
International Wood Fiber Markets (and Emerging Shocks)

Don G. Roberts,
CEO, Nawitka Capital Advisors Ltd.
dgroberts@sympatico.ca



MEGAflorestais

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The Architecture of Forest Governance in the 21st Century

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1. Global Demand for Biomass & Logs
2. Investment in Plantations & Timberland
3. Excess Capital & Implications for Forest Agencies.



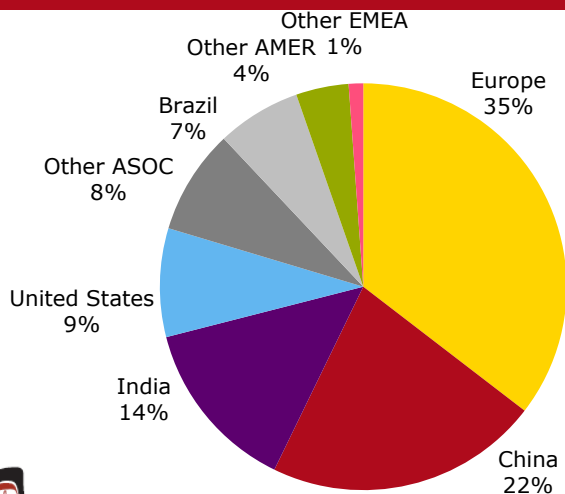
DEMAND FOR BIOMASS & LOGS



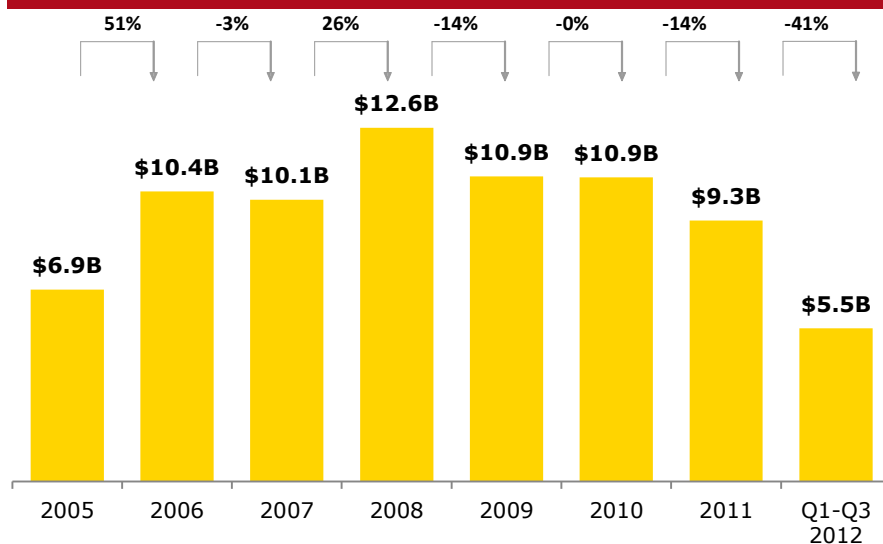
Global Investment in Biomass-based Power

- ▲ Despite falling significantly from its peak in 2008, over \$7 billion was still invested in biomass-based power in 2012.
- ▲ Europe is the leader, accounting for ~1/3 of global investments in Biomass-based power
 - EU expects to double biomass-based power capacity by 2020 to ~26 GW .
 - Just in the UK, biomass demand is expected to rise from ~12 million ODMT in 2013 to ~18 million in 2016.
- ▲ China is now targeting to increase biomass-based power from <4.5 GW in 2011 to 8 GW by 2015 and 18 GW by 2020 – more than triple over the next 10 years.
- ▲ If we believe the national targets, there will be upward pressure on the global price of biomass for energy

Global Asset Financing in Biomass Power
(2005 – 2012 Q3)



Cumulative Growth in Biomass Power Asset Financing
(US\$)



Source: Bloomberg New Energy Finance, Nawitka.

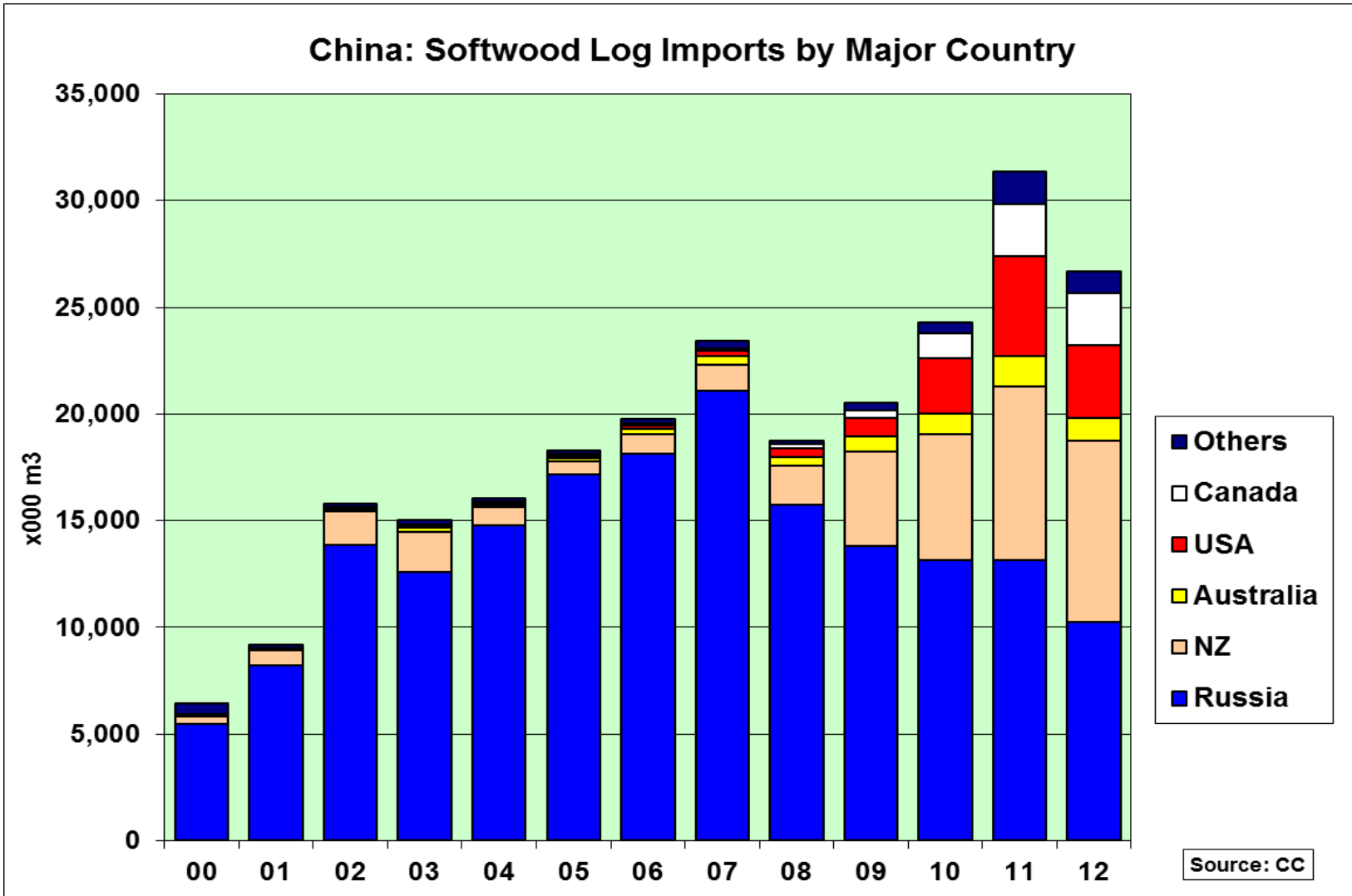
Global Wood Pellet Shipments



Europe & Asia are the centers of global biomass demand

Note: Dotted cycles represent the major demand centres; the strength of the arrows is relative to their importance as trading routes.
Source: Bloomberg New Energy Finance, IEA.

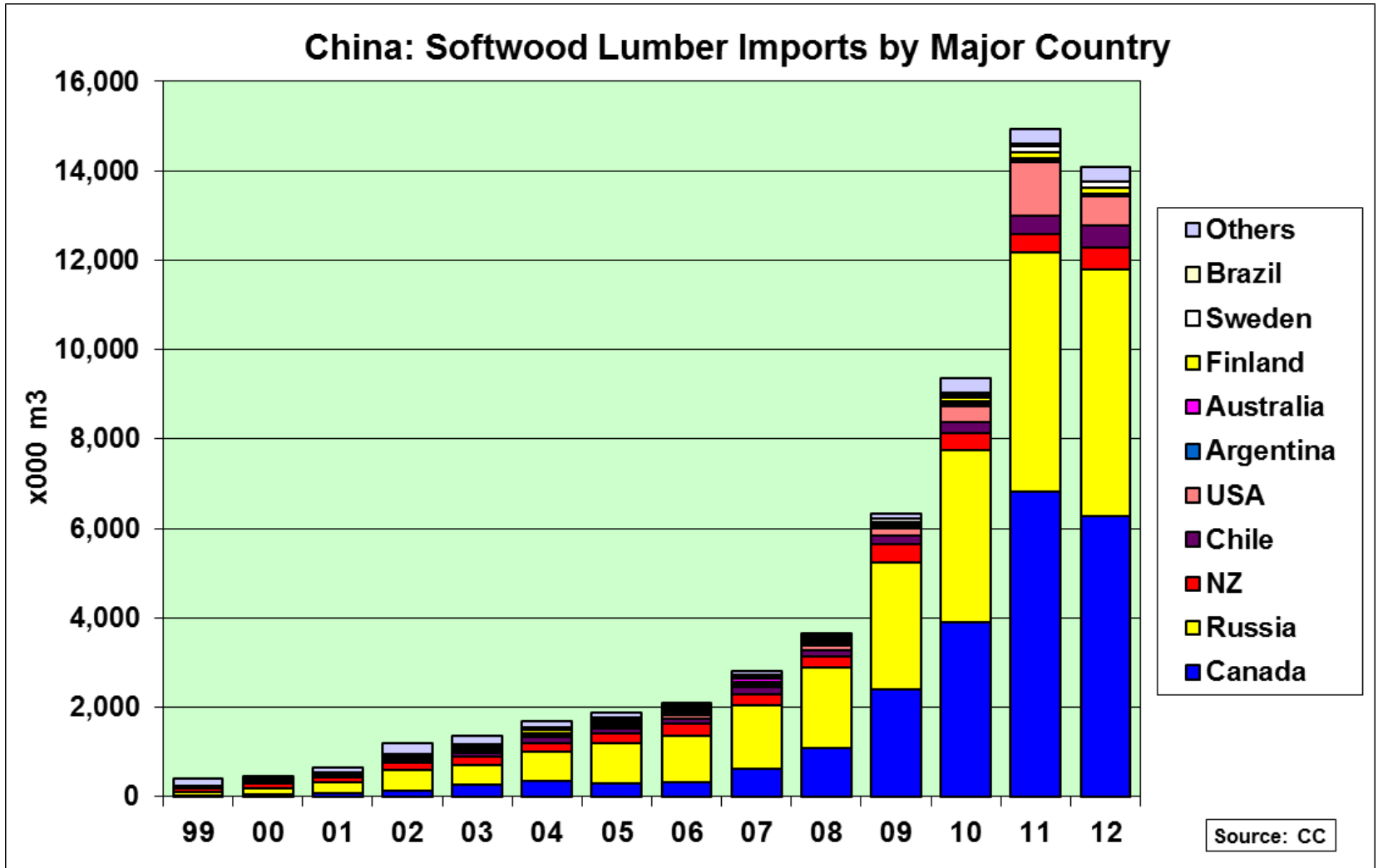




China's imports of softwood logs has already increased ~5x since 2000, and it is expected to continue to soar.

Source: Russ Taylor Wood Markets Inc.

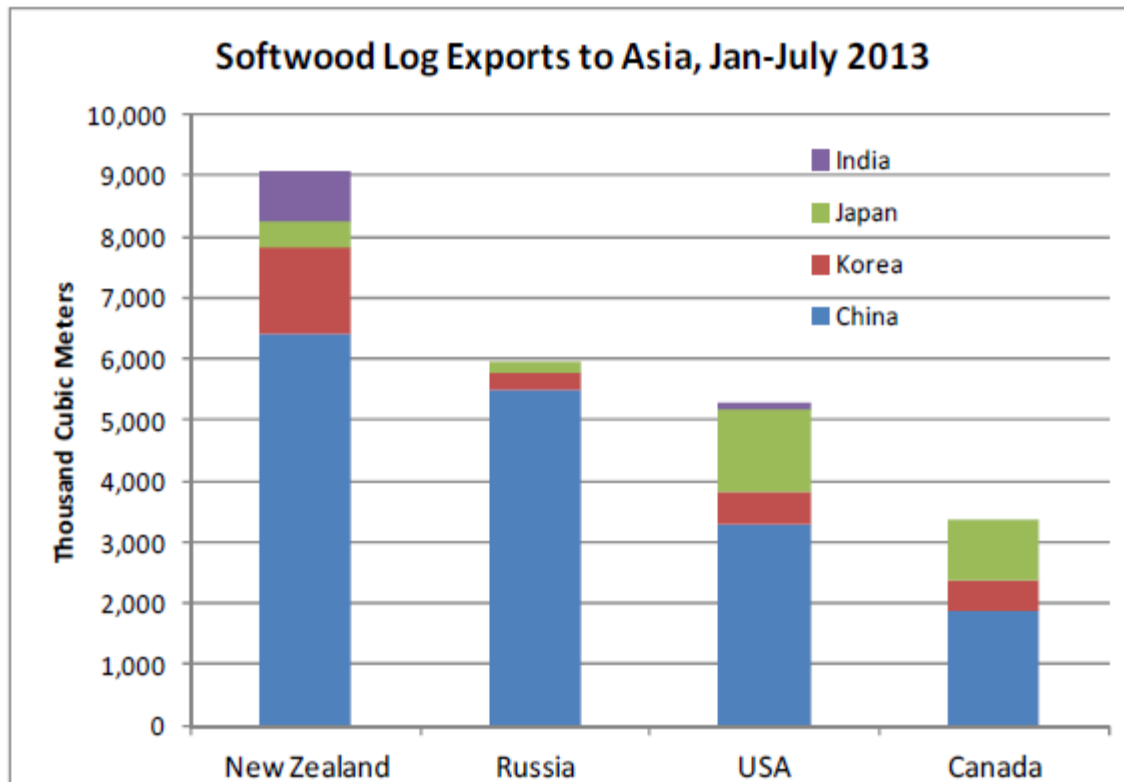




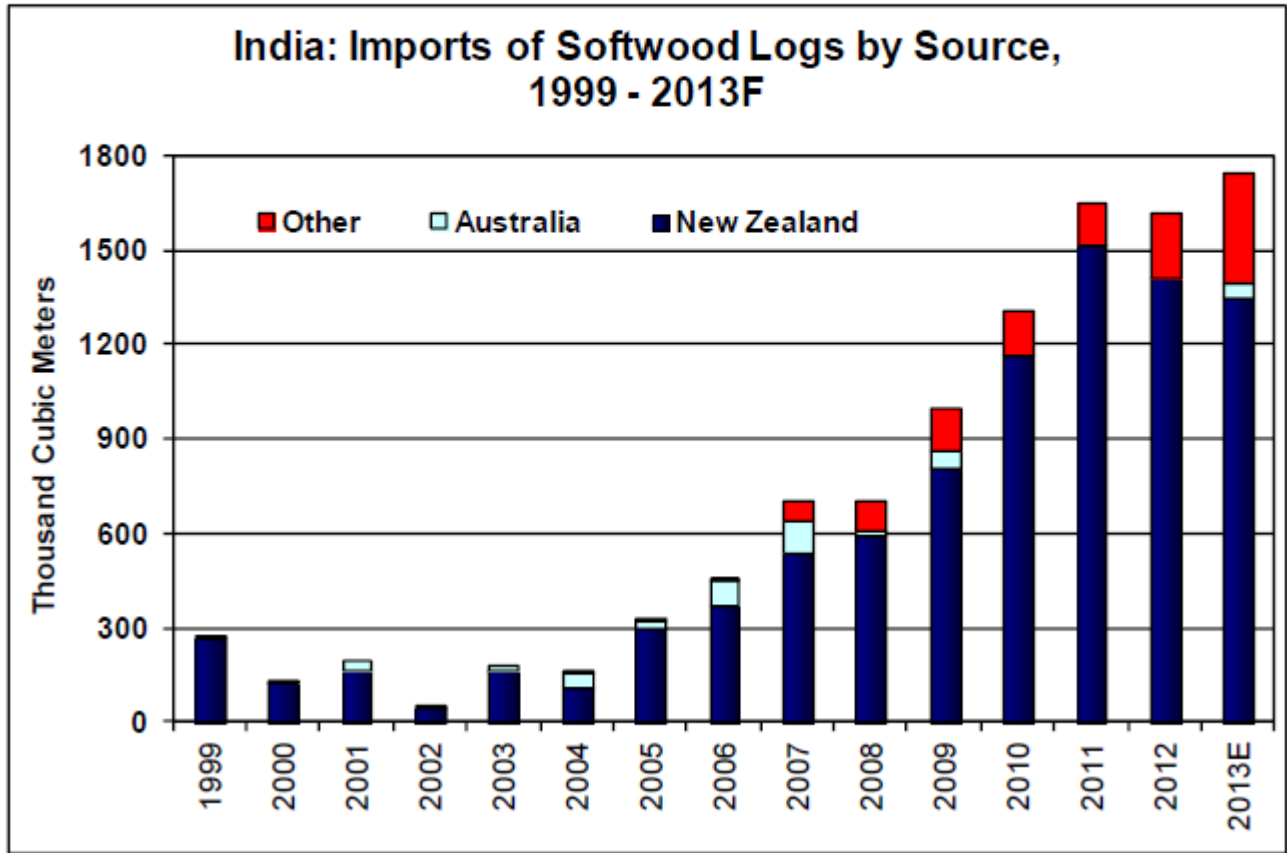
China's imports of softwood lumber have risen even more dramatically than its imports of logs, and the upward trend is expected to continue.

Source: Russ Taylor Wood Markets Inc.

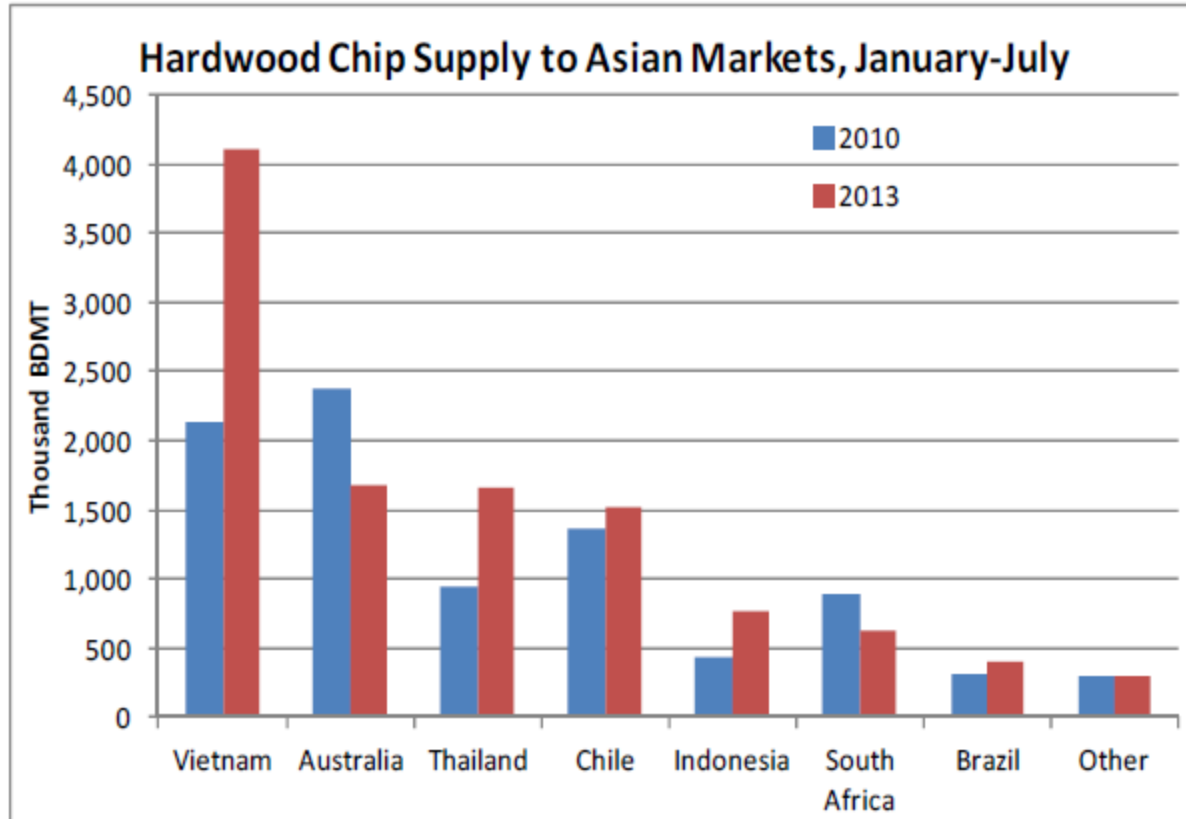
New Zealand Is Not Only the Leading Softwood Log Supplier to China, But to All of Asia



India Has Become a Significant Softwood Log Market for New Zealand



Southeast Asia Now Accounts for 60% of Hardwood Chip Supply in Asia



Source: International Pulpwood Trade Review, 2013



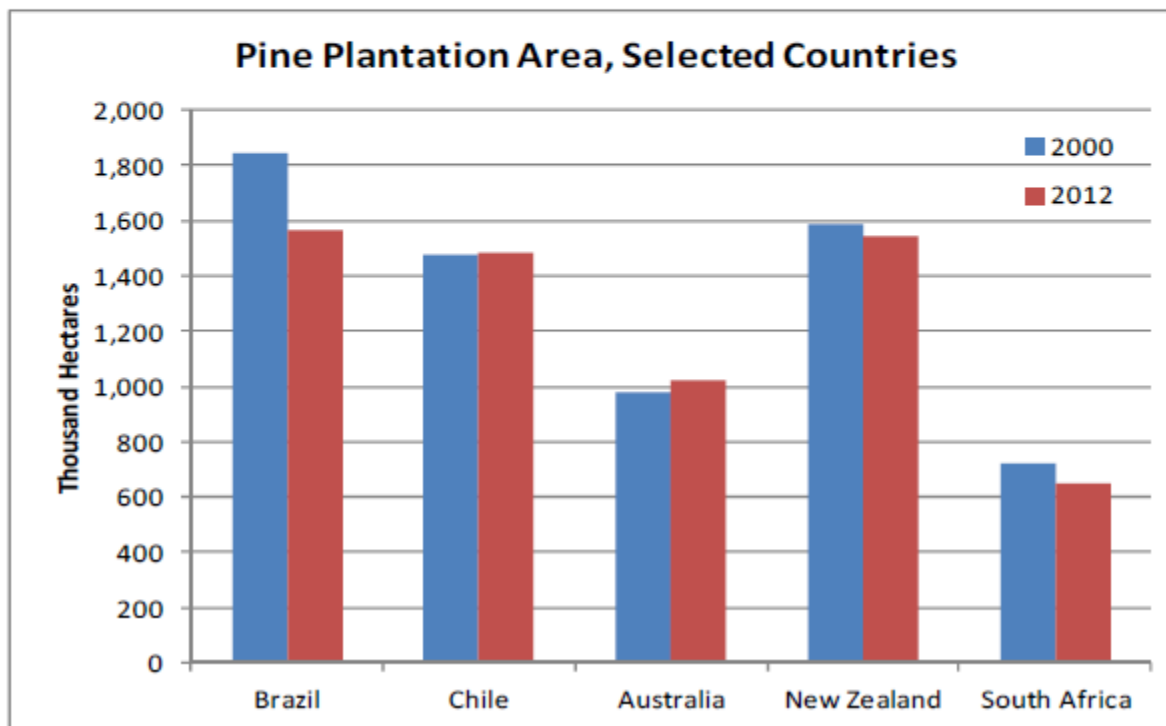
INVESTMENT IN PLANTATIONS & TIMBERLAND



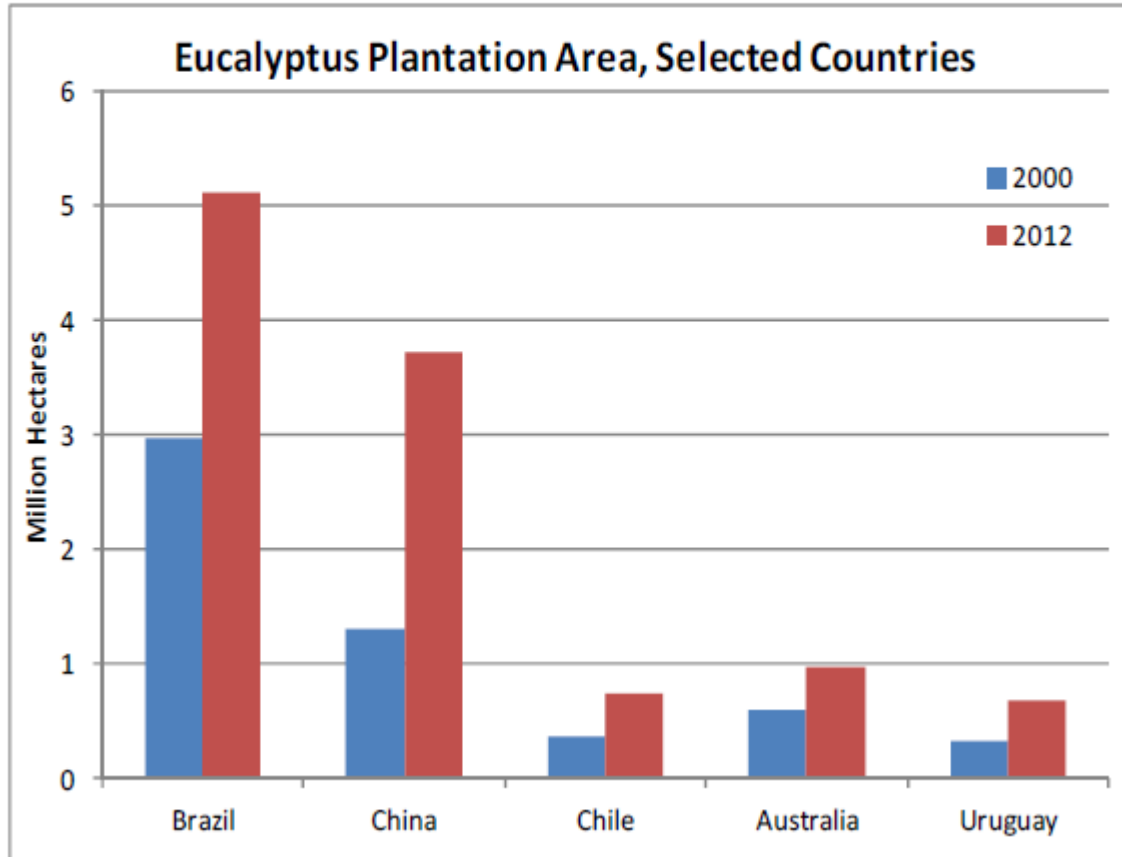
- ▲ China has by far the greatest area in timber plantations in the world.
- ▲ However, Chinese plantations are typically slower growing, and the harvest from many will not enter the industrial wood stream.
- ▲ Industrial plantations are generally concentrated in Brazil, Chile, Australia, New Zealand and the United States.



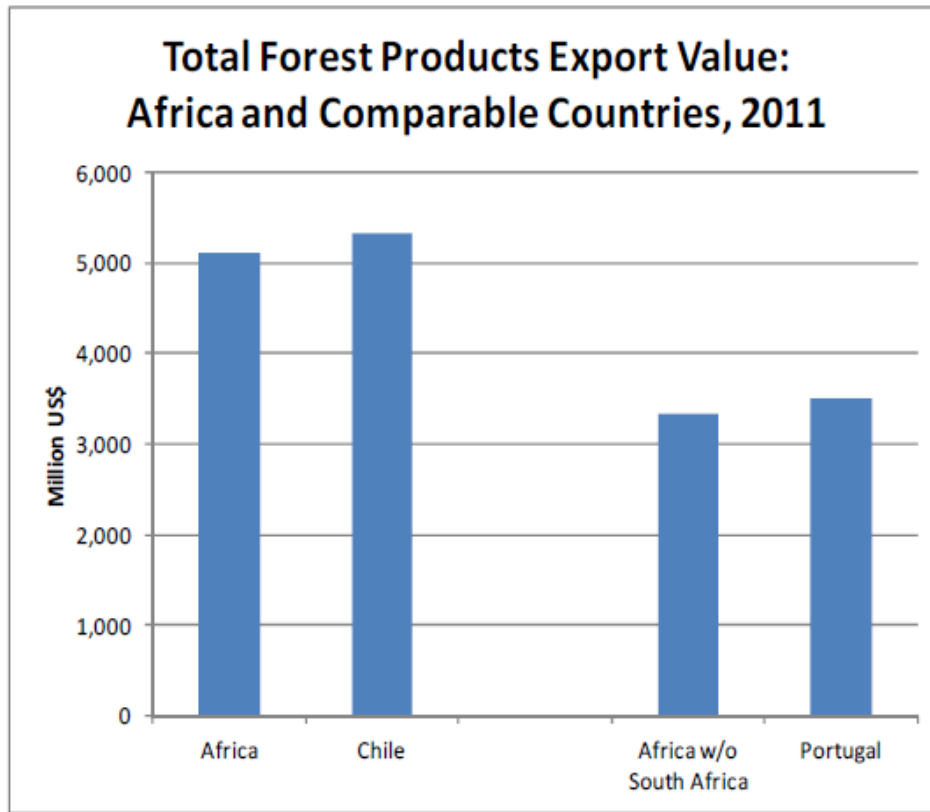
Combined, Brazil and Chile Have More Pine Plantations Than NZ and Australia, and Growth Rates Are Higher—But the Area of Fast-growing Pine Plantations is Reducing



Instead, Everyone Seems to Be Planting Eucalyptus...



- ▲ With the exception of raw hardwood logs, most investors do not focus much on Africa because historically trade was limited, and the domestic consumption was relatively low.
- ▲ Domestic consumption is now accelerating rapidly with higher economic growth in many parts of the continent.
- ▲ Expect most investment to originate domestically, and from Asia & Europe. Little from N. America due to different perception of risk.



These numbers reflect trade between African countries.

Source: FAO



Two key types of investors in plantations/timberland:

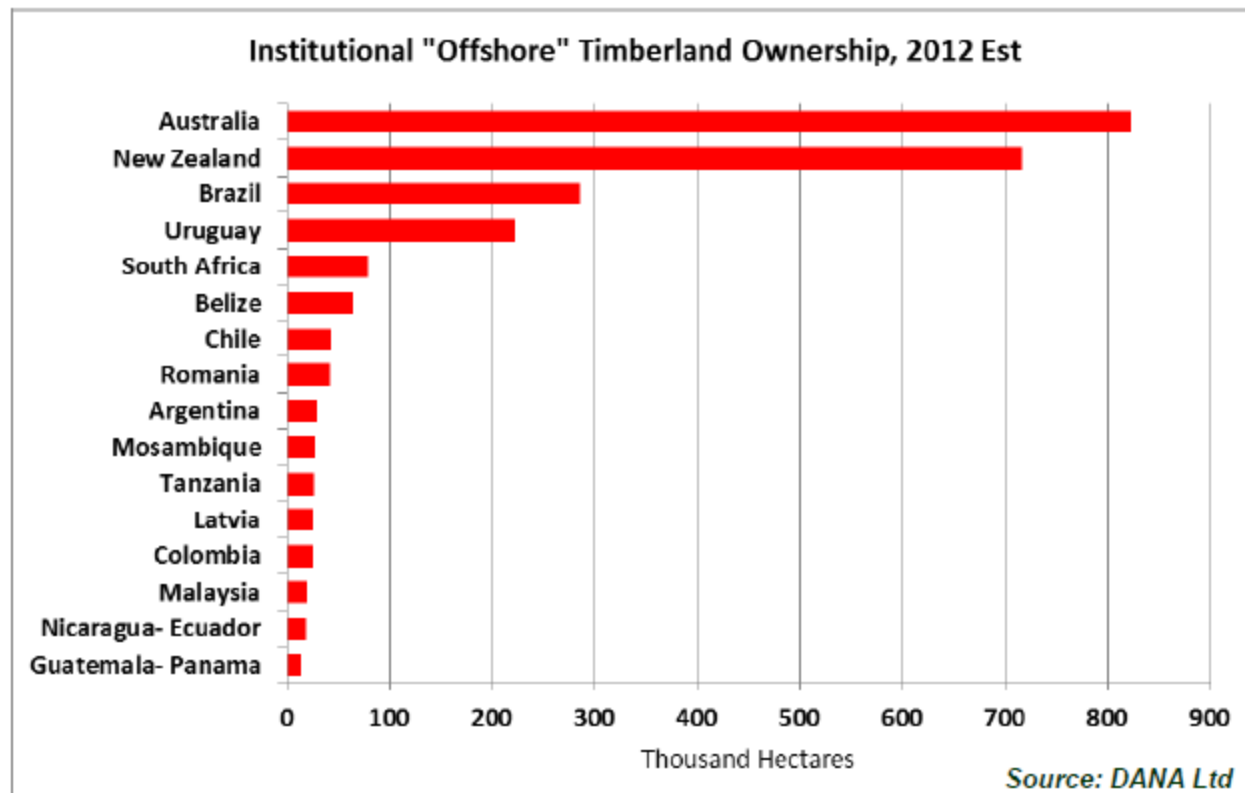
1. Strategic Investors (eg., companies like Stora, Weyerhaeuser, Fibria, Oji)
2. Institutional Investors (eg., financial institutions like Pension Danmark, Ontario Teachers' Pension Plan, TIAA-CREFF)

Most institutional investors hire Timber Investment Management Organizations (TIMOs) to place and manage their timberland investments.

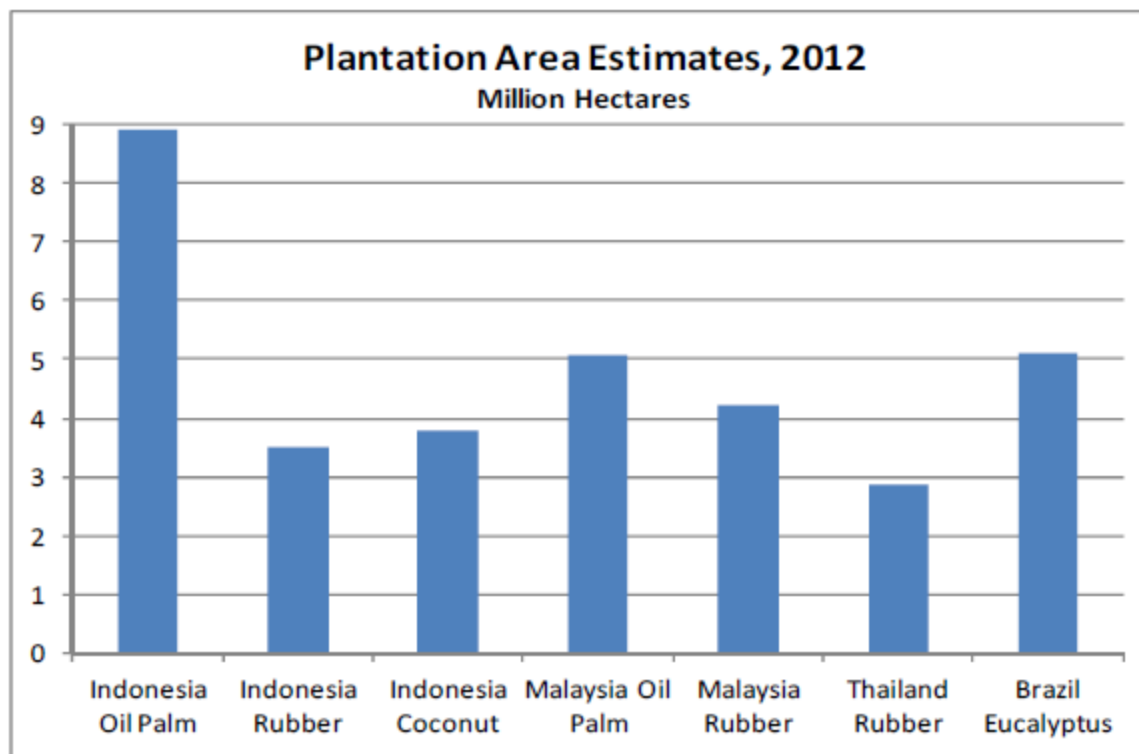
- Generally interested in long-term stable rates of return.
- Many of the public pension funds are very concerned with "reputational risk".....generally seen as "good capital".
- Over 80% of this money has historically been invested in the United States.
- But there is a growing interest in investing outside the U.S.



Australia & New Zealand Are Still the Main Recipients of Non-North American Timberland Investments of “Financial” Investors



TIMOs Are Just Beginning to Make Investments in Southeast Asia, a Region Where “Tree Plantations” Means a Lot More Than Just Eucalyptus and Acacia



The mix of crops highlights the convergence of the markets for food, fuel, feed and fiber.

Land is the common denominator.



Overseas Investment in Timberland by Chinese Companies

- According to Chinese data, more than 500 companies have been involved in forestry sector projects in more than 20 countries, meeting the government's advice to "Go Abroad".
- The largest area of overseas timber harvesting rights has been in Russia, and the largest share of investments have been by Chinese State Owned Enterprises and their partners.
- The China Development Bank handles most of the financing for these investment projects outside the country, many of which involve some type of wood processing facility in addition to standing timber.



Overseas Investment in Timberland by Chinese Companies

- The success rate for Chinese overseas timber investments has been extremely low.
- While most Chinese companies prefer “frontier” countries such as Russia, West Africa and parts of South America, recently more focus has been on plantation-based countries like New Zealand.



EXCESS CAPITAL & IMPLICATIONS FOR FOREST AGENCIES



- The pool of financial capital in 2020 is expected to exceed real global GDP by 10x.
- Total pool of global capital expected to expand 50% by the end of the decade.
 - \$300 trillion increase by 2020 (from \$600 trillion in 2012 to \$900 trillion)
 - 40% of the increase will come from emerging countries.
 - China alone will add almost \$90 trillion.
 - 4x more than Japan; \$25 trillion more than the U.S. + E.U.
- The surplus of capital will serve to depress rates of return, and capital owners/managers will instinctively chase higher yields, creating the tendency for asset bubbles.
- The advantage will increasingly shift from “having money to fund something” to “having something worth funding.”



A world of excess investment capital?

Really? Earlier this year:

- Gov't of Rwanda issued \$400 million in 10-years bonds at 6.9%
- Gov't of Bolivia's 10-year bonds traded at a yield of 4.6%.

Why?

1. Financial innovation, high speed computing and increased use of leverage have allowed the pool of investment capital in the advanced economies to expand at a very rapid rate over the past couple of decades;
2. During the same period, GDP growth in the US, EU and Japan have been slowing, providing fewer new investment opportunities;
3. Emerging economies like China will soon turn from being capital users to capital exporters, significantly increasing the amount of global capital searching for high-return projects to invest in.



Implications for Forest Agencies?

- Interest rates may remain (much) lower than the consensus expects.
 - Should make long-term investments like growing trees more financially attractive.
 - As the land manager, do you know which opportunities may look best?
- In a capital-glutted world, financial bubbles like those in 1999/2000 and 2006/07 have a high chance of recurring.
 - Impact on how you structure your stumpage/royalty systems (and even how you should manage your agency's budget), when there is greater volatility in commodity prices and exchange rates?
- The risk of investing in the developing world, where capital will be needed the most, will become more palatable to return-starved global investors.
 - Should result in more money chasing opportunities in less developed countries. Important to clarify customer & legal rights now.
 - Increased likelihood of corruption within your agencies?
 - Can you tell the difference between "good" vs "bad" capital? Are there "signals" you can read?



Implications?

At a global level, it will be natural resources (with poor substitutes) and knowledge –either as technology, craft skill or entrepreneurship – which will be the scarce factors.

- Will wood be scarce? Even “good quality” wood?
- Or will there be a “technological fix”?





- 3D Printing has been called “the source of the next industrial revolution”. It allows for *mass customization*.
- It is a manufacturing process that builds layers to create a three - dimensional solid object from a digital model on a computer.
- The wooden table above was printed by a hobbyist in Vancouver. Does this require “high quality” wood fiber?



Implications for Forest Agencies?

- The natural resources which will be truly scarce are those for which no good substitutes can be developed.
 - At a minimum, make sure you manage for top soil and groundwater.



Mr. Roberts is CEO of Nawitka Capital Advisors Ltd, a firm which provides advice on strategic direction and raising capital for companies in the Renewable Energy, Clean Technology & Forest Products Industries.

In 2012, Mr. Roberts was chosen by Corporate Knights Magazine as the individual in the Financial Services sector who contributed the most to sustainable development in Canada.

Prior to starting Nawitka in July 2013, Mr. Roberts was a Vice-Chair of Wholesale Banking, and Managing Director in Investment Banking with CIBC World Markets Inc. In this position he founded and led the Bank's cross-functional Renewable Energy & Clean Technology Team. He also provided senior coverage for companies in the global forest products industry.

From 1995-2009, investor surveys consistently ranked Mr. Roberts among the top equity research analysts covering the North American forest products industry. Prior to joining the financial sector, Mr. Roberts was Chief Economist for the Canadian Forestry Service.

**In addition to his work with Nawitka Ltd., Mr. Roberts is also
An Adjunct Professor in the Department of Forest Resource Management at the University of British Columbia (Vancouver);
On the Board of Directors of Kruger Inc (Montreal) and the Rights & Resources Initiative (Washington, D.C.); and,
Serves in an advisory capacity for a range of government, industry, and NGO groups.**

Mr. Roberts has a Bachelor's degree in Agricultural Economics from the University of British Columbia, a Master's degree in Forestry Economics from the University of California at Berkeley, and both an MBA and doctoral studies in International Finance and Economics from the University of Chicago. He is also a certified Board Director with the Institute of Corporate Directors.

