

# The likely impacts of climate change policy

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# What do we know about the likely impacts?

- Employment
  - Total
  - By sector; region and occupation group
- Prices
  - CPI
  - Electricity
  - Liquid fuel



# Employment Impacts

## Methodology

Run general equilibrium model (Infometrics) with:

- fixed wages and capital costs
- C price \$25
- no free allocation or leakage protection
- all sources and gases

Find measure of transitional ‘employment pressure’ by sector— could affect jobs or wages

Spread by region and occupation

Compare with other experiences of employment shifts



# Employment Impacts

	86 – 91	91-96	96-01	ETS?
<b>Total</b>	-7.6%	13.9%	6.2%	-2.5%

Fairly even spread across sectors, regions and occupations

May understate total impact:

- exchange rate can change
- capital stock too flexible
- low C price
- no macroeconomic impacts
- bias towards even spread
- plants may close not contract.



# Employment impacts

May overstate total impact:

- wages may be flexible;
- gradual introduction;
- some free allocation;
- leakage protection possible

# Employment impacts in context

	<b>86-91 % change over 5 years</b>	<b>ETS impact</b>
Food, Beverages & Tobacco	-16.5%	-2.4%
Textiles, Leather & Apparel	-36.0%	-5.7%
Wood and wood products	-20.2%	-3.3%
Paper and paper products	-30.1%	-4.2%
Printing, Publishing and Allied Industries	-13.5%	-3.5%
Industrial and Other Chemicals	-33.5%	-4.3%
Rubber & Plastic Products	-23.7%	-2.2%
Non-Metallic Mineral Products	-39.9%	-3.5%
Basic Industries	-11.5%	-6.5%
Fabricated Metal Products	-31.7%	-2.5%
Machinery and Equipment	-36.0%	-2.7%
Other Manufacturing Industries	-10.7%	-3.2%
<b>ALL MANUFACTURING</b>	<b>-26.3%</b>	<b>-3.1%</b>



# Employment impacts in context

Job turnover: around 15% of jobs created and destroyed each year simply because of the dynamics of the economy

Some of these changes will not require movements between sectors and may be reemployment of the same people in the same place to do similar things.

# Prices

The Reserve Bank estimates that a carbon price of NZ \$21 per tonne will add:

- 0.25% to inflation in 2009
- 0.35% in 2010



# Electricity prices

- 2008-2012 retail electricity prices are likely to rise by between 5-20% (based on carbon prices of \$15-50/tonne)
- Real average wages projected to rise around 1.5%

Low income households spend more of their income on electricity and may face more acute tradeoff between warmth/health and other consumption.



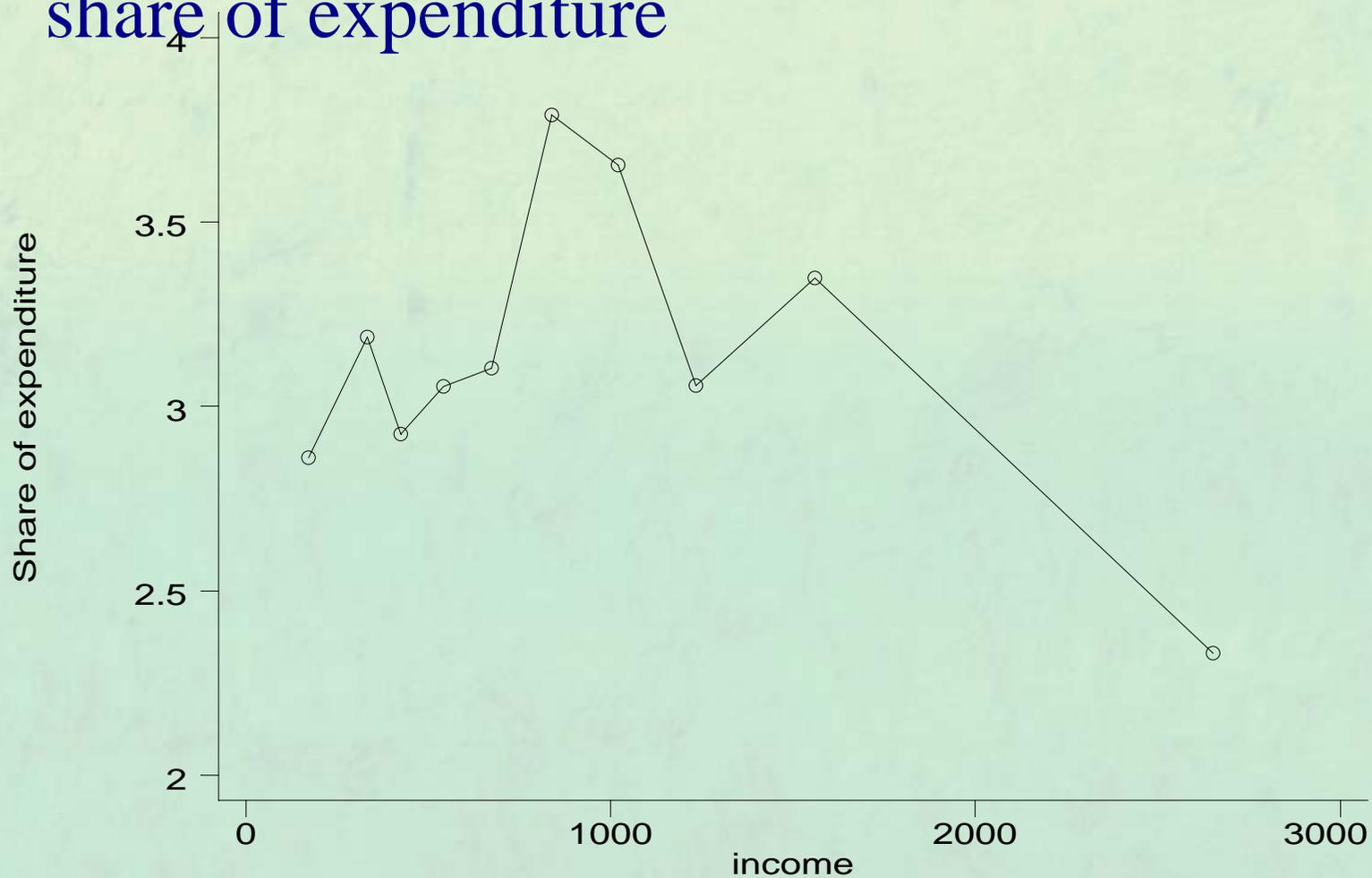
# Fuel Prices

	Emissions price scenarios	
	\$25/t CO <sub>2</sub> -e	\$50/t CO <sub>2</sub> -e
Petrol c/litre including GST	6.1c (4%)	12.2c (8%)
Diesel c/litre including GST	6.7c (7%)	13.3c (14%)



# Fuel Prices: who is most affected

Middle income people affected most as share of expenditure



# Fuel prices: who is most affected

- Working people in 40-50 age group (teenage children?)
- People in rural areas? Aucklanders?

Some poor and older people are very dependent on transport and may be vulnerable to fuel prices and increased vehicle costs.

Poorer people would benefit from improved public transport.



How can we ease these impacts without undermining the environmental effectiveness of the policy?

