

# PHOENIX CENTER POLICY BULLETIN NO. 66

George S. Ford, PhD

February 2024

# ECONOMIC IMPACTS OF GEORGIA'S FILM TAX CREDIT

Abstract: Several states offer tax incentives to attract television, video and film productions to their states. Georgia's tax program is one of the more attractive and successful. Georgia is today one of the entertainment industry's power players. Yet, two recent reports on the benefits and costs of Georgia's tax incentive program come to different conclusions on its efficiency, though the two reports employ entirely different concepts of benefits. In this BULLETIN, content from both reports is used to construct a plausibly causal and independent estimate of the return of Georgia's tax program. Three measures of the return-on-investment of the program are calculated, two from these prior reports and a third based on the Compensation Principle. The analysis indicates that Georgia's film tax credit has a large, positive return.

#### I. Introduction

Thirty-eight states and the District of Columbia offer some sort of tax incentives to attract television, video and film productions to their states. Georgia has one of the more attractive programs, codifying the tax incentive in 2005 and increasing its benefit in 2009. Since 2010, movie and television production has skyrocketed in the state and Georgia is now one of the entertainment industry's power players. Evidence from the Fiscal Research Center at Georgia State University shows that Georgia's Film Tax Credit ("FTC") accounts for approximately 85%

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

5335 Wisconsin Avenue, NW, Suite 440 Washington, D.C. 20015 Tel: (+1) (202) 274-0235 ◆ Fax: (+1) (202) 318-4909

of the state's movie and film industry employment (about 20,400 jobs), a figure matched by survey evidence.1

Debate continues, however, on whether the benefits of the FTC are worth the costs. In 2022, for instance, the state issued \$1.3 billion in tax credits, or 2% of the state's total expenditures (\$67.5 billion in 2022, including \$26.2 billion in federal dollars).<sup>2</sup> A recent report by the consulting group Olsberg:SPI ("Olsberg:SPI Report") finds that Georgia's tax credit has a return on investment ("ROI") from economic activity of \$6.3 per-dollar of net tax incentive, which is a sizable return to the state in terms of economic activity.3 A rival study by the Fiscal Research Center ("FRC Report"), while conceding that the "FTC induces substantial economic activity in Georgia," concludes that the incentive program "loses money" with an ROI of \$0.19 in tax revenues perdollar of net tax incentive.

This difference in the ROIs between the two studies arises largely from different definitions of the ROI that reflect a fundamental disagreement on the tax credit's purpose – economic activity or tax revenues. Olsberg SPI views increased economic activity as the goal of the tax incentive program (an economic activity ROI); the Fiscal Research Center views the goal as increased tax revenues (a tax ROI). Georgia's Department of Economic Development describes the purpose of the state's tax incentive programs is to "spur job creation," which is consistent only with the Olsberg·SPI approach.<sup>4</sup> On the tax side, few, if any, government spending programs return more in taxes than they cost in the static model used in both reports. Larger infrastructure projects, such as highway construction, require years to achieve a positive ROI.<sup>5</sup> Economic development, therefore, seems to be the primary motivation of the tax credit, though the effect on tax revenues is a consideration as these revenues affect the ROI by either definition. If job creation is the goal of the FTC, then evidence submitted in both studies suggests the FTC is a success.

5335 Wisconsin Avenue, NW, Suite 440 Washington, D.C. 20015 Tel: (+1) (202) 274-0235 • Fax: (+1) (202) 318-4909

C. Patrick, P. Bluestone, F.C. Carvajal, N. Farooq, and K. Shrestha, Tax Incentive Evaluation: Georgia's Film Tax Credit, Fiscal Research Center, Andrew Young School, Georgia State University (December 2023) (available at: https://www.audits.ga.gov/ReportSearch/download/30438); Economic Impact Study of Georgia's Entertainment Credit, Olsberg-SPI (November 2023) (available https://www.gsecoalition.com/\_files/ugd/18ed45\_c5ca9791ffde4f36a4ac705491f56538.pdf).

State Expenditure Report, National Association of State Budget Offices (2023) (available at: https://www.nasbo.org/reports-data/state-expenditure-report) at Table 1.

Olsberg SPI Report, supra n. 1.

Incentives, Georgia Department of Economic Development (last visited December 20, 2023) (available at: https://www.georgia.org/competitive-advantages/incentives).

See, e.g., R.S. Chirinko and D.J. Wilson, Job Creation Tax Credits, Fiscal Foresight, and Job Growth: Evidence from U.S. States, Federal Reserve Bank of San Francisco Working Paper No. 2010-15 (2016) (available at: http://www.frbsf.org/economic-research/publications/working-papers/wp10-25bk.pdf).

The stark disparity between the two studies warrants attention, especially now as Georgia's lawmakers contemplate modifications to the FTC and other tax credits.<sup>6</sup> In this BULLETIN, I use evidence from both studies to construct an independent estimate of the ROI of the FTC, and in so doing illustrate the differences in the two concepts of ROI found in the two reports. I do not aim to resolve all the differences between the two reports or to address the panoply of disputes in the literature regarding film tax credits. Like these two studies, I use the IMPLAN model to estimate the economic and tax effects of the FTC, and then compute several measures of the ROI, including an alternative ROI based on the compensation principle whereby those that gain from the program must benefit by an amount sufficient to compensate those that pay for it (*i.e.*, Georgia's taxpayers). While my approach differs from—and is more limited in its focus than—these recent reports, it helps reconcile some of the top-line differences between them and adds to the evidence.<sup>7</sup> My alternative measure of the ROI is large and suggests the FTC has a positive payoff to the state. My analysis is limited to the State of Georgia and these results are not generalizable to other states.

### II. Conceptual Framework

The ability to study both reports has the advantage of incorporating information and methods from the two to add a third (and perhaps more direct) approach to quantifying the effects of the FTC on Georgia's economy. Causal effects are, of course, the aim, but input-output models (like IMPLAN) alone do not provide causal effects; some exogenous information is required. The analysis in the *FRC Report* provides an opportunity to estimate causal effects of the FTC by providing in the report a plausibly causal analysis (based on the method of Synthetic Counterfactual) of the FTC on employment in the motion picture and television production industry in the state (among other outcomes). This analysis shows that approximately 85% of jobs in Georgia's film and television production sector are a consequence of the FTC.8 With approximately 24,000 jobs in this sector, the FTC created 20,400 movie-and-film production jobs in the state; absent the FTC, the sector would employ only about 3,600 persons.9 Based on a

<sup>6</sup> E. Boehm, Georgia Taxpayers Lose \$160,000 for Every Job Created by Film Tax Credits, Reason (December 18, 2023) (available at: <a href="https://reason.com/2023/12/18/georgia-taxpayers-lose-160000-for-every-job-created-by-film-tax-credits">https://reason.com/2023/12/18/georgia-taxpayers-lose-160000-for-every-job-created-by-film-tax-credits</a>); J. Salzer, Audit: Georgia Film Credit Produces Fewer Jobs Than Promoters Say It Does, ATLANTA JOURNAL CONSTITUTION (December 14, 2023) (available at: <a href="https://www.ajc.com/politics/audit-georgia-will-owe-14-billion-a-year-in-film-tax-credits-by-2029/UKOMJVAK75BGZII2EM2OG6OHRQ">https://www.ajc.com/politics/audit-georgia-will-owe-14-billion-a-year-in-film-tax-credits-by-2029/UKOMJVAK75BGZII2EM2OG6OHRQ</a>).

<sup>&</sup>lt;sup>7</sup> For the most part, IMPLAN estimates the effect on the supply-side alone. So, the effect on tourism or the construction of soundstages and studio support infrastructure, for instance, would require additional analysis. Both reports do so, though these downstream effects are ignored here.

<sup>8</sup> FRC Report, supra n. 1 at pp. 19-21.

<sup>&</sup>lt;sup>9</sup> Employment figures provided by IMPLAN. *See also FRC Report, supra* n. 1 at p. 17. Other outcomes analyzed in the *FRC Report* by the method of Synthetic Counterfactual also show substantial increases in economic activity in this sector.

survey of movie and film production companies, Olsberg·SPI reports the "causal" effect of the tax incentive to be 92.1% of total activity, so the two methods (causal analysis and a survey) produce comparable results. Both estimates confirm that Georgia's FTC is a boon to movie and television production in the state and is in fact responsible for nearly all this economic activity.

Is this new economic activity worth the cost? Consider a simple cost-benefit analysis. Let total economic activity in Georgia be Y, which comprises economic activity E and tax funds T available for the state (and its subdivisions) to spend on various programs. Absent the FTC, economic activity is  $Y_0$ , and with it is  $Y_1$ , though this change in economic activity requires a cost C (the tax credit). The difference between the two states is,

$$Y_1 - Y_0 = (E_1 - E_0) + (T_1 - T_0) - C = \Delta E + \Delta T - C.$$
 (1)

The Olsberg  $\cdot$ SPI Report measures the ROI in terms of economic development ( $ROI_E$ ), which may be written as,

$$ROI_E = \frac{\Delta E + \Delta T}{C},\tag{2}$$

where the numerator measures benefits (economic activity and state taxes) and the denominator is the cost of the tax credit. Olsberg·SPI measures the numerator as Value Added (which is a measure of the Gross Domestic Product of the state).<sup>11</sup> If the ROI equals or exceeds 1.0, then the benefits equal or exceed the costs.<sup>12</sup> The *FRC Report*, in contrast, measures the ROI in terms of tax revenue, so the tax ROI ( $ROI_T$ ) is,

$$ROI_T = \frac{\Delta T}{C}.$$
 (3)

To equal or exceed unity, the  $ROI_T$  requires that the tax credit program be "self-funding," an almost impossible scenario in a static model. Even highway construction would not satisfy the requirement, though the returns to transportation are presumably large over time for many such

Georgia receives 20% of federal taxes back for the state to spend, so this share of federal taxes is a tax benefit to the state. *SOI Tax Stats - Gross Collections, by Type of Tax and State,* INTERNAL REVENUE SERVICE DATA BOOK (last visited January 9, 2023) (available at: <a href="https://www.irs.gov/statistics/soi-tax-stats-gross-collections-by-type-of-tax-and-state-irs-data-book-table-5">https://www.irs.gov/statistics/soi-tax-stats-gross-collections-by-type-of-tax-and-state-irs-data-book-table-5</a>) at Table 5; *State Expenditure Report, supra* n. 2.

<sup>&</sup>lt;sup>11</sup> In IMPLAN, Value Added includes Labor Income, Other Property Income, and Taxes on Production and Imports. Details availability at: <a href="https://support.implan.com/hc/en-us/articles/360017144753-Understanding-Value-Added-VA">https://support.implan.com/hc/en-us/articles/360017144753-Understanding-Value-Added-VA</a>.

<sup>&</sup>lt;sup>12</sup> The actual return on investment (in percentage terms) would be *ROI* – 1.

projects. Yet, in a static, supply-side model like IMPLAN, the  $ROI_T$  for the construction of new highways and streets (IMPLAN industry 54) is only  $0.10^{13}$  There is likely no "business case" in a static model where government spending creates more tax revenue than the expenditures made to increase economic activity and, in turn, tax revenues. Plainly, the  $ROI_E$  and  $ROI_T$  are different measures of the ROI and are not directly comparable. The disparity in top-line results from the two reports is not the result of different approaches for measuring the same thing; the two reports are measuring two very different things.

I propose an alternative measure of the ROI based on the economic concept of the *Compensation Principle*. The Compensation Principle requires that the total net benefits of a policy change are positive across all affected groups. Let  $\lambda$  (which lies on the unit interval) represent some share of economic gains useful for compensation. The compensating ROI (*ROI*<sub>C</sub>) is defined as,

$$ROI_C = \frac{\lambda \Delta E + \Delta T}{C},\tag{4}$$

which is bounded by  $ROI_C$  and  $ROI_E$  since  $0 \le \lambda \le 1$ . Profits are a sensible measure of relevant economic gain that may be used for compensation, though some share of labor compensation may also be used for compensation (though such compensation is excluded here). Tax effects to the state are likewise taken to be a compensating benefit.

#### III. Estimating the ROI of the FTC

Computing the ROI of the FTC requires a comparison of two states: one *without* the FTC and one *with* the FTC. As in the *Olsberg·SPI Report* and *FRC Report*, IMPLAN is used to estimate economic outcomes in these two states. The IMPLAN model measures the economic contributions of some sort of change in underlying economic or government activity. IMPLAN is a supply-side model measuring how some specified change in economic or government activity affects the economics of the supply chain; it does not measure any downstream economic growth resulting from the change in economic activity. For instance, a change in the film industry's size is certain to affect tourism, but such downstream effects must be separately modeled. To estimate

<sup>&</sup>lt;sup>13</sup> Author calculations using IMPLAN.

<sup>&</sup>lt;sup>14</sup> See, e.g., J. Black, N. Hashimzade, and G. Myles, A DICTIONARY OF ECONOMICS (2009) ("The welfare criterion that a change in the economy is beneficial if the gainers could afford to compensate the losers.").

<sup>&</sup>lt;sup>15</sup> Labor is selling time for wages, so all gains to labor useful for compensation would be inframarginal. The elasticity of labor supply would be required to estimate such gains, which is unavailable. In the interest of a conservative estimate, labor compensation is excluded.

the returns of the FTC, several scenarios are considered, beginning with the simplest case and then adding in opportunity costs.

#### A. A Simple Scenario

My analysis relies on what IMPLAN defines as an Industry Employment event. Based on the analysis of the Fiscal Research Center, Georgia's tax credit supports 85% of movie-and-film production employment in the state (and about the same for wages in the sector), which translates into 20,400 jobs. This is a plausibly causal effect based on the method of Synthetical Counterfactual. IMPLAN is used to calculate the economic contribution to the Georgia economy of increasing employment in the movie and television production sector by 20,400 jobs. I note, however, that despite its own estimate of a sizable employment effect, the *FRC Report* concludes the FTC created only 4,900 jobs in the sector and 19,126 jobs across the state's economy, a finding incompatible with its causal analysis. This sizable difference appears to be an internal inconsistency in the *FRC Report*, and no clear explanation of the disparity is provided. The causal effect provided in the *FRC Report* seems the most sensible approach to measure the effect of the FTC on Georgia's economy.

Table 1 summarizes the IMPLAN results from two scenarios and their differences. First, the economic contribution of the movie and television industry without the FTC is estimated by entering the Fiscal Research Center's movie and television production employment absent the FTC of 3,600 jobs into IMPLAN as an Industry Employment Event for the motion picture and video industries (IMPLAN Sector 429).<sup>17</sup> Second, the economic contribution of the movie and television production industry is calculated using industry employment of 24,000 jobs. The difference between the two scenarios measures the effect of the FTC on Georgia's economy and permits a computation of the net cost of the tax credit program relative to the counterfactual.<sup>18</sup>

<sup>&</sup>lt;sup>16</sup> See, e.g., S. Cunningham, Synthetic Control, CAUSAL INFERENCE: THE MIXTAPE (2021) (available at: <a href="https://mixtape.scunning.com/10-synthetic\_control">https://mixtape.scunning.com/10-synthetic\_control</a>).

The data year is 2022 and the dollar year is 2023.

An Industry Employment event of 20,400 jobs provides the same results as the difference between these two scenarios.

Table 1. IMPLAN Calculation of Film Tax Credit Impacts						
	Employment	Labor Income	Value Added	Output	State/Local Taxes	
Counterfactual, No F	TC					
Direct	3,600	\$0.34 Bil.	\$0.59 Bil.	\$1.18 Bil.	\$44.4 Mil.	
Indirect	3,278	\$0.24 Bil.	\$0.41 Bil.	\$0.80 Bil.	\$33.5 Mil.	
Induced	2,889	\$0.16 Bil.	\$0.31 Bil.	\$0.53 Bil.	\$38.9 Mil.	
Total	9,767	\$0.74 Bil.	\$1.32 Bil.	\$2.51 Bil.	\$116.8 Mil.	
With FTC						
Direct	24,000	\$2.27 Bil.	\$3.93 Bil.	\$7.88 Bil.	\$296.3 Mil.	
Indirect	21,852	\$1.57 Bil.	\$2.77 Bil.	\$5.31 Bil.	\$223.3 Mil.	
Induced	19,262	\$1.09 Bil.	\$2.09 Bil.	\$3.55 Bil.	\$259.1 Mil.	
Total	65,114	\$4.93 Bil.	\$8.78 Bil.	\$16.7 Bil.	\$778.7 Mil.	
Effect of the FTC						
Direct	20,400	\$1.93 Bil.	\$3.34 Bil.	\$6.70 Bil.	\$251.8 Mil.	
Indirect	18,574	\$1.33 Bil.	\$2.35 Bil.	\$4.52 Bil.	\$189.8 Mil.	
Induced	16,373	\$0.92 Bil.	\$1.77 Bil.	\$3.02 Bil.	\$220.2 Mil.	
Total	55,347	\$4.19 Bil.	\$7.46 Bil.	\$14.2 Bil.	\$661.9 Mil.	

In this scenario, the economic contribution of the FTC to Georgia's economy are sizable. Relative to the counterfactual, the FTC supports 55,347 jobs across the economy, \$4.19 billion in labor compensation, \$7.46 billion in Value Added (GDP), and \$14.2 billion in economic transactions in the state. Also, the FTC increased taxes paid in the state by \$661.9 million. With tax credits totaling \$1.31 billion in 2022, the net cost of the tax credit is \$648.1 million.

The  $ROI_E$  is from Table 1 is 5.7, which is comparable to the  $ROI_E$  from the Olsberg SPI Report (6.3).19 The ROI<sub>T</sub> is 0.51, which is less than 1.0, but larger than that reported in the FRC Report (0.19), in part because state-relevant federal taxes are included here and because of the FRC Report's internally inconsistent estimate of employment effects. (The ROI<sub>T</sub> is 0.35 if federal taxes returned to the state are ignored.)

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

5335 Wisconsin Avenue, NW, Suite 440 Washington, D.C. 20015 Tel: (+1) (202) 274-0235 • Fax: (+1) (202) 318-4909

<sup>19</sup> A portion of the difference between the two ROI is the exclusion of federal taxes that do not return to Georgia from  $ROI_E$ .

The  $ROI_C$  requires dividing Value Added into its constituent parts.<sup>20</sup> The portion of economic gains that may be used for compensation is assumed to include Proprietor Income and Other Property Income, both measures of profit, and state and relevant federal taxes. Employee compensation is excluded. The  $ROI_C$  is calculated to be 2.51, which is well above 1.0. Thus, the economic benefits of the FTC cover the cost of the tax credit program. If some portion of labor compensation is viewed as a benefit, then the  $ROI_C$  would be larger.

#### 1. Opportunity Cost Scenario 1

The net cost of the FTC is estimated to be \$648 million, which equals the tax credits (\$1.31 billion) less new taxes (from Table 1). The *FRC Report* includes in its analysis an opportunity cost measured as the economic benefits of spending this net cost in other ways, specifically on education and healthcare, which make up the bulk of Georgia's budget. I add to the counterfactual the impacts of such spending using an Institutional Spending Event. This approach has an advantage over the prior scenario, where the counterfactual does not include the impacts from a possible reduction in taxes of \$648 million by the elimination of the FTC.<sup>21</sup> In this scenario, the tax expenditures of the government are accounted for by spending those funds in other ways, which has economic impacts. The cost of the FTC is, however, lower, since there are tax expenditures of \$648 million embedded in the counterfactual. Results are summarized in Table 2.

Value Added includes employee compensation, proprietor income (*i.e.*, profits), taxes on production and imports, and other property income (*i.e.*, profits). C. Clouse, *Understanding Value Added (VA)*, IMPLAN (February 5, 2019) (available at: <a href="https://support.implan.com/hc/en-us/articles/360017144753-Understanding-Value-Added-VA">https://support.implan.com/hc/en-us/articles/360017144753-Understanding-Value-Added-VA</a>). *ROI<sub>C</sub>* excludes employee compensation and federal taxes.

<sup>&</sup>lt;sup>21</sup> Taxes must be collected to fund the tax credit (here, \$648 million). Presumably, a reduction in taxes would produce some economic gains, but there is no straightforward way to quantify such gains within IMPLAN.

Table 2. IMPLAN Calculation of Film Tax Credit Impacts
Counterfactual with Tax Spend of \$648 Million On Education and Healthcare

					State/Local		
	Employment	Labor Income	Value Added	Output	Taxes		
Counterfactual, no FTC and with Tax Spend on Education and Healthcare							
Direct	9,004	\$0.73 Bil.	\$1.10 Bil.	\$1.75 Bil.	\$77.8 Mil.		
Indirect	3,577	\$0.26 Bil.	\$0.45 Bil.	\$0.86 Bil.	\$37.1 Mil.		
Induced	4,935	\$0.28 Bil.	\$0.53 Bil.	\$0.91 Bil.	\$66.4 Mil.		
Total	17,516	\$1.26 Bil.	\$2.08 Bil.	\$3.52 Bil.	\$181.3 Mil.		
With FTC					_		
Direct	24,000	\$2.27 Bil.	\$3.93 Bil.	\$7.88 Bil.	\$296.3 Mil.		
Indirect	21,852	\$1.57 Bil.	\$2.77 Bil.	\$5.31 Bil.	\$223.3 Mil.		
Induced	19,262	\$1.09 Bil.	\$2.09 Bil.	\$3.55 Bil.	\$259.1 Mil.		
Total	65,114	\$4.93 Bil.	\$8.78 Bil.	\$16.7 Bil.	\$778.7 Mil.		
Difference					_		
Direct	14,996	\$1.54 Bil.	\$2.83 Bil.	\$6.13 Bil.	\$218.4 Mil.		
Indirect	18,275	\$1.31 Bil.	\$2.32 Bil.	\$4.45 Bil.	\$186.2 Mil.		
Induced	14,328	\$0.81 Bil.	\$1.55 Bil.	\$2.64 Bil.	\$192.7 Mil.		
Total	47,598	\$3.66 Bil.	\$6.70 Bil.	\$13.2 Bil.	\$597.4 Mil.		

In this scenario, the counterfactual is more substantial, as it includes growth in the education and healthcare sectors from the tax spend.<sup>22</sup> Still, the effects of the FTC—the difference between the two scenarios in Table 2—remain large, increasing employment by 47,598, labor income by \$3.66 million, increasing GDP by \$6.7 billion, total output by \$13.2 billion, and taxes throughout the state by \$597.4 million. The economic benefit is larger from spending on the film and television industry than on the next best alternative. The net cost of the FTC is lower in scenario (the increment is \$662 million, which serves as *C* in Expressions 1-4), as tax expenditures of \$648 million are allocated to education and healthcare.

The  $ROI_E$  of this alternative is 10.3, which is large and shows a positive return, while the  $ROI_T$  is 0.92, which is below but very near to 1.0. The  $ROI_C$  is 4.88, so the net benefits to all relevant parties are positive. Note that in the static model, the  $ROI_T$  of the spending on education and healthcare is 0.28 [= 181.3/648], which confirms the fact that  $ROI_T$  is likely to be below 1.0 for

5335 Wisconsin Avenue, NW, Suite 440
Washington, D.C. 20015
Tel: (+1) (202) 274-0235 ● Fax: (+1) (202) 318-4909
www.phoenix-center.org

<sup>&</sup>lt;sup>22</sup> The FRC Report estimates a GDP gain of \$2.2 billion from the tax spend. FRC Report, supra n. 1 at pp. 21-2.

most tax programs.<sup>23</sup> From these estimates, Georgia is better off spending money on the FTC than it is the most obvious alternative, even for generating tax revenues.

## 2. Opportunity Cost Scenario 2

Rather than spend the tax consequence on education and healthcare as in the prior scenario, a second option is to issue rebates of the program's costs to households (akin to a tax cut). This is modeled as a Household Income event where the \$648 million is equally allocated across households irrespective of income (rather than spending that amount on education and healthcare). Results are summarized in Table 3. All economic contributions from the rebate are induced effects (the Direct Effects are the same as in Table 1).

Table 3. IMPLAN Calculation of Film Tax Credit Impacts Household Tax Rebate of \$648 million							
	Employment	Labor Income	Value Added	Output	State/Local Taxes		
Counterfactual, n	Counterfactual, no FTC and with Tax Spend on Education and Healthcare						
Direct	3,600	\$0.34 Bil.	\$0.59 Bil.	\$1.18 Bil.	\$44.4 Mil.		
Indirect	3,278	\$0.24 Bil.	\$0.41 Bil.	\$0.80 Bil.	\$33.5 Mil.		
Induced	7,243	\$0.41 Bil.	\$0.79 Bil.	\$1.34 Bil.	\$98.1 Mil.		
Total	14,121	\$0.98 Bil.	\$1.79 Bil.	\$3.32 Bil.	\$176.1 Mil.		
With FTC							
Direct	24,000	\$2.27 Bil.	\$3.93 Bil.	\$7.88 Bil.	\$296.3 Mil.		
Indirect	21,852	\$1.57 Bil.	\$2.77 Bil.	\$5.31 Bil.	\$223.3 Mil.		
Induced	19,262	\$1.09 Bil.	\$2.09 Bil.	\$3.55 Bil.	\$259.1 Mil.		
Total	65,114	\$4.93 Bil.	\$8.78 Bil.	\$16.7 Bil.	\$778.7 Mil.		
Difference							
Direct	20,400	\$1.93 Bil.	\$3.34 Bil.	\$6.70 Bil.	\$251.8 Mil.		
Indirect	18,574	\$1.33 Bil.	\$2.35 Bil.	\$4.52 Bil.	\$189.8 Mil.		
Induced	12,019	\$0.68 Bil.	\$1.30 Bil.	\$2.21 Bil.	\$161.0 Mil.		
Total	50,993	\$3.94 Bil.	\$6.99 Bil.	\$13.4 Bil.	\$602.6 Mil.		

Again, the effects of the FTC are large, increasing employment by 50,993 jobs, labor income by \$3.94 million, increasing GDP by \$6.99 billion, total output by \$13.4 billion, and taxes in the state by \$602.6 million. The economic benefits of the film and television industry are more economically consequential than those for a tax rebate of the same cost. As for the returns, the  $ROI_E$  of this alternative is 10.55, which is very large and indicates a positive return. The  $ROI_T$  for

PHOENIX CENTER FOR ADVANCED LEGAL & ECONOMIC PUBLIC POLICY STUDIES

5335 Wisconsin Avenue, NW, Suite 440 Washington, D.C. 20015 Tel: (+1) (202) 274-0235 • Fax: (+1) (202) 318-4909

The tax effect is the difference between the counterfactual in Table 2 and that of Table 1.

the alternative is 0.91, which is again very close to 1.0. With an  $ROI_C$  of 4.42, nearly equal to the prior scenario, the net benefit to all affected parties is strongly positive. The FTC has a positive return to the state.

#### IV. Conclusion

Over the last decade, the movie and television production industry in Georgia has experienced remarkable growth—a direct result of its film tax credit. If the goal of the tax credit is to increase jobs and economic activity, then Georgia's film tax credit is a home run. The tax program comes at a cost, however, and there is debate over whether the program has a positive return. Analyses of the benefits and cost of the film tax credit vary widely in their methods and conclusions, and two recent studies present strongly opposing findings, though they measure returns in different ways.

In this BULLETIN, I describe the difference in how returns are measured and add a third assessment of the film tax credit's ROI based on the compensating principle. My estimation approach begins with a causal estimate of the effect of the tax credit on industry employment, which is used to feed the IMPLAN model to produce estimates of economic contribution. The results are conservative as the model is a static, supply-side model and downstream effects (e.g., tourism) and capital investments in studio infrastructure are ignored. My conservative estimates indicates that Georgia's investment in the film tax credit has a generous return to the state and has made the state a power player in the movie and television production industry.

5335 Wisconsin Avenue, NW, Suite 440 Washington, D.C. 20015 Tel: (+1) (202) 274-0235 ◆ Fax: (+1) (202) 318-4909