because the *Sourcebook* is the official publication of the Georgia Office of Film, Video and Digital Entertainment, and basic listings are free, virtually everyone in the industry provides a listing. That being said, the printed versions (also available online) are only published annually, and therefore may become outdated quickly, but can provide useful information for historical analysis. The online database version of the *Sourcebook* is more up-to-date, but requires specific searches to retrieve information, making it a bit more cumbersome to use as a data source. It is important to note that, in order to be listed in the *Sourcebook*, companies and individuals are required to submit proof of Georgia residence (Georgia Department of Economic Development, 2012).

In addition to these sources, I will also use the County Business Patterns (CBP) for some state- and county-level establishment and employment data. This source is limited mostly because getting geographic and/or industry detail is difficult because of undisclosed data. However, I will use this data for more larger analyses, and to cross-check against the other sources. The CBP is currently available through 2011.

Operationalizing the Variables

Descriptive Variables

To describe the scale and geography of Georgia's film industry I will rely on a combination of CEW, Bureau of Labor Statistics Occupational EBLS) and CBP data, as well as some data from IMDb Pro. For the number of productions in the state, I will use

the results of an IMDb Pro search by location. For the employment data, I will use the CEW data for March of each year, as well as occupational data from the Bureau of Labor Statistics (BLS). And finally, for the number of establishments, I will use the CBP, since establishments are less likely to remain undisclosed at the 6-digit NAICS level. Industry codes will include Motion Picture and Video Production (512110), Motion Picture and Video Distribution (512120), Teleproduction and Other Postproduction (512191) and Other Motion Picture Industries (512199). For occupations, I will use a few select occupation codes most associated with the motion picture industry, and based on earlier research for comparison (Christopherson & Rightor, 2010). These occupation codes will be, from the IPUMS Occupations codes: Actors (2700); Producers and Directors (2710); Broadcast, Sound Engineering Technicians, Radio Operators and Other Media Equipment Workers (2900/2960); and Television, Video and Motion Picture Camera Operators and Editors (2920). In addition, I will use four key "below-the-line" occupations from the BLS: Audio and Video Equipment Technicians (27-4011), Camera Operators (27-4031), Film and Video Editors (27-4032), and Sound Engineering Technicians (27-4014).

Critical Components Variables

To establish the presence of "critical components" as described by Christopherson and Rightor (2010), I will rely primarily on the IMDb Pro and Georgia Sourcebook directories. Some of these components, however, will require additional information, while others are harder to assess at all in any real quantitative manner. In addition to the six components identified, I have added a seventh on shooting locations.

The presence of the industry decision makers

The presence of industry decision makers is the most difficult to assess quantitatively. Rather, I will use the directory resources and other trade publications to assemble information in a more qualitative format. Specifically, I will be attempting to ascertain the extent to which Georgia-based companies can make final decisions determining the approval of film projects, and the scale of the projects for which this approval exists. I will also consider the presence of "above-the-line," or creative, talent, active in the state, using BLS estimates for Directors and Producers and Actors.

Specialized business services: specialized attorneys, investment bankers, location scouts, and agents.

Specialized business services are those generally listing themselves in key industry directories such as IMDb Pro and the Georgia Sourcebook, and should therefore be relatively easy to identify and count.

Smaller service businesses catering to the film industry

These include companies such as equipment rentals or catering in support of the motion picture industry, but which depend on servicing a number of productions over the course of the year. Firms included here might include transportation, craft services and catering, and office space and equipment rentals. Like specialized business services, these businesses are generally easy to find in the industry directories.

Training and education programs in specialized fields
While some of these may be listed in the directories, more likely they will be found by searching for programs offered by a variety of public, private, and for-profit educational institutions and training companies.

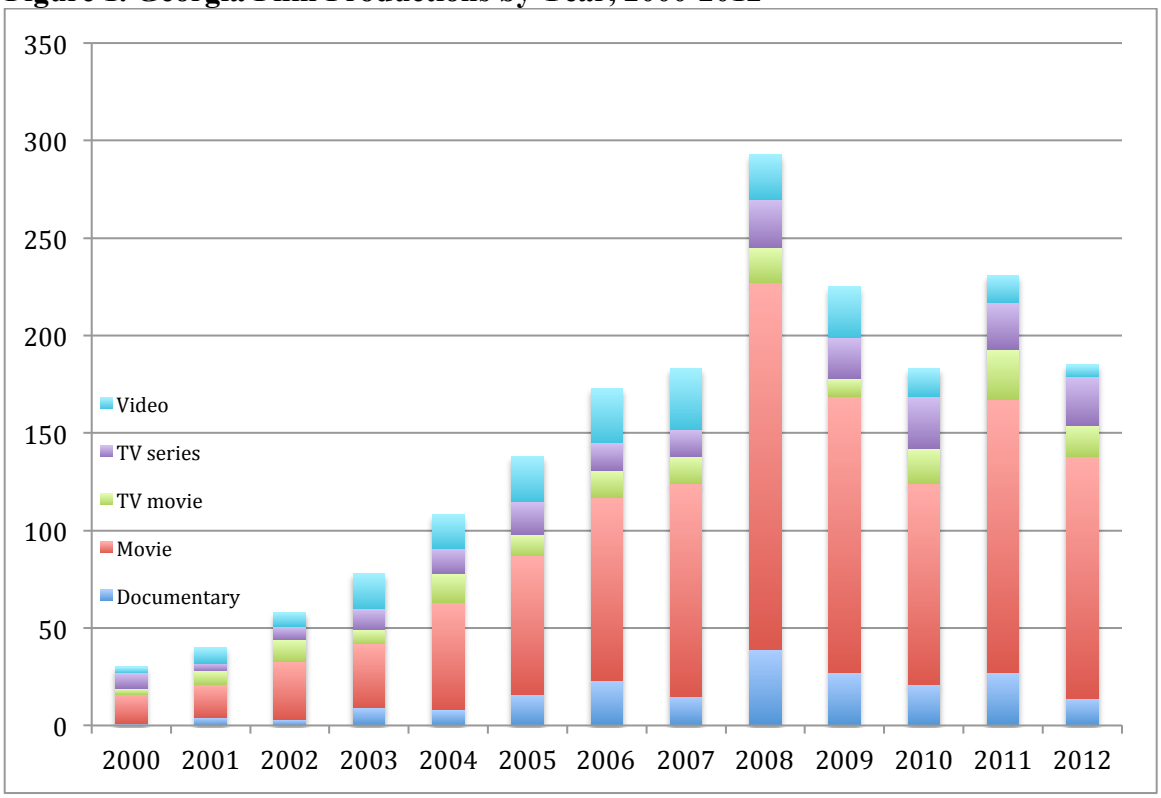
Studios and other production, rehearsal, and sound-recording spaces
Again, these are fairly easy to locate using the directories cited above.

Industry-specific events such as trade shows and film festivals
Identifying trade shows and film festivals will require a combination of general Internet searches and searches of national and regional industry trade journals. The result will be a list of trade shows and festivals and a brief description of each.

Locations and climate suitable for exterior productions
Locational advantages are not only economic in nature. Despite the digital magic available to the twenty-first century filmmaker, location still does matter. First, there are specific locations that are difficult to replicate, either because they are iconic, or unique in other ways (Lukinbeal, 2004). But even more important for building a sustainable industry is having a variety of locations that can stand in for other locations, ideally located in close proximity. Other factors, such as the quality of natural light and a moderate climate, can also be attractive to filmmakers, as these were considered among the attractions that lead to the rise of Hollywood.

Findings

Figure 1. Georgia Film Productions by Year, 2000-2012

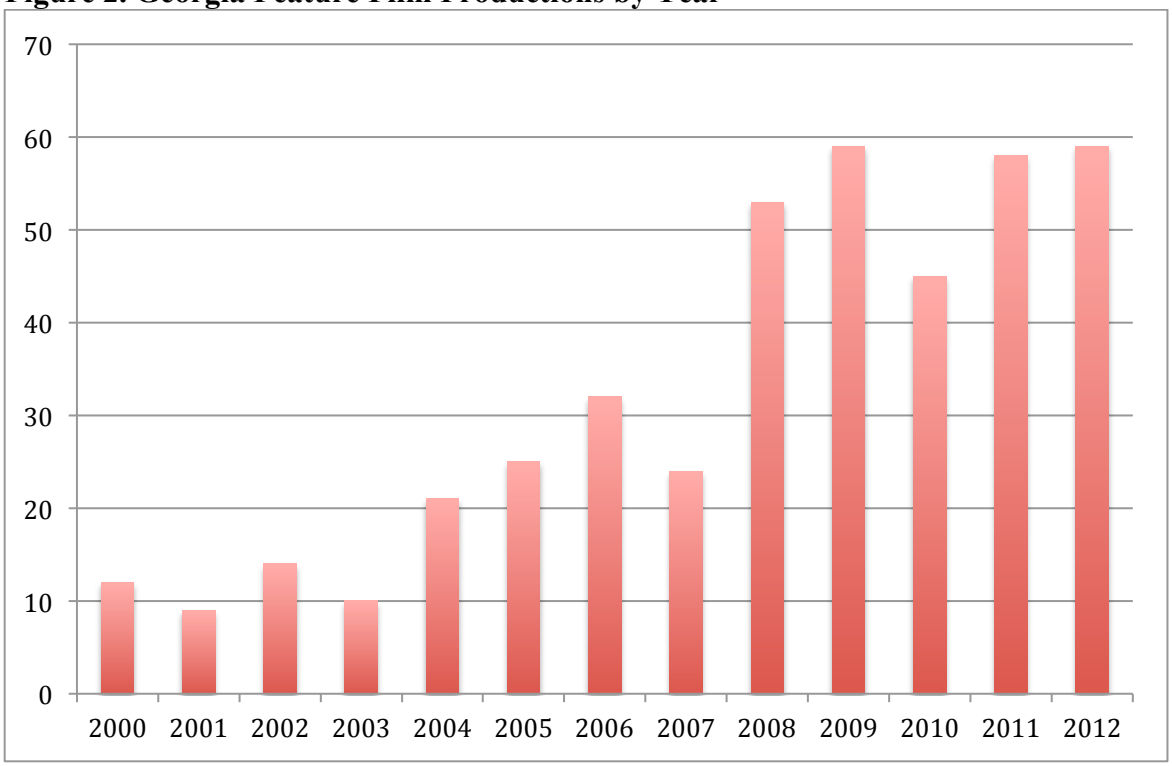


Source: IMDb Pro

Productions in Georgia

Based on location searches in IMDb Pro, the number of productions peaked in the 2008 release year for overall productions, though the peak was somewhat later for feature film productions, and remained largely steady between 2009 and 2012. Given the lag time in feature film production and release time, the lag in understandable, but the fact that other categories declined while features remained steady may indicate support for the hypothesis that some level of sustainability has been achieved.

Figure 2. Georgia Feature Film Productions by Year

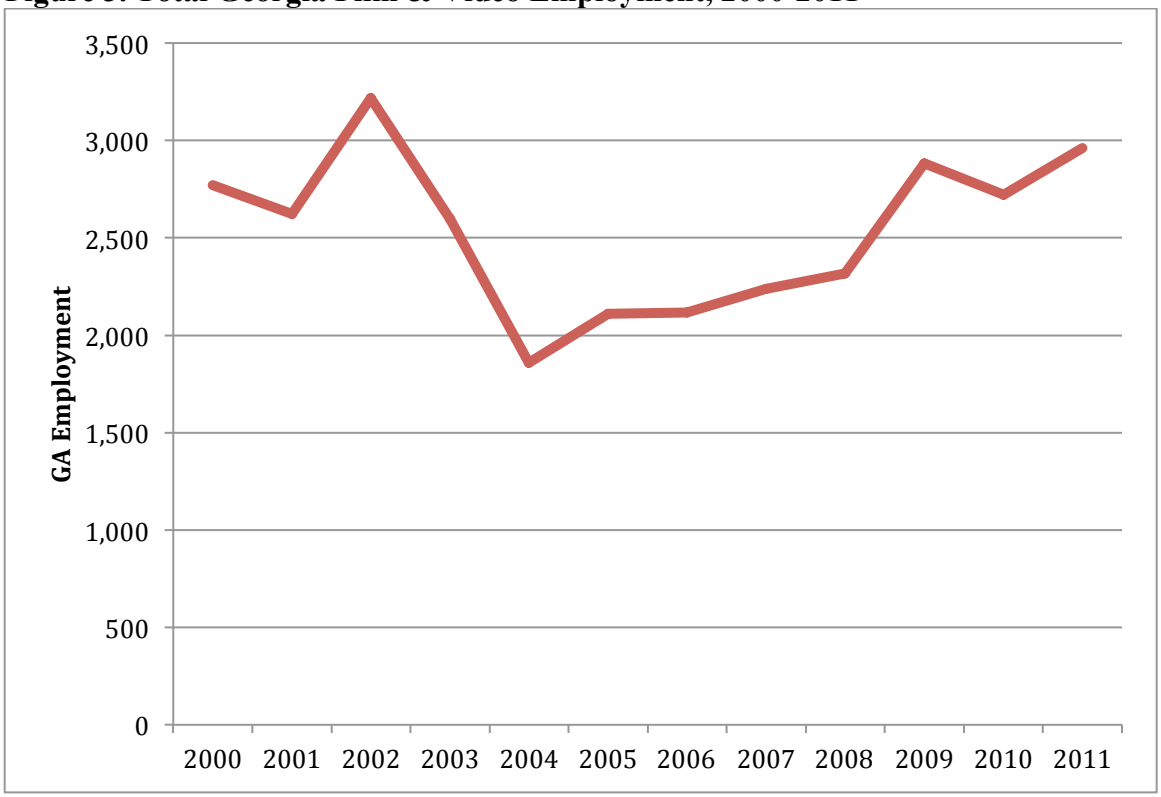


Source: IMDb Pro

However, it is also true that the period between 2009 and 2012 also saw many states reducing, defunding, and even discontinuing their subsidies, Georgia may have benefited from this less-competitive environment.

Film Industry Employment

Figure 3. Total Georgia Film & Video Employment, 2000-2011



Source: Georgia CEW

Total Film Industry Job Growth

Based on a summary of all film industry NAICS codes, industry employment peaked in 2002, but then grew fairly steadily from 2004 through 2011. The pre-incentive peak may be at least in part due to the fact that this is the year other states, most notably Louisiana, began offering tax incentives to attract productions. It is especially interesting to note that the largest growth rates took place in the years in which tax incentive packages being implemented (2005 and 2008).

Figure 4. Georgia Non-Production Film & Video Employment, 2000-2011

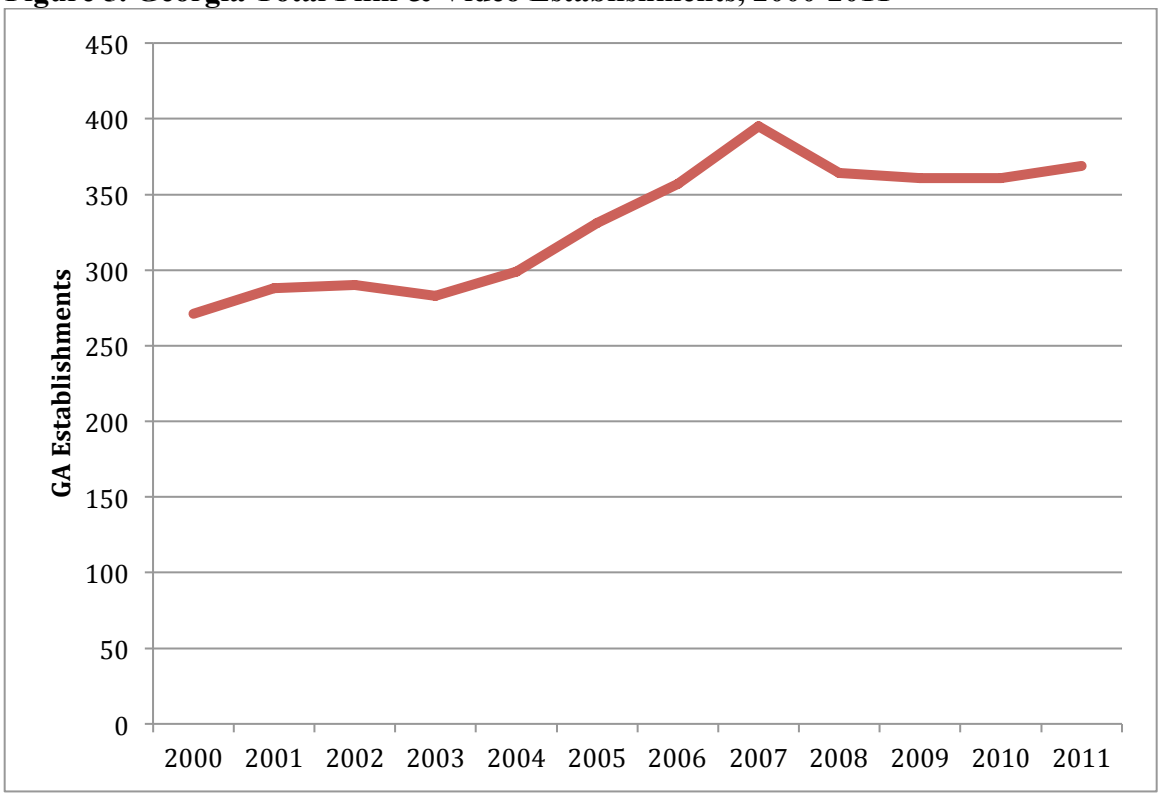
Source: Georgia CEW

Detailed Job Growth

While production jobs (not shown) have accounted for virtually all jobs and growth, and therefore tracked closely to the total, they did peak above the 2002 peak in 2011, suggesting a shift from non-production to production jobs in the industry mix. During that period, the converse was true of the non-production jobs. Teleproduction and Other Postproduction (512191 in Figure 4) declined sharply in 2004, and has been gradually declining since, while Distribution (512120) and Other Motion Picture Industries (512199) have been largely flat during the entire period, with the former declining bit in 2007 and the later rising a bit at around the same time.

Film Industry Establishments

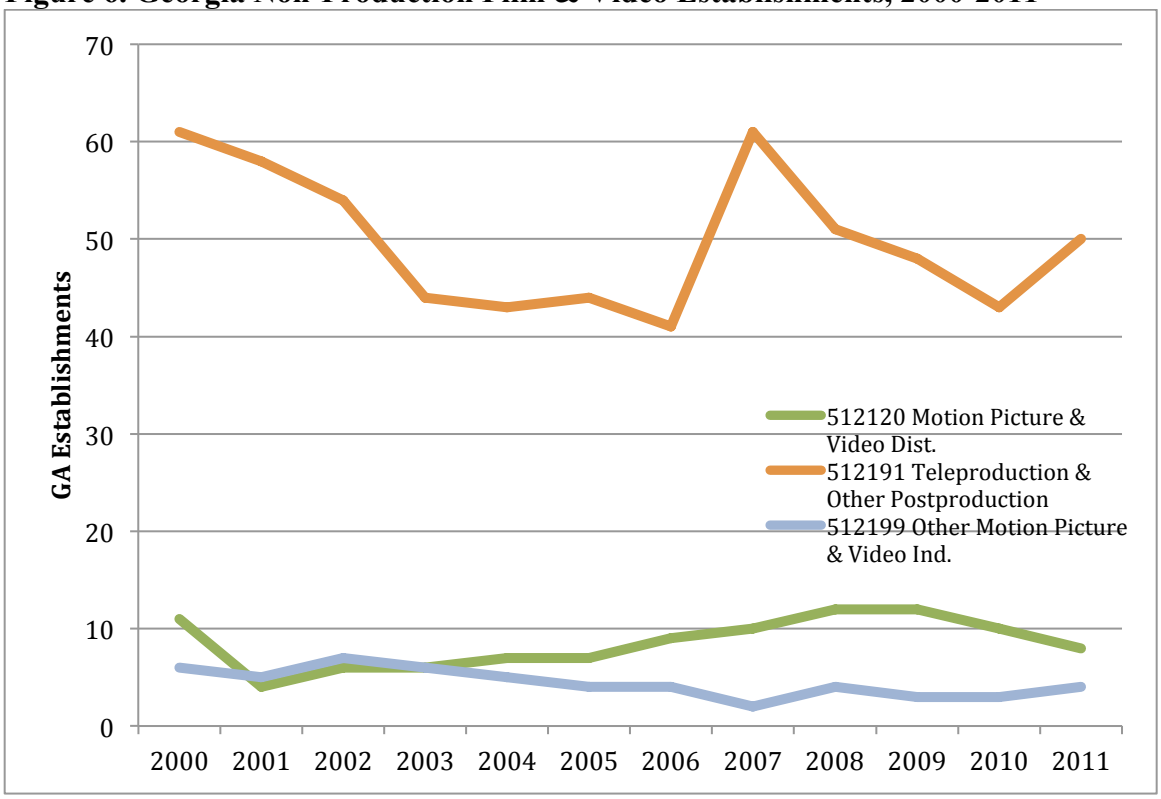
Figure 5. Georgia Total Film & Video Establishments, 2000-2011



Source: County Business Patterns

The findings for establishments were similar to those for employment in some respects, but surprising in others. Using a different data set (CBP this time), Figure 5 shows that establishments saw a steady rise to a 2007 peak, followed by a slight drop to a plateau for the remaining four years. One might expect less variability in the establishment numbers, so this is not terribly surprising, but it is interesting to note the similarities between the trends here and in film production (Figure 1), which similarly peaked in 2007 before flattening out. Figure 6 shows a similar trend for Teleproduction and Other Postproduction, while the other categories were more similar to the employment numbers for those industries.

Figure 6. Georgia Non-Production Film & Video Establishments, 2000-2011



Source: County Business Patterns

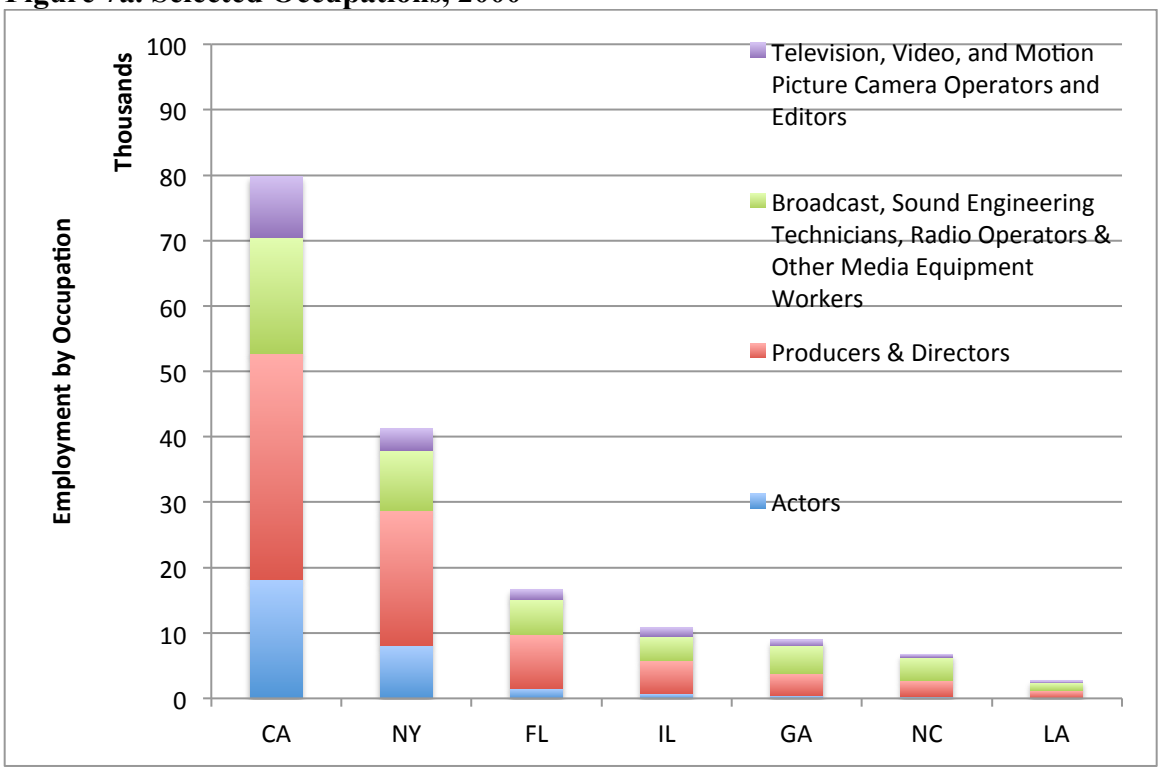
Film Industry Occupations

In addition to looking at establishments and employment by industry, I used the BLS OES data to study employment by occupation for several key film- and video-related occupations, both for Georgia, and for several other important filmmaking states.[6] Figures 7a and 7b show selected occupations for 2000 and 2011. These figures show how overall, the only states experiencing growth across all four occupations were the two dominant states, California and New York.

Figure 8 shows four common "below-the-line" occupations—typically more technical, non-creative roles—for selected years between 2000 and 2012. Here, while most showed fairly flat growth, Audio and Video Equipment Technicians did show marked growth over the 12-year period.

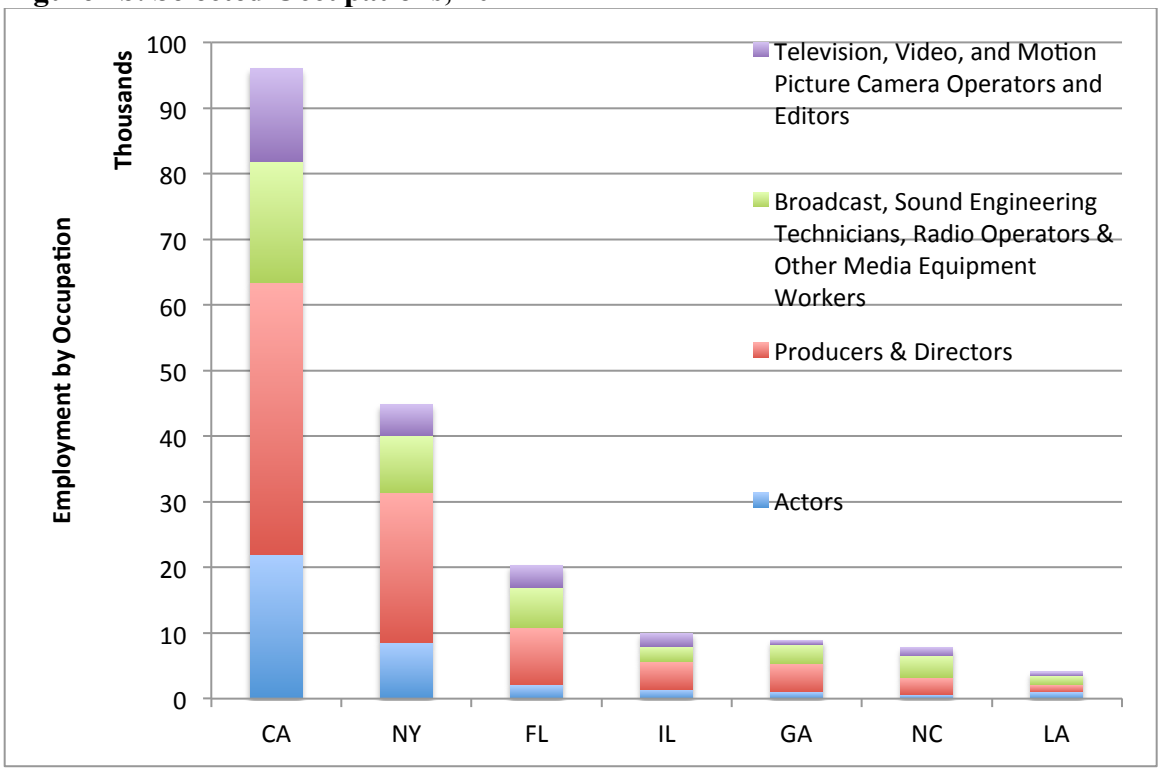
[6] I based both the selected occupations chosen and the comparison states on previous work by Christopherson et al. (2006)

Figure 7a. Selected Occupations, 2000



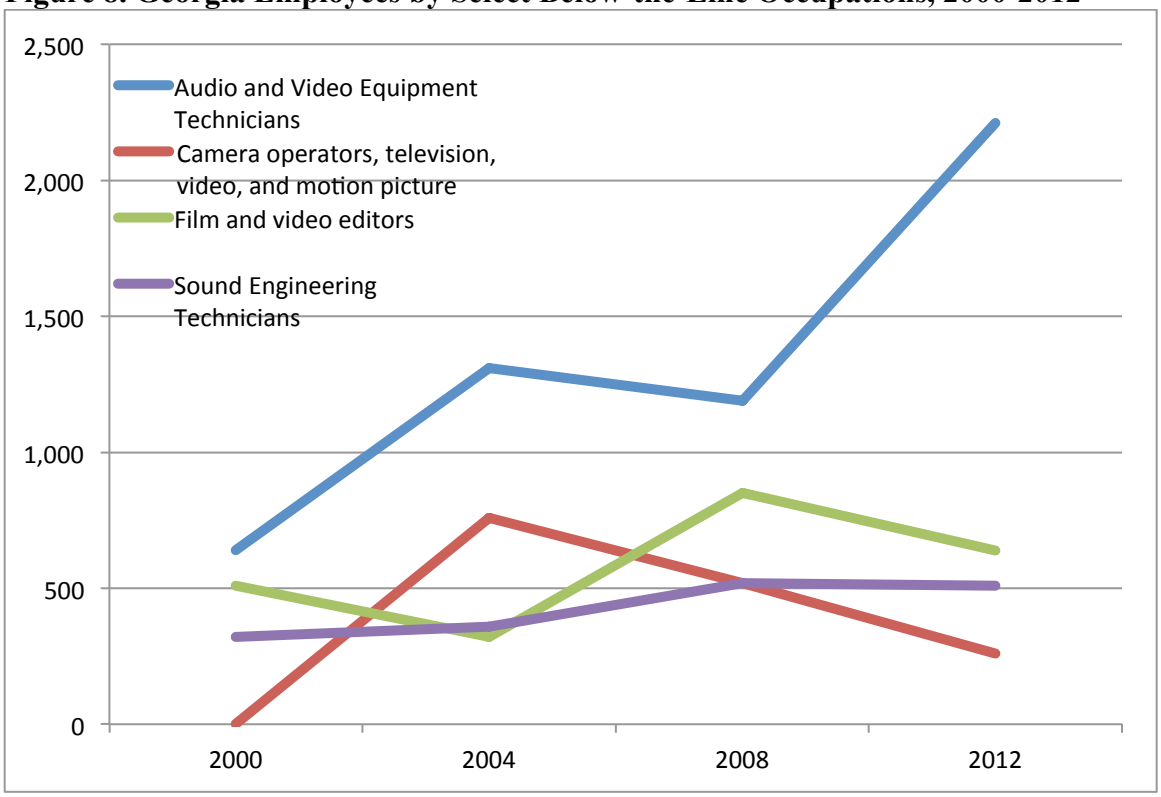
Source: U.S. Bureau of the Census, Census 2000 IPUMS 5% Sample

Figure 7b. Selected Occupations, 2011*



*Source: U.S. Bureau of the Census, *ACS 2009-11 IPUMS 3-year Sample*

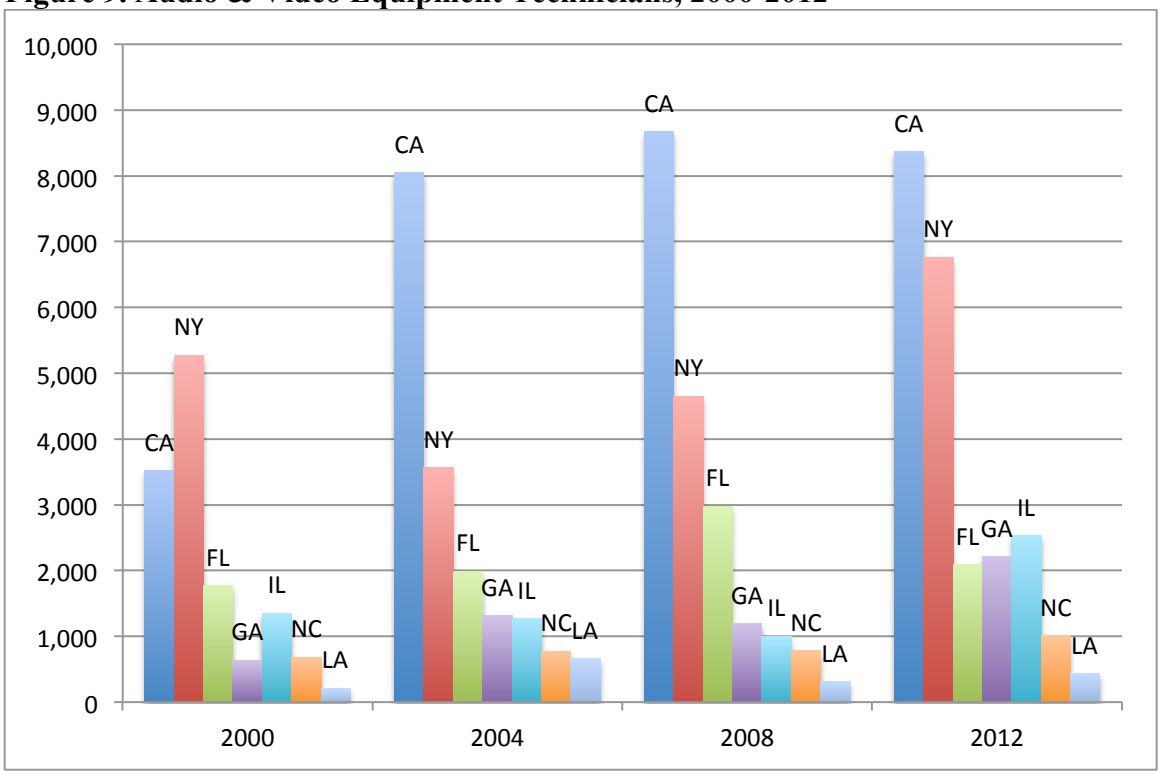
Figure 8. Georgia Employees by Select Below-the-Line Occupations, 2000-2012



Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES)

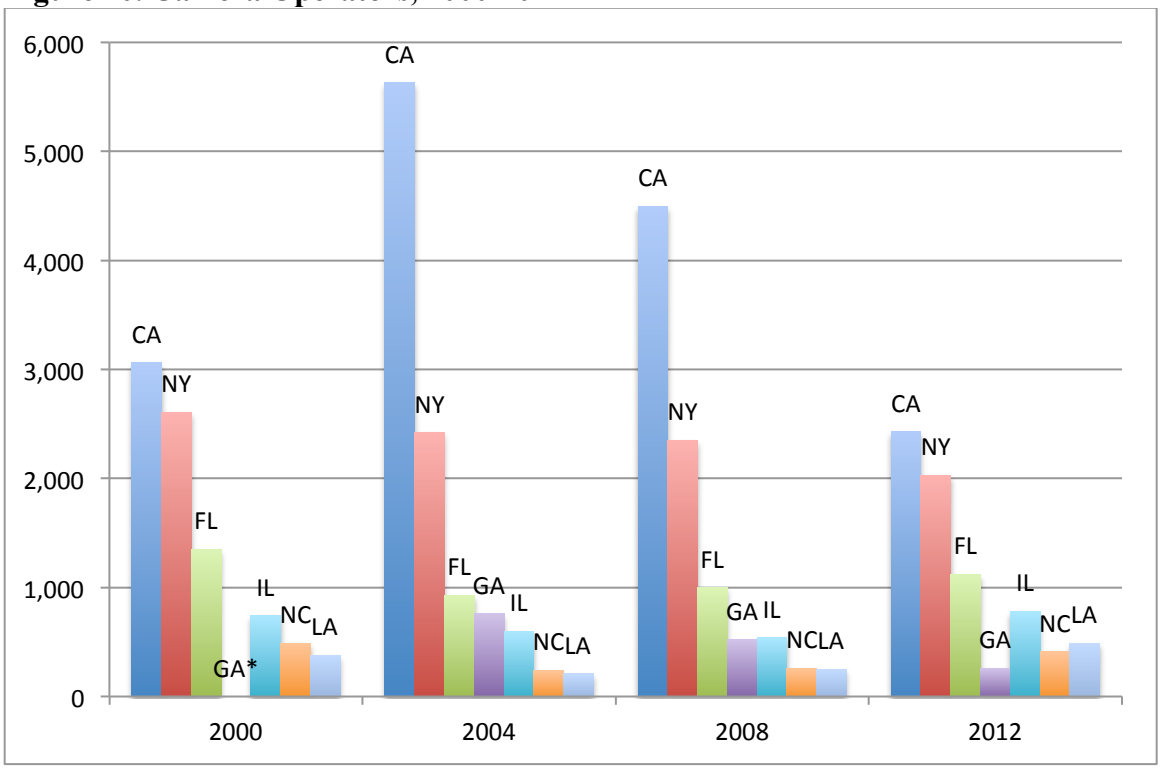
Figures 9, 10, 11 and 12 show each of these occupations for 7 filmmaking states, including Georgia. The other states are California, New York, Florida, Illinois, North Carolina and Louisiana. Two patterns are worth noting here. First, two states—California and New York—dominate the occupations in question, and in most cases, maintained or increased their relative share over the period. The Florida and Illinois have respectable levels of employment, with the rest showing low and flat levels overall. Second, while three of the four occupations showed a general growth trend across the period, Camera Operators (Figure 10) showed a steady decline in virtually all states during the period.

Figure 9. Audio & Video Equipment Technicians, 2000-2012



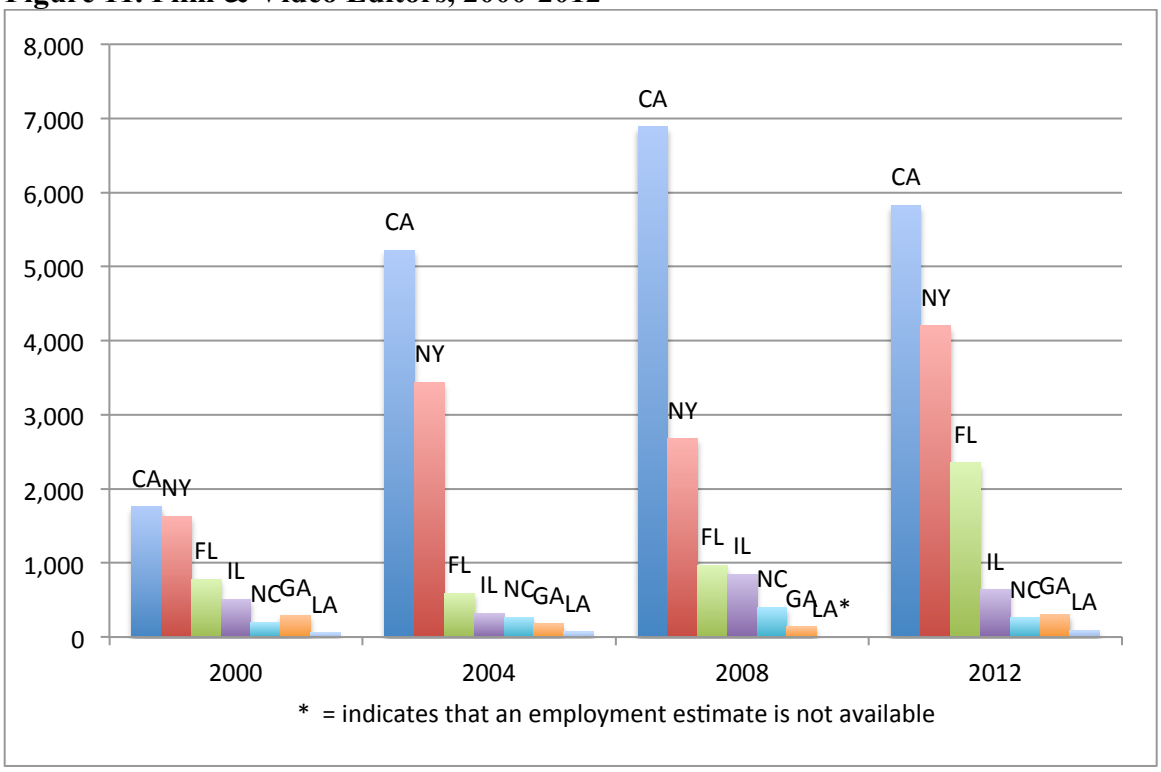
Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES)

Figure 10. Camera Operators, 2000-2012



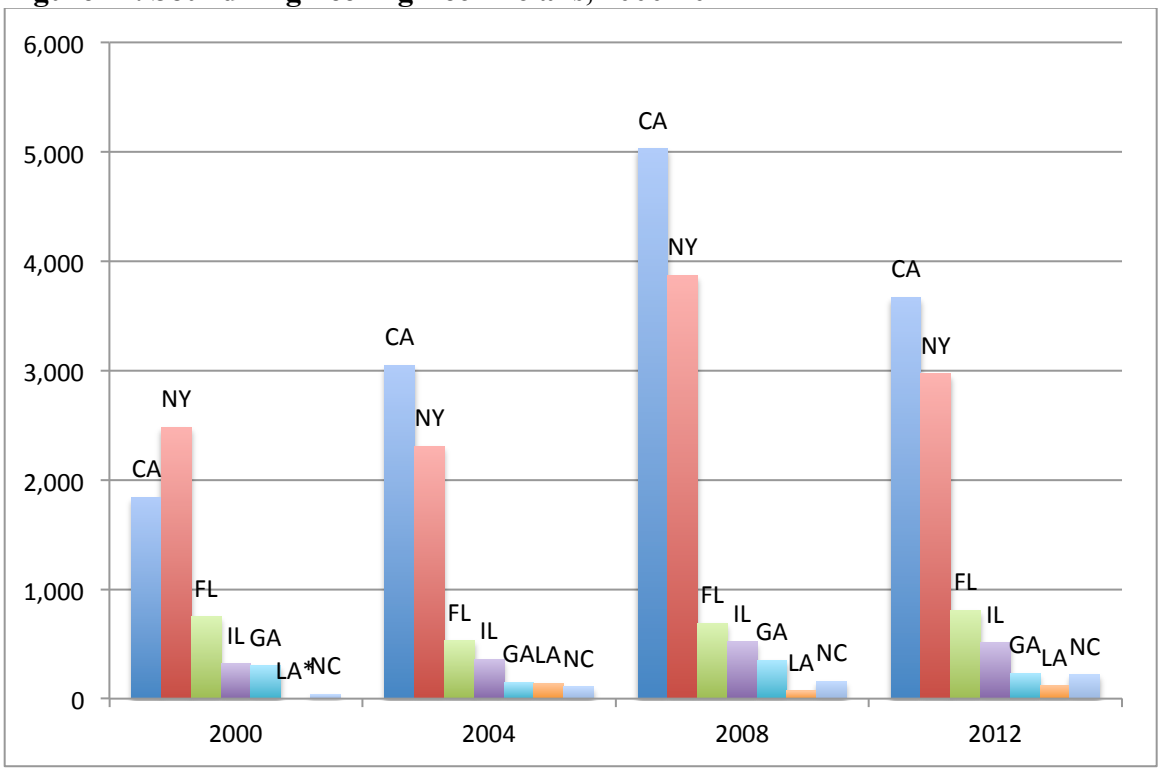
Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES)

Figure 11. Film & Video Editors, 2000-2012



Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES)

Figure 12. Sound Engineering Technicians, 2000-2012



Source: Bureau of Labor Statistics, Occupational Employment Statistics (OES)

Critical Components Variables
Data was not yet available for most of these measures, and will be included in future versions of this paper.

Conclusions and Policy Implications

Based on the findings presented here, the evidence is mixed in suggesting a positive correlation between implementation and level of movie production incentives and growth in the film industry. Using the metrics of productions, employment by industry, and employment by occupation, in addition to comparative data on occupational employment, there is little evidence to support the hypothesis that the incentives implemented in 2005 and expanded in 2008 have had more than a marginal impact on the growth of the film and video cluster in Georgia.

It is interesting to note that, though the overall number of Georgia-based productions has lagged in the years following their peak in 2008, feature films have maintained that peak level. This phenomenon may be interpreted in more than one way, based on earlier studies, large feature films, with their commensurately large budgets, might be more likely to base production location based on budgetary considerations such as refundable tax incentives. However, they are also more likely to import crew, and to use subcontractors not based in the production location.

This might explain why the other metrics; establishments and employment by industry and occupation, do not show similarly high levels of activity.

This does not in itself preclude the possibility that the other primary rationale for such incentives—the economic effects of footloose production in the short-term—might in fact justify such tax expenditures, though several state studies have suggested otherwise. Therefore further evaluation of these subsidies should be done, and policymakers should in general consider implementing means by which more benefits can be achieved, or to reduce or eliminate the policy.

Suggestions for future research
One possible reason for the mixed outcomes may be the affects of extra-jurisdictional actors. Other states have been implementing and altering tax incentive programs of their own, in many cases in direct reaction to those of competing states. I saw some evidence of that with the employment drop after 2002, when the first states began implementing incentives. A more complex model would be needed to assess the competition effects of states' policies.

Another way to move this research forward is too look more closely the year-to-year data. As my research continues, I plan to use a variety of time-series and panel data analyses to do just that.

And finally, I plan to continue exploring the components of sustainability by doing some comparative study with a few other states with existing industry clusters, most notably California and New York.

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