

The Effect of Government Forestry Programmes on Land Use Change

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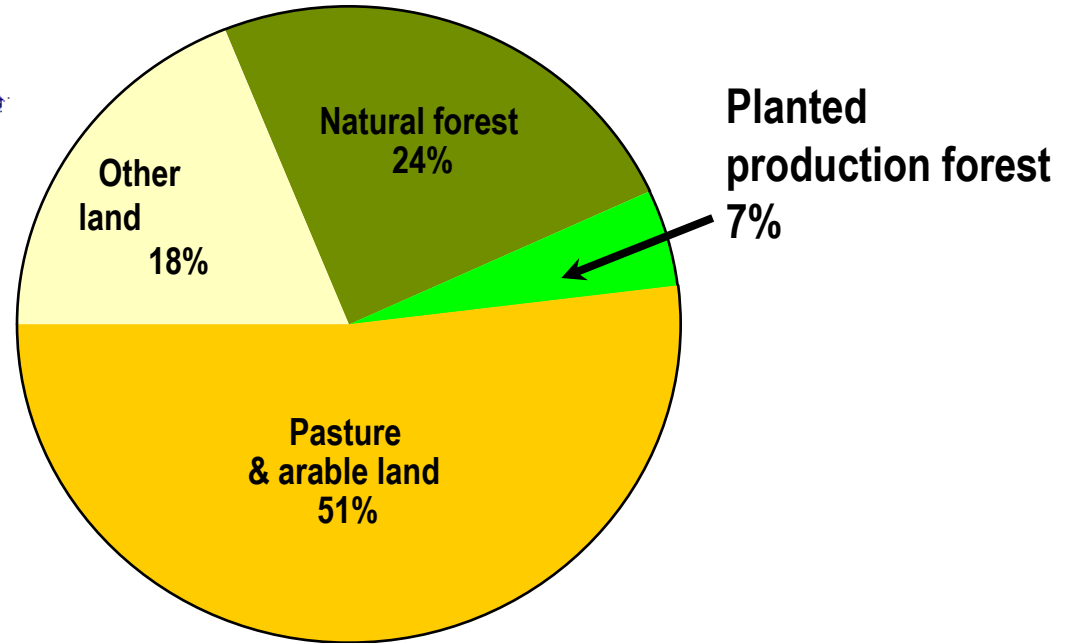
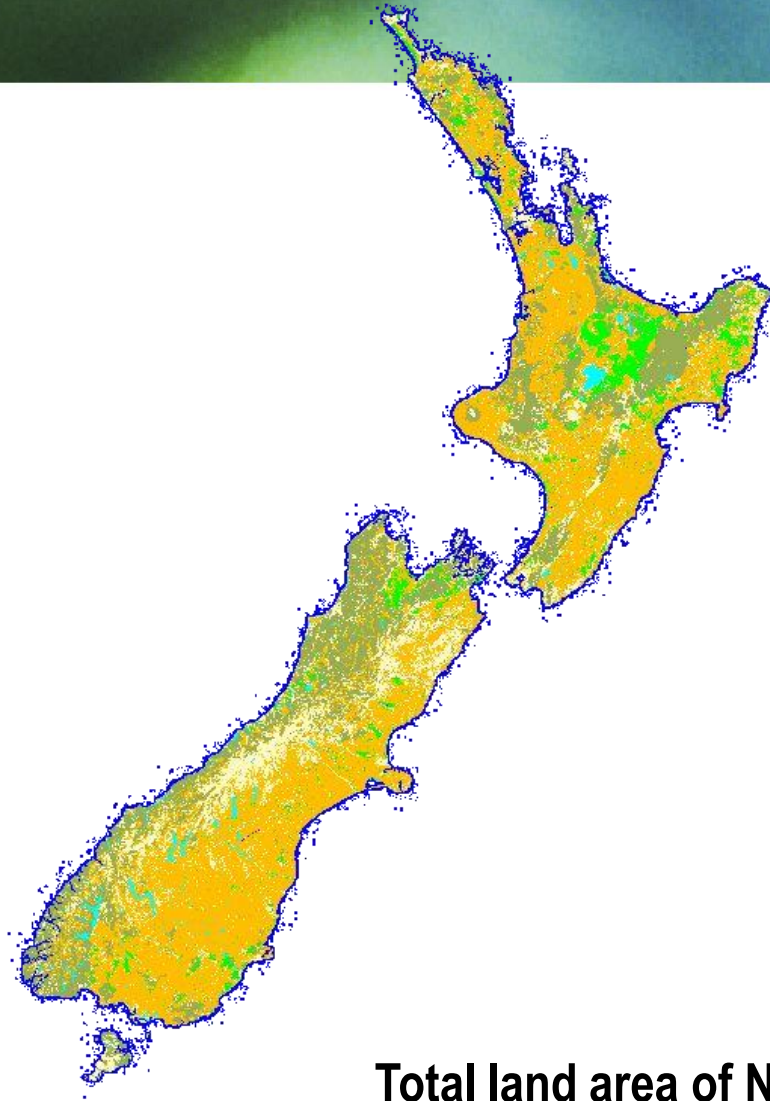
Effect of Government Programmes on Land Use Change



Today I will address the following questions:

- What are the effects of the Government's carbon forestry programmes on land use change?
- What effect are they having on new planting rates?

Land Use in New Zealand



Total land area of New Zealand: 27 million hectares

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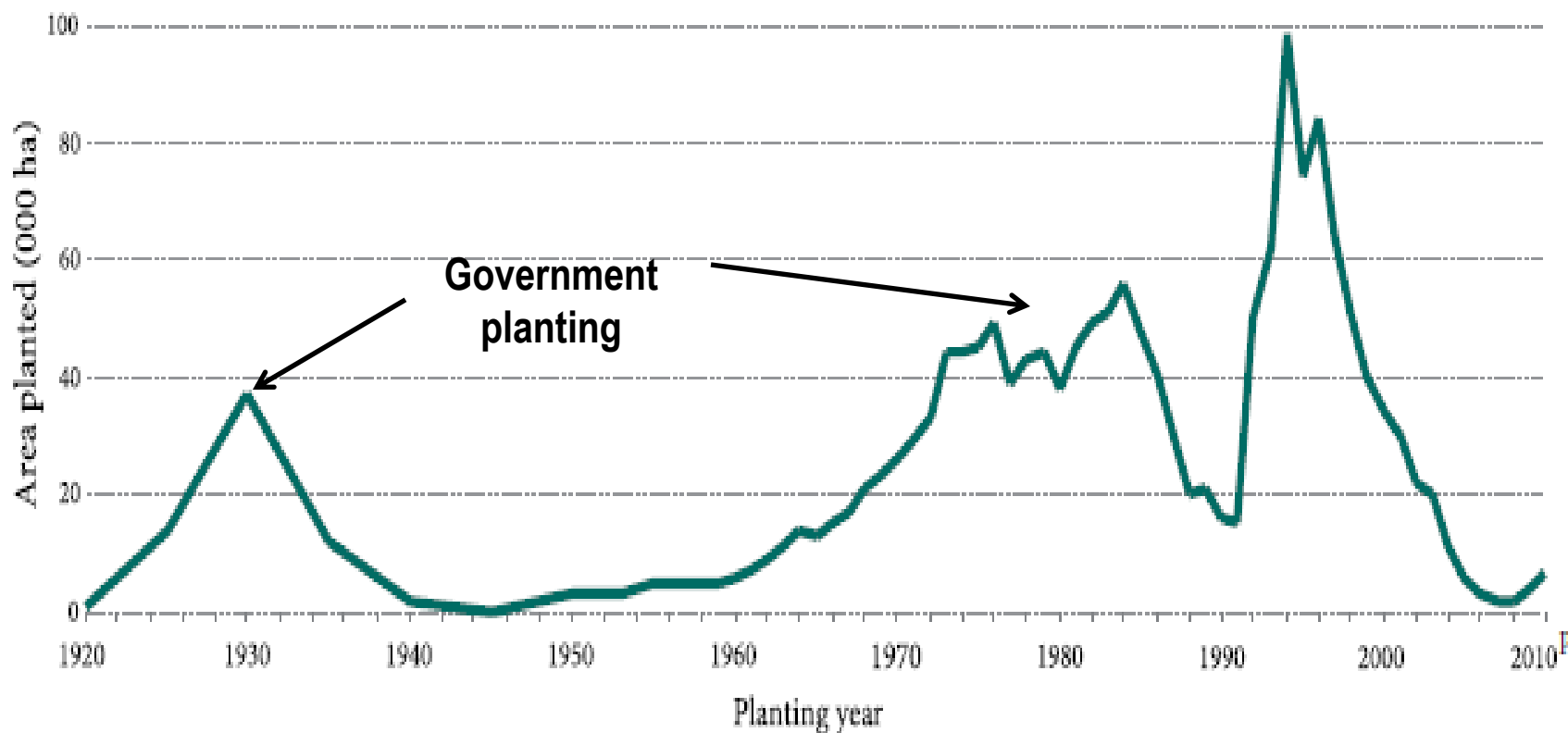
What do I mean by land use change?

- Conversion of farmland to forest
- Conversion of forest to farmland

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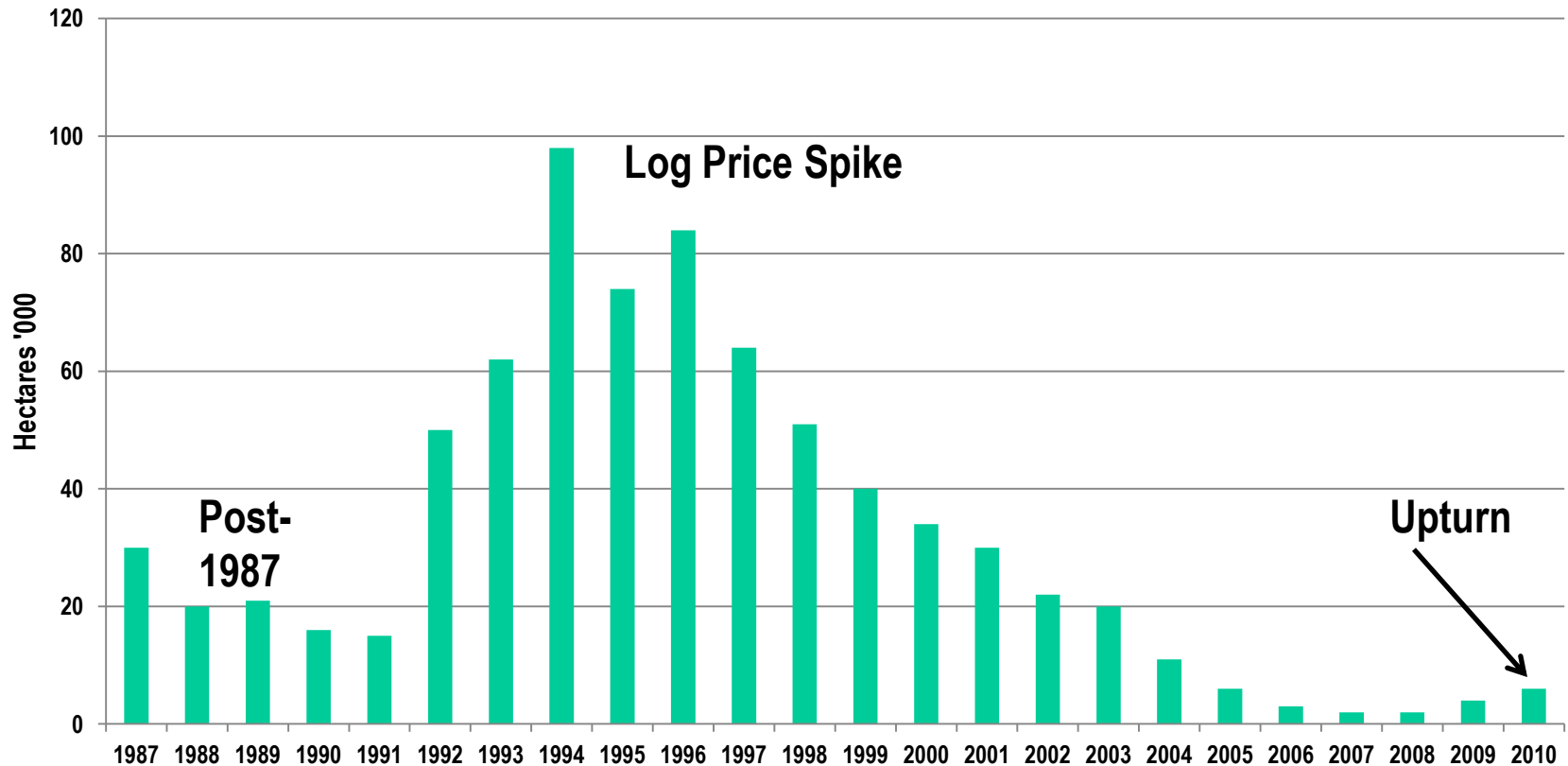
New Land Planted in Production Forest



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New Land Planted in Production forest



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1987-1991

- Public sector withdrawing from new planting
- Tough economic times

1992 – 1996

- Log price spike in 1991-1992
- Lack of confidence in share market
- Investors looking for alternative investments



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Reasons for downturn in new planting post-1996

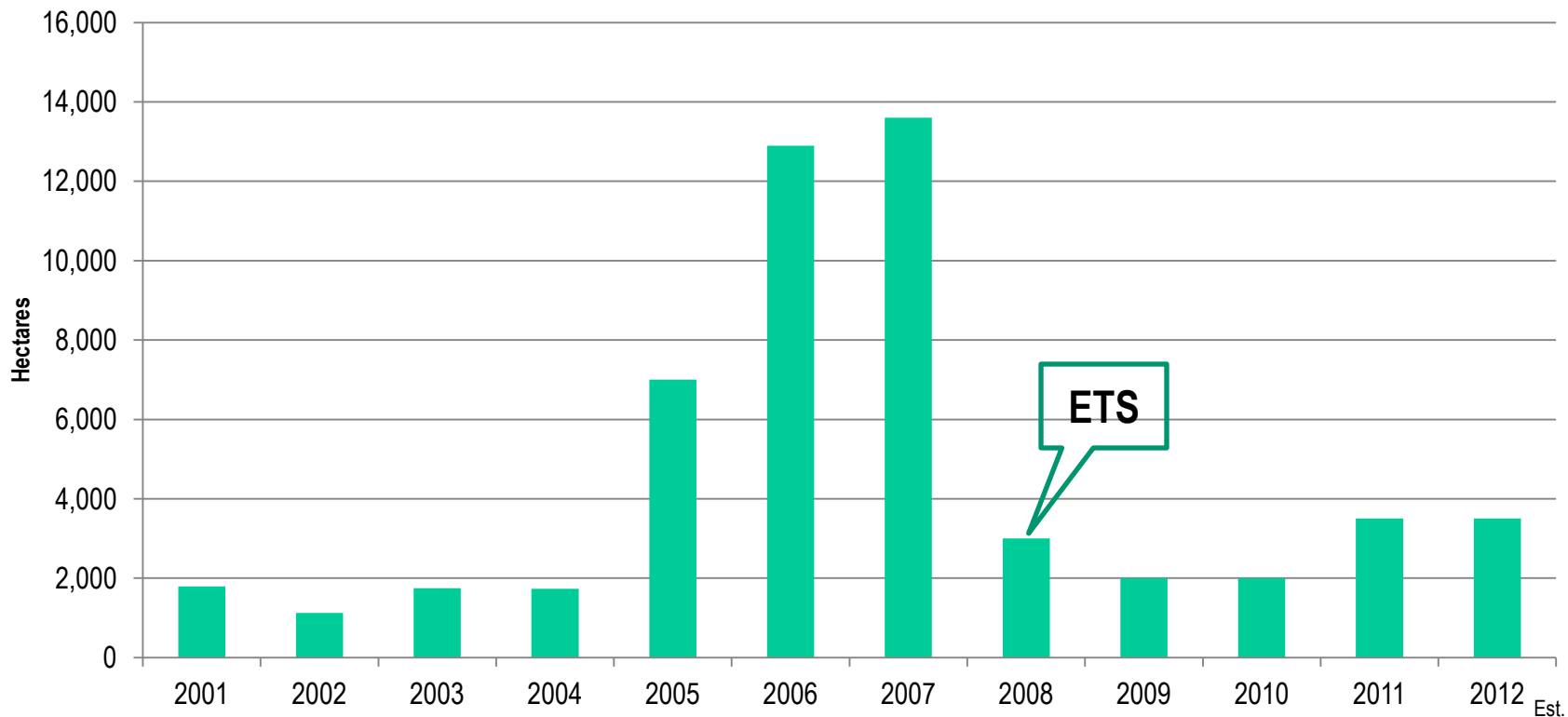
- Low log prices
- Competing land uses
- Higher land prices

New planting continued to decline until 2008

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Exotic Forest Deforestation



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- Before 2005 deforestation was only 3-4% of the area harvested each year
- Deforestation accelerated from 2005-2007 as dairy farming profitability rose
- The ETS in 2008 effectively reduced deforestation to historic levels
- Offsetting from 2013



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The advent of government carbon forestry programmes

- 2007 - Permanent Forest Sink Initiative (PFSI)
- 2008 - Emissions Trading Scheme (ETS)
 - Post-1989
 - Pre-1990
- 2008 - Afforestation Grant Scheme (AGS)

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Permanent Forest Sink Initiative (PFSI)

- Approved in principle in 2002
- Open for applications in 2007
- Allows landowners to access forest carbon value
- Permanent covenants with 99-year harvest restriction
- Landowners may exit after 50 years but must surrender units



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Afforestation Grant Scheme (AGS)

- 5-year programme from 2008-2012
- Grant equal to 10 years of average sequestration
- No entry to ETS or PFSI for 10 years
- Priority given to environmental co-benefits
 - Regional Councils on eroding hill country



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Emissions Trading Scheme (ETS) – post-1989 forestry

- Legislation effective from 1 January 2008
- Opened for applications in 2009
- Participants must account for changes in forest carbon stocks

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Emissions Trading Scheme (ETS) – post-1989 forestry

- Potential increase in forest profitability
- Changes the nature of the forest investment-
 - Annual carbon income, use timber revenue to pay carbon liabilities
- Better suited to forests with multiple ages and species-
 - Only a small proportion of the forest is harvested in one year

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Emissions Trading Scheme (ETS) – pre-1990 forestry

- Landowners who deforest > 2 ha of pre-1990 forest land in a 5-year period are mandatory ETS participants
- Deforesters must notify and surrender NZUs
- Cost can be between \$12,000 and \$17,000 per hectare for 30 year old forest at \$20/NZU
- Deforestation only viable for very high value land uses
- Offsetting from 2013

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Current Statistics

PFSI	14,700 hectares 67% indigenous forest 58 covenants	Mostly forest planted pre-2008
Post-1989 ETS	228,000 hectares (36%) registered 1576 participants	Mostly forest planted pre-2008
AGS	12,500 hectares (2008-12) 304 grants	All new post-2008 forest

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Impact of the AGS on land use change

- **high** impact
- Up-front cash grant
- No carbon price risk to grantee
- Solves cash flow problems
- Limited by funding and term



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Impact of the Post-1989 ETS on land use change

- Most area in the scheme is pre 2008
- Beginning to incentivise afforestation
- Limited by-
 - Carbon price risk
 - Management of harvest liabilities



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Impact of the PFSI on land use change

- Most area in the scheme is pre-2008
- Some interest in non-harvest forests
- Suited to naturally regenerating indigenous forest
- Limited by-
 - Long-term covenant locks in land use
 - Carbon price risk

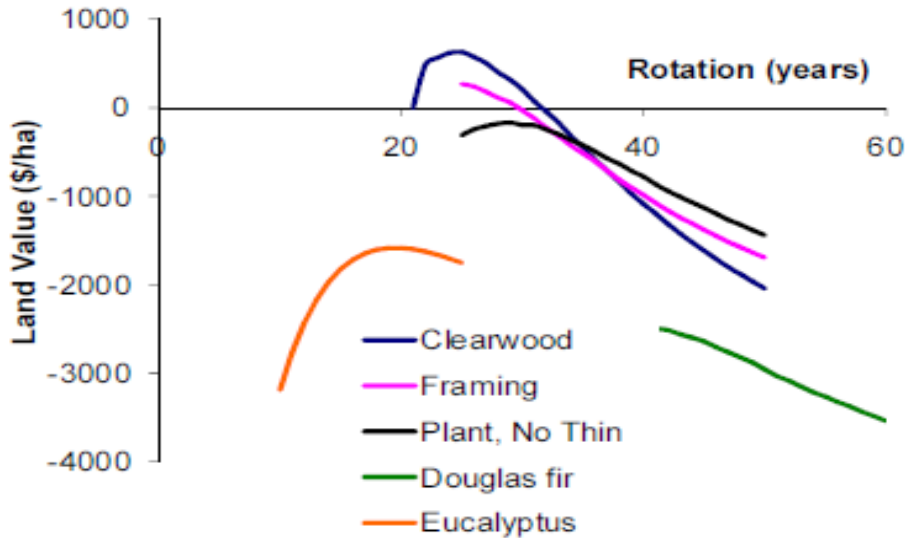
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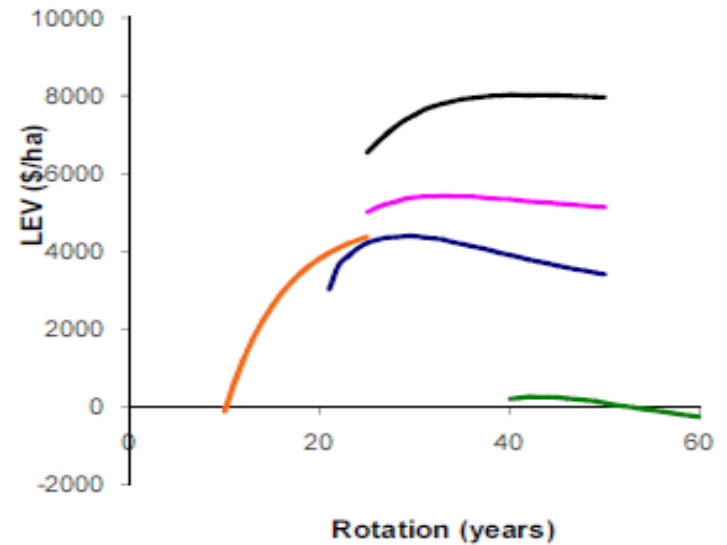
Effect of ETS

University of Canterbury

LEV vs Rotation Age
Logs only



LEV vs Rotation Age
Logs +C (\$20/t)



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Afforestation trend

- low spot in 2007
- Increasing from 2008 –but largely due to East Coast Forestry Project and AGS
- From 2011 increasing interest from carbon investors e.g.
 - Carbon Conscious Ltd
 - Craigmore Forestry Ltd
 - CO₂ NZ
 - NZ Forest Leasing Ltd

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Future afforestation?

- Carbon could be the major driver
- ETS likely to continue regardless of international agreements
- Strong carbon price needed to change behaviour
- Some emitters signing 15-year supply agreements

Carbon price predictions difficult because of uncertainty in-

- Future international climate change agreements
- Development of the market for emission units

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Conclusions

- Government programmes are affecting land use change
 - Conversion of pre-1990 forest to farmland is minimal
 - The post-1989 ETS and PFSI are beginning to incentivise carbon forestry investment
 - Reversion of marginal farmland to native forest is encouraged
 - The AGS has been successful particularly as a tool for Regional Councils SLM programmes