12-2016

The Media Industry in Oregon: Incentive and Impact Analysis

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December 2016

ACKNOWLEDGEMENTS

This report was researched and produced by the Northwest Economic Research Center (NERC) with the support from The Oregon Governor's Office of Television and Film.

The Oregon Governor's Office of Television and Film promotes the development of the film, television, commercial, and interactive industry in Oregon, and works to enhance the industry's revenues, profile, and reputation within Oregon and among the industry internationally.

NERC is based at Portland State University in the College of Urban and Public Affairs. The Center focuses on economic research that supports public-policy decision-making, and relates to issues important to Oregon and the Portland Metropolitan Area. NERC serves the public, nonprofit, and private sector community with high quality, unbiased, and credible economic analysis. Dr. Tom Potiowsky is the Director of NERC, and also serves as the Chair of the Department of Economics at Portland State University. Dr. Jenny H. Liu is NERC's Assistant Director and Assistant Professor in the Toulan School of Urban Studies and Planning. This report was researched and written by Mike Paruszkiewicz and Emma Willingham, with assistance from Peter Hulseman.

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"Lean on Pete" in Harney County, Photo Credit: Scott Green

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Executive Summary

Oregon's media industries have become increasingly well-known over the last several years, thanks in large part to successful feature length films and television series produced in the state. It is widely known that such productions offer visibility, tourism interest, and a boost to local merchants during their visits. More economically important, but less immediately obvious, are the impacts of a home grown industry of professionals and businesses that thrive in regions able to maintain a reliable stream of production activity. Numerous states now offer incentives to visiting media productions, some focused on big-ticket features and visiting series. In Oregon, the Governor's Office of Film and Television has emphasized support for a local industry that not only interacts with out-of-state productions, but produces its own content, income, and permanent jobs. Indeed, the state's media industry has grown substantially over the last decade, and now supports thousands of resident professionals working in film, television, animation, video games, and multimedia.

Providing such support requires incentives that not only compete with other states hopeful to foster similar outcomes, but with other areas of Oregon's budget. The Film Office has commissioned analyses of the local economic impact of its efforts since at least 2007. This report expands and updates previous work by NERC to measure the costs and economic benefits of Film Office incentives. Such analyses have proliferated in recent years, with widely varying scopes and methodologies. This report conservatively focuses on activity directly related to state incentives, and considers only the implications for Oregon businesses and residents in order to provide a fair assessment of economic impacts.

The analysis confirms that production incentives have a substantial positive economic impact for the state. Further, because the Oregon Film Office specifically targets "indigenous" productions (made in Oregon by Oregonians), and has expanded its scope to include interactive media and video games, the benefits of its incentives reach deeper into the local economy than those of temporary feature film shoots. In total, incentives paid in FY 2015-16 approached $15 million, funded primarily by tax credit auction and Oregon Lottery funds. Although most state incentive funding is given to productions that are not based in Oregon, about 90 percent of the income that follows accrues directly to Oregon workers and businesses. In turn, that income stimulates additional employment, income, and economic output in the state. Incentivized productions *directly* provided over 1500 above-average wage jobs and an annual average total of $93 million in income to Oregonians working in the industries between 2012 and 2015 (Table A.1).

Table A.1 – Direct Income and Employment in Oregon's Media Industry

	2012	2013	2014	2015
Direct Labor Income (OR Residents)	$78,137,553	$99,792951	$95,262,665	$101,101,410
Direct Employment (OR Residents)	1,431	1,694	1,560	1,488
Average Wage (overall)[1]	$43,158	$46,235	$48,886	$50,853
Total Industry Employment[2] (QCEW)	2,967	2,840	2,991	3,233

The total economic impact of this activity (estimated by IMPLAN, a widely-used economic impact model) included well over 3,000 jobs and $200 million in state Gross Regional Product ("Value Added") in 2015 (Table A.2). These figures correspond to over $18 million in state and local tax revenues.

Table A.2 – Total Economic Impact of Incentivized Media Production in Oregon, 2012-2015

	2012	2013	2014	2015
Employment (OR Residents)	3,000	3,465	3,196	3,118
Labor Income (OR Residents)	$128,881,035	$158,719,290	$150,660,528	$157,908,146
Total Value Added	$169,623,847	$205,943,468	$194,595,429	$202,791,033
Output	$488,586,609	$563,793,800	$509,228,599	$537,788,177

Ultimately, the figures and estimates presented in this report provide a conservative look at the relative costs and benefits to Oregon of its media production incentives. While policy priorities depend on more than hard numbers, those found herein confirm that these investments have provided returns at minimum commensurate with their size to the state, and are likely of further value to long-term economic development strategy[3].

[1] The average wage in the video games subsector tends to be higher than that of the broader film/TV production industry. This higher wage is accounted for in employment estimates.
[2] Includes all employment in the state's media industry – both incentivized and non-incentivized.
[3] As noted, the indigenous industry supported by production incentives provides economic development benefits that are insufficiently measured by jobs counts and fiscal totals. These issues are further explored in a companion 2016 study prepared by the Center for Community Service at the University of Oregon.

Introduction

As states across the country grapple with shifting budget priorities and revenue challenges, due diligence requires the comprehensive analysis of all public investments, including targeted spending on economic development. Film, television, and other media productions engender a significant amount of economic activity where they occur, and therefore the size of incentives provided by individual states to producers is an important policy element—states are effectively competing with each other to attract opportunities of this type.

Numerous US states currently offer incentives for media production, including tax credits, exemptions, cash rebates, and logistic assistance. In Oregon, the Governor's Office of Film and Television ("Oregon Film Office") began offering incentives to larger film and television productions in 2005 through the Oregon Production Investment Fund (OPIF). In 2007 state incentives were expanded through the Greenlight Oregon Labor Rebate, and the Indigenous Oregon Investment Fund (iOPIF) was introduced in 2009 to specifically target Oregon-based productions that primarily hire Oregon residents as employees.

Many productions are able to combine incentives – for example, a feature film (that otherwise meets the aggregate spending threshold of $1 million in total) that spends $1 million on goods and services in Oregon and further spends $1 million on payroll in Oregon would be eligible for a combined rebate of $362,000: 20 percent of its goods and services purchases, and 16.2 percent of its Oregon payroll (10 percent through OPIF plus 6.2 percent through the Greenlight Rebate).

Economic studies analyzing media production in US states have proliferated in recent years alongside incentive programs. These studies vary widely in scope and methodology, sometimes considering activities somewhat removed from actual incentives. This report focuses on activity that is directly linked to Oregon state policy – that is, productions interacting with one or more of Oregon Film's incentive programs. There is a valid argument that the interrelated nature of the production industry's labor and capital markets indirectly tie a larger swath of activity to Oregon's efforts to draw and retain specific productions to the state. However, for

Oregon Production Incentives Summary

Oregon Production Investment Fund (OPIF):

Qualifying productions (directly spend $1 million in Oregon) receive a 20% cash rebate on production-related goods and services, and a 10% cash rebate of wages paid to resident and non-resident workers.

Indigenous Oregon Production Investment Fund (iOPIF):

Qualifying productions (spend minimum of $75,000, produced by OR resident and with principal cast and crew at least 80% Oregon residents) receive 20% cash rebate (of spending up to $1 million) for goods and services and 10% cash rebate for wages paid to Oregon residents.

Greenlight Oregon Labor Rebate:

Offers a cash rebate of 6.2% for all Oregon labor to productions spending over $1 million in the state.

economic "impact", "contribution"[4], or cost-benefit analyses, those activities that directly interface with incentive programs comprise the highest quality evidence.

The analysis that follows begins with a summary of the State of Oregon's expenditures on production incentives – the "cost" side of the issue – followed by several measures of the outcomes of incentivized media production activity as they relate to Oregon's economy.

"Portlandia" Season 7, Portland City Hall

[4] The distinction between economic "contribution" and economic "impact" is an important one, but the two terms are often used interchangeably in policy analyses. Technically speaking, "impact" refers to the results of new activity that stems from changes in policy, business environments, or other traceable factors. "Contribution" refers to the economic "footprint" of existing activity. This report involves both.

Methodology

This study focuses on activity that is strongly connected to Oregon's policy landscape and economy. The following sections thus present statistics that reflect a narrow portion of the state's media industry: only production companies that received incentives are considered, and further, only individual projects for which those incentives were received are considered (rather than all projects by the production company in question). This contrasts substantially with many similar reports on states' incentives programs.

Likewise, the geographic distribution of issues related to cross-border activity is approached with care. The rich set of data provided by the Oregon Film Office included detailed payroll records from incentivized productions. Most records included employees' place of residence, which allowed the income and employment of Oregon workers to be separated from overall payroll spending. For "indigenous" production companies (based in Oregon), it was assumed that all employees were Oregon residents, though it is technically possible that some employees may have commuted from other states. In a few isolated cases (less than 0.5%), it was not possible to isolate Oregon workers and wages from the rest of a project's cast and crew; the hiring data from comparable projects of similar size and type was used to estimate the missing data in such cases.

"Employment in the media sector is highly unique, following patterns very different from typical nine-to-five work."

Employment in the media sector is highly unique, following patterns very different from typical nine-to-five work. Jobs estimates are approximated using earnings and average wages for the industry, as discussed in more depth in a sidebar later in the report.

All reported production spending occurred within Oregon borders, as required by the incentive programs, and thus represents only a portion of a given project's overall budget.

Economic Impact Analysis

The 2014 IMPLAN model of Oregon's economy was used to generate economic impact estimates (see inset). IMPLAN is an input-output (I-O) model that simulates a given region's economy – a mathematical representation of all of the linkages between firms, households, governments, and other economic entities. Based primarily on detailed data on the historical relationships and behaviors that define an economy, IMPLAN traces the impacts of a given activity through linkages wherein subsequent rounds of spending, earning, investment, and sales take place.

I-O models break out analysis into three types of impacts: direct, indirect, and induced.

- ***Direct impacts*** are the initial events that spur "upstream" and "downstream" economic activity. The classic example is the construction of a new sports stadium which is expected to generate $1 million in annual sales in the local economy. The $1 million in sales (output), earnings of new stadium employees, return to the stadium's investors, and associated government revenues represent direct impacts.

- ***Indirect impacts*** result from industry-to-industry activity – the upstream effects of an activity. In the stadium example, construction and operation of a new stadium requires building materials, lighting equipment, electricity, accounting services, and countless other inputs from other industries. These industries in turn must hire workers and purchase inputs from other industries, and the cycle continues to feed each supply chain. The output, jobs, and income of these upstream activities represent the indirect effects of the new stadium.
- ***Induced impacts*** occur "downstream" (economically speaking) of the new stadium's direct and indirect effects: the stadium's workers, as well as the employees of its vendors in other industries, spend much of their income in the local economy. That spending in turn spurs economic activity at grocery stores, restaurants, medical offices, apartment complexes, and perhaps even the sports stadium. Induced effects capture all such iterations of workers' spending in the economy.

Economic impact analysis typically requires multiple assumptions that cannot be easily verified; in general, the most conservative option was chosen for this study. The first assumption involves the scope of the direct impact to be considered. As mentioned, this analysis considers only media production activity directly incentivized by the OPIF, iOPIF, and Greenlight programs to be direct impacts.

While the labor income of the incentivized industry's employees was known, the output, profits, and taxes paid by the productions in question was not known. Estimates of these figures presented below were generated by IMPLAN.

Finally, strictly in-state or "indigenous" productions are of particular focus in this analysis. However, companies and workers based elsewhere clearly play a role in incentivized activity. This study considers the impact of visiting productions and visiting workers conservatively, assuming only a small fraction (10 percent) of out-of-state workers' incomes are spent in Oregon, and ignoring the revenues earned and taxes paid to other states by out-of-state companies.

Southern Oregon Production, Photo Credit: Mary Wilkins Kelly

Results and Discussion

The next section provides the detailed results of this analysis, accompanied by context and interpretation. Comparison between out-of-state and in-state effects is provided as part of the central discussion relating incentives and industry spending.

State Incentive Funding

Both OPIF and iOPIF funds are raised through biannual tax credit auctions. In FY2015, the most recent auction for which records are available, $10,000,000 in tax credits were sold for $1.01 on the dollar, grossing $10,010,215 and raising a net $9,985,189 to be spent on production incentives (Table 1).

Table 1 – State Incentive Funding, FY2012-FY2015

	2012-13	2013-14	2014-15	2015-16
OPIF funds available	$6,000,000	$10,000,000	$10,000,000	$10,000,000
OPIF funds received	$5,867,837	$9,898,206	$9,956,233	$10,010,215
OPIF funds paid	$6,914,505	$7,957,667	$11,134,369	$10,616,256
Greenlight funds paid	$4,427,593	$4,499,886	$4,495,551	$4,967,926

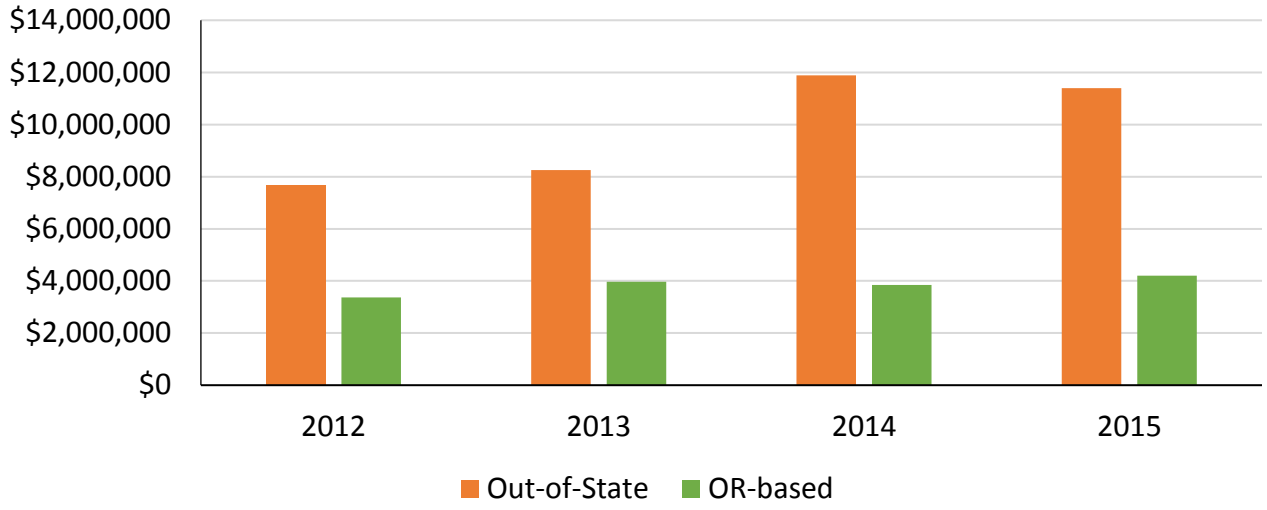
The difference between the total auction amount and the corresponding revenue – referred to as "leakage" – has decreased substantially over the life of the program. In 2011, the state spent five cents in foregone tax revenue in addition to every dollar paid in OPIF/iOPIF incentives, resulting in a total of $507,921 in leakage. In recent years, however, credit auction prices have converged towards a 1-dollar to 1-dollar ratio. FY2015's auction actually resulted in a greater amount of revenue than was offered in credits – a *negative* leakage.

Unlike OPIF/iOPIF funds, Greenlight Program funds are not limited to set auctioned amounts each year. The Greenlight Program paid out $4.96 million in FY2015 – slightly more than the four-fiscal-year average of $4.6 million

In total, state production incentives grew by 37 percent from 2012 to 2015, with a peak at $15.6 Million in 2014. By far the largest single share of these funds is received by the out-of-state-based television series produced in Oregon ($9.7 Million in 2015), primarily through the OPIF program. The second largest share has gone to Oregon-based animation projects ($3 Million in 2015).

Though numerous Oregon-based television series, feature films, interactive games, and commercials receive incentives each year, the size of those incentives is naturally smaller than the typically-larger out-of-state based projects. This pattern is generally consistent: incentivized Oregon-based projects outnumber out-of-state based productions, but those in the latter broad category outspends (and thus receives more state funding) than their indigenous counterparts (Figure 1).

Figure 1 Incentives Received[5], Indigenous vs. Non-indigenous



Project Types

Out-of-State Series. *The largest category of projects in terms of spending, out-of-state series are produced in Oregon by companies based outside the state. These include Portlandia, Grimm, and The Librarians.*

Out-of-State Feature Films. *Many states' production incentive programs were launched to target large feature films that are typically produced by companies based elsewhere. In Oregon, only three such projects have been incentivized since 2012. The most familiar example is Wild (2013). Although Laika's popular animated films are often feature length, they are included in the Animation category (below).*

Indigenous Series. *Several pilots, episodes, and other serial projects destined for television and web presentation have been produced by Oregon-based creators. Recent examples include Combat Report and PBS's Original Fare.*

Indigenous Feature Films. *Many independent feature films and documentaries have been produced in Oregon since 2012, including Night Moves (2012), The Green Room (2014) and Black Road (2015).*

Games/Interactive Media. *Recently incorporated into OR Film's purview, Oregon's small but growing video game industry includes a cluster of companies based in Eugene, Oregon City, and the Portland region. Oregon developers were involved with The Wolf Among Us, Day of The Tentacle, and Villagers and Heroes, among others.*

Commercials. *Oregon commercial production houses serve the local, regional, and national market. Larger-budget productions (>$1 Million) qualify for Greenlight incentives through the OR Film office.*

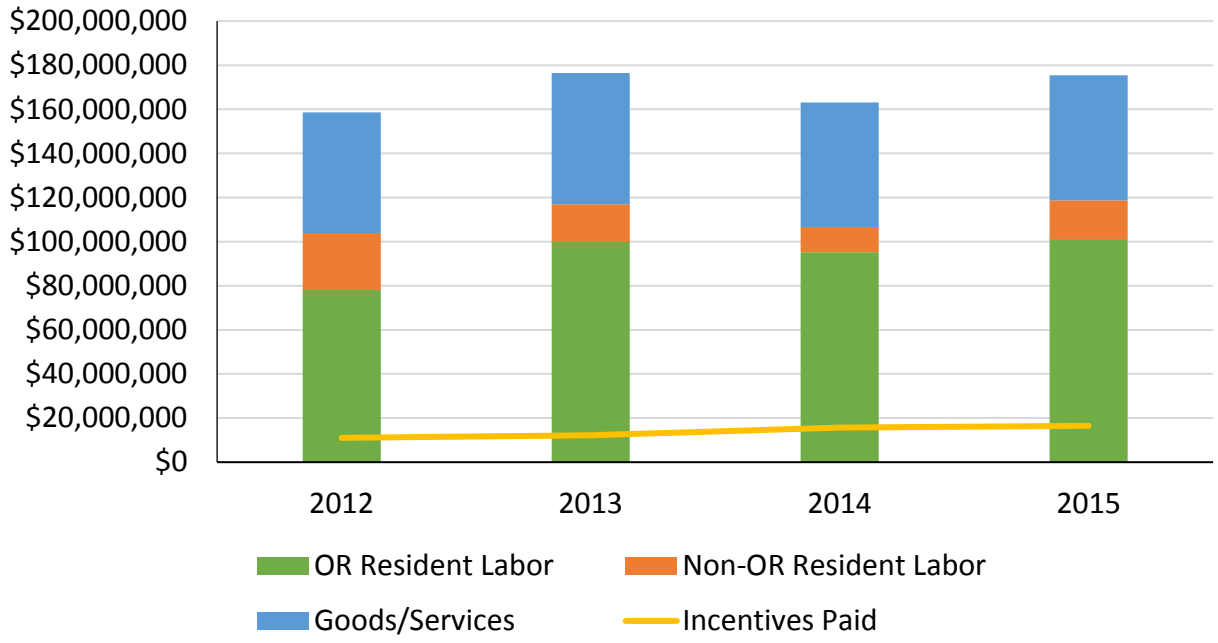
Animation. *Besides Laika's popular animated films – including Paranorman (2012), The Boxtrolls (2013), and Kubo and the Two Strings (2016), Oregon companies produce digital and traditional animation work for commercial, web, television, and film projects.*

[5] Due to benign timing issues, agency fiscal year reporting and incentivized projects' audits do not precisely match up in a given year.

Production Spending

Media productions naturally spend far more in the state than they receive in incentive payments – between ten and twelve times more, collectively (Figure 2). Altogether, incentivized projects spent more than $673 million in Oregon between 2012 and 2015, with an annual average of $168 million. The largest share of spending (55 percent, roughly $93 million per year on average) was received by employees that reside within the state. Another third is spent on goods and services from Oregon vendors, and a relatively smaller 11 percent accrues to employees who do not reside in the state.

Figure 2 – Production Spending vs. Incentives Received



In order to further isolate the activity that is most material to the state's economy, most figures and tables below consider only the portion of payroll spending attributable to Oregon residents. The income of out-of-state residents working temporarily in Oregon is covered in more detail in the next section of the report. All of the animation, interactive games, and commercial projects incentivized between 2012 and 2015 use essentially only Oregon residents (with few payroll expenditures to others). Oregon residents comprise large shares of both indigenous and out-of-state based features and series workforces, as summarized in Table 2. Overall, about 83 percent of payroll expenditures across all project types accrue to Oregon residents[6].

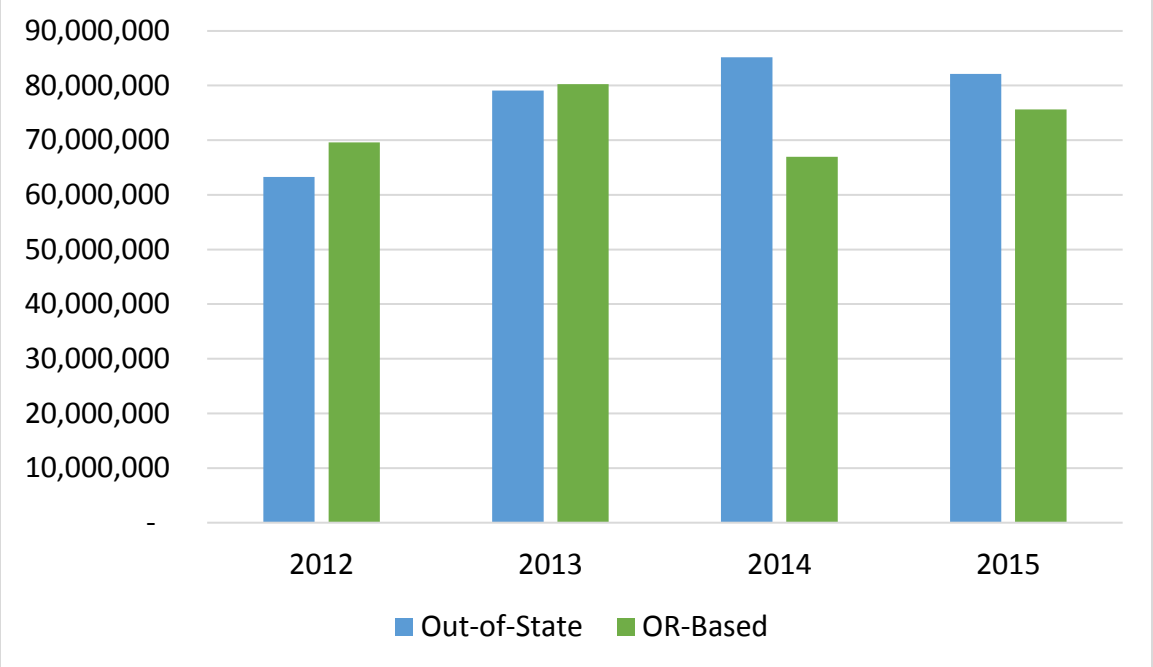
[6] As discussed above and below, positions in the media industry tend to pay above-average wages. This is particularly true for "above the line" personnel that travel to out-of-state locations. Thus, the distribution of *payroll dollars* accruing to Oregon-based workers likely understates the distribution of *jobs* to Oregon workers.

Table 2 – Oregon Residents' Share of Payroll, Series and Features

Project Type	Oregon Residents' Share of Payroll Spending (average)
Out-of-State Features	40%
Indigenous Features	76%
Out-of-State Series	61%
Indigenous Series	95%

Indigenous projects – features, series, animation, interactive and commercial projects – outnumbered those based outside of Oregon in 2012-2015. In 2012 and 2013, indigenous projects also collectively spent more in the state than non-indigenous productions; that balance shifted in 2014 and 2015 thanks in part to a decline in indigenous project spending (Figure 3).

Figure 3 – In-state Production Spending[7], Indigenous vs. Non-Indigenous Projects



As noted above, the successful out-of-state-based television series produced in Oregon comprise the largest portion of the state's incentivized industry in terms of spending. Ignoring wages paid to out-of-

[7] Includes payroll for OR residents only

state residents, these series collectively spent an average of $70 million per year between 2012 and 2015 for a four-year total of approximately $280 million.

Feature-length animation projects, completed by the Oregon-based *Laika* studio, would alone comprise the second largest category of in-state spending. *Laika*'s in-state spending is so significant that its qualified incentive payments would exhaust much of the available OPIF/iOPIF funding each year. Rather than submit the entirety of its expenses, the company works with the Oregon Film Office to arrive at a rebate amount that incentivizes local production while leaving state funds available to other projects.

Another note of interest stems from the inclusion of interactive game development in Oregon's production iOPIF program beginning in 2013. Since that year, game developers have spent nearly $10.5

"Jobs" in a Gig Industry

In the realm of economic development and policy, it is common to focus on job counts as an overall indicator of utility – the economic bottom line. Certainly, the employment associated with any activity is a convenient, if narrow, way to measure development or policy outcomes. Unfortunately, for the media production industry, counting jobs and comparing those figures with others presents a unique challenge.

In the TV/Film business, what does a total jobs figure refer to? For other industries, such as in a manufacturing plant, its meaning is roughly equivalent to the sum of all the workers on the plant's payroll in a given year. If a given plant worker only stayed on the job for 6 months, her position might count as one half (0.5) of a job.

But what of jobs on largely ad hoc television or film shoots? A camera operator may earn her annual salary by working for one week for a commercial shoot, six months for a TV series, and two weeks each on two more small projects. Her days on set may have been twice (or half) as long as those of a typical nine-to-five worker, and she may take off several weeks or months between periods of employment. Did she work just one "job" - Camera Operator - four jobs, or something in between?

Fortunately, there is a way of counting jobs that results in a standardized and intuitive figure for the related industries at hand. Returning to the half-year manufacturing employee example, official public employment data such as the QCEW might arrive at a 0.5 job estimate by dividing the number of months worked by the employee by the average months per year worked by employees at the plant. If this was a plant that was open year round, we would conclude that the half year employee represents one-half of a job. If the plant were open only nine months, the half-year employee would count as 0.66 jobs, and so on.

This analysis (and many economic models such as IMPLAN, described below) use a near-equivalent means to estimate jobs that serves well for industries where employees' work patterns are highly variable. Rather than the average number of months a "typical" camera operator works in a year, average wages and salaries can be used, essentially substituting money for time. Given the rich payroll data available through the Oregon Film Office's incentive programs, it is possible to convert reported wages to an estimated number of jobs that is familiar and comparable to other sources.

For example, say the average worker in TV and film production in Oregon earned about $45,000 per year. If a camera operator earns $15,000 in a year, we thus estimate 0.33 jobs without resorting to the complicated details of her yearly work schedule.

million in the state (mostly on the wages and salaries of Oregon residents), which outweighs the spending of more visible non-indigenous feature films over the same period ($7.6 million). Only three complete years of spending data are available for incentivized video game projects wherein relatively high levels of incentivized activity in 2013 and 2015 bracketed a lower $428 thousand in 2014. During this period, total statewide employment in the small video games industry grew by 9 percent to about 300.

Table 3 (below) summarizes the estimated employment and income directly associated with incentivized production activity in Oregon from 2012 to 2015. Employment in the media production world differs in many ways from typical nine-to-five work (see above sidebar); the estimated job counts in Table 3 are based on the average annual income of workers in the television, film, and interactive games production industries for the sake of comparability to public employment data sources such as the Bureau of Labor Statistics and Oregon Employment Department.

Table 3 – Direct Income and Employment in Oregon's Media Industry

	2012	2013	2014	2015
Direct Labor Income (OR Residents)	$78,137,553	$99,792951	$95,262,665	$101,101,410
Direct Employment (OR Residents)	1,431	1,694	1,560	1,488
Average Wage (overall)[8]	$43,158	$46,235	$48,886	$50,853
Total Industry Employment[9] (QCEW)	2,967	2,840	2,991	3,233

Productions that worked with the Oregon Film Office hired the equivalent of 1,847 jobs, on average, during each of the last four years, with a peak in 2013 and subsequent decline over 2014-2015. A wide majority of these jobs were filled by Oregon residents (84 percent on average), due in large part to the indigenous animation, commercial, and interactive games subsectors, which hire almost exclusively Oregon residents. Comparing the estimated job counts from incentivized productions to QCEW industry-wide counts provided by the Oregon Employment Department[10] suggests that roughly two-thirds of media production jobs are directly associated with productions that work with the Oregon Film Office for incentives.

[8] The average wage in the video games subsector tends to be higher than that of the broader film/tv production industry. This higher wage is accounted for in employment estimates.
[9] Includes all employment in the state's media industry – both incentivized and non-incentivized.
[10] OED provided custom aggregations of various subsectors that comprise the film/video production industry as well as the video games industry in Oregon, which straddles several industries in official data sources.

IMPLAN Impacts

The impact summary results are given in terms of employment, labor income, total value added, and output:

***Employment** represents the number of annual average jobs in a given industry. These job estimates are derived from industry wage averages.*

***Labor Income** is made up of total employee compensation (wages and benefits) as well as proprietor income. Proprietor income is profits earned by self-employed individuals.*

***Total Value Added** is made up of labor income, property type income, and indirect business taxes collected on behalf of local government. This measure is comparable to familiar net measurements of output like gross domestic product.*

***Output** is a gross measure of production. It includes the value of both intermediate and final goods. Because of this, some double counting will occur. Output is presented as a gross measure because IMPLAN is capable of analyzing custom economic zones. Producers may be creating goods that would be considered intermediate from the perspective of the greater national economy, but may leave the custom economic zone, making them a local final* good.

Economic and Fiscal Impacts

The incentivized spending of media productions in Oregon, like all economic activity, has impacts beyond the direct hiring of employees and purchases from local vendors. These impacts, sometimes referred to as "multiplier effects", arise when the industry's workers spend their incomes on housing, food, and other consumption goods, and the vendors providing goods and services to productions pay their own employees and purchase inputs from other businesses (each of which spurs additional rounds of activity). Multiplier effects are a common way to capture the net economic impacts of a policy or industry change on a given economy, and are estimated using sophisticated mathematical models and detailed data. NERC used a proprietary IMPLAN model of the Oregon economy (see *Methodology*, above) to trace the additional impacts of media production spending throughout the state's economy. The estimated combined impacts of incentivized industry activity are summarized next.

Utilizing the spending data provided by the Oregon Film Office as inputs for the IMPLAN model is fairly straightforward: the wages, salaries and benefits of resident employees is added to the simulated state economy as labor income, and the in-state spending of production companies is spread according to the appropriate industry's specified supply chain. One exception, however, requires further attention. By and large, IMPLAN (and similar impact models) assume that most of a worker's income is spent in the geographic region that defines the economy in question. While this is almost certainly accurate for our purposes in the case of television and film industry personnel living in Oregon, it is less clear how much of non-residents' income is spent in the state. Film and television productions are unique in that visiting workers often spend long periods in the state, during which they presumably spend some substantial portion of their paycheck. Other studies of states' film and television industries have made wide-ranging assumptions regarding visiting workers' spending, but hard data on such patterns is not readily available. To maintain a conservative set of estimates, this study assumes that ten percent of an out-of-state resident's income is spent in Oregon – for a full-time equivalent worker earning the industry's 2015 average wage of $50 thousand per year, this implies spending of about $20 per day. Ultimately, the inclusion adds a little over $7 million in non-resident income alongside that of Oregon resident workers.

Economic Impacts

Table 4 summarizes the overall economic contribution of the media production activities incentivized by the Oregon Film Office. Total impacts indicated add indirect and induced effects, based on the direct inputs (outlined in Table 3 above), to said direct impacts. As noted, job counts are based on average wages, and in Table 4 refer only to Oregon residents, ignoring the jobs generated by productions and occupied by non-Oregonians. As in Table 3, labor income refers to total compensation – gross monetary pay plus benefits – and is likewise limited strictly to Oregon residents in Table 4. The output (industry sales) associated with the activity in question is a sum of three parts: an estimate of direct output for indigenous activity based on labor income generated by IMPLAN (the "direct effect"); the reported in-state spending of indigenous and non-indigenous productions (the "indirect effect"); and the output purchased by workers in the media industry and their counterparts in every other affected industry (the "induced effect"). In other words, from Oregon's perspective, the economic output attributable to visiting productions stems simply from their spending on in-state goods, services, and labor (rather than the sales that they eventually achieve through box offices and media outlets elsewhere). The output of Oregon-based businesses, just like businesses in other industries, includes both their own gross revenues and the upstream and downstream activity they spur.

Table 4 – Total Economic Impacts of Incentivized Media Production in Oregon

	2012	2013	2014	2015
Employment (OR Residents)	3,000	3,465	3,196	3,118
Labor Income (OR Residents)	$128,881,035	$158,719,290	$150,660,528	$157,908,146
Total Value Added	$169,623,847	$205,943,468	$194,595,429	$202,791,033
Output	$488,586,609	$563,793,800	$509,228,599	$537,788,177

In addition to an estimated annual average of 1,543 jobs provided directly by the businesses in question, the indirect and induced impacts of industry activity supports another 1,652 jobs[11] elsewhere in the Oregon economy. Likewise, the resulting income paid to Oregon workers averaged $149 million per year — $93.5 million directly paid by media productions, and another $55 million supported indirectly by industry activity and consumer purchases. Total value added[12] by the industry within the Oregon economy, including multiplier effects, averaged $193 million per year per year.

Fiscal Impacts

Oregon's production incentives are funded through state taxes, with costs incurred during revenue collection (i.e. the "leakage" of tax credit auctions) as well as expenditure. Naturally, the relevant question of costs and benefits to the state includes the extent to which revenue dedicated to incentives is recouped through the broad economic activity just discussed. Indigenous workers pay taxes to the

[11] Note that the indirect and induced employment effects are based on spending, and are thus not influenced by the estimated direct employment figures.
[12] A local near-equivalent of GDP

state, and many out-of-state workers pay "work state" taxes, which further add to Oregon's revenue. (The latter are not included in this model.) Table 5 summarizes the fiscal impacts associated with incentivized production.

Table 5 – Total Fiscal Impacts of Incentivized Productions in Oregon, 2012 – 2015

State	2012	2013	2014	2015
State Personal and Corporate Income Taxes	4,641,433	5,421,626	4,769,691	5,074,838
Other State Taxes, Fees, and Licenses	3,787,480	4,401,761	3,891,188	4,027,408
Total State	8,428,913	9,823,386	8,660,878	9,102,245
Local	**2012**	**2013**	**2014**	**2015**
Property Taxes	7,149,059	8,295,574	7,340,522	7,539,945
Other Local Taxes, Fees, and Licenses	1,751,367	2,033,785	1,796,927	1,854,659
Total Local	8,900,426	10,329,359	9,137,449	9,394,604
Federal	**2012**	**2013**	**2014**	**2015**
Federal Personal and Corporate Income Taxes	18,505,447	21,550,783	18,824,392	19,879,351
Social Insurance and Excise Taxes	15,503,277	18,156,818	15,986,076	17,081,142
Total Federal	34,008,724	39,707,601	34,810,468	36,960,493

"[I]ndigenous activity has a higher dollar-for-dollar economic impact than visiting productions."

Overall, the state of Oregon collected an average of $9 million in revenue per year between 2012 and 2015 – about 67 cents for every dollar devoted to production incentives. These estimates are broadly comparable to previous studies of Oregon's film incentive programs[13] with a few notable qualifications. First and most important is this study's limited consideration of direct impacts (i.e. exclusively incentivized productions), and thus of fiscal impact. Second is the addition of video game projects to the list of incentive recipients in 2013; as indigenous activity has a higher dollar-for-dollar economic impact than visiting productions, these Oregon-based firms have relatively high state and local fiscal impacts.

[13] See for examples analyses by ECONorthwest from 2005 and 2007, and NERC from 2012.

Conclusion

This analysis agrees with previous economic impact studies that while incentive programs by no means "pay for themselves" via state tax collections, they do leverage incentive dollars to a high degree, with an average of $13.7 million in incentives directly supporting about 1,543 jobs and $93 million of income for Oregon residents, and more broadly supporting many more through indirect and induced economic impacts.

Although most state incentive funding is given to productions that are not based in Oregon, about 90 percent of the income that follows accrues directly to Oregon workers and businesses. In turn, that income stimulates additional employment, income, and economic output in the state. Indigenous activity generally has larger impacts on the state economy, as more of its generated income, spending, and tax revenue stays inside the state. While many states' incentives have been traditionally aimed at attracting out-of-state productions, Oregon's incentive programs support numerous indigenous projects, an economically important distinction.

"Although most state incentive funding is given to productions that are not based in Oregon, about 90 percent of the income that follows accrues directly to Oregon workers and businesses."

Ultimately, the measures of costs and benefits presented in this analysis should be viewed with an appropriate eye towards their limitations. The explicit costs of incentive programs – the amount of tax revenue granted to productions – are straightforward, but say nothing of the relative opportunity costs of foregone funding for other state priorities. Similarly, the explicit employment benefits of incentivized productions, even when appropriately scaled up to account for multiplier effects, do not capture a notable economic development aspect of public support. Oregonian workers and businesses operating in television, film, or interactive game production indirectly benefit from a stable source of opportunities offered by out-of-state productions and the growing presence of an indigenous ecosystem of complementary businesses that provide goods and services to the industry. As discussed above, the economic impact figures herein present conservative estimates of the incentive programs' upside, but not only because they probably understate the spending of non-resident workers. Measuring deeper support for a permanent regional industry requires thorough quantitative and qualitative investigation[14], alongside the employment and income tallies of economic impact analyses.

[14] These issues are further explored in a companion 2016 study prepared by the Center for Community Service at the University of Oregon.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