



Evaluating the effectiveness of state film tax credit programs

Issues that need to be considered





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Executive summary

Evaluating the effectiveness of state film tax credit programs

Film credits are currently in use in 37 states to attract production activity and create a sustainable film industry over time. As state tax shortfalls have grown and budgets have been cut, legislators have been forced to weigh expenditures on film credits with those on other types of economic development programs and general state spending. This report examines the objectives of film credit programs, explains the methodology that should be used in a comprehensive evaluation of the effectiveness of state film credit programs and compares the methodologies from a number of recent state studies of the effectiveness of film credits.

This report describes the rationale for offering production incentives in terms of the broader economic development goals of a state. Film tax credit programs create both short-run and long-run economic and fiscal benefits that extend beyond the production activities that qualify for the credit. These benefits include increased tourism, development of film industry infrastructure, such as studios and service providers, and attraction of production activities not eligible for the credit. A comprehensive benefit-cost analysis of film credits should compare tax credit costs to both private sector benefits (additional in-state jobs and income) and public sector benefits (higher state and local taxes from a stronger economy), not just the net change in state tax collections.

Evaluating film credits

The following points should be kept in mind when evaluating film credits from an economic development perspective:

- ▶ The key objective of film credits is to provide state residents with increased employment and higher incomes in the film and related industries and from statewide multiplier activity associated with production in these industries. The multiplier activity accounts for jobs and incomes earned from in-state suppliers to the industry and from the spending and respending of the additional earnings of employees throughout the state economy.
- ▶ The short-run goal of the credits is to attract specific films and productions. Film companies employ in-state and out-of-state workers and purchase goods and services from in-state and out-of-state suppliers. For states without an established movie production base, initial film productions may have a large component of payments to non-residents and out-of-state suppliers. As the industry develops over time, a greater share of movie spending will accrue to residents and in-state suppliers, which supports the long-run goal of creating jobs and incomes for a state's residents.



- ▶ From a budget impact perspective, state legislators and policymakers may be concerned about short-run impacts of film tax credits on state budgets, asking film credits to “pay for themselves.” This goal is usually described as requiring additional state taxes from film-related economic activity to exceed the tax credit costs. This short-run budget perspective may conflict with the longer-run economic development objectives for film credit programs.
- ▶ The primary benefits of film credits accrue to the private sector, not the public sector. An evaluation of the effectiveness of film credits must incorporate the private sector benefits into the analysis. For example, the number of statewide new jobs related to expansion of the film industry can be compared to the net cost of the credit program (credit costs minus additional state and local taxes from a stronger economy).
- ▶ From an economic development perspective, the relevant policy question in evaluating film credits should be, “Do the residents of the state get a good return for their investment?” and not simply, “Does the investment pay for itself in terms of additional state tax collections?” Film credit programs could still be relatively effective economic development programs even though the public sector is not a net beneficiary.
- ▶ The economic impact analysis should include the increased direct economic activity from film productions, indirect economic activity of in-state suppliers and additional in-state consumer spending triggered by the direct and indirect economic activity.
- ▶ Film credits may also generate economic activities beyond the productions qualifying for credits. These ancillary activities include increased tourism and industry infrastructure investment (such as film studios) as the industry expands. Although more difficult to measure, these benefits should be included in a comprehensive film credit study.
- ▶ If a state analysis of the effectiveness of film credits is done from the perspective of the benefits only to in-state residents, the economic impact analysis can be limited to the compensation paid to in-state residents and purchases of goods and services from in-state suppliers. Over time, the percentage of the total budget paid to state residents and in-state suppliers should increase as the film industry expands.
- ▶ The net cost of a state’s film credit program depends upon its effective tax credit rate. This is the ratio of credits received to the total film budget for in-state activities and equals the statutory credit rate times the percentage of the total budget eligible for the credit. Effective credit rates can be substantially lower than the statutory rates.
- ▶ In determining the net cost of film credit programs, the credit costs should be reduced by the additional state and local taxes generated from the increase in employment and income attributable to film credits. Although all or most of the credit costs will be borne by the state, both state and local governments benefit from the stronger state economy.

Estimating film credit benefits and costs

Based on a review of specific state film credit studies and the film credit case study including this report, the following key features of a comprehensive study of the economic and fiscal impacts of film credit programs should be considered:



Comparing film credit studies

Empirical studies of the effectiveness of film credit programs differ significantly. Studies differ significantly in terms of key assumptions and estimating methodologies, making comparison of results difficult. These differences include:

- ▶ A number of studies focus on the question, “Does the film credit pay for itself?” The answer is often described as the state’s (public) return-on-investment (ROI). The studies calculate economic benefits and net credit costs but do not explicitly evaluate the film credit’s effectiveness in generating more jobs and income than alternative economic development programs.
- ▶ Studies that include the impacts of capital investment, tourism and other ancillary activities resulting from film credits report higher overall job impacts of the film credit programs.
- ▶ The majority of film credit programs estimate the economic and fiscal impacts of the film credits independent of any other tax or expenditure policy changes. Several studies, however, estimate the additional impacts of offsetting expenditure changes to balance state budgets.

Economic contributions of film credits

Film credit studies show that credits have generated significant private sector benefits in the states in which they have been adopted. These studies have shown that the credit programs have generated thousands of production jobs, increased tourism activity, channeled investment in industry infrastructure and stabilized the retention of existing activity. Study results include:

- ▶ In studies that examine the full range of economic benefits from film credits, the impacts from tourism and capital investments can be more significant than the impact of the film production activity.
- ▶ Significant increases in state tourism can be tied to film productions. In some cases, widely viewed films increased tourism to featured locations by more than 25%.

The question of whether the costs of the film credit programs are justified by these economic benefits must be answered by comparing the benefit-cost ratios of film credit programs with those achieved by other available economic development programs.



Introduction

Film credits are in use in 37 states in an effort to attract production activity and create a sustainable film industry in each jurisdiction. As state tax shortfalls have grown and budgets have been cut, legislators have been forced to weigh expenditures on film credits with those on other types of economic development programs and more general state spending. Before undertaking a comparison of the film credit programs with other types of state spending, it is important to understand the objectives of film tax credit programs and their potential benefits.

This report describes the rationale for offering production incentives in terms of the broader economic development goals of the state. The primary benefits of film credits accrue to state residents in the form of increased employment and higher incomes generated by production activities. These private sector economic benefits must be included in a comprehensive benefit-cost analysis of film credit programs.

Film tax credit programs can create economic and fiscal benefits that extend beyond the production activities that qualify for the credit. These benefits include:

- ▶ Increased tourism due to prominent placement of a state's tourism assets in popular television shows and films
- ▶ Development of film industry infrastructure such as studios and service providers
- ▶ Attraction of productions not eligible for the credit

As states consider their film credit structures, their economic and fiscal impacts can be maximized by considering each of the mechanisms by which film tax credit programs can provide benefits to state economies.



The economic development rationale for film credits

Whether tax credits and other film incentives are good public sector investments must be measured in the context of the state's objectives and expectations. Most states have a series of goals in mind for any incentive program, and the specific goals and the importance attached to each vary widely. The result is that there is no single answer that applies to all states and all film projects regarding the question of whether incentives are a good investment. Each state must separately determine whether incentives should be granted based on their objectives and, if so, the specific structure of the incentive programs needed to achieve those objectives.

In addition to involving multiple objectives, evaluation of the benefits and costs of incentives is made even more difficult because some occur in the private sector, some accrue to the public sector, some are qualitative, others are quantitative and so forth. The multifaceted dimensions of incentives complicate explicit measurement and make it difficult to combine benefits and costs to derive an aggregate, quantitative measure of net benefits and costs.

State goals for film credits

Each state must identify the combination of goals and relative weights that they place on each goal as they consider whether the provision of tax incentives for the motion picture industry is good policy. The following are specific goals that states are pursuing when they adopt film credits.

Create jobs and income

The key objective of film credits is to provide state residents with increased employment and higher incomes in both the film and related industries and from multiplier activity associated with production in these industries. The multiplier activity accounts for jobs and incomes earned from suppliers to the movie production

industry (sound stage construction, catering, transportation, hair stylists, etc.) and from the spending and respending of the earnings that create demands for other goods and service suppliers throughout the state economy.

The private sector goals and benefits include both short-run and long-run dimensions. Short-run goals include attracting specific films and productions. Film companies employ both in-state and out-of-state workers and purchase goods and services from in-state and out-of-state suppliers as the movies, TV shows and other productions are filmed. The extent to which in-state jobs and incomes are created (or sustained) and provide benefits to the state where the film is produced depends upon many factors. These include the propensity of production companies to hire in-state employees and to buy goods and services supplied by in-state companies.

Economic benefits to the residents of the filming state are greater if employees are hired from within the state and in-state suppliers are used. The larger the percentage of employees and purchases made in-state, the greater the economic benefits to a state's residents. However, in the short run, there is a "chicken or the egg" problem from an economic development perspective. The percentage of film expenditures that accrue to in-state residents and suppliers will grow over time as the state's production base expands, but this requires attracting new productions in the short run with possibly lower short-run, in-state benefits.

Long-run economic development goals include developing the in-state film production industry (or specific components of the industry) so that it generates additional productions and offers an expanded base of in-state employment and supplier companies. The objective is to encourage the in-state development of the film industry, including pre-production, production and post-production activities. The expanded base will increase economic benefits to a state's residents from in-state productions, as well as provide increased income and jobs from "exports" of services

to productions outside the state. A minimum threshold of activity likely exists before the in-state industry is sustained to the point that it is not dependent on attracting the next movie, and instead has a sustained demand and is generating new productions, attracting film locations and providing services to film production in other states.

The long-run development of the film industry requires expansion of the set of skilled people in the state, opportunities for actual experience and entrepreneurship that lead to successful film industry businesses that are growing and succeeding in the state. Entrepreneurial pursuits may be among the most challenging to foster. The success of states in developing thriving industries may depend on the historical development of the industry, the state's location and topological characteristics, the presence of related industries in the state and the overall regulatory and business tax structure in the state.

Development of a self-sufficient and sustained industry relies on synergies from expansion of different components of the industry and the making of a sufficient number of movies each year. Synergies can also take place across sectors as the film industry is complementary with other industries, including music and photography. Thus, the benefits derived from the movie production industry growth can expand rapidly if strong complementarities exist so that development of filmmaking also attracts and enhances these other industries and vice versa.

While states strive to create jobs and income through economic development programs, incentives and other structural differences in tax systems can create different tax liabilities for the firms depending on their specific industry. These differences can work to the advantage or disadvantage (at least in a relative sense) of industries and thereby encourage or discourage expansion in a state. Some states may believe that taxes should be imposed in a uniform fashion on all industries; tax features and incentives that create different tax burdens for an industry would be viewed as a violation of this principal. This goal conflicts with the economic development objective of using targeted tax credits to encourage the expansion of a specific industry. States may vary on the value they give to this uniformity goal.

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Public sector budget impact goal

From a budget impact perspective, state legislators and policymakers may be concerned about short-run impacts of film tax credits on state general fund budgets. Given this concern, they may assert that film tax credits, for specific productions or all productions for a single year, should "pay for themselves." This goal is usually described as requiring additional state taxes from the productions and related statewide economic activity to exceed the value of the productions' tax credits, and it is almost exclusively focused on the short run.

The tax revenues and expenditures that arise from any economic activity that is stimulated by film credits should be included in the analysis of the credits' effectiveness. However, given the fact that taxes collected by local governments (and potentially expenditures) will also increase due to expansion of the film industry, increased taxes that offset the initial cost of the credit should include both state and local taxes. Nearly every tax imposed by state and local governments will be affected, including personal income taxes, sales tax, excises on fuel, alcohol and tobacco products, corporate income taxes, property taxes and others. The taxes may be based on direct activity at production companies, at their suppliers or undertaken by people who earn their incomes from film production. For example, tax revenues can be expected from the sales taxes on non-exempt purchases by the production companies, purchases by their suppliers and consumer purchases by those working for production companies and those earning incomes created through the multiplier process. State and local governments may also collect modest revenues from fees and charges.



Although tax receipts will be reduced directly by the tax credits on qualified expenditures, incentives are generally given only to the production companies or are associated with income taxes earned by individuals working directly for the production companies. The additional tax liabilities of suppliers and individuals from the stronger state economy provide offsets to the tax incentives provided directly to film productions. The increased economic activity from film productions is also expected to generate investments and additional spending that do not qualify for the credits. These include tourism spending, investments in industry infrastructure, such as studio construction, and non-credit-eligible productions attracted by the expanding film industry.

Additional public service expenditures that arise because of new film productions may not be paid for directly by the film productions, although productions often pay parking fees, overtime fees for police and location fees for the use of public spaces. The public sector expenditures may be relatively modest for the production of individual movies since occasional productions should have little effect on state expenditures. However, expenditures for local government services, such as public safety and fire, may increase. In theory, if these expenditures are not covered by non-tax payments by the productions, they should be included in the calculation of net benefits to the public sector. In practice, the incremental cost of these types of expenditures is difficult to measure and is not included in studies evaluating film credit effectiveness.

The net fiscal benefit for state and local budgets is generally determined by comparing the cost of incentives to the additional state and local taxes generated by the film industry expansion. The net fiscal effect could be positive or negative depending upon both the features of state film credits and the economic characteristics of each production.

As pointed out in the discussion of the economic development goal, there is also an important time dimension that needs to be considered in evaluating the net fiscal impact on state and local governments. In the short run, film credits in states with less developed film industries may have lower net tax contributions from film credits. However, over time, longer-term growth in the industry is expected to increase the in-state film employment and multiplier effects that will increase the size of the positive

tax feedback effect relative to the cost of film credits. This should increase the net contribution of the film credit program to state and local government budgets, although it could also entail some additional expenditures.

Increase visibility for the state

States expect to obtain public relations benefits as film and TV productions are viewed and from news and entertainment reporting around the productions. Beautiful scenery, the presence of entertainment options and other unique factors of states can be highlighted and made very visible to people around the US and the world in ways that are otherwise very difficult to achieve. Improved visibility and exposure of a state's physical beauty can result in tourism, attract others to produce movies in the state, enhance the state's image or even cause firms in unrelated industries to consider locations in the state.

The advertising value of film and television productions, at a minimum, can be evaluated by comparing the costs of generating similar awareness of a state through paid advertising. For decades, states have purchased advertising in magazines and on television to promote awareness of their states as a destination for tourists. Examples include Michigan's "Pure Michigan" campaign, which cost nearly \$30 million in 2009; California's "Find Yourself Here" campaign, which has cost \$50 million annually since 2007-08; Hawaii's leisure and sports marketing budget of \$44 million in 2010; Florida's marketing cost of \$23 million in 2002; and Las Vegas' \$87 million spent on advertising in 2009, including its "What Happens in Vegas, Stays in Vegas" campaign.

These advertising campaigns have generated substantial visitation, which has in turn generated significant economic impacts as visitors spend money on restaurants, hotels, transportation and retail goods and services.¹ While tourism advertising campaigns use a message tailored to tourists, these advertisements have a limited amount of time in which to convey their messages. For example, a typical advertising campaign may feature several images of a state with a link to a website or other state tourism information source. In contrast, television and film productions may feature a single city or state for an extended period of time, creating a deeper connection with the audience. Although this impact may be a challenge to measure, it should be included in a comprehensive evaluation of the effectiveness of film credits.

¹For example, see "Travel Michigan, 2009 Regional/National Advertising Evaluation," Longwoods International, (2010), which found that the "Pure Michigan" advertising campaign induced more than 680,000 visits from residents of other states in 2009.

Increase tourist spending

Films and television shows that successfully showcase locations in a state can significantly increase tourism and the associated public and private sector benefits in those destinations. Tourists may want to visit sites where movies were filmed or where they are currently being filmed. Attractive settings and interesting sites as backdrops in films may alert or remind tourists of the desirability of visiting a particular state. In some cases, visiting sites where movies were filmed is not sufficient by itself to attract tourists but adds to the other amenities that a locale offers. Such tourism results in hotel stays, souvenir sales, restaurant visits and many other benefits to the local economy. Private sector employment and incomes and public revenues and expenditures can be expected from any expanded tourism, and the share attributed to film incentives should be included in a comprehensive analysis of credits.

Film and television productions can increase awareness of a state and its attractions and can create a loyal following of fans who are interested in seeing locations where filming occurred. Even a small increase in tourism resulting from a successful film or television production can have a significant impact on a state economy and on the net benefits of film credits to a state.

The effect on visitation is most easily measured in locations where the release of a film is the only major event influencing visitation. For example, in the case of the cornfield in Iowa that was home to *Field of Dreams*, visitation before the film was released was zero but increased to 65,000 in the years after its release. It is not difficult to determine that these visitors can be easily attributed to the film. Determining the increase in visitation to a large city due to a film is much more difficult, but the potential benefits from tourism are much larger.

A recent report that analyzes the impact of Sweden's film-induced tourism industry finds similar results from blockbuster films featuring Stockholm, such as *The Girl with the Dragon Tattoo*. This film and other films in the series are estimated to have generated exposure worth more than 100 million Euro.² In New Zealand, *Lord of the Rings* was estimated to have created \$42 million of exposure.³

Substantial evidence exists documenting the increase in tourism at specific sites following the release of several films. The tourism effect of films that feature state or national parks is most easily analyzed because parks maintain and publish annual visitation data and significant increases in visitation following the release of a film can be easily correlated to the release of a film featuring that location. Examples of impacts include:

- ▶ ***Last of the Mohicans* (North Carolina):** There was a 25% increase in attendance at Chimney Rock Park in the year following release.⁴
- ▶ ***Close Encounters of the Third Kind* (Wyoming):** Devil's Tower was featured in an iconic scene in the film. There was a 74% increase in visitation (an increase of more than 116,000 visitors) to Devil's Tower National Monument in the year after the film's release and an additional increase in the year when the film was aired on television.⁵
- ▶ ***Dances with Wolves* (South Dakota):** Visits to Badlands National Park, which was featured in the film, increased 14.5% over the prior year in the first full year after the film was released.⁶
- ▶ ***Field of Dreams* (Iowa):** The film featured a baseball field in a cornfield that had no visitors prior to the release of the film. In the years following the release of the film, visitation increased to as many as 65,000 visits per year.⁷
- ▶ ***Thelma and Louise* (Utah):** In the year following the release of the film, visitation to Canyonlands and Arches National Parks increased 22.6% and 13.7%, respectively.⁸
- ▶ ***Steel Magnolias* (Louisiana):** The film was set in a fictional suburb of Natchitoches, Louisiana. Visitors to Natchitoches increased 39.7% the year after the film's release, according to the local tourist commission.⁹

²Cloudberry communications, "Millennium Report." March 2011.

³NZ Institute of Economic Research (Inc.), "Scoping the Lasting Effects of The Lord of the Rings" (2002)

⁴R. W. Riley and C.S. Van Doren, "Movies as Tourism Promotion: A 'Pull' Factor in a 'Push' Location," *Tourism Management*. (1992) 13(3): 267-274.

⁵Ibid.

⁶R. W. Riley and C.S. Van Doren, "Movie-Induced Tourism." *Annals of Tourism Research*. (1998) 25(4): 919-935.

⁷Ibid.

⁸Ibid.

⁹R. W. Riley and C.S. Van Doren, "Movies as Tourism Promotion: A 'Pull' Factor in a 'Push' Location," *Tourism Management*. (1992) 13(3): 267-274.



Films that have a material impact on tourism were all successful at the box office and prominently featured locations suitable for tourism. While film tax credit programs cannot predict which films will be successful at the box office, the credit programs can maximize their impact on state tourism by providing financial support to films that feature destinations that are potentially attractive to tourists.

The visibility and tourism impacts of films attracted by film credits, while more difficult to measure, have a disproportionate impact on the net benefits of credits to a state. This is because the additional in-state economic activities triggered by the films do not result in film tax credit costs. In other words, these activities increase private sector incomes and public sector taxes at no additional budget cost to government. As discussed below, these impacts can have a significant impact on the net benefit calculation for film credits.

Quantifying and aggregating film credit benefits and costs

Measuring benefits and costs

The benefits and costs from incentive programs, such as film credits, should be quantified and aggregated to analyze the expected or actual impacts of incentives for a state, but states face a series of issues in quantifying these benefits and costs and in summarizing this information. First, many of the benefits, the creation of jobs and income, accrue to the private sector, but many of the costs, primarily the tax credit costs, are borne by the public sector. States must decide how to measure, weigh and combine the public and private sector benefits and costs.

Second, the benefits of film credits have both a short-run and long-run dimension. In the short run, film credits attract new films to a state and create jobs, incomes and spending in the state. From an economic development perspective, it is the longer-run, dynamic expansion of the film industry that is the primary policy objective. The challenge in conducting a comprehensive benefit-cost analysis of film credits is estimating the longer-run, private sector benefits

that could result from short-run incentives provided to a specific production. A calculation of the short-run rate-of-return (however defined) on a specific production does not include this broader economic development perspective.

Third, other benefits, such as greater visibility and enhanced tourism, may be more difficult to quantify because they are diffused and part of a broader set of campaigns that states conduct to build their image. Some analysis of these benefits may be possible, but states will ultimately need to make qualitative judgments on the value of some of these benefits.

The practical challenges in measuring short-run and long-run benefits and costs of film credit programs are discussed in more detail in the case study section.

Evaluating benefits and costs

Once benefits and costs are measured, the right question must be asked in terms of evaluating the film credit program's effectiveness. From an economic development perspective, the correct question should be, "Do the residents of the state get a good return for their investment?" and not simply, "Does the investment pay for itself in terms of state tax collections?"

A large majority of film credit studies explicitly or implicitly ask the question, "Do film credits pay for themselves?" From a benefit-cost analysis perspective, this is too limited a budget constraint. The studies do not explicitly compare the benefit-cost ratios for other state tax and spending programs designed to increase jobs and income. The studies calculate film credit benefit-cost ratios but do not compare these ratios to other state spending programs or tax changes.

Economic development programs, including film credits, can generate substantial private sector benefits in terms of jobs and higher incomes, even if they do not pay for themselves in terms of overall state tax changes. The important policy point is that film credits may be effective in meeting economic development objectives even if the public sector is not a net beneficiary.¹⁰

¹⁰ In a recent Brookings Institution paper prepared by Timothy Bartik of the Upjohn Institute for Employment Research, "Bringing Jobs to People: How Federal Policy Can Target Job Creation for Economically Distressed Area," (October 2010), the author discusses how to evaluate alternative proposals for increasing job growth in geographic areas. He uses empirical estimates of the responsiveness of economic activity to changes in business taxes to estimate the impact of the job-creating programs on jobs and program costs. He compares the effectiveness of the programs in terms of the government costs per job created. He estimates a range of \$8,500 to \$25,000 for the three options he examines. These programs do not pay for themselves in terms of additional taxes generated by increased employment; if they did, the ratios would be "zero" government cost per job created. The important point he makes is that policymakers need to compare job programs in terms of their relative effectiveness in creating jobs, as measured by this ratio.

As the authors of a recent Massachusetts study noted: "As we have pointed out in previous studies, it is important to place film tax incentives in the context of tax incentives generally. Most studies of tax incentives show that increases in economic activity induced by the incentives produce tax revenue that is lower than the amount of the tax expenditures themselves. ... Whether a tax incentive program is desirable is not solely a function of how much revenue it generates, but also whether the economic activity it causes is judged to be favorable for the Commonwealth."¹¹

From an economic development perspective, the right way to evaluate film credits is to compare the benefits received from using \$1.00 for a state film credit program to the benefits of using the \$1.00 in some other way. The challenge is defining what the alternative use is. Given that states have to balance their budgets, the following are alternatives for paying for a \$1.00 increase in net film tax credits:

- ▶ The net tax credit cost of \$1.00 is offset with an equal increase in state taxes. In this case, the private sector benefits foregone (the "opportunity costs" of increasing taxes) of the \$1.00 should be compared to the benefits of using the \$1.00 to provide the film credit. The policy question in this comparison asks if the \$1.00 has higher benefits in the public or private sector.

In the context of economic development, this question can be answered by comparing the increased state economic activity (e.g., jobs or income) induced by the film credit (the "benefits") with the decreased economic activity (the "costs") of raising taxes to pay for the credit.

- ▶ The tax credit cost is offset with a \$1.00 decrease in state expenditures. In this comparison, the alternative is using the \$1.00 to fund state spending.¹²

- ▶ In benefit-cost studies of economic development incentive programs, it is generally assumed that the \$1.00 decrease is from other state economic development programs, including targeted tax credits or more general business incentives.

This is a more targeted version of the balanced budget requirement that asks the policy question, "Is the film tax credit more or less effective than other state economic development incentives?" The benefit-cost analysis in this case requires comparing the economic impact of the film credit to the economic impact of spending the \$1.00 on another economic development program. This approach recognizes that film credit program evaluations are more realistically evaluated within the framework of a fixed budget for economic development programs.¹³

This benefit-cost question, how film credits compare to other development incentives, is the more practical question that policymakers should be focusing on as they evaluate state film credits in the context of economic development objectives.¹⁴

Do incentives matter?

Regardless of the film credit program goals that are important to a state, incentives cannot be a good investment unless they actually attract productions that would otherwise be filmed elsewhere or related economic activity. Achievement of the goals ultimately depends on their effectiveness in attracting film production to the state, and knowing the effectiveness requires understanding the causality of what results in films being produced at particular locations. Incentives do not enhance a state's economy if the films would be produced in the state anyway. To be successful, the credit program needs to encourage a sufficient number of new productions in the state.

¹¹Navjeet K. Bal, "A Report on the Massachusetts Film Industry Tax Incentives," p.25.

¹²In theory, the analyst can make proportionate adjustments to total taxes or total expenditures or adjust the level of specific taxes and expenditures.

¹³For examples of the evaluation of other state tax incentive programs in terms of private sector economic benefits, see Ernst & Young LLP, "The Economic and Fiscal Effects of the Massachusetts Investment Tax Credit," and "The Economic and Fiscal Effects of the Massachusetts Research Credit." Both studies were prepared for The Associated Industries of Massachusetts Foundation, Inc.

¹⁴It should be noted that a common question around all types of economic development incentives is, "Should they be provided to stimulate economic activity in specific industries." Significant distributional effects can result from using general tax revenues to generate private sector benefits in an industry. Although distributional effects are always difficult to evaluate, programs should not be discounted solely because their benefits accrue to a subset of the population.



Logic suggests that tax credits and other incentives will have their greatest effect on a location when the productions could easily be filmed at many different locations and the primary consideration in location choice is cost differences. With the advent of computer-generated imagery (CGI) and other post-production techniques, a film production can be made to appear as if it was filmed virtually anywhere. Some films that rely heavily on CGI and other visual-effect technology can spend more than 50% of their total budgets on these effects, creating high-paying jobs and support businesses as a result. Taxes and incentives will tend to rise higher on the list of important issues in these cases. But, it is often difficult for state officials to determine the degree to which credits influence the location decision or the most appropriate structure of the credit, including the credit rate. The lack of this information also presents a challenge for estimating the benefit-cost ratio for film credit programs.

There are several key factors that determine how “efficient” a state film tax credit program is in generating the desired economic impacts from production activities. These include the statutory credit rate and the definition of the production expenses that qualify for the credit. Together, these two factors determine the *effective credit rate*, which is equal to the amount of credit received by the production as a percentage of its total costs in the state. If a state has a statutory tax credit of 30%, and 50% of the spending qualifies for the credit, the effective credit rate is 15%. The effective credit rate is key to determining the competitiveness of a state’s film credit. States with higher effective credit rates are more likely to attract significant additional production activity than those with lower effective credit rates, all else being equal.

The gross credit cost, and therefore the economic impact of the credit per dollar of credit cost, depends upon both the credit rate and the types of spending that qualify for the credit, with some types of qualified spending having more “bang for the buck” in terms of economic impacts.

In the short run, productions may be indifferent as to the combination of statutory credit rates and eligible expenditures as long as the effective credit rate is attractive. A production choosing between two states with identical effective credit rates will not prefer one over the other due to differences in the definition of qualified expenditures, as long as both states offer a credit with the same dollar value for the production. Likewise, from the state’s perspective, the only factors at play in the short run are the activity that is attracted and the total credit cost of attracting that activity.

Over the long run, the lower after-credit price of using qualified resources (such as in-state labor and suppliers) is expected to increase the usage of those resources relative to the use of non-qualified resources. The use of non-resident labor, for example, might be reduced by offering a higher credit rate on resident labor. The higher in-state credit rates provide an additional incentive to substitute in-state for out-of-state activity. However, to keep the state attractive to filmmakers, the credit rate on qualifying expenses would have to be higher to preserve the effective credit rate on total expenditures.

The challenge of measuring the causal relationship between state incentives and the location of production is not unique to the film industry. Analysts have studied how business costs affect the location decisions of business firms for many years. The research concludes that the most important factors for a typical business are transportation of inputs and outputs and access to the needed quality and supply of workers.¹⁵ For film productions, additional considerations enter the location decision, such as the availability of studios, climate and appropriate scenery. Among the states that have the required assets, productions will often choose the lowest cost location, considering available incentives and other costs.

¹⁵States often provide public sector programs that are financed by all taxpayers but which provide benefits to smaller groups of residents. Ultimately, the question becomes, “Do targeted movie credits offer a relatively high return for economic development expenditures?”



Case study of a credit program's impact

The economic and fiscal impacts of a state film tax credit program occur through multiple channels. These channels include the direct and indirect effects of the qualified production activities, infrastructure development, tourism and the potential development of a cluster of non-qualified production activities reliant on the industry infrastructure developed to support qualified productions. This section looks in more detail at these channels using a typical film production. The example below assumes that the state was able to attract the typical film production by offering a credit with a competitive effective credit rate.

Impact of production activity

A typical film production may incur \$10 million or more in costs for in-state production activities. (A more detailed budget for a typical film production is shown in Appendix A, along with calculations of the typical production's impact.) Of this production amount, potentially 50% to 60% generates substantial in-state economic impacts from payments to resident labor and businesses. Payments to non-residents may generate some in-state economic impacts, but the impact of the consumer spending resulting from these payments (the induced economic impact) would likely be much smaller than for resident labor compensation.

The total economic impact of a film production includes three components: direct, indirect and induced economic impacts. The direct economic impact describes the activities associated directly with the production: payments to labor, purchases of goods and

services, and the employment on the production set. This direct activity generates the two other types of economic impacts: indirect supplier impacts and induced consumption impacts.

The film production's purchases of goods and services from in-state suppliers are referred to as the indirect economic impact. Essentially, businesses that sell goods and services to film productions expand to meet the additional demand created by films that were attracted to the state due to the credit. The final type of impact, the induced economic impact, results from spending by film employees on goods and services. For example, a crew member that purchases groceries and dry cleaning services creates additional induced economic impacts at the grocer and dry cleaner.

Each of the economic impacts can be measured using several economic metrics. Two common metrics are labor income (a measure of the wages, salaries, benefits and other incomes earned by employees and proprietors of businesses) and employment.

Considering the direct, indirect and induced effects of the production activities, a typical \$10 million film production could generate nearly \$19 million in total economic output, \$4.4 million in labor compensation and 123 jobs. (See Appendix A for a detailed explanation of the calculation of these impacts.) The production will also generate direct, indirect and induced tax effects. For a \$10 million production, these additional state and local taxes could total more than \$600,000, including taxes on non-residents. (See Appendix A for a detailed explanation of the tax impacts.)¹⁶

¹⁶Note that the ratio of taxes generated per dollar of personal income impact is higher than the US average because the taxes include non-resident individual income taxes (which are generated by income not included in the personal income impacts) and by sales taxes on purchases of goods and services by film productions.



Additional economic impacts of film credits

The composition of production spending, the state's economic structure and the parameters of the film credit program will determine the benefit-cost ratio of the film credit program, measured in terms of credit cost per additional job. If these underlying relationships remain constant, this ratio will be fairly constant as film spending expands. However, credit-eligible productions that attract economic activity that does not generate credit costs can change this benefit-cost ratio. As a result, the calculated benefit-cost ratios are quite sensitive to how these ancillary or spin-off impacts are handled, if at all, in the analysis. This section illustrates how a single film may have an economic and fiscal impact that extends beyond the impact of production activities. In practice, some films will have no additional impacts and others will have impacts far exceeding the examples illustrated below.

Impact on tourism

If a film is successful in generating tourism, the economic and fiscal impacts can be substantial. For example, if a successful \$10 million film production induces 100,000 visitors to a state over several years, these visitors would spend approximately \$34 million during their visits on lodging, meals, entertainment and other purchases.¹⁷ In a typical state, this spending would create 310 direct and indirect jobs and \$1.2 million of additional state and local taxes.

The ability of a production to create these types of impacts depends on its success and the way in which it depicts the state. A film that prominently features a state's tourism assets but is not widely viewed will have a limited tourism impact. Likewise, a film that is a commercial success but portrays locations in a state as being in another jurisdiction would not generate positive tourism impacts. For this reason, not every production can be assumed to have this level of economic and fiscal impact from tourism, but state film credit programs are being refined to maximize their economic impact by focusing on films with the best potential for achieving significant tourism impacts.

Estimating the impact of tourism from a "typical" film is challenging because it is difficult to know how many films qualifying for the credit will be both a commercial success and will feature the state in a way that generates tourism activity. In North Carolina the television series *One Tree Hill* and the film *Nights in Rodanthe* prominently featured North Carolina locations and had budgets that equaled, on average, 10% of the total statewide production spending during the period they were produced.

Assuming that only 1 out of every 10 dollars of production expenditures qualifying for the credit will generate the type of tourism effects described above, the average for a typical film would include \$3.4 million of tourism spending (10% of the \$34 million above), 31 jobs and \$120,000 of state and local tax revenue, assuming average state and local tax rates.

The composition of production spending, the state's economic structure and the parameters of the film credit program will determine the benefit-cost ratio of the film credit program, measured in terms of credit cost per additional job.

¹⁷ Spending per visitor varies by state. This estimate assumes a conservative average spending level of \$340 per visitor. Typical per-visitor spending in New York City is more than \$1,000.



Industry infrastructure investment

Successful film credit programs that have attracted major productions have also attracted major investments in new studio facilities. In Georgia, studios including EUE/ScreenGems, Tyler Perry, and Raleigh Studios invested a combined \$135 million in facilities from 2008 to 2010.¹⁸ In New York, Kaufman-Astoria Studios expanded its Queens studio at a cost of approximately \$22 million while Steiner Studios at the Brooklyn Navy Yard is investing \$85 million to expand. Studios in Connecticut, New Mexico, and Michigan have also made significant investments in new facilities and equipment due to an increase in film production resulting from those states' incentives.

It is difficult to determine how many film productions must be attracted to a state in order to generate a major studio investment, but if such an investment occurs once during the first five years of a credit program that supports 50 productions per year, each film supported by the program could be credited with 1/250th of the total impact of the studio investment. A state must reach a critical mass of productions to attract a studio investment, and not every state will be able to do so. Those that are able to attract a significant amount of production activity may realize this benefit.

A studio investment of \$80 million would generate more than 1,000 total (direct and indirect) jobs and \$5.8 million in total state and local taxes, based on typical multipliers and national average state and local tax levels. These estimates are based on typical ratios of employment to spending for construction

Successful film credit programs that have attracted major productions have also attracted major investments in new studio facilities.

projects (\$157,000 of output per worker) and a typical multiplier for construction activities (output, income and employment multipliers between 2.0 and 2.1) and typical levels of state and local taxes (relative to statewide personal income). Based on this level of economic activity and taxes generated, the benefits per film equate to four jobs and more than \$23,000 of state and local taxes per film.

Overall economic impact of a typical film production

Considering the ancillary benefits associated with film productions, such as tourism and industry infrastructure development, the total economic impact of the hypothetical production could reach as high as \$23 million of economic output, \$5.7 million of income and 159 resident jobs. This level of economic activity would be expected to generate \$751,000 in state and local taxes. Compared to the level of resident personal income and job impacts reported earlier (and in Appendix A, Table A-4) for the film production alone, the addition of tourism and infrastructure impacts adds almost 24% to the statewide economic impacts of the typical production.

¹⁸“Economic Contributions of the Georgia Film and Television Industry,” Meyers-Norris-Penny, February 2011.



Comparison of methodologies used in film credit studies

A number of studies over the past decade have evaluated the costs and benefits of film tax credit programs. Each of these studies uses the standard tools employed by economists to estimate the economic effects of film tax credit programs but the studies differ in terms of their perspective and comprehensiveness. Thus, they produce a wide range of results.

Key study perspectives and assumptions

Many of the analyses of film tax credit programs begin by asking a single question, “Does the film credit ‘pay for itself?’” The studies then proceed to address this question by analyzing the economic impact of the productions qualifying for the credits and estimating the resulting “feedback” tax impacts. The costs of the tax credits are then compared to the additional taxes generated by new economic activity to calculate a net tax cost. In most cases, the studies examine only the film productions claiming the credit and do not focus on the ancillary benefits of the program, such as increased tourism, the creation of a stronger film industry or investments in new studio facilities.

Studies published by the Michigan Senate Fiscal Agency, the Connecticut Department of Economic and Community Development (DECD) and the Massachusetts Department of Revenue (DOR) include a “balanced budget constraint,” which imposes the requirement that each dollar of credit earned must be balanced in modeling the economic impacts by a corresponding dollar decrease in state expenditures on other programs.¹⁹

Analyses that include this balanced budget constraint offset a portion of the positive economic impacts of the film credit program by the estimated negative impact of a reduction in state spending. As discussed earlier, this is one way to impose a balanced budget constraint by assuming that the state’s total budget is fixed and the film credit is “paid for” by reducing general state spending. Because it is impossible to know what expenditures will be reduced, analysts typically assume that all government spending would be reduced proportionately to fund the credit. While this is a simplified way to model the net impacts of imposing a balanced budget constraint, it does not provide legislators with any information about how effective film credits are compared to other targeted economic development programs.

Another difference in perspective is how studies address the question of the extent to which activity claiming the film tax credit would have occurred in the absence of the program because all studies are based on assumptions rather than precise analysis. For example, the Massachusetts DOR study assumes that all feature films produced in the state occurred because of the credit program, but that nearly all commercials and a portion of television series and documentaries would have occurred in its absence. Based on the amount of production spending in each category, the study assumes that 7% of the total activity receiving the credit would have occurred in the absence of the program and that these productions did not generate any new state economic activity.

¹⁹David Zin, “Film Incentives in Michigan,” Michigan State Senate, Senate Fiscal Agency, September 2010; Navjeet K. Bal, “A Report on the Massachusetts Film Industry Tax Incentives,” Commonwealth of Massachusetts, Department of Revenue, July 2009; Stanley McMillen, Kathryn Parr, and Troy Helming, “The Economic and Fiscal Impacts of Connecticut’s Film Tax Credit,” Department of Economic and Community Development, February 2008.

In some states, the film credit excludes productions with a local focus intended for a local market (e.g., news programs), commercials and other content that would generally be produced locally in the absence of a credit and such an adjustment; while these types of productions would not create new economic activity, they also would not qualify for film credits in some states. In states with significant existing film industries, estimates of the number of productions that would have occurred without the credit is potentially larger in the short term. From a short-run perspective, these productions do not generate additional economic activity because they would have occurred anyway. A longer-run, competitive perspective is that in the absence of the credit, many of these productions would eventually leave the state and relocate to a state with a more generous credit program.

Studies also differ in how local taxes are treated in the benefit-cost analysis. Many studies do not consider the potential impact of a stronger state economy on local taxes. In contrast, Economic Research Associates reported local tax effects in both its Louisiana and Pennsylvania analyses, and the Los Angeles County Economic Development Corporation (LAEDC) included local taxes in its study of the California credit program.²⁰ In the Louisiana study, the authors found that local taxes equaled roughly one-half of the state fiscal impact. Due to the significance of local taxes in a state's overall tax system, these benefits should be included in a comprehensive benefit-cost analysis. The larger the increase in local taxes due to the expansion of the film industry, the smaller the net tax cost of the film credits.

Modeling economic impacts of the credits

The authors of each study must make several choices in estimating the economic impacts of the film production activity. The first choice concerns which economic model will be used. The two most commonly used state economic models, the Minnesota IMPLAN Group (IMPLAN) model and the Regional Economic Models Inc. (REMI) model have several differences. The major difference between the two models is that the REMI model incorporates dynamic economic responses to changes in key economic and policy variables, such as price levels, business tax rates and investment. The REMI model is a more useful tool when evaluating fundamental changes in an economy or broad policy changes, such as tax reform. When the economic change is small relative to the overall size of the economy and the change can be well defined in terms of changes in commodity demand and labor compensation, the IMPLAN model has richer industry detail that permits more accurate impact estimates.

The next choice for the user of either model is to determine whether to adjust the model's industry structure to incorporate more detailed information from credit applications about the specific productions receiving credits. Studies that rely on the "default" data supplied with the economic model assume that film productions resulting from the credit look like all of the economic activity captured in the government data collected for the industry in terms of average compensation and spending patterns on goods and services. Additionally, because film productions typically receive the credit only for goods and services purchased from in-state suppliers, they are incentivized to minimize their purchases from suppliers outside the state. Economic models should be adjusted to reflect the detailed economics of the actual productions receiving credits, whenever it is possible.

²⁰"Louisiana Motion Picture, Sound Recording and Digital Media Industries," Economic Research Associates, February ; "Pennsylvania's Film Production Tax Credit and Industry Analysis," Economic Research Associates, May 2009; "Economic Impact Report: California Film and Television Tax Credit Program," Los Angeles County Economic Development Corporation, February 2011.



The most common way to incorporate the production-specific data is to adjust the economic model to reflect actual film industry wages, spending and employment or to model these components separately. The multipliers for the film production industry in the IMPLAN economic model, for example, can be adjusted to reflect the actual wages and employment reported on credit applications. Such adjustments are more difficult in the REMI model. However, users of both models can also model film productions as a collection of spending on various types of goods and services plus compensation payments to labor. This is a common technique used in many of the studies. The general experience is that making these types of adjustments to more accurately reflect the economic characteristics of assisted productions increases the estimated state economic impacts of the credits.

Studies also vary in their treatment of non-qualified expenditures. Some studies, including an analysis of the New Mexico credit by Popp and Peach and an Arizona analysis by the Arizona Department of Commerce, examine only qualified expenditures when estimating the economic and fiscal impacts of productions.²¹ In-state, non-qualified expenditures for the assisted productions also add jobs and income and should be included, as is done by most of the other studies analyzing film credit programs. Studies including these expenditures report higher overall economic impacts and benefits.

Comparing film credit study results

Despite the differences in perspective and methodology in the studies noted above, a common practice for readers of the studies is to compare the results as if the differences described above did not exist or did not have a significant impact on the measured effectiveness of film credit programs. For example, two common metrics used to compare the efficiency of programs is the cost per job (the economic development perspective) and the public sector ROI (the budget perspective). Comparing these metrics using the results from studies that include different impact components and different modeling assumptions is comparing apples to oranges.

When comparing the results of film credit studies, what becomes evident is that, while the range of results for overall public sector ROI (additional taxes from an expanded economy divided by credit costs) varies significantly, comparing the results for impact components that are common to each study shows a much smaller variation.

For example, much of the variation in measured ROI is explained by differences in what is included in the calculations: state taxes or state plus local taxes, production impacts versus other impacts such as tourism, production expenses, capital investments and new productions versus retention of existing industry activity. In the case of the Ernst & Young LLP New York study, the study included the cost of both the New York State credits and the New York City credits. The state and local taxes per dollar of credit cost include both state and local taxes and credits; the state taxes per dollar of state credit include only the state taxes and credit costs. Without controlling for each of these impacts separately, it is difficult to compare the relative efficiencies of the credit programs being analyzed.

As another example, a recent analysis of the California film credit program by LAEDC included both tourism effects and productions that were attracted to California by a stronger overall film industry but did not receive film credits.²²

The Ernst & Young LLP analyses for New York and New Mexico also include other impacts (such as those due to tourism, capital investment and the longer-run retention of existing film industry activity). Similarly, a recent study of the Georgia credit program included impacts from film-induced tourism and capital expenditures.²³

²¹"Motion Picture Production Tax Incentives Program: Annual Report, Calendar Year 2008," Arizona Department of Commerce, March 2009; Anthony Popp and James Peach, "The Film Industry in New Mexico and The Provision of Tax Incentives," Arrowhead Center, August 26, 2008.

²²"Economic Impact Report: California Film and Television Tax Credit Program," Los Angeles County Economic Development Corporation, February 2011.

²³"Economic Contributions of the Georgia Film and Television Industry," Meyers-Norris-Penny, February 2011.

A close-up photograph of a person wearing a dark blue t-shirt, holding a clapperboard. The clapperboard is white with black text and has a black and white striped top edge. A white chalk marker is held in the person's hand, pointing towards the clapperboard. The background is a plain, light-colored wall.

Conclusion

Film credit studies have shown that film credit programs have generated significant private sector benefits including thousands of jobs on productions, increased tourism activity, investment in industry infrastructure and the retention of existing production activity. Whether the costs of the programs are justified by these economic benefits must be answered by comparing the benefit-cost ratios of film credit programs with those achieved by other economic development programs.

Although economic development programs generally have long-term goals, many analyses of film credit programs evaluate the credits from a short-run perspective, asserting that the credits must generate tax revenue equal to the cost of the program on an annual basis. While several of the most comprehensive film credit studies show that the credit costs of film credit programs may be fully offset by additional state and local taxes from expanded economic activity, film credits that do not meet this test may still provide relatively high benefit-cost ratios compared to other economic development programs.

Appendix A

Detailed case study of a typical film production

The impacts of a typical film production summarized in this report are based on more detailed calculations of the economic activity and taxes generated by a typical production. This appendix describes the assumed profile of the typical production analyzed, examines the potential film credit costs in each state and details the economic and tax impacts.

Profile of film production example

The following production example is provided to illustrate the mechanisms by which film credit programs result in economic impacts and some of the estimation challenges encountered by the analyst of these programs. The example is a hypothetical film, based on actual data from a number of studio productions in several states. Production budgets (including those for television and film productions) can range from a few hundred thousand dollars to more than \$100 million. This example uses a \$10 million total production budget to discuss economic impacts and to illustrate film credit features.

As shown in Table A-1, a typical film production incurs a variety of labor and non-labor costs. Although each production varies, a typical production (based on actual production data) could incur labor costs of more than 60% of its total budget. If a state analysis of the effectiveness of film credit programs is done from the perspective of the benefits (such as personal income and jobs) to in-state residents, compensation should be divided into resident and non-resident components. While compensation earned by non-residents may result in some additional in-state spending, this would typically be a relatively small impact compared to payments to residents. The example makes the conservative assumption that these payments to non-residents have no impact on the state economy. As a result, the state economic impacts depend upon only production payments to in-state labor and payments to in-state businesses for goods and services. In the example, resident compensation accounts for 33% of the film's total compensation.

Table A-1. Hypothetical production profile

Labor costs	Expenditure	% of budget
Above-the-line wages	\$2,700,000	27.0%
Residents	270,000	2.7%
Non-residents	2,430,000	24.3%
Below-the-line wages	3,500,000	35.0%
Residents	1,750,000	17.5%
Non-residents	1,750,000	17.5%
Other costs	Expenditure	% of budget
Living expense allowance	\$700,000	7.0%
Lodging	400,000	4.0%
Food	200,000	2.0%
Travel costs	200,000	2.0%
Leased equipment and facilities cost	1,300,000	13.0%
Location fees	200,000	2.0%
Purchased services	300,000	3.0%
Other services	500,000	5.0%
Total costs	\$10,000,000	100.0%
Total above-the-line costs	3,500,000	35.0%
Total below-the-line costs	6,500,000	65.0%
Spending affecting state economy	\$5,820,000	58.2%
Typical annual salary for resident labor	50,000	
Number of hires	200	
Number of production days	120	
Estimated resident FTEs	40	

In determining film credits, some states limit the credit to certain categories of qualified in-state compensation and expenditures. Most states limit credits on purchases of goods and services to purchases from in-state businesses. In addition, in some states, the credit eligibility of expenses also depends upon whether the expenses are “above the line” or “below the line.” Above-the-line expenses refer to the cost of talent, producers, directors, writers and rights to a story or screenplay. Below-the-line expenses include most of the other day-to-day production and post-production expenses associated with the production, such as set construction, makeup, wardrobe, catering, transportation and the cost of facilities. For the example production, it is assumed that all resident compensation qualifies for the credit and that all purchases of goods and services are in state and qualify for the credit. In this example, \$5.8 million of the total \$10 million of spending affects the state economy.

To estimate the production’s impact on the state economy, the number of full-time equivalent (FTE) jobs must be derived. This calculation translates the number of individuals hired to work on the production into the number of year-long, full-time jobs. Ideally, the analyst would not need to estimate the number of FTE jobs because the film office or other entity responsible for administering the credit would collect data on the number of hours worked on each production. Unfortunately, many state credit programs do not collect data on the number of hours worked by production employees and analysts must make a number of assumptions to estimate the number of FTE jobs. In this example, it is assumed that the typical employee on a 70-day production would work the equivalent of 11% of a full-time job.²⁴ The hypothetical film production hires 375 residents to work on the production, which translates to 40 FTE jobs. These jobs include grips, camera operators, gaffers, costume department staff, makeup and hair stylists, and others.

Credit cost of a typical film production

The amount of credit earned by the hypothetical film production will vary significantly depending on the state in which it is produced. Table A-2 illustrates the variation in the value of

the credit for the hypothetical state across selected states that are actively competing for films. In practice, films seek out locations that meet their requirements and offer tax credits that best suit their production cost profile. For instance, films with very high above-the-line costs may choose a location that includes such costs in the credit base instead of New York or California, which exclude above-the-line costs from the credit.

There are several key factors that determine how “efficient” a state film tax credit program is in generating the desired economic impacts from production activities. These include the statutory credit rate and the definition of the production expenses that qualify for the credit. Together, these two factors determine the effective credit rate, which is equal to the amount of credit received by the production as a percentage of its total costs in the state. If a state has a statutory tax credit of 30%, and 50% of the spending qualifies for the credit, the effective credit rate is 15%. The effective credit rate is key to determining the competitiveness of a state’s film credit and the state’s credit costs.

The definition of qualifying expenditures may encourage the substitution of qualifying expenses for other non-qualifying expenses over the long run, but in the short run, productions are indifferent as to the credit base as long as the effective credit rate is attractive. A production choosing between two states with identical effective credit rates will not prefer one over the other due to differences in the definition of qualified expenditures, as long as both states offer a credit with the same value to the production. Likewise, from the state’s perspective, the only factors at play in the short run are the activity that is attracted and the total credit cost of attracting that activity.

In some states, including Massachusetts, the state may buyback credits from the taxpayer at a discounted amount. This buyback reduces the net cost to the state because the credit is effectively reduced by the amount of the discount. The cost of the credit may also be effectively reduced in net present value terms because the cost of the credit is incurred typically after the film has been completed, but most tax revenue is typically collected at the time of production.

²⁴For the hypothetical production, an employee that worked every day of the 70-day production period worked 27% of the available workdays in a year (70 out of 260 possible, assuming a five-day workweek). Because film productions often require an employee’s services for only part of a production or for only a few hours a day, an additional adjustment must be made to reflect the actual number of hours worked. Based on actual industry data, it is assumed that a typical film production employee works 40% of the available hours during a production. In other words, for a typical 70-day production, an average employee would work 28 days. This adjustment reflects the fact that the crew that assemble sets, drivers that deliver materials, location scouts, post-production crew and others do not work every production day. Therefore, the typical employee of a 70-day production would work for 28 out of 260 available work days in a year and would be equivalent to 11% of a full-time job.



Table A-2. Comparison of film tax credit programs in selected states with highest FY2010 credit program expenditures*

Jurisdiction	Statutory credit rates by type of qualified expenditure				Rebate/credit (see credit discount)
	Residents	Non-resident ATL	Non-resident BTL	Purchases from in-state vendors	
California (4)	20% of below-the-line expenses	None	20% of below-the-line expenses	20%	Credit
Connecticut (2)	30% on all expenses (above/below-the-line)	30% on all non-resident labor expenses	30% on all non-resident labor expenses	30%	Credit (transferable)
Florida (7,8)	20% on all expenses (above/below-the-line) to Florida residents	None	None	20%	Credit (transferable)
Georgia	30% on all expenses (above/below-the-line) to Georgia residents	30% on all non-resident labor expenses	30% on all non-resident labor expenses	30%	Credit (transferable)
Louisiana (5)	30% on all expenses (above/below-the-line) incurred in state	30% on all expenses incurred in state	30% on all expenses incurred in state	30%	Credit (transferable)
Massachusetts	25% of payroll subject to Massachusetts income tax, 25% on its Massachusetts production expenses	25% of payroll subject to Massachusetts income tax	25% of payroll subject to Massachusetts income tax	25%	Credit (refundable at 10% discount)
Michigan (3)	32% on all resident labor expenses	27% on qualified non-resident labor	25% on non-resident crew labor	27%	Reimbursement of expenditures
New Mexico	25% on all expenses (above/below-the-line) to New Mexico residents	25% on all expenses to non-New Mexico residents through super loan out	None	25%	Rebate
New York (1)	30% of below-the-line expenses	None	30% of below-the-line expenses	30%	Credit (refundable)
Pennsylvania (6)	25% on all expenses incurred in state	25% on all expenses incurred in state	25% on all expenses incurred in state	25%	Credit (transferable)

*Excludes Arizona, which repealed its credit effective December 31, 2010.

1 - Above assumes "Level 2 Production" (movie has greater than \$15 million budget or greater than 5% of beneficial ownership is directly or indirectly owned by a publicly traded company); expenses must be used at the site of qualified Level 2 production facility; and includes 5% New York City rate.

2 - Aggregate star talent compensation is limited to \$20 million.

3 - \$2 million salary cap per employee per production, Additional 3% if filmed at qualified facility.

4 - Refundable 25% tax credit for independent films, does not cover TV series that were located in California before the credit was adopted.

5 - Additional 5% tax credit on total payroll of Louisiana residents.

6 - Aggregate above-the-line labor compensation is limited to \$15 million.

7 - Additional transferable 5% tax credit available during off-season; additional transferable 5% tax credit available for "family-friendly" productions.

8 - All credit-eligible resident labor compensation is limited to \$400 thousand per person.

Over the long run, the lower after-credit price of using qualified resources (labor, materials) would be expected to increase the usage of those resources. The use of non-resident labor, for example, might be reduced by offering a higher credit rate on resident labor or excluding non-resident labor from qualifying expenses entirely. To keep the state attractive to filmmakers, the credit rate on qualifying expenses would have to be adjusted to preserve the effective credit rate on total expenditures.

The most significant variation in qualified expenditure impacts and the source of the greatest leakage of benefits of film tax credit programs is the inclusion of non-resident labor costs as qualified expenditures. Because non-residents spend less of their incomes in-state, they generate lower economic impact per dollar of tax credit cost than other expenses that are eligible for the credit. Some states, such as New Mexico and Michigan, offer lower credit rates on non-resident wages. Other states, such as New York, do not distinguish between resident and non-resident wages but limit the credit to the below-the-line costs, expenses more likely to be paid to in state residents and businesses.

For the hypothetical production, approximately \$5.8 million of the \$10 million of total production expenditures impacts the state economy through payments to residents and in-state businesses for purchases of goods and services. The other \$4.2 million is related to non-resident labor compensation and has a significantly reduced impact on the state economy. From an economic development perspective, an increase in the percentage of total spending that benefits the state economy through purchases from in-state businesses and payments to in-state labor will increase the economic benefits of film credits. Over time, as a state develops more in-state talent and film industry suppliers, the percentage of a film's total costs paid to in-state residents and suppliers should increase and the credit costs per in-state job created should fall.

Economic impacts of a typical film production

The spending and employment associated with the hypothetical production generate additional employment and economic activity in other industries that expand to supply additional goods and services to the production and its employees. Economic models can be used to estimate this effect in a specific state. One widely used model is the IMPLAN economic model, available for US states and counties. The model contains data describing the level of economic output, employment and income generated by each industry in a state. It also contains information about the purchases of each industry from other industries.



Based on average economic relationships in IMPLAN economic models for three state economies (California, Florida and Ohio), a film production with \$10 million of total spending would generate a total of 123 jobs, including jobs on the production set and in businesses that sell goods and services to the film production and its employees. The components of the impacts are:

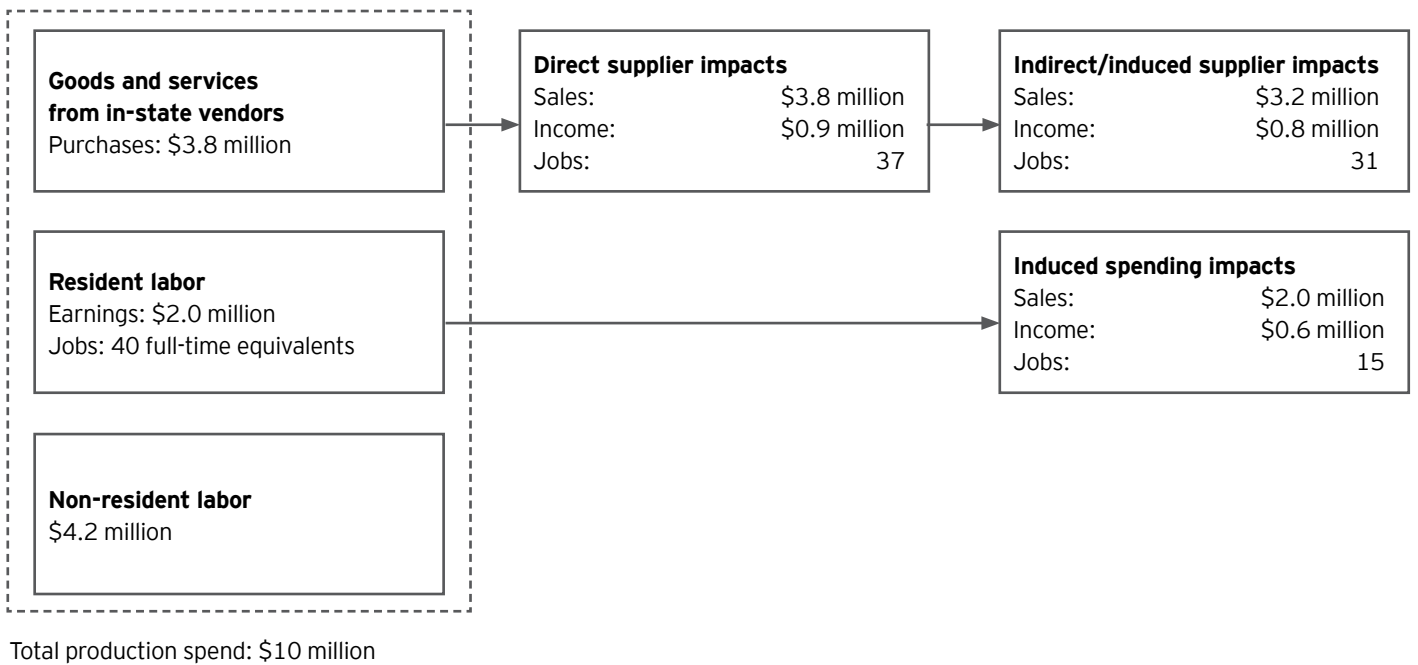
- ▶ **Impact of film production activities:** The \$10 million hypothetical film production employs 40 FTE resident employees who earn \$2.0 million of income. The production also purchases \$3.8 million of goods and services from in-state businesses, which generates additional statewide economic impacts.
- ▶ **Impact on in-state suppliers from the purchase of goods and services:** For a \$10 million production, the impact on in-state providers of goods and services purchased by the film production could include 37 jobs and \$900,000 of additional employee compensation. Catering companies, hotels, restaurants and other service providers benefit most significantly from spending by film productions. These expenditures generate a relatively large number of jobs per dollar of spending because the service industries most affected by production spending are typically low-wage industries, such as restaurants and hotels.
- ▶ **Indirect and induced impacts from supplier activity:** As the businesses supplying the film productions grow, they employ additional workers and require additional inputs from other in-state businesses. These impacts contribute an additional 31 jobs to the state economy.
- ▶ **Impact from film production employee spending:** Payments to resident employees of the film productions generate in-state economic activity when employees spend their incomes at restaurants, retailers and other in-state businesses. Based on the assumed level of resident employee compensation, 15 jobs would be created from this type of impact. The dollar impacts are presented in Table A-3.

Table A-3. Economic impact of a hypothetical film production with \$10 million of in-state expenditures (millions of dollars)

Direct impact from production activity	
Production spending	\$10.0
Resident employee income	\$2.0
Resident full-time equivalent employment	40.4
First-round impact on suppliers	
Sales to film production	\$3.8
Employee and proprietor income	\$0.9
Employment	36.5
Additional indirect and induced impacts from supplier purchases	
Sales	\$3.2
Employee and proprietor income	\$0.8
Employment	31.3
Induced impact from production employee spending	
Sales	\$2.0
Employee and proprietor income	\$0.6
Employment	15.1
Total impact from production	
Sales	\$18.9
Employee and proprietor income	\$4.4
Employment	123.4

Figure A-1 provides an overview of how the impact of the \$10 million of production spending is transmitted throughout the state economy as measured by sales (output), jobs and income.

Figure A-1. Economic impact of a hypothetical \$10 million production





State and local fiscal impacts of a typical production

The stronger state economy due to film production will benefit the public sector, as well as the private sector. Based on the typical production profile described above, the estimated state and local fiscal impacts, measured as higher state and local taxes, are presented in Table A-4.

State fiscal impacts arise from sales, individual income, corporate income and other taxes related to the qualified productions or their indirect economic impacts. In most states, non-resident labor compensation is eligible for the credit only if it is subject to state income tax. For the hypothetical production, this individual income tax on non-resident wages is nearly equal in size to the individual income tax on resident income. By combining the various state taxes generated by the production and the resulting indirect economic activity, a \$10 million production would generate nearly \$450,000 in state tax revenue.²⁵

For the hypothetical \$10 million production, local tax impacts exceed \$150,000 – nearly 33% of the total fiscal impact.²⁶ This result assumes that local taxes are equal to 4.4% of resident income resulting from the production, plus non-resident individual income taxes.²⁷ Although, in most cases, film credits are issued by state governments, local taxes can play an important role in returning tax dollars resulting from film production activity to the public sector.

In 2008, local governments collected \$0.70 of tax revenue for each dollar of tax collected by state governments, making local taxes a significant part of the overall system of taxation within the geographic boundaries of a state.²⁸ States also provided local governments with a significant amount of financial assistance to fund services and capital programs. In 2008, state assistance to local governments totaled more than 25% of total state expenditures.²⁹ A comprehensive film credit study focusing on statewide economic benefits should include both the state and local tax offset.

The additional state and local taxes will offset a significant portion of the initial tax credit costs and result in a net state and local tax cost for the film credit program. This net credit cost is the “cost” figure in a state’s benefit-cost analysis.

Table A-4. Estimated direct and indirect state and local fiscal impact of typical film production with \$10 million of in-state expenditures (thousands of dollars)

Tax type	State	Local	Total
Sales taxes	\$163.3	\$43.0	\$206.3
Resident individual income taxes	98.9	9.3	108.2
Non-resident individual income taxes	93.9	8.9	102.8
Property taxes	2.4	76.3	78.8
Excise taxes	41.7	9.5	51.2
Corporate income taxes	18.0	2.5	20.5
Other taxes	28.9	10.1	38.9
Total taxes	\$447.2	\$159.5	\$606.8

Note: Numbers do not sum due to rounding.

²⁵This estimated impact assumes that 52% of the production expenditures would be subject to a typical 6% state sales tax rate. Expenditures on transportation, services and location fees are assumed to be exempt from sales tax. Other state and local taxes were estimated assuming that additional tax revenue is generated by resident income in the same proportion as existing state tax collections and resident income. For all taxes, this ratio of state taxes to resident income is 6.3% at the state level and 4.4% at the local level.

²⁶The estimated local tax impact conservatively assumes that film productions will not generate direct property tax impacts from production equipment or payments to employees. The estimated state and local property tax impacts are estimated by multiplying the impact on resident income from indirect and induced impacts by the historical ratio of property tax collections to personal income.

²⁷Reflecting an average level of tax for the states that do tax non-resident income at the state level and 4.4% at the local level.

²⁸In 2008, local tax collections totaled \$548.8 billion and state collections were \$781.6 billion, according to the U.S. Census Bureau, State and Local Finances data.

²⁹In 2008, state intergovernmental transfers to local governments totaled \$466.5 billion and total state expenditures were \$1.7 trillion, according to the U.S. Census Bureau, State and Local Finances data.

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