

Copyright Term Extension

Economic Effect on the New Zealand Economy

A Review of

NZ Government Economic Modeling on Estimated Effect of Copyright Term Extension
on New Zealand Economy

and

Associated Report Prepared by Henry Ergas of Concept Economics for the NZ
Government

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1.0 Introduction and Executive Summary

This paper reviews an estimate of the economic effect on the New Zealand economy of copyright term extension which was recently released by the New Zealand Government but which was tabled as part of the Trans Pacific Partnership (TPP) negotiations on the IP Chapter. The estimate is that the average cost to New Zealand from the obligation under TPP to extend New Zealand's copyright period from 50 to 70 years would average around \$55 million per year.¹ Our review of this estimate suggests it is clearly incorrect, and indeed seriously over-estimates costs.

As part of this information release the New Zealand Government released a copy of an external study which it relied upon to develop its estimate of the \$55 million per year cost of the copyright term extension under the TPP. This external study was commissioned in 2009 by the New Zealand Ministry of Economic Development (now the Ministry of Business, Innovation and Employment, MBIE) and undertaken by Concept Economics (CE), led by Henry Ergas, (the CE or Ergas Report) to estimate the costs and benefits of copyright proposals under the TPP. The New Zealand Government summarises the Ergas study as follows:

The study estimated the total cost for New Zealand of copyright term extension for books and recorded music in terms net present value (i.e. the equivalent amount of money that, if invested today, would cover all future costs for every year). The study considered a time period of 70 years for recorded music (the extended copyright term, which is generally calculated from time of production) and 110 years for books.² The study estimated a net present value of \$208-239 million for recorded music and \$263- 300 million for books.³

There are a number of problems with this estimate by Ergas, which we shall review below in detail. As we shall see, the Ergas report:

- i) Focused only on the well-known social costs of copyright while completely excluding the equally well-known social *benefits* from copyright, thus ensuring, given that New Zealand is a net importer of copyrighted goods, that term extension would be found to have a negative impact; and
- ii) Made serious errors in its calculations of the costs of copyright, leading to an enormous overestimation of the *costs* of term extension by an order of magnitude over any reasonable estimate of costs.

¹ <https://www.tpp.mfat.govt.nz/assets/docs/TPP%20-%20Analysis%20of%20Copyright%20term%20extension,%20explanatory%20cover%20note.pdf>

² The study used 110 years for books based on assumptions that the average life of an author over the last 90 years was 70 years, and the average age of an author when they create a new work is 30 (i.e. an average of 40 years before their death). An extended copyright term of 70 years from the death of the author would mean that on average a book would be protected by copyright for 110 years after the year it was produced.

³ See P1 <https://www.tpp.mfat.govt.nz/assets/docs/TPP%20-%20Analysis%20of%20Copyright%20term%20extension,%20explanatory%20cover%20note.pdf>

The Government exacerbated Ergas' misleadingly high costs by assuming, completely out of thin air, a cost of term extension for film and television that was not estimated by Ergas, and then compounded this unfounded claim by including in its cost estimate "range" a high value from the Ergas report that was contingent on a particular legal result that was known to have not occurred by the time the government came up with its range. Finally, when converting Ergas' present value results into a yearly value, the government inappropriately used a discount rate inconsistent with that used by Ergas, a decision that increased the estimated costs from what they would have been had a consistent discount rate been used, as was appropriate.

2.0 Summary of Major Errors in the Ergas Report

There are numerous serious problems with the Ergas report. The two most fundamental problems with the Ergas report are:

- i) It only looks at social costs while ignoring the social benefits of copyright, or copyright's extension. The traditionally accepted analysis of copyright discusses the proper *balance* between the well-known costs and benefits of copyright. The Ergas report's methodology was fundamentally biased because it failed to take account of the key benefit, new creative output, from term extension to New Zealand. The Ergas report simply *assumes* "that term extension has no output-inducing effect" (page 13), and only focuses on the retroactive cost of copyright term extension for already created works. Output inducement, however, is the major positive benefit of copyright, indeed the key economic rationale for copyright, and Ergas simply ruled it out before starting the analysis. Ergas thus made sure that the report ignored any potential welfare enhancements by limiting the analysis to only those works created before the change to the copyright law, and assuming any additional revenue would not have an output inducing effect. The finding of harm or costs to New Zealand is thus assumed by definition, given New Zealand's status as a net importer of copyrighted works.
- ii) The Ergas report contains an enormous overestimation of the costs of term extension. The enormity of the Ergas error can be illustrated by examining the sound recording market. The IFPI indicates that sales of sound recordings in NZ were approximately \$129 million in 2008. The only recordings that would be impacted by a change in copyright duration are those older than the original copyright length and younger than the proposed length—recordings 50 to 70 years old. Yet such old recordings have always made up a very small share of sales, only a few percentage points (discussed in more detail below). Note that this small share would translate into sales of less than three million dollars in 2008. Yet, Ergas estimates the present value of *losses due to* term extension of \$239 million for sound recordings, which the NZ government converted to a value of \$18 million overpricing *per year*. How can a term extension for records that generate only a few million dollars per year in revenues be responsible for overpricing consumers by \$18 million per year? Obviously, the Ergas numbers are absurd, and appear to be too high by a factor of 77, as will be explained in more detail below. The Ergas estimate of copyright extension for book is also wildly overstated due to the same logical error. While we know there must be an important error in the Ergas calculations, we do not know exactly what the error is because the Ergas report does not describe those calculations in sufficient detail.

2.1 The NZ Government's Compounding of the Ergas Cost Error

Not only did the Ergas report which the New Zealand Government commissioned and relied on include major errors, but these were compounded when the New Zealand Government itself made a number of errors in interpreting and extrapolating the Ergas reports estimates of the costs of copyright term extension. The New Zealand Government inflated the estimated costs to generate the \$55 million average annual cost from the Ergas Report's net present value results as follows:

- i) First, the New Zealand Government assumed that film and television would incur the same net cost as recorded music even though Ergas never claimed to measure those losses.
- ii) Second, although Ergas did not know at the time of his study which Article of the Berne Convention would apply, the New Zealand Government, when it reviewed the Ergas study, did know. Yet it included the greater cost estimate from Ergas' study Article that it knew, or should have known, was inappropriate.
- iii) Third, the New Zealand Government also, without specifying why, adopted a higher discount rate than Ergas used (7.5% rather than 7%) to translate Ergas' total costs into annual costs.

3.0 The Ergas Report's Mismeasurement of Harm

In the following, we summarise the results of the Ergas Report and then analyse the two main problems with the Ergas report in detail. Further, we explore a number of other errors in the Ergas report. The problem, however, is that there are so many errors we cannot address them all in the limited timeframe we gave ourselves to write this report and we also cannot definitively explain what Ergas did since it is not clear how the report derived its conclusions. The Ergas report, due to its many errors and its failure to look at copyright's impact on the creation of new works, does not provide a basis for judging the impact of a copyright term extension.

Before proceeding we first summarise the Ergas Reports main results.

3.1 Summary of the Ergas Report Results

As noted, Ergas estimated costs (and partial benefits) from term extension for books and recorded music. Ergas concluded that the present value (the total sum of future harm in today's dollars) of the net impact of copyright term extension on the New Zealand economy was estimated as follows.

- Recorded Music: Net costs between \$208 million and \$239 million over the period to 2078 in present value terms, depending on whether export market trade is on terms consistent with Article 7 or Article 5 of the Berne Convention.
- Books: Net costs between \$263 million and \$300 million over the period to 2118 in present value terms, depending on whether export market trade is on terms consistent with Article 5 or Article 7 of the Berne Convention.

For both books and recorded music Ergas only considers one potential minor benefit to New Zealand (a so-called Export Transfer benefit) but two potential costs (the import transfer costs, and the deadweight costs) from copyright term extension as follows:

- i) The Export Transfer Benefit captures the transfers from foreign consumers to New Zealand rights holders as a result of the copyright term extension as an economic benefit to New Zealand. This export transfer arises to the extent exporters of recorded music are able to rely on NZ’s longer copyright term in overseas markets under reciprocal arrangements in the TPP. New Zealand creators will thus earn export income overseas due to New Zealand’s copyright term extension.
- ii) On the Cost side Ergas identified two costs:
 - a. The import-transfer cost: this purports to measure the transfer from New Zealand consumers to foreign rights holders as an economic cost to New Zealand. This counts as costs the payments made to foreigners for books and recorded music that otherwise would have fallen out of rights and been cheaper.
 - b. The deadweight cost from term extension: this measures the loss of value from reduced consumption of books and recorded music by New Zealand consumers that occurs as prices are assumed to remain high for works that would otherwise have fallen out of rights and been cheaper. This includes the deadweight loss associated with New Zealand consumers’ foregone consumption of both domestic and imported works.

Table 1: Summary of Ergas’ Estimates

		Books \$m	Recorded Music \$m
Benefit	Export Transfer Benefit	+ 36.000	+31.40
Costs	Import Transfer Cost	-300.000	-239.00
	Deadweight Cost	-0.155	-0.81
Total Net Welfare		-264.155	-208.41

Table 1 above shows Ergas’ estimates of the benefits and costs under each of the above headings for both books and recorded music. Ergas’ estimate of total net welfare is shown in the last row of the table. As can be seen most of the total net loss is due to Ergas’ estimate of the import transfer cost. The losses from decreased consumption, otherwise known as deadweight losses (DWL) are trivial in the Ergas calculations, for both books (-.155) and music (-.81), and given their tiny impact we will not refer to them again. The export transfer benefit estimate in the third row (assumes article 7 of the Berne Convention) is also small by comparison, being approximately 12% of the import transfer cost for books (\$36m), and 13% for recorded music (\$31.4m). The key values are the import transfer cost, and this will be our main focus, although we will also refer to the export transfer benefit.

3.2 The Problems in Ergas' Analysis

3.2.1 The Biased Setup

The starting point for any economic analysis should be the construction of an accurate “economic model”. The nature of the model used in the Ergas report however was such that it was impossible from the outset for the study to find anything but a harmful consequence from extending copyright duration (unless New Zealand was a net exporter, in which case the export transfer benefit would be greater than the import transfer cost).

This can be boiled down quite simply to the constituent ingredients of the economics of copyright. Copyright is understood to be a balance between costs and benefits. The benefit is the increase in original works that copyright is expected to cause. The costs are the higher prices that consumers must pay for original works when there is ownership over those works due to copyright. In particular, the welfare losses are due to the higher prices that consumers must pay *after the work has received sufficient revenues to cover its cost of creation*.⁴ For society as a whole, under standard economic assumptions, copyright would have a negative impact on economic welfare if there were no impact on the creation of new works. This is a simple, straightforward proposition.

What does the Ergas report take as its starting point? It quite simply “*assume that term extension has no output-inducing effect*” and limits its analysis to only already created works that would be impacted by retroactive copyright term extension. Output inducement, the key positive benefit of copyright, is ruled out in the Ergas report before starting the analysis. This is a very powerful, far-reaching, assumption. Such an assumption does not belong in an objective analysis claiming to be interested in measuring the full impact of copyright change.

The finding of overall harm due to term extension is true, *by definition*, under their setup. The only question that arises in such an analysis is which countries are harmed the most and least, and whether any individual country can benefit even though the overall welfare of all countries falls. The only way a country could benefit is if it is a large exporter of copyrighted works so that it gets a larger share of an otherwise decreasing pie, due to the copyright term extension. In that case, it is possible that the additional revenue flowing into that country from other countries more than compensates for the higher prices that the consumers in the country must pay. But the Ergas study presumably knew in advance that New Zealand was a net importer of creative works, and if they understood what they were doing would have realized that it would be impossible for their analysis to conclude that an increase in copyright length might benefit New Zealand.

The fundamental problem with the overall logic of the Ergas report is that it assumes away the key benefits from copyright term extension. But there are also very important errors with the detailed calculations conducted in the report.

3.2.2 The Calculation of Costs

The only question that arises in the Ergas report, given the way that they have set it up, is the size of the harm, not whether the harm exists or not. The Ergas report states:

⁴ As explained in Liebowitz and Margolis (2005), the deadweight losses from the reduced consumption due to higher copyright-induced prices only begin to occur after the revenues due to copyright have paid off the costs of creation, including a normal return to the creator.

[W]e conservatively estimate that the economic cost associated with the transfer of income to foreign rights holders for books is of the order of \$300 million in present value terms and for recorded music is of the order of \$240 million in present value terms over a 2009 to 2118 timeframe.

These estimates of the “import transfer” costs are not conservative. Instead as we shall see, they are ludicrously high and can be dismissed out of hand based on little more than common sense. Nevertheless, it is important to try to understand how Ergas arrived at the numbers discussed in this quote. One problem in doing so is that the Ergas report only describes these calculations in general terms. The report doesn’t give any specific details as to how the calculations were performed, although we have requested greater detail from the author(s). Although it is clear that the analysis contains major errors, the unspecified nature of the calculations makes it difficult to know for sure which errors are responsible for the outrageous estimates.

3.2.3 The Basic Ergas Methodology for Estimating Costs

The methodology used in the Ergas report for estimating the costs of copyright term extension is not clear. We know that it excludes works created after 2008 although we are not sure how this was accomplished. Ergas claims that this “exclusion of works created after 2008 from the analysis leads to understatement of the economic cost” although we will include works created after 2008 in our analysis below and our measure of the cost of copyright extension is far smaller than that reported in the Ergas report. Ergas also claims that they exclude new works merely to “simplify the analysis.”

We will use the recorded music market to illustrate what may be going on in the Ergas report, which is found in its Appendix C. The copyright term for recorded music was expected to increase from 50 years to 70 years under term extension.

Ergas begins by calculating the proportion of works that are “in rights” each year. The timeframe of their analysis extends to 2078, seventy years after the term extension was hypothesized to take place.⁵ They use information from the National Library of New Zealand’s record collection to measure the share of titles in the collection that were produced in a given year (or decade), which appears as Table C in their report and which we reproduce as Table 2 in the next section. This table is only useful if the share of records in the National Library collection in 2008 corresponds to the share of sales in 2008, because it is the sales of albums in markets that determines actual costs and benefits.

So far, the Ergas methodology seems reasonable. Knowing the current shares of the cohort of records that would be affected by the longer copyright life (recordings from 51 through 70 years of age) is essential for estimating the impact of the copyright term change on the market for recordings.

The Ergas report then says “we projected out to 2078 the likely consequences of term extensions for the percentage of works produced prior to 2009 that will be in rights.” This is where the Ergas analysis becomes vague. Taken literally, this seems to be saying that using the 2008 shares from the National Library, we can calculate how many records that would have lost copyright in a particular future year (under the old copyright law) no longer do so, and perform this task for

⁵ This timeframe was chosen so that the copyright change would have a full 20 year cohort affected by the extra 20 year copyright term.

every future year (until 2078). That task is easy to do, but such percentages will not be related to the market share of those record cohorts unless you know the number (and share) of new works created each year after 2008, since these new records affect the actual sales market shares of any prior decade's records in the years after 2008.

It is unclear from the Ergas report what, if anything, they are assuming about the creation of new records after 2008 even though we know they are not including the new records in their estimates of costs. For all we know, they may assume that no new records are ever created after 2008, which would be terribly misleading because whether copyright is extended or not, new records are going to be created in the future and to assume otherwise would be to create a hypothetical world that is completely unrealistic. It would be a world where people listen to the same records over and over again, forever. In the real world, market shares of records fall as the records get older. But that would not be the case if no new records were produced, and that might be what Ergas is assuming.

The Ergas report then makes several other adjustments: removing classical recordings and singles, determining a growth rate of sound recording sales, determining the share of imports and exports, and applying an estimate of the price elasticity of demand for recorded music.

The report also makes an assumption that 36% of recorded music sold in a year was produced in prior years although their use of this assumption is puzzling to us. We are not really sure how this assumption enters into their calculations.

Regardless of what Ergas has done, or tried to do, it is clear that he has failed to properly identify the costs of copyright term extension based on the absurd cost levels that the report finds. In the next section we use a correct methodology, one that Ergas says would lead to a higher costs than the one he used because it includes the future costs of new works created after 2008, and demonstrate that Ergas' estimates are not even remotely close to being correct, allowing his results to be dismissed out of hand.

3.2.4 Evidence of an Enormous Flaw in the Ergas Methodology

In the case of sound recordings, the duration of copyright would be increased from 50 to 70 years in the proposed copyright term extension. This means that in the 51st to 70th year of their existence, sound recordings, under an enhanced copyright law, would continue to receive copyright protection instead of going into the public domain. One key question, and one that the Ergas report seemed like it was trying to answer, is: how important to the market are these sexagenarian (60 year old) and quinquagenarian (50 year old) sound recordings likely to be in the future? It is in the hope of answering this question that an analyst might turn to the current shares of various cohorts of sound recording as a template for future cohort shares. Thus looking at the National Library holdings makes sense if those holdings are related to market share.

The NZ National Library (reproduced in Table 2) and used in the Ergas report, using the 2008 holdings (not sales) suggests that 3.1% of sound recording sales were for songs between 51 and 70 years old.⁶ Because the holdings of the library are likely to not precisely reflect sales, it is useful to look at measures that do reflect sales if we can find them. Liebowitz⁷, using UK sales

⁶ The values were .63% for the decade of the 1940s and 2.47% for the decade of the 1950s. These numbers were added together.

⁷ Liebowitz, Stan J. "What are the consequences of the European Union extending copyright length for sound recordings?" Prepared for the International Federation of the Phonographic Industry (IFPI). Available at <http://www.ifpi.com/content/library/liebowitz-study-aug2007.pdf> (2007). This value is based only on records 50-60 years old, which overstates the share since 60-70 year old

data, (sales data are the ideal data for this purpose although it would be best to have those data for New Zealand), found that this vintage of records comprised about 1% of sales. It seems reasonable, therefore, to use 2% as the share of records between 51 and 70 years old, since it incorporates information from both sources.

Table 2: National Library of NZ Holdings of Books and Recoded Music – Percentages per year

Vintage Decade	BOOKS	MUSIC
2000-09	9.52%	22.27%
1990-99	13.25%	30.18%
1980-89	19.24%	28.63%
1970-79	17.90%	7.28%
1960-69	13.97%	7.18%
1950-59	8.49%	2.47%
1940-49	5.44%	0.63%
1930-39	3.02%	0.52%
1920-29	1.99%	0.51%
1910-19	1.52%	0.17%
1900-09	1.20%	0.05%
PRE 1900	4.49%	0.12%
Total	100.03%	100.01%

This very small (2%) share of the market for records 51-70 years old, translates to a value in the vicinity of \$2.6 million in sales for this cohort in 2008 (2% of \$129 million), since sound recording revenues in 2008 were approximately \$129 million, according to the IFPI.⁸ We should note that it is the retail price that measures the payment by consumers and that Ergas claims to have measured.

The Ergas report also excludes 25% of the market as being made up of classical music and singles, which the report claims will not participate in any copyright changes. Using that adjustment reduces the \$2.6 million in sales to \$1.9 million for musical works 51 to 70 years old.

The Ergas report acknowledges that only a portion of copyrighted sound recording revenues is due to the higher prices that copyright is expected to impose on sound recordings. The Ergas

records will have a lower share. But this value is also based on 4 years where copyright had expired, possibly overstating the share if revenues from recordings fall after copyright expiration (which may or may not be true since the elasticity of demand could be greater than 1, which would increase revenues after copyright expired).

⁸ Data on 2008-2009 retail sales (\$80.5 million) were taken from page 79 of the IFPI's "Recording Industry in Numbers 2010" and those figures, in U.S. dollars, were converted to NZ dollars using the exchange rate (1.6) found on page 84. This 2008-2009 retail sales data corresponds to the time that Ergas wrote his 2009 report. Ergas however used an average of retail sales for the earlier time period 2003-2007 noting "We obtained data on the total value of retail recorded music sales from the RIANZ websitefor period 2003 to 2007" (Ergas p30). The reason why the 2008-2009 sales date we use provides a better basis for analysis than the older and out of date data used by Ergas is that retail sales of music collapsed from 2003. The data on RIANZ website at the time thus showed retail music revenues fell rapidly each year as follows: 2003 \$190.30m: 2004 \$176.30m: 2005 \$173.30m: 2006 \$155.90m: 2007 \$140.10m. This downward trend continued after 2007. By taking a simple average of the four years 2003-07 Ergas was ignoring the downward trend and therefore overestimating relevant sales, introducing further error into his analysis, and inflating his import cost estimate. The downward trend in retail sales was due to the increase in piracy with the advent of the internet and digitization that enabled a greater ease of piracy, and consequent fall in the effective rate of copyright protection;

report estimates, in a section titled “Royalties Mark-Up”, that the markup is 26%, although there are some problems with this estimate.⁹ Nevertheless, following this methodology exactly would lead to an estimate of the extra cost to consumers in 2008, if recordings between 51 and 70 years of age were to suddenly have copyright instead of not having copyright. The value would be 26% of \$1.9 million, or approximately \$500,000. This \$500,000 is the measure of the higher revenues that would be due to copyright if this cohort of records had copyright protection, which they do not have under the current law.

This is a good place to take notice of what we have measured so far. Following the logic proposed by Ergas almost exactly, we have derived a 2008 value of the “extra cost” due to copyright for the entire cohort of sound recordings that were 51-70 years old, the age group of records that would be affected by the proposed change to the copyright law. If all 20 years of these sound recordings were suddenly to be given copyright protection in 2008 (leading to a greater cost than would the actual proposed law), the cost to NZ consumers in 2008 would be expected to be \$500,000. This ignores some of the other adjustments made by Ergas, such as the fact that some of those extra revenues would return to NZ performers, which would lower the “harm” to the country.

Compare this yearly cost of \$500,00 to the Ergas estimate, as translated by the NZ government, of \$18 million per year.¹⁰ These values differ by a factor in the vicinity of 36. They are not remotely close. Indeed, the \$18 million Ergas “cost” is almost 5 times as large as the *entire dollar sales* of the 51-70 year record cohort, assuming the same price for this cohort as other in-rights cohorts.¹¹ There is no way that the transfers (losses) from NZ consumers to foreign record companies can be larger (by a factor of 5!) than the total payments made by NZ consumers for those records. This is evidence, in fact it is proof, of a major error in the Ergas analysis. Greater details have been requested from Concept Economics (Ergas) in order to adduce the specific cause of their error.

4.0 A more Realistic Estimate

The numbers discussed in the last section were useful to show the errors in the Ergas report, but they are not accurate measurements of the impact of copyright extension on New Zealand. For one thing, not all records between 51 and 70 years suddenly achieve copyright status under the proposed law. It also ignores the payments made to NZ copyright owners, as well as ignoring the value to NZ consumers of new works induced by the greater payment due to copyright. We will try to correct the first two oversights now and the third in the next section.

One aspect of the law that affects these values has to do with the fact that not all works 51 to 70 years old are suddenly provided copyright protection under the proposed law. Instead, only the works that were about to turn 51 years old are given copyright protection the first year of the law

⁹ The Ergas report assumes that sellers of non-copyrighted works have an accounting markup of zero. They make this assumption, presumably, because without copyright the market for reproductions of works is likely to be perfectly competitive, generating zero *economic* profit according to economic textbooks. But it is an error to treat economic profit, which subtracts out the opportunity cost of an investment, as being the same as accounting profit, which does not. Accounting profits in a perfectly competitive market will not be zero. Firms that earn zero accounting profit are doing worse than investing their money in risk-free bonds. Ergas appears to be confusing the assumption of zero *economic profit*, which economists believe is typical in competitive markets, with that of zero accounting profit, which economists do not assume to be zero in such markets.

¹⁰ The Government converts “total” amounts into yearly amounts by multiplying the total by .075. The \$240 million import cost for sound recordings thus converts to \$18 million per year.

¹¹ By assigning shares based on the NZ National Library we implicitly assume equal prices for all sound recordings. We calculated 3% of \$129 million to be \$3.87 million and \$18 million is 4.7 times as large as \$ 3.87 million.

because all older works that had already lost their copyright do not get their copyright back. The works about to turn 51 represent about 5% of all the works in the 51-70 category, so the 'harm' in the first year is only 5% of the harm calculated above for all works in that age category. Works turning 51 in the second year after the law's passage also represent about 5% of the works in that age category, leading to 10% for the two years of works combined in the second year after the law's passage. This continues for each year until all works in that age category are included, in the 20th year after the law is passed. Thus the calculated losses need to be adjusted for the slow transition into a longer copyright term.

Performing this analysis for the early years of the law's implementation, we need to reduce some of the losses calculated during the first 19 years after the law's passage, as the Ergas report claims to have done. But we need to subtract these values from the correctly calculated losses. In the previous section the yearly costs were estimated to be about \$500,000. The Ergas report assumed that the recording industry grows at 3% per year and that the discount rate for the present value (PV) calculations is 7%. Using their assumptions, the present value of \$500,000 a year running forever, is \$12.5 million.¹² Our calculations indicate that \$3.7 million needs to be subtracted from the \$12.5 million calculated above due to the slow nature of the rollout to the complete 51-70 cohort.¹³ This leaves \$8.8 million as the PV of the harm due to presumed copyright-induced higher prices for sound recordings, based on how the law will be implemented (and including the costs of new works in a perpetual time frame). Not Ergas' \$240 million.

Finally, in this section, we adjust for the transfer benefits that accrue to NZ copyright holders. New Zealand copyright owners benefit from the lengthier copyright and these benefits need to be taken account of. We adopt the Ergas numbers for this calculation. Ergas found that financial benefits of term extension to NZ copyright owners were 13% of the costs. This implies that the \$8.8 million value above should be adjusted to \$7.6 million, which is naturally below the \$208 million reported in Ergas.

Because the values above are based on a perpetual stream of revenues, they include future costs from all the new works created after the law goes into effect, not just the works that were already created before the law went into effect. If our analysis were limited to the costs from the now higher priced pre-existing works, as the Ergas analysis was, the measured losses would be even lower than those described above. Specifically, it would be \$2.7 million. Thus, the numbers from the Ergas report are 77 times as high (208/2.7) as a correctly performed analysis of an analysis following their general procedure.¹⁴

The likely reason that the Ergas authors wished to avoid including the costs of the new works that are created after the copyright is changed is that this would open the door to thinking about the likelihood that the increased revenue flowing to creators, because of copyright term enhancement, would lead to some additional new works being created. This would then lead to the possibility that the value of these new works to NZ citizens could lead to a net benefit from the implementation of the extended copyright law.

4.1 The Output Enhancing Benefit of Term Extension

¹² The PV calculation is equivalent to discounting the \$500,000 per year by 4%. We use 4% as the discount rate in this calculation since a discount rate of 7% combined with a value growing at 3% per year is equivalent to a 4% discount rate of a constant value. You merely subtract the growth rate from the discount rate, which is where the 4% value comes from.

¹³ The calculation of the \$3.7 million is available in a spreadsheet.

¹⁴ These calculations are available from the authors.

The Ergas report claims to exclude an analysis of new works to keep things simple. Yet excluding new works seems to make the analysis more difficult. Discussing new works, however, does open the door to the question of the impact of new revenues on those new works.

Although the payments by consumers for works impact by the copyright extension occur in the future, sometimes far in the future, the benefits to creators from the increase in future revenues takes place right away, a feature of markets that is often forgotten when examining copyright duration.¹⁵ The present value of the increased revenue, even if the increased revenue occurs far in the future, will be immediately incorporated into market decisions as long as the market participants correctly anticipate the future. That is why someone can sell the rights to an inheritance (or a life insurance policy) that they may not receive for many years.

Record companies and book publishers are in the business of making payments to creators well in advance of any revenues being generated from the works for which they contract. The extra money being spent by copyright owners in anticipation of future revenues due to a copyright term extension should increase the number or quality of creative works produced in the immediate future, with the number of new works depending on how sensitive creators are to additional revenues. That is how “supply” is normally modelled in economics textbooks. Admittedly, the present value of new dollars flowing to creators due to the increased copyright term is not large, just as the present value of the costs of copyright extension are not large. New Zealand, after all, is a small country and the sales of books and records old enough to be impacted by the changed copyright term are only small portions of the small market.

The present value of extra costs that NZ consumers would pay due to the copyright extension, almost \$9 million, is money that should be available to creators of copyrighted sound recordings shortly after passage of the law. Those extra revenues should induce some greater “output” of sound recordings, although the output may be in the form of greater numbers or it might be in the form of higher quality.¹⁶ Although is not a large amount of money, it is difficult to quantify its impact on creators. As Liebowitz and Margolis (2005) demonstrate, depending on the density of the distribution of authors’ reservation prices, a small increase in income can have surprisingly large effects on the amount of new creation. This is not to say that those favorable conditions will occur in this case, but they cannot be ruled out based on any evidence adduced by Ergas.

It is important to understand that the value that consumers receive from new sound recording is greater than the payments that they make in these markets (with this difference being known as “consumer surplus”). Sometimes the value is much more than the market payments, just as water has a much higher value to human beings than its market cost. Thus, there is really no telling whether the extra value that NZ consumers derive from the improved quality or quantity of sound recordings will be greater than the extra costs imposed by the increased copyright term.

If a few of those new works induced by the longer copyright duration turn out to be of value to NZ music listeners, the possible surplus received by those listeners might overcome the extra transfer payments going out of the country due to the longer copyright duration. The nationality of the creator of the new works does not matter. This is the story that the Ergas report is able to ignore by leaving out of their report any analysis of new works at all.

¹⁵ See Liebowitz, Stan J., and Stephen E. Margolis. "Seventeen famous economists weigh in on copyright: The role of theory, empirics, and network effects." *Harvard Journal of Law and Technology* 18, no. 2 (2005).

¹⁶ It is because extra payments can lead to either quality or quantity improvements that it is so difficult to demonstrate that small increases in the revenue from of copyright lead to increases in the production of copyrighted works. There is no clear way to measure quality. But revenue expenditures by sophisticated agents are normally assumed to increase quality.

A further problem identified by LECG,¹⁷ is that Ergas failed to recognize that extra revenue generated by the recorded music industry, even when that revenue is generated by already created works, is used to create new works. It is something of a truism that unanticipated revenues to an already created work does not enhance the creation of that work. Since the work was already created, extra revenue to its creator cannot enhance the quality of the already created work. Nor does an extra payment to the creator of this extant work change the expected value of any potential work not yet created.

But what is forgotten in this story is that the revenues go to the entire “team” of the corporation that produced the record, not just the musicians that created the actual music on the recording with a now extended copyright. Thus, increased revenues from older works under an extended copyright term will be used by music companies to expand investment into new sound recordings and in the development of new and existing artists, unless, that is, capital markets were perfect. Although this argument loses force the closer these markets get to perfection, it is abundantly clear that these markets have a way to go before perfection makes this argument irrelevant.

5.0 Other Specific Errors in the Ergas Report

In addition to ignoring any output-inducing effect (as explained above), and over-estimating the import transfer costs, the report makes several questionable or wrong assumptions when conducting its consumption side cost-benefit analysis.

5.1 Measuring the Price Effect of Copyright

The report assumes that there will be a “pass through reduction in price after copyright expires”. Specifically, the paper assumes that consumer prices of books and sound recordings decrease by 9.3% and 26% respectively when copyright expires. However, the paper does not show any evidence for this claim. This assumption is the main underlying driver of the estimates in the paper, and the estimated effects using the rest of the assumptions in the paper change dramatically if this assumption is incorrect (if prices do not decrease when copyright expires then the net effect using the remainder of the assumptions in the paper would be approximately zero).

Ergas’ analysis requires knowing the price differential for the creative work, with and without copyright. That price differential is the extra payment that Ergas uses to measure the harm from copyright. But in the case of records, they include all the costs of retailing as the extra payment (markup) over the competitive level, which is an error in economic logic. Instead of using the price differential between these works when they are covered by copyright and when they are not, which is the correct measurement, they use a markup over costs. This is equivalent to assuming that there will be no profits (zero markup) generated in the book market without copyright.

This is clearly a fundamental error. Competitive markets are supposed to earn zero *economic* profit, but that means that the producers merely earn a normal return on investment, their opportunity cost. But a normal return on investment is not a zero return in accounting terms. Firms in competitive markets are expected to earn positive *accounting* profit, because accounting profits differ in concept from economic profits, as any introductory economics text tries to make clear. And the numbers that Ergas uses are accounting numbers.

¹⁷ <http://www.ifpi.org/content/library/legc-study.pdf>

When Ergas incorrectly and inadvertently assumes that all accounting profits are economic profits, they overstate the price difference between markets with copyright and markets without copyright. They treat part of the normal return on investment as a monopoly payment (transfer) to creators. This overstates the size of the transfer due to copyright.

5.2 The use of an inappropriate elasticity of demand

The estimated elasticity of demand for sound recordings (used to estimate the DWL losses) is based on a paper (Stevens, L. and D. Sessions 2005) that uses an entirely inappropriate data set that does not measure what its authors believe it measures, making the estimated elasticity used by Ergas a meaningless exercise.

The authors, Stevens and Sessions, did not realize that the apparent monthly data reported by the U.S. government did not measure monthly record sales. The government does an economic census every 5 years and it merely interpolated (and seasonally adjusted) the numbers to generate monthly values. The resulting monthly numbers have no relationship to actual monthly sales. Further, the statistics included both blank and prerecorded tapes and blank and prerecorded CDs, with the blank tapes and CDs being an important component of sales. That is how Stevens and Sessions erroneously found that U.S. record sales were flat from 2000 to 2010, when in actuality industry sales of prerecorded music dropped by half during that period.

The elasticity estimated by Stevens and Sessions, and then relied upon by the Ergas report, is entirely worthless.

5.3 Free Riding Assumptions and the Open Economy

The paper argues that because New Zealand is a net importer of copyright products, a copyright term extension would imply a net transfer to foreign creators and that NZ would be better off free riding off of the behavior of other countries. The logic of this argument can also be used to suggest that NZ should abandon copyright altogether. Although there is no guarantee that free-riding will actually benefit New Zealand, the implication of this logic is that it might.

These are an unduly static analyses, which ignore dynamic effects implying any such choice to “free ride” will not be in fact be “free”. For example, not vaccinating your children for contagious diseases is a reasonable policy as long as everyone vaccinates their children, since there would be no one to infect your children. That would be free riding. But when everyone starts to free ride, everyone is much worse off. If free-riding by NZ convinced other countries to free ride, then what might look like a good policy in a static world (where no other country changes its behavior) could lead to a situation where New Zealand is worse off than it if had not chosen free-riding in the first place.

5.4 “Conservative” methodology is not conservative

In several place the Ergas report claims to be making assumption that are very conservative in the sense that the costs of the copyright extension are being intentionally limited by the authors of the report. One example of this is when Ergas claims, in several places, that his analysis is underestimating the harm from copyright law extension because it ignores the costs from foregone “derivative” works (defined as follow-on works that copy sections of earlier original works) that are supposedly not produced because the creators of these derivative works would

need to purchase the rights to these original (51-70 year old) works upon which they are basing their derivative works. Ergas even has a section titled “[r]educed local production of derivative works” that takes up a good portion of two pages in his report. Estimating the cost to derivative works from term extension would be very difficult, and so Ergas’ “conservative” analysis is basically forced on him by a lack of data.

But note the irony in Ergas’ concern. He is very concerned about the impact of a lengthier copyright law on the decrease of new derivative works, but does not seem to think it a problem that ignoring the influence of the term extension on the increase in the number of original works is a problem. If the extended copyright law has such a large effect on creators of new derivative works, would it also not be expected to have a significant effect on the creators of new original works? And doesn’t it seem reasonable that original works are more important economically than derivative works, and deserve more concern?

5.5 The New Zealand Government’s \$55 Million Per Annum Over-Estimate

In addition to the problems with the Ergas report, the New Zealand government made several unsupported adjustments of its own. In the government’s words:

Based on these net present value results, the Government estimated the equivalent average annual cost of copyright term extension, over the total period that the extension would take to come into effect. (A discount rate of 7.5% was used to generate this average real value from the report’s net present value results.) This included an additional estimate for the cost of extending copyright on film and television, which Concept Economics did not model, by assuming film and television would incur the same net cost as recorded music. The average cost to New Zealand per year from copyright period changes under TPP was estimated as \$55 million. This was the mid-point of the range of results reported by the study, which was equivalent to \$51-59 million per year

First, the New Zealand Government admits that Ergas never claimed to measure the losses from film and television. On what basis does the government assume that film and television would incur the same net cost as recorded music? It would seem to be little more than convenience. Shouldn’t the government have checked out the Ergas analysis in more detail before deciding to flip a coin and choose one of the Ergas estimates (records instead of books) to apply, holus bolus, to film and television?

Second, why did the Government, also without specifying any reason, adopted a higher discount rate than Ergas used (7.5% rather than 7%) to translate Ergas’ present value costs into annual costs? This change in rates has the effect of raising the yearly costs by 7%. However, if they had been consistent and also raised the rates used in Ergas’ calculations, that would have lowered the present value that is used to create the yearly costs, negating most if not all of the increase in costs brought about by using their higher discount rate. It is inconsistent for the government to use different discount rates in slightly different parts of the analysis, and it is even worse to change in one discount rate that raises the cost without an equivalent change in the other discount rate that would lower the costs.

Finally, although Ergas did not know at the time of his study which Article of the Berne Convention would apply, the New Zealand Government, when it reviewed the Ergas study, did know. Yet it included the greater cost estimate from Ergas’ study that it knew was inappropriate.

Conclusion

The New Zealand government has commissioned and used a report from Concept Economics (“Ergas”) in order to gauge the economic impact of an extended copyright term. We have carefully examined that report as well as the Government’s use of that report. We have found numerous and extremely serious errors in the report that make it entirely unworthy for the basis of any policy recommendations. Its estimates of costs are wildly above any plausible values. The lack of detail found in the Ergas report prevents us from being able to precisely point to a single error, if there were but a single error in the Ergas analysis.

Our reanalysis, using mostly the same assumptions, provides an estimate of the harm that is one seventy seventh the size of that in the Ergas report. We also note that the report is entirely one-sided in its approach, ignoring the potential gains from the proposed copyright legislation. These gains could easily counteract the fairly small losses that a correct estimate of the costs would find.

The government has taken these very misleading values from the Ergas report and compounded the errors by asserting, with no evidence, that the film and television market would incur the same overstated losses as Ergas found for the sound recording market. It also picked a different discount rate than Ergas had used when the present values of costs were converted into a constant yearly stream, and the new rate had the effect of raising the costs. If the government had been consistent and applied the same higher rate in its calculation of the original present values, that would have lowered the measured costs. This inconsistency in the government’s choice of discount rates is inexplicable.