Responding to the Legislative Analyst's Office Review of the California Film and Television Tax Credit 2.0 Program

The Legislative Analyst's Office (LAO) recently released its report entitled "The 2023-24 Budget: California's Film Tax Credit," which questions the efficacy of the California Film and Television Tax Credit 2.0 Program (Program).[1] LAEDC commends the LAO for its commitment to transparency in government, which has been recognized as a best practice by the Pew Charitable Trust. [2]

While the LAO's report acknowledges the findings of academic research which demonstrates that motion picture production increases in states that have film tax credits, the report questions the statewide efficacy of the program by making a number of assertions about the Program such as the following:

- The Program has increased the size of California's motion picture industry only marginally;
- The Program has an unclear effect on the broader economy in California;
- Using Program funding for other purposes could generate larger economic benefits; and
- LAEDC's analysis overstates the Program's fiscal benefits.

The LAO report uses a review of existing literature to evaluate a retention program based on its ability to attract and grow production activity. We address some of the issues raised in the LAO report below, explaining our findings and how they were developed.

What LAEDC Found

LAEDC completed its latest study of the Program in March 2022. Using data provided by the California Film Commission, LAEDC estimated the total economic impact resulting from the 169 productions that were allocated Program tax credits as of February 26, 2020.[3] These productions generated a total of $7.4 billion in production spending (including $4.8 billion in qualifying expenditures) and received a total of $915 million in tax credits.

The economic impact of these productions is provided below in Table 1. Overall, the productions generated $21.9 billion of economic output across California as the production spending rippled through the State. Of this, $12.4 billion in economic output is attributable to the industry directly, while $9.4 billion is attributable to the industry's suppliers and the suppliers' employees. The productions generated $14.5 billion in value added, which essentially represents the industry's contribution to California's GDP. Additionally, the productions were responsible for supporting more than 110,000 jobs and $7.7 billion of labor income in California, and resulted in $962 million in state and local taxes.

[1] Uhler, Brian. (2023). *The 2023-24 budget: California's film tax credit*. Legislative Analyst's Office. https://lao.ca.gov/Publications/Report/4713

[2] https://www.pewtrusts.org/-/media/assets/2017/05/edti_how_states_are_improving_tax_incentives_for_jobs_and_growth.pdf

[3] The tax credits for these 169 productions spanned the years FY 2015-16 to FY 2019-20.

Table 1: Spending of Credit-Approved Productions
Total Economic Impact in California ($2021)

Economic Impact	Feature	Independent Film	TV Projects	Relocating TV Series	Total
Output ($ millions)*	**4,699.0**	**2,026.6**	**12,725.2**	**2,413.0**	**21,863.8**
Direct	*2,671.9*	*1,152.9*	*7,221.7*	*1,374.8*	*12,421.2*
Indirect and Induced	*2,027.1*	*873.7*	*5,503.5*	*1,038.2*	*9,442.6*
Value Added ($ millions)*	**3,105.3**	**1,339.5**	**8,432.6**	**1,596.8**	**14,474.2**
Direct	*1,817.5*	*784.9*	*4,936.4*	*937.2*	*8,476.0*
Indirect and Induced	*1,287.7*	*554.6*	*3,496.3*	*659.6*	*5,998.1*
Employment (Jobs)*	**24,600**	**11,500**	**63,500**	**10,700**	**110,300**
Direct	*14,800*	*7,200*	*36,800*	*5,700*	*64,600*
Indirect and Induced	*9,800*	*4,300*	*26,600*	*5,100*	*45,800*
Labor Income ($ millions)*	**1,656.8**	**713.3**	**4,514.5**	**849.6**	**7,734.2**
Direct	*942.3*	*404.9*	*2,577.0*	*482.7*	*4,406.9*
Indirect and Induced	*714.5*	*308.4*	*1,937.5*	*366.9*	*3,327.3*
Fiscal Impact ($ millions)					
State and Local Taxes	**205.9**	**88.9**	**560.3**	**105.9**	**961.5**

*May not sum due to rounding
Source: Estimates by LAEDC

suppliers' employees. The productions generated $14.5 billion in value added, which essentially represents the industry's contribution to California's GDP. Additionally, the productions were responsible for supporting more than 110,000 jobs and $7.7 billion of labor income in California, and resulted in $962 million in state and local taxes.

Our methodology for estimating these economic and fiscal impacts involved breaking down spending for each of the 169 productions by category and location. Categories included above- and below-the-line hires, qualified wages, qualified non-wages, and all non-qualified expenditures. Locations refer to whether the production activity took place inside or outside the Los Angeles Zone, and if outside the specific California county in question. We then analyzed this spending using IMPLAN software, an industry standard input-output model that traces inter-industry transactions resulting from an increase in demand in a given region.[4] IMPLAN provided the impacts to output, value added, employment and labor income, separated into their direct, indirect and induced contributions, as well as the state and local taxes generated.

This analysis is what allows us to conclude that for each tax credit dollar allocated:

- Total economic activity (output) in the state will increase by $24.40,
- Labor income (including to the self-employed) will increase by $8.60,
- Total GDP in the state will increase by $16.14, and
- State and local governments will receive initial tax revenue of $1.07.

[4] For more details on our methodology, see Sedgwick, S.M., Laferriere, T., Specht, A. & Dunsker, M. (2022). https://laedc.org/wp-content/uploads/2022/03/LAEDC-Report_CA-Film-TV-Tax-Credit-Program-2.0_FINAL_2022.03.14.pdf

We note that our analysis assumes that each of the 169 productions required the Program tax credit to film in California. In other words, absent the credit these productions would have taken place elsewhere or not at all. Given the competitive nature of film production in the United States and internationally, we believe this assumption is sound, as demonstrated by California's shrinking role as a location for the industry's top-grossing features as shown in Table 1.

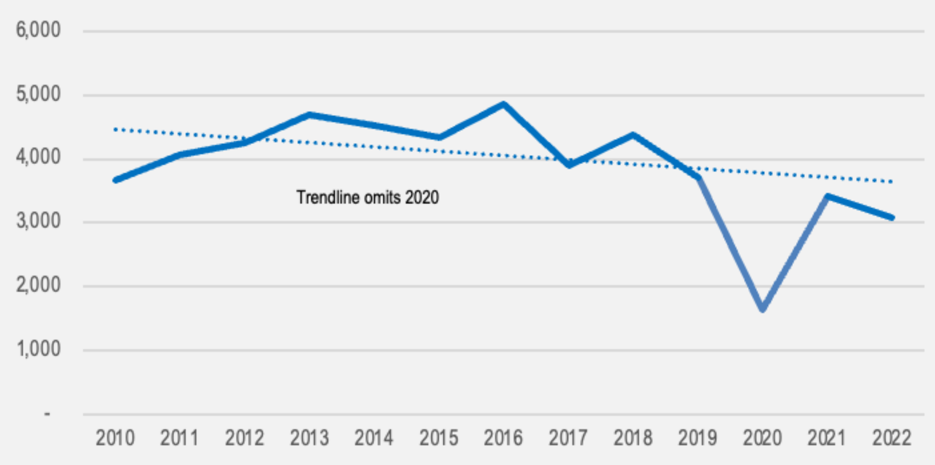
Table 1: Primary Filming Locations For Top-Grossing Features
(Excluding Animation)

Production Center	2018	2017	2016	2015	2014	2013
Georgia	22	15	17	11	8	9
U.K.	16	15	16	15	12	9
California	11	6	7	12	16	12
Canada	11	16	10	10	7	14
New York	7	6	6	7	12	4
Massachusetts	5	n/a	n/a	n/a	n/a	n/a
Australia	3	3	4	1	1	2
Louisiana	1	5	6	9	6	15

Source: Film LA

Consider, for example, that California served as the primary filming location for only 11 of the 76 top-grossing features in 2018 (14 percent) despite its production incentives**. Since 2016, Georgia has captured twice as many of the top grossing films in the industry**. Also consider the number of shoot days for feature films, as illustrated in Figure1 below. The number of shoot days in California has trended downwards the past decade, even when excluding the severe pandemic-related drop seen in 2020.

Figure 1: Number of Shoot Days in California



Source: Film LA

LAO Claim 1: The Program Has Increased the Size of California's Motion Picture Industry Only Marginally

The LAO stated:

> The CFC reports around $2 billion in annual production spending associated with projects that received Program 2.0 credits. Adjusting for the share of productions that would have happened anyway suggests the Program 2.0 credits were associated with around $1 billion in additional production activity per year. This represents about 2 percent of California's overall motion picture industry. (Uhler [2023, p.6])

The LAO significantly understates the impact that the Program has on the size of California's motion picture industry. The LAO's "2 percent" conclusion is based on the assumption that 50 percent of the productions that received Program tax credits required them to film in the State. Moreover, the LAO measures the additional production activity against the size of the combined *motion picture and sound recording* industries, which together totaled $44.9 billion in 2021. Had the LAO instead used the more reasonable assumption of 88 percent and compared the additional production activity against the size of the motion picture industry alone, which measured $16.4 billion in 2021, then the resulting figure would have been closer to 11 percent, a five-fold increase.

Below the top-level numbers, Workman (2021) shows that the Program has outsized impacts. The author statistically analyzed 501 films from FY 2012-13 to FY 2014-15 to understand how being offered a California film tax credit or receiving one affected the percentage of filming locations in California and other production statistics. Workman (2021) finds that films that were *offered* a California tax credit increased their budget by an average of 267 percent, the number of cast and filmmakers by an average of 123 percent, and the number of filming locations in California by 15 percentage points. The increases were much larger for films that actually *received* film tax credits. Those films increased their spending in California by an average of 966 percent, the number of cast and filmmakers in the state by an average of 388 percent, and the percentage of filming locations in California by 54 percentage points.

Importantly, though, the LAO misses the larger point that the Legislature and Governor enacted the Program specifically to retain film production in the State, more so than to grow the industry. As described in the 2009 Budget Act, "[The film credit] is intended to compete with other states and countries that offer subsidies to lure productions away from California (p.12)."[5] Consequently, the LAO should have given consideration to runaway film production that is still occurring today. As we describe in our report, at least 157 out of 312 projects (50 percent) that applied for but did not receive Program tax credits between 2015 and 2020 left California for another state. These runaway productions alone cost the state $7.7 billion in economic activity, 28,000 total jobs, $2.6 billion in labor income, and state and local tax revenues totaling $354.4 million.

[5] Genest, M.C. (2009). *2009 Budget Act*. California Department of Finance. https://dof.ca.gov/wp-content/uploads/sites/352/budget/publications/2009-10/Budget_Agreement_Full-Package-w.pdf

LAO Claim 2: The Program Has an Unclear Effect on the Broader Economy in California

The LAO stated:

> Although the film tax credit likely increased economic activity in California's motion picture industry, whether it resulted in growth of the state's broader economy is unclear. Forgone state tax revenue from the film tax credit could have been spent on other programs or services. This alternative spending similarly would have increased activity in some part of the state's economy. Measuring the economic effect of any state spending (including film tax credits) is challenging. Nonetheless, the best available evidence suggests that we cannot be confident that the economic benefit of film tax credits exceeds alternative uses of state funds. (Uhler [2023, p.6])

As with the discussion on the size of the California motion picture industry, we believe the question on the extent to which the Program has grown the broader economy is misguided. The Program was intended to retain California's motion picture industry in the face of active efforts by other states and nations to lure away the State's film productions. These efforts are still ongoing today. The Program was not intended to grow the State's economy per se, with the only caveat being that film tax credits were introduced as a stimulus measure during the depths of the Great Recession. Accordingly, to evaluate the Program now on how well it increases economic activity ignores the legislatures own intent in crafting the retention program.

A better question might be, what would happen to the broader economy in California if the Program ceased to exist? How much would the economy shrink, how many job losses will occur, and how much labor income would disappear if other states and nations could poach California's film productions at will?

Regrettably, California has had experience with losing an iconic industry in the past 30 years, and many would suggest that the State has never fully recovered from it. In the 1980s and early 1990s, California – and Los Angeles County in particular – witnessed the demise of the State's aerospace industry, primarily due to cutbacks in federal defense spending. As documented by the RAND Corporation, California at the time had about 25 percent of the nation's aerospace employment, representing 21 percent of California's manufacturing workforce, and half of the State's aerospace workers were in Los Angeles County. These jobs were highly skilled, well paid, and created 140 percent more economic activity than the typical service job. Defense cutbacks ultimately caused aerospace employment to fall by 20.3 percent in Los Angeles County from 1987 to 1991, compared to just 7.5 percent in the rest of California.[6]

While we would not assert that the State of California could have prevented the collapse of the aerospace sector, we note RAND's conclusion that the "costs of doing business in this state, particularly Los Angeles, are higher than in other regions," and that these high costs led to a steady, long-term erosion of the state's economic advantage in attracting manufacturing business. Today, California faces a similar threat to a vital industry, with production costs

[6] Dertouzos, J. & Dardia, M. (1993). *Defense spending, aerospace, and the California economy*. RAND Corporation. MR179. https://www.rand.org/pubs/monograph_reports/MR179.html

playing an increasing role in location decisions, yet in this instance, the State of California can act decisively.

LAO Claim 3: Using Program Funding for Other Purposes Could Generate Larger Economic Benefits

The LAO stated:

> One of the more optimistic estimates from the studies mentioned above suggests that each dollar of film tax credit results in an increase of $2 to $4 in earnings for workers in that state. At the same time, research on other types of public spending—such as K-12 education and workforce development—suggests comparable or better earnings benefits for workers (Heinrich et al. [2013], Jackson [2015], and Hollenbeck [2017]). This suggests the potential for at least similar economic benefits if state resources used for film tax credits were instead allocated to other purposes. (Uhler [2023, pp.6-7])

LAEDC believes this claim illustrates why the Program is beneficial to California. This can be seen in the work of Heinrich et al. (2013)[7], which the LAO references, as demonstrating that education and workforce development could provide a better return on public spending by the State.[8] We are strong advocates of education and workforce development. But this example raises a fundamental question for the State of California: how would having more educated and skilled workers generate larger economic benefits if, in turn, a major industry leaves the State and takes good-paying jobs with it? As a reminder, the LAO points out in its report that California workers in the motion picture industry earned an average of $2,600 per week in 2021, nearly 60 percent higher than the average of all workers in the state. These earnings put motion picture workers on par with workers in sectors like banking, engineering, and advertising.

In short, the LAO has essentially reduced the State of California's options to providing either financial support of an industry or investments in human capital. This does not have to be an either/or choice, however. The State can (and should) do both.

LAO Claim 4: LAEDC's Model Significantly Overstates the Program's Fiscal Benefits

In its report, the LAO states:

> A recent study from the Los Angeles County Economic Development Corporation found that each $1 of Program 2.0 credit results in $1.07 in new state and local government revenue. This finding, however, is significantly overstated due to the study's use of implausible assumptions. Most importantly, the study assumes that no

[7] Heinrich et al. (2013) study the impacts on earnings and employment of the two primary adult workforce support and training programs under the U.S. Workforce Investment Act (WIA) using data on 16,000 participants. Notably, they find that "participants in the WIA Adult program, who typically enter with poor work histories, realize improved employment levels and increased average quarterly earnings of several hundred dollars (emphasis added)." We do not question this study's conclusion, but we point out that "poor work histories" could result from two possible explanations. One is a lack of skills. The other is a lack of job opportunities.

[8] Heinrich, C., Mueser, P. R., Troske, K. R., Jeon, K., & Kahvecioglu, D.C. (2013). *Do public employment and training programs work?* IZA Journal of Labor Economics. http://www.izajole.com/content/2/1/6

> productions receiving tax credits would have filmed here in the absence of the credit. This is out of line with economic research discussed above which suggests tax credits influence location decisions of only a portion of recipients. Two studies that better reflects [*sic*] this research finding suggest that each $1 of film credit results in $0.20 to $0.50 of state revenues (Owens and Rennhoff [2020]), Rickman and Wang [2020]). (Uhler [2023, p.7])

Three points should be noted here. First, we conducted an empirical analysis of the Program and were transparent about our methodology, assumptions, and findings.

Second, many of the academic research papers that the LAO cites as evidence are problematic and limited in scope, evading easy comparisons. The LAO references Owens and Rennhoff (2020), for example, which statistically analyzes data on 15 years of films produced in the United States (1999 to 2013) to understand how film incentives affect location decisions.[9] The authors exclude internationally produced films from their analysis, however. This paints an incomplete picture for California, since the United Kingdom and Canada are two of the State's biggest competitors. The authors also do not capture film incentives at the individual film level but instead at the state level (i.e., whether or not a state offers a film incentive and, if so, the type of incentive offered). In doing so the authors effectively minimize the attraction of state tax credits by measuring whether a state's film incentive influences location decisions even if the films in question do not receive a tax credit. Additionally, the authors do not rigorously measure the benefits and costs of film incentive programs, confessing *"With the caveat that a precise evaluation of a state's movie production incentive program requires detailed financial information that we do not have access to, we nevertheless present a 'back of the envelope' calculation…."* Implausibly, this calculation assumes (for every state including California) that every dollar of labor earnings generated from film production results in seven cents of state tax revenue, a statistic borrowed from Louisiana's Legislative Fiscal Office. This calculation, then, omits sales taxes and corporation taxes, and likely undercounts the personal income taxes of California's high-income earners involved in the industry.

The LAO also references Rickman and Wang [2020]), which conducts an extensive literature review of existing studies on the impact of state film incentives as well as an empirical analysis.[10] The authors present a number of findings regarding the literature, including that "[s]tate incentive programs are diverse and difficult to measure and interact with differences in state characteristics in ways that make studies of all states less likely to find the effects of state film incentive programs." In other words, while different states' film incentives could be decisive in luring productions from one location to another, studies of these incentives might not be able to demonstrate this statistically. The authors do conclude from their empirical analysis that state film incentives are unlikely to pay for themselves, however their study only focuses on states that were early adopters of film tax credits (Louisiana, New Mexico, North Carolina and Rhode Island) or states that ultimately eliminated their film tax credits (Arizona, Florida, Indiana, Michigan, Vermont, and Wisconsin). These states have limited relevance to California.

Third, had the LAO relied on studies focusing specifically on film incentives in California, it would likely have drawn different conclusions about the Program's efficacy. The LAO states

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[9] Owens, M. &. Rennhoff, A.D. (2020). *Motion picture production incentives and filming location decisions: a discrete choice approach.* Journal of Economic Geography 20.3: 679-709.

[10] Rickman, D. & Wang, H. (2020). *Lights, Camera, What Action? The Nascent Literature on the Economics of US State Film Incentives*. Munich Personal RePEc Archive, Paper 104477. https://mpra.ub.uni-muenchen.de/104477/

in its report that the general literature "suggests that film tax credits probably influence the location decisions of 25 percent to 75 percent of credit recipients (p.6)," and from this it assumes that only 50 percent of California's Program recipients required the tax credit to film in the State. But more relevant California studies suggest that this percentage is much higher:

- The LAO's 2016 analysis[11] – 75%
- Appelbaum, Tilly & Huang (2012)[12] – 92%
- LAEDC's 2022 analysis – 100%
- Workman (2021)[13] – between 81% and 87%

Here, with a range from 75 percent to 100 percent, one would expect the LAO to conclude that film tax credits likely influence the location decisions of around 88 percent of credit recipients. This in turn implies much higher state and local tax revenues as a result of the Program.

Reasonable minds certainly can disagree over what the proper percentage is for a fair analysis of the Program's fiscal benefits. Moreover, we do not assert that the LAO would have or should have made the determination that the Program necessarily pays for itself. But it is important to emphasize that the LAO severely discounts the Program's benefits.

Conclusion

Button (2019) provides a very succinct summary of the environment that led to the creation of the Program:[14]

> In the film industry, filming locations are relatively substitutable because the majority of scenes can be shot anywhere. Relative to other industries, filmmakers also tend to be less sensitive to local labor and input market characteristics as they usually bring their skilled workers (e.g., principal actors, directors, and managers) with them, and hire locally for less skilled workers (e.g., camera operators, extras)…. Filming also requires much less physical capital investment. Filming is thus relatively 'footloose' even given the large agglomeration economies in motion picture production more broadly. Cost is becoming the most important decision in where to film, trumping even creative concerns…. (Button [2019, p.2])

In other words, film production is highly mobile despite concentrations of the industry in places like Hollywood. And this mobility is increasingly driven by cost.

Back in 2016, the LAO showed a strong appreciation of this environment in its report. While the LAO expressed misgivings about using tax credits or subsidies as tools of industrial policy, it concluded that it is "understandable to defend a flagship industry targeted by other states." The LAO continued:

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[11] Weatherford, B. (2016). *California's first film tax credit program*. Legislative Analyst's Office. https://lao.ca.gov/Publications/Report/3502

[12] Appelbaum, L.D., Tilly, C. & Huang, J. (2012). *Economic and production impacts of the 2009 California Film and Television Tax Credit*. UCLA Institute for Research on Labor and Employment. https://escholarship.org/uc/item/0qh4h6jw

[13] Workman, A. (2021). *Ready for a close-up: the effect of tax incentives on film production in California*. Economic Development Quarterly 35.2: pp 125-140.

[14] Button, P. (2019). *Do tax incentives affect business location and economic development? Evidence from state film incentives*. National Bureau of Economic Research, Working Paper 25963. https://www.nber.org/system/files/working_papers/w25963/w25963.pdf

> As we noted in our April 2014 report, it is nevertheless understandable that the Legislature has taken action in this area. Other states and countries have provided significant subsidies for film and television production. These subsidies have clearly resulted in some productions, which would have otherwise been filmed here, relocating away from California to those places. California's first film tax credit program, and the expanded program passed in 2014, can be viewed as ways to "level the playing field" and counter financial incentives to locate productions outside of California unrelated to creative considerations. (Weatherford [2016, p.25])

Again, while we applaud the LAO's transparency in reviewing this important State program, we believe they have lost sight of the legislature's intent in developing the program. Considered from that viewpoint, and the continued export competition the industry faces, we believe this program provides value to the State of California in maintaining a highly targeted and fiscally sound program.