An Economic Impact Analysis of the Oregon Film and Video Industry in 2007

An analysis for the Oregon Film and Video Office
by Robert Whelan and Alec Josephson

July 29, 2008

ECONorthwest
ECONOMICS • FINANCE • PLANNING

Phone • (503) 222-6060
FAX • (503) 222-1504
info@eugene.econw.com

Suite 1460
888 SW Fifth Avenue
Portland, Oregon 97204

I. SUMMARY OF FINDINGS

The Governor's Office of Film & Television ("Film Office") is responsible for promoting and expanding the state's film and video industry, and recruiting out of state productions to film in Oregon. To assist in measuring its success, the Film Office engaged ECONorthwest to determine the economic and fiscal impacts of the film and video industry in 2007. ECONorthwest conducted similar analyses in 2002 and 2005, which allows this report to compare the industry's progress over that five-year period.

For this report, the film and video industry is defined as one that produces (or records) live-action or animated entertainment, news, commercial, and educational programs. The industry is divided into the following three segments:

1. **Indigenous film and video** consists of businesses and individuals that are based in Oregon and engaged primarily in the production of movies and videos.

2. **Television and cable broadcasting** is composed of television stations that broadcast programs and produce television programming.

3. **Out-of-state film and video productions** represent the spending in Oregon by companies and individuals from out of state who come to Oregon to film specific projects.

Within these segments is a range of entities from large corporations to individuals who freelance. There are also groups that do film and video production, but work for companies that are outside of the traditional film and video industry. All benefit from the assistance of the Film Office and, therefore, are counted in this analysis as part of Oregon's film and video industry.

This report summarizes ECONorthwest's analysis of the film and video industry of Oregon and is divided into the following sections:

- A summary of the key findings from this analysis;
- A description of the film and video industry and its three segments including data on output, employment, and wages;
- An overview of economic impact analysis;
- The results of an economic impact analysis of the film and video industry in Oregon and Portland in 2007, and how these impacts have changed between 2002 and 2007, and
- An analysis of the fiscal impacts of out-of-state productions.

A. Key Findings

Data from the Oregon Employment Department, U.S. Census, and Film Office were compiled and analyzed to measure the size and growth of the film and video industry. This information was then fed into specially constructed economic models of Oregon and Portland to measure the total economic impacts of the film and video industry, as well as each of its three segments.

The analysis reveals that the economic contributions of the film and video industry in Oregon in 2007 consisted of:

- Direct impacts of $709.6 million in output, $294.3 million in wages and business income (labor income), and 6,325 full- and part-time jobs. Compared to 2002, output increased 64 percent, wages increased 55 percent, business income was up 50 percent, and employment increased 21 percent. A breakout of the direct impacts for each sector in the film and video industry shows:
  - Indigenous film and video directly generated $380.0 million in output, $102.3 million in wages, $60.8 million in business income, and 4,000 jobs;
  - Television and cable broadcasting directly generated $288.3 million in output, $89.7 million in wages, $374,600 in business income, and 1,655 jobs; and
  - Out-of-state film and video productions directly contributed $41.3 million in output, $22.2 million in wages, and 669 jobs.
- Total economic impacts of $1.39 billion in economic output, $624.9 million in labor and other income, and 13,336 jobs. Across all impact measures, total economic impacts increased significantly from 2002. Indeed, over the five-year period, output increased 66.4 percent, labor and other income (all incomes combined) increased 49.8 percent, and employment increased 28.4 percent.
- On a statewide basis, the film and video industry exhibited strong linkages (i.e., sizeable multiplier effects) to other sectors of the Oregon economy. For example, with an income multiplier of 2.12, every $1.0 million in income generated in the film and video industry translates into $1.12 million in income for workers and business owners elsewhere in Oregon. With a job multiplier of 2.11, every 10 jobs in the film and video industry are associated with 11.1 jobs in other industry sectors in the state.

The film and video industry also generated significant economic impacts for the Portland metropolitan area in 2007. Among our findings for Portland:

- The direct economic impacts of the film and video industry consisted of $542.9 million in output, $164.4 million in wages, $40.5 million in business income, and 3,977 jobs.
- The total economic impacts associated with the film and video industry were $1.04 billion in output, $469.1 million in labor and other income, and 8,614 jobs.

- Most of the economic impacts attributed to the Oregon film and video industry benefit the Portland metropolitan area. In 2007, Portland captured 74.8 percent of the total statewide output impacts, 75.1 percent of the total income impacts, and 64.6 percent of the total job impacts.

Although Portland captures a large share of the total statewide impacts, between 2002 and 2007, the economic activity benefiting more rural areas of the state has grown. For example, the rest of Oregon's capture rate of total income impacts increased from 15.6 percent in 2002 to 24.9 percent in 2007 (a 60.1 percent increase). Even more impressively, the rest of Oregon secured approximately 11.3 percent of the total employment impacts in 2002 and 35.4 percent in 2007 (a 214.4 percent increase).

The fiscal impacts from out of state productions benefit state and local taxing jurisdictions. ECONorthwest determined:

- For every million dollars spent in Oregon by out-of-state productions, about $123,260 in state and local government revenues are generated.

The film and video industry generates additional benefits for Oregonians. Among them:

- Spending by out-of-state productions and their employees is directed towards a wide array of businesses from hotels and restaurants to the less obvious, such as antique shops, which are a source of props, and local contractors who are needed for set construction.

- Out-of-state business helps Oregon film and video firms reach the threshold of demand needed to sustain themselves and grow.

- The jobs generated by out-of-state business help Oregon retain students who are interested in film as workers in the state, and help it grow sectors tangentially related to film because of the presence of a skilled creative workforce.

- The effective "product placement" of Oregon locations featured in films substantially stimulates tourism.

II. Industry Overview

The following is a discussion of the Oregon film and video industry, its structure, and its size in 2007.

A. Definition of the Film and Video Industry

For this analysis, the film and video industry is defined as all of the film and video production done by groups, firms, and self-employed individuals in Oregon for entertainment, news, advertising, and educational programming. This includes production spending and filming in Oregon by non-resident firms and individuals.

The film and video industry is difficult to measure because so much of its economic activities are not fully captured by traditional statistics. Often missing from official data is work done by individuals acting as freelancers, by out-of-state entities, and by groups or individuals working within firms that are not classified as film and video companies. Because of these complexities, several different sources and economic techniques must be used to assess the size of the industry.

***Ad hoc* productions.** One complication can be traced to how productions are made. By their nature, most are one-time projects recorded at impermanent locations. Each requires the recruitment of creative and technical talent, for a day to as long as a few months. Many come not as employees, but as self-employed freelancers. These projects are collaborative efforts done on an *ad hoc* basis. Once complete, the productions break up. The firms and people that were brought together will individually seek new projects—some of which may not be film or video productions. Thus, much of the work on film and video projects—whether by out-of-state crews or Oregon-based groups—are simply not counted in standard industry data that focuses on firms that have a paid workforce and a fixed business address.

Inter-industry productions. Further complicating the analysis is the matter of internal production work. Some groups that engage in film and video production work for companies that are in sectors outside of the film and video industry. For example, some schools, advertising companies, and retailers produce their own videos. This is a trend that has greatly accelerated in the last few years due to the advent of the Internet and digital recording, which have reduced barriers to entry (and upfront costs) of producing recorded content. The output and employment by this source are described in this report as "inter-industry production."

B. Three Segments

The three segments of the film and video industry conduct nearly all the commercial film and video production activity that occurs in Oregon. They are:

Indigenous film and video is the segment of Oregon-based producers of feature films, television commercials, animation, instructional videos, television programs and movies, documentaries, animation, and multimedia products. Most of the sector consists of establishments and freelancing individuals who reside in Oregon and are primarily engaged in making motion picture film and video productions. This sector also engages in postproduction work such as editing, closed captioning, special effects, and film processing, and companies that specialize in producing programs for distribution on cable or satellite television.

Television and cable broadcasting covers all local establishments that produce and broadcast television programming (including news). This category includes the activities of local public and private broadcasters. The analysis considers them part of the film and video industry because they do a substantial amount of the entertainment, documentary, and news programming in Oregon.

Out-of-state film and video productions is a segment defined by the employment and spending in Oregon by non-resident companies (and some individuals) that come to Oregon to shoot television programs, commercials, and feature films, videos, and other motion pictures. These productions are attracted to Oregon because of its scenic locations, incentives, crew base, availability of services, and other positive attributes. Although they are based outside the state, such productions typically employ Oregonians. This segment also includes still photo shoots (commercial photography) done by out-of-state crews as such activities also receive the support of the Film Office.

C. Exceptions

Excluded from the industry definition. Except to the extent that they may produce their own motion pictures or videos, Oregon-based entities engaged primarily in commercial photography, movie theaters, film distribution, software development, satellite and cable television distribution, or sound recording are excluded, as well as film schools, video rental stores, film festivals, and live theaters.

Adjustments for double counting. Out-of-state film and video productions purchase local supplies and services from Oregon vendors. Sometimes they buy services from Oregon film and video companies. When totaling the size of the indigenous film and video industry, this analysis deducts such purchases so that the final results do not include the same spending twice—once under out-of-state productions and a second time under the indigenous film and video segment. Similarly, the local employment by out-of-state producers working in Oregon appears in the indigenous film and video sector, but this too is subtracted out to avoid double counting jobs and payroll.

D. Data Sources

Measuring the size of the film and video industry is challenging. Data is assembled from several sources and crosschecked. Adjustments and estimates are made. The results yielded estimates of 2007 employment, output (revenues), wages, and self-employment income for Oregon and for the Portland metropolitan area.[1]

The two principal sources of data for this analysis were the Oregon Employment Department's Employment Security (or ES 202) data files, and the out-of-state production tracking files of the Film Office. Other sources played important roles as well. In summary, the data used in this analysis included:

- The Oregon Employment Department ES 202 database contains 2007 employment and wage information for firms that are in the film and video production, film postproduction, television broadcasting, or cable television programming sectors. Each firm listed in the database was reviewed, and those that were misclassified were removed. ECONorthwest identified and added a small number of film production companies in Oregon that were missing from the ES 202 database.

- The Film Office tracks out-of-state productions that report to it. The Film Office records the locations and local spending of these productions, which include commercial photography shoots, as well as film, video, and television productions. Some activity is not reported to the film office. The analysis estimates that about 17.5 percent of production spending goes unreported. This estimate was derived from actual ES 202 payroll data from the Oregon Employment Department.

- The Film Office directory of film and video professionals and firms was used to identify some companies that were not coded as being in the film and video industry on the ES 202 database.

- Dun & Bradstreet business credit reports were used to classify and estimate employment for firms not found in the ES 202 database.

- Detailed expenditure records of past out-of-state productions, along with expenditure survey data from the U.S. Census Department, were used to profile the spending pattern of film and video productions.

- Internal Revenue Service non-employer business statistics were used to determine the number and revenues of self-employed individuals. This includes a portion of freelancing performers and writers that work in the industry.

- 2002 U.S. Economic Census data was used to estimate the relationship between economic output and employment for the subject industries.

- U.S. Bureau of Labor Statistics ("BLS") occupational employment statistics were used to estimate inter-industry film, video, and commercial photography activity.

---

[1] In this analysis, the Portland metropolitan area is defined as Multnomah, Washington, Clackamas, Columbia, and Yamhill counties.

E. Size of the Film and Video Industry in Oregon

Measuring the size of the industry requires adding together the output, wages, and business income of firms in the industry, employees in firms outside the industry that engage in film and video production, freelancers, and out-of-state productions. In doing so, some of the spending and all of the local payrolls from out-of-state productions appear in both out-of-state production spending and in the indigenous film and video production sector. To avoid double counting, some out-of-state production spending is subtracted from the indigenous film and video sector (as shown in the row labeled "less work done for out of state sector" in Table 1).

Direct output and labor income. The analysis finds that the direct economic output of the film and video industry in Oregon was nearly $710 million in 2007. The industry had a payroll of about $214.2 million and generated about $61.1 million in income for self-employed individuals and owners of small firms (*i.e.,* proprietors' income). As discussed previously, these totals include adjustments made to correct for potential double counting.

Table 1: Film and Video Industry Direct Output and Labor Income in Oregon, 2007

Oregon Film & Video Industry	2007 Output	2007 Payroll	Proprietors' Income
Indigenous film & video production sector:			
Industry businesses with paid employees	$253,277,000	$98,569,246	$12,664,000
Freelance and non-employer businesses	60,105,000	-	48,084,000
Inter-company film & video crews	68,939,900	26,829,732	-
Less work done for out of state sector	(2,329,862)	(23,132,650)	-
Total indigenous film & video	$379,992,039	$102,266,327	$60,748,000
Television broadcasting sector:			
Industry businesses with paid employees	$287,810,000	$89,680,001	$17,000
Freelance and non-employer businesses	447,000	-	357,600
Total television broadcasting	$288,257,000	$89,680,001	$374,600
Out-of-State production spending	$41,299,542	$22,225,925	-
Grand Total - Oregon	$709,548,580	$214,172,253	$61,122,600

Source: ECONorthwest, July 2007.

The film and video industry consists of three sectors. The direct contributions of each sector on the state economy in 2007 include:

- The indigenous film and video sector produced nearly $380 million in direct output in Oregon in 2007. It had a net contribution of $102.3 million in wages and $60.7 million in proprietors' income.

- Television broadcasting generated $288.3 million in direct output and $89.7 million in wages. Large corporations dominate television broadcasting, so this sector generated only a small amount of proprietary income.

- Out-of-state production spending in Oregon—which this analysis defines as the sector's output in the state—was $41.3 million. More than half of that spending went to wages that are subject to Oregon income taxes. In 2007, $22.2 million in wages were paid by the sector to Oregon workers. Direct proprietors' income was zero, as all self-employed owners of out-of-state productions were, by definition, non-residents of Oregon and, therefore, their earnings have no direct impact on the state's economy.

Employment. The film and video industry is characterized by having large numbers of freelancers and other self-employed workers. This is evident from the 2007 data shown in Table 2. Of the 6,325 jobs in the industry statewide, 2,293 were held by the self-employed. The self-employed earned an average of $26,659 in 2007. However, much of this was for part-time work. For the 4,032 workers that were paid employees, the average annual wage rate was $53,118, which is approximately 34 percent greater than the statewide average for all covered employment in 2007 ($39,566).[2]

Table 2: Film and Video Industry Employment, Labor Income, and Average Annual Income in Oregon, 2007

Oregonians Working in the Film & Video Industry	Number	Labor Income	Average Annual Income
Full-Time equivalent paid employees	4,032	$214,172,253	$53,118
Self-Employed, full and part-time workers	2,293	61,122,600	26,659
Total Workers	6,325	$275,294,853	$43,527

Source: ECONorthwest, July 2008.

F. Size of the Film and Video Industry in the Portland Metropolitan Area

The state's film and video industry is concentrated in the Portland metropolitan area with about 81 percent of the indigenous film and video production and 73 percent of the television broadcasting output being done in Portland. Spending by out-of-state productions, however, is more dispersed and only 58 percent of it occurs in the metro area, as highly attractive shooting locations are found throughout the rest of Oregon.

Direct output and labor income. The data shows that the film and video industry generated nearly $543 million in direct economic output in the Portland metropolitan area during 2007. Industry payroll exceeded $164 million. Earnings by the self-employed working in the metro area reached almost $40.5 million.

---

[2] Covered employment consists of workers in Oregon that are covered by unemployment insurance. About 91 percent of all the employment in the state is categorized as covered employment. In 2007, there were over 1.7 million such jobs.

Table 3: Film and Video Industry Direct Output and Labor Income in Portland, 2007

Portland Metro Film & Video Industry	2007 Output	2007 Payroll	Proprietors' Income
Indigenous film & video production sector:			
Industry businesses with paid employees	$228,913,000	$82,391,200	$11,446,000
Freelance and non-employer businesses	36,066,000	-	28,852,800
Inter-company film & video crews	43,632,063	16,980,537	-
Less work done for out of state sector	(2,105,740)	(14,149,548)	-
Total indigenous film & video	$306,505,323	$85,222,190	$40,298,800
Television broadcasting sector			
Industry businesses with paid employees	$211,269,000	$65,830,243	$0
Freelance and non-employer businesses	249,000	-	199,200
Total television broadcasting	$211,518,000	$65,830,243	$199,200
Out-of-State production spending	$24,883,944	$13,391,642	-
Grand Total - Portland Metro	$542,907,267	$164,444,075	$40,498,000

Source: ECONorthwest, July 2007.

Employment. The film and video industry employed 3,977 workers in Portland in 2007. Of these, 2,788 were paid employees that earned an annual average wage of $58,986. There were also 1,189 self-employed workers in the industry that earned nearly $40.5 million, or $34,061 a year each.

Table 4: Film and Video Industry Employment, Labor Income, and Average Annual Income in Portland, 2007

Film & Video Industry Workers - Portland Metro	Number	Labor Income	Average Annual Income
Full-Time equivalent paid employees	2,788	$164,444,075	$58,986
Self-Employed, full and part-time workers	1,189	40,498,000	34,061
Total Workers - Portland Metro	3,977	$204,942,075	$51,534

Source: ECONorthwest, July 2008.

III. OVERVIEW OF ECONOMIC IMPACT ANALYSIS

The previous section reported ECONorthwest's estimate of the direct contributions of the film and video industry in Oregon and Portland. These direct impacts represent the dimensions of the industry itself. As the film and video industry spends money, economic impacts will spread to other sectors of the Oregon and Portland economies. This section of the report provides an estimate of the total economic impacts attributed the film and video industry.

A. Economic Impact Methodology

Spending and employment by an industry will often generate economic impacts elsewhere in the economy. These economic impacts are measured using input-output modeling techniques.[3] An input-output model is a mathematical representation of an economy. It shows how different parts of an economy are linked to one another. Information about linkages comes from various sources including U.S. Census reports on population and businesses.

The most widely used input-output tool is IMPLAN, which is an acronym for "IMPact analysis for PLANning."[4] In simple terms, the IMPLAN model works by tracing how money made in one sector of an economy is spent and re-spent downstream throughout the rest of the economy. This process of spending and re-spending is often referred to as the multiplier process. Impacts do not continue to cycle indefinitely through an economy. They gradually diminish as money leaks of out of the system of spending and earnings. This happens as Oregon residents and businesses purchase goods and services made elsewhere, save some of their money, and pay taxes. The IMPLAN modeling software accounts for these leakages.

For this analysis, ECONorthwest used the IMPLAN software to build input-output models of the state of Oregon and the Portland metropolitan area.

---

[3] Wassily Leontief first put input-output analysis to practical use in the late 1930's. While at Harvard, Leontief used his input-output system to construct an empirical model of the United States economy. This research gave rise to his 1941 classic, "Structure of American Industry, 1919-1929." For his research, Leontief was awarded the Nobel Prize in Economics in 1973.

[4] IMPLAN was initially developed by the U.S. Department of Agriculture in cooperation with the FEMA and the Bureau of Land Management to assist federal agencies in their land and resource management planning. Since 1993, the Minnesota Implan Group, Inc. has been maintaining IMPLAN and updating the data used in the models.

B. Types of Impacts

There are several measures of economic activity produced by economic impact models. Output, wages, proprietor income, other income, and employment impacts are reported in this analysis.

Output is the broadest measure of economic activity. It is the total value of production. For most sectors of the economy, output is approximately the same as sales or revenues (there are inventory adjustments that account for slight differences). For industries that buy goods for resale—such as stores, gas stations, and wholesalers—output is the approximate difference between sales and the cost of goods sold.

Wages are the earnings of paid employees. It includes benefits such as employer-paid health insurance, life insurance, and retirement account contributions. Wages do not include self-employment earnings.

Proprietor income equals the amounts earned for work not covered by employer payrolls. It includes the earnings of the self-employed, small non-employer business partnerships, and some farmers. In Oregon, proprietor income equals about 10.3 percent of all worker earnings in 2007.[5]

Earnings per job equals wages and proprietor income divided by the number of jobs of both the self-employed and wage earners.

Other income includes money made from sources other than work such as rents, dividends, and royalties.

Jobs are counted in economic impact studies as the number of full and part-time positions held on an annualized basis. This includes both paid wage earners and the self-employed.

Economic multipliers, as defined in this report, represent the ratio of total impacts to direct impacts. (In economic terms, these are called Type II multipliers.) Multipliers are used to conveniently explain or characterize how an industry is linked to an economy. Multipliers can be calculated across all impact measures.

C. Three Stages of Impacts

Economic impacts are recorded for following three distinct stages:

- A **direct impact** is something that generally happens at the location of the sector being studied. In this analysis, direct impacts include the output and employment for the three sectors of the film and video industry. For out-of-state productions, direct impacts are limited to the value of their spending in Oregon—whether it is on local purchases or local hiring.

[5] From the U.S. Bureau of Economic Analysis website http://ww.bea.gov/regional accessed on July 9, 2008.

- The second stage covers **indirect impacts**, which are the effects on industries that supply the initial sectors with goods and services. For example, when a television station in Medford hires a local contractor to install new lighting, the amount paid is an indirect output. Furthermore, when that contractor, in turn, buys supplies from a store in Roseburg, that purchase also contributes to the total indirect output of the state, as does the extra work done by the contractor and store clerk. Indirect impacts can go back many steps from the originating direct source, albeit their size diminishes considerably as they do.

- The third stage counts the **induced impacts** from higher incomes of workers and businesses that benefit from the spending of the sector under study. In the previous example of the television station in Medford hiring a lighting contractor, the extra wages of the installer and store clerk, along with the additional profits of their employers, cause incomes in Oregon to rise. When this money is spent in Oregon, it stimulates downstream impacts on the economy. These are income-induced impacts and they are often quite large.

D. Basic Assumptions

For the purposes of clarity, analysis, and presentation, the following basic assumptions were made for the economic impact study described in this report.

The analysis measures the economic impacts of the film and video industry in 2007, and compares those findings to those from previous economic impact studies conducted for 2002 and 2005. ECONorthwest used the same methodology for all three analyses.

The historical analysis reveals the gross impacts of sectors. These are all of the impacts that can be traced back to the initial sectors in 2007 regardless of what spending would have occurred had the sectors not existed. In other words, all impacts are reported without netting out substitution effects. For example, one could argue that but for the ability to watch a TV show from a local broadcast station, a family may have rented a movie and, therefore, some of the gain in output attributed to television broadcasting in Oregon came at the expense of foregone movie rental revenue.

For the out-of-state sector, because of how it is accounted for in this analysis, the net and gross impacts are the same. This is because had out-of-state film crews not come to Oregon, little or no other indigenous economic activity would have occurred to substitute for the loss. Effectively, the in state spending by out-of-state productions is nearly entirely net additive to the state and metro economies.

The fiscal impact analysis, which measures the tax revenue effects, used data from 2005 and 2006, as complete 2007 data were not yet available at the time this report was finished. Similarly, the economic impact model data used in this analysis are from 2006. ECONorthwest used standard economic techniques to estimate the data used to 2007 values. Nonetheless, the analysis is subject to revisions as complete economic data for 2007 become available.

In this section, the results of the economic impact modeling of the film and video industry, broken down into its three basic sectors, are presented for both Oregon and the Portland metropolitan area for 2007. In addition, the impact results are compared to previous study results for 2002 and 2005.

A. Oregon Impacts

As shown previously in Table 1, the film and video industry generated approximately $709.6 million in output in 2007. This represents the direct output of the industry, and is shown in the upper portion (second column) of Table 5, below. The film and video industry also directly generated 6,325 full- and part-time jobs and $275.3 million in labor income. The direct income impacts shown in Table 5 exceed this amount because they also include other income, such as profits, generated for business owners and others in the film and video industry.[6]

The bottom section of Table 5 shows how spending by the film and video industry translates into larger economic impacts for the state. This is called the multiplier effect. In total, via this multiplier process, the film and video industry is associated with almost $1.4 billion in output, $624.9 million in income, and 13,336 full- and part-time jobs in Oregon in 2007.

Table 5: Economic Impacts of the Film and Video Industry in Oregon, 2007

Type of Impact and Sector	Output	Labor and Other Income	Jobs
Direct Impacts			
Indigenous Film and Video	$379,992,039	$174,414,089	4,000
Television and Cable Broadcasting	$288,257,000	$97,680,274	1,655
Out of State Film and Video	$41,299,542	$22,225,925	669
Total Direct Impacts	$709,548,580	$294,320,288	6,325
Total Impacts			
Indigenous Film and Video	$748,631,598	$359,724,824	7,777
Television and Cable Broadcasting	$562,006,695	$222,643,702	4,442
Out of State Film and Video	$81,865,035	$42,510,498	1,117
Total All Impacts	$1,392,503,328	$624,879,023	13,336

Source: ECONorthwest, July 2008.

[6] For television and cable broadcasting and out of state film productions, a large portion of other income goes to owners outside the state of Oregon. This income is not included in the direct income shown in Table 5. For the indigenous film and video sector, however, the majority of the companies are owned by Oregonians and the other income directly generated by this sector will stimulate additional spending in the state.

ECONorthwest calculated multipliers across all three impact measures. These multiplier effects for the film and video industry can be summarized as follows:

- The **output multiplier of 1.96** suggests that every $1.0 million in output (or revenues) directly generated by the film and video industry is associated with another $960,000 in output in other industry sectors in the state.

- The **income multiplier of 2.12** shows that every $1.0 million in income generated in the film and video industry translates into $1.12 million in income for workers and business owners elsewhere in Oregon.

- The **job multiplier of 2.11** demonstrates that every 10 jobs in the film and video industry are associated with 11.1 jobs in other industry sectors in the state.

Table 6 provides additional details on how the direct economic impacts of the film and video industry filter throughout the state economy. Spending by businesses and employees within the film and video industry, as well as their suppliers and freelancers, has a positive economic effect on other sectors. As shown in Table 6, as measured by job and labor income impacts, the top three industry sectors that benefit from spending of the film and video industry include: other services (including health, social, and personal services); transportation, communication and utilities (excluding TV broadcasting); and retail and wholesale trade.

Table 6: Total Impacts of the Film and Video Industry in Oregon, by Industry Sector, 2007

Industry	Wages (a)	Self Employed Income (b)	Total Labor Income (c = a + b)	Other Income	Jobs
Film and video productions*	$124,492,252	$60,748,000	$185,240,252	$11,399,761	4,669
Hotels and accommodations	1,254,361	95,631	1,349,992	700,725	58
Automobile rentals and leasing	148,628	34,637	183,265	152,417	7
Television and cable broadcasting	89,680,001	374,600	90,054,601	7,625,673	1,655
Other Industries					
Natural resources	1,672,486	848,321	2,520,808	2,447,144	83
Construction	7,519,064	2,168,214	9,687,279	893,859	196
Manufacturing	9,590,578	715,410	10,305,988	3,604,384	191
Trans, comm, and utilities**	31,801,287	2,811,967	34,613,254	10,845,979	984
Wholesale and retail trade	23,728,886	1,800,381	25,529,267	9,635,807	697
Finance, insurance and real estate	17,555,725	4,822,205	22,377,930	26,537,772	558
Other services***	89,873,709	18,489,997	108,363,707	28,161,950	3,805
Government	27,910,581	0	27,910,581	4,736,630	432
All industries	$425,227,559	$92,909,364	$518,136,923	$106,742,100	13,336

Source: ECONorthwest, July 2008.
** Combines indigenous and out-of-state film productions.*
*** Excludes the television and cable broadcasting sector, which is reported separately.*
**** Other services do not include film and video productions, hotels and accommodations, and automobile rentals, which are reported separately.*

Table 7 shows how the film and video industry in Oregon has changed over the five year, 2002 to 2007, time period. The 2002 impact analysis showed that television and cable broadcasting was the largest sector in the film and video industry. In 2005, television and cable broadcasting (as measure by output and income) was approximately the same size as the indigenous film and video sector. Between 2005 and 2007, this relative growth trend continued and the indigenous film and video sector is now the largest of the three sectors in terms of both direct and total impacts on the state economy.

Table 7: Film and Video Industry Impacts In Oregon, 2002, 2005 and 2007

Type of Impact	2002	2005	2007	Change 2002-2007	% Change 2002-2007
Output					
Indigenous Film and Video	$316,831,500	$477,783,000	$748,631,598	$431,800,098	136.3%
Television and Cable Broadcasting	$481,647,100	$471,993,000	$562,006,695	$80,359,595	16.7%
Out of State Film and Video	$38,300,300	$35,967,000	$81,865,035	$43,564,735	113.7%
Total All	$836,778,900	$985,743,000	$1,392,503,328	$555,724,428	66.4%
Labor and Other Income					
Indigenous Film and Video	$182,909,700	$233,376,000	$359,724,824	$176,815,124	96.7%
Television and Cable Broadcasting	$214,011,600	$193,563,000	$222,643,702	$8,632,102	4.0%
Out of State Film and Video	$20,233,300	$16,969,000	$42,510,498	$22,277,198	110.1%
Total All	$417,154,600	$443,908,000	$624,879,023	$207,724,423	49.8%
Jobs					
Indigenous Film and Video	5,392	6,809	7,777	2,385	44.2%
Television and Cable Broadcasting	4,367	3,977	4,442	75	1.7%
Out of State Film and Video	630	393	1,117	487	77.3%
Total All	10,389	11,179	13,336	2,947	28.4%

Source: ECONorthwest, July 2008.

Between 2002 and 2007, the following changes have taken place in film and video industry in Oregon:

- The economic impacts associated with the **indigenous film and video** increased significantly, with output increasing 136.3 percent, labor and other income increasing 96.7 percent, and employment increasing 44.2 percent.

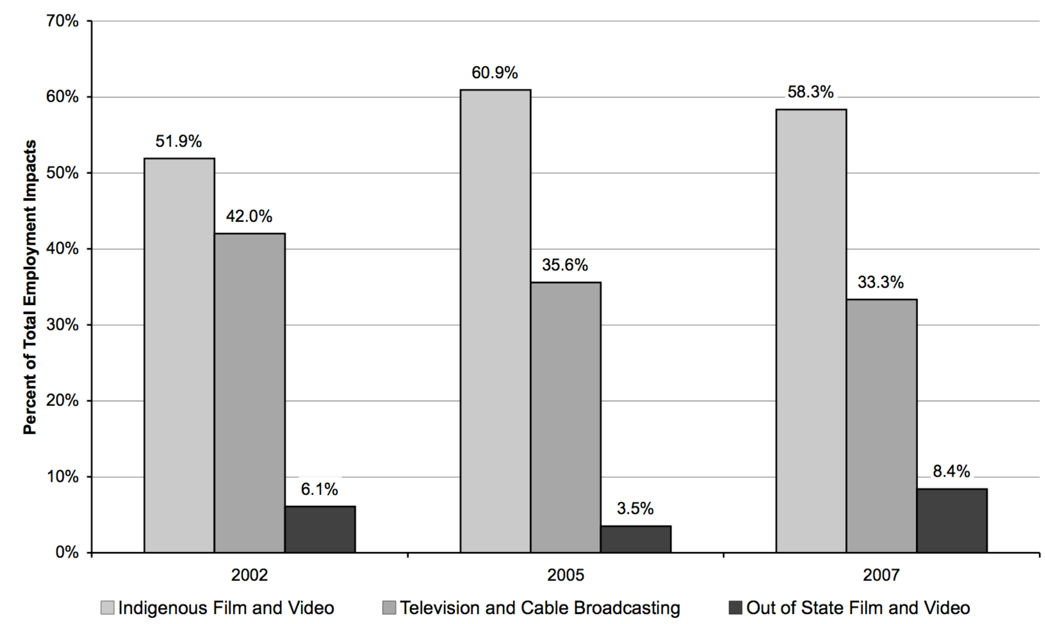
- **Television and cable broadcasting** impacts grew modestly. Output, wages, and income are up 16.7, 4.0, and 1.7 percent, respectively, over the five-year period.

- **Out-of-state film and video productions** reversed the decline it experienced between 2002 and 2005, with growth over the last two years that have left the economic impacts associated with this sector well above 2002 levels. Between 2002 and 2007, this sector generated a 113.7 percent increase in output, 110.1 percent increase in income, and 77.3 percent increase in employment.

Figure 1, below, shows each sector's share of total employment impacts, and how those shares have changed over time. As shown previously, the indigenous film and video sector generates the most employment. In 2002, this sector generated 51.9 percent of total employment impacts attributed to the film and video industry in Oregon. In 2007, it generated 58.3 percent of total employment impacts (a 12.3 percent increase).

The television and cable broadcasting sector's share of total employment impacts declined between 2002 and 2005, but remained relatively constant over the last two years. Because television and cable broadcasting is a capital-intensive industry, the job shares shown below will tend to understate its contributions to the state economy. The television and cable broadcasting sector is responsible for 40.3 and 35.7 percent, respectively, of the total output and income generated by the film and video industry in Oregon in 2007.

Figure 1: Share of Total Employment Impacts by Industry Sector, 2002, 2005, and 2007



Source: ECONorthwest, July 2008.

Also shown in Figure 1, out-of-state film and video productions account for the smallest share of employment impacts attributed to the industry. However, on a percentage basis, and despite the decrease between 2002 and 2005, employment attributed to the out-of-state film and video sector increased the most (37.7 percent increase) of any sector between 2002 and 2007.

B. Impacts on Portland

The film and video industry is an important contributor to the Portland metropolitan economy. The direct impacts on Portland—as shown in the top section of Table 8—include $542.9 million in output, $221.3 million in income, and 3,977 full- and part-time jobs.

Spending and activities associated with the film and video industry generate additional economic impacts for other sectors of the Portland economy. Indeed, the total economic impacts that can be traced back to the film and video industry in 2007 include $1.04 billion in output, $469.1 million in income, and 8,614 full- and part-time jobs.

Table 8: Economic Impacts of the Film and Video Industry in Portland, 2007

Type of Impact and Sector	Output	Labor and Other Income	Jobs
Direct Impacts			
Indigenous Film and Video	$306,505,323	$134,716,149	2,544
Television and Cable Broadcasting	$211,518,000	$73,181,457	1,027
Out of State Film and Video	$24,883,944	$13,391,642	406
Total Direct Impacts	$542,907,267	$221,289,248	3,977
Total Impacts			
Indigenous Film and Video	$589,286,117	$280,184,445	5,161
Television and Cable Broadcasting	$403,960,692	$163,881,922	2,810
Out of State Film and Video	$47,729,119	$25,047,553	643
Total All Impacts	$1,040,975,928	$469,113,920	8,614

Source: ECONorthwest, July 2008.

The multiplier process that generates economic impacts in industry sectors outside the film and video industry is shown in greater detail in Table 9. The diffusion of economic impacts in Portland is comparable to that for the state. Although most industry sectors experience positive economic impacts, the sectors that benefit the most from the film and video industry are other services; transportation, communication, and utilities; and retail and wholesale trade.

Table 9: Total Impacts of the Film and Video Industry in Portland, by Industry Sector, 2007

Industry	Wages (a)	Self Employed Income (b)	Total Labor Income (c = a + b)	Other Income	Jobs
Film and video productions*	$98,613,832	$40,298,800	$138,912,632	$9,195,160	2,950
Hotels and accommodations	628,115	37,617	665,733	341,692	25
Automobile rentals and leasing	107,697	3,534	111,230	99,349	4
Television and cable broadcasting	65,830,243	199,200	66,029,443	7,152,014	1,027
Other Industries					
Natural resources	810,655	799,487	1,610,142	1,805,193	33
Construction	6,656,728	1,227,312	7,884,041	746,979	142
Manufacturing	7,689,732	664,406	8,354,138	2,628,753	152
Trans, comm, and utilities**	24,396,279	1,947,215	26,343,494	7,710,912	684
Wholesale and retail trade	17,362,189	1,107,640	18,469,829	6,919,283	463
Finance, insurance and real estate	14,151,660	3,170,144	17,321,804	19,860,894	386
Other services***	71,234,723	11,313,070	82,547,794	21,074,415	2,474
Government	19,652,988	0	19,652,988	3,676,011	276
All industries	$327,134,842	$60,768,425	$387,903,267	$81,210,653	8,614

Source: ECONorthwest, July 2008.
** Combines indigenous and out-of-state film productions.*
*** Excludes the television and cable broadcasting sector, which is reported separately.*
**** Other services do not include film and video productions, hotels and accommodations, and automobile rentals, which are reported separately.*

Overall, the film and video industry in Portland grew between 2002 and 2007. (Note: ECONorthwest did not conduct an impact analysis for Portland in 2005.) Over the last five years, in Portland, output increased 51.7 percent, income increased 33.2 percent, and employment increased 4.8 percent.

Table 10: Film and Video Industry Impacts In Portland, 2002 and 2007

Type of Impact	2002	2007	Change 2002-2007	% Change 2002-2007
Output				
Indigenous Film and Video	$276,557,900	$589,286,117	$312,728,217	113.1%
Television and Cable Broadcasting	$380,584,000	$403,960,692	$23,376,692	6.1%
Out of State Film and Video	$29,108,900	$47,729,119	$18,620,219	64.0%
Total All	$686,250,800	$1,040,975,928	$354,725,128	51.7%
Labor and Other Income				
Indigenous Film and Video	$159,670,900	$280,184,445	$120,513,545	75.5%
Television and Cable Broadcasting	$177,040,400	$163,881,922	-$13,158,478	-7.4%
Out of State Film and Video	$15,505,700	$25,047,553	$9,541,853	61.5%
Total All	$352,217,000	$469,113,920	$116,896,920	33.2%
Jobs				
Indigenous Film and Video	4,603	5,161	558	12.1%
Television and Cable Broadcasting	3,166	2,810	-356	-11.2%
Out of State Film and Video	450	643	193	43.0%
Total All	8,219	8,614	395	4.8%

Source: ECONorthwest, July 2008.

C. Summary

As summarized in Table 11, the film and video industry has a considerable and growing economic impact on the Oregon and Portland economies. In 2007, the film and video industry generated a total of almost $1.39 billion in output, $624.9 million in income, and 13,336 full- and part-time jobs for workers and business owners in the state.

Table 11: Summary of Film and Video Impacts in Oregon and Portland, 2007

Study Area / Impact	2007	% Change 2002-2007
Oregon		
Output	$1,392,503,328	66.4%
Labor and Other Income	$624,879,023	49.8%
Jobs	13,336	28.4%
Portland		
Output	$1,040,975,928	51.7%
Labor and Other Income	$469,113,920	33.2%
Jobs	8,614	4.8%

Source: ECONorthwest, June 2008.

In Portland, the film and video industry generated a total of $1.04 billion in output, $469.1 million in income, and 8,614 full- and part-time jobs in 2007. This represents approximately 74.8, 75.1 and 64.6 percent of the total output, income, and job impacts in Oregon.

Although the economic impacts attributed to the film and video industry are concentrated in the Portland metropolitan area, between 2002 and 2007, the industry has grown faster outside of Portland than in the city itself. As shown in the last column of Table 11, between 2002 and 2007, the percentage increases in statewide impacts across all impact measures (output, income, and jobs) are greater than the increases in Portland between 2002 and 2007.

Table 12 offers additional geographic information regarding the economic impacts associated with the film and video industry in this state. In 2002, Portland garnered approximately 82.0, 84.4, and 88.7 percent, respectively, of the total output, income, and job impacts attributed to the film and video industry. The rest of the state captured just 18.0, 15.6, and 11.3 percent of the output, income, and job impacts.

By 2007, Portland's share of impacts had fallen and the rest of Oregon had increased across all impact measures. In 2007, the rest of Oregon captured approximately 25.2 percent of the output impacts (a 40.3 percent increase from 2002), 24.9 percent of total income impacts (a 60.1 percent increase), and 35.4 percent of total employment impacts (a 214.4 percent increase).

Table 12: Portland and the Rest of Oregon's Share of Total Impacts, 2002 and 2007

	2002		2007		Growth in
Impact	Portland	Elsewhere in the State	Portland	Elsewhere in the State	Non-Portland Share of Impacts
Output	82.0%	18.0%	74.8%	25.2%	40.3%
Labor and Other Income	84.4%	15.6%	75.1%	24.9%	60.1%
Jobs	88.7%	11.3%	64.6%	35.4%	214.4%

Source: ECONorthwest, June 2008.

The film and video industry in Oregon benefits the state's economy in many ways. First, the film and video industry is growing and its economic impacts are increasing. So, too, are the average wages that the industry generates.

Second, growth in the film and video industry benefits other sectors that supply the industry or households and businesses that derive income from the industry.

Third, the economic impacts of the film and video industry are spreading beyond Portland to more rural areas of the state. This represents the combined growth of the industry itself as well as that of supporting industries outside of Portland. Fourth, the growing and expanding contribution of the film and video industry suggests that synergies (or agglomeration economies) are beginning to develop.

Out-of-state production spending helps the state's economy in two principal ways. The most readily measurable is through the fiscal impacts that flow through the economy because of production spending. These effects are fairly immediate. In the longer term, out-of-state productions help the economy by providing structural benefits that support and develop indigenous businesses and employment.

A. Immediate Fiscal Impacts

When an out-of-state crew comes to Oregon and spends money filming a production or doing still shoots for a magazine advertisement, local labor is hired, cars are rented, hotel rooms filled, and money is spent at local stores and restaurants. This stimulates the economy because those dollars come from outside of Oregon and would not have been spent in the state had the production not come. Furthermore, as described in the economic impact analysis, the stimulative effects carry through the state's economy causing further employment and spending gains.

All of this activity creates taxable transactions and other government revenues, such as fees, licenses, permits, and fines. It also increases household wealth within the state, which ultimately raises property values and, thus, local property taxes.

As shown on Table 13, when all of these effects are totaled, the analysis found that out-of-state production spending resulted in nearly $5.1 million in state and local government revenues in Oregon during 2007. This equaled $123,260 for every million dollars such productions spent. The federal government derived about $7.4 million from out-of-state productions in Oregon or $179,136 for every million spent in 2007. These figures do not include the effect of incentives.

Table 13: Government Revenues Generated by Out-of-State Film Productions in Oregon not Including Incentives, Total Fiscal Impact and Impact per Million Dollars Spent in 2007

Jurisdiction/Source	Total Impact	Impact per Million Spent
State of Oregon		
State personal & corporate income tax	$2,241,836	$54,282
Other state taxes, fees & licenses	1,095,688	26,530
Total State Taxes	$3,337,524	$80,813
Local Governments in Oregon		
Local property taxes	$1,309,187	$31,700
Other local taxes, fees & licenses	443,863	10,747
Total Local Taxes	$1,753,050	$42,447
Total State & Local	**$5,090,574**	**$123,260**
U.S. Federal Government		
Federal personal & corporate income tax	4,248,065	$102,860
Excise & retirement taxes	3,150,169	76,276
Total Federal Taxes	$7,398,234	$179,136
Total All	**$12,488,808**	**$302,396**

Sources: ECONorthwest IMPLAN analysis, July 2008.

B. Longer-Term Impacts

Although one can estimate the government revenues stimulated by film productions, there are other benefits that can accrue to a state. They are not readily quantifiable using economic impact models, but are nonetheless important.

Foster indigenous sector growth. Oregon has a modest indigenous film and video industry and ranks 11th nationally in this regard.[7] This is evidence that Oregon has some comparative advantages in film & video production. A flow of business from outside the state provides the critical mass of work necessary for the industry to sustain itself and grow. That growth, which reveals itself in the form of investment spending by indigenous businesses, ultimately stimulates fiscal impacts in addition to the immediate effects shown on Table 13.

[7] Source: US Bureau of Labor Statistics—Covered Employment.

Provide in-state jobs for Oregon-educated students. Oregon educates students in high school and college in skills for film, video, and other careers that tie directly to the film and video industry. By the very nature of career differences within populations, the state will always have a certain proportion of students that grow up with an intense interest and innate skills in film and video production. If the state lacks a sufficient base of firms in the industry, graduates will migrate out of Oregon, leaving the state effectively having paid for the educations of workers whose careers will be in California, New York, and other states. Supporting film and video production in Oregon helps the state attain better job diversity and reduces the loss of skilled workers to other places.

Economic development of tangential businesses. In a related benefit, many of the skills used in the film and video sector are transferable to other sectors. By retaining skilled workers, it allows other, tangentially related sectors to develop by providing a pool of trained and interested employees. Examples include computer animation, website development, music, advertising, and marketing.

Stimulate tourism. Film tourism is growing, facilitated by the wide availability of and repeated viewing opportunities for movies and television shows. Internet sites such as IMDB.com and DVDs with "behind the scenes" features particularly foster viewer knowledge of filming locations. Film tourism is the economic phenomenon of tourism visits stimulated by a destination being featured on television, film, DVD, or the Internet.

Researchers have measured the value of film tourism and, in particular, its ability to generate incremental tourism years after a film is first released. Devils Tower National Monument in Wyoming still gets visitors because of the movie *Close Encounters of the Third Kind*[8]. 17 years after the release of *Field of Dreams*, 65,000 tourists a year visit the cornfield in Iowa where it was set. A recent study found that the number of visitors is approximately 54 percent higher four years after a location is featured in a successful film[9].

There are many examples of the value of film tourism. A surge in tourism to New Zealand followed the *Lord of the Rings* trilogy. Visits to Santa Barbara County wineries, the setting for the movie *Sideways*, saw a 300 percent increase a year later.[10] The city of Astoria attracts "a couple hundred" visitors a month[11] that come specifically to see locations from the 1985 movie "Goonies." In June 2005, Astoria saw over 500 vacationers from as far away as the United Kingdom for the 20th anniversary of Goonies.[12] Indeed, the Oregon Tourism Commission[13] and private individuals[14] promote film locations.

---

[8] "Hudson, Simon, and J. R. Brent Richie. Film Tourism and Destination Marketing: The Case of Captain Corelli's Mandolin." *Journal of Vacation Marketing*. Vol.12 No.3, p.256 (July 2006).

[9] Riley, R., Baker, D. and Van Doren, C.S. (1998) 'Movie Induced Tourism', *Annals of Tourism Research* 25(4): 919-35, *cited in* "Hudson, Simon, and J. R. Brent Richie. Film Tourism and Destination Marketing: The Case of Captain Corelli's Mandolin." *Journal of Vacation Marketing*. Vol.12 No.3, p.256 (July 2006).

[10] Yoshino, Kimi. "From Film to Destination Spot." *Los Angeles Times*. June 5, 2006.

[11] Boule, M. "Loony for Goonies." *The Oregonian*. April 10, 2003. Page F-1.

[12] Davis, B. "Goonies fans never say bye to favorite film." *The Seattle Times*. June 9, 2005. Page E-8.

[13] http://www.traveloregon.com/Explore-Oregon/Portland-Metro/Trips-We-Love/Film-in-Oregon.aspx

[14] http://www.thegoonies.org/viewersTrips.htm

Research has found that cognitive and affective (*i.e.*, emotional) images in visual media statistically predict the tourism destinations people choose. The benefits of this consumer behavior would be of great importance to a desirable vacation destination, such as Oregon. Effectively, having an Oregon location identified and featured in a production acts as a form of product placement. It can be a highly effective means of indirect long-term marketing for the state as a place to visit, live, and locate a business.

For more information regarding this analysis, please contact:

Robert Whelan or Alec Josephson
ECONorthwest
888 SW Fifth Ave., Suite 1460
Portland, Oregon 97204
(503) 222-6060

This report was prepared for:

Steve Oster
Governor's Office of Film & Television
121 SW Salmon, Suite 1205
Portland, Oregon 97204
(503) 229-5832