

# The Economic Impact of Michigan's Motion Picture Production Industry and the Michigan Motion Picture Production Credit

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## Executive Summary

In the nine months following passage of the Michigan Film Production Credit, 32 Michigan film productions were completed generating nearly \$70 million in spending. This spending directly and indirectly benefited Michigan residents and businesses. This study presents the estimated economic impacts of film production in Michigan following the passage of this incentive. The Michigan REMI model is used to estimate state-wide economic impacts of audited expenditures of Michigan film productions in 2008.

- Michigan productions spent \$65.4 million dollars in 2008. Of this, \$25.1 million was spent on direct wages and salary and \$40.3 million was spent on Michigan goods and services. Productions directly employed 2,763 Michigan residents during the duration of filming.
- Through a multiplier effect, film productions generated 1,102 year-round equivalent jobs in 2008 with total wage and salary income of \$53.8 million. In addition, film expenditures generated \$28.4 million in additional state-wide expenditures through the multiplier effect. In total, film production expenditures generated \$93.8 million in state output in 2008.
- We estimate total production expenditures will grow 187 percent from 2008 to 2012 based on the experiences of Louisiana and New Mexico, who passed similar, but lower incentives in 2002. Both states continue to experience year-over-year growth in total in-state production expenditures.
- By 2012, we project total direct production expenditures will climb to \$187.7 million. These expenditures will likely produce 2,922 jobs with annual income of \$189.5 and total state output of \$335.6 million, once accounting for the multiplier effect.
- Based on generally accepted economic theory, multiplier impacts will increase over time. This occurs as infrastructure develops around this new industry and a greater proportion of the total production budgets are captured in state.
- Michigan film will likely generate tourism impacts. We do not estimate such impacts but illustrate examples of locations in Michigan that have generated tourism and other indirect benefits from film production.

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## Introduction

Michigan legislators enacted the Michigan Film Production Credit incentive program in April 2008 to correct Michigan's uncompetitive position in attracting film and digital media productions relative to other states. This act provides a refundable, assignable tax credit of up to 42 percent of the amount of a production company's qualified expenditures incurred in producing a motion picture or other media entertainment project in Michigan. Michigan combines this incentive with a 25 percent tax credit for companies that invest in new film and digital media studios in the state and 50 percent non-refundable and non-assignable tax credit for on-the-job training expenses. Combining these incentives, Michigan has created an incentive package to not only draw filming crews to Michigan, but also to attract a whole industry in one effort to offset Michigan's declining manufacturing base.

Under this program, productions receive a 40 percent refundable tax credit for qualified Michigan expenditures and may qualify for an additional 2 percent credit for purchases and transactions in any of Michigan's 103 Core Communities. Qualified Michigan expenditures include wages and salaries of Michigan residents, and purchases of goods and services from Michigan businesses. Additionally, expenditures generally categorized as *above the line* also qualify for the 40 percent credit and are eligible for the additional two-percent credit for production activity within a Core Community. *Above the line* expenditures encompass the creative talent component of the production, including writers, producers, directors, and cast. These expenditures are generally negotiated before filming begins. Finally, productions are eligible for a 30 percent credit for wage and salary expenses of *below the line* crew members hired from outside the state who do not make up the creative talent component of the production. *Below the line* expenditures include wages and salaries of non-cast crew.

Both Michigan and non-Michigan production companies are eligible for this incentive. To be eligible for tax incentives, production companies must spend at least \$50,000 in the state for development, and production activities of a state qualified production. They must also provide a pro-forma, or projected budget, and enter into an agreement with both the Michigan Film Office and the Department of Treasury. The Michigan Film Office provides a post-production certificate of completion based on audited records of expenses, and the production is responsible for submitting this post-production certificate to the State Treasury for credit consideration.

The Michigan Film Office and the Department of Treasury have discretion on whether to enter into an agreement with eligible production companies. Several factors are considered before entering into such an agreement including whether the production will locate in another state in the absence of the incentive; the extent that the production will promote Michigan as a tourism destination; the economic development or job-creation linked to the production; and the background record of the production company. Furthermore, several types of productions are not eligible for credit, including those enterprises pursuing news and sporting event coverage, radio programming, political or

product advertising, fundraising efforts, game shows, and those covering topics generally deemed obscene.

It is posited that this tax credit will continue to attract motion picture production projects to Michigan and will propel the development of the film and digital media industry cluster in Michigan. As this cluster develops, Michigan will be home to more production projects and will gain further revenue injections through film production expenditures. Furthermore, as the cluster develops, a greater proportion of production expenditures will be internalized within the Michigan economy. Michigan film industry will be more equipped to see the film making process through, from beginning to end throughout the calendar year. Using standard economic impact modeling techniques, this report shows that the potency of film production expenditures is likely to increase as Michigan's film and digital media production industry develops over time. This report also documents the economy-wide impacts from 2008 film production expenditures. Projections of film production expenditures in Michigan are created based on trends experienced in states with similar film incentives.

## **Impact of the Michigan Film Production Credit**

In 2008, Michigan's Film Production Credit generated a great deal of film production activity in Michigan and created a stir in Hollywood. The L.A. Times reports (Verrier, 2008), "Not since Michael Moore's documentary "Roger and Me" has the Great Lakes state garnered so much attention from Hollywood." There is good reason too.

Michigan's film incentives are generally considered to be the most aggressive in the U.S. Competing state incentives have resulted in a gradual whittling away of southern California's film production activities. These runaway productions have mostly been isolated to three cross-boarder locales such as Vancouver, Toronto, and Montreal (Scott & Pope, 2007). However, the decline of the dollar caused the cost of filming in Canada to increase, setting off competition across states to recruit available productions to their state.

Interest in filming in Michigan following the passage of the Michigan Film Production Credit is evident when comparing 2007 filming activity to 2008. The Michigan Film Office web site shows that only two motion picture productions were filmed in Michigan in 2007, and these productions generated about two-million dollars in state expenditures. In contrast, the Michigan Film Office received 221 scripts for potential consideration, leading to 136 applications and 71 approvals for the incentive program in the nine months following the passage of the legislation. In all, 32 new production ventures completed filming in Michigan in 2008; contributing nearly \$70 million in direct expenditures.

The additional film production activity and interest in Michigan are testaments to the impact of the Michigan Film Production Credit. However, interest is not limited to actual film production. Several parties have inquired about building production studios in Michigan, taking advantage of the infrastructure credit accompanying the increased film production. Three soundstages are planned for construction in Southeast Michigan and interest in other studios and soundstages exist outside of southeast Michigan, according to the Michigan Film Office. Additionally, Michigan's universities and community

colleges, and vocational training schools have announced various programs and partnerships statewide in response to immediate demand for training film industry and workforce training. West Shore Community College and 10 West Studios in Manistee have collaborated to offer a film production-training program; Oakland Community College and S3 Entertainment Group have developed new Fast Track educational programs; and the Macomb Community College is offering film-based programs to area residents among others. Interest in pursuing film careers in Michigan has spiked since Michigan enacted the Film Production Credit.

The following sections illustrate the model for estimating the economic impact of 2008 film production in Michigan. Projections are used to illustrate how film production expenditures are likely to expand over time. The following section describes the approach used to estimate the economic impact of film production expenditures and concludes with estimates of that impact. The next section describes the modeling framework and associated assumptions used to estimate economy-wide impacts in Michigan. The last section describes estimates of the direct and indirect effects and provides economy-wide summaries of the expected impact from 2008 to 2012.

## **Method**

We use the Regional Modeling Incorporated's (REMI) Policy Insight Model for Michigan to estimate the economic impact of the Michigan Motion Picture Production Credit. The REMI model is designed for practitioners to understand how policy and industry changes affect the economics of all sectors of the economy and population. It is a quantitative model that incorporates accepted economic modeling principles in establishing value chains across industries, within and outside a modeled region. These value chains represent the transactions across industries when producing goods or services for final consumption. Within the current film production context, such transactions will likely include purchases of construction inputs, props, costumes, and other material purchases as well as a host of services that may include accommodations, equipment rental, property leasing, graphic-art services, set design, a host of technical consulting services, travel services, and others.

The REMI model uses a system of accounting for tracking transactions across all sectors of the economy in providing estimates of the total impact that accrues to a local economy from an initial stimulus. Such impacts start from an initial set of expenditures, called direct expenditures or direct effects. These dollars circulate within the state economy through secondary transactions, as beneficiaries of direct expenditures increase expenditures. Such secondary transactions continue at a progressively lower level overtime, dwindling from gradual leakages that occur when beneficiaries of secondary transactions purchase out of state. Once the initial economic stimulus runs its course through sequential secondary transactions, the measurable total economic impact will be larger than the initial stimulus.

REMI also imputes the necessary capital investment expenditures and labor required to support additional industry sales. Whenever industry sales ratchet up, both employment and capital are required to facilitate new sales. Across an inclusive set of industries, REMI uses national estimates of the capital and labor necessary to support a given level

of industry sales. The model uses accepted economic modeling principles to track the expected gradual investment in capital necessary to sustain an increase in industry sales. Furthermore, industry employment increases to the extent that additional labor is required to support increased economic activity. As labor and capital are added to the economy to meet new demand, proficiency is created. Specialized labor becomes less expensive and more accessible as a pool of skilled workers grows. Labor also becomes more proficient, as the number of workers required to support a given level of industry sales declines. Furthermore, the cost of providing support services declines as vendors form core clusters. In essence, the REMI model captures agglomeration effects that accrue as industry clusters mature. As Michigan's film cluster develops, the Michigan motion picture and digital media industry becomes more efficient and competitive relative to the nation; affording more film and digital media production projects in Michigan and potentially less dependence on the incentive themselves.

Deriving meaningful estimates of the economic impact of film production expenditures requires careful consideration of what makes up the direct expenditures and proper assignment of these direct expenditures to various industries. This analysis uses a combination of audited actual expenditures and non-audited projected expenditures to accurately allocate expenditures into proper spending categories. As of this writing, the Michigan Film Office has provided post-production certificates of completion for 32 completed productions in 2008 that sought Film Production Credits. Post-production certificates document the audited expenditures across ten distinct spending categories.

Only expenditures reported to take place in Michigan are considered for this economic analysis. These direct expenditures are distributed among 19 expenditure categories for use in the REMI model based on detailed budgets and post-production certificates of completion of the 32 completed and audited productions.

Because only expenditures that take place in Michigan are included in the economic impact assessment, direct expenditures are lower than the total value of the 32 film budgets. Budgeted expenditures made to individuals and firms outside of Michigan are excluded from the analysis, and assumed to have no impact on the Michigan economy. Based on post-production certificates, about 45 percent of total 2008 production expenditures eligible for the Michigan Film Production Credit were out of state expenditures. About 26 percent are *above the line* expenses for creative talent, and 19 percent are for *below the line*, non-Michigan wages and salaries of cast and crew members.

### **Film and Digital Media Direct Production Expenditures**

The Michigan Film Office and Department of Treasury collected 136 applications from film productions and approved 71 unique productions for state incentives. Over \$492.4 million in production expenditures were approved between April 8 and December 31, 2008. However, not all of the 71 approved projects materialized in 2008, and some have signaled intent to film their projects or resubmit in 2009. In all, 32 of the approved film and digital media productions were completed in 2008. These approved productions have total production budgets of \$172.1 million and Michigan approved \$124.4 million of the total budgets for eligibility for credit under the Michigan Film Production Credit.

The 32 post-production certificates indicate productions spent 927 days filming in Michigan in 2008<sup>1</sup>, and most production projects required fewer than 30 days of filming. Productions further report employing 2,763 Michigan workers, excluding extras. Based on the audited budgets, the 32 productions directly spent \$65.4 million in Michigan. Table 1 summarizes the 2008 film productions.

<b>Table 1: Summary of 2008 Film Production Enterprises</b>	
<b>Projects Approved</b>	
Number of Project Applications	136
Number of Approved Projects	71
Total Budget Amount of Approved Projects	\$ 492.4 Million
<b>Completed Projects</b>	
Number of Completed Projects	32
Approved Budgeted Expenditures of Completed Projects *	\$ 172.1 Million
Approved Actual Expenditures of Completed Projects **	\$ 124.4 Million
Total Michigan Expenditures ***,§	\$ 65.4 Million
Total Direct Employment ****,§	2,763
Total Number of Filming Days	927

\* includes eligible expenditures and ineligible expenditures at time of approval

\*\* includes Michigan expenditures and all approved wages and salaries eligible for the incentive

\*\*\* includes only Michigan expenditures that contribute to a state-wide economic impact

\*\*\*\* does not include extras

§ applied to the REMI model for analysis

Direct Michigan expenditures measure the economic stimulus that drives the REMI economic impact calculations. Table 2 breaks out total approved budgets based on the post-production certificates and audited budgets. *Below the line* labor wages and salaries make up about 38 percent of the total in-state expenditures. Contracted services of Michigan firms make up the next largest component of in-state expenditures. All direct Michigan expenditures are allocated to 19 expenditures groups based on detailed audits. These breakouts allow REMI to capture the chain of secondary expenditures that provide the economy-wide impact.

The REMI model tracks economic impacts over time. To add a time element to direct film and digital media productions, total Michigan direct expenditures are trended over time. Louisiana and New Mexico enacted similar, yet less aggressive incentive credits in 2002 and 2003. Both states experienced explosive growths in film production activities following passage of these incentives. Growth rates in film production expenditures in Louisiana and New Mexico since enacting their respective incentives will provide guides to estimate the expected trajectory of Michigan film production expenditures over time.

<sup>1</sup> This number may be understated, as filming day numbers of some productions have not yet been fully verified. Filming days of unverified productions are not included.

	Approved Non-Michigan Expenditures	Approved Michigan Expenditures	Approved Actual Expenditures of Completed Projects
ATL Labor Wages/Salaries	\$ 36.4 Million		
Non-Michigan BTL Wages/Salaries	\$ 22.5 Million		
BTL Labor Wages/Salaries		\$ 25.1 Million	
Michigan Lodging Expense		\$ 5.0 Million	
Michigan Building(s) Rental		\$ 1.7 Million	
Michigan Food/Restaurant		\$ 3.1 Million	
Michigan Equipment Rental/Purchase		\$ 9.1 Million	
Michigan Materials Rental/Purchase		\$ 8.4 Million	
Michigan Location Fees		\$ 2.4 Million	
Michigan Contracted Services		\$ 10.6 Million	
<b>Totals</b>	<b>\$ 58.9 Million</b>	<b>\$ 65.4 Million</b>	<b>\$ 124.4 Million</b>

Only Approved Michigan Expenditures are applied to the REMI model.

The un-weighted average growth of in-state production expenditures in Louisiana and New Mexico following the enactments of their respective incentive credits are used to project total direct expenditure growth in Michigan, as shown in Table 3. Because direct expenditures are distributed among 19 expenditure categories, the annual direct expenditure growth is applied to each of the expenditure categories – not shown in the table.

It is important to recognize that the growth in Michigan film expenditures are merely conjectures of how expenditures are likely to increase over time. The actual growth of production expenditures may vary from these projections. For example, since the Michigan Film Production Credit is more aggressive than other state incentives, it is feasible that the actual expenditure growth will be higher. Alternatively, the current economic environment may curtail future production budgets; leading actual future expenditures to be lower than projected. The reader is cautioned in interpreting the growth projections.

	Expenditure Growth Since 2008	Total Direct Expenditures (\$ millions)	Total Direct Employment**
2008	NA	65.4	665
2009	105%	134.1	1,291
2010	135%	153.8	1,398
2011	163%	172.0	1,484
2012	187%	187.7	1,536

\* 2008 encompasses 9 months of filming activity, and 2009 to 2012 projections are based on calendar year expenditures.

\*\* Direct employment is estimated from direct expenditures in annualized jobs

The REMI model uses average sales per employee to calculate direct employment required to support direct expenditures. Table 3 also reports the estimated direct employment impacts in annualized jobs. This measure differs from the direct employment reported by production companies and shown in Table 1 in two aspects. First, production companies report hires as those directly hired by the production company. However, these direct hires are employed for the duration of the shoot, rather than over the course of a year. The typical 2008 production filmed for 23 days. Based on a 250-day work-year, 2,763 direct short-term employees generate approximately 254 annualized Michigan jobs in 2008. Estimated direct employment also differs from the post-production records of direct employment in that direct expenditures to Michigan businesses induce Michigan businesses to hire additional workers to fill new orders. REMI calculates the additional workers necessary to support these direct expenditures and we categorize these induced hires as direct employment impacts of film production expenditures. We estimate that non-wage, direct production expenditures generated an additional 411 direct Michigan jobs in 2008. Together, the number of annualized jobs hired directly by productions and the number of industry hires induced by direct production expenditures provide total direct employment of 665 for 2008.

The total direct expenditures and direct employment will be used to form the basis of multiplier calculations. Economic multipliers are common measures of the actual and potential economy-wide impacts from a given level of stimulus. Once the initial economic stimulus runs its course through sequential secondary transactions, the measurable total economic impact will be larger than the initial stimulus injection of the direct expenditures. The multiplier is a measure of the difference in direct expenditures and employment and the economy-wide expenditures and employment.

### **State-wide Economic Impacts**

The REMI model of Michigan provides statewide economic impacts resulting from direct expenditures of film production in 2008 and the projected expenditures from 2009 to 2012. The calculated economic impacts provide measures of the industry multipliers and population impacts as discussed below. To be sure, only actual and projected Michigan expenditures are considered in deriving these economy-wide impacts.

Table 4 displays the economic impacts in terms of changes in Michigan employment, personal income, and output. Employment impacts measure how motion picture production expenditures changed statewide employment in 2008 and how they are likely to change statewide employment throughout the projection period. Similarly, personal income in the state increased by \$53.8 million in 2008 and is expected to trend up as film and digital media production expenditures continue to trend up. The typical earnings of these new Michigan jobs are relatively high, with average earnings of nearly \$49,000 in 2008 and increasing to nearly \$65,000 by 2012.

The concept of the economic multiplier is at the core of impact analyses. Statewide economic impacts are measured as the sum of direct and indirect effects<sup>2</sup>. Economic

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<sup>2</sup> Many researchers typify total impacts as the sum of direct, indirect, and induced effects. REMI estimates all three components of total impacts but does not distinguish indirect and induced effects.

multipliers are calculated as the ratio of total impacts divided by the direct effects and provide a measure of the degree to which initial economic stimulus disperses throughout the economy. The higher the multiplier the more potent the stimulus is at creating economy-wide impacts. In addition, economic multipliers are not necessarily constant over time. Since economic multipliers reflect the underlying structure of the economy, the economic multipliers will change as the structure of the economy evolves. More so, as industries develop clusters of interrelated businesses, their supply chains tend to deepen. Industries with deep supply chains will have larger multipliers than industries with shallow supply chains. An industry with a deep local supply chain is one that purchases a great deal of inputs from other industries within the same economy. In Michigan, the auto sector is an example of an industry with deep supply chains, because many of the automobile parts suppliers are also located within the state.

<b>Variable</b>	<b>2008</b>	<b>2009*</b>	<b>2010*</b>	<b>2011*</b>	<b>2012*</b>
Total Non-Farm Employment	1,102	2,214	2,500	2,741	2,922
Private Non-Farm Employment	1,089	2,179	2,442	2,661	2,822
Public Admin Employment	13	35	58	80	101
Personal Income (Mil Nom \$)	53.8	116.6	142.9	167.4	189.5
Output (Mil Nom \$)	93.79	203.4	248.0	292.7	335.6

\* projected economic impacts

In the context of film and digital media production, much of the supply chain does not yet exist in Michigan. Talent and infrastructure is in the process of development. Within the short nine months since enacting the Michigan Film Production Credit, Michigan’s universities, community colleges and vocational schools have responded to this industry’s need for creative and technical talent with new educational programs and courses designed around film and digital media productions. In addition, soundstages of the caliber required for large-scale productions have not yet been established in Michigan. However, staff at the Michigan Film Office references an extraordinary response from businesses and individuals seeking to locate in Michigan to pursue businesses and careers in film and digital media production. Indications show that Michigan is likely to be home to several new soundstages. As such, resources within Michigan will gradually ratchet up, the film and digital production industry’s supply chain will deepen, and economic impacts of production expenditures will expand over time.

Table 5 reports the employment and output multipliers over time; indicating a deepening supply chain as the film and digital media cluster develops. As infrastructure and talent develops in Michigan, transactions become more internalized to the Michigan economy. Fewer outside suppliers are required to complete production and a greater proportion of total production budgets will remain in Michigan. Hence, Michigan businesses will enjoy a much larger share of the total value of production that goes into motion picture production as Michigan's film production cluster develops.

	Employment	Output
<b>2008</b>	1.66	1.43
<b>2009*</b>	1.71	1.52
<b>2010*</b>	1.79	1.61
<b>2011*</b>	1.85	1.70
<b>2012*</b>	1.90	1.79

\* Projected values

Population impacts are likely to occur as well. According to the U.S. Census, Michigan has experienced a net outmigration of over 90,000 residents between 2005 and 2008. Michigan leads the nation in unemployment, and according to an annual United Van Lines study of migration, relative to other states Michigan has had the highest percent of outbound migrants for the last 3 years. Furthermore, it is well recognized in Michigan that outmigration of Michigan's young educated workforce is a concern (Burzynski-Bullard, 2008). Michigan is losing its young educated work force to states with better job prospects according to Lou Glazer, President of Michigan Future Inc.

As discussed above, the Michigan jobs connected to film and digital productions are high-paying high-skilled jobs that Michigan desires to attract and retain. The REMI model provides estimates of the population impacts of the film and digital media stimulus. Table 6 shows estimated population changes resulting from Michigan's growing film and digital media production industry. The positive impacts shown are cumulative and show that by 2012, film and digital media enterprises will likely partially offset Michigan's current outmigration by retaining or attracting 1,612 residents.

	2008	2009*	2010*	2011*	2012*
Total Population Change	206	570	926	1273	1612
Ages 0-14	50	141	232	323	414
Ages 15-24	46	121	185	238	281
Ages 25-64	110	307	506	706	906
Ages 65 and Older	0	1	3	7	12

\* Projected values

In generating Table 6, the REMI model estimates migrations flows based partially on differences in expected income and prospects for employment. Regions that suffer both low wages and low employment opportunities relative to other regions generally experience outmigration. The REMI model uses relative employment opportunity and relative wage rates to estimate migration impacts. If employment opportunities increase or wages increase relative to the nation, REMI will predict net in-migration. As discussed above, film production expenditures generate high-wages and high-skilled jobs. The REMI model correctly anticipates a responding surge in migration as economic migrants pursue such jobs.

This section shows that film production creates real economic impacts. We project that by 2012, film production expenditures will increase to \$187.1 million per year. Film productions and contracted businesses will directly employ 1,536 residents year-round. Through the multiplier effect, statewide output will gradually increase by \$335.6 million and employment will expand by 2,922 jobs by 2012. These are high paying jobs offering wages in excess of \$64 thousand a year and requiring substantial technical skills. Finally, these high-quality jobs are expected to help ease Michigan's recent outmigration.

### **Un-Measured Impacts and Motion Picture Tourism**

Michigan has a very diverse environment, making it an ideal location sought out by motion picture producers according to feedback from 2008 producers. The film production industry is attracted to Michigan's blend of urban and rural settings, extensive historical communities and architecture, contemporary settings, and open space. Contributing to its appeal, Michigan is also home to an array of independent artists and talent to support such an industry. While Michigan has much to offer film and digital media producers, the converse is true as well.

While the motion picture production industry is not recession proof, it is resilient against economic down-cycles (Lev-Ram, 2008). During economic slumps, consumers may drastically curtail expenditures, closing the spigot of funds that circulate and re-circulate within the economy. However, movie receipts often go in the opposite direction, as moviegoers turn to cinema during tough economic times. Such recessionary resilience is in contrast to Michigan's dominant manufacturing sector that tends to move with business cycles.

Other measurable benefits exist. While Michigan has an established tourism industry, film provides national and international exposure of Michigan's charms to further build on this existing industry. The right film at the right place has potential to spark significant tourism and open opportunities for Michigan's communities. When surveyed, approximately 30 percent of Mackinac Island tourists revealed that they learned about Mackinac Island from seeing the 1980 cult classic movie *Somewhere in Time*. Filmed on location on Mackinac Island, this movie has a loyal following of fans that flock to the Grand Hotel every October during the Somewhere in Time Weekend, and generates over 1,000 room nights and over \$620,000 in annual sales<sup>3</sup>. In 1984, Eddie Murphy's character in *Beverly Hills Cop* sported Detroit high school insignia that generated over \$1 million in t-shirt sales revenue for Mumford High School. Producers of *Semi-Pro* invested heavily in maintenance and landscaping around the Michigan State Fairgrounds and Coliseum during filming in 2007. In addition, 50 years after filming *Anatomy of a Murder* in and around Marquette, MI., Marquette continues to capitalize on tourism generated from this classic Jimmy Stewart film.

Many examples exist of regions benefiting from increased tourism by capitalizing on major motion pictures. Regional economic development professionals throughout Oregon set out early to capitalize on potential tourism impacts of the 2008 film, *Twilight*.

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<sup>3</sup> Total sales is calculated using reservation prices, Michigan tourism spending profiles and standard economic multipliers.

Their efforts paid big dividends off the success of the movie. Lucrative events and tours around filming locations coincided and followed the release of the movie. Furthermore, tourism impacts can last for years. The *Field of Dreams Movie Site* continues to draw about 65,000 visitors a year following the 1989 release of *Field of Dreams*. The movie *The Bridges of Madison County* provides another example of potentially long-lasting tourism impacts of motion picture production. Approximately 150 people visit Madison County's tourism office on a typical day in search of the covered bridges featured in this 1995 Clint Eastwood film. Such attractions are easily leveraged with other attractions to create a tourism destination.

Other examples exist, as the list of hit movies that have sparked tourism growth in filming locations is extensive, and several lessons are learned from these experiences. Research on how the motion picture industry impacts tourism is growing with four broad categories:

- How a motion picture impacts the decisions to travel
- What are the profiles of motion picture tourists
- How a motion picture impacts the number of regional tourists
- How regions are marketing destinations through motion pictures and television.

The general finding is that motion pictures influence individuals' desires to experience new destinations. Destination placement in theaters exposes viewers to locations of interest that are further enhanced by involvement in the topic of the movie.

In a recent academic article, Hudson and Ritchie (2006) note that film-induced tourism is a growing segment of the tourism market. Many economic development professionals see geographic placement in movies as a viable approach to market their regions as tourist destinations. Product placement in movies to generate demand has been a long-time strategy for brands such as Coca-Cola and Pepsi. More recently, regions have looked to expand the reach of traditional commercial and print advertising for tourism with tourism-destination placement in movies. Since research indicates that product placement in movies is more effective than traditional media advertisement (Karrh, Mckee, & Pardun, 2003), economic and tourism development professionals anticipate that destination placement in movies will produce successes similar to those of product placement. When compared to the effectiveness of advertising destinations, the *Lord of the Rings* trilogy provided equivalent media exposure of \$41 million in traditional tourism destination advertising for New Zealand travel (New Zealand Institute of Economic Research, 2002).

Hudson and Ritchie further survey destination-marketing organizations that have attracted film-induced tourist to better understand what factors are most effective at generating tourism. These factors included performance of the film at the box office and other attributes, destination attributes, and cooperation of government and non-government stakeholders in promoting their destination. They find that marketing activities are important in facilitating motion picture-tourism and that such efforts are best put into place before the release of the motion picture.

Other tourism research finds that motion picture-induced tourism is often year-round tourism; evading seasonal variations. In addition, film induced tourism often brings visitors to locations they would not likely visit otherwise. Film induced tourism has the potential to broaden the base of the visitor market if pursued. Such research indicates that motion picture-related tourism is a robust form of tourism that does not share the usual seasonal and economic cycles of traditional leisure tourism.

While these impacts are difficult to measure and are likely to vary across circumstances, they are real and observable. New Mexico finds that \$2.50 is generated in film tourism for every dollar of in-state production expenditure (Ernst & Young, 2009). Increasingly, film tourism and issues associated with film tourism are topics in academic journals, and economic development professionals are realizing the potential to capitalize on film tourism as viable economic development initiatives. As reported in *The Annals of Tourism Research*, locations where a successful film was shot generally see a 54 percent increase in tourism visits over four years (Riley, Baker, & Van Doren, 1998).

## Conclusion

This study documents the direct and indirect impacts of Michigan film production in 2008. These impacts follow the Michigan Film Production Credit enacted in April. Projections of direct and indirect impacts through 2012 reflect the expected growth in state production expenditures based on expenditure growths experienced in Louisiana and New Mexico following the launches of their film incentives. The Michigan REMI economic impact simulation model is used to model the actual 2008 impact and expected impacts from 2009 to 2012.

Film production expenditures increased to \$65.4 million in 2008. Such expenditures are expected to double in 2009 and continue to increase at a decreasing rate through 2012. With the current incentives in place, we expect annual film production expenditures in Michigan will total \$187.7 by 2012. This economic stimulus will generate 2,922 new jobs, annual wages commensurate to \$189.5 million and a boost to total state output equal to \$335.6 million annually.

Findings of this study show that Michigan film expenditures generated multiplier effects of 1.66 for employment and 1.43 for output in 2008. As film production infrastructure develops in Michigan, these multipliers are expected expand to 1.90 for employment and 1.79 for output. This expansion in multipliers is the result of deepening value chains, as Michigan will likely capture a greater proportion of total production budgets as its infrastructure develops. Evidence of infrastructure development has already been shown through investment in education and production facilities.

We also find evidence that film expenditures will positively influence migration in Michigan. The motion picture and digital media sectors are high-tech sectors that require a high-skilled labor force. These positions, whether they are on the set during filming, in the studios for post-production, or supplying services for productions, provide high-paying opportunities for Michigan workers.

This analysis has not taken into consideration the full spectrum of motion picture and digital media production. Film production enterprises and parties interested in establishing soundstages and production facilities have responded quickly to Michigan's incentives, but have not been included in this analysis. Other media production enterprises such as video game productions are likely to follow, as Michigan's labor force develops around film and digital media productions.

This analysis also does not take into consideration real economic impacts accruing to Michigan's tourism industry. While there exists evidence of such secondary impacts from past films in the state, conjectures of how filming in Michigan will impact tourism would be uncertain at best without further research.

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