The Economic and Fiscal Impacts of Connecticut's Film Tax Credit

DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

Prepared for the Connecticut Commission on Culture and Tourism

Connecticut Commission
on Culture & Tourism

February 2008

Authored By:

Stanley McMillen, Ph.D.

Kathryn Parr

Troy Helming

Research Assistance By:

Selini Katsaiti

Table of Contents

EXECUTIVE SUMMARY i
INTRODUCTION 1
BACKGROUND 1
The U.S. Film Industry 2
Connecticut's Film Industry 5
The General Structure of Film Production Tax Incentives 8
Connecticut's Film Production Tax Credit 12
FILM PRODUCTION INCENTIVE STUDIES 13
Manitoba Province (Canada) 13
British Colombia Province (Canada) 16
New York 17
Louisiana 19
THE ECONOMIC AND FISCAL IMPACTS OF FILM PRODUCTION IN CONNECTICUT 21
Economic Impact Method 26
ECONOMIC IMPACT RESULTS 32
CONCLUSION 39
APPENDIX A: THE REMI MODEL 41
APPENDIX B: U.S. FILM PRODUCTION INCENTIVES 51

EXECUTIVE SUMMARY

PA 06-172, codified as Section 12-217jj of the Connecticut General Statutes, mandated that the Connecticut Commission on Culture and Tourism (CCT) report to the legislature on the economic and fiscal impacts of the state's film tax credit program. CCT requested the Department of Economic and Community Development (DECD) to perform the study to evaluate these impacts. The study period is July 1, 2006 through September 30, 2007 during which thirteen productions filed final applications seeking the issuance of tax credits from the Commission.[1] In July 2007, the legislature expanded and refined the scope of the film tax credit. The current analysis does not reflect the impact of these legislative changes. Productions that applied for the credit certificate on which CCT had to issue credits by September 30, 2007 are included in this report. Several other films were in various stages of production during the study period and their contribution to the Connecticut economy does not reflect in this study. *There were thirty film productions in process during the study period incurring $282 million in expenditures in Connecticut that will claim $86 million in credits over the next year or so. This spending is more than five times the spending driving the impact estimated in the current study.*

Film productions receiving their credit under the original film tax credit program during FY 2007 generate a modest impact on the Connecticut economy. In the study period, Connecticut's film tax credit program stimulated:

- $55.1 million in film production spending that generates;
- $20.72 million in new real gross state product (RGSP) and adds;
- 395 full time equivalent (FTE) jobs and generates;

[1] The Connecticut legislature repealed Section 12-217jj of the general statues July 1, 2007 and replaced it with Public Act 07-236 (effective January 1, 2008) that expands the type of production qualifying for the tax credit, stiffens the reporting requirements, and penalizes production companies for fraudulent claims. Prior law required a company to apply for a production tax credit eligibility certificate within 90 days after incurring its first production expense. Then, no later than 90 days after incurring its last expense, it had to apply for the actual credit certificate on which CCT had to enter a credit amount. The study period therefore includes productions completing this process and filing an audit report during state FY 2007. The text of PA 07-236 appears at http://www.cga.ct.gov/2007/ACT/PA/2007PA-00236-R00HB-06500-PA.htm. A summary of the Act appears at http://www.cga.ct.gov/2007/sum/2007SUM00236-R02HB-06500-SUM.htm.

- $6.58 million in new real disposable personal income (RDPI) through multiplier effects.

Connecticut's film tax credit program within a balanced budget scenario (that is, reduced spending offsets forgone revenue) fuels this economic expansion. The film tax credit for 2007 amounts to $16.5 million (that is, the cumulative credits applied for during the study period). The *additional economic activity* exclusively generated by the credit (its indirect effect) returns $1.25 million in present value state tax revenue (over a five-year horizon). Each tax dollar spent (tax revenue forgone) on the film tax credit generates $1.07 of additional RGSP in present value terms. This finding suggests that the tax credit *does* increase economy-wide activity by a greater amount than the cost of its implementation.

The early experience of Connecticut's film production tax credit suggests the tax credit has a modest impact on the state's economy.[2] If the state pays for the tax credit by reducing expenditure, this analysis suggests it would receive additional revenue from induced economic activity. These returns are not likely to be sufficient to pay for the cost of the film tax credit in one year. Expansions to the tax credit program and additional years of data will provide a stronger indication of the potential economic and fiscal impact of the film tax credit program on the Connecticut economy.

For film productions considered in this study, no data was available for where production company employees live so that for those workers residing outside Connecticut, their income represents 'leakage' from the state. Leakages consist of corporate and personal incomes paid out that are not recycled into sales for Connecticut businesses (that is, household consumption). DECD assumes some above-the-line workers (actors, producers, and directors) reside outside Connecticut. To the extent this assumption understates the number of film production workers residing in another state, this analysis overstates the impact on the Connecticut economy (and vice versa).

In general, however, DECD makes conservative assumptions about the impact of film production spending in Connecticut. The economic and fiscal impacts are conservative as well because we do not account for the increase in tourism at the production locations of successful films. Southeast Connecticut continues to benefit from the notoriety generated by the films *Mystic Pizza* (1988) and *Amistad* (1997). Indeed, *The Annals of*

[2] This is consistent with the findings for several states with film tax credit programs in a study by the Federal Reserve Bank of Boston; see footnote 34.

Tourism Research reports that the number of visitors rises an average of 54% over four years in a location where a successful film was shot.[3] We have not accounted for movie-induced tourism in this study.

In the studies examined in the literature review, only a few examined the experiences of film tax credits in specific states. Some studies are projective, predicting what the impact of the tax credits would be if legislated (e.g., Tennessee and Montana) and we have not included them here. The proliferation of film tax credits appears to be a relatively recent phenomenon and many early adopter states are now publishing studies of incentives they started five to eight years ago. Connecticut is an outlier in that regard and the present study may not indicate future success, because the states that were trying to foster a film industry did not experience as much growth the first year as they did in the second and third years. There is likely a recognition lag as production companies ponder their shooting locations given the variety of incentives they face (described in Appendix B).

The literature suggests the primary goal of the film tax credit should be to build industry infrastructure including pre- and post-postproduction facilities and the requisite professional workforce within the state to provide lasting benefits and not just to attract a series of films to shoot film and exit. Perhaps the examples from other states may stimulate Connecticut educational and professional development programs that will attract additional film production dollars to the state (PA 07-236 may help accomplish this). It may be advantageous to perform a similar analysis at three-year intervals to assess the economic and fiscal impacts of Connecticut's film tax credit as the film industry discovers the state and the supportive infrastructure evolves.

[3] Riley, Roger, Dwayne Baker and Carlton S. Van Doren (1998). "Movie Induced Tourism," *The Annals of Tourism Research*, vol. 25, no. 4, 919-935.

INTRODUCTION

On January 1, 2006, the Connecticut General Assembly enacted an aggressive film production tax credit (defined in Sec. 12-217jj of the Connecticut General Statutes) intending to attract a larger segment of the lucrative film industry into the state. The immediate result of this act is transparent, as Connecticut has experienced a dramatic increase in film production since the law's enactment. The economic ramifications of this act, however, are less straightforward. In granting a tax credit to the film industry, the state effectively reduces the tax revenue it would otherwise receive from increased film production in the state that presumably would not occur without the credit. The result of this temporary sacrifice of tax revenue is a flurry of direct and indirect economic activity that stimulates Connecticut's economy, which one hopes more than offsets the direct reduction in tax revenue and its indirect effects. The increase in economic activity provides a wide range of economic benefits including increased output (sales) for local businesses, new jobs, as well as subsequent increases in sales and personal income tax revenue to the state. The purpose of this study is to evaluate the impact of the film production tax credit on Connecticut's economy.

BACKGROUND

In January 1999, the Directors Guild of America and Screen Actors Guild commissioned the Monitor Company to perform an investigation[4,5] into the phenomenon of "runaway" film and television productions from the U.S. Runaway productions are those that are developed and intended for release, exhibition or television broadcast in the U.S., but are actually filmed in another country. Creative runaways depart because the story takes place in a foreign setting that cannot be duplicated or for other creative considerations cannot be produced domestically, while economic runaways depart to achieve lower production costs (similar to manufacturing jobs migrating to China). "In 1998, of the 1,075 U.S.-developed film and television productions in the study's scope,

[4] This study considered only feature films, direct-to-video productions, movies for television, and series for television.
[5] U.S. Runaway Film and Television Production Study Report available at http://www.dga.org/news/pr_runaway.pdf

285 (27% of total) were economic runaways, a 185% increase from 100 (14% of total) in 1990." The result was a $10.3 billion loss in gross domestic product (GDP) and a loss of 20,000 FTE jobs. The destination of 81% of economic runaways was Canada while Australia and the U.K. captured another 10%.

The Monitor report cites a number of reasons that contribute to the rapid increase in runaway productions. Location decisions encompass expected revenues, costs of production, quality and availability of talent, and physical infrastructure. Foreign crews and infrastructure have improved through experience and direct investment. Additionally, through much of the 1990s, currency in nations that attracted runaway productions declined 15% to 23% relative to the U.S. dollar, lowering the cost of labor and costs of goods and services by at least 15%. Lastly, Canada offers federal and provincial tax credits of 22% to 45% of labor expenses[6] (we discuss tax credits in detail below).

"This runaway production has since set off a chain-reaction competition among U.S. states, with each giving the economic red-carpet treatment to the film industry with the goal of creating good-paying jobs, increasing local consumption and some free wide-screen publicity about the landscape or urban milieu that might encourage more tourism."[7] "Today, all but five states offer some type of film production incentive, ranging from a transferable or refundable tax credit to a direct rebate from the state, to a waiver of sales tax and occupancy tax, to a production loan."[8] In addition, international competitors have designed similar tax incentives to lure film production to their regions.

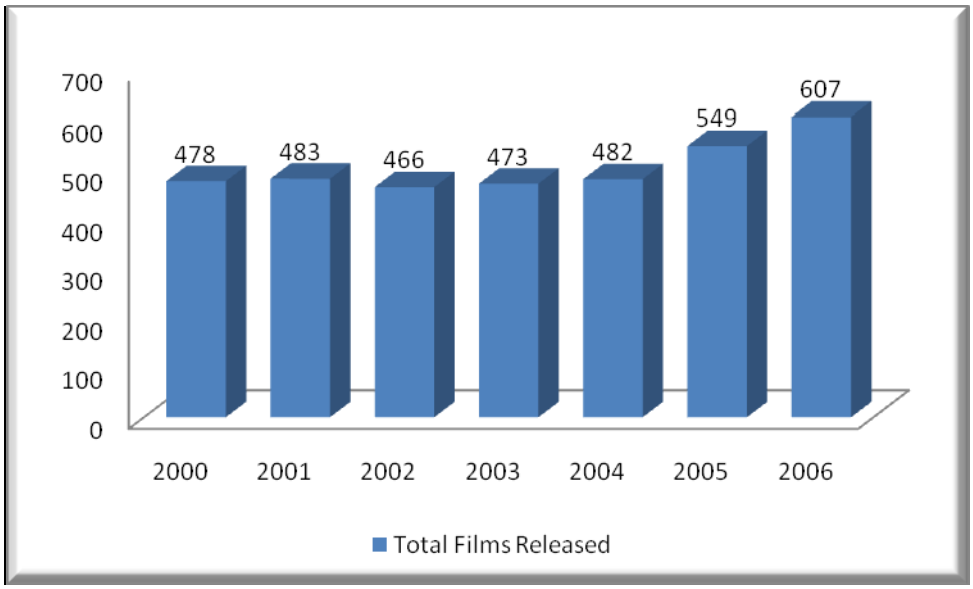
The U.S. Film Industry

Before considering the impact of Connecticut's film industry, it is necessary to characterize the overall status of the film industry in the U.S. In 2006, the outlook for the film industry in the U.S. remained strong. Driven by an increase in the release of new films, the number of total releases in the U.S. increased 11% reaching another all-time high in 2006. Chart 1 shows the recent growth trend in total film releases in the U.S.[9]

---

[6] This was the incentive structure when the report appeared in 1999.
[7] "Roll the credits…and the tax incentives," Kathy Cobb, Fedgazette, September 2006; available at: http://www.minneapolisfed.org/pubs/fedgaz/06-09/film.cfm.
[8] "Fall 2007 Edition The Complete Guide to U.S. Production Incentives," by Axium International.
[9] "U.S. Entertainment Industry: 2006 Market Statistics," by the Motion Picture Association of America. Available at: http://www.mpaa.org.

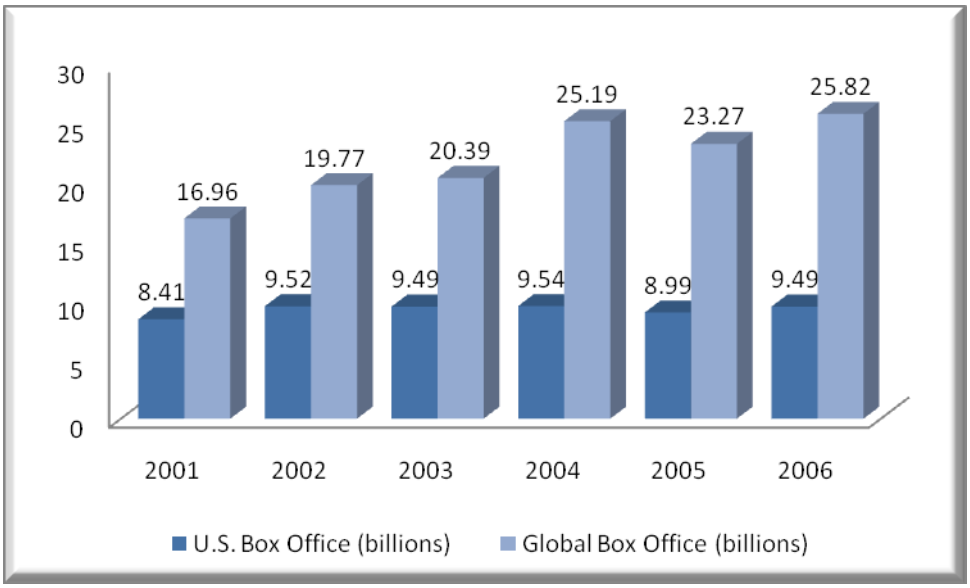
Chart 1: Recent Growth Trend



Source: U.S. Entertainment Industry: 2006 Market Statistics," by the Motion Picture Association of America. Available at: ***http://www.mpaa.org***

In 2006, total domestic box office revenue increased by 5.5% to $9.5 billion. Global box office admissions grew 11% as well, reaching an all-time high of $25.8 billion. The growth trend in the domestic box office revenue is not as pronounced as the growth in total film production, but there has been a 13% increase since 2001. Global box office revenue increased 52% over this same period. Chart 2 illustrates the trend in both U.S. and Global box office receipts (see footnote 8).

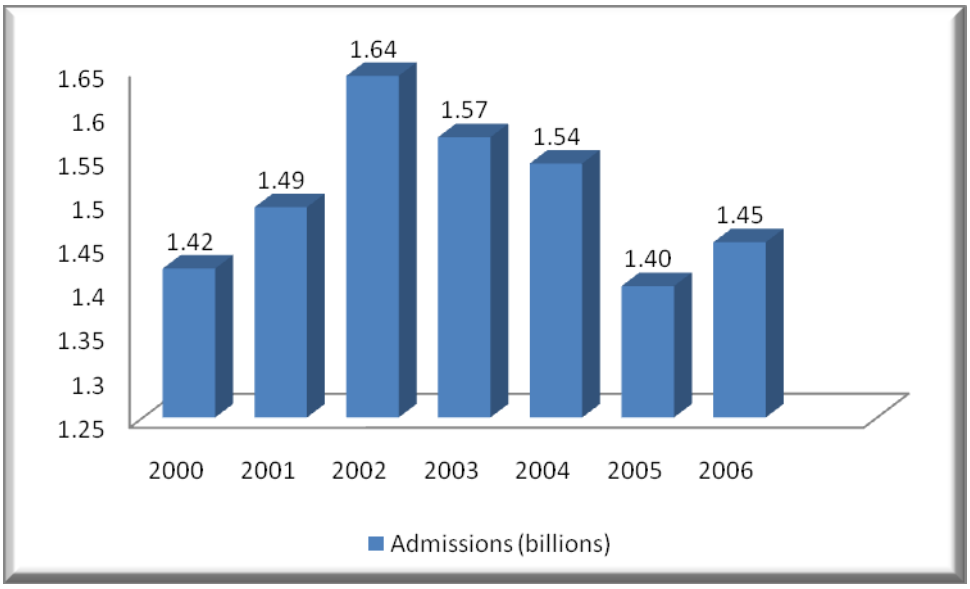
Chart 2: Trend in U.S. and Global Box Office



Source: U.S. Entertainment Industry: 2006 Market Statistics," by the Motion Picture Association of America. Available at: http://www.mpaa.org

Finally, in 2006, U.S. theater admissions grew 3.3% ending a three-year downward trend from its peak in 2002. Chart 3 illustrates this trend (see footnote 7). Recent research conducted by Nielsen Entertainment found that 80% of participants in their survey had seen at least one movie in 2006 and believed it was time and money well spent, while 16% preferred watching DVDs and 4% had not seen a movie at the theater. The overall trend for the film industry is positive, reflecting an increase in films released, box office receipts, and admissions.

Chart 3: 2006 U.S. Theater Admissions Growth



Source: U.S. Entertainment Industry: 2006 Market Statistics," by the Motion Picture Association of America. Available at: http://www.mpaa.org

Connecticut's Film Industry

To determine the economic and fiscal impacts of Connecticut's film tax incentive, it is important to examine the nature of the industry as it exists within the state. This section reviews the film and sound recording industries in Connecticut and its competitors from an employment and economic perspective. It is important to note that the most recent data available for our use below is 2006, thus we do not reflect the impact of Connecticut's film production incentive in these numbers.

From the literature, we glean two factors that typically determine filming location for production companies. The first factor is artistic - the local landscape and scenery are of primary importance. The second factor is economic and the availability of economic incentives, among other things, is of primary importance. As film production is a high mobility industry, we define Connecticut's competitors both geographically as well as those states with similar tax incentives. Fortunately, the states neighboring Connecticut offer film production incentives that are similar to Connecticut's, making comparison easier (for a description of these incentives, see Appendix B). We include California, the leader in film production in the U.S. as well.

The first indicator we examine is the fraction of employment in the film and sound recording industry within a region. This is a ratio of industry employment to baseline industry employment and provides a measure of the relative size of an industry in a given region. The film and sound recording industries represents 0.33% of employment in the U.S. as a whole. Connecticut's film and sound recording industries account for less than half the national average (0.15% of total employment), which is the smallest of any of Connecticut's competitors. Table 1 presents the fraction of film and sound recording industry employment in relevant states.

Table 1: Film Production Employment Shares for Selected States	
California	1.15%
New York	0.65%
Massachusetts	0.16%
Rhode Island	0.22%
Connecticut	0.15%

Source: Bureau of Labor Statistics available at http://www.bls.gov

The Location Quotient (LQ) is another powerful indicator that allows an area's distribution of employment in an industry to be compared to a baseline.[10] An LQ of 1 indicates that the industry has the same share of employment as the reference area. An LQ greater than 1 indicates the local industry has a greater share of employment than the reference area, while an LQ less than 1 indicates the local industry has a smaller share of employment than the reference area. Thus, LQs effectively measure the concentration of an industry within a region. In this study, the reference area is the U.S. Connecticut has an LQ of 0.46, which is again the lowest among its competitors. Table 2 presents the LQs.[11]

[10] Bureau of Labor Statistics available at: http://data.bls.gov/help/def/lq.htm#location_quotient
[11] Bureau of Labor Statistics available at http://www.bls.gov

Table 2: Film Production Location Quotients for Selected States	
California	3.47
New York	1.98
Massachusetts	0.50
Rhode Island	0.66
Connecticut	0.46
Source: Bureau of Labor Statistics available at: http://data.bls.gov/	

The final two measures we examine are the total number of establishments in the film and sound recording industry and the total employment generated by the industries. Though the measures do not provide information on the importance of the concentration of the industry, as do the previous statistics, they provide insight into the current capacity of the industry in the region. Both the number of establishments and total employees in the film and sound recording industries has decreased in Connecticut, though this is an industry-wide trend not specific to Connecticut. Among its competitors (California is not a competitor), Connecticut ranks only above Rhode Island in the number of establishments and employees. Tables 3 and 4 present the establishment employment and total employment respectively.

Table 3: Film Production Establishments in Selected States						
	2001	**2002**	**2003**	**2004**	**2005**	**2006**
U.S.	28,296	27,415	26,476	25,905	25,904	26,663
New York	3,658	3,401	3,265	3,172	3,143	3,179
Massachusetts	543	529	514	523	511	468
Connecticut	340	315	297	289	288	305
Rhode Island	58	57	56	59	63	70

Source: Bureau of Labor Statistics available at: http://data.bls.gov/

Table 4: Employment in Film Production Establishments in Selected States						
	2001	**2002**	**2003**	**2004**	**2005**	**2006**
U.S.	366,789	384,838	368,459	380,300	373,561	372,585
New York	56,632	50,868	45,628	44,332	45,986	45,885
Massachusetts	5,720	5,453	5,124	4,718	4,718	4,581
Connecticut	2,289	2,293	2,265	2,200	2,151	2,181
Rhode Island	566	641	639	610	585	917

Source: Bureau of Labor Statistics available at: http://data.bls.gov/

The General Structure of Film Production Tax Incentives

As the film industry is the second largest "clean" industry in the U.S. (the largest is the semiconductor industry), it is no surprise that luring the film industry to particular regions through tax incentives has drawn significant interest in recent years. All but five states in the U.S. offer various types of tax incentives to the film industry, and foreign competition[12] intensifies competition for film production. A plethora of tax incentives designed by different states exists, each with a different vision for the film industry in their respective locations. The following section examines the underlying structure and motivation of tax incentives in detail.

The most basic tax incentive is an exemption from local sales and use tax. A number of states employ this approach as it is relatively simple to implement, easy to evaluate and non-controversial. Additionally, by its nature it only applies to spending occurring within the region offering the incentive. Connecticut does not exempt film productions from local taxes. Many states including Connecticut waive hotel/lodging taxes on stays longer than 30 consecutive days (the required length of stay varies). Though this is not always directly connected to the film production tax incentive, film companies that produce film in a particular region for an extended period consider it favorably. A small number of U.S. states employ the lodging tax waiver as their only tax incentive, but states often use it in conjunction with other tax incentives. Few restrictions apply when this is the only tax incentive a state offers, though some states require production companies to spend

[12] For simplicity, we use the term "state" to refer to U.S. states, Canadian provinces and foreign nations.

more than approximately $250,000 (varies by state) on qualified film production expenditures.

Another mechanism, utilized more frequently, is a tax credit or rebate for a portion of the film's budget (Connecticut has adopted this approach). Generally, only in-state expenses qualify, though there are exceptions. Additionally, several states specify which expenses qualify for the tax credit and those that do not. This approach has advantages over tax exemption. Primarily, the tax credit or rebate can offer incentives beyond those available via tax exemption alone. The incentive available through tax exemption is limited to the value of the tax; by offering a rebate greater than the tax liability, states are able to increase the value of the rebate making their state more attractive to the film industry.

An additional feature of tax credits is the ability to include targeted incentives to encourage greater local economic activity than would otherwise occur with a sales or lodging tax exemption. Many states offer an incentive-laden tax credit in an attempt to influence film industry behavior, generally attempting to foster the employment of in-state residents and encourage in-state spending on goods and services in film production. Though some states offer a tax credit only on in-state labor expenses, no state offers an exclusive rebate on non-labor expenses. Several states award different levels of tax credits for labor and other in-state expenses. In these states, in-state labor always receives a higher tax credit than in-state expenditure. There is a clear, though not universal, trend in tax incentives that favor in-state labor rather than overall in-state spending. The structure of Connecticut's tax incentive does not favor hiring in-state laborers over non-labor expenditure; however, it does specify that only in-state expenditure qualifies for the tax credit. Additionally, Connecticut's tax incentive is more generous than some states' as out-of-state laborers qualify for the credit as long as they work in Connecticut.

The trend for film tax incentives to favor in-state labor rather than overall in-state spending provides states with several distinct advantages. First, it creates a direct means to provide quality jobs for the state's population. In addition, the trend favoring labor in tax incentives fosters further growth of the film industry in the state by encouraging the establishment of a local labor pool to sustain the industry. This labor pool, which consists primarily of below-the-line laborers (below-the-line labor refers to all

labor that is not creative talent including technical, professional and skilled tradespersons), is the lifeblood that makes film production possible. Finally, labor-based incentives provide a framework for on-the-job training programs established in some states. Connecticut's tax incentive, however, does not differentiate between labor and other expenses. Manitoba's experience exemplifies a state (in this case, a Canadian province) focusing on labor force development. Manitoba offers a 35% rebate on in-state labor expenses. Out-of-province labor expenses qualify if there are no in-province laborers available with the necessary skills, given that the production company provides training opportunities for in-province residents. Because of its generous tax incentive program, film production in Manitoba has experienced rapid growth. Its indigenous labor force, however, has not kept pace and many production companies looking to film in Manitoba cite a lack of available local labor as the primary reason they choose to film elsewhere.

Through another set of incentives, states attempt to influence the type of film production they attract. Some states employ a wide range of qualifications they require productions to meet to be eligible for their tax incentives. One widely utilized incentive is the implementation of tax credits with an expense threshold (on qualifying in-state expenses) that productions must exceed to be eligible to receive the tax credit. This attracts larger productions that will create a greater local economic impact. The typical qualifying expense can range from $100,000 to $1 million. Connecticut requires a $50,000 qualifying expense that falls significantly below the median of minimum qualifying expenditures. States that do not have a minimum qualifying expenditure often develop an incentive that specifies the percentage of employees, percentage expenditure of the total budget, or percentage of filming that must occur within the state. The typical range is between 50% and 75% locally employed, spent, or indigenously filmed. As Connecticut has a fixed minimum expenditure amount, it does not require a minimum percentage to be employed, spent or filmed in-state.

A more intricate iteration of the size incentive is a sliding scale of tax credits on the amount a film production spends instate for labor, goods, and services. A typical example is Mississippi, which offers a rebate of 20% on the first $1 million, 25% on the expenditures between $1 million and $4 million, and 30% on expenditures above $5 million. Connecticut does not offer greater incentives for larger productions; instead as previously mentioned it specifies a minimum in-state spending requirement.

Additional incentives attempt to influence the time or location of the film production. For example, Florida offers an additional 5% tax credit for filming in the off-season. New York offers an additional 5% tax credit when filming is in New York City and Hawaii offers varying tax credits depending on which island film production occurs. As the expenses associated with film production can be quite large, several states offer a loan program to film producers as well. Connecticut does not currently offer a loan program for film production and as states offer it relatively infrequently, we consider the disadvantage to be small and it primarily affects films struggling for funding such as independent films.

Other features of film production incentives are limitations on the extent of expenses that qualify. Many states place a cap on the amount of compensation per employee that qualifies for a tax credit. Generally, the cap is near $1 million per employee, but can range from $100,000 to $15 million. The $15 million limit of Connecticut represents the extreme in this case; the next largest per individual cap is $1 million, offered by several states such as North Carolina, Pennsylvania and South Carolina. Additionally, many states have maximum total tax credits per year and a maximum tax credit per production. Unless there is an optimal level of film production in a given state, an annual cap has dubious merit (that is, provided the tax credit affords an overall benefit to the state measured periodically by analyses such as this). Theoretically, as long as an incentive produces more economic and fiscal benefit than its cost, there should be no limit to how much of the incentivized activity occurs. If there is a minimum threshold necessary to induce a production to entertain a particular location, a per production cap can be a means to limit the tax credit issued to a given production. This becomes less attractive, however, compared to a state that does not have a per production cap. Connecticut offers neither an annual maximum tax credit nor a maximum per production tax credit at this writing.

A final consideration in film production incentive programs is the structure of the payment. A number of different payment structures exist with varying degrees of flexibility, ranging from nontransferable tax credits to an outright cash rebate. States infrequently employ nontransferable tax credits as they only benefit productions with tax liability in the state of production. Transferable tax credits are more common; they allow film producers to transfer their tax credit to an entity that has tax liability in the state. There are two types of payment structures: one allows transfer of tax credits to

individuals with personal income tax liability, the other allows transfer of tax credits to corporations with corporate profit tax liability. Connecticut's tax credit is transferable to corporations with Connecticut corporate profits tax liability. The final, and most widely utilized, payment structure is a rebate or refundable tax credit. A rebate and refundable tax credit are similar in structure; however, they have a small difference. The distinction is that a rebate is an outright payment by a state to a production company, while a refundable tax credit is an outright payment by a state to a production company after deducting its own tax liability. Several states offer a combination tax credit and tax rebate. States employing this incentive offer a tax credit that may be sold to an individual, corporation, or broker or may be sold directly to the state at a discount (at approximately 80 cents on the dollar).

Connecticut's Film Production Tax Credit[13]

Connecticut has one of the most aggressive film production tax credits in the United States. The tax credit provides qualifying productions with a tax credit equal to thirty percent of production costs incurred in the state for preproduction, production, and postproduction costs. Qualified productions encompass a vast range of film productions including motion pictures, documentaries, mini-series, sound recordings, videos and music videos, interactive television, video games, commercials, any format of digital media created primarily for distribution or exhibition to the public, and numerous other productions. Ongoing programs created primarily as news, weather, financial market reports, and any production containing material that is obscene as defined by Section 53a-193 of the Connecticut General Statutes do not qualify for the tax credit. Expenses incurred in Connecticut that qualify include worker compensation or purchases in both production and postproduction markets, distribution expenditures, and intellectual property expenditures subject to certain conditions,[14] but exclude specific costs that may arise.[15]

[13] This description reflects section 12-217jj of the General Statues, which is the subject of this study and reflects the tax credits apportioned over the study period.
[14] The intellectual property was primarily produced in the state, 75% of the production based on the intellectual property is produced in the state, and it accounts for no more than 35% of production expenses incurred in the state.
[15] Talent fees for extras that exceed the rates of the Screen Actors Guild, media promotion or marketing, deferred, leveraged or profit participation costs, costs related to transfer of tax credits, and amounts paid to persons as a result of their participation in profits from the exploitation of the qualified production are not eligible for the tax credit.

FILM PRODUCTION INCENTIVE STUDIES

It is perhaps equally informative to examine the experience of film tax incentives enacted in other states or provinces in determining the optimal policy as it is to examine Connecticut's own experience. In the sections that follow, we will examine the film production tax incentives of other regions, highlighting some of the unique experiences other regions encountered. The principal focus in this section is regions that have studied the economic impact of their film tax incentives, either before or after implementation as this provides the most insight to the effect of the incentives.

Manitoba Province (Canada)

It is instructive to start by examining the Canadian example because it pioneered film production incentives, experienced spectacular success, and developed an integrated approach to launching its film/television production-oriented initiatives. The success of Canada in luring film production away from the U.S. is unmistakable. Canada captured 81% of U.S. economic runaways in 1998 (before U.S. states responded with film production incentives of their own). Canada's federal government offers a 25% rebate on domestic productions and a 16% rebate on foreign productions.[16] The integrated approach Canada pioneered "begins with a relatively underdeveloped production industry. It then launches a series of (usually tax credit-centered) initiatives to attract production activity and investments, and often creates qualifying requirements for those incentives that stimulate hiring of local personnel. As a result, local production crews gain valuable experience and training and are, therefore, more capable and attractive to producers. At the same time, investments in physical infrastructure are sought so that more and more productions can be accommodated. As these production capabilities expand, other tax incentives such as those for local labor expenditures are offered to further stimulate demand for local production resources."[17] The most important aspect of this approach is that it not only attracts film production to the region, it cultivates local growth of the industry and builds the infrastructure necessary to sustain the industry. For example, film production requires the involvement of governments and a large variety of outside businesses to provide the goods, services, permits, and rentals that

[16] In 2003, Canada increased this by 5% from 11%.
[17] See footnote 4.

allow film and video professionals to operate. The Manitoba film study cited below provides a useful conceptual diagram of these cascading effects illustrated in Chart 4.

Chart 4: Relationship of Direct, Indirect and Induced Employment in the Film and Television Production Industry in Manitoba

Source: "Action! Industry in Motion! Economic Impact Analysis of Manitoba's Film Industry 2003" by InterGroup Consultants and OARS Training Inc.

In 1997, the Province of Manitoba introduced a film production tax credit based on labor expenses in addition to Canada's federal tax incentives. Both domestic and foreign production companies are eligible for a 35% tax credit on labor expenses paid to Manitoba residents. If no qualified Manitobans are available to fill a specific position, then the production is eligible for the labor tax credit, given that they provide training opportunities for Manitobans. "This is an important link between the Manitoba Tax Credit and the training and development of the Manitoba film labor force. Such training support is especially important because the cyclical nature of the film industry generally does not allow it to take advantage of income support programs accessible for training in

other industries."[18] Manitoba structures the tax credit such that it must be invested in a production; a producer or production company cannot retain it as earnings or profits. However, the production companies generally do not receive the credit until three to six months after the production is complete. A producer is responsible for all interest and financing charges on interim funds, which severely handicaps producers (see footnote 18).

An economic impact study by InterGroup Consultants and OARS Training Inc. concludes that the tax credit has had a significant impact on the film industry in Manitoba. In 1996/1997, (the year prior to implementation of the tax credit) the total budget of production filming in Manitoba was CAD[19] 15-20 million per year, whereas in 2001/2002, the total film production budget increased to CAD 65 million, reaching CAD 82.9 million in 2002/2003. During this period, the number of foreign productions nearly doubled and the number of indigenous productions increased more than 60%. However, indigenous productions grew steadily during the period, "it appears that offshore productions have been the main driver behind the growth in production volumes in 2000/01 through 2002/03," (see footnote 17). TV specials and feature films represented the largest proportion of production and they experienced the greatest growth over the study period. It is important to note, however, that direct expenditures in Manitoba only increased from CAD 26.8 million in 1998/1999 to CAD 33.7 million in 2002/2003. Yet the outlook is positive, "Manitoba's film industry has grown during a period when production volumes at the national level are stabilizing… [and] Manitoba's film industry continues to improve its performance relative to other regions in Canada" (see footnote 17).

It is not possible to determine the fiscal impact based upon these numbers, but they illustrate the economic and fiscal growth enhancing potential of a film production incentive tax credit. In conducting a more detailed analysis of fiscal impacts, the study concludes that Manitoba generally recovered more than 50% of the tax credit through direct revenues created by the film industry within the province. The Manitoba study utilizes spending multipliers, which range from 2.0 to 2.5 for employment income and 1.25 to 1.75 for other expenditures, to determine total expenditures (including direct, indirect and induced spending). From this calculation, the study's authors determine total fiscal impacts. The smaller multipliers indicate positive fiscal impacts in 1998/99,

[18] "Action! Industry in Motion! Economic Impact Analysis of Manitoba's Film Industry 2003" by InterGroup Consultants and OARS Training Inc.
[19] CAD = Canadian dollars.

with net revenue of CAD 132,000, but increasingly negative fiscal impacts thereafter ranging from a loss of CAD 128,000 in 1999/2000 to a loss of CAD 584,000 in 2001/2002. The results indicated by the higher multipliers are more encouraging and positive in every year, but decline from a surplus of CAD 1.1 million in 1998/99 to a surplus of CAD 560,000 in 2001/2002. Table 5 presents the fiscal impacts of Manitoba's film production incentive. The Manitoba study concludes, "Based on this analysis, it can be reasonably concluded that when indirect and induced effects are taken into account the provincial tax credit is revenue neutral to the province and in some years may be positive revenue" (see footnote 18). It is important to note, however, that as total film budgets grew rapidly over the study period 1998 to 2002, the fiscal impacts declined. One possible explanation for this performance is that, though total film budgets increased 23% from 1998/1999 to 2001/2002, expenditures within Manitoba increased 19% over the same period. If Manitoba lacked the necessary infrastructure, either physical or workforce,[20] to accommodate the rapid increase in the number of productions, this would allow expenditures outside the province to qualify for the tax credit without generating fiscal returns to Manitoba.

Table 5: Fiscal Impacts of Manitoba's Film Production Incentive (Canadian Dollars)				
	1998/1999	**1999/2000**	**2000/2001**	**2001/2002**
Net Fiscal Impact Low	$132,000	($128,000)	($299,000)	($584,000)
Net Fiscal Impact High	$1,106,000	$663,000	$680,000	$560,000

Source: "Action! Industry in Motion! Economic Impact Analysis of Manitoba's Film Industry 2003" by InterGroup Consultants and OARS Training Inc.

British Colombia Province (Canada)

In 1998, British Colombia (BC) deployed a film production incentive in addition to the federal government's tax credit. BC offers different tax credits for productions with certain levels of qualifying Canadian content. Productions that meet this requirement receive a 30% refundable corporate income tax credit[21] on qualified labor expenditures, which is capped at 48% of total production expenditures. An additional 12.5% is available if shooting occurs outside of the Vancouver area. Finally, a 30% tax credit is

[20] Lack of skilled crew was cited by several production companies as the reason they did not film in Manitoba.
[21] This amount was 20% prior to January 2005.

offered on expenditures paid to BC residents enrolled in training courses. For productions that do not contain qualifying levels of Canadian content, BC offers an 18%[22] refundable corporate income tax credit on BC labor expenditure and an additional 6% is available if shooting occurs outside of the Vancouver area. BC offers a 15% credit on expenses related to digital animation or visual effects regardless of the level of Canadian content or location.

In 2005, InterVISTAS analyzed the economic impact of film and television in British Colombia. They examined payroll data from the industry in a multiplier framework based on the Input-Output model of the BC economy maintained by BC Stats. Direct spending on domestic production decreased from CAD 460.4 million in 2000 to CAD 213.9 million in 2004 (constant 2004 Canadian dollars). At the same time foreign production spending, which accounted for 80% of film spending in BC, decreased from CAD 1,295.4 million in 2000 to CAD 801.0 million in 2004 (constant 2004 Canadian dollars). Thus, there was a substantial decline in film production in the region over the study period. This trend provides a clear reason for the increase in tax credit rates at the start of 2005 that would make BC more competitive against the higher rebates offered elsewhere in Canada as well as in the U.S. Though the effect of BC's increase in tax credits would be interesting, the study period ranges from 2000 to 2004 for which employment and total spending were calculated. In 2004, there were 13,200 direct FTE jobs, and 23,900 FTE jobs that result from film production in BC trough multiplier effects. In 2004, the BC film industry generated CAD 1,274 million in direct GDP and CAD 1,714 million in total GDP. The fiscal impacts of film production in BC, which arise from personal income tax, sales taxes by both individuals and production companies, and corporate income taxes, amounted to CAD 121 million.

New York

It is informative to study New York's film tax incentive not only because of its close proximity to Connecticut, but also because of its unique position in the film industry. New York is the leading center of film production in the U.S.; only California produces more films. It contains not only extensive physical infrastructure, it is a creative cluster for the industry. "The cluster of directors, producers and starring actors located in New York frequently plays a role in decisions to locate productions in the city. Because of the

[22] This amount was 11% prior to January 2005.

multiple employment opportunities for actors – in legitimate theater and daytime soap operas as well as film, cable and broadcast television and commercials – New York is a primary center for acting talent. By virtue of its long history and current strengths in these production sectors, New York has an abundance of highly qualified crew in all the specialty occupations required for media production."[23] Though it is a source of competition for Connecticut film production, the proximity of New York also provides Connecticut film producers with a readily accessible pool of talent and nearby infrastructure able to fill deficiencies in Connecticut's film industry. New York's position of both competitor and complement to Connecticut's film industry makes it critical to understand the role of its film production tax incentive.

In August 2004, New York State instituted a program that provides a 10% refundable tax credit for qualifying feature films, television series, pilots, and television movies. Beginning in January 2005, New York City provided an additional 5% tax credit to productions within the City. Thus, any production in New York City receives a 15% tax credit and any production in New York State outside the City receives a 10% tax credit. The state incentive has an annual cap of $60 million and the New York City incentive annual cap is $30 million; both are offered on a first-come, first-served basis. To qualify for the tax credit, a production must spend 75% or more of its facility-related expenses at a qualifying New York State facility, and if the costs associated with the work are less than $3 million, the production must shoot at least 75% of its location days in New York State.

If it does not meet these requirements, the production can, in some circumstances, be eligible for a partial tax benefit. "'Qualified production costs' are costs for tangible property or services used or performed within New York directly and predominantly in the production (including pre- and postproduction) of a qualified film. Qualified production costs generally include costs of technical and crew production, expenditures for facilities, props, makeup, wardrobe, set construction, background talent, and generally exclude costs of stories and scripts, wages for writers, directors, producers and performers (other than extras without spoken lines)."[24] Production companies receiving tax credits may apply them against the New York State tax liability of the person or entity that controls the qualified film. If that person or entity does not use the

[23] "New York's Big Picture - Assessing New York's Position in Film, Television and Commercial Production," by Cornell University and Fiscal Policy Institute, New York.
[24] "Fall 2007 Edition, The Complete Guide to U.S. Production Incentives" by Axium International.

entire tax credit, 50% of the unused amount will be issued as a rebate and the remaining 50% will carry forward to the following year. The unused portion in the next year will be fully refunded. Additionally, there is no sales tax on most below-the-line expenses; New York City provides police services without charge and free shooting permits.

A study by Cornell University and the Fiscal Policy Institute (FPI) of New York estimates the economic impact of film, television, and the production of commercials in New York State. Utilizing the IMPLAN regional input-output model,[25] Cornell and FPI analyze the impact of film, television, and commercials in the year 2003 and estimate the impacts in 2004 and 2005. Thus, this study provides an initial indication of the impact the tax incentives implemented in New York had on the production of film, television, and commercials. In 2003, they find that film, television, and commercial production contributes $5.4 billion in direct value added to New York's gross state product (GSP) as well as providing direct employment of 36,372 (jobs). Total value added is $11.7 billion and total (direct plus indirect) employment impact totals 114,000 jobs. The study's authors estimate a 7.2% increase in production from 2003 to 2004 and a 6.0% increase from 2004 to 2005. This equates to direct value added of $5.8 billion and $6.2 billion GSP for 2004 and 2005 respectively. The corresponding total value added (that is, GSP) is $12.5 billion for 2004 and $13.3 billion for 2005. This indicates 13.6% growth in the New York State tax credit over the first two years of the production of film, television, and commercials. This study estimates industry growth as a whole with incentives in place, but does not separate incentives or delineate between pre-incentive and post incentive outcomes.

Louisiana

Louisiana's film production incentives are worthy of close examination not only because its aggressive tax incentives are structured similar to Connecticut's film tax incentive, but, as an early adopter of film production incentives, coupled with aggressive tax incentives, Louisiana was quite successful. Though Connecticut offers a slightly higher overall tax credit rate, Louisiana's film tax credit has several unique features such as offering a tax credit on in-state labor that exceeds Connecticut's rate as well as an infrastructure investment tax credit. Before enacting its film incentive program, Louisiana had little film production in the state, averaging approximately two productions

[25] For a description of the model, see http://www.implanpro.com.

per year. Since implementing film production incentives, the number of productions has grown exponentially, exceeding forty in 2006. Over the past several years, Louisiana's labor force in the film industry has increased dramatically and currently the state is planning and building additional infrastructure capacity and soundstages.[26]

In 2002, Louisiana was one of the first states to emulate the Canadian film tax incentive program. Louisiana's film tax incentives have undergone revisions since their introduction. The current implementation features a 25% transferable income tax credit, which is now limited to qualifying in-state expenditures. Pre-production, production and post-production expenses are eligible for the credit. Louisiana offers an additional 10% tax credit on the first $1 million for each state resident employed. Production companies must spend a minimum of $300,000 in Louisiana to qualify for the tax credit. They may sell the tax credits directly to the Office of Film and Television for 72 cents on the dollar, or sell them to brokers or the private market. Finally, Louisiana has a 15% tax credit for infrastructure investments that exceed $300,000.

A 2006 report by the Economic Research Associates (see footnote 25) estimates the economic impact of the film industry in Louisiana. Utilizing the IMPLAN regional input-output model (see footnote 25), they analyze the impact of film production in Louisiana. The direct impact of film production in 2002 was a $2.6 million increase in total output and the creation of 70 full time equivalent (FTEs) positions (see Table 6). Using a multiplier of approximately 1.85, they estimate the total impact on GRP to be $7.5 million and 320 FTEs. These numbers grew exponentially reaching $343.8 million in GSP and more than 13,000 FTEs by 2005. This rapid increase in economic activity created a corresponding increase in tax revenues in the state. Total tax revenue generated by film production increased from $570,287 in 2002 to $23.9 million in 2005. This, however, represents a total increase in tax revenue. It does not take into account the cost of the tax incentives and thus it does not represent net new state revenue. It is clear the Louisiana film tax incentives successfully attracted the film industry and increased film production in the state. Unfortunately, the study does not examine the fiscal feasibility of the tax incentives.

[26] "Trends in Film, Music and Digital Media" by Economic Research Associates. See also the study in footnote 34.

Table 6: The Economic and Fiscal Impact of Louisiana's Film Tax Credit				
	2002	**2003**	**2004**	**2005**
Direct Value Added	$2.6 M	$47.0 M	$87.3 M	$126.6 M
Total Value Added	$7.5 M	$130.6 M	$239.9 M	$343.8 M
Direct Employment	70	1,179	2,100	2,915
Total Employment	320	5,437	9,683	13,445
State and Local Taxes	$570,287	$9.7 M	$17.2 M	$23.9 M

Source: "Trends in Film, Music and Digital Media" by Economic Research Associates.

THE ECONOMIC AND FISCAL IMPACTS OF FILM PRODUCTION IN CONNECTICUT

This report's primary data source is the film tax final credit applications (not the pre-application) filed between July 1, 2006 and June 30, 2007 by productions filmed in Connecticut.[27] Film tax credit applications provide itemized and detailed expenditures as well as descriptive information for each production. The application forms categorize expenditures incurred in Connecticut,[28] qualified for the tax credit, in Connecticut, and not qualified for the tax credit, and outside Connecticut. From the productions filing a tax credit application during the study period, a picture emerges of the film production industry in Connecticut we describe in this section.

Thirteen productions filed for the Connecticut Film Tax Credit during the study period.[29] Table 7 shows these films included five feature films, five television productions and three commercials or infomercials. For the purpose of this report, film productions filing for the tax credit represent 'net new' industry activity, while motion picture productions not filing for the tax credit are part of the baseline industry activity.

[27] There were film productions in Connecticut during this period (July 1, 2006 through September 30, 2007) that did not file for the tax credit. This study considers productions that submitted final audits by July 1, 2007 (see footnote 1). CCT did not begin receiving final applications requesting the credit until late June 2007.
[28] 'incurred in Connecticut' means production-related expenditure made to any entity anywhere while the production was present in Connecticut and the good or service purchased was actually used in the state.
[29] Film productions spent about $23 million in Connecticut between 1997 and 2005; see footnote 34. Further, there were productions in Connecticut during the first year after Section 12-217jj existed that did not apply for credit.

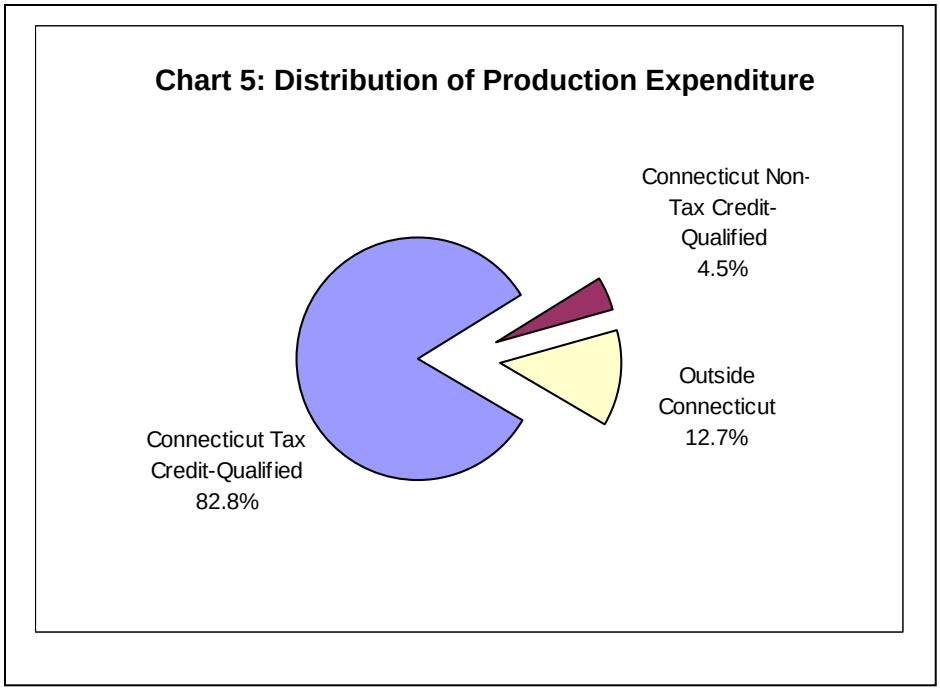
Table 7: Connecticut Film Productions (July 1, 2006 through June 30, 2007)			
Production Type	Total Number of Productions	Total Photo Days	Average
Commercial/ Infomercial	3	12	4
Television Show	5	64	12.8
Feature Film	5	142	28.4
Total	13	218	16.8

Source: DECD calculations using CCT data

The thirteen productions spent a total of 218 days shooting in Connecticut. On average, feature films had the longest average photo-shoot days, 28.4 days per production, and commercials/infomercials had the shortest average photo-shoot days at 4 days per production.

Expenditures for the thirteen productions occurred primarily in Connecticut (see Chart 5 below). Productions spent $57.9 million in Connecticut on both tax credit-qualified and non-tax credit-qualified expenditures[30] representing 87.3% of total expenditure. Tax credit-qualified expenditures meet the guidelines for Connecticut's film tax credit as it appeared at the time of filing. Film productions made non-qualified expenditures in Connecticut that are not tax-eligible. Productions applying for the Connecticut tax credit spent $8.4 million of their total expenditure (12.7%) outside of Connecticut.[31] This spending does not affect the Connecticut economy nor is it eligible for the 30% film tax credit.

[30] This figure is based on Form D tax filings summary, which are projected in some cases. These may differ slightly from expenditure figure breakdowns.
[31] Note that figures may not add perfectly because of rounding.



Source: DECD calculations from CCT data

The Connecticut film industry tax credit is one of the most generous in the U.S.[32] Motion picture productions receive a tax credit worth 30% of qualified expenditures in Connecticut. Based on current tax filings, eligible (or qualified) tax expenditures totaled $55.1 million for FY 2007. This figure implies potential tax credits of $16.5 million. Film production companies may use this credit if they have sufficient Connecticut tax liability or sell it to a Connecticut-based company to use against its profits tax liability.

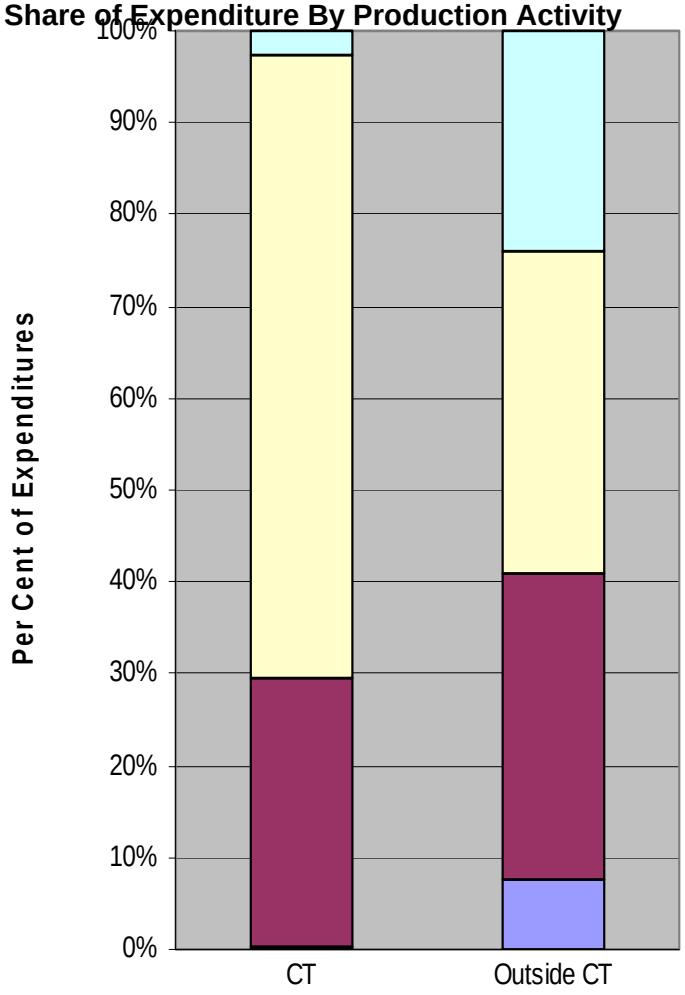
Further analysis of the tax credit applications reveals what types of film production activities occurred in Connecticut in the study period. Chart 6 below shows the fraction of total production expenditures by activity type inside and outside Connecticut whether expenditures are qualified or not. Above-the-line (ATL) production refers to activities related to performance, story creativity, and principal coordinators (producers and directors) and their attendant expenses. Below-the-line (BTL) production refers to 'crew' activities that are largely behind the scenes; examples are special effects, wardrobe, set design, production staff, and editing.

These categories are further broken out by the phase of production. Pre-production is an above-the line activity. It involves the script and project development before the film

[32] Jonathan O'Connell, "Firms Want Broker Film Credits," Hartford Business Journal, October 30, 2006.

begins shooting. ‘ATL production and other’ includes direction (directors), continued development (producers), ‘on camera’ activities (talent), and attendant expenses during filming. ‘BTL production and other’ includes expenditures on crew, sets, business services and their attendant expenses during filming. In both cases, ‘attendant expenses’ include expenditures such as travel, lodging, per diem payments, meals, and office space rental. Post-production involves taking the footage created during the filming phase and assembling it into a finished product. This category includes editing, visual effects, music, and sound and occurs after filming is complete. Chart 6 provides percentages and dollar values for these categories.

Chart 6: Share of Expenditure By Production Activity



	CT	Outside CT
BTL Post-Production	$1,516,894	$3,455,053
BTL Production & Other	$38,350,461	$5,046,996
ATL Production & Other	$16,635,528	$4,844,916
ATL Pre-Production	$184,060	$1,079,616

Production or shooting activity accounted for 97% of the film expenditure in Connecticut for films applying for the tax credit. Pre-production and post-production expenditures were more likely to occur outside Connecticut on a percentage and amount basis. Film productions incurred 85% ($1 million) of their pre-production costs and 69% ($3.5

million) of their post-production costs outside of Connecticut. These findings suggest that the tax credit has attracted the more 'footloose' filming activities rather than the industry's underlying or fundamental activities.

These descriptive findings translate into an economic analysis of their impact on the Connecticut economy. The next section describes the methodology used to model the economic footprint left by the film productions in Connecticut during the study period.

Economic Impact Method

The impact analysis uses itemized amounts from the tax credit application to quantify the direct economic effects of film production in Connecticut.[33] The direct impact measures the changes in goods and services purchased from the Connecticut economy by production companies and their staffs. The indirect impact captures the ripple effect of this primary demand and describes the subsequent rounds of business-to-business spending as one expands its business and buys more goods and services from its supply chain. From these additional (ripple) sales, Connecticut firms experience increased revenues and more workers have incomes to spend as well. This secondary effect increases the volume of goods and services sold in Connecticut. This report uses the Connecticut Economic Model (REMI) to estimate the economic impact (see Appendix A for a description of the REMI model).

This analysis assumes the expenditure of motion picture productions applying for the film tax credit represents 'net new' spending in the state (it does not displace any existing spending but only adds to spending in the state). That is, we assume these productions would not have located in Connecticut but for the tax credit. The literature review above suggests the film industry is 'footloose' and able to relocate production easily. That these productions located in Connecticut *and* applied for the credit suggests that Connecticut's film tax credit influenced their decision to locate production in the state. In contrast, some productions occurred in Connecticut during the same period but did not apply for the film tax credit.[34] This report excludes this second group of productions and assumes their work would have taken place in Connecticut without the

[33] The itemized amounts may differ slightly from the projected summary amounts.
[34] This information is based on conversations with the Connecticut Commission on Culture and Tourism film division staff.

film tax credit.[35] The second group of productions is included in the 'baseline' of motion picture production in Connecticut, while those taking advantage of the tax credit are over-and-above this baseline film activity.

For the purposes of the impact analysis, DECD includes qualified and unqualified expenditures in Connecticut because both affect its economy. This stance shifts the analysis basis between the tax credit-qualification expenditures discussed above and the expenditures considered below. The tax credit estimate remains $16.5 million based on the accounting information considered in the tax credit filings.

Another shift in the analysis basis arises as this analysis excludes some reported expenditures both for methodological reasons and for consistency with other similar film studies we discuss in the literature review. The first exclusions are salary payments to and fringe benefits of above-the-line (ATL) primary producers, executive producers, primary directors, principal cast and supporting cast. Methodologically and pragmatically, it seems unlikely that most big-budget film earners spend their take-home pay in Connecticut. Although a few major motion picture stars, producers and directors call Connecticut home, most others earn their wage here but return home to another state to spend their income. With sizable salaries, recipients are likely to spend and save in atypical patterns. Presumably and importantly, we assume highly-compensated film production professionals save a significant portion of their salaries rather than spend it. Therefore, including their income in the model as if they entirely spent it in Connecticut would unrealistically overstate the impact of Connecticut's film tax credit. For similar reasons, the economic impact analysis of Louisiana's tax credit excludes these incomes as well. The payments to ATL primary producers, executive producers, primary director, principal cast and supporting cast amounted to $13.8 million.

The second exclusion is the 'loss and damages' category. This accounting category represents goods purchases accounted for elsewhere in the itemized expenditures that were lost or damaged during the filming process. To include this category would double count these expenditures. 'Loss and Damages' amounted to $155,534. These exclusions together (payments to ATL personnel plus 'loss and damages') account for almost $14 million of reported film tax expenditures in Connecticut.

[35] Saas, Darcey Ann (2006). "Hollywood East? Film Tax Credits in New England," The Federal Reserve Bank of Boston Policy Brief 06-3, http://www.bos.frb.org/economic/neppc/briefs/2006/briefs063.pdf.

From detailed itemization on the tax credit applications, DECD translated accounting categories (purchases of goods and services) into 70 REMI economic sectors using the North American Industry Classification System (NAICS). In most instances, accounting descriptions made translation categories apparent. Examples of expenditure types include hotels, meals, set construction, editing equipment rentals, and film stock. In some instances, modeling required us to make careful judgments discussed below.

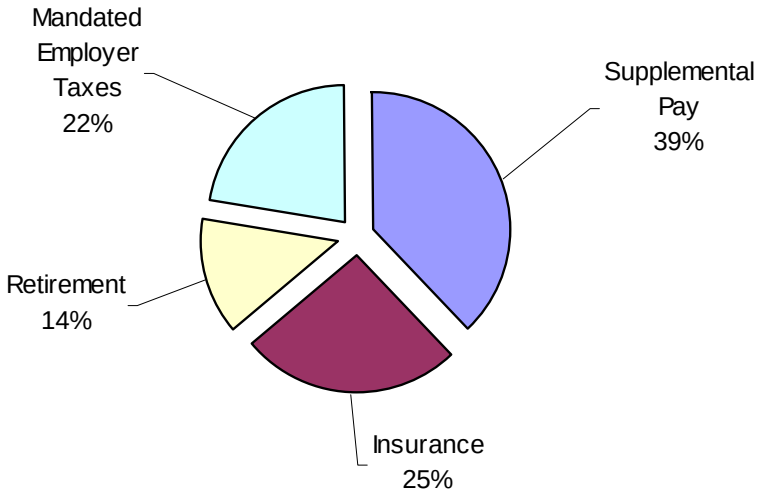
Some productions group their expenditure for wages and materials together and some do not. For modeling purposes, we need distinct expenditure in each category. To obtain expenditure in each category, we derive a ratio from productions that report separate expenditure for wages and materials. We allocate wages and materials expenditure for those productions that did not separate wages and materials in a REMI wage and material category in the same proportion as those that do. For example, one film production reports 'wardrobe' expenditures in total. DECD uses the ratio of expenditure by category derived from other productions to allocate aggregate wardrobe expenditure into the required REMI wage and material sectors for those productions that grouped such expenditure together.

DECD allocates categories such as 'purchases', 'materials and supplies', and 'miscellaneous' as follows: for ATL 'purchases', 80% accrues to the retail sector and 20% to the wholesale sector. Below-the-line (BTL) purchases by specific trades' people (such as lighting or sound technicians) accrue as follows: wholesalers (40%) and retailers (60%). Purchased by below-the-line operations, 'materials and supplies' accrue as follows: specialized manufacturing (20%), wholesale (40%) and retail (40%). The 'materials and supplies' category appear in areas such as wardrobe, props, and special effects, in which we expect one-of-a-kind craftsmanship occurs. 'Miscellaneous' expenditure accrued entirely to the retail sector. These assumptions do not affect total spending but only the allocation of expenditures among sectors for modeling purposes.

In many instances, the credit application form lists expenditures on fringe benefits for staff. Because media production often engages freelance contractors, these fringe benefits represent an important contribution to the employee's income. From the Bureau of Labor Statistics' National Compensation Survey, motion picture industry standards provide DECD a basis for allocating fringes among sectors (Figure 3). Mandated benefits include the state worker compensation as well as federal programs.

Connecticut's population share of U.S. population provides the estimate of federal insurance program dollars returning to Connecticut. The derived benefits to ATL and BTL workers entered the REMI model in the categories depicted in Chart 7.

Chart 7: Distribution of Fringe Benefits in the Motion Picture Industry



Source: DECD calculations using CCT data.

Another form of supplemental pay is 'box rentals'. In the motion picture industry, independent artists or crafts persons receive a 'rental' fee toward their toolkits. For instance, a make-up artist might receive not only wages and benefits but also a supplement toward paying for their make-up tools and kit. This supplement is additional income or 'sales' in their respective industry that we enter into the REMI model.

In some instances, employees travel to Connecticut to shoot film. While in Connecticut, they stay in hotels, eat meals, shop and travel and, we assume, generally behave as tourists. Film production budgets include allowances for such expenses. For instance, meals or 'craft services' are typically provided on set. When shooting continues through meals, workers receive meal-offset payments (supplemental income). Transportation to and from the state and to and from the set is typically provided by the film for out-of-state workers. Some productions specify per diem payments as a catchall for non-accommodation expenditures.

We reviewed several studies on visitor spending patterns. A 2006 study of the Monona Terrace Community and Convention Center in Madison, Wisconsin, estimated that

convention attendees spent an average of $738 per event. This study took recent estimates of convention attendee spending from the Destination Marketing Association International (DMAI) 2005 ExPact study, and adjusted them downwards to reflect the "small market" definition of Madison and 2005 Monona Terrace actual data. The average length of stay for an event was 3.56 nights. In 2003, C.H. Johnson Consulting, Inc. studied convention spending in Peoria, Illinois, and found convention attendees spent an average of $198 per day, and sporting event visitors spent approximately $57 per day in that area. During FY 2003 and 2004, the San Jose Convention & Visitor's Bureau estimated that convention and meeting attendees spent an average of $117 per day, and day-trippers spent an average of $58 while visiting the city. The different characteristics between "business" and "leisure" travelers reflect in their spending patterns.

Based on the above studies, we identified visitor-spending profiles in the following categories: retail, food and beverages, car rental, lodging, other transportation (fuel, maintenance and tolls, parking), recreation and entertainment, and miscellaneous (snacks and convenience store purchases, for example).

From our analysis of the foregoing visitor spending patterns, we assume visitors from within Connecticut (in-state visitors) spend half their budget on food and beverages and 30% on other transportation. We assume in-state visitors do not spend on lodging and car rental, but do spend on shopping for souvenirs, recreation, entertainment and miscellaneous food items.

For visitors from outside Connecticut, we mirrored the Greater Madison Convention and Visitor Bureau study's estimates of their spending profile, and assume lodging accounted for half their spending, 26% on food and beverage, 10% on shopping, 2% on parking, 7% on other transportation and the remainder on recreation and entertainment and miscellaneous items.

Table 8: Estimated Visitor Spending as a Share of Total		
	Out-of-state visitor spending as a share of total	**In-state visitor spending as a share of total**
Retail	10%	5%
Food & Beverages	26%	50%
Car Rental	2%	0%
Lodging	51%	0%
Other Daily Transportation	7%	30%
Recreation & Entertainment	3%	10%
Groceries & other convenience items	1%	5%
Total	**100%**	**100%**

Source: DECD calculations using referenced studies

The current analysis distributes these per diem payments using convention visitor expenditure vectors based on these studies expressed in Table 8. This study does not include additional visitor spending beyond that included in the production budgets for out-of-state workers. This assumption is conservative and may result in an underestimate of the economic impact.

Excluding 'loss and damages' and some ATL salaries specified above, the total spending for materials, salaries and benefits, and travel and living is about $43 million based on film tax credit application filings for the study period. The $43 million includes both tax credit-qualified and non-tax credit-qualified expenditures in Connecticut. DECD assumes this expenditure exceeds what would normally be spent on film production in Connecticut because we consider it to result entirely from the film tax credit (while there are other productions in Connecticut that did not file for the tax credit, we do not know anything more than that they occurred). As such, the $43 million represents a direct

injection into the Connecticut economy that ripples out through increased business sales and personal incomes in the state economy.

The projected tax credit for the considered 2007 filings is $16.5 million based exclusively on qualified Connecticut expenditures. These tax credits are transferable and may be either applied to the film production company's tax liability or sold to another company with Connecticut tax liability. This analysis assumes that film tax credit purchasers redeem the full value of the tax credit. Consequently, the tax credit reduces state tax revenue. If the state adheres to the balanced-budget requirement, this reduction in revenue implies that state government expenditures fall by $16.5 million.

Summary of key points and assumptions:

- Assume expenditures from productions applying for the tax credit represent 'net new' expenditures in Connecticut.
- Thirteen motion picture productions spent $43 million on Connecticut goods and services in both tax-eligible and non-tax eligible categories excluding loss and damages and some ATL salaries.
- $55.1 million in tax-eligible expenditure (includes loss and damages and some ATL salaries and does not include non-tax-eligible expenditure) implies a potential tax credit of $16.5 million.

ECONOMIC IMPACT RESULTS

In the study period, the film productions filing for the Connecticut film tax credit created:

- 395 new FTE positions;
- $20.7 million in new Real Gross State Product[36] (RGSP); and
- a reduction of $14.5 million in state revenues.

If the film productions filing for the tax credit represent new industry spending and the state government balances its budget, the Connecticut economy will benefit from the tax credit based on the first twelve months of the program's operation.

[36] Gross State Product (GSP) is the value of goods and services produced in the state economy adjusted for inflation.

The results presented in this section report both direct and indirect impacts. Direct spending includes (1) $43 million that the production companies spent on Connecticut goods and services in both tax eligible and non-tax eligible categories; and, (2) $16.5 million in tax credits, which result in a reduction in state government expenditures under a balanced budget assumption. The direct impact is the change from the baseline or status quo forecast in spending on goods and services purchased in the Connecticut economy and the reduction in government services. From this change in direct spending, new sales increase incomes and businesses' demand for inputs. These indirect and induced effects cause a further change in personal and business incomes and taxes.

Table 9 summarizes the annual average, net present value and peak values for four key economic variables over a 6-year time horizon (2007 and five subsequent years to 2012). The annual average value is the change of the variable (e.g., employment) from the baseline or status quo forecast averaged over six years. The net present value is the discounted present value (at 5%) of the change from the baseline in each measure from 2007-2012. The peak values are the maximum increase above the baseline attained by each measure respectively from 2007-2012. In each case, these estimates are the *change* from the assumed baseline resulting from new economic activity stimulated by the film tax credit.

Table 9: Connecticut Film Tax Credit Economic & Fiscal Impact (in $2007 millions)

Variable	Annual Average	Net Present Value	Peak
Full Time Employment (Jobs)	63	NA	395
Population	39	NA	65
Gross State Product	$3.02	$17.68	$20.72
Real Disposable Personal Income	$1.26	$7.19	$6.58
State Government Revenues	$0.22	$1.25	$1.07

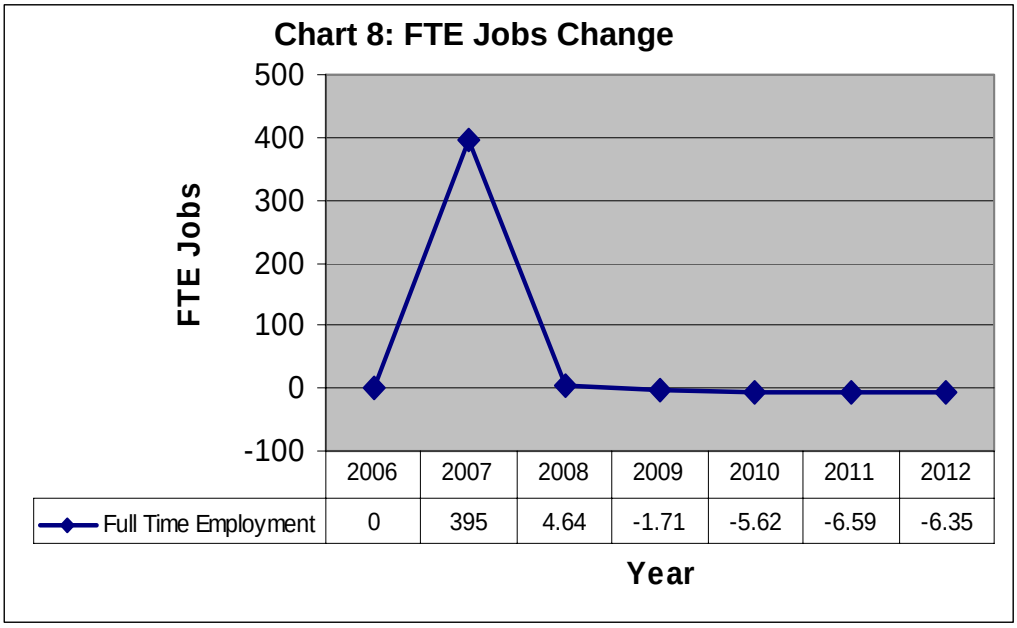
Source: DECD calculations using REMI results.

Note that this analysis uses only twelve months of data. In the study period, thirteen productions filed their audits for credits in Connecticut. For the remainder of the 6-year time horizon (2007 plus 5 years to 2012), DECD assumes there is no motion picture

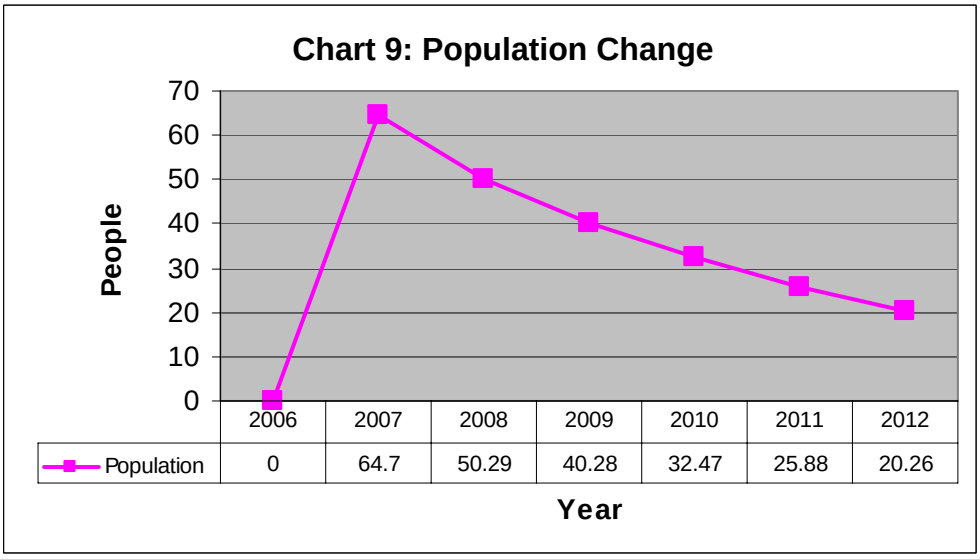
production in Connecticut claiming a tax credit because we have no information. We report the additional five years because REMI is a dynamic model in which it takes time for the economic effects to be fully realized. However, the resulting 'annual averages' and 'net present value' need to be interpreted with caution. These values obtain from twelve months of Connecticut's film tax credit distributed over time. If the tax credit continues to have the same effect each year (through an infusion of spending), the values in Table 9 would be higher. As we show in Figures 4 through 8 below, the 'peak' values each occur in 2007 and are a better measure of what one might expect in future years with new Connecticut productions claiming a film tax credit at roughly the same level as during the study period.

Charts 8 through 12 below indicate the time path of employment (jobs), population, real gross state product, real disposable income, and state revenue and expenditure. In each case, the graphs show the total changes, that is, the direct, indirect and induced changes stimulated by 2007 film production spending. Consequently, changes in economic activity cluster around 2007. We include the 2006 baseline (status quo) for visual comparison.

Additional employment (measured in FTE jobs) spikes to 395 jobs in 2007 and then falls to baseline levels (see Chart 8 below). Averaged over six years, this represents an annual average change of 63 new jobs in the state. Chart 9 shows that people are attracted to Connecticut because of increased economic activity. Population peaks at 65 in 2007 and slowly continues to adjust at a declining rate over time. The annual average increase in population is 39 people from 2007 and 2012.



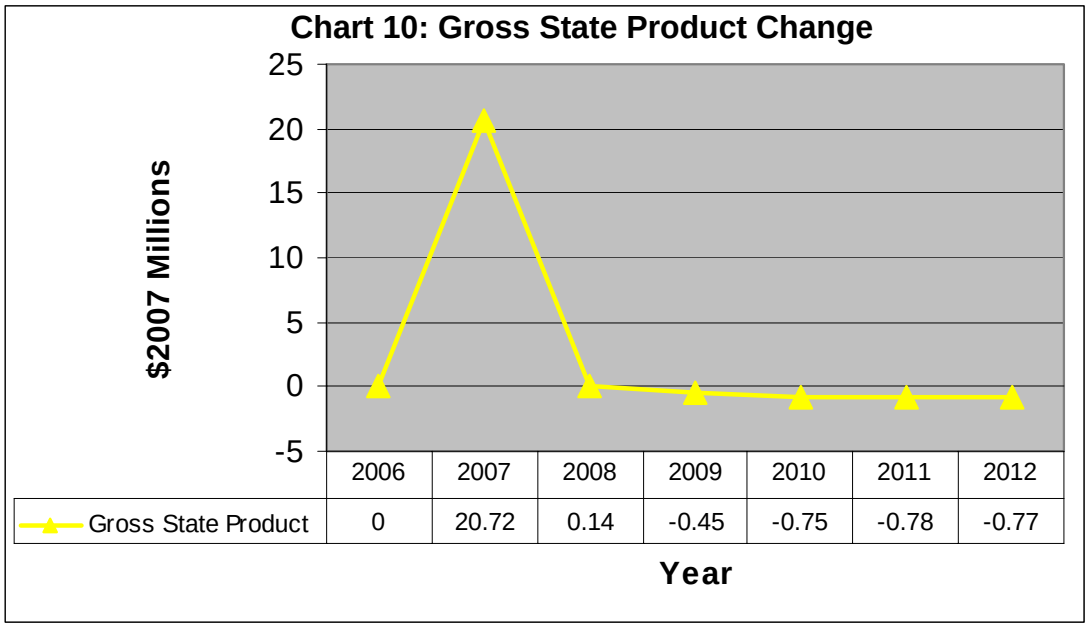
Source: DECD calculations using REMI results



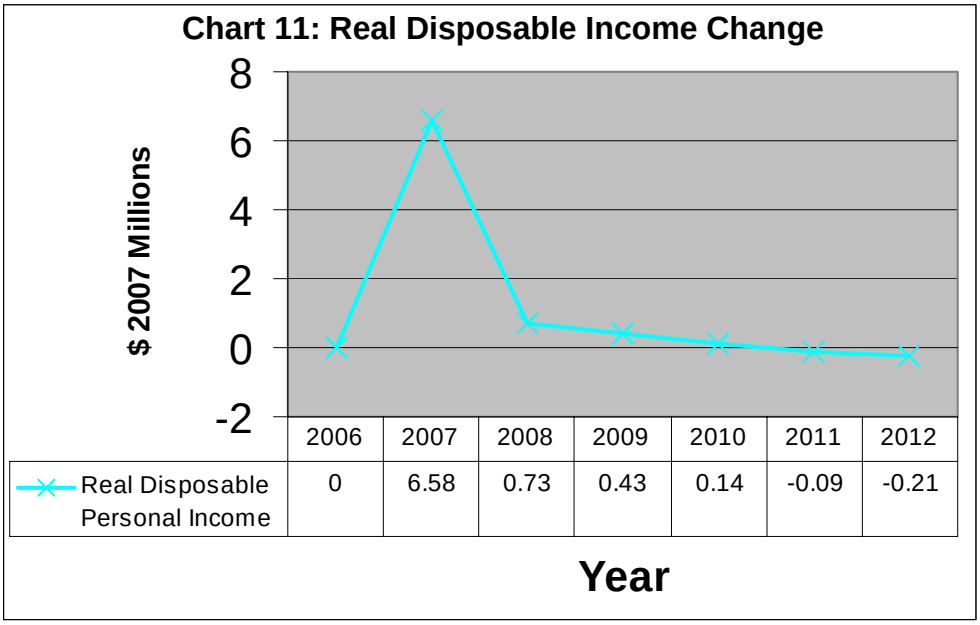
Source: DECD calculations using REMI results

Charts 10 and 11 show changes in RGSP and Real Disposable Personal Income (RDPI). RGSP is the value of all goods and services produced in the state economy in a given year adjusted for inflation. RDPI is the portion of RGSP that filters into take-home

incomes adjusted for taxes and inflation. Changes in both economic measures spike in 2007 and then rapidly return to baseline in the absence of additional economic changes in future years. RDPI returns to the baseline slower than RGSP. In the peak year, RGSP increases by $20.72 million and RDPI increases by $6.58 million (both expressed in 2007 million $). The net present value of RGDP increases by $17.68 million from 2007-2012. The net present value of RDPI increases by $7.19 million. These figures reflect new film production activities' impact on the state economy.



Source: DECD calculations using REMI results

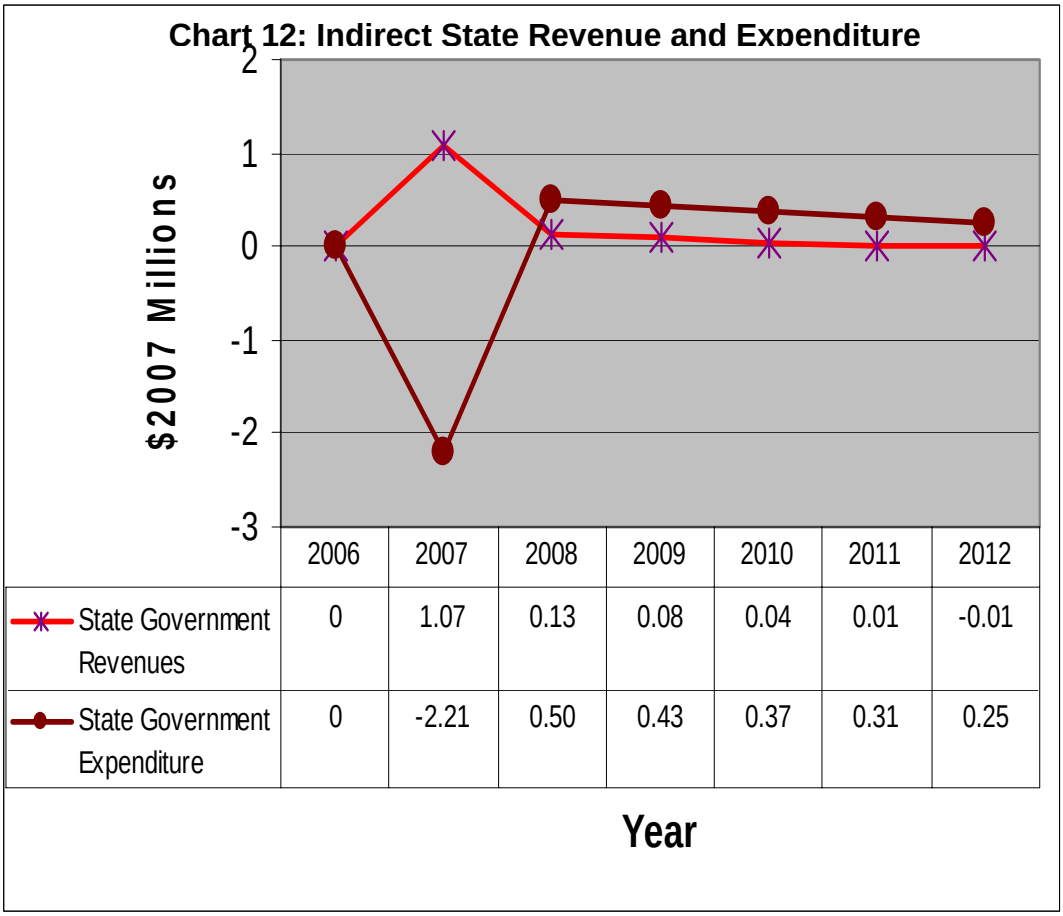


Source: DECD calculations using REMI results

Chart 12 shows the indirect fiscal impact of the film tax credit. The total change in government expenditure and tax revenue collection comprises the fiscal impact. We divide this change into the direct and the indirect effects. In the balanced budget scenario considered here the direct fiscal impacts are a $16.5 million decrease in state revenue and a simultaneous, matching $16.5 million decrease in state expenditure. From a fiscal standpoint, these two changes cancel each other. The film tax credit's indirect effects arise from induced economy-wide activity associated with the film industry expansion and from the state government's reduction in spending. For example, more net new jobs increase incomes, which, in turn, increase net income taxes paid.

Considering the indirect fiscal impact exclusively resulting from the reduction in government spending, Chart 12 shows an average annual increase in state revenues of $0.22 million with a peak of $1.1 million in 2007 and a net present value of $1.25 million from 2007-2012. The peak value best represents the film tax credit's potential impact going forward. If the state balances its budget as we assume, this analysis suggests the

state will receive net new fiscal revenue from the film tax credit, that is, revenues will exceed expenditure in each year in which the credit is claimed.



	2006	2007	2008	2009	2010	2011	2012
State Government Revenues	0	1.07	0.13	0.08	0.04	0.01	-0.01
State Government Expenditure	0	-2.21	0.50	0.43	0.37	0.31	0.25

Source: DECD calculations using REMI results

State expenditure falls with respect to the baseline as the economy expands (that is, jobs are created) and the need for programs related to unemployment insurance, Medicaid, retirement benefits and similar insurance trust requirements decrease as employment increases. State expenditure falls by $2.2 million at its peak, $0.06 million on average annually and $0.54 million in net present value from 2007-2017. These net changes present a favorable outcome for fiscal balance.

CONCLUSION

The film tax credit has a small and positive impact on the Connecticut economy. At its peak, the program contributes $20.72 million to RGSP and $6.58 million to RDPI. This change adds to Connecticut's total estimated $217.4 billion in total RGSP and $147.4 billion in total RDPI projected by the REMI model for 2007. In 2007, the film tax credit adds 395 FTE jobs to the more than 2.2 million FTE jobs projected for the entire Connecticut economy in 2007.

This expansion is fueled by a $16.5 million film tax credit within a balanced budget scenario. Connecticut experiences the tax credit impact during the year for which productions shot in the state. The effects quickly dissipate after the productions complete their work and leave the state. The *additional economic activity* exclusively generated by productions claiming the credit (its indirect effect) returns $1.25 million in present value tax revenues. For every dollar spent on the tax credit, the state receives $0.08 back in additional revenue. This will have a small favorable fiscal impact only if the state government pays for the film tax credit by reducing spending. The state will not receive enough additional revenue from increased economic activity to pay for the estimated $16.5 million in tax credits applied for in 2007. From a fiscal perspective, this program cannot pay for itself in one year. However, every dollar spent on the film tax credit generates $1.07 of additional RGSP in present value terms. This is because people and firms continue spending through time the money injected into the economy when the productions were operating in Connecticut. This finding suggests that the tax credit does increase economy-wide activity by a greater amount than the cost of implementation. In this case, present value findings are sensitive to the time horizon chosen for the study given that only one year of data is available.

In July 2007, the legislature expanded the film tax credit to include additional types of media production (specifically, digital animation) and an infrastructure credit. The current analysis does not reflect the impact of these changes. Further, only productions that filed their documentation by September 30, 2007 as described in footnote 1 are included in this report. No data was available on where production company employees lived. For those workers residing outside the state, their income represents 'leakage' from the state in the REMI model. Leakages are income paid out that is not recycled into new sales for Connecticut businesses. This report assumes some ATL workers

(talent, producers, and directors) reside outside Connecticut. To the extent this understates the number of film production workers from outside the state, this analysis overstates the impact on the Connecticut economy (and vice versa). In general, however, the report makes conservative assumptions about the impact of film production spending in Connecticut.

The early experience of Connecticut's film production tax credit suggests the tax credit has a small and positive impact on the state's economy. If the government pays for the tax credit by reducing expenditures, this analysis suggests the state could receive additional revenue from induced economic activity. These returns are not likely to be sufficient to pay for the cost of the film tax credit in one year. Expansions to the tax credit program and additional years of data may give a stronger indication of the potential impact of the tax credit program on the Connecticut economy.

APPENDIX A: THE REMI MODEL

The Connecticut REMI model is a dynamic, multi-sector, regional model developed and maintained for the Connecticut Center for Economic Analysis by Regional Economic Models, Inc. of Amherst, Massachusetts. This model provides detail on all eight counties in the State of Connecticut and any combination of these counties. The REMI model includes all of the major inter-industry linkages among 466 private industries, aggregated into 67 major industrial sectors. With the addition of farming and three public sectors (state and local government, civilian federal government, and military), there are 70 sectors represented in the model for the eight counties.

The REMI model is based on a national *input-output* (I/O) model that the U.S. Department of Commerce (DoC) developed and continues to maintain. Modern input-output models are largely the result of groundbreaking research by Nobel laureate Wassily Leontief. Such models focus on the inter-relationships between industries and provide information about how changes in specific variables—whether economic variable such as employment or prices in a certain industry or other variables like population affect factor markets, intermediate goods production, and final goods production and consumption.

The REMI Connecticut model takes the U.S. I/O "table" results and scales them according to traditional regional relationships and current conditions, allowing the relationships to adapt at reasonable rates to changing conditions. Listed below are some salient structural characteristics of the REMI model:

- REMI determines consumption on an industry-by-industry basis, and models real disposable income in Keynesian fashion, that is, with prices fixed in the short run and GDP (Gross Domestic Product) determined solely by aggregate demand.
- The demand for labor, capital, fuel, and intermediate inputs per unit of output depends on relative prices of inputs. Changes in relative prices cause producers to substitute cheaper inputs for relatively more expensive inputs.
- Supply of and demand for labor in a sector determine the wage level, and these characteristics are factored by regional differences. The supply of labor depends on the size of the population and the size of the workforce.

- Migration—that affects population size—depends on real after-tax wages as well as employment opportunities and amenity value in a region relative to other areas.
- Wages and other measures of prices and productivity determine the cost of doing business. Changes in the cost of doing business will affect profits and/or prices in a given industry. When the change in the cost of doing business is specific to a region, the share of the local and U.S. market supplied by local firms is also affected. Market shares and demand determine local output.
- "Imports" and "exports" between states are related to relative prices and relative production costs.
- Property income depends only on population and its distribution adjusted for traditional regional differences, *not* on market conditions or building rates relative to business activity.
- Estimates of transfer payments depend on unemployment details of the previous period, and total government expenditures are proportional to population size.
- Federal military and civilian employment is exogenous and maintained at a *fixed* share of the corresponding total U.S. values, unless specifically altered in the analysis.
- Because the each variable in the REMI model is related, a change in one variable affects many others. For example, if wages in a certain sector rise, the relative prices of inputs change and may cause the producer to substitute capital for labor. This changes demand for inputs, which affects employment, wages, and other variables in those industries. Changes in employment and wages affect migration and the population level that in turn affect other employment variables. Such chain-reactions continue in time across all sectors in the model. Depending on the analysis performed, the nature of the chain of events cascading through the model economy can be as informative for the policymaker as the final aggregate results. Because REMI generates extensive sectoral detail, it is possible for experienced economists in this field to discern the dominant causal linkages involved in the results.

The REMI model is a structural model, meaning that it clearly includes cause-and-effect relationships. The model shares two key underlying assumptions with mainstream

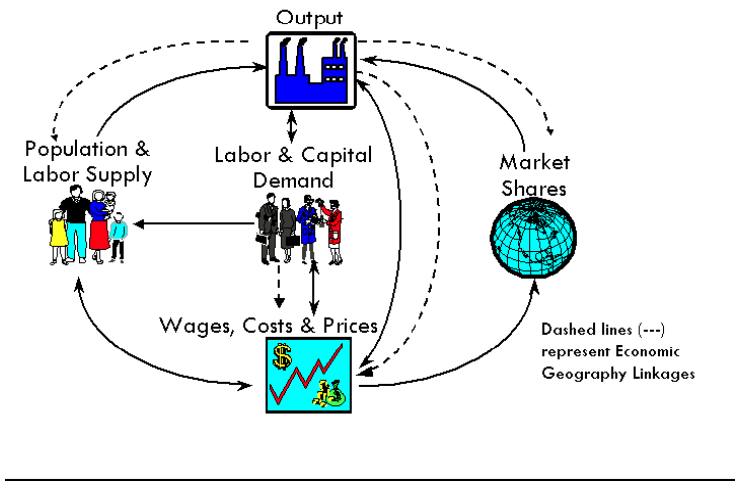
economic theory: *households maximize utility* and *producers maximize profits*. In the model, businesses produce goods to sell to other firms, consumers, investors, governments and purchasers outside the region. The output is produced using labor, capital, fuel and intermediate inputs. The demand for labor, capital and fuel per unit output depends on their relative costs, because an increase in the price of one of these inputs leads to substitution away from that input to other inputs. The supply of labor in the model depends on the number of people in the population and the proportion of those people who participate in the labor force. Economic migration affects population size and its growth rate. People move into an area if the real after-tax wage rates or the likelihood of being employed increases in a region.

Supply of and demand for labor in the model determine the real wage rate. These wage rates, along with other prices and productivity, determine the cost of doing business for each industry in the model. An increase in the cost of doing business causes either an increase in price or a cut in profits, depending on the market supplied by local firms. This market share combined with the demand described above determines the amount of local output. The model has many other feedbacks. For example, changes in wages and employment impact income and consumption, while economic expansion changes investment and population growth impacts government spending.

Model Overview

Figure A1.1 is a pictorial representation of the model. The Output block shows a factory that sells to all the sectors of final demand as well as to other industries. The Labor and Capital Demand block shows how labor and capital requirements depend on both output and their relative costs. Population and Labor Supply are shown as contributing to demand and to wage determination in the product and labor market. The feedback from this market shows that economic migrants respond to labor market conditions. Demand and supply interact in the Wage, Price and Profit block. Once prices and profits are established, they determine market shares, which along with components of demand, determine output.

Figure A-1.1



The REMI model brings together the above elements to determine the value of each of the variables in the model for each year in the baseline forecasts. The model includes each inter-industry relationship that is in an input-output model in the Output block, but goes well beyond the input-output model by including the relationships in all of the other blocks shown in Figure A-1.1.

In order to broaden the model in this way, it is necessary to estimate key relationships econometrically. This is accomplished by using extensive data sets covering all areas of the country. These large data sets and two decades of research effort have enabled REMI to simultaneously maintain a theoretically sound model structure and build a model based on all the relevant data available. The model has strong dynamic properties, which means that it forecasts not only what will happen, but also when it will happen. This results in long-term predictions that have general equilibrium properties. This means that the long-term properties of general equilibrium models are preserved without sacrificing the accuracy of event timing predictions and without simply taking elasticity estimates from secondary sources.

Understanding the Model

In order to understand how the model works, it is critical to know how the key variables in the model interact with one another and how policy changes are introduced into the model. To introduce a policy change, one begins by formulating a policy question. Next, select a baseline forecast that uses the baseline assumptions about the external policy variables and then generate an alternative forecast using an external variable set that includes changes in the external values, which are effected by the policy issue.

Figure A-1.2

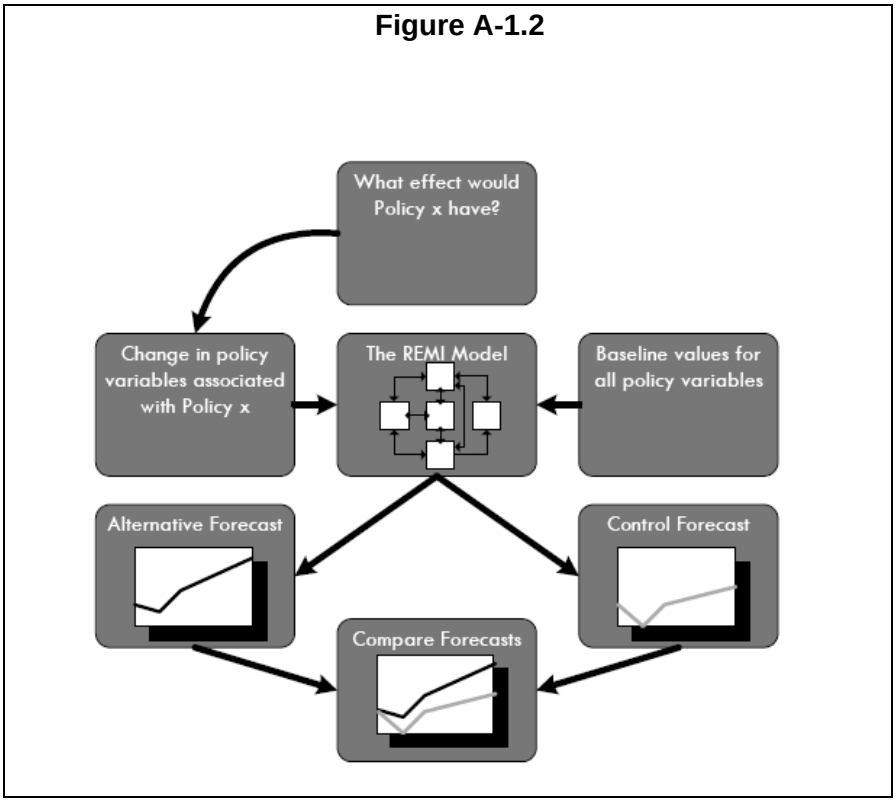


Figure A-1.2 shows how this process would work for a policy change called Policy X. In order to understand the major elements in the model and their interactions, subsequent sections examine the various blocks and their important variable types, along with their relationships to each other and to other variables in the other blocks. The only variables discussed are those that interact with each other in the model. Variables determined outside of the model include:

- Variables determined in the U.S. and world economy (e.g., demand for computers).

- Variables that may change and affect the local area, but over which the local area has no control (e.g., an increase in international migration).
- Variables that are under control of local policy (e.g., local tax rates).

For simplicity, the last two categories are called policy variables. Changes in these variables are automatically entered directly into the appropriate place in the model structure. Therefore, the diagram showing the model structure also serves as a guide to the organization of the policy variables (see Figure A-1.3).

Output Block

The Output Block variables are:

- State and Local Government Spending
- Investment
- Exports
- Consumption
- Real Disposable Income

These variables interact with each other to determine output and depend on variable values determined in other blocks as follows:

Variables in the Output Block	Variables Outside of the Output Block that are Included in its Determinants
State and Local Government Spending	Population
Investment	Optimal Capital Stock (also the actual capital stock)

Output	Share of Local Market (The proportion of local demand supplied locally, called the Regional Purchase Coefficient)
Exports	The Regional Share of Interregional and International Trade
Real Disposable Income	Employment, Wage Rates and the Consumer Expenditure Price Index

Labor and Capital Demand Block

The Labor and Capital Demand block has only three types of key variables:

- Employment - determined by the labor/output ratio and the output in each industry, determined in the Output block.
- Optimal Capital Stock - depends on relative labor, capital and fuel costs and the amount of employment.
- Labor/Output Ratio - depends on relative labor, capital and fuel costs.

Simply put, if the cost of labor increases relative to the cost of capital, the labor per unit of output falls and the capital per unit of labor increases.

Population and Labor Supply Block

The model predicts population for 600 cohorts segmented by age, ethnicity and gender. This block also calculates the demographic processes - births, deaths and aging. The models deal with different population sectors as follows:

- Retired Migrants are based on past patterns for each age cohort 65 and over.
- International migrants follow past regional distributions by country of origin.

- Military and college populations are treated as special populations that do not follow normal demographic processes.
- Economic migrants are those who are sensitive to changes in quality of life and relative economic conditions in the regional economies. The economic variables that change economic migration are employment opportunity and real after-tax wage rates.

This block allows the determination of the size of the labor force by predicting the labor force participation rates for age, ethnicity and gender cohorts, which are then applied to their respective cohorts and summed. The key variables that change participation rates within the model are the ratio of employment to the relevant population (labor market tightness) and the real after-tax wage rates.

Wage, Price and Profit Block

Variables contained within the Wage, Price and Profit block are:

- Employment Opportunity
- Wage Rate
- Production Costs
- Housing Price
- Consumer Price Deflator
- Real Wage Rate
- Industry Sales Price
- Profitability

The wage rate is determined by employment opportunity and changes in employment demand by occupation for occupations that require lengthy training. The housing price increases when population density increases. The Consumer Expenditure Price Index is based on relative commodity prices, weighted by their share of U.S. nominal personal consumption expenditures. The model uses the price index to calculate the real after-tax wage rate for potential migrants that includes housing price directly, while the price index used to deflate local income uses the local sales price of construction. Wage rates affect production costs, as well as other costs, and they in turn determine profitability or

sales prices, depending on whether the type of industry involved serves mainly local or external markets. For example, a cost increase for all local grocery stores results in an increase in their prices, while an increase in costs for a motor vehicle factory reduces its profitability of production at that facility but may not increase their prices worldwide.

Market Shares Block

The Market Shares Block consists of:

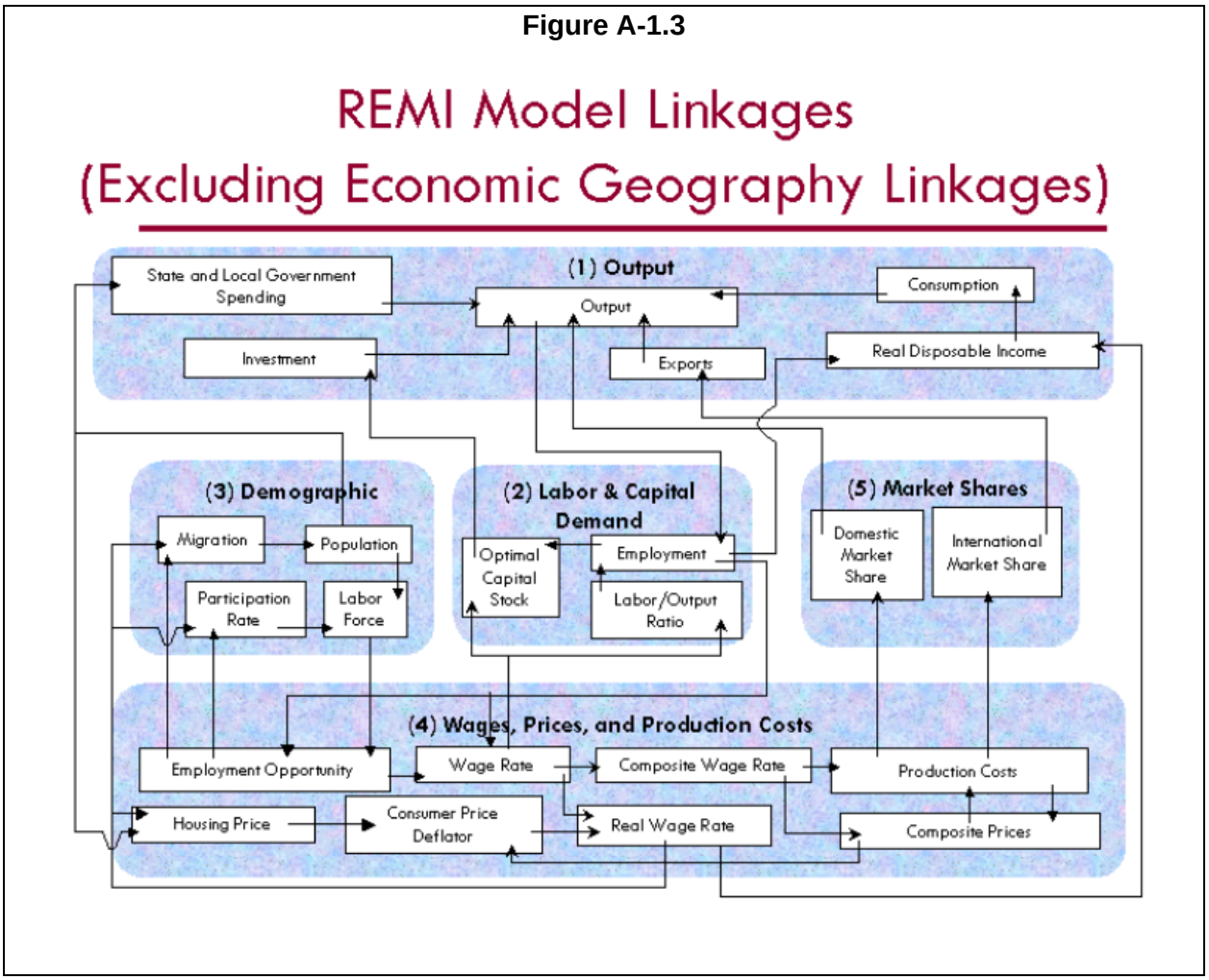
- Share of Local Market
- Share of External Market

An increase in prices leads to some substitution away from local suppliers toward external suppliers. In addition, a reduction in profitability for local factories leads to less expansion of these factories relative to those located in areas where profits have not decreased. These responses occur because the U.S. is a relatively open economy where firms can move to the area that is most advantageous for their business.

The Complete Model

Figure A1.3 illustrates the entire model and its components and linkages. This diagram is helpful in understanding the complex relationships shared by variables within the various blocks discussed above, as well as their relationships to variables in other blocks.

Figure A-1.3


REMI Model Linkages
(Excluding Economic Geography Linkages)
(1) Output
State and Local Government Spending
Output
Consumption
Investment
Exports
Real Disposable Income
(3) Demographic
Migration
Population
Participation Rate
Labor Force
(2) Labor & Capital Demand
Optimal Capital Stock
Employment
Labor/Output Ratio
(5) Market Shares
Domestic Market Share
International Market Share
(4) Wages, Prices, and Production Costs
Employment Opportunity
Wage Rate
Composite Wage Rate
Production Costs
Housing Price
Consumer Price Deflator
Real Wage Rate
Composite Prices

APPENDIX B: U.S. FILM PRODUCTION INCENTIVES

Table B1 below summarizes film production incentive programs in the U.S. as of 2006. Note: New Hampshire tax credits are state tax policy, not directly related to film production and the following states have no film tax credit program: Alabama, Alaska, Ohio, and North Dakota.

Table B1: Film Production Incentives by State or Region

Region	Incentive	Qualifications
Alabama	No incentive available	
Alaska	No incentive available	
Arizona	Transferable tax credit equal to 20% of all in-state expenditures of $250,000 to $1 million and 30% on in-state expenditures of more than 1 million; $5 million per production and $40 million cap in 2007 and $7 million per production and $50 million cap in 2008	Spend more than $250,000; at least 35% of employees (cast and crew) must be Arizona residents, for 2008 50% must be Arizona residents; must receive approval prior to beginning filming
Arkansas	State sales and use tax refunded if $500,000 is spent within 6 months or $1 million is spent within 12 months	Must provide a letter of support from the community in which filming will take place
California	Little or no fee on state owned properties; no sales tax on production services; no state lodging tax	
Colorado	10% rebate on local expenditures for out of state productions on qualified expenditures; cap of $600,000; lodging tax rebate when staying more than 30 days	Minimum of $1 million in qualified expenditures; 75% of crew payroll must be Colorado residents and 75% of below-the-line expenditures must be qualified local expenditures
Connecticut	Transferable tax credit equal to 30% of qualified in-state expenses on productions; hotel tax does not apply on stays longer than 30 days	Spend more than $50,000 on qualified in-state expenditures; obscene material does not qualify; Compensation in excess of $15 million per individual does not qualify, media buys and promotional events do not qualify; news, sports and weather do not qualify
Delaware	No state or local sales tax	

Table B1: Film Production Incentives by State or Region (continue)		
District of Columbia	Refundable grant equal to the lesser of 10% of qualified expenses or 100% of sales and use tax if more than $500,000 is spent	Spend more than $500,000 on qualified in-state expenditures
Florida	Rebate of 15% of qualified in-state expenditures; additional rebate of 5% for filming in the off season; additional 2% rebate for creating a family-friendly film; statewide cap of $25 million and each production can qualify for $8 million; sales tax exemption	Spend more than $625,000; commercials and music videos spend more than $100,000; digital media projects spend more than $300,000; only first $400,000 of compensation to Florida residents qualify
Georgia	Base tax credit of 9% on qualified expenditures and both in-state and out-of-state labor, an additional 3% is awarded for expenses on Georgia residents	Spend more than $500,000 on qualified in-state expenditures
Hawaii	Refundable tax credit of 15% on Oahu and 20% on neighbor islands; $8 million credit cap per production	Must make effort to hire local crew and make contributions toward local education or workforce development
Idaho	Rebate of sales tax; hotel stays of more than 30 days do not pay sales or hotel tax	Spend more than $200,000 on qualifying expenses
Illinois	Transferable tax credit against state income tax equal to 20% of in-state expenditures and labor; hotel tax waived on stays longer than 30 days	Spend at least $100,000 on qualifying expenditures; tax credit on salary limited to the first $100,000 to each resident; minority hiring and training requirements
Indiana	Hotel stays longer than 30 days are exempt from taxes	
Iowa	Transferable income tax credit equal to 25% of in-state expenditures where local vendors are able to reduce their gross income by amount received on qualified expenditures; a 25% credit is available to investors as well	Spend more than $100,000 on qualifying expenses; the same person cannot claim the expenditure and investor credit

Table B1: Film Production Incentives by State or Region (continue)		
Kansas	Non-refundable, non-transferable income tax credit equal to 30% of direct production expenditures incurred in-state that are subject to taxation in Kansas; $2 million cap per year	Spend more than $50,000 in qualifying expenditures on a production of 30 minutes or less and $100,000 on a production of more than 30 minutes
Kentucky	Refund of 6% of sales and use tax	
Louisiana	Transferable income tax credit equal to 25% of in-state expenditures, resident and non-resident labor qualifies; additional 10% employment credit on first $1 million of each Louisiana residents payroll; 15% state infrastructure tax credit of 15% for investments that exceed $300,000	Spend more than $300,000 on qualifying expenditures; labor expenses over $1 million per individual do not qualify
Maine	Reimbursement equal to 12% of qualifying production wages paid to employees that are Maine residents and 10% to non-residents; credit for all Maine income taxes that would be assessed against the income created by the production; No state sales tax; no lodging tax on stays longer than 28 days	Spend more than $250,000 on qualifying expenditures over a 12 month period
Maryland	Rebate up to 25% of total in-state direct costs of production, resident and non-resident labor expenses qualify, $4 million statewide cap; exemption from sales tax	Spend more than $500,000 on qualifying in-state expenditures
Massachusetts	Income tax credit equal to 25% of qualified in-state expenditures, may receive tax credit as a rebate for 90% of face value or it may be transferred; sales tax exemption	Shoot more than half of movie in-state or spend more than half of budget in-state; Spend more than $50,000 on in-state qualifying expenditures; salary expenses over $1 million per individual do not qualify

Table B1: Film Production Incentives by State or Region (continue)		
Michigan	Refundable sales tax credit up to $2 million per production, 12% credit on expenditures from $200,000 to $1 million increasing to 20% credit on expenditures above $5 million; $7 million cap per fiscal year; no tax on hotel stays longer than 30 days	Compensation above $100,000 per individual does not qualify
Minnesota	Rebate of up to 15% of qualified in-state production costs, capped at $1.3 million per biennium; sales tax exemption on commercials; not hotel tax on stays longer than 30 days	At least 60% of film must shoot in-state
Mississippi	Cash rebate of 20% of the first $1 million of local expenditures, 25% of the next $4 million, and 30% of local expenditures over $5 million; 10% rebate for out-of-state payroll; sales tax waived for qualifying purchases; max $5 million rebate per production	Obscene material does not qualify
Missouri	Transferable state tax credit equal to 50% of qualified expenses, maximum credit per project is $1 million, capped at $1.5 million (credit can be carried to next year if no funds available)	Spend more than $300,000 on qualifying expenditures
Montana	Refundable tax credit equal to 14% of the first $50,000 paid to each Montana resident; 9% refundable tax credit on qualified in-state expenditures (excluding labor); no hotel tax on stays longer than 30 days	
Nebraska	Sales and lodging taxes are waived for hotel stay of 30 days or more	
Nevada	Reduction in hotel tax after 30 days	
New Hampshire	No sales and use tax, personal income tax or capital gains tax in New Hampshire	

Table B1: Film Production Incentives by State or Region (continue)		
New Jersey	Tax credit equal to 20% of qualified expenses, $10 million per year cap; no sales tax; loan guarantee of up to 30% with a maximum of $1.5 million per project; no hotel tax on stays of more than 14 consecutive days	At least 60% of total expenses (not including postproduction costs) must be incurred in-state
New Mexico	Production tax rebate equal to 25% of qualified expenses, 20% rebate for out-of-state cast but capped at $5 million for all out-of-state talent; film investment loan up to $15 million available; 50% reimbursement of wages for on-the-job training for New Mexico residents; no sales tax option (if sales tax is waived purchase does not qualify for tax rebate)	Obscene material does not qualify; budget must be greater than $2 million and 85% of principal photography must be shot in-state to qualify for investment loan
New York	Tax credit equal to 10% of qualified in-state expenses; additional 5% tax credit if shot in New York City; $25 million cap on state, $12.5 million cap on New York City; taxes applied as a credit, but 50% of unused amount refunded at end of year, if any tax credit remains at the end of the second year, it is fully refunded	Spend 75% or more of facility expenses at a qualifying facility, if facility expenses are less than $3 million 75% of location days must be shot in New York (a partial benefit is available if less than 75%)
North Carolina	Refundable income tax credit equal to 15% of qualified in-state expenses, $7.5 million cap per production; tax credit subject to 6.9% corporate income tax; no hotel tax on stays longer than 90 days	Compensation above $1 million per individual does not qualify; Spend more than $250,000 on in-state qualifying expenses
North Dakota	No tax on hotel stay longer than 30 days	
Ohio	No incentive available	

Table B1: Film Production Incentives by State or Region (continue)		
Oklahoma	Rebate equal to 15% of qualified expenses if 50% or more below the line crew is in-state, 10% if 25% to 50% below-the-line crew is in-state, and 5% if less than 25% below-the-line crew is in-state, this requirement is waived for budgets exceeding $30 million; $5 million cap; sale tax exemption available (tax free purchase does not qualify toward tax credit); 25% tax credit on profits if they are reinvested in another Oklahoma production	Spend at least $1.25 million in-state, total budget at least $2 million
Oregon	Rebate equal to 20% on qualified in-state expenditures; 16.2% rebate on labor subject to Oregon withholding; $5 million cap	Spend at least $1 million in-state; compensation above $1 million per individual does not qualify
Pennsylvania	Transferable tax credit equal to 25% of qualified in-state expenditures, $75 cap per year; 20% grant program, $5 million per year cap	Spend at least 60% on qualified in-state expenditures
Puerto Rico	Tax benefit equal to 40% of money paid to Puerto Rican residents capped at 50% of equity invested in production; total tax benefit capped at $15 million per year	
Rhode Island	Transferable income tax credit equal to 25% of qualified in-state expenditures as well as out-of-state cast and crew	Spend at least $300,000; at least 51% shot in Rhode Island
South Carolina	Wage rebate equal to 20% cast and local crew and 10% for out-of-state crew; 30% rebate on goods and services purchased in-state; $10 million cap on wage rebate, $11 million cap on supplier rebate; exemption from sales and lodging tax (production must spend at least $250,000); non-transferable investment tax credit of 20% for residents is available, $100,000 cap and cannot reduce liability more than 50%	Spend at least $1 million in-state; compensation above $1 million per individual does not qualify

Table B1: Film Production Incentives by State or Region (continue)		
South Dakota	No sales and use tax or contractor tax	News, athletic events and obscene material do not qualify; spend at least $250,000 in taxable costs and only expenditures in excess of $250,000 qualify
Tennessee	Rebate equal to 13% of qualified in-state expenditures, 15% rebate if 25% of cast and/or crew are Tennessee residents, 17% if spend $20,000 on music created in-state, $100,000 cap; an additional 15% refund is available on qualified in-state expenses (must spend at least $1 million on qualified in-state expenses)	Spend at least $200,000 on qualified in-state expenditures; budget must be at least $500,000; compensation of more than $100,000 per individual does not qualify
Texas	Grant equal to 5% of qualifying in-state expenditures, $2 million cap per film, $2.5 cap million per television program, $200,000 cap per commercial, and $250,000 cap per video game; a production in an "under-utilized area" qualifies for an additional 1.25% grant; no sales and use tax	For certain productions only the first $50,000 of each in-state resident's salary qualifies, for certain productions only the first $100,000 of in-state residents salary qualifies, for department heads only the first $200,000 of in-state residents qualifies; spend at least $1 million for feature or television program, $100,000 for a commercial, infomercial, music video or video game; 70% of labor must be in-state; 80% filming in-state
Utah	Refundable rebate equal to 15% of qualified in-state expenditures; $4 million cap per year	Spend at least $1 million in-state, wages paid to non-residents do not qualify
Vermont	Sales tax waived, lodging tax waived for hotel stay of 31 days or more; non-resident performer pay the lower of the rate of Vermont and their home state	
Virginia	Rebate paid at Governor's discretion; no sales and use tax; no hotel tax on stays longer than 30 days	

Table B1: Film Production Incentives by State or Region (continue)		
Washington	Rebate on up to 20% of qualified in-state expenditures, $1 million cap per production; $3.5 million cap per year	Spend at least $500,000 for feature films, $300,000 for television, and $250,000 for commercials; compensation over $250,000 for in-state residents does not qualify
West Virginia	Non-transferable tax credit (only benefits in-state investors) equal to 27% on qualifying expenses with an additional 4% bonus for in-state resident labor; $10 million cap per year; no sales tax; no lodging tax on stays longer than 30 consecutive days	
Wisconsin	Refundable tax credit equal to 25% of qualified in-state production expenses excluding wages; 25% of the first $25,000 of wages paid to in-state residents excluding the two highest paid employees; sales and use tax refundable	Productions more than 30 minutes spend at least $100,000 on qualified in-state expenditures, productions less than 30 minutes spend at least $50,000 on qualified in-state expenditures
Wyoming	Cash rebate of 12-15% of qualified in-state expenses; $1 million cap per year; lodging tax waived on stays longer than 30 days	Spend $500,000 on qualified in-state expenditures

Source: DECD literature search.