A Supply Chain Study of the Economic Impact of the North Carolina Motion Picture and Television Industry

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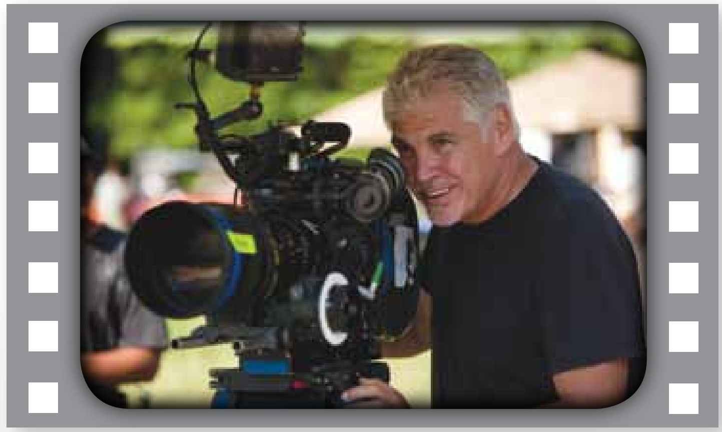

Above: Director Gary Ross on the set of THE HUNGER GAMES.
Photo by: Murray Close
Left: Ya-Ya Director, Callie Khouri

Executive Summary

A group of North Carolina Film Regional Film Commissions (Wilmington, Charlotte, Piedmont Triad, Western North Carolina, and Triangle) and the MPAA commissioned this study to address four questions policymakers have about the North Carolina Production Tax Incentive (PTI):

- What is the "Return On Investment" (ROI) in terms of state and local tax revenue generated by production activity?;
- How many jobs of all types are created by additional production activity due to the PTI?;
- What is the financial impact of allowing the PTI to expire?; and
- What is the financial impact of extending and expanding the PTI?

On set of One Tree Hill

THE FINDINGS OF THE STUDY ARE AS FOLLOWS:

RETURN ON INVESTMENT: THE PTI GENERATES POSITIVE CASH FLOW FOR NORTH CAROLINA.

The net contribution of the film and television production industry to the state, when compared to the film credit paid, is positive **($25.3M)**. This is the difference between the 2012 PTI cost of **$60.14M** from the General Fund, and the net revenue to state and local governmental jurisdictions of **$85.4M** collected through increased personal income taxes (PIT), sales and use tax on goods (SUT), taxes on consumer expenditures, hotel tax, SUT charged on rentals, and SUT paid by vendors to tier two vendors of goods and labor.[2] The contribution includes **$65.4M** in state tax revenues and **$20.2M** in local tax revenues. This calculation does not include the benefit from **$3.1M** in unemployment contributions made by the film industry to the state UI fund, **$2.1M** in defined pension benefits, industry contributions of **$26.4M** to employee healthcare benefits, and **$11.3M** to employee pension funds. These benefits are received in North Carolina but the expense taken in other states. These figures are shown in Table 1 (next page).

[1] The North Carolina Production Alliance, The Wilmington Regional Film Commission Inc., the Charlotte Regional Film Commission, the Triangle Regional Film Commission, and the Triad Regional Film Commission all were involved with this report.

[2] The estimated margin of error of these figures is in the range of +/- $5M.

On set of Sleepy Hollow at Tryon Palace

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Net Tax Revenue to State and Local Government Over the Life of the Program (2007-2012)

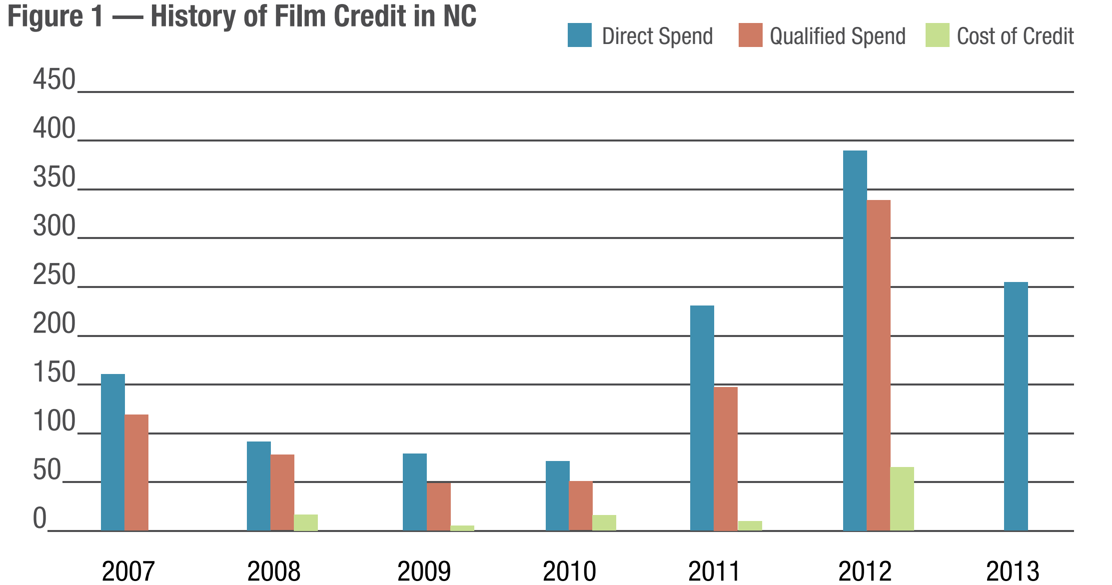
Figure 1 shows that the difference between the total spent by the industry in North Carolina during the period of 2007-2012 ($1.03B), and the qualified spend against which the state assessed the credit ($566M). The industry generated an additional **$454M** that was not subject to any portion of state refund. As such, during the period of 2007-2012, the total cost of the credit to the state was $112M. Using the results of the study as applied to the 2012 film and television production spending ($391M) compared to the approximate tax revenue generated for the state ($85.4M), the film and television industry generated **$1.52 of tax revenue and $9.10 of direct spending for every $1.00 of tax credit** provided by the state. Over the 2007-2012 period, this generated net positive revenue of **$58.3M** for the state and local communities (Table 2). The rapid growth in the revenues for the industry after 2010 was a result of the legislative increase of the industry incentive from 15% to 25%, which provided a competitive advantage for North Carolina during this period.

Table 1 — Return on Investment — North Carolina Production Tax Incentive

	STATE REVENUES	LOCAL REVENUES
EXPENDITURE FROM GENERAL FUND	$60,144,669	
State Personal Income Taxes Paid	$19,613,353	
Sate Sales Tax Paid on Goods and Services	$5,267,000	
Local Sales Tax Paid on Goods and Services		$3,359,057
Local Occupancy and Local Portion of State Tax Paid on Hotel		$1,632,061
State Sales Tax Paid on Rental Equipment	$1,605,895	
Local Sales Tax Paid on Rental Equipment		$760,687
Local Property Tax on rental company assets and studio property		$1,205,555
State Taxes paid by 4200 film workers and families in the state (see Table 23)	$12,746,219	
Local Taxes paid by 4200 film workers and families in the state (see Table 23)		$5,115,147
State Sales Tax Paid on Other Services (Parking, Fuel, Transport, Catering, Per diems)	$2,287,490	
Local Sales Tax Paid on Other Services (Parking, Fuel, Transport, Catering, Per diems)		$1,083,548
Tier 1 Supplier State Sales Taxes Paid	$1,819,384	
Tier 1 Supplier State Personal Income Tax on Labor and Services	$2,831,419	
Tier 1 Supplier Local Sales Taxes Paid		$957,571
Tier 2 Supplier State Sales Taxes Paid	$520,066	
Tier 2 Supplier Local Sales Taxes Paid		$273,719
Tier 2 Supplier State Personal Income Taxes Paid	$635,125	
Corporate income taxes based on apportioned income based in North Carolina	$5,287,500	
Corporate income taxes paid on income of Tier 1 suppliers	$2,365,057	
Corporate income taxes paid on income of Tier 2 suppliers	$674,210	
Sales and occupancy tax revenue from film-induced tourism (FIT)	$9,700,000	$5,790,000
Total State and Local Revenues	$65,352,718	$20,177,344
Total Contribution to State nd Local Government Revenue	**$85,440,062**	
Net Contribution of Incentive to State and Local Revenue	**$25,295,393**	
Other Benefits		
Contribution to Employee Healthcare benefits	$26,380,521	
Contribution to Employee Retirement Funds	$11,305,938	
Funds paid by production companies to NC state employment fund	$3,092,334	
Special Taxes related to healthcare and defined pension benefits	$2,150,000	

Using the results of the study as applied to the 2012 film and television production spending ($391M) compared to the approximate tax revenue generated for the state ($85.4M), the film and television industry **generated $1.52 of tax revenue and $9.10 of direct spending for every $1.00 of tax credit** provided by the state.

Figure 1 — History of Film Credit in NC



*Based on NCDOR figures

The film and television industry is unique in that there is typically a delay on the payment of tax credits, but states receive the benefit of production spending immediately. The production companies are delivering economic tax revenue for the state in the current fiscal year, but the refund against this tax revenue will not be returned by the state for some period after the specific cost was incurred (the time necessary to complete the production and have the expenditures qualifying for the Production Tax incentive calculated and audited). In addition, less than 100% of the revenue spent in the state qualifies for the credit,[3] yet state and local taxes are paid on revenue generated by the production.

Table 2 – Cost of Credit to the State (2007-2012)

Cost of Credit (Paid by State 2007-2012) $112,000,000	
Direct Spending by Film Industry in the State ('07-12)	$1,020,000,000
Direct Spend for Every $1 in Credit	$9.11
State Tax Revenue Generated in 2012	$65,352,718
Film Industry Spending in the State in 2012	$391,355,909
Ratio of State Tax Revenue Generated to Direct Spend (2012)	1.6
Projection of Tax Revenue Generated 2007-2012	$170,330,307
Cost of Credit	$112,000,000
Net Revenue Generated to State 2007-2012	$58,330,307
Tax Revenue Generated Per $1 Cost of Credit (2007-2012)	$1.52

[3] For example, wages paid to "Above the Line" (ATL) talent in excess of $1 million are fully taxed by North Carolina, but are not subject to the PTI.

On set of The Shunning

- **Job Creation: Thousands of New Jobs Created by the PTI.**

The *North Carolina Jobs Plan*[4] (Economic Development Board) identified the importance of a globally competitive workforce for the state. Based on calculations of actual motion picture and television industry activity in 2012 (shown in Table 1), there was over **$391M** of total production spending in the state. The film tax credit has enabled North Carolina to maintain a nationally-recognized crew base with talented new workers entering the labor force from North Carolina's film schools in the state's public universities. The film industry in North Carolina provides **4,259** jobs at an average wage of $66,000[5] for the industry compared to a statewide annual average wage for all private industries of $43,056 (NC Labor and Economic Analysis Division, Quarterly Census of Employment and Wages, 2012) or all occupations of $41,750 (US Bureau of Labor Statistics, Occupational Employment Statistics, 2012 Annual Average Wage, May 2012).

- **Failure to Extend the PTI would cost North Carolina 4,200 Jobs and $164 million in Business Revenue.**

The failure to extend the production incentive would have a negative impact on the state. As shown in Table 3 below, the predictive model forecasts an increase in the unemployment rate, due to the **loss of 4,046 jobs** earning **$60,000** or more annually (total compensation). Although the state would pay no incentive, the industry's tax contribution would shrink to **$4.3M**, generating a net loss in state and local revenues of **$21.0M** over 2012 levels. This would also entail a net loss of over $4M in state sales tax. Further, the research predicts several other outcomes, beginning with a surge of more than **3,400** production employees and their families moving to other states. The remaining underemployed 800 workers who choose to remain in NC would have a combined loss of **$25.2M** in wages earned. There would be a **loss of over $164M in business revenue to more than 1000 small businesses** in the state, a reduction in local personal property taxes collected due to production workers moving to other states, and the expected closure of **50 or more small businesses** in Charlotte and Wilmington.

The disappearance of the PTI would result in the significant reduction of production by levels close to 90% of 2012 levels, rendering a permanent blow to the continuity of the industry in the state. Executives in the film industry interviewed concur with this assessment.

On set of One Tree Hill

Table 3 – Impact to the State of Incentive Sunset

REMAINING PRODUCTION SPENDING	$19,567,795
COST OF CREDITS	$0
NET CONTRIBUTION TO STATE & LOCAL REVENUE	$4,272,003
Net LOSS in State and Local Revenue from 2012	-$21,023,390
Net LOSS in Full Time JOBS	4046
Net migration of Film Workers to other states	3407
Net loss in earning revenue for workers remaining in the state	$25,298,460
Net revenue loss to NC small businesses	-$164,031,848
Loss of Healthcare Benefits	-$23,742,469
Loss of Employee Retirement Benefits	-$10,175,344

[4] http://www.nccommerce.com/Portals/0/Documents/AboutOurDepartment/BoardsCommissions/NC%20Jobs%20Plan%20Report_Final.pdf

[5] These estimates were obtained directly from payroll data from motion picture payroll services companies providing employment and accounting services to production companies, and not from census data or NAICS census codes. Payroll data show 5,378 individual SSN's were filed for workers in the industry (which does not include extras), while the NC Film Office shows that 4,561 crew and 1,661 actors. Because of the movement of workers in and out of the state, our model suggests that a conservative estimate of 4,259 workers earning $60,000 or more (total compensation) is reasonable. Of this amount, 90% of jobs would disappear (4,046) and 60% (3,407) would be assumed to move (see Chapter 4 for more detail). The estimates represent the only study of the film industry ever to estimate job impact using direct payroll data from all productions in the state in a single fiscal year. Further details are in Appendix 3.

Jennifer Lawrence stars as 'Katniss Everdeen' in THE HUNGER GAMES. Photo by: Murray Close

■ Extending the PTI Would Result in Continued Expansion of the Industry in North Carolina, and Its Resultant Benefits.

The predictive model in Table 4 shows a significant benefit to the State associated with extending the production incentive program. Empirical survey results and cost model projections suggest that the long-standing advantage of the motion picture and television industry will provide a foundation upon which to grow this sector of the economy to **$587M**, which would begin to rival the size of the industry in Georgia **($880M)**. This industry would generate over **$128.1M** in revenues back to the state on a production credit of **$90.2M**, with a net positive (conservative) contribution to state and local revenues of **$37.9M** annually, (a net revenue to the General Fund of **$7.8M**). Most importantly, the size of the industry would grow to almost 31,000 workers, with over 6400 of those in full time production jobs, and new capital deployment and sound stages. This would result in the net creation of over 1800 new jobs opportunities in the state, and generate a net revenue growth of over **$86M** to small business owners in North Carolina.

Based on the analyses above, the industry jobs created by the PTI cannot be considered "temporary" in nature, but in fact are the primary source of full-time employment income for over 4200 individuals in the state. A majority of motion picture and television workers in the industry are technical professionals who rely on location production projects for full-time employment, are home-owners, married and have children in public schools, and pay income and property tax in the state. Most have college educations and have been employed in the industry for 15 years or more.

All of these findings can be validated against Department of Revenue production credit filings, as well as individual W-2 tax returns for individuals working in the industry or in small businesses.

The remainder of the report explores how North Carolina competes against other states with film incentives, through development of a "scorecard" that not only compares North Carolina's current production environment to that of other states, but also what that comparative environment would be if the North Carolina PTI were eliminated. Details on the methodology employed in the appendices of this study and a discussion of why the supply chain approach provides a fuller perspective to better inform decision-making for policy makers also are included.

Applying an economic process model used widely in the business world, this supply chain economic impact study provides a bottom-up net cost-benefit analysis of the value to the state and local communities of North Carolina's film and TV production tax incentive. Supply chain analyses examine production from procurement to delivery, providing a broader perspective of total economic value and impact. In the case of motion picture and television production—which is unlike any other industry—this approach yields a more accurate measure of the resulting flow of funds, goods, services, employment, wages, and taxes paid. It therefore presents a more reliable assessment of North Carolina's significant positive economic return on the state's investment in its film production tax incentive.

Table 4 - Annual Impact if Film Incentive Renewed

FILM PRODUCTION SPEND	$587,033,864
FILM CREDIT	$90,217,004
CONTRIBUTION TO STATE & LOCAL REVENUE	$128,160,092
NET CONTRIBUTION TO STATE AND LOCAL REVENUE	$37,943,089
NET CONTRIBUTION TO GENERAL FUND	$7,812,073
Total Workers	30986
Size of Fully Employed Workforce	6389
Net migration of Film Workers to NC Industry	1877
Net revenue growth to NC small businesses	$86,332,552
Growth in Healthcare Benefits	$39,570,782
Growth in Employee Retirement Benefits	$16,958,907
New capital expenditures	$50,000,000

On set, The Shunning

CHAPTER 1

NATIONAL TRENDS IN THE MOTION PICTURE AND TELEVISION PRODUCTION INDUSTRY AND THE ROLE OF STATE PRODUCTION TAX INCENTIVES

In December 2013, the North Carolina Economic Development Board issued the *North Carolina Jobs Plan* that identified recommended strategies for economic growth for North Carolina for 2014-2024. In that plan, film was identified as an industry within one of the state's 10 targeted growth clusters. The Board recognized that film is an industry with above average wages and projected growth that North Carolina should attract, retain and expand. The film tax credit enables North Carolina to achieve this goal. Additionally, the Economic Development Board identified the attraction of the creative class as one of its major goals for North Carolina. The film industry in North Carolina constitutes a major component of the state's creative workforce and can help attract other creative talent to the state as well as enhance North Carolina's brand.

The North Carolina job plan also recognizes the importance of creating "industry clusters," as many of the state's traditional industries have shed jobs. The need to develop and align state policy to support targeted industries that attract jobs and retain workers and provide a positive return on public investment is at the heart of the *North Carolina Jobs Plan*.[6] This report supports the notion that public investment in the motion picture and television production industry aligns with the requirements outlined in the plan.

As an initial matter, it is important to understand the dynamics and nature of the motion picture and television production industry. The industry is growing rapidly, so there are reasons why the state of North Carolina would want to continue to maximize its advantages and its foothold in an industry with an excellent growth trajectory. The proliferation of television channels has required companies to push more content to cable and over the Internet in what has become truly a global market. This has substantially increased the production of content, with many companies now broadcasting via multiple channels of web streaming, movie theaters, and television screens to satisfy and reach the users and customers of this intellectual property content.

In fact, demand for content has resulted in an explosion of film, video, digital media, television production, with multiple parties competing to produce content for television, film, video, digital media and web streaming as well as new emerging multi-content distribution channels. The industry is entering an incredible growth cycle—and not just yearly cyclical growth—due to a rapid expansion of the number and variety of channels of distribution, and the resultant demand for new content. These factors have created opportunities for governments to create economic growth for their local communities and jurisdictions.

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[6] North Carolina Jobs Plan, North Carolina Economic Development Board, Recommended Strategies for Economic Growth, 2014-2024, December 2013.

A Supply Chain Study of the Economic Impact of the North Carolina Motion Picture and Television Industry

Jodie Foster, Dangerous Lives of Altar Boys, Wilmington

Motion picture and television production does not function as a traditional "rust-belt" industry that is fast disappearing in the US economy. The North Carolina and national economies have gone through a massive shift as a result of the outsourcing of manufacturing jobs and the dramatic impact of the 2008 global economic recession. Today, an increasing amount of work performed in North Carolina and other states involves highly skilled, technical specialists that work from home as freelance project workers. These workers move from one short-term production employment engagement to another with no fixed company affiliation, and are employed based on their professional reputation and work history. This trend is being driven by the move towards a truly global economy, which relies more on localization of supply networks, project-based technology work flows, and industry clusters that drive specialized skills in regional pockets.[7]

Any state policy to expand motion picture and television production must recognize the fact that producers take a risk when they fund a project in North Carolina or any other location, as there is no guarantee that a feature film or a television series will provide a syndication revenue stream or will ever be profitable.If they are profitable, it may take five years or more before a breakeven point is reached. For this reason, production costs and budgets are a critical component of the production investment decision. With the growth of incentive programs globally to not just Canada, but the United Kingdom, Australia and New Zealand, there is much more competition for where studios can cost efficiently produce their content.[8] Many of the incentive regimes operate through the tax code, and many foreign governments have sought to expand a tax regimen incentive. This is a major shift in the industry that will not change, despite claims that some states are "dropping incentives".

Katniss Everdeen (Jennifer Lawrence) and Gale Hawthorne (Liam Hemsworth) in THE HUNGER GAMES.

Supported by the PTI and by a strong presence of film production professionals in the state, investment in North Carolina by the industry has grown significantly in the last five years, peaking at $391M of spending in the state in 2012.[9] These funds have created a strong base of production professionals, infrastructure-related businesses, and thriving hotels and small enterprises that rely on the industry for a major part of their business revenue. This growth has transformed North Carolina into one of a handful of states targeted for major investments by the largest film studios, with $1.02B in total operating spend by the industry between 2007-2012, versus $103M in film credits released by the state. The $33B motion picture and television business is thriving, particularly with the growth in cable television shows such as *Homeland*, *Eastbound* and *Down and Under the Dome* that is continuing to remain stable in the years ahead.[10]

North Carolina is not alone: a majority of states continue to use production credits, and the application of these credits as a means to incent film investments is increasing. The top production incentive providing states include Georgia, New York, Louisiana, and Illinois, with more and more productions shifting away from California. States approved or allocated $1.5B in incentives in 2012.[11]

[7] See for example Sheffi, Yoshi, "Logistics Clusters: Deliverying Value and Driving Growth", MIT Press, 2012. Handfield, R., Straube, F., Pfohl, H, and Wieland, A., "Global Logistics Trends and Strategies", BVL International, April 2013.

[8] As of the reporting of this report, incentives exist in UK, Northern Ireland, the Republic of Ireland, Hungary (one of the top incentives in the world), the Czech Republic, France, Australia and New Zealand, Malaysia. Other incentives are also beginning to emerge in Thailand, Morocco, Italy, Spain, Germany (feature films) and Columbia. Film incentives are continuing to expand across the world.

[9] The North Carolina Film Office reports $391M of spending in 2012. The DOR is still in the process of validating all qualified spending, with the final 2013 report as of 11/5/2013 stating $308M of qualified spending for calendar year 2013. http://www.dornc.com/publications/incentives/2013/01film_credits_12summary.pdf.

[10] BISWorld Industry Report 51211a Movie & Video Production in the US.

[11] http://eeditionmobile.latimes.com/Olive/Tablet/LATimes/SharedArticle.aspx?href=LAT%2F2013%2F12%2F26&id=Ar00101

Above: On Banshee set.
Photo by Fred Norris/Cinemax
At right: On set of Dawson's Creek.

CHAPTER 2

HOW IS NORTH CAROLINA EVALUATED AGAINST OTHER STATES?

Any discussion of role and effectiveness of the North Carolina PTI must begin with a discussion of the overall production environment in the states against which North Carolina competes for production investment.

Although there are approximately 40 states that currently have production incentives, a recent article in the Los Angeles *Times*[12] suggests that New York, Illinois, Louisiana, Georgia and North Carolina are increasingly being considered as alternatives to production in California. Following is an overview of the industry environment in those states, as well as neighboring South Carolina.

Georgia

North Carolina, South Carolina, and Georgia entered the production incentive competition around the same time, and were initially grouped together in a partnership as "incentive states," with early versions of the programs emerging in 2005. Georgia initially adopted a much more aggressive and diversified approach, targeting new media, gaming, music, and new entertainment productions. The initial focus in Georgia was to elevate Atlanta as a "creative class" cluster economic model. Initially, there was always a free flow of production crews between these three states, the theory being that "a rising tide raises all boats".

During the 2007 fiscal year, the economic impact of the film, television and interactive entertainment industries in Georgia was $242 million. This has grown to $689.3M in 2011 and 879.8M in 2012.[13] Hollywood producers, film studios, and other industry affiliates invested $3.1B in the state based on the tax credit.[14] Virtually all that growth can be traced back to the passage of House Bill 100, and the refinement and stability of the tax incentive by the current Governor Nathan Deal (R-GA) and legislature, offering attractive tax incentives to film, television and entertainment projects shot, produced or built in Georgia. Lee Thomas, director of the Georgia Film, Music & Digital Entertainment Office—a division of the Georgia Department of Economic Development, said the real impetus to pass that bill occurred when Georgia lost the film project Ray—the movie about Ray Charles, the singer who turned the song "*Georgia on my Mind*" into the state song—to Louisiana.[15]

Georgia has a transferrable tax credit, which means it has to be used by a Georgia-based company to offset their tax liability. The film studio may and often does "sell" the credit to a local taxpayer, often brokered by a third party. In terms of net financial terms a 30% credit is approximately equivalent to a 25% refund, after the brokerage fees are considered.

Since 2008, more than 70 entertainment industry companies have located in Georgia, and there have been 11 soundstage announcements. As Georgia's physical infrastructure has grown, so has its skilled labor. According to a recent interview, Georgia can provide crews for up to 10 to 11 projects simultaneously.

One of the particular trademarks of the Georgia incentive program is the "Georgia peach" logo shown in the ending film credits. Productions earned a 10% additional credit on the incentive simply for showing the peach in the credits. The 30% total credit (which includes the "peach") is transferrable, meaning that corporations that are already participating in and taking advantage of the Georgia state tax code are able to purchase the credits from production companies and further reduce their tax burden.

Many of the crews in Georgia are from out of state, including many of the production workers from North Carolina who are seeing decreased demand as a result of the potential elimination of the North Carolina incentive.

[12] http://eeditionmobile.latimes.com/Olive/Tablet/LATimes/SharedArticle.aspx?href=LAT%2F2013%2F12%2F26&id=Ar00101

[13] http://www.georgia.org/about-us/gdecd-annual-report/

[14] http://www.georgia.org/industries/entertainment/georgia-film-tv-production/

[15] http://saportareport.com/blog/2013/09/giving-away-tax-incentives-for-film-television-is-gift-that-keeps-on-giving/

Banshee set. Photo by Fred Norris/Cinemax

South Carolina

In 2007, South Carolina was surging ahead of Georgia and North Carolina due to a competitive incentive program, that provided 20% refunds on all wages and 30% on all goods and services. However, by 2010, productions in South Carolina had waned. The primary reason for the reduction in production investment is the annual renewal of the South Carolina incentive. This reliance on an annual government decision represented a highly uncertain environment for film and television production accountants. The uncertainty made this a less attractive place for television series to locate given the uncertainty. Creating stability of the incentive is an important feature for any film and television incentive. In 2013, South Carolina began to rebuild their program. Now they are building up the crew base, using the same formula of 20% refund on wage and 30% on goods and services, but with an additional premium refund of 5% for South Carolina resident hires.

Liam Hemsworth stars as 'Gale Hawthorne' in THE HUNGER GAMES. Photo by: Murray Close

Louisiana

Production employment in Louisiana increased between 2001-2007 at a compounded annual growth rate of approximately 22 percent, compared to a national growth rate of about 2 percent annually for the same time period.[16] The 2009 impact data were lower than those in 2008, due in large part to the result of the uncertainty of the direction of the production tax incentive legislation, which was made permanent that year.

One year after enactment of the tax incentive program, the state realized an economic impact from productions over $100 million, a dramatic increase from the more recent average which was closer to $20 million. Small sound stages and studios have been popping up every year. A total of 1,066 motion picture and television productions were filmed on location in Louisiana, leading to the establishment of more than 450 related businesses. As of 2011, 15 soundstages were operating and the local crew base was large enough to produce 10 projects at the same time. As noted above, Ray, which won several Oscars awards, was one of the first major motion picture productions to locate in Louisiana as a result of the tax incentive program. The script did not call for a Louisiana location, but the majority of principal photography was completed in the state.

Since 2007, the major motion picture studios alone paid an average of $71.7 million per year to local vendors in Louisiana. Production expenditures for member companies were $474 million in 2008, $361 million in 2009 (70 projects), and $674 million in 2010 (100 projects). These expenditures produced an estimated annual total economic impact of $812 million in 2008, $593 million in 2009, and $1.1 billion in 2010. In-state production expenditures for 2011 were $1.4 billion, according to Louisiana's Office of Entertainment Industry Development. In 2010, Twilight Saga: Breaking Dawn (parts 1 and 2) spent four months shooting in Baton Rouge, spending more than $98 million into the local economy.[17]

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[16] Louisiana Economic Development Office of Entertainment Industry Development and Legislative Fiscal Office 2011 Annual Report

[17] Louisiana Economic Development Office of Entertainment Industry Development and Legislative Fiscal Office 2011 Annual Report

Iron Man

www.euescreengemsstudios.com

In general, research suggests that Louisiana has a very competitive incentive, but a limited major sound stage infrastructure and a limited crew base. In this respect, the state cannot compete with the quality of the infrastructure in North Carolina, and productions in the state rely largely on non-Louisiana based crews (increasing travel-related costs for the production). The state is largely dependent on its incentive to attract motion picture and television production companies, which it has successfully been able to do.

"Productions in Louisiana are largely dependent on shooting in several warehouses, which is awkward. You have to shoot around columns and have to go from warehouse to warehouse, which poses a lot of disadvantages. One of the reasons Ironman liked being in North Carolina is that they could have it all in one place. The scale of how they piece these productions together in a sequence means that they often shoot scenes that are totally out of order (e.g. the third act is filmed on the second day), and the pieces are assembled later. The level of sophistication on the sets in North Carolina, given the investments they are making is what makes North Carolina stand out as a location. In their words, "we are on a campus that is first rate, with robust connectivity, that allows us to upload our encrypted digital files back to Los Angeles. Our executives are able to see the progress in a secure environment, and production directors have sophisticated manufacturing technologies at their fingertips in our studios"

—Production Studio Executive

Illinois

Illinois has a strong history of film and TV production in the state, and in this respect, has a history that is very similar to North Carolina's. The state (particularly the Chicago area) has multiple generations of film technicians available, a high number of film and TV production vendors with experienced staff providing high levels of service, and a city with a highly cooperative local government for location rentals. The attractiveness of the state as a location for production has increased recently, with the removal of the sunset provisions of their incentive laws Eight full one-hour series began shooting in Chicago a in 2014, with more coming later in the year.

New York

The New York State Film Production Tax Credit was enacted in August 2004 with applications commencing November 1, 2004. Originally the program granted a Credit equal to ten percent of qualified "below-the-line" expenditures, defined as production expenses incurred in New York State, excluding the cost of talent, directors, producers, writers and story acquisition rights. In 2008, the credit was increased to cover 30 percent of qualified below-the-line expenditures. While the multi-year availability of funding for this credit was uncertain during the initial years, legislation enacted in August 2010 created an additional pool of funding for the credit, allocating $420 million annually to the program from 2010 through 2014. Since that time, the natural appeal of the city through television shows such as *Sex in the City* and police dramas has led to an explosive growth of infrastructure, crew, equipment, skill level, and locations that are second to none. However, there are some challenges of working in New York City including traffic, congestion and local regulations. The costs of production in New York City can also be higher; thus, the benefits of the incentive are offset by the cost of production, but the appeal of filming in New York is nevertheless a key component of the story for many scripts.

Above: On Banshee set.
Photo by Fred Norris/Cinemax

At left: Jennifer Lawrence on the set of THE HUNGER GAMES.
Photo by: Murray Close.

CHAPTER 3

MAKING THE LOCATION DECISION: A SCORECARD MODEL.

Financial executives selecting production locations during the budgeting process routinely consider a number of factors in addition to production incentives when making the decision on where to locate a production. What are these criteria, how are they “weighted” by production executives, and how well does North Carolina rate relative to competing states?

Critical Criteria

1. Crew Development.

Producing a movie or television series in a location where production crews must be brought in from out of state is an expensive proposition.   There is the consideration of having to pay for lodging and per diem costs, but also the difficulty of pulling together a crew from multiple locations to a location that has no existing capability. Crew development is also a function of a firm’s prior experience with production in a location. If they have had a good experience with a particular crew, there is a much higher likelihood that they will select that crew in the future.

2. Infrastructure

A second consideration is whether there is local infrastructure available to support the production of the project. Although sound stages such as EUE Screen Gems is certainly an important element of infrastructure in North Carolina, it is important not to overlook the availability of secondary businesses that provide many of the services, amenities, and rental components that go into a film production. Production companies do not by definition own a lot of assets (as they go out of existence at the completion of production), and when a production goes into a location, an enormous portion of the budget involves renting equipment, props, scenery, furniture, etc. Also, there is a need to purchase consumable materials such as lumber, construction products, paint, appliances, and countless other products and services that are required for development of the set.This is an entire set of purchases that are not captured in payroll numbers, but are real inflows of funds into the state that are often not considered in film incentive discussions. In North Carolina, there are several businesses that do nothing but arrange for television or movie production rental equipment dedicated solely to the film industry, and provide a substantial revenue stream into the state. For the most part, the individuals interviewed emphasized how they typically procure most of their products and services with small local companies, to ensure that they are making the greatest impact to the community.

> ***“As a set dresser, I am involved in buying and contracting with local providers to ensure that we have the right presentation on the set. If I need carpet, I will contract this out to carpet layers. If I need to move a baby grand piano, I will contract with a moving company. Today, I have three purchase orders in my hand to and I will be shopping this afternoon. I will be spending $1000 on hardware, and it is my mission to go to a local Ace Hardware and drop $$500 to $1000 at that store. Tomorrow I will go out and do more shopping, until I find all of the items I need for the set. Over time, I have developed a whole knowledge base of local businesses that carry items that are difficult to find. For example, I purchased a set of old avocado-colored appliances for a set that needed to look like a 1970s kitchen. I found these at an antique dealer, and I will probably sell the items back to the dealer for pennies on the dollar when we are through with it.”***
>
> ***—Set Dresser***

The presence of local infrastructure (competent local crew and dedicated sounds stages) directly affects the financial analysis of the location because such local infrastructure avoids the high costs of bringing in crews from out of state and paying them a

Josh Hutcherson stars as 'Peeta Mellark' in THE HUNGER GAMES. Photo by: Murray Close

Photo courtesy of Mike Hewett

Night set of One Tree Hill

high per diem for food and lodging. Per-diem costs can run approximately $100 a day, plus hotel costs for crews that are out of state. On a major production, this can quickly add up to $8—$10M of excess cost. It is also important not to overlook the more than 1300 film students graduating from NC film schools that will go to other states if the incentive disappears.

3. Production Tax Incentives

As noted, the production incentive is an important component of the financing decision. There are several parts to the incentive that are also relevant, including whether it is refundable or in the form of a tax deduction, caps on salaries that may exist, and the stability of the incentive over a period of time. There are definite tradeoffs associated with the size of the incentive and these other factors. These are described in the comparative analyses for Georgia, Louisiana, Illinois, New York, South Carolina, and North Carolina described next, with a summary of the incentive structures for the states in Table 5 shown below.

Table 5 - Comparison of Production Tax Incentives in Competitor States

Parameters		NC	GA	LA	NY	IL	SC
Income tax credits	Refundable	YES	NO	NO	YES	YES	YES
	Transferable	NO	YES	YES	NO	YES	NO
Sales and Use Tax Exemption		NO	YES	NO	YES	YES	NO
Cap per Project		$20 Million	No Cap	No Cap	No Cap	No Cap	YES
Compensated Cap per Individual		$1 Million	No Cap	No Cap	No Cap	No Cap	YES
Carry Forward (years)		0	5	10	0	1	1
Minimum Spend Amount		$ 250,000	$ 500,000	$ 300,000	$ -	$ 250,000	$ 250,000
Loan Out Withholding/ Registration		Yes 4%/ No	Yes 6%/ No	No/ No	No/ No	Yes/Yes	Yes/Yes
Screen Credit Required (Yes/ No)		YES	YES (to receive 10% kicker)	YES	YES	YES	YES
Type of Auditing (In-house Vs Outsource)		NC DOR DOES AUDIT FEE FREE	DOR $55/hour	Out Source	IN HOUSE FILM CREDIT OFFICE FEE	STATE DOR	STATE DOR
Sun-set Date (If it is lesser than 3 years, the rating of the city		1-Jan-15	None	None	None	None	None
Time Taken for Production to Receive Tax Credit		20 to 30 days after filing	30 days due to transfer	30 days due to transfer	1 to 3 months after audit id reconciled	30 days after filing taxes	30 days after filing taxes

Above: On set of One Tree Hill

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A number of notable points emerge from a review of Table 5, including:

- A refundable credit is viewed positively by the industry, even though the credit percentage is slightly less than Georgia and Louisiana percentages where the credit is transferable.
- The $20M cap on productions and $1M on highly compensated individuals is viewed negatively by the film industry, even though NC does not have a cap on television productions.[18] This cap discourages the production of high dollar "tentpole" productions like Iron Man 3 and Hunger Games in North Carolina. (The most recent Hunger Games series was filmed in Georgia).
- North Carolina taxpayers benefit by having the Department of Revenue produce an independent and efficient audit, separate from the Department of Commerce or the studios. The studios are in agreement that the audits have been fair and even-handed and have the independence of a state certified outcome.
- The complete absence or temporal remoteness of sunset dates for tax incentives offered by North Carolina's direct competitors is a major advantage for those states.The sunset date is a major problem for North Carolina, as the threat of eliminating the PTI is already affecting production decisions.

4. Adjustments Based on Relative Prices

Film executives typically compare production costs of filming in Los Angeles to similar costs in other locations. One document reviewed[19] identified the following disparities in production costs between locations before and after incentives were taken into consideration, shown in Table 6 below. The chart illustrates the important role that film incentives play in the financial analysis that occurs in the industry.

Table 6: Costs of Filming in Different Locations (Before and After) As a Result of Incentives

State	Before Incentive	After Incentive	Differential
North Carolina	6-9% Higher	8-11% Lower	14-20%
Georgia	8-11% Higher	8-11% Lower	16-22%
Louisiana	8-11% Higher	10-13% Lower	18-24%
UK	16-29% Higher	2-5% Lower	18-34%
Illinois	5-8% Higher	9-12% Lower	14-20%

[18] Note that the cap does not eliminate the production or talent from taking any credit, but limits the credit to an amount capped at $20M/$1M.
[19] This analysis was shared by a production studio that wished to remain anonymous.

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A Supply Chain Study of the Economic Impact of the North Carolina Motion Picture and Television Industry

The "Scorecard": A Comparative Summary of How North Carolina Rates Against Its Competition.

Figure 2 is a "scorecard" of the factors a production executive might consider when deciding whether to make a production in North Carolina versus Georgia, South Carolina, Louisiana, Illinois or New York. These factors will vary based on the type of production and changes in production incentives amongst the several states.

Although movie and television production studios do not explicitly employ this methodology, it is used here as a means of expressing how studios might evaluate different locations for a given production. As noted by one film executive:

"We tend to do this type of chart instinctively, not analytically. The way that I get money back isn't the leading issue, but we tend to look at how much the incentive is, and then creatively take into account what the story is about, what infrastructure is available, what the filmmakers want, and try to combine the creative elements with the other structural elements. But 95% of the issues are captured in this scorecard."—Production Executive

Figure 2 – Scorecard Evaluating State Film Production Criteria

Category	Weight	Subweight	Score (Weighted)					
			NC	GA	SC	LA	IL	NY
1) Crew Development	20		**15**	**14**	7	**11**	**15**	18
(i) Presence of Local Crew		7	5	4	3	4	5	6
(ii) Capacity & Availability of Crew		6	4	3	2	3	5	6
(iii) Capability and Prior Experience		7	6	4	2	4	5	6
2) Infrastructure	30		**24**	**22**	15	**20**	**23**	24
(i) Tailored to Production Needs		6	5	4	3	3	5	2
(ii) Facilities, Sound Stages, Vendors		6	5	2	1	3	4	5
(iii) Availability of Turnkey Production Facilities		6	6	5	4	5	6	6
(iv) Ease of Working w/ Local Jurisdiction		6	5	3	4	3	4	1
(v) Understanding of our needs		6	5	4	3	3	4	1
3) Production Incentive	50		**34**	**48**	33	**48**	**39**	49
(i) Relative amount of incentive		20	19	19	15	20	15	20
(ii) Production and Individual Cap		20	5	20	10	20	15	20
(iii) Refundable Credit		5	5	4	4	4	4	4
(iv) Professionalism of State Film Office		5	5	5	4	4	5	5
Total Score	100	100	73	84	55	79	77	91

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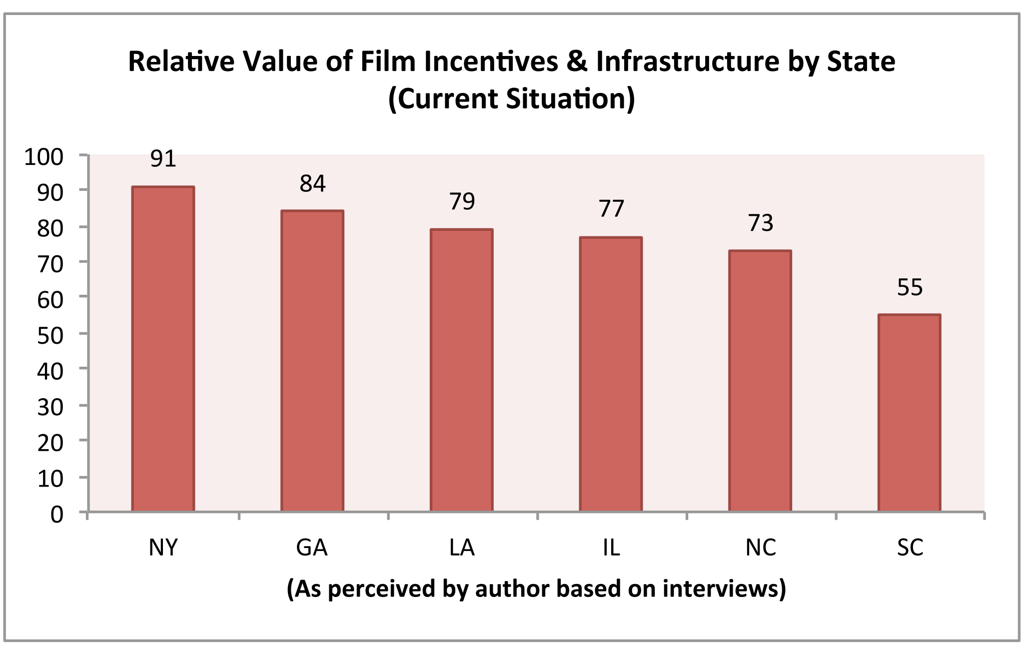
A Stable and Experienced Crew Base Give North Carolina an Advantage Over Competitor States

"North Carolina invented runaway production 20 years ago, when studios began leaving New York and Hollywood to come here. We learned our craft from the best in the world, and there is an entire industry here with a world-class filmmaking reputation, and the studios know that. The quality of our crews is well known, and we are at least 5 crews deep in Wilmington, and 3 crews deep in Charlotte, and studios understand that there is a professional standard that you will find in North Carolina that makes us one of the best places to produce films."—Production Designer

A summary of the evaluation criteria scores for each state is shown in Figure 3. In terms of this comparative assessment, North Carolina is disadvantaged other states in the eyes of production studios. This is despite the fact that North Carolina has comparable or superior scores when it comes to the depth and experience of workers and existing infrastructure. The scores developed in the initial scorecard development for the states of North Carolina, Georgia, South Carolina, Louisiana, Illinois, and New York is shown in Figure 2, using an approximation of the scores as evaluated based on interviews conducted during this study. Interviews with production crews we carried out in the course of this study reveal that North Carolina has a marginal advantage over many other locations in the category of experienced film production crews. First, North Carolina has a solid domestic workforce and infrastructure due to the Wilmington sound stages, and the number of people who have made their living in North Carolina around this facility. However, the $20M cap on production incentives and $1M on highly compensated individuals impacts North Carolina's score, all other things being equal. (These scores are in no way representative of a single production decision, which are highly variable based on a number of different criteria.)

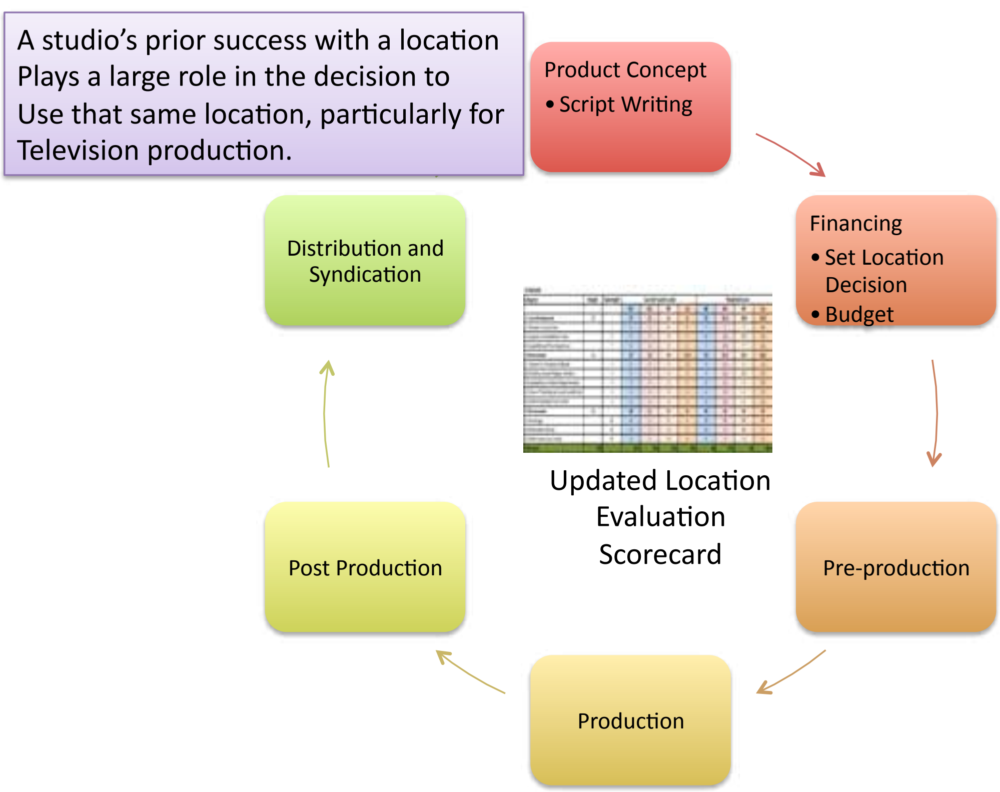
Figure 3: Relative Value of Film Incentives & Infrastructure by State (Current Situation)



A Final Thought: The Commitment to Film in a State Increases the Likelihood That Additional Films by the Same Production Company will be in the Same State.

There is a high probability that successive films will be shot in the same location, as financial decisions that lead to a proven formula for success can apply to other films in the portfolio. As such, a tax incentive in one state will often lead to other films being made in that state. Bringing one movie project to a successful end is difficult enough, but most studios are, at any given time, dividing their attention across a number of projects in various stages of development and across types. It is difficult to obtain reliable data, but according to a comprehensive database, as many as 27 film production projects may be in the production company pipeline during any period. As shown in Figure 4 below, the decision to locate a film in a location is a function to some extent of the success experienced during the prior production cycle that occurs in that location. This is a cyclical decision pattern, based on the on-going assessment of the current industry incentives, film production crew infrastructure, etc. The film evaluation scorecard plays a central role in determining the on-going location decision, as the environment is shifting and evaluated by film industry executives.

Figure 4: Production Value Chain Decision Cycle



Jennifer Lawrence stars as 'Katniss Everdeen' in THE HUNGER GAMES. Photo by: Murray Close

CHAPTER 4

THE PESSIMISTIC SCENARIO: THE IMPACT OF ENDING THE NORTH CAROLINA PRODUCTION TAX INCENTIVE.

"If the incentive goes away, so will we. We are extremely mobile, especially on a production where our budgets are over $100M. If the funding stopped, we would stop making films in that location. I am certain we would not come back to North Carolina ever again." —Production Executive

We value the state because of its sound stages and crews that provide a lot of production value as well as the ease and welcoming environment fostered by its residents. As a studio, we are interested in keeping the incentive alive. If the incentive were to go away, not only would the state lose out on consideration for future projects, but we would also likely move our current productions out of state because we simply can't afford to stay. We produce a variety of shows, both for network and cable television, and the finances are such that we can only film in tax friendly states and Canada." Studio Production Executive

"NC has finally made it to the top! They are landing productions like Hunger Games and Iron Man 3 and it has taken them so long (20 years) to build this industry. And now some are ready to let it go if they let this program sunset. It goes without saying that you don't build an industry overnight. The process of building the crew base and the infrastructure has happened over years and years. The industry will immediately leave if this incentive sunsets, and all the people in the industry who have to feed their families will be forced to set up shop elsewhere." —Production Executive

The current production location decision is driven primarily by state tax incentives to lower production costs and other supporting infrastructure elements that can reduce the initial investments in production. Figure 5 and Figure 6 below provide an approximate representation of how film production studios would view North Carolina as a production location if the incentive were not renewed. The scorecard in Figure 5 demonstrates the significant

Figure 5 – Film Scorecard if Incentive Allowed to Lapse

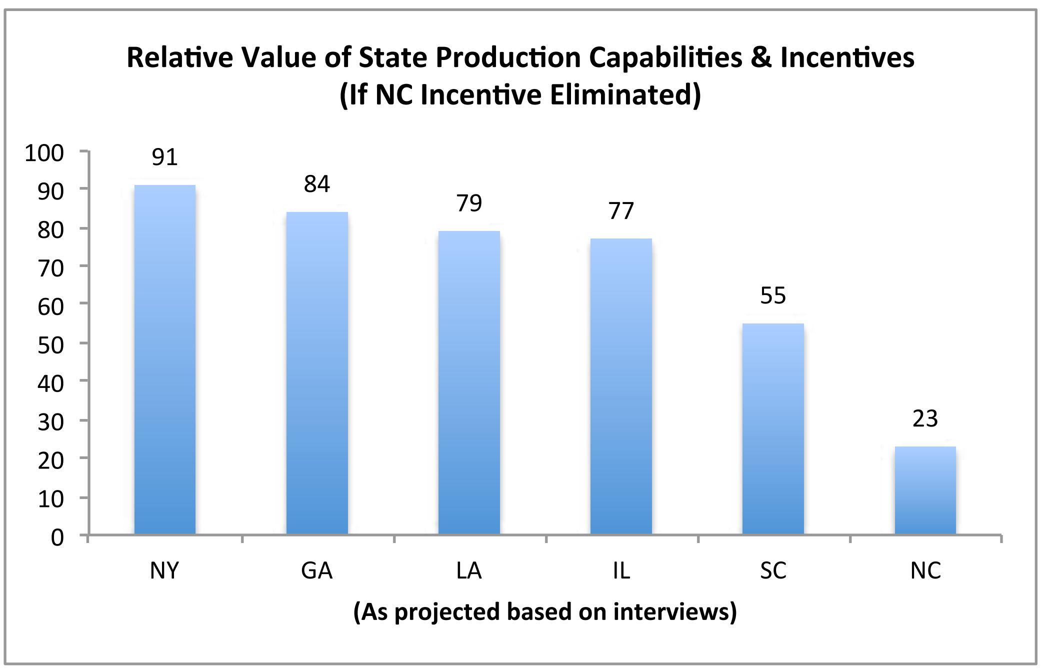
Category	Weight	Subweight	Score (Weighted)					
			NC	GA	SC	LA	IL	NY
1) Crew Development	20		**6**	**14**	7	**11**	**15**	18
(i) Presence of Local Crew		7	2	4	3	4	5	6
(ii) Capacity & Availability of Crew		6	2	3	2	3	5	6
(iii) Capability and Prior Experience		7	2	4	2	4	5	6
2) Infrastructure	30		**12**	**22**	15	**20**	**23**	24
(i) Tailored to Production Needs		6	2	4	3	3	5	2
(ii) Facilities, Sound Stages, Vendors		6	2	2	1	3	4	5
(iii) Availability of Turnkey Production Facilities		6	1	5	4	5	6	6
(iv) Ease of Working w/ Local Jurisdiction		6	4	3	4	3	4	1
(v) Understanding of our needs		6	3	4	3	3	4	1
3) Production Incentive	50		**5**	**48**	33	**48**	**39**	49
(i) Relative amount of incentive		20	0	19	15	20	15	20
(ii) Production and Individual Cap		20	0	20	10	20	15	20
(iii) Refundable Credit		5	0	4	4	4	4	4
(iv) Professionalism of State Film Office		5	5	5	4	4	5	5
Total Score	100	100	23	84	55	79	77	91

Fred Norris/Cinemax

Revolution © Warner Bros. Entertainment Inc. All Rights Reserved.

impacts on the scoring mechanism for not just the incentive part of the scorecard, but to the infrastructure (due to closures) and the workforce (who would move to other states). As shown in Figure 6, the total net impact of non-renewal would be that production in North Carolina would no longer be economical compared to other locations, and as such, the relative advantages of filming in North Carolina would disappear. Despite the appeal of the state's geography, economics will always win, especially with states next door that have appealing incentives.

Figure 6 – Total Score if Incentive Sunsets



The economic recession and investor reluctance to invest in projects in times of changing distribution channels and consumer preferences has increased the importance of production incentives in improving the economics of the investment decision to the point where it may be "first among equals."

In short, the disappearance of the movie and TV production incentive would result in a significant reduction of production by levels close to 95% of 2012 levels.

If the production incentive disappears, the economic section of the scorecard drops to zero, with a resulting major impact on the budget associated with production in North Carolina. In addition, production of television series that have a reputation for seeking a stable location with multi-year filming sequences will select other locations. Interviews and data also showed definitively that

Above: On set of Iron Man.
At left: www.euescreengemsstudios.com

workers in the industry would need to move to other locations such as Georgia where they could make a living, and sell their homes in North Carolina. This would also reduce the attractiveness in the "Crew" category. Finally, it is likely that sound stages, rental companies, and others would shut down, and the infrastructure category would also be affected.

Impact on State and Local Revenue of Eliminating the Production Tax Incentive

The first major impact identified by the film incentive is a net reduction in state and local tax revenue of more than $21M. The analysis in this study and interviews of industry executives make it clear that if the incentive goes away, so do the productions. Two scenarios were modeled: a pessimistic scenario in which the PTI was allowed to expire, and an optimistic scenario that assumed extension of the current PTI.

In the pessimistic scenario, it was assumed that movie and television production drops to five percent (5%) of former levels, with the result that income taxes, hotel room taxes, sales taxes, and tier 2 supplier purchases associated with film production also drop by 95%. More importantly, the number of employed individuals in the state will drop with at least 4000 fully employed individuals forced out of work and at least 75% of that workforce (3400) that will be forced to migrate to where the work is, and relocate to other states. This will further impact the already high unemployment rate in the state. Of those who remain, our survey analysis reveals that these workers expect their take home pay to fall by 40% or more, leaving a net shortfall in salary of $25M to those who elect to remain in North Carolina. The net impact to state and local revenue will be a net shortfall of $21.0M over 2012 in state and local tax revenue, as well as a loss of over $164M of taxable corporate income taxable revenue to local NC small businesses. This is summarized in the Table 7 below.

Table 7: Net Loss in Earnings for Workers Remaining in the State

REMAINING PRODUCTION SPENDING	$19,567,795
COST OF CREDITS	$0
NET CONTRIBUTION TO STATE AND LOCAL REVENUE	$4,272,003
NET LOSS IN STATE AND LOCAL REVENUE FROM 2012	-$21,023,390
NET LOSS IN FULL TIME JOBS	4046
NET MIGRATION OF FILM WORKERS TO OTHER STATES	3407
NET LOSS IN EARNING REVENUE FOR WORKERS REMAINING IN THE STATE	$25,298,460
NET REVENUE LOSS TO NC SMALL BUSINESSES	-$164,031,848
LOSS OF HEALTHCARE BENEFITS	-$23,742,469
LOSS OF EMPLOYEE RETIREMENT BENEFITS	-$10,175,344

Banshee: by Fred Norris/Cinemax

On set of One Tree Hill

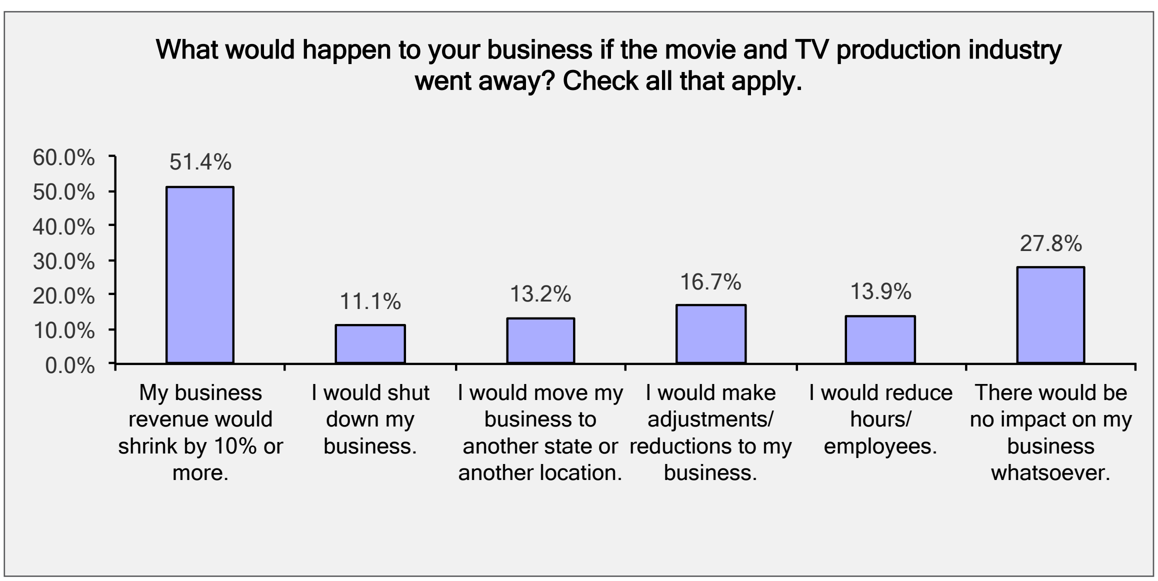
Revenue Loss Adversely Affect Small Business

This view is confirmed by the supplier survey (n=240), shown in the figure below. Over half of suppliers surveyed stated that their business revenue would shrink by 10% or more, and in the case of 13% of suppliers, their businesses would be shuttered permanently. It is also clear that there would be secondary impacts on tier 2 labor rates, and that unemployment levels would increase, with fully 17% of business stating they would need to make adjustments and 14% would reduce hours or lay off employees.

North Carolina Production Industry Workers Relocate to Surrounding States

Another serious impact would be the flow of workers out of the state. Almost two-thirds (61%) of the 1100 workers surveyed and who are currently fully employed in the state have stated they would move to another state.[20] This would have deleterious effects on the property market in affected areas like Wilmington and Charlotte. Another 23% of workers would resort to being "under employed", taking local jobs paying significantly lower salaries. Of the workers who said they would move, the majority (60%) would move to Georgia, a state with an expanding local film industry (Figure 9).

Figure 7 – Impact on NC Business of Film Incentive Sunset



[20] This figure of 61% was used as a reliable indicator of the number of people who would move in the first year. Over time, it is anticipated that all of the workforce would be forced to move to a state with a film incentive to pursue their careers.

Above: On set of One Tree Hill.
At left: www.euescreengemsstudios.com

Figure 8 – Impact on NC Workers of Film Incentive Sunset

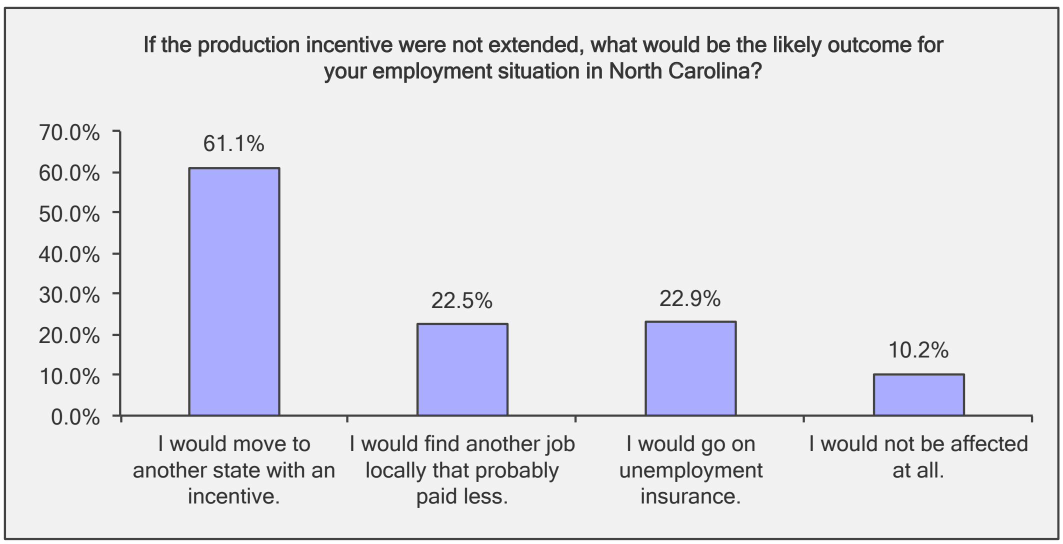
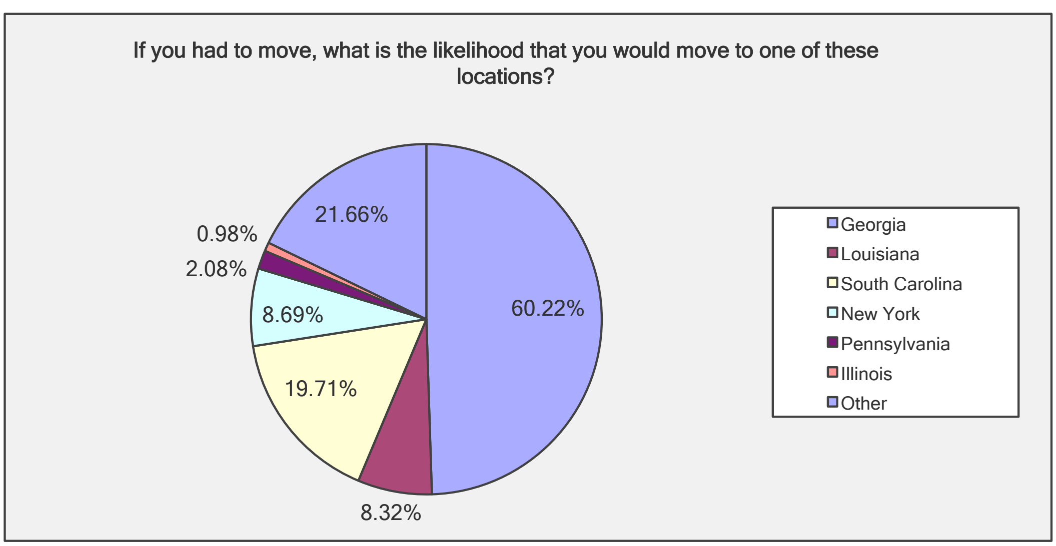


Figure 9 – Where NC Workers Would Move if Film Incentive Sunsets



Above: Josh Hutcherson stars as 'Peeta Mellark' in THE HUNGER GAMES. Photo by: Murray Close
At right: www.euescreengemsstudios.com

CHAPTER 5

THE OPTIMISTIC SCENARIO: EXTENSION OF THE PTI EXPANDS THE NORTH CAROLINA PRODUCTION INDUSTRY

On the other hand, an optimistic scenario was also modeled, indicating what the outcome would be in the event the PTI were renewed. In this scenario, the industry would not just stabilize, but the reputation of North Carolina as a great place to produce film and television projects, with qualified workers, an optimal infrastructure, and a sound incentive, would attract even more revenue to the state. A conservative estimate is that the industry would grow by 50% over 2012 levels in the first or second year, leading to a situation where the industry revenue would grow to $587M.[21] With an incentive of $90.2M, the contribution of the production industry to state and local revenue would grow to $128.1M, leading to an impressive growth in state and local tax revenues of $38M over 2012 levels, ($7.8 directly to the General Fund). Most importantly, the industry would grow to more than 6400 full-time workers earning more than $60,000 annually, with over 1800 new workers coming to the industry. These projections are shown in Table 8 below.

The Impact on Related Industries: Tourism, Computer Science, Special Effects

The presence of a strong motion picture and television production industry in North Carolina will promote other related industries, including production stages and post-production studios, as well as computer science-related fields that develop special effects, and other related technical specialties.

There is also evidence to show that tourism is significantly impacted by film production. A successful network series such as Homeland produced in North Carolina is distributed in over 100 countries, and reaches over 100 million households in the United States. The level of global output provided by images and publicity of North Carolina that reaches a global audience is many times the budget of North Carolina's Department of Tourism. There is also a very long tail associated with the content

Table 8: Impact on State and Local Tax Revenue if PTI Extended

FILM PRODUCTION SPEND	$587,033,864
FILM CREDIT	$90,217,004
NET CONTRIBUTION TO STATE AND LOCAL REVENUE	$37,943,089
NET CONTRIBUTION TO GENERAL FUND	$7,812,073
TOTAL WORKERS	30986
SIZE OF FULLY EMPLOYED WORKFORCE	6389
NET MIGRATION OF FILM WORKERS TO NC INDUSTRY	1877
NET REVENUE GROWTH TO NC SMALL BUSINESSES	$86,332,552
GROWTH IN HEALTHCARE BENEFITS	$39,570,782
GROWTH IN EMPLOYEE RETIREMENT BENEFITS	$16,958,907

[21] There may be a delay of one year in the growth to the scheduling of productions, which normally are done a year or more in advance of project starts.

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exported by North Carolina produced productions, including CD's, DVD's, Netflix, and multiple other sources of entertainment that provide positive images of North Carolina's tourist destination.

For example, several interviews with tourism experts and local business owners across the state show a definite growth in tourism-related spending in locations that have had a film production industry. Formal studies confirm this positive anecdotal link between production and tourism. A 2012 study by Oxford University on the UK film incentive identifies the documented broad and profound economic impacts of film production in the UK economy.[22] The study provides a thorough analysis of film-induced tourism in general. In brief the economists (affiliated with Oxford University) concluded that one out of every ten visitors to the UK are drawn to the country by UK films viewed. The film impact on tourism alone led to 21,000 jobs added to the UK economy.

A number of other studies utilized a documented methodology to measure the value of film-induced tourism. A study of the impact of the motion picture and television industry on tourism in Georgia showed that the presence of the production industry increased tourism by 1%.[23] The film *The Girl with the Dragon Tattoo* was estimated to bring in more than 10,000 tourists a year to Stockholm.[24] A study of New Zealand[25] showed a similar result.

Several studies provide a specific analysis of the impact of Film Induced Tourism (FIT) on state and local taxes. For example, a study by the State of Florida found that between 5 and 19% of tourism was generated by the film industry.[26] Most tourism industry representatives interviewed believe film and television attracts in the range of 10% to 20% of visitors to Florida.

The analysts in the Florida report[27] used a very conservative assessment of 5%, assuming that:

"... 5% of visitors to Florida are influenced in whole or in part by film and/or television. It is important to note that this is a conservative assumption, as it represents less than half the amount of visitors found in our interviews and we have not included any impacts arising from increased spending due to general film tourism."

The study conducted by the state of Georgia related the historical experience of communities associated with film and TV shows filmed in Georgia, to total historical production spending. Film Induced Tourism was found to account for about 1% of historical state and local taxes associated with tourism. Using a documented spend of $22.4B in NC tourism in 2012, and a similarly conservative number of 1% the following film-induced tourism tax benefit was derived using figures provided by the NC Division of Tourism,[28] shown in Table 9.

Table 9: Impact on State & Local Tax Revenue if PTI Extended

	2012
Total Tourism Direct Taxable Sales Revenue	$22,000,000,000
Total Tourism State Tax Revenue	$970,000,000
Total Tourism Local Tax Revenue	$579,000,000
FIT State Tax Revenue from Film (1%)	$9,700,000
FIT Local Tax Revenue from Film (1%)	$5,790,000
TOTAL	$15,490,000

Growth of the industry would lead to investments in other areas, including the growth of the film production academic disciplines in Charlotte (a development dedicated to film production training was discussed at a local meeting of the North Carolina Film Office), related investment in rental businesses, post-production studios, and other sound stages. There is also the presence of a number of film-related academic disciplines in North Carolina universities that provide a steady flow of workers into film-related jobs. Without a local industry, the investment of education dollars into these individuals is effectively funding talent for other states. Conversely, the growth of the industry would encourage workers TO relocate to North Carolina, leading to growth in real estate and other property development growth. Most importantly, the cadre of film professionals in the state will grow and add to North Carolina's already well-established reputation in this growing and profitable industry.

Robert B. Handfield, PhD
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Director, Supply Chain Resource Cooperative
Poole College of Management
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[22] http://www.creativecoalitioncampaign.org.uk/images/uploads/bfi-economic-impact-of-the-uk-film-industry-2012-09-17.pdf
[23] http://www.mpaa.org/wp-content/uploads/2014/03/Georgia-Executive-Summary_Feb28.pdf
[24] "The Millenium Effect", Stockholm Business Region Report, produced by the Oxford Group, September 2011.
[25] http://www.southwindsor.org/pages/swindsorct_IT/ct_studios/Credit_Study.pdf
[26] Update on the Economic Impacts of the Florida Film and Entertainment Industry Financial Incentive Program, MNP International, January 2014.
[27] Update on the Economic Impacts of the Florida Film and Entertainment Industry Financial Incentive Program, MNP International, January 2014.
[28] http://www.nccommerce.com/tourism/research/nc-fast-facts

APPENDICES

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APPENDIX I

CREATING A SUPPLY CHAIN COST MODEL OF THE MOTION PICTURE AND TELEVISION PRODUCTION INDUSTRY IN NORTH CAROLINA.

Phillip Morris Plant, scene of filming of “Hunger Games” in Concord, NC.

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I. Designing and Building the Supply Chain Cost Model

A. Model Design

Supply chain maps construct the service activities and flows of funds and information created by industries, including all of the enterprises and individuals associated with a supply chain. The approach relies on quantitative and qualitative empirical data[29] collected directly from the entities in the targeted industry. In this case, the current study involved in-depth interviews and quantitative data collection from the following individuals and entities involved in production:

- Production Studio Interviews
- Major Payroll Company interviews
- Production Rental Company interviews
- Hotel worker interviews
- Movie and Television production workers interviewed
- Movie and Television production workers (>1100 surveyed)
- Vendors to the production industry (>225 surveyed)
- North Carolina Film Office Personnel
- Major entertainment union representatives

The initial research suggested that several challenges unique to the motion picture and television production industry were presented:

- Wages in the motion picture and television industries are generally reported through Motion Picture Payroll Services Companies (MPPSCs) which report their employment data for census purposes as part of a much larger category of temporary employment and payroll concerns; thus, production industry wage and employment data could not be captured through a direct NAICS code measure.

- The actual value of North Carolina Department of Revenue (DOR) qualified film spending is a “moving target”, in that film production companies file for the incentive at different times, and the DOR is always in the process of updating the value for “qualified spend”. As such, the current state incentive figure paid for any given year may include productions from a number of previous years, but also exclude productions that have not yet filed.

- The project-based nature of the industry means that individuals working in the industry may work some projects in the state, some out of state, and may work for several different production companies over the course of a year; and
- The level of motion picture and television spending on third party vendors is significant, but often not captured in typical industrial production figures. This spending is typically with small North Carolina businesses, and is not reported at an aggregate level.

Fortunately, many of these challenges were overcome in the study design phase due to the unique features of supply-chain cost modeling, which is much more granular than other types of methodologies.

For example, as noted above, wages paid to production workers in North Carolina, are paid through MPPSCs, which are themselves small parts of “temporary employment services” NAICS codes. As a result, census data could not be relied upon, and actual income tax returns reported to the Department of Revenue were inaccessible. However, payroll data directly received from MPPSCs was used in the supply chain cost model. Both companies providing data are located in California with offices in North Carolina, and their exclusive business is to provide employment and payroll-related services

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[29] All interviews, payroll data, and surveys have been cleared and are available to the Department of Revenue for purposes of validation and analysis. We are continuing to update our data sources and estimates based on on-going review.

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to the movie and television production industry. These companies issue W-2's to individuals and 1099's to personal service corporations that provide the services of "Above the Line" (ATL) (and in some cases "Below the Line (BTL) personnel, and also provide budgeting, accounting, audit, and other services for the production companies. Use of this data for analysis allowed a much more granular and accurate estimate of production remuneration paid in North Carolina than through reliance on census data.

Preliminary analysis of the data revealed three additional important considerations affecting model design:

- The types of jobs are relatively consistent across productions of the same type (e.g. feature film A vs. Feature Film B), although the actual total value spent by each production will vary. This was further validated by reviewing the actual cast roles for productions in the state and comparing the jobs for the people employed;
- Similarly, the ratio of the hours worked by each job relative to the total cost of the production was relatively consistent across productions in the same production category, although the total number of hours changed. This was also validated through interviews with employees, production directors, unit managers and studio production accountants; and
- Due to union collective bargaining agreements, the hourly payroll and fringe benefits are similar across all types of productions by job role.

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The interviews also revealed that the motion picture and television production industry in North Carolina could be broken down into four classes of production, based on type of output produced:

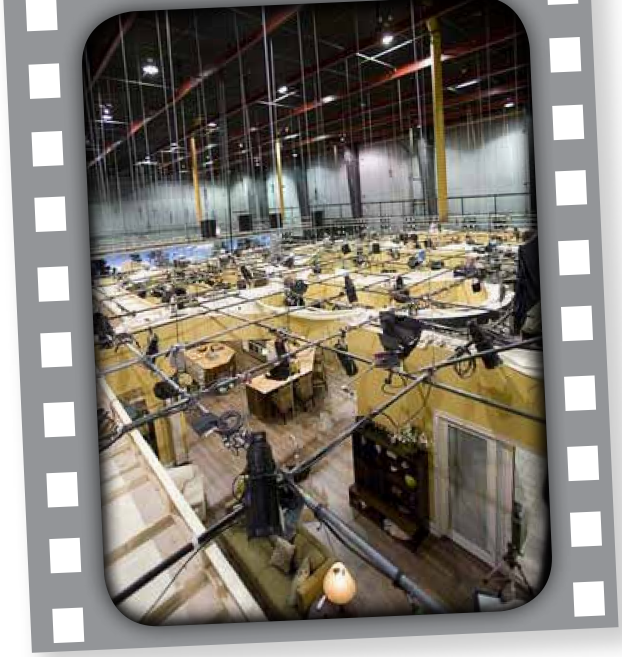
Feature films consist of one-time major studio productions that often include major Hollywood actors, and big production sets, special effects, makeup, and high production budgets. Such major feature films are often in the range of $50M+. For example, the budget for *Iron Man 3* shot in North Carolina was $180M, while *Hunger Games* was $80M. Major feature films are not as common, but when they are produced, can span 200-300 days, including pre-production, filming, and post-production.

Independent feature films are generally smaller in scale, and may be run by smaller production studios such as Weinstein or others. Examples of such films include *Safe Haven, Conjuring, We're the Millers, You Are Here* and others. Again, these productions can also last 100-200 days in length.

Television series represent a major area of growth. This type of production was first launched by HBO in production of *The Sopranos*, and others quickly followed, including *Breaking Bad, Mad Men*, and others. Series filming in North Carolina include *One Tree Hill* (finishing its ninth season), *Homeland* (second season), *Sleepy Hollow, Banshee*, and others. TV series are often predicated by a 30 minute pilot (to test the concept and the audience), which if successful, can launch a series. Each series typically has 8 to 10 shows per season, which are generally produced back to back with some small breaks in between. Each show can take 8 to 10 days of production, with a total of 80 to 100 days of production, plus additional pre-production and post-production. High quality series such as Homeland and Banshee will spend $35-40M in a single season filming all of the episodes.

Pilot shows and commercials represent the smallest volume of spend. Pilots are typically a single show run in a location on a test basis, while commercials are single one-off productions that involve actors filming a 30 second clip or series of clips that are run on television or other venues.

Further data derived from the interviews and from data received from the production companies and motion picture payroll services companies led to the design of an empirically-derived model of actual flows of funds from various parties in the motion picture and television production chain of these four types of productions as set forth in Figure 10:



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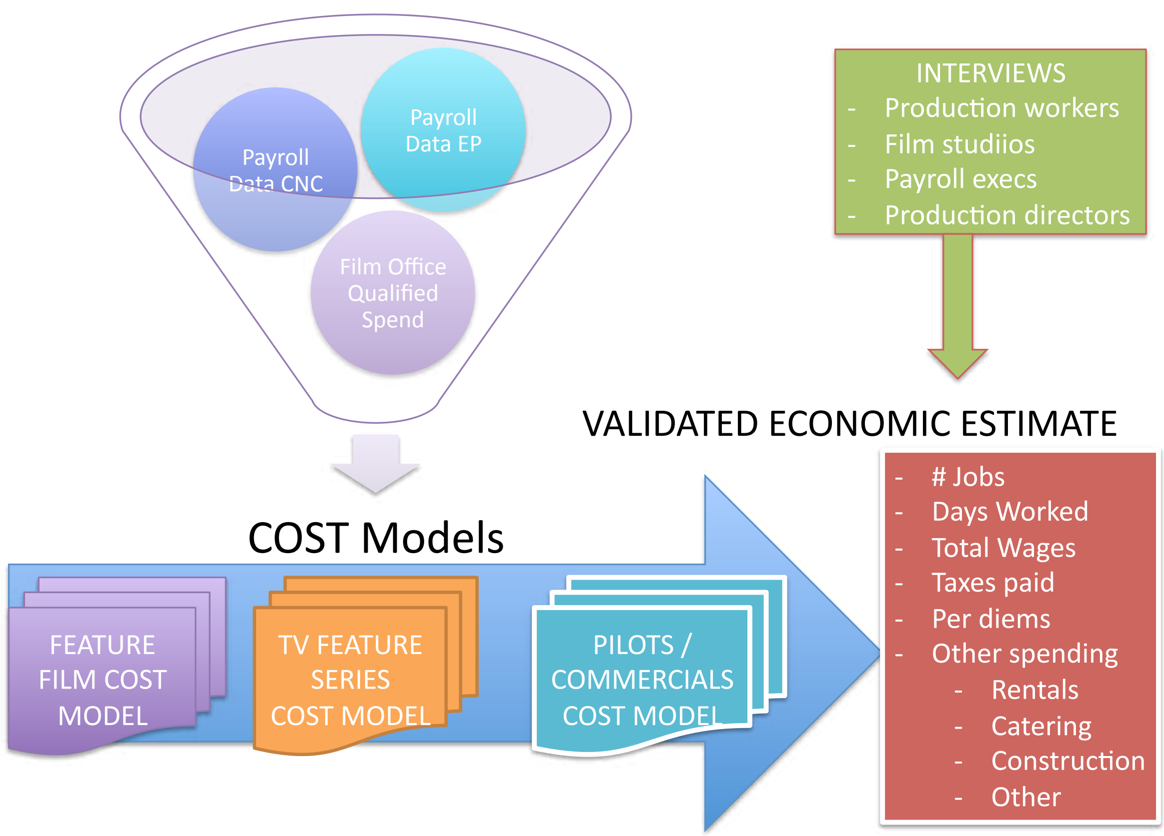
Each cost model developed an estimated ratio of hours worked on each production, jobs in each type of production, wages and time spent per production, per diems spent, and other production costs associated with each type of production. An additional cost model was designed to derive a validated economic estimate of key value chain outputs represented in the North Carolina economy. This "bottom-up" modeling approach employs actual flows of funds paid to North Carolina residents and non-residents, as well as the flows of funds spent with third parties in the state.

Figure 10 – Study Methodology



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B. Actual Model Construction

Actual construction of the cost model for each type of production included a labor cost component and a third party "goods and services" component. With regard to the labor cost component, the model included the following:

1. Using the actual payroll W-2 for each job role, the total number of days worked, hourly rate, salary, and taxes paid for each job role for each type of production (feature film, television series, and independent film) was established.

2. Pay scales were derived from IATSE standard negotiated minimum hourly pay rates, as well as survey data from workers.

3. This data was aggregated across all payroll productions in the United States in 2012, including all productions in North Carolina.

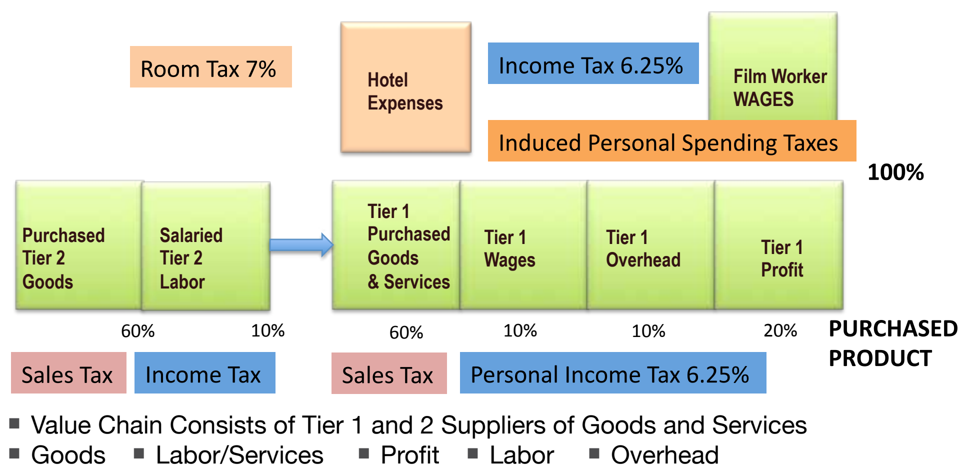
4. Payroll ratios were applied across actual qualified spending in North Carolina to derive number of jobs, hourly pay scales, and salary estimates by production and in total for the entire year.

To capture the total spending in each sector of North Carolina's economy that was relevant, a unique approach was required that collected data "from the source". As discussed above, such data on wages and benefits paid to North Carolina production employees was obtained directly from the two major motion picture payroll services companies that constitute approximately 95% of the industry spending on in-state production jobs. These companies provided in-depth data and analysis on the number of jobs for all productions shot in North Carolina, as well as the hours, salary level, taxes paid, fringes paid, and other data.

The third party "goods and services" cost model was constructed using a survey of every supplier identified, combined with Motion Picture & Television Office data audited by the Department of Revenue. A direct survey was sent to these third party vendors, with aggregate numbers furnished later in this study. These numbers have been reconciled with the reports of the Department of Commerce and the Department of Revenue for validation.

To accomplish the objective of capturing revenues flows and taxes paid into the state, a value stream mapping exercise, that required tracking all funds flowing out of the production industry, paid directly to production workers, as well as to local North Carolina businesses was conducted (see Figure 11). The latter category included both products purchased directly from suppliers, as well as purchased services (hotels, services, etc.). Using data from the aforementioned supplier surveys, the level of second tier supplier purchases (that is, the suppliers of the direct suppliers to the industry) was measured, which also included products and services. These were estimated using analysis of supplier's cost structures, using simple proportional ratios based on the vendor survey results. In this way, the income taxes and sales taxes paid by all tier one and tier two suppliers to the industry were captured, as well as income taxes paid by production workers. Finally, the number of hotel nights was calculated based on production days in the state, and the standard hotel rates were calculated from hotels in the major production locations. The occupancy tax (6%) was then calculated from the hotel expenses paid by production companies. Finally, induced spending and taxes derived from approximately 4200 individuals directly employed by the film industry was calculated using ratios derived from the Bureau of Labor Statistics Consumer Expenditure Survey, and included in the analysis as well.

Figure 11 – Value Chain Mapping of Film Industry



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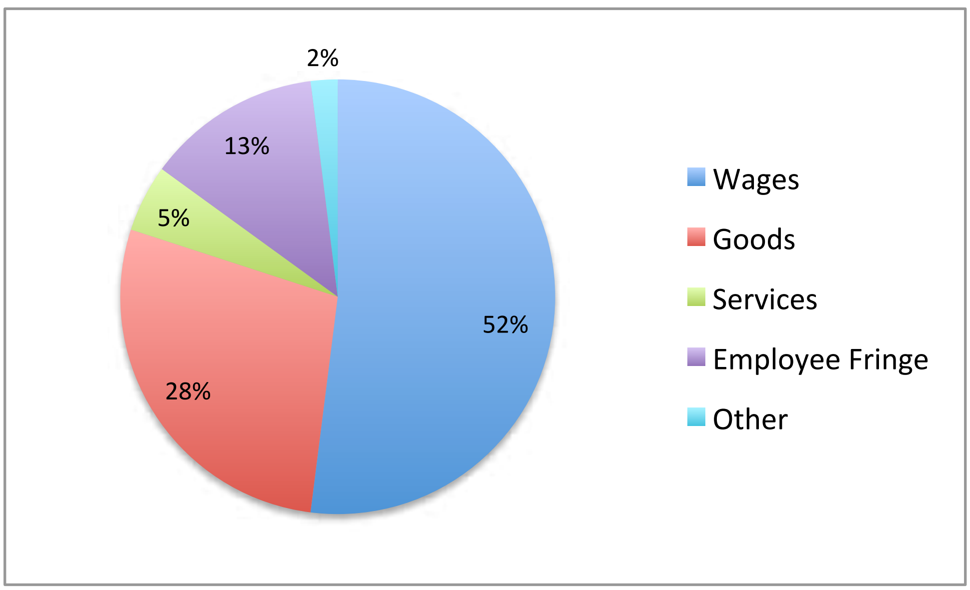
C. Cost Model Inputs

A review of the data indicated that production industry funds flow into four primary sectors of the industry, as shown in the chart below.[30] Figure 12 illustrates the breakdown of costs that go into production, based on the qualified spend amount for 2012. Each category input is described below:

Figure 12 – Breakdown of Film Spending in North Carolina



DIRECT PRODUCTION WAGES (52%) – include both types of direct wages paid in the industry:

"Above the Line" (ATL) – includes Hollywood directors, actors, writers, executive producers, and other individuals who are generally from outside the state of North Carolina, and in most cases, are paid directly by the production studio. Wages that are ATL qualify for the production incentive reimbursement up to a maximum of $1M per person, and NC income taxes are paid on all of these wages by production studios when a production films in North Carolina (whether those wages are subject to the PTI or not).

"Below the Line" (BTL) – includes all other production jobs that are involved in the direct or indirect production tasks that occur when North Carolina is selected as a state for production. This includes all union (IATSE which includes camera, production designer, hair and makeup), transportation (Teamsters) as well as non-union elements (security, secretary, personal assistants, etc.). Wages also includes Extras wages.

GOODS AND SERVICES: (33% of spend) – Includes anything purchased that is used, either in the construction or erection of the set, or operations of the film office/entity. Examples include lumber, paint, all purchased props and set dressing goods, as well as indirect products such as paper supplies, office stuff, greenery, light bulbs, fuel, travel, hotels, film or tape stock. This sector was estimated using the vendor survey and actual Department of Revenue qualified spend figure. Also included is the purchase of other materials that are treated as goods and for which state sales tax is paid, which Includes all rental equipment, including office furniture, sound stages, cameras, light and grip equipment, trucks, cars, copier rentals, computers from staff, phones, walkie-talkies, and other service equipment. This sector was also estimated using the vendor survey and actual Department of Revenue qualified spend numbers.

[30] These figures were derived from the Department of Revenue qualified spend reports provided to the North Carolina Film Office.

Above: www.euescreengemsstudios.com
At left: Revolution © Warner Bros. Entertainment Inc. All Rights Reserved.

EMPLOYEE FRINGES (13%) This includes benefits that are generally paid as a percentage of straight time for all hours worked. This can vary from $80 to $180 per day, and includes healthcare retirement, and other fringe benefits. A typical breakdown might be $95/day for union employees, including $12 into a pension, $17 into a defined contribution fund, and the remainder into healthcare benefits. This too was provided by the payroll companies.

The total value of these costs of productions in 2012 is shown in Table 10. The total value of tax incentives associated with these productions in 2012 was $60.1M.[31]

Table 10 – Breakdown of Film Revenue Spending

TOTAL SPENDING	$391,355,909
GOODS AND SERVICES	$134,362,272
WAGES	$224,890,339
FRINGES	$37,601,344

In each of these categories, a direct set of value stream impact assessments is provided.

II. Calculating the Number of North Carolina Jobs Dependent on Motion Picture and Television Production

The summary data for all the TV series, Feature Films, Independent Films, and 30-60 minute pilots were reviewed, consolidated, and compared. These data were analyzed and compared to derive summary ratios that provided predictive validity, in that the number of jobs predicted by each ratio corresponded to the actual jobs in each type of production using this ratio. These are documented in the cost model worksheet, and summarized in Table 11.

Table 11 – Analysis of Jobs by Production

40 Features Films, 35 TV Features, 25 Commercials

	NC DOR Estimates	Model Estimates
Features	3731	3464
TV Series	2011	1970
Commercials	495	108
Totals	6237	5541

[31] As shown by North Carolina Department of Revenue validated payments made effective June 30, 2013.

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At right: On set of Dawson's Creek.

NCDOR audits show that more than 20,467 workers are employed by the film industry in 2012, of which **6237** were crew and talent (the remaining 14,440 were extras and part-time workers, that are not counted in this study).

We sought to estimate the number of individuals that rely on the film industry for their primary source of income (8-9 months a year, including both regular and overtime hours. Our analysis employed the list of productions audited by the Department of Revenue in 2012. This type of analysis is known as a "should-cost" model, and is a typical supply chain modeling approach utilized to derive estimates of cost breakdowns and job hours. In addition, the model was validated using actual cast data for *Homeland* Season 2, and was shown to be reasonably accurate. (In fact, the *Homeland* set used a greater proportion of residents than predicted by this study's model).

However, the ability to derive a single number identifying the number of fully employed individuals in the state proved to be challenging, due to the project-based nature of the work. Workers may work productions that are local in North Carolina about 80% of the time, based on our interviews and survey data (see appendix). However varying estimates of the number of production crew members and talent employed in NC exist. This is shown in Table 12.

Table 12 – Calculation of Individuals Working in Film Production in NC

ESTIMATED NUMBER OF INDIVIDUALS RELYING ON FILM FOR WORK	LOW	HIGH
NC DOR REPORTED TOTAL CREW AND TALENT		6237
MODEL ESTIMATE EMPLOYING MEASURES AND RATIOS OF CREW AND TALENT		5541
EP & CAST AND CREW REPORTED TOTAL NUMBER OF EMPLOYEE SSN'S	5378	
APPROXIMATE INCOME GENERATED IN NC	80%	100%
TOTAL FILM WAGES GENERATED IN 2012	$224,890,339	
APPROXIMATE WAGES PER WORKER	$66,000	$89,000
APPROXIMATE INCOME GENERATED IN NC	$52,800	
WAGES FOR EXTRAS, ETC. (APPROX.)	$2,000,000.00	$4000,000
APPROXIMATE # OF WORKERS (REMAINING WAGES INTO INCOME GENRATED)	4259	

As can be seen in Table 12, the number of production crew and talent ranged from a high of 6237 estimated by NCDOR, to 5378 actual SSN's provided by payroll companies, to 5541 using our estimated analytical model. What makes this even more complex is that individuals may work part of the time in North Carolina, but may also work in SC, GA, and LA based on work becoming available on film production in this state (see figure below). Our worker survey (n=1100) suggests that individuals earn a household income of $66,000.

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Table 13 – Hours Worked Per Day

Film Production Worker Survey

How many hours a day do you typically work on most productions?			
Answer Options		Response Percent	Response Count
<4 hours		1.95%	20
4-8 hours		2.83%	29
8-10 hours		12.49%	128
10-12 hours		39.61%	406
12-14+		43.12%	442
Other	Other (please specify)	2.24%	23
		answered question	1025
		skipped question	84
		Mean	11.55

Table 14 – Average Hourly Wage

Film Production Worker Survey

What is your approximate household income? (include both you and other working members of your family)		
Answer Options	Response Percent	Response Count
<$25,000	10.2%	108
$25,000 - $50,000	21.0%	223
$50,000-$75,000	23.1%	246
$75,000 - $100,000	24.4%	259
> $100,000	21.4%	227
	answered question	1063
	skipped question	46
	Mean	$65,833

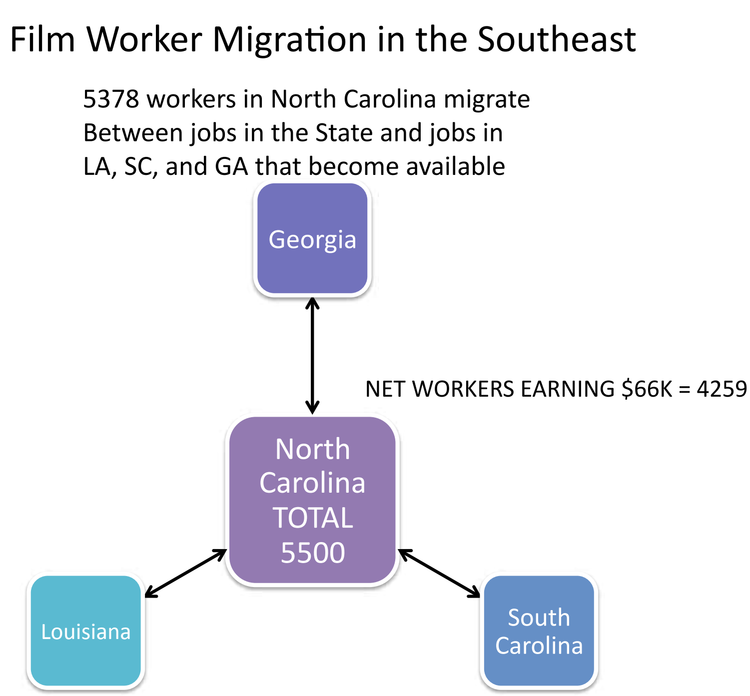
Table 15 – Average Annual Wage

Film Production Worker Survey

What is your approximate household income? (include both you and other working members of your family)		
Answer Options	Response Percent	Response Count
<$25,000	10.2%	108
$25,000 - $50,000	21.0%	223
$50,000-$75,000	23.1%	246
$75,000 - $100,000	24.4%	259
> $100,000	21.4%	227
	answered question	1063
	skipped question	46
	Mean	$65,833

However, the survey data also suggests that film workers earn a mean of $36.74 an hour, but work 11.5 hours a day, or which 3.5 hours is considered overtime (and double on weekends), producing an estimate of average annual wages of $89,000. The figure does not include defined pension plan benefits ($11 pension per day worked, $17 annuity payment / day worked) and fully paid healthcare plan benefits ($68 per day into PPO Urisa trust for healthcare).

Figure 13 – Migration of Workers in NC



On set of One Tree Hill.

By triangulating these varying estimates of workers fully employed in the industry (payroll company actual SSN counts, model estimates, survey data, and NC DOR figures), a reasonable estimate is that **4259** individuals work and rely on the film industry as their primary source of income (see Table 11). This assumes that individuals spend about 80% of the time in North Carolina as their home base, travelling 20% of the time to SC and GA for productions in those locations). These are individuals who derive their primary income from the film industry, working 8-10 months a year, earning in excess of $66,000 a year, of which a minimum of $52,800 is earned in NC. The list of productions filming in North Carolina and their categorization is shown in Appendix II.

One of the important insights this analysis points to is that by continuing the film incentive, more productions will film in North Carolina, which in turn will mean that more jobs will be in North Carolina, and more workers will be induced to remain in the state close to their work. The promotion of the incentive is also projected to attract more than 3300 workers into the state as production increases here.

III. Calculating the Contribution of the Industry to State & Local Revenue

Personal Income Taxes

As shown previously in Figure 11, several types of taxes are paid as a result of the film industry selecting North Carolina for a production location. The first of these is income taxes paid not only on wages to production workers, but also on wages paid for labor on tier one suppliers. Based on direct wages recorded by audits of the film industry by the Department of Revenue, personal income taxes were approximately $19.6M. It is important to note that ATL talent is also included in this category, even though these individuals do not reside in North Carolina and do not enjoy state services or benefits.

State and Local Taxes Paid by Film Workers (Consumer Effects) After consulting with several economists in North Carolina,[32] the research team adopted an approach for measuring consumer effects that was consistent with economic precedents. The approach involved assessing the tax implications of film production worker spending, rather than an estimate of induced spending. Economists recommended the Bureau of Labor Statistics' (BLS) Consumer Expenditure Survey to determine how employees spent their money, with application of regional purchase coefficients to determine how much of the spending took place in NC versus outside of NC. BLS data is compiled through interview surveys that "collects data on monthly expenditures for housing, apparel and services, transportation, health care, entertainment, personal care, reading, education, food, tobacco, cash contributions, and personal insurance and pensions, as well as income and characteristics data."[33]

This approach captures a standard set of expenditures for consumers who are spending wages earned in the film industry in North Carolina. The BLS survey provides a reasonable estimate of how consumers spend their money. From this analysis, we calculated the approximate state, local, and other taxes paid by workers out of the wages spent in North Carolina. To calculate this, we applied a regional expenditure percentage, based on a survey sample of 1100 workers in North Carolina.

Regional expenditure percentages were applied to consumer expenditure survey data to provide an estimate of how people spend their money throughout the entire year in the state. Most people do not spend all of their money in-state (if they take a vacation or travel for business, if they buy clothes or household goods on-line, and most importantly the fact that not all parts of the goods can be supplied in the region, which for our study would be the State of NC). Our survey data suggests that individuals spend approximately 77% of their wages in the state, so that the taxable purchases should be reduced by 23% (see survey data in Table X). This is due to the fact that the majority of workers are in North Carolina due to the production location being here.

[32] We consulted with Professor Michael Walden at NC State University and Professor William Hall at UNC-Wilmington on methodology. In addition, we spoke with Edward Feser, Dean of the College of Applied and Fine Arts, University of Illinois Urbana Champaign.

[33] http://www.bls.gov/cex/

On set of One Tree Hill.

Night set of One Tree Hill

The full table of expenditures and estimated taxes is shown in Appendix III, and includes taxes paid by 4200 households, (6300 individuals, assuming that 50% of households consist of two or more people). As summarized in Table 16 (right), however, we estimate that film workers spend about $12.75M of their wages on state taxes, and $5.11M on local taxes. These taxes paid as a result of wages paid by the film industry to the state are included in our analysis.

Table 16 – Average Annual Wage

	STATE	LOCAL
	$16,553,531	6,643,048
77% Spent in NC	$12,746,219	$5,115,147

Table 17 – Percent of Income Spent in NC

Film Production Worker Survey

How much of your household income is spent in North Carolina?		
Answer Options	Response Percent	Response Count
<20%	9.4%	100
20%-50%	4.0%	43
50%-75%	13.2%	141
75%-100%	73.3%	781
	answered question	1065
	skipped question	44
	Mean	76.56

State and Local Sales Taxes on Purchases of Goods and Services from Suppliers

Based on a survey of 1000 suppliers in the state (225 responses) an estimate of value stream model components purchased by the film industry was developed.

As shown below, the majority of suppliers to the film industry are small business enterprises, ranging in sales less than $1M. A larger number have sales of between $1-$5M in sales.

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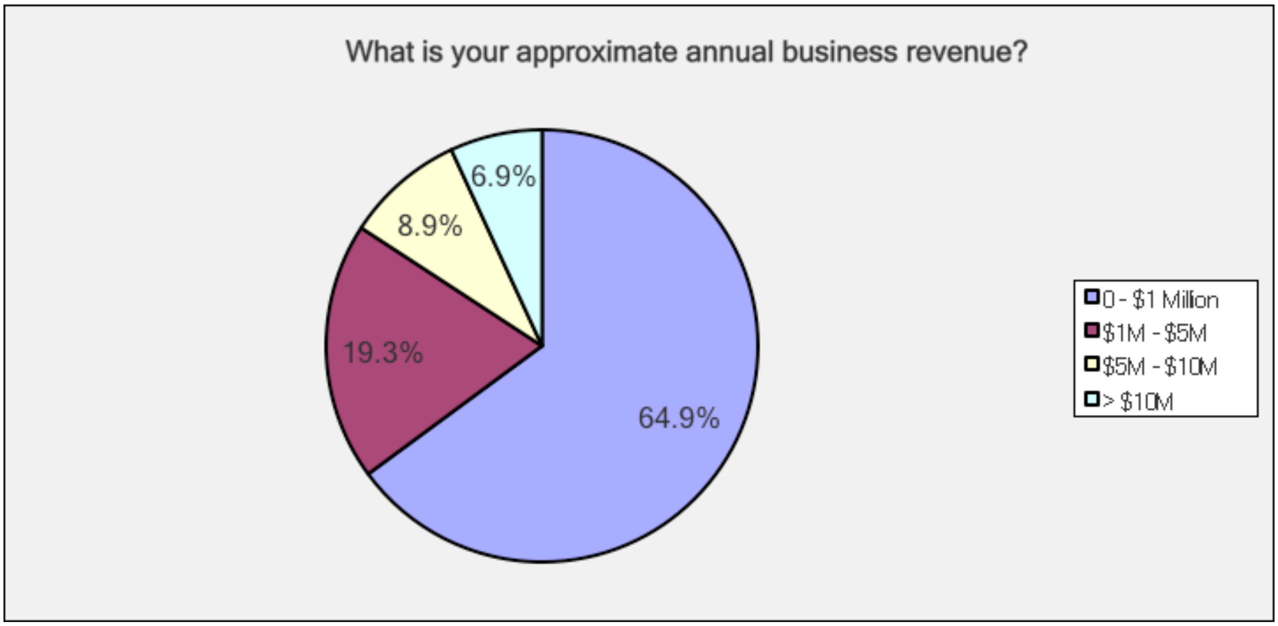
Figure 14 – Film Industry Supplier Revenue



The production industry is an important component of these suppliers' business revenue. At least 28% rely on the film industry for more than 50% of their revenue, and approximately two-thirds note that the film industry is at least 10% or more of their business revenue. Sales from the film industry are also highly profitable, with almost half the suppliers noting that profit margins are 20-40%.

Figure 15 – Importance of Film Industry Revenue to Suppliers

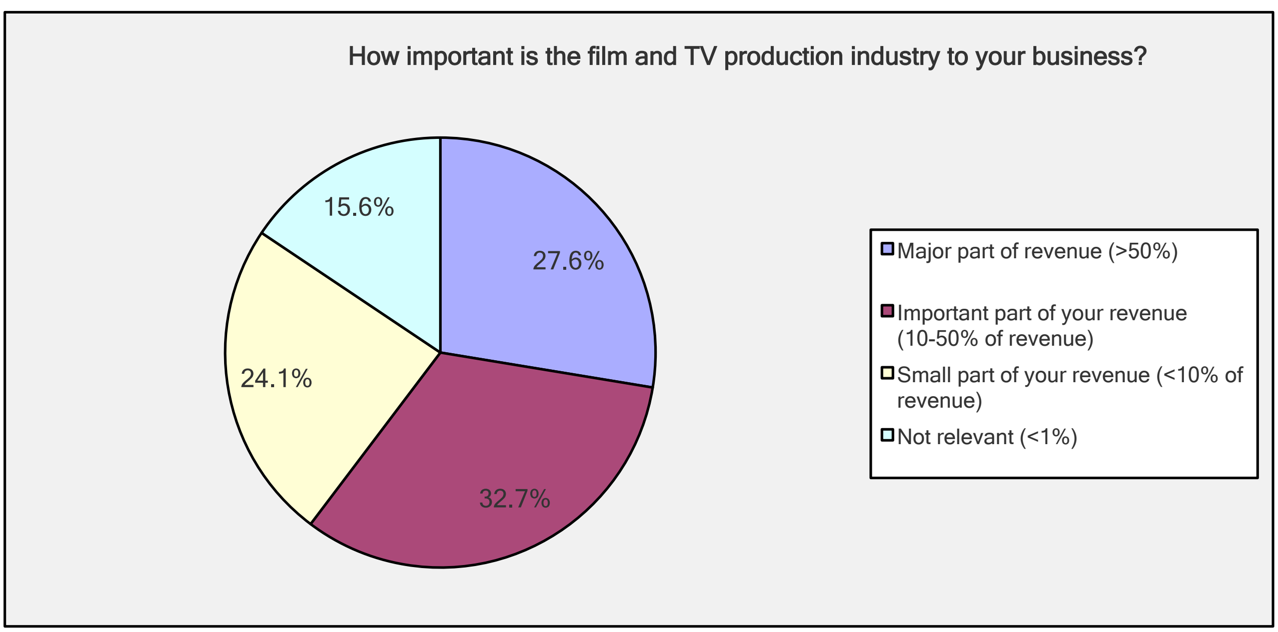


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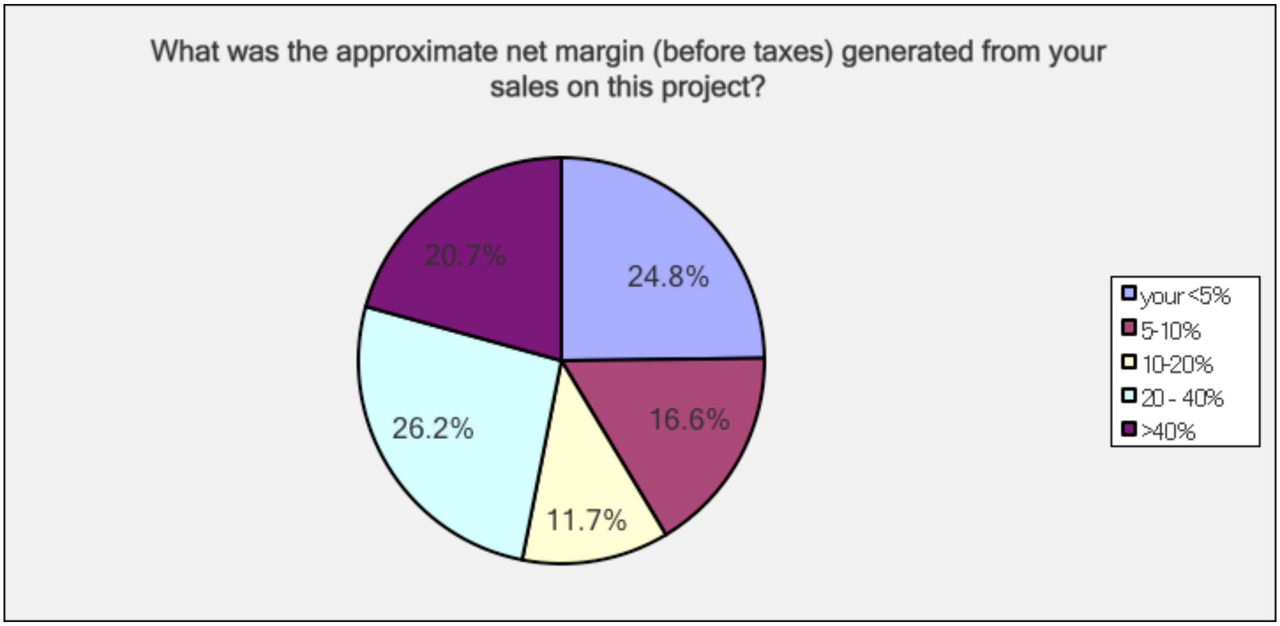
Figure 16 – Profits Generated by Film Industry Business to Suppliers



To estimate the percentage of business that goes to these suppliers as well as their suppliers (second tier suppliers), the survey asked suppliers to provide an approximate breakdown of goods and services that make up their revenue for a typical sale to the film industry. This breakdown is shown below. Using these estimates, the approximate value of goods and services purchased from in-state third parties (on behalf of the tier 1 suppliers) was estimated, as well as the labor and contracted services. Next, the income and sales tax were derived from both the tier one and tier two sales that were directly imputed from the movie and TV production industry.

Table 18 – Breakdown of Supplier Business Revenue

Goods purchased %	28%
Services contracted out %	21%
Labor cost %	15%
Fixed overhead coverage %	14%
Net income (margin) %	23%

In this manner, the impact of the goods and services paid by vendors in the state was derived. Our analysis shows that sales tax in the amount of $9.3M for tier one and tier two suppliers was collected and paid to the state and local government on all goods purchased from suppliers in the state. This includes construction materials, paint, set props, and other materials. This also includes income taxes to employees of tier 1 suppliers or to tier 2 suppliers, as well as income taxes paid on profits enjoyed by these NC small businesses.

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Table 19 – Taxes Paid by Suppliers on Film Industry Revenue

Tier 1 Supplier State Sales Taxes Paid	$1,819,384
Tier 1 Personal Income Tax on Labor and Services	$2,831,419
Tier 1 Supplier Local Taxes Paid	$957,571
Tier 2 Supplier State Sales Taxes Paid	$520,066
Tier 2 Supplier Local Sales Taxes Paid	$273,719
Tier 2 Personal Income Tax on Labor and Services	$635,125
Corporate income taxes paid on income of Tier 1 suppliers	$2,365,057
Corporate income taxes paid on income of Tier 2 suppliers	$674,210
	$10,076,551

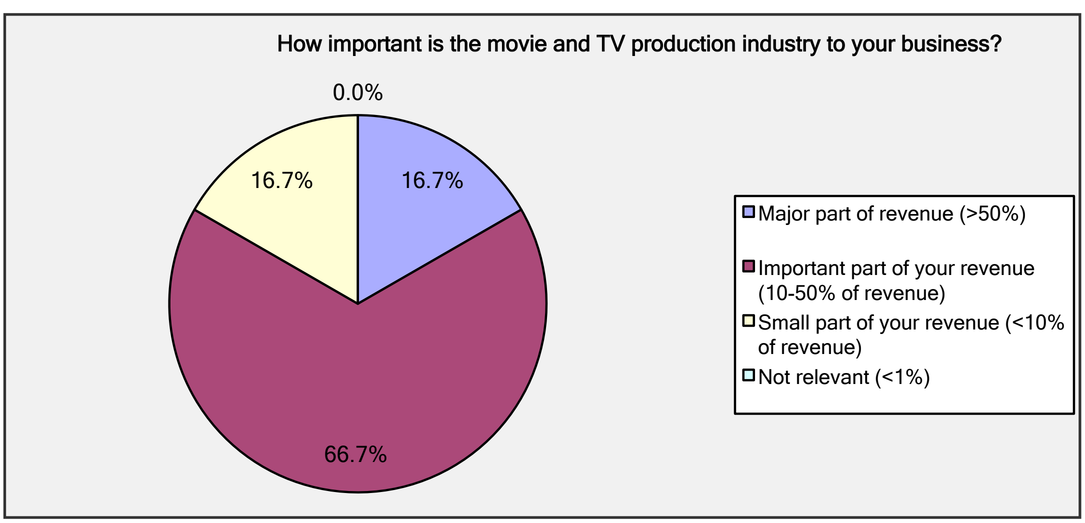
For the purposes of this study it was assumed that sales tax was paid on the sale of goods and income tax was paid on income from the sale of labor. Finally, the healthcare benefits paid to employees as part of their fringes were also included, which represented a cost avoidance to the state (these individuals would be forced to go on Medicare if unemployed).

Occupancy Tax

The production industry pays a significant amount on hotel rooms to house production workers on location away from their homes.

Several methods were employed to measure hotel spending, as described in the worksheet. Of the hotels surveyed, over 85% emphasized that the movie and TV production industry was a critical part of their business revenue.

Figure 17 – Impact of Film Business to Suppliers



Above: On set of One Tree Hill.
At left: Revolution © Warner Bros. Entertainment Inc. All Rights Reserved.

The data suggest 31,000 room nights were purchased from North Carolina hotels based on the number of days of filming and out of state workers on the set. This yielded a total hotel revenue estimate of approximately $20.1M, of which 7.25% of local tax was paid in county areas near Mecklenburg and New Hanover, yielding another $1.6M of revenue. (Note that tax was paid by hotels to the state, but this was counted in the previous state tax goods and service tax payment calculated.) This is a conservative estimate based on interviews of hotel managers and crews on productions.

Table 20 – Occupancy Tax Paid by Film Industry Revenue

New Hanover	$877,789
Mecklenburg	$754,272
	$1,632,061

State and Local Sales Taxes on Equipment Rentals and Local Property Taxes on Rental Inventories.

Sales tax is paid on purchases or rentals of cameras, lights, grip, and other equipment. This equipment is routinely leased from equipment rental companies dedicated to the film industry. The quantity of lease receipts, and the resultant sales tax, was also calculated from audits of productions and other sources, as documented in the worksheet. State tax of $1.6M was derived, as well as another $760K of local taxes. This was paid on approximately $36M of rental income derived from survey data and actual production spending figures.

Property tax was assumed to apply to rental company inventories, which based on interviews with several companies, is estimated at approximately $20M of inventory for every $6M of rental revenue derived.[34] Secondly, assessed property value for studios in the state was estimated at an approximate level of $120M. The weighted average county-wide tax rate for all 100 counties for 2010-11 was 60.3¢ per $100 of appraised valuation. Together, the property tax value of inventory and property for film and television production-related industries was estimated at approximately $232M, which assessed at a weighted county-tax wide rate provided by DOR documents, resulted in a local property tax estimate of **$1.2M**.

Table 21 – Property Taxes Paid by Film Industry Revenue

Interviews reveal about $20M of inventory for $6M of rental revenue.

Value of Rental Inventory	$112,694,393
Value or Real Property	$38,000,000
Local Property Tax	$1,205,555

The weighted average county-wide tax rate for all 100 counties for 2010-11 was 60.3¢ per $100 of appraised valuation.

[34] This value was estimated by individuals responding to the survey of suppliers, and includes all categories of real property owned by the rental industry in North Carolina.

Photo courtesy of Mike Hewett

Corporate Income Tax

A corporate income tax in 2012 is levied at the rate of 6.9% on the portion of net taxable income allocable to the State. Corporations with taxable nexus in North Carolina and at least one additional state calculate their North Carolina apportionable income through use of an apportionment formula. In addition, franchise tax at a rate of $1.50 per $1,000 is assessed against (a) the amount of the capital stock, surplus, and undivided profits apportionable to the State. The total profits of the film and television production industry is estimated to be approximately $2.5B on sales of $32B.[35] Based on an estimated proportion of production attributable to the state of 5% of production studio revenue, corporate income tax to be levied against this amount is estimated to provide $5.2M of corporate tax and $112K of franchise tax revenue. Because of issues that are unclear about the franchise tax policy, we decided to not include this in our estimates; however, this makes the fiscal estimate conservative.

Taxes Paid on other Services

Taxes on other services including catering, location rental (personal income taxes paid by individuals) parking, fuel, transportation and per diems were also calculated based on audits of productions and other reliable model estimates. State taxes of $2M and $960K in local taxes were calculated based on a derived spending estimate of $44M. Fuel tax was calculated based on fuel as a typical percentage of film costs, and calculated on typical price per gallon basis.

(Note that per diems are typically at least $50 per day, and are spent on food and beverage which is subject to tax.)

www.euescreengemsstudios.com

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[35] Based on IBIS World Report 51211a, Movie and Video Production in the US, September 2013.

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IV. Summary of Impacts

As shown below, the net contribution of the film and television production industry to North Carolina is positive **($25.3M)**. This is the difference between the 2012 PTI cost to the general fund of **$60.1M**, and the net revenue to state and local governmental jurisdictions of **$85.4M**.

This estimate still **under-represents the true benefit** of the production industry. For instance, the ROI analysis does not include revenue from collection of property taxes paid by individuals who are employed in the state. It does not include the property taxes production companies pay directly or indirectly through the leases of real or personal property. Nor does it include the income taxes paid by spouses who also work in the state because the film worker is located here. Health, UI, workers compensation, and pension are all paid for by another state. This analysis does not include payments to extras. Interviews conducted as part of the study suggest the majority of permanent film employees do in fact own houses, have working spouses, have children who attend public schools, and who contribute to the local community. Many if not all of these individuals would be forced to relocate if the PTI were to go away. Finally, the benefits associated with $26.4M of healthcare benefits and $11.3M of employee retirement benefits paid to individuals in the state are also not included in the calculation of the return on investment.

Table 22 – Economic Return on Investment of the Motion Picture and Television Production Industry Film Incentive in North Carolina

	STATE REVENUES	LOCAL REVENUES
EXPENDITURE FROM GENERAL FUND	$60,144,669	
State Personal Income Taxes Paid	$19,613,353	
Sate Sales Tax Paid on Goods and Services	$5,267,000	
Local Sales Tax Paid on Goods and Services		$3,359,057
Local Occupancy and Local Portion of State Tax Paid on Hotel		$1,632,061
State Sales Tax Paid on Rental Equipment	$1,605,895	
Local Sales Tax Paid on Rental Equipment		$760,687
Local Property Tax on rental company assets and studio property		$1,205,555
State Taxes paid by 4200 film workers and families in the state (see Table 23)	$12,746,219	
Local Taxes paid by 4200 film workers and families in the state (see Table 23)		$5,115,147
State Sales Tax Paid on Other Services (Parking, Fuel, Transport, Catering, Per diems)	$2,287,490	
Local Sales Tax Paid on Other Services (Parking, Fuel, Transport, Catering, Per diems)		$1,083,548
Tier 1 Supplier State Sales Taxes Paid	$1,819,384	
Tier 1 Supplier State Personal Income Tax on Labor and Services	$2,831,419	
Tier 1 Supplier Local Sales Taxes Paid		$957,571
Tier 2 Supplier State Sales Taxes Paid	$520,066	
Tier 2 Supplier Local Sales Taxes Paid		$273,719
Tier 2 Supplier State Personal Income Taxes Paid	$635,125	
Corporate income taxes based on apportioned income based in North Carolina	$5,287,500	
Corporate income taxes paid on income of Tier 1 suppliers	$2,365,057	
Corporate income taxes paid on income of Tier 2 suppliers	$674,210	
Sales and occupancy tax revenue from film-induced tourism (FIT)	$9,700,000	$5,790,000
Total State and Local Revenues	$65,352,718	$20,177,344
Total Contribution to State nd Local Government Revenue	**$85,440,062**	
Net Contribution of Incentive to State and Local Revenue	**$25,295,393**	
Other Benefits		
Contribution to Employee Healthcare benefits	$26,380,521	
Contribution to Employee Retirement Funds	$11,305,938	
Funds paid by production companies to NC state employment fund	$3,092,334	
Special Taxes related to healthcare and defined pension benefits	$2,150,000	

APPENDIX II

Table 23 - Productions in North Carolina (2012)

Production Name	Direct Spend	Verified Expenses
ESPN Nascar Sprint Cup Commercial	$525,000	$525,000
Foot Frenzy Commercial	$400,000	$400,000
Hillshire Farm	$350,000	$350,000
Mountain Dew Commercial	$1,800,000	$1,323,752
Novant Health Commercial	$450,000	$321,493
Photo Finish	$738,618	$738,618
Under Armor Commercial	$297,152	$297,152
Showtime-Inside NASCAR	$1,000,000	$1,000,000
The Conjuring	$16,000,000	$16,996,624
Iron Man 3 - Caged*	$130,000,000	$81,018,120
We're The Millers	$25,000,000	$25,000,000
Writers	$3,678,927	$3,678,927
A Dog Named Suki	$3,767,964	$3,767,964
A Nice Family Gathering	$1,250,000	$1,250,000
A Short History of Decay	$625,000	$503,553
Dog	$250,001	$250,000
Don't Know Yet	$100,000	$100,000
Heart of the Country	$900,000	$872,462
Jessabelle	$4,200,000	$4,200,000
Long Way Off	$400,000	$325,704
Safe Haven	$22,126,592	$17,162,312
Serious Applicants Only	$20,000	$20,000
Shelter	$3,000,000	$2,514,173
Somebody's Child	$452,584	$452,584
Susies Hope Movie	$1,545,191	$1,545,191
The Occult	$7,603,184	$7,603,184
You Are Here	$10,945,811	$10,945,811
The Book of Manning	$275,000	$275,000
Salvage Dawgs	$334,450	$312,181
Mary and Martha	$3,146,454	$3,146,454
Find A Way	$80,000	$80,000
Goodbye to All that	$750,971	$750,971
Homeland Season 2	$33,200,000	$33,200,000
Banshee	$37,850,000	$37,850,000
For Richer For Poorer	$350,000	$350,000
Revolution	$60,901,834	$60,901,834
Super Pole	$500,000	$500,000
The Witches of East End	$4,750,000	$4,750,000
WWE RAW/Smackdown	$3,200,000	$3,200,000
The Confession	$2,163,565	$2,163,565
Late Night with Jimmy Fallon	$467,954	$467,954
The Daily Show with Jon Stewart	$760,846	$760,846
Outcast Kustoms	$292,271	$292,271
Stars In Danger: The High Dive	$1,577,861	$1,577,861
The Bachelorette	$3,328,679	$3,328,679
TOTAL	$391,355,909	$337,070,240

Banshee: by Fred Norris/Cinemax

On set of One Tree Hill

APPENDIX III

VENDOR SURVEY RESULTS AND WORKER SPENDING PROFILE IN NORTH CAROLINA

A total of 225 vendors responded to a survey administered by Dr. Robert Handfield, through his firm Supply Chain Redesign, LLC.

Table 24 – Supplier Survey Respondents

Answer Options	Response Percent
Location	23.9%
Construction materials (lumber, paint, backdrops and signage etc.)	19.5%
Purchased props or set dressing goods	13.8%
Office supplies (e.g. paper, furniture, etc.)	4.4%
Greenery (flowers, etc.)	1.3%
Transportation goods (e.g. Lifts, Lulls, farm equipment and carts, fuel, delivery, etc.)	6.9%
Travel services	5.7%
Hotel	8.2%
Rental equipment - Electrical, generators, cameras, etc.	19.5%
Transportation (trucks, moving services, etc.)	18.2%
Retail big box store (e.g. Best Buy, Lowes, Home Depot, etc.)	2.5%

On set of Dawson's Creek.

Jennifer Lawrence on the set of THE HUNGER GAMES. Photo by: Murray Close.

Table 25 – Consumer Expenditure Estimates by Film Workers

TABLE OF ESTIMATED TAXES PAID BY INDIVIDUAL EMPLOYED IN FILM INDUSTRY IN 2012

http://www.bls.gov/cex/tables.htm

BLS Consumer Expenditure Data

Table selected: Income before taxes of $58,832832 for individual 25-34 years of age

Mean Income Before Taxes	$58,832
Mean Income After Taxes	57,437
Renters	60%
Homeowners (Mortgage)	35%

			Sales Tax							
Annual Expenditures	$49,544		State Sales Tax	Local Sales Tax	OTHER STATE TAX *	TOTAL STATE	TOTAL LOCAL	TOTAL TAX	Individuals	HouseHolds
Food Purchases	3,680			$92.00			$579,600	$579,600	6300	
Food - Outside of Home	2,833		$134.57	$70.83		$847,775	$446,198	$1,293,973	6300	
Alcohol	564		$26.79	$14.10	$169.20	$1,234,737	$88,830	$1,323,567	6300	
Housing	17,157									
Property Taxes		$1,024		$1,024.00		$4,300,800	$4,300,800	$8,601,600		4200
Utilities		$3,130								
Electricity, water, gas		$1,869			$115.88	$486,688	$486,688	$973,375		4200
Cell phone		$1,170	$81.90		$98.98	$1,139,557		$1,139,557	6300	
Apparel & services	2064		$98.04	$51.60		$617,652		$617,652	6300	
Household	1328		$63.08	$33.20		$264,936	$325,080	$590,016		4200
Transportation	9724									
Vehicle purchases		$4,125			$123.75	$779,625		$779,625	6300	
Gasoline Purchases		$2,822			$778.00	$4,901,400		$4,901,400	6300	
Healthcare	2047									
Entertainment	2382		$113.15	$59.55		$475,209	$250,110	$725,319		4200
AV equipment		$951								
Fees		$541	$91.97			$386,274		$386,274		4200
Tobacco	351		$16.67	$8.78	$26.33	$270,884	$55,283	$326,167	6300	
Cash contributions	1041									
Personal insurance / Pensions	5331				$101.29	$638,121		$638,121	6300	
Other	$1,052		$49.97	$26.30		$209,874	$110,460	$320,334		4200
TOTAL	49,554		$676	$1,380	$1,413	**$16,553,531**	**$6,643,048**	**$23,196,579**		

		STATE	LOCAL
*OTHER TAX			
Alcohol - assume 30% tax on each drink (NCDOR)			
Tobacco - assume 45 cents on $6 pack is 7.5%		**$16,553,531**	**$6,643,048**
Transportation - 3% Motor Use tax on purchase or lease of vehicles + $15 vehicle registration fee	**77% Spent in NC**	**$12,746,219**	**$5,115,147**

Cable tax is 17%
Insurance companies pay 1.9% taxes on their premiums
Cellphone includes sales tax and wireless tax of 8.46%
Electricity, natural gas, water tax 3% + 3.22% franchise tax
Property taxes: Median property tax paid in NC from research is $1209, we have used national average of $1024
Renters have property taxes built into their rent payments
Motor Fuel Tax - 38.9 cents per gallon = $3.13 (note that this goes into Highway Trust Fund)
Note: Film workers drive 30K miles/yr @ 15mpg = 2000 gallons @ $.389/gallon = $778 state taxes per year
Personal insurance includes Workers Compensation
Other includes white goods, tire disposal, and other categories of taxes
Tax is assessed on individuals, assuming 4200 households, and 50% of households having two people (4200+2100=6300)
Source: http://www.dornc.com/publications/stateandlocal2011.pdf
Source: http://www.osbm.state.nc.us/files/pdf_files/2010TaxGuide.pdf

Table 26 – Education of Film Workers

What is your education background?			
Answer Options	Response Percent	Response Count	
High school / GED	26.44%	276	
Art school	5.08%	53	
Technical college	10.44%	109	
Community college	16.76%	175	
Undergraduate degree	44.25%	462	
Graduate degree	15.90%	166	
Other (please specify)	9.77%	102	
answered question			1044
skipped question			65

On set of Banshee.

A Supply Chain Study of the Economic Impact of the North Carolina Motion Picture and Television Industry

Table 27 – Tenure in Industry by Film Workers

How long have you worked in the film industry?		
Answer Options	**Response Percent**	**Response Count**
Less than one year	5.5%	60
1 - 2 years	9.6%	104
2 - 5 years	19.0%	206
5-10 years	20.0%	217
10-20 years	19.5%	212
> 20 years	26.5%	288
	answered question	1087
	skipped question	22
	Mean	11.09

Table 28 – Typical Profile of Film Industry Workers (Interviews)

Production Job Title	Set Dresser	On Set Dress	Production Desig	Key Grip	Key Grip2	Lead Man	Lead Man, Dres	On Set Dresser
Years Working in Industry	14	22	23	23	28	25	20	14
Productions	One Tree Hill, Sleeping Hollow, Revolution	Dawsons Creek, One Tree Hill	The Abyss, 12 Monkeys, The Crow	Homeland, Banshee	Spongebob2, Ironman3	Sleepy Hollow, Hick, Bolden	Ironman3, Hunger Games, Sleepy Hollow	Homeland, Banshee
Education	City Guild of London	Computer Science	UNC Chapel Hill, BA Journalism	Univ of S. Carolina, Media Arts	Pittsburgh Comm. College	UNC Chapel Hill, BA English	Comm. College	Trident Tech Comm. College
NC Resident	✔	✔	✔	X *	✔	✔	✔	✔
NC Homeowner	✔	✔	✔	X *	✔	✔	✔	✔
Months Worked / Year	11	10	11.5	10	10	10	10	11
Hours Worked / Week	60	60	72	60	72	72	80	72
Approximate Annual Salary	$75K+	$60-75K	$100K+	$75K	$60-75K	$60-75K	$60-75K	$60-75K
Healthcare & Retirement	$75/day contrib.	$75/day contrib.	$100/day contrib.	$75/day contrib.	$75/day contrib.	$75/day contrib.	$75/day contrib.	$75/day contrib.

*Note: Hasn't bought home in NC due to uncertainty about duration of incentive.

Night set of One Tree Hill

On set of The Shunning

APPENDIX IV – AUTHOR BIO

Robert Handfield, PhD

Rob Handfield is the Bank of America University Distinguished Professor of Supply Chain Management at North Carolina State University, and Director of the Supply Chain Resource Cooperative (http://scm.ncsu.edu). He also serves as Faculty Lead for the Manufacturing Analytics group within the International Institute of Analytics, and is on the Faculty for Operations Research Curriculum at NC State University.

The SCRC is the first major industry-university partnership to integrate student projects into the MBA classroom in an integrative fashion, and has had 15 major Fortune 500 companies participating as industry partners since 1999. Prior to this role, Handfield was an Associate Professor and Research Associate with the Global Procurement and Supply Chain Benchmarking Initiative at Michigan State University from 1992-1999.

Handfield is the Consulting Editor of the Journal of Operations Management, one of the leading supply chain management journals in the field, and is the author of several books on supply chain management, the most recent being *Biopharmaceutical Supply Chains*, *Supply Market Intelligence, Supply Chain Re-Design* and *Introduction to Supply Chain Management* (Prentice Hall, 1999, 25,000 copies sold, and translated into Chinese, Japanese, and Korean). He has co-authored textbooks for MBA and undergraduate classes including Purchasing and Supply Chain Management 5th revision (with Robert Monczka) and Operations and Supply Chain Management 2nd revision (with Cecil Bozarth).

His blog, *Supply Chain View from the Field* (http://scm.ncsu.edu/blog) was listed as the #3 top business school blogs by OnlineMBA.com.

He has consulted with over 25 Fortune 500 companies, and has published 100 articles in top management journals including California Management Review, Sloan Management Review, IEEE Transactions on Engineering Management, Journal of Product Innovation Management, Journal of Operations Management, and Decision Sciences.

Handfield is considered a thought leader in supply chain management, and is an industry expert in the field of strategic sourcing, supply market intelligence, and supplier development. He has spoken on these subjects across the globe, including China, Azerbaijan, Turkey, Latin America, Europe, Korea, Japan, Canada, and other venues.

Jennifer Lawrence stars as 'Katniss Everdeen' in THE HUNGER GAMES. Photo by: Murray Close

Above: On set of One Tree Hill

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