Economic Impact of Connecticut's Digital Media & Motion Picture Tax Credit, Digital Animation Production Company Tax Credit and the Infrastructure Tax Credit

A Study for the Connecticut Office of Film, Television & Digital Media by Olsberg•SPI

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1. SUMMARY: THE ECONOMIC IMPORTANCE OF CONNECTICUT'S SCREEN PRODUCTION TAX CREDITS

Production Incentives
(Digital Media & Motion Picture Tax Credit; Digital Animation Production Company Tax Credit)

$3.1 billion
Eligible production expenditure between FY 12 and FY 20 for projects receiving Connecticut's two production incentives. Over the same time period, $894.3 million was invested by Connecticut through production tax credits.

2,978
Total Full-time Equivalent (FTE) jobs created in FY 20 by the Digital Media Tax Credit, including direct, indirect, and induced effects

Infrastructure Incentive
(Film Infrastructure Tax Credit)

$492.2 million
Investment incentivized by Connecticut's infrastructure incentive between FY 12 and FY 20 (construction impact). Over the same time period, $98.4 million was invested by Connecticut through the tax credit

Combined Impacts of Incentives

$358.7 million
Total combined Gross Value Added (GVA) impact for FY 20. GVA is a measure of economic value generated by an incentive. It is the equivalent for a sector or region of Gross Domestic Product at a national level

$4.60
Average combined economic (GVA) Return on Investment between FY 12 and FY 20 for all three incentives.
(The Digital Media & Motion Picture Tax Credit generated an economic RoI of **$4.80** over the same time period)

Connecticut has unique offer of **project** and **infrastructure** incentives. These complementary programs have underpinned the development of an ecosystem of major Screen sector companies in state

2. EXECUTIVE SUMMARY

2.1. Introduction

Recent years have seen an unprecedented increase in the volume of film, television and digital media ("**Screen**") production being undertaken globally. This is creating significant economic and strategic opportunities for jurisdictions that can service such productions, which is reflected in the expansion of public policy measures to stimulate the Screen sector, including production incentives.

Against this backdrop, the Connecticut Office of Film, Television & Digital Media (the "**Client**") has commissioned Olsberg•SPI ("**SPI**") to evaluate the economic impact of the state's three tax credits (the "**Study**").[1] These are:

- The Digital Media & Motion Picture Tax Credit;
- The Digital Animation Production Company Tax Credit (DAPCO); and
- The Film Infrastructure Tax Credit.

Independent and robust evaluations of incentives are an important part of their operation, used to assess the effectiveness of a system, its impact in stimulating production activity, and return on investment (RoI). This is particularly important in the COVID-19 environment where resources are in high demand.

This Study presents a state-wide economic impact analysis of the incentives and also considers the wider impacts of the incentives on the sector and for Connecticut.

Note: data in this Study are presented by the Connecticut legislative fiscal year — i.e. July 1st to June 30th. The Study uses the convention of FY 20 (for example) to denote the 2019-20 fiscal year.

2.2. About the Global Screen Production Opportunity

Prior to a temporary global slowdown in production in the wake of COVID-19, the volume and value of Screen production investment had reached record levels — creating a global deluge of production worth $177 billion globally in 2019.[2] This increase is being driven by streaming services such as Netflix, which has increased its content spend from $5 billion in 2015 to over $17 billion in 2021.[3] At the same time, a range of new and well-capitalized services have entered the market in the US and globally, and there has also been increased investment from established studios and broadcasters.

The Screen production sector has been growing significantly in terms of output, especially in scripted drama where the number of adult original scripted series available in the US increased by 94% between 2012 and 2021. While the number of shows declined in 2020 due to the pandemic, there was a rapid recovery to 559 shows in 2021 – a record total.[4]

Feature film production also remains strong, with 8,652 produced globally in 2019, according to the European Audiovisual Observatory.

For governments and other authorities, the production deluge is creating significant opportunities for economic growth and job creation. The Screen sector is now a robust

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[1] SPI is a consulting firm that specializes in the global Screen sector. See Appendix Three for an overview of the company

[2] *Global Screen Production — the Impact of Film and Television Production on Economic Recovery from COVID-19.* SPI, 25th June 2020. Accessible at: https://www.o-spi.co.uk/wp-content/uploads/2020/06/Global-Screen-Production-and-COVID-19-Economic-Recovery-Final-2020-06-25.pdf

[3] *Netflix Reveals $17 Billion in Content Spending in Fiscal 2021*. Variety, 20th April 2021. Accessible at: https://variety.com/2021/tv/news/netflix-2021-content-spend-17-billion-1234955953/

[4] *Peak TV Tally: According to FX Research, A Record 559 Original Scripted Series Aired in 2021*. Variety, 14th January 2022. Accessible at: https://variety.com/2022/tv/news/original-tv-series-tally-2021-1235154979/

economic driver and many jurisdictions are now implementing strategies to expand production capability to maximize the sector's impacts. It also provides a strategic opportunity to develop a future-facing, creative and digital sector. This is reflected in the broad usage of automatic production incentives in 101 global jurisdictions — including 34 in the US.

2.3. About Connecticut's Screen Incentives

Connecticut's incentives offer consists of three programs:

- The **Digital Media & Motion Picture Tax Credit** was created in 2006 and updated to its current formulation in January 2010. With minimum project expenditure of $100,000, the amount of tax credit relates to a production's total expenses or costs. Productions spending between $100,000 and $500,000 are eligible for a 10% credit; productions spending $500,000 to $1 million a 15% tax credit; and productions spending more than $1 million a 30% tax credit.
- The **Digital Animation Production Company Tax Credit (DAPCO)** came online in 2007 and is capped at $15 million annually. Its structure is the same as the Digital Media & Motion Picture Tax Credit — i.e. productions spending between $100,000 and $500,000 are eligible for a 10% credit; productions spending $500,000 to $1 million a 15% tax credit; and productions spending more than $1 million a 30% tax credit.
- The **Film Infrastructure Tax Credit** has been operational since 2008 and offers an incentive rate of 20% on capital expenditure of $3 million or more in a state-certified entertainment infrastructure project. This is defined as a capital project providing basic buildings, facilities or installations needed for the functioning of the digital media and motion picture industry in Connecticut.

2.4. Key Findings

The Study reviews the impact of Connecticut's Screen incentives across key economic metrics. This is based around direct, indirect, and induced components of impact as follows:

- Direct impacts — Gross Value Added ("**GVA**") and full-time equivalent ("**FTE**") employment created within the Screen production sector;
- Indirect impacts — GVA and FTE jobs created within sectors that supply goods and services to Screen productions; and,
- Induced impacts — GVA and FTE jobs created as a result of the re-spending of wages by those employed in the direct and indirect phases.

Connecticut is a relatively unique jurisdiction in terms of its incentives offer and related impact. While some incentives focus only on projects, Connecticut's combined project and infrastructure incentives offer has, over time, successfully developed an ecosystem of major Screen sector companies who have invested significantly in state. While the infrastructure involved may have been incentivized, and specific projects incentivized, there is nevertheless a significant amount of activity not covered by the incentives. The attraction of such a base of companies is something that other jurisdictions are also aiming to achieve.

The economic impact methodology developed for this Study aims to reflect the fact that the incentives have developed an ecosystem in state rather than only attracting a throughput of individual projects to be produced in state. The impact has been analyzed using two complementary methods:

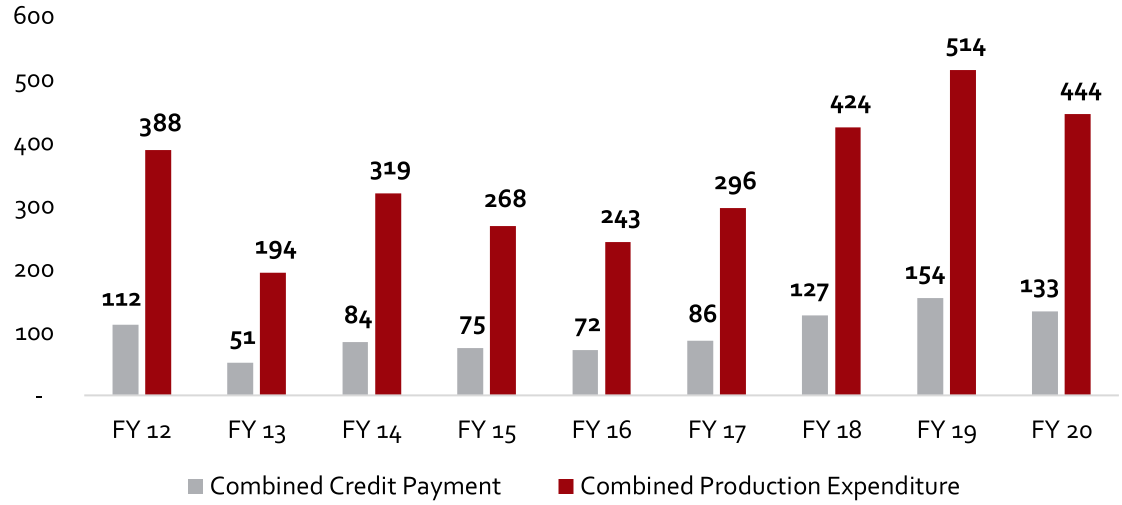
1. A 'bottom-up' approach, which provides a standard impact analysis of the three credits based on incentivized expenditure and construction activity.
2. A 'top-down' approach, which considers overall activity in the Screen sector in Connecticut and applies a sensitivity analysis in terms of the activity that can be ascribed to the broader incentives offer.

2.4.1. Expenditure and Sector Investment

Production Credits

Between FY 12 and FY 20, $3.1 billion of production expenditure was recorded in Connecticut. This figure represents eligible production expenditure for productions which received the Digital Media & Motion Picture Tax Credit and DAPCO incentives. Production expenditure has increased over time, peaking in FY 19 at $514 million before declining to $444 million in FY 20 when the latest data are available.

Figure 1
Incentive Investment and Total Connecticut Eligible Production Spend (Digital Media & Motion Picture Tax Credit and DAPCO), FY 12 to FY 20 ($m, nominal)



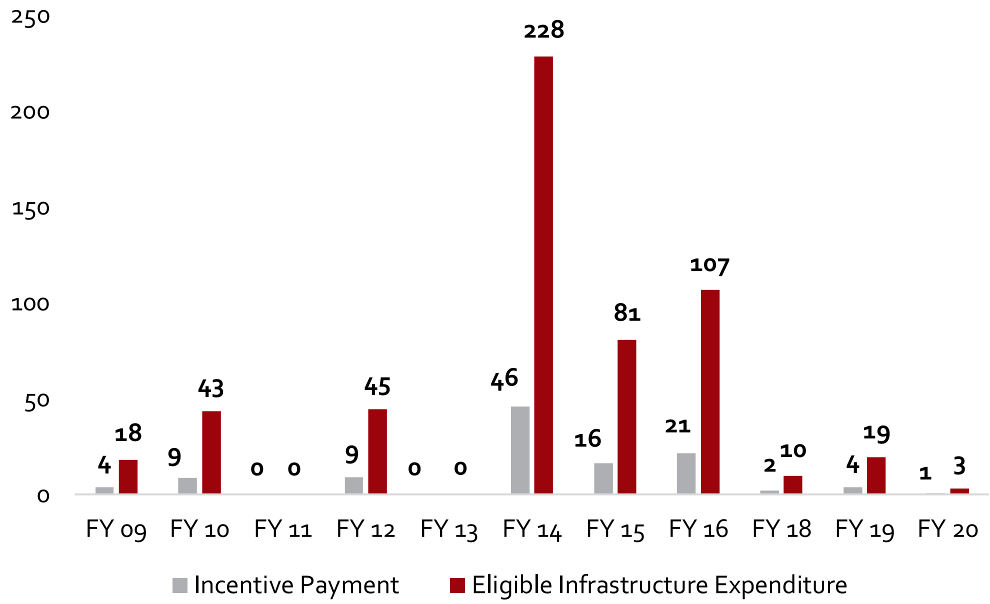
During this time, the average eligible expenditure per project in Connecticut (for the Digital Media & Motion Picture Tax Credit) was $12 million in FY 20, up from $8.7 million in FY 12. This illustrates the growth of the sector in state, as well as investor confidence in and usage of the state's programs.

Between FY 12 and FY 20, $894.3 million has been invested through Connecticut's production tax credits to the Screen sector.

Infrastructure Credit

Connecticut's infrastructure credit, meanwhile, aims to stimulate investment in production infrastructure in state. Between FY 09 and FY 20, it has incentivized $553.6 million in investment, dispersing $110.7 million in credits. It was utilized by 10 companies to make investments.

Figure 2
Infrastructure Spend and Credit FY 09 to FY 20 ($m)



Confidential consultations undertaken for this Study indicate that there are a number of infrastructure investment projects which intend to draw on this incentive currently under construction. The Client has advised that in the current fiscal year – FY 22 – credits have been issued that relate to expenditure totaling $46.9 million between the 2017 to 2021 calendar years. This spend is not included in the economic impact assessment as existing data are based on date of credit issue rather than production expenditure date.

2.4.2. Additionality

One crucial factor to consider in the assessment of incentives for Screen production is whether the system drives growth in the sector — i.e. does the availability of Connecticut's Screen incentives attract production expenditure into the state that would not otherwise have occurred?

To consider the issue of the additionality created by the state's incentives, a limited survey of significant producers was undertaken. Producers were asked the extent to which the incentives were a determining factor in their decision to produce in Connecticut. There were 37 responses to the survey, out of approximately 90 companies which accessed credits between FY 12 and FY 20.

Overall, there is strong evidence from companies that the incentives are an important factor in drawing production expenditure to Connecticut. When asked how much of their productions would have happened in Connecticut without the incentive, the average (median) response was that there would be no production without the incentive. The mean response was that 27% of production would have happened without the incentive, but this is influenced upwards by a relatively small number of responses. For the bottom-up approach an additionality rate of 73% was used.

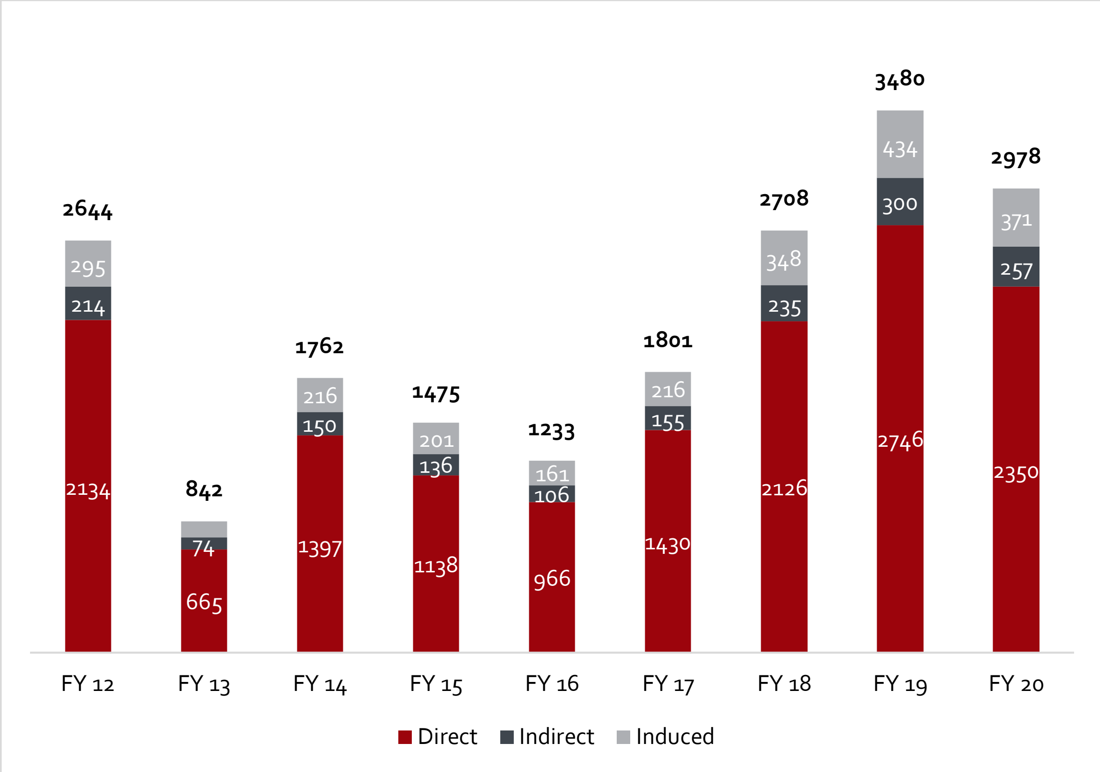
This assessment of additionality was supported by the confidential consultations which found the incentive a crucial factor for most producers.

2.4.3. Economic Impact: Bottom-up Approach

FTE jobs are a method of assessing freelance job creation on a full-time basis, allowing comparability between freelance and salaried employment.

Analysis using the expenditure approach indicates that the FTE jobs created by the Digital Media Tax Credit has been growing over the last nine years. In FY 20 it contributed 2,350 direct FTE jobs, rising to 2,978 when indirect and induced effects are taken into account.

Figure 3
Digital Media & Motion Picture Tax Credit — FTE Employment, FY 12 to FY 20



DAPCO also contributed to jobs up until FY 17 when its main recipient became eligible for the Digital Media Tax Credit. The annual average FTEs created by DAPCO between FY 10 to FY 17 was 369 direct FTEs and 466 when indirect and induced effects are included. The contribution of DAPCO is smaller than for the Digital Media Tax Credit, reflecting the relative size of the programs.

The economic impact of construction for the infrastructure investment projects led to on average 226.4 FTEs each year between FY 12 to FY 20 (direct jobs), although investment, reporting and therefore jobs figures were uneven during the years. Most of these direct jobs were in the construction sector rather than in the Screen sector.

GVA is a measure of the additional economic value of an activity. In the nine years up to FY 20, the Digital Media Tax Credit has contributed $2.29 billion to the economy in Connecticut – including $1.8 billion in direct GVA (2022 prices). The overall contribution to GVA has shown robust growth over the timescale, with a particularly notable increase from $149.6 million in FY 16 to $412.9 million in FY 19, reflecting higher levels of production expenditure.

Aggregating the impact of the Digital Media Tax Credit, DAPCO and the construction impact of the infrastructure investment, the total combined GVA impact for FY 20 was $358.7 million.

The Economic Return on Investment (or GVA RoI) is a measure of cost effectiveness. It compares the total value created in the economy as a result of the tax credits (GVA) and compares this with the net cost of the program (amount released in tax credits minus the additional state and local tax receipts received as a result of the credit).

This analysis suggests that, over nine years, the Digital Media & Motion Picture Tax Credit generated a return on investment (RoI) of 4.8 — i.e for every dollar of tax credit outlay between

FY 12 and FY 20, $4.80 in GVA was created. This includes additional value created by the direct production activity, in the supply chain and the additional value created by those living in the state spending in the local economy.

Given that the incentives work together to incentivize production, it is appropriate to consider a combined RoI which compares the total expenditure on programs with the overall benefit as determined by the bottom-up approach. This measure indicates that, on average, for each $1 invested in the sector, there is a GVA return of $4.60.

2.4.4. Economic Impact: Top-down Approach

The combination of the production and the infrastructure incentives has created a supportive environment for production and broadcast companies in Connecticut. A significant amount of this activity falls outside the remit of the production incentive, although its presence in Connecticut can be attributed to the incentive programs. For example, data from one company indicates that 50% of its overall expenditure in state is not eligible for the incentive program

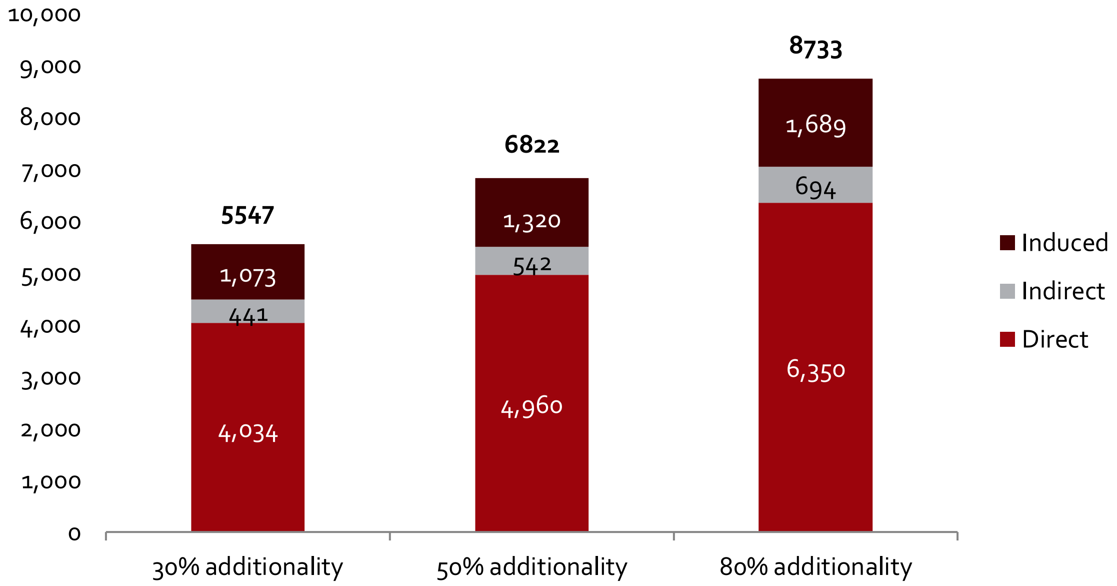
The top-down approach considers this fuller impact of the package of incentives for the Screen sector in Connecticut.

The analysis is driven by employment data obtained from companies in the sector, which indicates that approximately 8,254 people were employed in film and television companies and activities in Connecticut in FY 20.

Due to a lack of data regarding overall company additionality, a sensitivity analysis has been undertaken and the results are presented as a range from a very conservative 30% additionality to 80% which is supported by evidence from the confidential consultations.

This analysis indicates that the direct headcount employment impact of the package of incentives was between 4,034 and 6,350 in FY 20. The corresponding FTE impacts, including indirect and induced employment, are 5,547 and 8,733.

Figure 4
Employment Impact of Industry Incentive Programs, FY 20



The total GVA impacts are significant even with the most conservative assessment of additionality: direct GVA using a 30% additionality assessment is $424.1 million, rising to $668 million when the higher additionality assumption is applied.

Even using the conservative 30% additionality assumption, each dollar invested led to $4.12 of additional GVA. Using the higher additionality figure (which is supported by qualitative research) leads to a positive GVA RoI figure of $6.49 of impact for every $1 invested.

2.4.5. Strategic Benefits for Connecticut

Connecticut's unique incentives offer has enabled the state to achieve what a number of other jurisdictions are aiming to do — i.e. encourage Screen producers and investors to build infrastructure and commit on a longer-term basis. In focusing on long-form production rather than solely on film, the state has built stable production throughput, rather than focusing only on itinerant projects.

This means that the state has a very strong platform for future growth. The pandemic has created and accelerated a number of broader trends in the Screen sector, and Connecticut's infrastructure means that the state can benefit from some of these. For example, with project-related travel challenging more broadcasting activity is likely to be undertaken from headquarters rather than on location in the coming years.

The incentives have created a production ecosystem and a cluster of businesses. The Connecticut incentive also encourages focus on the state, which means that producers focus on sourcing in-state workers where they might have looked at other states.

In general terms, Screen productions can quickly deliver substantial amounts of expenditure into an economy. In addition, such projects also impact a wide range of workers and vendors across many different business sectors, remuneration and skill levels. Screen production jobs are of strategic value because they can be mobile, highly skilled and well paid.

According to previous SPI analysis, two thirds (67%) of production costs for Screen projects are spent in other parts of the economy outside of the specific Screen production sector.[5] This includes significant spend in sectors that have been particularly impacted during the pandemic, such as travel and hospitality, transport, construction, power and utilities, and training and education.

A further potential impact is the ability of the Screen production sector to offer employment opportunities to workers with transferable skills from a wide range of other sectors.

Finally, another area of increasingly recognized impact is Screen tourism. The presence and popularity of Screen productions mean they can be a major driver for tourists while audience shows of the type produced in Connecticut attract a large number of tourists with associated impacts on hotels and other spending. This value is not included in the economic impact analysis.

2.4.6. Note on Data and Recommendations

Given the complexities of modelling the economic impact of the film and television sector in Connecticut, future analyses would be more accurate if more targeted data collection could be implemented by the Client. Complete data on total expenditure and its component parts – specifically payroll and vendor spend, and the relationship of each to total spend – would be an important part of this. A more cohesive data management system that is more closely integrated into the management of the incentive process is recommended. This should ensure all data on payroll, vendor spend, and any additional categories of expenditure (e.g. facilities costs and depreciation) are clearly identified and summed. Given the issue of non-incentivized

[5] *Global Screen Production – The Impact of Film and Television Production on Economic Recovery from COVID-19.* Olsberg•SPI, 25th June 2020. Accessible at: https://www.o-spi.co.uk/wp-content/uploads/2020/06/Global-Screen-Production-and-COVID-19-Economic-Recovery-Final-2020-06-25.pdf

impacts that are related to the incentives, data should also be systematically collected on eligible and non-eligible spend undertaken by investors.

Regular and ongoing tracking of sectoral employment in Connecticut would also assist in the accuracy of future analyses. This could be delivered by ensuring annual collation of sectoral jobs in state through company filings, or through an annual sector survey to be administered by the Client.

3. THE GLOBAL SCREEN PRODUCTION DELUGE AND CONNECTICUT

3.1. The Global Screen Production Deluge

Recent years have seen an unprecedented expansion in film and television production worldwide. Driven by voracious consumer and investor demand, the volume and value of Screen production has created a global deluge of production worth $177 billion globally in 2019.[6] Other sources suggest that global expenditure on production and licensing of new film and television content by streamers, studios, and independents increased 16.4% year-on-year between 2019 and 2020, from $189.1 billion to $220.2 billion. Spend is forecast to rise to $250 billion in 2022.[7]

In the US in 2019, according to calculations by UBS reported in the *Economist*, content spending by 16 companies was roughly equal to the sum invested in America's oil industry in the same year.[8]

This increase is being driven by streaming services such as Netflix, which is reported to have increased its content spend to over $17 billion in fiscal 2021.[9] Other new and well capitalized players have entered the market and investment from established studios and broadcasters has increased. Disney, for example, announced at its 2020 Investor Day that it expected its global direct-to-consumer content expense to be between $14 billion and $16 billion dollars across Disney+, Hulu and ESPN+ for fiscal 2024.[10]

Governments and legislators have increasingly recognized the opportunity offered by Screen production. As a type of specialized manufacturing activity, it creates modern, highly skilled, productive, and mobile employment and can deliver strong returns on investment. It can also increase inward investment, stimulate infrastructure spending, and generate tourism and destination branding effects.

The sector is also resilient. While production was forced to stop in many jurisdictions during initial phases of COVID-19, the return to pre-pandemic levels is occurring in some major markets. For example, FilmLA has announced that film and television production in Los Angeles returned to pre-pandemic levels during the second quarter of 2021.[11] Official statistics in the UK show combined total spend on film and high-end television production in H1 2021 was £3.6 billion, the highest on record.[12]

The Screen production sector has been growing significantly in terms of output, especially in scripted drama where the number of adult original scripted series available in the US increased by 94% between 2012 and 2021. While the number of shows declined in 2020 due to the pandemic, there was a rapid recovery to 559 shows in 2021 – a record total.[13] Feature film

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[6] *Global Screen Production — the Impact of Film and Television Production on Economic Recovery from COVID-19*. SPI, 25th June 2020. Accessible at: https://www.o-spi.co.uk/wp-content/uploads/2020/06/Global-Screen-Production-and-COVID-19-Economic-Recovery-Final-2020-06-25.pdf

[7] *Streaming drove 16.4% rise in 2020 global production, licensing spend to $220bn (report)*. Screendaily.com, 28th June 2021. Accessible at: *https://www.screendaily.com/news/streaming-drove-164-rise-in-2020-global-production-licensing-spend-to-220bn-report/5160937.article*

[8] *The future of entertainment*. The Economist, 14th November 2019. Accessible at: https://www.economist.com/briefing/2019/11/14/the-future-of-entertainment

[9] *Netflix Reveals $17 Billion in Content Spending in Fiscal 2021*. Variety, 20th April 2021. Accessible at: https://variety.com/2021/tv/news/netflix-2021-content-spend-17-billion-1234955953/

[10] The Walt Disney Company investor day Transcript, 10th December 2020. Accessible at: https://thewaltdisneycompany.com/app/uploads/2020/12/Disney_Investor_Day_2020_transcript.pdf

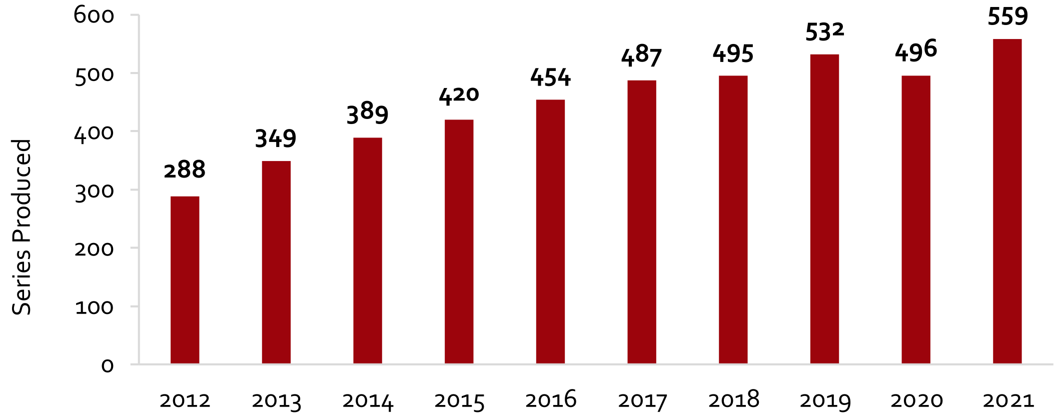
[11] *Production Returns to Pre-Pandemic Levels as Television Continues to Surge*. FilmLA, 5th August 2021. Accessible at: https://www.filmla.com/production-returns-to-pre-pandemic-levels-as-television-continues-to-surge/

[12] *Film, and high-end television production in the UK; January-June (H1) 2021* . BFI Research and Statistics Unit, 29th July 2021. *Accessible at: https://core-cms.bfi.org.uk/media/11588/download*

[13] *Peak TV Tally: According to FX Research, A Record 559 Original Scripted Series Aired in 2021*. Ibid

production remains strong, with 8,652 produced globally in 2019 according to the European Audiovisual Observatory.

Figure 5
Scripted Original Series Production in the US, 2011-2020



Source: FX Networks Research

Non-scripted television — a type of content regularly produced incentivized by Connecticut tax credits — is also growing in popularity among consumers and producers. While non-scripted and scripted productions alike are facing increasing competition for viewers, the higher cost of scripted shows — typically millions of dollars per episode to produce — is making non-scripted series viewed as an attractive and less risky investment.

3.2. Opportunities for Connecticut

Against the backdrop of sectoral growth, markets such as Connecticut which offer stable incentives and an established production ecosystem, are well-placed to benefit. Connecticut's offer for Screen investors is well developed and the state has attracted a number of major multinational companies. These include:

- NBCUniversal, which opened the Stamford Media Center in 2009. This facility has two sound stages, as well as HD control rooms, support space, green rooms, dressing rooms, hair and makeup rooms, audience holding area, wardrobe and parking. NBC Sports is also headquartered in Stamford.
- World Wrestling Entertainment, which has been based in Stamford since 1987.
- ESPN, which was founded in Bristol in 1978 and is still headquartered in the city.
- ITV America, the largest independent producer of unscripted entertainment content in the US, which announced in 2018 that it would relocate a significant portion of its business operations to Stamford.[14]

The ability to attract and retain companies of this scale and their productions is underpinned by Connecticut's Screen incentives. The state has been able to create a long-term sectoral ecosystem and encourage producers to build infrastructure and commit on a longer-term basis beyond single projects. This is something which other jurisdictions are attempting to stimulate through their incentives offer.

Connecticut's incentives offer has also encouraged companies to focus on in-state vendors and workers. The legislation that underpins the Digital Media & Motion Picture Tax Credit specifies

[14] *Gov. Malloy Announces Media Companies ITV America and Wheelhouse Entertainment Establishing Operations in Connecticut, Creating Hundreds of New Jobs. Connecticut Department of Economic and Community Development, 25th May 2018.* The same Governor's Office release announced that the newly-launched Wheelhouse Entertainment would also be using Stamford as one of its bases of operations. Accessible at: https://portal.ct.gov/DECD/Press-Room/Press-Releases/2018/2018-05-25-Media-Companies-ITV-America-and-Wheelhouse-Entertainment

that no expenses or costs incurred outside of Connecticut and used within the state are eligible for a credit: this has encouraged producers to look for skills and vendors within state even when it may be easier to source these inputs from out of state.[15]

There has also been investment in the Screen supply chain, while the clustering of major companies in state — and in Stamford particularly — is an attraction for other potential sector investors.

The focus on developing longer-term company commitment also means that there is a degree of activity outside of the incentive, for example with companies investing in back-office functions such as IT, human resources, and administrative roles.

Connecticut has built a platform for future growth in the Screen and digital sector, which will also enable the state to benefit from some key sectoral trends that have been accelerated by the pandemic. For example, the focus in sports broadcasting on undertaking more activity from broadcast headquarters rather than on location will benefit Connecticut given some of the major businesses based in state.

A further significant impact — which is not included in the economic impact analysis — is the impact of tourism from participants in audiences shows in the state and particularly at Stamford Media Center.

It should be noted, however, that Connecticut does face a number of challenges in the sector. Key is increased competition for companies and projects, which includes both in the US and elsewhere, including Canada. In the US market, Connecticut's proximity to New York and New Jersey — which both operate attractive incentives and have significant bases of sectoral workers — is a challenge.

[15] *Sec. 12-217jj. Film production tax credit regulations*. This document outlines that 'For income years commencing on or after January 1, 2010, no expenses or costs incurred outside the state and used within the state shall be eligible for a credit, and one hundred per cent of such expenses or costs shall be counted toward such credit when incurred within the state and used within the state. Accessible at: https://portal.ct.gov/-/media/DECD/Film_TV_Media/FILM__12-217jj_DigitalMediaMotionPicTaxCreditLegislation.pdf

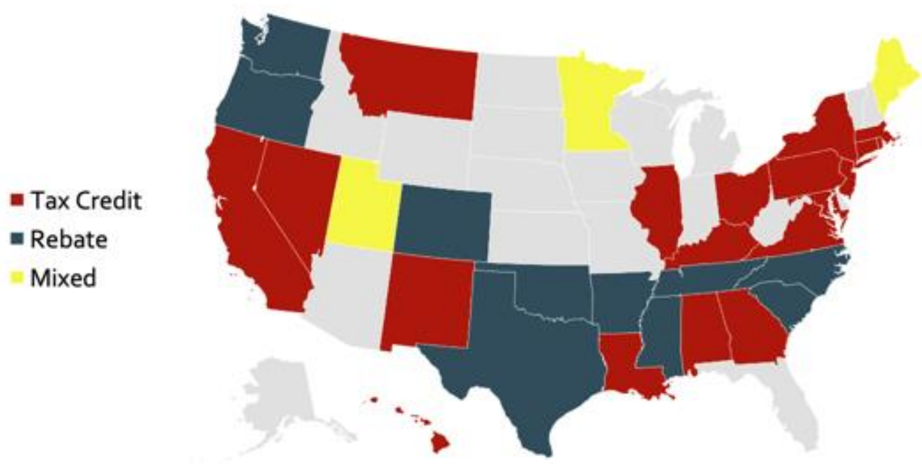
4. CONNECTICUT'S SCREEN INCENTIVES AND US BENCHMARKING

4.1. Background to Production Incentives

In a competitive global market, incentives have become increasingly utilized by legislators as a strategic policy tool to strengthen production and build skills, employment, and infrastructure in a global growth sector, as well as attract high-value inward investment.

There are currently 101 national, state, or province-level systems operating worldwide on an automatic basis — i.e. the incentives are triggered by expenditure rather than selective considerations, such as artistic value. This includes 34 in the US.

Figure 6
Screen Production Tax Incentives in the US



Source: SPI

4.2. About Incentives

There are four types of production incentive in common use globally:

- **Cash rebate**: these systems repay an amount of qualifying production costs to a production, based on a pre-determined formula, and funded directly from a state budget.
- **Refundable tax credit**: set against a producer's tax liabilities when a return is filed, either reducing the liabilities or, if there are none, being paid in cash, in full. In this way, it functions very similarly to a rebate model.
- **Transferable tax credit:** the model adopted by Connecticut. Transferable credits enable producers to sell the tax credit received to eligible taxpayers if it cannot be used directly, usually at a discount on the dollar. The purchaser then utilizes the credit to reduce tax liability.
- **Tax shelter**: designed to attract investment from high tax-paying firms and individuals, who can use the investment to reduce their tax liabilities. Tax shelters are now largely out of favor globally because of inherent complexities.

4.3. Connecticut's Incentives Offer

Connecticut offers three incentives, which are administered by the Office of Film, TV & Digital Media within the Connecticut Department of Economic and Community Development (DECD).

The **Digital Media & Motion Picture Tax Credit** was created in 2006 and updated to its current formulation in January 2010. With minimum project expenditure of $100,000, the amount of tax credit relates to a production's total expenses or costs. Productions spending between

$100,000 and $500,000 are eligible for a 10% credit; productions spending $500,000 to $1 million a 15% tax credit; and productions spending more than $1 million a 30% tax credit.

Eligible production companies must be registered with the Secretary of State to do business in Connecticut, and must undertake at least 50% of principal photography days within the state; at least 50% of post production costs in the state; or spend $1 million or more in post production costs in the state. No out-of-state expenses are eligible and star salaries are limited to $20 million, with the requirement that the compensation is subject to Connecticut personal income tax.

The credit is applicable to entertainment content, which includes motion pictures, documentaries, television series, music videos, commercials, miniseries, video games and other productions. Theatrically distributed feature films were removed as an eligible production type in FY 17.

The tax credit is non-refundable, and can be applied against corporation business tax or insurance premium tax for the income year in which final certification for the qualified production is made. Unused credit in the income year may be carried forward for, or in, the five immediately succeeding income years. The credits can also be sold or transferred to another taxpayer in state.

The **Digital Animation Production Company Tax Credit (DAPCO)** was established in 2007 via *Public Act No. 07-236* and is capped at $15 million annually.[16] Its structure is the same as the Digital Media & Motion Picture Tax Credit — i.e. productions spending between $100,000 and $500,000 are eligible for a 10% credit; productions spending $500,000 to $1 million a 15% tax credit; and productions spending more than $1 million a 30% tax credit. Eligible applicants must be state-certified digital animation production companies that engage in digital animation production. They must maintain studio facilities in Connecticut, and employ at least 200 full-time employees within the state.

Credit claimants can claim all or part of the tax credit in the income year costs were incurred or in any part of the three succeeding income years.

The **Film Infrastructure Tax Credit** has been operational since 2008 and offers an incentive rate of 20% on capital expenditure of $3 million or more in a state-certified entertainment infrastructure project. This is defined as a capital project providing basic buildings, facilities or installations needed for the functioning of the digital media and motion picture industry in Connecticut.

To qualify for a 20% tax credit, the capital project must provide buildings, facilities or installations needed to operate in Connecticut. This can include a capital lease or purchase, together with necessary equipment for a film, video, television, digital production facility or digital animation production facility. Project development is also eligible, including design, professional consulting fees and transaction costs; development, preproduction, production, post-production and distribution equipment and system access; and fixtures and other equipment.

The tax credit is non-refundable, and can be sold or transferred to another taxpayer in state. All or part of any credit must be claimed against the tax imposed for the income year in which expenditures were made for the infrastructure project, or in the three immediately succeeding income years.

[16] *Public Act No. 07-236. An Act Expanding Connecticut's Film Industry.* State of Connecticut, approved 6th July 2007. Accessible at: https://www.cga.ct.gov/2007/ACT/Pa/pdf/2007PA-00236-R00HB-06500-PA.pdf

Investors must apply for an eligibility certificate no later than 90 days after the first expenses or costs and, if eligible, receive a tax credit certification letter indicating the amount of tax credit.

4.4. The Importance of Connecticut's Incentives

Combined, Connecticut's infrastructure and project-based tax credits form a key attraction for investors in Connecticut's Screen sector. Consultations with users of the credits underline the importance of the programs in attracting and retaining investment, due to several in-state and out-of-state factors.

Consultees noted that Connecticut did not have the lowest general cost base as a state, and that the incentives enabled the state to compete for production with other key centers in North America. As previously noted, the incentives also encourage producers to focus on Connecticut labor hires — even when specific skills may be challenging to locate in state. Without the incentive it is highly likely that companies would hire less in state and focus on other states.

Some producers noted that the incentives were not always as competitive as other states — for example, feature film does not qualify and some elements of project development are not qualified.[17] While the incentives have encouraged long-form production and related benefits, the ineligibility of theatrically-distributed feature film has to a degree limited Connecticut's ability to develop a deeper crew base and a wider provision of infrastructure.

In sector-wide terms, production costs for film and television have been rising in recent years. This relates to several factors including increased competition driving budget increases as producers look for projects to stand out in a crowded market. Increased demand for crew and facilities globally is also a driver of cost increases. In the broadcast market, there is a downwards pressure on producer margins.

Given these trends, incentives were viewed by consultees as being critical for the sector in Connecticut. The additionality of the Connecticut incentives is assessed in detail in Section 6.2.1.

4.5. US Benchmarking

Connecticut is one of over 30 US states currently operating an automatic incentive for Screen production. Producers will routinely assess and cost several jurisdictions when deciding where to locate a production, and an incentive is usually a cornerstone consideration in this process. For producers, the attractiveness and effectiveness of an incentive within this decision relates to a number of inter-related elements. Two of the most important are the incentive rate — i.e. the amount of eligible spend that can be incentivized — and the annual incentive budget, or cap.

The rate is critical since it relates to how much return on expenditure the producer will receive. The headline rate is only a guide, and producers will focus on the net rate — i.e. the degree to

[17] *Connecticut Digital Media & Motion Picture Tax Credit FORM B: Schedule of Eligible Expenditures*. Accessible at: https://portal.ct.gov/-/media/DECD/Film_TV_Media/schedule_of_eligible_expenditures_10-29-09.pdf

which certain eligibility differences in systems being compared effect the rate of incentive return.

Annual caps are of critical importance. For systems without a cap — such as Connecticut — producers can invest in the jurisdiction without the risk that an annual incentive budget may run out. This is a key attraction.

This section provides high-level benchmarking in relation to the Connecticut offer and how it compares with the wider US offer. It should be noted that a number of international jurisdictions also compete very strongly, including several Canadian provinces.

4.5.1. Program Caps

The table below outlines states operating film and television production incentive programs. The annual program budget or cap is indicated: where no cap exists data is included to show state outlay on the programs, where data could be found.

With a five-year average annual spend of $114 million between FY 16 and FY 20 for the Digital Media & Motion Picture Credit and DAPCO, Connecticut can be considered a mid-range US market in terms of annual outlay, behind high-volume production states such as Georgia, New York, California and Louisiana.

Table 1
Comparison of State Incentive Program Caps in the US Market

State	Annual Program Cap / State Outlay
Arkansas	No cap (amount unstated)
Maine	No cap (amount unstated)
Tennessee	No cap (amount unstated)
Georgia	No cap ($1.2 billion, FY 21)[18]
Illinois	No cap ($420m, 2018)
New York	$420m
California	$330m plus increase (see footnote)[19]
Louisiana	$150m
Connecticut	No cap ($114m five-year average between FY 16 and FY 20 for Digital Media & Motion Picture Credit and DAPCO)
New Mexico	$110m Note: uncapped for New Mexico Film Partners — e.g. Netflix and NBC-Universal
New Jersey	$100m (additional $200m value available for Studio Partners)
Kentucky	$100m
Pennsylvania	$70m
Massachusetts	No cap ($56m-$80m annually per 2021 review)
Hawaii	$50m
Ohio	$40m

[18] *Georgia's Film and TV Tax Credit Hits Record $1.2 billion in Reimbursements*. Forbes, 17th January 2022. Accessible at: https://www.forbes.com/sites/joshwilson/2022/01/17/georgias-film-and-tv-tax-credit-hits-record-12-billion-in-reimbursements/

[19] In July 2021, the California legislature announced additional funding of $330m. This includes $150m for a new tax credit aimed at studio development, $15m for relocating TV series for two years (2021–22 and 2022–23) and $75m for recurring TV series for two years (2021–22 and 2022–23)

State	Annual Program Cap / State Outlay
North Carolina	$31m
Oklahoma	$30m
Texas	$22.5m[20]
Alabama	$20m
Mississippi	$20m
Oregon	$20m
Rhode Island	$20m
South Carolina	$15.5m
Maryland	$12m
Montana	$10m
Nevada	$10m
Utah	$8.3m
Virginia	$6.5m
Minnesota (Tax Credit)	$4.95m
Washington	$3.5m
D.C	$3.5m
Colorado	$0.9m
Minnesota (Rebate)	$0.5m

4.5.2. Rate

Connecticut offers a tiered rate of incentive, between 10% and 30% depending on the level of eligible spend. The table below outlines comparable incentive rates, though it should be noted that actual net rates will differ based on multiple factors related to the composition of a project and program limits and uplifts.

In comparable terms, Connecticut sits alongside states such as Ohio and Rhode Island in the rate offered.

Table 2
Comparison of State Incentive Rates in the US Market

State	Headline Incentive Rate	Uplifts	Notes
D.C.	35%	None	10% of personnel expenditure for non-D.C. residents; 30% for residents; 21% of production expenditure without a tax obligation to D.C.-registered vendors; 35% of production expenditure with a tax obligation to D.C.-registered vendors

[20] In 2021, the state allocated $45 million over two years

Kentucky	35%	None	30% of goods and services; 35% of Kentucky-resident labor; 30% of non-resident labor
New Jersey	35%	2% Diversity Tax Credit	For qualified film production expenses incurred in New Jersey, but within a 30-mile radius of the intersection of Eighth Avenue/Central Park West, Broadway, and West 59th Street/Central Park South, New York, New York, the tax credit is worth 30% (Fort Monmouth falls outside of this 30-mile radius)
Illinois	30%	Additional 15% tax credit on Illinois labor expenditure of employees who live in areas of high unemployment	
Mississippi	30%	5% additional rebate for honorably discharged armed forces veterans	25% for local spend on goods/services; 25% for non-resident payroll; 30% for resident payroll
Ohio	30%	None	
Connecticut	**30%**	**None**	**10% on production costs between $100,000 and $500,000; value increased to 15% on projects with eligible spend of more than $500,000; projects of more than $1m qualifying spend get 30%**
Rhode Island	30%	None	
South Carolina	30%	None	25% on resident labor; 20% on non-resident labor; 30% on in-state supplies; 25% on out-of-state supplies
Washington	30%	35% for TV series of more than six episodes	
Alabama	25%	35% for payroll to Alabama residents	
Louisiana	25%	Additional 5% for out-of-zone filming; additional 10% for a Louisiana screenplay on expenditures between $50,000 and $5m; additional 15% for Louisiana payroll;	

		additional 5% for visual effects	
Maryland	25%	None	25% for film production; 27% for TV production
Massachusetts	25%	Spending more than 75% of total budget or filming at least 75% of the principal photography days in Massachusetts makes the project eligible for a 25% production credit and a sales tax exemption, in addition to the 25% base payroll tax credit	
Minnesota (Tax Credit)	25%		
Montana	25%	Additional 5% on expenditure in a high-poverty county; additional 5% for Montana screen credit	25% of compensation for Montana resident crew; 15% of compensation for non-Montana resident crew; 30% of compensation paid to students; 20% of above-the-line compensation per production or television series, with ceiling; 10% of payments to Montana colleges or universities; 10% of all in-studio facility and equipment rental expenditure
New Mexico	25%	Additional 5% for television series productions; additional 5% if certain criteria are met regarding the use of qualified production facilities; 5% for production expenditures in the state at least 60 miles	15% for non-resident industry crew wages when certain criteria are met
New York	25%	Additional 10% credit available on qualified labor expenses (direct hires only) in most upstate counties	
North Carolina	25%	None	

Pennsylvania	25%	5% for productions that meet the minimum state filming requirements at a qualified production facility; 5% for eligible post-production expenses incurred at a qualified post-production facility	
Tennessee	25%	Additional 5% on resident labor for scripted TV series that include 'Film in TN' logo	
Utah	25%	None	Rebate: 20% for projects spending between $500,000 and $1m Tax Credit: 20% for projects that will spend $500,000-$1m; 25% for projects that spend above $1m and if additional criteria are met
Arkansas	20%	10% bonus for below-the-line Arkansas residents	
California	20%	None	20% for non-independent feature films, TV projects; 25% for independent films
Colorado	20%	None	
Georgia	20%	Additional 10% for including Georgia promotional logo in final production	
Hawaii	20%	None	20% for Oahu productions 25% for other islands
Minnesota (Rebate)	20%	5% additional rebate for productions with more than $1m qualifying spend, or 60% of days outside metro area	
Oklahoma	20%	3% Rural County Uplift; 2% Small Municipality Uplift; 5% Soundstage Uplift; 2% / 5% TV Uplift; 5% Multi-Film Deal Uplift; 3% Post-Production Uplift	
Oregon	20%	Additional 6.2% Greenlight labor rebate for qualifying projects spending more than $1m	20% on goods and services; 10% on labor

Texas	20%	2.5% for underused or economically distressed areas	Base rate of 5%-20%: 5% for projects of $250,000-$1m; 10% for projects of $1m-$3.5m; 20% for projects of $3.5m+. Based on eligible in-state spending
Nevada	15%	None	Above-the-line: 15% resident, 12% non-resident Below-the-line: 15% resident Production costs: 15%
Virginia	15%	5% bonus for filming in an economically-distressed area of Virginia; 10% bonus for Virginia resident payroll if total expenditure in Virginia of $250,000-$1m, or 20% for Virginia resident payroll if total expenditure in Virginia of $1m+; 10% bonus for Virginia resident payroll for Virginia residents employed for the first time as actors or members of a production crew	
Maine	12%	None	Rebate: 10% on non-resident wages; 12% on resident wages Tax credit: 5% on other eligible spend.

5. CONNECTICUT PRODUCTION AND INCENTIVE USE

This section provides an analysis of incentive usage, based on data provided by Connecticut's Office of Film, TV & Digital Media.

5.1. Notes on Data

Information is provided on the total value of the tax credit awarded to each production, as well as the total eligible Connecticut expenditure.

Usage data is presented by the Connecticut legislative fiscal year — i.e. July 1st to June 30th. This Study uses the convention of FY 20 (for example) to denote the 2019-20 fiscal year.

Projects were assigned to a relevant fiscal year based on the date the credit was issued. This may result in a lag between actual and recorded impact. This approach can lead to uneven annual analyses, as productions may have filmed across fiscal years. Where appropriate, three-year moving averages are presented to overcome this unevenness in reporting.

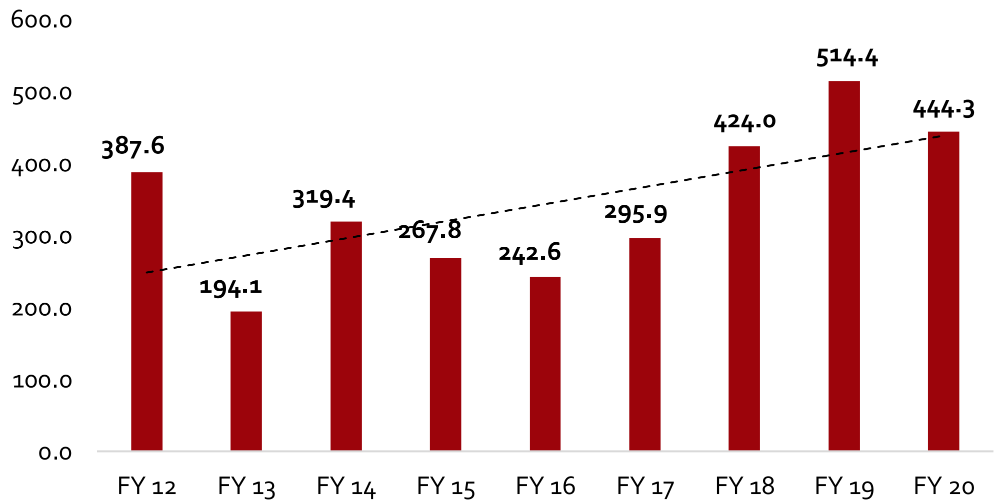
It should be noted that there are some limitations in the data collected, including the fact that the year of production and spend was not tracked, only the date of application and the date of the credit being issued.

5.2. Overall Production Expenditure

Connecticut's three incentives have seen different rates of usage since their introduction. Between FY 12 and FY 20, 302 projects have claimed the Digital Media & Motion Picture Tax Credit, with television, interactive websites, and digital media being the most common production types. Between FY 09 and FY 20, 24 projects across 10 production companies have claimed the Film Infrastructure Tax Credit. Meanwhile, just one production company — Blue Sky Studios — has used DAPCO, for 8 projects.

Production expenditure through Connecticut's two project-based incentives is relatively uneven over time. Such a trend is not uncommon in the Screen production sector, where a particularly large production may make a significant difference to an annual result. Nevertheless, the overall trend in production expenditure is upwards between FY 12 and FY 20 as the figure below indicates.

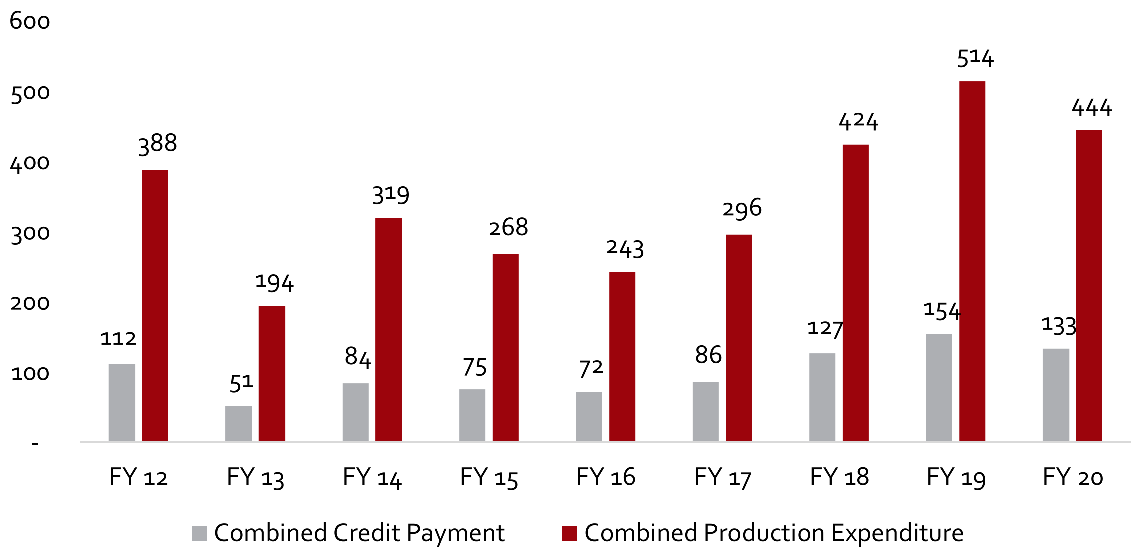
Figure 7
Total Eligible Production Expenditure (Digital Media & Motion Picture Tax Credit and DAPCO), FY 12 to FY 20 ($m with trend line)



5.2.1. Relationship Between Production Expenditure and Incentives

The role that incentives play in attracting Screen production to Connecticut is shown by the clear relationship between the investment and total eligible production expenditure in the figure below.

Figure 8
Incentive Investment and Total Connecticut Eligible Production Spend – Digital Media & Motion Picture Tax Credit and DAPCO, FY 12 to FY 20 ($m)

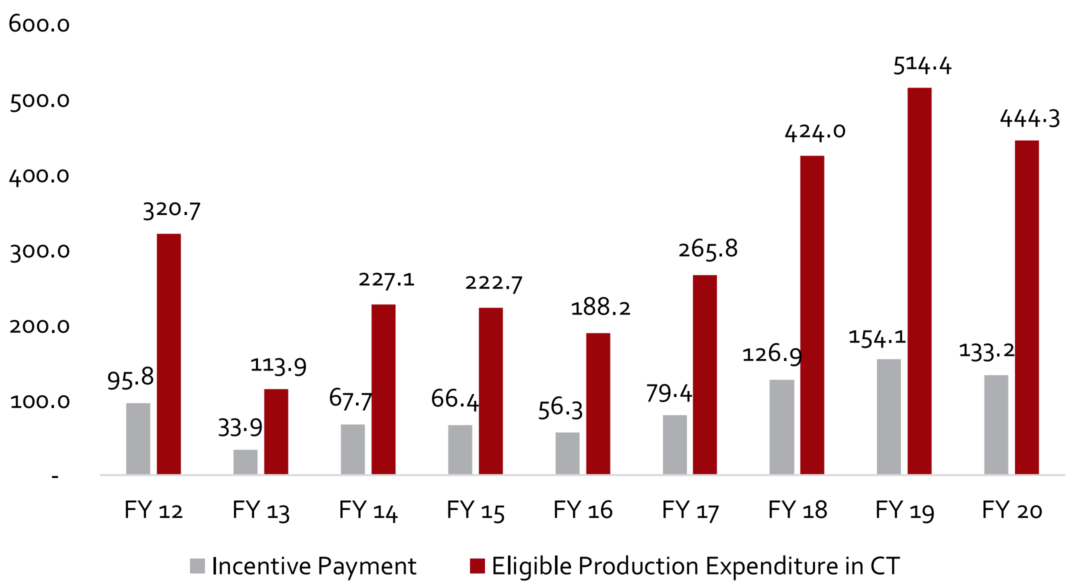


5.3. Digital Media & Motion Picture Tax Credit

5.3.1. Project Expenditure

The Digital Media & Motion Picture Tax Credit is the largest outlay in terms of both eligible expenditure and overall incentive disbursed. Between FY 12 and FY 20, 302 projects received total tax credits of $813.6 million. This helped to attract $2.72 billion of production expenditure into Connecticut.

Figure 9
Eligible Production Expenditure and Incentive Payments for Digital Media & Motion Picture Tax Credit, FY 12 to FY 20 ($m)



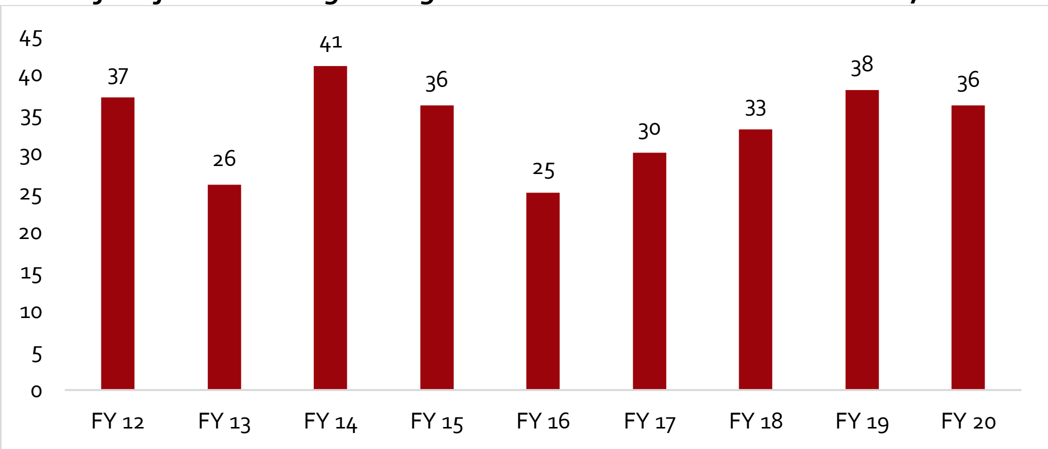
5.3.2. Project Volume

Between FY 12 and FY 20, 302 projects utilized the Digital Media & Motion Picture Tax Credit. Large producers and networks including ESPN, NBC Sports, and WWE repeatedly accessed the credit.

Over the operation of the credit, outlined below, there has been strong usage from the start of the system. A downturn in FY 16 and FY 17 was followed by further growth.

The average eligible expenditure per project in Connecticut was $12 million in FY 20, an increase from $8.7 million in FY 12. This illustrates a growing industry, and investor comfort with the state's program. In total, around 90 different companies accessed this incentive, with each company using it on average three times during the period.

Figure 10
Volume of Projects Accessing the Digital Media & Motion Picture Tax Credit, FY 12 to FY 20

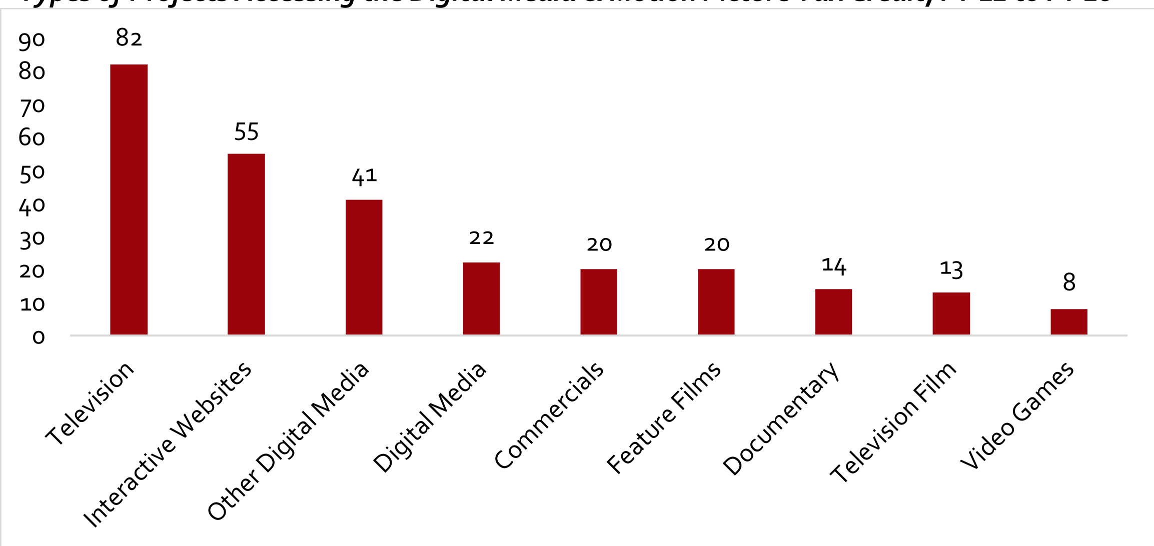


5.3.3. Project Type

Television, interactive websites, and digital media projects were the most common project type to access the credits between FY 12 and FY 20. A key feature of the credit is high use by non-scripted television shows, including some long-running talk shows and game shows.

There have been no theatrical feature films funded since FY 17 and the number of television projects have increased from six in FY 12 to 14 in FY 20.

Figure 11
Types of Projects Accessing the Digital Media & Motion Picture Tax Credit, FY 12 to FY 20

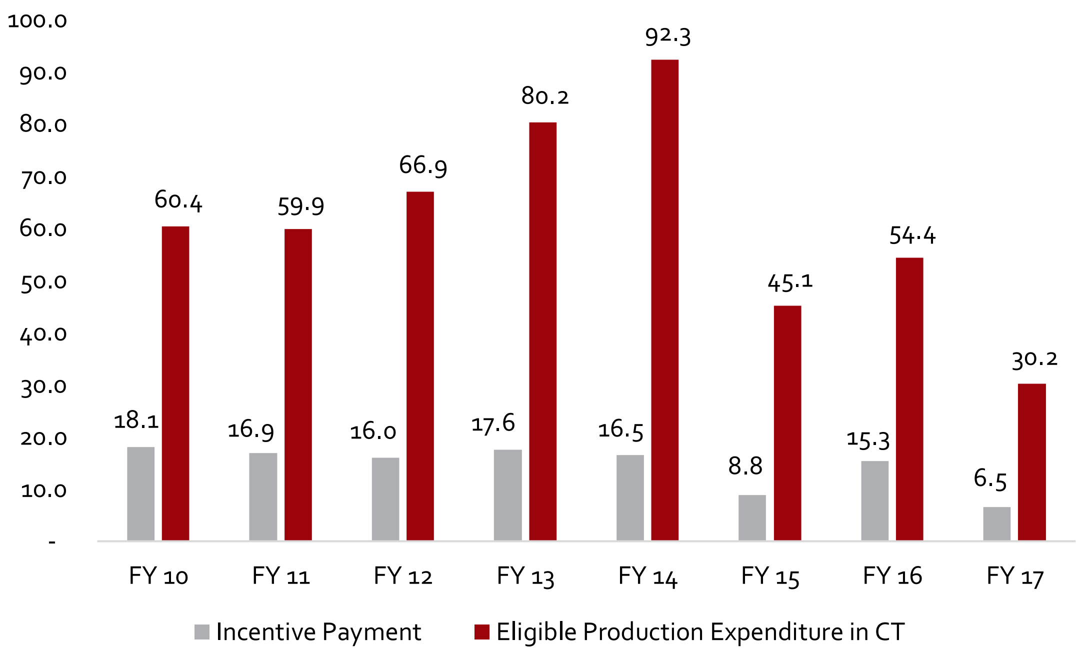


5.4. The Digital Animation Production Company Tax Credit

5.4.1. Project Expenditure

DAPCO is targeted at digital animation projects. Between FY 10 and FY 17, this incentive provided $115.7 million of incentive to eight projects, all produced by Blue Sky Studios. The last application to DAPCO was made in FY 16 and the final payment in FY17. Since FY 16 no projects have qualified for DAPCO. After FY 16, Blue Sky Studios began to make applications under the Digital Media & Motion Picture Tax Credit.

Figure 12
Investment and Spending Associated with DAPCO, FY 10 to FY 17 ($m)



Notes: for this analysis, credits are assigned to a fiscal year based on the fiscal year of disbursement, which is why FY 17 appears in the figure above; DAPCO credit is capped at $15 million annually but the payments can fall in the following fiscal year, meaning that some of the credit figures displayed in the chart are higher than the $15 million cap

5.5. Film Infrastructure Tax Credit

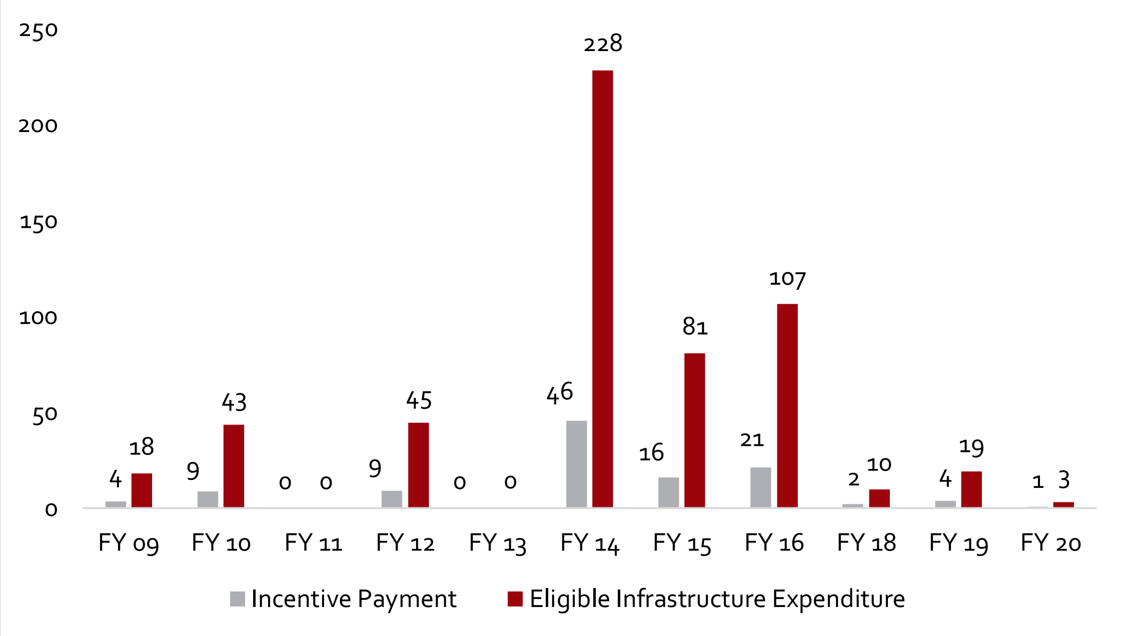
The infrastructure credit incentivizes investment in production infrastructure in Connecticut. Between FY 09 and FY 20, it has incentivized over $550 million in investment, dispersing $110 million in credits. It incentivized investments from 10 companies. The incentive has assisted in building a viable long-term sectoral ecosystem, with companies in state including NBC Sports, Stamford Media Center, WWE, and ITV America.

Most infrastructure projects claimed the incentive in two parts — an interim claim and a final claim. The uneven nature of these data reflects when the claims were made, rather than when the expenditure occurred — i.e. actual infrastructure expenditure would have happened in advance of the claims being made.

Analysis indicates that the payout and spend related to the incentive peaks in FY 14, but it should be noted that a lag between incentive spend and credit issuance means that the impact of the Film Infrastructure Tax Credit could increase as more credits are issued. Consultations indicate that there are a number of infrastructure investment projects which intend to draw on this incentive currently in process, and the Client has advised that in the current fiscal year – FY 22 – credits have been issued that relate to expenditure totaling $46.9 million between the

2017 to 2021 calendar years. This spend is not yet reflected in Figures 13 or 14 as credits are assigned to a fiscal year based on when they were issued.

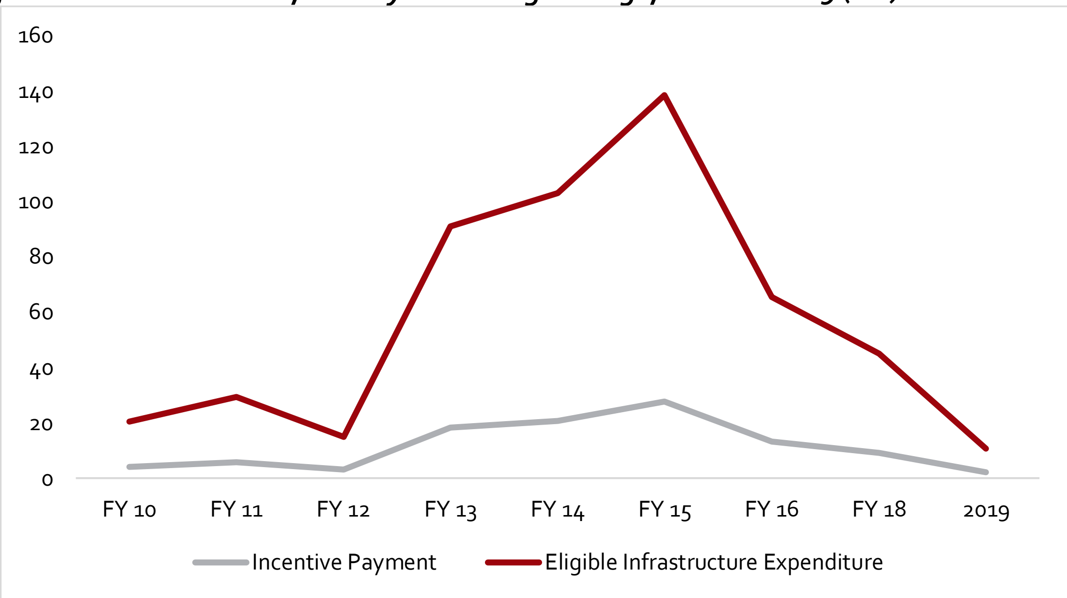
Figure 13
Film Infrastructure Tax Credit, FY 09 to FY 20 ($m)



Note: Spend undertaken may not yet appear in the data if a credit has not been issued in the fiscal years above

To adjust for the uneven nature of this data, it is clearer to consider a three-year rolling average.

Figure 14
Infrastructure Investment, Three-year Moving Average, FY 10 to FY 19 ($m)



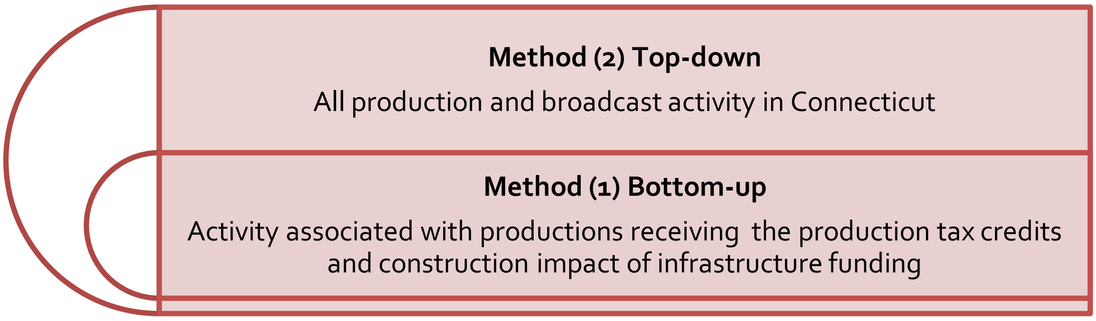
Note: Spend undertaken may not yet appear in the data if a credit has not been issued in the fiscal years above

6. ECONOMIC IMPACT OF CONNECTICUT'S INCENTIVES

6.1. Introduction to Methodology

This study uses two complementary methods to assess the economic impact of the suite of incentives which incentivize Screen production activity in Connecticut. As outlined in the following figure, these involve dual 'top-down' and 'bottom-up' approaches.

Figure 15
Two-Pillar Approach to Assessing Economic Impact



A full outline of the methodology is provided in Appendix One.

In brief, the 'bottom-up' approach focuses on activity incentivized by the Digital Media & Motion Picture Tax Credit and historically by DAPCO and construction activity resulting from the infrastructure credit. The 'top-down' approach, meanwhile, considers overall activity in the Screen sector in Connecticut.

For both methods, the IMPLAN economic model was used with one adjustment to better reflect the reality of the Screen sector in Connecticut. This involved using the customized region function in IMPLAN to adjust the model's assumption regarding the breakdown of production expenditure into payroll and vendor spend. Details are provided in Appendix One.

6.2. Bottom-up Approach — Digital Media & Motion Picture Tax Credit

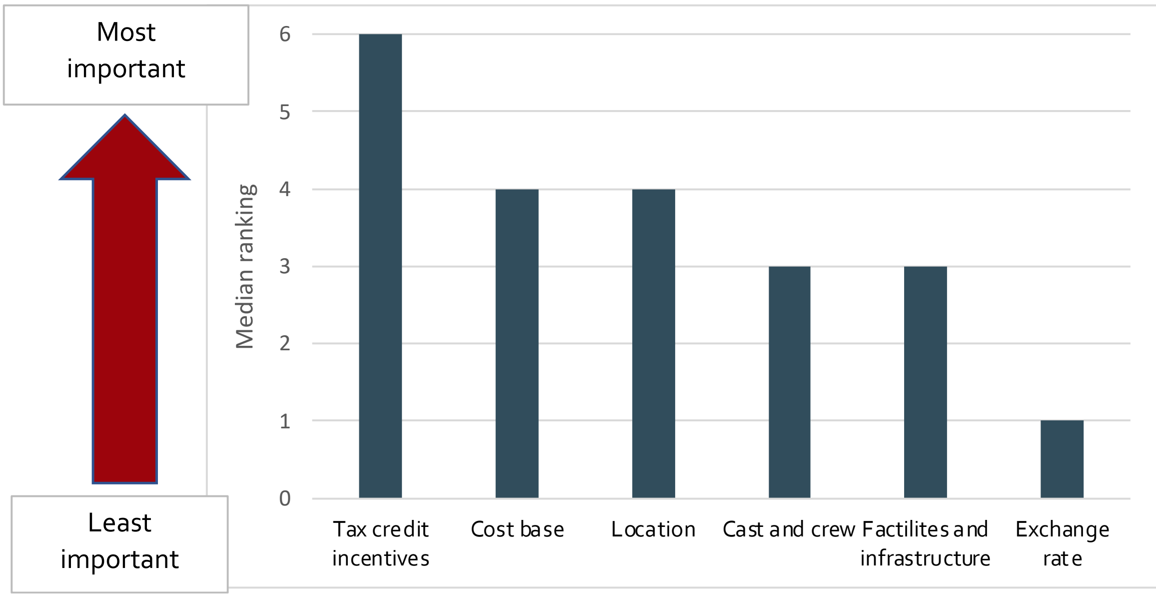
This approach focuses only on production activity incentivized by the Digital Media & Motion Picture Tax Credit. This section sets out the key economic impact metrics for the program over the last nine fiscal years.

6.2.1. Additionality

Additionality describes the extent to which an observed change or impact can be attributed to a particular intervention. In this case, it describes how much of the production expenditure can be attributed to the production tax credits (the Digital Media & Motion Picture Tax Credit and DAPCO). To determine additionality, a survey was sent to all production incentive applicants to explore what production companies would have done without the incentive. There were 37 responses to the survey, out of approximately 90 companies which have accessed the credit between FY 12 and FY 20. This represents a response rate of around 41% which makes the data robust, even though it is not strictly statistically significant.

Overall, there is strong evidence from companies that the incentives are an important factor in drawing production expenditure to Connecticut. When asked to rank the importance of six factors in the decision to produce in Connecticut, 56% of respondents indicated the tax credits were the most important factor and 34% the second most important factor.

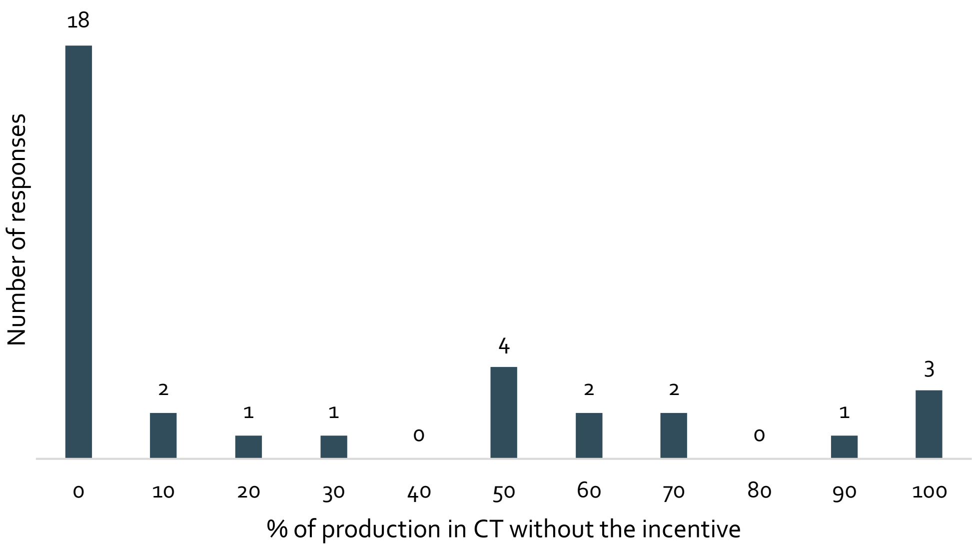
Figure 16
Decision Factors for Producing in Connecticut, Median Rank



Source: Olsberg•SPI, n=37

When asked how much of their productions would have happened in Connecticut without the incentive, the average (median) response was that there would be no production without the incentive. The mean response was that 27% of production would have happened without the incentive, but this is influenced upwards by a relatively small number of responses. Analysis of the survey results indicates that most companies which reported that some production would have occurred in Connecticut without the incentive are smaller producers. As outlined below, 18 of 34 respondents said that no production would have happened in Connecticut without the incentive.

Figure 17
Proportion of Production that Would Have Happened in Connecticut Without the Incentive



Source: Olsberg•SPI, n=34

The rate of additionality therefore is between 73% and 100% — i.e. the Digital Media & Motion Picture Tax Credit is responsible for between 73% and 100% of production expenditure in the state. Due to the distribution of survey results, it is likely that the real impact is closer to the top end of this. However, in the economic impact analysis, we have chosen to use a conservative additionality assumption of 73%.

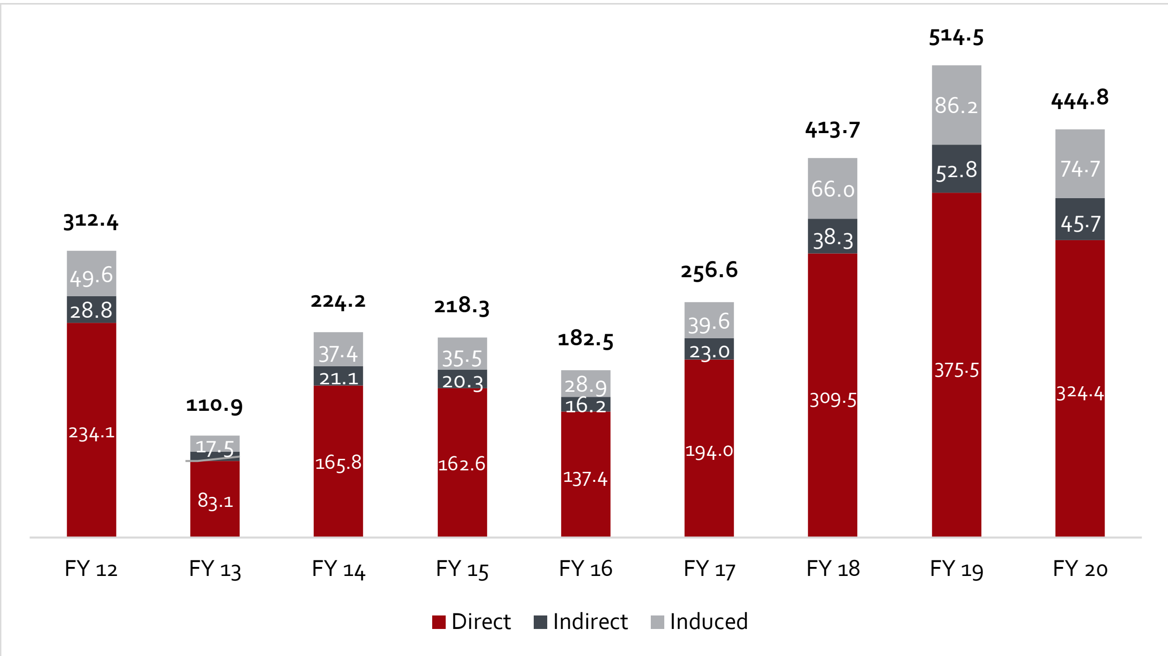
This quantitative data finding was supported by many of the industry consultations who indicated how crucial the tax credit is in driving spend to Connecticut. Consultees spoke of how, without the tax credits, they would have not considered moving their production to Connecticut. Others indicated they would have not been able to remain in production without the incentive, and that removal would mean that they would have to shut down or relocate.

With its proximity to Connecticut, the state of New York was mentioned numerous times during consultations as an alternative location, and this is where some crew currently live and commute from.

6.2.2. Digital Media & Motion Picture Tax Credit — Output

The figure below displays the direct, indirect, and induced impact of the Digital Media & Motion Picture Tax Credit in terms of output. In FY 20, this incentive led to an estimated $324.4 million in direct output[21], $45.7 million in indirect output and $74.7 million in induced output. The increase from FY 17 reflects expenditure growth through the credit.

Figure 18
Digital Media & Motion Picture Tax Credit – Output, FY 12 to FY 20 ($m, nominal)



Source: SPI Analysis

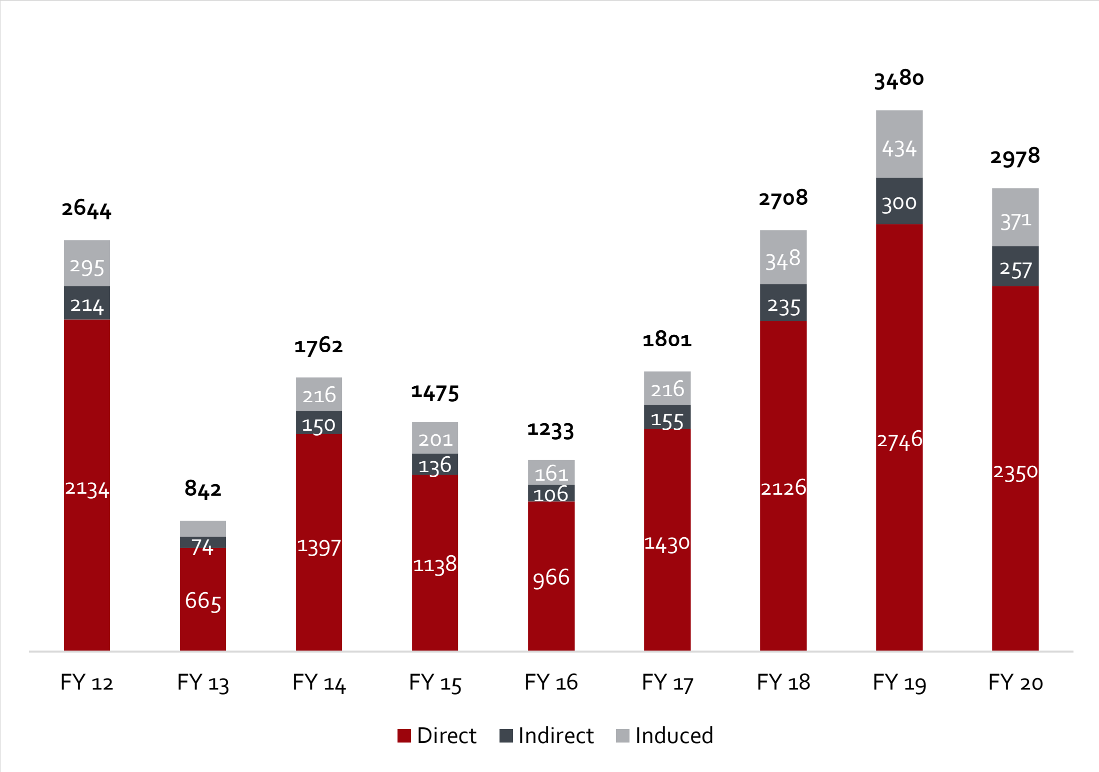
6.2.3. Digital Media & Motion Picture Tax Credit — Employment

In FY 20, the incentive generated 2,978 full-time equivalent (FTE) jobs in Connecticut in total. Of these, 2,350 were through direct employment in the sector, 257 were indirect jobs and 371 were induced.[22]

[21] Direct output is the equivalent to the production expenditure adjusted for additionality

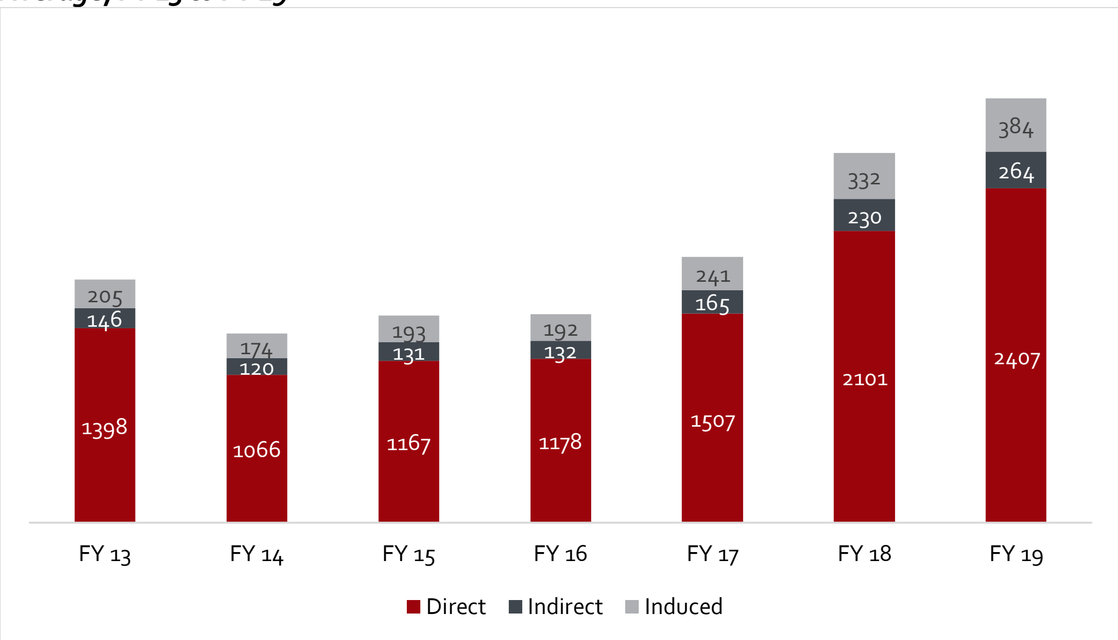
[22] As noted, the IMPLAN economic model was used to calculate impact with one adjustment to better reflect the reality of the Screen sector in Connecticut. This involved using the customized region function in IMPLAN to adjust the model's assumption regarding the breakdown of production expenditure into payroll and vendor spend. Details are provided in Appendix One.

Figure 19
Digital Media & Motion Picture Tax Credit — FTE Employment, FY 12 to FY 20



Analysis of FTE data on a three-year moving average basis shows that the incentive has successfully created an increasing number of FTE jobs over the period of its operation. This consistent growth helps to form the basis for building a strong workforce in the state.

Figure 20
Digital Media & Motion Picture Tax Credit — FTE Employment, Three-year Moving Average, FY 13 to FY 19

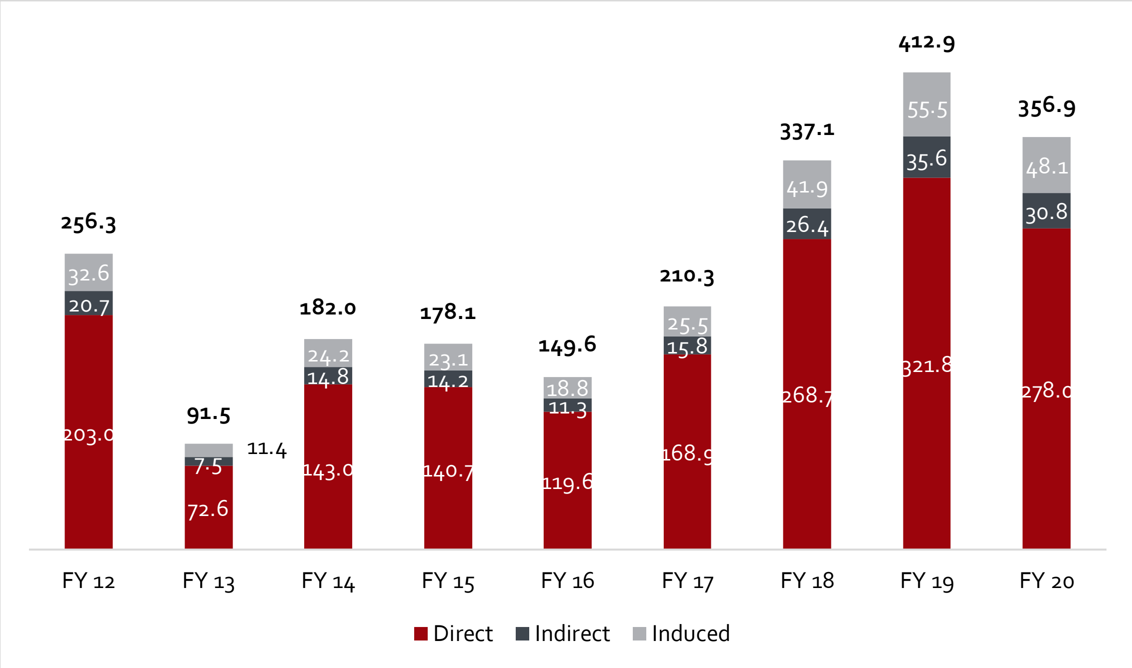


Note: Fiscal year refers to the mid-point of the three-year moving average

6.2.4. Digital Media & Motion Picture Tax Credit — Gross Value Added

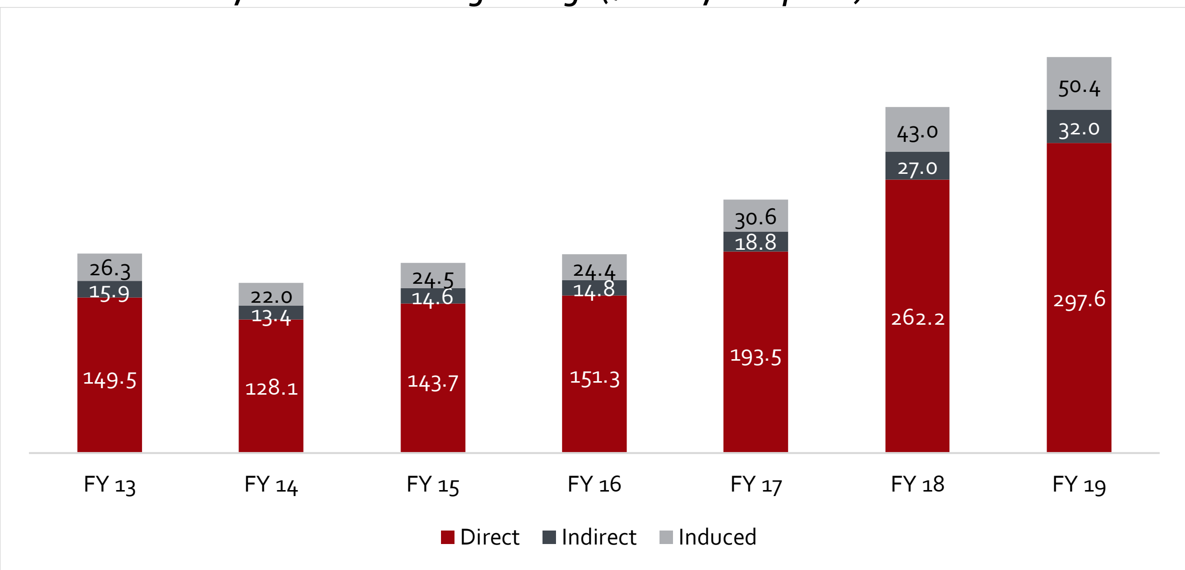
GVA is the measure of economic value generated by the incentive. It is the equivalent for a sector or region of Gross Domestic Product at a national level. Over nine fiscal years examined for this study, $2.29 billion in GVA was created by the Digital Media & Motion Picture Tax Credit.[23]

Figure 21
Digital Media & Motion Picture Tax Credit – Gross Value Added, FY 12 to FY 20 ($m, nominal)



The three-year moving average figures indicate a clear and ongoing growth in GVA terms for Connecticut.

Figure 22
Gross Value Added, Three-Year Moving Average ($m real, 2022 prices)



Note: Fiscal year refers to the mid-point of the three-year moving average

[23] This cumulative number is 'real' as it accounts for inflation and is in 2022 prices.

6.2.5. Digital Media & Motion Picture Tax Credit — Labor Income

Across nine years, total direct labor income of those working in Connecticut on projects incentivized by the Digital Media & Motion Picture Credit was $944.6 million. Factoring in indirect and induced effects, the total stands at $1.23 billion.

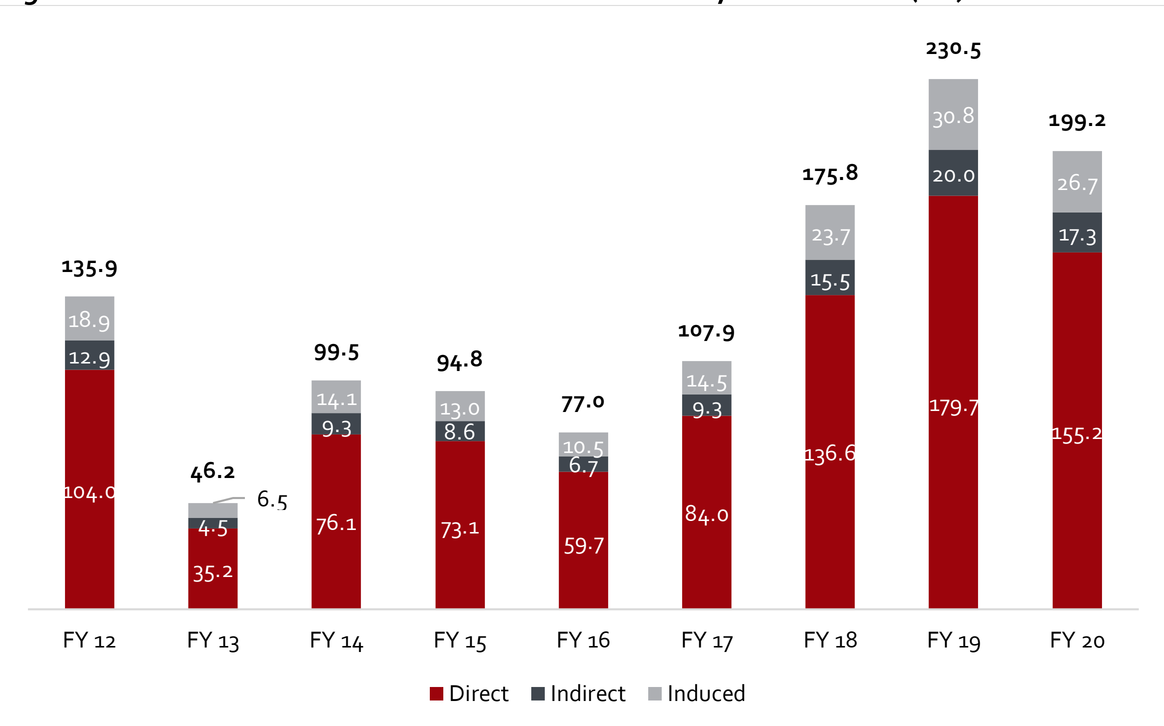
Table 3
Total Labor Income, FY 12 to FY 20 ($, 2022 prices)

Labor Income	
Direct	944,600,000
Indirect	111,200,000
Induced	170,800,000
Total	1,226,600,000

Note: real, 2022 prices

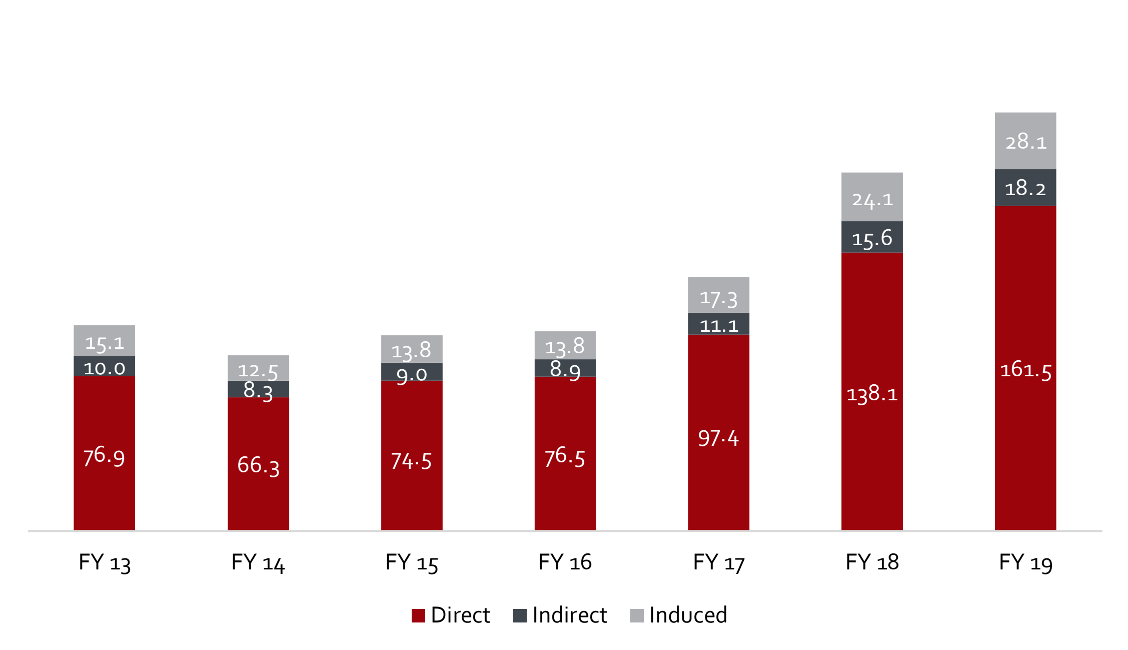
On an annual basis, labor income increased over the timeframe, albeit with uneven results in relation to expenditure reporting project flow and the assignment of productions to fiscal years

Figure 23
Digital Media & Motion Picture Tax Credit — Labor Income, FY 12 to FY 20 ($m)



The three-year moving average analysis shows a clear increase in labor income for those working in the state's Screen and digital media sector. This is driven by job creation in the sector over the same period.

Figure 24
Labor Income, Three-year Moving Average ($m)



Note: Fiscal year refers to the mid-point of the three-year moving average

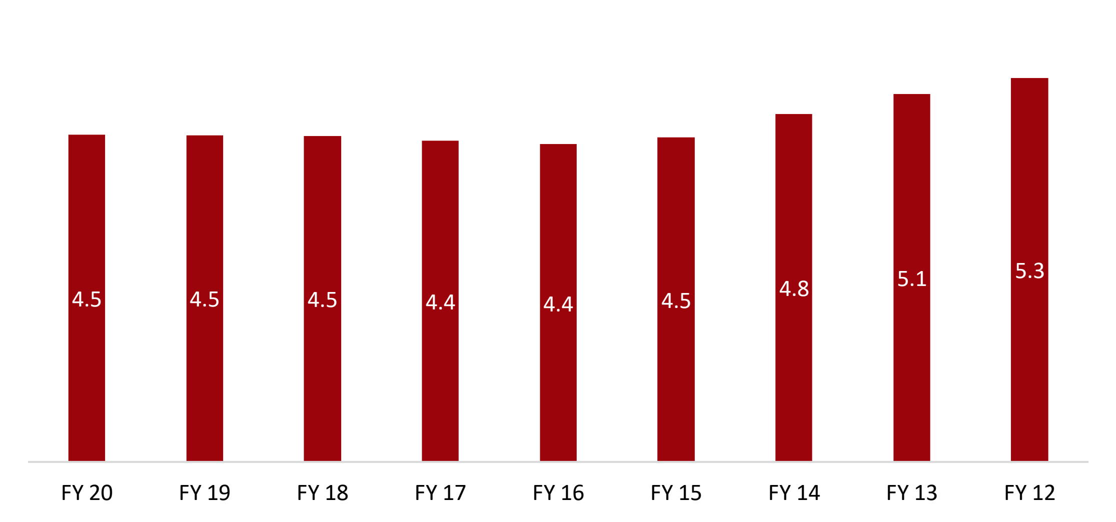
6.2.6. Digital Media & Motion Picture Tax Credit — Economic Return on Investment

The Economic Return on Investment (or GVA RoI) is a measure of cost effectiveness. It compares the total value created in the economy as a result of the tax credits (GVA) and compares this with the net cost of the program (amount released in tax credits minus the additional state and local tax receipts received as a result of the credit). SPI considers this the most appropriate measure to assess this type of credit as it matches closely with the aim of the credit. According to the DECD, the aim of the tax credit program is "to encourage the production of digital media and motion pictures in the State of Connecticut".[24] Taxation RoI has not been examined in the same way as it is considered a narrow measure of RoI that does not reflect the broader economic value created.

Analysis suggests that, over nine fiscal years, the Digital Media & Motion Picture Tax Credit generated a RoI of 4.80 — i.e. for every dollar of tax credit outlay between FY 12 and FY 20, $4.80 in GVA was created. This includes additional value created by the direct production activity in the supply chain and the additional value created by those living in the state spending in the local economy.

[24] Digital Media & Motion Picture Tax Credit Guidelines. DECD. Accessible at: https://portal.ct.gov/-/media/DECD/Film_TV_Media/3-5-10_DigitalMediaMotionPictureTaxCreditGuidelines.pdf

Figure 25
Digital Media & Motion Picture Tax Credit — GVA Return on Investment, FY 12 to FY 20



6.2.7. Digital Media & Motion Picture Tax Credit — Tax Receipts

There was an associated uplift in tax receipts by local, state and federal authorities connected with the increased economic activity. IMPLAN was used to estimate that a total of $150.2 million of additional taxes were collected in FY 20, over half of which were in state and local taxes.

Table 4
Uplift in Tax Receipts FY 20

Geographical level	Tax type	Tax receipts associated with uplift in production
State	Sales Tax	$27,041,189
	Corporate Profits Tax	$1,691,659
	Personal Income Tax	$7,845,740
	Other taxes	$1,740,979
Local	Commercial Property Tax	$39,940,353
	Other taxes	$1,107,408
Federal	All taxes	$70,847,563
Total		**$150,214,892**

6.3. Bottom-up Approach — DAPCO

The impact of DAPCO is modelled between FY 10 and FY 17 when it was last accessed. Since FY 17, Blue Sky has been eligible for the Digital Media & Motion Picture Tax Credit. Blue Sky expenditure and associated impact since then are incorporated into the Digital Media & Motion Picture Tax Credit impact.

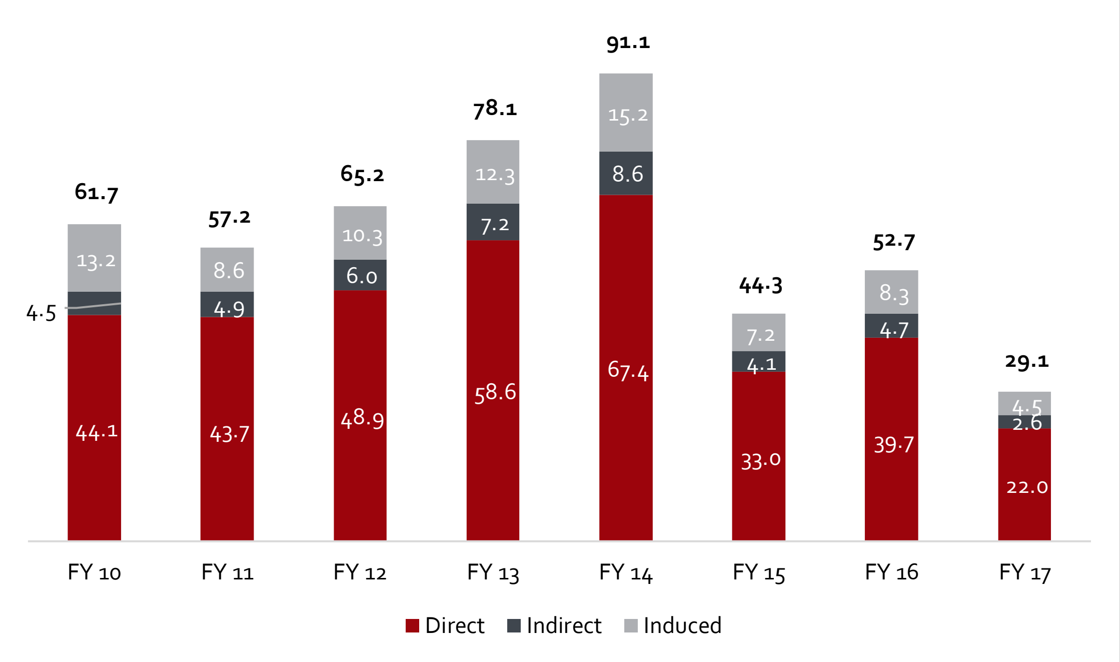
6.3.1. DAPCO — Additionality

As DAPCO was only accessed by one company, to protect respondent confidentiality, we use the same additionality figure as for the Digital Media & Motion Picture Tax Credit which is a rate of 73%.

6.3.2. DAPCO — Output

The output uplift associated with DAPCO peaked in FY 14 with a $67.4 million uplift in direct output, rising to $91.1 million when indirect and induced effects are included. Output associated with DAPCO fell as the expenditure transitioned into the Digital Media program.

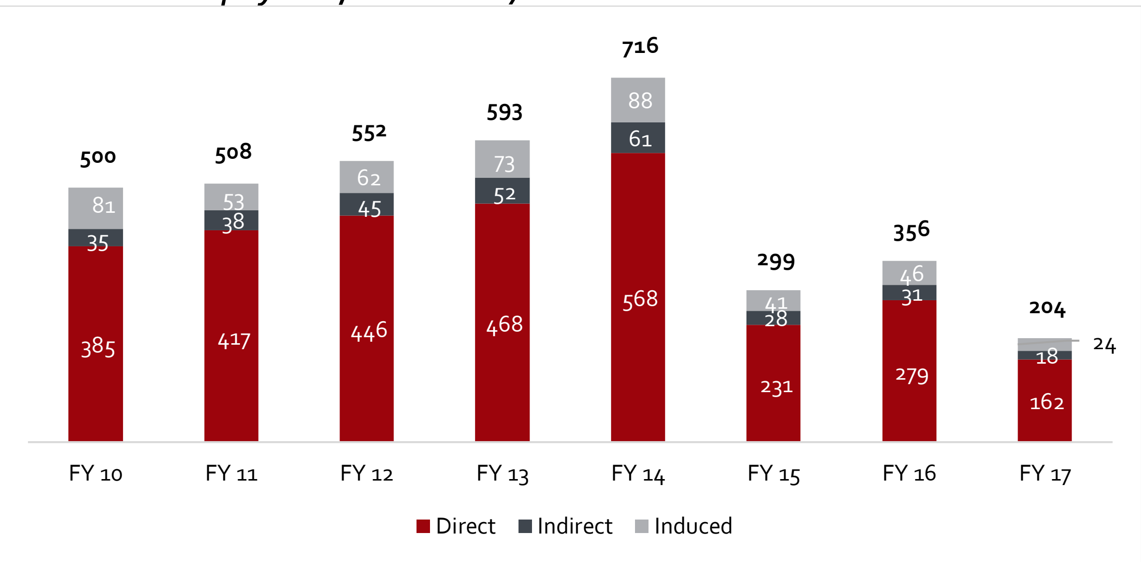
Figure 26
DAPCO — Output, FY 10 to FY 17 ($m, nominal)



6.3.3. DAPCO — Employment

In FY 17, the last year this incentive was accessed, DAPCO generated 204 FTE jobs. In FY 14 when the DAPCO incentive use was at its peak, it created 716 jobs including 568 direct jobs.

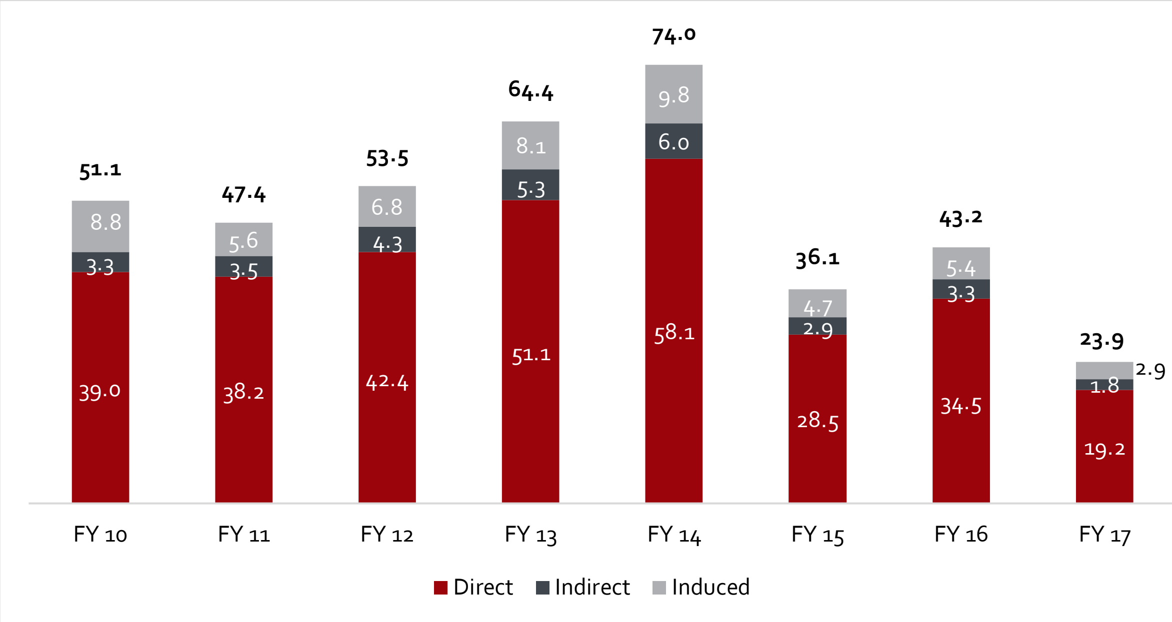
Figure 27
DAPCO — FTE Employment, FY 10 to FY 17



6.3.4. DAPCO — Gross Value Added

GVA measures the additional value generated by activity. Nearly $24 million in direct GVA was generated in FY 17, and when DAPCO was at its peak in FY 14 it contributed $74.0 million to the state economy through direct, indirect, and induced effects.

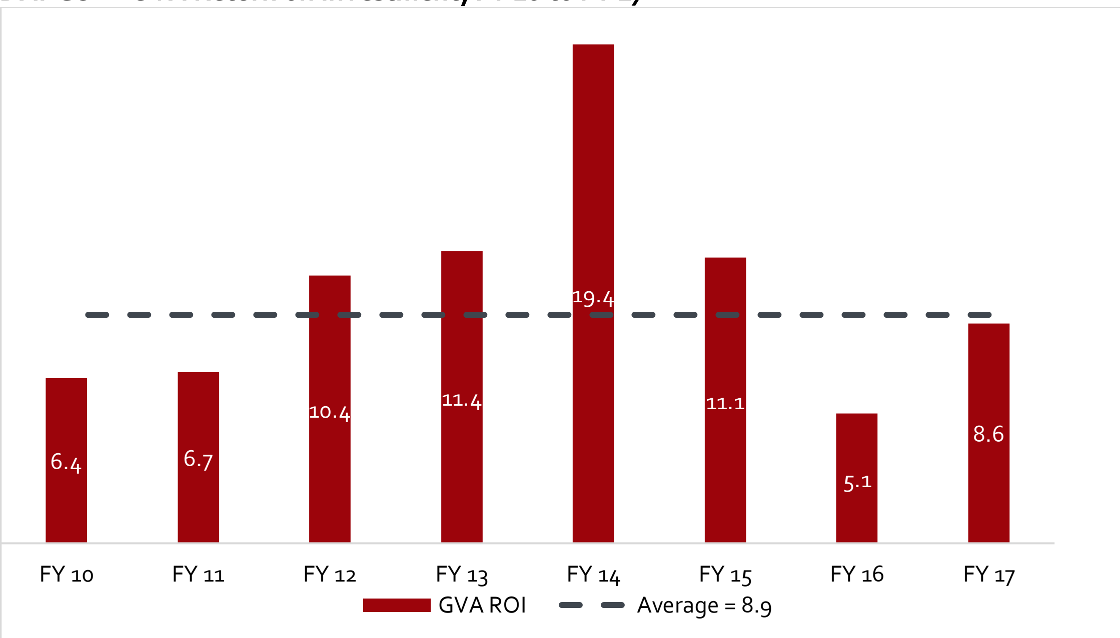
Figure 28
DAPCO — Gross Value Added, FY 10 to FY 17 ($m)



6.3.5. DAPCO — Gross Value Added Return on Investment

Analysis suggests that over the eight years in which DAPCO was accessed, it generated on average $8.90 of GVA per dollar spent on the program. The economic RoI for DAPCO is higher than for the Digital Media & Motion Picture Tax Credit, as the rate for DAPCO ranged between 18% and 30%, which was on average lower than for the Digital Media credit (30%).

Figure 29
DAPCO — GVA Return on Investment, FY 10 to FY 17



6.4. Bottom-up Approach — Infrastructure Tax Credit (Construction)

The infrastructure tax credit incentivizes large infrastructure projects for television, film, and digital media companies in Connecticut. Between FY 12 and FY 20, the total value of these projects was $492.2 million and the associated credits $98.5 million. During this period there were 26 credits issued, although some of these were interim payments and the overall number of projects supported was approximately 20. Ten companies accessed the infrastructure credit.

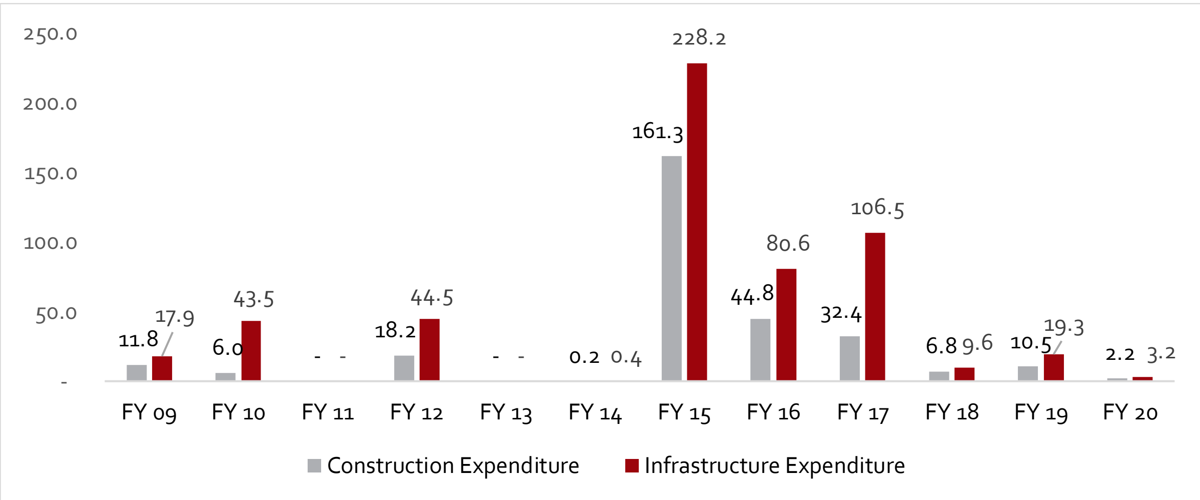
The analysis presented in this section only focuses on the construction impact of infrastructure investment. It is a narrow measure of impact and does not measure the activity in the sector that this infrastructure has enabled.

The figure below clearly shows an uneven pattern of infrastructure investment. This in part reflects that expenditure is counted when a credit is issued and, in practice, the expenditure occurs in the months and even years leading up to this point. Despite this uneven pattern, there was clearly a peak of investment around FY 14 (at $228.2 million), with infrastructure investment reducing significantly to reach $3.2 million in FY 20. There are more infrastructure projects in the pipeline and underway which are yet to appear in this data due to the lag between expenditure and the credit application being approved.

For the purposes of this analysis, only construction costs are included in the analysis. For full explanation of this, see Appendix One.

To make results consistent with the production credit timescales, the impact of construction has been modelled from FY 12 to FY 20.

Figure 30
Infrastructure and Construction Project Expenditure ($m), FY 09 to FY 20



6.4.1. Additionality

It was not possible to obtain a bespoke additionality level for infrastructure investment, although confidential consultations indicated that it is likely to be a similar level to the production incentive, if not higher. An additionality figure of 73%, the same as the production credits, is used as a conservative estimate.

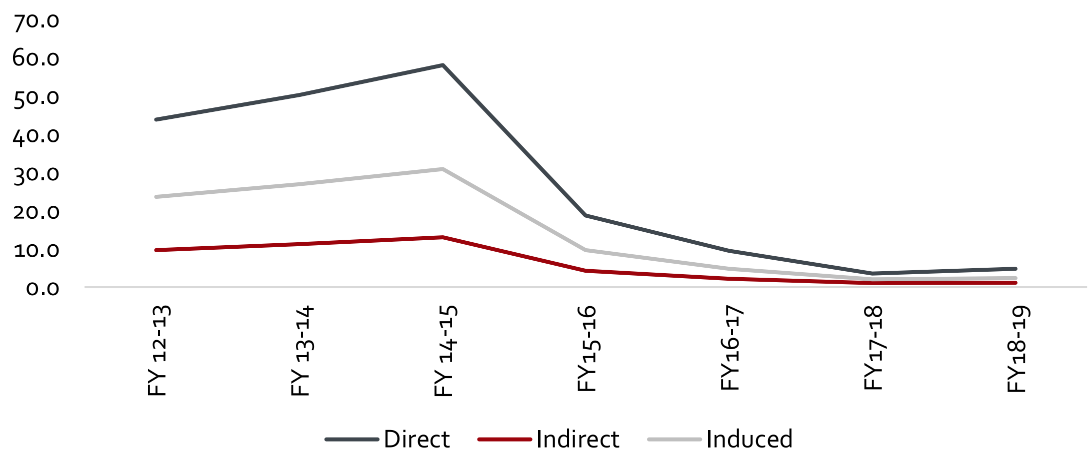
6.4.2. Construction Output

There has been an uplift in output associated with the construction activity stimulated by the infrastructure investment by television companies in Connecticut. While the uneven nature of the output reflects the expenditure reporting the table below shows the three-year moving average clearly reflecting the declining investment in recent years. With infrastructure projects underway, an uplift in the coming years is anticipated.

Table 5
Output Associated with Infrastructure Investment ($m), FY 12 to FY 20

	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20
Direct	13.3	0.2	117.8	32.7	23.7	0.0	5.0	7.7	1.6
Indirect	2.8	0.0	26.1	7.4	5.6	0.0	1.2	2.0	0.4
Induced	7.2	0.1	63.6	17.0	12.0	0.0	2.5	3.7	0.8

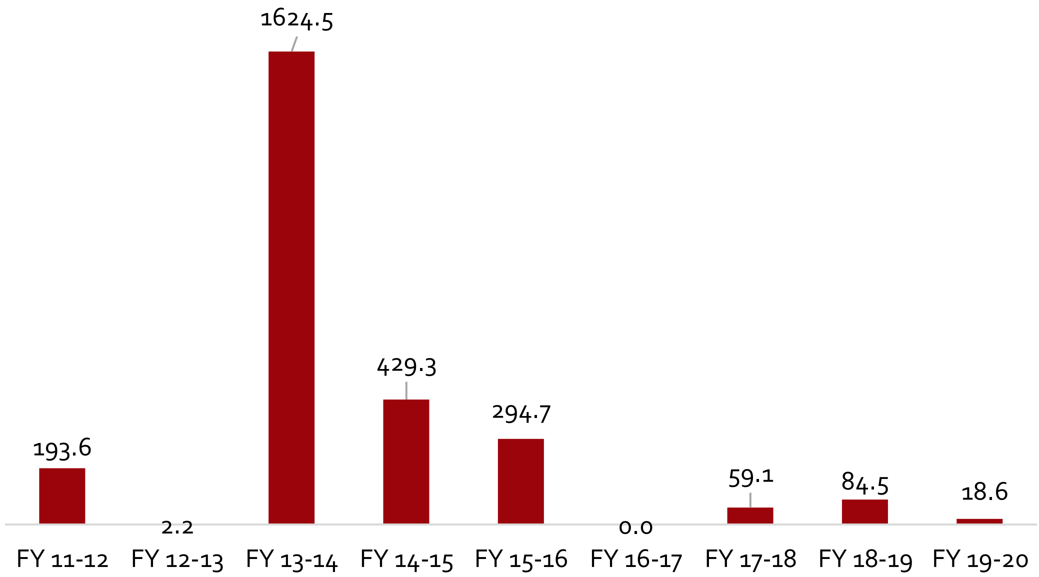
Figure 31
Output Associated With Infrastructure Investment, FY 13 to FY 19



6.4.3. Construction Employment

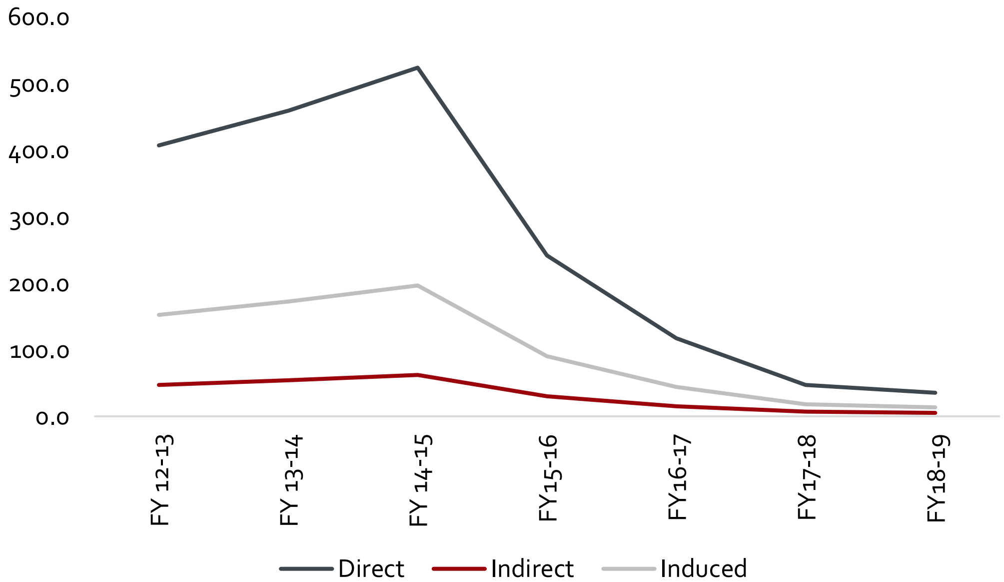
The employment created directly by the infrastructure investment is in the construction sector. The indirect and induced effects bring employment in other sectors through the supply chain and wage effects. The impact in terms of direct employment in construction is uneven, reflecting expenditure and reporting.

Figure 32
Total Employment (FTE) Impact — Direct, Indirect and Induced, FY 12 to FY 20



The three-year moving average reflects the declining investment and associated construction jobs.

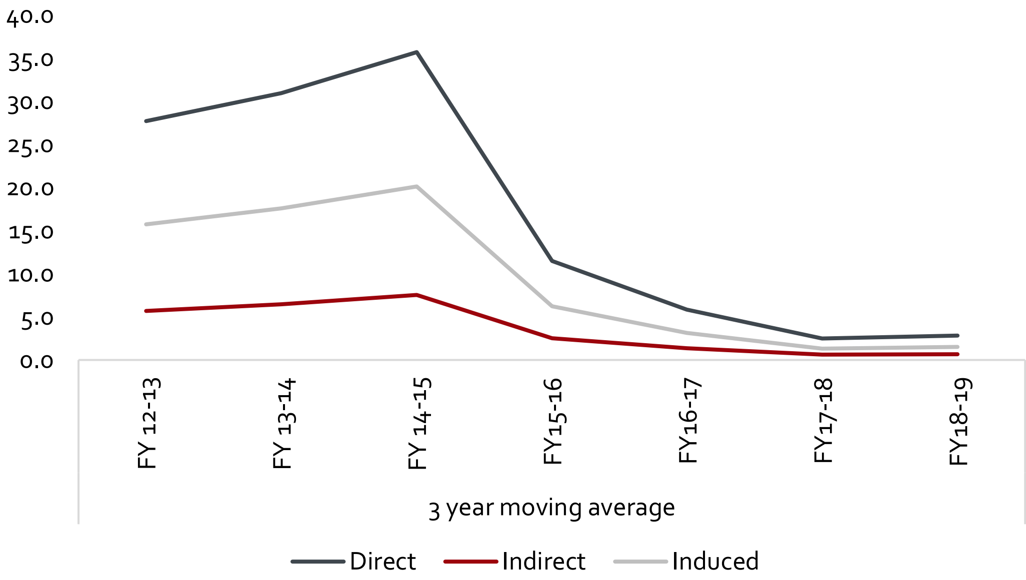
Figure 33
Employment Associated With Construction, Three-year Moving Average, FY 13 to FY 19



6.4.4. Construction GVA

The GVA generated by construction peaked in FY 15 when a total of $63.3 million of GVA was generated by infrastructure investments in the Screen sector. This included $35.1 million of direct GVA. The GVA created has fallen in recent years, reflecting the reduced investment figures, although this is predicted to increase with infrastructure projects underway.

Figure 34
GVA Associated With Construction, Three-year Moving Average, FY 13 to FY 19



Due to the partial nature of the impact being considered using the construction spend analysis, it would not be representative to calculate stand-alone return on investment figures.

6.5. Combined Expenditure Approach

The expenditure-driven estimate of impact for the Digital Media & Motion Picture and DAPCO can be combined with the construction approach for the Infrastructure Credit to give an overall estimate of impact and a combined RoI. This does not include all the impact of the incentives. Including headquarter activity and non-production activity in the Screen sector for which neither the Digital Media & Motion Picture Credit nor DAPCO (historically) were accessed. In this way, the analysis does not capture fully what is happening in all the buildings and companies that received infrastructure investment. To calculate, the impacts of the three incentives were aggregated.

Table 6
Combined Total GVA Impact, FY 12 to FY 20 ($m, nominal)

	Digital Media	DAPCO	Construction	Total
FY 12	256.3	53.5	17.9	**327.7**
FY 13	91.5	64.4	0.2	**156.1**
FY 14	182.0	74.0	129.3	**385.2**
FY 15	178.1	36.1	35.3	**249.4**
FY 16	149.6	43.2	25.5	**218.3**
FY 17	210.3	23.9	0.0	**234.1**
FY 18	337.1	0.0	5.3	**342.4**
FY 19	412.9	0.0	8.0	**420.9**
FY 20	356.9	0.0	1.8	**358.7**

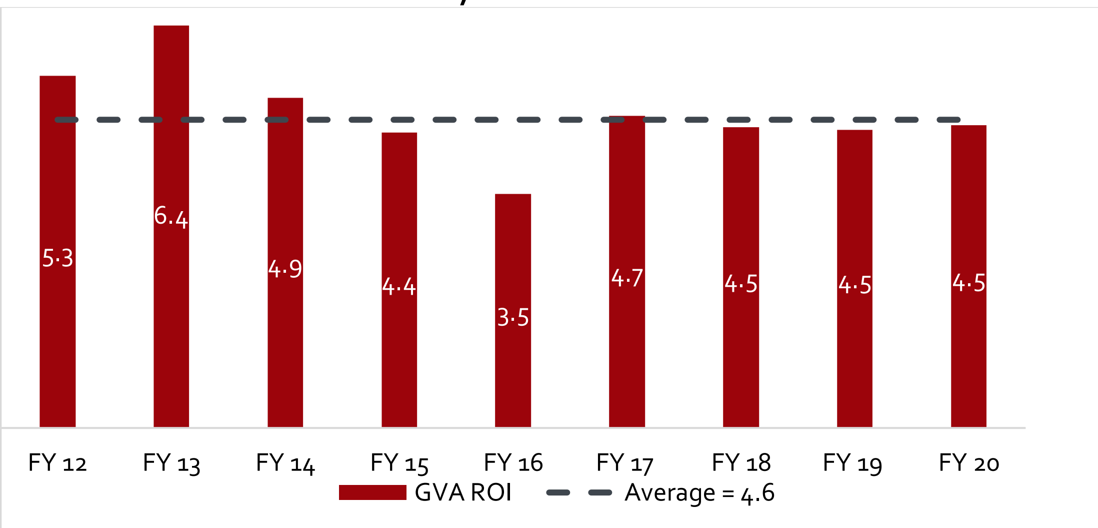
Table 7
Combined Total FTE Impact, FY 12 to FY 20

	Digital Media	DAPCO	Construction	Total
FY 12	2,643.7	551.9	193.6	**3,389.1**
FY 13	841.7	592.9	2.2	**1,436.9**
FY 14	1,762.3	716.3	1,624.5	**4,103.1**
FY 15	1,475.3	299.1	429.3	**2,203.7**
FY 16	1,232.7	355.9	294.7	**1,883.3**
FY 17	1,800.5	204.4	0.0	**2,004.9**
FY 18	2,708.0	0.0	59.1	**2,767.1**
FY 19	3,479.8	0.0	84.5	**3,564.3**
FY 20	2,978.4	0.0	18.6	**2,997.0**

Combing the impact assessed through the expenditure and construction approach and comparing it to the cost of the three industry incentive programs, provides one measure of the GVA RoI that can be directly tracked.

This measure indicates that, on average, for each $1 invested in the sector, there is a GVA return of $4.60.

Figure 35
Combined GVA Return on Investment, FY 12 to FY 20



6.6. Top-down Approach — Whole of Sector

The combination of the production and the infrastructure incentives has created a supportive environment for production and broadcast companies in Connecticut. This includes large firms such as ESPN, NBCUniversal, Stamford Media Center, and A+E Networks. A number of such companies are now headquartered in state. The overall employment figures for these companies are significantly higher than employment associated with productions for which production incentives are claimed. For example, data from one company indicates that 50% of its expenditure in state is not eligible for the incentive program.

The methodology used in the previous sections, which focuses on production and infrastructure expenditure, is unlikely to capture all the aligned, non-eligible and company headquarter Screen activity in Connecticut. To ascertain the full impact of the Screen sector in

Connecticut, an additional methodology has therefore been utilized to examine the total footprint of the sector in terms of jobs. This approach allows for the wider industry impacts to be determined, including those not covered directly by production incentives.

The bottom-up approach estimates the impact directly connected and attributed to the incentives. The top-down approach takes a wider view of the likely impact of the incentives as part of long-term screen sector stimulation and an established screen-friendly operating environment. It includes an estimation of activity not directly covered by the credit programs, but according to industry consultation and data can be attributable to the wider policy environment. The bottom-up approach estimates 2,997 FTEs in FY 20 can be attributed to the three incentive programs; the top-down approach (which is more inclusive) estimates that somewhere between 5,500 and 8,700 FTEs could be attributable to the screen-sector policy environment. The methodology used for obtaining this estimate is outlined in Appendix One.

6.6.1. Additionality

It is more difficult for film and television companies to make an assessment of the additionality of all their activity in Connecticut than it is for a single project. A number of companies have invested significantly in the state over the last 10-15 years and the factors that attract and retain them in a particular location can be complex.

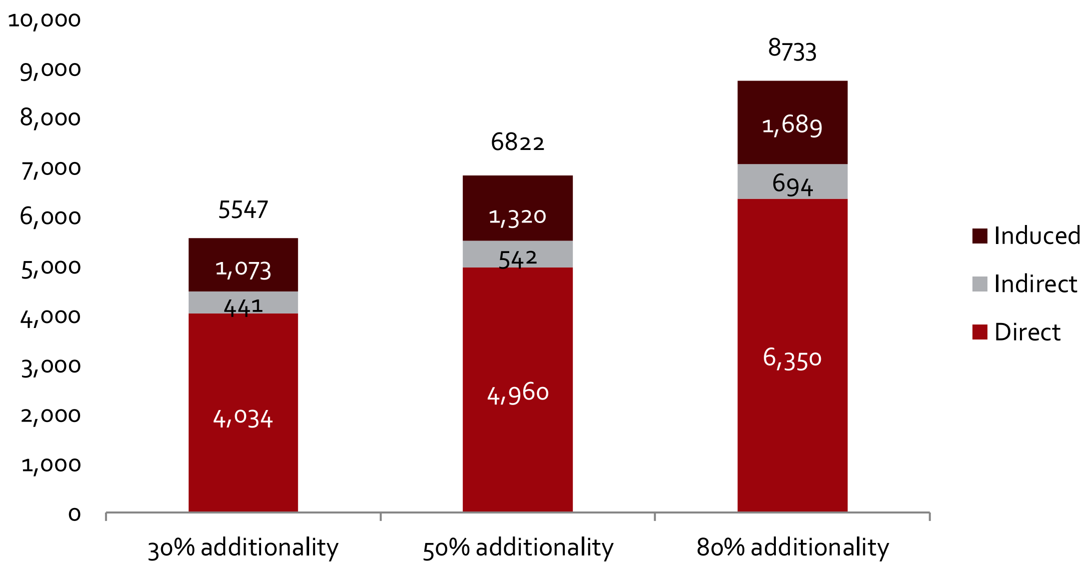
The confidential consultations underlined the importance of the state's package of incentives (both the production and infrastructure incentives) to film and television companies. Most report that their investment would not have happened in state without the suite of incentives.

While the qualitative data suggests a high additionality, as representative quantitative data does not exist, a range of assumptions has been used to model additionality. This includes the very conservative — 30% and 50% — and an 80% level which is in line with the qualitative findings regarding additionality. We have applied an additionality factor of 73%.

6.6.2. Employment

Modelling indicates that between 4,034 and 6,350 direct jobs (headcount) in Connecticut can be attributed to the incentives, rising to between 5,547 and 8,733 jobs when indirect and induced impacts are also included.

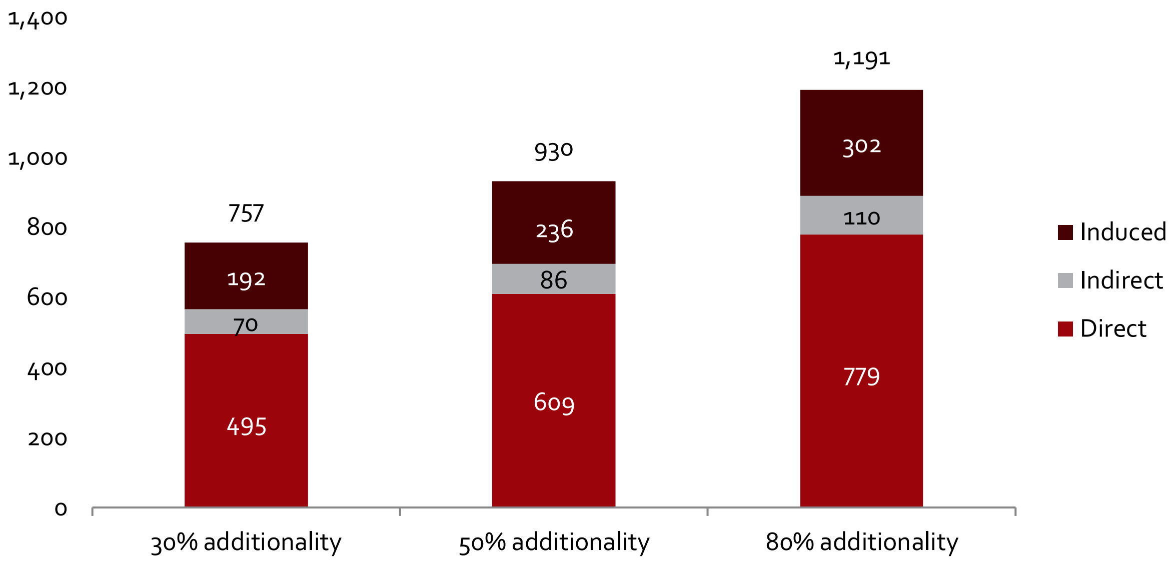
Figure 36
Employment Impact of Industry Incentive Programs, FY 20



6.6.3. Output and Gross Value Added

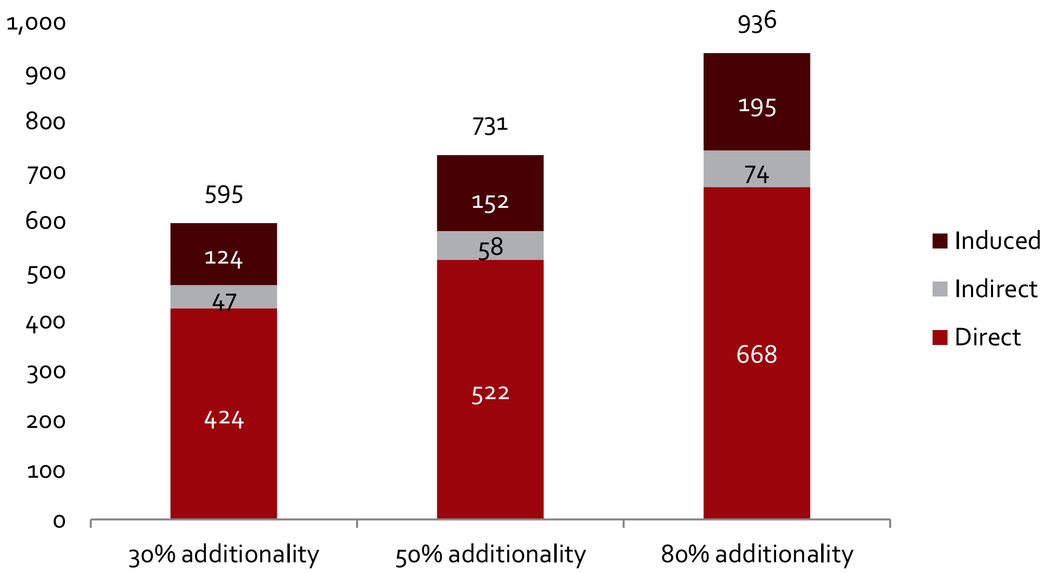
Using a very conservative assumption of additionality, the direct output associated with the incentives is $495 million in FY 20. Applying a more realistic assumption of 50% leads to a direct uplift of $0.6 billion in direct output.

Figure 37
Output Impact of Industry Incentive Programs, FY 20 ($m, nominal)



The total GVA impacts are significant even with the most conservative assessment of additionality: direct GVA using a 30% additionality assessment is $424 million, rising to $668 million when a higher additionality assumption is applied.

Figure 38
GVA Impact of Industry Incentive Programs, FY 20 ($m, nominal)



6.6.4. Economic Return on Investment

As previously outlined, the most appropriate RoI measure for this type of economic policy intervention is the economic RoI, which measures how much additional economic value the incentive program is delivering compared to the cost to the state. The analysis indicates that even using a conservative 30% additionality assumption, each dollar invested led to $4.12 of economic value.

Using the middle point additionality figure — which is supported by qualitative research — leads to a GVA RoI figure of $5.10 of impact for every $1 invested. In the 50% and the 80% additionality scenarios, the GVA ROI figure is higher for the top-down approach than the bottom-up approach as this method accounts for the wider impact that incentive has in attracting and retaining production-related activity in the Screen sector in Connecticut.

Table 8
Economic Return on Investment, FY 20 ($)

	RoI for total Impacts
30% additionality	4.12
50% additionality	5.10
80% additionality	6.49

7. CONCLUSIONS

The results of this Study show that Connecticut's incentives — the Digital Media & Motion Picture Tax Credit, the Digital Animation Production Company Tax Credit (DAPCO) and the Film Infrastructure Tax Credit — have contributed significantly to the development of the state's film and television ecosystem.

Connecticut's incentives function as a suite, together helping to attract the permanent establishment of companies in state and also retaining them as they undertake production. Because of the nature of the incentive-investor relationship in Connecticut, adequately modelling the economic impacts provides significant challenges. A certain amount of sectoral activity is being generated which exists because of the incentives but has not directly been incentivized. The Study has therefore used a dual top-down / bottom-up methodology to value this activity.

In economic terms, the results show that the incentives are creating significant economic benefits to the state. Using the bottom-up expenditure-based approach, in FY 20, the three incentives provided an estimated 2,997 FTE jobs. The total GVA impact for direct, indirect, and induced effects was $358.7 million in FY 20. The combined expenditure RoI was an average of 4.6 over the last nine years, meaning that for every $1 spent on the credits, $4.60 of value was created in the economy.

Companies have invested significantly in Connecticut because of the state incentives, and the programs have enabled Connecticut to develop a strong base of companies. This ensures that the state is seeing a throughput of long-form, stable production rather than a less predictable flow of individual projects. This is a significant boon for the state, and means that in an industry which can be cyclical Connecticut has built a stable base — which continues to develop.

The top-down assessment and sensitivity analysis estimates the impact of this longer-term significant investment by companies and models how this is connected to the incentive program. This analysis finds that in FY 20, the incentives were connected to as many as 6,350 direct jobs in the industry and a total of 8,733 when indirect and induced effects are added. Taking this wider view of impact means the overall economic RoI is very positive, even when a conservative additionality assumption is applied.

The incentives encourage employers to focus on Connecticut labor — even when specific skills may be challenging to locate. Without the incentives, it is highly likely that companies would hire less in state and focus on other states, such as New York.

A general trend in the wider production market is for jurisdictions to focus an incentive offer to try and attract longer-term production commitments and infrastructure spend. Connecticut has been successful in doing this, but increased competition in this area should be closely considered, given the fact that the industry is sensitive to incentive shifts.

Additionality of the incentives has been found to be very high. To a significant degree, the available incentives have encouraged companies and projects to locate in Connecticut.

Looking to the future, it will be important to continue developing the ecosystem in Connecticut so that it continues to be competitive. As outlined, competition for production has been increasing and a deeper crew and infrastructure offer would help strengthen Connecticut.

A unique aspect of the Connecticut offer is that it does not incentivize theatrical feature film. While the incentives have encouraged long-form production and related benefits, the lack of theatrical film eligibility has, to a degree, limited Connecticut's ability to develop a deeper crew base and a wider provision of infrastructure relevant to larger scripted projects.

8. APPENDIX ONE — ECONOMIC IMPACT METHODOLOGY

This study uses a dual approach to assessing the economic impact of the three incentives which aim to stimulate Screen production activity in Connecticut:

(i) A 'bottom-up' approach — covering only activity incentivized by the Digital Media & Motion Picture Tax Credit, historically by DAPCO, and construction impact of infrastructure investments; and

(ii) A 'top-down' approach — which considers overall activity in the Screen sector in Connecticut.

This appendix sets out the justification for each approach, methodological steps, data sources, and assumptions.

8.1. Bottom-up: Production Expenditure Approach

This approach focuses only on that activity (production spend) incentivized by the Digital Media & Motion Picture Tax Credit and DAPCO.

8.1.1. Determining the Gross Direct Effects

Data is collected for each project that receives the tax credit. This includes both the level of tax credit and the overall production expenditure in Connecticut by fiscal year. The gross direct effect is the sum of all the production expenditure in any given year.

IMPLAN (Economic Impact Analysis for Planning) is a model which combines all available data to provide a state-by-state economic impact modelling tool. IMPLAN contains data for 534 sectors and for this analysis SPI uses IMPLAN industry classification 429 "Motion picture and video industries".

IMPLAN is used to calculate other direct economic variables from the production expenditure, including:

- GVA
- Employment (headcount); a further calculation based on national statistics from the U.S. Bureau of Labor Statistics (BLS) estimates the associated FTE employment figure
- Labor income
- Tax receipts – local, state and federal.

8.1.2. Adjusting IMPLAN

IMPLAN recommended that where better industry data are available, the underlying industry data should be adjusted to reflect this – a process called region customization. SPI undertook region customization for industry classification 429 to update the underlying IMPLAN data to reflect the actual split between payroll and vendor spend in Connecticut, defined by analysing available data on the Digital Media & Motion Picture Credit and DAPCO.

8.1.3. Leakage and In-commuting

Leakage is the economic activity that occurs outside the target geography — in this case outside Connecticut. The production expenditure counted in gross direct effects is spending on goods and services in Connecticut ('vendor spend') and payroll costs. The payroll costs include workers who are resident in CT and those who commute in but pay CT income tax.

The leakage of vendor spend, by definition, is assumed to be zero.

This economic impact assessment focuses on the economic impact in Connecticut. Therefore, all payroll costs for those working in state and paying taxes in state are included in the analysis.

This direct economic activity is happening within the state, regardless of where the workers live.

Nonetheless, in-commuters have a different pattern of spend, and those living outside of Connecticut will spend less of their earnings in state than those living within the state boundary. Therefore, when in-commuting is high, the impact of re-spending wages (i.e. induced effects) is lower. To account for this, the average in-commuting rate can be adjusted in IMPLAN, and the induced economic impacts adjusted accordingly. The underlying assumption in IMPLAN is that the in-commuting rate for all industries across the state is 3.6%.

SPI has undertaken an analysis of detailed payroll data from 21 projects provided, covering 2016-2020. This analysis found a total of 606 employees, of which 347 had a residential address within Connecticut (57%). The consultations discussed in-commuting with the industry participants and their assessments were in-line with 57%.

To adjust for this in-commuting, we reduced the induced effects by a factor to reflect the difference between IMPLAN's assumed in-commuting rate and the inward commuting rate for the sector. Note that this approach assumes the Screen production sector's supply chain has a similar in-commuting rate as the sector production sector itself.

8.1.4. Displacement

Displacement is the proportion of impacts offset by a reduction in activity elsewhere within the state. This is assumed to be small as Screen production is a truly global sector and firms are unlikely to be competing with other Connecticut-based firms.

8.1.5. Substitution

Substitution is the effect where a firm substitutes one activity for a similar one to make the most of subsidies. We assume this is minimized by the tax credit only covering a proportion of production costs.

8.1.6. Multipliers

The type I and type II multipliers for the indirect and induced effect of the production expenditure are obtained from IMPLAN.

8.1.7. Deadweight / Additionality

To assess additionality and calculate 'net' impact from 'gross' impact, deadweight needs to be removed — i.e. the production expenditure that would have happened without the incentive. To do this, each participating company was sent a survey to ascertain the extent to which the production expenditure can be attributed to the incentive.

The survey contained three key additionality questions, addressing:

- The factors drawing the project to Connecticut. The incentive will be one of the factors listed along with elements such as locations and talent, and the respondent was asked to rate the importance of each;
- The specific importance of the incentive in drawing the project as an individual rating; and
- How much lower CT project spend would have been without the availability of the incentive.

An average additionality score across the program was calculated, based on the results of this survey and using the factors above.

From this, we found that the average (median) response to the question regarding how much of the respondent's production would be happening in Connecticut without the incentive is that there would be no production without the incentive. The mean response was that only

27% of production would have happened without the incentive, but this is influenced upwards by a small number of responses.

The rate of additionality is therefore between 73% and 100% — i.e. the incentives are responsible for between 73% and 100% of production expenditure in Connecticut. Due to the distribution of survey results, it is likely that the real impact is closer to the top end of this. We use a rate of 73% as a conservative assumption for the economic impact assessment.

8.1.8. Return on Investment

The net cost of the incentive program to the state is the amount spent on the incentive minus the tax receipts the state gained as a result of the uplift in economic activity. To calculate the net cost of the incentive, data on incentive payments on an annual basis were sourced from the Connecticut Office of Film, Television & Digital Media, and tax receipts from the associated activity were calculated through IMPLAN. The net cost of the incentive program was then used to calculate economic (GVA) RoI.

This figure is calculated for each year of the incentive and for the cumulative impact since 2012.

8.2. Bottom-up: Infrastructure Expenditure Approach

Connecticut's infrastructure credit incentivizes the development of key film and television infrastructure within the state. This includes investment in building, renovations, and equipment. The impact of the infrastructure credit is difficult to distinguish from the wider industry activity as the spaces and investments will support production and non-production activity. The overall impact of this credit on film and television companies is incorporated in the whole industry approach.

There are specific construction-related impacts of the infrastructure that can be modelled through IMPLAN. The first step is to identify how much of the infrastructure investments are construction and how much are in real estate acquisition (deemed a transfer and therefore excluded) and equipment (also excluded from the construction analysis).

Analysis of 21 cost reports provided by Connecticut Office of Film, Television & Digital Media were reviewed and, on average, it was found that 53.2% of infrastructure spending is on relevant construction costs. This figure varies year to year in the following proportions.

Fiscal year	Proportion - construction to all spend
FY 09	65.9%
FY 10	13.8%
FY 12	40.9%
FY 13	54.6%
FY 14	70.7%
FY 15	55.6%
FY 16	30.4%
FY 18	70.9%
FY 19	54.5%
FY 20	70.2%

Average across period	53.2%

The in-commuting rate embedded in IMPLAN is assumed to be accurate and all other factors are dealt with as explained previously. The updated construction figures were then run through IMPLAN to ascertain the employment, GVA, and tax figures in a similar way to the production expenditure.

The same rate of additionality (73%) is assumed for the infrastructure investment.

8.3. Top-down: Whole industry Approach

As well as the production incentives (Motion Picture and DAPCO), Connecticut's Film Infrastructure Tax Credit aims to encourage companies to set up and operate business activities in Connecticut through incentivizing investments in buildings, facilitates and installations. The combination of the production incentives and the infrastructure incentives leads to a supportive environment for production and broadcast companies, including for large companies such as ESPN and NBCUniversal. A number of these companies are now headquartered in Connecticut, and it is the combination of incentives and support that has led to these location decisions. The overall activity levels of these companies are much larger than the production expenditure which is eligible for the production incentives.

To ascertain the full impact of the Screen sector in Connecticut, SPI has used a methodology that looks at the total footprint of the sector in terms of jobs. This approach allows for the wider industry impacts to be determined, including those not covered directly by production incentives.

8.3.1. Determining the Gross Direct Effects

A small survey was undertaken to estimate the total employment by television and film production companies in Connecticut. First, the production expenditure data was analyzed to identify the spread of activity across the population of companies. We found that over 80% of the expenditure originated from 20% of companies in FY 20. From this, we focused on obtaining employment and turnover data from the top 20% of companies. Aggregating these figures together and adding a further 20% (to allow for the companies not surveyed) provides an estimate for the total footprint of the sector in Connecticut of 8,254 employees.

Using the customized IMPLAN model outlined previously, the other measures of direct impact (GVA and labor income) as well as the tax impacts were calculated.

The direct impacts are separated into two portions:

i. Those attributed to the production incentives
ii. The total gross direct effects minus (i), which gives an estimate for overall Screen activity compared to activity incentivized directly by the production incentives.

8.3.2. Leakage, In-commuting, Displacement, Substitution and Multipliers

All of these factors were dealt with in the same way as outlined previously. Where appropriate, the impact of the production incentives were removed to ensure no double-counting.

8.3.3. Deadweight/Additionality

To assess additionality and calculate 'net' impact from 'gross' impact, deadweight needs to be removed — i.e. the industry activity that would have happened without the infrastructure investment.

The methodology allows for different levels of deadweight/additionality to be applied to (i) those impacts attributed to the production incentives and (ii) those screen sector jobs not covered by the incentive. For (i) the additionality assumption is 73%, in line with the approach outlined elsewhere. To ascertain an estimate for additionality for (ii), companies were asked how much activity would happen in Connecticut without the package of incentives. Although no hard quantitative data were available for this, the sense from consultations with companies is that the incentives support the positive environment for production in Connecticut to a great extent and removing or reducing the incentives would make the state a much less competitive place to locate headquarters.

For the purpose of economic modeling, we have modeled three different additionality rates – a conservative 30%, more realistic 50% and a higher 80%.

Accounting for leakage, in-commuting, displacement, substitution and multipliers provides a net estimate for direct, indirect, and induced effects.

8.3.4. Return on Investment

The RoI analysis considers the relationship between the cost of the package of incentives (all three incentive programs) and the net GVA impact. Given the relationship between the credits, the analysis presents a GVA RoI which includes an annual average cost of the infrastructure program.

9. APPENDIX TWO — ABOUT OLSBERG•SPI

SPI provides a range of expert consultancy and strategic advisory services to public and private sector clients, specializing in the worlds of film, television, video games and digital media. Formed in 1992, it has become one of the leading international consultancies in these dynamic creative Screen industries. With its trusted insight and track record the firm has a diverse client base that includes:

- Multi-national public authorities
- National governments, including culture and economics ministries
- National film institutes and Screen agencies
- Regional and city development agencies and local authorities
- National and regional tourism agencies
- Studios and facilities companies
- Independent companies at all points of the Screen business value chain
- National and international broadcasters
- Trade associations and guilds
- Training and skills development organizations
- Publishers and conference organizers.

Olsberg•SPI has expertise in all areas of the fast-moving global creative sectors, and the firm's services span:

- Strategy and policy development for the creation and management of healthy and sustainable national and regional Screen sectors
- Advising on the creation and implementation of fiscal incentives for the Screen industries
- Research projects on all aspects of the value chain – including mapping and economic impact studies
- Business development for content companies
- Strategic development of studios, including business planning and feasibility studies
- Acquisition and divestment advice for owners of SMEs
- Evaluations of publicly funded investment schemes
- Creating prospectus-style funding proposals
- International cost comparisons for film and television productions
- Advising on inward investment and exports for national and regional public bodies
- Identifying and measuring the cultural value of a productive Screen sector
- Analyzing workforce skills, diversity and related best practice strategies
- Assessing the value of tourism generated by a nation or region's film and television output and developing strategies to maximize future impacts
- Providing strategic advice for Screen commissions, including business and marketing plans.