Understanding the Role of the Hawaii Film/TV/Digital Production Tax Credit In Diversifying the Hawaii Economy

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I. INTRODUCTION

Hawaii is one of 32 states in 2020 to offer a tax credit to film, TV, and digital productions through the Hawaii Motion Picture, Digital Media and Film Production Tax Credit (hereafter "film credit"). In 2006, when the Hawaii State Legislature enacted the first substantial film credit, the preamble to the bill stated that its purpose is to "encourage growth of the film industry by (1) Providing enhanced incentives that attract more film and television productions to Hawaii, thereby generating tax revenues; (2) Providing jobs and income for residents; (3) Supporting tourism and the natural beauty of Hawaii; and (4) Enabling the state to compete effectively for productions against other jurisdictions that offer similar incentives."[1] Whether or not the Hawaii film credit accomplishes the first three objectives depends on how many more film and TV productions are attracted to film in Hawaii rather than in other states or countries due to the presence of the credit.

There has been extensive debate over whether the film credit yields a favorable return to Hawaii's residents.[2] Chris Lee, founder and director of the Academy for Creative Media System at the University of Hawaii, explains why supporting the "content production industry" can advance economic diversification.[3] He argues that the film industry is environmentally friendly, provides a living wage to Hawaii's graduates to keep them at home, and complements tourism by publicizing the destination of Hawaii. And since the passage of the Hawaii film credit in 2006, spending in Hawaii on TV/film productions has soared, with expenditures qualifying for the tax credit rising from $128.2 million in 2007 to $355.6 million in 2019. Even after adjusting for inflation, current dollar spending in Hawaii on film/TV/digital production (in $2019) increased by 116 percent between 2007 ($164.5 million) and 2019 ($355.6 million). The film/TV industry's spending growth is much larger than the overall increase in Hawaii real gross domestic product over the same period, a modest 17 percent. The industry's strong performance raises the question of whether its rapid expansion can continue for another decade and contribute measurably to diversification of the state economy. Proponents argue that annual industry spending could grow from $355.6 million to $1 billion.[4]

In this policy brief, we focus on understanding why a majority of U.S. states now offer substantial film credits; difficulties in monitoring and measuring the effectiveness of film credits; whether a small state

1 Section 1, SB2570 CD1 Hawaii 2006; Act 88, Session Laws of Hawaii 2006.

2 For a concise discussion of the costs and benefits of film/TV tax credits, see Stewart Yerton, "The High Price Of Luring The Movies To Hawaii," *Honolulu Civil Beat*, April 16, 2019. Available at: https://www.civilbeat.org/2019/04/the-high-price-of-luring-the-movies-to-hawaii/ (last access on 25 Jan. 2021).

3 Chris Lee, "Look to the Film Industry When Diversifying Economy," *Honolulu Civil Beat*, June 3, 2020. Available at https://www.civilbeat.org/2020/06/look-to-the-film-industry-when-diversifying-economy/ (last access on 14 Feb. 2021).

4 Rob Kay, "Digital Media can be a way to grow Hawaii's economy," *Honolulu Star-Advertiser*, February 2, 2021. Available at https://www.staradvertiser.com/2021/02/02/hawaii-news/tech-view/column-digital-media-can-be-a-way-to-grow-hawaiis-economy/ (last access on 14 Feb. 2021).

like Hawaii is capable of developing a larger film industry; and what types of policy changes and industry investments are necessary for robust growth of the Hawaii content production industry to continue through the 2020s.

II. A BRIEF HISTORY OF THE HAWAII FILM CREDIT

Hawaii's film credit dates back to 1997 when the Legislature provided for a tax credit of up to four percent of qualified production costs incurred in the state and a six percent tax credit for expenditures on transient accommodations, e.g., hotels and rented homes/condos.[5] From 2000 to 2005, some TV/movie production companies filming in Hawaii were also able to claim additional tax credits under Act 221 which provided a 100 percent investment tax credit paid over a five-year period for all qualified expenditures in a number of specified industries. One of those lucky industries was the performing arts, a category that encompassed many film and TV productions.[6] After it came to light that over $15 million in tax credits had been awarded to the producers of *Blue Crush*, a surf movie produced on Oahu's North Shore, and roughly $14 million-to-$20 million in tax credits had been awarded to the Warner Brothers film, *The Big Bounce*, there was sharp criticism from the public and the media regarding the use of Act 221 tax credits to fund films. In response, the Hawaii Department of Taxation (DoTAX) changed the rules governing Act 221 tax credits to disallow one-shot movie projects.

In 2006 the Hawaii Legislature enacted Act 88 which provided stand-alone film/TV production tax credits.[7] Act 88 provided a production subsidy of 15 percent for qualified local production costs incurred on Oahu and 20 percent for costs incurred in Maui, Kauai, and Hawaii counties. Act 88 defined qualified costs as "costs incurred by a qualified production within the State that are subject to the general excise tax under chapter 237 or income tax under this chapter." To be eligible productions had to spend a minimum of $200,000 in local qualified production costs. Tax credits for each qualified production were capped at $8 million.

In 2013 the Legislature amended the film credit by passing Act 89. More commonly known as "Act 88/89", the new law increased the refundable tax credit to 20 percent of qualified production costs incurred in Oahu and 25 percent incurred in Maui, Hawaii and Kauai counties. Act 89 also extended the sunset date of the film credit to January 1, 2019 and increased the annual cap on credits received by a particular production from $8 million to $15 million.

In 2017 the Legislature passed Act 143 (effective December 31, 2018) which amended Act 88/89. For the first time, Act 143 imposed an annual cap of $35 million on the aggregate annual pool of film credit money

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5 Act 107, Session Laws of Hawaii 1997. The Legislature increased the tax credit on transient accommodation expenditures from 6.0 to 7.25 percent in 1999.

6 For a full analysis of Act 221, see Andrew Kato, Sumner La Croix, and James Mak (2009), "Small State (Hawaii), Giant Tax Credits." *State Tax Notes*, November 30, 2009: 641-652.

7 See Dept. of Taxation, State of Hawaii (2006), Department of Taxation Announcement No. 2006-05. RE: Act 88, Session Laws of Hawaii 2006, Relating to Digital Media (Act 88). Available at http://files.hawaii.gov/tax/news/announce/2004_09/ann06-05.pdf (last access on 23 Jan. 2021), and Dept. of Taxation, State of Hawaii (2006), Department of Taxation Announcement No. 2006-02. RE: Refundable Income Tax Credit for Persons Engaged in the Motion Picture, Television, and Digital Media Production Business. Available at http://files.hawaii.gov/tax/legal/tir/1990_09/tir06-02.pdf (last access on 23 Jan. 2021). For a brief history of film credits in Hawaii see Andrew Gomes, Hawaii Film Tax Credit Cap Under Fire at Capitol," *Hawaii HStar-Advertiser*, March 17, 2019. Available at https://howzitkohala.com/2019/03/17/hawaii-film-tax-credit-cap-under-fire-at-capitol-by-andrew-gomes/ (last access on 23 Jan. 2021).

available to production. Once the cap is reached, claims in excess of the amount available are rolled over to the next calendar year's credit allocation. During its 2019 session, the Legislature passed Act 275 which raised the aggregate cap on the film credit to $50 million per year, effective from January 1, 2020. The Hawaii film credit sunsets on January 1, 2026.

It is important for the reader to understand that the Hawaii film credit is a *refundable tax credit*. This means that the state pays the full dollar amount of a legitimate film credit claim whether or not the production company has a tax liability; a company receives a refund of the difference if the film credit exceeds the company's tax liability. Because the size of the gross film credit is not tied to a production's tax liabilities, the film credit is properly viewed as a *direct subsidy* to the production of particular films, TV shows, and other digital productions.

III. FILM/TV TAX CREDITS IN U.S. STATES AND FOREIGN COUNTRIES

In 1997, Hawaii was one of the first states to enact film credits to attract TV/film producers to film their projects in the state. Hawaii policy makers recognized that the production part of the film industry is highly "footloose", that is, intangible creative capital, some physical capital and people can easily be moved to or acquired at new production locations.[8] The rationale behind a small production subsidy was that even a small reduction in production costs would be sufficient to attract a large amount of additional business, i.e., that there would be an elastic response by film/TV production companies to the credit. In the early 2000s, other states and countries also started to offer relatively small tax credits for film/TV projects, hoping to attract new projects and grow their economies. In 2002 Louisiana became the first state to offer a substantial credit, offering a 30 percent tax credit on qualified expenditures and placing no caps on credits taken by individual productions or in the aggregate. New Mexico was next to move, enacting a 15 percent tax credit in 2002. The success of these two states in attracting new productions caught the attention of policymakers in other states. The number of states offering film credits jumped during the 2000s decade, rising from 6 states in 2002, to 19 states in 2005, and to 41 states in 2009-2010. The median value of a state film credit also increased, rising from 2 percent of qualified production costs in 1998 to 15 percent in 2001-2006, and to 25 percent in 2009-2015.[9]

The upward trend in the number of U.S. states with film credits ended in 2010. Over the course of the 2010s decade, 15 of the 41 states with film credits in 2010 decided to repeal their credits or reduce the value of the subsidy conferred by the credit. Eleven of the 41 U.S. states with film credits in 2010 have since repealed them or let them sunset: Alaska (2015), Arizona (2010), Florida (2016), Indiana (2011), Kansas (2012), Michigan (2015), Missouri (2013), West Virginia (2018), Wisconsin (2013), and Wyoming (2017), Vermont (2010).[10] Just two states have enacted film credits since 2010: Kentucky (2010), and Nevada (2014). As of

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8 U.S. and foreign production companies that film in Hawaii bring some physical capital to Hawaii, e.g., cameras, sound equipment, and costumes, but rent just about everything else in Hawaii. Highly skilled labor (e.g., actors, directors, producers, script writers, and skilled film crews) is also mobile and most highly skilled workers on Hawaii film/TV productions come from overseas. Other types of skilled labor and unskilled labor (e.g., extras) are hired locally.

9 See Bradbury (2020, 329-331). Iowa's film tax credit ended in 2009. Tax credits in some states are higher for qualified in-state labor expenses than on other qualified expenditures. An example of a state that provides a higher credit for qualified in-state labor expenses is Alabama which offers an income tax rebate equaling "25% of certain production expenditures on the project that are incurred in Alabama plus 35% of the payroll paid to Alabama residents." See Alabama Dept. of Revenue, *Major Tax Incentives: Film Rebate*, 2021. Available at https://revenue.alabama.gov/tax-incentives/major-tax-incentives/film-rebate/ (last access on 13 Feb. 2021).

10 Two states, Alaska and Michigan, that repealed their film credits offered some of the most generous incentives. Until repeal in 2015, Alaska offered "a 30 percent base transferable tax credit, with extra percentages for local hire,

January 2021, 32 states provided some type of film credits, and in these states, the median statutory credit value increased from 25 percent of qualified production costs in 2015 to 30 percent in January 2021.[11]

Within this group of 32 states, four cut back on their subsidies by reducing their aggregate credit cap during the 2010s decade (e.g., Colorado, Louisiana, Maryland, Oklahoma, and Texas), while nine increased the value of their credits by adjusting different dimensions of their programs. Some increased the percentage of qualified production expenses subsidized (e.g., California, Hawaii, Louisiana, and Virginia), some raised per project annual spending caps (e.g., Hawaii) while others raised aggregate annual caps on total tax credit expenditures (e.g., California, Hawaii, New Mexico, North Carolina, Oklahoma, Utah, and Virginia).

The competition to attract film/TV productions is not just between U.S. states but also involves U.S. territories and foreign countries. It was Canada's success with film credits in the 1990s that provided the model and motivation for the introduction of substantial film credits by U.S. states in the 2000s. Film/TV producers filming in Canada have been eligible for refundable tax credits from the Canadian federal government as well as some provinces since 1995 for Canadian-owned production firms and since 1997 for foreign-owned production firms. In British Columbia, generous credits can often cover up to 25 percent of a film's total budget.[12] By 2016 foreign film/TV production in Canada had become a $2.87 billion industry. Vancouver and Toronto are often referred to as "Hollywood North".

During the decade of the 2000s, the number of foreign countries or foreign regional governments offering film credits soared, with the value of credits also rising over the course of the decade. The Czech Republic, Hungary, Australia, New Zealand, Ireland, Canada and the United Kingdom are among more than 60 countries and regional governments that have implemented generous film credits and have been successful in attracting major TV/film productions to film within their borders. Australia's film credits are notable not just for providing a rebate for "up to 40 percent of in-country production costs" but for also providing a rebate of "30 percent of post-production costs paid in country, regardless of where the film itself was shot."[13]

The United Kingdom offers substantial film credits for producers to film their projects within the United Kingdom as well as film credits to firms based in the United Kingdom specializing in post-production

rural filming and off-season production. Production companies sell tax credits at a discount to Alaska corporate income taxpayers, who then take the credit." See Zac Hollander, "Report: Alaska's film industry hits new highs in 2014," *Anchorage Daily News*, Sept. 28, 2016. Available at https://www.adn.com/politics/article/tax-credits-limbo-report-highlights-alaska-s-growing-film-industry/2015/02/20/ (last access on 12 Feb. 2021).

Upon repeal in 2015, Michigan offered a 40-percent subsidy for eligible labor expenses, a 25 percent subsidy for industry-related capital improvements, and a 50 percent subsidy for "on-the-job training expenses of Michigan residents." See Kevin Elliott, "The tragic story of Michigan film industry," *Downtown Newsmagazine*, March 26, 2019. Available at https://www.downtownpublications.com/single-post/2019/03/26/the-tragic-story-of-michigan-film-industry (last access on 12 Feb. 2021).

11 States without film/TV incentives at the end of 2020 were Alaska, Arizona, Delaware, Florida, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, New Hampshire, North Dakota, Vermont, South Dakota, West Virginia, Wisconsin, and Wyoming. Five states—Delaware, Nebraska, New Hampshire, North Dakota and South Dakota—have never offered a film credit. See Amy Clarke, "Film Incentives State by State Breakdown 2021." Available at https://setheroapp.com/blog/film-incentives-state-by-state-breakdown-2021/ (last access on 12 Feb. 2021). See also Scott Macaulay, "Out of the Spotlight: A 2020 Update on Film Tax Incentives in the U.S.," *Filmmaker Magazine*, March 17, 2020. Available at https://filmmakermagazine.com/109378-out-of-the-spotlight/ (last access on 12 Feb. 2021).

12 See Hart (2017, 21).

13 See Hart (2017, 22).

visual effects. The U.K. strategy is notable because it has the potential to create more permanent jobs than one-time movie projects or commercial shoots. The three largest visual effect post-production companies were located in the United Kingdom in 2017.[14]

U.S. territories have also joined the competition to host film/TV productions. In 2011 Puerto Rico began to offer a 40 percent tax credit on qualified expenditures to Puerto Rican companies and individuals, a 20 percent tax credit on qualified wages paid to non-resident workers, and an array of other tax exemptions on license taxes, dividend distributions, and real property taxes.[15] The United States Virgin Islands offers "up to a 17 percent transferable tax credit, and eligibility for an additional 29 percent cash rebate."[16] Qualified films shot in American Samoa are eligible for the American Samoa Economic Development Credit.

IV. IS COMPETITION BETWEEN STATES FOR FILM AND TV PRODUCTIONS A RACE TO THE BOTTOM?

Why does a production company choose Hawaii for the location to film its project when costs of labor and rented capital are lower in many other locations? The main reason is the access the company gains to natural and cultural capital—Hawaii's diverse natural landscapes, near perfect weather, the unique urban landscapes of the tropical city of Honolulu, and the many cultures intermingling in the islands, including most prominently the Hawaiian culture. A production company will, of course, also consider the net of credit cost of filming a project in Hawaii vis-à-vis the net of credit cost of filming in another location. This means that film/TV spending in Hawaii depends not just on the size and scope of film incentives offered by the State of Hawaii but also on the size and scope of film incentives offered by numerous other U.S. states and countries.[17]

Consider this stylized model of two states, A and B, competing for film/TV projects. Assume that labor and capital necessary for filming productions can be moved at low cost from one state to another. At the start of the competition, the entire industry is located in State A because its costs are 5 percent lower than in State B. Enterprising policymakers in State B decide to compete for the mobile production business by offering a 10 percent film credit on film/TV production costs. With the 10 percent film credit, State B now has a 5 percent cost advantage over State A. Profit-maximizing film/TV producers respond by choosing to locate their next project in State B. State A then responds by also offering a 10 percent film credit, thereby regaining its 5 percent cost advantage. Profit-maximizing film/TV producers respond again by moving their next projects to State A. Suppose now that State B responds by increasing its film credit to 15 percent and State A retains its 10 percent film credit. Each state now has the same film-credit-adjusted project cost and each attracts half of the film/TV projects.[18]

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14 See Hart (2017, 22-24).

15 See Sotheby's International Realty, *Puerto Rico, Puerto Rico Tax Incentives*, Act 27. Available at http://puertoricotaxincentives.com/act-27-film-industry-economic-incentives/ (last access on 13 Feb. 2021). See also National Conference of State Legislators, *State Film Production Programs: Puerto Rico*, Jan. 30, 2018. Available at https://www.ncsl.org/Portals/1/Documents/fiscal/2018StateFilmIncentivePrograms_20189.pdf (last access on 13 Feb. 2021).

16 See National Conference of State Legislators, *State Film Production Programs: U.S. Virgin Islands*, Jan. 30, 2018. Available at https://www.ncsl.org/Portals/1/Documents/fiscal/2018StateFilmIncentivePrograms_20189.pdf (last access on 13 Feb. 2021). See also Economic Development Authority, United States Virgin Islands (2021), *S.T.A.R.S. Program*. Available at https://usvieda.org/incentives/stars (last access on 13 Feb. 2021).

17 See Wilson (2009) for an application of this type of reasoning to R&D tax credits offered by competing U.S. states. Wilson finds that one state's gain in R&D activity from raising its R&D tax credit often comes at the expense of R&D activity in other states.

18 We offer this example as an illustration and not as a demonstration that the tax competition game between the states

Consider now how the competition between states has increased the profits of film producers. At the beginning of this tax-credit competition between states, no state government paid a subsidy to film producers for filming a project. As the game unfolds, State A has lost half of its annual film production projects and pays a 10 percent subsidy for all film projects, while State B has gained half of the annual industry projects by paying a 15 percent subsidy for all film projects. Why are U.S. states willing to pay these subsidies? One reason is that film/TV projects embody intangible creative capital—the output of numerous producers, directors, writers, choreographers, song writers, and composers. Richard Florida (2012) has shown that people with creative capital are highly sought after by states and metropolitan areas to promote economic development. People with creative capital and their creative outputs are mobile across state and international borders and can be used almost anywhere.[19] Because creative capital is a mobile factor of production, competition between states and countries to attract creative capital will reduce the equilibrium marginal tax rate on creative capital[20] and, in some cases, necessitate payment of a subsidy.

A second reason is that attracting overseas film/TV projects to a state expands a state's exports and generates three different types of new spending. Local actors and other skilled and unskilled workers earn income directly from the film producers. Indirect spending, i.e., purchases of goods and services by film production companies from small-to-large-size Hawaii businesses such as dry cleaners, hotels, florists, food caterers, chauffeured car services, van services, computer technical support companies, hardware stores, and lumber suppliers, generates income for owners and employees of those businesses. Recipients of direct and indirect spending also generate multiplier benefits when they spend their incomes on a wide variety of goods and services (e.g., housing, food, education, medical care, etc.), thereby benefiting owners and employees of those companies.

A third reason for a state to offer a film credit is that it allows some states that would otherwise not host many film projects to become minor players in the industry, albeit at the cost of paying out significant subsidies to production companies. Mark Owens and Adam Rennhoff (2020) argue that state film incentives significantly influence film location decisions and that without these subsidies, film/TV projects would be concentrated in only a few U.S. states.[21] So how are film projects and employment actually distributed in the presence of competitive tax credits? In 2020 the Motion Picture Association (MPA) released results of a study showing where film/TV projects located in 2018/2019 and the number of jobs officially listed for the industry (Table 1).[22] States that offer film tax credits tend to have more films and TV series produced in their states than states that offer no significant tax incentives.[23] Eighteen states no longer played the film credit game in 2018/2019 for a variety of reasons, ranging from the game has become too expensive to

will actually reach an equilibrium at this point. It is possible that an equilibrium would not be reached until one of the two states repeals its credit and drops out of the competition.

19 Some of this intangible intellectual capital can be put on a flash drive, e.g., the sheet music, the script, story boards, and choreographic arrangements. In most cases, this material is much more valuable on location if it is accompanied by complementary human capital, such as the composer, the writers, the choreographer, etc.

20 Two excellent treatments of tax competition issues vis-à-vis footloose production capital are Amitrajeet A. Batabyal and Peter Nijkamp (2020), "Interregional Competition for Mobile Creative Capital With and Without Physical Capital Mobility," MPRS Paper No. 105589. Available at https://mpra.ub.uni-muenchen.de/105589/ (last access on 7 March 2021); and Dao-Zhi Zeng and Shin-Kun Peng (2020). "Symmetric tax competition and welfare with footloose capital." *Journal of Regional Science*. https://doi.org/10.1111/jors.12517

21 See Mark F. Owens and Adam D. Rennhoff, "Motion picture production incentives and filming location decisions: a discrete choice approach," *Journal of Economic Geography* 20(3), 679-709.

22 Motion Picture Association (2020), *What We Do: Driving Economic Growth*. Available at https://www.motionpictures.org/what-we-do/driving-economic-growth/ (last access on 14 Feb. 2021).

23 Some states that do not offer film tax credits are nonetheless able to attract sizeable film and TV productions to their states. Florida and Arizona, both of which used to offer credits, are examples.

play, other interests seeking subsidies from state governments have gained increased political influence, or policymarkers realize that the state's potential as a film location is too limited to support payment of subsidies.

Dan Rickman and Hongbo Wang (2020, Table 1, p. 37) use data compiled by the U.S. Bureau of Labor Statistics for state film and television industry employment to compare the relative size of film industries among U.S. states. The BLS data indicate that California led all states with 120,752 people employed in 2019 or a 45.9 percent share of all employment in the U.S. industry. New York is a distant second in employment with an 18.9 percent share. Georgia, with a 6.2 percent share of employment, is the only other significant employer. All other states had employment shares smaller than 3 percent of total industry employment. Hawaii ranks 22nd among states, registering 1,560 people employed in the film and TV production industry in 2019, which amounts to a 0.6 percent share of U.S. industry employment.

V. BENEFITS AND COSTS OF A FILM CREDIT FOR HAWAII AND OTHER U.S. STATES

There is a large number of recent studies on the impacts of state film credits on state tax revenues, output, earnings, and jobs.[24] Most are highly critical of the state credits. Rickman and Wang (2020) provide an exhaustive survey of this literature.[25] They argue (pp. 3-4) that a common fault of these studies is that the studies assume incentives are responsible for all of the increase in film production after the adoption of incentives and that applying standard benefit multipliers derived from state input-output models to these inflated numbers overstates benefits to state economies from offering film incentives. Despite their criticism of prior studies, Rickman and Wang's own empirical comparison of states that have adopted and retained film credits and those that have eliminated film credits finds (p. 5) "some support for the use of film incentives to stimulate state economies." They conclude (p. 32) that "incentives do not pay for themselves. But because of the higher average pay in most incentivized state and local film activity, and the greater footloose nature of the industry, state film incentives can produce a higher ROI [return on investment], a lower incentive cost per job, and a larger benefit-cost ratio, than the typical state incentives."

Has the Hawaii film credit generated net benefits for Hawaii's residents? Since 2013, the State of Hawaii Film Office has issued annual reports on film/TV production spending eligible for the Hawaii film credit. The reports show, as we discussed earlier in this policy brief, that after the 2006 film credit was implemented, inflation-adjusted production spending more than doubled between 2007 and 2019. The additional production spending led to additional indirect and multiplier spending, and the Hawaii Department of Business, Economic Development and Tourism (DBEDT) estimates that the several rounds of spending increases led to substantial increases in Hawaii output, earnings, and jobs. In 2016 the State of Hawaii Office of the Auditor conducted its first audit of the state's film tax credit. It focused largely on the Film Office's administration of the tax credit.[26] It concluded (p. 1) that "insufficient administration of the film tax credit by the Department of Taxation (DoTAX) and the Hawaii Film Office has likely increased the cost of the credit while overstating the possible economic benefits that it provides to the State." As evidence, the

24 See Adkisson (2013), Bradbury (2020a; 2020b), Button (2018; 2019), Leiser (2017), Owens and Renhoff (2020), Phillips, Cline, and Fox (2011), Sewordor and Sjoquist (2016), Swenson (2017), Tannenwald (2010), Thom and An (2017) and Thom (2018a;2018b).

25 Dan Rickman and Hongbo Wang, "Lights, Camera, What Action? The Nascent Literature on the Economics of US State Film Incentives, MPRA, MPRA Paper No. 104477, posted 4 December 2020. Available at https://mpra.ub.uni-muenchen.de/104477/ (last access on 12 Feb. 2021).

26 State of Hawaii, Office of the Auditor (2016), *Audit of Hawaii's Motion Picture, Digital Media, and Film Production Income Tax Credit*, A *Report to the Governor and the Legislature of the State of Hawaii*, Report No. 16-08, November 2016. Available at https://files.hawaii.gov/auditor/Reports/2016/16-08.pdf (last access on 14 Feb. 2021).

Auditor's report alleged that DoTAX inappropriately allowed out-of-state expenses as "qualified production costs", and had not promulgated rules to ensure that film credit claims were sufficiently monitored. The Auditor's 2019 follow-up report concluded that the Film Office had not changed its practice allowing some out-of-state expenditures to count as credit-eligible expenditures.[27] The Hawaii Film Office Commissioner informs us that its practices regarding eligibility of out-of-state expenditures for the film credit are governed by a ruling by the Hawaii State Attorney General that allows qualified imported goods and services to be eligible for the film credit as long as the project producers attest that "reasonable efforts were unsuccessful to secure and use comparable products or services within the state" and Hawaii's use tax, i.e., Hawaii General Excise and Use Tax on items and service purchased out of state and used in state, has been paid on the item.[28]

It is beyond the scope of this policy brief to analyze or resolve the dispute between the State Auditor and the Hawaii Film Office over interpretation of language in the film credit statute. We note it is quite possible that applying the film credit to some out-of-state expenditures could yield benefits for the state, as this would increase the subsidy applied to a particular project and raise the likelihood that producers decide to film their projects in Hawaii. Some states, e.g., Massachusetts and New York, allow some out-of-state expenditures to count as qualified spending eligible for their tax credits, while others, e.g., Georgia, Louisiana, Minnesota, North Carolina, Tennessee, and Washington, only allow purchases from in-state vendors to count as qualified spending eligible for their tax credits.[29]

Each year the Hawaii law establishing the film credit requires DBEDT's Research and Economic Analysis Division (READ) to submit a cost-benefit analysis of the film tax credit to the Legislature. We conclude that READ should not include expenditures made outside the state or the bulk of wages paid to non-resident employees in its analysis of benefits that potentially accrue to state residents from film/TV project spending. If a film/TV producer makes an expenditure out-of-the state, that expenditure will typically not generate any direct, indirect, or multiplier spending, output, earnings, or jobs in Hawaii. In its calculation of these benefits, READ should remove any out-of-state expenditures from the base of producer expenditures eligible for the credit even if producers have paid the use tax for these expenditures. Otherwise, the impact of the Hawaii film credit on the overall Hawaii economy will be overestimated.

In its calculation of benefits stemming from the film credit, READ does not account for the share of productions that would have occurred in Hawaii even if the state did not offer film incentives. That share could be sizable. An analysis by the California Legislative Analyst's Office estimates that about one-third of the projects receiving California's film credit would have been made in California without the credit.[30] Consider also the case of Florida. After intense lobbying by a group linked to the Koch Brothers, the Florida Legislature abolished the state's film credit in 2016. Most film/TV producers pulled up stakes and left the state, with many relocating to neighboring Georgia which has a rapidly growing TV/film industry, new production studios, and a competitive tax credit equal to 30 percent of qualified expenses in 2020.[31] Film

27 State of Hawaii, Office of the Auditor (2019). *Follow-Up on Recommendations from Report No 16-08, Audit of Hawai'i's Motion Picture, Digital Media, and Film Production Income Tax Credit*. Report No. 19-14, September 2019. Available at https://files.hawaii.gov/auditor/Reports/2019/19-14.pdf (last access on 28 Jan. 2021).

28 Email communication from Donne Dawson, State Film Commissioner, February 25, 2021. The quotation is from the Hawaii film credit statute, HRS 235-17(d)(5). We note that the Offce of the Auditor's 2019 *Follow-Up Report* finds that several other action items from its 2016 *Report* were adequately addressed by the Film Office.

29 State of Hawaii, Office of the Auditor (2016), p. 14.

30 Legislative Analyst's Office, State of California (2016). *California's First Film Tax Credit Program*. Available at https://lao.ca.gov/reports/2016/3502/First-Film-Tax-Credit-Prog-092916.pdf (last access on 31 Jan. 2021).

31 The standard film credit in Georgia is 20 percent of qualified expenditures. An additional 10 percent can be claimed if the finished product includes a Georgia screen credit logo.

Commissioner Sandy Lighterman estimated that in Miami-Dade county "direct spending by entertainment production companies has plummeted from $350 million a year to $150 million."[32] This implies that the Florida tax credit generated an additional $200 million per year in film/TV/digital spending in Miami-Dade county, not $350 million.

In its calculations of benefits from the film credit, READ does not take into account benefits accruing to the tourism industry from the increased exposure provided to potential visitors by films and TV series filmed in Hawaii. Some tourists come to Hawaii to visit locations, such as Kualoa Ranch, where scenes from many popular films were shot. Others visit Hawaii to see locations where popular TV shows such as Hawaii 5-0 (ten seasons) and Magnum PI (currently in its third season) were filmed. The main impact of these popular TV shows on tourism is most likely via the constant stream of (generally) positive advertising they provide regarding all things Hawaii. A proper accounting of benefits from the film credit should include an estimate of this impact.

The Hawaii Auditor's 2016 report concluded that they could not determine whether the film credit results in a net benefit to the state because of data reporting problems by the Film Office (p. 27). While it is important for the Film Office to provide sufficiently detailed data for a cost-benefit analysis, provision of correct data would not matter much unless READ accounts more comprehensively for both benefits and costs generated by the film credit.[33] We recommend that the statutory requirement for READ to conduct an annual evaluation of the film credit program be replaced by a requirement to undertake a more comprehensive cost-benefit analysis over a longer time interval, say 3-5 years. A more in-depth accounting would help citizens and policymakers to understand better the tradeoffs involved in the program and whether it is generating substantial net benefits for Hawaii residents.

VI. THE CHALLENGE OF BUILDING A ROBUST FILM INDUSTRY IN HAWAII

What factors does a business consider when it decides to locate in a particular city or state or country? The economics and business literature has a long list of answers ranging from natural, cultural, and urban attributes valuable to the firm and its employees, thick local labor markets for the specific types of human capital required by the firm, and attributes of the overall business and regulatory environment relevant to the firm and its industry. For highly mobile film production companies, the question is actually more narrow: What factors affect the decision of a film production company to ***temporarily*** locate in a particular place to shoot a film? Some factors relevant for employees living permanently in a particular location—traffic, housing cost, quality of public and private schools—are likely to be less relevant for a company's decision to temporarily locate there.[34] More important factors are the natural environment (natural scenery, urban environment, and weather), state and county regulations pertinent to the project (e.g., film permits, restrictions on times and places for filming, and union labor requirements), taxation and subsidy of the project's income and expenses, availability of different types of skilled and unskilled labor, and facilities specific to the industry, such as film studios.

It is notable that the first three items on the above list—natural environment, state and county regulations, and project subsidies—are already pretty much in place in Hawaii. Most film/TV projects that choose Hawaii feature its natural environment which is extraordinary diverse both within and across

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32 Jason Garcia, "The Film Industry in Florida: Lights, Camera, Inaction," *Florida Trend*, May 29, 2018. Available at https://www.floridatrend.com/article/24632/the-film-industry-in-florida-lights-camera-inaction (last access on 14 Feb. 2021).

33 For its estimates of the effects of film credits from 2013, READ has used state input-output tables to compute additional benefits to the Hawaii economy from indirect project spending and from induced multiplier spending.

34 The omitted factors might be more relevant for a multi-year TV series project than for a one-shot film project.

islands. A small state film office and four county film offices (consisting of one employee each) work with project producers to facilitate licenses to film at various locations, to block major highways for car-chase scenes, and to meet administrative requirements to obtain the film credit. The state film credit, currently set at 20 percent of eligible expenses for Oahu and 25 percent for the other three counties, is now below the median state film credit of 30 percent. Given that the Hawaii film credit is fully refundable and some out-of-state production related expenditures are eligible for the film credit, we view it as still quite competitive with other states' film credits in both its size and administrative operation.[35]

How well does Hawaii fare on availability of skilled and unskilled labor in demand by film production firms? Skilled human capital required by the industry accumulates via formal education and by individuals working in the industry and gaining more via learning-by-doing and informal education on the job. Expanded undergraduate education programs and facilities dedicated to film/TV/digital production at UH campuses are providing college students with skills and overall knowledge valued by film/TV/digital production companies. The brand new UH-West Oahu facilities have the potential to make UH's Academy of Creative media one of the leading schools for content production in the United States.[36] With roughly 250 undergraduate majors expected when the new UH-West Oahu facilities open for in-person learning later this year, content production companies filming in Hawaii will find it easier to staff jobs in their productions with local talent, while other program graduates will be encouraged to start their own companies.[37]

Formal schooling is, of course, not the only way for people involved in the industry to acquire more skills. Learning-by-doing for the many employees involved in *Hawaii* 5-0 and the new *Magnum PI* TV series has made them more skilled, more experienced, and more valuable employees. On its own, the recent development of a larger and deeper stock of human capital with film/TV industry specific skills should attract more film/TV projects to Hawaii. That is, as long as Hawaii residents with these skills decide to stay in Hawaii rather than migrate to other locations where they are more in demand.

Private investment in a film studio(s) for use by Hawaii and overseas production companies has potential to attract more film/TV projects to Hawaii. The Hawaii Film Studio at Diamond Head, the only state-owned and state-operated studio facility of its kind in the United States, can presently only accommodate one TV series at a time. A U.S. Navy warehouse facility in Kalaeloa leased by DBEDT has accommodated productions needing more space but is not exactly the type of modern facility needed to attract new film productions. A new TV series, Doogie Kamealoha, has leased unused laboratory/office space at the UH Cancer Center in Kakaako. In sum, Hawaii is currently trying to attract film/TV productions to the state without industry-standard production facilities and sound stages.

In general, U.S. states with thriving film industries are ones where substantial public and private capital investments in production studios and ancillary facilities have taken place. Large-scale investments in

35 Since the median applies to the maximum tax credit available when various conditions are met, the actual Hawaii credits are probably pretty close to the median state effective tax credit. Raising them to higher levels to attract additional productions would come at a high cost, as the increase would apply to the existing flow of productions generated by the current tax credit as well as new that are not at the tax credit cap for additional projects. Raising the credit from 20 to 30 percent would provide an extra 10 percent subsidy to projects already willing to film here. With $356 million in qualified local spending in 2019, this would provide an unnecessary additional $35.6 million to these projects if none of the projects are at their project caps and less if some projects are at the project cap of $15 million.

36 See University of Hawaii, "New state-of-the-art Academy for Creative Media facility ready for students, *University of Hawaii News*, Feb. 7, 2021. Available at https://www.hawaii.edu/news/2021/02/07/acm-facility-ready-for-students/ (last access on 13 Feb. 2021).

37 The new UH-West Oahu facilities contain dedicated space for a "business incumbator" to help students translate ideas for new content production businesses into business plans and functioning companies.

studio facilities by the producer/actor Tyler Perry and several other production companies have propelled the film/TV industry in Atlanta, Georgia to success over the last decade. In Albuquerque, New Mexico, a state-of-the-art film studio complex, ABQ studios, was built for $91 million in 2007. It hosted numerous movie and TV productions, including the *Breaking Bad* television series. The studio went bankrupt in 2010 and, after reorganization, continued operations. In 2018, Netflix acquired ABQ studios and has since made it a hub of its North American production operations. In Louisiana, state government invested in building sound stages in New Orleans, Shreveport, and Baton Rouge, but the facilities have not received buy-in from major producers. This could be due to Louisiana's imposition of an aggregate cap of $180 million on its film credit in 2015 and a subsequent reduction to $150 million in 2017.

Is there potential for complementary investment in film studios to occur in Hawaii? Potential projects have been discussed repeatedly but despite the rapid growth of production spending in Hawaii over the last 15 years, private investors have not made substantial investments in facilities for the film/TV industry. Two bright spots with respect to infrastructure investment have recently emerged. One is the new $35 million publicly-financed facility at the UHWO's Academy of Creative Media program that will allow creative media students to learn in state-of-the-art facilities. A second bright spot is that an adjacent site on Farrington Highway near the new UH-West Oahu facilities has been identified as a potential site for a private production studio to be developed with private funding on university land. We note that private construction of a major new film studio could help to counter expected declines in State of Hawaii construction (CIP) spending over the next three fiscal years. Given today's extremely low cost of borrowing, even a modest return on investment could make a new studio viable for private investors.

VII. CONCLUSIONS AND RECOMMENDATIONS

At the end of the day, unless stakeholders in the Hawaii industry can find a way to invest in needed studio facilities, growth in the Hawaii content production industry is likely to slow. If the reason for the lack of interest by private investors in building new studio facilities is the extra cost and delay imposed by Hawaii's regulations governing land development, then the film industry may just be another casualty of Hawaii's antiquated regulatory system. Political risk may also be nontrivial. In a state where the operating permit for a new bioenergy plant—Hu Honua—was taken away after the plant was built with all required building permits, confidence in the ability of state government to fulfill its promises has ebbed.[38] Or perhaps potential investors are worried that the tax credit competition among states will become too heated for a small state like Hawaii to effectively compete. Nonetheless, private investment in a new studio is likely to be viable only if a new studio opening in, say, 2024 or 2025 finds that the Hawaii film credit is still in place and expected to continue for at least a decade. While this is impossible for state government officials to credibly promise, one small step to enhance credibility regarding the state's commitment to new studio construction would be for the Legislature to extend the film credit's sunset date to 2030.

There is considerable agreement in the development economics literature that small countries and states, like Hawaii, that depend heavily on one major export should adopt policies that facilitate diversification of their economies to strengthen their resilience to shocks and achieve a higher sustainable rate of economic growth (McIntyre et al., 2018).[39] It is quite natural for policymakers to take a close look at

38 Four of Hawaii's last five governors, recently joined together to note the extreme threat of the recent Hawaii Supreme Court decision on Hu Honua to future economic development. See Dave Segal, "Former Hawaii Governors Support Big Isle Energy Project," *Honolulu Star Advertiser*, Oct. 23, 2020. Available at https://www.staradvertiser.com/2020/10/23/hawaii-news/former-governors-support-big-isle-energy-project/ (last access on 13 Feb. 2021).
39 Arnold McIntyre, Mike Xin Li, Ke Wang, and Hanlei Yun, *Economic Benefits of Export Diversification in Small States*, International Monetary Fund (IMF), Working Paper WP/18/86, April 2018. Available at https://www.imf.org/en/

prospects for growth of Hawaii's film industry, as spending by production companies on film/TV projects in Hawaii has grown much faster over the last 15 years than Hawaii's overall economy. Some of this growth has occurred because Hawaii enacted a substantial film credit at the start of the period and enhanced its generosity over the next 15 years. However, increases in the value of the film credit become more costly as the industry becomes larger. As noted previously, even a five-percentage point increase in the credit would provide existing productions with additional subsidies of $17-18 million, a large cost burden to be overcome by benefits from new productions. We caution that increases in the value of subsidies paid to attract individual film/TV projects to the state are unlikely to be a viable policy for a small state to promote growth in this industry.

The aggregate annual cap of $50 million on film credits is, however, a problematic feature of current arrangements to foster growth in the Hawaii film/TV industry. There are two good reasons for state government to impose an aggregate annual cap on film credits. One is to facilitate state budgeting and a second is to ensure that film/TV producers do not unexpectedly find ways "to game" the credit and create large unexpected current and future liabilities for the state. However, if the film credit is generating net benefits for Hawaii residents by bringing more productions to the state, it is difficult to understand why the state would want to limit the credit's use to just a few projects. If three subsidized film projects provide net benefits to state residents, then nine film projects should provide three times as many net benefits. Currently, producers are applying for more than $50 million of credits, and projects exceeding the $50 million cap are being rolled into the credit allocation for the next calendar year. The regular roll-over of a substantial volume of credits for current film projects into the next fiscal year should not become standard practice, as this means that subsidies for current projects are being pushed onto future state budgets. We recommend that the annual aggregate cap be raised, perhaps to $75 million, to facilitate payment of film credits in the year in which the production occurs. In conjunction with this increase, we would recommend limiting roll-overs of film credits to the next fiscal year to $15 million. In sum, if the film credit is a worthwhile activity for the state, we should make more use of it by raising the aggregate annual cap to allow more projects. At the same time, the credit should not be structured so as to impose burdens on future state budgets.

Finally, we conclude that those interested in fostering growth in the Hawaii film industry should look beyond increases in the film credit to other traditional sources of economic growth, namely investment in the stock of human capital valued by the industry and investment in new studios and ancillary facilities used by production companies. Exciting new programs at University of Hawaii-West Oahu have laid the foundation for building Hawaii's stock of creative human capital but there has been slow and halting progress in fostering investment in new production facilities. It is time for stakeholders interested in future growth of the Hawaii content production industry to consider how to overcome obstacles that have delayed private development and operation of new production facilities. Without them, robust growth in content production is unlikely to continue.

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TABLE 1: FILM AND TELEVISION PRODUCTION BY STATE: 2018-2019

A. States Offering Film/TV Tax Credits

State	Year	# of Films	# of TV Series	# of Jobs[a] in Production	Tax Credit[b] (%)
Alabama	2018-19	21	2	1,020+	25-35%
Arkansas	2018-19	6	1	100+	20-30
California	2018 2019	291 247	441 415	129,300+	20-30
Colorado	2018-19	5	10	2,760+	20
Connecticut	2018-19	12	7	3,920+	10-30
D.C.	2018-19	4	6	940+	21-35
Georgia	2018 2019	54 61	82 80	7,190+	20-30
Hawaii	2018-19	14	18	1,910+	20-25
Illinois	2018 2019	20 12	18 26	7,390+	30-45
Kentucky	2018-19	24	5	1,370+	30-35
Louisiana	2018 2019	32 32	21 28	5,051+	25-40
Maine	2018-19	3	4	300+	5[c]
Massachusetts	2018 2019	16 14	9 12	3,900+	25
Maryland	2018-19	5	6	2,690+	25-27
Minnesota	2018-19	8	6	1,740+	20-25
Mississippi	2018-19	7	5	300+	25-35
Montana	2018-19	3	8	460+	20-35
Nevada	2018 2019	12 12	12 12	2,440+	12-25
New Jersey	2018-19	49	53	6,200+	20-35
New Mexico	2018 2019	15 24	3 7	2,100+	25-30
New York	2018 2019	147 130	168 172	54,300+	25-30
North Carolina	2018 2019	3 9	12 26	3,400+	25
Ohio	2018-19	26	8	3,250+	30
Oklahoma	2018-19	35	9	1,530+	35-37
Oregon	2018-19	19	22	3,420+	6.2-20
Pennsylvania	2018 2019	18 20	8 9	5,410+	25-30
Puerto Rico	2018-19	5	3	2,000+	20-40
Rhode Island	2018-19	3	5	490+	30
South Carolina	2018-19	9	12	1,280+	20-30
Tennessee	2018-19	10	29	7,970+	25-30
Texas	2018 2019	19 29	34 39	11,960+	5-22.5
Utah	2018-19	13	22	2,930+	20-25
Virginia	2018-19	8	3	3,260+	15-40
Washington	2018-19	6	9	2,880+	15-35

B. States without Significant Film/TV Production Tax Incentives

State	Year	# of Films	# of TV Series	# of Jobs[a] in Production	Tax Credit[b] (%)
Alaska	2018-19	0	30	100+	--
Arizona	2018-19	8	41	2,650+	--
Delaware	2018-19	1	1	170+	--
Florida	2018 2019	13 14	25 25	12,050+	--
Idaho	2018-19	1	4	410+	--
Indiana	2018-19	4	11	1,400+	--
Iowa	2018-19	2	2	460+	--
Kansas	2018-19	0	5	530+	--
Michigan	2018-19	8	13	3,240+	--
Missouri	2018-19	1	8	2,090+	--
Nebraska	2018-19	1	3	330+	--
New Hampshire	2018-19	1	1	620+	--
North Dakota	2018-19	1	2	140+	--
South Dakota	2018-19	1	0	210+	--
Vermont	2018-19	2	2	190+	--
West Virginia	2018-19	1	5	2,300+	--
Wisconsin	2018-19	4	5	1,200+	--
Wyoming	2018-19	0	0	140+	--

Notes: (a) 2018
(b) Winter, 2020-2021
(c) 10-12% rebate

Sources: Motion Picture Association (2020). Available at https://www.motionpictures.org/what-we-do/driving-economic-growth/ (last access on 14 Feb. 2021). Tax credit rates are available at https://www.productionincentives.com/wp-content/uploads/US-IncentivesMap_WINTER-2020_2021.pdf (last access on 10 March 2021)