International markers – a review

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Abstract

This paper reviews both the supply and demand outlook for New Zealand logs focusing on the international markets. Since China entered the log buying market in a sustained manner in 2006/07, the dynamics of the international log markets have changed dramatically. This has coincided with a change in the Russian supply of logs and lumber. Looking forward 5–10 years the outlook is positive as the US housing market recovers, China reduces its domestic supply of softwood logs, and demand from India continues to increase. This paper outlines some of those trends in more detail.

New Zealand log supply

Figure 1 shows that the total harvest in New Zealand has risen steadily since 1990. Key changes in the harvest have been noted on the graph highlighting the Asian financial crisis in 1997/98, China's entry into the log markets in the early 2000s (a faltering start), followed by the now sustained entry into the New Zealand log export market commencing in 2006/07. At each of these points the harvest changed quite rapidly, either up or down, and underlined how responsive the New Zealand harvest is to changes in the international markets.

Figure 1 also illustrates that the domestic demand over this period has been relatively flat, with only one major change in demand around 2000. However, it is worth noting that the data from the Ministry for Primary Industries (MPI, 2017a, 2017b) aligns very well for the total harvest with the Forest Levy Growers Trust Board data (FGLTB, 2017). However, it does diverge when compared to the domestic data from the FGTLB. This discrepancy has not been resolved and does require further work to evaluate.

Despite the issues with the volume sold domestically, Figure 1 clearly shows that once China entered the market in a sustained manner in 2006/07 the volume sold into the international markets increased significantly. Figure 2 is a forecast of the future New Zealand harvest based on data from NEFD and the Ministry for Primary Industries along with my own modelling. The main area of difference with the NEFD forecasts is it incorporates an estimate of the effect of having a higher level over the last three years (compared to NEFD) and decreases the future harvest accordingly.
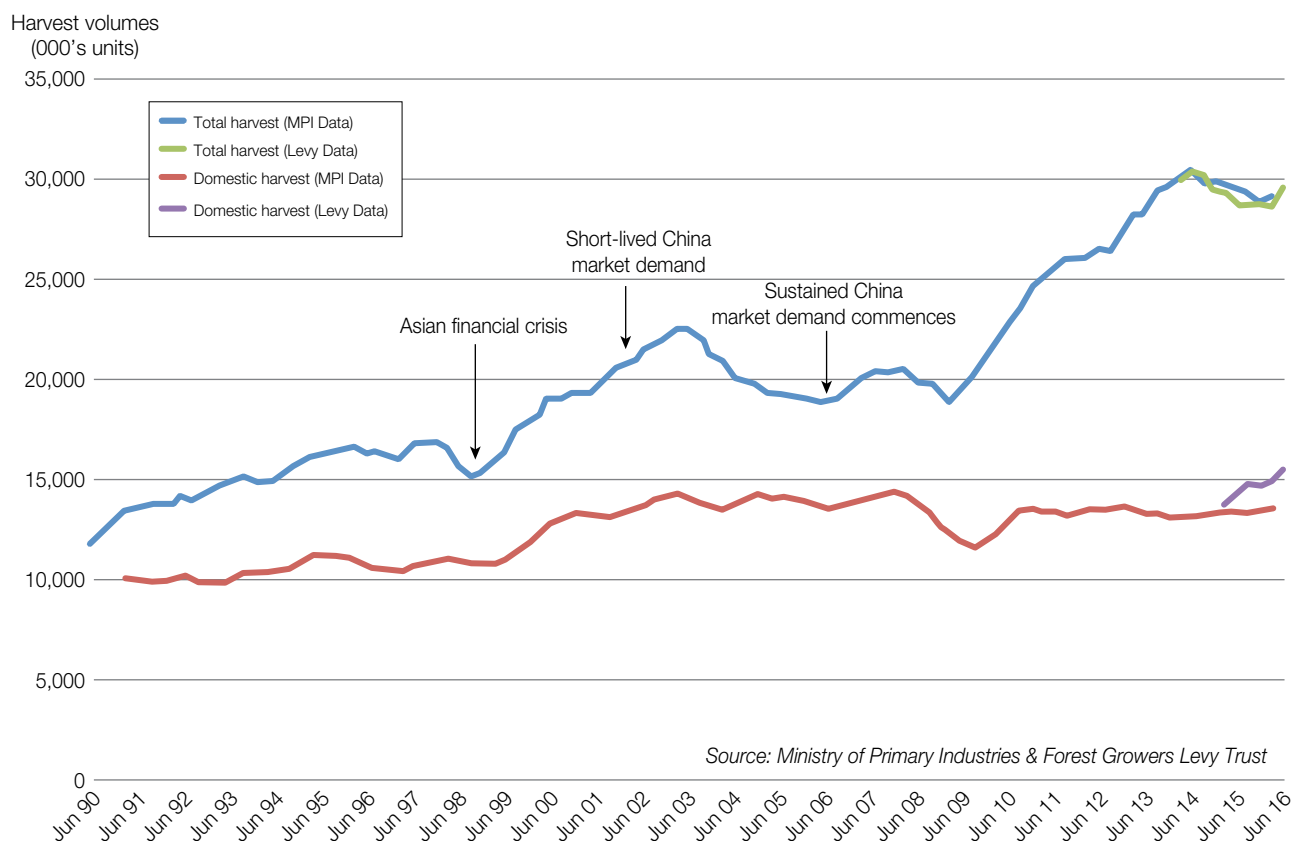

Figure 1: Total NZ harvest and volume supplied to domestic processors. Source: MPI, 2017a, 2017b

The split between large forest owners (>10,000 ha) and small forest owners (<10,000 ha) is a 'best guess' based on internal modelling and analysis. While the graph shows a relatively even harvest over the next 15–20 years it will in fact fluctuate mainly due to small forest owners attempting to maximise their net revenue; if market conditions are positive small forest owners will harvest as quickly as possible and conversely reduce their harvest when adverse market conditions eventuate. Larger forest owners will tend to maintain a steady harvest regardless of market conditions in order to maintain infrastructure and cash flows as well as meet contractual obligations.

Regardless of those market-driven fluctuations, the total harvest as shown in Figure 2 will probably range between 30 and 32 million m³ per year for the next 15–20 years and will decline thereafter, assuming all other factors remain the same. As Goulding (2005) described in August 2005, there is no 'wall of wood' because the current harvest level is probably within 5% of the average annual harvest over the next 15–20 years.

International demand

Having defined the likely range of future harvest volumes the question arises about the market demand for that harvest and, in particular, what do the international markets look like for the surplus logs not required for domestic processing?

Figure 3 shows the supply sources for softwood logs and lumber into China in 2015. China imports logs and lumber from over 40 countries, but New Zealand was the largest supplier of logs followed closely by Russia. While important suppliers, the US and Canada were less than 40% of either the New Zealand or Russian supply.

This trend is continuing into the first half of 2016 and, as shown in Table 1, China is the dominant destination market for New Zealand logs. It is interesting to note that New Zealand exports around 50% of its harvest as logs – by far the largest amount for any developed country.

Table 1: Share of NZ log exports by country – YTD 30 June 2016

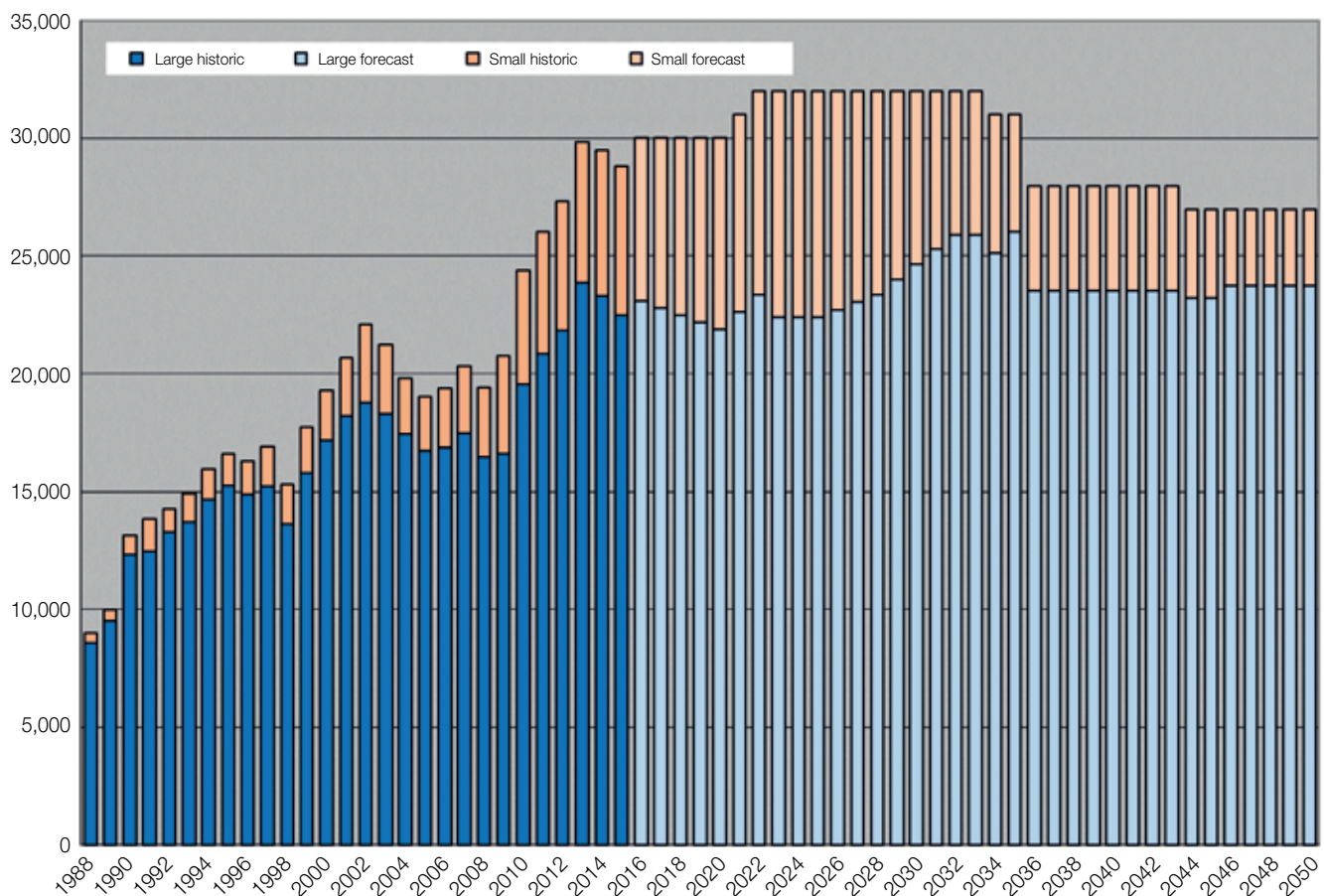| Destination market	Market share % – YTD 30 June 2016
China	70%
South Korea	15%
India	10%
Japan	4%
Other	1%

Figure 2: Historic and projected NZ harvest classified by small and large forest owners. Source: MPI, 2017a, 2017b; MPI internal forecast
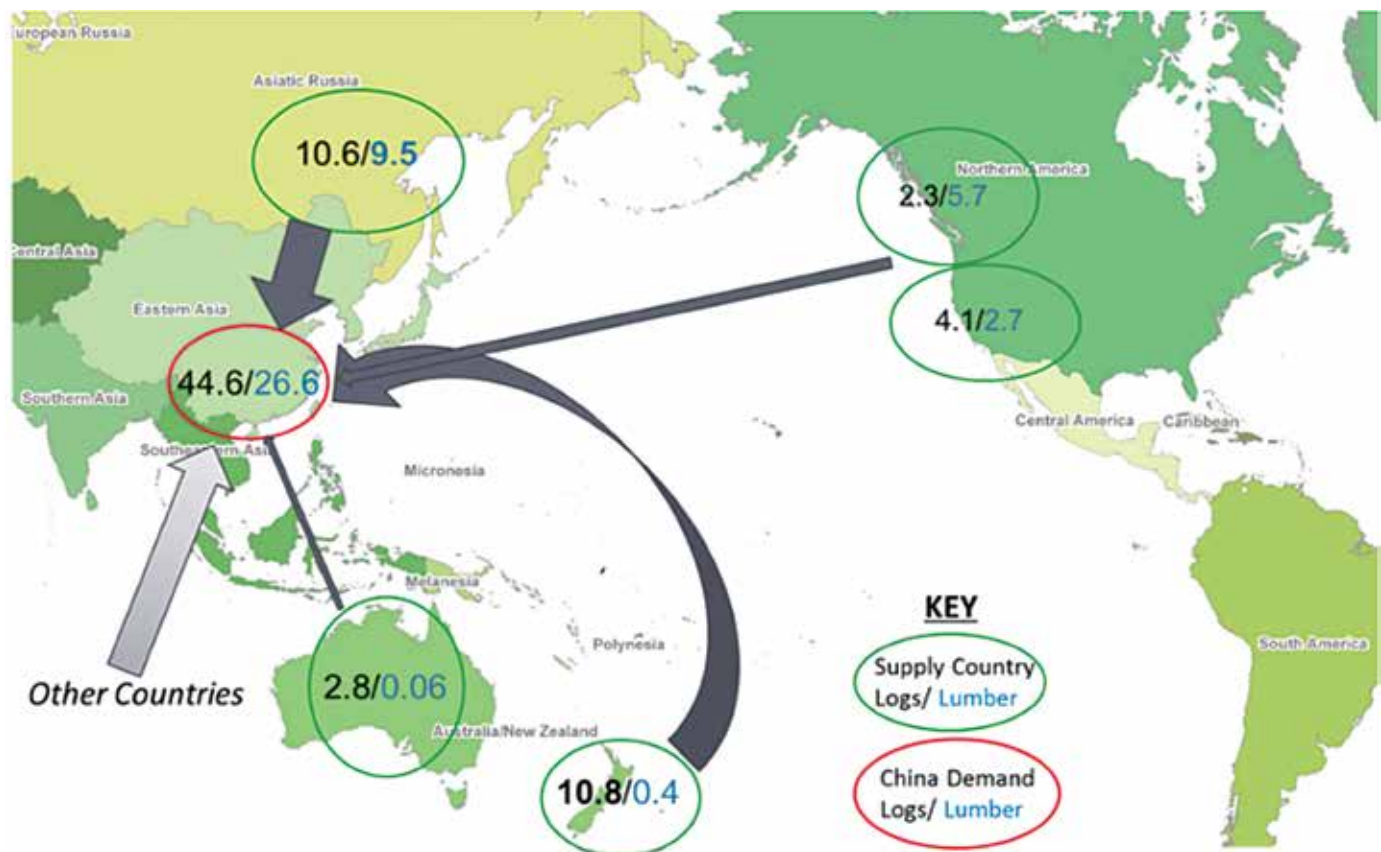
Figure 3: Wood flows into China for 2015

Outlook for demand from China

The health of the Chinese market is therefore essential for New Zealand's continued ability to sell the forecast harvest volumes at least in the short term. The slowdown in the Chinese economy is well documented, with GDP expected to grow around 6.7% in 2016, down from double digit growth five years ago. Many commentators have seen this slowing Chinese economy as impacting the developed western economies still recovering from the global financial crisis of 2008 onwards. This is illustrated in the cartoon shown in Figure 4.

The reality is that while the Chinese economy is slowing down, and the construction sector is slowing down even faster than this, China is still a large market that requires imported logs to sustain its growth. It is worth re-capping some of the key statistics about China as a market. As Figure 5 illustrates, on a 'like-for-like' basis China has 32 cities greater than one million people compared to the US's 10 and India's 17. On a density per square mile basis South Korea followed by India and China far exceed the relatively sparsely populated US. The conclusion from these population statistics is that despite slowing growth rates the population locations, size and density create a robust demand for logs and log products.

This large underlying urban population has driven the growth in log and log products since 2007 when China re-entered the import market for those products in a large and sustained way. The latest Chinese 5-Year Plan (the 13th since 1953 covering the period 2016–2020) outlines the areas identified for continued urbanisation, as shown in Figure 6.

This continued focus on urbanisation for which timber is essential would by itself not be sufficient to drive continued demand from New Zealand for its logs and log products. As highlighted in Appendix 1 in a summary of the 13th 5-Year Plan under point 19, China has also banned commercial deforestation of natural forests. Figure 7 shows the decline of timber-producing areas as recorded in China's National Forest

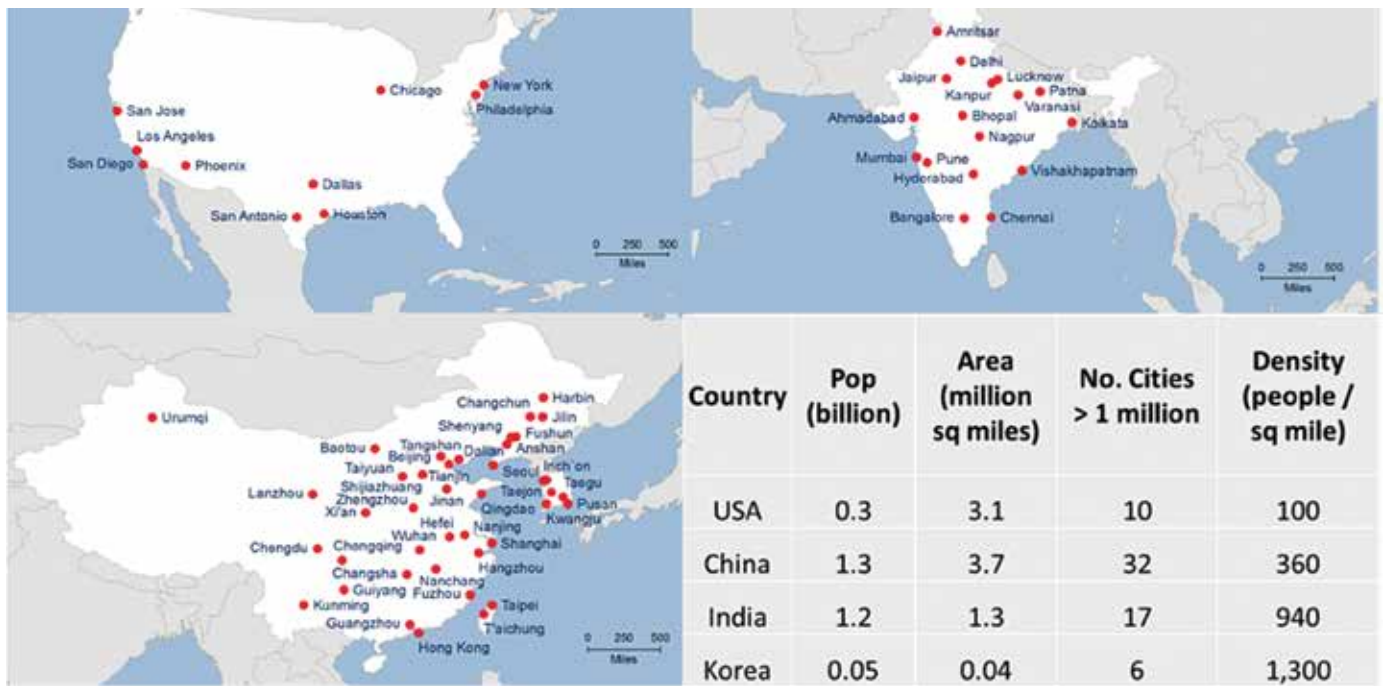Figure 4: Cartoon depicting the concern of a slowing Chinese economy

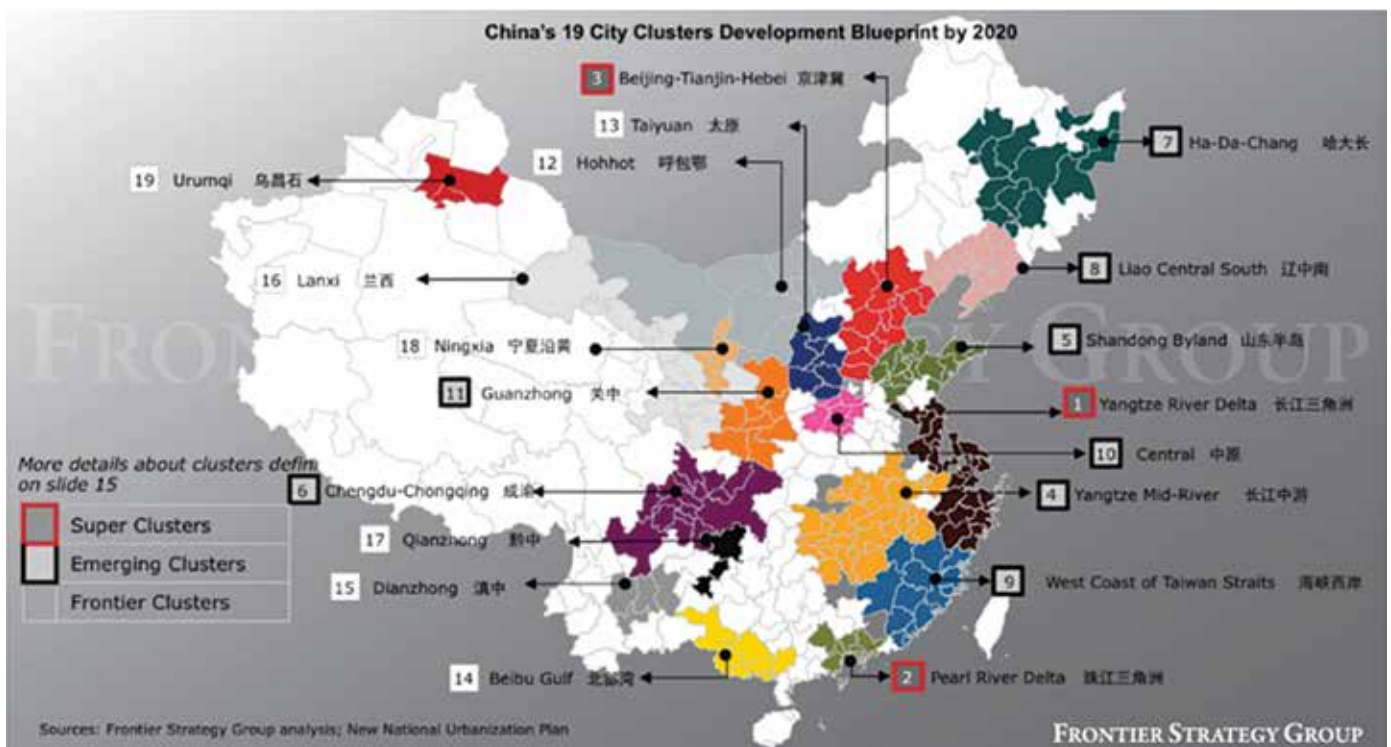Figure 5: Number of one million people cities

Country	Pop (billion)	Area (million sq miles)	No. Cities > 1 million	Density (people / sq mile)
USA	0.3	3.1	10	100
China	1.3	3.7	32	360
India	1.2	1.3	17	940
Korea	0.05	0.04	6	1,300

Figure 6: Areas identified for continued urbanisation

Inventory (NFI). The 8th NFI (WeiSheng Zeng et al., 2015) covering the period 2009 to 2013 indicates a slight recovery in the timber-producing areas, but this is as a result of an increase in fast-growing hardwood plantations in the southern part of China.

The northern provinces of Heilongjiang, Jilin and Inner Mongolia shown in Figure 8 are mainly natural softwood forests and so have been immediately affected by the ban on commercial harvesting and deforestation.

Russian sawn timber supply

However, the market in China for logs is also influenced by the sawn timber imported from around the world.

Figure 9 shows that China imports nearly twice as much sawn timber from Russia compared to North America, with the other supplier countries even smaller again. Figure 10 shows that Russia continues to increase the volume of sawn timber it exports to China.

Hectares (millions)
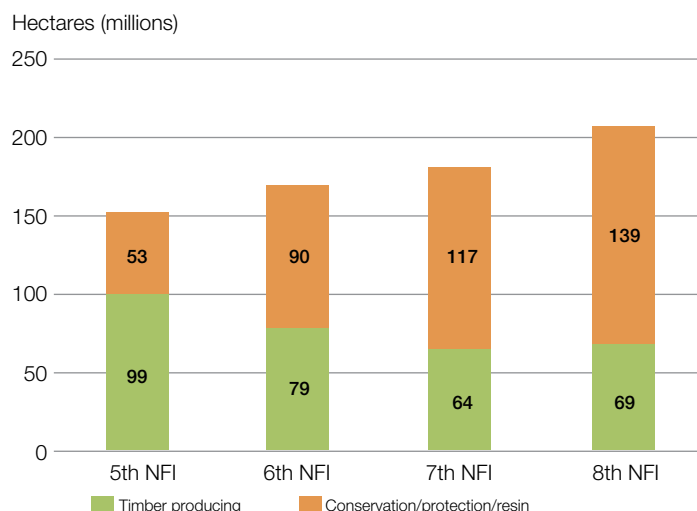
Figure 7: Declining productive areas of commercial forests. Source: Zeng et al., 2015

There are questions about whether Russia is able to increase sawn timber production any further and, if so, if any increase is at the expense of its log exports to China or if it is able to increase the total harvest from its forests in Siberia and the Russian Far East. Anecdotally, Russian producers in the Far East indicate that the total harvest in both Siberia and the Russian Far East is constrained by the infrastructure and unlikely to expand any further. This would indicate that the increase in sawn timber exports to China will reduce the raw log export from Russia to China.

Conclusion

The supply from New Zealand's commercial forests is likely to remain fairly static between 30 to 32 million m³ per year. About 50% of this production will be processed locally and about 50% will be exported in raw log form. Any changes in this proportion will in the long run be driven by the economics of domestic processing. China is the dominant market for log exports and will most likely remain so for the next 5–10 years.

Even though the rate of growth in China is slowing, and the rate of growth in the construction sector is slowing at an even faster rate than the general economy, there are a number of factors that will maintain China as the largest importer of New Zealand forest and forest products during this period. These include the continuing requirement for forest products to assist in the urbanisation and infrastructure building, the expanding use of radiata as a component of furniture making, and the continuing replacement of New Zealand radiata pine for the domestic softwoods.

Figure 8: Forest distribution in China based on data collected in the 8th NFI – the arrow shows the natural softwood forests affected by the harvesting ban. Source: Zeng et al., 2015

Total China sawn timber imports (m³)
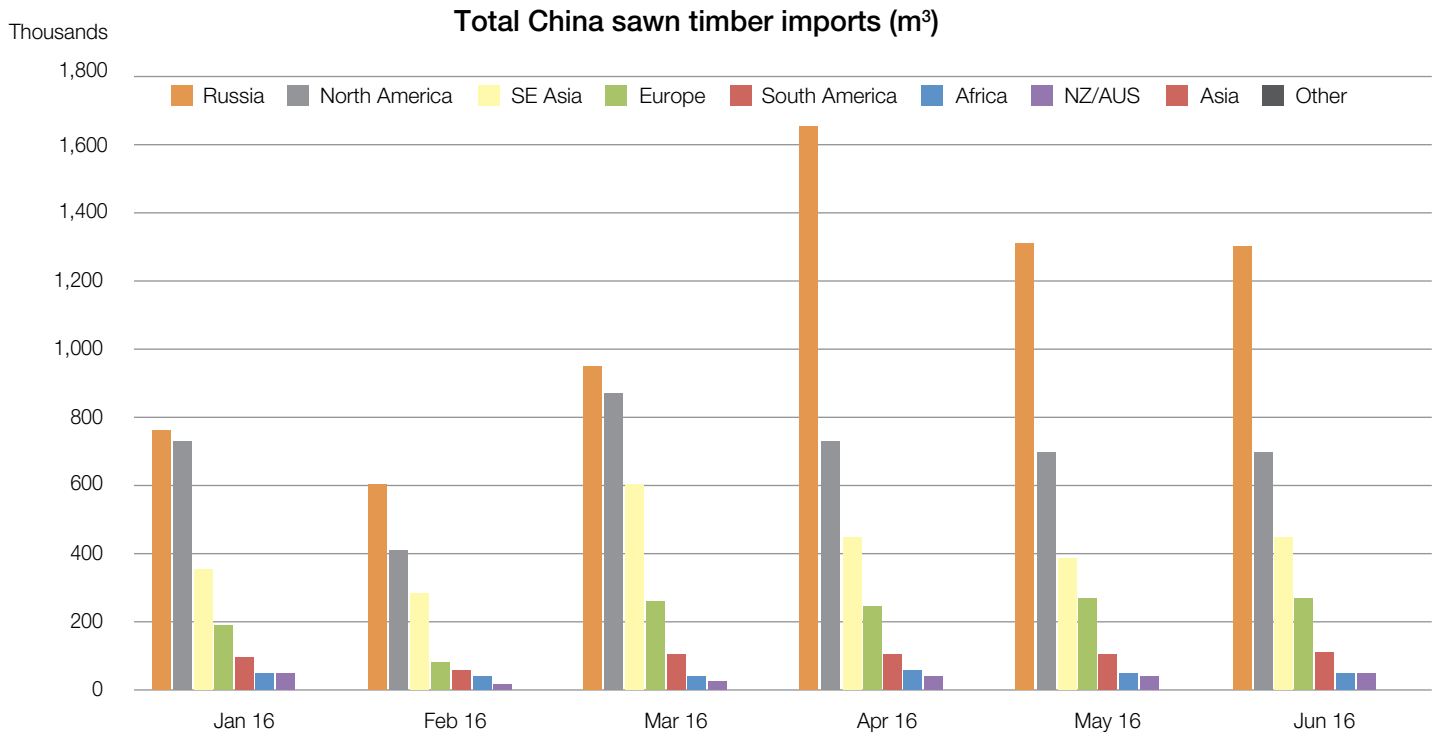
Figure 9: Sawn timber imports to China in 2016
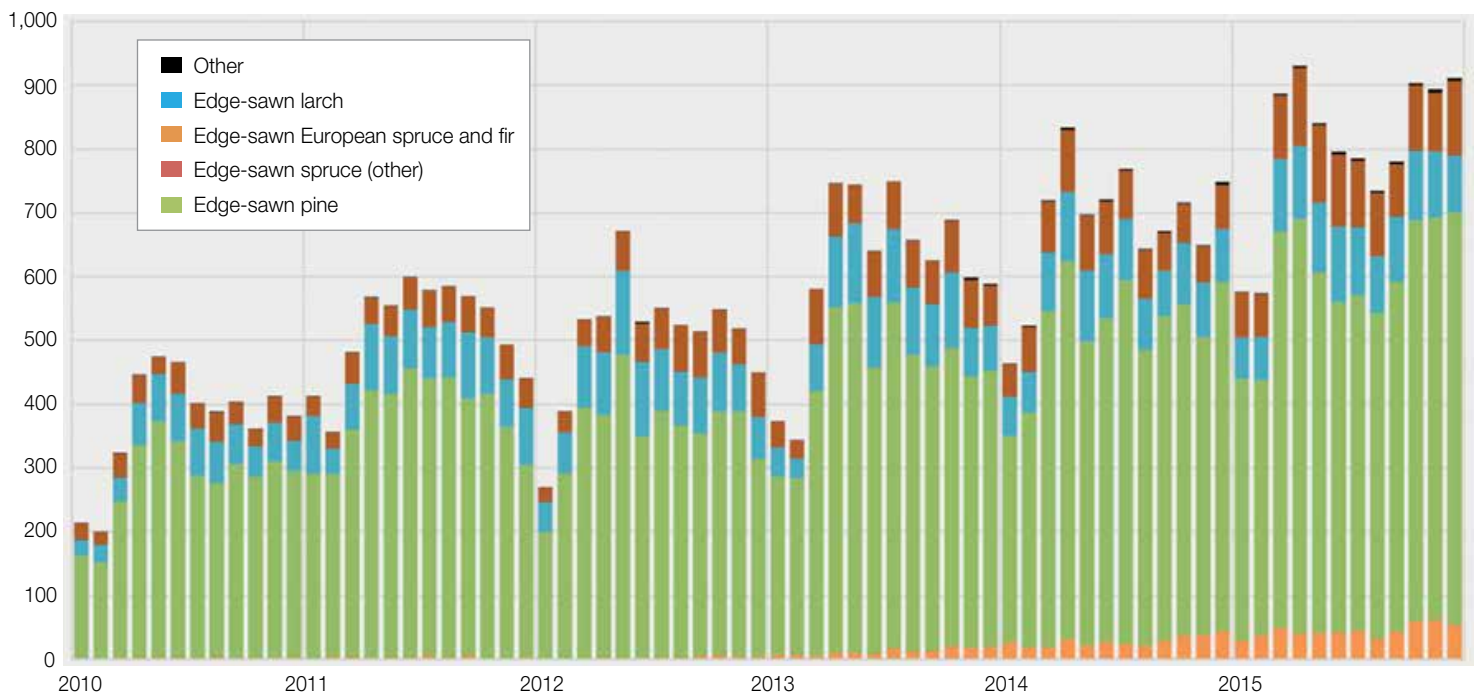
Figure 10: Russian monthly sawn timber exports to China. Source: Baranov et al., 2016

Not discussed in this paper, but of growing importance, is the Indian market where in 10 years' time (2026) most projections indicate it will be the world's most populous nation. The volume of Russian sawn timber imported into China continues to increase, but appears to be offset by reductions in Russian raw log supply so that overall the market impact on the consumption of New Zealand logs remains the same.

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1. China has seen great progress in the past five years, becoming the world's second-largest economy and with per capita GDP increasing to $7,800. Agricultural production has risen continually and the proportion of permanent residents in urban areas reached 55 percent.

2. Various systems to be improved in the next five years. National governance ability to be further enhanced through modernization, and basic systems to be set up in each industry. Nation to be more democratic and rule of law and judicial credibility to be implemented and boosted. Human rights and property rights to be protected effectively.

3. Competition to be further improved in national monopoly sectors, including electricity, telecommunications, transportation, petroleum, natural gas and public services.

4. Cybereconomy to be further expanded and Internet Plus plan implemented. Network speed to be increased and fees lowered, along with support for innovation in cyberspace of related industries, business methods, supply chains and logistics chains.

5. Increased autonomy for universities and research institutes. Project leaders to have more freedom to make strategic decisions, including on financial and personnel administration.

6. New-style professional farmers to be nurtured. Reform of the rural land system to deepen and the orderly transition of land operational rights promoted.

7. Most-stringent policies to be adhered to for protection of cultivated land to boost capacity and ensure grain security.

8. Fiscal reform to be strengthened. Responsibilities of the central government and other authorities to be moderately strengthened to approve allocation of their income.

9. Financial reform to be accelerated. The issuance and trading system for stocks and bonds to be improved.

10. A new urbanization method will be pushed, focusing on improving livelihoods and deepening reform of the household registration system.

11. Legal land use rights of farmers to be ensured, including those who work in cities. Renovation of shantytowns in cities to be speeded up.

12. Online cultural building to be enhanced, positive culture in cyberspace encouraged and the online environment cleaned up. Mixed development of traditional media and new media to be promoted and digitalization accelerated.

13. Reform of the military to be speeded up, with the goal of establishing a modern military system with Chinese characteristics by 2020.

14. Clean production to be promoted and green and low-carbon industry systems set up. Green finance to be promoted and a green development fund established.

15. Audit system proposed for officials who leave their current posts, taking environmental protection into consideration. Officials' efforts to protect natural resources to form part of their performance appraisal.

16. Use of new energy vehicles to be promoted and the industrialization level of electric cars improved.

17. The strictest management system for water resources to be implemented and a national monitoring system established for groundwater.

18. A nationwide real-time online environmental monitoring system to be set up and an emission permit system will cover all companies with stationary pollution sources.

19. Forest protection plan to be improved, with commercial deforestation banned and forested areas increased. The amount of land returned to farmland and forest areas to be expanded and pasture protection improved.

20. Financial markets to be opened further. Renminbi's inclusion in the IMF's special drawing rights basket to be promoted to achieve convertible capital account.

21. International coordination of macroeconomic policy to be strengthened. An active role to be played in rule-making in new fields such as the Internet, deep-sea and polar areas, and outer space.

22. Increased investment from central and provincial governments to integrate various channels for poverty alleviation. More financial channels to be explored to combat poverty.

23. Innovative teaching abilities to be raised to ensure some universities meet world standards. Modern vocational school system to be set up and universities encouraged to transform into vocational schools.

24. Cooperation encouraged between schools and enterprises to train skilled workers. Skilled workers' salaries to be increased.

25. Social insurance system to be improved to cover all residents living in China legally. Insurance rates to be lowered to a reasonable level.

26. Reasonable adjustments to the pension fund. Investment channels for this fund to be increased and investment returns raised.

27. Policies to be issued on raising the retirement age progressively. Progress to be made on commercial old-age care insurance and occupational or corporate pension plans.

28. Full implementation of the supplementary health insurance program proposed for jobless rural and urban residents suffering from major diseases. Retirees who live at places other than their workplaces to have hospitalization fees reimbursed under basic health insurance.

29. Advancing comprehensive reform of public hospitals proposed, ending the system used to seek profits. A personnel and remuneration system to be set up that is appropriate for the health industry. This calls for optimized distribution of health resources, an improved basic health service, and for health resources to be promoted at rural and grassroots level.

30. Full implementation of fertility policy advocated, allowing all couples to have two children. Improvements to reproductive health services, women's and children's healthcare and nursing services also proposed.

31. Leadership's knowledge structure to become more professional. Reform of human resources to be further deepened.

32. National population basic information database proposed, along with improvements to the social credit system. Social mental health service system to be enhanced and an emergency response mechanism set up.

Appendix 1: Highlights of proposals in the 13th 5-Year Plan (2016–20)