FIGHTING PRODUCTION FLIGHT: Improving California’s Filmed Entertainment Tax Credit Program

by Kevin Klowden, I-Ling Shen, and Ka Wai Ho
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EXECUTIVE SUMMARY

Since the entertainment industry last peaked in California in 1997, filmed production of all kinds has been lured away by competing state and foreign governments. Other states and nations have sought to attract motion picture and television productions to boost tax revenues and create high-paying jobs in a high-tech, high-profile industry.

While the staying power of some of these efforts is uncertain in the current economic and fiscal climate, there is no question that the bar for competition has been raised and that California is seeing concerted efforts to draw entertainment productions and workers out of the state. California’s concentration of film employment has slipped from 4.4 times the national average in 1997 to less than 3.7 times the average now.

To combat this production flight, California’s Legislature passed the Film and Tax Credit Program in 2009 on a limited five-year basis. Due to the structure of the program, the final funding will be allocated in July 2012. Although the California Assembly overwhelmingly endorsed an extension of the program, the renewal stalled in the state Senate amid concerns about the impact and funding of the legislation. Although lawmakers in the Assembly are pushing to renew the program for five more years, this delay has created an opportunity to assess the results of the first two years and examine how the program can be modified and adapted based on this assessment.

The most important element in revising the incentives is to attract new productions to the state, rather than pursuing productions that are leaving in pursuit of the lowest overall costs. California cannot and should not match states that are providing the highest level of tax breaks and incentives, whether due to higher costs such as in New York or to make up for a smaller pool of skilled film professionals. Instead it should combine strong incentives with a combination of greater flexibility and availability in order to meet the demand that already exists.

California’s incentive program has been a success in terms of being fully subscribed and having a demonstrable impact in arresting the decline in filmed entertainment spending and employment in the state. The key concerns with the program are its limited funding relative to demand, the fact that it placed all targeted programs in the same application and allocation process, and the lack of long-term structural incentives that would serve to expand the program beyond its current funding and statutory limits.

To get the best results, it is essential to examine which aspects of the program have been most effective. In reviewing data from the past two completed years of the program, we have developed the following recommendations based on best practices in California and competing locations.

- **Eliminate unnecessary contingencies** to attract productions that create the most jobs and to facilitate producers’ long-term planning.
- **Deepen and broaden California’s entertainment industrial base** to create an environment that attracts future productions.
- **Encourage local job creation and keep workers’ skills up to date** to enhance the state’s supply and quality of production crew.
- **Target television production** to increase, or at least maintain, current production levels with their consistent employment and steady cash flow.
• **Attract foreign and international productions** to capture demand for production locales, facilities, and crews from the fast-growing global entertainment industry.

• **Expand the credit pool** from the current $100 million annual fund to a level that can accommodate demand. A separate fund for television productions would allow a more targeted use of money.
INTRODUCTION

California enacted its first Film and Television Tax Credit Program in 2009 to retain its slipping crown in the entertainment industry (see figure 1). The program, with an annual funding of $100 million, will terminate in 2014; however, because the last year of funding was front-loaded into the first year of the program, doubling the initial availability, funding for the program will actually end June 30, 2013, and the allocation phase will be complete by July 2012.

Although the Assembly passed a bill in May 2011 for a five-year extension providing an additional $500 million, the state Senate failed to reach an agreement in 2011 on a full extension. Instead the Senate finance committee passed a conditional one-year extension to allow time to examine how the state economy and budget stands before further extensions. A five-year extension has been reintroduced into the Assembly for 2012, but its fate is uncertain. In the first two years of the program, more than $300 million in tax credits were awarded to 125 projects. From the applications for the next fiscal year, 27 projects were selected to receive tax credits.

![Figure 1. A waning entertainment empire? California's share of national entertainment employment, 1981–2010](image)

Note: The dataset used in this graph is the Current Employment Statistics (see the appendix for further details).

California is not alone in granting incentives to entertainment production. In fact, the Golden State is a latecomer despite (or perhaps because of) its leading position in the industry. New Mexico and Louisiana pioneered the incentive concept in 2002. By the beginning of 2011, more than 40 states (and many countries) had offered incentives, including tax credits and cash, to lure film and TV productions.

Productions spend a large amount of money, which creates jobs and tax revenue for local governments. An earlier Milken Institute report on film flight estimated that in 2008, if California had retained the 40 percent share of total entertainment jobs in North America it enjoyed in the late 1990s, 10,600 direct jobs would have been preserved and more than 25,000 indirect jobs would have been generated in the state.
Although the ability to attract productions can be clearly demonstrated, the ability to recapture revenue from incentive programs varies from state to state and is heavily tied to the establishment of a local employment base in the industry. For example, the Massachusetts Department of Revenue estimated that from 2006 to 2008, for every dollar of film incentive provided, the Commonwealth gained $0.16 of tax revenue in return. In contrast, a 2009 study by Ernst & Young placed the return at $1.10 for the state of New York, and the Los Angeles County Economic Development Corporation (LAEDC) derived $1.13 for California.4

The outcomes, however, are not directly comparable across states due to different program parameters. A program’s overall effectiveness also depends on a state’s industrial base. Furthermore, the immediate cost-effectiveness, measured by state revenue per dollar spent, may not be the ideal criterion for evaluation. The dynamic impacts of the incentive programs on local industrial growth as well as direct and indirect job creation over time are arguably more important to the long-term health of a state’s economy. In addition, the delays between the awarding of the credits, the credits' issuance, and the final evaluation of the tax collection data limit the ability to create a full summary of revenues.

California’s film and TV tax credit program is modest compared to the package offered by New York, its archrival in the entertainment industry.5 It is a nonrefundable, nontransferable 20 percent tax credit that applies to qualified local expenses of feature films, movies of the week, and television series for basic cable. (Low-budget independent films may transfer or sell to an unrelated party; others may transfer only to affiliates.) The tax credit rises to 25 percent for independent films and television series moving to California regardless of the distribution outlet. This excludes productions such as broadcast network shows that are already in-state, half-hour shows, pilots, and commercials. In acknowledgment of the high cost of living, California offers sales tax and hotel occupancy tax relief. As in many other states, filming in state-owned properties is generally free with a proper permit.

From FY 2009–10 to 2010–11, the 125 film and TV productions that were awarded tax incentives had a combined direct spending of more than $2.3 billion in the state.6 During this period, $760 million of qualified wages were paid to below-the-line crew members, and the total qualified non-wage spending amounted to nearly $700 million (see Table 1 for the breakdown by type of production). The California Film Commission estimated that the 27 projects selected on June 1, 2011, will spend more than $662 million in California, including nearly $234 million in qualified wages. They will employ an estimated 3,048 cast members, 3,307 crew members, and 49,778 extras and stand-ins (calculated in “man-days”).7

The incentives are in high demand. The first day in 2011 to apply for the credits saw 176 applications,8 which more than doubled the amount from the previous year. This level of demand suggests that the chief problem with the incentive program is not the percentage of credits offered, but rather the constraints on the size and scope of the program.

Our definition of employment in the entertainment industry includes two North American Industry Classification System (NAICS) categories: motion picture and video industries, encompassing subcategories for production and post-production; and independent artists, writers, and performers.9 In California, the industry accounts for 1.1 percent of the state’s nonfarm employment and 2 percent of the aggregated wage bill in 2010. As of August 2011, the industry employed 175,900 people.10 The historical trend shown in figure 2 demonstrates that the industry’s employment in California has hovered around 160,000 for most of the past decade, down from 180,000 during its heyday in the late 1990s. Even so, recent employment growth has been robust. An examination of monthly employment between 2010 and 2011 shows that the industry added an average of nearly 20,000 jobs per month at a time when the state’s total employment was still diminishing on a year-over-year basis.

Although it is beyond the scope of this report to measure how much of the employment growth can be attributed to the state’s film and television incentive program, it is worth noting that the LAEDC study estimates that 20,040 jobs were supported by the first 77 approved productions, assuming that all of them would have been filmed in other states if not for the tax incentive.
Table 1. Qualified spending and credit allocated
FY 2009–10 and FY 2010–11

<table>
<thead>
<tr>
<th>Type of production</th>
<th>Number of projects</th>
<th>Qualified wage expenses (millions)</th>
<th>Qualified non-wage expenses (millions)</th>
<th>Total production (millions)</th>
<th>Credit allocation (millions)</th>
<th>Credit distribution</th>
<th>Total qualified expenses as share of total production</th>
<th>Total production over credit allocated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature film</td>
<td>41</td>
<td>$466.2</td>
<td>$452.8</td>
<td>$1,413.2</td>
<td>$181.3</td>
<td>60.3%</td>
<td>64.1%</td>
<td>7.79</td>
</tr>
<tr>
<td>Indie feature film</td>
<td>41</td>
<td>$64.4</td>
<td>$55.0</td>
<td>$222.2</td>
<td>$31.2</td>
<td>10.4%</td>
<td>56.3%</td>
<td>7.13</td>
</tr>
<tr>
<td>Movie of the week</td>
<td>7</td>
<td>$15.0</td>
<td>$13.7</td>
<td>$7.1</td>
<td>$6.1</td>
<td>2.0%</td>
<td>62.2%</td>
<td>5.61</td>
</tr>
<tr>
<td>Indie movie of the week</td>
<td>15</td>
<td>$7.7</td>
<td>$13.9</td>
<td>$34.8</td>
<td>$5.6</td>
<td>1.9%</td>
<td>64.5%</td>
<td>6.20</td>
</tr>
<tr>
<td>TV series</td>
<td>17</td>
<td>$176.0</td>
<td>$127.6</td>
<td>$36.4</td>
<td>$60.8</td>
<td>20.2%</td>
<td>80.4%</td>
<td>5.98</td>
</tr>
<tr>
<td>Relocating TV series</td>
<td>3</td>
<td>$29.4</td>
<td>$27.6</td>
<td>$118.2</td>
<td>$14.2</td>
<td>4.7%</td>
<td>48.1%</td>
<td>8.31</td>
</tr>
<tr>
<td>Indie mini-series</td>
<td>1</td>
<td>$1.5</td>
<td>$2.9</td>
<td>$441.7</td>
<td>$1.3</td>
<td>0.4%</td>
<td>68.3%</td>
<td>7.26</td>
</tr>
<tr>
<td>Grand Total</td>
<td>125</td>
<td>$760.2</td>
<td>$693.3</td>
<td>$2,273.6</td>
<td>$300.5</td>
<td>100.0%</td>
<td>63.6%</td>
<td>7.57</td>
</tr>
</tbody>
</table>

Source: California Film Commission.

Note: The ratio of total production over credit allocated is a rough and rescaled measure of the incentive program's potential economic impact per state dollar spent. This ratio is in line with the CFC’s measure of economic impact reported in the Program Progress Report as of January 2011. It assumes that all production expenditures, whether qualified for the tax incentive or not, are spent within the state.

Figure 2. Monthly employment in the entertainment industry
California, January 1990–2011

* The statistic is the sum of employment in the motion picture and video industry plus independent artists, writers, and performers.
Source: California Economic Development Department.
A similar trend can be seen in post-production employment,\textsuperscript{11} which is a subcategory of the entertainment industry and involves the technical work that has to be done after a film is shot (e.g., visual effects, sound mixing, and editing). Most of these jobs rely on digital technology; as a result, they are more mobile and do not have to be in the same location as the actual production. Figure 3 shows that the number of post-production jobs in California plummeted from 15,252 in 1996 to 8,734 in 2003, a decline of 43 percent. The situation has somewhat improved since then, and in 2010, California had close to 10,000 post-production jobs.\textsuperscript{12} In the meantime, however, the state lost many visual-effect businesses either to relocation (e.g., Digital Domain moved to Vancouver) or because many small to mid-size firms could not withstand subsidized competition from Canada and the United Kingdom or low labor costs in China and India.\textsuperscript{13}

\textbf{Figure 3. Post-production employment in California}

Source: California Economic Development Department.

Notwithstanding the incentive program’s popularity,\textsuperscript{14} there is ample room for improvement to root the entertainment industry firmly in the state and to maximize the program’s potential impact on job creation. As shown in figure 1, California’s share of national entertainment employment sharply dropped to its trough at 38 percent in 2002, the year when New Mexico and Louisiana enacted their incentive programs. This is a drop of 8.7 percentage points in a matter of five years. Although the number has recovered slightly since then, California has a long way to go if the state plans to return to its prime.

According to the projections by the California Economic Development Department, with no incentive program in place, the industry’s employment will grow at an annualized rate of 1.1 percent and increase to 185,600 in 2018.\textsuperscript{15} This is unimpressive considering the state’s entertainment industry supported 184,600 jobs in August 1999. To boost job growth in this high-paying industry and to augment its ripple effects on the state economy, we recommend measures that, if adopted, will improve the California Film and Television Tax Credit Program. Our recommendations, described in greater detail at the end of this report, fall under these five areas:

\begin{itemize}
  \item \textbf{1. Eliminate unnecessary contingencies} to attract productions that create the most jobs and to facilitate producers’ long-term planning.
  \item \textbf{2. Deepen California’s entertainment industrial base} to create an environment that attracts productions in future decades.
\end{itemize}
3. Encourage local job creation resident skill update to enhance the state’s supply and quality of production crew.

4. Target television production to grow, or at least maintain, a source of steady cash flow.

5. Attract foreign and international productions to capture the demand for locales, facilities, and crews from foreign producers who are the major drivers of the fast-growing global entertainment industry.

6. Expand the credit pool from the $100 million annual fund to a level that can accommodate demand. Set up a separate fund for television productions.
Most of the states with incentive programs for entertainment production (including California) offer tax credits. A handful give cash rebates; some offer both. Aside from the administrative differences, a rebate is technically the same as a refundable tax credit, meaning that a cash refund is issued when the amount of tax credits exceeds the total tax owed to a state. After reviewing programs in each state and in some prominent international locations, we identify the following best practices that are lacking in the California Film and Television Tax Credit Program.

**Purpose-targeted**

This enables the state to lure investment aimed at specific goals such as job creation. The incentive for infrastructure investment is one example. Michigan and Connecticut provide transferable tax credits for infrastructure construction, such as soundstages and post-production facilities. New York, the birthplace of the U.S. entertainment industry, offers an “up-to-5-percent” tax credit for investments in construction and upgrades to qualified film production facilities. While these states still need to promote production overall, targeting post-production will deepen their industrial capacity, which will attract and keep a wider variety of activities within each state. Eventually, this could result in longer-term employment growth.

**Transferability not contingent on production type and budget**

Transferability makes tax credits more attractive as it helps producers get money upfront when the financing is needed. Transferable tax credits can be put on the market for sale soon after being allocated. In comparison, most incentive programs pay producers when production is completed or at some stage after it has begun. In California, only credits attributable to an independent film with a qualified expenditure budget of less than $10 million may be sold or reassigned to an unrelated party. Among the states that offer transferable tax credits, only the Golden State restricts transferability by production type and budget. Although transferability may be especially helpful for cash-strapped indie producers, it is not necessarily the best option for regulators to determine which type of production is more likely to benefit from this provision. Instead, production firms are in a better position to weigh the benefits against the costs of advanced financing. (On top of transfer fees, tax credits are usually sold at a discounted face value.) Furthermore, transferability is particularly important for certain activities, such as infrastructure investment, where a sizable upfront cost is usually involved.

In addition to advanced financing, transferability increases the overall appeal of the incentive program by making it comparable to refundable tax credits (adopted in New York among other states as well as in Canada and the United Kingdom) or cash rebates without incurring out-of-pocket expenses to the state government. This is because if producers do not use up their allocated tax credit and if the tax credit is transferable, they can cash in the unused units by selling them to a third party.

**No production budget cap**

While excluding big-budget productions may help the “little guys” who have difficulty in attaining funding, it does not
address the main goal of tax incentives, which is to create and maintain jobs. Big-budget productions often employ disproportionately larger crews and invest much more than a smaller project. Instead of a budget cap, a limit could be placed on qualified expenditure to control the amount of credit available for any production. Furthermore, bigger productions often have significantly higher above-the-line spending. Above-the-line expenditures do not qualify for tax credits, yet they generate economic activity. California is the only state that implements a production budget cap (at $75 million for feature films). Removing, or at least raising, the cap could increase the rate of return on film tax incentives.

Sub-region specific

This can stimulate economic activity in targeted geographical areas. With increased exposure to the entertainment industry, these areas may build up a more permanent industrial base for a wider array of production activities. Texas provides extra benefits for productions undertaken in underutilized areas (receiving 15 percent or less of the state’s total film and TV production in a fiscal year). Alaska, Minnesota, and British Columbia also encourage the spread of production activities with incentives for projects filmed outside local metropolitan areas.

Resident specific

As the state is funding these incentives, its main goal would be to benefit the residents of the state. Therefore, providing incentives contingent on investment in goods and services provided by residents will achieve that goal.

1. Targeting resident payroll: More than a dozen states (including Louisiana and Texas) have a two-tier system that provides preferential tax credits for wages paid to state residents.

2. Rewarding job training for residents: To build a vibrant entertainment industry in the long term, the state must have a deep crew base with the most up-to-date skills. Regular training is essential. In Michigan, a maximal 50 percent tax credit is applied to job training for resident below-the-line crew, provided the training addresses skills deficient in the state.

“Sunset-free”

Like all policies, regular review is necessary to determine effectiveness and improvements. However, without sunset clauses, producers can better plan their filming because they know where, when, and how much tax incentives are available. The two pioneer states—Louisiana and New Mexico—do not have a sunset clause.

Seasonal assistance

Much of entertainment production is conducted during the summer when weather is more suitable or during times that coordinate with peak release dates. This makes employment highly seasonal. Florida offers extra tax incentives for off-season productions. In California, seasonality is less important, possibly because commercials are largely filmed during TV production downtime. However, we consider seasonal assistance a best practice because it helps to stabilize employment and income.

Promoting production of commercials

The number of commercials filmed in California, particularly in the greater Los Angeles area, puts the state well ahead of
the rest of the nation in this industry niche. According to the Association of Independent Commercial Producers, half of all advertising the AICP films is done in California, with New York coming in second with 15 percent. New York, which added commercials to its incentive program in 2007 with a 5 percent credit, is one of the few states with an employment base capable of luring ad productions away from California. The state offers separate pools for productions in the New York City area and those filmed in the rest of the state. In addition, New York offers a 20 percent tax credit to offset an annual growth in expenditures in the state. New York’s program provides a model that California could follow with a separate dedicated commercial pool.

Table A1 in the appendix shows further details of the incentive programs in some of the more prominent areas for entertainment productions.
Several statistics compiled by Film L.A., which coordinates permits for entertainment production in Los Angeles,\textsuperscript{27} suggest that television production filmed in California has passed its pinnacle. In Los Angeles, where more than 80 percent of the state’s entertainment employment is concentrated,\textsuperscript{28} the number of permitted on-location television production days has dwindled from its 2007 peak of over 23,000 to below 16,000 in 2009, a 32 percent decline due in no small part to the recent recession (see Figure 4). Although the number rebounded in 2010, many producers may have opted for alternative locales with lower costs and better financial incentives. Pilot programs for broadcast and cable networks were increasingly filmed in other states and abroad, with L.A. taking only half of the pie in the 2010–2011 development cycle (see Figure 5).\textsuperscript{29} This also means that if a pilot is made into a series, it is less likely to be shot in L.A.
Fighting Production Flight

Despite this loss of business, California could be regarded as less than generous when it comes to incentives for television productions: A 20 percent tax credit applies to new hour-long series for original distribution on basic cable only. (However, a series that has filmed all of its prior seasons outside the state would get a 25 percent credit for relocating to California without regard to episode length or media outlet.)

California still leads the nation in TV productions due to the concentration of talent and infrastructure in Hollywood. The top five states between 2009 and 2010 were California (525 productions), New York (345), Georgia (67), Texas (45), and Illinois (37) (see Table A2 in the appendix). Because of California's infrastructure advantage, tax credits for television productions do not need to be as generous as those in competing states. Still, the current restrictions are a concern.

**New York**

The state that gave birth to the American entertainment industry has the second-most concentrated talent pool outside California. Its tax incentive program is more attractive than that of California's in many aspects. New York has a refundable credit, meaning that even if a production's tax liability does not take up the allocated credit, a refund will be issued. It offers a 30 percent credit on qualified expenditures and supplements this with a 10 percent post-production credit should the 30 percent from the production credit not be reached. It also offers a 4 percent to 5 percent investment tax credit for infrastructure projects. This is of benefit to long-running TV productions as they would receive extra funding to offset the cost of set construction and other related costs. However, many of these incentives are prompted by the fact that New York has a higher overall tax structure and higher operating costs than California.

**Georgia**

While not a major entertainment hub, the Peach State has a deep and experienced crew base with more than 5,000 union and non-union professionals as well as 1,000 production suppliers and support vendors. Its tax incentive program is easy to navigate. The state provides a transferable credit that producers can sell or pass on to a third party. Georgia offers 20 percent credit with an extra 10 percent (for a total of 30 percent) if the production includes a "qualified Georgia promotion"—for a feature film, this consists of a five-second animated logo in the rolling credits. Other than a $500,000 cap per person per project cap on taxable salaries that applies to above-the-line talent and a mandatory $500,000 minimum local spend, the program has few restrictions. Both above- and below-the-line expenditures on residents and non-residents qualify, and there is no sunset clause.

**Texas**

The Lone Star State offers cash rebates rather than tax credits. Like Georgia, it is not an entertainment capital, but does have a large crew base. It is estimated that productions in Texas were able to hire 80 percent of their crew locally.

**Illinois**

Its incentive program is attractive to TV productions as it offers a 30 percent transferable tax credit with an additional 15 percent offered to labor expenditures in designated poverty areas. Illinois removed the sunset provision of the program in 2009.

Broadcast network shows produce the majority of drama hours, but California is losing out on these productions because the state's TV production incentive favors basic cable network shows (except for relocating series). Film Los
Angeles has documented the success of the incentives for basic cable production: cable pilots accounted for all of the increase in Los Angeles’ total pilot production in the 2010–2011 development cycle. While TV pilots are not eligible for tax credits, the series tend to stay where their pilots were filmed.

Another problem is that California’s fiscal year does not coincide with the television development cycle. Most shows are planned for new and continued funding in early spring for the showing in autumn. This allows networks to test new shows by prescreening pilots to advertisers.

Television, specifically the coveted hour-long dramas, provides jobs and a stable, continuous flow of production spending for California. The downside is that TV productions can relocate between seasons. To cope with this higher mobility and risk of “runaway” TV productions, California needs to make adjustments. These could include creating a separate funding category for TV production, including all broadcast network shows, and setting allocation dates—preferably in early spring—that coordinate with the TV industry development cycle. Half-hour comedies, which are unlikely to move from Los Angeles due to the need for on-site writing staffs, should remain exempted from the incentives. The changes would boost the impact of tax credits better, perhaps, than any other modification to the program short of increased funding.
While many incentive programs include elements that attract productions from abroad, benefits to foreign producers are usually not explicitly spelled out. Some programs even create hurdles. The U.K., for example, requires that applications must be made by or through a production company registered and centrally managed in the U.K. or another state of the European Union or European Economic Area.34

The California film incentives are neither prohibitive nor attractive to foreign producers. All incentives are awarded in a lottery-style process, regardless of the origin of the applicant productions. Attracting foreign productions has a clear upside: creating more demand for local skilled crew and cutting-edge facilities. It is worth noting that the only Best Picture nominee at the 2012 Academy Awards to be filmed entirely in Los Angeles was the French film “The Artist.”35 The fact that this film won the award for Best Picture is certainly a bonus.

In Canada, foreign production36—valued at C$1.5 billion—accounted for nearly 31 percent of total film and television production in FY 2009–10.37 The Canadian Production Services Tax Credit (PSTC) was enacted in 1998 and enables foreign companies to save 25 percent or more in costs when filming in Canada.38 With the goal of building up a strong and competent industrial base, PSTC was aimed at attracting U.S. production. Among all foreign productions that took place in FY 2009–10, more than 77 percent were U.S.-based. In the same year, foreign production employed 14,100 full-time-equivalent jobs in Canada’s entertainment industry and generated 21,800 indirect jobs. Today, Vancouver, Montreal, and Toronto are considered top filming locations in North America, next only to Los Angeles and New York.

Other countries and regions have implemented or plan to implement programs to attract foreign productions. For example, Mexico and Uruguay have tax rebates and financial assistance for the exportation of audio-visual content for co-productions and solely foreign production teams.39 Colombia and Argentina (Buenos Aires specifically) are planning tax incentives for international productions. Approaches taken by South Africa and Brazil are particularly noteworthy.

The South African Foreign Film & Television Production Incentive aims to invite foreign investment as well as raise South Africa’s international profile by supporting big-budget films and television productions. The program is only available to foreign-owned productions with qualifying expenditures of a minimum of R12 million and a maximum R100 million. The incentives require formation of a special-purpose corporate vehicle in South Africa and a minimum number of production days within South African territories. Eligible productions include feature films, television movies, television drama series, documentaries, and animation.

Brazil has laws that date to the 1990s to promote foreign productions: the Audiovisual and Rouanet laws. The Audiovisual law supports domestic productions, but an article in the law also targets foreign productions by allowing Brazil-based foreign distributors, including the Hollywood majors, to put part of the taxes they owe toward local productions. Since 2010, this benefit extends to TV production companies. The Rouanet is similar to the Audiovisual law except that the company funding the production gets a rebate on its expenditures. Brazilian production incentives totaled $105.7 million in 2010, up 30 percent from 2009. Approximately 80 Brazilian films (including international co-productions) were released in 2009, a 50 percent increase from 2008. While there were only five international co-productions in Brazil in 2005, the number spiked to 15 in 2008, 10 in 2009, with 18 finished or shooting in the fall of 2010.40

Throwing more money at foreign producers is not necessarily the smartest way to go. For one thing, it risks creating an incentive “price war.”
Brazil, for example, complements federal incentives with other sources. It collects taxes and mandatory fees paid by broadcasters and producers of TV content and commercials to invest in film production, distribution, printing and advertising, and indie TV production. Municipalities such as Paulinia and Rio de Janeiro use their relatively plentiful tax revenues (such as those from oil) to invest in infrastructure to build up the entertainment industry for long-term growth.

Beyond funding, Brazil and other countries have co-production agreements and are signatories to multilateral treaties such as the Ibero-American Film Integration and the Latin American Film Co-Production agreements to promote international cooperation (i.e., investment).
RECOMMENDATIONS

Although the Golden State still occupies the throne of the entertainment industry, it has seen an increasing number of productions move to other states and countries since the late ’90s, especially to locales with incentive programs. California enacted its first Film and Television Tax Credit Program in 2009 and recently extended the production incentive to 2019. The annual funding of the program amounts to $100 million. To get more bang for the buck, we recommend the following modifications:

Eliminate unnecessary contingencies

The goal of the film tax credit program is job growth. Therefore, it should be devised to attract productions that create the most jobs rather than simply helping the “little guys” get their projects made. Maximizing inclusivity and accountability combined with careful selectivity is vital.

• Make tax credits transferable for all qualified spending, not restricted to low-budget independent films.
• Remove, or at least raise, the production budget cap to attract big-budget projects. Instead, a limit could be placed on qualified expenditure to control the amount of credit available for any one production.
• Make the program “sunset-free” to facilitate producers’ planning. Additionally, conduct an independent annual review from 2015 onward when there are sufficient data to evaluate the longer-term impact of the program.

Deepen and broaden the state’s industrial base

Critics of tax incentives have long said that once incentives are withdrawn, the benefits are extinguished. To ensure the program’s contributions are sustainable, extra focus needs to be placed on creating an environment that attracts productions in future decades.

• Reward long-term investment that helps to strengthen the industrial base. For example, create a separate funding category for expenditures in infrastructure and post-production. Providing tax credits to producers for their expenditures rather than subsidizing growth investment from suppliers will ensure that the long-term investment reflects what producers seek out.
• Identify alternative filming locations within the state and provide bonus incentives to promote less-familiar regions and direct filming away from saturated and costly locales.

Encourage local job creation and resident skill update

As well as promoting job growth, efforts should be focused on enhancing the skills of the state’s labor pool. Besides attracting productions, this will increase the earning potential of residents, which in turn improves tax revenues.

• Create a two-tier system for wage expenditures and offer a preferable incentive for resident payroll.
Fighting Production Flight

• Create a separate funding category for job training for resident below-the-line crew living outside the 30-mile zone of the L.A. core. This is consistent with our recommended measure to identify alternative filming locations to spread the economic benefits to less-utilized regions.

Target television production

While feature films get much of the attention in the industry, television brings a steady cash flow. Therefore, it is important to grow, or at least maintain, the television industry in the state by broadening eligibility for incentives and clarifying which incentives are available for television productions.

• Divide the incentives into one program for film and another for television production. Allocate funding proportionate to their direct spending in the state.
• Synchronize the selection of TV projects with their development cycle, preferably in early spring.
• Make the tax credit available to original broadcast network shows. Continue to exclude half-hour comedies or reality shows because they tend to film where their writers work, which is likely to be L.A. or New York City. California, therefore, does not need incentives for these two genres.

Attract international productions

The growth of TV and film industries in foreign countries is a challenge to Hollywood. Rather than fighting the tide, California should cater to foreign producers’ demand for locales, facilities, and crews. Including foreign productions in current tax incentive policies is a good first step, but California also needs to signal to foreign producers that the state specifically wants their business. Sacramento should also consider incentives that target foreign productions.

• Launch a pilot program to make defined allocations to ensure that a certain percentage of the tax credit budget is used to gain foreign expenditure.

Expand the pool of funds available for production tax credits

Although the fiscal climate in California makes this unlikely in the near term, expanding and improving the effect of the film and television credits will require more money. As mentioned previously, demand for tax credits outstrips supply, and has done so every year since the program began. Added funding will enable the state to attract and retain more production and target larger blockbuster films.

Finally, advertisements are a pillar of the television and film industries. Because they are mostly shot during the off-season of TV production, commercials help to alleviate the seasonality of entertainment employment and stabilize the income stream for below-the-line crew members. In 2007, New York enacted a separate tax credit program for the production of commercials. Still, the Golden State, especially Southern California, remains the most popular domestic location for creating commercials and shows no sign of decline. In Los Angeles, for example, such activity is still on the rise, according to the Association of Independent Commercial Producers. Much of this growth is tied to ad productions intended for international markets, and attracting investment into this sector can only enhance the state’s advantage.

Despite this positive outlook, California will need to monitor closely its future development. When other states or countries develop their industrial base with skilled crew and high-quality infrastructure, advertising production will be increasingly likely to leave California.
Entertainment employment

Two major datasets allow us to compute the level of entertainment employment in the U.S.: the Current Employment Statistics (CES) Program and the Quarterly Census of Employment and Wages (QCEW). For Canada, the data come from the Survey of Employment, Payrolls and Hours (SEPH), which is similar to the CES.

In this report, the employment numbers are based on the CES data (unless otherwise noted), which offer the official estimates of total employment by industry. In the Milken Institute’s previous report on film flight (Klowden et al., 2010), QCEW was utilized. This dataset provides administrative records that represent a virtual census of nearly all business establishments. While the QCEW does not cover businesses that are not subject to unemployment insurance laws, it provides more-detailed estimates by industry and geography plus additional information on the number of establishments by industry.

Figure A1 plots California’s share of North American entertainment employment annually from 1991 to 2010. The main difference in the trends comes from large discrepancies between QCEW and CES estimates during the earlier period (1990–2001): CES produces a higher share than QCEW does. While both datasets are not exempt from many types of errors, we chose to present the CES data because they are used in the official estimates.

Figure A1. CES versus QCEW

## Table A1. Comparison of incentive programs in states and countries

<table>
<thead>
<tr>
<th>State</th>
<th>Number of TV and film productions, 2009-2010</th>
<th>Type of incentive program</th>
<th>Annual funding (millions)</th>
<th>Project budget cap (millions)</th>
<th>Maximum benefit</th>
<th>Transferability</th>
<th>Refundability</th>
<th>Sunset/Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>1,087</td>
<td>Tax credit</td>
<td>$100</td>
<td>$75 for feature films $10 for indie films</td>
<td>20% of qualifying local spending 25% for qualifying relocating TV series and indie films</td>
<td>N</td>
<td>N</td>
<td>Originally 6/30/2014; extended to 6/30/2015</td>
</tr>
<tr>
<td>New York</td>
<td>624</td>
<td>Tax credit</td>
<td>$420</td>
<td>N</td>
<td>30% of qualifying production local spend 10% of the qualifying post-production spend (if 30% credit not claimed) 4-5% of the eligible investment credit base</td>
<td>N</td>
<td>Y</td>
<td>12/31/2014</td>
</tr>
<tr>
<td>Louisiana</td>
<td>149</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>30% of qualifying local spend Extra 5% of resident payroll ≤ $1 million</td>
<td>Y</td>
<td>Y (partially)</td>
<td>N</td>
</tr>
<tr>
<td>Texas</td>
<td>148</td>
<td>Cash rebate (grant)</td>
<td>$30</td>
<td>N</td>
<td>5% to 15% of qualifying local spend or 8% to 25% of wages paid to Texas residents Extra benefits if filmed in underutilized or economically distressed areas</td>
<td>N/A</td>
<td>N/A</td>
<td>N</td>
</tr>
<tr>
<td>State</td>
<td>Number of TV and film productions, 2009-2010</td>
<td>Type of incentive program</td>
<td>Annual funding (millions)</td>
<td>Project budget cap (millions)</td>
<td>Maximum benefit</td>
<td>Transferability</td>
<td>Refundability</td>
<td>Sunset/Review</td>
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<td>-----------------------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Michigan</td>
<td>112</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>40% of qualifying direct production expenditures (42% if in core communities)</td>
<td>Business: Y</td>
<td>Income: N</td>
<td>Business: Y; Annual review</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30% of qualified personnel expenditures</td>
<td>Income: N</td>
<td>Investment: Y</td>
<td>Investment: 9/30/2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25% infrastructure investment tax credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgia</td>
<td>111</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>20% of the base investment in the state</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extra 10% if the qualified production activities include a qualified Georgia promotion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illinois</td>
<td>74</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>30% of qualifying local spend</td>
<td>Y</td>
<td>N</td>
<td>5/6/2021</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extra 15% of labor spending if hiring residents from underprivileged areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>65</td>
<td>Tax credit</td>
<td>2010-2011: $53.5</td>
<td>N</td>
<td>20% qualifying spend</td>
<td>Y</td>
<td>N</td>
<td>6/30/2015</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2011-2012: $74.5</td>
<td></td>
<td>5% bonus for off-season projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2012-2015: $38</td>
<td></td>
<td>5% bonus for family-friendly projects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Mexico</td>
<td>51</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>25% of qualifying local spend</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
### Table A1. Comparison of incentive programs in states and countries (Cont.)

<table>
<thead>
<tr>
<th>Country</th>
<th>Type of incentive program</th>
<th>Annual funding (millions)</th>
<th>Project budget cap (millions)</th>
<th>Maximum benefit</th>
<th>Transferability</th>
<th>Refundability</th>
<th>Sunset/Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Tax credit (offset)</td>
<td>No cap</td>
<td>$75 for feature films</td>
<td>Location and visual offsets: 15% of qualifying local spend</td>
<td>N/A</td>
<td>N/A</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$10 for indie films</td>
<td>Producer offset: 40% for feature films; 20% for TV/documentaries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>16% of qualifying labor expenditures, net of assistance (including provincial credits)</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>British Columbia</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>33% of qualifying labor expenditures, plus 17.5% bonus for labor spend related to digital animation or visual effects</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6% regional tax credit bonus when &gt; 50% done outside Vancouver and additional 6% distant location credit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ontario</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>25% of qualifying local expenditures (not limited to labor), plus 20% bonus for labor spend related to digital animation and special effects</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Quebec</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>25% of qualifying local expenditures (not limited to labor), plus 20% bonus for labor spend related to digital animation and special effects</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Germany</td>
<td>Cash rebate (grant)</td>
<td>€60</td>
<td>N</td>
<td>20% of qualifying local spend</td>
<td>N/A</td>
<td>N/A</td>
<td>12/31/2012</td>
</tr>
<tr>
<td>Hungary</td>
<td>Tax credit</td>
<td>No cap</td>
<td>N</td>
<td>20% of qualifying spend (Hungarian spend and foreign spend, for a maximum effective benefit rate of 25%)</td>
<td>N</td>
<td>N</td>
<td>12/31/2013</td>
</tr>
<tr>
<td>Country</td>
<td>Type of incentive program</td>
<td>Annual funding (millions)</td>
<td>Project budget cap (millions)</td>
<td>Maximum benefit</td>
<td>Transferability</td>
<td>Refundability</td>
<td>Sunset/Review</td>
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<td>---------------</td>
</tr>
</tbody>
</table>
| New Zealand  | Cash rebate (grant)        | No cap                    | N                            | Large Budget Screen Production (LBSP) and Post, Digital, Visual Effects Production (PDV): 15% of qualifying local spend  
Screen Production Incentive Fund (SPIF): 40% of qualifying local spend on feature films; 20% on TV, documentary, and short-form animation  
Additional grant of 15% for projects spending more than NZ$200 million on qualifying additional expenditure | N/A             | N/A            | LBSP/PDV: 2011  
SPIF: 2012 |
| United Kingdom | Tax credit               | No cap                    | N                            | 20-25% of qualifying local spend                                                 | N               | Y             | N             |

Sources: Motion Picture Association of America, Entertainment Partners, “Basic Overview of U.S. and International Production Incentives,” April 2011.
Table A2. Geographical distribution of TV productions

2009–2010*

<table>
<thead>
<tr>
<th>State</th>
<th>Number of productions</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>525</td>
<td>37.9</td>
</tr>
<tr>
<td>New York</td>
<td>345</td>
<td>24.9</td>
</tr>
<tr>
<td>Georgia</td>
<td>67</td>
<td>4.8</td>
</tr>
<tr>
<td>Texas</td>
<td>45</td>
<td>3.2</td>
</tr>
<tr>
<td>Illinois</td>
<td>37</td>
<td>2.7</td>
</tr>
<tr>
<td>New Jersey</td>
<td>36</td>
<td>2.6</td>
</tr>
<tr>
<td>Florida</td>
<td>34</td>
<td>2.5</td>
</tr>
<tr>
<td>Louisiana</td>
<td>33</td>
<td>2.4</td>
</tr>
<tr>
<td>Minnesota</td>
<td>27</td>
<td>1.9</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>25</td>
<td>1.8</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>23</td>
<td>1.7</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>21</td>
<td>1.5</td>
</tr>
<tr>
<td>Nevada</td>
<td>20</td>
<td>1.4</td>
</tr>
<tr>
<td>Michigan</td>
<td>19</td>
<td>1.4</td>
</tr>
<tr>
<td>North Carolina</td>
<td>15</td>
<td>1.1</td>
</tr>
<tr>
<td>Virginia</td>
<td>11</td>
<td>0.8</td>
</tr>
<tr>
<td>New Mexico</td>
<td>10</td>
<td>0.7</td>
</tr>
<tr>
<td>Oregon</td>
<td>10</td>
<td>0.7</td>
</tr>
<tr>
<td>Alaska</td>
<td>10</td>
<td>0.7</td>
</tr>
<tr>
<td>Colorado</td>
<td>9</td>
<td>0.6</td>
</tr>
<tr>
<td>South Carolina</td>
<td>8</td>
<td>0.6</td>
</tr>
<tr>
<td>Hawaii</td>
<td>7</td>
<td>0.5</td>
</tr>
<tr>
<td>Tennessee</td>
<td>6</td>
<td>0.4</td>
</tr>
<tr>
<td>Connecticut</td>
<td>6</td>
<td>0.4</td>
</tr>
<tr>
<td>Arizona</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>Utah</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>Maine</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>Montana</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>4</td>
<td>0.3</td>
</tr>
<tr>
<td>Maryland</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>Ohio</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>South Dakota</td>
<td>2</td>
<td>0.1</td>
</tr>
<tr>
<td>West Virginia</td>
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<td>0.1</td>
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<tr>
<td>Arkansas</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Alabama</td>
<td>1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Total 1,386  100.0

*Unlisted states had no TV productions.
Source: Motion Picture Association of America.
1. See Table A1 in the appendix. The annual funding for California’s incentive program is capped at $100 million, with the exception of the first year of the program, which received an additional $100 million intended for the 2013–2014 fiscal year. When the allocated tax credits in a year exceed the annual cap, the overflow will be rolled over to draw from next year’s funding.

2. There was a failed attempt in the California Legislature in 1997 to provide incentives for the movie industry to export major theatrical releases.

3. Kevin Klowden et al., “Film Flight: Lost Production and Its Economic Impact on California,” Milken Institute Research Report, July 2010. Notice that the employment statistics cited in the 2010 report are different from those in the current report. The difference is due to the use of two different datasets. See the appendix for a detailed explanation.

4. Navjeet K. Bal, “A Report on the Massachusetts Film Industry Tax Incentives,” Massachusetts Department of Revenue, July 2009; Ernst & Young, “Estimated Impacts of the New York State Film Credit,” February 2009; Christine Cooper et al., “California Film and Television Tax Credit Program: An Economic Impact Study,” Los Angeles County Economic Development Corporation, 2011. The Massachusetts study further notes that, in many existing studies, returns to the state coffer generally ranged from $0.07 to $0.28 per dollar of incentive granted.

5. See Table A2 in the appendix.

6. This number is provided by the California Film Commission with the assumption that all production expenditures, whether qualified for the tax incentive or not, are spent within the state.


9. The respective NAICS codes are 5121 and 7115.

10. California Economic Development Department.

11. It is measured by employment in the industry of teleproduction and other post-production services (NAICS code: 512191). The estimates shown in Figure 3 come from the Quarterly Census of Employment and Wages because the Current Employment Statistics Program does not provide such estimates.

12. California Economic Development Department.


14. The state’s $100 million annual funding for the tax credits has always run out by the first few days of its release each year (June 1) and has an ongoing “waiting list.”


16. In the California film and television production industry, wage per employee was over $100,000 in 2010 ($94,010 for the motion picture and video industries and $190,240 for independent artists, writers, and performers), according to data available at Moody’s Analytics.

17. Michigan Film Office; Connecticut Office of Film, Television and Digital Media.
18. New York State Governor’s Office for Motion Picture and Television Development.


20. Joe Chianese et al., “Basic Overview of U.S. and International Production Incentives,” Entertainment Partners, April 2011. The budget cap is $10 million for independent films; if an awarded film exceeds this threshold, it will be reclassified as a feature film.

21. See, for example, the quantitative analysis in the LAEDC study.

22. Texas Film Commission. The same bonus applies to production undertaken in economically distressed areas. Similarly, Michigan provides extra incentives for projects undertaken in its “Core Communities,” which are older communities that are in need of revitalization.

23. Another way to spur job creation for certain specific regions is to motivate hiring residents from those areas. Illinois, for instance, offers a 15 percent additional tax credit on labor expenditures for employees from high-poverty or high-unemployment areas. This approach, however, may only help with creating non-specialized and lower-paid jobs, unless residents from the underprivileged areas have access to job training programs that are targeted specifically at the entertainment industry.

24. Michigan Film Office.


27. It encompasses the City of Los Angeles, unincorporated parts of Los Angeles County, and other local jurisdictions.

28. The statistic includes employment in the motion picture and sound recording industries, plus independent artists, writers, and performers. As employment in the motion picture and video industries, which accounted for more than 95 percent of total employment in the motion picture and sound recording industries, is not available at the county level, we use the number from the broader category.

29. Based on Film L.A.’s definition, a development cycle is “the period leading up to the earliest possible date that new pilots would air, postpickup” (Film L.A., “2011 Pilot Production Report”).

30. Motion Picture Association of America.

31. Georgia Film, Music & Digital Entertainment Office.

32. Texas Film Commission.


34. The British Film Institute Film Fund—Terms and Conditions.


36. It includes projects filmed by foreign producers and those by Canadian service producers on behalf of foreign producers.


42. Association of Independent Commercial Producers, “AICP: Annual Member Survey. Discerning Key Distinctions in Commercial Production,” July 2011. In 2010, an average producer spent 45 percent of total production expenditures in Los Angeles, a 6 percent increase from a year ago. And in the past three years, about half of total shoot days took place in Southern California, 15 percent in New York, and 12 percent in foreign locations.
Kevin Klowden is director of the California Center at the Milken Institute, where he also serves as managing economist in the research group. He specializes in the study of demographic and spatial factors (the distribution of resources, business locations, and labor), how these are influenced by public policy, and how they in turn affect regional economies. Klowden has addressed the role of technology-based development in publications such as “North America’s High-Tech Economy” and in location-specific studies on Arkansas and Arizona. In addition, he oversaw the year-long Los Angeles Economy project, which examined key workforce and economic development issues in Los Angeles. Klowden was the lead author of “Film Flight: Lost Production and Its Economic Impact in California” and “The Writers’ Strike of 2007–2008: The Economic Impact of Digital Distribution,” both of which analyze the changing dynamics of the entertainment industry. He has also written on the role of transportation infrastructure in economic growth and job creation in reports such as “California’s Highway Infrastructure: Traffic’s Looming Cost” and “Jobs for America: Investments and Policies for Economic Growth and Competitiveness,” as well as in several publications including The Wall Street Journal. Klowden earned an M.A. in economic geography from the University of Chicago and an M.S. in politics of the world economy from the London School of Economics.

I-Ling Shen is a senior research analyst at the Milken Institute. She specializes in population economics, economic growth, and inequality. Her research has been published in the Journal of Economic Inequality, Economic Inquiry, and in various working paper series at the Bank of Italy, the Center for Economic Policy Research (CEPR), and the Institute for the Study of Labor (IZA). Her work was cited in United Nations’ “Human Development Report 2009” and was widely covered by media in the U.S. and Europe. She is an IZA research fellow and a research associate with the Catholic University of Louvain (UCL), and she was formerly a Marie Curie post-doctoral fellow at the University of Geneva. She received her Ph.D. and M.A. in economics from UCL, a Master of Public Policy from the University of California, Los Angeles, and a bachelor’s in business administration from National Taiwan University.

Ka Wai Ho is a financial analyst working in the entertainment industries division of Pacific Mercantile Bank, focusing on topics pertaining to film financing and other credit facilities for media and entertainment organizations. He was a senior research analyst at the Milken Institute, where his work focused on investment in financing of high-risk projects, such as those in innovative technologies, entertainment, and emerging markets. His research on technology transfer from public research institutions has been published in the economics journal Research Policy. He holds an M.Eng. in engineering, economics, and management from Oxford University and received his M.B.A. from UCLA Anderson. He has experience working in clean tech/social venture capital, strategy consulting, and film financing.