Assessing the Impact of Incentives for the Entertainment Industry on Employment Growth: A Cross-State Analysis

Ric Kolenda
Georgia State University and
Georgia Institute of Technology
rkolenda1@gsu.edu

For presentation at the Association of Collegiate Schools of Planning Conference,
Cincinnati, Ohio, November 1-4, 2012

Introduction

After witnessing the success of Canadian strategies to attract US film production in the 1990s, states and localities began offering financial incentives in an effort to lure film and video production away from their traditional hubs in California and New York (Christopherson & Rightor, 2010). This effort increased dramatically in the 2000s, both in scope and in scale. Production activity can now locate in states offering rebates of up to 40 percent of costs, even if this exceeds their actual tax bills, and all but a handful of states offer some form of direct cash incentives (Christopherson & Rightor, 2010; Katz & Rosenthal, 2006; Vock, 2008). While some states may be reducing incentive packages in the current climate of fiscal austerity, others are doubling down on that strategy as an effort to stimulate job growth and increased economic activity. And while most states tout many successes from these programs in both metrics, the question of whether or not such policies promote long-term sustainable economic development has not been fully answered.

In this, the first of three related studies, I will use data from the County Business Patterns (CBP) and data on movie production incentives (MPIs) collected by the author over the years 2002-2010 to view changes in economic activity by state by the level of incentives offered. Using cross-sectional and panel data for industry employment and occupational employment as dependent variables, I will use a variety of regression models to view the relationship between the presence of incentives and the outcomes for the film industry.

Based on the theory behind industrial economic incentives generally, I would expect that the number of firms and employees in each state would be positively correlated with the level of the tax credit offered. However, I also hypothesize that since the states are competing for this business, that the relative rate and direction of the subsidies would also contribute to the employment and firm frequency outcomes.

The key independent variable will be the incentive level, but adjustments will be made

for the type of incentive (rate, transferability, and sales and use tax exemptions), the number of months in effect, the state's relative ranking of incentive levels offered, and the direction of the incentive (whether it was raised or lowered from the previous year). Other independent variables will include total employment and firms for the state in all industries and the national growth in each for the film industry.

Dependent variables will be the number of firms and employees in the film industry from the Economic Census, and from the ACS, the number of individuals employed in the film industry and the number of individuals employed in film-related occupations.

It is important to note that this study will not consider employment and firms working in projects in states other than their home states. But while this may be an important consideration for the overall economic impacts of film industry incentives, my purpose here is only to view the impact on sustainable economic development of the industry cluster, which I am defining as the growth of in-state workers and firms.

Theory and Literature

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), 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.

The cumulative causation and entrepreneurship theories 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 considered here because they are growing industries with innovative products. I will focus here on only the theories related to regional advantage.

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

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

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 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)[2]. 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 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

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

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*[3] 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,

[3] 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).

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 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).

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 (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.

Data and Methodology

The data used was a combination of state-by-state MPI levels for the years 2002-2010 and employment and establishment data for the same years.

Movie Production Incentives Data

The collection of MPI data was a bit of a challenge. While several sources offer up-to-date web-based information, either individually at state film commission web sites or aggregators of current information (Motion Picture Association of America, 2012; National Conference of State Legislatures, 2011) or that collected at an often-unspecified point in time (Harper, 2009; Luther, 2010), getting good data over several years was surprisingly difficult. In addition to the above sources, I spent a good deal of time finding and reading enabling legislation, much of which lacks good information on changes over time, and news articles about the passage of and/or amending of MPI legislation. In the end I have a complete set of data from 2002 to 2010, though it is possible that data from few states and/or years could have fallen through the cracks of my rather holey dragnet. I am engaged in an ongoing process of updating this data, as well as managing it in years subsequent to those represented in this paper.

The next challenge was determining what rate to use, since many states offer a variety of incentives based on specific criteria. For this paper, I chose to use only one rate: that of the state income tax credit or rebate for general expenditures. This means I did *not* include add-ons for local hiring, expenditures in economically troubled areas of a state, variations of rates based on total expenditure or production type, or a handful of others. I did, however add credits that were both applied to general expenditures *and* relatively easy to get. One notable example is the extra ten-percent credit offered by Georgia for adding an animated logo to the credits of a production.

Ten states and the District of Columbia had no fixed, funded tax incentive for film production, and since these states also had low film industry concentration, making them less than ideal control observations, they were dropped from the data set. Table 1 shows the 22 states in the final sample with their MPIs by year.

Employment and Establishment Data

For the employment and establishment data, I used the County Business Patterns (CBP), an annual series of national and subnational economic data by industry. The number of establishments and employment is reported from the week of March 12. While this single point in time might be a problem for some inquiries, in this case it might be advantageous, because while film production takes place throughout the year, the winter months are more likely to reflect more permanent patterns of employment, rather than seasonal booms in the more temperate times of the year. This also makes it somewhat more likely that film industry workers will be employed in their state of residence.

To measure data specifically for the motion picture industry, I chose to use the single four-digit NAICS code of 5121, “Motion Picture and Video Industries.” Unfortunately, around half of this category nationally is employed in the exhibition portion of the industry. The reason for choosing this category was that much of the data for the appropriate subcategories was suppressed, therefore making it difficult to get enough

observations for meaningful analysis.

One concern with this data is that many values, especially in areas of smaller employment numbers, are suppressed for reasons of confidentiality. This was even true, as it turned out, for relatively highly aggregated cells at the state and 4-digit NAICS levels. Therefore, in addition to the 11 observations dropped due to lack of MPIs, another 12 were dropped due to lack of employment data. Observations were dropped if either more than 3 years total or two or more consecutive years were unavailable. After this, there remained five states with one or two missing employment data: Iowa, Massachusetts, Oregon, Utah and Washington. These missing values were imputed using the midpoint of the employment flags given in the CBP data. Tables 2 and 3 show employment and establishment growth from 2002 to 2010 for the 22 states in the remaining sample.

Hypothesis

Based on the literature and the policy logic models that favor MPIs, I would hypothesize that offering MPIs will increase film industry employment and establishments in the states that offer them, and further, that higher MPI rates mean greater growth. To test these hypotheses I will use a combination of descriptive and linear regression models.

Descriptive Statistics

After culling the states with no tax credits and suppressed employment values, I was left with 22 states for my analysis. Since my goal is to look at long-term growth in the motion picture industry, I chose to report primarily on the net changes between the base year (2002) and the final year for which I have data (2010). For a few cases, I do show annual changes as well.

Calculating weighted averages

Because the states offered different rates of incentives over different years, I chose to use weighted average rates for each state. I did this in two different ways. First, I compared the overall employment growth to the MPI rate weighted by the number of years each rate was in effect. However, this did not seem to reflect the effects of MPIs in late-adopting states, where the effect could only be seen over one or two years. Therefore I revised my weighting mechanism, weighting the MPIs over only the years since first offered, and compared those to the employment growth from the base year (the year of the first MPI).

For employment and establishments, I used an exponential-growth weighting scheme used by the World Bank and others to estimate annual rates (World Bank, 2012).

Weighted annual employment growth rate calculated was calculated from the base of the first year of MPI to 2010, using the formula:

$$r = \ln (p_n / p_1) / \mathrm{n},$$

where p_n & p_1 are the last and first year MPIs were active respectively, and n = the number of years in which MPIs were in effect, using a one-year lag. This method does not use the intermediate values of the series, nor will it be identical to the growth of any

given one-year interval.

Regression analysis
Again, since I am looking at long-term employment growth, for this paper I chose to use cross-sectional ordinary least squares regression on employment growth over the entire period with MPIs in effect. The dependent variables used are the employment growth rate for the motion picture industry between 2002 and 2010, using NAICS 5121 "Motion Picture and Video Industries."

I began by attempting a simple model, using the employment growth of the state's motion picture industry as the dependent variable, and the weighted average of the MPI level for all nine years as the primary independent variable, with the state's overall employment growth as a control variable[4], and using robust standard errors to account for heteroskedasticity.

The second model used transformations of the variables from the first. This time I used the weighted average annual employment growth for the state's film industry as the dependent variable, controlling for the same transformation of the state's overall employment growth, and again using the weighted average MPI rate as the primary independent variable.

Findings

Movie production incentives
Beginning with the descriptive statistics, Table 1 shows the states with MPIs and the typical rate of tax credit from 2002-2010. It is clear from this table that there was a dramatic increase in the number of states offering such incentives over that period of time, and several states increased these rates during that period as well. Louisiana was the early adopter here, and has been consistently in the top tier of incentive offers, having increased them from 15% to 25% in 2005, and again raising them to 30% in 2009, matching southeastern neighbor Georgia, who increased their top rate to 30% in 2008.

Another trend of note is the use of incentives for states traditionally strong in the film industry. California, still dominant in both employment and establishments, started offering incentives in 2009, and New York significantly increased their incentive from 10% to 30% in 2008.

Looking at a weighed average across all nine years, the states offering the most in the way of incentives over the period are Louisiana (22.8%), Pennsylvania and Tennessee (17.8% each), and Washington state (16.7%), with Arizona and Florida tied for fifth with 15.6% each. The last column shows the weighted average for only the years in which incentives were offered, which while being less useful on its own, is used in some of the tables were growth rates are compared for only the years with incentives in place.

[4] I also used the employment growth in the US film industry, but this was automatically dropped due to collinearity.

Employment and establishment growth

Turning to employment and establishment numbers, Tables 2 and 3 show the diversity of growth among the states offering MPIs. Table 2 shows that while 15 of the 22 states offering incentives showed positive growth in film industry employment, and 14 states grew film employment faster than other industries in their states, only 4 grew jobs at a faster rate than the US industry as a whole. Film industry establishments fared a bit better, with again 15 states showing growth, and 13 states showing growth greater than other all industries, and a somewhat different set of 13 states beating out film establishment growth nationally. It may also be worth noting that the employment growth numbers were more widely distributed, with a high of 45% for California and a low of -54% for Tennessee, while Oregon showed the greatest growth in film establishments at 23.6% and Michigan the least at -6.1%.

Figure 1. shows the rather tenuous relationship between MPIs and film employment growth. By tracking the weighted average MPI with the weighted average of annual employment growth, I would expect to see a positive trend line develop, and though a fitted linear trend would show a slight upward slope, the distribution of the data show that this would be a very loose fit at best.

Finally, Figures 3 and 4 show little difference between the growth rates of the top and bottom five states by MPI weighted average. With few exceptions, the employment growth rates for these states showed mostly a series of year-to-year fluctuations largely reflecting the US film industry growth rates (shown by a black dotted line). It is worth noting that Tennessee stands out as a state with a the third highest average MPI, but was the lowest-performing state, while California and Texas were the two highest performers in employment growth, and the two lowest in MPI effort.

OLS Linear Regression

The two models attempted here yielded in the way of support for the hypothesis that MPIs correlate positively with the growth of the film industry in the state. With positive but infinitesimal and insignificant coefficients in both models (0.002), there is very little evidence supporting a positive effect on either growth for the whole period, or even over the years each state offered incentives.

Conclusions and Policy Implications

Based on the findings presented here, there is some basis in the evidence that challenges the hypothesis of a positive correlation between level and frequency of movie production incentives and growth in the film industry. Neither the descriptive statistics nor the linear regression models showed any significant relationship between the two variables.

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.

One 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. In addition, I plan to do a detailed analysis of one state, Georgia, where incentives have been in place for several years, and where state officials feel the policy has been successful in growing an indigenous motion picture industry.

Tables

Table 1. State Motion Picture Incentives, 2002-2010

State	2002	2003	2004	2005	2006	2007	2008	2009	2010	Wt. Avg.	MPI Avg.
Arizona			20	20	20	20	20	20	20	15.6	20.0
California								20	20	4.4	20.0
Colorado					10	10	10	10	10	5.6	10.0
Florida			20	20	20	20	20	20	20	15.6	20.0
Georgia				9	9	9	30	30	30	13.0	19.5
Illinois								30	30	6.7	30.0
Iowa						25	25	25	25	11.1	25.0
Louisiana	15	15	15	25	25	25	25	30	30	22.8	22.8
Maryland						25	25	25	25	11.1	25.0
Massachusetts					25	25	25	25	25	13.9	25.0
Michigan							42	42	42	14.0	42.0
Minnesota					25	25	25	25	25	13.9	25.0
New Jersey					20	20	20	20	20	11.1	20.0
New York			10	10	10	10	30	30	30	14.4	18.6
N. Carolina					8.1	15	15	15	15	7.6	13.6
Oklahoma				15	15	15	15	35	35	14.4	21.7
Oregon				20	20	20	20	20	20	13.3	20.0
Pennsylvania			20	20	20	25	25	25	25	17.8	22.9
Tennessee					32	32	32	32	32	17.8	32.0
Texas								17.5	17.5	3.9	17.5
Utah				15	15	15	15	15	20	10.6	15.8
Washington					30	30	30	30	30	16.7	30.0

Source: Author's compilation of state data

Table 2. Employment Growth by State, 2002-2010 (in thousands)

	Motion Picture Employment Growth				All Employment Growth				Growth
ST	2002	2010	Net	Growth	2002	2010	Net	Growth	Difference
CA	86.70	125.73	39.03	45.0%	12,856.43	12,536.40	-320.02	-2.5%	47.51
TX	11.15	15.65	4.51	40.4%	7,993.56	8,785.24	791.68	9.9%	30.53
OK	1.66	1.99	0.33	19.8%	1,200.48	1,241.17	40.69	3.4%	16.41
NY	21.43	24.13	2.70	12.6%	7,234.92	7,266.19	31.27	0.4%	12.15
NC	3.98	4.36	0.38	9.5%	3,322.00	3,234.60	-87.41	-2.6%	12.15
MA	3.81	4.11	0.30	7.8%	3,023.13	2,928.55	-94.58	-3.1%	10.98
WA	3.93	4.62	0.68	17.4%	2,185.66	2,326.73	141.07	6.5%	10.95
OR	2.60	2.88	0.29	11.0%	1,329.24	1,351.16	21.93	1.6%	9.36
LA	1.63	1.77	0.13	8.1%	1,583.31	1,599.55	16.24	1.0%	7.05
IL	8.99	9.18	0.19	2.1%	5,224.29	4,980.01	-244.28	-4.7%	6.77
IA	1.67	1.80	0.13	7.5%	1,229.61	1,253.10	23.49	1.9%	5.57
PA	6.08	6.31	0.23	3.8%	5,046.44	4,976.19	-70.25	-1.4%	5.16
AZ	3.64	3.95	0.31	8.4%	1,945.47	2,065.22	119.75	6.2%	2.27
UT	2.67	3.03	0.36	13.5%	900.43	1,021.14	120.72	13.4%	0.06
CO	4.12	4.20	0.08	2.0%	1,912.15	1,955.34	43.18	2.3%	-0.24
MI	6.18	5.16	-1.02	-16.5%	3,889.83	3,288.46	-601.37	-15.5%	-1.07
MN	4.09	3.85	-0.24	-5.8%	2,359.59	2,357.97	-1.62	-0.1%	-5.78
MD	3.27	3.09	-0.18	-5.4%	2,062.52	2,075.51	12.99	0.6%	-6.05
FL	10.96	10.68	-0.28	-2.6%	6,366.96	6,626.56	259.59	4.1%	-6.65
NJ	5.70	4.89	-0.82	-14.3%	3,596.92	3,367.17	-229.75	-6.4%	-7.93
GA	6.48	5.08	-1.41	-21.7%	3,381.24	3,315.27	-65.97	-2.0%	-19.74
TN	7.38	3.40	-3.98	-54.0%	2,291.50	2,264.03	-27.47	-1.2%	-52.75
US	253.38	295.18	41.80	16.5%	112,400.65	111,970.10	-430.56	-0.4%	16.88

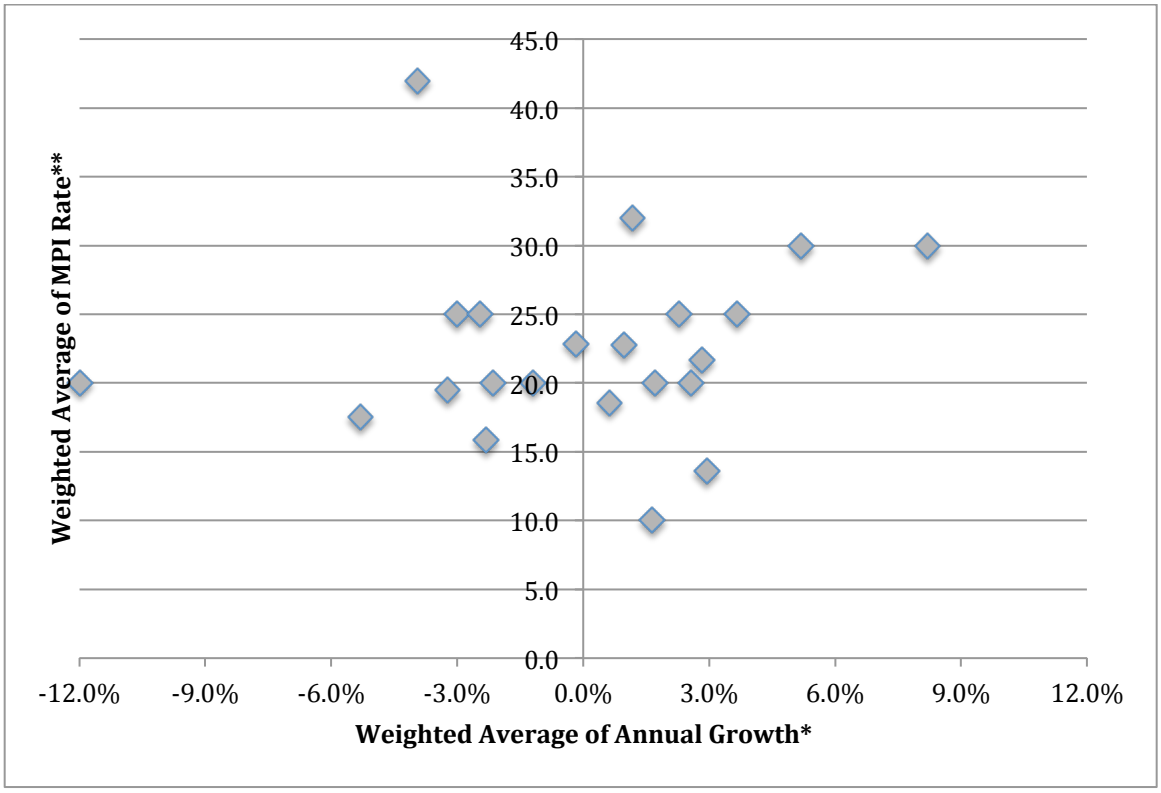
Source: County Business Patterns

Table 3. Establishment Growth by State, 2002-2010

	Motion Picture Establishment Growth				All Establishment Growth				Growth
State	2002	2010	Net	Growth	2002	2010	Net	Growth	Difference
OR	199	246	47	23.6%	101,933	107,397	5,464	5.4%	18.26
GA	398	478	80	20.1%	206,323	217,099	10,776	5.2%	14.88
LA	116	130	14	12.1%	101,885	103,365	1,480	1.5%	10.62
OK	143	161	18	12.6%	86,029	90,050	4,021	4.7%	7.91
IA	149	159	10	6.7%	81,042	80,801	-241	-0.3%	7.01
NY	2,292	2,502	210	9.2%	498,921	519,504	20,583	4.1%	5.04
MA	357	357	0	0.0%	175,991	169,790	-6,201	-3.5%	3.52
TN	258	265	7	2.7%	130,556	131,582	1,026	0.8%	1.93
MI	423	397	-26	-6.1%	237,616	219,119	-18,497	-7.8%	1.64
NC	335	356	21	6.3%	207,562	218,104	10,542	5.1%	1.19
FL	1,002	1,103	101	10.1%	450,188	491,150	40,962	9.1%	0.98
CA	6,245	6,519	274	4.4%	820,997	849,875	28,878	3.5%	0.87
NJ	429	415	-14	-3.3%	237,505	228,937	-8,568	-3.6%	0.34
WA	358	378	20	5.6%	165,933	175,914	9,981	6.0%	-0.43
PA	465	458	-7	-1.5%	297,257	297,023	-234	-0.1%	-1.43
MN	351	349	-2	-0.6%	143,953	145,464	1,511	1.0%	-1.62
TX	780	829	49	6.3%	482,169	522,146	39,977	8.3%	-2.01
CO	351	367	16	4.6%	142,247	151,973	9,726	6.8%	-2.28
IL	690	680	-10	-1.4%	309,980	314,171	4,191	1.4%	-2.80
UT	206	233	27	13.1%	58,788	68,820	10,032	17.1%	-3.96
MD	285	274	-11	-3.9%	131,815	134,579	2,764	2.1%	-5.96
AZ	216	222	6	2.8%	119,740	131,849	12,109	10.1%	-7.33
US	19,652	20,296	644	3.3%	7,200,770	7,396,628	195,858	2.7%	0.56

Source: County Business Patterns

Figure 1. Film Industry Weighted Annual Growth Rate by Weighted MPI, 2002-2010



* Weighted annual employment growth rate calculated was calculated from the base of the first year of MPI to 2010, using the formula:

$$r = \ln (p_n / p_1) / n,$$

where p_n & p_1 are the last and first year MPIs were active respectively, and n = the number of years in which MPIs were in effect, using a one-year lag.

** Weighted average of MPI calculated by the MPI rate for the years in effect

Figure 2. Motion Picture Employment Growth in Top 5 States by MPI

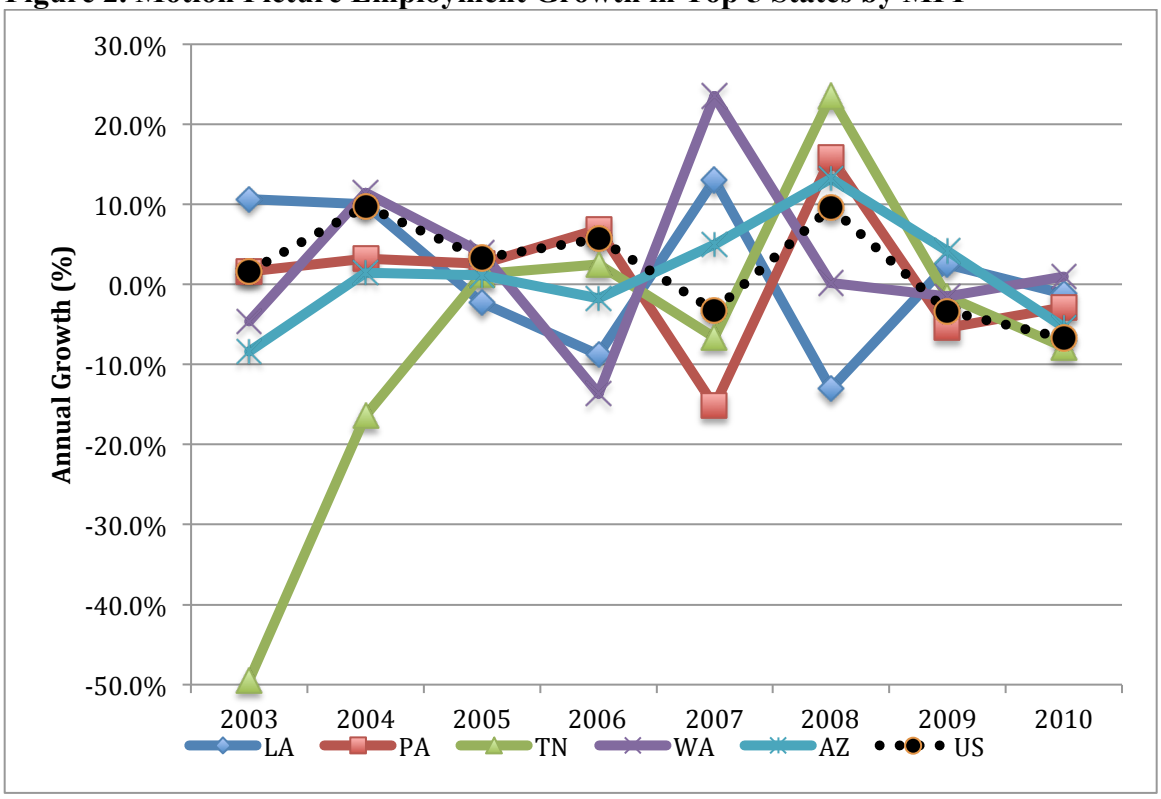


Figure 3. Motion Picture Employment Growth in Bottom 5 States by MPI

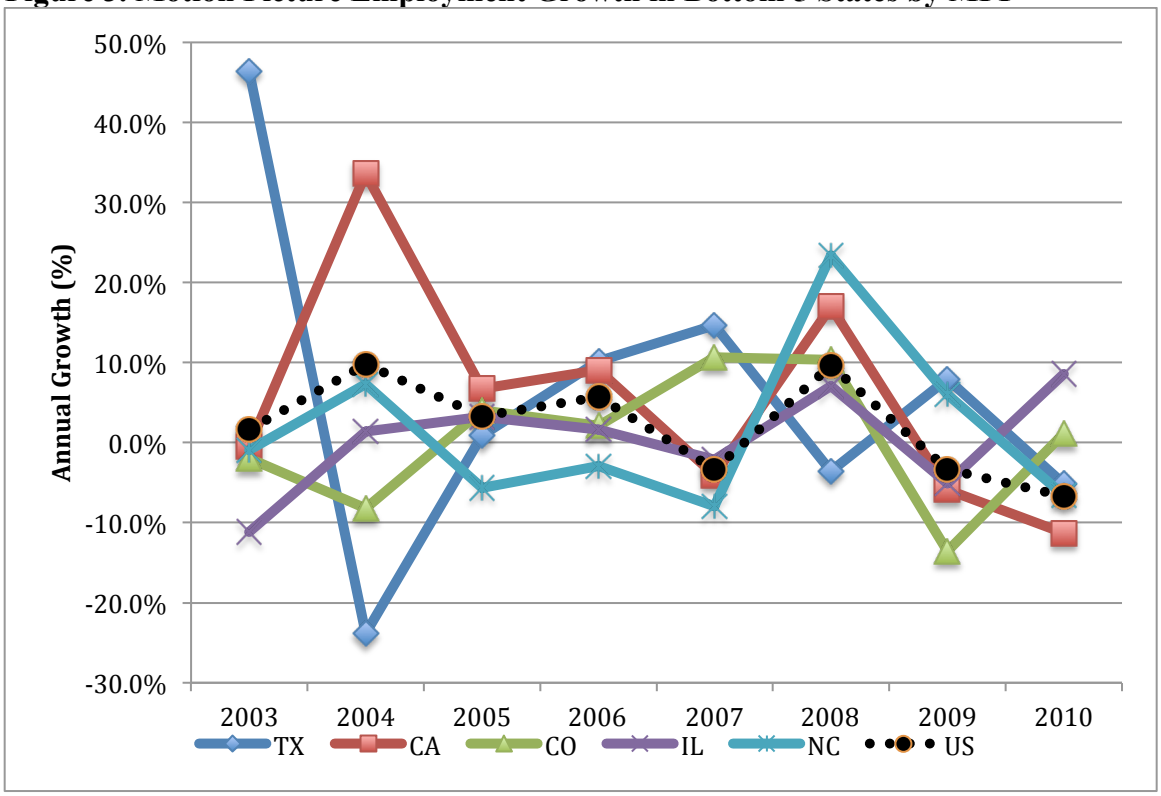


Table 4. Linear Regression Models

VARIABLES	(1) MP Emp. Growth	(2) Avg. Annual MP Growth
MPI Weighted Avg.	0.00201	0.00223
	(0.00419)	(0.00200)
Total State Emp. Growth	0.595	
	(0.881)	
Avg. Annual MP Growth		1.418
		(1.075)
Constant	-0.00470	-0.0339
	(0.0889)	(0.0401)
Observations	22	22
R-squared	0.033	0.127

*** p<0.01, ** p<0.05, * p<0.1
Robust standard errors in parentheses

References

Bartik, T. J. (1991). *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Bartik, T. J. (2007). Solving the Problems of Economic Development Incentives. In A. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 103-141). Kalamazoo, MI: WE Upjohn Institute.

Batt, R., Christopherson, S., Rightor, N., & Van Jaarsveld, D. (2001). *Net Working: Work Patterns and Workforce Policies for the New Media Industry*. Washington, DC: Economic Policy Institute.

Baxter, C. L. (2011). *Fiscal and Economic Impact Analysis of Louisiana's Entertainment Incentives*. Baton Rouge, LA: Louisiana Economic Development, Office of Entertainment Industry Development.

Blair, J. P., & Carroll, M. C. (2009). *Local Economic Development: Analysis, Practices, and Globalization*. Los Angeles: Sage.

Blair, J. P., & Premus, R. (1993). Location Theory. In R. D. Bingham & R. Mier (Eds.), *Theories of Local Economic Development: Perspectives from Across the Disciplines* (Vol. 20, pp. 3-26). Newbury Park, CA: Sage Publications, Inc.

Blakely, E. J., & Bradshaw, T. K. (2002). *Planning Local Economic Development: Theory and Practice* (Third Edition ed.). Thousand Oaks, CA: Sage Publications, Inc.

Blakely, E. J., & Leigh, N. G. (2009). *Planning Local Economic Development: Theory and Practice* (Fourth Edition ed.). Thousand Oaks, CA: Sage Publications, Inc.

Bradshaw, T. K., & Blakely, E. J. (1999). What Are the "Third-Wave" State Economic Development Efforts? From Incentives to Industrial Policy. *Economic Development Quarterly, 13*(3), 229-244.

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.

Choi, B.-R. (2003). *High technology development in regional economic growth: policy implications of dynamic externalities*. Hampshire, UK: Ashgate Publishing, Ltd.

Christopherson, S., & Clark, J. (2007). *Remaking Regional Economies: Power, Labor, and Firm Strategies in the Knowledge Economy*. Oxon, U.K.: Routledge.

Christopherson, S., & Rightor, N. (2010). The Creative Economy as "Big Business": Evaluating State Strategies to Lure Film Makers. *Journal of Planning Education and Research, 30*(1).

Christopherson, S., & Storper, M. (1986). The city as studio; the world as back lot: The impact of vertical disintegration on the location of the motion picture industry. *Environment and Planning D: Society and Space, 4*(3), 305-320.

Christopherson, S., & Storper, M. (1989). The Effects of Flexible Specialization on Industrial Politics and the Labor Market: The Motion Picture Industry. *Industrial and Labor Relations Review, 42*(3), 331-347.

Currid, E., & Williams, S. (2010). Two Cities, Five Industries: Similarities and Differences within and between Cultural Industries in New York and Los Angeles. *Journal of Planning Education and Research, 29*(3), 322-335.

Economics Research Associates (2009). *Louisiana Motion Picture, Sound Recording and Digital Media Industries*. Baton Rouge, LA: State of Louisiana, Louisiana Economic Development.

Ernst & Young (2009). Economic and fiscal impacts of the North Carolina film credit program. North

FilmNC (2012). North Carolina Film Office - 25% Incentive Retrieved May 1, 2012, 2012, from http://www.ncfilm.com/new-25-tax-credit.html

Fisher, P. S. (2007). The Fiscal Consequences of Competition for Capital. In A. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 57-86). Kalamazoo, MI: WE Upjohn Institute.

Fisher, P. S., & Peters, A. H. (1997). Measuring Tax and Incentive Competition: What Is the Best Yardstick? *Regional Studies, 31*(8), 751-764.

Fitzgerald, J., & Leigh, N. G. (2002). *Economic Revitalization: Cases and Strategies for City and Suburb*. Thousand Oaks, CA: Sage Publications, Inc.

Florida, R., Mellander, C., & Stolarick, K. (2009). *That's Entertainment: Scale and Scope Economies in the Location and Clustering of the Entertainment Economy*. Toronto: Martin Prosperity Institute.

Florida, R., Mellander, C., & Stolarick, K. (2012). Geographies of scope: an empirical analysis of entertainment, 1970–2000. *Journal of Economic Geography, 12*(1), 183-204.

Former Iowa Film Office head gets deferred judgment, probation (2011, October 18). *The Gazette*, from http://thegazette.com/2011/10/18/former-iowa-film-office-head-gets-deferred-judgment-probation/

Francis, N. (2009). Ernst & Young Film Study - REVISED. Unpublished Memorandum. New Mexico Legislative Finance Committee.

Goldstein, H. A., & Luger, M. I. (1993). Theory and Practice in High-Tech Economic

Development. In R. D. Bingham & R. Mier (Eds.), *Theories of Local Economic Development: Perspectives from Across the Disciplines* (Vol. 20, pp. 147-172). Newbury Park, CA: Sage Publications, Inc.

Hall, W. W., Jr., Dumas, C. F., & Schuhmann, P. W. (2009). *Economic Impact Study of the Production of a 'Mid-Major' Motion Picture on the Economy of Southeastern North Carolina* (Report). Wilmington, NC: Center for Business and Economic Services.

Harper, R. (2009). *Analysis of the Florida Film and Entertainment Industry*. Pensacola, FL.

Hissong, R. (2003). The Efficacy of Local Econonmic Development Incentives. In S. B. White, R. D. Bingham & E. W. Hill (Eds.), *Financing Economic Development in the 21st Century* (pp. 131-144). New York: M.E. Sharpe, Ince.

Holmes, T. (1995). Analyzing a Proposal to Ban State Tax Breaks to Businesses. *Federal Reserve Bank of Minneapolis Quarterly Review, 19*(2), 29-39.

Hong, J. (2010). *Three Essays on the Role of Amenities as an Economic Development Strategy.* Unpublished Dissertation, Louisiana State University, Baton Rouge, LA.

Iannone, D. T. (1997). Commentary on Industry Targeting. In R. D. Bingham & R. Mier (Eds.), *Dilemmas of Urban Economic Development: Issues in Theory and Practice* (pp. 195-196). Thousand Oaks, CA: Sage Publications, Inc.

Judge sentences film producer to prison for Iowa film tax credit scandal (2011, May 17). *WCFCourier.com*, from http://wcfcourier.com/news/local/article_3d1dd51c-80a6-11e0-8414-001cc4c03286.html

Kamerick, M. (2009, March 13, 2009). Analysis contends film study overstates industry's economic impact in New Mexico. *New Mexico Business Weekly*. Retrieved 08/08/2009, from http://albuquerque.bizjournals.com/albuquerque/stories/2009/03/16/story8.html

Katz, S. M., & Rosenthal, M. A. (2006). *The global success of production tax incentives and the migration of feature film production from the U.S. to the world: Year 2005 Production Report*. Los Angeles: CEIDR (Center for Entertainment Industry Data and Research).

Ledebur, L. C., & Woodward, D. (1990). Adding a Stick to the Carrot: Location Incentives with Clawbacks, Recisions, and Recalibrations. *Economic Development Quarterly, 4*(3), 221-237.

LeRoy, G. (2007). Nine Concrete Ways to Curtail the Economic War among the States. In A. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 183-198). Kalamazoo, MI: WE Upjohn Institute.

Lukinbeal, C. (2004). The rise of regional film production centers in North America, 1984–1997. [10.1023/B:GEJO.0000026704.17447.7a]. *GeoJournal, 59*(4), 307-321.

Luther, W. (2010). *Movie Production Incentives: Blockbuster Support for Lackluster Policy* (Special Report). Washington, DC: The Tax Foundation.

Mackay, J. W. (1994). The evolving importance of incentives. [Article]. *Economic Development Review, 12*(4), 4.

Malizia, E. E., & Feser, E. J. (1999). *Understanding Local Economic Development*. New Brunswick, NJ: Center for Urban Policy Research.

Markusen, A., & McCurdy, K. (1989). Chicago's Defense-Based High Technology: A Case Study of the "Seedbeds of Innovation" Hypothesis. *Economic Development Quarterly, 3*(1), 15-31.

Markusen, A., & Nesse, K. (2007). Institutional & Political Determinants of Incentive Competition. In A. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 1-42). Kalamazoo, MI: WE Upjohn Institute.

Martin, R. (2012). Regional economic resilience, hysteresis and recessionary shocks. *Journal of Economic Geography, 12*(1), 1-32.

McCann, P. (2009). Location theory. In J. E. Rowe (Ed.), *Theories of Local Economic Development: Linking Theory to Practice* (pp. 127-144). Surrey, UK: Ashgate Publishing Limited.

Motion Picture Association of America (2009). *The Economic Impact of the Motion Picture and Television Industry on the United States*. Washington, DC: Motion Picture Association of America.

Motion Picture Association of America (2012). State by State Statistics Retrieved November 1, 2012, from http://www.mpaa.org/policy/state-by-state

Motoyama, Y. (2008). What Was New About the Cluster Theory? What Could It Answer and What Could It Not Answer? *Economic Development Quarterly*.

National Conference of State Legislatures (2011). State Film Production Incentives & Programs Retrieved January 16, 2012, from http://www.ncsl.org/issues-research/budget-tax/state-film-production-incentives-and-programs.aspx

Neff, G. (2005). The Changing Place of Cultural Production: The Location of Social Networks in a Digital Media Industry. *The ANNALS of the American Academy of Political and Social Science, 597*(1), 134-152.

Neff, G., Wissinger, E., & Zukin, S. (2005). Entrepreneurial Labor among Cultural Producers: "Cool" Jobs in "Hot" Industries. [Article]. *Social Semiotics, 15*(3),

307-334.

Parr, J. B. (1999). Growth-pole Strategies in Regional Economic Planning: A Retrospective View: Part 1. Origins and Advocacy. *Urban Studies, 36*(7), 1195-1215.

Patton, Z. (2010). The Value of Movie Tax Incentives. *Governing*. Retrieved from http://www.governing.com/topics/economic-dev/The-Value-of-Movie-Tax-Incentives.html

Perry, M. (2009). The theory behind business clusters. In J. E. Rowe (Ed.), *Theories of Local Economic Development: Linking Theory to Practice* (pp. 145-168). Surrey, UK: Ashgate Publishing Limited.

Peters, A. H., & Fisher, P. S. (1995). Measuring the competitiveness of state and local economic development incentives. *Computers, Environment and Urban Systems, 19*(4), 261-274.

Pierce, S. C. (2008). *Promoting Film and Media to Enhance State Economic Development*. Washington, DC: National Governors Association.

Popp, A. V., & Peach, J. (2008). *The Film Industry in New Mexico and the Provision of Tax Incentives*. Las Cruces, NM: Arrowhead Center, New Mexico State University.

Porter, M. E. (1998, November). Clusters and the New Economics of Competition. *Harvard Business Review,* 77-90.

Congress Should End the Economic War Among the States, U.S. House of Representatives (2007).

Scott, A. J. (2002). A New Map of Hollywood: The Production and Distribution of American Motion Pictures. *Regional Studies, 36*(9), 957.

Storper, M., & Christopherson, S. (1987). Flexible Specialization and Regional Industrial Agglomerations: The Case of the U.S. Motion Picture Industry. *Annals of the Association of American Geographers, 77*(1), 104-117.

Tannenwald, R. (2010). *State Film Subsidies: Not Much Bang For Too Many Bucks*. Washington, DC: Center on Budget and Policy Priorities.

Thomas, K. P. (2007). The Sources & Processes of Tax and Subsidy Competition. In A. Markusen (Ed.), *Reining in the Competition for Capital* (pp. 43-56). Kalamazoo, MI: WE Upjohn Institute.

Vock, D. C. (2008). Star-struck States Sweeten Film Incentives Retrieved March 19, 2009, 2009, from http://www.stateline.org/live/details/story?contentId=283782

Voytek, K. P., & Ledebur, L. (1997). Is Industry Targeting a Viable Economic Development Strategy? In R. D. Bingham & R. Mier (Eds.), *Dilemmas of Urban Economic Development: Issues in Theory and Practice* (pp. 171-194). Thousand Oaks, CA: Sage Publications, Inc.

Weinstein, B. L., & Clower, T. L. (2000). Filmed Entertainment and Local Economic Development: Texas as a Case Study. *Economic Development Quarterly, 14*(4), 384-394.

World Bank, T. (2012). Methodologies Retrieved October 27, 2012, from http://data.worldbank.org/about/data-overview/methodologies