Review of “Evaluating the New Zealand Screen Production Grant”

Report February 2018

SENSE PARTNERS
DATA LOGIC ACTION

Summary of findings

We were asked to provide an independent peer review of the report *Evaluating the New Zealand Screen Production Grant*, focusing on whether:

- the evaluation method is robust and correctly followed
- the assumptions are sound, including for the counterfactual and wage premia used
- the evaluation has answered all the questions in the contract
- the quantitative findings are supported by the evidence presented and robust.

The evaluation contains a wealth of detailed and insightful material and has addressed all the key questions. However, limitations in the approach and sources mean the evaluation does not provide strongly-evidenced answers.

Particular issues include:

- sampling of productions and lack of explicit consideration of timing issues mean that evidence on the causal link between the grants and net benefits is weak
- a weak (and potentially biased) evidence base for key assumptions, such as additionality and crowding out, creates significant uncertainty in the quantified results
- a weak evidence base on indirect effects and spill-overs. There was a mine of insightful and compelling anecdotes, but these were not followed through with data analyses or other research evidence to allow generalization about impact
- calculation method errors, or at least steps that we would have approached differently
- not highlighting results of sensitivity analysis in the executive summary, nor using alternative assumptions that better reflect the degree of uncertainty.

Overall, the robustness of results is affected by limitations in the data and the methodology. A number, but not all, of these are acknowledged and discussed in the body of the text and appendices. Some of the gaps in evidence may be unavoidable. But the limitations are not articulated in what is an unequivocal executive summary, and reference to the literature or further data analysis could have helped to support or test assumptions and results.

We would not rely on the results of this evaluation alone, without further supporting analysis, to inform policy or funding decisions.

Review

Purpose

MBIE asked Sense Partners Ltd to provide an independent peer review of *Evaluating the New Zealand Screen Production Grant*, produced by Sapere, December 2017.

We were asked to focus on the approach to calculating the net economic, fiscal and industry development impacts, reviewing whether:

- the evaluation method is robust and correctly followed
- the assumptions are sound, including for the counterfactual and wage premia used
- the evaluation has answered all the questions in the contract
- the quantitative findings are supported by the evidence presented and robust.

Evaluation method

The purpose of the grant is to provide economic and industry development benefits in order to lift New Zealanders' income above what it otherwise would have been, and to support the creation of New Zealand content to provide cultural benefits.

To answer whether the grant is achieving this, an evaluation needs to test whether:

- income has lifted (greater use of resources, at better returns)
- any improvement in income is caused by the grant
- additional local content is being created and is valued.

The evaluation tackles these questions, but the standard of evidence presented is weak.

In particular, the assessment of additionality relies on surveys and interviews of industry insiders. These sources are qualitative and likely biased on the role of the grant compared to that of other possible factors (such as reported global growth in this sector). The discussion on spare capacity in the wider economy and crowding out is also inconclusive.

The evaluation seeks to test the net economic benefit of the productions that received the grant between April 2014 – July 2017. The report points out that, as payments are made at the end of the project, this means that productions that may be attributable to the grant but have not yet completed are excluded. This may affect findings.[1]

Another potential issue which was not explored is that, given lags between planning and finishing, the location of some screen productions may have been decided before the policy

[1] The report notes this may have particularly affected results for domestic TV productions, where it is reported there was no increase in productions, though the grant increased from 20 to 40 percent of qualifying expenditure (p7).

change (i.e. at the old subsidy rates and thresholds). Conversely, production decisions may have been delayed while policy changes were being considered.

We understand from MBIE that at least the first effect is most probably not a factor. But for clarity, an explicit assessment of the connection between grant payments and the timing of production activity is important as it is material for inferring impacts. This would have given greater clarity over when and under what conditions production activity took place.[2]

It would also help clarify what occurred between the previous schemes and the introduction of the New Zealand Screen Production Grant, and whether this may have affected activity. Were transitional arrangements in place or was there a gap? How were potential investors informed about policy changes? The introduction of a new programme introduces the possibility of 'discontinuities' which may be able to be exploited to improve estimates of causality.

The implication is that, at this point, the link between the reported net benefits and grants is unclear. The approach taken cannot answer the key question of what direct and indirect net economic benefits are being generated *as a result* of the grant.

Nor could it answer what the marginal effects of the 2014 policy changes are. Whether the intent was to assess the effects of the 2014 *changes* to the screen production grants, or to assess the effects of screen production grants in general, it would have been wise to extend the evaluation to consider not just recent grants but also past grant programmes too.

The evaluation also seeks to establish how much New Zealanders value New Zealand content, by asking what they are willing to pay for such content regardless of whether they might see it. We note that only around 17% of respondents were willing to pay something to secure such content, while 44-53% were not willing to pay anything for this (p 133). The evaluation does not critically examine the implications of this finding. Nor does it account for other government expenditure on supporting New Zealand content. This casts doubt on the conclusion that "the cultural value of New Zealand film justifies the grant expenditure" (p xv).

More generally, a more formal methodology would have improved the evaluation. A more formal methodology might have included:

- reference to academic literature or similar research for motivating the effects and effect sizes considered in the evaluation
- a discussion of formal hypotheses or models that would help to:
    - contextualise what was being tested and why (this would, e.g., help to make clear what role expectations of domestic providers, studios, and financial backers played in this evaluation)

[2] Information on grant registration and grant payment would also have been useful for measuring potential effects of the grant on activity or activity intentions.

– highlight critical evaluation problems (identification and selection biases) and clarify how these were dealt with (if at all)

– clarify where data limitations were most problematic

- detailed analysis of sector activity over time (e.g. using Statistics New Zealand's Longitudinal Business Database).

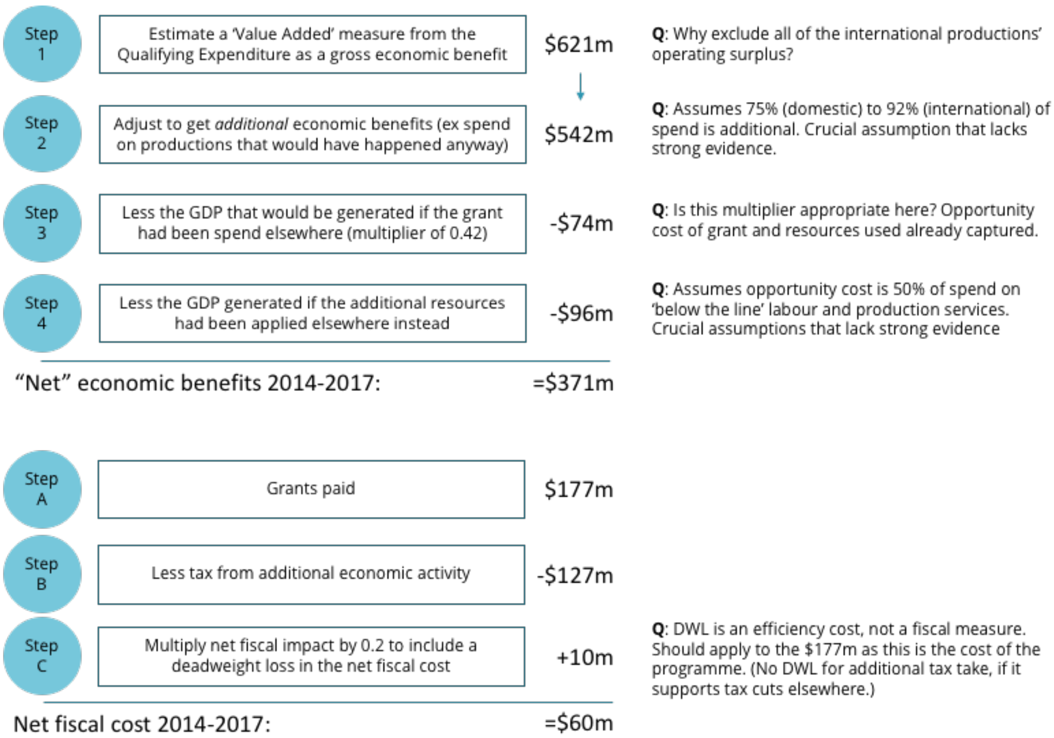
The robustness of the results is affected by limitations in the data and the methodology. A number of these are acknowledged and discussed in the evaluation. But the limitations are not articulated in what is an unequivocal executive summary. In particular, the assumptions on additionality and opportunity cost merited a sensitivity analysis with alternative assumptions that better reflect the degree of uncertainty, and for the results to be shown in the executive summary.

The counterfactual and other assumptions

Net economic benefits

Figure 1 summarises the approach to quantifying the net economic benefits and fiscal costs.

FIGURE 1: EVALUATION'S MAIN METHOD AND RESULTS, AND SOME QUESTIONS



The authors estimated income (expenditure less supply costs) for New Zealand, by deducting non-resident labour's wages and operating surplus for international productions. This may understate economic benefits to the extent that international crew live and spend in New Zealand for an extended time, and New Zealand producers have a claim on the operating surplus.[3] These matters were not explored. The approach to intermediate consumption and contract labour is appropriate.

A crucial assumption is the portion of screen productions that would not have occurred without a grant. This assumption relied on responses to an industry survey. That source is likely to have biases. It also relied on examples from interviews, without testing these against the international literature, say. Additionality of 92% was assumed for international productions, +/- 5% around the central case. Testing sensitivity to a range of 70%-100% may have better reflected the degree of uncertainty. It would also have been informative to explore reasons for differences in assumptions from previous studies.[4]

The other crucial assumption is on the opportunity cost of the additional resources drawn in to the screen sector as a result of the grant. The authors assume this opportunity cost is half the wages paid to below-the-line labour and half the value added by production services firms. Above the line cast and crew and post production businesses were assumed to move with the work (overseas). The 50% assumption reflects a judgement that there was spare capacity in the economy and follows Treasury guidance accordingly.

This set of assumptions is debatable (e.g. given low unemployment as noted on p 39) and warranted more detailed sensitivity analysis at least. There was also an opportunity to test labour market data even if just to test that there were no contrary trends in the data. Analysis of the timing of production activity would have supported this sort of analysis and provided a means for mapping production activity to labour market conditions to support the claim of slack or otherwise.[5]

We do not think the fiscal multiplier adjustment (step 3 in Figure 1) is appropriate. First, no such multiplier is applied to other items. Second, the opportunity cost of the grant is already captured by the $177m grant amount, and the opportunity cost of resources drawn in to the sector is captured separately. Third, the paper from which the multiplier is taken also states that 0.42 is a one-year GDP effect that would be offset in later years, but this dampening impact is not included here.

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[3] The screen production grant covers the wedge between what it costs New Zealand producers to deliver the production (supplies, wages, *and* profits) and what the international studios and investors pay for the production.

[4] For example, the Large Budget Screen Production Grant evaluation estimated an additionality of 63%, compared to 91.6%. In that study, the ratio of net economic benefit to qualifying spend was 15% (282m/1937m), compared to 47% (370m/787m) in this evaluation.

[5] The 50% assumption could be either a price and quantity effect. Note the Large Budget Screen Production evaluation tackled this in a different way, assuming from interviews a wage premium of 15-30% for below-the-line NZ resident labour and 30-50% for above-the-line labour, translating in an opportunity cost nearer 70-80%, compared to 50% of below the line and some supplier costs.

The calculation of the deadweight loss of taxation is an economic, not a fiscal, cost. It should thus not be treated as part of the fiscal cost. Nor should it be calculated on the *net* fiscal cost. The cost of the programme is $177m, which means a $35m deadweight loss.[6]

It is unclear if the cost of administering the grant scheme is captured in the $177m cost, though the Large Budget Screen Production Grant evaluation showed it was relatively small at the time. Even if it has increased, it seems reasonable to assume it is still small relative to the grant.

The extent to which activity stimulated by grants crowd out (see p.39) domestic screen productions should also have been quantified, if only to test the sensitivity of the findings. The need for large grants to domestic production (40% of qualifying expenditure) does suggest that supply of domestic productions is likely to be very sensitive to input costs.

There should also have been more analysis of the effects that minimum expenditure criteria for grant eligibility have on the efficiency of production expenditure. There is a perverse incentive to increase qualifying expenditure to be eligible for grants (including the 5% uplift). The extent of this inefficiency should have been analysed, to the extent possible, not least because it speaks to additionality.

The estimates span just over three years. The report does not mention whether or not estimates are shown in, say, 2014 values, by applying an appropriate discount rate. This may affect estimates as benefits precede grant costs, which are paid after the fact.

Indirect benefits, including spillovers

The assessment of the other key evaluation questions, including spill-overs and sustainability, is primarily discursive and qualitative.

The assessment of indirect benefits is a catalogue of examples and descriptions of effects. Some of this material was very insightful. But it needed to be presented in a way that allows an assessment of the size of the impact (good, bad, or indifferent compared to what could otherwise have been expected). This makes it difficult to be confident about the conclusion in the executive summary that the indirect economic benefits are significant.

For example, Weta Workshop may have created a revenue stream from workshop tours for tourists, but it is not obvious that this is additional, rather than displaced, tourist spending; the 5% grant uplift may buy additional benefits such as internships, mentoring, promotion of New Zealand as a screen production location, but how is its effectiveness and value for money assessed? The report did note there is insufficient monitoring of the uplift which hampers an evaluation.

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[6] We assume that the $127m extra tax collected in the screen sector would be offset by a tax reduction in other areas – if not, the deadweight loss would be raised by a further $25m.

There was an opportunity to supplement the international education and tourism stories with an analysis of tourism and international student trend data, to complement the stories and to give a sense of relative scale.

Size and sustainability of the screen sector

The evaluation report provides a range of statistics on revenue and number of businesses, generally showing growth. This is reasonably well-evidenced.

There is an opportunity for additional statistical analysis to test the impact of the grant, given the greater availability of historic data from the screen industry survey. This could include an assessment of how trends compare to expectations (which might have been set out in the relevant regulatory impact statement, for example).

The report notes that the observed increase in revenue and productivity may have been due to the grant (essentially an increase in revenue for the recipient firms), but it does not draw firm conclusions about this.

Overall, this section raises, in our mind, an important question about how sustainability is defined. One interpretation is that sustainability means that activity is steady enough so that businesses can grow and continue to operate for a time. This is the approach taken in the report (footnote 35).

On this basis, the report concludes there are signs the sector is becoming more sustainable. It would have been informative to back this up with a comparison of the composition of the sector by size of business, and entry and exit rates, over time and with those of other sectors.

A second interpretation of sustainability is that in future no subsidies would be needed; the grants enable screen production businesses to establish a foothold, grow, and create sources of competitive advantage (IP, reputation, facilities) so that in future they can compete on factors other than cost, removing the need for subsidies over time.[7]

The report cites comments from interviewees stating that sources of competitive advantages have been eroded, that capital is highly mobile, and that the subsidy is necessary to compete (p 16). These comments raise questions about the impact on industry sustainability.

A related definition of sustainability might be that the grant is only sustainable if it is fiscally neutral. Fiscal neutrality is a necessary condition for sustainability, if it is not the intent of production subsidies to shrink the size of the public sector.[8]

[7] In 2013 Ministers said a reason for the change was to "encourage a stronger domestically-sourced screen industry that over time will be less dependent on taxpayer incentives" https://www.beehive.govt.nz/release/incentive-changes-sustainable-nz-screen-industry, and http://www.mbie.govt.nz/info-services/sectors-industries/screen-industry/documents-image-library/Implementation%20of%20New%20Zealand%20Screen%20Production%20Grant%20-%20Cabinet%20paper%20-PDF%20566%20KB.pdf

[8] In the extreme, non-fiscally neutral grants would cause the public sector to shrink to nothing more than a vehicle for production subsidies.

We expected to see some discussion of the underlying risk that is posed to sustainability by international 'tax competition'. The evaluation notes that almost none of the grant-supported international screen productions would have been produced in New Zealand had it not been for the scheme, and that grants of 20% of expenditure are 'very standard' (p.119). This raises the risk that future international competition for this business would bid up the cost of the grant and increase fiscal costs. Or, if the Crown does not respond with a higher grant, then production activity would decline and skills and capital equipment could be left unused.

Completeness

TABLE 1: HAS THE REPORT ADDRESSED ALL THE QUESTIONS IN THE CONTRACT?

Key evaluation questions	Covered?
What are the direct and indirect net economic benefits, including spill-over effects, generated as a result of the grant, and are they worthwhile	Covered. Quantifies direct net benefits, and a benefit/cost ratio Qualitative assessment of indirect benefits (but difficult to draw conclusions)
Has the grant encouraged additional screen production in New Zealand that would otherwise not have been made	Covered. Concludes the majority of screen production would otherwise not have been made (though the effect size is uncertain)
Has the grant encouraged resilient business models in the screen sector	Covered. Shows business growth in aggregate, but resilience is not tested
Has the grant supported New Zealand content that would otherwise not have been made	Covered. Most of domestic productions are said to be additional. Issues with comparing pre and post 2014 data so effect of policy change cannot be tested robustly.

Robustness of the findings

The quantified findings are critically dependent on a number of assumptions. These are described in the report. The level of confidence in the assumptions is affected by a lack of data, references to academic research, and the relatively short time that the programme has been in place in its current form. The weak standard of evidence and degree of uncertainty about the results should be made very clear.

We identified a number of methodological problems with calculating the net economic benefits, and net fiscal costs, and estimating the cultural value.

By way of illustration only, Figure 2 shows the impact of addressing some of these matters and sensitivity-testing some assumptions. This is only illustrative and not an endorsement of how parameters have been constructed. A more complete analysis would work through the rationale behind these parameters (assumptions), taking account of the sorts of issues raised in this review, such as international productions 'crowding out' domestic productions.

FIGURE 2: AMENDED APPROACH AND ILLUSTRATIVE SENSITIVY TESTS

		Low	Central	High
Step 1	'Value Added' measure from Qualifying Expenditure for gross economic benefit	$621m	$621m	$621m
Step 2	Take away spend on productions that would have happened w/o grant, leaves added economic benefit	$423m	$542m	$614m
Step 3	Less the opportunity cost of additional resources that otherwise would be applied elsewhere instead	-$255m	-$96m	-$58m
Step 4	Less deadweight loss of tax to fund the grant	-$35m	-$35m	-$35m
Economic benefits 2014-2017:		$132m	$410m	$521m
Step 5	Less the cost of the grant	-$177m	-$177m	-$177m
Net economic benefits 2014-2017:		**-$45m**	**$233m**	**$343m**
$ benefits / $ grant:		**0.7**	**2.3**	**2.9**
Tax	Tax from additional economic activity	$99m	$127m	$144m
Net fiscal cost 2014-2017 ($177m grant less extra tax):		$78m	$50m	$33m

The assumptions used in figure 2 to illustrate the sensitivity of results are outlined in table 2.

TABLE 2: ALTERNATIVE ASSUMPTIONS TO ILLUSTRATE SENSITIVITY OF RESULTS

	Central	**Low**	**High**
Additionality	As per evaluation: 75% of domestic and 92% of international production is extra	Weak evidence, so adjust by -20% 55% and 70% respectively	Weak evidence, so adjust by +20% 90% and 100% respectively
% of labour and other resources available for alternate use	32% (seems low given high proportion of NZ resident labour)	60% (note, LBSPG evaluation implied higher still)	32%
Income adjustment of those resources in alternate use	-50% (as per Treasury guidance)	-30% (Based on LBSPG evaluation)	-70% (for symmetry only, not credible)

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