January 2019

PENNSYLVANIA

FILM PRODUCTION TAX CREDIT

An Evaluation of Program Performance

INDEPENDENT FISCAL OFFICE

IFO

About the Independent Fiscal Office

The Independent Fiscal Office (IFO) provides revenue projections for use in the state budget process along with impartial and timely analysis of fiscal, economic and budgetary issues to assist Commonwealth residents and the General Assembly in their evaluation of policy decisions. In that capacity, the IFO does not support or oppose any policies it analyzes, and will disclose the methodologies, data sources and assumptions used in published reports and estimates.

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The Independent Fiscal Office was created
by the Act of Nov. 23, 2010 (P.L.1269, No.120).

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INDEPENDENT FISCAL OFFICE

January 14, 2019

The Honorable Members of the Performance-Based Budget Board and Chairs of the House and Senate Finance Committees:

Act 48 of 2017 requires the Independent Fiscal Office (IFO) to review various state tax credits over a five-year period. For the first year, the IFO reviewed three tax credits: the Historic Preservation, Film Production and Jobs Creation tax credits. The act requires the IFO to submit tax credit reviews to the Performance-Based Budget Board and the Chairs of the House and Senate Finance Committees and to make reports available to the public on the IFO website.

This report contains the tax credit review for the Film Production Tax Credit (FPTC). The IFO reviewed numerous studies on state FPTCs, held discussions with various stakeholders and met with agency staff who administer the tax credit. Based on that research, the IFO submits this report to fulfill the requirements contained in Act 48.

For 2018, 32 states used an FPTC to incentivize productions. Currently, Pennsylvania offers $65 million in annual credits, which ranks ninth highest across all states. There is significant competition for film and television productions because they are highly mobile and specialized labor and talent necessary for the productions can be imported. While advocates note that tax credits can leverage up to four to five times that amount in new spending, critics believe the tax credit does little to promote economic growth because a large portion of the subsidized expenses flow out of state as wages to non-residents and some recipients would film in the state regardless of the tax credit. This analysis examines these and other issues that affect the net economic return of the FPTC.

The IFO welcomes all questions and comments on the contents of this report. Questions and comments can be sent to contact@ifo.state.pa.us.

Sincerely,

MATTHEW J. KNITTEL
Director

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General Findings and Recommendations

Enacted in July 2007, the Film Production Tax Credit (FPTC) provides a tax credit equal to 25 percent of Pennsylvania qualified film production expenses. Feature films and television productions are eligible for an additional 5 percent credit if the production meets minimum stage filming requirements at a qualified production facility and is intended for a national audience.[1] Qualified post-production expenses incurred at a qualified post-production facility are also eligible for the higher 30 percent credit. Under current law, the maximum amount of credits that can be awarded for any fiscal year is $65 million. The tax credit seeks to promote the growth and development of the Pennsylvania film and television production industry.

The **general findings** of this report are as follows:

- Three states dominate film and television productions: California, Georgia and New York. For the latest year, those states spent between $330 million (CA) to $533 million (GA) on film tax credits.
- Unless Pennsylvania increases the tax credit by a substantial amount, it will be difficult to entice production firms to relocate from states where they have already invested significant resources and established a long-term presence.
- Although the tax credit incentivizes productions, it is difficult to see the impact in recent government data. The current tax credit retains jobs, but it is likely insufficient to expand the industry due to competition from other states and the transient nature of annual production activity.
- Nearly all tax credits are transferred or resold because recipients lack sufficient tax liability to utilize the credits.
- The analysis finds that the net return on investment (ROI) is 13.1 cents of state tax revenue for each tax credit dollar. That ROI is consistent with other government and academic studies.
- On net, the tax credit retains roughly 1,140 jobs per annum and $68 million of labor income. That outcome assumes that 90 percent of productions are incentivized by the tax credit. If the true figure is half that, then the tax credit has no material net economic impact.

The **recommendations** of this report are as follows. A more complete discussion of these points can be found in the final section of this report.

- Policymakers need to establish explicit goals and objectives. A moderate tax credit can incentivize mobile productions to film in the state, but a much larger credit is necessary to attract long-term investment.
- The tax credit should be targeted more towards workers who reside in the state. That will increase the multiplier effect of the tax credit and the economic impact.
- The credit should be made refundable. The fees and discounts charged by third parties represent leakage and do not contribute to the economic output of the industry.
- Policymakers should consider different allocation pools for television and film productions. A separate allocation pool might also be used for small, independent productions.
- A temporary higher credit could be offered to television productions that relocate to the state.

[1] Article XVII-H, Subarticle B of the Tax Reform Code of 1971 (P.L. 6, No. 2), as amended.

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Section 1: Introduction

Act 48 of 2017 requires the Independent Fiscal Office (IFO) to review various state tax credits over a five-year period.[2] For the first year, the IFO reviewed three tax credits: the Historic Preservation, Film Production and Jobs Creation Tax Credits. The act requires the IFO to submit tax credit reviews to the Performance-Based Budget Board and the Chairs of the House and Senate Finance Committees and to make reports available to the public on the IFO website.

The act specifies that tax credit reviews shall contain the following content:

- The purpose for which the tax credit was created.
- Whether the tax credit is accomplishing its legislative intent.
- Whether the tax credit could be more efficiently implemented through other methods.
- Any alternative methods which would make the tax credit more efficient.
- The costs to provide the tax credit, including the administrative costs to the Commonwealth and local government entities within this Commonwealth.

The act also specifies that the IFO shall develop a tax credit plan for all tax credits subject to review. The plans should include performance measures, and where applicable, the measures should reflect outcome-based measures (including efficiency measures), measures of status improvements of recipient populations, and economic outcomes or performance benchmarks against similar state programs or similar programs of other states or jurisdictions. The IFO submits this report to fulfill these requirements.

This review contains four main sections. Section 2 discusses how the tax credit is administered and presents historical data. Section 3 compares state FPTCs based on key parameters and examines state employment and GDP trends for the film-television production industry. Section 4 presents the economic analysis and compares the findings to other FPTC studies. Section 5 concludes with the tax credit plan, as required by Act 48. A complete list of reports, studies and data sources used for this review can be found in the Appendix. If submitted, written comments provided by stakeholders and affected agencies are also included in the Appendix.

[2] Act 48 of 2017 is also known as the Performance-Based Budgeting and Tax Credit Efficiency Act. See the Appendix for the Tax Credit Review Schedule.

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Section 2: Overview of the FPTC

Act 55 of 2007 authorized the Film Production Tax Credit (FPTC) that is administered by the Department of Community and Economic Development (DCED).[3] Productions that are eligible for the tax credit include feature films, television films, talk or game show series, pilots or episodes intended as programming for a national audience, commercials and documentaries. Current law provides a base credit of 25 percent for qualified production expenses incurred in Pennsylvania, provided at least 60 percent of the production's total budget is spent in the state.[4] Feature films and television productions intended for a national audience that meet minimum stage filming requirements at a qualified production facility may be eligible for an additional 5 percent credit. Qualified post-production expenses incurred at a qualified post-production facility are also eligible for a 30 percent credit.

The annual FPTC program cap is currently $65 million. DCED may award credits for future years up to a specified limit (30 percent of the dollar amount of credits available to be awarded in the next succeeding fiscal year, 20 percent in the second successive fiscal year and 10 percent in the third successive fiscal year). DCED may also reissue unused credits from prior years.

Tax credits may be utilized to offset up to 50 percent of the corporate net income, insurance premiums, bank shares, mutual thrift institution or personal income qualified tax liability. The credits authorized for film production companies must first be applied to the tax year in which the credits are issued. If a recipient's tax liability is less than the credit amount awarded, then the credits may be carried forward for three years, but are not refundable and may not be carried back. Credits may also be sold or reassigned to another entity. Credits sold to another entity must be used in the year of purchase.

This section begins the analysis with a general description of the purpose and goals of the FPTC. It then discusses the administration of the tax credit and presents program data from fiscal year (FY) 2011-12 through FY 2017-18.

Purpose and Goals

Act 48 of 2017 requires that all tax credit reviews published by the IFO shall discuss (1) the purpose for which the tax credit was created and (2) whether the tax credit is accomplishing its legislative intent. According to DCED, the FPTC was created "to foster the growth and development of the state's film industry."[5] Therefore, the analysis assumes that the main purpose of the credit is to incentivize film and television productions in order to increase state economic output and overall job creation.

The goals of the tax credit have not been established. This analysis assumes there are three general goals:

- To increase the number of productions filmed in the state than would otherwise occur.
- To increase industry employment as measured by data published by the federal government.

[3] The program has been subsequently amended several times, most recently by Act 43 of 2017.
[4] The 60 percent requirement may be waived for feature films, television films or series meeting specified criteria.
[5] Report to the General Assembly, Film Production Tax Credit Program, FY 2017-18, DCED.

- To maintain or increase Pennsylvania's market share of the industry as measured by data published by the federal government.

Administration and Implementation

The Department of Community and Economic Development administers the FPTC and reviews applications.[6] The text that follows is a summary of the more detailed description contained in the Program Guidelines for the Film Production Tax Credit (FPTC) published by DCED.[7]

Applicants for an FPTC must provide a complete application package that includes the following:

- A non-refundable application fee equal to 0.2 percent of the requested FPTC amount, up to a maximum of $10,000. The fee is waived for projects with a total production budget of $1 million or less, and the application fee may be refunded for applications denied solely due to a lack of available credits.
- Evidence that the applicant is registered to do business in Pennsylvania.
- Evidence that the applicant has a valid state tax ID number.
- Evidence that all personal service corporations or loan-out companies that will be engaged by the applicant are incorporated, or formed in Pennsylvania, or have registered to do business in Pennsylvania or are in the process of obtaining a Certificate of Authority.
- A completed FPTC application form.
- A "budget top sheet" that lists the projected total and qualified film production expenses and qualified post-production expenses at a qualified post-production facility.
- A completed "single application for assistance."
- A copy of the script or storyboards (commercials only).
- Verifiable documentation that at least 70 percent of the financing for the project has been secured and the remaining amount will be secured.

Within 15 days of submission of the completed application package, DCED conducts a telephone interview with the applicant. Completed applications are reviewed for compliance with program guidelines and are evaluated based on various criteria, including:

- Number of production days in a qualified production facility.
- Number of Pennsylvania employees.
- Number of pre-production through post-production days in Pennsylvania.
- Number of room nights in Pennsylvania hotels.
- Total Pennsylvania production expenses in comparison to the total production budget.
- The use of studio resources.
- The location and type of any qualified post-production expenses.

Applications are approved (or disapproved) on a quarterly basis. Upon approval, DCED will issue an FPTC contract, which specifies the maximum amount of tax credit for which the applicant is eligible. The contract

[6] The Department of Revenue performs compliance checks on applicants and ensures that approved tax credits are used appropriately.
[7] See "Film Production Tax Credit: Program Guidelines," Department of Community and Economic Development (December 2018).

requires submission of monthly progress reports until the production is complete. It also requires that the end credits for any FPTC production include the Pennsylvania Film logo and an acknowledgement that the project was made possible with the support of the Commonwealth of Pennsylvania. The logo must be placed on all packaging material and hard media as well.

DCED issues an FPTC certificate within 45 days of receipt of the following finalized forms and reports:

- Production and economic impact report (required within 180 days of the project's completion date).
- Budget top sheet detailing actual expenses.
- List of Pennsylvania vendors and subcontractors.
- List of final cast and crew.
- An independently audited "examination report" of total production expenses.

The FPTC certificate is submitted to the Department of Revenue (DOR) for application against the recipient's Pennsylvania state tax liability. DOR ensures that the tax credit is applied appropriately.

Historical FPTC Data

Table 1 provides detail on FPTC authorizations for FY 2011-12 through FY 2017-18. For all years, DCED authorized credits up to the maximum statutory cap, and application data show that there has been excess demand for credits in all years. For the latest two fiscal years, television productions comprised roughly 55 percent of tax credits authorized, while feature films comprised nearly all of the residual. The number of productions that were authorized for credits typically ranges from 35 to 45 productions per annum.

Credits are "authorized" when DCED approves the FPTC application and reserves a portion of the annual credit allocation for a specific production. Credits are "awarded" when the production is complete, all final reports have been submitted/approved and the credit certificate has been issued. **Table 2** illustrates the flow of tax credits from authorization to award to utilization. For example, for FY 2016-17, $60 million of tax credits were authorized. During that fiscal year, $0.7 million in awards were made from authorizations in the same year, $24.7 million in awards was made from authorizations in FY 2015-16 and $9.8 million in awards was made from authorizations in FY 2014-15. The final column lists tax credits applied against tax liability during the relevant fiscal year. Those amounts are often less than credits authorized due to (1) delays between authorization and use and (2) roughly 5 to 10 percent of authorized credits lapse or are returned each year due to cancellations or other technical issues.

The agencies provided estimates for staff time and annual costs to administer and enforce the tax credit:

- For DCED, one to two full-time equivalent (FTE) staff ($237,000; includes $50,000 of operating expenses).
- For DOR, two to three FTE staff ($309,000).

A detailed explanation of DOR's administration, enforcement and compliance efforts related to the FPTC can be found in the Appendix.

Table 1
Film Tax Credit Authorizations

Fiscal Year	Amount Authorized ($ millions)				Number of Authorizations			
	Film	Television	Other	Total	Film	Television	Other	Total
2011-12	$44.8	$15.1	$0.1	$60.0	17	24	2	43
2012-13	32.6	27.0	0.5	60.0	15	16	2	33
2013-14	36.2	22.5	1.3	60.0	18	26	8	52
2014-15	25.6	34.1	0.3	60.0	16	15	3	34
2015-16	14.1	45.4	0.6	60.0	13	26	8	47
2016-17	25.2	34.4	0.4	60.0	9	19	3	31
2017-18	29.6	34.5	0.9	65.0	12	20	12	44

Source: Film Production Tax Credit Program (various years), DCED.

Table 2
Film Production Tax Credits Authorized, Awarded and Used

Fiscal Year	Amount Authorized	Amount Awarded Based on FY of Authorization									Amount Used
		earlier	11-12	12-13	13-14	14-15	15-16	16-17	17-18	Total	
2011-12	$60.0	$25.4	$4.8							$30.2	$65.7
2012-13	60.0	7.5	25.0	$25.7						58.2	48.6
2013-14	60.0	0.9	9.3	40.7	$3.0					53.9	26.2
2014-15	60.0	0.2	0.0	8.9	25.9	$9.9				44.8	25.8
2015-16	60.0		0.0	0.0	5.4	33.0	$26.4			64.9	88.8
2016-17	60.0			0.0	3.8	9.8	24.7	$0.7		39.0	59.0
2017-18	65.0				0.3	0.9	0.7	31.2	$30.1	63.3	29.5
Total	**425.0**									**354.2**	**343.6**

Note: Millions of dollars.
Source: Film Production Tax Credit Program (various years), DCED.

Section 3: State Tax Credit Comparison

As of November 2018, 32 states offered some form of tax credit, rebate or grant to encourage film or television production activity in the state. The prevalence of the FPTC has declined in recent years as a number of states eliminated or allowed these tax credits to expire. Those states include Missouri (July 2013), Michigan (July 2015), Montana (January 2015), Alaska (July 2015), Florida (June 2016), New Jersey (2016) and West Virginia (July 2018). In July 2018, New Jersey reinstated a film-television production tax credit (FPTC) with an $85 million annual cap for the next five fiscal years.

Film-Television Production Incentives Across States

Table 3 provides a summary comparison of certain FPTC attributes across states. In practice, the incentive can take three forms: a grant, rebate or tax credit. Grants and rebates are similar in that both provide cash reimbursement: grants are typically made prior to the completion of production (e.g., Virginia) while rebates are made after production is complete and are targeted towards specified costs (e.g., Arkansas). Tax credits are typically applied to taxes such as corporate net income, personal income or sales and use tax. However, the great majority of recipients are unable to use credits because their operations do not generate sufficient state tax liability. Therefore, some states provide a full refund of the tax credit while others will refund a fixed share of the tax credit (e.g., Massachusetts repurchases unused tax credits for 90 cents on the dollar). If states do not have a refundable tax credit, then they allow the credit to be transferred or sold to other firms that have sufficient tax liability to absorb the tax credit.

Data from DCED show that roughly 95 percent of Pennsylvania film tax credits are transferred or sold to firms other than the original recipient. For recent years, sellers have received an average of 93 to 94 cents on the dollar. The entity that facilitates the transaction will also typically receive a commission equal to one to two percent of the transaction. The residual discount accrues to the buyer of the tax credit, which is often a large multistate corporation. The sale reduces the credit percentage from the vantage point of the original recipient. For example, if a recipient must sell a tax credit, then the effective credit rate would be 25 percent * 0.93 = 23.3 percent, as opposed to 25 percent. A portion of the credit has been effectively siphoned off and has no real stimulative effect on the film-television production industry.

The fourth column of Table 3 lists the base credit rate. The base credit rate is the share of qualified costs that states will reimburse. Many states offer somewhat higher rates if production firms meet certain criteria. For example, the Pennsylvania credit rate increases from 25 to 30 percent if production takes place in a qualified facility, is intended for a national audience and meets minimum stage filming requirements. The rates shown in Table 3 reflect only the base rates, prior to qualification for higher rates. Most states offer a base rate between 20 to 30 percent, and a number of states apply separate rates to resident and non-resident labor to encourage firms to use resident labor.

Table 3
Film Tax Incentives Across States

State	Type	Utilization	Base Credit Rate	Annual Cap	
				Cap	Amount
Montana	grant	-	10% non res/12% res labor	yes	$1
Colorado	rebate	-	10% to 20% spend	yes	1
Kentucky	credit	refundable	30% spend/35% res labor	no cap	2
Tennessee	grant	-	25% spend	yes	2
Washington	rebate	-	30% spend	yes	4
Oklahoma	rebate	-	35% spend	yes	4
Maryland	credit	refundable	25% spend	no cap	5
Utah	credit/rebate	refundable	20% to 25% spend	yes	8
Virginia	credit/grant	refundable	15% spend/extra 10-20% labor	yes	10
Nevada	credit	transferable	25% spend	yes	10
Oregon	rebate	-	20% spend/16.2% labor	yes	14
Rhode Island	credit	transferable	25% spend	yes	15
South Carolina	rebate	-	30% supplier/20-25% labor	yes	16
Alabama	rebate	-	25% spend/35% res labor	yes	20
Mississippi	rebate	-	25% spend/30% res labor	yes	20
Texas	grant	-	20% spend	yes	22
North Carolina	rebate	-	25% spend	yes	31
Hawaii	credit	refundable	20% to 25% spend	yes	35
Ohio	credit	refund/transfer	30% spend	yes	40
New Mexico	credit	refundable	25% spend	yes	50
Pennsylvania	**credit**	**transferable**	**25% spend**	**yes**	**65**
Massachusetts	credit	transferable	25% spend	no cap	78
New Jersey	credit	transferable	30% to 37% spend	yes	85
Connecticut	credit	transferable	30% spend (>$1 million)	no cap	93
Illinois	credit	transferable	30% spend	no cap	150
Louisiana	credit	transferable	25% to 30% spend	yes	150
California	credit	transferable	25% spend	yes	330
New York	credit	refundable	30% spend	yes	420
Georgia	credit	transferable	30% spend	no cap	533
Maine	credit/rebate	non-transferable	5% spend/10%-12% labor	no cap	n.a.
Minnesota	rebate	-	25% spend	no cap	n.a.
Arkansas	rebate	-	20% spend/30% res labor	no cap	n.a.

Note: Millions of dollars. The following states do not offer an incentive: Alaska, Arizona, Delaware, Florida, Idaho, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, New Hampshire, North Dakota, South Dakota, Vermont, West Virginia, Wisconsin and Wyoming.

Sources: NCSL and various state agency websites.

Although Table 3 facilitates a comparison of base credit rates, it should be noted that those rates may not be directly comparable. The reason for that outcome is that states do not have a uniform definition of the expenses that can be counted as "qualified" and available for partial reimbursement. This distinction is especially true for labor costs. Some states only provide incentives for resident labor, while others provide separate rates for above-the-line (e.g., producers, actors, directors) versus below-the-line (e.g., crews) labor costs. For example, Illinois offers a 30 percent credit, but only resident wage and employer benefits up to $100,000 are qualified expenses. For New Mexico, non-resident above-the-line labor that does not appear in the production is not a qualified expense. These exclusions can have a significant impact on the "effective" credit rate, which takes into account the types of costs that qualify for partial reimbursement. It is the effective credit rate that is relevant for firms as they make location decisions. Relative to other

states, Pennsylvania has a broad definition of qualified expenses, and all labor that is considered "PA payroll" (i.e., performed services in the state) generally qualifies for the tax credit.

The fifth and sixth columns list the presence of an annual dollar cap and the dollar amount of the cap or credit (uncapped states) for the latest year that data are available. Currently, nine states offer uncapped incentives: Arkansas, Connecticut, Georgia, Illinois, Kentucky, Maine, Maryland, Massachusetts and Minnesota. For states with an annual cap on awards, it is generally the case that the maximum credit amount available in any given year is awarded. Five states dominate the tax credit awards: Georgia ($533 million), New York ($420 million), California ($330 million), Louisiana ($150 million) and Illinois ($150 million). Six states offer incentives between $40 to $100 million, while the remainder offer various amounts under $40 million.[8]

Industry Employment Trends

Table 4 provides a comparison of motion picture and video employment for select states for the latest decade that data are available. The employment data are from the U.S. Bureau of Labor Statistics through the Quarterly Census of Employment and Wages (QCEW).[9] The data are based on returns filed by firms covered by the national unemployment insurance program and comprise more than 99 percent of all private wage and salary employment. The data are compiled based on the location of the firm (not an employee's state of residence) and include part and full-time positions.

For this comparison, a relatively narrow definition of the industry is used because (1) the relevant data are published by the federal government and are publicly available and (2) the definition has been used by previous film tax credit studies.[10] The definition includes the following three sub-sectors based on NAICs code: (1) 51211 Motion Picture and Video Production, (2) 51212 Motion Picture and Video Distribution and (3) 51219 Post-Production Services and Other Motion Picture and Video Industries.

This narrow definition does not include independent artists and performers that are employed on a temporary or full-time basis. The data also do not include individuals who are indirectly employed by the industry, and provide services to other industries (e.g., subcontractors such as construction workers and drivers). Therefore, the definition represents only direct employment by the industry, but it is consistent across states, and the data facilitate a comparison of industry employment trends across states over time.

Table 4 ranks states based on the level of industry employment for calendar year 2017. By far, the California film-related industry is the largest and comprised 46.6 percent of the national total. The next largest states are New York (19.2 percent), Georgia (6.0 percent), Florida (2.9 percent) and Texas (2.4 percent). All other states individually comprised less than two percent of the national total. Compared to total U.S. payroll employment (122.4 million, bottom of table) measured by the QCEW, the narrowly-defined industry comprised roughly 0.2 percent of total payroll employment. The data show that the industry has grown at a

[8] Some states also offer sales and use tax exemptions for qualified purchases. The exemptions can provide modest additional savings for film and television production firms. Data submitted to DCED show that roughly one-third of total Pennsylvania qualified expenses are not related to labor, and state sales tax comprised two to three percent of those expenses. Those figures suggest that approximately one percent (0.333 * .025) of total qualified expenses represent state and local sales tax.
[9] See https://www.bls.gov/cew/.
[10] For example, see the Georgia (2014), Louisiana (2015), Virginia (2017) and Maryland (2015) economic impact studies listed in the Appendix.

somewhat faster pace over the past five years (2.7 percent average employment growth per annum) relative to total payroll employment (2.0 percent).

Table 4
Motion Picture and Video Industry Employment

	Employment Level			Change: 2007-12		Change: 2012-17	
	2007	2012	2017	Number	AAGR	Number	AAGR
California	126,599	120,271	122,562	-6,328	-1.0%	2,291	0.4%
New York	35,009	47,404	50,516	12,395	6.2%	3,112	1.3%
Georgia	2,119	3,339	15,683	1,220	9.5%	12,344	36.3%
Florida	5,399	4,698	7,515	-701	-2.7%	2,817	9.9%
Texas	3,846	3,794	6,243	-52	-0.3%	2,449	10.5%
Illinois	3,610	2,977	3,505	-633	-3.8%	528	3.3%
Connecticut	1,388	2,163	3,349	775	9.3%	1,186	9.1%
Massachusetts	2,190	2,974	3,333	784	6.3%	359	2.3%
Pennsylvania	2,461	3,999	3,329	1,538	10.2%	-670	-3.6%
Louisiana	2,913	3,871	3,517	958	5.9%	-354	-1.9%
Oregon	1,866	2,605	2,870	739	6.9%	265	2.0%
New Jersey	3,348	3,367	2,728	19	0.1%	-639	-4.1%
Michigan	1,752	1,961	2,088	209	2.3%	127	1.3%
New Mexico	2,318	2,229	1,933	-89	-0.8%	-296	-2.8%
Ohio	1,190	1,304	1,835	114	1.8%	531	7.1%
Indiana	641	472	553	-169	-5.9%	81	3.2%
All Other	24,738	22,379	31,598	-2,359	-2.0%	9,219	7.1%
U.S. Industry Total	**221,387**	**229,807**	**263,156**	**8,420**	**0.7%**	**33,349**	**2.7%**
U.S. Total (millions)	114.0	110.6	122.4	-3.4	-0.6%	11.7	2.0%

Note: Data are for calendar years. AAGR is average annual growth rate.
Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

For Pennsylvania, the data for 2017 show 3,329 jobs or positions for the industry. That figure is significantly higher than the level from 2007 (2,461), but lower than 2012 (3,999). Pennsylvania ranks ninth across all states, which is lower than two states that award less film tax credits (Texas) or no credit (Florida), but higher than Louisiana, which awards significantly more tax credits.[11]

The data and trends from Table 4 reveal a number of notable outcomes. They are as follows:

- Employment in Georgia expanded rapidly beginning in CY 2015. The timing coincides with an increase in paid tax credits from $228 million (2013) to an estimated $533 million for FY 2017-18.[12]
- Employment in states that recently eliminated their film tax credit has continued to expand despite the lack of an incentive: Michigan (tax credit eliminated July 2015), Florida (June 2016) and Indiana (July 2012). New Jersey eliminated its tax credit in June 2016, and industry employment has remained steady for CY 2017 (2,728) compared to CY 2015 (2,693).

[11] As noted, these figures do not include independent artists or individuals who are employed by a firm that is located outside the state.
[12] Georgia Tax Expenditure Report, Fiscal Research Center, Andrew Young School of Policy Studies at Georgia State University, various years.

- For the past five years, trends in states that award a high volume of film tax credits is mixed. While some states (Texas, Illinois, Connecticut and Ohio) recorded employment gains far above the U.S. average, other states underperformed (California, New York) or recorded contractions (Pennsylvania, Louisiana and New Mexico).

Like any good or service, demand for film-television productions is limited, and states essentially compete for a larger portion of an industry that expands at a similar pace as the national economy. If one state realizes strong employment gains, other states will generally record losses. For most states that record initial employment gains due to a tax credit, the credit must be maintained to retain those gains because the employment is attributable to temporary production activity. If other states increase tax incentives, the maintenance of the tax credit could be insufficient to retain the original job gains.

Industry Output Trends

An alternative way to view industry trends across states is to use a total output metric. For all states, the U.S. Bureau of Economic Analysis publishes Gross Domestic Product (GDP) for many industries.[13] GDP represents the final value of all goods and services produced in the state economy during the calendar year. It includes compensation paid to or earned by all individuals who supply labor to produce goods and services, including partners and independent contractors. It also reflects the economic value of other types of expenses, purchases and income such as rental expenses, equipment purchases and profits. State GDP is a much broader metric than the employment data used in Table 4.

Table 5 shows the results from the state GDP comparison. The data are for the "Motion Picture and Sound Recording" industry. Although sound recording is included, it comprises a small share of total employment and output. For the U.S., employment in the motion picture-video production sector (Table 4) was roughly twelve times the employment level for the sound recording sector. Hence, trends for the combined sectors will be almost entirely driven by motion picture-video production.

[13] See https://apps.bea.gov/iTable/index_regional.cfm.

Table 5
Motion Picture-Video and Sound Recording GDP

	GDP ($ millions)			Change: 2007-16		Market Share		
	2007	2012	2016	Amount	AAGR	2007	2012	2016
California	$41,380	$42,105	$45,885	$4,505	1.2%	54.1%	51.1%	50.4%
New York	15,835	19,611	19,994	4,159	2.6%	20.7%	23.8%	21.9%
Georgia	708	931	2,420	1,712	14.6%	0.9%	1.1%	2.7%
Texas	1,581	1,632	2,147	566	3.5%	2.1%	2.0%	2.4%
Florida	1,865	1,477	1,963	98	0.6%	2.4%	1.8%	2.2%
Tennessee	1,956	1,535	1,829	-127	-0.7%	2.6%	1.9%	2.0%
Connecticut	728	1,092	1,555	827	8.8%	1.0%	1.3%	1.7%
Illinois	1,457	1,174	1,261	-196	-1.6%	1.9%	1.4%	1.4%
New Jersey	1,065	1,064	1,204	139	1.4%	1.4%	1.3%	1.3%
Pennsylvania	787	1,467	1,185	398	4.7%	1.0%	1.8%	1.3%
Louisiana	861	1,253	1,142	280	3.2%	1.1%	1.5%	1.3%
New Mexico	475	881	1,020	544	8.9%	0.6%	1.1%	1.1%
Virginia	449	563	801	352	6.6%	0.6%	0.7%	0.9%
Nevada	342	381	664	322	7.6%	0.4%	0.5%	0.7%
Massachusetts	496	698	626	131	2.6%	0.6%	0.8%	0.7%
Michigan	616	585	595	-21	-0.4%	0.8%	0.7%	0.7%
All Other	5,867	5,989	6,836	969	1.7%	7.7%	7.3%	7.5%
U.S. Total	**76,466**	**82,436**	**91,126**	**14,660**	**2.0%**	**100.0%**	**100.0%**	**100.0%**

Note: GDP is in nominal dollars. Does not control for inflation. AAGR is average annual growth rate.
Source: U.S. Bureau of Economic Analysis.

The GDP data largely confirm the results using employment data. California accounted for nearly one-third of the industry expansion 2007 to 2016 (+$4.5 billion), but lost 3.7 percentage points of market share to other states that enacted or increased film tax credits.[14] The three states that gained the most market share were New York (1.2 percentage points), Georgia (1.8 percentage points) and Connecticut (0.7 percentage points). Pennsylvania gained market share through 2012, but has lost share since that time as other states enacted or increased film tax credits.

The employment and GDP comparisons demonstrate that states compete for an industry that has fully matured and appears to grow at roughly the same rate as the overall U.S. economy. The competition for productions is zero-sum: if one state gains industry share, others must lose. States that offer moderate incentives cannot continually "grow the industry" and likely attract only temporary production activity, as opposed to more permanent investments in infrastructure. To accomplish the latter objective, states would need to offer a very high level of tax incentives. The rapid expansion of industry employment and output in Georgia suggests that state has successfully impacted long-term location and investment decisions. However, it is unclear whether other states could replicate that outcome, as they lack a "first mover" advantage, and production firms have already made substantial investments in states that provide significant tax credits or rebates.

[14] The latest year of published state GDP with industry-level detail is 2016.

Film Production Tax Credit Studies Across States

The FPTC has been the subject of frequent analysis over the past decade. This section concludes with a comparison of recent economic impact studies across states. The next section undertakes a similar analysis for Pennsylvania based on application data submitted to DCED.

Table 6 lists 14 recent studies performed across 10 states with an FPTC. (See the Appendix for citations for the studies in Table 6.) It is useful to compare general results across states to provide context for the Pennsylvania analysis in the next section. The comparison also highlights certain technical issues that are relevant for FPTC studies. Policymakers should be aware of these issues because studies make different assumptions or omit adjustments that can have a material impact on results.

The first three columns of Table 6 list the relevant state for which the analysis was performed, the year the report was published and the relevant time period examined. Studies have been published by (1) government agencies (top portion of table), (2) private entities commissioned by a government agency or office (middle portion, often the office's mission is to promote the film industry or economic development) and (3) private entities contracted through an industry representative such as the Motion Picture Association (bottom portion).

Table 6
Summary of Recent State Film Tax Credit Studies

	Year Published	Time Period	Activity Incentivized	Bal. Budget Offset	State ROI	Output Multiplier
Government Agency						
Maryland	2015	2012-16	100%	lower spend	0.06	n.a.
Massachusetts	2016	2008-14	94%	lower spend	0.15	n.a.
Virginia	2017	2012-16	95%	higher taxes	0.20	1.60
Florida	2018	2014-16	100%	lower spend	0.18	n.a.
Michigan	2010	2008-09	100%	lower spend	0.13	1.61
Washington	2016	2015-16	100%	lower spend	0.06	n.a.
Commissioned by Gov't Agency						
Michigan	2014	2012	100%	none	0.24	1.78
New Mexico	2014	2010-14	100%	none	0.33	1.63
Oklahoma	2016	2011-15	100%	none	0.13	1.85
New York	2017	2015-16	100%	none	0.51	1.92
Louisiana	2015	2013-14	100%	none	0.17	1.45
Louisiana	2011	2008-09	100%	none	0.15	1.63
Private Entity						
Maryland	2014	2011-15	100%	none	0.89	1.83
Michigan	2011	2009-10	100%	lower spend	0.21	2.60

Sources: See Appendix for a complete list of reports.

The fourth column lists the "activity incentivized," which is also referred to as the "but for" assumption. Film tax credits attempt to sway firms that would not otherwise produce a movie or television production in the state. If the firm would have done so regardless, then the tax credit will actually have a negative net impact on economic growth because the tax credit monies could have been spent elsewhere. The majority of studies assume that all productions that receive an FPTC would not have filmed in the state "but for" the incentive. Many studies that make this assumption note it is not realistic and is meant to represent an upper bound on the incremental economic growth that could be attributed to the tax credit.

The fifth column lists whether the study used a balanced budget offset. In order to derive the true net economic impact of the tax credit, studies should allow for the fact that states must balance budgets. Hence, any monies spent on incentives must be offset by higher taxes, lower spending or both. If this alternative use of funds is not included in the analysis, then the net incremental economic impact of the tax credit will be overstated and the results will have no context. For example, if an analysis finds that the FPTC generates 1,000 jobs, there is no way for policymakers to judge whether that is a good outcome if alternatives are not presented. As shown by Table 6, all pure government studies generally include a balanced budget offset, while studies contracted to a private entity nearly all exclude them. This exclusion is one reason that private studies typically find larger economic impacts from an FPTC.

The sixth column lists the computed state return on investment (ROI) from the tax credit. The figure represents the total state tax recouped per dollar of tax incentive. Some studies also include a local tax (e.g., property tax) ROI, but most do not, and those impacts tend to be much smaller than the state ROI. For pure state government reports, ROIs range from 6 to 20 cents on the dollar. For reports by private firms, state ROIs generally range from 13 to 51 cents, with one outlier at 89 cents.

The final column lists the multiplier effect for total output or sales. The multiplier is an important determinant of the economic impact from the tax incentive. A multiplier of 1.5 implies that $1 of new spending attributable to the tax incentive would increase total output or sales by $1.50 in the state, as the original spending is respent by the firms and employees who received the "direct" or first round of spending. (Studies with an "n.a." in the final column did not publish sufficient detail to allow computation of the output multiplier.) Studies may have different multipliers depending on the model used (e.g., REMI or IMPLAN) and assumptions made. For example, some industry studies assume a large impact from film-induced tourism in their analysis, which produces a larger multiplier and economic impact from the tax incentive.

Most credible output or sales multipliers range from 1.6 to 1.9, which is in line with multipliers computed and published by the U.S. Bureau of Economic Analysis. For Pennsylvania, the latest published multiplier for the motion picture and video industry is 1.67. Compared to other industries, the multiplier is low because a relatively high proportion of the direct spending by the industry flows out of state to non-resident labor.[15]

[15] Out of the 356 RIMS II industry multipliers published by Bureau of Economic Analysis, the motion picture and video industry multiplier ranks 342 in terms of the size of the output multiplier.

Section 4: Economic Impact and Metrics

This section contains the economic analysis of the Pennsylvania FPTC. It proceeds in three steps. First, it develops a cost profile of the typical Pennsylvania film and television production based on audited applications submitted to DCED. Based on those profiles, it determines the amount and type of direct spending that is incentivized by the tax credit. Finally, the net new spending is input to an economic model to determine the multiplier effects of the new spending and the final impact on sales, employment, income and state tax revenues.

Cost Profile for Pennsylvania Productions

Prior to the economic analysis, a cost profile for a typical Pennsylvania production must be established to identify the types of new, direct spending leveraged by tax credits. **Table 7** (next page) displays the share of total costs for various spending categories for a typical feature film and television production. The profiles are based on audited applications submitted to DCED for the past four fiscal years. The final column computes a weighted average profile that assumes television productions comprise 55 percent of total tax credits awarded.

The data show that qualified expenditures typically comprise two-thirds of total expenses for feature films and 82 percent for television productions. Expenses that do not qualify for the tax credit are expenditures that occur outside the state such as payments to writers, payments for services performed out-of-state and amounts that exceed the $15 million total cap for above-the-line payments for wages paid to a principal actor(s). For qualified expenses that are eligible for the tax credit, wages and salaries paid comprise a little more than two-thirds of total expenses for the weighted average profile. The wage share is higher for television productions (72.3 percent of qualified expenses), as is the share paid to Pennsylvania residents (34.0 percent) compared to feature films. Non-wage expenses include various rentals (e.g., equipment), lodging for crews and actors, catering and per diem expenses, construction and other miscellaneous expenses.

The final line in Table 7 displays the total share of qualified spending that the analysis assumes is received by Pennsylvania residents and vendors and remains in the state. It includes all wages paid to residents and all non-wage expenses. All wage payments to non-residents are assumed to flow out of state because those individuals receive lodging and per diems (which are both spent in state). It is noted that some non-wage spending may not remain in the state economy despite the fact that it qualifies for the tax credit. For example, online purchases can count as a qualified expense if purchased from a vendor that charges Pennsylvania sales tax or the production company pays the Pennsylvania use tax for the online purchase. In an analysis by the Massachusetts Department of Revenue (2016), the agency reduced qualified non-wage expenditures by 39 percent to reflect flows to non-Massachusetts vendors.[16] This analysis assumes that all non-wage expenditures are received by Pennsylvania-based vendors and remain in state. This assumption results in an upper bound estimate for the economic impact of the tax credit.

[16] "Report on the Impact of Massachusetts Film Industry Tax Incentives through Calendar Year 2014," Commonwealth of Massachusetts, Department of Revenue, Table 1 (December 2016).

Table 7
Pennsylvania Production Profile

	Feature Film	Television Production	Weighted Average
Total Expenses	**100.0%**	**100.0%**	**100.0%**
Qualified	66.9%	81.9%	73.8%
Non-Qualified	33.1%	18.1%	26.2%
Qualified Expenses	**100.0%**	**100.0%**	**100.0%**
Wages and Salaries	63.1%	72.3%	67.8%
PA Residents	16.9%	34.0%	25.7%
Non-PA Residents	46.2%	38.2%	42.1%
Non-Wage Expenses	36.9%	27.7%	32.2%
Various Rentals	6.7%	9.2%	8.0%
Hotel	1.9%	1.7%	1.8%
Catering-Per Diems	2.3%	3.0%	2.6%
Locations-Stage	4.0%	5.3%	4.7%
Construction	1.5%	1.5%	1.5%
Travel and Living	2.9%	1.5%	2.2%
State Sales Tax	0.7%	0.8%	0.8%
All Other	16.9%	4.6%	10.6%
Share of Qualified Spending That Remains in PA	53.8%	61.8%	57.9%

Source: IFO calculations based on audited applications submitted to DCED from last four years.

Direct Spending in Pennsylvania due to the FPTC

Having established a typical cost profile for Pennsylvania productions, this sub-section determines the amount of new incremental spending induced by the tax credit. The analysis assumes that all tax credits available for authorization are awarded and claimed in the same year. In reality, although the maximum amount of tax credits is authorized in any year, roughly five to ten percent are not awarded due to withdrawn applications or other technical issues. To simplify the presentation, the analysis also ignores timing issues related to the delay between authorizations, awards and utilization of tax credits. Including that detail would not change the general results of this analysis.

Table 8 presents the computation and the following text describes the adjustments based on line number:

Line 1 The analysis assumes that $65 million of tax credits are authorized, awarded and utilized.

Line 2 Data from DCED show that nearly all tax credits are sold or transferred because recipients do not generate sufficient tax liability in the Commonwealth. On average, the data suggest a six to seven percent sales discount for tax credits and a one to two percent transaction fee. Knowing in advance that they

cannot utilize the full value of the tax credit, firms will discount its value and make their computations based on the net value to them, after sale. It is this lower amount that effectively incentivizes and attracts new spending to the state. For this analysis, the reduction attributable to the sale of the FPTC and any transaction fee is not included. This leakage does not incentivize economic activity for the industry.

Line 3 The product of lines 1 and 2: the effective value of the tax credit to the recipient.

Line 4 Most studies assume that all recipients of the tax credit would not otherwise film in the state "but for" the tax credit. However, most studies also note that the assumption is unrealistic and merely provides an upper bound estimate of the economic impact. Other studies have found that the share of film-television location decisions affected by the tax credit could be lower.[17] This analysis assumes that the tax credit incentivizes 90 percent of productions that receive a credit.

Line 5 The product of lines 3 and 4. This is the amount of tax credit that effectively leverages investment because it reflects (1) the true value to the firm after any sales discount and (2) recognizes that a portion of film and television productions would have occurred in the state without the tax credit.

Line 6 The tax credit leverage factor. The base tax credit is equal to 25 percent of qualified spending. Therefore, every $1 of tax credit leverages or motivates $4 of qualified spending. It is noted that the factor could be lower because certain productions qualify for the 30 percent tax credit. Although more attractive to firms, a higher credit percentage also implies a lower leverage factor (3.33 for a 30 percent credit). The factor could also be higher if certain in-state spending does not qualify for the tax credit. The analysis assumes those effects offset and uses a leverage factor of 4.0.

Line 7 Qualified spending due to the tax credit is equal to the product of lines 5 and 6. This is the direct spending made by productions and includes payments for non-resident wages, resident wages and payments made to vendors for goods and services supplied during production in the state.

Lines 8 to 10 This breakdown is based on the detail from the cost profile in Table 7. Based on that profile, 42.1 percent of qualified spending flows to non-residents in the form of labor compensation, 25.7 percent to Pennsylvania residents as wages and 32.2 percent to goods and services providers (e.g., caterers, lodging and equipment rentals).

Line 11 For this analysis, payments to non-residents are not included because they leak from the state and have no implications for state economic growth.

Line 12 Nearly all studies undertaken by government entities that do not seek to promote the film or tourism industries use a balanced budget adjustment. Due to the balanced budget requirement, states must reduce spending or raise taxes to provide resources for the tax credit. If that offset is not taken into account, then the net economic impact of the credit will be overstated. This analysis assumes that discretionary spending would be reduced and those monies would have been spent on education, healthcare and

[17] A November 2018 report by the California Film Commission tracked productions that were approved for credit allocations but did not receive a credit (due to the cap). The report found that 70 percent of those productions filmed in another state, while 30 percent filmed in California regardless. However, the latter percentage may be high because California is an industry leader and has many production facilities and local talent. An analysis for Massachusetts assumed roughly 9 percent of the dollar amount of productions would have occurred without the tax credit. See ibid.

infrastructure. A $55.3 million offset is used.[18]

Lines 13 to 15 Net incremental spending is equal to spending in Pennsylvania less the balanced budget adjustment. The analysis assumes that one half of the balanced budget adjustment reduces resident wages (i.e., state employees) and the other half reduces payments to vendors.

Table 8
Net New Spending Attributable to Film Tax Credit

	Spending Category or Adjustment	Amount or Percentage
1	Tax Credits Awarded and Used	$65.0
2	Reduction for Sales Discount	93.0%
3	Value to Firm	$60.5
4	Awards that Sway Location Decision	90.0%
5	Effective Amount of Tax Credit	$54.4
6	Tax Credit Leverage Factor	4.0
7	Qualified Spending Due to Tax Credit	$217.6
8	Non-Resident Wages	$91.6
9	Resident Wages	$55.9
10	Goods and Services	$70.1
11	Spending in PA Only	$126.0
12	Less Balanced Budget Adjustment	$55.3
13	Net Incremental Spending	$70.8
14	Resident Wages	$28.3
15	Goods and Services	$42.4

Source: IFO computations based on audited applications submitted to DCED from last four years.

Economic Impact

This analysis uses the IMPLAN economic model, which is one of two standard models used for an analysis of the FPTC.[19] The REMI economic model could also be used. That model is more complex and allows for dynamic effects in response to any net increase in economic activity due to the tax credit. Dynamic effects allow certain technical parameters to change (e.g., the price of inputs, migration patterns) in response to

[18] The analysis assumes that $65 million is spent on tax credits. Alternatively, if the state used those monies for discretionary spending, that amount should be reduced to reflect the fact that the portion used to pay employee compensation includes pension contributions and employer payroll taxes which do not have immediate implications for the state economy. Therefore, the analysis reduces the balanced budget multiplier by 15 percent to reflect those impacts and deducts $65 * 0.85 = $55.3 million.

[19] IMPLAN is an economic input-output simulation that models the interrelationships between individual sectors of state and local economies. It incorporates the most recent data published by the U.S. Bureau of Economic Analysis on supply chains and economic multipliers. The model produces static impact estimates because various technical parameters are assumed constant. For the purpose of tax revenue estimates, the IFO relied on internal data from the Department of Revenue and other sources.

changes in direct spending. The model also allows the state economy to expand in response to any new economic activity induced by the tax credit, if appropriate.

The IFO did not use the more complex REMI model for two reasons. First, the net change in sales or output in response to the tax credit is $71 million. (See Table 8.) For 2017, the total size of the Pennsylvania economy is estimated at $756 billion, and the projected incremental change comprises 0.008 percent of that amount. It is the IFO's opinion that the magnitude of the change does not justify the strong assumption that various pre-specified technical parameters in the REMI model would adjust appropriately. More assumptions and complexity introduce greater potential for error and reduce the transparency of the results. Second, per Act 48, the analysis is an historical analysis. Conversations with multiple stakeholders revealed that much uncertainty surrounded the annual award of tax credits because supply is limited and is depleted quickly. It was not clear that firms would qualify for tax credits in any given year. Therefore, production location decisions were made on a year-to-year basis without regard to long-term investments that would motivate dynamic effects.

The economic analysis assumes the tax credit induces additional spending of $71 million. That amount is comprised of resident wages ($28 million) and payments to service providers ($42 million), which is split between hotels, equipment rentals, caterers and construction firms. Based on that allocation, the model derives the following results. It is noted that these are net results and reflect the economic impact from an alternative use of tax credit funds:

- Net sales or output increase by $135 million. This figure reflects a multiplier impact of 1.8 and is consistent with existing studies. The breakdown is as follows: $71 million in direct spending and $64 million of indirect and induced spending. The indirect effect represents the impact from other businesses that supply inputs to the film and television production industry. The induced effect represents the impact from employees spending wages and business owners spending income and profits.
- Net gross domestic product (GDP) increases by $93 million. The GDP impact is smaller than total sales because the sales or output metric double counts transactions that move through the supply chain.[20]
- Net employment increases by 1,140 full-time employees. The average labor income per employee is $59,600. However, that figure includes the value of health and retirement benefits, and payroll taxes. Average wages and salaries for those employees would be lower by roughly 10 to 15 percent. The tax credit generates 18 net jobs for each $1 million spent.
- Net state tax revenues increase by $8.5 million for an ROI of 13.1 cents per tax credit dollar. An important assumption is that personal income tax is remitted by all non-residents who temporarily work in the state.

[20] For example, the total sales or output metric counts all sales as the production of wood furniture moves from the supplier of the raw material ($50 of sales), to the manufacturer ($80) and then the retailer ($100). In this example, total sales would equal the sum, or $230. However, the GDP figure only reflects final sales to ultimate consumers ($100).

Sensitivity of Results

The analysis made a number of critical assumptions to derive the net change in direct spending that is input into the economic model. The simulation results are sensitive to those assumptions. The following bullet points describe how the results could change if certain parameters or assumptions are adjusted:

- If the share of productions that are incentivized due to the tax credit falls from 90 percent to 65 percent, the net economic impact is cut in half. If it falls to 45 percent, the net impact is negligible.
- If the tax credit triggered dynamic effects and the effects could be modeled accurately, they could increase the net economic impact by a modest amount. However, a number of FPTC studies used the dynamic REMI economic model and found comparable or lower returns on investment than this review.[21] As noted, most stakeholders perceive a high degree of uncertainty with the current tax credit, and they do not make longer-term investments in the state based, in part, on that uncertainty.
- The analysis did not include any impact from film-induced tourism that might be triggered by the tax credit. If those impacts exist, they would also increase the net economic impact by a modest amount. However, all non-industry studies find minor impacts from film-induced tourism and do not attempt to model it.[22] A recent study by the Massachusetts DOR also notes that the agency was "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."[23]

[21] For example, see the Maryland (2015), Massachusetts (2016), Florida (2018) and Washington (2016) studies listed in the Appendix. Those studies used the dynamic REMI economic model.
[22] For example, the Maryland (2015) study notes that "productions that received film tax credits in Maryland do not appear to have contributed much to film tourism in the State."
[23] "Report on the Impact of Massachusetts Film Industry Tax Incentives through Calendar Year 2014," Commonwealth of Massachusetts DOR (December 2016), p. 22.

Section 5: Tax Credit Plan

Act 48 of 2017 directs the IFO to review tax credits and develop a tax credit plan for all tax credits subject to review. The act states that tax credit plans should include performance metrics for each credit. The act does not specify any other elements of the tax credit plan. For this review, the IFO defined the tax credit plan more broadly to include the following elements: (1) the general findings of the review, (2) specific recommendations, including performance metrics and (3) key decision points for policymakers to consider.

General Findings

For the purpose of this report, the IFO reviewed numerous tax credit studies and spoke with multiple stakeholders, as well as the agencies that administer the tax credit. The following bullet points summarize the main findings of this research:

- Three states dominate the film-television production industry: California, Georgia and New York. For the latest year that data are available, those states spent between $330 million (California) to $533 million (Georgia) on film tax credits. Unless Pennsylvania enacts a substantial increase to the tax credit, it will be difficult to entice production firms to move from locations where they have already invested significant resources and established a long-term presence.
- Although the tax credit incentivizes productions, it is difficult to see the impact of the tax credit in employment and GDP data for the last five years. The current credit does not expand the industry, but rather retains jobs that would otherwise be lost.
- Nearly all tax credits are transferred or resold because recipients lack sufficient tax liability to utilize the credits.
- The analysis finds that the net return on investment (ROI) is 13.1 cents of state tax revenue for each tax credit dollar. That ROI is consistent with other government or academic studies.
- On net, the tax credit retains roughly 1,140 jobs and $68 million of labor income. That outcome assumes that 90 percent of productions are truly incentivized by the tax credit. The average wage for retained jobs is $51,000 to $53,000. By comparison, the average wage for NAIC 51211 (Motion Picture and Video Production) is $61,000 for 2017.

Specific Recommendations

Based on the general findings, the IFO submits the following recommendations to enhance the efficiency of the tax credit and improve its ability to achieve its purpose and goals.

The credit should be made refundable as well as transferable.

Data from DCED show that roughly 95 percent of Pennsylvania film tax credits are transferred or sold to firms other than the original recipient, because the recipient does not have sufficient tax liability to utilize the credit. For recent years, sellers have received roughly 93 to 94 cents on the dollar, and the entity that facilitates the transaction typically receives a commission equal to one to two percent of the transaction. These transactions represent leakage that does not stimulate the industry. The credit could be made fully

refundable, or partially refundable, such as 95 cents on the dollar. A fully refundable tax credit ensures the full benefit to the tax credit flows to the production firm.

Incentivize the use of resident labor for mid-tier productions.

A big drawback of the FPTC, especially for large budget feature films that employ highly paid actors, is that much of the economic impact flows out of the state to non-resident labor. Given Pennsylvania's position relative to other states (i.e., a moderate, capped tax credit), it is questionable whether Pennsylvania should compete for such productions. Instead, the state could compete for mid-tier productions where a larger share of the cost structure is comprised of resident labor. To encourage that outcome, the base credit rate could be higher for resident labor relative to non-residents. A number of states offer higher credit rates for resident labor to encourage firms to use local labor. Although the rate differential may discourage certain types of productions, there is excess demand for credits, and it is likely that modest changes would not cause total allocated tax credits to fall below the maximum cap. Higher utilization of resident labor will reduce spending that leaves the state and increase the economic impact from the tax credit. There will be a larger "bang for the buck."

Consider separate credit pools for film, television and small, independent productions.

These three categories of productions have different characteristics and economic implications. As shown by Table 7, television productions employ more Pennsylvania labor and there is greater potential those productions will have a multi-year presence in the state. Small, independent productions have cost structures that are more labor intensive. Separate pools would ensure that productions compete against competitors with similar characteristics. It would also allow DCED to adjust criteria for each allocation pool. The dollar amounts could be adjusted each year depending on industry conditions.

Consider a temporary higher credit for television productions that relocate to Pennsylvania.

This approach is used by the California Film Commission for the state's Film and Television Tax Credit Program 2.0 enacted in 2015. Under that approach, a relocating television series received a 25 percent credit on qualified spending, compared to a regular base credit of 20 percent. The television series must have filmed at least 6 episodes outside California. The credit is reduced to 20 percent after the first season filmed in California.

DCED should track outcomes for productions that were approved for tax credits but did not receive an award.

The tracking of this metric will inform the share of productions that would have filmed in Pennsylvania regardless of the tax credit. *This is a crucial parameter in the economic impact analysis.* If that metric is relatively high, it may suggest that DCED should revise their internal scoring algorithm to target awards to firms that will truly be incentivized by the credit.

Some stakeholders would like to see a more rapid approval process.

Stakeholders found the application process was reasonable and that DCED was responsive to their questions and concerns. However, a number of stakeholders would like a quicker approval process. Given that

the tax credit is capped and amounts are fully allocated every year, it is unclear that an expedited process would change ultimate outcomes, only the mix of productions. It is likely that larger feature films are more sensitive to the delay between the submission of an application and approval.

Key Decision Points

Compared to other states, the current Pennsylvania FPTC inhabits a "middle ground": it is large enough to attract significant economic activity and productions, but too small to attract large feature films and longer-term investment. Stakeholders also noted that there is uncertainty regarding the availability of tax credits in any given year.

Given the moderate size of the tax credit relative to other states, policy should be crafted in recognition of that fact. If the size of the tax credit is maintained, Pennsylvania likely cannot compete for certain productions with states like Georgia, which has an uncapped credit and higher base credit rate. Therefore, the limited credit monies should be targeted towards productions that will maximize the long-term economic impact on the state. Currently, there is significant excess demand for the tax credit, so a more targeted approach will likely still result in a full allocation of available tax credits each year.

Given the current landscape of state FPTCs, the following issues merit discussion by policymakers:

- What types of productions should the tax credit target: feature films, television productions or small independent productions? Should the credit attempt to attract large feature films given the capped tax credit?
- What is the long-term vision for the tax credit? Do policymakers want to maintain current market share, or do they want the industry to expand? If the latter, are they willing to make a substantial investment in the tax credit?
- Should policymakers create separate allocation pools in order to ensure that certain types of productions always receive some credit allocations?
- Is a 25 percent base credit rate the rate that maximizes economic impact? A lower base credit rate reduces the attractiveness of the credit, but allows more productions to receive it. The tax credit is already oversubscribed, and if it remains oversubscribed at the lower rate, the credit could leverage $5 of spending for each $1 of tax credit, instead of $4.

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Appendix

Tax Credit Review Mandate

Act 48 of 2017 is the Performance-Based Budgeting and Tax Credit Efficiency Act. The act requires the Independent Fiscal Office (IFO) to review tax credits based on a five-year schedule determined jointly by the Secretary of the Budget and the Director of the IFO. The act specifies that the schedule must ensure that tax credits are subject to a review by the IFO at least once every five years. The IFO will submit reviews to the Performance-Based Budgeting (PBB) Board and the Chairs of the House and Senate Finance Committees and make the report available to the public through its website.

The act specifies that reviews shall contain the following content:

- The purpose for which the tax credit was created.
- Whether that tax credit is accomplishing the tax credit's legislative intent.
- Whether the tax credit could be more efficiently implemented through alternative methods.
- Any alternative methods which will make the tax credit more efficient if necessary.
- The costs of providing the tax credit, including the administrative costs to the Commonwealth and local government entities within this Commonwealth.

The act also specifies that the IFO shall develop a tax credit plan for all tax credits subject to a review. The plans should include performance measures, and where applicable, the measures should reflect outcome-based measures (including efficiency measures), measures of status improvements of recipient populations, and economic outcomes or performance benchmarks against similar State programs or similar programs of other states or jurisdictions.

Performance-Based Budgeting and Tax Credit Review Schedule

Performance-Based Budgeting and Tax Credit Review Schedule

Year	Performance-Based Budgets					
1	Corrections	Board of Probation and Parole	PA Commission on Crime & Delinquency	Juvenile Court Judges' Commission	Banking and Securities	General Services
2	Economic & Community Development	Human Services – Part 1	Health	Environmental Protection	PA Emergency Management Agency	State
3	PennDOT	Human Services – Part 2	State Police	Military & Veterans Affairs	State Civil Service Commission	
4	Education	Human Services – Part 3	Aging	PA Historical & Museum Commission	Agriculture	Labor and Industry
5	Drug and Alcohol Programs	Insurance	Revenue	Executive Offices	Environmental Hearing Board	Conservation and Natural Resources
Year	**Tax Credits**					
1	Film Production	New Jobs	Historic Preservation Incentive			
2	Research and Development	Keystone Innovation Zones	Mobile Telecom and Broadband	Organ and Bone Marrow		
3	Neighborhood Assistance	Resource Enhancement and Protections (REAP)	Entertainment & Economic Enhancement	Video Game Production	Keystone Special Development Zones	
4	Educational Tax Credits	Coal Refuse and Reclamation	Mixed Use	Community-Based Services		
5	Resource Manufacturing	Brewers'	Computer Data Center	Manufacturing and Investment	Waterfront Development	Rural Jobs and Investment

IFO Independent Fiscal Office

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DOR Administration, Enforcement and Compliance Efforts for the FPTC

The text that follows was submitted by the Department of Revenue (DOR) and describes the agency's administration, enforcement and compliance efforts related to the tax credit. The estimated cost of those efforts was included in the main body of this review.

Program Administrator(s)
DCED – Program Administrator
DOR – Credit Utilization, Fiscal Tracking and Compliance

Guidelines, Forms, Bulletins, IT changes
The Department of Revenue ("Revenue") is responsible for providing the Department of Community and Economic Development ("DCED") with credit utilization language within the program guidelines, tax credit award letter and claim form. These documents are reevaluated annually with the program administrator's office.

Tax Returns, Credit Schedules and tax bulletins are revised annually to provide direction and guidance on the use of the credits under the tax types through which the credit may be utilized against a qualified tax liability.

Revenue is responsible for ensuring that tax credits are recorded within the tax system for utilization against qualified liabilities according to the defined business rules through which the credit may be claimed by taxpayers. These business rules regulate clearing by the tax systems to ensure that all credit use can be verified and tracked by Revenue. In addition, Revenue maintains secondary record systems to record transaction level data between Bureaus.

Consultation Time with DCED
Revenue provides guidance to the program office upon request. When consulted upon, Revenue may be asked to interact with awardees on guidance pertaining to the Sale and Assignment process. The Office of Economic Development generally performs this service on behalf of Revenue.

Pre-Award Application Review and Compliance Review
Recent changes in state law authorize Revenue to perform state tax clearances on applicants participating in tax incentive programs. Revenue, acting under the provisions in Act 43 of 2017, review applicants' tax history to ensure compliance with the laws and regulations of the Commonwealth of Pennsylvania. The two issues for determination are entity tax compliance and ownership tax compliance for entity owners with a 20% or greater share of ownership. Failure to comply to the satisfaction of the department will result in disqualification from the tax credit program.

Revenue has a dedicated unit within the Bureau of Compliance for tax clearances on applicants participating in tax incentive programs. Applicants deemed non-compliant have an opportunity to achieve tax compliance by working with the staff in this unit. Applicants deemed compliant are communicated back to DCED for credit awarding.

Credit Use by Awardee including Pass-Throughs
Applicants are required to file the credit claim form received with the DCED award letter to claim the credit. Generally, approved credits are the first applied to a taxpayer's liability. Complying with this rule will insure maximum utilization of the credit within the taxpayer's account. It also provides for any "cash" paid into the period to be available for transfer or refund.

The Bureau of Corporation Taxes, Bureau of Individual Taxes, and Pass Through Business Office are responsible for ensuring credits claimed by awardees are in accordance to the utilization rules for the credit and that the use of the credit is recorded against the balance held by the awardee for the duration of its lifecycle. Post reviews for all transactions are conducted by the Office of Economic Development.

Sale or Assignments
A completed tax report *must be filed* for the period in which the credit was approved before the credit may be passed through, carried forward, sold or assigned. In addition, the sale or assignment of a restricted credit will not be approved if the seller has any unpaid state taxes. Therefore, a seller must have filed *all* state tax reports and returns and paid *all* state tax liabilities as of the date the department is asked to review the seller's records as part of the process to approve the sale of a credit.
Revenue interacts with buyers, sellers and credit brokers to complete a Sale or Assignment transaction. The Bureau of Compliance, Bureau of Corporation Taxes and Office of Economic Development are responsible for processing sales and assignment applications.

Credit Use by Buyer including Pass-Throughs
Buyers of restricted credits must use the credit in the year in which the purchase or assignment is made. The credit "shall be immediately claimed" and is prohibited from being carried forward, carried back, refunded, sold or assigned. They may not carry over, carry back, obtain a refund of or sell or assign the credit. The "immediately claim" language as well as the prohibition against "assigning" means that a purchased credit must be used by the purchasing entity or passed-through, by a pass-through entity and used by resident or non-resident shareholders, members or partners. The credit may not be passed through twice.

The Bureau of Corporation Taxes, Bureau of Individual Taxes, and Pass Through Business Office are responsible for ensuring credits claimed by buyers are in accordance to the utilization rules for the credit and that the use of the credit is recorded against the balance held by the assignee for the duration of its lifecycle. Post reviews for all transactions are conducted by the Office of Economic Development.

Credit Reconciliation and Post Accounting BTS/ Credit Databases
Revenue routinely performs post accounting adjustments to taxpayer accounts and adjustments to the credit databases to ensure that all credits are reconciled in the tax system. The Bureau of Corporation Taxes and Office of Economic Development are responsible for interacting with taxpayers through which reconciliations were requested or adjustments were made to accounts pertaining to the credits.

Post Reporting (GASB77 and Governors Budget Book)
Revenue is responsible to providing the Governor's Office of the Budget information on tax credit programs for awarded and utilized credits. The Bureau of Research is primarily responsible for preparing this information.

Letters Submitted by Stakeholders

Matthew Knittel

Independent Fiscal Office

400 Market Street

Harrisburg, PA 17105

September 26, 2018

Dear Matthew,

The Greater Philadelphia Film Office (GPFO) is a film commission representing southeastern Pennsylvania that officially serves the counties of Bucks, Chester, Delaware, Montgomery and Philadelphia. GPFO serves to drive film and television business to the Philadelphia region, recognizing its huge economic impact in job creation and its unparalleled public relations effects for the region. These productions will not come to Pennsylvania without the guarantee of a funded film incentive program.

The funds in the PA Film Tax Credit program are depleted early in the second quarter of each fiscal year. When the funds are depleted, film industry tax credit newsletters spread the word and GPFO's phones stop ringing. Pennsylvania is turning away business, while states with uncapped programs in Georgia, Massachusetts, Illinois, Arkansas, Connecticut, Maine and Kentucky reap the benefits. California is capped at $330M, and neighboring New York is funded at $420M,. Consequently, in the past two years more than 30 film projects representing almost $400 million of direct investment have gone to those states despite their preference to shoot in Pennsylvania.

Pennsylvania is the only state in the United States with two major production centers: Philadelphia and Pittsburgh. Both cities have the resources to satisfy much more production and drive substantially more revenue to the Commonwealth. To do this, the film tax credit program must be supported and increased.

Assisting and coordinating all types of production, GPFO is extremely familiar with the deep and robust indigenous Philadelphia film industry. When PA loses feature film and television business due to a depleted film tax credit program, its residents lose jobs and the entire industry is thwarted. Each production that receives a film tax credit brings an unmatched amount of direct, indirect and induced spending to Pennsylvania. These productions not only pay their entire cast and crew millions of dollars, but they also stay in hotels, hire casting agencies, rent cars and equipment, pay location fees, hire caterers, etc. Each business these productions employ goes on to increase their own spending on employees, services and products to satisfy the needs of the production, resulting in a substantial amount of indirect spend, in addition to the $2.3B in direct spend that the film industry has already brought to PA.

In addition to the direct and indirect spend is the induced spend, which most significantly promotes growth in our local industry. For example, when Expressway Cinema Rentals receives orders from the film tax credit recipients, their increased revenue goes directly toward expanding their team and facilities. Due to the volume of business they have received, they have opened a second studio, and the production wing, Expressway Productions, has been able to take on more commercial production than ever before. To satisfy the needs of this increased commercial production in their facility, Expressway hires more crew members, and has even started an annual Boot Camp series to train entry level crew in specialized skills unique to each department on set. Similarly, Pennsylvania resident M. Night Shyamalan, a repeat Philadelphia region filmmaker, is now producing a television series. He will be renting, and perhaps

purchasing, his own studio in Pennsylvania. The owners of Sun Center Studios, one of two qualified sound stages in PA, are eager to renovate and expand their studio, but with no guarantee of additional production in the region each year when the tax credits are depleted, they can't expand their investment in Pennsylvania infrastructure.

Pennsylvania has an opportunity to capitalize on the booming, consistent and recession proof power house that is the film and television industry. The Film Tax Credit program is one of the most carefully audited programs in the state, and every audit proves that investment in film and television is a homerun for Pennsylvania. The indirect and induced spending is overlooked in PA despite impact it has on Pennsylvania's businesses, citizens and government coffers. Help us create more jobs and increase revenue by supporting and expanding the program.

Sincerely,

Sharon Pinkenson

Executive Director

PITTSBURGH FILM.OFFICE
535 Smithfield Street, Suite 500, Pittsburgh, PA 15222 PH 412.261.2744 FAX 412.471.7317

October 1, 2018

Matthew Knittel
Director
Rachel Carson Office Building
400 Market Street
Harrisburg, PA 17105

Mr. Knittel:

On behalf of the Pittsburgh Film Office and the southwestern Pennsylvania area, I am writing to you in response to a meeting we had on August 13, 2018. It is my hope to convey the positive impacts the Pittsburgh Film Office has created for the state and local economy through the benefits of the Film Production Tax Credit. Pittsburgh and Allegheny County have been home to many feature films and television series over the past 11 years, since the revised Film Tax Credit began. As we discussed in our meeting, we encourage the Independent Fiscal Office (IFO) to do a macro-analysis of the Film Production Tax Credit. In our opinion, it is the only way to accurately capture the benefits to a robust film industry in Pennsylvania. A macro-analysis of the Film Production Tax Credit will provide the IFO with a true evaluation of legislative intent (i.e. lodging, local taxes, tourism promotion and workforce development).

Pennsylvania has seen over 381 feature projects since 2007, with 139 feature films and TV productions in southwestern Pennsylvania. Nearly 80 of those projects were productions under the Tax Credit program. The state Film Production Tax Credit is capped at $65 million a year. Currently, production companies must spend a minimum 60% of their total budget in Pennsylvania in order to receive a 25% tax credit. In addition, each production must undergo an independent audit to ensure that this threshold is being met. The film industry would argue that the guidelines set forth in the Film Production Tax Credit are some of the strictest in the state.

The film industry has recorded over 131,000 hotel stays in the past five years, creating tremendous benefits to both local and state government tax revenues. Since the revised Film Tax Credit program was created in 2007, there has been nearly $1 billion in economic activity in southwestern Pennsylvania. This program has created high-skilled, meaningful jobs for both the film industry and other-related industries. Film-related unions, such as the International Alliance of Theatrical Stage Employees (IATSE) 489, have tripled in membership since 2007. In addition, a wide range of ancillary fields including, manufacturing, catering, construction and service industries have grown as a result of the film industry in southwestern Pennsylvania. The growth of the film industry, as supported by the Film Production Tax Credit, has led to the development of permanent production facilities across the state.

The Pittsburgh Film Office is proud to be a supporter of the Pennsylvania Film Production Tax Credit and looks forward to advocating for increasing the cap to the credit. The Teamsters and IATSE have shared data with the IFO demonstrating the film industry creates long-term family-sustaining jobs that have enhanced and grown the economy in southwestern Pennsylvania.

Sincerely,

Dawn M. Keezer

January 4, 2019

To whom it may concern:

This letter is in response to a productive meeting that took place with the IFO on Tuesday, August 7, 2018.

The goal of the Pennsylvania Film Industry Association (PaFIA) is to continuously educate elected officials in the General Assembly on the PA Film Tax Credit and its economic benefits to the state. Our ultimate goal is to create a work force that will supply and support the continued film work in Pennsylvania with skilled labor, talent, and project management. Our voice is stronger, aligned with numbers, and we have a political commitment to enlighten our legislators to the number of PAFIA members in their districts and document the importance of the PA Film Tax Credit in a positive and constructive way.

PaFIA is working with many stakeholders, including the Philadelphia and Pittsburgh Film Offices, to seek an increase to the $65 million film tax credit allocation. While PaFIA remains very appreciative for the support that legislators and the Governor have for the program, we feel it is a very good time to invest further in the industry – bringing more films and shows to the Commonwealth, creating additional jobs throughout the state.

While this tax credit gets the attention of producers, it's our members' passion that has created Pennsylvania's name as a viable shooting location for large budget productions. PA is an excellent location for filming because the exceptional infrastructure (crews and vendors) and attractive shooting locations.

The PA film tax credit program is a great success. The program has injected millions of dollars back into Pennsylvania's economy and has provided countless jobs for people in the state. PA reaps major benefits from the film tax credit program and will continue to do so, in large part, because of the tireless work of PAFIA.

Sincerely,

David Haddad
Chairman, Pennsylvania Film Industry Association
President, Haddad's Inc.

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NBCUniversal

January 4, 2019

Dr. Matthew Knittel
Independent Fiscal Office
400 Market Street
Harrisburg, PA 17105

Re: Pennsylvania Production Tax Credit Impacts

Dear Dr. Knittel,

Thank you again for allowing me to meet with you to discuss NBCUniversal's experiences with the Pennsylvania production tax credit and working in the Commonwealth. In response to the public request for comments for the IFO report, prepared below for your consideration is NBCUniversal's submission. Please let me know if I can provide additional information or otherwise be of assistance. Thank you.

Sincerely,

Brian O'Leary

Introduction

In thriving film and television production centers around the United States and the world that are enjoying increased direct investment in production and job creation, a common element to all is a stable, competitive production incentive. A predictable, competitive incentive is capable of delivering both the seismic impact of large budget feature films on a recurring basis as well as the steady, long term economic benefits of multiple high end television productions. It is commonplace in other jurisdictions that film and television production will concentrate in and around the main urban center where there is an availability of crew and production infrastructure. Pennsylvania, by comparison has the benefit of its two existing production centers in Philadelphia and Pittsburgh, positioning the state to attract and expand production investment across the state. The potential for Pennsylvania to grow production is evidenced by the annual oversubscription of the production tax credit program as well as the experience in other jurisdictions in growing production and production related jobs.

Fiscal and Economic Impacts

There have been a number of economic impact reports, including those commissioned by government agencies that have found film and television production activity generates significant positive impacts, ranging from job creation to strong fiscal returns. For example, in 2014, California city governments commissioned the Los Angeles Economic Development Corporation (LAEDC) to evaluate the economic and fiscal impacts of the California production tax credit. The LAEDC report found that for every $1 (US) of tax credits issued, total economic activity in California increased by $19.12 and labor income grew by $7.15. The LAEDC report also found a positive government **ROI of $1.11 in taxes collected for every $1 in credits issued**[1]. In 2017, Camoin Associates issued a report on behalf of the New York State government that the government return on investment for the 30% NYS film production tax credit was **$1.15 in taxes collected for every $1 of credits issued.**[2] Another New York State report prepared by Cornell University found that for every 1 job hired to work in film and television production there are another 2 jobs created in the economy; a **3:1 effect.**[3] The film industry's positive economic impacts have also been reported in territories outside the United States. For example, in April 2013, Deloitte Consulting prepared for the National Film and Video Foundation of South Africa a report entitled, 'South African Film Industry Economic Baseline Study' that concluded foreign direct investment as a result of the South African 20-25% film incentive generated more than 17,000 jobs for South Africans and yielded **a 2 to 1 taxes collected to incentives paid ratio**. The Deloitte economists hired by the South African government also found that every dollar spent in the South African economy actually generated almost 3 dollars of total economic impact.

Impact on Tourism

The nexus between the location where a project is filmed and tourism has been studied and incorporated into reports issued by governments, including the 2016 report prepared by MNP LLP for the New Mexico government. The MNP report concluded that for 2014, film induced tourism (FIT) from **New Mexico productions contributed at least 5% of total visitor spending to the New Mexico economy**. Stated another way, FIT generated approximately $423.8MM in economic impact and 4,412 jobs.[4] Governments have also evaluated the effect film has on visitation based on a production's marketing value. A notable example being the report Cloudberry and Oxford Research prepared for regional and municipal government authorities in Sweden establishing the impact of the Swedish produced films, *'Girl with a Dragon Tattoo'*. The marketing value for these films to the Swedish economy was set at $154MM (US).

Other locations have successfully harnessed film and television production as a force of attraction for tourists. For example, central to New Zealand's national branding identity was exporting New Zealand's extraordinary natural beauty to global audiences. The Lord of the Rings and Hobbit franchises were the central catalyst resulting in the attraction of foreign visitors to New Zealand. The epic series, Game of Thrones has successfully transformed

[1] https://laedc.org/2014/03/20/film-television-tax-credit-report-released-scag
[2] https://esd.ny.gov/sites/default/files/news-articles/2017_CamoinAssociates_FilmTaxCreditReport.pdf
[3] https://www.ilr.cornell.edu/sites/ilr.cornell.edu/files/New_York_Big_Picture.pdf.
[4] http://nmfilm.com/uploads/files/MNP%20Film%20Study%20Phase%20III%202016(1).pdf

viewers to visitors to locations including Northern Ireland.[5] In Iceland, which is a recurring film location for GoT, tourism increased **from 566,000 in 2011, the year the series premiered, to more than 1.3 million in 2015, and 1.8 million last year**.[6]

Film Industry Growth Potential

With the expansion of distribution platforms, there has been a corresponding increase in the production of content for a growing global market. The increase in production and the resultant demand for additional infrastructure investments, including soundstages and postproduction facilities, as well as a skilled production workforce has created endless opportunities for jurisdictions to diversify their economies and increase job opportunities for their residents. For example, the state of Georgia has steadily built one of the world's leading film and television production sectors. In 2017 the film industry's direct investment was $2.65 billion, which is significant, and becomes all the more profound when one considers the industry spent $671.6 million in 2011 and less than $250 million in 2007.[7] In Canada, Ontario has increased production across the province with its uncapped production tax credit of 21.5%. Total production in Ontario increased from $671 million (CN) in 2008 to $1.689 billion (CN) in 2016. The stability and competitive standing of the New York film credit has allowed for the substantial increase in production activity and the corresponding growth in the New York film industry workforce. The most recent annual figures show the New York state film industry's impact exceeded $6 billion and generated 35,000 jobs,[8] in 2007 there were 19,500 jobs and economic impact $2.2 billion.[9]

Workforce Development

The growth in production and changes in technology have expanded the workforce needs of the film industry, both in terms of the raw number of workers as well as the skills needed to produce content. Territories around the world are employing a variety of measures to develop a local workforce to meet the growing demand for skilled labor. For example, to provide entry level workers to meet the long term needs of the film industry, the government of Georgia has created the Georgia Film Academy, which is a government supported state-wide film training program. The Republic of Ireland has taken a modified approach, forming a workforce development organization, Screen Training Ireland[10] that works in partnership with producers to provide apprenticeships and skills development.

Conclusion

The film industry in Pennsylvania has enormous potential to diversify the Commonwealth's economy and create well paying, long term careers for residents. Measuring the production tax credit's impact and its role in driving investment is a goal than can be achieved. The challenge in doing so is accounting for the extent of the industry's economic influence through the stages of production, the collateral impacts of infrastructure development and exposure (tourism) value.

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[5] http://m.independent.ie/business/irish/tourism-bonanza-as-game-of-thrones-and-star-wars-drive-people-to-ireland-36164165.html

[6] http://www.telegraph.co.uk/travel/arts-and-culture/filming-locations-game-of-thrones-season-seven/

[7] https://www.usnews.com/news/best-states/articles/2017-10-20/georgias-film-presence-continues-to-grow

[8] https://www.scribd.com/document/339314287/Report-on-the-New-York-state-film-tax-credit#from_embed

[9] http://www.frsm.se/wp-content/uploads/2012/07/NYStateEIReportFeb09Final.pdf

[10] https://www.screentrainingireland.ie/

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