

**Comments on *Lights, Camera, but No Action? Tax and Economic Development Lessons From State Motion Picture Incentive Programs*, a paper by Michael Thom**

Christine Cooper, Ph.D.  
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*Lights, Camera, but No Action*, a paper by Michael Thom of University of Southern California and published in the American Review of Public Administration, presents a cross-state analysis of “motion picture incentive (MPI) programs,” which the author describes as preferential tax treatments awarded to the motion picture industry. Using longitudinal data from 1998 through 2013, the paper is an attempt to analyze the effect of these tax treatments on labor markets and economic outcomes at the state level for each of the fifty states in the nation.

The purpose for pursuing this analysis is to test the effectiveness of such programs in generating economic activity. The author’s goal is not to estimate the value of the net return on this investment of tax dollars but instead to answer the simpler question of whether the programs generate any favorable outcome on economic activity given their widespread adoption across states.

**OVERALL IMPRESSION**

Full commentary of this paper appears below, but is briefly summarized as follows. It appears that the econometric study is the justification for the author’s larger discussion about policymakers’ inability to adequately frame economic development priorities based on sound data. The author clearly has opinions about targeted tax incentives and their usefulness, and about how policy should be developed, but the overall discussion and conclusion devolves past the findings of the empirical analysis.

On the econometric analysis itself, the results are mixed and fail to find much impact of MPIs on economic outcomes. This lack of significant results are taken to indicate that targeted tax incentives are not effective. However, there is a distinction between *failing to find impacts* and *finding evidence of no impact*. This paper should not be held as finding evidence of no impact of targeted tax incentives.

The reasons for failure to find impacts could include the following:

- ▶ Using employment and gross product data for aggregated industry sectors rather than data at the detailed industry level;
- ▶ Using industry gross product data for activity that does not generate revenues for the state in which the activity takes place;
- ▶ Models that are not well-defined;
- ▶ Using annual employment data for activity that may be of shorter duration; and
- ▶ Poor identification of explanatory variables.

The paper is discussed in more detail below.

## **ORGANIZATION**

The paper is nicely organized and presented. It begins with a discussion of motion picture incentive programs and the history of their adoption in the United States. The author suggests that these can be of questionable effectiveness with little evidence to suggest they work, hence the need for more rigorous analysis. This is followed by a discussion of the research design, dependent and explanatory variables and controls; a short summary of data sources; and the empirical results. A discussion of the implications of these findings and recommendations for policymakers concludes the piece.

## **METHODOLOGY OF EMPIRICAL ANALYSIS**

The author estimates separate simple reduced form models for four dependent variables: two related to labor market outcomes in the industry and two related to industry economic activity.

The dependent variables are: (i) annual employment percentage point change in the motion picture and sound recording industry (here represented by NAICS 512); (ii) annual earnings percentage change in the industry; (iii) annual percentage change in industry gross product; and (iv) annual change in the industry's location quotient of gross product.

Explanatory variables are focused on whether or not the state offered any tax incentives targeted at the film production activity. Four different types of incentives are included: transferable tax credits, refundable tax credits, lodging tax waivers and sales tax waivers. These variables are represented in binary form: "1" if offered during a given year and "0" if not offered. A number of other state-level economic conditions are controlled, including state level fixed effects to absorb potential missing variables.

## **FINDINGS**

- ▶ Transferable tax credits have a positive employment effect, increasing employment for each year of its duration, but having no effect on earnings. The author's conclusion to this finding is that transferable tax credits motivate continuing production as the unused portion of the tax credit is applied to other productions in that state.<sup>i</sup>
- ▶ Refundable tax credits have a positive earnings impact but no effect on wages. The author's conclusion to this finding is that the local workforce not being sufficient to meet the increased demand puts upward pressure on wages, although at a declining rate over the duration of the tax incentive program.
- ▶ Impacts of incentive programs on changes to state industry gross product and its location quotient are not distinguishable from zero.<sup>ii</sup>
- ▶ Sales tax waivers and lodging tax waivers had no discernible impact on labor market outcomes or economic outcomes.<sup>iii</sup>

## **DISCUSSION**

The author's concluding discussion uses these results to support his position that targeted tax incentives are not successful economic development strategies and, in general, state governments have wasted taxpayer funds in these efforts. He cites many shortcomings of such policies, including the lack of rigorous cost-benefit analysis of such programs, rent-seeking behavior which undermines the equitable distribution of funds, the lack of long-term benefits and that they disregard "market signals." He offers a number of recommendations to improve future economic development policies, but none of these appear to be related to the econometric analysis.

## **SUGGESTIONS FOR IMPROVEMENT**

*A failure to prove an impact is not affirmative evidence of no impact.* It could be that the models are incorrectly specified, that the data used in the models is not appropriate, that controls have been omitted, that the nature of the variables is incorrect (levels versus percentage points, binary versus some continuous variable). The author claims that this paper shows that motion picture incentive programs have little or no impact on labor market or economic outcomes, whereas it can only be claimed that the paper fails to show a significant impact of tax incentives. The difference is important in a policymaking world, where, as the author states, rigorous analysis often seems lacking. In this case, this paper fails to add much to the discussion of the effectiveness of incentives.

However, the empirical analysis could be improved by considering the following issues:

### **The problem of industry aggregation:**

The empirical analysis depends upon data provided by the Bureau of Economic Analysis (BEA). This agency provides state-level employment and earnings data for many industry subsectors, including NAICS 512 (motion picture and sound recording industries). It also provides estimates of state-level gross product of these subsectors.

Ideally, an analyst would prefer to have access to consistent and complete data at a finer level of detail. In this case, the industry that would more correctly match the aim of this paper is 51211 (motion picture and video production) which narrows the data to activity more aligned with production activity. The 512 subsector includes not only 51211, but also:

- ▶ 51212 (motion picture and video distribution), which includes firms that acquire rights to film and video products and distributes them to exhibitors;
- ▶ 51213 (motion picture and video exhibition), which includes theatres, festivals, drive-ins and other exhibition facilities;
- ▶ 51219 (postproduction services and other related industries), which are firms that edit, develop and process the film, add titles, credits and closed captioning, and those that are engaged in graphics, animation, and special effects; and

- ▶ 5122 (sound recording industries), which are engaged in producing, publishing and distributing musical recordings and sound recording services.

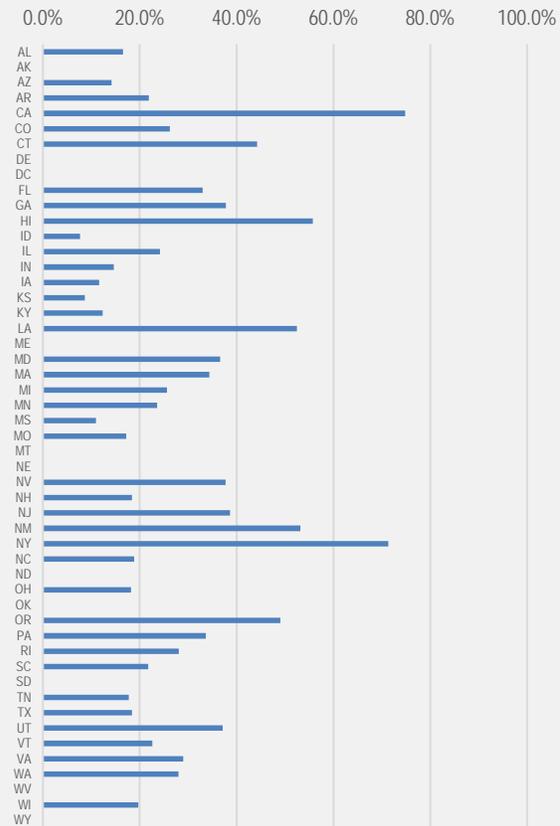
In many regions, the economic activity associated with these other activities outweighs the economic activity strictly related to production. To illustrate, the exhibit at right shows for each state the percentage of employment in the aggregated 512 subsector that is actually in 51211 (motion picture production). This is the arithmetic average of this percentage for each state between 2001 and 2015.<sup>iv</sup>

The average percentage across all states is 29.1%, meaning approximately 29.1% of the employment in the 512 subsector is related to production activity (NAICS 51211). The minimum share is found in Idaho, with 7.7%, and the highest is found in California, with 74.8% of employment in 512 being in 51211. In only five states did employment in 51211 exceed 50% of employment in 512 (CA, NY, HI, NM and LA).

Hence any change in employment in 51211 will be diluted by a factor of this percentage. For example, an increase of 1% in employment in 51211 in a state where 51211 represents 29.1% of subsector 512 employment, then the change to 512 employment related to actual production activity will be 0.291% instead of 1% – and this could easily be offset by changes in employment in the other industries included in the 512 subsector – obscuring the initial change in production activity employment and biasing the empirical results.

This might be more acceptable if the correlation between the employment series for 512 and 51211 is strong, but the average correlation between these series for all states is 0.646, with a minimum in North Dakota of -0.418 and a maximum of 0.998 in New Mexico (shown in the exhibit on next page). Without a consistent correlation between the series across all states, it is difficult to interpret the results of the empirical analysis using employment and earnings data from subsector 512.

Production Employment (in NAICS 51211) as % of Subsector NAICS 512 (Average of 2001 to 2015)



Source: BLS, ES202

Correlation of Employment in 512 and 51211  
(2001 to 2015)



**The problem of data periodicity:**

The BEA compiles its employment and earnings data using data collected by the Bureau of Labor Statistics (BLS) in its ES202 program. Employment data in this program are collected monthly and earnings data are collected quarterly. After making some adjustments, the BEA compiles this data as annual averages of monthly and quarterly data reported by the BLS.

Production activity can occur over a couple of months and then not repeat until the following year. Using annual averages of sporadic monthly data will dilute the employment change, rendering any observable change less impactful.

The BEA also reports estimates of industry gross product. These are derived from surveys collected every five years in the economic census program of the Census Bureau. For the intervening years when the survey is not conducted, the BEA interpolates estimates using wages and salaries as indicators. For the period studied in this paper, there were three economic censuses conducted: 2002, 2007 and 2012. The other 13 years were estimates, subject to error.

**The problem of data inclusion and applicability:**

In addition to examining the impact on industry employment and earnings, the author estimates

two models using some variation of industry gross product as dependent variables (yearly percentage change and location quotient).

The BEA estimates industry gross product as the sum of labor income (which includes wage and salary income, benefits, and proprietors' income), capital income (typically corporate profits and interest), and taxes on production. Labor income in this context is the same as that used above. In overall gross state product, labor income accounts for approximately 65 percent of the GSP.

The contribution to industry gross product of capital income and taxes on production for motion picture production activity is likely to be small. It is important to note that production activity by itself does not generate revenues or profits. Once production is wrapped, and sound and post-production completed, a finished project may be sold and distributed, but this is likely to occur in the industry corporate centers of Los Angeles and New York and not in the state where filming took place. Filming

activity alone produces no impact to the gross product of the 512 industry in the state where filming occurred other than payments to labor.

The models in the paper that use gross state product of the industry or gross state product location quotient of the industry (see Table 4 of the paper) are subject to a similar dilution of impacts as discussed in the industry employment aggregation discussion. Here, the models are diluting any potential impact further by accounting for capital income from other industries in the 512 subsector that are not impacted by tax incentives.

The poor fit of the models using industry gross product and the lack of significant predictors should be a flag that the models are not well-designed.

**The problem of relative variability of variables:**

It does not seem convincing to use percentage point change in the dependent variable rather than levels. The difference among state of employment in the 512 subsector is quite striking. Hence a percentage point change in 512 employment in California in, say, 2005, represented an increase of 1,465 employees, compared to a percentage point increase in Georgia during that same year which would be 74, and in Connecticut 30.

Production activity is usually not smoothly continuous in employment. Production of a film of a given budget would typically require a given number of workers. Were an incentive to draw a production to Connecticut, this would represent a much larger percentage change in industry employment than a larger employer state, such as California or New York. This could explain the very large variation among states in Figures A3 and A4 in the paper, where the smaller state of Hawaii showed a year-over-year change in employment of more than 80% and Rhode Island a change of almost 60%. On the flip side, the industry employment changes in California, New York and Texas (all large industry employer states) occur within a very tight range and would be lost in the variability of other industries within the 512 subsector.

**The problem of missing variables:**

Competition for production activity is global. Incentive programs have been launched in the United Kingdom, Canada, New Zealand, Australia, Hungary, Germany and elsewhere. These nations have been able to attract significant amounts of production activity away from the United States and have been successful at building sustainable and successful film and television production industries, yet incentives offered outside the United States were not included in the analysis.

**The problem of identification:**

Tax incentives targeted to the film and television production industry are extremely complex. Their value is based on a number of determining factors. Typically, the amount of a credit is based on a percentage of “qualifying” expenditures. Not only does the credit percentage vary across jurisdictions, the inclusiveness of qualifying expenditures can vary significantly as well. Each state decides which expenditures qualify for inclusion into the calculation of the amount of the credit. Usually this would be related to the spending that occurs in the state, but it can be expanded to include so-called “above-

the-line” expenditures as well. In addition to the credit percentage rate and expenditures that qualify for inclusion, some tax credits are capped based on the actual amount of qualifying expenditures or on the overall production budget. Some types or sizes of productions may be entirely disqualified from applying for tax incentives.

Because tax credits represent cost reductions, their effectiveness depends on their relative net value to the production company when compared to other states. As competing regions have any combination of options in designing tax incentives (in addition to their overall cost-competitiveness), the calculation of the lowest overall net cost of production, including the expected realization of tax incentives, is quite complex. That a state offers an incentive is not a sufficient condition to attract production activity. It must demonstrate that it is a lower cost location to shoot than all other locations, taking into account tax incentives, talent availability, local cost competitiveness and relocation expenses.

Competition for production activity is a zero-sum game. When a project is filmed in Louisiana or New Mexico or Vancouver, it is not being filmed in Los Angeles. As the industry is very mobile, cost considerations are an overwhelmingly important factor in the location decision. Targeted tax incentives are not aimed at incentivizing new, unplanned production activity. Rather, their stated goal is to incentivize the relocation of activity from one region (generally, Los Angeles or New York) to an alternative so that regional firms can benefit from increased spending.

Over the long term, of course, a continual industry presence can establish itself after reaching a tipping point, a center of gravity.

The competitive nature of these incentives and the states which offer them makes it difficult to support modeling these variables as binary variables. It comes as no surprise that the estimations in this paper found very weak (if any) response of employment or wages to binary tax credit variables.

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<sup>i</sup> This is not entirely true. In many states transferrable credits can be sold to other qualifying parties (at a discount) providing immediate liquidity to the production company and releasing it from the need to engage in future production activity in that state.

<sup>ii</sup> Why this result might have occurred is discussed below in the nature of the dependent variable.

<sup>iii</sup> These tax incentives are not comparable to production tax credits in relative value.

<sup>iv</sup> Some states show no value due to data suppression for confidentiality purposes.