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NEW ZEALAND INSTITUTE OF ECONOMIC RESEARCH

The potential impact of the Forests Amendment Bill

An investigation into the costs and benefits

NZIER report to the New Zealand Forest Owners' Association

June 2020

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Key points

Objective

NZIER has been asked to provide comment on the Forests (Regulation of Log Traders and Forestry Advisers) Amendment Bill (the Bill) by the New Zealand Forest Owners' Association (NZ FOA).

This is not straightforward given the rushed nature of the legislation, confusion about what the Bill is trying to address, and the potential for intervention in a market currently being run efficiently. Of particular issue is whether or not logs can be forcibly diverted to domestic processing.

Intervening in an efficiently run market will have negative consequences

From a national perspective, the potential for the Bill to increase costs and reduce value is high. While it is difficult to pin down what the Bill is attempting to do, it could have multiple costs:

- It will reduce gross domestic product (GDP). Diverting logs from an efficient sector, plantation forestry, to an industry that is less competitive on world markets would have a detrimental impact on New Zealand's national income.
- Investment is likely to decrease in the forestry plantation sector.
- The potential jobs created in the processing sector are likely to cost at least double that of the going market rate.
- Government intervention in an efficient market will incur costs:
  - In the short term with the set-up of administrative mechanisms to divert logs and the associated registration of log traders
  - In the longer term as government tinkers with regulations that do not work perfectly first up.
- It will create trade policy concerns and negative international reputation effects. Its deliberate intervention in markets is likely to be at least against the spirit of WTO rules.

Alarmingly, the impacts of this type of industry policy are well known. A simple search of the internet throws up many examples of failure (two of which involving the forestry industry are briefly included in this report). International experience also suggests that industry policy is less effective than commonly claimed (see Beason (1996)).

Yes, jobs are created in the short term but at a huge cost. Rather than diverting log supply to create employment for wood processing workers, it would be simpler to give those people the average wage in the wood processing sector. If implemented, the policy will rumble on requiring attention by officials. This is largely the story of New Zealand's attempts to use border controls to prop up domestic manufacturing industry from 1935 until the signing of Closer Economic Relationship (CER) in 1983.

Table 1 summarises the costs and the short-term benefits. The costs are driven by the transfer in value as resources move from one efficient industry to another less efficient industry. There are also concerns about the role of a registered log trader, the impact on trade policy, and the impact of industry policy per se.

We produced a low and a high scenario which both indicate a negative impact on GDP and increased administrative and compliance costs.

The impacts of the non-quantified costs are considerable. These costs tend to be the most damaging, diverting resources from other government activity and being less effective in trade negotiations.

Table 1 Summary of costs

	Impact	Comment
Costs		
GDP loss	Between $16.5 million and $30.9 million.	A direct result of transferring value from an efficient sector to a less efficient sector.
Value transfer from plantation forestry to wood processing	Between $129.2 million and $170.5 million.	Approximate estimate.
Cost of new jobs	Cost of wood processing jobs are between $107,000 and $141,000 per job.	The average wage in the wood processing sector is approximately $55,000.
Administrative costs	Increase in the short run. Increase in the longer term. Costs will be hidden.	Will divert resources away from areas where government attention is required. Regulation will require constant attention.
Compliance costs	Increase.	Likely to reduce investment in the plantation forestry industry, particularly if mandated diversion of logs occurs.
Trade policy	Less leverage.	Return to the time when we argued for freer trade while protecting the home market.
Benefits		
New jobs	1,200	Assumes 16% diversion rate. Likely only to be short term since they do not rely on the market.
Note (1) Calculations have used Statistics NZ's Input-Output tables. Given the rushed nature of the Bill and the tight timeframes we have not been able to use an economy-wide model to estimate the losses. Estimates are approximate.		

Source: NZIER

Caveats

Most of the assumptions are derived from New Zealand experience with industry policy and overseas studies/examples. The general impact of these types of policies are very clear, however the rushed nature of the Bill and the confusion about what the Bill is trying to achieve make it difficult to pin down actual impacts.

Since most of the problems can be addressed in the status quo, claimed benefits are over-stated.

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1 Introduction

The New Zealand Forest Owners' Association (NZ FOA) commissioned NZIER to provide them with independent comment on the possible impact of the Forests (Regulation of Log Traders and Forestry Advisers) Amendment Bill (the Bill).

One of the problems we face is that we are unsure of what the Bill is attempting to do, and we do not know how government is intending to intervene in practice. The Bill is a moving target.[1]

Despite this, there are a number of reasons for the interest of the NZ FOA in this specific Bill. These include:

- A possible forced diversion of logs destined for the export market to domestic processing at a significant discount. This will transfer value from forest owners to mill owners.
- The detrimental impact on New Zealand's trade policy credibility of pursuing domestic protection.
- The high cost of job creation in forestry processing, each job potentially costing double what each worker will be paid on average.
- The negative impact on forestry investment and ownership.
- The development of an industry based on protection rather than market drivers.

The purpose of this report is to provide a cost benefit analysis (CBA) of implementing the Bill.

We have drawn on international and domestic studies, reports, case studies, information from NZ FOA, experience with industry policy both in New Zealand and overseas, and other sources.

[1] As at 17 June the aims of the relevant part of the Bill are:

"to—

(a) support the continuous, predictable, and long-term supply of timber, and equity of access to timber, for domestic processing and export; and

(aa) support a more transparent and open market for log sales through the provision of professional advice; and

(b) improve the confidence and informed participation of businesses and investors in the forestry sector; and

(c) contribute to improved economic, employment, and environmental outcomes from the forestry and wood-processing sector, nationally and for local communities; and

(d) contribute to improved climate change outcomes from the forestry and wood-processing sector; and

(e) contribute to the development, and improve the long-term sustainability, of the forestry and wood-processing sector.

(2) To that end, this Part—

(a) establishes a regulatory system for log traders and forestry advisers; and

(b) imposes obligations on registered log traders and forestry advisers to ensure that logs grown in New Zealand are bought and sold in a way that is transparent and professional; and

(c) requires those who provide advice about forestry matters, including the application of the emissions trading scheme to forestry activities (within the meaning of the Climate Change Response Act 2002), to register as forestry advisers and meet regulatory standards.

The analysis is intended to give policymakers an indication of the likely costs and benefits to assist in a decision on whether to progress with the Bill. There remain a number of important uncertainties on practical implementation issues.

As such, the depth of the CBA reflects the initial scoping nature of the assessment and the rushed nature of the Bill. We have not, for example, used an economy wide model, therefore estimates remain approximate.

2 Background to the Bill

As a result of the Government's Coalition Agreement, forestry has enjoyed a revival. The One Billion Trees programme, the revamp of the Emissions Trading Scheme to make it more useable for forest owners, and the support of forestry through government funding of research (a second tranche of PGP funding) have all contributed to a positive vibe around forestry.

The Bill could be seen as a way of assisting forestry industries to take advantage of improved status and to increase the number of jobs that it could provide, particularly in the regions.

While a lot of what has occurred has followed a coherent approach, ably backed up by the Ministry for Primary Industries (MPI), the key issue is that this Bill has the potential to transfer value from one internationally competitive part of the industry to a less competitive part of the industry. This is likely to introduce significant costs and have an adverse impact on the forestry industry over time.

2.1 Problem definition

There is some confusion about what this Bill is trying to address. The lack of clarity around the problem definition is a major concern given that the Bill seems to attempt to intervene in all aspects of the forestry marketing chain. This is likely to create arbitrary 'winners' and 'losers' within the market based on regulation rather than market efficiency, effectiveness, and innovation.

New Zealand's regulatory history shows poorly specified problems are never adequately solved (Bollard and Buckle, 1987). Given the large amount of international literature (Devarajan (2016); Karp and Perloff (1995); Moreno (2015)) on development of industry policy and its known failings, it is very unlikely that the problem will be meaningfully tackled. This has the impact of diverting scarce regulatory resources.

According to the NZ FOA submission, MPI stated that it was to address the needs of small owners who are inexperienced. These owners will be selling logs only once in their life-time and could potentially be open to manipulation by unscrupulous log traders.

Small lot holders – on average – are probably not as innocent as they have been characterised by MPI. Small time 'once in a generation' sellers are not being pressed to sell in general, so they do not have to sell as soon as the logs mature. Many of these people are likely to be farmers and business people who have considerable experience with market trading from their other activities.

Nevertheless, there could in theory be a problem with asymmetric information or power regarding small-lot forestry. If they are the concern, a more efficient and effective solution can easily be designed. Some possibilities are putting better information in the hands of small lot owners so that they are in a stronger trading position, or supporting them until the market rights itself. All that is required is cooperation between industry and government to address the problem.

However, the Bill does not stop there. The Bill goes too far because it may interfere in nearly all aspects of the market from:

- Establishing licensed log traders.
- Suggestions that there will be diversion of logs to the domestic industry (which transfers value from forestry owners to processors).
- Including features that add further administrative costs to the industry. (This money would be better in the hands of those who are supposed to be in trouble.)

3 Trade and trade policy context

3.1 Trade policy

3.1.1 The Bill is a throwback to another time

Prior to the signing of Closer Economic Relations (CER) in 1983, New Zealand's trade policy consisted of protecting manufacturing and attempting to maintain market access arrangements, particularly into the European Union.

In these times New Zealand attempted to have free trade in our export products while at the same time protect our version of various manufacturing industries (see Nixon and Yeabsley 2002). This approach set up the potential for conflicts which:

- Increased the amount of lobbying that went on by owners and senior managers in the protected industries.
- Set up cumbersome regulations where officials mulled over absurd levels of industry detail – was locally canned tuna and effective substitute for imported salmon?
- Increased the amount of tinkering that went on as innovative people found loopholes that had to be blocked. This gained little real reward and was extremely time consuming.

The Bill potentially is a throwback to this time where officials were asked to make arbitrary decisions with little or no real understanding of what they were dealing with, while managers of processing facilities spent more time lobbying than running their own companies.

3.1.2 Does the Bill impact on New Zealand's trade policy entrepreneurship?

New Zealand has had a long period of successful trade agreements with mainly Asia Pacific nations since the signing of CER. In this period New Zealand developed a style and approach which connected the growing Asian economies with New Zealand products and services.

Not only were we 'traders with the world' we were also prepared to develop trading agreements with countries that were motivated to break down their own barriers to border entry. This process was helped because we were small, had developed credibility by deregulating the New Zealand economy, and earned a reputation for high quality agreements backed by relatively few barriers to entry. The success of this process is set out in Table 2 Trade agreements since 1983.

Table 2 Trade agreements since 1983

Agreement /Association	Acronym	Year	Comment
New Zealand/Australia	ANZ**CER**TA	1983	Cornerstone of New Zealand's trade policy.
Asia – Pacific	APEC	1989	Acted as a platform for further individual negotiations with the Asia – Pacific region.
Uruguay Round	WTO	1994	Introduced rules on agriculture.
New Zealand – Singapore	CEP	2001	Demonstrated willingness to engage and set up a blueprint for further agreements.
New Zealand – Thailand	CEP	2005	Improves playing field for New Zealand products.
Brunei – Chile – Singapore – New Zealand	P4	2006	Fore runner to the CP TPP.
New Zealand – China	FTA	2008	Reinforced strong New Zealand trade links.
ASEAN – Australia – New Zealand	AANZFTA	2010	Lays the platform for further integration.
New Zealand – Malaysia	Malaysia FTA	2010	Improves playing field.
New Zealand – Hong Kong China	Hong Kong CEP	2011	Connects with the China FTA.
New Zealand – Korea	FTA	2015	Improves playing field.
Asia – Pacific grouping	CP TPP	2018	Signalled intent for more creative engagement.

Source: MFAT and NZIER

3.2 How have we made money, increased jobs and contributed to GDP?

New Zealand has diversified its economy with huge growth in tourism, technology product exports, and education services while also maintaining its land-based exports.

Dairy, meat, horticulture, and forestry do not now entirely dominate New Zealand's export trade profile; however, they are still a major part of trade. Forestry, in particular, has grown on the back of plantings in the 1990s.

There has been debate in New Zealand over the past 30 years around commodity trading and how New Zealand should be 'adding more value'. Those involved in the trade while diversifying their product portfolio have found it difficult to develop 'value added' products at prices that the market wishes to pay, i.e., it is easier to add cost rather than value.

Further, the advantage of commodity trade is that it requires much lower capital investment in the market, allows for the development of flexible value chains, and reduces the concentration risks of trade. Trading in commodities in traditional and new markets reduces the risk relative to products thought of as 'value added'.

New Zealand commodity exporters have been highly successful in commodity trade and this has assisted the development of the New Zealand economy as demand for commodities have increased, particularly in Asia.

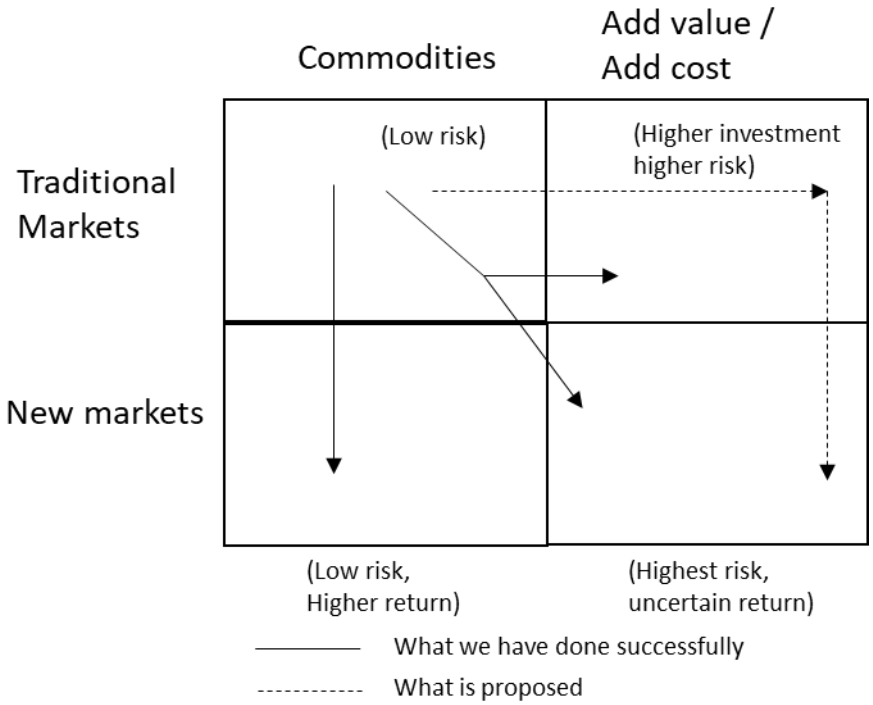
However, this is not the end of the story. Some of those involved in commodity trading have diversified and created a New Zealand story for their products. Typically, these are smaller players (although not always). In the forestry sector they have:

- Focused on the story around farmed trees (not native trees).
- Emphasised the 100% renewable Forest Stewardship Council (FSC) certification for *Pinus radiata*.
- Produced a consistently good quality product.
- Shown that product is sourced from a reputable supplier and country.

In this way new products can be marketed in both traditional and new markets alongside the existing commodity production. Not only are they selling wood but also the 'story behind the wood' (see Figure 1 The advantages of using the commodity trade to incrementally improve value). This incremental market-based approach is a lower risk approach than government mandating the diversion of logs to the wood processing sector.

The role of government in this process is to be supportive and helpful: connecting New Zealand through trade agreements, trade and technical missions, and developing deeper institutional connections. For example, Minister Jones visiting China two years ago was a positive step forward that assisted brand New Zealand in forestry.

Figure 1 The advantages of using the commodity trade to incrementally improve value



Source: NZIER

3.3 Implications for forestry

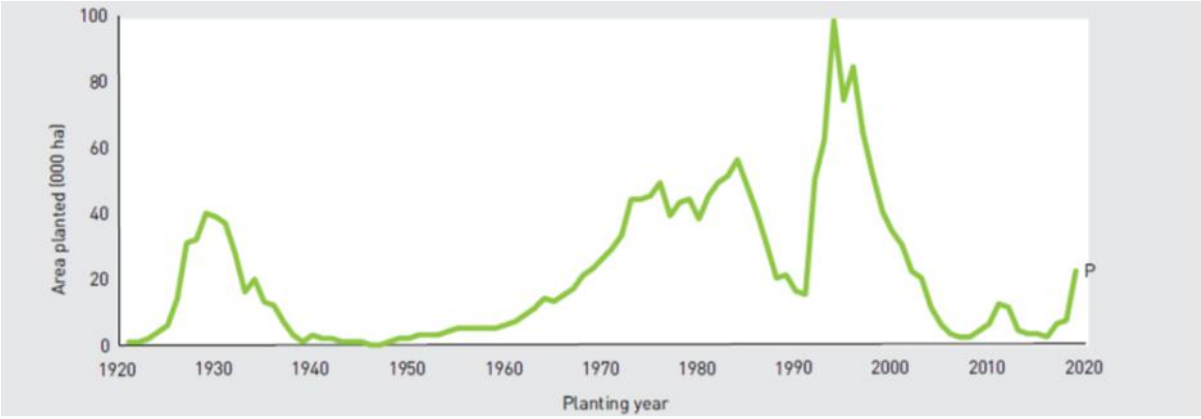
SENSE partners, in a recent report for MFAT, investigate some of the reasons for the strong preference for New Zealand logs by Chinese customers. These include:

- High levels of trust between Chinese and New Zealand firms.
- The quality of the New Zealand product.
- Political relationships and institutional connections that have been enhanced by the FTA and domestic settings.

An overlooked critical element has been the supply of mature pine trees spurred by taxation policies of the 1990s (see Figure 2). Combining this with approximately 60% of trees over 16 years of age means that:

- New Zealand rapidly increased the plantation estate between 1990 and 2000. Little planting occurred after 2000.
- The owners of these plantations are largely small investors.
- Many of the plantations have been established in areas away from traditional domestic processing regions.
- Many plantations are ready to be harvested between 2020–30.
- The current wood flow seems unsustainable after 2030.
- The 10-15-year investment window of additional supply is much less than required for a new sawmill or other similar processing facility to become established.

Figure 2 Plantation forestry in New Zealand



Source: National Exotic Forestry Description, 2019

4 Costs and benefits

We have used a cost benefit framework to examine the value of the Bill and its possible consequences.

Cost Benefit Analysis (CBA) is a long-established technique intended to identify the economic efficiency of a proposed project or policy change. Efficiency is broadly about maximising outputs obtained from available inputs, but there are different variants used in economics:

- **Technical efficiency** refers to the most cost-effective way of providing a given service, for instance, if transaction costs increase in forestry markets due to government intervention it will increase costs per cubic metre and thus be technically inefficient.
- **Allocative efficiency** refers to the ease with which resources can move across the industry to their most productive uses. For instance, if logs are diverted into the domestic market by government regulation there will be a transfer of value from an efficient plantation forestry sector to a less efficient forest processing sector, reducing plantation forestry profitability with subsequent impacts on investment.
- **Dynamic efficiency** refers to innovation and changing to new activities over time. Diverting logs to a less efficient market is likely to constrain innovation at the margin.

If the introduction of the Bill increases transaction costs, it will reduce technical efficiency. To the extent that it shifts resources from a productive activity to a less productive activity, it also decreases the allocative efficiency of resource use. If it also blunts new, more efficient ways of working it also reduces dynamic efficiency over time.

A CBA proceeds by comparing effects and outcomes associated with the introduction of the Bill against what would have occurred under a counterfactual, without the proposed change. This counterfactual can be described as a projection of the status quo into the future as supply and demand conditions change.

4.1 Counterfactual

A scenario is required where benefits and costs of the situation 'without' the Bill are measured (the counterfactual). This involves examining in detail the current status quo. It includes a commentary on:

- What exists on the ground at the moment.
- The private sector approaches that exist.

The counterfactual also includes examining the likely future policy developments. While this can be speculative, we have focused on how government and industry can work in partnership to overcome perceived problems. The aim is to identify how policies are likely to change over the next 5 years, to establish a realistic base case.

The starting point for the counterfactual is that in general economic terms less regulation is preferred to more. This is a simple matter of allowing people more scope to try different ways of approaching issues. Diversity is a form of innovation and it is this that leads to a better economic outcome.

To overcome the 'one-off' sales problem that small forestry lot owners face and the potential for manipulation, we support the approach advocated by industry under existing regulations: that government and industry work in partnership to provide assistance to small lot owners. To the extent there are systemic problems in the local processing industry we support their diagnosis and treatment, issue by issue.

This approach reflects the general starting point of our laws that people should be free to engage in activities unless they are prohibited for some good reason.

More specifically, good regulatory design should signal and support the importance of innovation for economic growth, and the maintenance and enhancement of New Zealand's standard of living.

One of the secrets of success for New Zealand land-based industries is to allow firms to make decisions about what they trade and how to trade. Despite the difficult periods in the 1980s and 1990s, land-based industries have flourished here. The Productivity Commission has calculated that the primary sector has led the way in productivity improvements for the New Zealand economy for most of the past 30 years.

Therefore, the problem of 'one-off' sales can be solved under the status quo given the existing law.

Further, other perceived failings such as improving the value of New Zealand log and lumber value can also be addressed under the status quo. Although these issues will take longer to solve, a concerted effort by industry and government to tell the New Zealand farmed wood story (see section 3.2) is required.

Under the counterfactual the problems that the Bill attempts to address can be mitigated and substantial progress can be made to assist the processing industry over time. This will require closer cooperation between government and industry.

4.2 Stakeholders

This is a 'partial' cost benefit analysis in the sense that some effects will be too difficult to reliably quantify. For instance, how much further processed lumber will be sold and what might happen to the price on international markets once our logs are diverted to domestic processors is unknown.

For practical reasons our analysis has concentrated on effects that are readily quantified and valued; we have also described qualitatively the effects that cannot be readily quantified or valued.

From industry feedback the following groups are considered important:

- Forestry and wood processing employees. For plantation forestry employees there is likely to be a cost since the transfer of logs to the forestry processing industry will decrease sector profitability and impact on jobs longer term. For wood processing employees there will be a short to medium term gain. However, it is unlikely that the mandated diversion of logs into the processing sector will be durable since it relies on political patronage.
- Government departments. The Bill is likely to be a major issue for government departments as they attempt to intervene in markets about which they have little

specialist knowledge (relative to the industry). It will also divert resources away from more pressing matters.

- Forestry owners. It is a major cost for forestry owners since they will be compelled to sell logs at a discount to the forestry processing industry. Over the long term it will reduce investment in forestry from long term stable investors in the New Zealand economy.
- Regional development strategies. The development of politically mandated policies is likely to provide a short-term benefit for some favoured regions. However, it is likely to disrupt long term efforts to grow regions sustainably since the short-term growth is not based on market needs. It is also likely to hamper longer term efforts to promote the New Zealand forestry story in ways that can enhance value.
- Trade policy. It is likely to undermine New Zealand's efforts to further enhance our trade policy success as a small open trader ready to engage with the world. We would no longer be a good example of how to successfully manage an open economy following international accepted rules.

4.3 Costs associated with the Bill

4.3.1 Administrative costs

The administrative costs are likely to be very high. At the heart of these added administrative costs is the intervention of a semi-official registration process where those involved are subject to a "fit and proper person test" and are subject to reporting requirements. The concern is that this is a duplication of what already happens through market mechanisms and there is no guarantee of the competence of those being registered.

Those who are tasked with intervening in the market are likely to:

- Impose substantial administrative costs for which they will be unaccountable. How will this be measured and against what criteria? What proportion of advisors will be registered?
- Be more risk averse than market traders so that administrators will add substantial reporting costs (to document their processes) and respond much more slowly to shocks than efficient and effective markets require. Moving from market mechanisms toward a government created pseudo-market will underpin this process.
- Add unnecessary costs associated with registration. Two issues are at play (1) Costs will rise to meet the administrative needs (2) What is broken in the system that registration fixes?

Given that individual policymakers often have limited specialist understanding of the sectors they regulate – a consequence of the 'generalist' approach embraced by the New Zealand government – the chances of arbitrary decision-making are very high. To people in the industry, this approach can look like 'making up the rules as they go along', which creates further uncertainty for the industry. The country's experience with the Resource Management Act is a case in point: it has been revised multiple times over its history. This is likely to decrease transparency and increase inefficiencies in the administrative system.

We have no idea how much the administrative costs will be since the details are scarce on how such a scheme will operate and what its staffing might be. What we do know from previous poorly designed intervention in New Zealand is that it will require consistent attention from officials and further regulatory changes as participants push the boundaries of the scheme. The administrative costs are likely to increase as the scheme progresses.

4.3.2 Compliance costs

Taking from the efficient and giving to the inefficient

This Bill is likely to create a negative dynamic within the forestry industry. Any scheme which forcibly transfers value from one efficient industry to another less efficient industry is unlikely to generate wealth (see following Box story on British Columbia and Box 2 Ukrainian experience with a log export tax).

Box 1: British Columbia, Canada

Domestic manufacturing and log exports have underpinned British Columbia's forest economy for decades. Pine beetle, fires, US tariffs and other macroeconomic issues squeezed available supply and margins.

In 2019, export regulations were expanded so logs must be offered for domestic use first, whether or not processing capacity exists.

Rather than stem the flow, mill failures have continued at pace. Export log restrictions exacerbated the impacts, causing unmitigated disaster for forest owners and contractors.

British Columbia's largest manager of private forests (Mosaic) suspended harvesting in November 2019 due to low pricing/lack of markets. Their forests remain closed with 5,000 workers stood down. Log exports didn't cause British Columbia's problems, but these policies have made things far worse.

https://vancouverisland.ctvnews.ca/new-shutdown-to-put-thousands-of-b-c-loggers-out-of-work-monday-1.4698655

MBIE Spotlight Paper. The impact of BC Government log export restrictions on BC Sawmilling Industry. 2018 www.mbie.govt.nz

Of particular concern in New Zealand is the losses to forestry industry players of export revenue since they will be forced to sell into the domestic market. Their previous choice of the export market suggests it is preferable (i.e. higher prices) and they are likely to be out of pocket if forced onto the domestic scene. This loss is real and if not made up by someone, will have major impacts.

How big might these losses be? Table 3 shows that under credible assumptions the transfer from the plantation forestry sector to the forest processing sector could be between $129 million and $170 million in direct value transfer.

Table 3 Possible diversion rates and sales discounts from the forestry plantation sector to the processing mills

Based on MPI log export sales forecast value for 2021 of $3.2 billion and a price of $150 per cubic metre

Forced diversion rate	Forced sales discount rate to the processing sector (value of logs)			
	10%	25%	33%	50%
5%	16,150,00	40,375,000	53,295,000	80,750,000
10%	32,300,000	80,750,000	106,590,000	161,500,000
16%	51,680,000	**129,200,000**	**170,544,000**	258,400,000
20%	64,600,000	161,500,000	213,180,000	323,000,000

Source: MPI NZIER

The immediate question is, where will the wood processors be able to sell the extra lumber? The most obvious place is China (currently under COVID-19 China is the only market for lumber). The scale of the diversion suggests that in at least some markets, because New Zealand processors are probably uncompetitive, they will have to sell product at below market prices. There may also be anti-dumping complaints.

Box 2: Ukrainian experience with a log export tax

In January 2017 Ukraine banned pine log exports, following a 2015 ban for all other species. In 2016 European Unions' Forest Law Enforcement, Governance and Trade (FLEG) produced an analytical report on the issue (see: http://www.enpi-fleg.org/news/ukrainian-timber-export-ban-to-be-or-not-to-be/).

Their report and other analysis on similar bans in other countries, assesses the influence of the ban on solving Ukraine's problems and predicts its consequence.

The 3 main motives for the moratorium were: nature conservation, economic: directing previously exported logs to local mills, and social: creating new jobs for Ukrainian citizens.

The report has three major conclusions:

- Government intervention in the unprocessed timber market decreases timber and wood prices.
- It negatively affects forestry.
- Leads to development of inefficient wood processing.

In the long run the ban helped no one. Illegal logging increased.

Expensive jobs

If between $120 million and $170 million is to be extracted from plantation forests and delivered to the processing sector, how many jobs might that create? Under plausible assumptions the number of jobs created is likely to be approximately 1,200 at an average wage of $55,000.

However, the cost of those jobs is likely to be between $107,000 and $141,500 or double what an average worker is likely to be paid.

Table 4 Assumptions: The high cost of a new job in forest processing

Assumptions	Impact
For every 1,000,000 cubic metres	350 workers are employed
Currently 21,533,333 cubic metres are produced	This translates into approximately 7,500 jobs if all logs were further processed
If a further 16% of logs were diverted	It would create approximately 1,200 jobs
The cost of those jobs	$107,000 and $141,400 (where the average wage is $55,000)[1]
Note: (1) $129.2 million/1,206 jobs and $170.5 million/1,206 jobs	

Source: NZIER

4.3.3 Wider economic losses

Impacts on GDP

We expect a fall in GDP. This is because the losses from the efficient sector, forestry plantation, will outweigh the gains from the less efficient forestry processing sector (see Table 5).

The extraction of between $129.2 million and $170.5 million in the forestry plantation sector will see the industry face falling average prices. Reducing the quantity of logs extracted, will lead to a change in direct loss of output of between $192.7 million and $254.7 million. This represents $96.8 million to $127.2 million in direct GDP loss to the forestry plantation sector

The reduction in output of the forestry plantation sector will also have an impact on other industries that depend on forestry plantation for their livelihood. From the Stats NZ's Input-Output tables these industries include road transport, forestry support services, heavy engineering etc. The indirect impact is estimated to be between $41.0 million and $53.9 million in value added, leading to a total GDP loss of $137.8 million to $181.1 million for the forestry and supporting sectors.

This is offset by the gain in GDP to the wood processing industry from logs being diverted from the forestry plantation sector. We expect that GDP to increase in the wood processing sector by $111.4 million to $140.3 million directly, while support industries (excluding forestry) will see an increased GDP of $9.9 million.

The loss in economic activity from the forestry sector is expected to be greater than the gains from wood processing. We find that GDP to the whole economy will fall by between $16.5 million and $30.9 million.

The above analysis assumes than the wood processing firms will be able to sell the extra production at the current prices. This is unlikely, therefore the likely extra value added created in the wood processing sector may be lower than estimated.

Table 5 GDP losses

$ millions

	Output			GDP impacts		
	Direct	Indirect loss	Total loss	Direct loss	Indirect loss	Total loss
Plantation forestry						
Discounted logs (25%)	-$129.2 m	-$63.4 m	-$192.7 m	-$96.8.8m	-$41.0m	-$137.8m
Discounted logs (33%)	-$170.5m	-$84.1 m	-$254.7 m	-$127.2m	-$53.9m	-$181.1m
Wood processing						
Discounted logs (25%)	$87.3m	$22.7m	$110.0m	111.4m	9.9m	100.2
Discounted logs (33%)	$87.3m	$22.7m	$110.0m	140.3m	9.9m	112.1m
Total benefit/cost						
Discounted logs (25%)	-41.9m	-40.7m	-82.6m	$14.7m	-31.1m	**-16.5m**
Discounted logs (33%)	-83.2m	-61.4m	-144.6m	$13.1m	-44.0m	**-30.9**

Note (1) We have used the Statistics NZ's Input-Output tables to provide approximate estimates. If the timeframe had not been so tight our preference would have been to use an economy-wide model with regional components to give a more robust estimate of the losses.

Source: NZIER, Stats NZ's Input-Output tables

The negative dynamic will continue

We also know from overseas and New Zealand experience that the GDP losses will get worse as government will have to step in and prop up the policy further as it fails (the Australian car industry shows this over the decades).

The economics do not make sense so there will have to be more interventions, possibly subsidies and payments, to ensure the wood continues to be processed. More bans and rules may be needed as the boundaries of the regulatory regime come under pressure.

Trade policy initiatives will suffer

New Zealand relies on a rules-based international system – already under stress due to the behaviour of the United States. Flouting international rules and turning inward will undermine New Zealand's international credibility and potentially our trade relationships.

The impact of the Bill cuts across New Zealand's role as a relatively free trader that brings a degree of credibility to international negotiations. We cannot be as effective on the international stage with other freer trading nations by pursing policies that distort trade. We cannot ask others to reduce barriers to entry when New Zealand engages in similar activities. Unlike larger countries which have large domestic markets all New Zealand has to trade on is its reputation as a supporter and follower of international rules.

Likely negative impact on investment

Investment is likely to decline since the declining profits, administrative burden, ad hoc changes by the regulator, and forced log sales to processors will create uncertainty over the short, medium and long term.

Those who invest in and manage forests in New Zealand have options of where to plant trees or whether to maintain current plantations. By tapping into pension funds all around the world these companies have invested in trees in New Zealand. New Zealand is attractive because of its rule of law and strong institutions – they are confident that they can get their money back out, so they invest in jobs and technology benefiting not only their company but workers and the regions they invest in. New Zealand has been a good place to do business over the long run relative to alternatives. By delivering wins for all stakeholders, forestry investors fit the profile of an ideal investor in the New Zealand economy: long term, stable, and predictable.

Pursuing a policy of forced extraction of wealth from one competitive sector to another is likely to increase the risk of reducing the investment in the plantation forestry sector. Investors will take a hard look at the options and may reduce investments here as risks in investing in New Zealand increase.

Cuts across the need for export-led growth

With international tourists shut out of New Zealand, other exports need to step up their performance for the New Zealand economy to recover from the COVID-19 crisis. Making it more difficult for efficient sectors to operate will cut across our export-led strategy.

Over the longer term, if this approach persists, it will also have regional impacts as investment is run down in plantation forestry.

4.4 The benefits are illusory

It will fail workers

Despite the expected 1,200 extra (and expensive) jobs, the Bill will fail workers. The jobs from extra processing have to be made ‘economic’ by some sort of subsidy that effectively comes from forestry plantation owners selling at below world prices.

The hard yards of building a market will not be achieved by regulation

The chance to ‘add value’ has always been there. It was not pursued because it is not a matter of just pushing a log through a mill, it’s about having an economic scale of processing to produce a product that is right for the customer and the right economic story (see section 3.2). Doing this effectively is a challenge we have struggled with in forestry processing but there are signs that this could be accomplished over the longer run.

A hastily prepared Bill offering easy jobs is very unlikely to achieve the objectives sought. Possibly it will achieve the opposite by making mills more inefficient and job opportunities therefore more precarious.

Industry policy will fail – it is about adding cost not value

Heavy industry policy has been tried and failed in most countries. A number of reasons are typically given:

- The case for industrial policies is based on the idea that there is a market failure that is preventing industrialisation (in this case something holding back the forestry processing industry) and so some form of government intervention is necessary to correct that failure. In the real world, however, these existing economies are full of distortions, such as the inability to gain consents needed for greenfield processing facilities. In this setting, correcting the market failure does not rely on diverting logs to domestic processing but promoting ways to streamline other regulatory processes. Poorly targeted interventions may make matters worse since the output from foresters and/or domestic mills may have to be sold at below cost.
- Picking winners does not work. Industrial policy has typically targeted sectors. By picking the forestry processing industry as a 'winner', it reduces the flexibility of the industry to respond to international markets and it constrains the ability to export in a time when exports are needed more than ever. It is competitive firms that do this, by promoting a sector-wide response the likelihood of inefficient firms emerging – making a living off subsidised logs – is very real.
- Set workers up for failure. Firms engaged in parts of the economy where 'winners' are picked by the government typically have skewed behaviours and priorities. Management focuses on lobbying, not efficient running of the firm. Wages are highly dependent on political support for the industry (note the recent demise of the Australian car industry where the industry depended on protection and other handouts from the government for many years).

The result is that the forestry industry's competitiveness is likely to be blunted by the aims and objectives of this Bill: it will add cost not value.

5 Conclusions

There is great concern and confusion in the forestry plantation industry about the intent of the Bill. If the Bill mandates the diversion of logs into domestic processing at discounted prices, then the impact will be detrimental to the New Zealand economy. This is reinforced by overwhelming evidence from overseas in the forestry industry and in other industries.

Of the components that could be quantified, results suggest that costs of a mandated diversion of logs will have little long-term benefit for New Zealand.

The principal parts of the analysis are:

- The transfer of logs from the efficient plantation forestry sector will extract value from plantation forestry.
- The forced extraction of value will reduce investment in the forestry plantation sector.
- The jobs created in the wood processing sector will be expensive and cost at least double the market rate. These jobs are likely to be short term since they rely on political patronage, not market realities.
- GDP will fall.
- Other interventions such as registering log traders will likely add to costs.

We must stress that there are limitations in the quantified analysis due to the information available, the confusion about what the Bill wants to achieve, and the changing objectives. The robustness of the analysis is influenced by the potential bias in the information provided and the potential magnitude of unquantified costs and benefits, such as uncertainty about how many jobs will be lost in the plantation forestry industry over time as investment is reduced. These limitations affect the precise size of the impacts estimated, but not the overall thrust of the economic analysis.

The figures in this report should be regarded as an order of magnitude calculation rather than a definitive measure and the analysis can use improved information if it becomes available, i.e. a proper analysis would require the use of a fully specified economy-wide model with regional components. This was not available in the timeframe as the Bill is being rushed through parliament.

6 References

Beason, R., & Weinstein, D. (1996). Growth, Economies of Scale, and Targeting in Japan (1955-1990). The Review of Economics and Statistics, 78(2), 286-295. doi:10.2307/2109930

Bollard A and Buckle R (eds). 1987. Economic liberalisation in New Zealand. Allen and Unwin Port Nicholson Press.

Devarajan, Shanta. 2016. "What to Do When Politics Is 'the Problem.'" *Brookings* (blog). September 15, 2016. https://www.brookings.edu/blog/future-development/2016/09/15/what-to-do-when-politics-is-the-problem/.

Karp, Larry S., and Jeffrey M. Perloff. 1995. "Why Industrial Policies Fail: Limited Commitment." *International Economic Review* 36 (4): 887–905. https://doi.org/10.2307/2527264.

Moreno, Luis Alberto. 2015. "Getting Industrial Policy Right | by Luis Alberto Moreno." Project Syndicate. January 23, 2015. https://www.project-syndicate.org/commentary/latin-america-industrial-policy-failures-by-luis-a--moreno-2015-01.

Nixon C and Yeabsley J (2002), New Zealand's trade policy odyssey: Ottawa via Marrakech, and on. New Zealand Institute of Economic Research Monograph No. 68.