Report on the Impact of Massachusetts Film Industry Tax Incentives Through Calendar Year 2012

Commonwealth of Massachusetts
Department of Revenue

Amy Pitter
Commissioner of Revenue

Release Date: September 16, 2014

Key Findings

This is the Department of Revenue's annual report of the Massachusetts film industry tax incentive program. In accordance with the Massachusetts' statutory requirements, this report provides an estimate of the economic impact of the film tax incentives in Massachusetts. The Department relied on data provided in connection with the film tax incentives to estimate the amount of new Massachusetts spending generated by the film tax incentives and the positive multiplier effects on the Commonwealth's economy. Given that the state has a balanced budget requirement, the report also takes into account state budget cuts that are needed to offset tax expenditures on the film tax incentives, and the negative multiplier effects of such cuts to arrive at an estimate of the net impact on the state's economy.

The report's key findings are as follows:

2012 Film Productions and net tax impact:

- For productions filmed in calendar year 2012 that have thus far applied for film tax credits, a total of approximately $78.9 million in tax credits were generated by 98 individual productions. This compares to the $47.8 million of credits in 2011[1].

- In 2012, 15 feature films generated $67.5 million in credits, with all other projects generating $11.4 million in credits. In 2011, 14 feature films generated $40.2 million in credits, while all other productions generated only $7.6 million. Feature films typically claim about 85% of all credits.

- Massachusetts paid an estimated $77.8 million in fiscal year 2013 for film tax credits that were issued in calendar year 2012 and in prior calendar years but had not yet been used to reduce tax payments (see Table 3, page 13);

- In calendar year 2012, the film tax incentive program generated $10.6 million in new state revenue which partially offset the cost of the tax credits (see Table 5, page 16);

2012 Spending due to Film Tax Credits:

$304.4 million in New Spending due to Credit (calendar year 2012)			
	Massachusetts Spending	Non-Massachusetts Spending	Total
Wages	$50.3 million	$144.8 million	$195.1 million
Non-Wage Spending	$50.3 million	$59.0 million	$109.3 million
Total	$100.6 million	$203.8 million	$304.4 million

- Calendar year 2012 production spending eligible for the tax credits totaled $315.8 million. Of that spending, $304.4 million constituted new spending, as DOR estimates that $11.4 million in spending would have occurred even in the absence of film credits. Of the remaining $304.4 million of new 2012 spending attributable to the tax incentives, $100.6 million (33%) was paid to Massachusetts residents or businesses located in Massachusetts. $203.8 million (67%) was paid to non-residents or businesses located outside of Massachusetts (see Table 1, page 11);

[1] Note that film credit claims for 2011 film productions totaled $44.0 million as of December 2012. Since then, an additional $3.8 million in credits have been claimed for 2011 film productions; the estimates in this report reflect all additional projects.

- Of the $304.4 million in new film production spending, $195.1 million was spent on wages and $109.3 million was non-wage spending. Approximately $50.3 million (26%) of wage spending was paid to residents and $144.8 million (74%) was paid to non-residents. Of the non-wage spending, approximately $50.3 million (46%) was paid to Massachusetts-based businesses, and $59.0 million (54%) was paid to non-Massachusetts based businesses (see Table 1, page 11);

Net economic impact

- After taking account of payments to non-residents and non-Massachusetts businesses, as well as state spending reductions required to fund the tax credits in order to maintain a balanced budget, the film tax credit program resulted in $67.9 million in net new spending in the Massachusetts economy during the calendar year 2012. Over the calendar year 2006 to 2012 period, the film incentive program resulted in $260.9 million in net new spending in the Massachusetts economy (see Table 4, page 14);

- Beyond the $67.9 million net new direct spending, estimating the net economic impact of film tax credits requires taking into account the additional economic activity generated by film spending (positive multiplier impact) and the cuts in state spending necessary to pay for the film credits (negative multiplier impact) (page 5). After taking into account the full impacts, including the direct impact and the multiplier impact, the film incentive program generated net new Massachusetts state Gross Domestic Product (GDP) of $200.5 million, and $44.2 million in personal income (see Table 5, page 16);

Net impact on FTE's:

- In calendar year 2012 the film tax incentive program resulted in approximately 1,351 net new full time equivalent employees (FTEs). The gross number of FTEs created by film production and its multiplier effect was 1,985 (including the change in the number of jobs held by Massachusetts residents outside of the state); however, under the Commonwealth's balanced budget requirement, the tax expenditure for the film tax incentives must be offset by either tax increases or spending reductions. For purposes of analyzing the net economic impact of the film tax incentive, this report assumed that state budget expenditures were reduced to offset the film tax incentive, resulting in an estimated reduction of 634 FTEs (561 FTEs for Massachusetts residents and an additional 73 for non-residents). The gross 1,985 FTEs, minus the 634, results in the 1,351 net new FTEs (see Table 6, page 18).

- Of this net new figure in 2012, the number of jobs for Massachusetts residents is estimated to have increased by a net 730 as a result of the film incentives. This 730 figure includes an estimated 72 jobs held by Massachusetts residents in other states (see Table 6, page 18).

- For the period 2006 to 2012, one net new Massachusetts-resident job was created for every $118,873 in film credits issued; including non-Massachusetts jobs, one job was created for every $64,473 in film credits (see Table 5, page 16);

Film tax incentives from 2006 through 2012

- For productions completed between calendar years 2006 and 2012, approximately $411.0 million in total film tax credits were generated by 812 individual productions. Production activity generated tax credits of $19.4 million in calendar year 2006, $39.9 million in 2007, $120.4 million in 2008, $85.4 million in 2009, $19.2 million in 2010, $47.8 million in 2011, and $78.9 million in 2012.

- Of the $411 million in film credits generated between calendar years 2006 and 2012, $50.0 million are in the final stages of approval, $22.1 million have been used or retained by film production companies (of which $3.1 million was refunded), and $335.9 million were sold directly to other Massachusetts taxpayers or to tax credit brokers. For the $335.9 million in face value credits, $292.3 million was paid directly to film production companies, $9.7 million was gross profit of tax credit brokers, and $33.8 million benefited other Massachusetts taxpayers in the form of reduced net tax payments to the Commonwealth (see Table 7, page 21);

- Of the $411 million in film credits generated between calendar years 2006 and 2012, Massachusetts has paid out an estimated aggregate of $402.1 million in issued film tax credits to production companies and other Massachusetts taxpayers in fiscal years 2007 through 2013 (see Table 3, page 13);

Film activity in 2013

- Looking ahead to 2013, an additional 46 of the projects that have applied for the sales tax exemption are in production, post-production, or credit-approval phase. If they are all approved, spending from these projects in calendar year 2013 will total over $218 million, resulting in lost tax revenue from tax credit claims of over $54.6 million. A significant number of productions have also filed sales tax exemptions for projects expected to file in calendar year 2014; if all of these projects go forward, their spending would total over $300 million, resulting in lost tax revenue of over $75 million.

Important Note Concerning Comparisons to the Massachusetts Tax Credit Transparency Report

- In July of 2013, in compliance with Massachusetts legislation enacted in 2010 requiring agencies that administer refundable and transferable tax credit programs to submit an annual public report, the Massachusetts Department of Revenue released its annual Tax Credit Transparency Report [2]. The report provides a detailed list of approved refundable or transferable credits that were awarded or issued in 2012, including film credits. It is important to note that there may be differences between the figures presented in the Transparency Report and the aggregate figures presented in this report. This is due to the fact that this report focuses on the economic impact that occurred when the filming took place, while the Transparency Report focused on when a film project was issued a credit. For example, if a production company films a television series in 2011 but does not apply for and receive the credit until 2012, this project would appear in the Transparency Report as a 2012-issued credit. However, all of the economic impacts from this project would have occurred in 2011. As such, for the purpose of assessing its economic impact, the Film Industry Tax Incentives Report would classify the project as a 2011 project. The tables and figures in this report are based on the calendar year in which the economic activity took place, unless otherwise noted.

[2] A copy of the Calendar Year 2012 Transparency Report, which explains the reporting requirements and lists all 2012 credits awarded or issued, can be accessed at http://www.mass.gov/dor/docs/dor/stats/tax-credit-transparency/tax-credit-transparency-report-cy2012-final-report.pdf .

Introduction

This is the sixth annual report on the Massachusetts film tax incentives issued by the Massachusetts Department of Revenue (DOR). As previous years' reports explained in detail how the film incentives work and the methodologies underlying the Department's analysis of the program's economic and fiscal impacts, this year's study forgoes those background and methodological discussions and refers readers to the relevant sections of prior years' reports where appropriate. The prior years' reports are available on the Department's website.[3] Consequently, while this report will summarize overall credit activity, it focuses on calendar year 2012 film spending.

The Massachusetts film tax incentives[4], as amended in July 2007, are composed of a tax credit equal to 25% of a film's production cost, 25% of a film's payroll costs and an exemption from sales tax[5] for film productions. The tax credits can be used to reduce the production company's tax liability, and to the extent that the tax credits exceed that tax liability, production companies may receive cash refunds from the Department of Revenue equal to 90% of the amount of the tax credit remaining. The tax credits may also be transferred or sold by production companies to third parties, who can use the tax credits to reduce their Massachusetts corporate, insurance, financial institutions, or personal income tax liabilities. In some cases, sales to third parties are direct sales from the production company to such third parties. In other cases the credits may be sold to tax credit brokers, who in turn may resell the credits to Massachusetts taxpayers who use the credits to reduce their state tax payments.

Economic Impact Methodology

As required by law, one of the primary purposes of this report is to estimate the Massachusetts economic impact of the film tax incentives. Conceptually, the immediate net economic impact of the incentives is relatively straightforward, and calculated as shown in the following diagram:

---

[3] These reports can be found at: http://www.mass.gov/dor/tax-professionals/news-and-reports/other-reports/massachusetts-film-industry-tax-incentive-report/.

[4] *See* St. 2007, c. 63; also *see* DOR's TIR 07-15 for a full description of the film credit.

[5] Applies to sales of tangible personal property, including meals, to a qualifying motion picture production company or to an accredited film school student for the production expenses related to a school film project.

Amount of *New* Massachusetts Wage and Non-Wage Spending Generated by the Tax Incentives **And** Additional Massachusetts Economic Activity Generated by New Wage and Non-Wage Spending (Positive "Multiplier" Impact)

Minus

State Spending Cuts or Tax/Fee Increases Required to Maintain a Balanced Budget (Negative Economic Impact) **And** Additional Massachusetts Economic Impact of Those State Spending Cuts or Tax/Fee Increases (Negative "Multiplier" Impact)

In order to estimate the net economic and fiscal impacts of the tax incentive program, this report provides in-depth statistical data from film tax credit applications and uses this data to estimate economically relevant variables. This report includes the following statistical information:

- The total amount of tax credits generated, claimed, and paid by calendar and fiscal year;
- The types of productions claiming the tax credits;
- An estimate of the film production activity that would have occurred in the Commonwealth even in the absence of the tax incentives;
- The dollar amount of wage and non-wage spending for film productions that claimed the tax incentives;
- The dollar amount of wages and salaries that were paid to Massachusetts residents and non-residents;
- The dollar amount of non-wage spending that was paid to Massachusetts-based and out-of-state businesses;
- The number of new jobs generated by film productions that claimed the tax incentives, for both residents and non-residents; and
- The net increase in the amount of spending that occurred in Massachusetts as a result of the film tax credits.

This study employs a dynamic model of the Massachusetts economy developed by Regional Economic Models Incorporated ("REMI"). This model is used to estimate the net economic and fiscal impacts of the film tax incentive program using the aforementioned statistical information. A dynamic analysis estimates the full impact on the economy and the state's revenue stream of an increase or decrease in economic activity resulting from a tax law change, including the impacts of "multiplier" and displacement effects.

In this report we use the term "film" to refer to production activity that is eligible for the Massachusetts motion picture credits and sales tax exemptions. This activity includes the production of motion pictures, certain television programs and commercials, as well as related activities.

Production Spending in the Absence of Tax Incentives. Because this report is attempting to measure only *new* Massachusetts economic activity that results from the film production tax incentives, we do not include economic activity that, while eligible for the film tax incentives, was already taking place before the tax incentives were implemented and presumably would have continued to take place had the incentives not been enacted. In particular, there was significant commercial and advertising production activity in Massachusetts that pre-dated the tax incentives. Further, Massachusetts has been an important center for public television productions, with stations from the Commonwealth providing significant national and local programming. Massachusetts has also served as a base for documentary productions. That said, it should be noted that we have generally credited projects to the existence of the incentive.

In estimating the economic impact of the tax incentives, it is important to establish a spending base for these activities, and include only the incremental impact of spending that would not have occurred absent the tax incentives. We used the following methodology and assumptions to determine whether production activity was new:

<u>Feature Films</u>. We assumed that all feature films applying for the tax credits were induced to film in Massachusetts due to those credits. Since spending on feature films made up 87.6% of all film spending in 2012, the vast majority of all spending will be treated as due to the film credit. This is a generous assumption considering that some feature films were required to shoot in Massachusetts, at least in part, for authenticity purposes. However, since approximately 35 states currently have tax incentives to encourage film production, it is reasonable to assume that no major movie productions would have been filmed in the Commonwealth in the absence of the Massachusetts tax incentives.[6] While some smaller-budget filming might have occurred here, we have no way to distinguish these and assume in this analysis that they represent new economic activity. Since smaller-budget films represent only a small portion of film production spending in the Commonwealth, they do not materially affect our results.

<u>Commercials/Advertising Projects</u>. For commercials and advertising projects, we analyzed each of the 46 calendar year 2012 productions identified as commercials or advertising. If those commercials were for local businesses, local sports teams, local non-profits (such as local health insurers), state and local governments, or were public service announcements, they were classified as productions that would have occurred even in the absence of the tax incentives.

The remainder of the advertising productions, which were for non-Massachusetts businesses or governments or national advertising campaigns, was assumed to have been due to the tax incentives. While this probably overestimates the amount of spending due to the tax credits (there were a substantial number of advertising companies in Massachusetts responsible for national advertising campaigns prior to the enactment of the tax incentives), this overestimate does not materially affect our calculation of the overall economic impact of the incentive program since advertising makes up a relatively small portion (around 2%) of the value of production activity eligible for the tax incentives.

<u>Television Series.</u> We identified long-running shows and specifically local programming that claimed the tax incentives, and assumed that these would have continued to be produced even without the incentives. For the

[6] This 35-state figure is down from the 40 states that offered credits in 2010; see Tax Foundation *Special Report No. 199* (April, 2012) "Movie Production Incentives in the Last Frontier" at http://taxfoundation.org/sites/taxfoundation.org/files/docs/sr199.pdf

most part, these consisted of educational, public affairs, and sports-themed productions connected to long-established local institutions.[7]

Including the 23 television series produced in 2012, DOR has received 183 tax credit applications for television series produced in the years 2006 to 2012, claiming tax credits of $37.3 million. Based on an analysis of these applications, DOR estimates that approximately 59% of these programs would have been produced in Massachusetts even without the credit, as they were long-running series produced by local stations. While these existing productions increased the amount of tax incentives attributable to these years, they were not included in our estimates of new economic activity in those years, since they do not represent new spending resulting from the tax incentives.

Documentaries. Because documentaries generally are one-time events, it was more difficult to estimate how many would have been made in the absence of the film tax incentives. However, some documentaries that were produced in 2012 were made for local television stations or had local themes, and the production companies that produced them had created similar programs in the Commonwealth in the past. In such cases, we classified those documentaries as projects that would have been undertaken even without the film tax incentives.

Payments to Non-Residents and Non-Massachusetts Vendors. Not all production spending benefits the Massachusetts economy or Massachusetts residents – spending "leaks" out of the Commonwealth's economy if spent on imports of goods or services, or employment of non-residents. Money spent on imports by definition is not included in the state's gross domestic product (GDP) although wages paid to non-residents are included in that measure. To the extent that non-resident wages are a significant share of film industry spending, including them in Massachusetts's gross state product overstates the direct benefit of such spending to the Massachusetts economy. In contrast, measures of state personal income do not include non-resident wages (as such measures are based on the state of residence of workers, not the place where the work was performed), and thus are a better measure of economic benefit to Massachusetts citizens. As almost all feature films are by definition short-term projects that spend at most several months shooting in Massachusetts, an important consideration is whether the work on those productions is done by Massachusetts residents or non-resident actors and movie industry professionals. Payments to Massachusetts residents have much higher "multiplier" effects than payments to non-residents, as a significantly higher proportion of income earned by residents is spent on local businesses, which in turn generates additional local economic activity. Payments made to non-residents – especially workers who spend only a short time in the Commonwealth on film projects – will be spent almost entirely outside of Massachusetts, likely in the state or states where the worker regularly resides. This is particularly true of wages paid to highly-compensated actors, directors, producers, writers and their staff, whose local expenses – including in-state travel, food, lodging, entertainment, and ancillary expenses – are already included in the film production budget (and are themselves generally eligible for the 25% production credit), thereby reducing the amount of income that such highly compensated non-residents need to spend in Massachusetts.

In this context, it is useful to distinguish between so-called "above-the-line" and "below-the-line" film production expenses:

- "Above-the-line" spending includes the costs of the primary cast, director, producer, and screenwriter (to the extent that any rewrites are done in Massachusetts during the course of production). Virtually all of these payments are made to non-Massachusetts residents, including significant budgets for food, travel, entertainment, and living expenses.

[7] If we could not conclusively identify the TV series as having been produced prior to the incentives becoming available, we assumed that such series would not have been produced in the absence of the tax incentives. Thus our estimate probably overestimates the amount of new television series production activity spurred by the incentives.

- "Below-the-line" expenses include costs such as those for production crew, set designers, set construction, and extras. These payments generate economic activity in the Commonwealth, but mainly to the extent that they are made to Massachusetts residents.

Because most film budgets we reviewed included amounts for wages, lodging, meals, and entertainment for non-resident production employees (including below-the-line workers), and because the work on most film projects is intensive, requiring long work hours, we follow previous studies in assuming that non-resident wages and salaries generate little additional economic activity in the Commonwealth. We assume that none of the (above-the-line) wages of those earning $1 million or over is spent in Massachusetts because virtually all their local expenses, including lodging, food, entertainment, and miscellaneous expenses, are covered in the production budgets. There is greater uncertainty about what portion of other non-resident wages and salaries (mostly, but not entirely, below-the-line costs) is spent locally. However, because lodging is provided and meals are catered or otherwise covered by *per diems* for these non-resident employees, we assume that only 5% of wage and salary payments to non-residents earning less than $1 million per production (which includes a portion of above-the-line employees who are paid high salaries) are spent in the Commonwealth. This implies that after non-resident employees working on Massachusetts film productions have federal, state, and Social Security taxes deducted from their wages, they would spend locally 8%-9% of the disposable income they earn during their short time here. As most consumers' spending is generally for housing (32.8%), transportation (17.5%), food (12.8%), pensions (10.9%), health care (6.9%), and entertainment (5.1%)[8], almost all of which is provided for in the production budgets themselves, our assumed local spending level for non-resident employees is most likely a high-end estimate.

Our assumption that only a small amount of non-resident earnings is spent in Massachusetts does *not* imply that the presence of non-resident employees creates no economic activity, but rather that the economic activity is already accounted for in the travel, lodging, meals, entertainment allowances and *per diems* that are included in the film production budgets themselves. To count additional indirect spending from wages and salaries of non-residents would be to double-count this economic activity, and thus overestimate the economic impact of film productions.[9]

Economic "Multipliers". The gross production spending amounts do not take into account "multiplier" impacts of the initial "direct" spending. As money is spent on productions, these direct purchases stimulate "indirect" economic activity of vendors, and payments to such vendors' employees increase personal income and spending of Massachusetts residents, resulting in additional "induced" economic activity. These positive multiplier impacts are simulated using a dynamic model of the Massachusetts economy constructed by Regional Economic Models, Inc. ("REMI"), and must be taken into account. Negative multiplier impacts must also be included to account for the effect of state spending cuts required to maintain a balanced budget (see next section).

Balanced Budget Requirement and Refundable/Transferable Tax Credits. Massachusetts has a balanced budget requirement, obliging the government to make spending reductions to maintain a balanced budget when film tax credits and sales tax exemptions reduce state revenues. In the same way that production spending has positive multiplier impacts, government spending reductions have negative multiplier effects, because government spending cuts reduce employment and purchases in Massachusetts. If the tax credits were non-

[8] These percentages are derived from the most recent U.S. Consumer Expenditure Survey, *Consumer Expenditures in 2012*, U.S. Department of Labor, Bureau of Labor Statistics, August 2012, available at: http://www.bls.gov/cex/csxann12.pdf

[9] Another study that excludes both above-the-line and below-the-line non-resident wage and salary spending in calculating multiplier effects is Steven B. Miller and Abdul Abdulkadri, "The Economic Impact of Michigan's Motion Picture Production Industry and the Motion, Picture Production Credit," Center for Economic Analysis, Michigan State University, February 6, 2009, p. 4, available at: http://www.michigan.gov/documents/filmoffice/MSU_Economic_Impact_Study_269263_7.pdf. Two other studies exclude all above-the-line wages and salaries but do not explicitly address non-resident below-the line wages. See Connecticut Department of Economic and Community Development, "The Economic and Fiscal Impacts of Connecticut's Film Tax Credit", February 2008, at http://www.ct.gov/cct/lib/cct/Film_Tax_Credit_Study_-_Final.pdf.

refundable and non-transferable, the cost to the state would be limited to the taxpayer's liability. If the tax credits induce new economic activity, the revenue loss to the state from the tax credits can be considered revenue that would not have been received by the Commonwealth in the absence of the tax incentives. In that case there is no net revenue loss to the state. However, since the film tax credits are refundable and transferable, the revenue loss to the state can (and usually does) exceed the tax liability of the taxpayers generating the tax credits. Where production companies that generate film tax credits have no Massachusetts tax liability and claim the credits under the 90% refundable option, the cash payments made by the Department of Revenue to film production companies are equivalent to direct cash grants from the Commonwealth. A production company can alternatively transfer or sell film tax credits either directly to a taxpayer or to a tax credit broker who then sells them to a taxpayer. The transferred credits are then used to reduce or eliminate payments the taxpayer would have otherwise made to the commonwealth. The effect on the commonwealth's cash flow and budget is equivalent to that of a cash grant. The film production company receives a percentage of the credit amount (see Table 7 on page 21) as the purchase price for the credit. The purchaser of the tax credit realizes the full value of the credit in the form of a refund or reduction in its Massachusetts tax liability. In this case, the cash payment to the film production company is made by a third party (either a tax credit broker or a Massachusetts taxpayer) rather than the Commonwealth itself. The reduction in state tax revenue comes between one and six months later when the buyer of the credit (typically an insurance company, financial institution, or other corporation) reduces its tax payments. Therefore, where film production companies that generate tax credits do not have sufficient tax liability to use them, both refundable and transferable credits do not constitute new tax revenue foregone (since there is in fact no tax revenue to forgo). However, they are equivalent to cash outlays by the Commonwealth in the form of either reduced tax payments or refunds of already remitted taxes on economic activity entirely unrelated to film productions. Tax credits, which can be monetized by either refunding or selling them in the absence of sufficient tax liability, are functionally identical to state spending. While these tax expenditures may generate offsetting economic activity that reduces the necessary spending cuts, the expenditures are no different from other state subsidies that may also generate economic activity and tax revenues. In this report, we therefore calculate the amount of state expenditure cuts that were required to offset the tax expenditures, but only after calculating the estimated amount of tax revenue generated by the tax incentives, which reduce the amount of required spending cuts.

Purchases Made from Non-resident Vendors

One important consideration in the economic analysis is that under Massachusetts law non-wage expenditures *do not* have to be purchased from a Massachusetts-based business in order to qualify for a film tax credit; purchases can be made from out of state and imported into the Commonwealth. As long as those purchases are used in the Massachusetts-based production, they are considered Massachusetts spending and eligible for the 25% film credit. Purchases from Massachusetts-based vendors have very different economic impacts than imports, as purchases from vendors generally stimulate material economic activity only in the state or country where the purchase is made, and not elsewhere.

Table 1 – 2012 Film Production Spending by State of Residence or Location of Vendor on page 11 shows the distribution of wage expenditures by state of residence and non-wage expenditures by location of vendor. As of June 30, 2013 there were 98 productions (see Table 2 on page 12) filmed in calendar year 2012 that had been approved for tax credits or were in the final stages of the approval process. Total 2012 film production spending eligible for tax credits was $315.8 million, generating $78.9 million in film credits (see Table 3 on page 13), with $206.0 million in wage spending and $109.8 in non-wage spending. Of the $315.8 million in 2012 spending, DOR estimates that $11.4 million in spending would have occurred even in the absence of the tax incentives. This is subtracted from our estimates of new economic activity generated by the tax incentives, leaving $304.4 million in new spending generated by the tax incentives. Of that $304.4 million in new spending, $100.6 million (33% of total new spending), was paid to Massachusetts residents or Massachusetts-based businesses, and $203.8 million (67% of total new spending) was paid to non-residents or businesses located outside of Massachusetts. The larger category of new spending was wages and salaries spending, where $195.1 million in new spending was generated, with $50.3 million (26%) paid to Massachusetts residents, and $144.8 million (74%) paid to non-residents. Note that 100% of all wage spending on salaries of over $1 million was paid to non-residents.

Table 1 shows non-wage spending in 22 different spending categories, based on a DOR analysis of thousands of individual expenditures totaling $109.8 million, documentation for which was submitted as part of film credit applications. Of the $109.8 million, an estimated $0.5 million would have occurred in the credit's absence. Of the $109.3 million in new non-wage spending, $50.3 million (46% of total non-wage spending), was paid to Massachusetts-based businesses and $59.0 million (54% of total non-wage spending) was paid to out-of-state vendors. Note that in 2011, in-state non-wage spending was 55%.

As column C in Table 1 shows, the largest categories of new non-wage spending were fringe benefit/taxes, ($53.6 million), set lighting/electrical ($7.4 million), set construction ($6.2 million), hotel/motel ($5.8 million), location fees ($4.6 million), and cameras/film ($4.3 million). The categories of primarily local expenditures include location fees and hotel/motel spending, where purchases were 100% local; private security/police details, which were 97% local; cleaning and repair, which were 67% local; extras, which were 90% local; set construction, which was 62% local and special effects, which were 43% local. Primarily non-local purchases were comprised of trailers/mobile dressing rooms, which were 93% non-local and cameras/film, which were 86% non-local. (The percentages shown in the table are adjusted for estimates of local purchases by non-local vendors, such as where out of state caterers are assumed to purchase food in Massachusetts and out of state transportation services, are assumed to purchase fuel in Massachusetts.)

Table 1 - 2012 Production Spending By State of Residence or Location of Vendor *
(Dollar Amounts are in Millions)

Category of Spending	(A) Total Spending Eligible for Tax Credits	(B) Minus Spending That Would Have Occurred in Absence of Incentives	(C) = (A-B) New Spending Resulting from Tax Incentives	(D) New MA Resident Wages or MA Vendor Purchases Resulting from Incentives	(E) = D/C New MA Resident Wages or MA Vendor Purchases as % of New Spending	(F) New Non-Resident Wages or Non-MA Vendor Purchases Resulting from Incentives	(G)= F/C Non-Resident Wages or Non-MA Vendor Purchases as % of New Spending
Wage Spending	**$206.0**	**$11.0**	**$195.1**	**$50.3**	**26%**	**$144.8**	**74%**
Wages $1 Million & Over	$83.5	$0.0	**$83.5**	$0.0	0%	$83.5	**100%**
Wages Under $ 1 Million	$122.5	$11.0	**$111.5**	$50.3	45%	$61.3	55%
Non-Wage Spending	**$109.8**	**$0.5**	**$109.3**	**$50.3**	**46%**	**$59.0**	**54%**
Fringe Benefits / Taxes **	$53.6	$0.2	**$53.4**	$20.5	38%	$32.9	62%
Set Lighting/Electrical	$7.4	$0.0	**$7.4**	$1.0	13%	$6.4	87%
Set Construction	$6.2	$0.0	**$6.2**	$3.8	62%	$2.4	38%
Hotel / Motel	$5.8	$0.0	**$5.8**	$5.8	100%	$0.0	0%
Location Fees	$4.6	$0.0	**$4.6**	$4.6	100%	$0.0	0%
Cameras / Film	$4.3	$0.0	**$4.3**	$0.6	14%	$3.7	86%
Special Effects	$4.2	$0.1	**$4.2**	$1.8	43%	$2.4	57%
Production + Prof. Services	$4.1	$0.1	**$4.0**	$3.2	80%	$0.8	20%
Computer / Telecom Equip	$3.2	$0.0	**$3.2**	$0.7	24%	$2.4	76%
Costumes / Clothing / Props	$2.9	$0.0	**$2.9**	$0.6	20%	$2.3	80%
Food / Restaurant / Catering	$2.1	$0.0	**$2.1**	$1.5	70%	$0.6	30%
Miscellaneous / Other	$1.9	$0.0	**$1.9**	$0.7	39%	$1.2	61%
Mobile Dressing Rms	$1.9	$0.0	**$1.9**	$0.1	7%	$1.7	93%
Parking, Fuel, Auto Repair	$1.8	$0.0	**$1.8**	$1.0	58%	$0.8	42%
Priv. Security/Police Details	$1.5	$0.0	**$1.5**	$1.4	97%	$0.1	3%
Cleaning and Repair	$1.2	$0.0	**$1.2**	$0.8	67%	$0.4	33%
Transportation / Moving Serv.	$1.2	$0.0	**$1.2**	$0.9	75%	$0.3	25%
Office Rent / Supply / Supp.	$0.8	$0.0	**$0.8**	$0.4	50%	$0.4	50%
Local Travel / Car Rental	$0.8	$0.0	**$0.8**	$0.6	80%	$0.2	20%
Extras	$0.1	$0.0	**$0.1**	$0.1	90%	$0.0	10%
Producer / Director Fees	$0.0	$0.0	**$0.0**	$0.0	100%	$0.0	0%
Other Lodging	$0.0	$0.0	**$0.0**	$0.0	0%	$0.0	0%
Total Spending	**$315.8**	**$11.4**	**$304.4**	**$100.6**	**33%**	**$203.8**	**67%**
Resulting Tax Credits	**$78.9**	**$2.9**		**$25.1**		**$50.9**	**67%**

* Based on film credit applications received through June 30, 2013
** Fringe benefits and employment taxes are allocated to the state of residence of the wage earner
Detail may not add to total due to rounding

Table 2 - Total Massachusetts Production Spending Eligible for Film Tax Credits below is a high-level summary of spending data for the calendar years in which the Massachusetts film credits were available (2006-12). As the table shows, over the seven years in which the tax incentive program was in effect through calendar year 2012, 812 productions claimed film tax credits, with total credit-eligible spending of $1.649 billion. Of that $1.649 billion, $556.3 million (34%) was paid to Massachusetts residents and Massachusetts-based businesses while $1,093.3 million (66%) was paid to non-residents or non-Massachusetts businesses.

Table 2 - Total Massachusetts Production Spending Eligible for Film Tax Credits, 2006-2012
(Dollar Amounts are in Millions)

	Calendar Years							
Category of Spending	2006	2007	2008	2009	2010	2011	2012	2006 to 2012
Number of Productions	**97**	**125**	**162**	**108**	**121**	**101**	**98**	**812**
Feature Films	*7*	*14*	*20*	*14*	*8*	*14*	*15*	*92*
Commercials/Advertising	*45*	*53*	*87*	*54*	*64*	*60*	*46*	*409*
Television Series	*27*	*31*	*29*	*26*	*27*	*20*	*23*	*183*
Documentaries/Other	*18*	*27*	*26*	*14*	*22*	*7*	*14*	*128*
Total Wages	$44.8	$113.7	$306.2	$209.4	$46.5	$126.8	$206.0	$1,053.5
Wages $1 Million & Over	*	*	*$133.6*	*$82.0*	*	*$54.3*	$83.5	*$402.7*
Wages Under $ 1 Million	*	*	*$172.6*	*$127.4*	*	*$72.5*	*$122.5*	*$650.8*
Set Construction	$1.2	$4.7	$23.7	$19.4	$1.0	$4.2	$6.2	*$60.4*
Location Fees	$9.3	$10.7	$42.0	$37.3	$8.4	$12.9	$31.9	*$152.5*
Unclassified/Other	$30.8	$30.6	$109.0	$74.9	$19.7	$46.5	$71.6	*$383.1*
Totals	**$86.1**	**$159.8**	**$481.0**	**$341.0**	**$75.6**	**$190.4**	**$315.8**	**$1,649.6**
Of Which Spent on:								
MA Resident/Business ($)	**$30.18**	**$47.49**	**$153.03**	**$110.61**	**$46.24**	**$65.16**	**$103.64**	**$556.3**
Non-MA Resident/Business ($)	**$56.0**	**$112.3**	**$328.0**	**$230.4**	**$29.3**	**$125.2**	**$212.1**	**$1,093.3**
MA Resident/Business (%)	**35%**	**30%**	**32%**	**32%**	**61%**	**34%**	**33%**	**34%**
Non-MA Resident/Business (%)	**65%**	**70%**	**68%**	**68%**	**39%**	**66%**	**67%**	**66%**

*Data hidden to protect taxpayer confidentiality
Detail may not add to total due to rounding

When compared with the previous year, calendar year 2012 had 98 projects, nearly the same as the 101 for 2011.

Table 3 – Aggregate Amount of Tax Credits Generated and Used below shows the amount of tax credits claimed, categorized by the calendar year in which the production was completed and the fiscal year in which the tax credits were or are expected to be used to reduce tax payments. Through June 30, 2013, 812 productions had been approved or were in the process of being approved for tax credits totaling $411.0 million.

Table 3 - Aggregate Amount of Tax Credits Generated and Used			
(Dollar amounts are in millions)			
Year	Number of Tax Credits by production / calendar year	$ Amount of Tax Credits Generated by production / calendar year	Estimated $ Amount of Tax Credits Used By Fiscal Year
2006*	97	$19.4	$0.0
2007	125	$39.9	$11.9
2008	162	$120.4	$10.5
2009	108	$85.4	$110.0
2010	121	$19.2	$90.8
2011	101	$47.8	$45.4
2012	98	$78.9	$55.7
2013	N/A	N/A	$77.8
Total Approved / Pending**	812	$411.0	$402.1

* For tax year 2006, the payroll credit was only 20% and credits were capped at $7 million for any one

** Through June, 30, 2013; some projects in final states of approval.

Detail may not add to total due to rounding.

There is a lag between the date tax credits are applied for and the date they are actually used to reduce tax liability. This occurs partly due to the time it takes to provide documentation of expenses and gain verification from DOR, but mainly because virtually all the production companies that have thus far generated the tax credits have no declared tax liability in the Commonwealth. Such companies sell the credits to brokers (who then resell them to taxpayers) or directly to taxpayers who can use the credits to offset their tax liabilities.

The Department of Revenue estimates that of the $411.0 million in film tax credits for productions through calendar year 2012, $11.9 million was used to reduce tax payments or increase refunds in FY07, $10.5 million was used to reduce tax payments or increase refunds in FY08, $110 million was used to reduce tax payments or increase refunds in FY09, $90.8 million was used to reduce tax payments or increase refunds in FY10, $45.4 million in FY11, $55.7 million in FY12 and $77.8 million in FY13.

Film projects that are starting production are allowed to file for an application for exemption from sales tax. This provides some indication of expected future film spending and thus the cost of credits that will be claimed. Based on an analysis of sales tax exemption applications there are 46 film productions that had recently completed filming in Massachusetts or were then filming and planning to be complete by the end of 2013. If all of these projects actually spend their proposed amounts within the time frame reported on their applications, qualifying film credit spending will total over $218 million in 2013, resulting in credit claims of $54.6 million. A significant number of productions have also filed sales tax exemption application for projects expected to file in calendar year 2014; if all of these projects go forward, their spending would total over $300 million, resulting in - tax credits of over $75 million.

Total New Massachusetts Direct Spending

Table 4 – Calculation of Increase in Massachusetts Local Spending Due to Film Tax Incentives below shows the calculation of new direct local spending from film production activity after adjusting for projects that would have occurred in the absence of tax incentives, wage and non-wage spending paid to non-residents, and state spending cuts required to fund the tax credits and maintain a balanced budget.

Table 4 - Calculation of Increase in Massachusetts Local Spending Due to Film Tax Incentives
(Dollar Amounts are in Millions)

	Production / Calendar Years							
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2006 to 2012**
Film Production Total Spending	**$86.1**	**$159.8**	**$481.0**	**$341.0**	**$75.6**	**$190.4**	**$315.8**	**$1,649.6**
Minus Spending In Absence of Tax Incentives	($25.2)	($27.1)	($32.1)	($22.0)	($29.2)	($12.8)	($11.4)	($159.9)
Minus Adjustment for Non-Resident Wages[1]	($19.9)	($78.4)	($236.1)	($148.8)	($9.1)	($84.8)	($141.7)	($718.8)
Minus Non-Wage Spending on Non-MA Vendors	($17.2)	($18.6)	($83.0)	($62.9)	($6.2)	($27.4)	($59.0)	($274.2)
New Massachusetts Film Spending from Incentives	**$23.9**	**$35.7**	**$129.8**	**$107.3**	**$31.1**	**$65.4**	**$103.7**	**$496.7**
Minus Reduced MA Spending to Balance Budget[2]	$1.4	($6.6)	($55.4)	($74.8)	($40.8)	($23.8)	($35.5)	($235.6)
Net Increase in Massachusetts Local Spending	**$25.2**	**$29.1**	**$74.3**	**$32.6**	**($9.8)**	**$41.6**	**$68.1**	**$261.1**
New Massachusetts Spending as a % of Total	27.7%	22.3%	27.0%	31.5%	41.1%	34.3%	32.8%	30.1%

[1]Includes all non-resident wages over $1 million per person plus 95% of non-resident wages under $1 million per person.

[2]Net of taxes generated by film production and state spending cuts borne by non-residents or out-of-state businesses.

First, we calculated total production spending of $1,649.6 million for the period of 2006 through 2012. Next, we subtracted $159.9 million for productions that would have occurred in the absence of tax incentives, $718.8 million in wages paid to non-residents (which includes all payments to non-residents earning more than $1 million per production and 95% of wages under $1 million paid to other non-residents for feature films and all other productions), $274.2 million in non-wage spending estimated to have been paid to non-Massachusetts vendors, and $235.6 million in state spending cuts to maintain a balanced budget, which leaves a total of $261.1 million in *net* new Massachusetts spending activity. For calendar year 2012 alone, the net new spending in the Massachusetts economy was relatively large at $68.1 million. The state spending cuts shown in Table 4 include adjustments for amount of state spending cuts that affect non-residents and non-Massachusetts businesses and thus “leak” out of the Massachusetts economy. These “non-Massachusetts” spending cuts reduce the direct and indirect impacts of the spending reductions. These are the net new spending totals used as inputs for the REMI model to estimate multiplier effects.

REMI Model Results

A dynamic analysis attempts to calculate the full impact on the state economy and revenue stream of an increase or decrease in economic activity resulting from a tax law change, including the impacts of “multiplier” and displacement effects. The REMI model simulates the structure of and interrelationships among the various parts of the Massachusetts economy, and can be used to estimate the impacts of a tax law change on state economic activity and tax revenue collections. The tax revenue changes calculated by the REMI model can then be compared to the initial cost of the tax incentives to arrive at a net cost to the state.

Table 5 – Dynamic Economic Impacts of Film Incentives on page 16 combines the results of DOR’s payroll analysis (for direct employment) and the REMI simulation for indirect and induced employment (i.e., employment resulting from “multiplier” impacts) and other measures of economic activity.

Based on the inputs detailed in Table 4, the REMI simulation estimates that Massachusetts state GDP (the most useful measure of economic activity) increased by $48.9 million in calendar year 2006, $107.3 million in calendar year 2007, $311.1 million in calendar year 2008, $168.9 million in calendar year 2009, $4.4 million in calendar year 2010, $120.5 million in 2011, and $200.5 million in 2012 due to new film production spending and state spending cuts resulting from the tax credits. Economic output (a broader, less useful measure of economic activity roughly equivalent to sales, including “sales” of labor) grew by $85.0 million in 2006, $152.0 million in 2007, $507.6 million in 2008, $327.8 million in 2009, $56.5 million in 2010, $199.4 million in 2011, and $301.2 million in 2012. The REMI model estimates that the net new economic activity generated by increased film production and reduced state spending required to maintain a balanced budget resulted in additional Massachusetts personal income of $16.5 million in calendar year 2006, $22.9 million in 2007, $51.1 million in 2008, $25.4 million in 2009, a negative $0.3 million in 2010, $27.5 million in 2011, and $44.2 million in 2012. The significant difference between growth in state GDP and economic output and state personal income (+$301.2 million for economic output vs. $200.5 million for state GDP vs. $44.2 million for state personal income in 2012) is caused almost entirely by the large proportion of wage and non-wage spending paid to non-resident employees and non-Massachusetts businesses, which are included in state GDP and state output but not in state personal income. Including the estimated changes for Massachusetts residents employed in other states, estimated full time equivalent employment (FTEs) increased by 450 in 2006, 660 in 2007, 1,474 in 2008, 586 in 2009, 89 in 2010, 921 in 2011, and 1,351 in 2012 (see Table 6), with increases in film-related industries offset by reductions in other industries caused by state spending cuts required to maintain a balanced budget. For Massachusetts residents, full time equivalent employment is estimated to have increased by 314 in 2006, 352 in 2007, 795 in 2008, 222 in 2009, 50 in 2010, 538 in 2011, and 730 in 2012. Note that in 2012 the impact of state spending cuts is lessened due to the delayed use of film tax credits, and corresponding delayed spending cuts, which reduces the negative impact on employment and personal income.

Table 5 - Dynamic Economic Impacts of Film Incentives - REMI Model Results
Massachusetts Changes from Baseline
(Dollar Amounts are in Millions, Except Where Noted)

		Calendar Years							
		2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2006-2012**
REMI Inputs - Calculation of Net New MA Spending									
Net New Massachusetts Spending for REMI Input (from Table 4)		**$25.2**	**$29.1**	**$74.3**	**$32.6**	**-$9.8**	**$41.6**	**$68.1**	**$261.1**
REMI Results - Changes from Baseline									
Employment (Resident - Includes Jobs Held in Other States)	a	314	352	795	222	50	538	730	3,000
Employment (Non-Resident)	b	137	308	679	364	40	383	622	2,532
State GDP[1]	c	$48.9	$107.3	$311.1	$168.9	$4.4	$120.5	$200.5	$961.6
Economic Output[2]	d	$85.0	$152.0	$507.6	$327.8	$56.5	$199.4	$301.2	$1,629.5
State Personal Income[3]	e	$16.5	$22.9	$51.1	$25.4	-$0.3	$27.5	$44.2	$187.2
State Taxes	**f**	**$2.4**	**$5.5**	**$16.7**	**$10.0**	**$1.0**	**$6.7**	**$9.9**	**$52.2**
From Direct Spending	*f1*	$1.6	$5.0	$15.6	$11.1	$1.4	$6.1	$9.5	$50.3
From Indirect/Induced Spending	*f2*	$0.7	$0.5	$1.1	-$1.1	-$0.4	$0.6	$0.4	$1.9
State Non-Tax Revenue	g	$0.3	$0.3	$0.8	$0.4	$0.1	$0.4	$0.7	$2.9
Total State Revenue	**h=f+g**	**$2.6**	**$5.9**	**$17.5**	**$10.4**	**$1.0**	**$7.1**	**$10.6**	**$55.1**
Tax Credits Generated (Not from REMI)	**i**	**$19.4**	**$39.9**	**$120.4**	**$85.4**	**$19.2**	**$47.8**	**$78.9**	**$411.0**
Additional Tax Loss from Sales Tax Exemption (not from REMI)	**j**	**$0.0**	**$0.1**	**$0.3**	**$0.1**	**$0.1**	**$0.1**	**$0.1**	**$0.7**
Total Tax Expenditure (not from REMI)	**k=i+j**	**$19.5**	**$40.0**	**$120.7**	**$85.5**	**$19.2**	**$47.9**	**$79.0**	**$411.8**
$ in State Revenue Per $ of Total Tax Expenditure	**h/k**	**$0.13**	**$0.15**	**$0.14**	**$0.12**	**$0.05**	**$0.15**	**$0.13**	**$0.13**
Net $ Cost to State	**k-h**	**$16.9**	**$34.1**	**$103.2**	**$75.1**	**$18.2**	**$40.8**	**$68.4**	**$356.7**
Net Cost to State Per MA Resident Job Created ($)[4]	(k-h)/a	$53,695	$97,014	$129,733	$338,046	$366,572	$75,830	$93,810	$118,873
Net Cost to State Per MA & Non-MA Job Created ($)[4]	(k-h)/(a+b)	$37,419	$51,738	$70,003	$128,136	$203,813	$44,282	$50,647	$64,473

[1,2] State GDP and state economic output include non-resident earnings
[3] State personal income excludes non-resident earnings
[4] Includes jobs held by Massachusetts residents working in other states; in dollars per job
Totals may not add due to rounding

Table 6 - Estimated Wages and Number of Full-Time Equivalent Employees (FTEs) Generated by Film Incentives shows the details of the employment and associated total and median wages. It is estimated that the film credit increased number of FTE Massachusetts residents employed directly on film productions by 100 in 2006, 190 in 2007, 600 in 2008, 473 in 2009, 188 in 2010, 415 in 2011 and 650 in 2012. The number of non-residents hired directly in film productions is estimated to have been increased by 105 in 2006, 286 in 2007, 673 in 2008, 430 in 2009, 82 in 2010, 380 in 2011, and 653 in 2012 as a result of the film incentives (these results are not from the REMI model, but from an analysis of film budgets). The REMI simulation estimates the number of additional net indirect and induced jobs due to film spending but offset by state spending cuts (no state spending cuts were required in 2006 due to the fact that no film credits were claimed until 2007). Film production spending created an estimated 207 indirect FTE positions in 2006, 291 indirect jobs in 2007, 1,088 indirect jobs in 2008, 876 indirect jobs in 2009, and 429 indirect jobs in 2010, 447 indirect jobs in 2011, and 569 in 2012 for Massachusetts residents, as well as 28 jobs in 2006, 40 jobs in 2007, 147 jobs in 2008, 118 jobs in 2009, 55 jobs in 2010, 54 jobs in 2011, and 42 jobs in 2012 for non-residents. However, job creation by film spending was offset by the job losses due to state spending cuts to maintain a balanced budget (except for 2006, when 28 jobs for residents and 4 jobs for non-residents were created due to a projected state spending increase as tax revenue generated by film production was not offset by tax credit claims). State spending cuts eliminated an estimated 133 jobs in 2007, 1,085 jobs in 2008, 1,421 jobs in 2009, 749 jobs in 2010, 394 jobs in 2011, and 561 jobs in 2012 held by Massachusetts residents, as well as 17 jobs in 2007, 141 jobs in 2008, 185 jobs in 2009, 97 jobs in 2010, 51 jobs in 2011, and 73 jobs in 2012 held by non-residents. Table 6 shows median annualized wages for direct film jobs (with wages less than $1 million per production). The median wage was: $67,775 for Massachusetts residents and $98,598 for non-residents for the period 2006 to 2008; $51,116 for Massachusetts residents and $104,637 for non-residents in 2009; $74,880 for Massachusetts residents and $86,667 for non-residents in 2010; $70,657 for Massachusetts residents and $72,808 for non-residents in 2011; and $64,775 for Massachusetts residents and $62,400 for non-residents in 2012[10]. It should be noted that these annualized wage calculations are considerably higher than the amounts actually paid to employees on film productions, as those employees were generally employed for periods of three months or less, since all film productions are by their nature short-term projects. In many cases, workers on film productions are employed only for a few weeks, or even days.

[10] Due to lack of available detailed data for calendar years 2006-2008, median annualized wages for those years are for feature films only and are not available for each year separately. Median wages for 2009 to 2012 are calculated based on all new projects.

Table 6 - Estimated Wages and Number of Full-Time Equivalent Employees (FTEs) Generated by Film Incentives

	Calendar Years						
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Employment							
Employment (Full-Time Equivalents)	**450**	**660**	**1,474**	**586**	**89**	**921**	**1,351**
Employment (Resident)	**314**	**352**	**795**	**222**	**50**	**538**	**730**
Direct Resident (Employed on Film Productions)	*100*	*190*	*600*	*473*	*188*	*415*	*650*
Indirect/Induced Jobs Held by MA Residents Due to Film Spending	*207*	*291*	*1088*	*876*	*429*	*447*	*569*
Indirect/Induced Jobs Lost by MA Residents Due to State Spending Cuts [1]	*28*	*-133*	*-1085*	*-1421*	*-749*	*-394*	*-561*
Indirect Jobs Held By MA Residents in Other States	*-21*	*4*	*193*	*294*	*181*	*70*	*72*
Employment (Non-Resident)	**137**	**308**	**679**	**364**	**40**	**383**	**622**
Direct Non-Resident (Employed on Film Productions)	*105*	*286*	*673*	*430*	*82*	*380*	*653*
Indirect/Induced Jobs Held by Non-Residents Due to Film Spending	*28*	*40*	*147*	*118*	*55*	*54*	*42*
Indirect/Induced Jobs Lost by Non-Residents Due to State Spending Cuts [1]	*4*	*-17*	*-141*	*-185*	*-97*	*-51*	*-73*
Total Wages ($ Million)							
Wages (Resident)	**$16.7**	**$24.4**	**$56.6**	**$32.3**	**$1.4**	**$30.2**	**$51.3**
Direct Resident (Employed on Film Productions) [2]	$8.7	$18.2	$55.2	$51.4	$13.8	$28.4	$50.3
Indirect/Induced Jobs Held by MA Residents Due to Film Spending	$7.0	$10.8	$41.3	$36.4	$19.8	$20.2	$26.0
Indirect/Induced Jobs Lost by MA Residents Due to State Spending Cuts	$1.0	-$4.7	-$39.9	-$55.6	-$32.2	-$18.4	-$25.0
Wages (Non-Resident)	**$22.3**	**$45.7**	**$135.3**	**$88.4**	**$7.8**	**$34.9**	**$59.9**
Direct Non-Resident (<$1 million per worker) [2]	$21.2	$44.8	$134.9	$90.7	$9.5	$34.9	$61.3
Indirect/Induced Jobs Held by Non-Residents Due to Film Spending	$0.9	$1.5	$5.6	$4.9	$2.5	$2.4	$1.9
Indirect/Induced Jobs Lost by Non-Residents Due to State Spending Cuts	$0.1	-$0.6	-$5.2	-$7.2	-$4.2	-$2.4	-$3.2
Median Wages ($) [3,4,5]							
Direct Resident (Employed on Film Productions)	$67,775 for the 2006-2008 Period			$51,116	*$74,880*	*$70,657*	*$64,775*
Direct Non-Resident (<$1 million)	$98,598 for the 2006-2008 Period			$104,637	*$86,667*	*$72,808*	*$62,400*

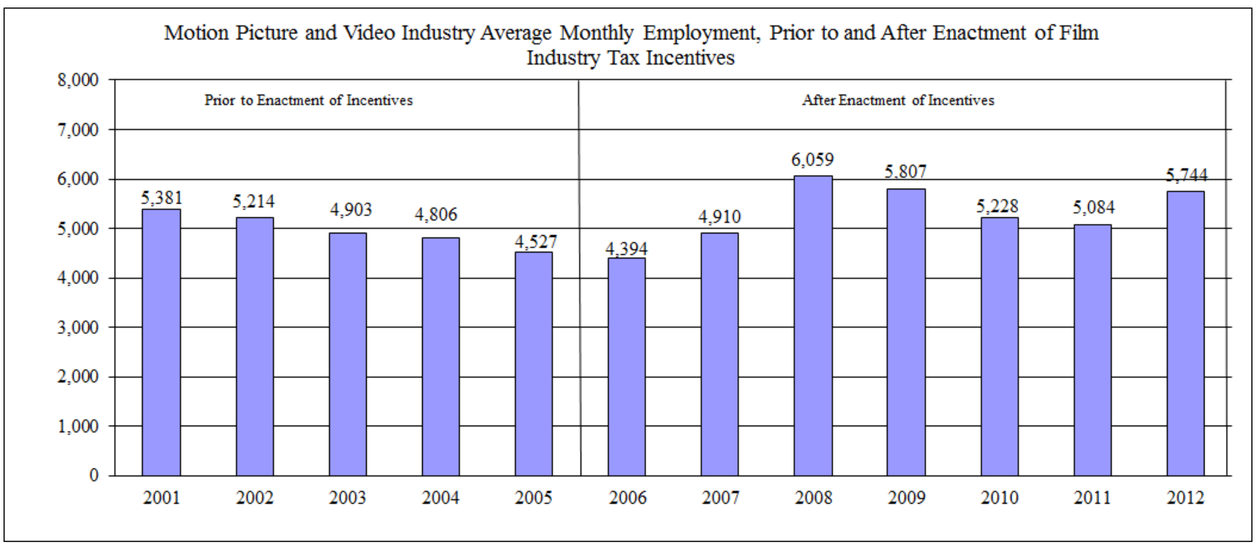
[1]Film credit program did not require state spending cuts in 2006 due to lag in tax credit claims
[2]Including wage payments reported as non-wage spending
[3]Indirect/induced jobs are generated from REMI output which does not include information necessary to calcuated median wages
[4]Wage payments reported as non-wage spending, which are not available for individuals, are excluded in calculating median wages
[5]Due to lack of available detailed data, median wages for 2006-2008 are for feature films and for all three years.
Median wages for 2009 - 2012 are calculated based on all new projects.
Totals may not add due to rounding.

To confirm the job estimates derived from the film budgets and the REMI model, DOR examined data reported by the state's Department of Labor and Workforce Development. DOR's FTE calculations are not strictly comparable to the Workforce Development data, since the latter are not FTE counts but rather snapshots of the number of employees (including short-term employees) working at a particular point in time. However, an analysis of the Workforce Development data can tell us whether the employment trends are consistent between the two sources. Data on industry employment are included in the Department of Workforce Development's "ES-202" employment and wage reports[11]. Prior to January 2008, employees in the motion picture category were undercounted in the ES-202 reports because the category excluded employment for members of the Screen

[11] The ES-202 reports do not distinguish among full-time, part-time, and temporary employment.

Actors Guild, who were included in the "temporary employment" category of those reports. Starting in January 2008, Screen Actors Guild members were included in the motion picture category, accounting for some of the growth seen in the first half of calendar year 2008. The Department of Labor and Workforce Development is not able to estimate how many employees moved from the temporary employment to the motion picture category, so making comparisons between the pre- and post-January 2008 periods provides measures of film industry growth between the two periods that are more suggestive than precise.

The chart below shows trends in average monthly film industry employment before and after the film incentives were enacted. Prior to 2006 when the film incentives were implemented, film industry employment had declined from 5,381 in 2001 to 4,527 in 2005. That downward trend continued in 2006 with employment of 4,394. From 2006 to 2008 film industry employment rose, reaching a peak average monthly employment of 6,059 in 2008. Since then film industry employment has declined to 5,744 in 2012, a decline of 5.2%. Over the same time period, 2008-2012, total Massachusetts private employment decline from a high of 2.83 million in 2008 to 2.82 million in 2012, a decline of 0.1%. As noted above, comparisons before and after January 2008 exaggerate growth after 2007. What can be stated is that according to Workforce Development data, film industry employment in Massachusetts (for both residents and non-residents) in 2012 increased by a maximum of 1,350 jobs compared to 2006, and most likely by a smaller amount.



Offsetting State Revenues

Both DOR's own calculations and the REMI simulation were used to estimate the amount of additional state revenue generated by new film production activity. For tax revenue from direct film production employment, DOR applied known effective tax rates based on those employees' average annualized wages. In calendar year 2012, for employees who were not Massachusetts residents, we estimate that the Commonwealth received approximately $7.0 million in income taxes (mostly withholding taxes) on wages of $144.8 million[12], implying an effective tax rate of 4.8%. Since employees who were Massachusetts residents had lower average wages, we applied an effective tax rate of 4.2%, which resulted in an estimate of $2.1 million in income taxes on taxable income of $50.3 million[13]. As shown in Table 5 on page 16, taxes on direct film production spending – consisting almost entirely of income tax withholding – totaled $9.5 million in calendar year 2012, and for the 2006-2012 period totaled $50.3 million. In addition to taxes on direct production activity, the REMI model estimates that there was a tax revenue gain of $0.4 million in 2012 from indirect and induced spending, and a tax revenue gain of $1.9 million for the entire 2006-2012 period due to indirect impacts. The REMI model also estimates that $0.7 million in new non-tax revenue was received in 2012, and $2.9 million over the 2006-2012 period, mostly from state fees related to increased economic activity. Total new state revenue (tax and non-tax) is estimated to have been $10.6 million in 2012 and $55.1 million over the 2006-2012 period. Since state tax expenditures totaled $79.0 million in 2012, ($78.9 million in tax credits plus $0.1 million in sales tax revenue losses), this implies that in calendar year 2012 the state received $0.13 in offsetting revenue for each dollar of tax expenditure. Over the 2006-2012 period, total revenues were $55.1 million versus tax expenditures of $411.8 million, implying $0.13 in offsetting revenue for each dollar of tax expenditure[14]. In calendar year 2012, net costs to the state were $68.4 million ($79.0 million in tax expenditures minus $10.6 million in revenue generated). For the 2006-2012 period the cost per net new Massachusetts-resident job created was $118,873 (the net cost to the state divided by the number of net new Massachusetts jobs).

Revenue Loss from Sales Tax Exemptions

The amount of state revenue forgone due to sales tax exemptions is calculated from the production expense data included in the tax credit and sales tax exemption applications. Because we assume that no feature films would have been made in Massachusetts in the absence of the tax incentives, sales tax revenue forgone on purchases made by those productions does not result in lost tax revenue. Our estimate of tax revenue lost is therefore calculated using expenditure data only for productions we assume would have been made in Massachusetts even in the absence of the tax credits. Based on an analysis of the non-wage spending by commercials, television series, and documentaries, we estimate that sales tax revenue was reduced by approximately $78,539 in 2012 and $749,827 for the 2006 to 2012 period as a result of the sales tax exemption.

Transfers vs. Refunds of Tax Credits

As noted earlier in this report, production companies shooting films in the Commonwealth frequently report little or no tax liability in Massachusetts. Typically, claimants sell their tax credits to taxpayers who can use them. Filers also have the option of claiming a refund for their credits at 90% of their face value, but only $3.1 million in credits have been submitted for a refund. Table 7 – Distribution of Film Tax Credit Beneficiaries below shows the distribution of tax credit sales by type of end-user. Through December 31, 2013, $335.9 million of the $411.0 million (82%) in tax credits generated have been sold to other parties, $194.0 million (57.8%) through tax credit brokers. On average, credits have been sold for approximately 89.9% of their face

[12] Including wage payments reported as non-wage spending, such as per diem, petty cash card advances, paid holidays and so on.
[13] Also include wage payments reported as non-wage spending.
[14] The $411.8 million is the rounded sum of $411.009 million in credits claimed plus $0.749 million in sales tax loss, which rounds up to $411.8 (see Table 5).

value. As of December 31, 2012, applications for $50.0 million (12.2%) tax credits generated through calendar year 2012 were still pending with the Department of Revenue, and had not been issued to production companies for transfer or sale.

Table 7 - Distribution of Film Tax Credit Beneficiaries, 2006-2012 (in $ Millions)

			Net Benefit ($ Millions)	
Total Film Credits Generated			**$411.0**	
Pending Credits Claimed by Production Companies			$50.0	
Credits Retained by Production Companies for Tax Refund or Sale			$22.1	
Credits Refunded to Production Companies at 90% of Face Value			$3.1	
Face-Value of Credits Sold by Production Companies			$335.9	
Disposition of Credits Sold by Production Companies				
Face-Value of Credits Sold by Production Companies			$335.9	
Sale Proceeds of Credits Paid to Production Companies			$292.3	
Credit Value Accruing to Final Purchasers of Tax Credits			$33.8	
Tax Credit Broker Net Profit (includes amount still held*)			$9.7	
Benefits Accruing to Final Purchasers of Tax Credits:	Credit Value:	Purchase Price:	Net Benefit:	Price/credit:
Insurance Companies	$200.3	$187.6	$12.7	93.7%
Financial Institutions	$47.4	$43.1	$4.2	91.1%
Corporations	$76.6	$63.7	$12.9	83.1%
Individuals	$11.1	$7.1	$4.0	64.1%
Still Held by Brokers*	$0.5			
Total	**$335.9**	**$301.5**	**$33.8**	**89.9%**

*Through 12/31/12. May be sold in future transactions.
"Still Held by Brokers" amount netted out of "Price/credit" calculation
Total may not add due to rounding

Approximately $3.1 million in tax credits had been claimed under the 90% refundable option by production companies whose tax credits exceeded their tax liabilities. This use of the 90% refundable option reduced the state's revenue loss by $0.4 million below what would have been the revenue reduction had the credits been used to offset tax liability at 100% of their face value (e.g., in the case of transferred credits, where the buyers offset tax liability at 100%). To the extent that any of the currently unsold $72.1 million in film credits are refunded at 90% of their value, the revenue loss to the Commonwealth would be reduced, though based on previous experience it is likely that most tax credits will be sold and used by third parties.

Other Considerations

Studio Construction within Massachusetts

According to the media reports[15], construction of a production facility, the New England Studio (the Studio), was begun in Devens, Massachusetts towards the end of 2012, and completed by September of 2013.

Construction of a film studio would have two levels of economic impact: the first would be a transient, short-term impact from the actual construction; the second would be a long-term impact on film production. The construction of film studios within Massachusetts would presumably make the state more attractive to film producers, thereby increasing filming activity. The short-term impact of the Studio's construction would predominantly have affected calendar year 2013 because most of the Studio's construction took place in 2013. This short-term impact will be incorporated in DOR's next (2013 film industry tax incentives) report (note that any of these short term impacts would only be in effect for the duration of the construction project). DOR is not aware of any film production activity that took place at the Studio during the calendar year 2012 to incorporate in this (2012 film industry tax incentives) report. However, our data methodology will automatically include any increase of in-state film activity due to the Studio or studios that are yet to be built in future film industry tax incentives reports.

Taxation of Income from Residuals

The estimates for 2006-2012 do not reflect revenue generated from income taxes on earnings of actors or directors who, as part of their compensation, participate in the revenues or profits of the motion pictures after release. Our annual examination of Massachusetts tax returns indicates that the Commonwealth does not at this point appear to have received tax revenue from any such residuals for films produced in the Commonwealth during that period. This is a subject of on-going analysis by the Department.

Economic Activity Generated by Movie-Induced Tourism

As was the case in DOR's previous analyses, we have not included the impact of potential increase in economic activity resulting from greater exposure of the Commonwealth through films and other productions that are made in Massachusetts. It has been suggested that having high-profile movie and television actors in the Commonwealth for extended periods of time might be tantamount to advertising. However, DOR is not aware of any published and peer-reviewed study from a non-interested party, measuring the direct and indirect impact of the film credit induced tourism in an unbiased, objective manner. In fact, there have been some reports indicating that the findings and methodologies of those that do exist are found to be controversial or "biased" (for example see http://www.cbpp.org/files/11-17-10sfp.pdf).

As we outlined and explained in great detail in an earlier film credit report (Pages 22 and 23 of http://www.mass.gov/dor/docs/dor/news/reportcalendaryear2008.pdf), we are not aware of any model that can reliably estimate such impacts. The actual impact would depend on several variables, including how many people view the films made in Massachusetts, the demographics of the audience, whether particular motion pictures are set in Massachusetts and include recognizable Commonwealth scenery, and whether the films portray the state in a positive, negative, or neutral light. Obviously, such a study would also have the task of accurately measuring these and other important factors affecting tourism industry, and be able to isolate impacts due to a particular film and/or films on tourism. We would welcome such studies that take into account of all

---

[16] See the description of the New England Studio project at http://www.massdevelopment.com/press-room/press-archives/archives/new-england-studios-breaks-ground-on-devens-state-of-the-art-film-and-television-studios/ and at http://www.telegram.com/article/20131126/NEWS/311269794/1101

these factors, addressing all these concerns and measurement issues, as well some other issues that we addressed in our last year's report (location considerations, correlation between the success of a movie to particular visitor, and its net dollar impact, etc.).