COMMERCIAL IN CONFIDENCE

Report prepared for the Ministry of Business, Employment and Innovation and the Ministry for Culture and Heritage

Evaluating the New Zealand Screen Production Grant

Vhari McWha, Malin Niemi and David Moore, with Dr Ruth Harley (independent advisor)

March 2018

sapere research group

About Sapere Research Group Limited

Sapere Research Group is one of the largest expert consulting firms in Australasia and a leader in provision of independent economic, forensic accounting and public policy services. Sapere provides independent expert testimony, strategic advisory services, data analytics and other advice to Australasia's private sector corporate clients, major law firms, government agencies, and regulatory bodies.

Wellington Level 9, 1 Willeston St PO Box 587 Wellington 6140 Ph: +64 4 915 7590 Fax: +64 4 915 7596	**Auckland** Level 8, 203 Queen St PO Box 2475 Auckland 1140 Ph: +64 9 909 5810 Fax: +64 9 909 5828	
Sydney Level 14, 68 Pitt St Sydney NSW 2000 GPO Box 220 Sydney NSW 2001 Ph: +61 2 9234 0200 Fax: +61 2 9234 0201	**Canberra** Unit 3, 97 Northbourne Ave Turner ACT 2612 GPO Box 252 Canberra City ACT 2601 Ph: +61 2 6267 2700 Fax: +61 2 6267 2710	**Melbourne** Level 8, 90 Collins Street Melbourne VIC 3000 GPO Box 3179 Melbourne VIC 3001 Ph: +61 3 9005 1454 Fax: +61 2 9234 0201

For information on this report please contact:

Name: Vhari McWha

Telephone: +64 4 915 5351

Mobile: +64 21 607 402

Email: vmcwha@srgexpert.com

Contents

Appendices

Tables

Figures

Boxes

Glossary

AES	Statistics NZ's Annual Enterprise Survey
ANZSIC	Australia and New Zealand Standard Industry Classification
ATEED	Auckland Tourism, Events and Economic Development
ATL	Above the Line expenditure relates to creative elements of total expenditure on a screen production. It includes screenplay rights and salaries and other expenses to writers, producers, directors, principal cast and stunts
BOS	Statistics NZ's Business Operations Survey
BTL	Below the Line expenditure include salaries of support staff and talent and all production costs - catering, studio, lighting, etc.
FX	Special effects (visual and digital)
IP	Intellectual Property
IRD	Inland Revenue Department
LBSPG	The Large Budget Screen Production Grant provided a grant rebate to international productions until 1 April 2014 – when it was replaced by the NZSPG – International
LEED	Statistics NZ's Linked Employer-Employee Data
MBIE	Ministry of Business Innovation and Employment
MCH	Ministry for Culture and Heritage
MPSRA	Motion Picture and Sound Recording Activities is a standard industrial classification in the ANZSIC which incorporates the screen industry
NZSPG	New Zealand Screen Production Grant
PAYE	Pay-as-you-earn tax is a withholding tax on income payments to employees
PDV	Post Production, Digital and Visual Effects
QNZPE	Qualifying New Zealand Production Expenditure is generally production expenditure spent by the applicant on: goods and services provided in New Zealand; the use of land located in New Zealand; and the use of a good that is located in New Zealand at the time that the good is used in the making of the screen production
R&D	Research and Development
RME	Rolling Mean Employment is a twelve month moving average of the monthly employee-count figure
SIS	Statistics NZ's Screen Industry Survey

SPIF	Screen Production Incentive Fund provided a grant rebate to domestic productions until 1 April 2014 – when it was replaced by the NZSPG - domestic
WREDA	Wellington Regional Economic Development Agency

Executive summary

Sapere Research Group (Sapere) was commissioned by the Ministry of Business, Innovation and Employment (MBIE) and Ministry for Culture and Heritage (MCH) to evaluate the impact of the New Zealand Screen Production Grant (NZSPG) for domestic and international productions. The NZSPG replaced the previous screen production incentives on 1 April 2014. The international grant offers a 20% rebate on QNZPE, with a 5% uplift available for productions that are deemed to have a significant economic benefit commensurate with the value of the grant. The domestic grant offers a 40% rebate on QNZPE to productions that have significant New Zealand content.

MBIE and MCH want to understand the net benefit of the grant, in terms of its economic, industry development and cultural policy objectives. Their key evaluation questions were:

- What are the direct and indirect net economic benefits, including spill-overs and economic activity generated as a result of the grant? Have the direct and indirect net economic benefits of the grant achieved what would be expected of a grant of this size? Are the net economic benefits worthwhile?
- Has the grant encouraged screen production (and resulting expenditure) in New Zealand that would otherwise not have been made?
- Has the grant encouraged screen businesses to develop resilient business models, for example, by generating and controlling IP, or through developing capabilities that are hard to replicate?
- Has the grant supported the creation of New Zealand content and stories that would otherwise not have been made?

We have used a mixed method approach to evaluating the economic, industry development and cultural benefits of the NZSPG including:

- Analysing expenditure data of NZSPG recipients
- Semi-structured interviews with stakeholders and key informants (note that interviews were carried out between July and October 2017 and some information provided may now be out of date).
- A public survey to test the value of New Zealand screen content
- Analysis of official statistics

Direct and indirect economic benefits

Our report covers two categories of benefits:

- Direct benefits are those that are associated with the activity that is generated by the grant. Direct benefits can be associated with a particular production.
- Indirect benefits are those benefits that are associated with the screen sector, but are not directly associated with a particular NZSPG production. MBIE/MCH also refer to these indirect benefits as spillovers.

We estimated the value of the direct benefits of the NZSPG, the indirect benefits are not quantified. Table 1 sets out our estimated indicator of the total net (direct) economic benefit associated with productions that received the grant between 1 April 2014 and 1 July 2017. The net economic benefit should reflect the economic value of additional activity attributable to the grant less the economic value of the opportunities that have been lost as a result of diverting resources to the screen sector during that period.

- The additional economic benefit of $541.5 million is the total additional activity that is directly attributable to the NZSPG. This excludes production activity that would have occurred in New Zealand in the absence of the grant. The economic benefit includes both the primary benefits to workers on NZSPG productions and to domestic producers and the secondary benefits to suppliers and contractors.
- The counterfactual benefit associated with the grant expenditure is the estimated GDP that would be achieved if the government had spent the grant money on some other discretionary initiative. We estimate this to be $74.4 million.
- We have provided an indicator of the counterfactual benefit associated with reallocated resources. This relates to the economic benefit that might be derived from reallocating the resources used in production activity to another sector (in the absence of the grant). We describe this as an indicator to reflect the relative uncertainty of this value compared to our estimates of the other components. The indicative value of the economic benefit lost as a result of drawing resources to the screen sector during the evaluation period is $95.9 million.
- Finally, we estimate that there is a $10.0 million deadweight loss associated with the fiscal (tax) cost of the NZSPG. The deadweight loss is an estimate of the loss of welfare (opportunity cost) caused by distortions in activity (e.g. changes in consumption) as a result of taxation.

Table 1 Indicator of direct net economic benefit

NZSPG productions, 1 April 2014-1 July 2017

	Domestic	International	Total
Additional economic benefit of NZSPG	$58.7m	$482.8m	$541.5m
Counterfactual benefit grant expenditure	-$15.4m	-$59.0m	-$74.4m
Indicator of counterfactual benefit reallocated resources	-$13.6m	-$82.4m	-$95.9m
Deadweight loss	**-$4.7m**	**-$5.3m**	**-$10.0**
Indicative net economic benefit	**$25.0m**	**$336.1m**	**$361.1m**

	Domestic	International	Total
$ of benefit/ $1 grant	$0.68	$2.35	$2.04

Source: Sapere analysis

Overall, we estimate that the NZSPG yielded net economic benefits of $361.1 million between 1 April 2014 and 1 July 2017. This is more than twice the total government expenditure on the grant. The lower economic benefit associated with the domestic grant reflects the higher rate of the grant and the fact that the domestic grant stimulates a lower increase in activity (i.e. relatively more of the domestic production activity would take place in the absence of the grant).

This estimate takes into account the relative prevalence of New Zealand resident labour on these productions. Based on Film Commission data, we have estimated that 94% of roles on domestic NZSPG productions and 89% of roles on international NZSPG productions are filled by New Zealand residents. There is strong qualitative evidence that international productions pay a higher wage to workers. This is consistent with the limited data we were able to derive on average earnings. Domestic television tends to be more highly paid than film, although the qualitative evidence suggests that this may relate to the longer term of employment on television productions as opposed to the pay rate.

There are a number of analytical limitations on the analysis in this report, which taken together mean that the estimates should be considered indicative only and caution should be exercised in considering the conclusions. In particular:

- The analysis of the counterfactual is relatively speculative, and we can have greater confidence in our estimate of the gross additional economic benefit than the net benefit.
- The ex post reporting framework means that we are likely to have underestimated the level of activity that is attributable to the grant, as activity that occurred in the last 12-18 months may not yet have been reported. The relatively long timeframe for some types of production may exacerbate this.

While the government spends $177.1 million on the grant, the net fiscal cost is less than this due to the tax revenue associated with the activity generated. We estimate that the net fiscal cost is $50.2 million.[1] There is significant offsetting tax revenue associated with employees and contractors on international productions.

Table 2 Fiscal impact

	Domestic	International	Total
Grant cost	-$36.6m	-$140.5m	-$177.1m

1 This estimate is based on the additional direct activity only and does not account for the tax revenue that would be earned in a counterfactual resource allocation.

	Domestic	International	Total
Net fiscal cost	-$23.5m	-$26.7m	-$50.2m

Source: Sapere analysis

There are significant indirect economic benefits associated with the screen sector. These include

- Increased awareness and attraction of tourists to New Zealand as a result of seeing NZSPG films particularly those that showcase NZ landscapes
- Increased tourism spending in New Zealand as a result of the development of visitor experiences by screen sector firms and export earnings associated with international tours of these exhibitions or development of exhibitions and experiences for overseas museums and attractions
- Attraction of students to creative education opportunities in New Zealand, particularly export education (international students)
- Application of screen sector knowledge, technology and assets to other high tech industries, such as AR/VR and gaming, and to develop technologies for use in the screen industry globally and other industries, such as motion capture technology and drone technology

Based on the evidence available the economic benefits derived from the NZSPG-international significantly outweigh the cost of the grant. The economic benefits derived from the NZSPG – domestic may not outweigh the cost. However, economic benefit is not a key objective of the domestic grant so this conclusion should not be over-emphasised.

Industry development

Our estimates of the extent to which the NZSPG stimulates production activity are based on an exit survey of international grant recipients and other qualitative data. Our central estimates are that in the absence of the grant 74.8% of activity associated with domestic NZSPG productions and 91.6% of activity associate with international NZSPG productions would be lost.

We consider that in the absence of the grant it is unlikely that New Zealand would attract large budget productions because their bottom line would not support it. PDV from the main US studios is also unlikely to continue. Some activity associated with lower budget productions may remain, although it is arguable whether in the absence of the other activity the screen production industry would be capable of attracting this.

Our view is that while the number of domestic productions may reduce, reductions in budgets are also likely, and therefore the goals around developing productions that attract an international audience are unlikely to be achievable. Creativity may also be limited as there is qualitative evidence that the NZSPG allows greater creative freedom than other funding available.

Since the introduction of the NZSPG there has been strong growth in the sector and key indicators of the performance of the motion picture industry have strengthened relative to other industries. Overall the industry increased by 26% (measured by gross revenue) between 2014 and 2016. Auckland-based businesses dominated this growth.

There is consistent evidence that the domestic grant has enabled producers to attract funding from other investors, and increased the professionalism and quality of the products. This in turn has attracted international audiences to New Zealand productions. The attraction of international audiences is associated with ownership of the IP in particular productions and formats.

There is evidence that research and development tends to be associated with solving a problem on a particular production rather than a more planned continuous process. While this appears a relatively ad hoc process there is often significant imperative to be innovative and there is evidence that these innovations are later applied to other businesses or in some cases are able to be sold to other providers. Domestic producers also benefit from some of these innovations.

The industry does not appear to be sustainable without the grant. International competitiveness on costs was critical to attract international productions and domestic producers emphasised their ability to attract external investment to their projects based on the grant. The ability of domestic producers to exercise creative freedom was also a common theme in our interview findings, with producers valuing the non-discretionary nature of the grant for this reason.

Cultural value

Our analysis of the cultural benefits of the domestic grant showed that productions tended to have significant New Zealand personnel rather than necessarily being about a New Zealand subject matter. The guidelines for assessing significant New Zealand content suggest that on-screen elements have particular importance in defining a New Zealand production. While our finding seems at odds with this sentiment, there was a strong consensus in our interview findings that New Zealand stories encompassed stories that are from New Zealand but not overtly kiwi or relevant only to New Zealanders. This is consistent with the industry development goal relating to attracting international audiences to watch New Zealand stories.

We undertook two public surveys to support the assessment of the cultural value of the domestic grant. Respondents were shown a series of statements and asked whether they agreed with them or not. The statements that resonated most strongly were that NZ content "puts our places, faces, humour and voices on screen" and "gives New Zealand television or film makers an opportunity to be creative". Respondents also strongly agreed with the statement that New Zealand film productions "create interest in New Zealand overseas". This qualitative evidence supports both the on-screen content and the creativity goals of the domestic grant, and suggests that the public see a strong link between tourism and film.

In addition to qualitative data, the survey asked people their view on the value of New Zealand content. This included the value of watching New Zealand-specific content, but also the existence value, irrespective of whether they expected to watch the content or not themselves.

The estimated annual value to the adult population of New Zealand of the existence New Zealand film is $56.63 million. This compares to the average annual cost of the grant during the evaluation period of $7.86 million. We conclude that the cultural value of New Zealand film justifies the grant expenditure.

The conclusion is less clear for television because of the significant government funding available from non-NZSPG sources. The estimated annual value to the adult population of New Zealand of the existence New Zealand television content is $47.15 million.

1. Introduction

Sapere Research Group (Sapere) was commissioned by the Ministry of Business, Innovation and Employment (MBIE) and Ministry for Culture and Heritage (MCH) to evaluate the impact of the New Zealand Screen Production Grant (NZSPG) for domestic and international productions.

MBIE and MCH want to understand the net benefit of the grant, in terms of its economic, industry development and cultural policy objectives.

The key objectives of the evaluation are to:

- Determine the direct and indirect net economic benefits, including spillovers and economic activity generated as a result of the grant.
- Assess whether the benefits achieved are what would be expected of a grant of this size and if the benefits are worthwhile.
- Assess whether the grant has encouraged screen production (and resulting expenditure) in New Zealand that would not otherwise have been made.
- Determine whether the grant encouraged screen businesses to develop resilient business models, for example, by generating and controlling IP, or through developing capabilities that are hard to replicate.
- Examine whether the grant has supported the creation of New Zealand content and stories that would not otherwise have been made.

The findings of the evaluation will be used to help inform future policy decisions.

1.1 Government agencies

The NZSPG – International is overseen by MBIE and funded through Vote Business, Science and Innovation. The NZSPG – New Zealand is overseen by MCH and funded through Vote Arts, Culture and Heritage. The New Zealand Film Commission (NZFC) administers the grant on behalf of MBIE and MCH, and productions apply for the grant through NZFC. Final applications for the grant are assessed by the NZSPG Panel (the Panel). The Panel is made up of members from NZFC, MCH, MBIE, Inland Revenue Department (IRD) and industry representatives.

2. Overview of NZSPG

Box 1 Summary – overview of NZSPG

The NZSPG replaced the previous screen production incentives on 1 April 2014.

The international grant offers a 20% rebate on QNZPE, with a 5% uplift available for productions that are deemed to have a significant economic benefit commensurate with the value of the grant.

The domestic grant offers a 40% rebate on QNZPE to productions that have significant New Zealand content.

The objectives of the grants relate to economic benefit, industry development and sustainability and supporting the creation of New Zealand content and stories. Modifications made to the grant criteria since 2014 are intended to better target these objectives.

Screen production incentives have been available in New Zealand since 2003. The New Zealand Screen Production Grant (NZSPG) scheme took effect on 1 April 2014. There are two distinct parts to the NZSPG scheme and they operate under separate eligibility criteria and with different purposes:

- The NZSPG for International Productions (the international grant) – which replaced the Large Budget Screen Production Grant (LBSPG). The international grant is available for film, television and PDV formats.
- The NZSPG for New Zealand Productions (the domestic grant) – which replaced the Screen Production Incentive Fund (SPIF). The domestic grant is available for film and television formats.

The international grant offers a 20% rebate on Qualifying New Zealand Production Expenditure (QNZPE), with the possibility of an additional 5% rebate (the 5% uplift) for productions that are deemed to have a Significant Economic Benefit. Under the previous scheme – the LBSPG – international productions were offered a 15% rebate on QNZPE.

The purpose of the international grant is described in clause 3 of the NZSPG Criteria for International Productions:

> *The purpose of the International Grant (including the PDV Grant) is to provide economic and industry development benefits to New Zealand by incentivising screen production (and the resulting production expenditure in New Zealand) that would not have otherwise been made here. The purpose of the PDV Grant is to specifically foster capacity and new business development for PDV Productions in New Zealand. In establishing the International Grant, the New Zealand Government recognises that large budget screen productions and PDV Activity contribute to New Zealand's economic development by providing valuable economic, employment and skill development opportunities for the New Zealand screen production industry.*

The domestic grant offers a 40% rebate on QNZPE for productions that have Significant New Zealand Content.[2] The previous grant scheme SPIF offered a grant of 40% of the production expenditure on feature films and 20% on television or other format screen production.

The purpose of the domestic grant is described in clause 3 of the NZSPG Criteria for New Zealand Productions as:

- *"To build the sustainability, scale and critical mass of the domestic industry, and support the development of New Zealand creatives.*
- *To provide cultural benefits to New Zealand by supporting the creation of New Zealand content and stories."*

While the precise wording of the objectives has varied over the period during which the NZSPG grants have been available, the international grant is intended to target economic development goals, with a focus on development of the screen production industry, while the domestic grant has a parallel industry development objective, but also a focus on the cultural benefits derived from New Zealand screen content. There have been some changes to the criteria over the evaluation period with the intention of more closely targeting the objectives of the grants. The most significant was in 2015, when the minimum threshold for QNZPE for a production to be eligible for an international grant for PDV (only) was lowered from $1 million to $500,000.

2.1 2017 criteria changes

On 1 July 2017 the criteria for both grants were amended. The key changes for the NZSPG – international were:

- A 20 per cent qualifying New Zealand production expenditure (QNZPE) cap on above-the-line personnel costs[3]
- New QNZPE exclusions
- A sliding grant rebate scale for the Post, Digital and Visual Effects (PDV) Grant, (a subset of the New Zealand Screen Production Grant – International). Up to $25 million of QNZPE the grant is 20%, and above this threshold the grant is 18% of QNZPE.
- A strengthened 5% uplift application and eligibility threshold including a minimum QNZPE for the current production, and for the applicant over a five year period. Applicants must be invited to apply for the uplift.
- A requirement that applicants register with the New Zealand Film Commission (NZFC) prior to commencing production activity.

---

2 The meaning of significant New Zealand content is discussed in section 0. Broadly it means strong New Zealand on-screen elements such as characters, locations, stories, historical or cultural elements or strong New Zealand creative input and high levels of New Zealand production activity and film-maker input.

3 Above the line (ATL) costs relate to creative elements of total expenditure on a screen production. It includes screenplay rights and salaries and other expenses to writers, producers, directors, principal cast and stunts.

The key changes for the NZSPG – domestic were:

- Requiring production companies to have undertaken business in New Zealand for a pre-qualifying period before they are eligible to apply for the New Zealand Screen Production Grant - NZ
- Requiring a second New Zealand content test for access to the Additional Grant
- Tightening distribution requirements, and requiring plans to engage with New Zealand audiences
- Bringing in new qualifying New Zealand production expenditure (QNZPE) exclusions – wardrobe and props not made in New Zealand, production insurance, completion bond fees, freight and fringes.

While we will provide the feedback on these changes that we received in our interviews, the impact on activity is not yet apparent (and occurs outside the evaluation period). One piece of high level feedback from our interviews was that trying to fine tune the grant, given the pace of change to the production and consumption of television and film is difficult. The Film Commission's response to this feedback was that the ability to make changes to the grant is an important tool to allow it to reflect industry changes.

3. Approach and method

Box 2 Summary – approach and method

The evaluation period is 1 April 2014 to 1 July 2017.

We have used a mixed method approach to evaluating the economic, industry development and cultural benefits of the NZSPG including:

- Analysing QNZPE for NZSPG recipients during the period
- Analysis of official statistics
- Semi-structured interviews with stakeholders and key informants
- A public survey to test the value of New Zealand screen content

A mixed method approach improves the robustness of the analysis by providing evidence from multiple sources. Nonetheless a number of limitations remain as a result of the relatively short evaluation period, the use of sampling for QNZPE data and the ex post reporting framework, which means that current activity is not included in the analysis. Information about the counterfactual is also relatively sparse.

Our approach to this evaluation has been developed in light of the objectives of the grants. The benefits of the NZSPG on the New Zealand economy and screen industry may arise through increasing the number of or expenditure on productions locating in NZ; shifting production toward more economically beneficial formats or aspects of production; capitalising on the reputation of NZ as a location for screen production either by increasing attractiveness to other businesses (outside the sector) or for tourists or other visitors; or by generating spillovers into other sector, such as through technology transfer. In addition, there may be some utility value to New Zealanders of seeing New Zealand on screen (i.e. welfare or wellbeing improves).

To meet the objectives of the evaluation, we used a mixed-method approach involving both primary and secondary research, including:

- Analysing production expenditure for NZSPG recipients from 1 April 2014 to 1 July 2017
- A scan of literature and other existing information sources including relevant Statistics NZ data
- Designing and implementing a survey, in conjunction with Litmus, to reveal the value place on local screen content by the New Zealand public
- Semi-structured interviews with more than thirty stakeholders and key informants. A full list of people interviewed is provided in Appendix 7. The stakeholders chosen were selected by Sapere with input from our cultural advisor, NZFC, MBIE and MCH.

We drew on the documentation and literature, combined with our stakeholder engagement to identify the full range of potential impacts.

We used a mix of quantitative and qualitative valuation techniques to estimate the likely magnitude of each impact. Where possible, we quantified impacts and expressed them in dollar values (monetised them). Where quantification was not possible, we assessed the impact in qualitative (descriptive) terms. The methods used for valuing each impact are explained in the following chapters.

3.1 Analytical limitations

There are a number of limitations on the analysis in this report. Taken together, these limitations mean that we recommend that caution is exercised when considering the conclusions of this report. We discuss these limitations in more detail in the relevant sections of the report and have highlighted the level of confidence we have in our conclusions where appropriate. The key limitations are:

- The counterfactual cannot be independently verified. There are two aspects to the counterfactual: how much activity would occur in the New Zealand screen sector in the absence of the grant, and how resources would be used if they were not required in the screen sector.

  We have based our estimate of the first part (which we have called additionality) on a partial exit survey of international productions and findings from our interviews. To mitigate potential error and bias in these methods, we have developed a central estimate and two sensitivities for international and domestic productions separately.

  For the second part, if for example we estimate that 90% of activity would not occur and therefore 90% of current jobs would not be required, we then need to consider what those people would be doing otherwise. Although we discussed this with some stakeholders, it is more speculative.

  The analysis is focused on the evaluation period and therefore reflects economic conditions during that period and relatively short term effects.

- The ex post reporting framework associated with the NZSPG means that recent and current activity is not included in the evaluation. Application for the grant occurs after QNZPE is completed: it requires submission of audited production accounts and a process of verification and acceptance. An unavoidable consequence of this is that there is a material delay in activity being reported. Activity that is attributable to the grant that occurred in the last 12 – 18 months may not yet be reported in the data. This has implications for the analysis which means that the level of activity and the associated economic benefit is underestimated. An example of this is discussed with respect to domestic television productions.

- The evaluation period for the grant is just over three years (1 April 2014 – 1 July 2017). This is a short time period particularly given the lags described in the previous point, and the relatively long timeframe for some types of production. For example, children's animated television productions can take in excess of two years. This means that even if the grant creates an incentive for a sustainable pipeline of this type of work, it may not yet be visible in the data.

- The analysis is based on a sample of QNZPE and employment data. Because of confidentiality of the data and the very detailed nature of the accounts that are part of the application, the Film Commission has summarised the QNZPE data into key expenditure categories. The level of analysis required to do this meant that it was only feasible to complete a sample of productions for each format. Use of a sample introduces a risk of bias depending on how representative the sample is. Given the lumpy, one-off nature of screen productions it is unlikely that the sample is truly representative. However, it is the best that is available and as such we have assumed that there is no material bias in the data. The same sample is used for employment data.

4. NZSPG productions

Box 3: Summary – NZSPG productions

While a greater number of lower budget productions received both the international and domestic grants compared to the pre-2014 period, this finding is inconclusive. Although this may be due to industry trends, it may also be due to the timing of this evaluation, as the production pipeline is lumpy. However, the interview and exit survey findings suggest that the incentives are key to New Zealand's competitiveness as a screen production location.

There has been a large increase in the number of international productions receiving the PDV grant.

There has been no increase in domestic TV productions as a result of the increase in the grant from 20 to 40 per cent based on the data that is available. We understand that this is a result of the ex post reporting framework, and does not reflect the actual level of current and recent activity.

The goal of incentivising larger domestic productions in the $15-50 million budget range has not been reached. However, the target budget range may have been simply a tool to deliver the second part of this goal to reach an international audience. This was an explicit target for the New Zealand producers we interviewed, particularly for television and has been achieved in a number of instances.

One of the key outputs sought from the NZSPG is an increase in the number and scale of screen productions in New Zealand and a regular and diverse pipeline of productions. In particular, the grant seeks to:

- increase New Zealand's competitiveness as a screen production location for international productions in the short- to medium-term
- attract international productions that support an underlying level of activity in the domestic industry
- facilitate the making of more New Zealand productions in the middle production budget bracket (i.e. $15–50 million) that will attract international as well as local audiences.

This section discusses these objectives through analysing QNZPE data provided by the Film Commission. Qualifying New Zealand Production Expenditure (QNZPE) is the expenditure on which the grant is based, for example for a domestic production the grant is 40% of QNZPE. QNZPE is generally production expenditure spent by the applicant on:

- Goods and services provided in New Zealand
- The use of land located in New Zealand
- The use of a good that is located in New Zealand at the time that the good is used in the making of the screen production.

We outline what production formats have received the grant and compare this against the previous grants. We also discuss to what extent the grant incentivised productions that would not have been made otherwise – i.e. the additionality of the grant. The box above summarises the Summary of this chapter.

4.1 Number and scale of productions

Since the introduction of the NZSPG, a total of $787 million has been spent across New Zealand in QNZPE.[4] 88 per cent of this QNZPE came from productions that received the international grant. The total grant paid under NZSPG was $177 million – 23 per cent of QNZPE.

4.1.1 Data limitations

One of the significant challenges with and limitations of using QNZPE data to assess the level of activity in the screen industry and the impact of the grant is that there is a long lag between when production activity occurs and when it is recorded. This is because the activity is not recorded until the grant is paid, even though the activity is attributable to the grant. This is because of the ex post application and audit process. We are aware of several current and completed productions that are not captured by the data, but which are attributable to the grants (and may ultimately receive a grant).[5] This activity is not included in the data in this report. This appears to be a problem for domestic television productions in particular, which are in production but because they are not yet complete are not in the data.

The combination of this lag, and the short period of time that the NZSPG has been in place relative to the length of time over which production activity may occur limits the data available to assess the level of activity attributable to the grant and its associated effect. The activity attributed to the grant in the evaluation underestimates the level of activity actually occurring because it only measures completed productions.

4.1.2 Comparison with pre-2014

International

Table 3 shows a comparison of LBSPG and NZSPG – International grant recipients. When we compare the characteristics of NZSPG – International recipients against characteristics of LBSPG-recipients, we see that a greater number of smaller productions have been receiving the NZSPG grant; this is especially true for TV and film.

We are reluctant to conclude that this is a feature of activity attributable to the grant due to the data limitations including the short time period. A small number of large productions could have a material effect on this average.[6] The LBSPG data includes several Wingnut Films Productions productions which are unusual in the international context in that all aspects of production occurred in New Zealand. Other international productions may only

4 As mentioned above, the data we have received of QNZPE for 2016 and 2017 is only provisional due to lags in reporting. Thus, these numbers are an understatement.

5 For example, *The Meg, A Wrinkle in Time, Mission Impossible 6, Mortal Engines, Thunderbirds Are Go, Kiddets, Darwin and Newts, Bladerunner, War for the Planet of the Apes, Valerian and the City of a Thousand Planets, Spectral and Thor: Ragnarok.*

6 The Hobbit trilogy had a material impact on the LBSPG data.

have one or two (for example the live action shoot or digital and visual effects work) with the remainder of the production activity occurring elsewhere (this is particularly true for post-production).

Table 3 LBSPG and NZSPG – International, comparison grant recipients

	Feature film	PDV	TV	Total/ average total
LBSPG (2004-2014)				
QNZPE ($millions)	2,682 (244M/year)	407 (37M/year)	561 (51M/year)	3,649 (332M/year)
Proportion of total QNZPE	73%	11%	15%	100%
Grant received ($millions)	388 (18.5M/prod)	63 (2.6M/prod)	81 (4.3M/prod)	532 (8.3M/prod)
Number of productions	21[7] (1.9/year)	24 (2.2/year)	19 (1.7/year)	64 (5.8/year)
Proportion of productions	33%	38%	30%	100%
Average QNZPE per production ($millions)	128	17	30	57
NZSPG (2014-present)				
QNZPE ($millions)	213 (71M/year)	288 (96M/year)	194 (65M/year)	695 (232M/year)
Proportion of total QNZPE	31%	41%	28%	100%
Grant received ($millions)	43 (8.5M/prod)	58 (3.0M/prod)	40 (4.0M/prod)	141 (4.1M/prod)
Number of productions	5 (1.7/year)	19 (6.3/year)	10 (3.3/year)	34 (11/year)
Proportion of productions	15%	56%	29%	100%
Average QNZPE per production ($millions)	43	15	19	20

Source: Data from NZ Film Commission, Sapere analysis

While our interviews suggest that the changes in the pattern of consumption and distribution of screen content may be reducing production budgets, we consider it is too early to be conclusive about this possible trend.

7 The Hobbit trilogy of films is recorded as a single production in the QNZPE data, for the purposes of this comparison table we have counted it as three productions.

A significant increase in the number of PDV grant recipients has contributed to the reduction in average QNZPE. During the 11 years LBSPG was in place, 24 PDV grants were paid (2.2 per year). NZSPG has only been in place for 3 years, and at least 19 productions have already received the PDV grant (6.7 per year).[8]

It is not obvious from the data that lowering the PDV threshold to $500,000 had a significant impact, as only one production fell between this and the previous threshold of $1 million. However our interviews suggest that the lower threshold gave productions the confidence to commit to undertaking PDV in New Zealand and initially budgets may have been less than $1 million even though they ultimately went over this amount. Our interviewees reported increases in their own level of activity after the threshold was lowered. This indicates that the effect of lowering the threshold may be obscured by increases in budgets during production.

Based on the annual average, there has also been an increase in the number of TV and film recipients. Film has gone from a yearly average of 1.9 productions per year to 2.3 per year, while TV has gone from 1.7 productions per year to 3.3 per year. Also, as discussed above there is significant activity occurring that has not yet been reported.

Overall then the data suggest that an increasing number of international productions have occurred in New Zealand since the introduction of the NZSPG. The average size of productions to date is smaller than under the LBSPG but we cannot say whether this is a result of the grant, general industry trends or simply a timing issue.

Domestic

Table 4 shows a comparison of SPIF and NZSPG – domestic grant recipients. Similar to the international grant, the data indicates that a greater number of lower budget productions have been receiving the grant – both for TV and film productions. Unlike the international grant, where the LBSPG QNZPE data is inflated by the Hobbit trilogy, there are no outliers with respect to QNZPE under the SPIF.

In 2014, the grant rebate changed for TV productions (from 20 to 40 per cent of QNZPE). It is not apparent from the data that this caused a significant change in the relative proportion of TV productions compared to film. However, again we are aware of several current productions that are not yet complete and are therefore not part of the data for the evaluation. Some of these relate to children's animated television which appears to have a particularly long lead time.

Our interviews also suggest that there may be other barriers to television production including the narrow local broadcast market and perhaps the stronger focus of the Film Commission on facilitating film productions.[9]

The average QNZPE of domestic film productions has decreased. This is probably a result of the change in the threshold from $4 million to $2.5 million. Our interviews suggest that the lower threshold has lowered budget, with some budgets previously being increased to meet the threshold. The NZSPG – domestic has not so far met the goal of stimulating

8 See previous footnote.

9 The Film Commission exists to promote and fund film productions and we believe this comment reflects this primary role. It should not be interpreted as implying that the Film Commission is not being even-handed with respect to its administration of the grant.

productions in the $15-50 million budget range. The feature film with the largest budget was *Into the Rainbow* at $11.0 million.

Table 4 SPIF and NZSPG – domestic, comparison grant recipients

	Feature film	TV	Total/ average total
SPIF (2009-2014)			
QNZPE ($millions)	114 (19M/year)	48 (8M/year)	162 (27M/year)
Proportion of total QNZPE	70%	30%	100%
Grant received ($millions)	45.5 (2.3M/prod)	9.6 (0.7M/prod)	55.1 (1.7M/prod)
Number of productions	20 (3.3/year)	13 (2.2/year)	33 (5.5/year)
Proportion productions	61%	39%	100%
Average production per year	1.8	1.2	3.0
QNZPE per production ($millions)	5.7	3.7	4.9
NZSPG (2014-present)			
QNZPE ($millions)	59 (20M/year)	33 (11M/year)	91 (30M/year)
Proportion of total QNZPE	64%	36%	100%
Grant received ($millions)	24 (1.7M/prod)	13 (1.2M/prod)	37 (1.5M/prod)
Number of productions	14 (4.7/year)	11 (3.7/year)	25 (8.3/year)
Proportion of productions	56%	44%	100%
QNZPE per production ($millions)	4.2	3.0	3.7

Source: Data from NZ Film Commission, Sapere analysis

5. The counterfactual

Box 4 Summary – the counterfactual

There are two aspects to understanding the counterfactual, that is, what would happen in the absence of the grant:

- Estimating the activity that would occur in the screen industry
- Identifying what would happen to those resources (labour and capital) that were no longer employed in the screen industry

The first of these aspects is more amenable to quantification than the second. While there are a number of factors that influence the choice of location for international productions, cost is ultimately key. We based our estimates of the international production activity that would occur in the absence of the grant on an exit survey that NZFC sent out to previous NZSPG recipients. While there were issues with this data, principally due to the self-selection of respondents, the results are consistent with our interview findings and reported decisions.

Based on the exit survey, international experience and our interview findings, our view is that in the absence of the grant it is unlikely that New Zealand would attract the very large budget productions because their bottom line would not support it, PDV from the main US studios is also unlikely to continue. For our central estimate we have conservatively assumed that 91.6% of international activity would cease in the absence of the grant.

Our estimate of the domestic production activity that would occur in the absence of the grant was based on our interviews and the knowledge of our industry advisor. To mitigate possible error we used a central estimate with upper and lower scenarios in the subsequent analysis. The consistency of the feedback from New Zealand producers suggests that none of the television content that is funded by the domestic grant would be made if the grant were not available, because there is no other domestic source of funding for this type of internationally-marketable content. Access to the grant funding allows the production company to attract international investors. Film-makers also seem to agree that NZSPG funding gives a creative freedom that is not available from other funding sources. It also allows films with larger budgets to be made than those that rely on other domestic funding sources (such as the NZFC discretionary funds). Our central estimate is that 74.8% of the domestic activity would not occur in the absence of the grant.

The possible reallocation of resources that would not have been employed in the screen industry in the absence of the grant depends on a number of factors including the level of specificity of the skills of workers, the extent to which equipment and facilities can be applied to a different use, and the general strength of the economy. For example, we consider it likely that wages would be lower for some workers who have relatively general skills, but specific sector experience, while workers with more specific skills may emigrate. We discuss these dynamics further in the analytical sections below.

One of the critical issues for evaluating the effect of the NZSPG is the extent to which providing a grant stimulates additional activity, or merely represents a transfer from the government to the supplier or the consumer.[10] There are two challenges:

- Estimating the level of activity or expenditure that would occur in the screen industry in the absence of the grant. Appendix 1 provides an economic illustration of the market dynamics.
- Identifying what would happen to those resources that were no longer employed by the screen sector in the absence of the grant. This could be labour or capital resources.

If the grant is effective, then by lowering prices to the producer, demand (activity) will be stimulated. For international productions this may mean that the New Zealand screen industry attracts a larger proportion of this activity. For domestic productions, there could be an increase in the total activity or a change in the mix or quality of output. We cannot directly observe what would have happened in the absence of the grant, and in this section we discuss how we have estimated the extent to which the grant stimulated demand during the evaluation period.

5.1 International grant

A number of factors influence location decisions by international studios, this could include:

- Mitigating risk, for example digital and visual effects are often split between several suppliers to reduce the risk associated with failure by one suppliers
- Creative factors, such as a location that supports the script; or
- More practical concerns such as infrastructure adequacy, availability of qualified cast and crew or even just whether the weather is suitable.

However, the major factor is the bottom line, and for this reason incentives are almost always in play.

Warner Bros described the process in some detail: usually they prepare budgets for between three and five locations, which could be US states, Australian states, the UK, Morocco or NZ. The first place they look is "where the project should be made based on the script", they compare this to other locations where they could get the same look or they might consider changes to the story to fit a location in order to achieve a lower budget. The available incentive is a line in their budgets. They indicated that for *The Meg* which was recently produced in Auckland, the 5% uplift tipped the scales. This is the same process as described by Maria de Vane, Senior Vice President of Finance at Amblin Partners in an interview in 2016.[11]

Rob Tapert, international television producer, described the process as one of considering whether creatively the production will work where it is lowest cost to produce, and whether

[10] In this case the supplier is the NZ screen industry business, the consumer is the producer or studio.

[11] Sapere Research Group, 2016, Economic analysis of the New Zealand Screen Production Grant – International, page 24.

the final product will be impacted by that decision. He noted that all the other options open to him offer some type of incentive.

5.1.1 Exit survey

In order to assess the importance of the grant in bringing international productions to New Zealand we have considered the responses obtained by MBIE and the NZFC in the exit survey which was implemented in 2017 and subsequently sent to previous recipients of the grant at our request.

There are issues with using the results of the exit survey for analysis. In particular, while we removed answers that were clearly dummies, duplicates or incomplete there are other answers that may not have been complete or where questions were interpreted differently from intended. For example in response to the question around the importance of various factors to choosing NZ as the location for a production, one respondent chose "partly important" for all of the factors listed. While this may have been a genuine response, it may have been a misinterpretation of the question as which factors played a part in the decision (rather than their relative importance) or the person answering the survey may not have known the answer. We cannot control for this type of problem.

In addition, as the exit survey was sent retrospectively to previous grant recipients (it is now a requirement), the sample was self-selected. Underlying motivators for completing the survey may have varied, and we cannot know whether we have a representative view. Nonetheless in the absence of other data we consider this provides useful information and we test the results against other evidence including international experience and our interview findings.

Although we considered separately the responses for feature film, PDV and television ultimately we have chosen not to disaggregate the sample. In part this was because there were no responses that related to feature films that fell within the evaluation period.[12] Qualitatively, it appears that the results follow what we would expect from our interviews:

- Factors that influence the budget are very important for all productions.
- For feature film, location and landscape were also extremely important and skills of local crew and other local logistics were ranked as important or very important.
- For PDV, the facilities and services were extremely important.
- For television, the skills of local crew and cost of local production were also extremely important.

5.1.2 Additionality estimate from the exit survey

We use the term additionality to describe the extent to which the grant has increased local activity in the screen sector. To estimate additionality we focused on the responses of productions within our evaluation period to the importance of the NZSPG to their decision

12 There was a response relating to a feature film, however this had not received an approved grant within the period of our evaluation.

to locate their production in New Zealand.[13] Responses to the exit survey were received from productions that accounted for 30.7% of the evaluation period QNZPE. In addition, there were four responses for productions that do not appear in the QNZPE data. We excluded these from our analysis.

Productions that accounted for 92.7% of the value of QNZPE from those productions that responded stated that the NZSPG was an "extremely important" factor in persuading them to come to New Zealand.[14] Productions accounting for 6.7% of QNZPE ranked the NZSPG as "important", while 0.5% of QNZPE recipients said it was "partly important".

There are a number of ways to use this data to derive an estimate of the expenditure which would not have occurred without the grant. First an assumption needs to be made about the implication of a certain ranking in terms of the probability that a production would still be made in New Zealand. While it is fairly clear that "not important at all" implies that there was no additional QNZPE as a result of the NZSPG the other rankings are open to interpretation.

For our central estimate we have assumed an even scale. We assume that 100% of the QNZPE is additional (that is it would not occur without the NZSPG), where the NZSPG was considered an "extremely important" factor in the decision to produce in New Zealand, and that 0% of QNZPE is additional where NZSPG is rated as "not important at all" to the location decision. This simple scale is shown in Table 5.

Based on these weightings and the responses from the exit survey we estimate that 96.2% of QNZPE (international) is additional activity that results from the grant. This amounted to $668.9 million in the sample period (of a total of $695.0 million).

Table 5 Additional expenditure due to the international grant

	Extremely important	Very important	Important	Partly important	Not important at all	Weighted total
Percent QNZPE (survey)	92.7%		6.7%	0.5%		
Additionality	100%	75%	50%	25%	0%	96.2%

Source: MBIE/NZFC exit survey of international grant recipients, Sapere analysis

We have assumed above that 100% of the projects where NZSPG was considered "extremely important" are reliant on the NZSPG. If there is a chance that some of those

[13] Productions must have applied under the NZSPG and been approved between 1 April 2014 and 1 July 2017.

[14] Taking into account the level of responses, these productions represent 28.4% of the total international QNZPE.

projects would still come to NZ, perhaps because of our landscapes, some particular technical skill or the sway of the director, and on this basis this assumption was reduced to 95% (i.e. a 5% chance that production that rated the grant as "extremely important" would still occur in New Zealand in the absence of the grant) then this reduces the additionality attributable to the NZSPG by almost 5%, to 91.6% for our central estimate.

5.1.3 Other evidence

This indicates a very strong link between the grant and international productions choosing to locate in New Zealand. This estimate is based on the reported opinions of studios and others in the sector who benefit from the incentive, and there may therefore be upward bias in the estimate. This may be exacerbated by the self-selection issue described above. However, the result is consistent with the anecdotal evidence and the experience of other jurisdictions that have changed their incentives.

Weta Digital executives explained that all projects are tendered, including Sir Peter Jackson's movies (through his production company Wingnut Films Productions Ltd), and there is a process of negotiation or re-bidding to match competitors' offers. While they considered that 10 years ago they were at the forefront of technology and that studios were forced to use them to achieve particular effects, they said that this is no longer true: "the degrees of difference in technology are almost imperceptible". It is no longer technical capability that wins work, it is price point; they consider themselves a price taker. "If the grant were to disappear tomorrow it would call into question the business itself…the subsidy allows us to compete." There is "no scenario" where the US studios would pay 20% more for Weta Digital than its competitors. They also noted that different special effects (FX) houses are on different cycles, for example ILM tends to work on December tentpoles while Weta works on (Northern Hemisphere) summer tentpoles.[15] This means that Weta Digital is bidding against firms in the ebb of their cycle.

Weta Digital provided a description of the international FX industry that supports this view that budgets are critical. Although Weta Digital trades at the high end of the market they noted that margins are reducing for films under the "top five". Weta Digital executives described the movement of FX facilities "chasing" the rebates. For example they said that most facilities in California have closed because there was no rebate, they recalled two moved to other jurisdictions where there were rebates (Digital Domain and Method Studios); the latter has just closed their London facility because of limited access to rebates. They described their industry as "very portable". Weta Workshop emphasised that to be "on the table" a meaningful incentive programme was required to allow them to compete with international alternatives.

Weta Digital also described the importance of the simplicity and objective nature of the grant. They noted that in Canada the rebate is conditional and because decisions on eligibility are made ex post, Canadian FX houses are guaranteeing the rebate in their bids in order to

15 Typically a larger budget movie with a greater marketing budget and often merchandise tie-ins, a tentpole movie is one that the studio predicts has relatively low financial risk, that is it is expected to be highly profitable.

secure clients. To compensate for this risk they are moving work to India and Vietnam where labour costs are lower.

The high mobility of capital in the screen industry can be seen clearly through experience in the New Zealand sector. *Ghost in the Shell* moved from Berlin to Wellington because the New Zealand tax credit allowed for a lower budget. *Light Between Oceans* director Derek Cianfrance was quoted in the Sydney Morning Herald explaining that he had intended to make the movie in Western Australia, "but at the last minute, the *Pirates of the Caribbean* crowd flew into town and took all the tax credit. So I could no longer afford to shoot the movie in Australia."[16] Instead it was shot in Marlborough and Otago.

There are international examples too, in Louisiana, once dubbed "Hollywood South", a change to the tax credit system in 2015 stalled the industry. The change imposed a cap on the amount that the state would pay out each year causing confusion amongst producers about when they would be able to cash in their tax credits. As a result, television and film productions moved elsewhere, notably to Georgia which has an uncapped system. This demonstrates the need for certainty, but also the speed with which productions will move if they think incentives are missing.

It was noted by some producers and screen sector companies in our interviews that the distance of New Zealand particularly for directors and other creative talent was a barrier to production in New Zealand and that this made the bottom line even more of a focus. For effects the only distance issue appears to relate to the different time zones which can be a communication barrier but can also be an advantage as New Zealand works through "the night". Distance appear to be the key factor for post-production work with our interviews suggesting that this is due to a combination of director preference to work near home and studio desire to monitor this stage of production.

Based on the exit survey, international experience and our interview findings, our view is that in the absence of the grant it is unlikely that New Zealand would attract the very large budget productions because their bottom line would not support it, PDV from the main US studios is also unlikely to continue. While the New Zealand lifestyle is a factor for a number of people we spoke to in terms of choosing to live here, this would call into question the overall sustainability of the industry. A number of businesses rely on the larger projects to buy capital and these projects also attract talent. It is arguable whether in the absence of the other 96.2% of activity, New Zealand would have a screen production industry capable of attracting the remaining 3.8% of productions.

5.1.4 Sensitivity analysis

In terms of sensitivity, there are a number of other ways of looking at the data. One feature that is apparent is that larger budget productions were more likely to answer "extremely important". This is logical since they have more to gain from the grant. It is also consistent with the views of two of our interviewees in 2016 who said that they expected that the volume of work would decline rather than disappear. Those interviewees worked on

16 Sydney Morning Herald, *The Light Between Oceans lit up by Michael Fassbender and Alicia Vikander*, 4 November 2016, http://www.smh.com.au/entertainment/movies/the-light-between-oceans-20161101-gsfayx.html http://www.smh.com.au/entertainment/movies/the-light-between-oceans-20161101-gsfayx.html

relatively low budget productions. If we slice the QNZPE data into bands based on the budget, and use the average exit survey response for each band, then the additional expenditure caused by the grant is even higher, at 98.1%.[17]

We have also considered unweighted average rankings by format, on the basis that perhaps there are different attraction factors at play in the different formats. This gives a lower estimate of 87.2%.

5.2 Domestic grant

There is no exit survey of domestic grant recipients on which to base an estimate of additionality. However, we did discuss this issue in our interviews with local producers. Their view was that the NZSPG enabled them to make international-standard content. Funding shortages are particularly acute in television where neither NZ on Air nor the commercial broadcasters have the budgets to compare with overseas funders and the NZSPG is needed to make television content that is of a quality that will be saleable internationally. Producer, Richard Fletcher indicated that UK budgets for an hour of content were more than twice what NZ on Air could fund, and licence fees from local broadcasters were perhaps 5% of what the BBC offers. His view was that relying on NZ on Air and (for film) the NZFC would result in a "massive drop in volume".

This was echoed by other producers, for example Imagination TV executives explained that the NZSPG has enabled them to make shows that will travel – they felt that to be successful with NZ on Air funding they would need to tailor their productions tightly to the NZ on Air brief. NZSPG allows them to make shows that are appealing to overseas viewers, to own their own IP, and to compete in the local audience market against international productions. Their view was that international shows made by foreign companies with "big development budgets" were their competitors, as well as popular local franchises of international formats which are funded through commercial arrangements.

The non-discretionary nature of the NZSPG enables a broader range of stories to be told. Producer, Matthew Metcalfe explains that the NZSPG makes it easier to attract other funding including from overseas investors, because if you do not fit the NZFC's discretionary funding then without the NZSPG "you've got nothing to bring to the table except an idea that is dependent on finance you don't have". He considers that the NZSPG has allowed NZ producers to become part of the "professionalisation of the global independent film industry".

Pūkeko Pictures executives agreed that the NZSPG being on the table is critical in enabling them to raise private funds and international equity for productions of significant scale. This was echoed by South Pacific Pictures CE Kelly Martin who explained that *800 Words* would not have worked financially without the grant. At the time, she said, things were very quiet with no NZ on Air money available. The grant allowed them to attract significant investment

---

17 We split the productions into four budget bands, under $5m, $5m-10m, $10m-30m and over $30m. Under $5m the exit survey indicates that 75% of production expenditure would not occur, in the $5m-$10m bracket the probability is 83%. Over $10m the probability is 100%. The bottom two bands comprised approximately 10% of expenditure.

from their Australian partner, Channel 7. The other key feature of the local television environment was the low licence fees which means that funding must be attracted from elsewhere (or overseas sales made). Bob Campbell from Screentime said that in his view the grant was critical for drama.

The consistency of the feedback from New Zealand producers suggests that none of the television content that is funded by the domestic grant would be made if the grant were not available, because there is no other domestic source of funding for this type of internationally-marketable content. Access to the grant funding allows the production company to attract international investors. Film-makers also seem to agree that NZSPG funding gives a creative freedom that is not available from other funding sources. It also allows films with larger budgets to be made than those that rely on other domestic funding sources (such as the NZFC discretionary funds).

5.2.1 Additionality estimate

We have made a conservative estimate of additional feature film activity that is caused by the domestic grant. For feature films we assumed that all the films would be made, but the maximum budget available to each would be $2.5 million, thus any QNZPE over $2.5 million is considered additional. This estimate was based on discussion with New Zealand producer, Matthew Metcalfe, who estimated that around $2.5 million was the limit of the funds that could be raised in New Zealand [assuming a maximum NZFC discretionary investment of $2 million]. This is also consistent with the threshold for the NZSPG. We assumed that none of the feature documentary or television content that receives the NZSPG would be made without the grant.

Table 6 Additional expenditure due to the domestic grant

	Share of QNZPE	Additional QNZPE
Feature film	50.5%	50.0%
Feature documentary	14.5%	100.0%
Television	35.0%	100.0%
Weighted total		74.8%

Source: NZFC data, Sapere analysis

5.2.2 Sensitivity analysis

We have used two other approaches as comparisons to assessing the attribution of activity to the domestic grant. Having the NZSPG allows recipients to access overseas investment funding. Richard Fletcher estimates that the net benefit of the domestic grant amounts to approximately 33% of a production's budget, allowing for debt financing. If we assume that 95% of the remaining budget is from overseas investors, and that this would not be available in the absence of the grant (based on our interviews) then 63.7% of QNZPE from the domestic grant can be assumed to be additional. Thus if all domestic resources were assumed to be redeployed to equally productive activity in the counterfactual of no grant, then 63.7% of QNZPE is additional.

A third scenario can be obtained by assuming that rather than a $2.5 million maximum for feature films in the absence of the grant, the maximum budget is $1.8 million. Any expenditure over $1.8 million is assumed to be additional.

The alternative of $1.8 million is based on the observation and experience of Dr Ruth Harley. Dr Harley was formerly the chief executive of the Film Commission and Screen Australia. She noted that there was a trade-off between funding more projects or funding a higher budget for each production. While the specific dollar estimate is somewhat subjective, we consider it to be reasonable for the purposes of developing a range of additionality assumptions. If we adopt this lower cap then 62.9% of feature film expenditure and 81.3% of overall QNZPE is additional.

These figures seem plausible based on our interviews, for example, producer, Matthew Metcalfe said that the screen sector exists in a fragile state, he considered that our small population meant that telling our stories in a self-sustaining way was not possible. This lack of an audience able to achieve critical mass and therefore be financially sustainable for productions, unless they are internationally portable, was echoed by other interviewees. Lisa Chatfield at Pūkeko Pictures notes this lack of audience critical mass as one of the local market problems that the incentive was an offset for.

5.3 Conclusion on additionality

Based on the methods discussed, we have developed a range of scenarios for the extent to which the international grant and the domestic grant stimulate economic activity in the screen sector. These are shown in Table 5.

Table 7 Additionality assumptions

	Low	Central	High
International grant	87.2%	91.6%	96.2%
Domestic grant	63.7%	74.8%	81.3%

Source: Sapere analysis

Our interviews and the exit survey indicate that New Zealand has some inherent advantages for live action productions including elements of location and reverse seasonality as well as a non-unionised workforce. However, our interviews, the exit survey results and the available evidence from other jurisdictions suggest that neither these, nor any specific technical excellence are sufficient to outweigh budget considerations.

In the context of high mobility of capital and international availability of production incentives, the attraction and retention of international screen production activity relies on the NZSPG.

For domestic productions, we have balanced the potential availability of other funding against the interview findings that the creativity, quality and exportability of the productions funded by the NZSPG require the level of funding offered by the NZSPG.

We do not get any sense that grant funding is crowding out or displacing other sources of funding. For international productions the studio budget is the cap and the production would simply move elsewhere without the grant. For domestic productions, the combination of a small industry small audience sizes limits the ability of local producers to attract funding, and local broadcasters also have limited budgets.

Based on these assumptions, we estimate that between 84.5 and 94.5 per cent of QNZPE can be directly attributed to the grant.[18] The calculations are shown in Table 8.

Table 8 Additional QNZPE attributed to the grants

Total for evaluation period 1 April 2014-1 July 2017

	QNZPE	Low	Central	High
International	$695.0m	$606.2m	$636.6m	$668.6m
Domestic	$91.5m	$58.3m	$68.4m	$74.4m
Total	$786.5m	$664.5m	$705.1m	$743.0m
% of total QNZPE		84.5%	89.6%	94.5%

Source: Sapere analysis

5.4 Reallocation of spare resources

As we noted above, the additionality estimates do not consider how the capital and labour resources that were no longer employed in the screen sector would be used. If all the spare resources transfer to some activity that is only marginally less productive then there is very limited economic benefit to the stimulation of the screen sector by the grant.

The actual dynamics of an adjustment cannot be robustly determined. We have focused on relatively short-term effects and the economic conditions prevailing during the evaluation period because the grants are a short-term instrument (location decisions are able to be changed at relatively short notice). We expect that it would depend on factors such as:

- the level of specificity of the skills of workers. Our findings suggest that while some workers, including some crew and some FX contractors have very specialised skills, a large number have more general skills, such as building or hairdressing, which could be transferred to another industry. Those with more specific skills may emigrate to remain in their chosen field. There is some degree of on-the-job experience for all workers

[18] This is the expenditure weighted average of the high and low additionality estimates derived in section 3.

which may be associated with higher wages in the screen sector if this experience is not transferable. However there was mixed evidence from our interviews about relative wages between the screen sector and other industries.

- the extent to which equipment and facilities can be applied to a different use. While there was consistent qualitative evidence that screen productions allowed an initial investment in equipment often this was able to be used for some other activity between productions. Some facilities are bespoke, particularly sound stages, and these investments would be obsolete. This is evidenced by both the experience of developing the facilities at Kumeu, which appears to have relied on a lease with ATEED, and the lack of investment at Avalon.

There is no independently verifiable way of estimating how these resources would otherwise be used. The level of confidence of workers and businesses in the screen industry affects the current use of resources (including during ebbs in activity) which may influence the "evidence". It is also likely that the economic cycle would affect the re-allocation of resources. We discuss the potential effects further in the analytical sections below.

In addition to the effects on resources currently employed in the screen sector, there would be wider effects on the indirect benefits derived from screen sector activity. We have not explicitly considered these in our central analysis of the economic benefits of the NZSPG. These indirect effects are discussed in section 10.2.

6. Overview of QNZPE

In this section, we provide an overview of QNZPE data and in the following sections we analyse how this expenditure has generated direct and indirect economic benefits to the New Zealand economy.

We outline details of the data we received from the Film Commission, its limitations and finally explain the different categories of expenditure for each production type. The categories of expenditure show what parts of the economy are most likely to benefit from the productions taking place. At a high level, production expenditure tends to be across a range of industries (suppliers or skills) and is often concentrated in a local area.

One key insight from our interviews is that the screen industry is “a microcosm of a village” (Catherine Fitzgerald, independent producer and founder of Blueskin Films). This is particularly the case for live action shoots where (for example) a world is physically built, people need to be clothed, accommodated and fed, transport is required to the appropriate location and a range of other everyday functions are undertaken. As a result, there are a range of services that are bought, which are not necessarily specialised, and people employed (with a variety of skills). This is the case for both film and television productions (but far less so for PDV, which is specialised).

Warner Bros executives indicated that businesses in the local area around film studios benefit from the concentration of people in the area for a sustained period of time. For example, they employed a total of 670 crew members during filming of *The Meg* and estimated that 500-750 vendors were used to produce the film. The period of filming can vary. Using *The Meg* as an example, a small group of 10-12 people started pre-production and by the end of a three or four month period all the crew were on site. Principal photography took 4 months during which time all cast and crew were on site, after this post production occurred. For *The Meg*, Warner Bros indicated that the key phase was 6-7 months in the middle, all of the activity during this period (apart from one week’s filming in China) occurred in a relatively small area around Kumeu.

Box 5 Summary – QNZPE data

The Film Commission provided aggregate QNZPE data for each grant format. The Film Commission classified the very detailed expenditure from the general ledgers and we have relied on this classification in the analysis in this and the following sections.

For international productions 59% of QNZPE related to labour costs, this proportion was 50% for domestic productions. The remainder of expenditure was on a range of goods and services. Production services was the largest category of suppliers making up 18-26% of total QNZPE depending on the format. Post-production was the next largest category for international TV and both domestic formats. Live action international film productions tended not to undertake post-production in New Zealand.

Unsurprisingly QNZPE expenditure is concentrated in Wellington and Auckland. International film and PDV are focused in Wellington while other formats are predominantly Auckland based. This suggests that activity tends to be centred on the relevant film studio.

6.1 Sample for QNZPE

Due to confidentiality of the financial data, the Film Commission provided aggregate QNZPE general ledgers for each of the different grants and formats. The general ledgers provided as part of the application are very detailed and in order to provide analytically tractable information the Film Commission summarised the data into key expenditure categories. The level of analysis required to complete the summaries meant that it was only feasible to complete a sample of productions for each format. Table 9 shows the number of productions that were included in the aggregated production expenditure data, and the total number that received the grant by format.

Table 9 Productions sampled

Total for evaluation period 1 April 2014-1 July 2017

Format	Total grants paid	Number included in sample	Percent of QNZPE in sample
NZSPG – International			
Feature film	5	4	117[1]
TV	10	5	49
PDV	19	18	80[1]
Total	**34**	**27**	**83**
NZSPG – New Zealand			
Feature film	14	7	67
TV	11	3	62
Total	**25**	**10**	**65**

Source: Film Commission

1. Film and PDV samples each include a payment that was made outside the evaluation period. As the data was aggregated these could not be isolated. We have assumed that this has not materially affected the analysis

The use of a sample of data introduces the risk of bias, and may challenge the generalisability and therefore the reliability of the results. For instance, overall regional activity may be biased if only a single production occurred in that region, depending on whether it is in the sample of not. The generalisability of the data will also be affected by the scope and scale of the productions in the sample. For example, a feature film may or may not include effects; the scope of PDV is also quite specific to the production.

The Film Commission grouped the QNZPE data into expenditure categories and regions. Although we have provided some other comparator data where possible, we have relied on the data that was provided for the primary analysis in this section. In particular, we have assumed that there is no material bias in the classification of QNZPE by the sample of productions.

6.2 Categories of QNZPE

6.2.1 Labour

The main categories of expenditure for the international and domestic grants by format are illustrated in Figure 1 and Figure 2. BTL labour and crew is the most common expense category for all types of production grants (except for PDV grants). In aggregate 59 per cent of QNZPE for international productions relates to labour costs. There are four categories that NZFC has allocated labour to:[19]

- Above the line labour/crew (contracted directly to the production)
- Below the line labour/crew (contracted directly to the production)
- Above the line cast and talent
- Below the line cast and talent

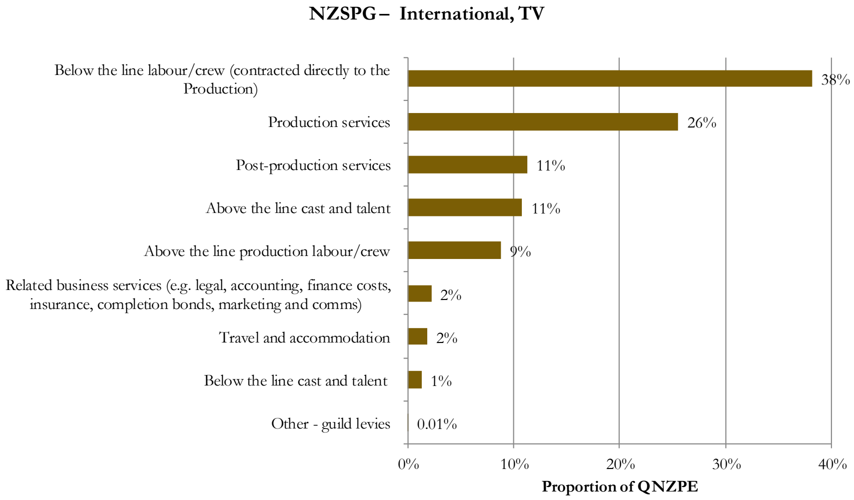
The remaining proportion (41 per cent) is spent on goods and services. For the domestic grant, the proportional split between labour and goods and services is 50:50. QNZPE under the PDV grants is almost exclusively spent on VFX suppliers (93 per cent). Weta Digital (the largest New Zealand VFX supplier) indicated that 85% of their costs were labour-related.

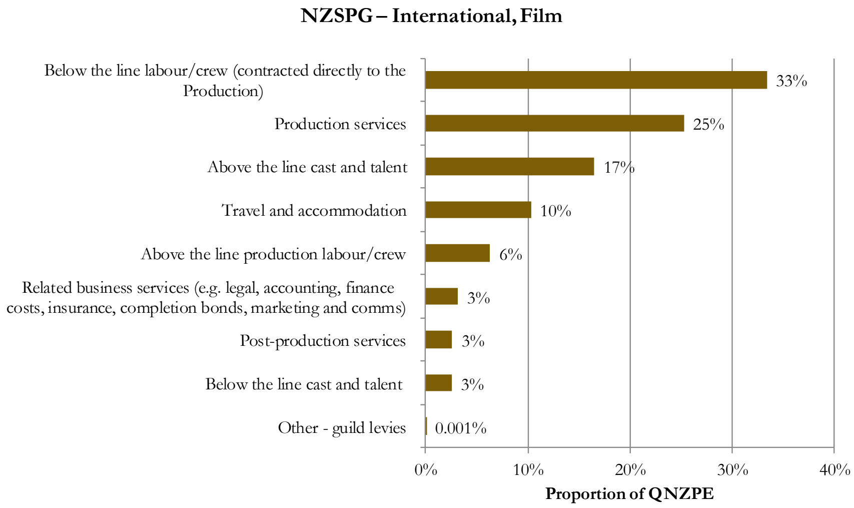
This proportion of QNZPE spent on labour is somewhat higher than has previously been found. In Sapere's 2016 study of the international grant using a similar approach, but a different sample, we estimated that 45 per cent was spent on labour, and in the 2012 evaluation of the LBSPG it was found that 47 per cent was spent on labour.

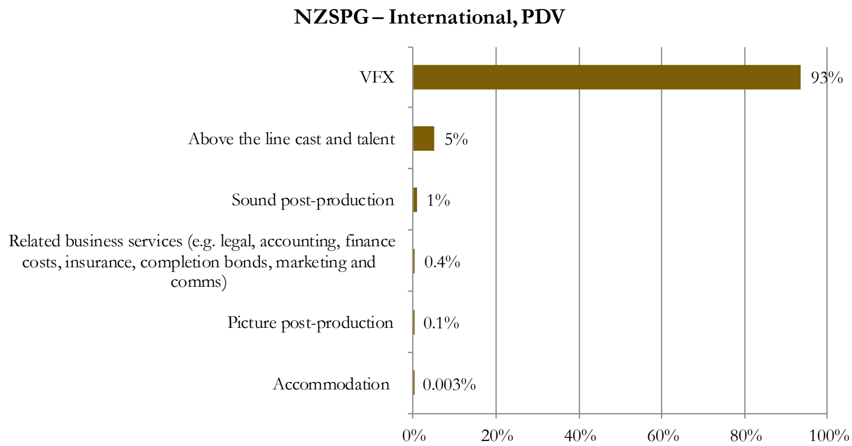
This variation demonstrates the potential problem with sampling. It is possible that the different scope and scale of the productions under the LBSPG required a different labour input, or that relative to other costs the price of labour has increased since 2012. The possible reasons for the difference between the 2016 and 2017 samples are less clear although there is some potential for difference in judgment made about classifying expenditure. To preserve consistency and on the assumption of no material bias, we have used the proportions from the NZFC 2017 sample data for the purposes of our analysis.

[19] Above the Line expenditure relates to creative elements of total expenditure on a screen production. It includes screenplay rights and salaries and other expenses to writers, producers, directors, principal cast and stunts. Below the Line expenditure include salaries of support staff and talent and all production costs - catering, studio, lighting, etc.

Figure 1 Categories of expenditure – International grant

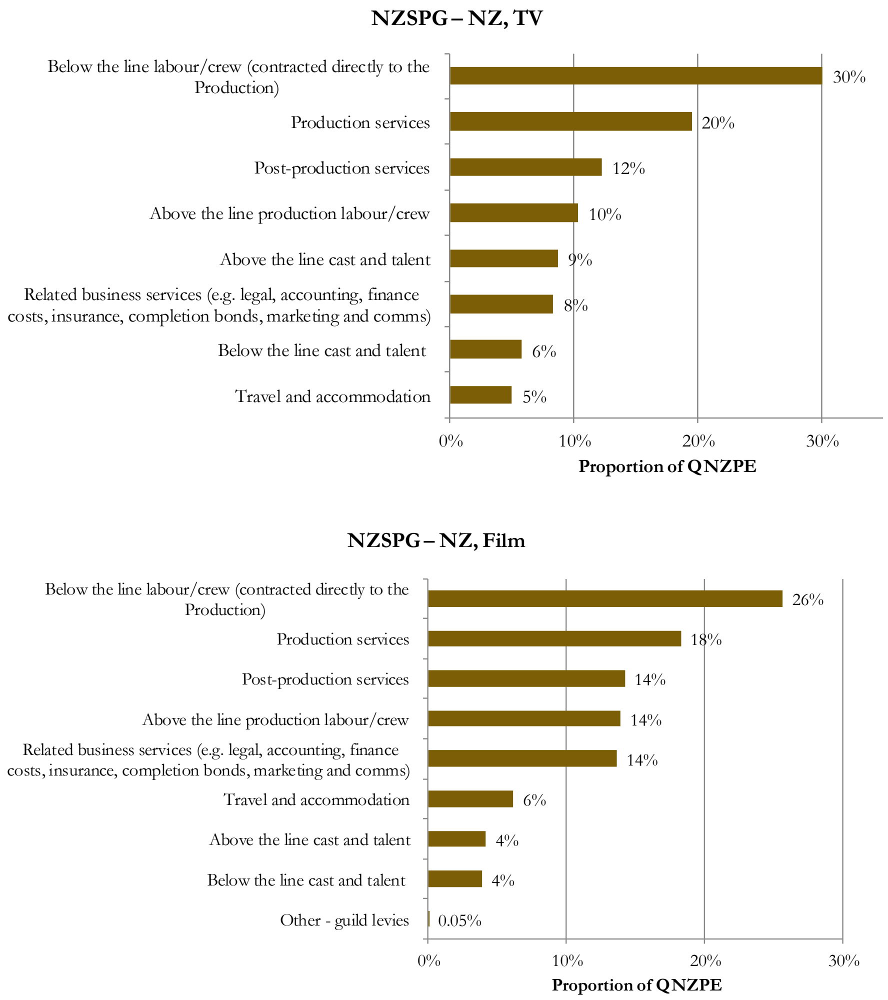






Source: Film Commission

Figure 2 Categories of expenditure – Domestic grant



Source: Film Commission

6.2.2 Goods and services

New Zealand businesses providing productions services are most likely to benefit from the grant. 'Production services' is the second largest category of expenditure for all production formats and both grants (except for PDV). It ranges between 18 – 26 per cent of total QNZPE and it includes the following subcategories:

- Facilities
- In front of camera (props, set dressing, construction and locations)
- Behind the camera (camera, sound, lighting & grip equipment, transport and security)
- Catering (craft services and on-set catering)

‘Behind the camera’ is the largest sub-category of expenditure, followed by ‘In front of camera’ – again for all production formats and both grants. The former ranges between 41 per cent and 59 per cent of total production services, while the latter ranges between 25 and 40 per cent.

Production and post-production by format

QNZPE data for the international grant indicates that most film productions locate either the production or post-production component in New Zealand – not both. Post-production makes up only 3 per cent of total QNZPE for international film grant recipients, while 99 per cent of total QNZPE under the PDV grant is from film productions. For international TV productions, post-production is the third largest category of expenditure (11 per cent of QNZPE) – suggesting that more individual TV productions locate both the production and post-production component in New Zealand. Moreover, while the film grant recipients spent almost all post-production expenses on VFX (84 per cent), TV productions in the sample have a more equal split between the subcategories (41 per cent of their post-production expenses on VFX, 36 per cent on picture and 23 per cent on sound).

Post-production services is the third largest expense category for New Zealand TV and film grant recipients – making up 12-14 per cent of total QNZPE. This suggests that New Zealand productions also undertake their post-production component in New Zealand, rather than locating it in another country. Aggregating film and TV, there is an almost equal split between the three post-production components: picture, sound and VFX. However, film productions tend to spend somewhat more on VFX (36 per cent), while TV spends more on picture and sound (39 per cent for both).

6.3 Regional distribution

The Film Commission provided data on how QNZPE was spent across New Zealand. To test the generalisability of the regional breakdown of QNZPE sample data, we applied the regional proportions to total QNZPE for each year, and compared this against Screen Industry Survey’s location of production expenditure data and the location of screen industry businesses.

The comparison is shown in Table 10. We use the average proportion during 2014-2016. This shows that sampling may skew the regional distribution because outside Auckland and Wellington productions are often one-off.[20] We are unable to correct for this in any way given the data constraints.

---

[20] The significant exclusions in terms of dollar values from the sample are some Auckland television productions.

Table 10 Regional distribution of the QNZPE sample compared to Screen Industry Survey data

District	Proportion of QNZPE	Proportion of businesses	Expenditure on producing
Northland	0.1%	0.7%	0.0%
Auckland	42.3%	45.0%	48%
Waikato	3.6%	1.0%	0.4%
Bay of Plenty	1.1%	1.0%	0.3%
Gisborne, Hawke's Bay	0.0%	1.0%	0.2%
Taranaki, Manawatu-Whanganui	0.0%	1.0%	0.1%
Wellington	43.1%	43.3%	40.0%
Tasman, Nelson, Marlborough	1.6%	1.0%	0.5%
Canterbury, West Coast	0.1%	3.0%	2.9%
Otago, Southland	7.0%	3.3%	3.3%
Overseas	1.0%	-	4.0%

Source: Film Commission and Statistics NZ

1. Proportion of businesses includes businesses within the whole screen industry. Data for Wellington and Taranaki, Manawatu-Whanganui is confidential for 2014 and 2015, therefore these proportions reflect 2016 values.

To the extent that specialised suppliers or contractors move to a region when a production is based there, we would expect to see a lower proportion of businesses than expenditure in regional New Zealand.

6.3.1 NZSPG - International predominantly Wellington-based

Figure 3 shows a map of how the QNZPE from the sample of productions that received the international grant (including the PDV grant) was spent across New Zealand. It shows that 64 per cent of QNZPE ($384 million) was spent in Wellington, followed by Auckland at 24 per cent ($140 million). Otago comes third, with 4 per cent of QNZPE spent there. Gisborne has not seen any benefits from the grant, and some other regions – including

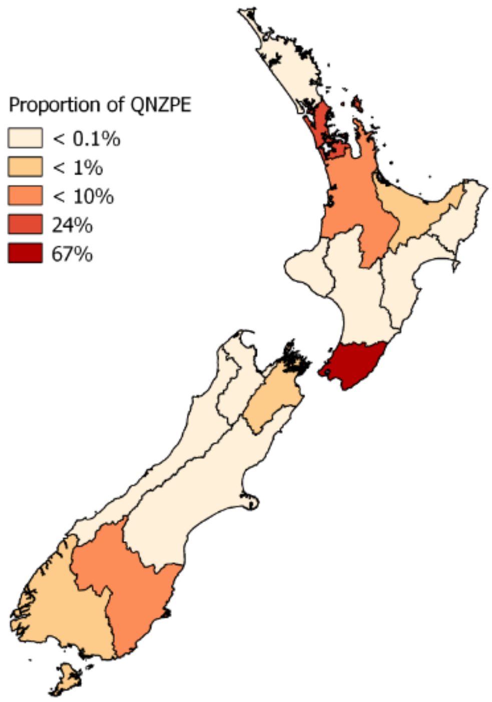
Hawkes Bay, Taranaki, Whanganui-Manawatu and Nelson-Tasman had under $50,000 spent in the region.

QNZPE under the PDV grant significantly pushes up Wellington's share of the spending. Of the $230 million QNZPE generated from PDV grant recipients – 99.6 per cent was spent in Wellington.

The concentration of the industry in the Weta Group could be considered a weakness because the economic activity is very localised. However there is also a benefit to the geographical density of the activity. Harry Harrison from Screen Auckland noted that in the UK, 250 businesses are on-site across Pinewood and Shepperton Studios. Co-location of complementary businesses could potentially be valuable in terms of efficiency and productivity of the film sector, but also driving economic growth in the other, complementary sector. Wellington has experienced this to some degree with the growth in AR/VR and gaming as well as the burgeoning of creative education options.

QNZPE from international live action productions was split between Auckland and Wellington regions. Wellington had the highest share, with 45 per cent of QNZPE, followed by Auckland at 40 per cent. Film grant recipients tend to spend most of their QNZPE in Wellington, while TV grant recipients spend most of their QNZPE in Auckland. Almost no QNZPE took place in Wellington under the TV grant. Otago had 6 per cent of QNZPE spent under the film grant, and 9 per cent under the TV grant.

Figure 3 Location of QNZPE spending – International grant



Source: Data from NZ Film Commission, Sapere analysis

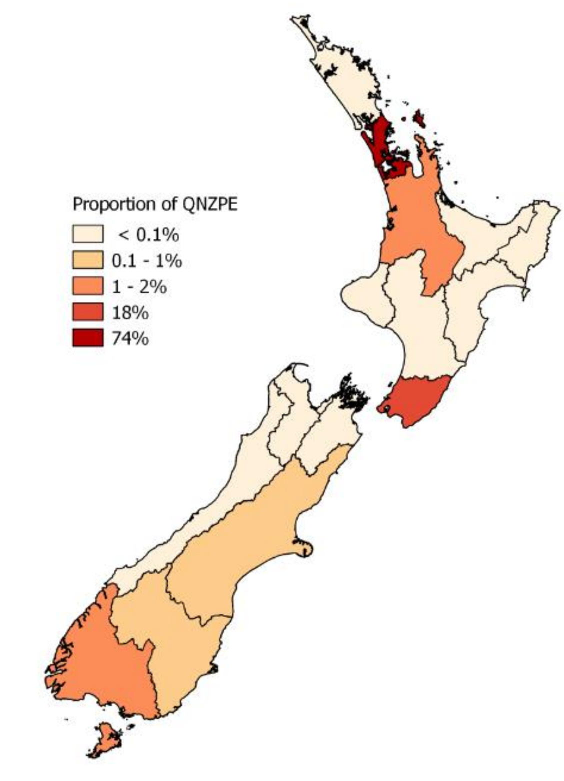
One per cent of QNZPE is recorded as being paid to offshore entities. The economic benefit of this to New Zealand is not clear. Some relates to imported equipment, such as cameras or props. However, where international flights and accommodation are paid to an overseas entity (e.g. U.S travel agent) this may have a more direct economic benefit to New Zealand depending on the ultimate provider.

The proportion in the sample of overseas expenditure is underestimated as it does not include all labour that is brought in from overseas. Data from the sample productions suggests that for international grant recipients 18% of film cast and crew and 9% of TV cast and crew are non-resident. Weta Digital estimates that 30% of their workers are non-resident. While some of these people might live here, ATL talent in particular may be in NZ for short periods of time. Their wages will not create secondary benefits for the NZ economy as they are likely to spend relatively little here.

6.3.2 Domestic activity is Auckland-based

Figure 4 shows a map of how the QNZPE under the domestic grant is distributed across NZ. Almost three-quarters is spent in Auckland, followed by Wellington at 18 per cent. Southland and Waikato had 1.5 and 1.3 per cent respectively spent in the region. The Nelson and Tasman regions recorded no QNZPE, and Northland, Bay of Plenty, Gisborne, Hawkes bay and Taranaki all had under $10,000 spent in the regions. Not shown in the figure is the 3.9 per cent of QNZPE spent offshore – of which most was spent on international flights and business services. As for the international grant this does not include non-resident labour, the sample data suggests that 8% of cast and crew on film and 2% on TV productions are non-resident.

Figure 4 Location of QNZPE spending – domestic grant



Source: Data from NZ Film Commission, Sapere analysis

6.3.3 Other regions

It is important to note that although most of the QNZPE is directly spent in Auckland and Wellington, we do not know to what extent the QNZPE stays in these two regions. This is particularly the case for the proportion of QNZPE spent on labour. Labour is more mobile than businesses and may move to Wellington or Auckland from other parts of New Zealand during the length of the production, and then move back again. There may be indirect flow-on effects to other regions as a result.

7. Labour market effects

Box 6 Summary – labour market effects

Our qualitative findings suggest that the grant has had a strongly positive effect on employment within the screen sector. While we have not been able to measure the effect of the NZSPG on employment or wage rates directly, we have included the estimated aggregate economic effects in our analysis of the economic benefits of the grant in the next section.

Based on Film Commission data, we estimate that the grant resulted in 8,180 additional roles in New Zealand on productions between 1 April 2014 and 1 July 2017. Of these 91% were filled by New Zealand residents. Unfortunately it is not known how many individual people were employed in these roles or to what extent the production work displaces another job.

There is some evidence from our qualitative findings that changes in the mix of formats affects earnings as international productions pay a premium to domestic productions and film pays a premium to offset the greater security of work offered by television productions. This is consistent with the analysis of Film Commission data.

We are not able to directly observe any difference in pay rates between resident and non-resident labour, although earlier analysis we undertook suggests that this may be significant. We estimated that 19% of labour costs were associated with non-residents compared to 9% of roles.

In our 2016 review of the international grant, we found that there had been some increase in employment reported by the businesses we interviewed. For instance, Mechanic Animation had noticed a quick growth and Weta Digital attributed the increase in number of contractors from 1,200 to 1,500 over an eighteen month period to the increase in the grant. However, Weta Digital also noted that there has been a growing demand for visual effects in film. And as all their competitors (internationally) also are growing it suggests that it may be a growing sector, rather than a growing share of the sector that is underlying Weta Digital's growth. This does not negate the positive impact of the grant reported by Weta Digital, as the counterfactual (without the grant) could be a lower share of the increasing pool of work.

Weta Digital reflected on the international mobility of their workforce, noting that they believe they have higher labour costs than their competitors, by 3-5%. This includes the cost of recruitment and physically relocating artists and their families to New Zealand. This premium is needed, in their view, to attract exceptional artists to New Zealand. They also noted that the practice of overseas companies of employing crew only during productions is less feasible in New Zealand because they cannot scale up as quickly due to the geographical distance. While they do scale up for productions, their lead in time is longer and they rely on migrant labour to do so. This means that they also retain more staff through the production cycle than similar companies in other countries.

From an employment perspective, television generally seems to be the most sustainable model, because of the length of production and the possibility of multiple seasons. For example, Kelly Martin, Chief Executive at South Pacific Pictures said that the crew on *800 Words* have had solid employment for three years. This model also enables them to bring through new talent. This latter finding was echoed by our discussion with Pūkeko Pictures, who noted that eight directors got their debut on *Thunderbirds are Go*.

There is some indication that there may be shortages of some crew in New Zealand. This depends in part on how much production is occurring. This may be a self-limiting factor on the infrastructure needs at present although there is a significant recent investment in education which may change this dynamic. We noticed in our interviews that there was a tendency for international productions to bring more crew with them on their first production and as they became comfortable with the skills available in New Zealand for this to reduce. The second and subsequent productions by a studio or director can be expected to have increasingly positive impacts on employment and therefore GDP.

7.1 Employment

While our qualitative findings indicate that the grant has had a positive impact on industry employment, it is difficult to quantitatively measure the total increase in employment. This is mainly due to data limitations, and it is further complicated by not knowing what the people working on the productions would have done otherwise.

AES shows that in 2016, the total number of people who worked within the production and post-production sectors (measured by RME) was 1,179; 73 percent within production and 27 percent within post-production.[21] This is a 4 per cent increase from 2015 – but due to a low level of industry grouping of the data, we cannot be certain if this is due to a change is sample size or due to an actual increase.[22] The Screen Industry Survey has not yet reported any employment data for 2016.

The predominance of self-employed contractors in the screen production sector also affects the availability of robust employment information. Both the official statistics measures (SIS and AES) use rolling mean employment from the Linked-Employer-Employee-Data which is based on PAYE information. PAYE is not applicable to contractors.

While the data provided by SIS and AES is limited for the purposes of this report, we have adopted an alternative framework to attempt to quantitatively measure the impacts of the grant on employment.

The Film Commission was able to extract data from grant applications relating to the total number of roles undertaken by people who worked on a production and the number of those roles that were undertaken by New Zealand residents. For PDV, as there is no employment data provided in the grant application, we have instead relied on estimates provided by Weta Digital of the number of crew and their residency status Since Weta Digital is the largest PDV supplier we have assumed that this average applies to all PDV suppliers.

21 Rolling Mean Employment is a twelve month moving average of the monthly employee-count figure.

22 Statistics New Zealand notes that the industry data used is at a lower level than designed industry groupings. Because sample sizes and weights are designed at a higher level, sample error at lower levels is not controlled for, and year on year data movements should be interpreted in the context of possible changing sample sizes.

The figures do not include employees of suppliers, and may exclude some casual labour. The count is based on the number of roles on each production, so if a person had more than one role then they will be counted twice. People are also counted multiple times in roles on different productions. They are significantly higher than the estimates of rolling mean employment from the AES and SIS. This reflects the fact that it is a total count across all productions rather than a monthly snapshot.

Table 11 shows the percent of labour by format that is NZ resident based on this data. This shows that film tends to employ more non-residents than television productions, and unsurprisingly international productions employ more non-residents than domestic productions. PDV does appear to be an outlier based on this data with a relatively low proportion of residents. This probably reflects the relatively specialised skills and internationally mobile labour force for this work. It may also in part reflect the fact that Weta Digital were estimating the number of people, rather than the number of roles filled. If residents fill multiple roles while non-residents typically only fill one, then the percentages for non-PDV formats will be overstated.

Table 11 Resident labour by format

Format	Percent of labour (roles) undertaken by NZ resident
Film - domestic	92.5%
TV - domestic	97.6%
Film - international	81.7%
TV - international	90.9%
PDV - international	70.0%

Source: NZFC sample data, Weta Digital, Sapere analysis

While there is no strong relationship between QNZPE and these job estimates, in the absence of a more robust method we have assumed that the share of QNZPE in the sample reflects the share of worker roles. For example 67% of film productions are in the sample data (based on QNZPE value) so we assumed that the employment data represented 67% of the total employment on domestic film productions.

Using this method, over the evaluation period a total of 10,244 people were employed in New Zealand in roles on productions that received the grant. Using our central additionality estimate 8,180 worker roles were additional, that is would not have been available in the absence of the grant. Of these worker roles 91% were filled by New Zealand residents.

Table 12 Employment created by the grant, by additionality scenarios

	Low	Central	High	% residents
Domestic	2,688	2,824	2,965	94%
International	4,562	5,357	5,822	89%
Total	7,250	8,180	8,788	91%

Source: Sapere analysis

These estimates are subject to considerable uncertainty due to the method of estimating them, and the underlying measure is not particularly useful from the perspective of measuring the economic benefit of this employment. We cannot reach any conclusion about the number of individuals employed.

7.2 Wages

The AES indicates that the wages and salaries paid in the production sector were 2.5 per cent higher in 2016 compared to 2015 (the data is confidential for the post-production sector). However, as mentioned above, we cannot be certain if this is due to a different sample size, or due to an actual increase.

Interviewees fairly consistently stated that feature films pay better than TV (although as mentioned TV tends to provide a longer period of employment), and that international productions pay a premium compared to domestic ones. However, none could provide an estimate of the premium. Shirley Escott, of Stephen David Entertainment said in our 2016 interview that crew will always prefer a feature film because of the relative pay rates and that they had found crewing their most recent production difficult as a result. These factors and changing mixes of production formats (more television but also more international productions) could affect average earnings in the sector.

Using the sample QNZPE data and the sample estimates of total workers we have estimated the average earnings for each role by format. This does not include PDV, because of the data differences we have already described. Discussions with industry indicate that the average annual earnings of PDV crew is $150,000. The results are shown in Table 13. While this is consistent with the anecdotal evidence of an international premium it shows higher average earnings for domestic TV relative to film. However, this may reflect the length of employment, rather than the hourly or daily wage rate.

Table 13 Average earnings by format

	Film - domestic	TV - domestic	Film - international	TV - international
Labour cost	$18.7m	$11.0m	$146.8m	$56.4m
Workers	1,379	625	2,167	1,620
Average earnings	$13,552	$17,665	$67,738	$34,836

Source: NZ Film Commission data, Sapere analysis

1. The data on workers, in this table, relates to the estimate of total workers on productions within the QNZPE sample only.

The difficulty with average earnings is that it provides no information about the distribution of earnings, and whether there is any difference in the average between NZ residents and non-residents.

Using analysis we completed in 2016 suggests that there may be significant difference in relative wages between resident and non-resident workers, with non-residents receiving a higher wage. At that time, we estimated that 75.5% of ATL labour costs and 5.8% of BTL labour costs for international television were non-residents. Using these estimates and the relevant QNZPE data on labour costs, we estimate that 19% of labour costs related to non-resident workers, this compares to 9% of worker roles. This analysis cannot allow for any difference in the period of time for which residents and non-residents worked on a production. If non-residents roles were on average for a longer period of time then this may account for some of this difference.

From an economic impact point of view – this information is of particular interest. This is because hiring relatively more NZ residents could be expected to bring higher economic benefits to New Zealand. Reasons for this include that the wages paid to NZ residents are more likely to be spent within the country, which will cause induced economic impacts (i.e. the wages will be spent on other goods and services – causing further economic benefits). Clearly care is required, as NZ residents are likely to have some other income (whether from another job or social assistance) in the absence of the production. In fact, they may experience no change in income if the film production activity is marginal to their job, or substitutes for some other activity. It is only the induced expenditure from any change in income that should be attributed to the production expenditure.

There may also be other benefits associated with non-New Zealand residents working in the sector, including skills transfer to New Zealanders, and new business or other work by family members of the migrant. The net benefits depend on whether the migrants are meeting skill shortages or displacing the existing New Zealand resident labour force.

7.3 Skills

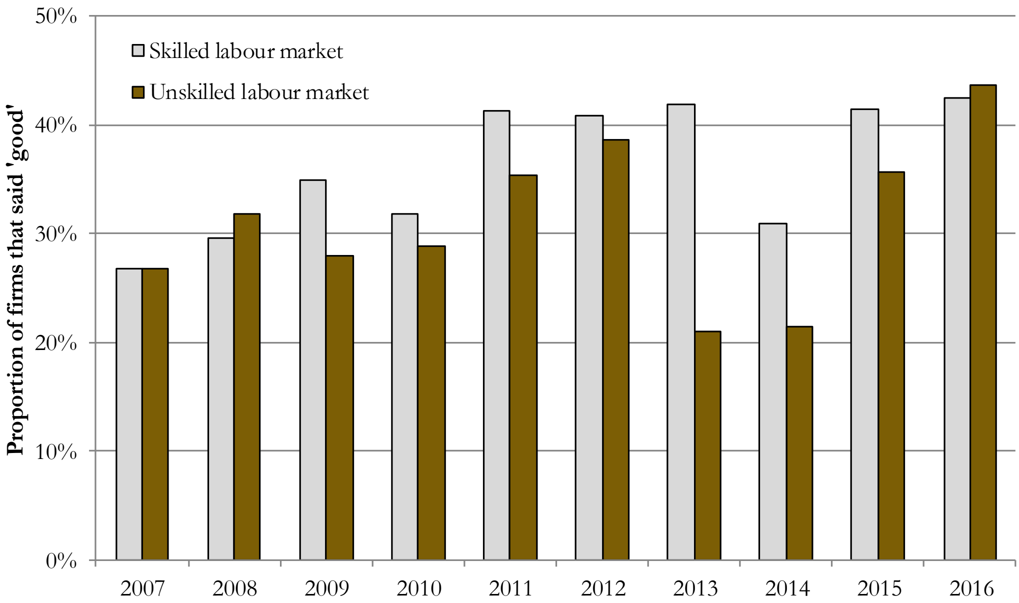
Another reason for higher benefit from NZ residents being employed, as opposed to non-NZ residents, is that they would be more likely to stay within the country and apply the skills learnt for an international production on other domestic activities. This was emphasised by Harry Harrison from Screen Auckland in 2016, who said that "people that have been working on international productions end up running domestic productions".

Our interview findings suggest that learning on the job is important. For example, where new technology is used in solving a cinematic problem (such as the 3D filming system used on *Walking with the Dinosaurs*), or new infrastructure is built (such as the water tanks for *The Meg*) then some skill development also occurs.

Some businesses have formal strategies to enhance this. For example, Weta Digital has a strategy of bringing academics to New Zealand on three month sabbaticals in order to help maintain their technological edge. Finally, there is an increasing range of formal education offerings (see section 11.5) as well as mentoring which is an important component of the 5% uplift agreements (see section 10).

The reported increase in skills is supported by data collected by the Business Operations Survey (BOS). Businesses within the Motion Picture industry are increasingly reporting that the quality of the labour force within the industry is increasing – both in the skilled and unskilled labour market. Figure 5 shows a dramatic increase between 2014 and 2016 – going from 21 per cent of businesses who answered "good" for unskilled labour - to 44 per cent in 2016. There was also a 12 percentage point increase from 31 per cent to 43 per cent of businesses who answered "good" when it came to the quality of the skilled labour force. Both these proportions were higher in 2016 than they have ever been. Although these figures cannot be directly attributed to the grant, they are consistent with our qualitative findings.

Figure 5 Proportion of businesses who reported skilled and unskilled labour market as "good"



Source: Statistics New Zealand, Business Operations Survey

7.4 Crowding out other employment

Crowding out effects exists if, due to a screen production receiving the grant, less labour is available for other jobs within the screen industry (or other industries) than otherwise would have been the case. This can also contribute to wage inflation. This is the issue that we discussed in section 5.4.

Crowding out effects are more likely to be present for jobs that require skills that are more transferable across many sectors. New Zealand is currently in a period of very low unemployment, so it is likely that if people were not able to work in the screen sector (because it did not exist or was much smaller) then they would find other employment. A number of production crew have skills that are readily transferable not as specialised skills but as more generic skills such as electricians or construction labourers. Anecdotally it seems that they would suffer a reduction in wages.

More specialised roles (such as post-production and specialised crew) are relatively internationally mobile and it is likely that many of these people, or even whole businesses, would move to other countries.

8. Direct economic benefit

Box 7 Summary – direct economic benefit

The direct economic benefit of the grant relates to benefits associated with a particular production. Our estimate of economic benefit should not be interpreted as the contribution to GDP of the NZSPG as we excluded some components of GDP where we consider they have limited economic value to New Zealand.

The additional economic benefit associated with activity directly attributable to the NZSPG is $541.5 million, comprising $58.7 million from the domestic grant and $482.8 million from the international grant. This includes both the primary benefits to New Zealand resident cast and crew and domestic producers, as well as the secondary benefits to suppliers and contractors.

Using a Treasury fiscal multiplier, we estimated the value that would have been derived from spending the grant money in a different way. We have also provided an indicator of the value of resources drawn to the screen sector by the incentives that would otherwise have been used in some other way.

We included an allowance for the deadweight cost associated with the net fiscal cost of the grants of 20% of the value of the net additional tax cost.

Our indicative estimate of the direct net economic benefit attributable to the NZSPG is $361.1 million compared to grant expenditure of $177.1 million. Of this direct benefit $25.0 million is derived from the domestic grant and $336.1 million is attributable to the international grant. Based on the evidence available, the economic benefits derived from the international grant significantly outweigh the costs. While the economic benefits of the domestic grant may not outweigh the costs, economic benefit is not one of the key objectives of the domestic grant.

The overarching economic objective of the grant is:

> *"to provide economic benefits to New Zealand by incentivising screen production (and the resulting screen production expenditure in New Zealand) that otherwise would not have been made here"*

In particular the grant seeks to:

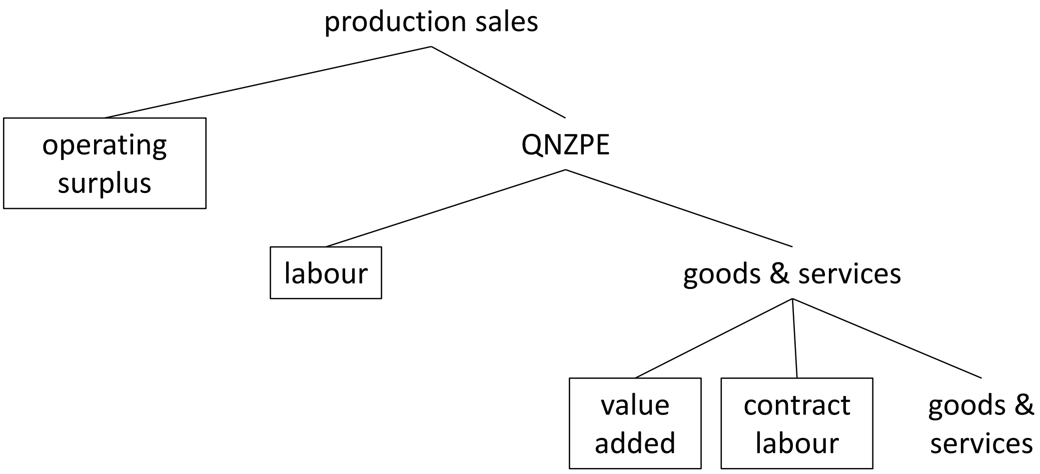
- Increase economic growth in the screen sector by providing a financial incentive to attract international screen productions to New Zealand and support an underlying level of activity in the domestic industry.
- Generate valuable direct and indirect economic benefits, including spill-over benefits for other areas of economic activity, for example through international brand recognition, tourism, innovation and technology transfer.
- Gain additional significant economic benefits for New Zealand for the extra 5 per cent rebate (on top of the base rebate of 20 per cent) through the initial application assessment process for international productions

The economic objective of the NZSPG relates to NZSPG – International. However, as the domestic grant may also give rise to economic benefits, we believe it is also relevant for the purposes of this evaluation to discuss the economic benefits of the domestic grant.

Our estimate of the economic benefit of the NZSPG is based on the total income formed in the production process that is retained in New Zealand. As such, it differs from an estimate of contribution to GDP which would include payments to foreign factors of production (i.e. non-resident labour and overseas corporates including studios).

Figure 6 illustrates how we have estimated the income derived by factors of production employed directly on the production and by suppliers to the producers. The boxed elements are considered to be economic benefits. We discuss our approach to estimating the counterfactual below. More detail about the method and the results is contained in Appendix 2.

Figure 6 The economic benefits of the NZSPG



Source: Sapere

All payments to labour directly employed on NZSPG productions are considered an economic benefit. For domestic productions we have also estimated the gross operating surplus associated with the production. For international productions we did not include gross operating surplus as we assumed this payment goes to the foreign studio. We have included value added relating to suppliers of goods and services included in QNZPE. Finally, to reflect the largely contracting based structure of employment we have estimated labour income received by sub-contractors of suppliers.

In order to limit our estimate of the economic benefits to those effects that are attributable to the grant we made two adjustments:

- All benefits are multiplied by the relevant additionality assumption so that any activity that would continue in the absence of the grant is excluded.
- We have also estimated the economic benefit that could be derived from an alternative application of the grant money by the government based on a fiscal multiplier estimated by the Treasury.

The fiscal multiplier goes some way to estimating the economic benefit of resources that would not be used in the screen industry in the counterfactual. However we are not able to estimate the economic benefit that would be associated with private labour and capital resources that would be available for use elsewhere.

We have also estimated the deadweight loss associated with the net fiscal cost of the grants. The net fiscal cost is met through taxes. Taxes give rise to so-called deadweight loss because they cause people to change their behaviour away from things that are taxed, reducing economic welfare. The Treasury recommends a default deadweight cost of taxation of 20%.[23]

Table 14 Economic benefit, including subcontractors

AES method, central additionality assumption

	Domestic	International	Total
Economic benefit	$58.7m	$482.8m	$541.5m
Counterfactual benefit grant expenditure	$15.4m	$59.0m	$74.4m
Deadweight loss	$4.7m	$5.3m	$10.0m
Net additional benefit	$38.6m	$418.5m	$457.0m
Grant	$36.6m	$140.5m	$177.1m
$ of benefit/ $1 grant	$1.05	$2.98	$2.58

Source: Sapere analysis

Table 14 shows the results of our analysis. The top row shows the economic benefit taking into account our central additionality assumptions. The second row details the expected benefit from applying the grant money to another use based on the fiscal multiplier. The third row is the deadweight loss associated with taxation. The total net additional benefit based on this method is $457.0 million including labour income earned by New Zealand residents providing contract services in the production and post-production sector.

8.1 Resource reallocation

The analysis of the economic benefit of the grant described above overestimates the total net benefit because it does not account for the counterfactual use of the private labour and capital resources that would be otherwise employed in the absence of the grant. It is our view that this is likely to be relatively limited. There are three key reasons for this:

23 NZ Treasury 2015, *Guide to Social Cost Benefit Analysis*, paragraph 42.

- The relatively minor contribution of demand from NZSPG productions to total sales in most of the relevant industries
- The presence of spare capacity in the New Zealand economy during the evaluation period and the uncertainty over the extent to which labour would alleviate any specific shortages
- The high international mobility of skilled workers (and the associated businesses) in the screen sector, particularly in post-production

On this basis, we consider that the lost economic benefits from resources that are drawn to the screen sector by the NZSPG are likely to be limited to those used in production services (including direct employment). As an indicator of the sensitivity of the results to the possibility that production labour and capital would be used in another sector in the absence of the grant, we estimated half the value-added by firms supplying production services to NZSPG productions, including sub-contractors, and half the wages of below the line production labour.

Table 15 Indicator of possible economic cost, including subcontractors

AES method, central additionality assumption

	Domestic	International	Total
Additional benefit	\$38.6m	\$418.5m	\$457.0m
Indicator of reallocated resources	\$13.6m	\$82.4m	\$95.9m
Indicative net economic benefit	**\$25.0m**	**\$336.1m**	**\$361.1m**
\$ of benefit/ \$1 grant	\$0.68	\$2.39	\$2.04

Source: Sapere analysis

The results are shown in Table 15 and suggest that even if the benefit of half the resources used in production services were available from some other sector in the counterfactual, the net benefit is approximately twice the value of the grant. The result for the domestic sector of less than unity is offset by the cultural value of the domestic productions. This is discussed in section 12.

8.2 Regression analysis

As a complement to this analysis, we undertook econometric regression analysis to quantitatively measure the impacts of the grant. We regressed the impact of the grant (both proxied by QNZPE and a time dummy for when the grant was introduced) with employment, wages and value add as dependent variables. We ran a number of model specifications, and key control variables that we used were the USD/NZD exchange rate, GDP and other grants provided in New Zealand. However, we were unable to find any appropriate model that would accurately measure the effects of the grant. This is likely due to the following reasons:

- Limited number of observations. This is due to the short timeframe the grant has been in place, and due to a limited number of observations before the grant.
- Timing issues. We found that there was a large variability in the length of productions, and their QNZPE. For productions under the international grant (including both NZSPG and LBSPG recipients) the minimum length of QNZPE was 77 days while the maximum was 1055 days. The duration of QNZPE for domestic productions (including both SPIF and NZSPG recipients) ranged from 31 days to 2093 days.[24] This creates problems with inference as it is difficult to know when most of the QNZPE was spent during production, and consequently, when the production is likely to have had an impact on the NZ economy.

---

24 This includes productions before the NZSPG. It is unclear if this spread is due to reporting issues or if it represents the true timing of QNZPE spend.

9. Fiscal impact

Box 8 Summary – fiscal impact

The net additional fiscal cost of the grants is estimated to be $23.5 million for domestic productions and $26.7 million for international productions.

This estimate is based on additional corporate tax and GST for domestic productions and taxes associated with labour, and suppliers' profits for both domestic and international productions.

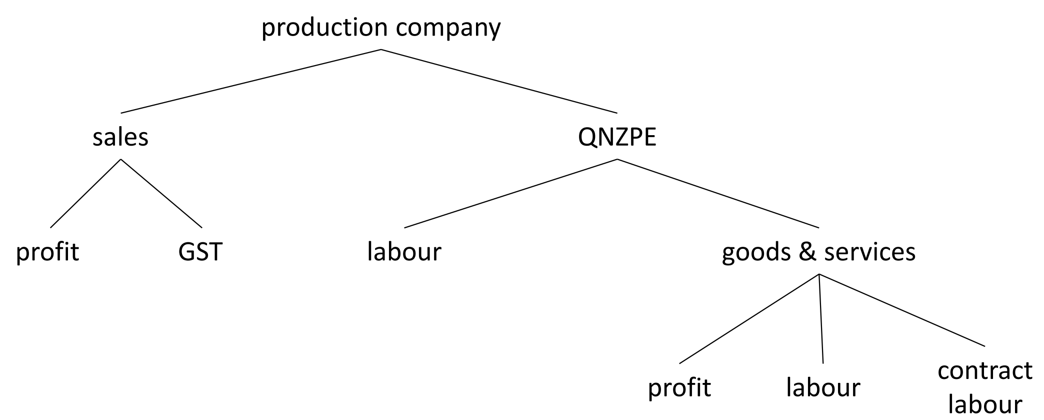
A fiscal cost does not necessarily imply that the grants are not worthwhile as it does not take cultural and broader economic benefits into consideration.

The fiscal impact of the grant measures the effect on the government's fiscal position of the additional stimulus to the economy provided by the grant. Figure 7 illustrates the key fiscal effects that arise from the activity of NZSPG recipients. The effects differ between international and domestic productions. In particular, we have assumed that international productions do not pay tax in New Zealand on any profits and that their output (the completed production) is exported and therefore zero-rated for GST.

We have included all tax revenue associated with the QNZPE expenditure:

- income tax on employees' salaries and wages
- taxes on the profits of suppliers of goods and services
- income tax on suppliers' employees' salaries and wages
- tax paid by contractors

Figure 7 The fiscal impact of the NZSPG



Source: Sapere

The methods we have used to estimate each of these and the detailed results are described in Appendix 3. We have not included GST paid by the production company on goods and services supplied (QNZPE) as this will be claimed back as an input tax credit, and therefore have no net fiscal impact.

All tax revenue estimated to be derived from activity associated with the grants is multiplied by the relevant additionality assumption such that only the additional tax revenue generated is counted as a fiscal impact of the grant.

Our estimate also accounts for the deadweight cost associated with the net fiscal cost of the grant, that is, the difference between the additional tax revenue received and the grant cost. We have adopted the Treasury's recommended default assumption of 20% of the value of taxation as the deadweight cost. Additional detail on the deadweight cost is provided in Appendix 3.

Table 16 Fiscal impact

	Domestic	International	Total
Additional tax revenue	$13.0m	$113.9m	$126.9m
Grant cost	-$36.6m	-$140.5m	-$177.1m
Total net impact including deadweight cost	-$23.5m	-$26.7m	-$50.2m

Source: Sapere analysis

Table 16 shows that using this method we estimate that the total net cost of the grants is $50.2 million. The tax revenue earned from international productions is relatively higher than domestic productions compared to the grant cost. This reflects the relatively higher rate of the grant for domestic productions, and the high labour intensity of PDV.

It is worth noting that a fiscal cost does not imply that the grants are not worthwhile. Domestic productions are partly funded for cultural benefit reasons. These benefits are additional to the tax earned by the government as a result of the economic activity stimulated by the grant. All the productions also give rise to additional economic effects that are discussed in this report but are not measured in the fiscal impact analysis above.

10. Indirect economic benefits

In this section, we describe the indirect benefits associated with the NZSPG productions including those targeted by the 5% uplift.

Box 9 Summary – other economic benefits

In addition to the direct economic benefits associated with the NZSPG there are some other significant indirect benefits associated with the screen industry.

The first economic benefit we discuss in this section relates to the 5% uplift. This additional grant is available to international live action productions that generate significant economic benefit for New Zealand. Expenditure thresholds have recently been introduced to the criteria but the impact of these is not considered here. This grant is not intended to attract productions, but rather targets these additional indirect benefits. There is to date limited evidence on the size of the specific benefits achieved.

More generally, indirect economic benefits of the screen industry include:

- Increased awareness and attraction of tourists to New Zealand as a result of seeing NZSPG films particularly those that showcase NZ landscapes
- Increased tourism spending in New Zealand as a result of the development of visitor experiences by screen sector firms
- Export earnings associated with international tours of New Zealand exhibitions or development of exhibitions and experiences for overseas museums and attractions by screen sector firms
- Attraction of students to creative education opportunities in New Zealand, particularly export education (international students)
- Application of screen sector knowledge, technology and assets to other high tech industries, such as AR/VR and gaming, and to develop technologies for use in the screen industry globally and other industries, such as motion capture technology and drone technology

10.1 The 5 per cent uplift

As mentioned above, one objective of the grant is to:

> *"gain additional significant economic benefits for New Zealand for the extra 5 per cent rebate (on top of the base rebate of 20 per cent) through the initial application assessment process for international productions".*

This grant is for live action international productions. The uplift is approved by the significant economic benefits verification panel including members from the Film Commission and MBIE on the basis of a points test set out in the criteria for the international grant. To be approved for the additional grant, a studio must commit to deliver significant economic benefits to NZ which equal or exceed the value of the 5 percent uplift.

The focus seems to be on achieving the agreed outputs and the benefits achieved from these agreements do not seem to be actively monitored. As a result there is limited empirical evidence to show that the economic benefit outweighs the fiscal cost.

10.1.1 Purpose of the uplift

While the purpose of the 20% international grant is (broadly) to attract international productions and the associated activity to New Zealand, the intention appear to be that the 5% uplift is more targeted towards indirect benefits such as tourism, education and regional development.

This is consistent with the decisions made by the production companies that applied for the uplift: three applications for the uplift have been declined and one withdrawn, all four of these productions remained in New Zealand. One of the six applications during the evaluation period that were provisionally approved subsequently relocated.

However, there is still an attraction associated with the additional grant, at least for first time applicants. Warner Bros executive Michael Walbrecht said that without the 5% uplift, Warner Bros would have pursued other locations for *The Meg*. He acknowledged that they may have come to New Zealand for the 20% incentive, but said that the 5% "got it over the line". The uplift has significantly higher uncertainty associated with it than the 20% grant, and this may be problematic for studios if they cannot be sure that they will achieve the 5%, for example because a third party is required to take some action or make an investment, as was the case with *The Meg*.

Mr Walbrecht noted that while they understood that the 5% uplift would require the company to provide additional deliverables, such as marketing-related programs, the question was whether those requirements more than offset the competitiveness of the grant programme.. He said it was a "much steeper hill to climb in New Zealand" than other places and from 1 July 2017 it was even more difficult to access. He went on to emphasise the importance of certainty and consistency, because the studio has to make a decision quickly and needs to be confident about the financial outcome. He said that in future they would not include the additional 5% in preliminary budgets because it would be seen as a long shot after their experience on *The Meg*. This would mean that New Zealand was not as competitive.

International television producer Rob Tapert described the 5% uplift as "maddening". He says that the "murky" requirements have caught out and caused ill-will with potential production companies. In his view the goal posts are unclear and some people see them as moving over time. He echoed the view that a lot more is required in New Zealand relative to other countries. In his view it would be preferable to make it a financial prerequisite only.

Producer Barrie Osborne's view was different. He noted that he has successfully applied three times for the uplift and is hoping to obtain it for the upcoming Disney production *Mulan*. He articulated the requirements of each side as: certainty (and the uplift) for the studio, and indirect benefits for the NZ economy. To successfully obtain the 5% uplift, both the producer/studio and NZFC have to bargain in good faith and digest each other's goals. Productions only obtain the 5% uplift if the outcome is mutually beneficial. He noted that the studio needs to change its normal practice with a focus on the film by the marketing department from the start, rather than their usual focus when films are ready to release. This can be difficult to achieve, and the uplift also requires a level of expenditure by the studio. This latter could be difficult if the uplift is too uncertain.

10.1.2 Economic benefits of uplift

Ten applications for the 5% uplift have been considered by the Significant Economic Benefits Panel (SEB Panel). Of these five have signed MoUs. In total these have anticipated QNZPE of $506.5 million.[25] The 20% standard international grant totals $94.9 million and the additional 5% uplift is worth $24.6 million.

Key economic benefits from the agreements with the five that have progressed are:

- Tourism marketing. This is discussed in Appendix 4 in relation to *Pete's Dragon*.
- Mentorships for key crew and some cast roles. Mentorships and roles in international films are useful to the domestic screen sector if the people remain in NZ for some period of time after the experience, or later return. It is not apparent to what extent this will occur (see skills development benefits in Appendix 4 in relation to *Pete's Dragon*).
- Promotion of NZ as a film location. Mary Ann Hughes an executive from Disney's production *Pete's Dragon* is reported as having said that the 5% uplift enabled them to film on location in regional New Zealand.

One-off benefits from the productions have included:

- Legacy production facilities at Kumeu. The creation of infrastructure at Kumeu as a result of the 5% uplift for *The Meg* is considered significant for the screen sector. The site is owned by a private landowner and ATEED has a lease to manage the site for 12 years. There was a sense that the reliance on a private individual's decisions introduced excessive uncertainty. However the addition of two sound stages has trebled the capacity in Auckland and the water tanks are unique in New Zealand. The potential economic impact of a capacity expansion of this size is significant (all else being equal).
- Using NZ technology or promoting it. Producer Barrie Osborne highlighted two technologies which have been developed over the course of several films. He considers the stealth drone technology and Lidar 360 scan technology to be applicable to film problems as well as having wider application.
- A partnership with Education NZ to promote NZ as a location for creative sector education internationally (see box below).

More detailed discussion of the anticipated benefits of the *Mortal Engines* MoU is provided in Box 10, and a detailed case study of the economic benefits *Pete's Dragon* is provided in Appendix 4.

25 Of the five applications, only *Power Rangers: Dino Charge* has received final approval and payment, other figures are taken from the initial '5% uplift' application papers and may change before final approval and payment.

Box 10 Education NZ and Mortal Engines: creative sector education

The most recent 5% uplift provisional approval is for Mortal Engines. This is Wingnut Film Productions' latest production, in partnership with MRC, and distributed by Universal Pictures. The estimated QNZPE for the production is $182 million, giving an uplift of $9.1 million. One of the key features of the agreement is a marketing partnership with Education NZ (ENZ) to promote export education in creative sectors. We discussed the anticipated benefit of this partnership with the CE of ENZ, Grant McPherson.

The premise of the marketing will be to showcase how New Zealand's high quality education system supports New Zealand's world-leading film industry. This includes behind-the-scenes footage including interviews showcasing the work of film industry talent who have been through the NZ education system. This approach will leverage New Zealand's existing brand recognition in film and creative industries to place New Zealand as a centre for excellence for education in film and television and related sectors. This is explicitly linked to the "New Zealand Story" which (in part) seeks to change the perception of New Zealand as "just landscapes" in particular highlighting innovation, creativity and depth of skills and experience. Mr McPherson said that ENZ is "trying to reposition NZ around some core competencies."

Mr McPherson sees the outcomes being targeted as not just the number of students, but also the courses they are enrolled in, and the potential to target more profitable courses where NZ has a comparative advantage, as well as the value created in the industry. He noted that there are some constraints in the industry because of the limited talent pool, and that there are potentially high value jobs in the screen sector.

The agreement with MRC may allow some individual providers to also use the marketing material, although the studios are sensitive about how their content is used. Mr McPherson saw this as a significant benefit, noting that only Tourism NZ was included in marketing agreements in previous uplift decisions. Mr McPherson said he expects the approach to marketing creative industries to be a partnership between ENZ and the relevant institutions and probably the regional economic development agency.

ENZ will "coat-tail" off Universal's marketing when Mortal Engines is released, particularly where the two entities have the same target markets, specifically USA, Japan, China and Korea. In terms of the lag between media coverage and the economic benefit Mr McPherson expects this to be relatively short. The first movie trailers are expected late 2017 or early 2018 with a release date for the movie set in late 2018. ENZ will work through this whole period and expects to see some increase in student numbers in late 2018 and 2019 with the most significant effects in 2020 and 2021. ENZ is already looking to the future with hopes for a sequel which would make the currency of the campaign more enduring.

In Mr McPherson's view it is important that Weta Group is involved in Mortal Engines as this local connection helped ENZ to connect with the right people and allowed a collegial relationship to be developed. He considered it sped up the process and enabled a mutually beneficial outcome for ENZ, Weta and the studio. He suggested that the new business relationship would allow ENZ to work with the Weta Group to build the industry and drive growth (presumably in both education and screen production sectors). It has created other opportunities such as securing Richard Taylor to speak at a global education event, which sparked interest in New Zealand's offerings, and identifying that a global shortage of production accountants exists which encouraged ENZ to connect with Chartered Accountants Australia and New Zealand.

While it is not possible to say at this point to what extent the anticipated benefits will be realised, the intuition seems compelling. As Mr McPherson said, while there is "nothing very New Zealand in the [Mortal Engines] movie – behind-the-scenes is all about New Zealand". Leveraging the production of a successful movie to increase the attractiveness of NZ creative sector education (particularly export education) and in turn build resources to enable the screen production sector to grow has a mutually reinforcing effect. It seems likely that the agreement to have access to industry talent footage and other promotional material at both national and institutional levels would not be achieved without the uplift and further that it is likely that it will accelerate or result in a step-change in the anticipated outcomes.

10.2 Other indirect benefits

One of the objectives of the grant is to help generate valuable benefits for other areas of economic and industry activity, for example through international brand recognition, tourism, export education, innovation and technology transfer. We have described these benefits that are outside the direct screen sector activity as indirect benefits.

These benefits accrue to parties not necessarily directly involved in the sector. Their distance in time or place from the original activity means it can be difficult to establish the extent to which they are attributable to the original activity and measure the effects. Nonetheless, they are very important to take into account when determining economic and industry values of a certain policy.

For the screen industry, perhaps the most distinct and notable indirect effects are in tourism and merchandise sales. For instance, when tourism is stimulated by a desire to visit film locations or settings – attractions, hotels and restaurants will experience higher income and higher employment.

Another indirect effect is the attractiveness of a place as a creative place to draw other creative people and industries; this seems to be particularly the case for Wellington. Wellington markets itself as the "creative capital". There is some international evidence that where creative industries are co-located with other sectors the economy grows more quickly.[26] It is hoped that this will increase the indirect benefits from the sector. There are also benefits to other tech sectors.

Below we discuss in more detail indirect benefits related to tourism, education and other tech sectors.

[26] See for example www.brightonfuse.com

10.2.1 Tourism benefits

While there is relatively limited monitoring of the extent to which tourists arriving in New Zealand are motivated by screen productions, Tourism NZ and Air NZ were consistent in their views that film tourism is an important motivator for those considering travel to New Zealand. Films and associated tourism advertising and media related to films raise awareness of New Zealand and in the case of films that showcase the landscape the desirability of travel here. This may have a regional effect if fans visit particular locations. The only data available relates to *Lord of the Rings/The Hobbit* and while the effect of other films may be less significant or of shorter duration there is industry and anecdotal evidence and economic literature that indicate it is nonetheless a real benefit.

Duncan Small, the head of government and industry affairs at Air NZ particularly emphasised the importance of film tourism for the North American market. Of the 120 million North Americans who have a passport, 30 million, based on Air NZ research, would like to come to New Zealand sometime in their lifetime; they are termed "active considerers". Of these active considerers, slightly less than one per cent, or about 250,000-300,000, visit each year. These tourists are high value tourists who often travel at the front of planes. Based on the overall number of active considerers, there is significant potential to increase the number of visitors from this segment.

However, North America is a hard tourist market to access, partly because it is hugely saturated in terms of advertising. Mr Small estimated that in total NZ probably spent $20 million in purchasing media in North America, and compared this to $750 million that he said was spent by Unilever on Dove soap. This is why Air NZ works hard to get cut-through with earned media (i.e. media coverage that they do not directly pay for), such as their safety videos and links to films. This is the same approach that is used by Tourism NZ for the 5% uplift benefit (see Appendix 4).

Mr Small estimates that up to one third of North Americans who have holidayed in New Zealand in the last 18 years have cited the *Lord of the Rings* as the number one reason they have visited. This is the reason that Wellington International Airport is decorated with *Lord of the Rings* themed items and that Air NZ painted the *Hobbit* dragon Smaug on their plane.

Air NZ has a partnership with Disney which allows it to use *Pete's Dragon* and *Moana* assets. Mr Small described this as their "number one play" in marketing NZ as a destination to North America. Attracting studios to film in New Zealand provides the platform for this type of marketing campaign. Although there is a long tail for some film tourism it does decay over time, meaning that it is important that new films continue to be made in New Zealand to sustain this type of tourism. Although *Lord of the Rings* and *The Hobbit* franchises are the most cited, it is a repeated phenomenon and *Avatar*, *Xena* and *The Last Samurai* are other examples of screen sector drawcards for tourists. Other destinations also use film to attract tourists, for example Croatia is now seen as a significant competitor for North American holidaymakers to NZ, as Game of Thrones was made in Dubrovnik.

A relationship with the studio is essential to this type of tourism marketing because they own the content, and the film-making ecosystem in NZ has created connections with Hollywood and lends credibility to New Zealand tourism businesses. Specifically, Sir Peter Jackson and Sir Richard Taylor have facilitated introductions for Air NZ.

The second key market for film tourism for Air NZ is China. Chinese film and television activity in New Zealand is helping get cut-through in the Chinese holiday maker segment. Air NZ focuses on young affluent double income Chinese couples and extended families planning a big holiday. They consider that these people engage in cultural activities and watch movies. There are strong connections particularly between the Weta Group of companies and the Chinese film and television industry including the upcoming Pūkeko Pictures co-production *Kiddets*, and the recent record breaking blockbuster *Wolf Warrior 2* which used Park Road Post.

Air NZ also directly benefits from the film sector travel to NZ as well as on the LA-London route which Mr Small said was an important source of revenue.

In addition to the attraction factor, if a visitor remains in New Zealand for an additional day to experience a film tourism activity, or visit a film location this also creates additional benefits for accommodation, restaurant, transport and potentially other sectors of the economy.

Box 11 Links between Te Papa Tongarewa and the screen sector

Te Papa Tongarewa encapsulates a number of the indirect benefits from the film industry. A large proportion of visitors to Te Papa are tourists, and the film sector is directly contributing to the attraction of those visitors, through the development and construction of visitor experiences.

- One and a half million people have seen the exhibition "Gallipoli, the scale of our war", which Geraint Martin (Chief Executive of Te Papa) says has driven overall visitor numbers to Te Papa during the period since it opened in 2015. The Gallipoli exhibition was conceived by Te Papa and brought to life by Weta Workshop.
- Bug Lab was jointly conceived by Weta Workshop and Te Papa. Designed to stimulate interest in science and technology subjects. The Bug Lab exhibition is now touring internationally until 2022 showcasing NZ ingenuity and Weta's technical skills in Australia, US and Korea, and providing an export income stream to Te Papa.
- Te Papa is planning to be a safe place for challenging conversations, which may open a number of opportunities to work with the screen sector. Te Papa is exploring links between the real objects in their collection and digital curation. For example, creating a digital resource of their art collection. Mr Martin suggests that this could subsequently be linked to other associated material, including film, a process he described as "thinking horizontally". He was keen to emphasise that film-making should be part of our cultural discourse suggesting that links be created between Te Papa, Nga Taonga and the NZFC to ensure that New Zealand's heritage story is told.
- Te Papa established an "innovation accelerator" Mahuki in 2016. The goal of Mahuki is to grow sustainable, scalable businesses that develop experiences and solutions for the GLAM sector (galleries, libraries, archives and museums). Some of the ideas brought to the accelerator and some of the skills are from the film sector, in particular Weta Digital. In addition the programme offers mentorships and workshops from staff from the likes of 8i and Magic Leap (which are in turn connected to Weta Digital and Weta Workshop).

The film sector ecosystem in Wellington appears to be having positive indirect effects for Te Papa, in terms of the exhibitions it can mount and earn income from, as well as developing solutions and experiences. These contribute to the attractiveness of Te Papa to international tourists and reinforce the establishment of a creative/technology hub in Wellington.

Air NZ also directly benefits from the film sector travel to NZ as well as on the LA-London route which Mr Small said was an important source of revenue.

In addition to the attraction factor, if a visitor remains in New Zealand for an additional day to experience a film tourism activity, or visit a film location this also creates additional benefits for accommodation, restaurant, transport and potentially other sectors of the economy.

As an example of the indirect benefits generated by the screen sector in the tourism sector Box 11 discusses the benefits that *Te Papa* Chief Executive Geraint Martin attributes to their links to the film industry.

10.2.2 Tech sectors

As part of our research we spoke to several firms in Wellington that are in what might be considered "tech" sectors. The key messages that we took from these interviews was that the film industry should be seen as a talent and technology breeding ground that has the potential (and does) feed a range of other industries for two reasons:

- International film productions provide the opportunity to push the "bleeding edge" of technology. The significant budgets and high pressure environment, as well as the significant computing capacity at Weta Digital, mean that "the film industry is one where technologies get invented" (Tom Kluyskens).
- There is a significant overlap between the body of knowledge used in the film sector and what can be applied to other industries.

Wellington was seen as the hub for technology businesses in NZ, and this appears to be strongly linked with the presence of the Weta Group. WingNut AR was spun out of Weta Digital, a geographically separate incubator with 16 staff led by Alasdair Coull, the former Weta Digital Head of R&D. The intention of separating the division was to encourage innovation. The goal is to leverage existing assets using them in a gaming engine in an AR environment. This potentially generates additional economic benefit from the incentive.

While there are no public plans for a commercial release from WingNut AR, it showcased a demo of its work at the 2017 Apple WWDC (Worldwide Developers Conference). The demo was developed using the Unreal Engine 4 game development tool on Apple's ARKit platform. Reports suggest that this is an R&D phase for the company: "we've been figuring out what is fun, and how we tell stories and entertain people in AR. There are a lot of challenges, both technical and creative, when creating exciting AR experiences and this past year has been about building the tools and doing a lot of interesting exploration."[27]

[27] Alasdair Coull, quoted at http://www.cartoonbrew.com/vr/inside-peter-jacksons-new-augmented-reality-studio-151959.html accessed 7 November 2017.

Toni Moyes, formerly of 8i expressed the view that New Zealand's tech sector overall has been significantly strengthened by the Wellington hub, without which we would not have the same level of technical expertise in the talent pool. Many of the people working in AR/VR have film industry experience. The two founders of 8i moved to NZ to work for Weta Digital. Lance Lones of L2VR, which manufactures cinematic VR camera systems, explained that his experience at Weta Digital was the lynchpin of his business ventures he considered that this "domain knowledge" is important.

Another point raised in our interviews is the credibility derived by association with the Wellington film industry. Toni Moyes explained that the reputation of the film industry for excellence increased the attractiveness of investment in 8i: they have raised approximately US$40 million in venture funding from a mixture of NZ and offshore investors.

Another benefit of the high tech sectors is that they are largely export-oriented which is beneficial for economic growth and employment. The application of the outputs of these sectors can also be fairly broad, for example there are a number of applications of AR/VR technology to education and industrial training, brand and marketing as well as entertainment. Lance Lones' camera hardware has been used by environmental documentary filmmakers for example to demonstrate the effect of rising sea levels.

10.2.3 Other activity by screen sector businesses

Through our interviews it became apparent that a number of screen sector businesses, particularly those that supply props or equipment for use in filming (such as cameras), also supply other non-screen sectors. Often these businesses have a core screen production business which supports the other activity.[28] This section provides examples of the indirect benefits of screen activity in the form of non-NZSPG activities undertaken by Weta Group companies Weta Workshop and Weta Digital, as well as Human Dynamo.

Weta Workshop epitomises this phenomenon. Over the past couple of years, general manager David Wilks explains that the structure of the Workshop has changed moving to a more managerial structure with a greater diversity of activity. Mr Wilks described the Workshop as a "diversified creative artisan studio".

The incentive is, according to Mr Wilks critical to the ability of the Workshop to obtain work and the currency of their screen sector work in turn underpins these other business offerings.[29]

- Tourism has become a significant part of the revenue structure of the Workshop with 140,000 paid tours each year. This revenue is relatively certain (compared to production revenue) and induces further activity in the Wellington economy as a commission is offered to tour operators who include the Weta Cave as part of their offering. Mr Wilks

28 There are obviously many suppliers to the screen industry that also supply other industries. In this section, we are looking at screen sector businesses that also do something else.

29 Mr Wilks described the Workshop's "competitors" as companies such as Legacy Effects, KNB, Ironhead and ADI, which are all based in California. The PDV incentive has assisted Weta Workshop to secure work against these competitors. The 2017 feature film Power Rangers is an example of this.

noted that the relevance of the Workshop as a current film maker was important. This activity is leveraged from the incentive.

- Weta Workshop has license agreements with some of the studios it has worked with on movies to produce consumer products. Although initially focused on the Lord of the Rings franchise an increasing number of movies have been licensed and 12-15 staff now work in this area. Products are wholesaled to retailers as well as sold direct to consumers. This activity is also related to the work the Workshop does on films, and is therefore leveraged from the incentive.
- Workshop also now has its own consumer product, board game *Giant Killer Robots: Heavy Hitters*. The game was funded with a kickstarter campaign (where fans pre-buy the product). The goal of the campaign was to raise $100,000. This was achieved in less than 5 hours and by the end of the 31 day campaign $1.2 million had been contributed. This is significant for Workshop because the IP belongs to the company (unlike the licensed consumer products) and they are now considering options to leverage this including apps.
- Weta Workshop started work on the *Gallipoli Scale of our War* exhibition in 2013. Exhibitions and visitor experiences are a growing part of the Workshop's business. The "Bug Lab" exhibition is now touring internationally (see Box 11). Dr Grordbort's a creation of Workshop employee Greg Broadmore is a retro-science fiction universe. The IP is owned by Stardog a company established by Richard Taylor and Tania Rodger to "help young creative artists within the Workshop to develop their own creative endeavours and sculpture collections and then to present these to the world".[30] The world of Dr Grordbort's has given rise to consumer products (e.g. rayguns and a board game), graphic novels, and an exhibition that is currently touring in China; development of a game using the *Magic Leap* AR platform is well advanced.[31]
- Napier City Council recently announced that it has given Weta Workshop creative licence to come up with a design for the renovation of the National Aquarium. This connection was at least in part a result of the success of the Gallipoli exhibition.
- Sculptural work is also part of the Workshop portfolio. For example, Weta Workshop is manufacturing a maquette of a sculpture designed by American sculptor Sabin Howard. The sculpture depicts the role of the US in World War I and the maquette will be used to raise money for its construction as a memorial in Washington. Workshop and Stardog together provide creative inspiration and philanthropic funding for creative arts. For example, Max Patte previously headed the sculpture department at Workshop, while also creating his own works (including Solace in the Wind on the Wellington waterfront). He is now a full-time artist. The key question for this evaluation is whether with such a diversified activity base the Workshop would be sustainable in the absence of the incentive. David Wilks' view is that ongoing film work is critical for the Workshop. This is for two key reasons: first that talented employees are attracted to the Workshop because they want to work on film projects and second that the customers in a number of cases are film fans, who are attracted by the currency of the films Weta

30 http://wetaworkshop.com/about-us/friends-and-allies/

31 http://drgrordborts.com/news-reel/tremendous-magic-leap-transmission/

Workshop has worked on. Mr Wilks considered that this relevance was important at least for tourists and for sales of consumer products.

Weta Digital has a much narrower focus on international productions than Weta Workshop, but it still has links to smaller New Zealand work including the colourisation of photos in the *Great War Exhibition* at Pukeahu National War Memorial Park.[32] Weta Digital created images for a road safety campaign of what five young people who died in car accidents would look like in 2015, if they had survived.[33]

Like Weta Workshop, Human Dynamo has diversified to non-screen activities, albeit on a smaller scale. Originally focused on making props for commercials, this market disappeared with the move to international, digital advertising and Human Dynamo moved into the film sector.[34] The film sector is a focus for the business, but there is a steady stream of other work between the film productions. Human Dynamo won the fastest growing mature business category in the Deloitte Fast 50 in 2016. Founding Director Rob Uivel points to the grant underpinning this, he estimated that his business has approximately doubled the number of employees since the NZSPG. This has spilled over into other work including design and prototype building of drone technology (used in security), advertising (e.g. Whittakers), exhibition work including trade shows such as Field Days and visitor experience centres, including at Curio Bay, Te Papa and Waitangi, and making trap enclosures for the Department of Conservation.

32 This exhibition was created by Sir Peter Jackson and it is unclear to what extent this caused the link with Weta Digital, or if it would have completed the colourisation for an independent party.

33 https://www.fastcompany.com/3046464/with-help-from-weta-digital-a-new-psa-shows-what-young-car-crash-victims-would-look-like-now

34 Although we note that there is still a significant market for live action production of commercials in some parts of New Zealand, notably Otago.

11. Industry development and sustainability

The overarching industry objective of the grant is:

> *"to encourage New Zealand screen businesses to develop resilient business models by, for example, generating and controlling New Zealand-owned intellectual property (IP) and/or developing technology and innovation that are hard to replicate".*

In particular the grant seeks to:

- Build the sustainability, scale and critical mass of the domestic screen industry.
- Support the development of capable internationally successful New Zealand creatives who can attract investment, generate IP and participate in the New Zealand screen industry.
- Facilitate making more New Zealand productions in the middle production budget bracket ($15m-$50m) with high production values that attract international as well as local audiences.

The industry development objective straddles both the domestic and international part of the grant. This section focuses on the first two objective detailed above. The third objective was discussed in section 4 where we noted that while productions in the defined budget bracket have not been made to date, international audiences are a key focus of New Zealand producers particularly for television productions.

In the first part of this section we describe data from the Statistics New Zealand's Screen Industry Survey (SIS), the Annual Enterprise Survey (AES), the Business Operations Survey (BOS), QNZPE data obtained from the Film Commission, and interviews with industry stakeholders. This data relates to the "sustainability, scale and critical mass" of the screen industry.

As noted previously, the ex post grant framework means that there is a delay in reporting activity. This means that QNZPE data does not match well with official statistics such as the Screen Industry Survey. For example we expect that the surge in film production revenue in 2016 in Auckland was likely to be associated with *The Meg* which has not yet been recorded in the QNZPE data.

Later in this section we look at whether there is evidence that the grant supports the attraction of investment and New Zealand creatives to be internationally successful, including through developing entrepreneurialism and innovation or IP.

Box 12 Summary – industry development and sustainability objective

Statistics New Zealand data shows that the screen industry has grown strongly recently, with gross revenue increasing by 26 per cent between 2014 and 2016. The production and post-production components have led this growth. Data on business performance indicators suggests that the motion picture industry has strengthened more rapidly than the rest of the economy, with particularly strong results in 2016. The size of businesses has been increasing which may indicate consolidation and sustainable business models. This data is consistent with the qualitative findings from our interviews.

There is quantitative evidence that television productions and formats that were funded by the grant have attracted international audiences consistent with the goals of the grant.

The generation of IP is a goal of the grants and this seems to be more consistently occurring in domestic productions, and was associated by producers with the creative freedom offered by the grant. In contrast, international productions are more likely to be innovative in terms of the techniques that they are developing and using. The latter may have broader applications outside the screen sector and the international sector suppliers appear more likely to be associated with indirect benefits particularly in the high tech industries (see previous section).

The industry continues to rely on the grant. It is our view that large budget international productions and PDV would not be attracted to New Zealand without the grant due to the international price competition. There was a consistent view that there is a symbiosis between the international and domestic productions with the former offering skill development and budgets for investment and innovation and the latter a more consistent pipeline of work. Some larger (international-focused) suppliers provide informal support or reduced prices for local productions. This suggests that eliminating the international segment would limit the growth potential of local creatives and other specialised workers, with an associated quality effect on local productions. It may also encourage those with specific expertise to move overseas.

In the absence of the grant some domestic production would cease, there is also likely to be a quality effect as budgets decrease, and international audience attraction would be reduced as productions are targeted to meet the criteria of other more specific funders. Infrastructure investment would also be severely constrained in this scenario limiting the volume and quality of productions that could be made.

11.1 Impacts on Screen Industry businesses

11.1.1 Size of the screen industry

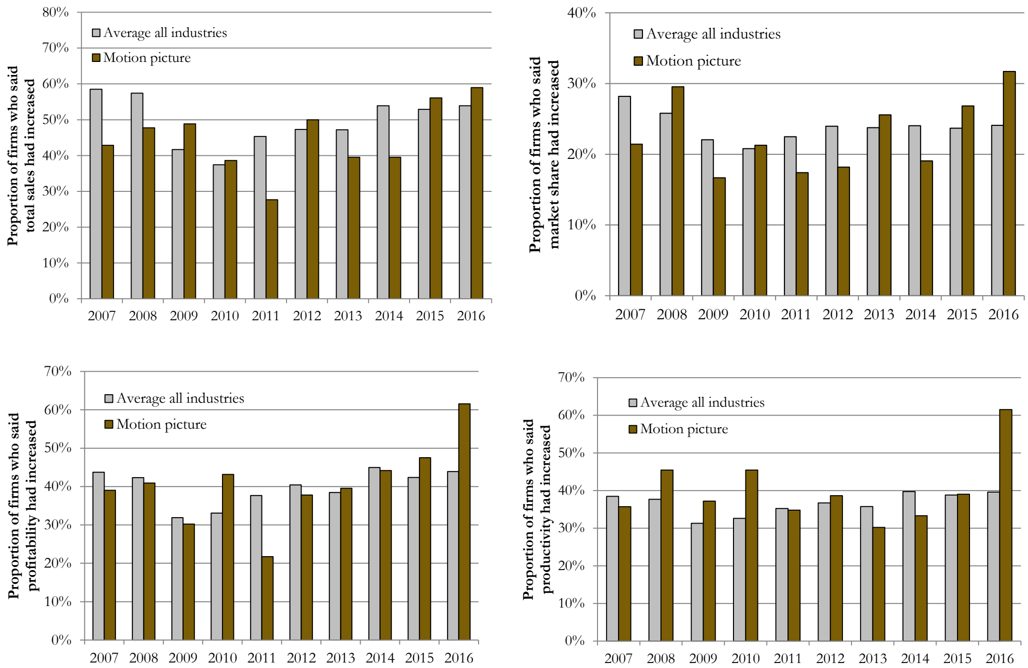
The businesses that we talked to have all experienced growth since the NZSPG was introduced. For example, producer Matthew Metcalfe said that he has gone from a sole operator (in 2008) to eleven full time staff in New Zealand and two in Australia. He attributed this to the ability to start a film with "equity in the game…from day one we can have up to 40% of the budget." This story was repeated to greater or lesser degrees by all our interviewees with the exception of Avalon Studios. The key issue for Avalon is the difficulty of attracting significant capital investment in an uncertain operating environment. We discuss this further below.

There was a sense also that the domestic grant has enabled a more professional local screen industry, and that this professionalization has opened doors for local producers to overseas studios and private funding.

This is also consistent with what we see in the data. For instance, firms within the motion picture industry report that their Key Performance Indicators are increasing. In 2016, the proportion of firms who reported an increase in total sales of goods and services, profitability, productivity and market share, was higher than all previous years. As shown in Figure 8, the largest jump was in productivity, which went from 39 per cent in 2015 to 62 per cent in 2016.

Figure 8 Key industry performance indicators

Top row: total sales, market share; bottom row: profitability, productivity



Source: Business Operations Survey

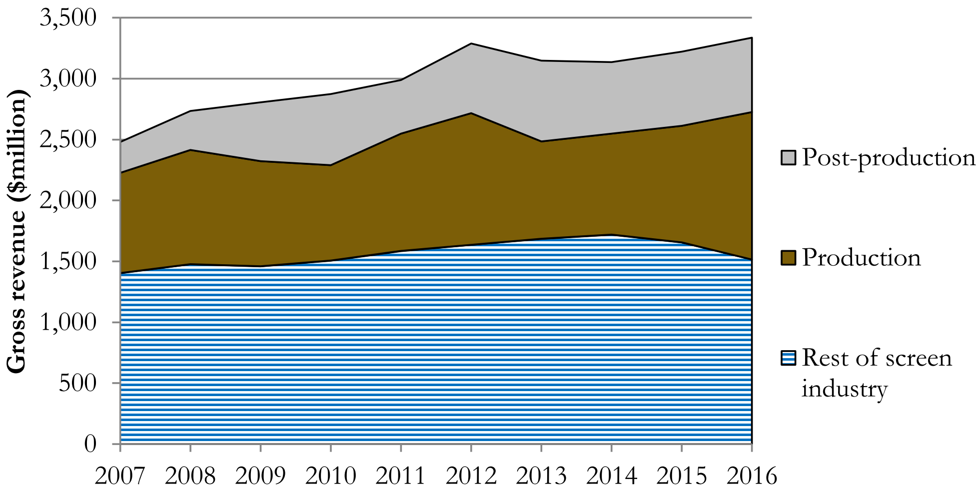
We are unable to be conclusive about how much of this increase can be attributed to the grant as there may be other factors that play a role. Nevertheless, our qualitative findings suggest that the grant plays an important role in production and post-production firms' growth. Notably since the changes to the incentive scheme in 2014 these indicators have generally outperformed the average for the economy, with a particularly strong 2016 result.[35]

[35] Statistics New Zealand does not provide an economy-wide measure of these indicators. To construct this measure we aggregated all the "increase" responses by industry and compared it to the total number of

Gross revenue by production and post-production businesses in the SIS, also shows the sector has grown since the introduction of NZSPG. This is mainly driven by the production sector which has grown 46 per cent between 2014 and 2016, from $830 million to $1.2 billion in gross revenue. Over the same time period, the post-production sector grew 4 per cent, from $587 million to $611 million in gross revenue. Together, the production and post-production sectors generated $1.8 billion in gross revenue in 2016, 26 per cent more than in 2014. Again, while we cannot be conclusive about how much of this increase is due to the grant, it provides an indication of the scale of the industry. Taken with the qualitative data from the interviews this suggests that the goal of increasing the scale of the industry is being met.

To get a sense of how the production and post-production sector relates to the rest of the screen industry, Figure 9 shows how the sectors' gross revenue compared to the rest of the screen industry. In 2016, the sectors' share of the industry's total gross revenue was higher than any other year in the sample – 54 percent. The gross revenue within the production sector was also higher than it's been before. For post-production, the gross revenue was slightly higher in 2013 ($663 million compared to $611 million in 2016).

Figure 9 Gross revenue, 2007-2016



Source: Statistics NZ Screen Industry Survey

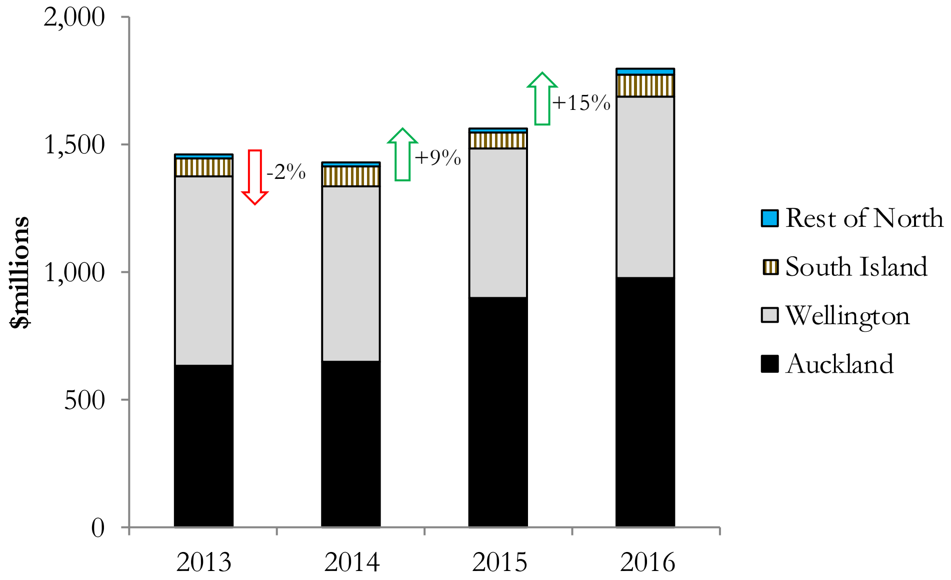
Figure 10 illustrates the total gross revenue between 2013 and 2016, split by region. Overall, the gross revenue for the sector increased 26 per cent between 2014 and 2016. This is after seeing a decrease in revenue (by 2 per cent) just before the introduction of the grant. There is limited evidence of the reported slump in activity in late 2013. From discussion with those in the industry, this is because the (post-production) activity associated with *The Hobbit* maintained industry revenue in 2013, and the relatively mobile sector meant that activity in 2014 picked up quickly once the NZSPG was in place (it was announced at the end of 2013).

responses for all industries. This measure therefore assumes that the industry sample sizes reflect the relative size of the industries in the economy.

This explanation is consistent with the QNZPE data which shows only one production was started in 2013, compared to six in 2012 and seven in 2014.

While all regions have increased revenue since 2014, Auckland based businesses have experienced by far the strongest growth. Between 2014 and 2016, revenue increased 52 per cent. This was mainly driven by an increase in revenue from feature films, which increased by 114 per cent between 2014 and 2016.

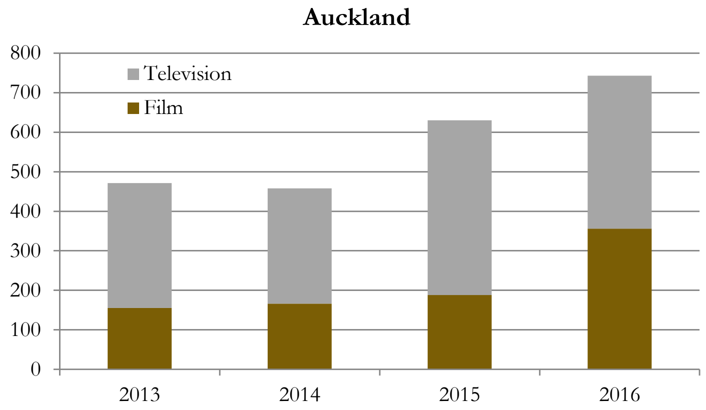
Figure 10 Gross revenue, production and post-production businesses, 2013-2016

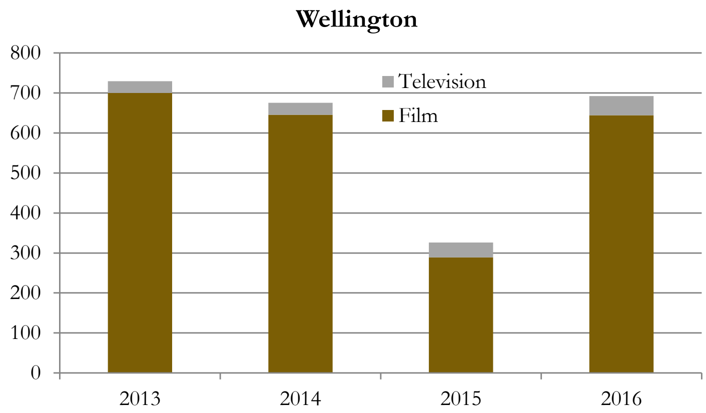


Source: Data from Screen Industry Survey, Sapere Analysis

Revenue for Wellington-based businesses increased by only 2 per cent, mainly driven by a 60 per cent increase in revenue from television programmes. As can be seen from Figure 11 there is volatility in the sector as individual productions can influence annual outcomes. For example in 2016 *The Meg* was shot in Auckland, and Stephen David Entertainment produced a TV programme in Wellington, having previously been based in Auckland.

Figure 11 Gross revenue, by format, Auckland and Wellington





Source: Statistics NZ Screen Industry Survey

11.1.2 Sustainability of businesses

The size of businesses in the sector may be an indicator that the screen sector is becoming more sustainable, which is part of the industry development objective.

The increase in gross revenue by businesses appears to be due to businesses growing, rather than new ones entering the market. This suggests that businesses may be becoming more sustainable.[36] The number of businesses in the production and post-production sector decreased by 7 per cent between 2014 and 2016.

There is no available data for 2016 of businesses split by gross revenue range. However, when comparing the percentage change 2014-15 (Table 17), there is a clear indication that there has been a decrease in businesses with revenues under $100,000, and an increase in businesses with larger revenues. However, the sector is still dominated by many small businesses and a few large ones. In 2015, just over 90 per cent of screen industry businesses had gross revenue below $500,000.

---

36 Sustainable in this context does not imply internationally competitive with no incentive. Rather it suggests a business that is likely to continue to operate at least in the short term.

Table 17 Revenue range, production and post-production sector

Gross revenue range (NZ $million)	Number of businesses 2013	Number of businesses 2014	Number of businesses 2015	Change 2014-2015
10+	18	15	21	40%
1–9.9	81	96	105	9%
0.5–0.9	75	81	87	7%
0.1–0.49	1,185	1,266	1,404	11%
Less than 0.1	1,533	1,440	1,212	-16%
Total	**2,892**	**2,892**	**2,832**	**-2%**

Source: Data from Screen Industry Survey, Sapere analysis

The significant revenue increase by Auckland based businesses meant that Auckland generated more revenue than Wellington in 2016. The success of the Kumeu Film Studio may be key to the sustainability of this.[37]

As expected most screen industry businesses have their main location in either Auckland or Wellington – with 46 and 41 per cent of the businesses respectively in 2016.[38] Outside of Auckland and Wellington, Otago has the largest share of screen industry businesses – making up 3-4 per cent of total.

Further to these findings, there has been no significant change in the location of production activities across New Zealand. Most production activities take place in Auckland (on average 75 per cent of businesses undertook producing activities here over the last four years), followed by Wellington at an average of 36 per cent.[39] Canterbury and West Coast follows Wellington, with an average 25 per cent.

[37] Kumeu Film Studios is a legacy of T*he Meg* production, see section 10.1

[38] These numbers include businesses within the whole industry – not just the production and post-production sector. Therefore, we cannot draw any valid conclusions of how the number and revenue of businesses within the sector differs at a regional level.

[39] These ratios don’t sum up to 100% as businesses carrying out production activity may work in many regions throughout the year.

Box 13 Mechanic Animation: a sustainable business supported by the incentive

Mechanic Animation is a Wellington-based animation design and creation company. Marvel Animation Studio is Mechanic's primary client; their 15th production with Marvel was slated for January 2017. Mechanic's Chief Executive Greg Harman explained in our interview with him in October 2016 that because labour costs are lower in India, South Korea and China productions are animated in Asia with the less labour-intensive, more technology-driven aspects of design and finishing provided by Mechanic.

Prior to 2014, Mechanic was based in Australia with the work outsourced to NZ. After 2014, with the incentives available the Australian business was closed down and the relationship with Marvel is directly with the NZ company. Mechanic has grown rapidly since 2013 when it employed approximately 12 people (the majority on a contract basis), increasing to 20 in 2014/15 and around 45-50 in 2015/16. Mechanic Animation had a turnover of $5-6 million in 2016 and Mr Harman estimated this has doubled since 2014.

Mr Harman noted that changes to the way Marvel is producing have changed Mechanic's business model, previously there were 2-3 month gaps between seasons, now the productions overlap allowing Mechanic to retain staff. Mechanic is also diversifying their client base, including contracting to Pūkeko Pictures for work on *Kiddets* TV series (a co-production with China). Mechanic has one original property (a TV series) on the market ready for sale with a second property in development. While the original work was clearly a secondary priority to their commissioned projects, Mr Harman appeared committed to the projects. Mechanic staff have been working on a mobile game called Astropods in order to learn the method and workflow of building this type of production. Mr Harman's intention is that this will enable Mechanic to provide a game and app development service in relation to their current work.

Mr Harman's view is that the budget is the number one criteria for Marvel.

The majority of Mechanic staff are contractors. They tend to be recent graduates often from Auckland's Media Design School, Massey University in Wellington or Southern Institute of Technology in Invercargill.

He indicated that Mechanic has approximately 18-24 months of work in its pipeline. This confidence has seen the business move to employ (rather than contract) a number of senior managers and artists.

11.2 Generation of intellectual property

The finding from our interviews is that IP is more likely to be created in domestic productions but that the screen businesses providing services to international productions are often highly innovative.

In our 2016 study of the international part of the grant, we found that there was some evidence of innovation in the sector. Our qualitative findings showed that there is a clear focus on research and development to solve a particular problem and the resulting solutions are not patented or protected in any way.

Roger Murray at Main Reactor said "R&D [research and development] is a part of the culture. How do we do it better, faster, cheaper over a longer period of time?" Weta Digital does not generally bother patenting their work, partly because the techniques are dynamic so patents would rapidly be outdated. Also partly because they consider the contractors embody the solutions and so the ideas and solutions would move with the person anyway.

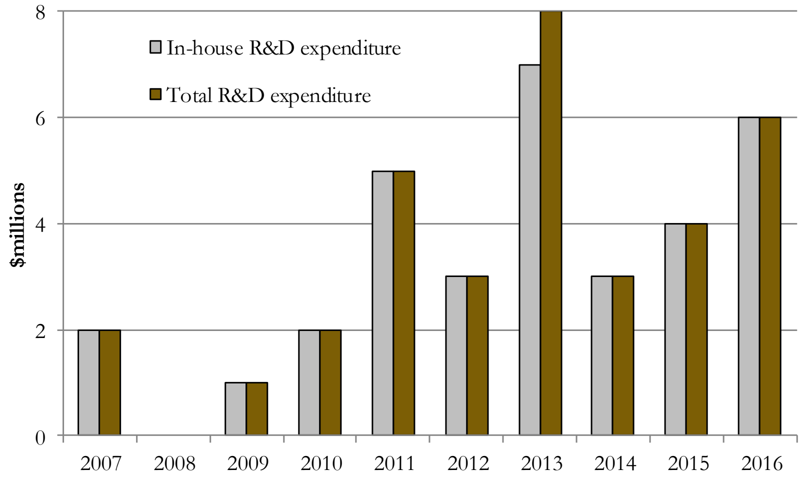
David Wright of Weta Digital explained they are "trying to stay ahead of the game, rather than protecting the past". Weta Workshop's David Wilks agreed saying that the IP is more in the creative thinking than the technical solutions. Main Reactor has a similar approach with a focus on problem solving quickly and then moving on. Cameron Harland, the former Chief Executive of Park Road Post, did indicate that there is some appetite for developing patentable work, citing the visual and augmented reality technologies. Mr Harland described an app developed for Sir Peter Jackson that, with additional investment in R&D, had the potential to be commercialised and hold a unique position in the industry.

As mentioned in our 2016 report, the focus on solutions suggests expenditure on R&D could be monitored rather than patenting activity. Weta Digital said they invest over $20 million per annum in R&D, giving examples of the visual effects painting tool, Mari, and visual and augmented reality developments. They also collaborate with universities in NZ, France and Germany. In 2016, Weta Workshop had recently employed a R&D specialist with a view to spinning off ideas into other areas.

Callaghan Innovation has recently provided a $450,000 loan to Moxion, an Auckland based start-up that has developed a secure platform for reviewing digital dailies. This platform has been used by a number of international productions, as well as local productions including Hunt for the Wilderpeople. We understand *The Meg* also used this platform.

The qualitative findings are consistent with the data. Figure 12 shows a steady increase since 2014 – from $3 million in R&D expenditure – to double the amount in 2016. There is some volatility in this series which may reflect the practice of solving particular issues on an individual production rather than an ongoing R&D programme.

Figure 12 In-house and total R&D expenditure in the motion picture industry

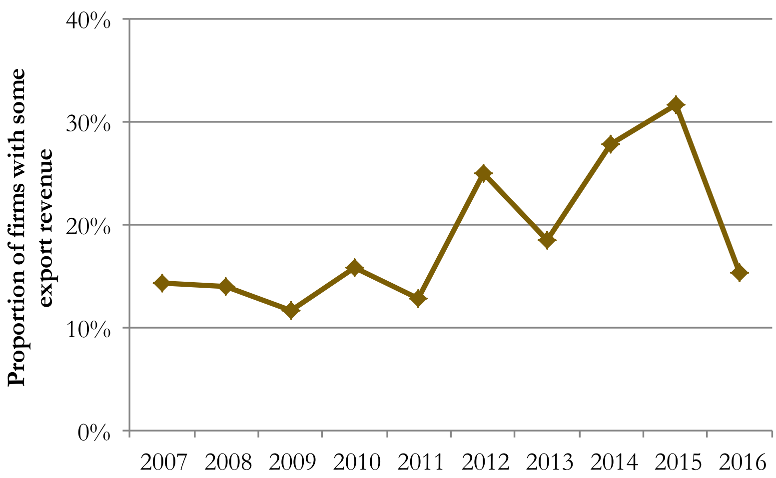


Source: Business operations survey

The domestic grant is more likely to directly support the creation of IP than the international grant. Put simply the domestic grant is focused on enabling the telling of a New Zealand story (whether one that is about New Zealand or one that has been created by a New Zealander), whereas the international grant is focused on enabling screen sector service providers in New Zealand to compete with those in other countries to tell a story. Pūkeko Pictures provides a clear example of this distinction. Unlike other companies in the Weta Group which provide services under contract to other production companies, Pūkeko Pictures is a production company. It owns a proportion of IP in everything that it creates. That ownership ensures the company received a related proportion of export returns. For example, *Thunderbirds are Go* was exported to Japan and the UK, and the *WotWots* most successful market was Australia.

The IP in domestic productions allows these to be exported consistent with the goal of attracting international audiences to New Zealand productions.

Figure 13 Firms with export revenue



Source: Business Operations Survey

Going forward, Pūkeko Pictures considers that China will provide a significant market for IP extensions driven from their TV productions. For example, *The WotWots* had a range of 40 products, whereas *Kiddets* is expected to have 100 associated products including merchandise such as toys, clothes and bedding. Some of the products associated with *Kiddets* are about creating brand awareness for the show, for example Fonterra milk powder will be used by Chinese beverage giant Wahaha to manufacture a yoghurt drink with a *Kiddets* brand. Other IP extensions will include branded playlands and stage shows.

For other television producers the format is the critical IP, for example *800 Words* has been sold as a format, *Rachel Hunter's Tour of Beauty* has sold in approximately 120-150 countries. The NZSPG allows this, whereas NZ on Air funded shows does not because the IP is not owned by the producer.

For many screen sector companies the way they do things is their IP. A good example of this is the motion capture helmet designed by Human Dynamo for Weta Digital for *Planet of the Apes*. DreamWorks Animation has now approached Human Dynamo about purchasing some of these helmets.

Matthew Metcalfe said that in his view the grant system has allowed his business to develop and he has built a library of feature films as a result, with the distribution rights now starting to return to GFC as 12 to 15 year distribution deals start to expire. He considered that he has built an internationally known brand and catalogue with a realisable value. This library of distribution rights is also a form of IP.

11.3 Attraction of investment

Our qualitative findings indicate that the domestic grant allowed local producers to attract investment in their productions (see section 11.1.1). The domestic producers and suppliers that we interviewed also emphasised the need for certainty to enable them to have confidence to embark on projects with long timeframes. Pūkeko Pictures and WhitebaitMedia both noted that the production timeline for animated series can be very long (in excess of two years) and as such they needed some certainty that the grant would be paid at the end of that period (see for example Box 16). Although the implication of this is that the potential for changes to the incentives regime limits producers' willingness to commit to projects, we cannot reach this conclusion on the basis of the overall information available.

Several interviewees also mentioned that the long-lived nature of investment in facilities means risk is high in an uncertain policy environment. Producer, Rob Tapert said that his view was that the need for proper infrastructure has never been greater as very low vacancy rates in Auckland make it difficult to get warehouse space to use as a studio. He also suggested that if the government were to ever commit to the grant for ten years then there would be an upsurge in infrastructure. He says that film companies have experienced sudden changes in incentives which make them wary of long term commitment, but he felt that there would be a larger sector in New Zealand with more built infrastructure.

This is consistent with the experience of Avalon Studios. Avalon Studios is at a point in the life cycle of their business where a significant investment is required to enable them to attract international productions. Gary Watkins indicated in email correspondence an investment of around $10 million in sound stage facilities for films. There is no certainty of success and as yet Avalon has been unable to secure the investment partners it requires to finance this.

Infrastructure investment is very risky in the screen sector; assurance of a long term incentive programme would help to mitigate the risk and government support via funding is often required to get projects off the ground. KJ Jennings of Film Otago/Southland described a sound stage as a "one room hotel" which is either fully occupied or completely empty. The volume of productions is low, with perhaps 2-6 productions annually (Michael Brook, Manager Screen Auckland).

For both the international and the domestic grant, our interviewees considered that an increasing amount of discretion appears to have been allowed in the 2017 changes with no obligation to follow precedent and no right of appeal for the applicant. If this is correct, it could introduce a level of risk to the process which may undermine the simple and certain approach for which the NZSPG has previously been known.

In the context of the 5% uplift this lack of certainty or high hurdle suggests that the additional grant is unlikely to provide (especially moving forward) a significant incentive to locate live action productions in New Zealand. This appears to be consistent with the intention to use it to get extra benefit from productions that have chosen to locate in New Zealand. This is discussed further in section 10.1. However we note that in order to achieve this goal the recipient needs to be sure that if they fulfil their obligations then incentive will be forthcoming.

An additional factor that Warner Bros raised in our interview with them was the change to the PDV grant to limit the 20% rebate to the first $25 million of QNZPE. Louise Houston, a consultant on production incentives, believes the limitation is counter-productive, effectively dissuading studios from bringing very large PDV projects to NZ, and awarding work elsewhere if a project gets close to the cap.. She noted that the PDV market is very competitive and that the availability of grants directs the flow of work. The minimum expenditure threshold was initially "far too high" (at $3 million under the LBSPG) and meant that work was lost to Australia, which had a lower threshold (of $500,000). Even though the project might eventually go over the New Zealand threshold, the studio could not risk bringing it to New Zealand. The lower threshold changed this, increasing PDV in New Zealand.[40]

11.4 Entrepreneurialism

There appears to be a tension between fostering entrepreneurialism, which would be consistent with an increasingly sustainable industry, and ensuring that government funding is minimised.

One of the messages that came from our interviews was that in order to have a local industry people need to be able to make money. Making a profit allows filmmakers and television producers to invest in their next project. This increases entrepreneurialism and innovation.

---

40 The threshold for PDV was lowered to $1 million in 2014 when the NZSPG was introduced and $500,000 in 2015.

While clearly the government needs to ensure that it does not contribute more than needed to achieve its goals, if it is a goal to support creative New Zealanders to generate IP, then it may be worth reconsidering the issue of overage.

There was certainly a sense however that the domestic grant encourages more variety and higher quality productions compared to a situation where the only funding available was the Film Commission's discretionary funds. This is because producers have more control due to the non-discretionary nature of the grant. Matthew Metcalfe, producer at GFC said that the grant "empowers you [as a producer] to be entrepreneurial". The non-discretionary nature of the grant gives the producer the ability to choose the story to tell. Each time their skill improves and it is a little easier to attract funding.

The qualitative findings for domestic television productions were similar in terms of both the greater creative freedom allowed by the grant relative to other funding sources and the ability to create a product that was internationally saleable.

11.5 Education

Increasing educational offerings relevant to the industry and increased investment in specialised facilities for this purpose is both an indirect economic benefit of the grant and an indicator that the industry is increasingly considered durable, and sustainable. Educational institutes have invested in infrastructure and development of programmes that reflect the needs of the sector, often in a collaborative way with sector participants. This suggests that they expect the industry to be sustained, otherwise their investment would not be expected to be profitable. They are also using the local industry as a marketing tool to attract students; this is an indirect benefit of the grant (see Box 10).

Shortages of skilled labour were mentioned in many of our interviews as a barrier to international productions or a self-limiting factor on the size of the industry.

Harry Harrison from Screen Auckland suggested that there was value in having film schools co-located with the industry in terms of allowing internships and other links with industry, with courses designed to interface with production requirements.

We note that one interviewee suggested introducing a training or skillset levy as crew is a key constraint. They considered a levy was particularly relevant for international productions.

There is mixed information about the specificity of skills required for screen production work. Some jobs are relatively low skilled. For example, Rob Tapert shared his experience that his crew do not generally come from film schools. Part of the reason for this is that there is a limited number of roles that film schools target in any given production (for example sound, technicians and writers). People may learn "shallower" skills on the job, for example a script supervisor.

Some skills are deeper, but not specific to the film sector such as computer science or design. There does seem to be a consideration that more practical courses are more applicable (with some pointing to Massey, although Victoria seems to be changing its offering). The type of courses offered reflect this broader applicability of skills, although a focus on film is popular among students.

Massey University has invested around $20m in new facilities for its School of Music and Creative Media Production. The first graduating year of its three-year media programme was in 2017. There are four pathways in the programme: film and television, animation and VFX, games, and web and interactive, and two new pathways in directing and producing and sound engineering starting in 2019. About 500 students are studying across the school with a large cohort producing film and television works. The course is focused on creative practice within a production environment and Andre Ktori, the Head of the School said that all their staff are also practicing within the industry. The facilities are of a high standard. External companies including Maori TV, Weta and TVNZ partner with the college, or hire facilities such as their motion capture stage, dubbing theatre and recording studios.

The objective of the course is to provide practical hands-on training with a strong client focus in the second and third years of the programme. Associate Professor Ktori described the course as production oriented with elements of the course focusing on entrepreneurship. Students are required to respond and deliver work to a real client brief. There are strong links between Massey and industry and Massey's approach has a focus on delivering skills that are required across the screen sector. Associate Professor Ktori also described the Masters of Creative Enterprise programme which starts in late 2018. The Masters programme is by proposal, based on market potential with a strong enterprise focus, similar in approach to an incubator.

Programmes that are practical and have direct links with industry appear to be relatively successful in terms of students entering the film sector. SIT is a more mature example of this, with 92% of the graduates from their film programme going on to work in the industry. KJ Jennings from Film Otago/Southland puts this down to the meaningful interning programme.

Box 14 Victoria University of Wellington's Miramar Creative Centre

There have been connections between Victoria University of Wellington (Victoria) and the film businesses on the Miramar Peninsula for a number of years. For example, John Psathas, Professor of composition at the New Zealand School of Music teaches film scoring in collaboration with Park Road Post. At the School of Design, guest lecturing in animation and graphics is provided by individuals from Weta Digital and in additive manufacturing by Weta Workshop staff; Weta Digital artist Kevin Romond has an adjunct appointment at the university. Weta Digital offers various opportunities to students at the School of Design including internships.

In 2017, Victoria opened the Miramar Creative Centre, a facility on the peninsula to be used to deliver two Masters-level programmes to around 60-80 students. The building is owned by the Selkirk Family Trust who is a shareholder in Weta Workshop and co-director of Miramar Creative Ltd, a partner company to the University which offers short courses and space hire at the Miramar Creative Centre. Victoria's former Deputy Vice-Chancellor (Engagement), Frazer Allan says that this has placed the relationship with the Weta Group of companies on a more strategic footing.

The university recognises that the Weta Group of companies are distinct entities with different business drivers. Professor Allan indicated that they are developing streams of work that recognise these distinctions and will provide mutual benefit. For the university, the opportunity to offer masterclasses and lectures by industry practitioners from renowned companies and access to specialised facilities at Park Road Post, as well as to potentially share other technology for research and teaching will give it an attractive profile for students.

The post-graduate programmes are intended as specialised, high value programmes. The Master of Design Technology and the Master of Fine Arts (Creative Practice) both graduated their first cohorts of students in early 2018. In addition to screen sector applications, graduates may be expected to apply their skills in other fields, such as gaming or biomedical/med tech industries. However in addition to screen sector applications, graduates may be expected to apply their skills in other fields such as gaming, or biomedical/med tech industries.

Victoria intends to leverage the programmes and relationships to create new opportunities. For example, a short course in the AR/VR sector is in development with Miramar Creative Ltd.; this is intended to attract the existing workforce in this sector.

Victoria is also co-developing a MOOC (Massive Open Online Course) on the edX platform with content developed by Weta Workshop. This free, open, online course is designed for a worldwide audience.

For Victoria, the key benefit of these collaborations is increasing the flow of inward students, particularly international students, to the university. Professor Allan explains that "New Zealand universities would not exist as we currently know them without international students". International students provide not only international, cultural benefits to the university, but also cross-subsidise other activities. While the relationship with the Weta Group of companies will directly attract students to the Masters programmes, it is expected that this will have a knock-on effect to enrolments in undergraduate and other programmes. Victoria is also competing for a "diminishing demographic" of domestic students. It expects the link will also increase the attractiveness of the university's programmes to local students in the creative sector.

Another key outcome for the university from the link is to improve the global ranking of the university. These rankings attract students. Victoria is already looking for ways to "offshore the opportunity" to increase its ranking. For example, there is demand in China for an education programme backed by the expertise of the Miramar companies. Victoria is working to develop a collaboration with a Chinese institution (such as the Beijing Film Academy) that leverages the existing relationships it has in NZ in such a way that provides revenue to the partners and students to Victoria.

Finally the link is expected to provide opportunities for research, particularly in design, for university staff.

Victoria has also embraced wider opportunities to enhance infrastructure relevant to the sector. The audio recording system to be installed as part of the proposed redevelopment of the Town Hall in conjunction with the City Council and NZ Symphony Orchestra will give the ability to record using a full orchestra. In conjunction with the technical facilities at Park Road Post, this is expected to be attractive to students of film score composition as well as studios locating their screen productions.

11.6 Links between the grants

There is a symbiosis between the international and local productions. International productions offer skill development and budgets for investment and innovation, while domestic productions offer a more reliable pipeline of work particularly for smaller businesses. Informal support and discounted pricing is offered by some of the larger internationally focused suppliers to local producers.

New Zealand suffers to some extent from our distance. International productions draw people to work here, which in turn increases the experience of New Zealanders. Catherine Fitzgerald, producer at Blueskin Films, said that international productions "allow New Zealanders to experiment and innovate."

There was a strong sense that the large budgets of international productions allow the local industry to innovate in terms of solving problems, and developing technologies that can then be applied either within the film sector or more widely. The international production budgets also enable capital investment that allows other projects to be completed. Rob Uivel of Human Dynamo said that in his business film work attracts design-focused, inventive people, and the large scale contracts enable them to have equipment which can then be applied to work in other industries. As an example he said that they were about to make another "leap" in plant into 3D printing for an Avatar contract. Other significant infrastructure investments, including in Kumeu and Stone Street Film Studios, have been made as a result of specific international productions.

Michael Brook from Screen Auckland noted that local productions may benefit from these investments.

There was also a sense that the international industry allows local workers to develop skills through the experience of working with overseas experts, which they can then apply to local productions. It also allows those in the industry to develop international contacts. This was a key theme from our interview with Carthew Neal in 2016 (see section Appendix 4). This may have benefits in terms of the sustainability of the local industry.

Some interviewees suggested that it would be possible to extend this benefit further by requiring the inclusion of a local producer on a production receiving an international grant; other interviewees felt that making this a requirement would not yield any real benefit for the individuals.

Rob Tapert noted that some screen sector businesses help local productions in the downtime between international productions at "mates' rates". The availability of equipment and technology that is funded by international productions has a "big knock on effect to up and coming filmmakers".

Park Road Post in particular provides strong support to the domestic film industry. Cameron Harland, formerly of Park Road Post noted that it is "far more part of the local industry than any of the others [in the Weta Group]". Informal support is offered to local producers for example Taika Waititi wrote *Boy* at Park Road, and cut *What we do in the Shadows* there. In contrast, while Weta Digital supported VFX on Taika Waititi's *Hunt for the Wilderpeople,* they are typically operating at quality level that most New Zealand film project budgets cannot afford. Richard Fletcher noted that Weta Digital, due to workload issues, was unable to provide a quote for *Into the Rainbow* and there was a resulting capacity issue for his production with 3D artists not being available.

Our findings strongly suggest that there are different rates for labour and some services in an international production compared to a local one. Park Road Post and Weta Digital both indicated that they discount for local productions. Mr Harland said that facilities at Park Road Post that cost $8,000 per day for international productions are at times provided for $4,000 for local productions. The international productions (he said) are necessary to sustain the facilities because local production budgets could not cover the true cost. This may suggest cross-subsidy between international and local productions. The alternative, which we consider more likely given the emphasis by international studios on budget considerations, is that local productions face only the incremental cost of their activity, while international productions cover the fixed costs (those that are incurred irrespective of the level of activity). Cameron Harland noted that Park Road Post also continues to rely on financial support from its owners.

Weta Digital noted that they are trying to do more to encourage their clients to bring their physical shoot to New Zealand. They noted that there are some limitations on the infrastructure, with the dimensions of some of the sound stages in New Zealand limiting the ability to do stunt work. In addition, there are some crew limits, for example construction crew were brought from Seattle, and a stunt team from Australia for Ghost in the Shell. Local producers noted that it can be difficult to access studio space if significant international productions are in town.

There was also a sense in the interviews that the local industry is the foundation on which the sector is built. In particular, the ad hoc nature of international productions means that they do not yield sufficient reliable income for many businesses and workers. We have already described some of the diversification that businesses practice. To some extent television and local film productions can launch careers. This does not just apply to producers or directors but also crew, animators and creators of physical effects.

One of the other factors that plays into the success of the screen sector is commercials. Michael Brook, Manager of Screen Auckland noted that commercials yield gross revenues of $100-150m annually. However his sense was that the degree of cross-over between commercials production and local film/television productions was not as strong as that between international and local film/television productions. While some crew and companies may work in both sectors, some specialise in commercials only.

12. Cultural benefit

Box 15 Summary – cultural benefit

To be eligible for the domestic grant a production must meet the significant New Zealand content test. We analysed the scores of the productions that received the grant. This showed that in the productions that received the grant in the evaluation period tended to have significant New Zealand personnel rather than being about a New Zealand subject matter. This does not appear to be consistent with the principle outlined in the guidelines. We discussed this during our interviews and there was a strong sense that producers and other creatives considered that it was important that New Zealand content encompass stories that are from here but not overtly kiwi or only relevant to New Zealanders. This is consistent with the industry development criteria that reflect the desirability of attracting international audiences to watch New Zealand stories.

Concern was expressed by some producers that the audience requirements in the NZSPG do not reflect changing consumption habits in terms of screen content viewing and limit the ability to reflect sectors of society based on how big they are and their viewing habits. The interviewees considered that this may limit the ability of some New Zealanders to see their own stories on screen.

We surveyed the public to reveal their views on the value of New Zealand screen content. The findings from this survey suggested that the value placed by the public on their own use of New Zealand film and television content is not sufficiently high to justify the funding available. However consistent with the notion of cultural value, the existence value and public support values are significant. We consider the existence value of film reported by the public was sufficient to justify the grant. The picture is less clear for TV due to other significant funding streams. However, given the apparent level of current activity that has not yet been reported in the QNZPE data, and therefore was not reflected in the survey this is not conclusive.

The overarching objective of the cultural objective is:

> *"to provide cultural benefits to New Zealand by supporting the creating of New Zealand content and stories"*

In particular, the grant seeks to:

1. Enrich and inform the lives of New Zealanders for current and future generations by enabling them to see their own stories on screen.
2. Enhance the perception of New Zealand, its culture and its creativity.

The cultural objective of the grant is only relevant for the domestic grant. Thus, unless otherwise stated, the discussion below refers to the domestic grant.

Box 16 *Darwin and Newts*, an animation for New Zealand children

The *Darwin and Newts* story is a microcosm of the NZSPG story. The key benefit of the production is likely to be the cultural benefit in terms of the connection to local content: New Zealand pre-schoolers and their families "hearing and telling their own story". In our interview, Ms Morrell-Gunn, the show's executive producer, also reflected on the well-being and security that can be derived by families watching a scheduled show that provides a familiar, local context.

Darwin and Newts (after Charles Darwin and Isaac Newton) is an outdoor adventure series "for kids who love to figure out how stuff works and aims to teach early learning science concepts to 4 to 6 year-olds". It is an animated production designed for a NZ audience, but with the intention of selling to international markets. WhitebaitMedia owner and executive producer of *Darwin and Newts*, Janine Morrell-Gunn specialises in children's television leaving the role of Head of Children's Programming at TVNZ to start WhitebaitMedia in 1998. She has produced *What Now* and the *Adam and Eve Show* for over a decade. *Darwin and Newts* is her first foray into animation, and the NZSPG. Education, science and reo experts advised on the development of the show. The first series will be broadcast on TVNZ.

The show has a quintessentially kiwi flavour: two pre-schoolers, a brother and sister, hang out in their tree-house and figure out how stuff works. There are no adults in the show; the children and their best friend Heni interact with animals including Wapiti, a NZ deer, a cheeky kea and two comical frogs. Janine Morrell-Gunn emphasises the importance of using colours in the animation that made it look like NZ.

The two central characters have brown skin, they have kiwi accents, and they sometimes speak te reo: one of their catchphrases is "mīharo – awesome". The opening credits will feature a haka designed for the show and there are other visual cultural links, for example elements reminiscent of Māori carving. WhitebaitMedia undertook surveys with parents as part of the shows development which indicated "openness to other languages and to diversity". So, the show features aspects of NZ that are recognisably part of our wider culture, although not necessarily the direct experience of the individual children watching the show.

It is also intended to have effect positive cultural change. Siouxsie Wiles, the well-known Auckland scientist and science commentator, advised on the development of the show. In particular, she emphasised the importance of having one of the children-scientists be a girl. The show's writers wrote the content without this knowledge, which Ms Morrell-Gunn considers eliminated any unconscious bias, creating a Newts "of equal status". The repetition of key phrases by the two children "I'm on it" by inventor Newts and "Let's science it" by the problem-solver Darwin are intended to reinforce positive attributes as children's play often mimics cartoons they watch repeatedly.

The show is due for completion in February 2018, and has taken around two and a half years to create. It is based on research into what NZ parents and pre-schoolers want and enjoy and reflects NZ society and values. We can therefore be reasonably confident that it will have strong cultural value.

Ms Morrell-Gunn is clear that the NZSPG was central to the creation of the show. The overall budget was financed by NZ on Air funding of $1.52 million, investment by

WhitebaitMedia and by their co-producer Toonz NZ, as well as the anticipated NZSPG. We understand that in other countries sale of the show to a broadcaster with a public broadcasting commitment would finance part of a production. In NZ, the absence of public broadcasters and the non-commercial nature of pre-school television due to advertising restrictions during the broadcast of these programmes are the rationale for providing both NZ on Air and NZSPG funding to children's television productions.

Ms Morrell-Gunn reflected that NZ on Air would not have sufficient budget to be able to fund the high volume of animation episodes. The NZ on Air funding is released over time based on the accepted application proposal by WhitebaitMedia that included a budget and timeline. The NZSPG is paid after the show is completed, subject to audit, and that portion is currently being financed by Toonz NZ. Ms Morrell-Gunn agreed that this is a high-risk process, and said that while she has not yet experienced the audit process she has faith in her project and relies on checking the NZSPG criteria to estimate the rebate. The investment by both WhitebaitMedia and Toonz NZ is not immaterial.

Toonz NZ is based in Auckland. It is part of Toonz Media Group which is owned by the Swiss Comcraft Group. It has production facilities in several countries with its main animation facility in India. Toonz Animation is completing the animation work on *Darwin and Newts* in India. This reflects the lower wage rates in India for animators. Pre-production work (animatics) and post-production will be completed in NZ. This appears to be a common practice: Toonz NZ engaged Mechanic Animation in Wellington to complete pre-production work on Beijing Safari (which received the international grant). Mechanic also does pre-production on Marvel assets, which are then animated in Asia.

The process of producing *Darwin and Newts* has involved upskilling the NZ animation workforce; animators and the art director were brought from Toonz Animation in India for this. As well as the investment in production, and the skill development, Toonz has brought its international connections to the project. Imira Entertainment (part of Toonz Media Group) is the international distributor for *Darwin and Newts* and is showcasing it in Cannes. Ms Morrell-Gunn indicated that three series (100 episodes) were needed to make a global show, with episodes then able to be repeated for a new (pre-school) audience. Season 2 is in pre-production. Initial focus group testing with US and Canadian families showed no adverse reaction to NZ accents and the desire to learn more about the cultural significance of Darwin's manaia. The use of te reo was compared to Dora the Explorer (Spanish) and freely accepted. Ms Morrell-Gunn seems very conscious of developing the local industry, focusing on getting three series of Darwin and Newts made, securing a place in the MIP library, and developing an animation business with skills that will allow it to access a sustainable pipeline of work.

The production also has links to the gaming sector. Ms Morrell-Gunn noted that it was important to buyers that there were other digital assets available (that they weren't expected to pay for). She is looking at using a Christchurch-based company to develop an app for the show with games and educational activities.

12.1 Significant NZ Content test

To be eligible for the NZSPG for New Zealand Productions (the domestic grant) a production must have significant New Zealand content. In order to provide information for producers, guidelines have been developed on the assessment of New Zealand content. Having guidelines can also be expected to increase the consistency of decision making. More detail on the test is provided in Appendix 2.

The test is broken into four sections:

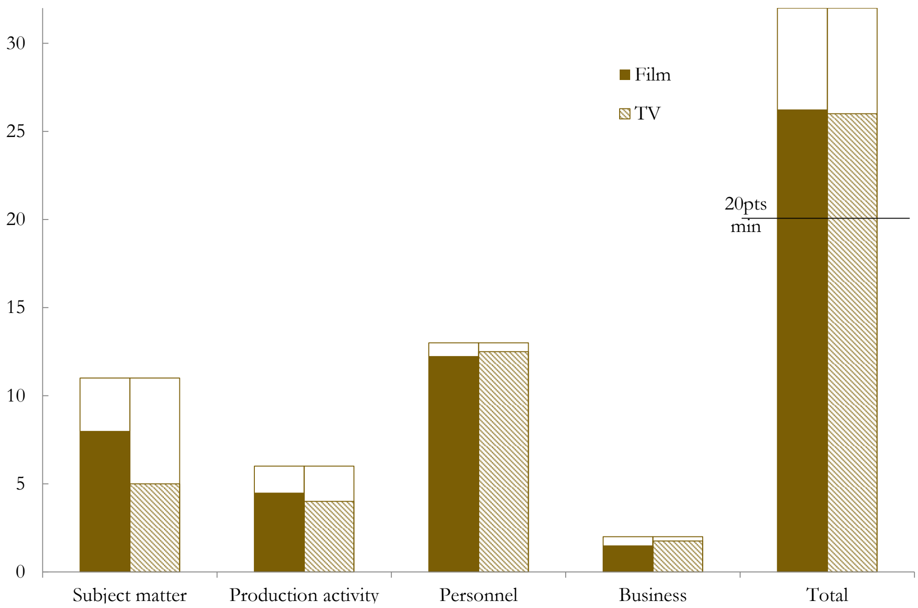
- New Zealand subject matter
- New Zealand production activity
- New Zealand personnel
- New Zealand businesses

The Ministry for Culture and Heritage has collated the points approved for each of the recipients of the domestic grant. We analysed these by format (film, TV) and by genre (drama, other). The average number of points awarded for each of the four sections is presented in the figures below, with the total number of points available also shown.

Drama tend to achieve a higher average number of points overall, which is driven by a higher weighting in the subject matter category. It is notable that while 34% of the available points are for subject matter, on average across all productions in 2014-17 only 28% of points awarded were in this section. This was offset by a higher weighting toward personnel. This indicates that in practice “significant NZ content” tends to be high levels of production activity, rather than on-screen content.

Figure 14 Average points in the Significant NZ Content Test

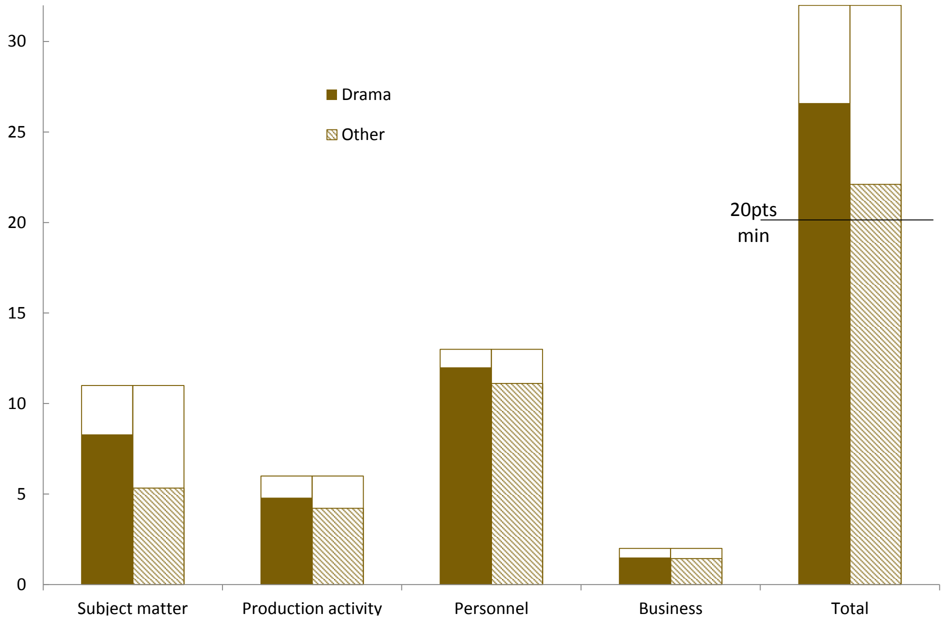
All productions, 2014-2017



Source: Ministry for Culture and Heritage

Figure 15 Average points in the Significant NZ Content Test, Drama and other

All productions, 2014-17



Source: Ministry for Culture and Heritage

The criteria allow a production to have significant content without having on-screen elements and allocate the highest number of points to this category. However, the predominance of productions with this type of significant New Zealand content appears to be at odds with the principle expressed in the criteria that emphasises the special importance of on-screen content:

> *Identifiable New Zealand on-screen elements are, in general, important to the uniqueness of New Zealand production. They are of particular significance in the expression and development of New Zealand's culture and identity, and reflecting situations and experiences unique to New Zealand, for the benefit of both New Zealand and international audiences. It is intended that most New Zealand productions in particular will display strong New Zealand on-screen elements.*[41]

Given this apparent inconsistency and the possible implication of policy change, we discussed what a New Zealand story is, and whether there is a distinctive kiwi "voice" with our interviewees.

Lisa Chatfield Head of Scripted Development at Pūkeko Pictures explained that "nobody's imagination is only contained in one place" and that it is important that NZ stories "come from here but are not only relevant here". We heard a number of examples of kiwi stories that while not being overtly kiwi had a kiwi flavour or theme. For example, Pūkeko's new pre-school series *Book Hungry Bears* features four animated teddy bears sharing picture books together. The picture books featured in the series will include New Zealand books as well as

41 NZSPG Criteria for New Zealand Productions, 1 July 2017, page 39.

covering a range of international cultures and themes. Ms Chatfield said that while not visually obvious as a New Zealand programme, at its heart this is the creation of a New Zealand author. Similarly, Clive Spink, Chief Executive of Pūkeko Pictures said that while *Kiddets*, the spinoff from the *WotWots* is not overtly kiwi it is designed, created, written and produced by New Zealanders and their "experiences in life as kiwi shape the way they tell stories". This sentiment was echoed by producer Richard Fletcher who considered that the New Zealand filmic voice includes humour and visual style and is influenced by the environment.

Matthew Metcalfe, producer at GFC, said that around the world New Zealanders will often describe their country via the All Blacks or through art and culture – ex pats "articulate their country and their bonds to their country through art [as cinema]". In his view film clearly adds to our "collective sense of self".

Another feature of New Zealand productions that came through was that they are more likely to feature multi-racial characters.

We heard feedback from some producers who felt that there should be a point available to companies that were New Zealand owned, because profits would be retained in New Zealand. We note that while this may appear to be a straightforward measure it is not in fact necessarily the case, the obvious contrary example being South Pacific Pictures which is not New Zealand owned but invests in producing shows in New Zealand and continues to generate GDP in New Zealand.[42] There was also some discontent from some interviewees about recent changes to the points allocation, for example that it favoured drama (recreation by an actor) as a New Zealand host was no longer eligible for a point.

12.2 Changes in consumption habits

One of the issues for domestic TV producers appears to be the changing nature of content consumption and the interpretation of audience reach. The concern expressed was that changes in distribution and consumption habits and the need to measure audience reach in a particular way may limit the ability of producers to tell stories that reflect smaller sectors of society. This was considered contrary to the stated cultural objective.

The impression we gained from Pūkeko Pictures was that in order to achieve a sufficient audience reach (to be commensurate with the value of the grant) a free-to-air broadcaster was required as part of the commercial distribution of the production. Concern was expressed by some of our interviewees that people do not watch television in the way that audience reach is measured. There appears to be some confusion about what platforms are acceptable with some interviewees saying that Sky and Prime were acceptable and others not. Overall the impression we gained is that TV1 or TV3 attachment is required to achieve the audience reach measures (i.e. to be commensurate with the value of the grant).

Pūkeko Pictures view is that the current assumption of what television distribution considered "commensurate with the grant" looks like is potentially limiting the opportunities for a wider variety of content to be offered to local audiences. Assumptions that the larger

42 Recent changes to eligibility may address this.

networks automatically guarantee larger audiences, means that content that would benefit from a smaller broadcaster or targeted platform with a bigger share of a niche audience may not be considered as achieving the threshold commensurate with the grant.

A similar view was reflected by Catherine Fitzgerald, a producer at Blueskin Films, who noted that some parts of New Zealand society would not be considered large enough to meet the mass audience measures for the New Zealand grant for film. One example she gave was a film in Mandarin. She also noted that programming for chains is determined in Australia and the chain has output agreements with the major studios, so it can be difficult to get cut-through for New Zealand films. Ms Fitzgerald considered that art cinemas tend to be relatively monocultural in terms of their audiences.

She considered that a film like Samoan-language feature *One Thousand Ropes* (which received the grant) was likely to be challenging, particularly for white middle-class women who tend to drive the box office results, which may potentially limit its audience. However she also considered that culturally it is a successful film, as it holds a mirror to an aspect of New Zealand culture. In Ms Fitzgerald's opinion the films that become part of the cultural record are often challenging. As an example she noted that the 2011 Samoan-language film *The Orator* is widely taught in schools in New Zealand as part of the English curriculum, it is also studied in university film studies programmes in New Zealand and elsewhere including in Hawaii, Australia, India and Scandinavia. While this film was not a major commercial success, she considered that it has had a significant cultural impact.

Another example of this would be to consider the impact of Māori Television. Ms Fitzgerald considered that Māori Television has helped normalise being Māori and te reo Māori. In her view the presence of Māori television has driven social change and this role could also be played by screen productions. Ms Fitzgerald said that "cinemas are increasingly culturally conservative compared to the needs of the population and cultural products". Independent films in her view often challenge our prejudices and explore our fears: this is a valuable role in society.

Ms Fitzgerald noted that because "free-to-air" television is funded by advertising, the range of shows are determined by what the broadcaster believes will be attractive to advertisers. Ground-breaking, culture changing programming is often considered too risky. Pūkeko Pictures noted that for pre-school programming the restrictions on advertising mean that productions have limited value to New Zealander's commercial broadcasters and this is reflected in the minimal licence fees they are willing to pay. As a result, Pūkeko executives said that in part the incentive (in particular they highlighted the "extra" 20% over the international TV grant) compensates for New Zealand's choice not to have a public television broadcaster or a quota system for children's content.

Importantly, Ms Fitzgerald noted that there is a need to keep making New Zealand films in order to maintain their relevance (as well as maintaining the archive). For example she noted that while *Once were Warriors* has enduring relevance for older people, young people born since *Once were Warriors* was made have not seen it. However some young people are able to recite extracts from *Two cars, One night*. Expressions from both films have entered New Zealand language.

From the views expressed, audience reach may not be an appropriate measure of cultural impact or relevance. It appears to be a significant challenge for the NZSPG to predict what will have a mass audience, and to assume that this is where the funding should be directed.

The criteria may implicitly prefer certain societal sectors. However, our interviews did not deliver a clear method for predicting cultural impact. "Looking back you can see the impact, but you can't predict it." (Catherine Fitzgerald, producer)

There was some concern expressed that there is no opportunity to engage with the Panel and that there is no ability to challenge their decision.

12.3 Contingent valuation

The value of New Zealand screen content to the New Zealand public is a non-market good: this means that the price of New Zealand screen content cannot be directly observed. We undertook a public survey with the purpose of estimating the value of New Zealand screen content. We used three approaches to measure use and non-use values. It is important to measure the cultural non-use value, that is, the benefit to New Zealanders of locally made content even when they do not directly watch the content themselves.

In the survey we defined New Zealand content as content that is "made by New Zealanders, that shows New Zealand places or that tells stories about New Zealand, New Zealanders and their lives".

Contingent valuation is a method of estimating the value of non-market transactions through a survey based technique that uses scenarios to illicit estimates of the public's willingness to pay for a resource. It is commonly used in environmental economics and increasingly in the cultural sector. The survey questions we developed drew on the work of Fujiwara.[43]

The three techniques we used were:

- The use value of NZ film and TV content by asking questions designed to illicit whether respondents were willing to pay a premium for NZ content relative to other content.
- The existence value of NZ film and TV content by asking respondents whether they would pay a voluntary contribution to ensure content is made, regardless of whether they expected to watch it themselves. Studies have shown that people often overstate how much they are willing to donate in this type of survey. To minimise this bias, we explicitly encouraged respondents to consider how much they could afford to pay, whether they felt they already paid enough or have other things to spend their money on, or ways to support NZ screen content.
- A secondary estimate of the existence value, which we have called a public support value[44]. This value was included partly to mitigate the potential bias with the estimate of existence value. This scenario provided an explicit budget constraint, asking the respondent how they would want the government to allocate $100 between themselves (in effect a tax cut) or to the screen sector to produce NZ content. There were also problems with this scenario, possibly in part because the survey was in the field in the

---

43 See for example, Bakhshi, Hasan, Fujiwara, Daniel, Lawton, Ricky, Mourato, Susana and Paul Dolan (2015) Measuring Economic Value in Cultural Institutions: A report commissioned by the Arts and Humanities Research Council's Cultural Value Project

44 Following the terminology adopted in Deloitte Access Economics (2016) *What are our stories worth? Measuring the economic and cultural value of Australia's screen sector.*

same week as a general election was held. A preliminary focus group during the design of the survey suggested that people felt that tax cuts were unlikely to be actually delivered. This may have biased the responses upward. We discuss this further below.

We have applied the results of the latter two approaches to the adult population of NZ aged 16 years and over in order to estimate the existence and public support value of NZ stories on screen.[45] The sample size of responses to some of the questions, particularly regarding willingness to pay, are relatively small and the results should be considered indicative rather than exact.

We did not attempt in either the film or television surveys to distinguish content that was funded by the NZSPG. This was because the criteria for funding are too complex to explain in a public survey context. This means that the results should be interpreted as a general value of NZ screen content, not the specific value of content made with support from an NZSPG grant.

12.3.1 Film

Respondents were asked to imagine a scenario where they were able only to watch films on a TV or similar device in their home. We chose not to use a cinema scenario, because people go to the cinema for other reasons than to watch a film – for example to socialise. We did not want the benefits attributed to a visit to the cinema to affect the results.[46]

Use value

The average reported price that people were willing to pay to watch a movie from outside New Zealand was $12.68. This compares with the average reported price for a New Zealand film of $15.62. The implied premium between these two values is $2.94. We also calculated the average stated premium based on the difference in the two answers for individual respondents. The stated premium for a New Zealand film was $0.51.

The reason for the difference between the two figures is that the stated premium excludes respondents who answered "don't know" for either one of the two questions. In particular the response to the maximum willingness to pay for a New Zealand film was skewed by one respondent who said they would pay $1,000.[47] While in theory it is possible that this is genuinely the maximum amount this individual would pay to watch a New Zealand film, we considered their overall response to the survey, which we did not view as consistent with this answer.[48]

Overall we consider that the average stated premium of $0.51 per adult per film is a better estimate of the cultural value derived by watching a New Zealand film.

---

45 The estimate of the adult population 16 years and older was obtained from Statistics NZ's June 2017 population estimates, and is 3,800,800.

46 It is possible that the social aspect of cinema-viewing would affect the premium if people perceived that their social group was more or less likely to enjoy a NZ film than another one.

47 The answer field allowed any numerical response between zero and 1,000,000.

48 The respondent indicated that they were not willing to pay a donation to support the creation of content, were a low frequency watcher of New Zealand films, and did not strongly agree with the qualitative statements.

In order to compare this value with the cost of the domestic grant we derived an average cost of the grant per film per adult aged 16 years and over in the New Zealand population.

Table 18 Cultural value of watching NZ films

	Dollars per film per adult
Stated value (premium for NZ content)	$0.51
Cost of grant	$0.44

1. Adults are defined as 16 years and older.

Source: Sapere analysis

The issue with this comparison is obviously that not every adult watches every NZ film made. To break even just based on the premium for cultural value derived from use, 86 per cent of the adult population would have to watch the films funded by the NZSPG. This is not realistic and means that the cultural value derived from watching films is not sufficient to justify the cost of the NZSPG. However, there is significant value in non-use of cultural assets (including films).

Existence value

We asked respondents to the survey whether they would be willing to pay a donation to ensure that New Zealand films continued to be made. While 77 per cent of those who gave an answer said that they would not be willing to pay anything, the average value of annual donation that respondents said they were willing to pay was $49.40.

This average was strongly influenced by one outlying respondent who indicated that they were willing to donate $10,000. While this person provided other responses that consistently indicated that they place a strong value on New Zealand film, including strong agreement with the qualitative statements, frequent visits to other cultural events and frequent viewing of New Zealand films, it was not clear that they had considered their budget constraint (given their stated income). To be conservative we therefore excluded this observation. This results in a lower average value of $14.71.

Generalising this annual value to the adult population of New Zealand the cultural value derived by the public from the existence of New Zealand films is $53.6 million.[49] This compares to the total annual average cost of the grant of $7.9 million. Even considering the other government funding available to New Zealand films, we consider this shows that the cultural benefit exceeds the cost.

Public support value

As we noted above, we asked about a third scenario in our survey as a check on the general level of public support for New Zealand films. This asked respondents to indicate how they would want the government to split $100 between New Zealand film and themselves. The

[49] If the outlier is included this value is $187.7 million.

answers were in a bi-modal distribution, with 19% of respondents saying 50:50 and 28% allocating the entire $100 to film. The average response was $59.41.

After prompting for recognition of New Zealand films funded by the NZSPG we offered respondents the opportunity to change their answer. This increased the average value by $0.41 to $59.55. Interestingly there was a group who increased their allocation to film, almost offset by a smaller group who decreased their allocation by a slightly higher value.

Using the average value after prompting, the public support value attributed to New Zealand films is $226.3 million. This is significantly higher than the unbounded donation question. There are a number of possible explanations for this – the donation question specified that the donation was annual, whereas the allocation may have been interpreted as a one-off. In this context $100 may have been perceived as a relatively low value for the individual by some respondents. It is also recognised that people tend to provide a lower valuation where they are giving something up (in the existence value question, they are asked to donate their own money) compared to when they are getting something (here a potential $100 windfall). In addition as the survey was in the field during the 2017 general election, there may have been some political motivation underlying these responses. We note however that this result, and the relatively higher value, is not inconsistent with the results of a similar survey in Australia.[50]

12.3.2 Television

We undertook a separate but parallel survey asking respondents about New Zealand television content. The survey was split in two because we wanted to understand the cultural value of the two formats and the survey was too long to have both formats in a single questionnaire. Splitting the survey reduced respondent burden and fatigue.

Use value

For the use scenario, we asked respondents to imagine that the only way to see television programmes was by paying a monthly subscription to watch at home. This scenario was chosen because it was familiar to respondents although potentially differences in value will arise depending on how much time the respondent spends watching television.

The average price respondents were willing to pay for a monthly subscription with no New Zealand content was $20.30, for a subscription that included New Zealand content; respondents were willing to pay $22.00 on average. This gives an implied premium of $1.70 per month or $20.37 per year. Again we compared this with the average stated premium, excluding respondents who answered “don’t know” to either question. The average stated premium was $0.79 per month, or $9.50 per year.

The difference was again caused by an outlying response in the question about New Zealand content. One respondent gave an answer of $200; this was the highest response to this question. The respondent provided relatively consistent answers across the survey. So

50 Deloitte Access Economics (2016) op cit. This study found an existence value of AU$22.40/ person and a public support value of AU$55.28/ person. The scope of the study was wider as it incorporated all screen content, not just film.

although there is not a strong rationale for excluding this response, we focus on the lower estimate to be conservative.

The annual average cost of the grant paid to television programmes over 2014-2017 equates to $1.14 per person aged 16 and over. Given the willingness to pay estimate of $9.50 per year per person aged 16 and over, if 12 per cent of this population group watched the content the derived cultural value would exceed the cost.

The issue with this conclusion is that it does not allow for other government funding of New Zealand television content. It is difficult to accurately estimate the aggregate funding available to television through all government sources. Based on data provided by the Ministry for Culture and Heritage we estimate it is $100-150 million. The survey suggests that the cultural value derived from direct use is not sufficient to justify this investment. If everyone aged 16 and over watched New Zealand television, then the value of that use would be $36.1 million.[51]

Existence value

When asked to imagine a scenario where government funding for television production was reduced, respondents said they would be willing to donate $12.40 on average each year to the cost of New Zealand television productions (that they may or may not watch). We excluded an outlier from this estimate, on the basis that their response of $10,000 was not consistent with their budget constraint and was only weakly consistent with their responses to the other indicators of value.[52]

Based on this average existence value, the total existence value of New Zealand television content is $47.1 million. This compares to the annual average cost of the NZSPG for television content of $4.3 million.

We do not recommend comparing the existence value from this survey with the total value of government support for New Zealand television. We have already noted the difficulties in in deriving this estimate, we also note that there are other benefits that are not considered in this report, including those that are specific to those other funding streams for example funding for Māori language content and Māori Television, which has particular benefits for Māori (as well as non-Māori) which are not part of this research.

Public support value

When asked how they would like the government to split $100 between themselves and New Zealand television content we obtained a similar bi-modal distribution of responses to the equivalent film question, 17% of respondents said 50:50 and 35% said $100 to television. The average response was $63.41.

After prompting for recognition of NZSPG recipients there was a $1.12 *decrease* in the average value. This could indicate that respondents had other programmes in mind when responding to this question initially, which they value more highly than those funded by the

[51] Using the higher estimate of willingness to pay the use value if all adults watched, would be $77.4 million.

[52] Including this outlier gives an average annual donation of $40.94.

NZSPG, or that the relatively short list of television programmes caused them to revise down their support. In addition, 19 respondents who previously said "don't know" provided a valuation after prompting. These respondents had a lower average value than the unprompted responses.

Taking both these effects into account the average value for all respondents after prompting was $61.87, which is equivalent to a total public support value of $235.2 million.[53]

The observations that we made about this result for film, also apply here: that the relatively higher value may have been prompted by the implied one-off nature of the allocation, the possible perception of the relatively value of the available funds to the individual, or political motivations particular given the concurrent general election.

12.3.3 Conclusion

The three values we obtained were:

- The use value of NZ film and TV content: the extent to which respondents were willing to pay a premium for NZ content relative to other content.
- The existence value of NZ film and TV content: the value of content, regardless of whether the respondent expected to watch it themselves.
- A secondary estimate of the existence value, which we have called a public support value based on how the respondent would want the government to allocate $100 between themselves (in effect a tax cut) or to the screen sector to produce NZ content.

The value place by the public on their own use of film and TV is not sufficiently high to justify the funding available. However consistent with the notion of cultural value, the existence and public support values are significant. We consider the existence value of film sufficient to justify the grant. The picture is less clear for TV due to other significant funding streams.

Table 19 Contingent valuations of cultural benefit of screen content

	Film	TV
Use value	$0.51/film	$9.50/person/year
Existence value	$53.6 m per year	$47.1 m per year
Public support value	$226.3 m	$235.2 m

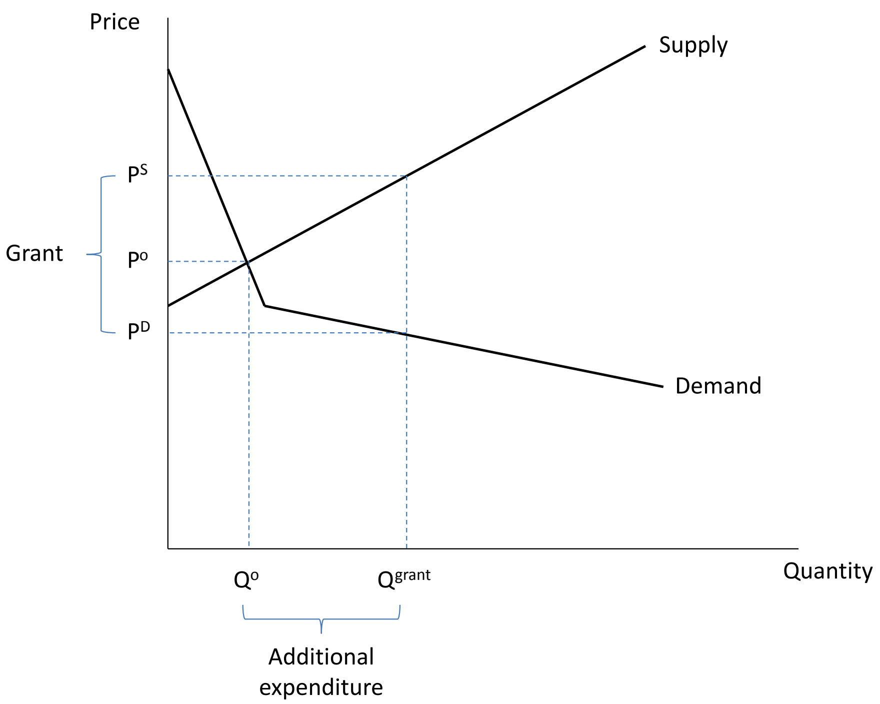
53 The total value before prompting was $241.0 million.

Appendix 1 The effect of an incentive – additionality

We use an illustration in Figure 16 to demonstrate how a grant may stimulate activity in the market. In this illustration, the original price before the grant is P^{O}. At this price demand is Q^{O}. We have drawn the demand curve with a kink to represent the impact of the competitive international environment; below a particular price New Zealand will become competitive and demand will quickly increase. At lower prices demand is more elastic. It is important to note that the diagram does not purport to illustrate the actual elasticity of supply, rather it merely reflects this relativity.

The grant changes prices stimulating both supply and demand resulting in expenditure of Q^{grant}. The challenge is to estimate Q^{O}. As we have already noted, we have limited information about what the supply and demand curve look like, although demand is likely to be elastic because of international mobility.

Figure 16 Illustration of additionality



Source: Sapere

1. This diagram is illustrative only; it does not reflect an estimate of the grant or its effects.

Appendix 2 Economic benefit

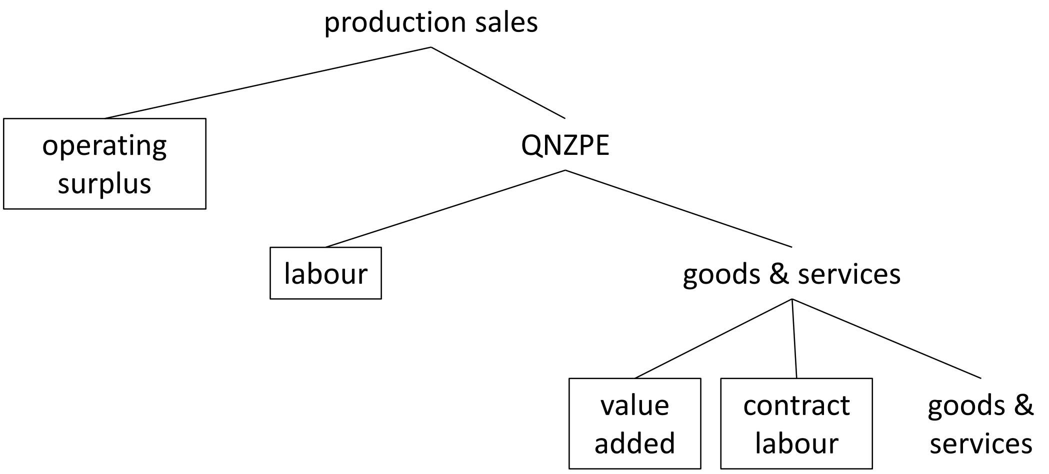
In order to estimate the economic benefit of the NZSPG we have used elements of two of the three methods for estimating GDP. We have not estimated the contribution to GDP, because we have excluded payments to foreign factors (i.e. non-resident labour and overseas production studios). New Zealand's GDP measures the value of production that occurs in New Zealand, and so includes payments to foreign factors. However we have not included these as they have limited economic benefit; as such our estimates could be considered akin to Gross National Product (GNP). In addition to this methodological decision, we have abstracted from a number of other aspects of the national accounts to focus on those that we consider most likely to be materially affected by the grant (and amenable to estimation).

The two approaches to estimating GDP that we have relied on for our estimate of the economic benefit of the NZSPG are:

- The production approach, which measures the total value of goods and services produced in the NZ economy after deducting the cost of goods and services used in the production process. This is also called value added, and is sometimes described as the value of output less the value of intermediate consumption.
- The income approach, which measures the income received by the factors used in the production process, such as labour and capital.

Figure 17 illustrates how we have estimated the income derived by factors of production employed directly on the production and by suppliers to the producers. The boxed elements are considered to be economic benefits. We discuss our approach to estimating the counterfactual below (i.e. the extent to which the economic benefits are incremental).

Figure 17 The economic benefits of the NZSPG



Source: Sapere

All payments to labour directly employed on NZSPG productions are considered an economic benefit. For domestic productions we have also estimated the gross operating surplus associated with the production, this can be thought of as payments to capital. For international productions, following our decision to exclude payments to foreign factors of production we have not attempted to estimate gross operating surplus. [54]

The non-labour component of QNZPE is purchases of goods and services from suppliers. One of the key economic effects of the grants is to stimulate activity amongst suppliers to the production companies; these suppliers are considered part of the local screen industry. For this reason, we have also attributed the value added component of goods and services used in the production process to the grant.

Value added is estimated as the value of output net of the value of intermediate consumption. Value added is equivalent to the income available to reward the factors of production. We have made one further adjustment to this estimate. The employment structure of the screen industry is such that a large proportion of labour is contracted rather than employed. Payments to workers who are contractors of suppliers will be excluded from value added (they are treated as a good or service supplied, sometimes called intermediate consumption). This means that this labour income will be excluded from our estimate even though it is economically equivalent to payments to employees. We have provided a scenario to estimate the extent to which this understates the contribution to GDP from the productions. This effect is most significant for International – PDV.

We have used our additionality assumptions, described in section 5.3 to exclude the economic benefit of production activity that it is assumed would occur in the absence of the grant. We have also netted off an estimate of the economic value of spending the grant money in another way.

Detailed methodology and assumptions

Table 20 summarises the method we have used to estimate the elements of the economic benefit of the NZSPG, and more detail is subsequently provided on each element of the method in the text below.

---

[54] We have assumed that the gross operating surplus is paid to the overseas studio. There may be an exception to this exclusion where an international production has a New Zealand producer, however there is no robust way of estimating what (if any) proportion of gross operating surplus is retained by the New Zealand producer and what proportion goes to the overseas studio. We have assumed that NZ producers' remuneration is part of QNZPE.

Table 20 Summary of method

Value added by producer		Value added by suppliers	
Operating surplus	**Production labour (QNZPE)**	**Value added on goods and services (QNZPE)**	**Sub-contractors to suppliers of production services and post**
For domestic productions only Assumed % of QNZPE based on AES data for the motion picture and video production industry, 2014-2016: $\frac{surplus}{opex + wages}$	Labour categories of QNZPE Adjusted for % of non-resident labour by format based on assumptions from NZFC's sample of productions	Assumed % of QNZPE by category based on AES proxy industry: $\frac{value\ added}{sales}$ Sensitivity: use SIS as a proxy for all expenditure	Scenario to estimate the value of goods and services used in suppliers' production process that is contract labour Based on estimates from SIS for TV and film, and for PDV from Weta Digital

Source: Sapere

Operating surplus of domestic productions

For domestic producers, we have estimated gross operating surplus associated with screen productions. Our estimate is based on customised data provided by Stats NZ from the AES for the "motion picture and video production" industry.[55] The data span 2014-2016 and so we have used the totals for this period, as it provides a reasonable match to our evaluation period.

From the perspective of producers, QNZPE is the value of purchases plus salaries and wages. For this reason we represented the operating surplus before tax from the AES as a percentage of purchases and other operating expenditure plus salaries and wages, and multiplied this by QNZPE for each domestic format.[56]

$$\frac{operating\ surplus_{AES}}{salaries\ and\ wages_{AES} + purchases\ and\ opex_{AES}} \times QNZPE$$

Based on this method, we estimate that gross operating surplus is 14.6% of QNZPE for domestic productions.

55 This is the same industry as used to estimate value added from suppliers of production services. Its ANZSIC number is J551100.

56 In this part of our analysis, we have included imports in the QNZPE data to be consistent with the AES, which includes imports.

QNZPE

NZFC provided QNZPE data for a sample of productions split into expenditure categories and regions.

To estimate the labour and goods and services components of QNZPE, we applied the proportions of these in the sample to total QNZPE by format. For some parts of the estimates we need to exclude imports from the total, and we have assumed that expenditure attributed to the "offshore" region in the sample is imports. This is likely to over-estimate the extent of imports because some proportion of this will be items bought in New Zealand by an overseas agent (such as travel and accommodation).

This process gives an estimate of total QNZPE by category of expenditure, and the total in each category excluding imports.

Labour

NZFC also provided an estimate of the total number of people working on a production and the total who are NZ residents for the productions in the QNZPE sample. This is based on information provided in the grant applications and their knowledge of the productions. Unlike the QNZPE data this is not audited, nonetheless we have assumed there are no material inaccuracies in this data.

Table 21 Resident labour by format

Format	Percent of labour that is NZ resident
Film - domestic	92.5%
TV - domestic	97.6%
Film - international	81.7%
TV - international	90.9%
PDV - international	70.0%

Source: NZFC sample data, Weta Digital, Sapere analysis

In order to estimate the percent of QNZPE expenditure on labour that related to NZ-resident labour we have aggregated the employment statistics and calculated the percentage of total labour in the sample that is NZ resident, for each format. We assume that this is the percent of labour costs that is paid to New Zealand residents. This assumption rests on two underlying assumptions that we cannot robustly test:

- The average wage paid to New Zealand resident labour is assumed to be the same as the average wage paid to non-resident labour. It is possible that non-resident labour has a higher average cost necessitated by skill shortages and the need to attract people (geographically) to New Zealand. If this is the case then we may have overestimated the payments to resident labour and hence the economic benefit. This could be offset in some cases by the relative seniority of resident employees.

- The sample is assumed to be representative of all productions. While we considered weighting the productions in the sample, there is no apparent pattern to the proportion of residents that worked on a project (for example, higher budget projects are not systematically associated with a higher or lower proportion of residents). The effect this may have had on the estimate of economic benefit is unknown.

For PDV, as there is no employment data provided in the grant application, we have instead relied on an estimate from Weta Digital that 70% of their workforce has New Zealand residency. We have assumed that this applies to all PDV suppliers.

AES data proxies

We have made extensive use of data from Stats NZ's 2016 Annual Enterprise Survey (AES). We assigned an industry from the AES to each category of QNZPE expenditure. This is described in Table 22.

Table 22 AES industry proxies

QNZPE categories	AES industry proxy
Production services (excluding catering) and other - guild levies	Production (J551100)
Post-production services	Post-production (J551400)
Catering	Food and beverage services (GH212)
Domestic and international flights	Rail, Water, Air and Other Transport (II12)
Rental cars/taxis	Road Transport (II11)
Other expenses (per diems, car allowances etc)	Transport, postal and warehousing (II)
Accommodation	Accommodation (GH211)
Related business services (e.g. legal, accounting, finance costs, insurance, completion bonds, marketing and comms)	Financial and insurance services; Legal and Accounting Services; Advertising, Market Research and Management Services; Administrative and support services (KK; MN112; MN113; MN21)

Source: Sapere

A certain amount of judgment is necessary in assigning proxies. "Related business services" is a relatively large category of QNZPE for domestic productions (19.8% of total QNZPE for domestic productions, 2.8% for international productions). Based on the NZFC's description of the types of expenditure that are in this category we have aggregated four industries in the AES to form the proxy industry for this category. We considered using only two industries (Financial and Insurance Services; and Professional, Scientific, Technical, Administrative and Support Services) however there are a number of industries in the latter grouping which are clearly irrelevant. Similarly we considered using a sub-grouping from the Financial and Insurance Services industry, but could not conclude that this would be appropriate.[57]

Value added by suppliers

Value added for each AES industry was estimated as sales less purchases and other operating expenses. This was then represented as a percentage of sales. QNZPE can be thought of as the value of sales by suppliers in each category (or industry) to the producer. Value added for each QNZPE category was then calculated by multiplying the value of QNZPE[58] by the proxy industry's value added as a percentage of sales. That is:

$$value\ added_{AES} = sales_{AES} - purchases\ and\ other\ operating\ expenses_{AES}$$

$$value\ added_{QNZPE} = \frac{value\ added_{AES}}{sales_{AES}} \times QNZPE$$

For example, we estimated that in the accommodation industry (GH211) value added is 46% of the value of sales. We assumed that this industry average applies to accommodation in QNZPE and thus 46% of QNZPE on accommodation is value added.

Using the AES data assumes that businesses that supply the screen industry are represented by the average business in the relevant industry. Stats NZ also provides financial data (similar to the AES) specifically for the screen industry, based on the Screen Industry Survey (SIS). These data relate to all businesses that supply the screen industry. As a comparison, we used SIS data to estimate the total value added from QNZPE on good and services (i.e. without separating the categories of expenditure). We have provided these results below, which shows that there is little difference between the methods, with the exception of PDV. The latter is unsurprising as PDV QNZPE is almost entirely comprised of expenditure in one industry. The difference reflects the difference between the post-production industry and the average screen sector supplier. We prefer the AES method as it allows the proportions of expenditure on different items, and therefore the relative value added, to vary across formats. Table 23 shows this variation. We have used the AES industry proxies for our main scenarios.

---

57 Specifically, we considered excluding the relatively large financial services industry. However, we expect that financing costs would be included in "related business services". Based on our interviews, we were not confident that these would be immaterial and therefore could be ignored (particularly for domestic productions). Excluding the financial services sector would reduce the value added attributed to related business services by $1.8 million.

58 QNZPE here excludes our estimate of imports, based on expenditure attributed to the offshore region. Imports are excluded because they are not part of the output of domestic suppliers; the value added in the production of imports is not an economic benefit to New Zealand.

Table 23 Percent of QNZPE by category

	Film - domestic	TV - domestic	Film - international	TV - international	PDV - international
Production services (excluding catering)	34.7%	41.0%	54.4%	55.6%	
Post-production services	29.7%	27.4%	6.2%	28.0%	99.6%
Catering	3.0%	3.5%	6.4%	6.1%	
Domestic and international flights	2.3%	0.8%	2.7%	0.8%	
Rental cars/taxis	3.9%	7.8%	6.1%	0.4%	
Other expenses	1.7%	0.4%	4.8%	0.9%	
Accommodation	3.9%	1.3%	11.5%	2.5%	
Related business services	20.8%	17.8%	7.7%	5.6%	0.4%

Source: NZFC data, Sapere analysis

Contract labour (suppliers)

We explained above that the employment structure of the screen industry relies relatively heavily on contractors. We wanted to test whether our estimates of economic benefit from suppliers to screen productions were consistent with this implied level of labour income.

The SIS states that 44% of production and post-production revenue for TV programmes, and 55% for feature films is from contracting. We have assumed that this implies that 44% of intermediate consumption by firms supplying production and post-production services to NZSPG TV productions relates to sub-contractors, i.e. labour. Similarly we have assumed that 55% of intermediate consumption by firms supplying production and post- production services to NZSPG TV productions relates to sub-contractors. Based on data from Weta Digital we have assumed that 85% of the total costs of post-production services provided to PDV-only productions relate to labour.

We used the assumptions described earlier for the proportion of resident and non-resident labour by format.

We provide results for this scenario below. The impact is most significant for PDV.

Additionality and counterfactual

In order to limit our estimate of the economic benefit of the grants to those effects that are attributable to the grants we have made two adjustments:

- All economic benefits from the activity associated with the productions are multiplied by the relevant additionality assumption. For example, in our central estimate 74.8% of the benefits associated with domestic productions are assumed to be attributed to the grant. In other words, without the grant 25.2% of the economic benefits would remain.
- In the counterfactual of no grants, the grant money would be available to expend on something else. We considered two options for estimating the economic benefit of this.
  - The average ratio of value added (sales less purchases) to total income for all industries to estimate the economic benefit of spending that money elsewhere in the economy. The ratio of value added to sales in the AES in 2016 was 0.314. This implies that economic benefits totalling 31.4% of the value of the grants would remain in the absence of the grants.
  - Treasury has previously estimated a fiscal multiplier, which measures the impact of a change in discretionary government spending on GDP based on data up to June 2010.[59] This study estimates an impact multiplier (first quarter effect) of about 0.26, "which implies that a 1 percent of GDP change to government expenditure increases GDP by 0.26%."[60] For our purposes, the first year multiplier is more suitable, this measures the GDP response over the first four quarters. The Treasury says "An unexpected one dollar increase in government spending would typically raise GDP temporarily by around 42 cents in the first year, at the cost of higher interest rates and lower output in the medium to long-run."[61]

  We have adopted the second of these options in our analysis. The rationale for this is that while the period of the study is now a little old, the structure of the economy is unlikely to have changed markedly and the method captures the actual average impact on GDP (economic benefit) of discretionary government spending including any induced demand in other sectors.

We have included a third adjustment, but as a sensitivity analysis because of the uncertainty of the estimated value of the adjustment. This relates to the extent to which private capital and labour resources used in NZSPG productions would, in the absence of the grant, be used in some other sector to derive economic benefit.

Estimating this adjustment relies on an assessment of the extent to which resources drawn to the film sector result in lost output in some other sector. Considerations relevant to this assessment include capacity utilisation and the associated probability that resources freed up from the screen sector would alleviate shortages in other sectors.

Lost output in other sectors would only result from the NZSPG where capacity was fully utilised and there was no ability to replace resources drawn to the screen sector with other

---

59 Parkyn, Oscar and Tugrul Vehbi, 2013, *The Effects of Fiscal Policy in New Zealand: Evidence from a VAR Model with Debt Constraints*, New Zealand Treasury Working Paper 13/02, http://www.treasury.govt.nz/publications/research-policy/wp/2013/13-02/twp13-02.pdf

60 Ibid, page 2.

61 Ibid, page 32.

resources. Over the period of the evaluation Treasury's measures of the output gap (the actual output of the economy less the potential output) were generally negative.[62] This means that there was spare capacity in the economy, suggesting that the opportunity cost of the resources used in the screen sector for NZSPG productions is limited.

There are three groups of sectors that we have considered in estimating an indicator of this aspect of the counterfactual: the production sector, the post-production sector and other suppliers. We have concluded that the key opportunity cost associated with private resources used in the NZSPG productions relates to production services, including direct employment.

For most industries that supply NZSPG productions the demand from this source is a minor proportion of total sales: QNZPE represented at most 0.1% of sales in each of the AES industry proxies, except accommodation where QNZPE represented 0.4% of sales. This suggests that for these industries there would be a relatively minor change in costs as a result of the demand from QNZPE, this means that there is no opportunity cost of resources (i.e. the counterfactual is simply lower output in that industry).

There are strong indicators that international mobility in the post-production sector is high and as such we have assumed that these workers and businesses would move to another jurisdiction so there is no alternative value of use of these resources in the New Zealand economy.

There is potential alternative use of resources currently used to provide production services and employed in a production role by the NZSPG productions. It is not clear the extent to which these resources would alleviate labour shortages currently observed in selected other industries. In addition to the potential skills mismatch there may be other factors that limit the extent to which output in the other sector might be able to increase if this labour were available, for example in the construction industry (which anecdotally could be an alternative employer of some production labour) land shortages or the consenting process may be the limiting factor on output rather than the availability of labour.

As an indicator of possible resource reallocation, we have estimated the value of the economic benefit if half the value added by production services firms supplying NZSPG productions and half the wages paid to below-the-line labour were realisable in the counterfactual. In other words we have assumed that if these resources were available to another sector they would achieve half the economic benefit they do in the screen industry. Possible reasons for a lower benefit include the factors we have already described such as spare capacity, structural mismatch, other limiting factors, and different rates of productivity.[63] In addition, some production labour is likely to emigrate. We have not included (directly employed) above-the-line labour in our estimate of resource reallocation because in our view these workers are more likely to emigrate to remain in the screen sector.

---

62 Two of the three measures used by Treasury to measure the output gap (excluding the poorly performing HP filter) have only recently returned to zero, having been negative since the 2008 financial crisis.

63 The Treasury's *Guide to Social Cost Benefit Analysis* suggests that where there is spare capacity the opportunity cost of labour is half the going wage. http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/guide/cba-guide-jul15.pdf, page 17.

This approach to the counterfactual has been criticised as too focused on the short term and somewhat arbitrary.[64] The grants are essentially a short term stimulus instrument, since the evidence is that adjustment occurs relatively rapidly in response to a change in incentives. In addition, our analysis is focused on activity during the relatively short evaluation period and hence what the alternative was during that period. While there is a degree of judgement in the counterfactual, in our view it is nonetheless useful to provide an estimate alongside the details of how it was determined, rather than simply ignore the issue.

Deadweight costs

The deadweight cost of taxation is the opportunity cost that arises as a result of changes in activity due to tax. Taxes cause people to change their behaviour away from the things that are taxed to things that are not taxed (or that are taxed more lightly). The opportunity cost is the loss of welfare (consumer and producer surplus foregone) when activities or transactions, which would have occurred in the absence of the tax, now do not occur.

It is possible to mount an argument that there is no need, within the context of evaluating a single government policy, to account for the deadweight cost of raising the revenue to pay for the initiative. This argument relies on the idea that the government raises a certain amount of revenue and then allocates this amongst different projects, but that no single project affects the total amount of revenue raised by the government. This would imply that an initiative would have no effect on deadweight cost, because if that initiative did not occur another would take its place (and any deadweight cost would therefore remain constant). This argument has merit at the margin, but it is somewhat artificial to argue that the government sets tax rates with no consideration of the initiatives it wishes to fund. At least in the long run, a counterfactual of lower taxes is appropriate.

When undertaking a cost-benefit analysis of a government initiative, the NZ Treasury suggests a default deadweight cost of taxation of 20%.[65] Conceptually, the rate of taxation and the elasticity of supply and demand for the thing being taxed change the deadweight cost.[66] For some projects, it may be considered worthwhile to estimate a specific deadweight cost if it is funded in a particular way, however the cost of doing so is generally prohibitive. Where an initiative is funded from general taxation then a harmonised estimate of the deadweight cost is appropriate, and allows comparison between different initiatives.

There is some criticism of the adoption of a 20% rate, which centres on its estimation and whether it is based on recent information about tax rates and the tax base. However,

---

64 Infometrics, *Review of Sapere Report 'Evaluating the New Zealand Screen Production Grant (December 2017)*, February 2018 page 2.

65 NZ Treasury, 2015, *Guide to Social Cost Benefit Analysis*, paragraph 42.

66 See for example Diewert, W., & Lawrence, D., 1995, The Excess Burden of Taxation in New Zealand. *Agenda: A Journal of Policy Analysis and Reform*, 2(1), 27-34. Retrieved from http://www.jstor.org/stable/43198704

updating the deadweight cost of taxation in New Zealand is a significant exercise, which is outside the scope of this report.[67] We therefore adopt the Treasury's default assumption.

It should also be noted that where an initiative generates revenue for the government this allows it to avoid raising funds for other projects through taxation. Society benefits from this and the revenue should be adjusted for the social surplus gained (the deadweight cost foregone).[68] For this reason we apply the deadweight cost estimate to the *net* fiscal cost of the grants. The net fiscal cost is defined as additional tax revenue less grant cost.

67 Dobes, Leo, Leung, Joanne and George Argyrous, 2016, *Social cost-benefit analysis in Australia and New Zealand: the state of current practice and what needs to be done*, ANU Press, Australian National University, Canberra, Australia, pages 206-212.

68 Ibid, page 205.

Results

Table 24 provides estimates of each component of the economic benefit of NZSPG productions. In this table, we have not taken any account of additionality or the counterfactual. This illustrates the similarity between the AES and SIS methods for the majority of formats. It also illustrates the importance of the contract labour adjustment, particularly for PDV.

Table 24 Components of economic benefit

	Film - domestic	TV - domestic	Film - international	TV - international	PDV - international
Operating surplus	$8.62m	$4.76m			
Labour	$25.67m	$17.43m	$102.06m	$104.33m	$10.46m
Value added QNZPE (AES)	$8.42m	$4.20m	$26.87m	$21.38m	$67.99m
Value added QNZPE (SIS)	$8.82m	$4.48m	$26.93m	$24.50m	$85.73m
Contract labour	$6.42m	$2.90m	$15.50m	$17.91m	$176.57m
Total AES method	**$42.72m**	**$26.39m**	**$128.93m**	**$125.70m**	**$78.45m**
Total SIS method	*$43.11m*	*$26.66m*	*$129.00m*	*$128.83m*	*$96.19m*
Total (AES method, incl contract labour)	**$49.14m**	**$29.29m**	**$144.43m**	**$143.62m**	**$255.02m**

Source: NZFC data, Sapere analysis

1. This table presents the total economic benefit and does not account for additionality or any counterfactual.

Table 25 shows the net economic benefit by format, based on the AES method. We have not included the adjustment for contract labour in this table, so this is a conservative scenario. The economic benefit in the first row of the table is the result from Table 24 adjusted for the extent to which we assume that activity would occur without the grant. This is based on the central additionality assumption. The second row of the table shows the expected economic benefit in the counterfactual, that is, the economic benefit of spending the grant income in some other way. The third row shows the deadweight cost based on the net fiscal cost of the grants. The fourth row, labelled "net additional benefit" shows the net economic benefit derived from the grant taking into account both screen production that would occur regardless and the economic benefit that might be associated with spending the grant money on some other activity net of the deadweight loss. We can compare the total net additional economic benefit of $272.4 million with the total cost of the grant of $177.1 million. The net economic benefits are estimated to be 1.54 times the grant expenditure.

Table 25 Net economic benefit, excluding subcontractors

AES method, central additionality assumption

	Film - domestic	TV - domestic	Film - international	TV - international	PDV - international	Total
Economic benefit	$32.0m	$19.7m	$118.1m	$115.1m	$71.9m	$356.8m
Counterfactual benefit grant expenditure	$9.9m	$5.5m	$17.9m	$17.0m	$24.2m	$74.4m
Deadweight loss	$3.0m	$1.7m	$1.8m	$3.4m	$0.1m	$10.0m
Net additional benefit	**$19.1m**	**$12.6m**	**$98.4m**	**$94.8m**	**$47.5m**	**$272.4m**
Grant	$23.6m	$13.0m	$42.6m	$40.4m	$57.6m	$177.1m
Net benefit/$1 grant	**$0.81**	**$0.97**	**$2.31**	**$2.35**	**$0.83**	**$1.54**

Source: Sapere analysis

Table 26 shows a similar analysis except this time we have included the payments to sub-contractors of suppliers of production and post-production services as an economic benefit. Once again, we have applied the central additionality assumption to the total economic benefits (in Table 24) in the first row of this table. Net of the counterfactual benefits and deadweight loss, we estimate the economic benefit of the grants including payments to sub-contractors is $457.0 million, or 2.58 times the value of the grant.

Table 26 Net economic benefit, including subcontractors

AES method, central additionality assumption

	Film - domestic	TV - domestic	Film - international	TV - international	PDV - international	Total
Economic benefit	$36.8m	$21.9m	$132.3m	$131.6m	$219.0m	$541.5m
Counterfactual benefit grant expenditure	$9.9m	$5.5m	$17.9m	$17.0m	$24.2m	$74.4m
Deadweight loss	$3.0m	$1.7m	$1.8m	$3.4m	$0.1m	$10.0m
Net additional benefit	**$23.9m**	**$14.7m**	**$112.6m**	**$111.2m**	**$194.7m**	**$457.0m**
Grant	$23.6m	$13.0m	$42.6m	$40.4m	$57.6m	$177.1m
Net benefit/$1 grant	**$1.01**	**$1.13**	**$2.65**	**$2.75**	**$3.38**	**$2.58**

Source: Sapere analysis

Table 27 shows the sensitivity of our results to the additionality assumption. Table 27 provides results based on both the relatively conservative estimates in Table 25, excluding sub-contractors and Table 26, where we have included payments to sub-contractors. The range of net benefits under these different scenarios and assumptions is from $248.5 million to $487.8 million, or 1.40 to 2.75 times the value of the grants.

Table 27 Sensitivity to additionality assumption

Additionality scenario	Excluding subcontractors' income		Including subcontractors' income	
	Net economic benefit	**Net benefit/$1 grant**	**Net economic benefit**	**Net benefit/$1 grant**
High	$293.5m	$1.66	$487.8m	$2.75
Central	$272.4m	$1.54	$457.0m	$2.58
Low	$248.5m	$1.40	$299.8m	$1.69

Source: Sapere analysis

Our final table uses the central additionality assumption to provide an indicator of the size of the economic benefit net of both elements of the counterfactual.

Table 28 Indicator of possible economic cost, including subcontractors

AES method, central additionality assumption

	Domestic	International	Total
Economic benefit	$58.7m	$482.8m	$541.5m
Counterfactual benefit grant expenditure	$15.4m	$59.0m	$74.4m
Indicator of counterfactual benefit private resources	$13.6m	$82.4m	$95.9m
Deadweight loss	$4.7m	$5.3m	$10.0m
Indicative net economic benefit	**$25.0m**	**$336.1m**	**$361.1m**
Grant	$36.6m	$140.5m	$177.1m
$ of benefit/ $1 grant	**$0.68**	**$2.39**	**$2.04**

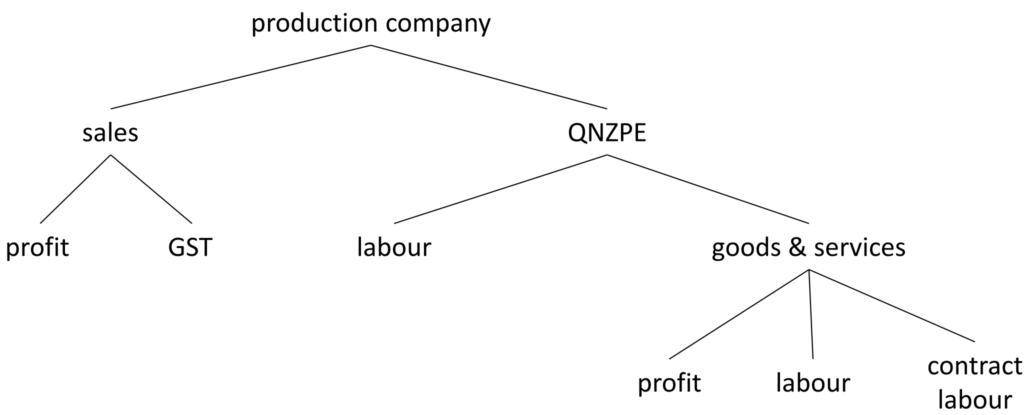
Source: Sapere analysis

This indicates that if half the economic benefit of resources used in production services were available from some other sector then this would provide $95.9 million of economic benefits.

Appendix 3 Fiscal impact

Figure 18 illustrates the key fiscal effects that arise from the activity of NZSPG recipients. The effects differ between international and domestic productions. In particular, we have assumed that international productions do not pay tax in New Zealand on any profits and that their output (the completed production) is exported and therefore zero-rated for GST. However, the expenditure associated with productions (QNZPE) gives rise to tax through income tax on employees' salaries and wages, and taxes paid by suppliers of goods and services. These are taxes on the profit of the suppliers, tax on their employees' salaries and wages and tax paid by contractors. We have made estimates of each of these using methods described below. We have not included GST paid by the production company on goods and services supplied (QNZPE) as this will be claimed back as an input tax credit, and therefore have no net fiscal impact.

Figure 18 The fiscal impact of the NZSPG



Source: Sapere

Detailed methodology and assumptions

Table 29 summarises the method used to estimate the tax revenue from each component of the fiscal impact. The fiscal analysis builds on the economic benefit analysis and uses some of the same data and estimates.

Company tax on profits of domestic producers

For the analysis of economic benefits, we estimated gross operating surplus of domestic producers. This was based on customised data provided by Stats NZ from the AES for the "motion picture and video production" industry for 2014-2016. We estimated that gross operating surplus was 14.6% of the value of QNZPE.

We estimate the company tax revenue associated with these profits at the rate of 28%.

GST on sales of domestic productions

We do not have data on the value of New Zealand sales for domestic productions.

We have estimated the value of sales as:

$$value\ of\ sales\ in\ NZ = total\ income\ from\ NZ\ sources - grants$$

QNZPE was used as a proxy for the sum of salaries and wages and intermediate consumption. We used the average ratio of salaries and wages and purchases and operating expenditure to total expenditure from the AES data for the motion picture and video production industry to estimate total expenditure.

The operating surplus was estimated in the economic benefits analysis and is described above. Adding this to total expenditure gives an estimate of total income.

$$total\ income = QNZPE \times \frac{salaries\ \&\ wages_{AES} + purchases\&opex_{AES}}{total\ expenditure_{AES}} + operating\ surplus$$

The Screen Industry Survey includes data on the source of revenue for producing for production and post-production businesses. We have used the percent of revenue that is reported to come from New Zealand sources to estimate the value of total income that comes from New Zealand sources. The SIS states that 47.2% of producing revenue for production and post-production businesses in 2014-2016 came from New Zealand sources.

This may be affected by New Zealand production companies that received the international grant. However, one of the insights that came through strongly from the domestic grant recipients was that they have a strong focus on exporting their productions. In part this is probably a simple matter of economics because the audience size in New Zealand is small and therefore the profitability is limited. But it is also a consequence of the type of productions that are made with grant funding rather than NZ on Air or Film Commission discretionary funding. These productions are more marketable internationally. Indeed Richard Fletcher reflected that this was one of the rationales for the NZSPG, to make productions that were attractive to international as well as New Zealand audiences. For example, *800 Words* has recently been sold as a format and a Dutch version is planned.

To obtain income from New Zealand sales we subtracted grants income from total income from New Zealand sources. Grants relates only to NZSPG, which will underestimate the value of government funding provided where discretionary NZFC funding is used. This means that the value of New Zealand sales may be overestimated.

Since this method is based on industry averages it will not be correct for individual productions. Productions are unique and there is no fixed relationship between expenditure and the value of sales. If recent productions were particularly successful, or not so successful, in terms of sales then the historical average will not provide a robust estimate.

The NZFC provided data that it has collected on films that received discretionary funding, which comprised six of the fourteen productions. We have used this data to estimate total sales, and the related GST.

This estimate of GST does not account for the GST earned from the exhibitor's share of box office sales. In this sense the GST revenue associated with sales of cinema tickets for NZSPG funded films will be higher. However, it seems unlikely that exhibitors would leave their cinema empty if an NZSPG funded film were not available, and we expect therefore that this GST revenue would still be earned. We have not therefore attempted to estimate it.

Table 29 Summary of method of estimating fiscal effects

Domestic production		QNZPE			
Company tax on profit	**GST on sales**	**Income tax on labour**	**Company tax on profit of suppliers**	**Income tax on labour employed by suppliers**	**Tax on sub-contractors of suppliers**
Estimate of operating surplus from economic benefit analysis x company tax rate (28%)	Upper bound: estimate value of sales as [QNZPE (proxy for intermediate consumption and compensation of employees) + operating surplus – grant] x GST rate (15%) Lower bound: estimate GST from box office and sales data provided by NZFC	IRD data on employee withholding tax receipts from NZSPG recipient companies	Estimate operating surplus of suppliers as % of QNZPE from AES data $\frac{operating\ surplus}{sales}$ use same industry proxies as for economic benefit analysis x company tax rate (28%)	Estimate salaries and wages of suppliers as % of QNZPE from AES data $\frac{salaries\ \&\ wages}{sales}$ use same industry proxies as for economic benefit analysis x withholding tax rate (20%)	Use estimate of expenditure on sub-contractors from economic benefit analysis x withholding tax rate (20%)
Deadweight loss: there is an excess burden or deadweight loss associated with taxation. We estimate the deadweight cost of the *net* fiscal impact using the Treasury's recommended default assumption of 20% of the value of the tax revenue.					

Source: Sapere

Income tax on labour directly employed

The Screen Desk at the IRD collects data on withholding tax receipts for NZSPG productions. IRD has provided us with this data.

Company tax on profits of suppliers (QNZPE)

This analysis is similar to the analysis of value added by suppliers for the economic benefit analysis. We compiled QNZPE data by category of expenditure excluding imports for the economic benefit analysis from NZFC data. Operating surplus for the AES industry proxy for each category of expenditure is represented as a percentage of sales. The value of QNZPE in each category is multiplied by this percentage to obtain the operating surplus for each category of expenditure. These can then be added together to obtain the total operating surplus of suppliers.

$$operating\ surplus_{suppliers} = \sum \frac{operating\ surplus_{AES}}{sales_{AES}} \times QNZPE_{category}$$

The company tax rate of 28% is applied to this estimate of operating surplus to obtain the related tax revenue.

Income tax on labour employed by suppliers

A similar method is used to obtain the total value of salaries and wages paid by suppliers. The percentage of salaries and wages to sales from the AES for each industry proxy is applied to the QNZPE data. A tax rate of 20% is applied which is the effective tax rate for annual earnings of $70,000.

Tax on sub-contractors to suppliers

As was discussed in relation to the economic benefit analysis, the screen industry relies relatively heavily on contractors. We used the estimates from the economic benefit analysis of the value of QNZPE paid to suppliers that relates to sub-contracted labour. We applied a withholding tax rate of 20% to this income.

Additionality

All tax revenue estimated to be derived from activity associated with the grants are multiplied by the relevant additionality assumptions. For example, in our central estimate 74.8% of tax revenue associated with domestic productions is assumed to be attributed to the grant. In other words, without the grant 25.2% of tax revenue would remain.

Results

Table 30 provides the estimates of each component of tax revenue associated with the activity of NZSPG recipients. In this table we do not take account of additionality. Income tax on labour is a particularly important component of tax revenue overall, particularly for PDV.

Table 30 Components of tax revenue

	Film - domestic	TV - domestic	Film - international	TV - international	PDV – international
Company tax on profits of domestic producers	$2.4m	$1.3m			
GST on sales of domestic productions	$1.5m	$0.8m			
Income tax on labour directly employed	$3.6m	$1.9m	$26.0m	$16.3m	$1.0m
Company tax on profits of suppliers	$1.6m	$0.8m	$3.5m	$3.3m	$11.2m
Income tax on labour employed by suppliers	$1.0m	$0.5m	$3.1m	$2.2m	$4.1m
Tax on sub-contractors to suppliers	$1.4m	$0.6m	$3.8m	$3.9m	$45.9m
Total tax revenue	**$11.5m**	**$6.0m**	**$36.4m**	**$25.7m**	**$62.2m**

Source: Sapere analysis

Table 31 shows the net fiscal cost by format. The first row shows the total tax revenue from Table 30 adjusted to reflect the extent to which we assume that activity would occur without the grant. This is based on the central additionality assumption. The net fiscal cost is the cost of the grant net of additional tax revenue raised from the activity of the recipients; this is the amount of tax that would need to be raised elsewhere in the economy to fund the grants.

Table 31 Net fiscal impact

Central additionality assumptions

	Film - domestic	TV - domestic	Film - international	TV - international	PDV – international	Total
Additional tax revenue	$8.6m	$4.5m	$33.3m	$23.5m	$57.0m	$126.9m
Grant cost	$23.6m	$13.0m	$42.6m	$40.4m	$57.6m	$177.1m
Net fiscal impact	**$15.0m**	**$8.6m**	**$9.2m**	**$16.9m**	**$0.6m**	**$50.2m**

Source: Sapere analysis

Table 32 shows the sensitivity of the net fiscal cost estimates to the additionality assumption. The total fiscal cost of the grant is $177.1m. This implies that between $108.0 million and $125.1 million of this cost is offset by tax revenue from additional activity attributed to the grant.

Table 32 Sensitivity of fiscal cost to additionality assumptions

Grant cost net of additional tax revenue

Additionality scenario	Net fiscal cost
High	$43.4m
Central	$50.2m
Low	$57.6m

Source: Sapere analysis

Appendix 4 Case study: *Pete's Dragon*

Pete's Dragon was the second film produced that received the 5 percent uplift, the additional 5 percent grant (to bring the total grant to 25 percent of QNZPE).[69] The movie was filmed in Rotorua's Redwood Forest, in Tokoroa, at Wellington's Stone Street Studios, and in Tapanui in Otago, which became "Millhaven" for the purpose of the film. As well as shooting the film on location in NZ, Weta Digital produced the digital and visual effects. David Wright from Weta Digital believes that the grant was critical to them obtaining this work. Although he conceded that Avatar had given them credibility, Weta Digital had not previously worked much with Disney; now they have a relationship, and will be on Disney's radar.

Disney executive Mary Ann Hughes has been quoted as saying that the additional 5 percent tipped the scales in favour of NZ, as 20 percent is "very standard" internationally. "I refer to it as a negotiated business agreement with the New Zealand government. We needed the 5 percent to be able to take *Pete's Dragon* to outlying locations like Tapanui."[70]

The three key aspects of the benefits provided by Walt Disney Pictures in relation to *Pete's Dragon* were:

- Defined minimums of the amount and proportion of production expenditure (90 percent) and visual effects (75 percent) to be spent in NZ; and of the number of key roles (6) and proportion of crew (75 percent) to be filled by New Zealanders.
- Marketing partnerships with Tourism NZ, and the Film Commission in relation to promoting NZ as a tourism and screen production destination respectively.
- Skills development for the local screen industry.

The 5 percent uplift is expected to result in an additional grant of approximately $4.4m to Disney. The test then is whether the benefits generated from Disney's additional commitments exceed $4.4m.

In 2016, we interviewed Rebecca Ingram the General Manager of PR and Major Events at Tourism NZ and Carthew Neal, who was an Associate Producer on *Pete's Dragon* as part of the skills development benefits, about their views on the benefits provided by the agreement. In 2017, we interviewed Rene de Monchy, the Director of Trade, PR and Major Events at Tourism NZ and Horace McAuley, chair of the local promotions group in Tapanui, who was the local liaison for *Pete's Dragon*.

Short-term localised benefits

There were certainly short-term benefits in the shooting locations and for those involved in the production. These are normal economic effects of film production and we do not consider they should be measured as part of the additional benefit arising from the 5 percent

---

69 The Avatar (sequel) films was approved in December 2013 for a 25 percent grant prior to the current test being implemented, and a Memorandum of Understanding has been entered into by the Crown and Lightstorm Entertainment and Twentieth Century Fox. The Avatar films have not yet received any grant.

70 http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11692557

uplift. However, it is possible that the benefits were more regionally distributed (for example to Tapanui, as described by the Disney executive) because of the uplift:[71]

- Disney directly hired 21 percent of the population of Tapanui (163 people of 770) where four and a half weeks of filming was done, and rented 55 houses in the town for cast members and crew. This provided an income boost to the small town.
- Several Tapanui businesses increased revenue by 80 to 90 percent during the month of filming in the town.
- 31 Kiwis are in the film cast (of 40) and 810 Kiwis were members of the crew. It took 74 days to film.
- Weta Digital had 150 staff work on the film. It began initial sketches of Elliot, the dragon, in 2014.

Well-being

We were struck in our interview with Horace MacAuley that there appeared to be a significant impact on the well-being of people in Tapanui as a result of the experience of *Pete's Dragon* filming there. Although the filming took place over a short period of about six weeks, he said "people still talk about the film experience". Disney appears to have gone out of their way, or at least reduced the normal barriers, to allow people to watch and experience the filming. He also spoke of the way the town came together providing accommodation and social venues in private homes and the involvement of the town in the production itself, whether as extras or undertaking other contract work, or providing goods and services from their business. From his comments there does seem to have been an increase in social cohesion as a result of the filming.

Tourism benefits

Tourism NZ considers that film tourism is an important motivator of travel to NZ and to that end has a film tourism strategy that includes maximising on opportunities from new films as well as the ongoing association of NZ as the home of Middle Earth. Tourism NZ uses a measure of "equivalent advertising value", which proxies the reach and quality of international media coverage achieved. Their target for *Pete's Dragon* was about $4 million of equivalent advertising value, which Rebecca Ingram considers will be achieved. Equivalent advertising value does not necessarily reflect economic benefit as it does not represent economic activity in NZ. The key is the increase in tourist expenditure, either from new visitors or increased expenditure, induced by this advertising and whether this represents additional activity. It may not be additional if, for example, there are capacity constraints on infrastructure such as accommodation or transport.

Key activities surrounding *Pete's Dragon* included:

- media junkets to NZ, with Tourism NZ able to access 100 international media in NZ

71 http://www.nzherald.co.nz/entertainment/news/article.cfm?c_id=1501119&objectid=11688082 and http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11692557

- three slots on Good Morning America, plus an additional two slots that provided behind-the-scenes information to profile and market NZ as a screen production destination
- material developed for the Tourism NZ website including a "Dragon's eye view" flyover of key tourist destinations
- local premieres, and
- a "featurette" of NZ as the home of *Pete's Dragon* on the DVD.

Tourism NZ does not actively monitor whether *Pete's Dragon* was a reason that NZ appealed to visitors. *The Hobbit/Lord of the Rings* remain part of the International Visitor Survey questionnaire and while the effect is expected to be smaller than the Middle Earth appeal, it is possible that consideration could be given to broadening the scope the IVS question about appeal factors to cover more films, or films in general. Tourism NZ does not monitor any possible effects on domestic tourism (for example from more people visiting Rotorua's Redwood Forest).

A survey by Tourism NZ of US "active considerers" (i.e. those already contemplating travel to NZ) in 2016 shortly after the release of the film showed that 82 percent were aware of *Pete's Dragon*, and 32 percent knew it was filmed in NZ. Of those who had seen the film 59 percent were aware that it was filmed here. There was a high level of recognition of the campaign (35 percent in total, and 52 percent of those with children under 18).

Of those who recognised the campaign 92 percent said that they were more motivated to visit NZ as a result. Rebecca Ingram considered this an unexpectedly positive result, with an average of 80 percent for a US campaign. She considered that all the "touch points" of the campaign provided incremental benefits as the verbatim comments were very broad.

The cost of developing the campaign for Tourism NZ is unclear. There is a budget provision of $0.9 million for film activity, but this will include marketing campaign costs as well as development. Rebecca Ingram emphasised the small size of Tourism NZ and the leverage that associating with Disney afforded them in what she described as a cluttered and expensive market.

While there are clearly direct advertising opportunities gained as part of the 5% uplift Tourism NZ has indicated that "tweets" by Oprah Winfrey and Reese Witherspoon during their time in New Zealand for the production of *A Wrinkle in Time* (which is expected to receive the international grant but has not applied for the uplift) had an equivalent advertising value in excess of $10 million.

It is important to note that advertising value does not necessarily equate to economic benefit. Economic benefit arises from tourism if additional visitors come to NZ and this yields a decrease in unemployment of people or other resources within the economy (or employment with a higher return).Tourism can also result in a need for capital expenditure on infrastructure (such as hotels or transport), which is an economic cost. Tourism NZ's Mr de Monchy acknowledged that it is a "long bow to draw [from this expenditure] to tourists arriving".

The literature shows that while films are a strong drawcard for tourists, the benefit of active marketing is unclear. Indeed there are examples where exposure in a film has led to a significant increase in visitors.[72] And the tourism effect can be long lasting, presumably well after the initial blush of media exposure has faded.[73] This is certainly true for Lord of the Rings fans, with 14% of holidaymakers citing the Hobbit Trilogy as a reason for visiting New Zealand.[74]

The long tail of tourism may be linked to the emotional connection of fans with the movie and its location (consider the Sound of Music for example). There is some evidence that for film-specific fans access to locations, organised tours and engagement by the local community are important to ongoing tourism.[75] The Hobbiton set experiences would tend to support this. The Hobbiton movie set was used in 1999 and despite some demolition of the site tours commenced in 2002. The set was rebuilt in 2009 for the Hobbit movies and in 2012 further replica "sets" were added. Similarly the Weta Cave in Wellington was opened in 2008 in response to demand by tourists and now receives 140,000 tourists a year. While Horace McAuley said that some visitors detour to Tapanui because of *Pete's Dragon* there is no specific tourism infrastructure nor has the set been retained.

Skills development benefits

New Zealander Carthew Neal was an associate producer on *Pete's Dragon*, and we interviewed him in 2016 about what he gained from this experience. The benefits he described centred on the people that he has been able to develop relationships with as a result of this role. This included:

- Barrie Osborne the executive producer, with whom he worked most closely over 6 months on the production,
- Writers, David Lowery and Toby Halbrooks, with whom he described a collegial relationship
- Producers Jim Whitaker and Adam Borba who provided introductions to casting agents and other colleagues in LA.
- Disney creative executive Louie Provost, who Mr Neal said was "generous" in providing advice as well as allowing him an "open door" to formally pitch if he wishes

He described these relationships as reciprocal, and said "I don't feel like the benefits have ended… [they] will carry on through my career." These benefits are largely private (in economic lexicon), that means that they accrue to Carthew Neal himself. However, there could be broader economic benefits from these depending on whether they enable activity in NZ that would not otherwise occur. For example, Mr Neal indicated that he had "at least one project" that he was keen to take to Disney at some point. If this project went ahead, when otherwise it would not have, and if it was shot in NZ or otherwise provided economic

---

72 Roesch, Stefan, 2009, The Experiences of Film Location Tourists, Aspects of Tourism, Channel View Publications, Bristol, page 32.

73 Ibid, page 43.

74 MBIE, International Visitor Survey, March 2017

75 Ibid, page 55.

benefit to NZ, then this would be a benefit of the 5 percent uplift on *Pete's Dragon*. It is unlikely that this effect would be measurable.

After Mr Neal's experience on *Pete's Dragon*, he went on to produce *Hunt for the Wilderpeople* which has become the largest grossing NZ film. He indicated that he had brought some of the techniques that he had learned from Barrie Osborne into his work on that film, giving examples of bringing everyone together to watch the daily rushes, as well as having the second unit shoot on a sixth day to enable the director (Taika Waititi) to be across more of the material. Our overall impression was that his experience on *Pete's Dragon* increased his confidence in his approach and provided valuable contacts for future projects.

Piki Films was the production company for Hunt for the Wilderpeople. Piki Films also benefited from Disney's commitments. Mr Neal is a producer at Piki Films and we asked him about his view on this. Particular benefits he noted were that the *Pete's Dragon* producers (Adam Borba and Barrie Osborne) read the script and provided notes, and Jim Whitaker helped with access to casting agents in LA.

Mr Neal also indicated other possible benefits for Piki's Taika Waititi, through visiting the *Pete's Dragon* set, and discussing with David Lowery his experience of his first studio film (Mr Waititi has since gone on to direct his first studio film). In addition, Mr Neal said that Adam Borba, Jim Whitaker and Barrie Osborne continue to advocate for Piki.

These benefits are difficult to measure because they are incremental. For example *Hunt for the Wilderpeople* would have been made without the Disney input, and it is not possible empirically to say to what extent, if any, the support contributed to the film's success.

Appendix 5 Significant NZ content test

To be eligible for the NZSPG for New Zealand Productions (the domestic grant) a production must have significant New Zealand content. In order to provide information for producers, guidelines have been developed on the assessment of New Zealand content.

The guidelines take as a starting point the matters to which the New Zealand Film Commission Act 1978 (the NZFC Act) requires the NZFC to have regard in determining whether or not a film has significant New Zealand content. Section 18(2) of the NZFC Act requires the NZFC to have regard to:

(a) the subject of the film:

(b) the locations at which the film was or is to be made:

(c) the nationalities and places of residence of—

  (i) the authors, scriptwriters, composers, producers, directors, actors, technicians, editors, and other persons who took part or are to take part in the making of the film; and

  (ii) the persons who own or are to own the shares or capital of any company, partnership, or joint venture that is concerned with the making of the film; and

  (iii) the persons who have or are to have the copyright in the film:

(d) the sources from which the money that was used or is to be used to make the film was or is to be derived:

(e) the ownership and whereabouts of the equipment and technical facilities that were or are to be used to make the film:

(f) any other matters that, in the opinion of the Commission, are relevant to the purposes of this Act.

Usually a production must achieve 20 points or more in the *Significant New Zealand Content Test* (the content test) to be deemed to have significant New Zealand content.[76] However, the NZSPG Panel has discretion and the "guidelines and points framework are not fixed policy rules".[77] The content test is set out in Appendix 3 of the criteria for the domestic grant.

The test is broken into four sections:

- *New Zealand subject matter*, which incorporates setting and lead characters, the connection of New Zealand citizens and permanent residents to the creation of the original story

[76] NZSPG Criteria for New Zealand Productions 1 July 2017, clauses 8.3 and 9.3.

[77] Ibid, page 36.

on which the production is based, and the connection to New Zealand culture or history.

- *New Zealand production activity*, which relates to where the production is made. Specifically, the proportion of principal photography that occurs in NZ and the proportion of post-production, digital/visual effects, music/voice recording and concept design/physical effects that are QNZPE.
- *New Zealand personnel*, which relates to the status of various persons credited in the production as New Zealand citizens or permanent residents. Both creative roles and production roles are covered.
- *New Zealand businesses,* which relates to NZ ownership of IP and business development outcomes.

The criteria state that "it is intended that most New Zealand productions in particular will display strong New Zealand on-screen elements".[78] However, while on-screen content, i.e. characters, locations, stories and historical and cultural elements, are important a production could be considered to have significant content where there is no such identifiable element. "It is not the intention of assessment to restrict film-makers' creativity by limiting them solely to New Zealand settings and situations. Where this is the case the production will need to have:

- Strong New Zealand creative input or underlying material; and
- High levels of New Zealand production activity and film-maker input."[79]

[78] Ibid, page 39.

[79] Ibid.

Appendix 6 Contingent Valuation Survey

Within the broad objective of providing cultural benefits to New Zealand by supporting the creating of New Zealand content and stories, one of the specific goals of the domestic grant is to enrich and inform the lives of New Zealanders for current and future generations by enabling them to see their own stories on screen. Consistent with this, the purpose of the survey was to estimate the value of New Zealand screen content to the New Zealand public. We included all the productions that received the NZSPG-domestic within the evaluation period in the survey questions. However, for some productions the second aspect of the cultural objective (to enhance the perception of New Zealand, its culture and its creativity) may be more important. In particular, official co-productions may have other objectives in line with the relevant treaty or other agreement between the countries concerned. The official co-productions that received the NZSPG-domestic during the evaluation period were: Atomic Falafel, Beyond the Known World, Cleverman and Tatau.

Definitions used in the survey

New Zealand films: feature films that were made by New Zealanders, show New Zealand places, or tell stories about New Zealand/ers.

TV programmes: includes drama, documentary, factual, children's and animated programmes. It does not include sports broadcasts, news, current affairs programmes or commercials.

New Zealand TV programmes: includes drama, documentary, factual, children's and animated programmes that were made by New Zealanders, that show New Zealand places, or that tell stories about New Zealand, New Zealanders and their lives.

Respondent demographics

Table 33 Demographics

	Film (n=500)	TV (n=500)
Gender		
Female	52%	50%
Male	48%	50%
Age		
18-19 years	2%	1%
20-29 years	21%	15%

	Film (n=500)	TV (n=500)
30-39 years	18%	22%
40-49 years	21%	24%
50-59 years	19%	19%
60-69 years	13%	13%
70+ years	6%	6%
Prefer not to say	1%	1%
Ethnicity		
NZ European	56%	54%
NZ Māori	11%	11%
Other European	4%	5%
Pacific	2%	5%
Asian	22%	19%
Other	4%	5%
I prefer not to say	1%	1%
Annual household income		
Under $15,000	3%	2%
$15,001-$20,000	3%	3%
$20,001-$25,000	4%	4%
$25,001-$40,000	8%	9%
$40,001-$60,000	19%	15%
$60,001-$100,00	21%	25%
$100,001+	22%	24%
I prefer not to say	20%	18%
Highest level of completed education		
Did not complete High School	5%	6%

	Film (n=500)	TV (n=500)
Completed High School (NCEA Level 2, Level 3 or equivalent)	21%	22%
Trade/technical/vocational training	14%	11%
Diploma	14%	15%
Bachelor's degree	26%	26%
Post-graduate degree (e.g. honours, master, PHD)	15%	15%
I prefer not to say	5%	5%
Where do they live?		
Northland	4%	3%
Auckland	37%	34%
Waikato	9%	9%
Bay of Plenty	7%	7%
Gisborne	1%	*
Hawkes Bay	4%	3%
Taranaki	3%	3%
Manawatu-Wanganui	6%	5%
Wellington	8%	12%
Tasman	1%	1%
Nelson	1%	1%
Marlborough	1%	1%
West Coast	1%	1%
Canterbury	12%	13%
Otago	5%	5%
Southland	2%	2%

Viewing behaviour

Respondents were asked how often they watch films, including any film they watch at the cinema, on the TV, computer or any other device. The majority (52 percent) watch films in general at least weekly. New Zealand films were watched less often, with the majority (53 percent) watching New Zealand films only every six months or more.

Table 34 How often do you watch films?

	Any films	NZ films
More than once a week	24%	2%
Weekly	28%	4%
Every other week	18%	4%
Monthly	15%	17%
Every three months	7%	17%
Every six months	3%	18%
Once a year	1%	17%
Less frequently than once a year	2%	18%
I don't watch films	Less than 1%	3%

Source: Sapere analysis

Respondents were asked how many hours they spend per week watching TV programmes, including programmes watched on their TV, computer or any other device. The majority (54 percent) of people watch at least 11 hours of TV a week. New Zealand TV was watched less often with the majority (56 percent) watching between zero and five hours a week.

Table 35 How many hours per week do you watch TV?

	Any TV	NZ TV
0-5 hours	18%	56%
6-10 hours	25%	21%
11-20 hours	27%	10%
21-30 hours	18%	4%
31-40 hours	6%	1%
40+	3%	1%
I don't watch TV programmes	2%	5%
Don't know	Less than 1%	3%

Source: Sapere analysis

Perceived value of New Zealand films and TV programmes

Whether a film or TV programme is made in New Zealand does not influence the decision to watch that programme

Respondents were asked whether they were more likely to watch a New Zealand film or TV programme than content made outside New Zealand. 66 percent of film watchers and 71 percent of TV watchers said that it made no difference to them. 22 percent of film watchers and 20 percent of TV watchers said they were more likely to watch the New Zealand film/TV.

Most people agree that New Zealand films and TV programmes add value

Respondents were shown a series of statements and asked whether they agree with the statement or not. Only a minority of respondents either disagreed or strongly disagreed to all the statements.

The top two most strongly agreed to statements for film were:

- 'creates interest in New Zealand overseas' (82 percent either agreed or strongly agreed)
- 'puts our places, faces, humour and voices on screen' (82 percent either agreed or strongly agreed).

  The top two most strongly agreed to statements for TV were:

- 'puts our places, faces, humour and voices on screen' (81 percent either agreed or strongly agreed)
- 'gives New Zealand TV makers an opportunity to be creative (76 percent either agreed or strongly agreed).

Figure 19 Do you agree or disagree with the following statement regarding NZ films?

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Show me stories I relate to	2%	7%	38%	38%	13%	2%
Reflect our unique culture	2%	4%	21%	48%	24%	2%
Put our places, faces, humour and voices on screen	1%	*	15%	47%	35%	1%
Are enjoyable	1%	2%	25%	47%	23%	2%
Are educational	2%	5%	45%	37%	8%	3%
Tell stories that would not otherwise be told	1%	3%	26%	46%	21%	3%
Bring attention to social issues	1%	6%	33%	42%	15%	3%
Help to preserve our history for future generations	1%	4%	25%	47%	20%	2%
Contribute to New Zealand's cultural identity	4%	3%	21%	40%	29%	2%
Should be supported by the New Zealand Government	4%	7%	26%	35%	24%	4%
Make a significant contribution to New Zealand's economy	2%	6%	22%	42%	24%	4%
Create interest in New Zealand overseas	2%	2%	11%	41%	41%	3%
Support New Zealand's tourism industry	2%	2%	14%	45%	35%	2%
Give New Zealand film makers an opportunity to be creative	2%	2%	13%	38%	43%	2%

Source: Sapere analysis

1. Colour scale: 0-10% = dark red, <10-20% = light red, <20-30% = light green, <30-40% = medium green, <40% = dark green
2. * = a value of less than 1%

Figure 20 Do you agree or disagree with the following statement regarding NZ TV?

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Show me stories I relate to	1%	7%	37%	40%	13%	2%
Reflect our unique culture	2%	6%	26%	47%	18%	2%
Put our places, faces, humour and voices on screen	1%	2%	14%	56%	25%	2%
Are enjoyable	2%	4%	24%	49%	18%	2%
Are educational	2%	3%	34%	45%	14%	3%
Tell stories that would not otherwise be told	2%	4%	24%	47%	21%	3%
Bring attention to social issues	2%	4%	23%	49%	19%	3%
Help to preserve our history for future generations	1%	5%	22%	48%	21%	2%
Contribute to New Zealand's cultural identity	4%	5%	23%	44%	22%	2%
Should be supported by the New Zealand Government	4%	9%	25%	37%	22%	3%
Make a significant contribution to New Zealand's economy	2%	9%	34%	38%	12%	5%
Create interest in New Zealand overseas	2%	3%	21%	46%	23%	4%
Support New Zealand's tourism industry	3%	4%	24%	46%	20%	4%
Give New Zealand TV makers an opportunity to be creative	1%	2%	18%	49%	27%	3%

Source: Sapere analysis

1. Colour scale: 0-10% = dark red, <10-20% = light red, <20-30% = light green, <30-40% = medium green, <40% = dark green

Calculating a monetary value

Use value: how much respondents would pay to see an NZ film or TV programme, compared to content made outside NZ

Table 36 How much would you be willing to pay to see a film?

	A film made outside NZ	A NZ film
Nothing	2%	2%
50c to less than $5	4%	4%
$5 to less than $10	15%	15%
$10 to less than $15	19%	19%
$15 to less than $20	18%	18%
$20 to less than $25	14%	13%
$25+	4%	6%
Don't know	24%	23%
Median price per film	$12.00	$12.00
Average price per film	$12.68	$13.07[1]

Source: Sapere analysis

1. One respondent gave an answer of "$1000 per film", which skews the average to a significant degree; therefore this response is not included in the calculation used in the table. Including that response gives an

average price of $15.62. Removing the response means the maximum value given was $50 for films made outside NZ and $80 for NZ films.

Respondents were asked to imagine that they only way to watch a film is on their TV or similar device at home, and that they must pay each time they watch the film. They were then asked how much they would be willing to pay to see film made outside New Zealand, and then asked how much they would pay to see New Zealand film.

Respondents were asked to imagine that they only way to watch TV programmes was by paying a monthly subscription fee that allows them to watch on their TV or similar device at home. They were then asked how much they would pay as a monthly subscription fee to watch only those TV programmes made outside New Zealand. They were then asked how much they would pay to watch both New Zealand TV programmes, and those from outside.

Table 37 How much would you be willing to pay per month for TV?

	TV programmes made outside NZ	NZ TV programmes plus TV made outside
Nothing	16%	15%
$1 to less than $5	2%	2%
$5 to less than $10	5%	5%
$10 to less than $15	10%	11%
$15 to less than $20	8%	9%
$20 to less than $25	11%	10%
$25 to less than $30	2%	2%
$30 to less than $50	7%	9%
$50+	10%	11%
Don't know	31%	27%
Median price per month	$15.00	$15.00
Average price per month	$20.30	$22.00

Source: Sapere analysis

1. The maximum value given was $130 per month for TV programmes made outside NZ and $200 per month for NZ TV programmes plus TV made outside NZ.

Existence value: Paying a donation

Respondents were asked to imagine that Government funding for New Zealand film/TV was reduced. They were then asked whether they would be willing to pay a donation to the film/TV industry to secure the ongoing production of New Zealand content that they may not watch. Most respondents were either unwilling, or didn't know whether they would pay a donation for New Zealand film or TV.

Table 38 Would you be willing to pay a donation?

	Yes	No	Don't know
Film (n=500)	16%	44%	40%
TV (n=500)	17%	53%	30%

Source: Sapere analysis

Those who indicated they were willing to pay a donation were then asked how much they would pay, per year. People were willing to pay more for TV than for film.

Table 39 How much would you donate?

	Film (n=82)	TV (n=84)
Less than $5	2%	2%
$5 to less than $10	7%	4%
$10 to less than $20	10%	8%
$20 to less than $30	26%	10%
$30 to less than $50	7%	7%
$50 to less than $100	10%	19%
$100+	17%	24%
Don't know	21%	26%
Median donation	$20.00	$50.00
Average donation	$62.17[1]	$70.97[2]

Source: Sapere analysis

1. One respondent gave an answer of "$10,000", which skews the average to a significant degree; therefore this response is not included in the calculation used in the table. Including that response gives an average price of $215.06. Removing the response means the maximum value given was $1,000.
2. One respondent gave an answer of "$10,000", which skews the average to a significant degree; therefore this response is not included in the calculation used in the table. Including that response gives an average price of $231.11. Removing the response means the maximum value given was $450.

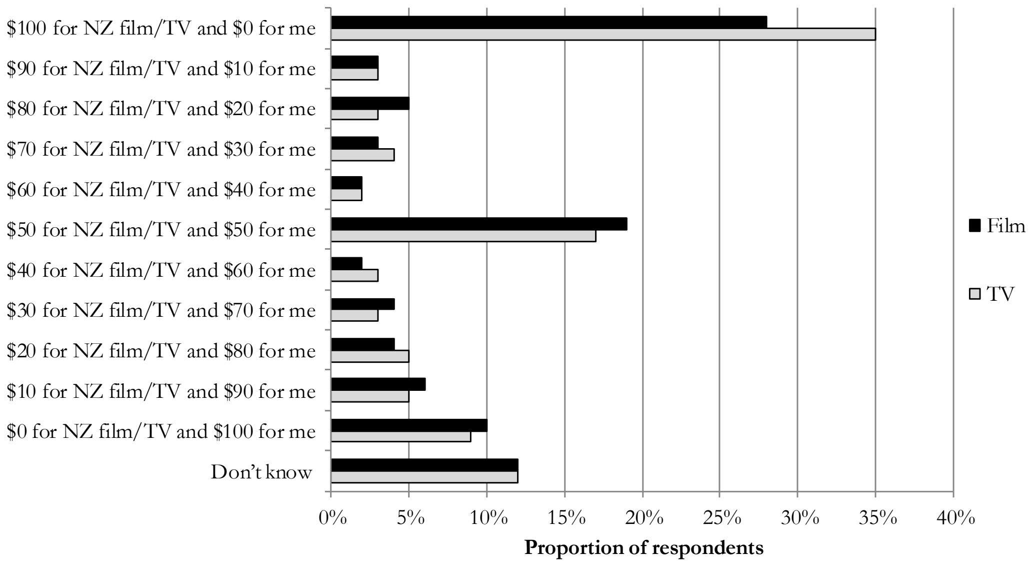
Public value: Allocating $100 between funding NZ film/TV and respondents

Respondents were asked to imagine the New Zealand Government had $100 for each person in New Zealand and they could choose only between funding New Zealand TV Programmes and giving each person the money. Respondents were asked to show how they would want the Government to allocate the $100.

As the Government allocates more money to New Zealand TV Programmes, the number and/or quality of TV Programmes produced would increase. As the Government allocates more money to the respondent, the number and/or quality of TV Programmes produced would decrease.

Film and TV responses were very similar. However, seven percent more respondents gave all the $100 to TV compared to film. The two most popular answers were giving all the $100 to film/TV, or splitting the allocation evenly between the respondent and film/TV.

Figure 21 How would you allocate the $100?



Source: Sapere analysis

Asking about the New Zealand Screen Production Grant

Respondents were asked whether they had heard of, or seen, films or TV programmes funded by the grant. People were more aware of the films funded by the grant, rather than the TV programmes, but there were many films and TV programmes that the vast majority of people had never heard of.

Table 40 Films funded by the grant

Film title	Have you heard of the film?	If you have heard of it, have you seen it?
Hunt for the Wilder people	79%	69%
Pork Pie	76%	41%
Chasing Great	53%	29%
Mahana	36%	34%
McLaren	27%	18%
Gary of the Pacific	22%	14%
Born to dance	21%	20%
The Rehearsal	7%	16%
One Thousand Ropes	5%	7%
Beyond the Known World	3%	24%
25 April	2%	63%
Atomic Falafel	1%	43%
None of these	9%	n/a

Source: Sapere analysis

1. Responses are ranked by the proportion of respondents who had heard of the film

Table 41 TV programmes funded by the grant

TV programme title	Have you heard of the TV programme?	If you have heard of it, have you seen it?
Rachel Hunter's Tour of Beauty	64%	48%
800 words - series 1	40%	54%
800 words - series 2	33%	49%
World's deadliest	20%	36%
Wild Survivor	17%	54%
Tatau	9%	30%
Panda Valley High	7%	61%
Cleverman - Series 1	6%	53%
The Desert Sea	2%	30%
None of these	22%	n/a

Source: Sapere analysis

1. Responses are ranked by the proportion of respondents who had heard of the film

After learning of the programmes that the grant helped fund, most people would not change how they would allocate the $100

People were then asked whether, after looking at the range of films and TV programmes supported by the grant, if they would like to change their answer to how much they would like to allocate the $100 between themselves and the New Zealand film industry. The overwhelming majority of people (90 percent of film respondents and 85 percent of TV respondents) said that they didn't want to change their answers.

Of those who said they would change their answer, more film respondents increased the amount they would give to film than those who would decrease. For TV respondents, the opposite was seen – more people said they would decrease the amount they would give to TV.

Table 42 Analysis of respondents who said they would change their $100 allocation

	Give more to film/TV	Give more to themselves	Don't know	No change from previous answer
Film (n=43)	22 (51%)	13 (30%)	2 (5%)	6 (14%)

	Give more to film/TV	Give more to themselves	Don't know	No change from previous answer
TV (n=67)	25 (37%)	33 (49%)	1 (1%)	8 (12%)

Source: Sapere analysis

Respondents were asked whether they thought the films/TV programmes supported by the grant contributed to New Zealand's cultural identity, told New Zealand stories that would not otherwise be told and gave New Zealand film and TV makers an opportunity to be creative.

The majority of respondents either agreed or strongly agreed with the statements for both film and TV. Respondents agreed to the statements relating to film more strongly than TV.

Figure 22 Do you agree or disagree with the following statement regarding NZ films?

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Contribute to New Zealand's cultural identity	1%	2%	20%	50%	24%	4%
Tell New Zealand stories that would not otherwise be told	1%	3%	23%	45%	24%	4%
Give New Zealand film makers an opportunity to be creative	1%	2%	14%	50%	30%	4%

Source: Sapere analysis

Figure 23 Do you agree or disagree with the following statement regarding NZ TV?

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
Contribute to New Zealand's cultural identity	2%	5%	25%	47%	18%	4%
Tell New Zealand stories that would not otherwise be told	1%	5%	22%	49%	19%	4%
Give New Zealand TV programme makers an opportunity to be creative	1%	4%	18%	51%	23%	3%

Source: Sapere analysis

When compared to the responses of the same statements before prompting, there was a slight positive shift in the film survey – in particular when it comes to the statement "Films supported by the grant contribute to New Zealand's cultural identity". 5 percent more tended to either agree or strongly agree with the statement. 2 percent more also tended to agree with the statement "Films supported by the grant tell New Zealand stories that would not otherwise be told.

In the TV survey – there was a slight shift toward people who either don't know or neither agrees or disagrees with the statement "TV programmes supported by the grant contribute to New Zealand's cultural identity" (i.e. slightly less people who agreed and disagreed). After prompting, there was also a slight increase in people who disagreed with the statement "TV programmes supported by the grant give New Zealand TV programme makers an opportunity to be creative".

Appendix 7 List of interviewees

Table 43 Interviewees

Name	Role	Company
Barrie Osborne	Producer	
Matthew Cheetham	Managing director	NZ Screen Association
Tom Kluyskens	Founder	Matter Machine
Clive Spink Angela Littlejohn Lisa Chatfield	Chief executive Head of production Head of scripted development	Pūkeko Pictures
Ian Taylor, Pania Tyson-Nathan	Board members	NZFC
Catherine Fitzgerald	Producer	Blueskin Films
Kelly Martin	CE	South Pacific Pictures,
Mathew Metcalfe	Producer	GFC
Rob Uivel	Founding director	Human Dynamo Workshop
Kyle Murdoch, John Crawford	Managing director Business affairs consultant	NHNZ
Bettina Hollings Darryl McEwen	Managing director Creative director	Imagination TV
Janine Morell Gunn	Owner	WhitebaitMedia
Richard Fletcher	Producer	Libertine
Sandy Gildea	Executive director	SPADA
Karen Fouts Michael Walkbrecht Louise Houston	SVP production planning VP public affairs Consultant	Warner Bros
Lance Lones	Founder, Chief Scientist	L2VR
Rob Tapert	Producer	

Name	Role	Company
Toni Moyes	Former COO	8i
Harry Harrison Michael Brook	Screen production attraction Screen Auckland manager	Screen Auckland, ATEED
Dorien Vermaas Katie Frost	Team Lead Sector Development & Business Attraction Screen Wellington manager	WREDA
Grant McPherson	Chief executive	Education NZ
Professor Frazer Allan	Former deputy vice chancellor, engagement	Victoria University
Andre Ktori	Associate professor, enterprise; head of the school of music and creative media production	Massey University
Horace McAuley	Chairman	Tapanui West Otago Promotions Group
Geraint Martin	Chief executive	Te Papa
Tui Te Hau	General manager, innovation hub	Te Papa
Cameron Harland	Chief executive	Park Road Post Production
David Wright Brendan Keys David Conley	Chief operating officer HR manager Executive visual effects producer	Weta Digital
Dave Wilks	General manager	Weta Workshop
Duncan Small	Head of government and industry affairs	Air NZ
Rene de Monchy	Director of trade, PR and major events	Tourism NZ
KJ Jennings	Executive manager	Film Otago Southland

In addition, to these interviews which were conducted specifically for this research, we also used material from interviews we conducted in late 2016 and a transcript of an interview conducted by MBIE staff with Jessica Manins, centre executive at ProjectR, earlier this year.

Table 44 List of 2016 interviewees

Name	Role	Company
Harry Harrison	Screen Production Attraction Specialist	ATEED (Auckland Tourism, Events and Economic Development)
Gary Watkins	Company director	Avalon Studios
Maria DeVane	Senior Vice President of Finance	Amblin Partners (previously DreamWorks)
Felicity Letcher and Roger Murray	General Manager and Creative Director	Main Reactor
Greg Harman	CEO	Mechanic Animation
Cameron Harland	CEO	Park Road Post Production
Carthew Neal	Associate producer, Pete's Dragon	Piki Studios
Shirley Escott	Senior Vice President of Production	Stephen David Entertainment
Rebecca Ingram	General Manager of PR and Major Events	Tourism NZ
David Wright	COO	Weta Digital
Dave Wilks	General manager	Weta Workshop
Philippa Mossman and Catherine Bates	Head of International Screen Attraction and Head of Incentives	New Zealand Film Commission

Appendix 8 Recipients of the NZSPG

Table 45 Recipients of the NZSPG – International

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
TV Series			
American Playboy: The Hugh Hefner Story	1953 Limited	7,253,587	1,450,717
Animal Archive	Animal Archive Productions Ltd	5,134,213	1,026,842
Ash vs Evil Dead	Starz Evil Dead NZ Ltd	35,761,056	7,152,211
Ash vs Evil Dead - Season 2	Starz Evil Dead NZ Limited	43,609,842	8,721,969
Lumen	Ninth Floor NZ Productions Ltd	8,228,581	1,645,716
Making of the Mob - Series 2	Making of the Mob Ltd	5,257,352	1,051,470
Power Rangers Dino Charge & Dino Super Charge	Power Rangers Productions Ltd	32,473,154	8,053,335
Rome: 13 Days of Blood	Roman Empire Ltd	4,020,974	804,195
The Shannara Chronicles	MTV NZ Ltd	44,296,452	8,859,290
ZooMoo - Series 2	NHNZ 2 Kids Ltd	8,156,673	1,631,335
Total TV series		**194,191,884**	**40,397,080**

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
PDV			
Alvin and the Chipmunks 4	New Upstairs Productions Ltd	59,751,197	11,950,239
Batman v Superman: Dawn of Justice	Warner Bros. Features NZ Ltd	15,327,797	3,065,559
Beijing Safari	Beijing Ventures No 1 Limited	1,159,844	231,969
Bilal: A New Breed of Hero	Park Road Post Production Limited	1,054,726	210,945
Central Intelligence	Warner Bros. Features NZ Ltd	1,691,686	338,337
Deadpool	New Upstairs Productions Ltd	1,087,212	217,442
Fantastic Four	New Upstairs Productions Ltd	7,162,924	1,432,585
Fast & Furious 7	Visual Productions FF Ltd	28,585,672	5,717,134
Guardians of the Galaxy - Series 1	Assembled Productions NZ Ltd	1,408,994	281,799
Independence Day: Resurgence	New Upstairs Productions Ltd	11,972,743	2,394,549
League of Gods	Park Road Post Production Limited	1,248,403	249,681
Marvel Avengers Assemble - Season 3	Assembled Productions NZ Ltd	1,471,410	294,282

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
Maze Runner: The Scorch Trials	New Upstairs Productions Ltd	24,981,184	4,996,237
Power Rangers (feature film)	Contrarian Productions Ltd	3,325,839	665,168
Shopkins Chef Club	Flux Animation Limited	501,970	100,394
Ted 2	MRC II NZ Ltd	2,309,890	461,978
The BFG	Big Valley Productions	89,196,371	17,839,274
The Hunger Games: Mockingjay Part 2	Contrarian Productions Ltd	8,740,239	1,748,048
The Jungle Book	Akela Productions NZ Ltd	26,985,351	5,397,070
Total PDV		**287,963,452**	**57,592,690**
Feature Film			
Crouching Tiger, Hidden Dragon II: The Green Destiny	Iron Knight Productions Ltd	51,166,575	10,215,950
Ghost in the Shell	LBO Productions	62,974,968	12,594,994
Krampus	Washtub Productions NZ Ltd	22,267,453	4,453,491
Pete's Dragon	Tyndall Productions Ltd	58,144,612	11,628,922

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
The Light Between Oceans	LBO Productions	18,306,426	3,661,285
Total feature film		**212,860,034**	**42,554,642**
Total all production types		**695,015,370**	**140,544,412**

Table 46 Recipients of the NZSPG – New Zealand

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
TV Series			
800 Words - series 1	South Pacific Pictures	5,791,313	2,316,525
800 Words - Series 2	South Pacific Pictures	11,385,016	4,554,006
China's Lost Tomb Ship	Tomb Ship Productions Limited (NHNZ)	358,439	143,376
Cleverman - Series 1	Pūkeko Pictures	2,930,244	1,172,098
Life Force 2 - Africa, India and China (SPIF)	Life Force Productions Ltd (NHNZ)	392,093	156,833
Panda Valley High	NHNZ	734,569	293,828
Rachel Hunter's Tour of Beauty	Tour of Beauty Ltd	2,047,149	818,860
Tatau	South Pacific Pictures	6,796,081	2,718,432

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
The Desert Sea (Wild Wild West)	NHNZ	617,665	247,066
Wild Survivor	Prospero	640,451	256,180
Word's deadliest	NHNZ	828,764	331,506
Total TV series		**32,521,784**	**13,008,710**
Feature Film			
25_April	GFC	4,458,369	1,783,348
Atomic Falafel	GFC	793,900	317,560
Beyond the Known World	Beyond the Known World Ltd	2,085,445	834,178
Born to dance	Vector 7	3,493,622	1,397,449
Chasing Great	Dark Dorris Plum	2,566,697	1,026,678
Gary of the Pacific	Chief Gary Ltd	2,729,035	1,091,614
Hunt for the Wilderpeople	Defender Films	4,135,055	1,654,022
Into the Rainbow	Libertine	10,978,447	4,391,379
Mahana	The Patriarch ltd	8,468,498	3,387,399
McLaren	GFC	3,565,992	1,426,397
One Thousand Ropes	One Thousand Ropes Ltd	3,310,028	1,324,011

Name of production	Applicant company	QNZPE (NZD)	Grant received (NZD)
Pork Pie	Treehouse	6,345,661	2,538,264
The Free Man (Welcome to the Thrill)	GFC	2,560,216	1,024,086
The Rehearsal	Rehearsal Films Ltd	3,453,044	1,381,218
Total feature film		**58,944,009**	**23,577,603**
Total NZSPG – New Zealand		**91,465,793**	**36,586,313**