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# Film and Television Production in Massachusetts: Industry Overview and Analysis

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# Film and Television Production in Massachusetts: Industry Overview and Analysis

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February 11, 2010

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# **FILM AND TELEVISION PRODUCTION IN MASSACHUSETTS: AN INDUSTRY OVERVIEW AND ANALYSIS**

February 11, 2010

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## **Executive Summary**

This report describes the structure and recent growth of the film and television industry in Massachusetts. We begin with a discussion of national trends in this industry and find that Massachusetts is one of the fastest growing locations for film and television production in the United States. We then discuss recent employment trends in this sector and find that there has been significant recent growth in the total number of local film and television production jobs -- particularly among the unionized crew and actors that staff local productions. Examination of federal data reveals that between 2005 and 2008 there has been a 117% and a 126% growth in employment in the motion picture and video production and postproduction industries respectively. Using network and geographic modeling tools, we also identify novel patterns in the non-wage spending of local film and television productions. We continue with a discussion of growth trends across several sub sectors of the local film and television sector and find that several are growing rapidly.

While our report recognizes and discusses the revenue and fiscal implications of the film industry tax credit, it is not the focus of our analysis. Indeed, the evaluation of the revenue implications of the Massachusetts Film Tax Credit (FTC)<sup>1</sup> has been done carefully by the recent Massachusetts Department of Revenue study (2009). Our report is focused more broadly on understanding the breadth, performance, and dynamics of the film and television industry in Massachusetts. Updating the “Lens on the Bay State” study (Laubacher, 2006), we provide an overview of aggregate employment trends in this industry and its sub-sectors. We use federal employment data to examine the economic impact of this industry on the Commonwealth. We also rely on interviews with industry participants, employment and spending data provided by local unions, archival data collection, and both network analysis and geographic visualizations to describe production and employment trends in specific sub-sectors of this industry.

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<sup>1</sup> While we use the term Film Tax Credit (and its abbreviation FTC) in the report below, the program actually applies to motion pictures as well as certain kinds of television programs. A description of the program is provided in Appendix 2.

We identify several important trends in the recent growth of the film and television industry in Massachusetts:

1. Massachusetts is among the fastest growing locations for film and television production in the United States; and notably some states with more generous tax credit programs have not experienced as much recent growth as Massachusetts.
2. Employment in film and television production has increased in Massachusetts during a period when total state employment has been on the decline. There is also evidence that some of this job growth has helped to offset job losses in particularly hard hit trades like construction and transportation, as workers from these sectors have found work in film and television production.
3. Local non-fiction television and post-production companies have experienced particularly dramatic growth in recent years and seem to be generating new career paths for local college graduates. In addition, because organizations in this sector tend to spend a large proportion of their production expenses locally, they represent a particularly interesting sector for local economic development. Moreover, as the home to WGBH, Massachusetts has a long history of leadership in non-fiction television and documentary production. This history combined with its numerous college programs generating film and television students, research universities, and high technology companies provides Massachusetts with a unique strategic advantage in the production of non-fiction cable and public television shows as well as growing opportunities in post-production.
4. The growth in local film and television production has stimulated growth among a cluster of local film service companies that support these productions. It has also lured some larger national film service companies to the Commonwealth. There remains room for growth in this area as some specialized film and television production equipment is still not available in Massachusetts and therefore needs to be sourced out of state. To the extent that the local film service sector continues to grow in response to increasing production activity, an increasing proportion of non-wage spending may remain in the Commonwealth.

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## Introduction and Goals

As documented in the 2006 “Lens on the Bay State” report (Laubacher, 2006), the Massachusetts film and television industry was on the decline in the 1990s with total employment falling a third between 1990 and 2006. The local industry reached a nadir with the closing of the Massachusetts Film Office in 2002. To revitalize this once thriving local creative industry, in 2005 the State Legislature passed a tax incentive plan that provided a bankable tax credit for qualifying motion picture and television productions produced in Massachusetts. As updated in 2007, the Massachusetts Film Tax Credit (FTC) provides a refundable/transferrable tax credit for 25% of qualifying wage and non-wage production expenses and a sales tax exemption for qualifying in-state spending.<sup>2</sup>

The FTC has clearly increased the amount of time and percentage of their budgets that film and television productions are spending in the Bay State. Industry representatives report that this increased activity has had a positive impact on local jobs, non-wage spending and the growth of local film service companies. While members of the industry have clearly experienced the positive impact of this program and some studies have found that they have positive short term revenue implications (Ernst and Young, 2009a, 2009b), others studies raise questions both about the value of these programs and methods used to measure their impacts (Luther, 2010; Gregg, 2008; Saas, 2006; Tisei, 2007). This lack of agreement is driven in part by the challenges of accurately measuring economic activity in a project-based industry like film and television production and in part by variations in the models, data, and assumptions used in studies of incentive programs (see Appendix 1 for a thorough discussion of these issues).

The primary purpose of the FTC is to stimulate film and television production in Massachusetts. However, to build a permanent and stable film and television industry requires that policy makers consider both annual returns on investment as well as aggregate industry trends, local workforce development and career paths, infrastructure development and the growth of local film service

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<sup>2</sup> For a detailed description of the provisions of the tax credit program see Appendix 2

industries, as well as variations in production practices and linkages among sub-sectors within this industry and employment trends in each.

Because Massachusetts is one of many states that offer FTC programs, it would also be helpful to evaluate how Massachusetts is doing relative to other states that are competing for a share of the total national film and television production budget each year. Finally, it is important to identify whether the Commonwealth has a set of unique resources that can put substance behind the aspiration of becoming a permanent center of film and television production in the United States.

Industry representatives argue that because of its unique combination of desirable locations, large numbers of universities and students, a talented cast and crew, tax incentives, and status as a world class city that is desirable to talent, Massachusetts has the potential to become the third largest center of film and television production in the United States (behind California and New York). Indeed, if this sector grows to the point that Massachusetts becomes a new hub of film production (like Vancouver, British Columbia did in the 1990s), there will be future benefits from workforce retention and attraction, infrastructure development, linkages between universities and industry, new career ladders, etc. Conversely, if film production leaves MA as soon as another state offers a more attractive incentive, even a revenue positive incentive program could fail in establishing a new industry in MA.

There are three primary goals of this study:

1. To describe the structure and recent growth patterns of the film and television industry in Massachusetts, identify its key sub-sectors, and begin to understand the key economic levers that promote success in this sector of the creative economy;
2. To estimate the aggregate impact of the film and television production sector on the state economy through direct and induced spending.
3. To supplement analyses using standard input/output models by collecting interview and network data on employment trends and non-wage spending patterns to better understand the linkages among these sub sectors and their connections to other sectors of the state economy.



To address these goals, we combine economic modeling with interviews, archival data collection, network analysis and geographic modeling to provide a nuanced picture of the motion picture and television industry in Massachusetts. By focusing on production practices and variations across sub-sectors of this local creative industry, we identify factors that may impact the long-term health of the film industry in Massachusetts.

This report begins with an overview of the current state of the Massachusetts film industry using data from the Bureau of Labor Statistics and the Motion Picture Association of America (2009) to discuss aggregate local and national film and television employment trends. Following this overview of local and national trends, we analyze the local film and television production sector by classifying organizations and employees primarily by the kinds of products they produce (e.g., feature length films, advertisements, scripted and non-fiction television programs, independent films and documentaries, etc.) and identifying connections among these sectors via shared workforce, material requirements and production practices.

We also identify the organizations that provide support services, equipment and material to film, television, and video productions and discuss recent activity in these sub sectors. We conclude with a summary of our findings and a discussion of our future work. An extensive discussion of issues involved in evaluating the impact of FTC programs is provided in Appendix 1.

## **Describing Massachusetts Film and Television Production**

This section begins by comparing the growth of the film and television industry in Massachusetts to growth rates in other states. After describing the aggregate employment trends in the Commonwealth, we discuss trends in non-wage spending and identify a core of film service firms and location-specific spending patterns associated with local motion picture productions. We conclude with a discussion of several important sub-sectors in this industry and interconnections among them.

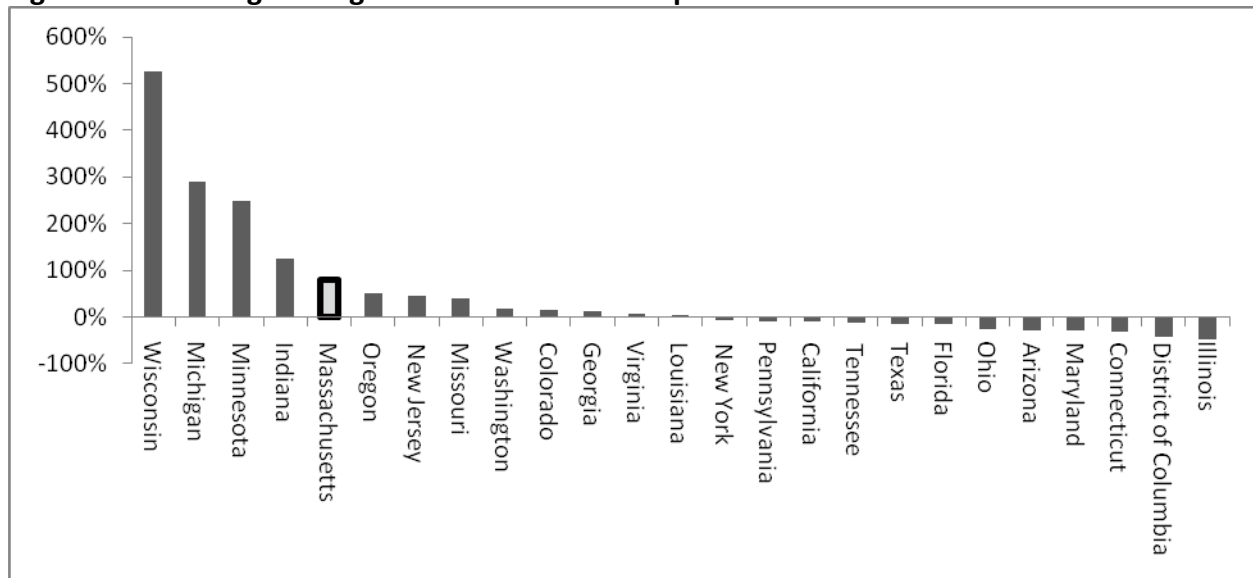
**Massachusetts in the National and Regional Landscape:** Over the last decade, several important national trends have emerged that affect the growth of the film and television industry in

Massachusetts. While the bulk of film and television production still takes place in Los Angeles and New York, other states are increasingly competing with these traditional centers through tax credit and other incentive programs. In fact, on-location shooting days in Los Angeles dropped 19% in 2009; the steepest decline since tracking began in 1993 (Verrier, 2010). To analyze recent national trends, we used data from the Motion Picture Production Association of America (2009) and the Quarterly Census of Employment and Wages (QCEW) data from the Bureau of Labor Statistics.

According to data from both the Motion Picture Association of America (2009) and the QCEW, Massachusetts captured a little over 1% of the total national spending on motion pictures and television productions in 2007. While Massachusetts does not currently capture a large percentage of the national film and television production spending, it seems to be growing more rapidly than other states (some of which have more generous tax programs) and capturing work that might otherwise be taking place elsewhere.

Figure 1 uses data from the Motion Picture Production Association (2009) to chart the percentage change in the number of film and television productions that took place in the top 25 most active states in the United States between 2007 and 2008. During this time, work declined in traditional centers like California and New York and grew rapidly in states like Georgia, Indiana, Massachusetts, Michigan, Minnesota and Wisconsin. According to these data, Massachusetts had the fifth largest growth rate among the top 25 most active states in the country. It is also clear that several states with active tax incentive and infrastructure development programs (and more generous incentives than MA) are not among the top 25 most active states according to the MPAA (2009). Care is warranted in interpreting these data given that the magnitude of changes in states like Wisconsin were driven in large part by the very small number of productions that it had in 2007.

**Figure 1. Percentage change in film and television productions 2007-2008**



Source: Motion Picture Association of America

Data on national employment provides additional support for the notion that Massachusetts is among the most active and rapidly growing states in the nation for film and television production. Using data from the Quarterly Census of Employment and Wages published by the Bureau of Labor Statistics, we examined recent employment trends in the 15 states with the most film and television workers in 2008. Table 1 presents the average employment in these states between 2001 and 2008. Notably, during the period encompassing the enactment of the FTC in Massachusetts (2005-2008), total employment in the NAICS code 5121 (Motion Picture and Video Industries) in Massachusetts increased 33%. This represents the largest total percentage growth between 2005 and 2008 of any state among the 15 with the most motion picture and video employees in 2008. This is notable given that states with much more generous credits like Michigan (which offers between 30-42% on qualified expenses) actually experienced a decline in film and television employment during this period.

These aggregate national employment and production data confirm the widespread reports from industry participants (as well as the frequent coverage of Hollywood star sightings in local papers) that Massachusetts is fast becoming a favored location for Hollywood productions. In the following, we look beneath these national trends to discuss local employment in the Massachusetts film and television industry.

**Table 1. Average annual employment (NAICS 5121)**

	2001	2002	2003	2004	2005	2006	2007	2008	% Chg '05-08
CA	118,889	142,027	137,728	155,656	146,635	145,830	145,627	149,778	2.14
NY	51,399	46,198	41,202	40,137	41,821	41,827	41,717	43,393	3.76
TX	15,057	15,717	16,312	15,190	14,914	15,079	14,631	14,548	(2.45)
FL	14,943	14,646	14,112	13,128	13,395	13,121	13,580	12,390	(7.50)
IL	10,098	9,899	9,431	9,155	9,391	9,267	9,432	9,233	(1.68)
PA	6,756	6,837	6,858	6,705	6,690	6,465	6,665	7,007	4.74
TN	6,869	6,574	6,751	6,606	6,592	6,666	6,699	6,998	6.16
NJ	6,289	6,900	6,305	6,480	6,679	6,831	6,813	6,475	(3.05)
MA	5,381	5,214	4,903	4,802	4,530	4,390	4,885	6,048	33.51
GA	6,517	7,744	6,446	6,124	6,037	5,926	5,834	5,820	(3.59)
MI	6,587	6,843	6,584	6,560	6,341	6,061	5,976	5,807	(8.42)
OH	7,115	6,577	6,276	6,107	6,003	5,835	5,837	5,496	(8.45)
WA	4,757	4,441	4,390	4,507	4,571	4,858	5,013	5,228	14.37
LA	2,120	2,140	2,843	3,448	3,941	3,454	4,358	5,196	31.84
VA	5,075	5,057	4,764	4,867	4,720	4,805	5,146	4,431	(6.12)
AZ	3,645	4,009	3,852	3,848	3,868	3,919	4,239	4,413	14.09
MD	3,245	3,544	3,715	4,106	4,192	4,169	4,463	4,372	4.29
NC	4,430	4,147	4,240	4,267	4,200	4,161	4,292	4,245	1.07
UT	4,896	4,822	4,730	4,320	4,569	4,414	3,931	4,092	(10.44)
MN	5,025	4,886	4,749	4,590	4,423	4,252	4,124	4,023	(9.04)

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

**Labor Market Structure:** Before analyzing trends in Massachusetts's film and television industry employment, it is important to first describe the primary labor pools used in film and television industry production. This is a highly unionized and project-based industry in which labor, services, and material are organized through loosely coupled networks that coalesce temporarily around specific productions. While smaller and independent productions sometimes rely on non-unionized employees, large studio productions hire their technical employees from one of two international unions, the International Alliance of Theatrical Stage Employees (IATSE) and the International Brotherhood of Teamsters (IBT).

IATSE represents film, television and theatrical employees in skilled crafts like set construction and dressing, lighting, special effects, rigging, props, camera, sound, wardrobe, make-up and hairstyling. In each of these crafts, relatively senior craftspeople assemble crews who work together on a semi-regular basis and move from job to job. In this respect, the technical labor required for film production is organized like the construction industry and other trades.

Moreover, because the technical skills required in some aspects of film production (e.g., set construction and lighting) are similar to those in trades like carpentry and electrical work (and because both sectors are highly unionized), we find it instructive to compare state employment trends across these sectors. The Teamsters represent the transportation employees that drive the trucks and other equipment used in film productions. Because it also represents transportation employees in larger local industries, film transportation workers represent a relatively small segment of total Teamster membership in the Commonwealth.

In addition to the skilled employees described above, film and television productions also employ creative personnel like actors, writers, and producers who are organized through their own unions and trade groups (e.g., The Screen Actors Guild, American Federation of Television and Radio Artists, the Writers Guild of America and the Directors Guild of America). These two labor pools are typically referred to as “below the line” (e.g., IATSE, IBT) and “above the line” talent (e.g., AFTRA, SAG, etc.), respectively, and together represent more than half the total costs of a typical major motion picture.

**Aggregate State Employment Trends:** There are four, five-digit NAICS codes that make up the 5121 Motion Picture and Video Industries category analyzed above. Of these, two capture production activities (Motion Picture and Video Production 51211 and Post Production Services and Other Motion Picture and Video industries 51219). These are the two primary codes we focus on in the following. The remaining two codes (Motion Picture and Video Exhibition 51213 and Motion Picture and Video Distribution 51212) do not rely on the same kinds of employees and organizations that are engaged in production activities (and particularly in the case of exhibition are treated as separate industries). As a result, we do not address these sectors in this study, although we recognize that over the long term, the presence of an active production sector in the Commonwealth could encourage growth of a local distribution sector.

In addition to the two primary film industry NAICS codes (51211 and 51219), we also explore employment trends in two sectors that likely contain significant numbers of film and television industry workers. Because of the large number of freelance employees in this sector, film and television productions typically use payroll services to manage withholdings and distribute wages

for cast and crew. Before 2008, these workers were not classified by the Bureau of Labor Statistics as being part of Motion Picture and Video Production (NAICS 51211). Before this time, some proportion of employment in local film and television production likely appeared in the category for 541214 (Payroll Services) and the process of recoding employment from this category to 51211 is still ongoing. Similarly, it is unclear what proportion of employment in related NAICS categories (e.g., 71151 Independent Artists, Writers & Performers) actually occurs in film and television production. Therefore, while we report and analyze Bureau of Labor Statistics data in the following, we recognize that they likely understate aggregate employment in the sector.

Between 2008 and 2009, Massachusetts experienced significant job losses caused by contraction in the local and national economies. Overall employment dropped 3.2% in Massachusetts between March 2008 and 2009 continuing a downward trend that began in 2007. Although Massachusetts experienced significant job losses in 2008 (with the state unemployment rate increasing from 4.9% in May 2008 to over 8% in May 2009), jobs in the film and television production sector have been growing rapidly during the same period.

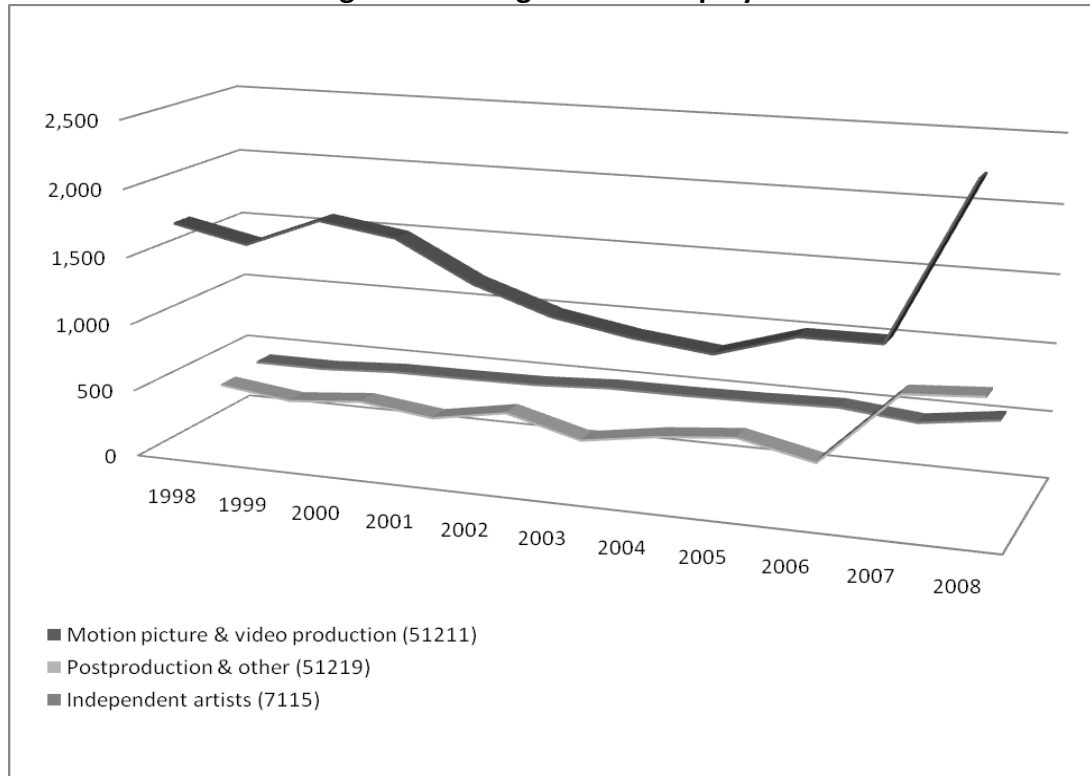
Between 2005 and the third quarter of 2008, the number of motion picture production employees (NAICS 51212), post production and other employees (NAICS 51219) and independent artists (NAICS 7115) in the Commonwealth grew 117%, 126% and 8% respectively (Table 2 and Figure 2 below). The substantial growth in NAICS 51219 (post production and other) is notable particularly because established local companies are doing some of this work. In addition, the Payroll Services sector grew substantially into 2007, which was before relevant firms were reclassified into NAICS 51212, so some of this growth may reflect growth in the film industry. Moreover, as noted above, reclassification is still ongoing, which means that some of the 2008 figures for NAICS 541214 still represent film industry activity.

Although the number of establishments has not grown as rapidly as employment, this may be caused by the widespread use of freelance labor in this sector and the fact that existing local film service companies have grown to meet new demand. It is also worth noting that motion picture production and independent artists are very high wage sectors and that post-production has vacillated between high and relatively low average wages.

**Table 2. Average Annual Establishments, Employment and Wages: 1998-2008**

Average Annual Establishments	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	% Chg. '05-'08
Motion picture & video production (51211)	319	316	326	311	308	293	297	297	272	273	298	0
Postproduction & other (51219)	34	31	35	36	33	30	30	32	28	30	31	(3)
Payroll services (541214)	182	160	162	172	163	164	180	177	172	190	187	6
Independent artists (7115)	169	178	188	196	213	236	259	255	240	249	258	1
<b>Annual Average Employment</b>												
Motion picture & video production (51211)	1,736	1,621	1,836	1,753	1,471	1,285	1,187	1,124	1,295	1,299	2,439	117
Postproduction & other (51219)	371	301	351	282	379	230	318	371	247	803	840	126
Payroll services (541214)	5,637	5,106	5,171	4,950	4,436	3,857	4,038	2,524	2,945	3,207	3,250	29
Independent artists (7115)	404	403	433	435	441	470	470	478	494	437	514	8
<b>Annual Average Wages</b>												
Motion picture & video production (51211)	42,840	45,453	50,103	50,700	48,624	51,370	54,415	57,695	60,527	60,598	61,225	6
Postproduction & other (51219)	31,648	39,477	46,471	49,301	30,932	49,953	35,728	34,953	51,986	18,086	19,437	(44)
Payroll services (541214)	53,483	55,172	60,328	64,280	62,116	62,017	63,511	59,807	59,353	68,066	75,789	27
Independent artists (7115)	51,932	53,316	49,426	72,815	58,239	57,321	65,151	64,733	63,995	78,538	94,316	46

Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

**Figure 2. Average Annual Employment: 1998-2008**

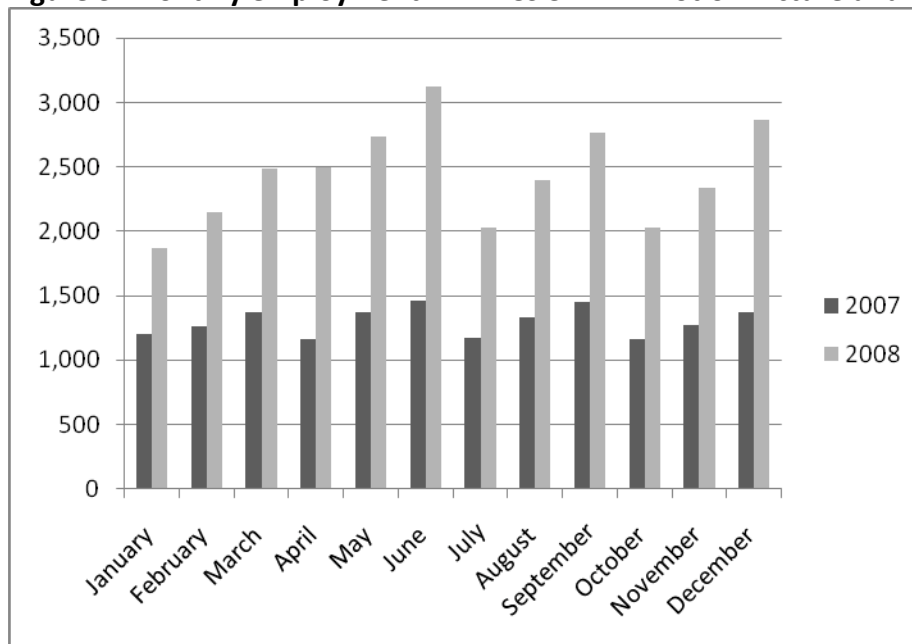
Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

Some caveats are required when interpreting these data. First, because QCEW data do not contain freelance employees (which are a large proportion of the workforce in this industry) they may underestimate aggregate employment in the sector. Second, some of the large percentage

increases are partially a reflection of the small base of employees in these sectors and thus do not represent large absolute increases.

Third, both motion picture & video production and postproduction & other services experience large fluctuations in employment during the year, reflecting the differing intensities of moviemaking activities in the Commonwealth. Figures 3 and 4 below plot monthly employment in NAICS 51211 (motion picture and television production) and NAICS 51219 (post production and other) for 2007 and 2008. In the case of motion picture and video production (NAICS 51211), employment in 2007 ranged from 1162 to 1462 and in 2008 from 1869 to 3126. Even given this range, there has still been a significant (61%) increase in the minimum level of employment in this sector across the two years. Fluctuation of monthly employment in the postproduction sector (NAICS 51211) has been even more dramatic, ranging from 230 to 1505 in 2007 and 314 to 2480 in 2008. Therefore, while there appears to have been a significant growth in core employment in this sector (the minimum employment level in 2008 was almost 40% higher than in 2007) it is less dramatic than what is implied by the annual employment numbers in Table 2.

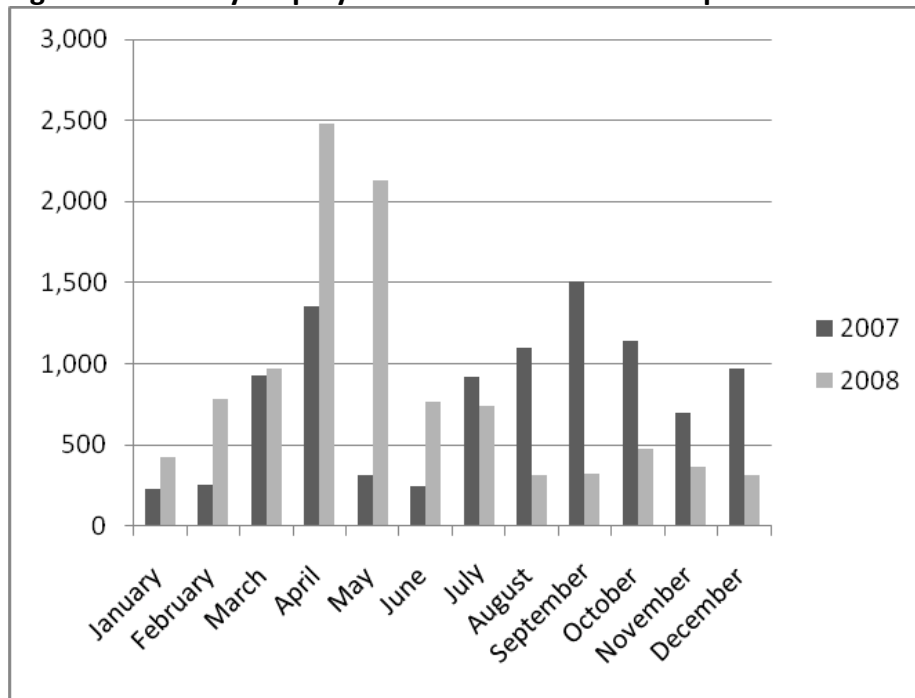
**Figure 3. Monthly employment in NAICS 51211: Motion Picture and Video Production**



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages



**Figure 4. Monthly employment in NAICS 51219: Postproduction and Other**



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages

These dynamics also help to explain the significant drop in wages in post-production beginning in 2007. One contributing factor seems to be the hiring of a large number of temporary employees in support of large film productions in Massachusetts. Another is the growth of the local non-fiction television and postproduction sector that has also been hiring large numbers of relatively lower paid new entrants. Many of these hires have in fact been local college graduates who are finding new career ladders in local television production. Because barriers to entry are lower in television and post-production than they are in studio film production, these jobs are particularly important for developing the local workforce.

Finally, in 2008 there was some reclassification of employees from payroll services (NAICS 541214) into the film industry NAICS code 51211 (motion picture and video production) making comparisons with prior years in Massachusetts suggestive rather than conclusive. However, since this was a national effort, it should not affect our comparisons across states.

Many of the jobs in the film industry consist of crew and skilled workers who build the sets and run the lights, cameras, and other equipment used in film and television production. These trades

use many of the same skills that are required in construction and other similar trades that experienced the fastest rate of job losses in Massachusetts in 2008. In Massachusetts, employment in the construction industry dropped 12.8% between March 2008 and March 2009 shedding a total of 17,400 jobs (Bureau of Labor Statistics, 2009). As discussed below, there is evidence that the rapid increase in film industry employment during this period has helped absorb some employees from construction and other trades.

## **The Contribution of Film and Television Spending to the Massachusetts Economy**

As noted in the discussion above, formal modeling of the film industry's contribution to the Massachusetts economy is difficult because of the industry's structure, fluidity, and the difficulty in obtaining an accurate snapshot of the current state of the industry. However, it is still worth knowing what standard economic models calculate as the economic impact of the industry on the Commonwealth, given the best sources of employment data that are available. It is important to distinguish this analysis from the analysis conducted by the Massachusetts Department of Revenue (2009) in relation to the FTC, which is discussed in Appendix 1. In this analysis, we are concerned with the contribution of the entire film industry as we have described it on the Massachusetts economy, not just the impact of the portion of the industry that can be identified as having been attracted to Massachusetts by the FTC, which is the focus of the Massachusetts Department of Revenue (2009) study.

Table 3 shows the results of the IMPLAN analysis for the film industry sectors that we have focused upon<sup>3</sup>. The first column represents the numbers that were used as inputs into the model, with the employment number derived from the total of the three primary sectors described previously (we did not include payroll services because it is not clear all employees of this sector in

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<sup>3</sup> IMPLAN is an input-output model that quantifies in monetary terms the flow of goods and services among industries and households in the economy. This enables one to follow a particular expenditure as it impacts different sectors of the economy and trace the money as it is spent and re-spent. In this case, the path of a dollar that originates in the film sector ends when that dollar leaves the Commonwealth through domestic or foreign trade, or is collected as a tax. Likewise, this expenditure analysis also enables us to trace employment impacts in these different sectors.

2008 are film industry related, but as noted previously, some employees are probably part of the film industry so our employment number is most likely an underestimate). The output number is based on the IMPLAN model assumptions that employees in these film sectors on average generate \$119,101 per worker. It is worth noting that this is associated with assumed relatively low average wages of between \$26,000 and \$32,000. However, as noted previously, two of the industry sectors we examined had much higher average wages in 2008 of \$61,225 and \$94,316. Thus, IMPLAN could be significantly underestimating the impact of this sector on the economy.

**Table 3. IMPLAN Analysis of MA Film Industry Employment 2008**

	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>	<b>Multiplier</b>
Output	451,749,958	268,463,348	159,959,092	880,172,401	1.95
Employment	3793	1821	1171	6785	1.79

This employment (3793) and the expenditures associated with this employment both in terms of employee wages and the value of production produced by these workers then generates additional employment and expenditures in industries that supply products to these film sectors and this is measured in the column labeled "indirect." The next column, labeled "induced" measures the additional employment and spending generated by the expenditures of the direct and indirect employees. These impacts are then aggregated in the "total" column. The final column, labeled "multiplier", reflects the total additional impact on the economy that the film sector has generated. The output multiplier of 1.95 can be interpreted to mean that an additional dollar generated by the film sector will produce an additional \$.95 of output value in the Commonwealth. The employment multiplier of 1.79 can be interpreted to mean that a new job generated in the film sector produces .79 additional jobs in the Commonwealth.

### **Employment Trends in Local Film Production**

There are four primary organizations that represent crew and cast employed on motion picture productions in Massachusetts: The International Alliance of Theatrical Stage Employees, Moving Picture Technicians, Artists and Allied Crafts of the United States, its Territories, and Canada (IATSE); the Screen Actors Guild (SAG); the American Federation of Television and Radio Artists

(AFTRA); and the International Brotherhood of Teamsters (IBT). There has been significant employment and wage growth in each of these unions in Massachusetts in recent years.

**IATSE Local 481:** Most large motion picture and television productions in Massachusetts are done by companies that have signed national agreements with IATSE or agreements with Local 481 specifically. As a result, crews on large and medium budget studio feature films, television pilots, television commercials, and some low budget independent feature films typically work under the terms of a union agreement. IATSE represented employees make up a large proportion (up to 75%) of the crew on film and television productions. A large proportion of these are members of IATSE Local 481 (<http://www.iatse481.com>), which represents the studio mechanic crafts in the New England states (Massachusetts, Rhode Island, New Hampshire, Vermont, Maine).<sup>4</sup>

IATSE membership has grown dramatically in recent years as a result of the recent growth in film and television production in Massachusetts. Local 481's Massachusetts's membership has more than doubled since the passage of the FTC, increasing from 237 in 2005 to 585 in 2008. There have been similar rates of membership growth in other Massachusetts IATSE locals.

Total annual wages earned in Massachusetts by Local 481 members increased ten-fold over the same period, growing from approximately \$3 million in 2005 to \$30 million in 2008. Because IATSE's wage rates are effectively fixed by its agreements with producers, and in light of the growth in Local 481's membership, it is safe to assume that this growth in wages represents an increase in earnings from increased work opportunities across a broad spectrum of the local's members.

While Local 481's membership has grown in size, it has also increased in quality. Over the past few years, many Local 481 members have advanced from junior roles to become heads of departments, a progression that now provides them with increased responsibilities and higher wages. This development has enhanced the ability of Massachusetts to support large productions with less need to import key workers from out of state. For example, on a recently filmed Adam

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<sup>4</sup> The 15 crafts represented by Local 481 are Art Department Coordinators, Construction, Costume/Wardrobe, Craft Services, Electric/Set, Lighting, Greens, Grip, Locations, Medical/First Aid, Properties, Set Dressing, Sound, Special Effects, Teleprompter Operators, and Video Assist.

Sandler movie ("Lake House") almost all of the departments represented by IATSE members were staffed locally from department heads down. One veteran of the local industry noted that the Commonwealth's crew base could now support 4-5 feature films at once, which was not the case two years ago.

IATSE representatives report that some of these new members have migrated from related trades that have been experiencing significant employment contraction. There are numerous instances of carpenters who had been laid off or were underemployed in the construction industry transitioning to the motion picture industry, working steadily, and then joining Local 481. Each new job in film and television production that replaced a lost job in construction and related fields generated both direct benefits (in increased wages) and indirect benefits by reducing demands for state services and benefits that would have been collected by unemployed tradespeople.

Experienced members of other IATSE locals, formerly based in Los Angeles or New York, who had family ties here or who had attended universities in Massachusetts, have also moved back to the Commonwealth to work on productions. If these trends continue, it could increase the proportion of wages from large productions that go to Commonwealth residents (a trend the Department of Revenue is currently tracking).

**SAG and AFTRA:** SAG (<http://www.sag.org/>) and AFTRA (<http://www.aftra.com/>) both represent performers who appear in television shows and commercials while SAG alone represents performers who appear in motion pictures. Since motion picture production accounted for most of the recent increase in production in Massachusetts, recent workforce developments in the local branch of SAG are especially relevant to understanding the impact of these projects on the local workforce.

The Boston branch of SAG grew by almost 30 percent between 2005 and 2008, with membership topping 2100 by the end of 2008. There was a 58% increase in wages earned on feature films and

television programming in 2008, as compared to 2005.<sup>5</sup> Wages earned on television commercials by members of SAG's Boston branch remained roughly constant between 2005 and 2008. This might be due to the overall downturn in the commercial industry as well as less awareness of the availability of tax incentives in this part of the industry as opposed to film production.

A notable feature of television commercials is that they generate residual payments for actors. Total residuals earned by actors on a commercial typically equal twice the wages paid during the shoot and may represent future taxable Massachusetts's income. Feature film residuals are currently a minor component of the earnings of Boston branch SAG members, approximately 10 percent of overall film wages in 2008. However, there is often a several year lag between production and the events that trigger payment of feature residuals, such as release of DVD and appearance on cable/broadcast television. Feature residuals are likely to increase, potentially markedly, for local SAG members as productions that have been shot in Massachusetts over the past two years reach those phases of the distribution process. In addition, it is possible that future wages from residuals paid to principal performers and participation agreements for above the line talent could be treated as Massachusetts sourced income. If so, this could represent a significant source of future Commonwealth tax revenue. (See Appendix 1 for a discussion of these issues).

**International Brotherhood of Teamsters Local 25:** The International Brotherhood of Teamsters Local 25 (<http://www.teamsterslocal25.com/>) represents the transportation workers who drive the trucks and equipment used in film and television production. Although film and television employees represent a small proportion of Local 25's total membership of 11,500 employees, this group has been growing rapidly. Historically, there have only been 30 Teamsters employed in this industry. Currently, there are over 200. In addition to the growth in total employment, there has been a growth in the total hours worked by these employees. In 2008, there were over 330,000 hours paid into the Teamster's pension and health and welfare funds by local film and television workers. As in the case of IATSE members, some of these new workers have come from other local transportation industries that have experienced recent contraction.

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<sup>5</sup> Permission is required from SAG's national office to report on gross wages earned by local branches, and since the national has not granted such permission to the Boston branch, we are only able to report on trends in this report.

Because transportation coordinators typically get competitive bids from multiple vehicle and equipment leasing companies and because many kinds of equipment and trucks are not available in the Commonwealth, local productions often rent equipment from out of state. Some local press reports have used this fact to suggest that trucks with out of state registrations are being driven by out of state employees. In fact, any truck or piece of equipment that is used in a union film or television production is driven by a member of Local 25. There have even been instances of Teamsters travelling out of state to pick up equipment being used in Massachusetts's productions. While these drivers are paid as Massachusetts's employees, increasing the number of film equipment rental companies in Massachusetts would increase the proportion of non-wage spending being kept in the Commonwealth.

**Workforce development:** As described above, there has been significant growth in both the number and skill of local film production employees. However, there are still some crafts with too few employees who are experienced enough to staff key positions. In the middle of 2008, a local assistant director and location manager reported that some crew lacked experience working on large productions and expressed the need for more local senior crew in positions like costume and production design, special effects, directors of photography, digital image technicians, hair, and makeup. Other things being equal, films and television productions prefer to use local crew because it saves the transportation and housing costs associated with importing talent. However, because crews are assembled by key positions and department heads who draw on networks of employees that work together on a semi-regular basis, the growth of local key positions represents an important lynchpin in local workforce development. Because these key positions tend to hire people they have worked with before, as the Massachusetts crew base gains more experience and connections with out of state producers, we may find that the proportion of work on large films going to local crew will increase.

AIMM and MPC, along with the Massachusetts Film Office, have collaborated with the Commonwealth's Department of Workforce Development to build awareness about opportunities in film production. An industry information day, "Jobs, Camera, Action," was also held in Boston in January 2009 and attracted more than 600 people. This day-long workshop was designed to

educate attendees on how to build a career in the Massachusetts film industry. It included a career exhibition as well as four sessions with industry executives explaining what types of positions they will need to fill. MPC and AIMM have also held several events for local university students. These focused on skills training for entry-level positions and networking to link employers with students.

In January 2009, the Department of Workforce Development in collaboration with IATSE local 481, held two training sessions for 80 services counselors from 37 Career Centers statewide on how to help displaced workers transition into film industry jobs/career paths. These sessions particularly emphasized workers whose skills could be readily transferred to motion picture production, including carpenters, painters, medics, and landscapers. Subsequently, the Department of Workforce Development scheduled events to identify workers with those skills who might be good prospects for the film and television industry and recommend them for a career workshop that will be conducted by members of Local 481. If this model proves successful, it may subsequently be used for other events to channel prospective workers to union-based job opportunities that may be created by the American Recovery and Reinvestment Act (ARRA)

Using a combination of BLS data and interviews, we have been able to document substantial growth in several sectors of the film industry in the Commonwealth, much of which is associated with the implementation of the FTC. However it is clear that there are many other related sectors, including industries that service the film industry and television commercials, independent, and documentary films, that are benefitting from the expansion of the film industry workforce associated with the increased production of films in the Commonwealth. In order to explore the industries supplying the film industry in more depth, the next section focuses on the non-wage spending patterns associated with film production in the Commonwealth.

### **Non-wage spending patterns**

According to the Massachusetts Department of Revenue (2009:8), 36% (e.g., \$247M) of the total film industry spending in the Commonwealth between 2006 and 2008 was on non-wage items. The



largest categories of these items were location fees (\$56.8M), transportation (\$35.8M), fringe benefits (\$33.5M), hotels and housing (\$29.3M), set construction (\$27.2M) and food (\$17.7M).

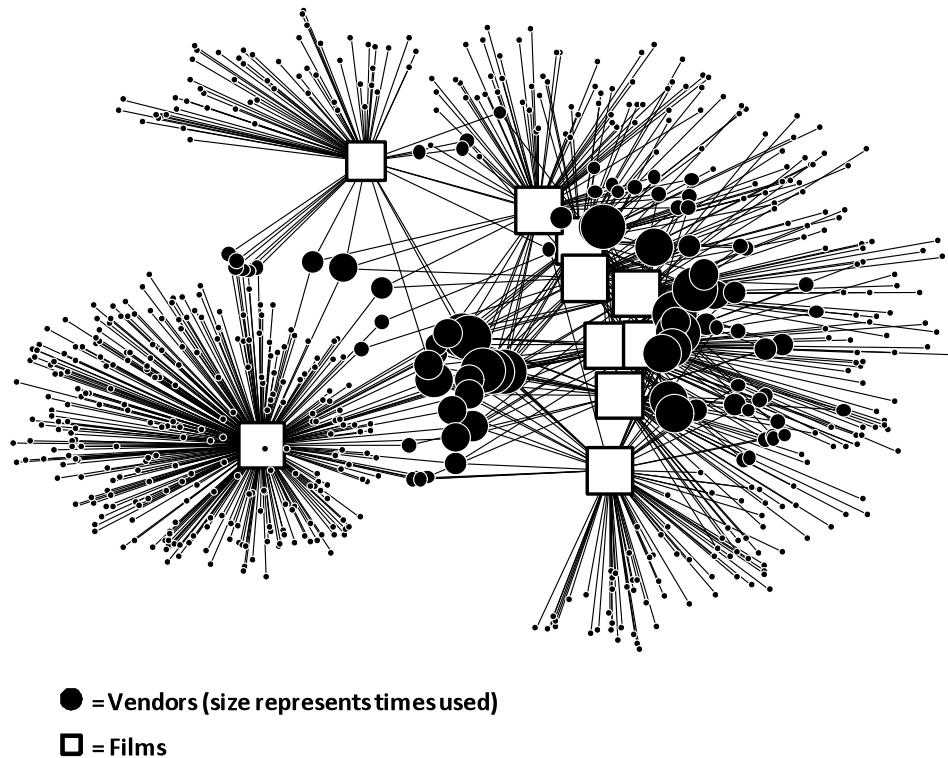
Interviews suggest that a large proportion of this spending is centered near production locations and can represent significant sources of revenue for local merchants. They also raise questions about whether and how well these patterns are represented in existing econometric models. For example, location fees are often paid directly to small organizations and even individual households. For example, the movie *Zookeeper* was filmed in the Franklin Park zoo in the summer of 2009. At a time when the zoo had experienced a significant budget cut and was in risk of shutting its doors, the movie production paid a large (but undisclosed fee) both to the zoo directly as well as a \$20,000 fee directly to the city's Parks and Recreation Department (Irons, 2009). In addition to providing an important cash infusion to a struggling public institution, this production also provided direct investments into public funds. These spending patterns may be missed, or at best incorrectly specified, by standard econometric models typically used in economic impact studies of local film and television productions.

To get a better understanding of these non-wage spending patterns, we interviewed local production employees and vendors as well as collected data on the vendors used by 10 motion pictures filmed in Massachusetts in 2008. Unfortunately, we were not able to obtain data on the amounts spent at each vendor. However, combining interviews and network and geographic visualization methods, we were able to identify several interesting patterns in the distribution of this spending.

Figure 5 below represents a network analysis of the vendors used by 10 motion pictures filmed in Massachusetts in 2008. Using data provided by one of the local unions, we created this diagram by importing lists of films and their vendors into a network analysis program called UCINET (Borgatti, Everett, & Freeman, 1996). In the diagram, films are represented as white squares and vendors as black circles. This analysis clearly shows two dynamics in the non-wage spending patterns in the local film industry. The two clusters of large black circles surrounding the films represent the rapidly growing core of vendors that provide specialized services and equipment to film and television productions. Each film is also surrounded by a cluster of unique vendors that are not shared with other firms. In other words, while most films rely on a small core of firms that provide specialized services and material, each film also has its own unique set of vendors. This pattern is

explained by interviews with industry participants and press reports which suggest that a significant proportion of non-wage spending is clustered around the locations in which filming takes place.

Figure 5. Vendor network of 10 MA films in 2008



To explore the geographic distribution of spending, we plotted the addresses of the vendor list on a map of the state (Figure 6 below)<sup>6</sup>. This map shows that while non-wage spending is located primarily in the eastern half of the state, it is also clustered around production locations. This makes sense given the rapid pace and logistical and material requirements of these productions.

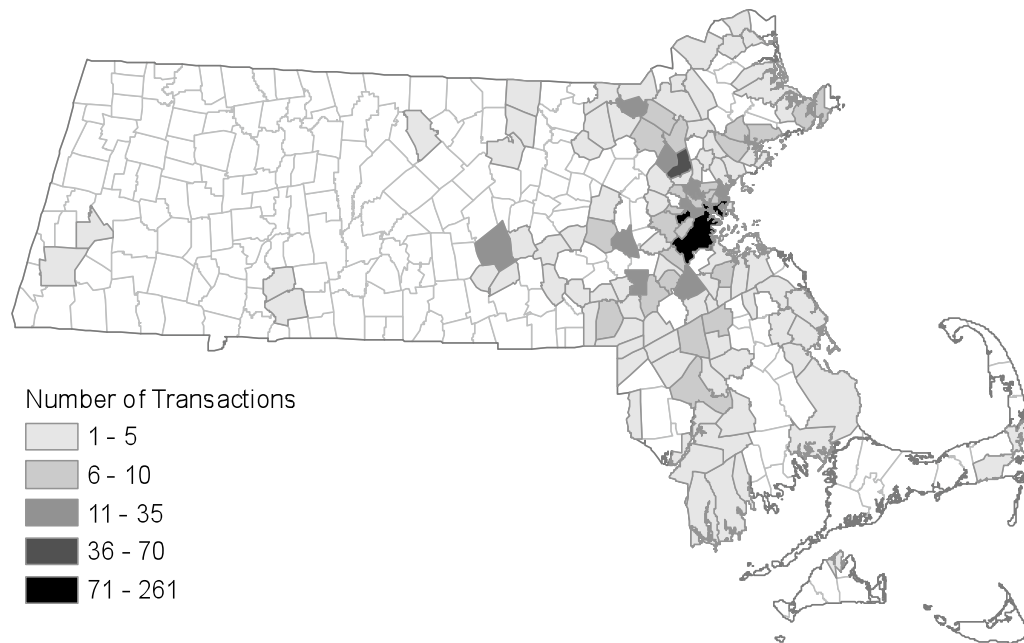
Film and television productions are material intensive and often require rapid service from local vendors. For example, costumes typically come in duplicate and often need to be laundered overnight. This kind of work is typically done by local vendors. Moreover, because film and television productions have high labor costs, production delays can be extremely costly. As a

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<sup>6</sup> Note that we were only able to generate geographic coordinates for 70% of the vendors for the 10 films studied. Therefore, the diagram likely underestimates the concentration of spending in some locations.

result, productions are sometimes required to make large unexpected expenditures at local vendors to keep working. A local Assistant Producer described one production that spent over \$4,000 at a small local sporting goods store to buy rain gear so that the crew could keep working through an unexpected storm. While such expenditures may not represent a large proportion of the total spending for a large production, they can represent significant revenue streams for local merchants.

**Figure 6. Geographic distribution of spending for 10 films made in MA in 2008**



### **Developments in Specific Sub Sectors**

Interviews with industry participants and analysis of archival data helped us identify recent developments in several important sub-sectors of the local television and film production industry other than feature films. In the following, we describe production practices and trends in television commercial production, documentary production, post-production and special effects, independent feature films and student films, linkages to universities, and the development of studio complexes.

**Television production:** According to the Massachusetts Department of Revenue (2009:6), television production generated 70% (186) of the total number of credit eligible projects from 2006-2008. However, because of the relatively smaller size of these productions, the sector only used 7% of the total value of the credits issued during that period. Compared to feature films, television productions (especially commercials and non-fiction programs) typically use a much smaller proportion of above the line talent. As a result, these productions may make larger proportional (though a much smaller total) contribution to local wage and non-wage spending. In fact, the television production sector in Massachusetts is itself comprised of at least three different sub-sectors. In the following, we briefly describe recent trends in scripted and dramatic television, non-fiction and public television, and advertising production.

**Dramatic and Scripted Television:** A scripted television show begins with the production of a pilot episode. Not all pilots become long running television shows. However, even shows that are picked up and air for a single season generate consistent employment for as many as one hundred cast and crew members. Like blockbuster films, the relatively small number of shows that become popular can generate long-term economic benefits in the form of local wage and non-wage spending, future earnings from residuals, and potentially local brand recognition. For example, the Cheers television show generated long-term economic benefits in the form of increased tourism even though it was not filmed in Massachusetts. The 1980s television show, “Spencer for Hire,” generated long-term jobs for many local television production employees and contributed tens of millions of dollars to the local economy.

Television pilots and series have recently been filmed in Massachusetts and captured 16% of the total credits issued between 2006 and 2008. One respondent described the long-term impact if one of these pilots generates a television show that is made in Massachusetts. “If the show comes, every episode will cost about \$2M. They will shoot 10 episodes. That is \$20M right there. There will be 80 core people and up to 140 at lunch when you include the extras, day players, etc.”

However, because scripted television is typically produced in a studio, Massachusetts currently lacks a critical resource for the growth of this sector. Respondents argued that without a studio, scripted television shows may continue to use Massachusetts as a backdrop for exterior shots (as

the long running show “Boston Legal” did) but would find it difficult to produce a full show in the Commonwealth.

**Non-fiction cable:** Non-fiction cable television production is currently the fastest growing and most profitable part of the television industry. This is driven by the fact that cable networks (as opposed to broadcast networks) can generate revenue from both advertising and carrier subscription fees. Moreover, as compared to scripted television, non-fiction television has lower production costs. Respondents report that there is significant room for international growth in this sector.

Industry representatives suggest that Massachusetts has the potential to be the nation's third largest center for non-fiction television production. There are several factors that may give Massachusetts a strategic advantage in this area. First, the labor pool contains experienced documentary producers, videographers, and sound recordists as well as a large pool of students. Only Los Angeles and New York graduate more film/TV/video students annually than Massachusetts and many of these students are currently finding jobs in the rapidly growing local non-fiction television sub-sector.

Barriers to entry into non-fiction TV are lower than for feature movie production. In particular, non-fiction TV has many openings for production assistants, assistant editors, and researchers. Movement up career ladders (to being associate producer and producer) is also more rapid than it is in feature film production. The jobs also last longer than feature film jobs because the complete production cycle of one hour of prime time non-fiction cable TV is between six and seven months long.

Massachusetts also has several other advantages that may contribute to the growth of this sector. The state is home to one of the national leaders in video editing equipment, Tewksbury-based AVID, as well as a rapidly growing digital gaming industry. Powderhouse Productions has used some of its savings from the Film Tax Credit to invest in AVID's new UNITY ISIS editing system and recently became one of few independent production companies in the country to have this sophisticated video storage and retrieval system. Not only did it generate additional sales revenue for another Massachusetts company (Avid), it will also enable Powderhouse to edit large numbers

of programs at a fraction of the cost of its competitors, giving them a significant competitive advantage. Powderhouse will also be featured in a national marketing campaign by AVID about the UNITY ISIS system. This story illustrates some of the positive spillover effects of increases in local film and television production on other local companies that are not directly monetizing credits.

Finally, because the Boston area has a large concentration of research universities, high technology and biotechnology firms, many of the stories that make up the content for non-fiction television programs can be found locally. This access to content provides an additional advantage for local non-fiction television film producers.

All of these strategic advantages combined with the passage of the FTC have helped this sector grow rapidly in recent years. One company (Powderhouse Productions) grew from 35 employees in 2006 to a high of 124 employees in 2009. In 2009, Powderhouse produced 36 hours of prime-time non-fiction TV for Discovery, History, Science, Animal Planet and PBS. During that time, they hired 45 production assistants, 12 assistant editors, 6 researchers and 105 student interns. In 2010, Powderhouse expects to produce 45 hours of TV and expects to continue hiring new employees. Not surprisingly, this growth is also reflected in dramatic revenue growth that nearly doubled between 2007 and 2009. It is also leading to national recognition reflected in the fact that one of the leading agencies, Creative Artists Agency (CAA,) recently took on Powderhouse as a client and now represents them in both Los Angeles and New York.

**Public Television:** As home to the public television station WGBH, Boston has long been recognized as a national center for non-fiction television production. As one of the flagship stations in the Public Broadcasting System, WGBH has a 60 year history producing internationally recognized non-fiction programs like Frontline, NOVA and This Old House as well as award winning children's programming (e.g., Zoom, Arthur). WGBH typically has between 100-200 projects in production and development at any given time. It is also the source of local production spending and employment. In fiscal year 2007, WGBH spent over \$126 million on program development and production alone (WGBH, 2008). As in feature film and other kinds of television production, location decisions in public television are driven by complex combinations of financial, aesthetic,

and practical considerations. For example, a producer for a specific show might be selected for her expertise in the topic while other contractors may be selected for specific technical and artistic skills like animation. Therefore, some proportion of the total WGBH production budget goes to out of state vendors and employees with skills and expertise that are not available locally.

These factors notwithstanding, WGBH remains a large local employer in television production with approximately 900 people at its Boston headquarters. Moreover, an examination of WGBH tax filings (available at [www.guidestar.org](http://www.guidestar.org)) reveals that three of the five most highly paid independent contractors for professional services in 2007 were Massachusetts companies that received more than \$500K that year. Although many of their largest independent contractors for production services are out of state companies, some local companies have received work from WGBH and it is possible that the station may be able to increase the proportion of its production work sourced to local companies as they gain new expertise, equipment, and skilled employees.

A significant new development occurred in 2007 when WGBH opened a new flagship office building and studio complex in Brighton, MA. This building represents an important new resource in the local non-fiction television production community and generated over \$20 million in revenues for local construction companies between 2006 and 2007. Because of this new space, WGBH has been able to bring members of the public into its facilities as never before. For example, an October 2009 premier for the critically acclaimed series, *Latin Music USA*, drew over 1,000 guests to the WGBH studios. This kind of increased public engagement has been directly enabled by the recent WGBH expansion.

While the film tax credit has not been a significant driver of this expansion, it has had a positive impact on some WGBH production decisions. Because it relies heavily on external fundraising to produce its programs and these programs often have production cycles of 18 months or more (during which time fundraising often continues), programs often need to be approved before funding is fully secured. The availability of tax incentives has helped WGBH manage these risks by providing a financial cushion that allows them to approve more programs before complete funding is secured.

In addition to managing these risks, WGBH has used credits to increase research and development in new programs. For example, the 2006 season of *Design Squad* cost \$2 million to produce. Of

this, all but \$500,000 was spent in Massachusetts. This production in turn generated \$235,000 in cash for WGBH, which was then used to fund future productions and ease fundraising pressure at the station (Mohl, 2008). Therefore, one hidden benefit of the FTC may be increasing the scope and breadth of WGBH's public programming and helping to reduce risks and fundraising pressure at this nationally recognized public television station. The combined impact of the 900 workers WGBH employs directly and contracts with local production companies and freelance employees, as well as its recently built studio complex, represent significant long-term investments in the local non-fiction television production sector.

**Commercials and advertising:** A majority of the television commercials produced in Massachusetts are made by a small handful of firms. The research team talked with three of the largest. These firms reported that their overall business has remained stable between 2005 and 2008, during a period when production of commercials in the U.S. as a whole has been on the decline. Moreover, a growing percentage of these firms' work is now being produced in Massachusetts. One company reported that 70 percent of its commercials were produced in the Commonwealth in 2008 compared to only 40 percent in 2005.

The tax credits have made Boston 30-40 percent less expensive than New York City, and this differential can give Massachusetts based commercial production companies a competitive advantage. A typical commercial shoots for two days and spends approximately \$200,000 on cast, crew, and materials. Of this spending, a significant proportion (including labor) is typically local. One producer provided the following breakdown for spending on a recent 2-day (\$200K) commercial.

**Table 2. Approximate expenses for a 2-day commercial**

Labor (all local)	90,000
Location expenses	17,000
Props and wardrobe	12,000
Equipment	20,000
Film stock and developing	10,000
Talent costs	10,000
Creative, director, insurance, etc.	41,000
	<u>200,000</u>



Commercial production companies have recently lured out of state advertisers to shoot commercials in the Commonwealth. For example, one local company recently completed spots here for a large pharmaceutical company based in New York and an auto company.

Boston advertising agencies and large Massachusetts based advertisers (for example, Fidelity, New Balance, Gillette and Reebok), however, have still tended to use out of town production companies for most of their commercials (although 2008 was the first year people have heard of out of state commercial production companies shooting in Massachusetts to capture the tax credit). The MPC has recently undertaken an aggressive campaign to encourage Massachusetts-based advertisers, such as TJX, to shoot their commercials in the Commonwealth.

**Documentary Film:** Documentary filmmaking has long been a distinctive strength of Massachusetts. Many of the pioneers of 16-millimeter documentary filmmaking were based here, and WGBH's role as the flagship PBS station has allowed the Commonwealth to establish and maintain a leadership position in both series and long-form television documentaries. Interviews indicate that the tax credits have been helpful to some independent documentary makers, making projects feasible and enabling the makers to produce higher quality projects during a period when financial support for independent work has been growing scarce.

While it is impossible to determine precisely how many independent documentary producers are working in the state, they likely outnumber independent narrative producers, a smaller but not insignificant group of local filmmakers. It is worth noting that most independent filmmakers have income sources other than their independent films. These filmmakers often work in related sectors including industrial, educational, and cable television production and earn a lower wage working on their own films than they earn from their other jobs.

Because these films are often made using grants and other donations, independent filmmakers rely on fiscal sponsors who provide the 501c3 status needed to qualify for major grants. While there are many fiscal sponsors in the Commonwealth, three of them work with a large number of local productions and assist filmmakers in researching, applying for, and administering grants. Interviews with the executive directors of three such organizations helped us understand recent trends in this sector.

Together, these organizations supported approximately 150 projects in 2009. Not all documentary

films that receive major grants use one of these three organizations and there are several other smaller fiscal sponsorship organizations in the state. Indeed, since any 501c3 organization can serve as a fiscal sponsor for a film, some filmmakers choose to work with non-profits that are not primarily media arts organizations, but whose missions are concerned with the content area the film explores. However, these three fiscal sponsors represent a large proportion of the total grant funded independent documentary production in the Commonwealth.

As their primary source of income, two of the sponsors depend on the fees they charge on the grants and donations they accept on behalf of their filmmakers. The other is a distributor and makes a significant portion of its income through the distribution arm of its operations. There are several factors that make it hard to gauge whether the financial statements of these organizations can be used as indicators of the level of independent film production in the state. First, these organizations do not exclusively work with local filmmakers. Local filmmakers often shoot the majority of their material outside of the state, and while it is hard to estimate what the ratio of shooting in-state vs. out-of-state is, all three fiscal sponsors report that a majority of their projects are shot out-of-state. Therefore, a significant portion of money raised for these films is spent in other states.

Another important factor to note is that major grants are often awarded in stages. For example, a major funder might grant a film \$300,000 in three yearly installments of \$100,000. Sometimes grants are awarded with the stipulation that matching funds are raised, so a grant may be awarded but not actually paid out until years later when the filmmaker is able to raise enough money to match those funds. Therefore, the financial statements in any given year do not necessarily reflect significant changes in funders' behavior; there is some lag time before any changes in funding behavior would be reflected in the income figures of these fiscal sponsors.

Although the numbers do not give us a clear sense of more recent funding changes, two of the fiscal sponsors reported that major funders are currently giving less. One of these notes:

“The biggest trend I’ve noticed between ’04 and ’08 is the decrease in government funding, that, especially the NEH which is what we’ve always earned our bread and butter from because they tend to give very large grants of half a million or more.... I’ve noticed especially in the last three years, maybe two years even, that those

budgets have been slashed and the NEH is hardly funding any films anymore ...and if they do, like this year we got three but they were each \$70,000, they were very small, as opposed to three that range between \$400,000 and \$700,000 in the past, so that's a huge decline in income for us."

Several filmmakers interviewed echoed the sentiment that it has become increasingly difficult to raise money from major foundations. In reference to her attempts to raise money during the period of 2005 – 2007 one filmmaker said:

"There are competing needs. A lot of foundations you know just don't want to fund films. Or, if they're going to fund films, they might fund one or two films. And, that – that takes up their whole commitment for anything that they were going to spend on film."

This comment suggests that perhaps there are more filmmakers competing for major grants, and that has created a perception that there is less money available, even if perhaps the amount of major grants has not decreased. The prevailing view in the independent documentary community is that large funders are granting less money to films. While some think it is directly related to the recent economic downturn, others locate the change beginning as early as five years ago.

In terms of spending for independent documentary films in MA, no one reported any significant changes in spending patterns since 2005. All four documentary filmmakers reported they typically shoot outside of state, while post-production is more often done in-state. In most cases, wages for production and post-production crew were the major expenses. In some cases, a significant portion of a film's budget was designated for obtaining rights to historical footage and/or music. None of the documentary filmmakers interviewed reported that the tax credit impacted their spending decisions. Only one film qualified for the tax credit, and in that case, during the production and post-production of the film, the filmmaker assumed that they would not qualify. Even though the tax credit program does not appear to have influenced spending decisions, all filmmakers said they were thankful that the tax credit program exists and that it might impact their spending decisions in the future. One filmmaker reported:

"For independent billings, people who make documentaries, who work on a shoestring basically...the tax credit is a lifeline. It's a Godsend...We do a lot of our work in

Massachusetts, partly out of preference and partly you know out of because we're here and we can't afford to travel anyway...Having some portion of that come back to us is...golden and ...for a lot of us that's what will enable us to continue to work."

Another said:

"I have not made any films that have qualified and it didn't influence my decision to make what films I have made so far...But...it makes me want to shoot and edit in Mass or film sometime soon. I am keeping my eyes wide open for film ideas that could be done here. Why not shoot here? We should be doing that kind of thing."

**Independent narrative and student films:** The number of low budget feature films shot under SAG agreement in Massachusetts doubled in recent years, rising from 18 in 2005 to 37 in 2008. The number of student films shot under SAG agreement more than doubled, going from 16 in 2005 to 41 in 2008. Although these kinds of projects do not make a large economic impact in the short term, they are important for developing young talent. In particular, young directors who achieve early success in Massachusetts may choose to shoot some or all of their future projects in the Commonwealth. Indeed, successful local actors like Ben Affleck have recently returned to the Commonwealth to produce films here.

Independent narrative films are financed through investors as opposed to the grants and donations typically used in documentary production. Investors are typically attracted to a narrative project if they believe the project will be financially successful and they will receive a return on their investment. Because independent narrative filmmakers do not typically have fiscal sponsors, it was not possible to get the same broad view of narrative production over the past five years as was possible with documentary production.

One narrative producer who made use of the tax credit was interviewed for this report. Although the producer is not from Massachusetts, the director and primary investors are. They started raising money in 2007, shot their film in Fall River in 2008, and completed post-production in 2009. This timeframe is typical for narrative films because unlike documentary films, the

filmmakers know the story ahead of time and can condense the shooting into one concentrated period of time. It is worth noting that this makes it easier for narrative filmmakers to take advantage of the tax credit, because they typically know which 12-month period will be the biggest spending period. In contrast, documentary filmmakers often do not know what the biggest spending period was until after the film is complete. On this particular narrative film, they received the credit before the post-production was complete and applied the money towards finishing post-production. The filmmakers are currently looking for distribution, and hope to recoup their costs and make a profit.

The producer reported that the largest spending category was wages for cast and crew. About half of the cast and crew were from MA and the other half were from out-of-state, primarily New York and LA. Another major category of spending was film and camera gear. Unlike independent documentaries, which are often shot on video, this film was shot on 35 mm film, a significantly more expensive format. These costs accounted for about a fifth of the overall budget. This money was spent out of state because they could not find the equipment or film stock in MA. Other significant costs included location fees and catering, which were all spent in state, and post-production, which was done primarily in LA. The producer estimated that about 40% of the overall budget was spent in MA.

It seems the tax credit has not yet impacted the independent documentary and narrative film sector to the same degree it has impacted studio features. For example, seventeen feature films were produced in 2008, as compared to an average of 2-4 in years prior to the tax credit program. In contrast, the overall number of active projects reported by the fiscal sponsorships organizations has not increased significantly since 2005. It is difficult to measure the impact of the program against the funding issues faced in the independent sector. The scarcity of funds limits the amount of projects made in the state. As there appears to be fierce competition for current funds, if there were more funding the sector would most likely grow.

It is worth noting that the tax credit may impact the independent sector in some indirect ways. First, the increase in major studio productions has enabled some of the local crew base to continue to live and work in MA. If these films had not been made some local crew might have

moved elsewhere in search of employment. One producer who has worked on both feature and independent projects noted:

“In a very simplistic sense, a rising tide does raise all boats, as does the development of a more experienced crew base. Any geographical region that is experiencing an increase of activity will also generate more interest in independent projects. The crew goes to almost any project as long as there appears to be some actual financial basis and if it fits into their own personal schedules.”

Additionally, the studio infrastructure that is being proposed to accommodate more feature films might also benefit the independent sector. Several large sound studios are currently proposed in MA. One fiscal sponsor commented on a potential benefit of these studios to the independent community:

“For instance, they might give really good deals to independents so that independents could actually afford to use some of the studios for their own projects and it might incentivize them to actually shoot something here versus going to New York or they might realize that some project is doable because whatever services they need are in MA.”

If more effort were placed on informing filmmakers about the tax credit and making the filing process easier, more independent and documentary filmmakers might take advantage of it. One filmmaker noted:

“My sense is that...a lot of independent filmmakers and myself included do so much on our films that it's like people just don't know a lot about that [the tax credits]. They don't know how it works. They don't know the ins and outs, somebody has been through it but it's been really confusing and then they were rejected and you don't understand why. You know it just seems really foreign still.”

It is difficult to speculate on the future of independent filmmaking in MA. The biggest determinate of its success is funding. It appears that MA has the crew base and infrastructure to support a significant increase in independent film production, but it remains unclear where the funding for these projects will come from.

**Postproduction and special effects:** The increase in motion picture production has had a positive spillover effect in local post-production and special effects. One notable example has been the expansion of Brickyard VFX. Founded by Massachusetts native and Emerson College graduate, Dave Waller, the 16-person organization is now one of the premier visual effects studios in New England. Brickyard began as a one-man shop in 1999 and specialized in visual effects for television commercials. In 2007, due to an upsurge of work, the partners created a new company called Brickyard Filmworks catering to the visual effects needs of feature films. The new Filmworks company enjoyed rapid growth and by 2009 had twenty people on staff and completed hundreds of effects for feature films like “The Proposal” and “Surrogates.”

Confirming reports from other television and post-production companies, employment at Brickyard also drew heavily from graduates of local colleges like Emerson College, Boston University, Fitchburg State, and the Massachusetts College of Art. In addition to these new entrants, Brickyard found that it also needed industry veterans to help keep up with increasing demand and recruited former Massachusetts residents who had moved to California and agreed to move back to Massachusetts to work at Brickyard. While Brickyard’s feature film work has been growing, 2008 and 2009 were the first years that television commercial revenues showed declines since the company's founding and it faced the prospect of layoffs. However, by sharing the tax credits on several projects with their clients, they were able to obtain additional work leading to the hiring of three employees along with associated workstations and equipment. In this, and many other cases, industry representatives describe how the tax credit has helped them prevent layoffs, obtain new work, and engage in new hiring and equipment purchasing during a period with a rapidly contracting regional and national economy.

Other companies in this sector have reported similar stories. National Boston Studios began a relationship with Sony Pictures by preparing the first HD Video Dailies for the film "21" which was shot mostly in Massachusetts. Since HD Dailies were a leading edge step in the digital workflow at that time, National Boston developed an efficient process replicating the same operational systems used for creating traditional film dailies. The company worked with Evertz of Ontario Canada to build specialty equipment that was installed at National Boston’s Studios to handle the processing of these digital dailies. These HD video dailies were produced over night and then sent

via fiber optic cable using proprietary internet software to Culver City where DVD's were then produced for viewing by studio executives. The tax credit encouraged Sony to work with National Boston to develop a technological system and work flow that had never been used before. In 2008, National Boston produced several commercials, television pilots and media projects that allowed them to take advantage of the tax credits. As they did for Brickyard, the credits helped National Boston avoid staff and production cuts during a difficult economic period.

Post-production technology is also driven in large part by changes in information technology, and the Commonwealth has a longstanding strength in information technology related to the film and television industry. Massachusetts is the home of Avid Technology Inc., which is one of the global leaders in editing hardware and software for television and film production. Avid alone employs 2,350 people and generated \$845M in sales in 2008. However, because Avid is listed in the NAICS code for Photographic and Photocopying Equipment Manufacturing (333315), it does not appear in data on film and television employment in the Commonwealth. Moreover, because it is not monetizing tax credits, it would not be included in any analysis of the revenue impacts of the FTC.

GenArts, a Cambridge based developer of FX software, recently attracted venture capital investment and acquired a leading UK based FX technology developer. The combined presence of Avid Technologies, small special effects software developers, digital gaming companies and leading research labs in artificial intelligence and emerging media (especially at MIT) could represent a powerful set of future synergies.

**Education:** With its concentration of universities, Boston is an important center for students studying the production of film, television and other media. The Massachusetts College of Art and Design, Emerson College, Boston University, Fitchburg State, Curry College and Bentley University all have film and television programs, some of which are important feeder schools for Los Angeles and New York television and film companies. Boston University alone has over 1,000 students enrolled in Communications and Film and Television programs and in 2009 graduated almost 300 students from these programs. Many other local schools also have drama, film, and television courses and generate many young local employees seeking jobs.



Until recently, graduates of these programs typically faced the choice of leaving Massachusetts or giving up on a career in the film industry. Officials associated with these programs and other industry representatives report that alumni who had left for Los Angeles and New York have recently returned to Boston, since it is now possible for them to work in the film industry here. Moreover, as noted above, local production companies are employing an increasing number of these students as interns and providing career advancement opportunities for Massachusetts's college graduates. In addition to providing a local work force for the industry, these programs also provide employment for the many senior members of the local film and television industry who teach in them. Industry representatives described these educational resources as unique strategic advantages for Massachusetts.

Career opportunities for local graduates seem particularly promising in non-fiction television production that tends to have many openings for new entrants (e.g., production assistants, assistant editors and researchers). Moreover, the jobs tend to last longer than with feature films, because the production cycle is longer. There are numerous examples of local university programs providing both interns and new entrants to local television and post-production companies. If this trend continues, it seems possible that this could in turn generate positive feedback loops both by reducing wage leakage from local film and television spending while building new career paths for Massachusetts creative workers.

**Equipment rental and specialized service firms:** The general trend in this part of the industry has been investment by local firms to expand their inventory of equipment and expansion into the Commonwealth by recognized national firms. Local grip and electric companies have expanded their offerings, and several national firms have opened Massachusetts's offices. The recent merger of two local equipment rental firms, Rule and Boston Camera, has created a Massachusetts based firm that possesses the scale to serve large studio productions. A national catering firm, Hat Trick, has opened an office in Massachusetts, filling a significant gap in the local industry's capabilities. In addition, Media Services, one of a small number of national payroll companies that serve the motion picture industry, acquired CrewStar, a Massachusetts-based payroll firm. These trends, along with Figure 5 suggest that there is a growing core of local film and television service firms emerging in the Commonwealth. If this trend continues, we could eventually find that it reduces

leakage from non-wage spending that is currently going to out of state companies with skills and equipment that are not available locally.

**Sound stage/film studio projects:** Sound stages and film studios are often described as critical lynchpins in the evolution of a permanent local film industry in Massachusetts. In addition to providing large numbers of permanent supporting jobs, these studios become the home for film service companies and other important affiliated businesses. As a result, there are likely to be significant benefits from clustering effects of having creative personnel and their supporting industries co-located. While it is hard to calculate the benefits of these kinds of clustering effects, there are more direct benefits associated with the specific needs and economics of television as opposed to feature film production.

Whereas a studio film might employ between 150 – 200 people, these employees work intensively over a relatively short period of several weeks or months. In contrast, a television series might employ 100 people and film 22 episodes a year. At a cost of between \$2M and \$2.5M each, a TV series can contribute significantly to local employment and spending. Because scripted television shows require sound stages, industry members argue that a studio would increase television production work in Massachusetts. At present, even shows that are set in Boston (e.g., Boston Legal) have primarily been filmed elsewhere.

Three groups are actively working to develop sound stages/film studios in Massachusetts. The research team spoke with two of them. One group has been working on a complex in Plymouth and in the spring of 2009 had already spent \$8 million in Massachusetts over 17 months on local architects, engineers, lawyers, and consultants. In the spring of 2009, this group employed a payroll of 35. Six of these employees have moved to Massachusetts from out of state and have purchased or are leasing homes in the Commonwealth. The remaining employees were local hires. Twelve college students were hired as interns last summer (2008), two of whom are now full-time employees. The summer intern program was slated to bring in 20 college students in the summer of 2009. A non-profit educational foundation has been established to enable students to access work-study funds. A second group is planning a complex closer to Boston, which will contain camera and equipment rental companies, a lab, postproduction, and CGI.

All of the studio projects face the challenges of raising investment capital in a difficult environment. However, if even one of these studios projects is successful, it could attract a television series to Massachusetts which both provides more stable and longer-term employment for local workers.

## **Conclusion**

In the preceding, we have provided a high level overview of the current structure and recent growth of the film and television industry in Massachusetts. We began by discussing the broad trends in state employment and wages in this industry and find that employment has grown dramatically in recent years (particularly in post production and other motion picture and video production industries). An economic impact analysis using IMPLAN finds an output multiplier of 1.95 and an employment multiplier of 1.79. Taken at face value, this can be interpreted to mean that an additional dollar generated by the film and television sectors will produce an additional \$.95 of output value in the Commonwealth and that a new job generated in the film and television sectors produces .79 additional jobs in the Commonwealth.

By comparing these data with interviews and numerous recently published analyses of the regional film industry tax credit programs, we argue that the federal data and modeling approaches used to calculate these multipliers may not fully capture this rapidly evolving industry. A singular focus on multipliers is both unwarranted (given limitations with existing data and modeling approaches) and too narrow given the complexities of production practices in a highly mobile, networked and project-based industry like film and television production.

This report examines broadly the production practices and recent growth trends in the local film and television industry. We discuss recent trends and interconnections among the sub sectors in the industry via shared labor, services and material. We uncover novel trends in the structure of non-wage spending patterns in this local industry and identify a core cluster of local film service firms that are servicing many of the large studio productions that are making films in Massachusetts. We also find that these productions tend to spend money very locally (with clusters of vendors being located close to shooting locations).

There are several next steps and factors that future studies may wish to consider. First, it would be helpful to increase access to more granular data on local employment and non-wage spending patterns across the sub-sectors discussed above. There are several large organizations (union locals, casting agencies, payroll service companies, fiscal sponsors for independent films) that collectively capture a large proportion of total activity in the industry. An annual census of these organizations would be very useful for scholars, analysts and policy makers interested in the growth of this industry in the Commonwealth. In the same spirit, it would also be useful to increase public access to granular data on the FTC program specifically. Because these data are confidential, it is impossible for external researchers and scholars to do their own analyses of the FTC program in Massachusetts. Increasing access to these important data would be a great benefit to future research on this complex industry.

### **Appendix 1:**

#### **Methods and approaches in studies of regional film and television industries and incentive programs**

As film and television production incentive programs have spread across the country and overseas, regional studies of these industries have also proliferated (See e.g., Christopherson et al., 2006; Economics Research Associates, 2009; Ernst and Young, 2009a, 2009b; Luther, 2010; Massachusetts Department of Revenue, 2009; McMillen, Parr, & Helming, 2008; Miller & Abdulkadri, 2009; Popp & Peach, 2008; Weiner, 2009a; Weiner, 2009b). Our examination of more than 20 reports on local film and television industries suggests that there are two basic approaches being used in the literature. The first focuses on estimating the direct and induced impacts of state tax incentive programs on future tax collections while the second looks more broadly at aggregate industry trends and production practices.

Studies estimating the net impact of spending on film and television incentive programs on future state tax collections vary widely in their methods, but typically use one of two widely available economic models (e.g., REMI and IMPLAN) to estimate the revenue impacts of incentive programs.

Despite the significant challenges of estimating net impacts in a mobile, project-based industry, some particularly careful recent analyses suggest the short term net revenue impacts of these programs may not be positive (Massachusetts Department of Revenue, 2009; Weiner, 2009a). At the same time, there have also been some studies showing that the net impact of these programs may be positive (Arizona Department of Commerce, 2007; Ernst and Young, 2009a, 2009b). Findings across these studies vary largely because of differences in data, models, and assumptions, which has generated debates about appropriate methods and approaches for conducting these kinds of analyses (Weiner, 2009b).

The second approach looks at aggregate industry trends, variations in production practices and linkages across sub-sectors, and wage and employment trends in each. Because industry analyses face the same challenges obtaining accurate employment data as studies on incentive programs, they typically supplement federal employment data with some combination of the following additional data sources:

1. Local film offices that collect their own industry data;
2. Interviews and surveys of industry members;
3. Unions and payroll companies that typically collect data on aggregate employment trends;
4. Other archival data sources and published reports

Some studies have combined these approaches (Christopherson et al., 2006) while others focus solely on the evaluation of incentive programs (Massachusetts Department of Revenue, 2009; Weiner, 2009a; Weiner, 2009b). It is important to note that this study focuses on aggregate industry activity rather than on an evaluation of the Massachusetts FTC. Although we have suggested some areas where our findings may have implications for future evaluation of such programs, we did not set out to evaluate the Massachusetts Film Tax credit program per se. Indeed, a careful analysis of this program has been recently conducted by the Massachusetts Department of Revenue (2009) and there is no reason to duplicate their work (nor would it be possible given confidentiality restrictions associated with the tax application data required for such a study).

In the next section we discuss the recent studies on the Massachusetts FTC and several recent studies of other state incentive programs. We identify a generic approach that seems to be used by a number of these studies and conclude with a discussion of some factors we identified in our research on Massachusetts that may be of value for future studies of regional film and television incentive programs.

### **Regional film and television production incentive programs: An overview of recent findings and approaches**

In July 2009, the Massachusetts Department of Revenue released their annual report on the Massachusetts Film Industry Tax Incentive (2009). Their report used a complete set of tax credit applications from 2006-2009 to calculate the net economic impact of the tax incentive program on economic activity in the Commonwealth. Their careful analysis finds that while the program has been effective in increasing film (and to a lesser degree television production) in the Bay State, its short-term fiscal impacts are negative. Specifically, the report estimates that for every dollar in tax credits generated by the program, Massachusetts collects only \$0.16 in revenue. This is similar to the result identified in their 2008 report which found each additional dollar in tax incentives generated only \$0.18 in new revenue. These findings are consistent both with a prior study in Massachusetts (Massachusetts Department of Revenue, 2008) and recent studies of these industries in Connecticut (Weiner, 2009a) and Arizona (Popp & Peach, 2008).

Such findings are not especially surprising because tax credits are usually not designed to result in a net expansion of tax revenues, particularly in the short term. Instead, most legislatures create a tax credit as a catalyst that will hopefully help to jump start a nascent industry or group of industries in the state, giving them enough of a boost to reach a volume of production that is self-sustaining without the government subsidy in the future. Most legislative goals are couched in terms of new employment generation and expansion of related industries rather than the expansion of tax revenues.

There are three primary factors driving these findings in Massachusetts. First, a large proportion of credits issued between 2006 and 2008 (\$150.8 million or 90.7%) were generated by feature films. Specifically, 71% of the total credits were generated by just 8 feature films with budgets over \$30

million. Because a relatively large proportion of wages on these productions go to above the line employees who are typically non-residents, most of these wages are removed from the calculation of benefits. The Massachusetts DOR (2009) assumes that none of the wages of employees earning more than \$1 million (and only 5% of non-resident salaries) should be included in calculation of state multiplier effects. As a result, the model subtracts \$233 million (52%) from the \$451.9 million total film production spending that occurred in Massachusetts in 2008. While this is a somewhat conservative assumption given that high net worth individuals may make significant purchases while located in the Commonwealth and that some of these may be made using advances against future income, it is unlikely that these purchases would dramatically alter the net revenue impact of the program.

Another reduction in the net economic benefits to Massachusetts is caused by the impact of the balanced budget requirement. Because of this requirement, the 2009 MA DOR report removes an additional \$60.2 million (13%) from the total film industry spending in 2008 under the assumption that a concomitant reduction in state spending is required to balance the film subsidy. It is notable that this is one of few studies that address the implication of these timing issues in their model. Finally, DOR removes \$12.7 million from the 2008 spending to account for the proportion of productions that would have been present in the Commonwealth absent the credit. As a result, the report removes \$306.7 (68%) of the \$451 million in total film industry spending in 2008 from the calculation of net revenues via multiplier effects.

While studies on Massachusetts and some other states suggest that the short-term revenue impacts of these programs are negative, others have found positive (and potentially long term) benefits from film industry tax incentive programs (Arizona Department of Commerce, 2007; Christopherson et al., 2006; Ernst and Young, 2009a, 2009b). For example, a recent report (Weiner, 2009b) found a short-term net revenue benefit to the State of New York as well as a long-term positive effect on cash flow due to a lag between the receipt of film industry spending and the redemption of credits, which typically occur many months after production. Moreover, although it is a project-based industry like other trades, wages in film and television production tend to be higher than average state wages. A report in the New York film and television industry

(Christopherson et al., 2006) found that because it is relatively highly paid sector, this industry “has one of the highest employment multipliers among all industries in New York”.

As we examine these divergent findings, it seems clear that the variation in methods, data, and models alone could easily account for the varied conclusions. It also raises questions about the correct approach for accurately assessing the economic impact of these incentive programs. Therefore, we find it useful to briefly discuss some of the remaining methodological challenges in doing so.

While specific methods and approaches vary from study to study, a generic method for measuring the revenue impact of a film industry tax credits seems to require the following steps:

1. Identify induced film activity (e.g., film and TV production that would not have happened absent of the credit);
2. Calculate local direct spending from induced activity (e.g., total local wages and non-wage spending from this new production);
3. Calculate multiplier effects of direct spending (e.g., induced economic activity, jobs created, etc.) using IMPLAN or REMI;
4. Add individual and corporate tax receipts to state from multiplier effects on wages and non-wage spending;
5. Subtract direct costs to state in tax credits;
6. Subtract negative multiplier of associated reductions in government spending (under balanced budget assumptions assuming that reasonable assumptions can be made about how these would in fact be allocated).

While some of the calculations in the list above are relatively straightforward (such as estimating the costs to the state in lost taxes), others are much less obvious. In particular, the calculation of multipliers for wages and non-wage spending relies on the use of complex economic models that may not be well suited to flexible, networked industries like motion media production.



Evaluations of incentive programs and other economic impacts studies typically use one of two existing models (IMPLAN or REMI) to estimate the net impacts of changes in employment and spending in specific economic sectors. Because these two models use different industry categorization schemes and methods to calculate multiplier effects, some of the variation among these studies is likely explained by differences in the internal dynamics of these models. However, our review suggests that differences in data sources, approaches to the calculation of net benefits and leakage, lags between industry spending and credit monetization, adjustments for balanced budget requirements and the inclusion of tourism benefits likely make a much larger contribution to these differences.

### **Variations in models: A discussion and evaluation**

As we have suggested above, existing federal employment data may contain significant errors and omissions in creative industries like film and television production. Therefore, some studies that rely on QCEW data for inputs into econometric models have found it necessary to make estimates about how many employees from related sectors (like independent artists) ought to be included in the film and television industry (Christopherson et al., 2006). Other studies get around this problem by using inputs obtained from actual tax applications (Massachusetts Department of Revenue, 2009; McMillen et al., 2008) or by combining interviews and archival data collection with econometric modeling (Christopherson et al., 2006). These approaches seem likely to generate more accurate estimates than the mere use of QCEW data, which may over (under) estimate actual wages and employment. Certainly, when these data are used alone their potential limitations should be identified (as they are in the analysis above).

Assuming that data inputs are accurate, there may be some aspects of film and television production that violate internal model parameters and assumptions (like the relationship between wages and consumer spending, labor flows, etc.). For example, location fees represent a large proportion of total spending (particularly for major motion pictures). The Massachusetts Department of Revenue estimated that between 2006 and 2008, net new spending on these payments was \$51 million (or 17% of the total spending during that time). Because these fees sometimes are paid directly to individuals and organizations, they may be spent differently than the traditional wages and other earnings upon which consumer-spending models are based.

However, some of these location fees also represent direct payments to towns, municipalities and other public entities so they cannot be simply entered in one generic NAICS category. This kind of idiosyncratic spending by local film productions may not be well captured in existing econometric models. Although location spending may vary dramatically across productions due to different creative and logistical concerns, states could conduct more detailed analyses of the recipients of specific location fees to proportionally allocate the payments across relevant NAICS codes.

Wage spending may also co-vary either with unpredictable external factors or with other model parameters (like spending on local wages). For example, in 2008, the threat of a summer SAG strike meant that several productions were filming in MA at the same time. This in turn led to a shortage of local crew and required importing labor from out of state. This in turn led to increased non-wage spending on food and lodging. In this case, the proportion of wages going to MA residents and non-wage spending for food and lodging both co-varied with the availability of local crew, which was indirectly related to scheduling issues caused by an impending SAG strike. This is but one example of complex dependencies among variables that may generate modeling problems in this industry.

Non-wage spending patterns are also highly variable and often include significant local components. For example, in addition to the raingear example noted in the text above, one industry representative reported that a television commercial made in 2008 required the purchase of \$1,000 of body bags for a scene. There are numerous other examples of such idiosyncratic spending patterns. As noted in the text, examining vendor lists of 10 films in MA in 2008 identifies over 800 individual vendors, many of which are clustered tightly around shooting locations. As a result, standard input/output models may not accurately account for these linkages to the local economy. Studies using data from tax applications (e.g., Massachusetts Department of Revenue, 2009) have been able to circumvent these modeling imperfections by allocating actual project spending to the appropriate NAICS codes.

Based on our review and the discussion above, we suggest that some studies of regional film and television industries may to varying extents:

- Incorrectly estimate the amount and distribution of spending that is located in non-film industry NAICS codes;
- Overlook important differences between production types (e.g., assume wage and non-wage spending is the same for all productions);
- Incorrectly estimate the proportion of local (as opposed to out of state) spending on wages and non-wage expenses;
- Underestimate employment of freelance labor due to the widespread use of payroll services and other complex labor arrangements;
- Underestimate non-wage spending in service industries like lodging, transportation, audio recording, etc.;
- Underestimate future revenue from residuals and royalties sourced to the state in which films, television programs and commercials are made;
- Overlook independent film production and how this sector is related to commercial productions;
- Underestimate reductions in state unemployment and health care costs due to increased employment among trades people;
- Not address hidden costs of film production caused by the increased use of public services, etc.

It is worth noting again that several recent reports and papers do a particularly careful job in addressing many of these complex issues (Christopherhson & Rightor, 2009; Christopherson et al., 2006; Massachusetts Department of Revenue, 2009; McMillen et al., 2008; Weiner, 2009b) and our observations above are intended as a summary of our broad review of the literature.

Nevertheless, there remain some questions and factors that could impact the future evaluation of the Massachusetts FTC and similar programs. In the following, we discuss some of these factors using illustrations from our research on Massachusetts to identify areas to consider in future research.

## **Secondary market for the tax credits**

The operation of secondary markets for film industry tax credits has received almost no attention from policy analysts or academics. However, this market likely generates some economic benefits in the form of a small amount of increased tax collections and perhaps by induced activity from the use of the \$11.6 million in value that is captured by Massachusetts companies purchasing the credits.

According to the Massachusetts DOR report (2009), as of June 30, 2009 \$148.9 million (89%) of the \$166.3 million in tax credits issued since 2006 have been sold to third parties. While tax receipts from sale of the credits were \$140,000 over the three-year life of the program, there may have been additional benefits generated by the use of the credits by the local companies that purchased them. The MA DOR 2009 report states that the FTCs are primarily being purchased by corporate entities (rather than by high net worth individuals). Of the \$148.9 million of credits that were sold, only 3% went to individuals while \$148.1 million went to insurance companies, financial institutions, and other corporations. While it is unclear how these corporations have used the credits, it seems likely that some proportion of the benefits would generate new economic activity, rather than windfalls for shareholders, for example. Calculating this benefit is made more complex by the operation of brokers who themselves capture 4% of the benefits from the sale of credits. Absent direct data on this market (which is treated as confidential by the Massachusetts state agencies), it is impossible to assess the potential economic benefits generated from the sale of these credits to Massachusetts companies.

While the calculation of direct increases in tax revenues from sale of the credits seems straightforward, the calculation of indirect impacts of increased activity is certainly more complex and depends on how Massachusetts companies are using the benefits from the tax credits. Future research should investigate how film industry tax credits are used by the corporate entities that purchase them and whether (and how much) this generates new economic activity for the Commonwealth.

## **Marketing and tourism benefits**

The Massachusetts Department of Revenue study (2009) recognizes that under certain conditions, films produced in Massachusetts may increase tourism but points out that modeling such impacts is both difficult and outside the scope of their study. Some studies have included tourism benefits in their model (Ernst and Young, 2009a), though without sufficient detail to evaluate the reliability of the estimates of new tourism spending. Other studies recognize that these benefits may be significant (Miller et al., 2009) and some also (McMillen et al., 2008) provide anecdotal data and reports of small surveys to support these ideas. Research on destination marketing and film induced tourism (Baker & Cameron, 2008; Beeton, 2005; Hudson & Ritchie, 2006; Morgan & Pritchard, 2005; Woodside, Spurr, March, & Clark, 2002) as well as press reports on film induced tourism in Massachusetts (L'Ecuyer, 2009; Shanahan, 2009) also suggest that these benefits may be important in the long run evaluation of benefits to the local economy associated with increase feature film production. Our examination of the current evidence suggests that these benefits may indeed be large, but we also recognize that they are also hard to measure accurately and likely outside the scope of most studies on state incentive programs.

In a widely cited article, Riley, Baker and Doren (1998) conclude that for films to have a positive impact on tourism at specific locations, they must contain “strong iconic identification with a particular location.” Because these strong iconic identifications are not part of every film made in Massachusetts, the Massachusetts Department of Revenue (2009) concludes that it is an open question whether film tourism will be a real benefit for Massachusetts. While the study rightly points out that some studies may have improperly estimated the magnitude of these benefits (e.g., Ernst and Young, 2009a), recent destination marketing research also suggests that film and television production could have a significant positive impact on future tourism (Hudson et al., 2006; Beeton, 2005; Woodside, et al., 2002).

There are at least two kinds of tourism and marketing benefits that could be considered in future studies of the economic impact of local film and television industries. First, since most states engage in some marketing activities (via boards of tourism, offices of economic development and official visits), it seems reasonable to treat appearances in films as part of the overall state marketing effort. If we treat Massachusetts as a brand that is competing for attention in the minds

of potential tourists, merely increasing brand awareness among these potential visitors may have value. Indeed, some locations have treated film appearances just this way. The New Zealand Tourism Board concluded that the value of exposure generated by the first Lord of the Rings film alone was US\$41 million (New Zealand Institute of Economic Research, 2002).

Second, since brand awareness has been directly linked to consumer purchasing decisions, marketing scholars argue that similar processes likely affect consumer travel decisions (Hudson & Ritchie, 2006). Their review of recent film industry tourism research (Hudson & Ritchie, 2006:398) demonstrates large tourism benefits across a wide range of films and locations. In Boston, the Cheers Bar received \$7 million in annual unpaid promotional advertising as a result of its appearance in the long running television show of the same name.

However, as Hudson and Ritchie (2006:388) point out, the success of film industry tourism depends on multiple factors including “destination marketing activities, destination attributes, film-specific factors, film commission and government efforts, and location feasibility.” Among these, destination marketing activities seem particularly important as local film offices and tourism boards can actively manage them. In a survey of 140 film industry destination marketing organizations (e.g., tourism boards, local film offices, etc.), Hudson and Ritchie (2006) found that 60% reported increases in tourism that were attributed to their marketing efforts. The most important benefits include increased brand awareness, direct economic benefits, and increased tourism. Most importantly, the study found that the most successful destination marketing organizations engaged in promotion both during pre-production (promoting specific locations, offering tours, appointing a promotions specialist, etc.) and after release of a film (ensuring that locations are mentioned in media coverage, using stars to promote locations, creating location maps, etc.).

Based on our review of recent research on destination marketing, we conclude that this could be a significant source of unmeasured economic impact for the Commonwealth. Interviews with studio executives and producers suggest that the state already has many of the positive, location specific factors that are identified by Hudson and Ritchie (2006) as increasing tourism. For example, local press reports suggest that the popularity of Sandra Bullock’s movie “The Proposal” generated

increased tourism in Rockport, despite the fact that the town actually posed as a seaside town in Alaska in the movie (L'Ecuyer, 2009; Shanahan, 2009). As a historic city on the waterfront, Boston has many iconic locations and scenes that have been (and will continue to be) featured in productions. Since these factors are outside the control of local destination marketing organizations, they represent an important resource for the Commonwealth that can be marketed by such organizations. Future studies could also seek to quantify the economic impact of film tourism on the Commonwealth. The Commonwealth's Office of Travel and Tourism could be a very useful partner in this research.

**Income tax from residuals and the growth of a local creative talent base:** Like most creative industries, the film and television industry is characterized by highly skewed distributions in the popularity of its products. While most movies are moderately popular, a small number of movies are extremely popular and generate significant revenue streams from DVD sales and rentals, and international and television exhibition. These revenues are in turn shared with above-the-line and other creative talent in the form of residuals and net- or gross-profit sharing contracts (Weinstein, 1998). If residual and profit sharing income from productions made in Massachusetts are sourced as Massachusetts state income, this could be a significant source of future tax revenue for the Commonwealth.

Principal actors in commercials, television programs and films typically receive residual payments for secondary uses of productions in which they appear. For example, when a television program has repeat airings or goes into syndication, the principal actors in it receive residual payments that are collected and distributed by the Screen Actors Guild. While the specific payments received by a given actor for a given use depends on many contractual factors, taken as a whole, residual payments represent a significant source of income for actors and other performers. According to the Screen Actors Guild (2009), total residual payments in 2007 were over \$1.1 billion and exhibited a 10.3% compound annual growth rate between 2001 and 2007.

In addition to future income tax revenue from residual payments made to actors working in Massachusetts, certain principal actors and other above the line talent also receive participation deals (e.g., a proportion of future profits) for productions made in Massachusetts.

Because profit sharing arrangements can take many forms (Weinstein, 1998), it is difficult to determine how significant these revenues could be for the local economy. However, given that the four highest grossing movies made in Massachusetts between 2006 and 2008 had combined worldwide gross revenues of over \$755 million<sup>7</sup>, a relatively small share of income tax receipts from these revenues could represent a significant source of future state revenue. According to the MA DOR's 2009 report there is some ambiguity about whether income from residuals and profit sharing contracts should be sourced as Massachusetts income.

As Massachusetts taxes nonresidents on their income from any trade or business conducted within the state and it is clear that the residuals and profit-shares arise out of the activities of the talent in the state, it would seem that Massachusetts could impose its personal income tax on these earnings. There are similar rules for pension payments made to retired nonresidents that earned their pensions while working in Massachusetts. If the state is not currently collecting tax receipts from these wages, this could represent a significant source of unclaimed benefits for the Commonwealth even though the collection of these taxes would be quite difficult without some kind of withholding requirement on the residuals earned by these nonresidents.

In addition to potential income tax collections from residuals and profit sharing contracts for principal actors, there may be additional benefits associated with the development of local creative talent. Three of the most successful and critically acclaimed films that have been made in Massachusetts have been based on books written by local authors (e.g., *The Departed*, *Gone Baby Gone* and *Mystic River*). While it is impossible to link the success of these authors with the film industry tax credit, to the extent that the credit facilitates the growth of similar local talent, this could have direct positive fiscal impacts via increased income tax collections (e.g., from the sale of book rights, scripts and other intellectual property) that would not be offset by associated production tax credits.

The primary business model in film production relies on the ability to recover the costs of numerous marginally successful productions against large profits on a relatively small number of

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<sup>7</sup> This figure was based on data from [www.IMDB.com](http://www.IMDB.com) on the worldwide gross revenues of four films (*The Proposal*, *Mall Cop*, *21* and *Game Plan*)



highly successful productions. Providing tax credits to incentivize productions without participating in back end profits means the Commonwealth is sharing in the risks of production without participating in the large profits of the small number of films that do extremely well. Massachusetts has already made, and is in the process of making, changes to its taxing statutes and regulations to make clear that earnings generated from film production activities remain subject to Massachusetts taxation, regardless of when paid or how calculated. In a working draft of tax regulations issued on January 11, 2010, the MA DOR has taken precisely this position (830 CMR 62B 2.3) for personal income tax purposes, treating the income earned by talent arising from film production activities in MA as subject to withholding taxes to the extent payable to out-of-state individuals or their surrogates.

**Benefits from changes to the Massachusetts corporate tax laws:** Massachusetts has also made significant changes to its corporate income tax laws that similarly will require companies to pay tax in MA on income derived from activities here. In 2008, Massachusetts changed its corporate tax laws to require affiliated companies conducting a unitary business in Massachusetts to calculate their net income and the apportionment factors used to allocate that income to Massachusetts on a combined, rather than separate company, basis. In the following, we briefly summarize this change and explain why it could have a significant positive impact on future tax collections for the Commonwealth.

Prior to 2008, an affiliated group of corporations determined its MA tax liability using separate company factors. This was accomplished by allocating the net income of each corporate affiliate to MA based on the payroll, sales and property of that company that are located within and without MA. The income thus apportioned to MA for each affiliate was then aggregated to determine the total amount of net income subject to the MA corporate tax.

Effective on January 1, 2009, corporations doing business in MA were required to determine their MA corporate tax liability in an entirely different manner. First they will aggregate all of the net income of each of their affiliates. This net income will then be multiplied by the proportion of those affiliates' aggregate sales, payroll and property located within and without MA. (See e.g., Koppel, 2008 for a description of the difference between these two rules).

These two methods can result in markedly different tax liabilities for unitary businesses operating in MA. Although generically one method does not consistently result in greater net income being taxed in MA than the other, there is strong reason to believe that, in the case of the film production industry, the new manner of calculating what is taxable in MA is very likely to increase MA tax receipts materially.

For example, it has been common to establish a separate company for each production, usually in the form of a limited liability company (LLC) that facilitates, among other things, the collection of the cost data necessary to document the calculation of MA tax credits claimed. Often the LLC is dissolved after the production is completed but before revenue is generated, so that it has been common for the production company to have no business activities in MA in the year in which profits begin to flow. It has also been common in the industry to charge MA affiliates for the use of any intangible property, which are often held by out-of-state affiliates. The deduction claimed for the use of those intangibles decreases MA net income and, as a result, reduces MA's tax revenues.

Both the use of out-of-state intellectual property companies and the manipulation of separate company apportionment factors have been largely eliminated by the January 1, 2009 law change. Although production companies may continue to attempt to reduce their contacts with MA in the years in which the production is generating revenues, this is more difficult to do when the entire affiliated group of corporations is analyzed as a cohesive whole, as is now required. Further, to the extent that MA is successful in attracting a more vibrant film production industry in MA, a greater proportion of property, sales, and payroll will be resident here which will increase the apportionment of income to MA in years in which profits are being generated.

**Increased health coverage and other benefits:** Film production follows an atypical work schedule. Because of the high fixed costs of assembling talent, crew, locations, and equipment, producers seek to maximize the return on their high fixed costs by working long hours. Crews on productions in the Commonwealth almost invariably work 50 hours per week at minimum and routinely as much as 70.

An average of 60 hours would be a conservative estimate of total hours worked in a week. This represents 50 percent more than a person working a nine-to-five job. A motion picture worker who puts in a 60-hour week on average will clock as many annual hours in 32 weeks as a nine-to-fiver working the entire year and taking the standard paid holidays and two weeks of vacation. Partly in recognition of these unusual work schedules, the industry labor organizations have developed unique approaches for providing health coverage and other benefits.

Motion picture producers under contract with IATSE make a benefits contribution ranging from \$65 to \$85 per day for each Local 481 represented employee, with studio features paying at the higher end of the scale. Approximately 70 percent of this contribution goes for health care and the remainder for retirement. Local 481 members can use the health benefit dollars they accrue by choosing between several insurance plans. Local 481 members are eligible for individual health coverage for the entire year if they work approximately 75 days on studio features or projects that make comparable benefits contributions. Several of the features that were shot in the Commonwealth last year, including *Edge of Darkness*, *Ashecliffe (now being released as Shutter Island)*, and *Surrogates*, had shooting schedules of 70+ days, not including pre-production, which often adds weeks or months of additional work for members in the construction and other pre-production crafts.

SAG members qualify for individual health coverage if they earn \$14,000 during the prior year, and for AFTRA members, this earnings threshold is \$10,000. It is difficult for SAG extras, who earn a lower wage than actors with speaking parts, to qualify for health benefits in this way. So the Guild also allows members to qualify if they clock 74 days of total work during the prior year. The threshold for eligibility for family health coverage is \$29,000 in the prior year for SAG members and \$30,000 for AFTRA members.

Combined, there are approximately 2500 members of IATSE/SAG in the Commonwealth. If even 10 percent of these members were covered by industry plans and thus did not avail themselves of

the Commonwealth Care plan, this would represent savings of \$1 million to Commonwealth.<sup>8</sup> This calculation does not even take into account the potentially greater impact of IATSE/SAG members' family members being covered under family plans.

**Benchmarking long-term growth trends:** It is critical to complement a short-term fiscal analysis with a longer-term perspective. One veteran of the Massachusetts film industry noted, "Boston is like Vancouver was 20 years ago." An examination of the historical development of the film production sector in and around Vancouver could identify key milestones that region passed in the process of building a sustainable industry. Tracking the Massachusetts production sector against milestones of this sort could chart the longer-term development of the Commonwealth's industry. Examination of the Vancouver case could also be useful for identifying economic spillovers and long term benefits that may not be captured in current evaluations.

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<sup>8</sup> A Massachusetts state government study estimated that the annual cost per person covered by Commonwealth Care in 2009 would be \$4,000 (Dembner, 2008).

## **Appendix 2:**

### **A brief summary of the Massachusetts film industry tax credit**

The Massachusetts Film Tax Credit program offers a transferrable and refundable tax credit equal to 25% of the total qualified Massachusetts wage and non-wage production expenses for films, and certain television and digital media productions with budgets larger than \$50,000. In addition to the minimum spending requirement, productions must meet one of two additional criteria: At least 50% of the principal shooting days take place in Massachusetts or more than half of the total production budget is spent in Massachusetts. Filmmakers may choose to receive the credit as a rebate, equal to 90% of the face value (guaranteed and rebated by the state). Alternately, the credit may be transferred or sold at the current market rate. Certain expenses for cast and crew from out of the state qualify. There is no statewide, talent or production cap. Additionally, filmmakers may be eligible for a 100% sales tax exemption on any production related items purchased in the state. In addition, certain expenses like production insurance, workers compensation and completion bond are not qualified expenses.

#### **Program Details**

Only the first 27 episodes of a TV series will qualify per year and pre-production, production, and post-production expenses qualify as long as they are directly incurred in the production of the film or television program. Qualified expenses include payroll (e.g., salary, wages or other compensation including all fringe benefits) but not insurance or completion bonds. Costs associated with marketing or advertising a picture, the transfer of the tax credits or amounts paid as profit participation also do not qualify.

The incentive is comprised of two components: A payroll credit and a production credit. The payroll credit is equal to 25% of the total payroll that is sourced to production activities conducted in Massachusetts on productions with costs exceed \$50,000 for a taxable year. Both salaries paid to residents and non-residents working in Massachusetts qualify for the payroll credit.

The production credit is equal to 25% of all Massachusetts production expenses (not including the payroll expenses included in the labor credit) for productions that meet the following criteria:

Total production costs incurred in Massachusetts exceed \$50,000 for the taxable year, and either the Massachusetts production expenses are more than 50% of the total budgeted production costs, or at least 50% of the total principal photography days take place in Massachusetts. For purposes of the production credit, the entire amount of each salary that is equal to or greater than \$1,000,000 may be used to calculate the production credit (if the entire salary was not included in the payroll credit).

The credits can be carried forward for 5 years, but once the credits have been transferred they are no longer refundable. In addition, a point-of-purchase sales tax exemption is available for qualified expenses. An application is available at [mafilm.org](http://mafilm.org) and must be filed in advance for this exemption.

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