Housing in New Zealand: naming the rules of the game

New Zealand Treasury, 1 October, 2014

Philippa Howden-Chapman, QSO, FRSNZ, PhD, Dip Clin Psych
Professor, Director, *He Kainga Oranga*/Housing and Health Research Programme
New Zealand Centre for Sustainable Cities
University of Otago, Wellington

www.healthyhousing.org.nz
www.sustainablecities.org.nz
www.resilienturbanfutures.org.nz

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hrc Health Research Council of New Zealand

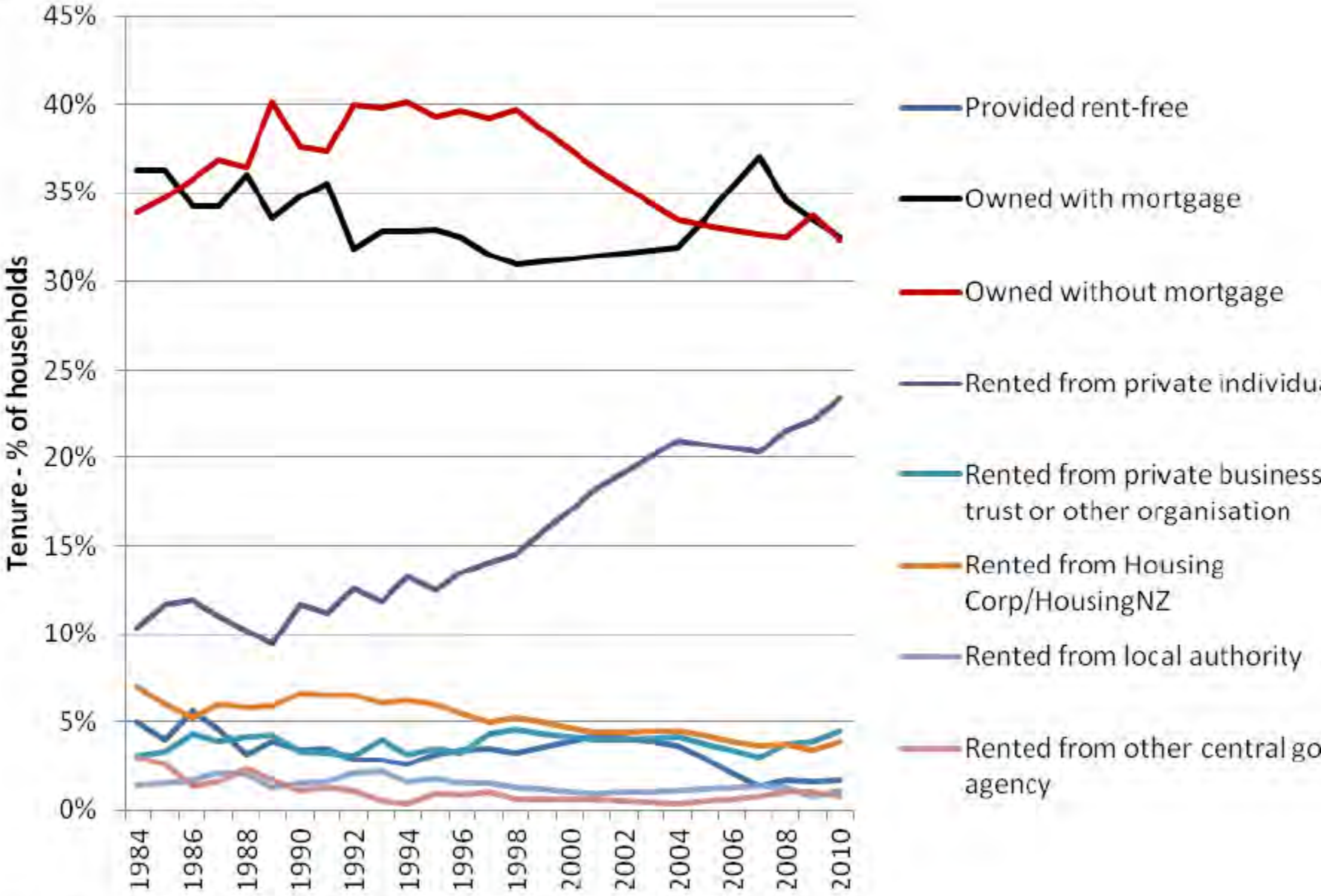
Outline of talk

- Policy framework
- Housing trends
- Problems and their drivers
- Housing research provides evidence-based solutions
- Benefits of co-benefits
- Importance of integrated land-use policies
- Conclusions

Framework

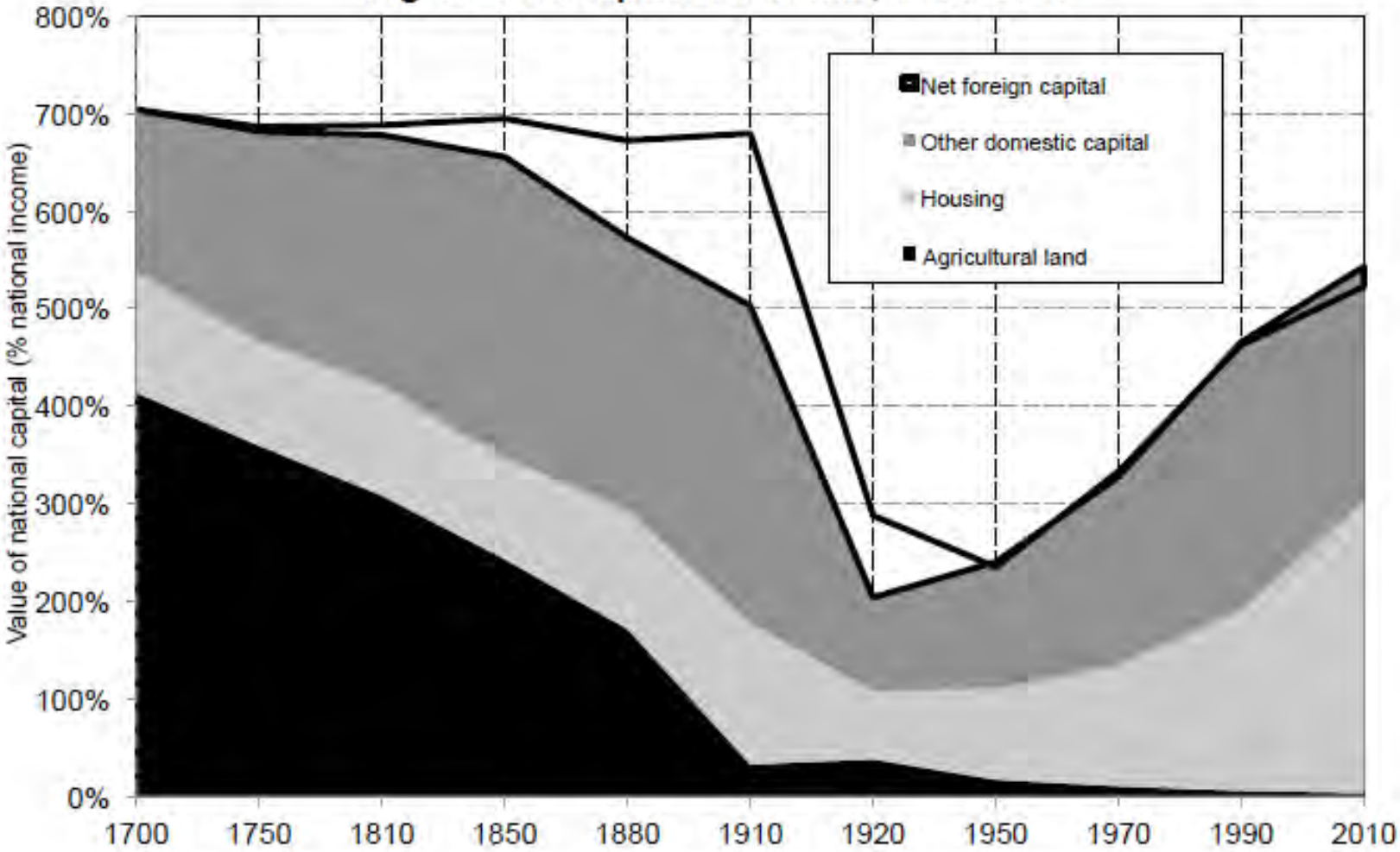
- New institutionalism emphasis on role of organisations & formal and informal institutional rules
- Background to individual choices is often “the unnamed rules of the game”
- Institutional rules surrounding owning, renting, investing and inheritance favour the wealthy
- Fragmented policy advice (MBIE, Treasury, MSD, Housing NZ, Productivity Commission, Reserve Bank)

Figure 4 – Housing tenure



Source: Statistics New Zealand (HES) data

Figure 3.1. Capital in Britain, 1700-2010



National capital is worth about 7 years of national income in Britain in 1700 (including 4 in agricultural land).

Sources and series: see piketty.pse.ens.fr/capital21c.

Drivers and problems

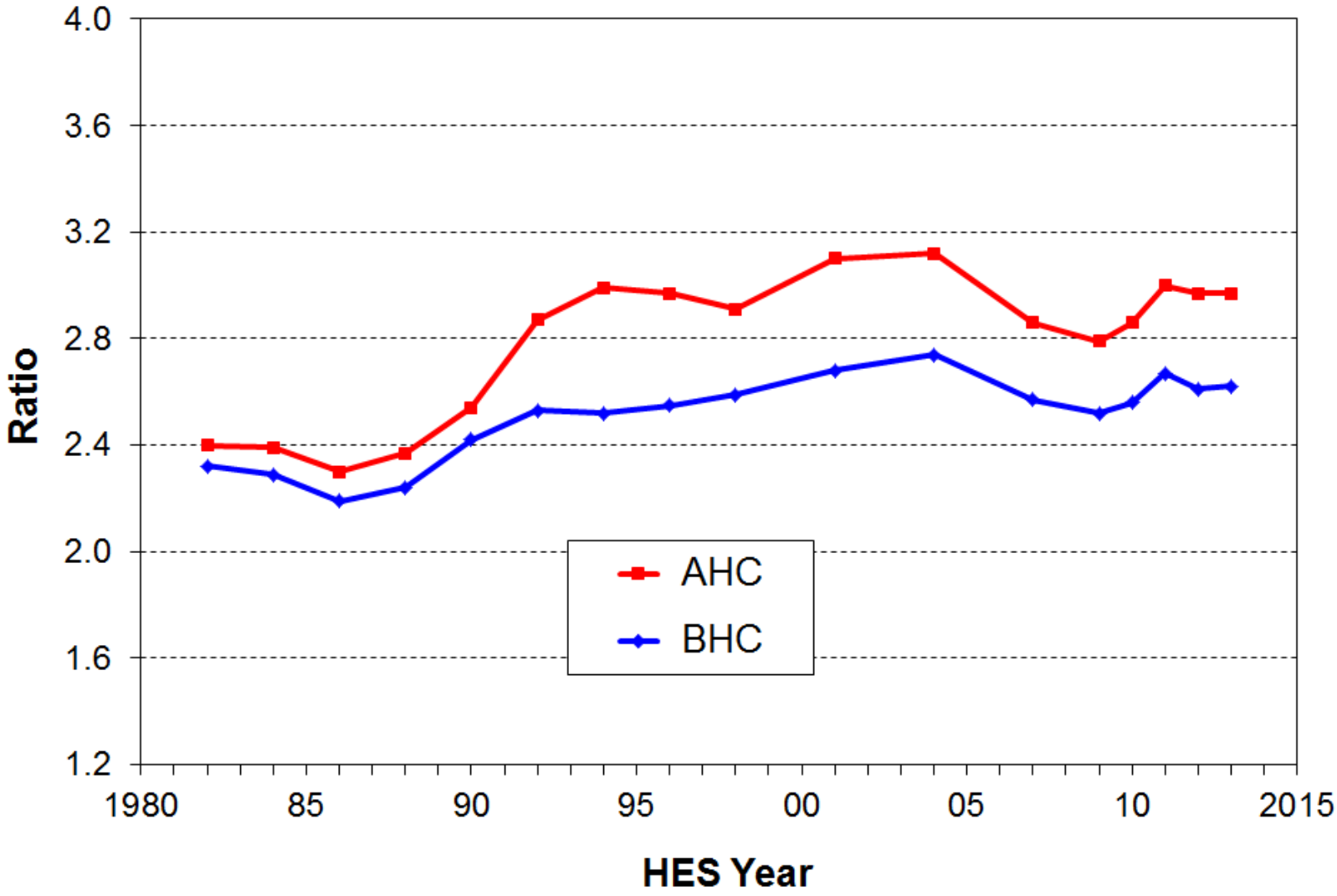
Drivers

- Low wages
- Lack of capital gains tax
- Widening income and wealth inequality
- Lack of affordable housing
- Inadequate regulation
- Glacial pace of Christchurch residential rebuild

Manifestations

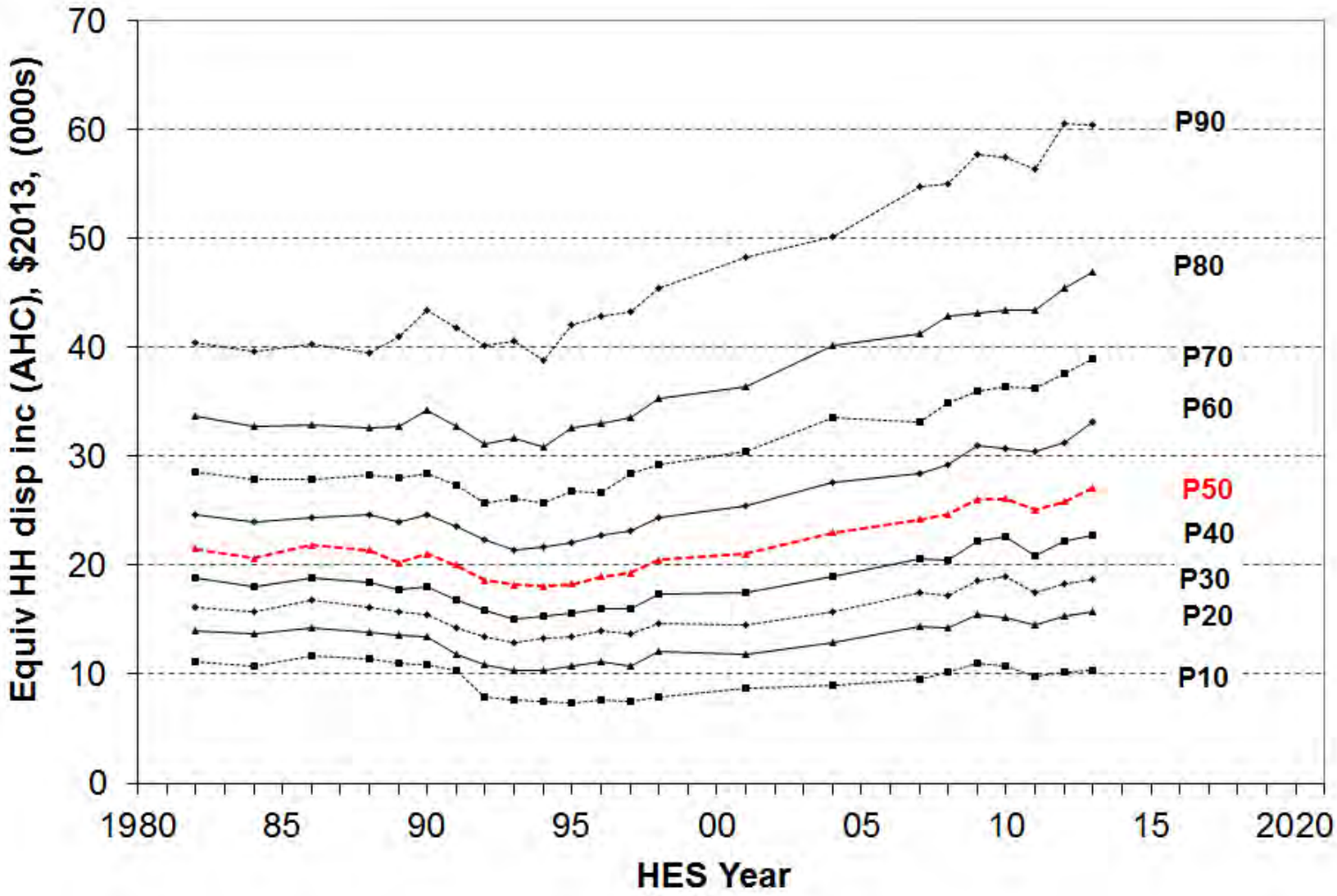
- Increase in severe housing deprivation
- Households in fuel poverty
- Unresolved leaky building problem
- Poor quality of private rental housing
- Growing public health and well-being problems

Income inequality in NZ: the P80/P20 ratio, 1982 to 2013, total population



Bryan Perry, Household Incomes in NZ. Wellington, MSD, 2014

Real equivalised household incomes (AHC): decile boundaries, 1982 to 2013 (2013 dollars)



Bryan Perry, Household Incomes in NZ. Wellington, MSD, 2014

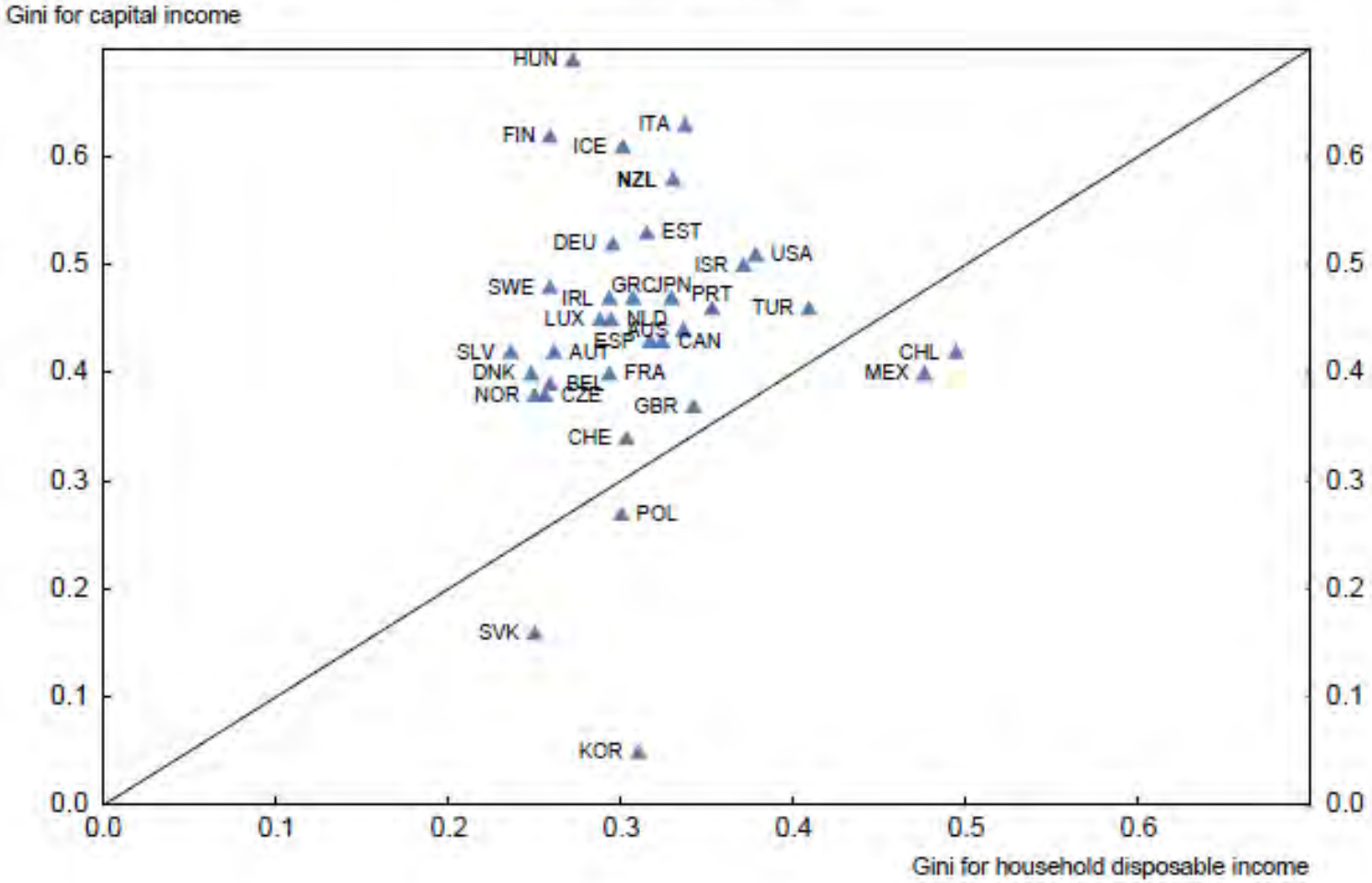
OECD perspective

New Zealand belongs to a group of five OECD countries with particularly high pre-tax capital-income inequality (Figure 13). As much of this income, especially at the top levels, takes the form of capital gains, the lack of a capital gains tax in New Zealand exacerbates inequality (by reducing the redistributive power of taxation). It also reinforces a bias toward speculative housing investments and undermines housing affordability, as argued in the 2011 Survey.

OECD Economic Survey New Zealand, 2013, p.24

Figure 13. Inequality of income and wealth

Late 2000s



Source: OECD Income and Poverty Distribution Databases and P. Hoeller *et al.* (2012), "Less income inequality and more growth – are they compatible? Part 1. Mapping income inequality across the OECD", *OECD Economics Working Papers*, No. 924.

Households in 2013 Census

- 50% children below the poverty live in private rental housing , 19% Housing NZ homes
- 33% of Pacific peoples lived in crowded households, 20% Maori, 18% Asian, 4% European.
- 9% no form of heating.

Changes in tenure

- Private rentals in worse condition than social housing, which is in poorer condition than owned homes (BRANZ)
- Private rental tenure, little security, poor standards, no heating required
- Housing NZ no longer social housing provider, asset manager, land more valuable than housing
- Diversity of community providers, but partial privatisation under rubric of mixed development
- Increased tenure insecurity leads to increasing residential and school mobility of very low-income families with children
- Private housing has public consequences

Bierre, S., Bennett, M. & Howden-Chapman, P. Decent expectations? The interpretation of housing quality standards in tenancy tribunals in New Zealand. *New Zealand Law Journal,* in press.

Housing and energy

- People spend 75% of time indoors, young, old & sick 90% of time at home
- NZ houses old & cold have lowest energy use in OECD
- Only one room usually heated
- Home heating 30-40% of residential energy; 13% of consumer energy demand

Contents lists available at ScienceDirect

Energy Policy

journal homepage: www.elsevier.com/locate/enpol

2009

Warm homes: Drivers of the demand for heating in the residential sector in New Zealand

Philippa Howden-Chapman [a,*], Helen Viggers [a], Ralph Chapman [b], Des O'Dea [a], Sarah Free [a], Kimberley O'Sullivan [a]

[a] He Kainga Oranga/Housing and Health Research Programme, University of Otago, P.O. Box 7343, Wellington South, New Zealand
[b] School of Geography, Environment and Earth Sciences, Victoria University of Wellington, New Zealand

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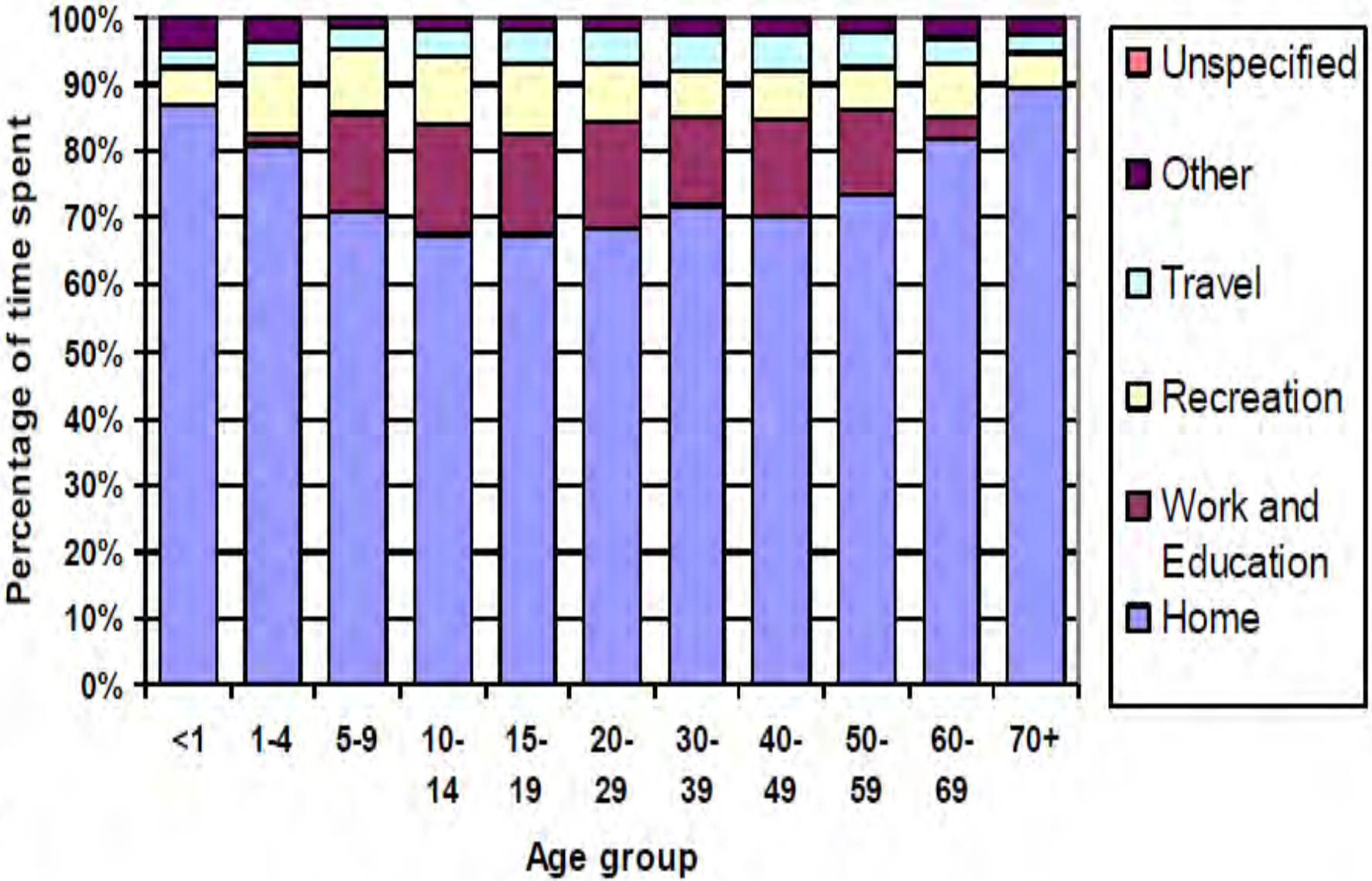
ABSTRACT

New Zealand houses are large, often poorly constructed and heated, by OECD standards, and consequently are colder and damper indoors than recommended by the World Health Organisation.

Figure 1: Percentage of time spent at home and on other activities, by age



Excess winter mortality

- 1600 excess winter deaths in NZ each year from respiratory and circulatory problems

  vs

  900 deaths from air pollution

  400 direct road toll

- Census-mortality linkage study showed an increased risk of dying in winter among low-income people, those living in rented accommodation and those living in cities.

Davie GS, Baker MG, Hales S, Carlin JB. Trends and determinants of excess winter mortality in New Zealand: 1980 to 2000. *BMC Public Health* 2007;7:263.

Household fuel poverty

- Despite major EU initiatives, in NZ fuel poverty not officially defined, measured, nor explicitly targeted.
- Household energy including adequate heating more than 10% of household income
- Main drivers: poor quality of the housing stock, relatively high levels of income inequality, and the increasing price of residential electricity
- Estimated 25% of NZ households in fuel poverty

Howden-Chapman P, et al. Tackling cold housing and fuel poverty in New Zealand: A review of policies, research, and health impacts. Energy Policy 2012;**49**:134–42.

Effects of fuel poverty on children

- 25% or 270,000 children living in households in poverty
- In *Growing Up in NZ* cohort parents of 9-month old babies, 18% put up with feeling cold to save on heating, 11% used no heating, and 22% of babies bedrooms had heavy condensation *quite often, always, almost always*
- Parents of children under 15 admitted to Wellington Hospital, 52% lived in housing colder than they would like, 14.2% had been unable to pay their electricity bills on time and 7.5% had experienced disconnection due to late or non-payment of bills (4x national rate) (Kelly et al, NZMJ, 2013).
- Hospital admissions for asthma are correlated to electricity prices, especially for young children

Severe Housing Deprivation

- People living in severely inadequate housing due to lack of access to minimally adequate housing.
- 34,000 people were identified as severely housing deprived in 2006
- Estimated 12,900 – 21,100 dwellings required
- Predominantly children and young adults, ethnic minorities, and either part of solo parent families or on their own

Amore K, Viggers H, Baker, MG, & Howden-Chapman, P (2013). *Severe housing deprivation: The problem and its measurement*, Official Statistics Research Series, 6. Available from www.statisphere.govt.nz.

Operation Housing

Medical Students for Global Awareness

Leaky Buildings: Experiment in deregulation

- Change in building materials, contracting arrangements, training and regulation =
- Leaky buildings liabilities estimated at NZ$22b
- Almost as expensive as Christchurch earthquake

Howden-Chapman P, Saville-Smith K, Crane J, Wilson N. Risk factors for mould. *Indoor Air 2005;15:469-476.*

Howden-Chapman, P., Ruthe, C. & Crichton, S. Habitable houses: lessons learned? In *The Leaky Building Crisis: Understanding the issues.* Wellington, Thomson Reuters, 2011, 303-315.

Do damp and mould matter?

Health impacts of leaky homes

Edited by **Philippa Howden-Chapman, Julie Bennett & Rob Siebers**


GET YOUR HEAD OUT OF THE SAND
THERE IS A HOUSING CRISIS!
HELP CHCH

Inverse care law

- Estimated 100,000 homes damaged
- Now 11,000 fewer habitable houses
- 8,000 fewer houses in Red Zone
- 16,953 empty buildings in greater Christchurch
- No of rental properties fell by about 19%
- Rents increased by double the rate of inflation
- Uninsured people not eligible for EQC payments
- Little provision of permanent, affordable housing for displaced households or disabled people

Housing & Health

RESEARCH, POLICY AND INNOVATION

edited by

Philippa Howden-Chapman & Penelope Carroll

Physical + biological pathways

- Cold indoor air is harder to heat
- Mould grows better in damp air
- Viruses survive for longer on cold surfaces
- Cold stresses immune system
- Blood (liquid) thickens when cold & more likely to form plaques
- When only 1 room heated in house, people crowd together

Research evidence from robust community trials

- Housing, Insulation & Health Study
- Housing, Heating & Health Study
- Warm Homes for Elderly New Zealanders (WHEZ)
- Housing, Injury Prevention Intervention (HIPI)
- Social Housing Outcomes Worth Study (SHOW)

Housing, Insulation & Health Study

- 1400 households where one member had chronic respiratory symptoms
- Winter 2001 baseline measures taken
- Randomly assigned intervention houses insulated over summer
- Winter 2002 follow-up measures taken
- Control group houses insulated


FIRE EXIT

Housing, Insulation & Health Study

Cite this article as: BMJ, doi:10.1136/bmj.39070.573032.80 (published 26 February 2007)

BMJ

RESEARCH

Effect of insulating existing houses on health inequality: cluster randomised study in the community

Philippa Howden-Chapman, professor and director,[1] Anna Matheson, PhD student,[1] Julian Crane, professor and codirector,[2] Helen Viggers, data analyst,[1] Malcolm Cunningham, principal analyst,[4] Tony Blakely, professor,[3] Chris Cunningham, professor,[5] Alistair Woodward, professor,[6] Kay Saville-Smith, director,[7] Des O'Dea, lecturer,[1] Martin Kennedy, adviser,[8] Michael Baker, senior lecturer and codirector,[1] Nick Waipara, scientist,[9] Ralph Chapman, associate professor,[10] Gabrielle Davie, biostatistician[1]

[1]He Kainga Oranga, Housing and Health Research Programme, University of Otago, Wellington, PO Box 7343, Wellington South, New Zealand

[2]Department of Medicine, University of Otago

ABSTRACT

Objective To determine whether insulating existing houses increases indoor temperatures and improves occupants' health and wellbeing.

Design Community based, cluster, single blinded randomised study.

INTRODUCTION

The quality of housing affects the health of the population. Improvements to housing could potentially prevent ill health, especially in sections of the population exposed to substandard housing.[1 2] Several reviews of social interventions, and housing interventions in par-

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Study DVD www.healthyhousing.org.nz

Better housing improves health

- Significant improvement in self-reported housing conditions (less cold and dampness)
- Significantly fewer days off school and work
- Significantly fewer symptoms of wheeze and colds
- Fewer hospital admissions
- Positive benefit to cost ratio of 2:1

- Howden-Chapman, P., et al., Retrofitting houses with insulation to reduce health inequalities: aims and methods of a clustered, randomised trial in community settings. *Social Science and Medicine*, 2005. 61: p. 2600-2610.
- Howden-Chapman, P., et al., Retrofitting houses with insulation to reduce health inequalities: results of a clustered, randomised trial in a community setting. *British Medical Journal*, 2007, 334, 460-464.

Co-benefits

employment matters

Energy Efficiency and Conservation Authority

Retrofitting Provides Multiple Rewards

An energy efficiency project about to begin in Taranaki is likely to improve health and housing as well as create jobs...

COSUST-239; NO. OF PAGES 6

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Current Opinion in Environmental Sustainability

Health co-benefits from housing-related policies

Philippa Howden-Chapman[1] and Ralph Chapman[2]

Housing is one of the key drivers of energy use and the economy. The lifetime of the building stock is around 80 years, so decisions about constructing new houses, or retrofitting existing homes can make a vital contribution to reducing carbon emissions. A methodologically robust body of research has also demonstrated that housing has an impact

Retrofitting houses with insulation: a cost–benefit analysis of a randomised community trial

R Chapman,[1] P Howden-Chapman,[2] H Viggers,[2] D O'Dea,[3] M Kennedy[4]

Valuing the health gains, and energy and CO2 emissions savings, suggests that total benefits in ‘‘present value’’ (discounted) terms are one and a half to two times the magnitude of the cost of retrofitting insulation.

LPG heaters –poor person's heater

- Third of NZ households have UFGHs
- Releases multiple combustion products indoors
- Exposure to NO_2 can reduce immunity to lung infections & increase the severity and duration of a flu episode
- NO_2 inflames the lining of the lungs, which can cause problems such as wheezing, coughing, colds, flu and bronchitis.
- NO_2 increases health risks from particulates
- 1 kg LPG = 1.6 kg H_20

Housing Heating and Health Study

- Randomised community trial
- Retrofitted insulation & sustainable heating in 409 households where children with asthma
- Aims
  - Increase temperature to WHO minimum 18°C
  - Lower relative humidity
  - Reduce NO_2
  - Reduce symptoms of children with asthma

Intervention in 409 households

Previous:

X electric heaters (2kW)

X unflued gas heaters (4kW)

Replaced with:

√ 320 heat pumps (4-7kW)

√ 55 wood pellet burners (10kW)

√ 11 flued gas heaters

Summary of heating results

- More effective heaters increased the indoor temperature
- Improved children's asthma symptoms
- Fewer days off school and fewer visits to GPs.

Howden-Chapman P, Pierse N, Nicholls S, Gillespie-Bennett J, Viggers H, Cunningham M, et al. Effects of improved home heating on asthma in community dwelling children: randomised community study. British Medical Journal. 2008;337:852-5.

Free S, Howden-Chapman P, Pierse N, Viggers H, Housing Heating and Health Study Research Team Study Team. Does more effective home heating reduce school absences for children with asthma? Journal of Epidemiology and Community Health. 2009;doi:10.1136/jech.2008.086520

Warm Up NZ: Heat Smart Programme

- 100,000 houses in first 2 years of programme
- $320 million, **not** targeted to low income
- Quasi-experimental study, detailed anonymised matching of first 46,655 houses
- Small but significant drop in metered energy
- Significant health outcomes in pharmaceutical usage, length of hospitalisation, avoidable mortality for over 65s
- Benefit/cost ratio 3.9:1; for children 6:1

http://www.motu.org.nz/news-media/detail/reports_on_warm_up_new_zealand_heat_smart_now_available.

Warm Homes for Elder New Zealanders (WHEZ)

- 522 people over 55 with COPD
- Intervention $500 electricity voucher
- *Heat is your medicine*
- Whanganui, Palmerston North, Wellington & Christchurch
- Community partnerships with asthma societies, outpatient respiratory clinics
- Half participants' homes colder than they would like and they have shivered inside

Viggers H, Howden-Chapman P et al Tackling Fuel Poverty through the Warm Homes for Elder New Zealanders Study: Aims and methods of a randomised community-based trial. *BMC Public Health* 2013;13(176).

Home Injury Prevention Intervention (HIPI)

- More than 1 million medically-treated injuries annually in and around homes in NZ
- 1,000 hslds recruited in Taranaki (95% response)
- ACC funded baseline study
- Aim to see if remediating common housing hazards reduces injury rates and ACC claims
- Rating tool Healthy Housing Index
- Average cost of repairs $564 per house

Keall M, Baker M, Howden-Chapman P, Cunningham C. Association between the number of home injury hazards and home injury. *Accident Analysis and Prevention* 2008;40 (3):887-893.

Keall M, Baker M, Howden-Chapman P, Cunningham M, Ormandy D. Assessing health-related aspects of housing quality. *Journal of Epidemiology and Community Press,* 2010, 64: 765 – 771.

in press

HIPI results

- 26% reduction in the rate of overall injuries
- 39% annual reduction in injuries
- Cost benefit ratio 30:1 (to be published)
- Major implications for ACC
- Preventive work saves injuries and costs

Keall, M., Pierse, N., Howden-Chapman, P., Guria, J., Cunningham, C., Baker, M. Reduction in fall injury rates achieved by home modification: a cluster randomised controlled trial, *The Lancet*, 2014, 384, 9949, 1159-1236.

Crowding link to infectious diseases

- When only one room heated, people crowd together
- Probable link to increasing rate of infectious diseases in New Zealand

D-11-03603R2 linked to 8829
S0140-6736(11)61780-7
Embargo: February 20, 2012—00:01 (GMT)

Articles
ZN

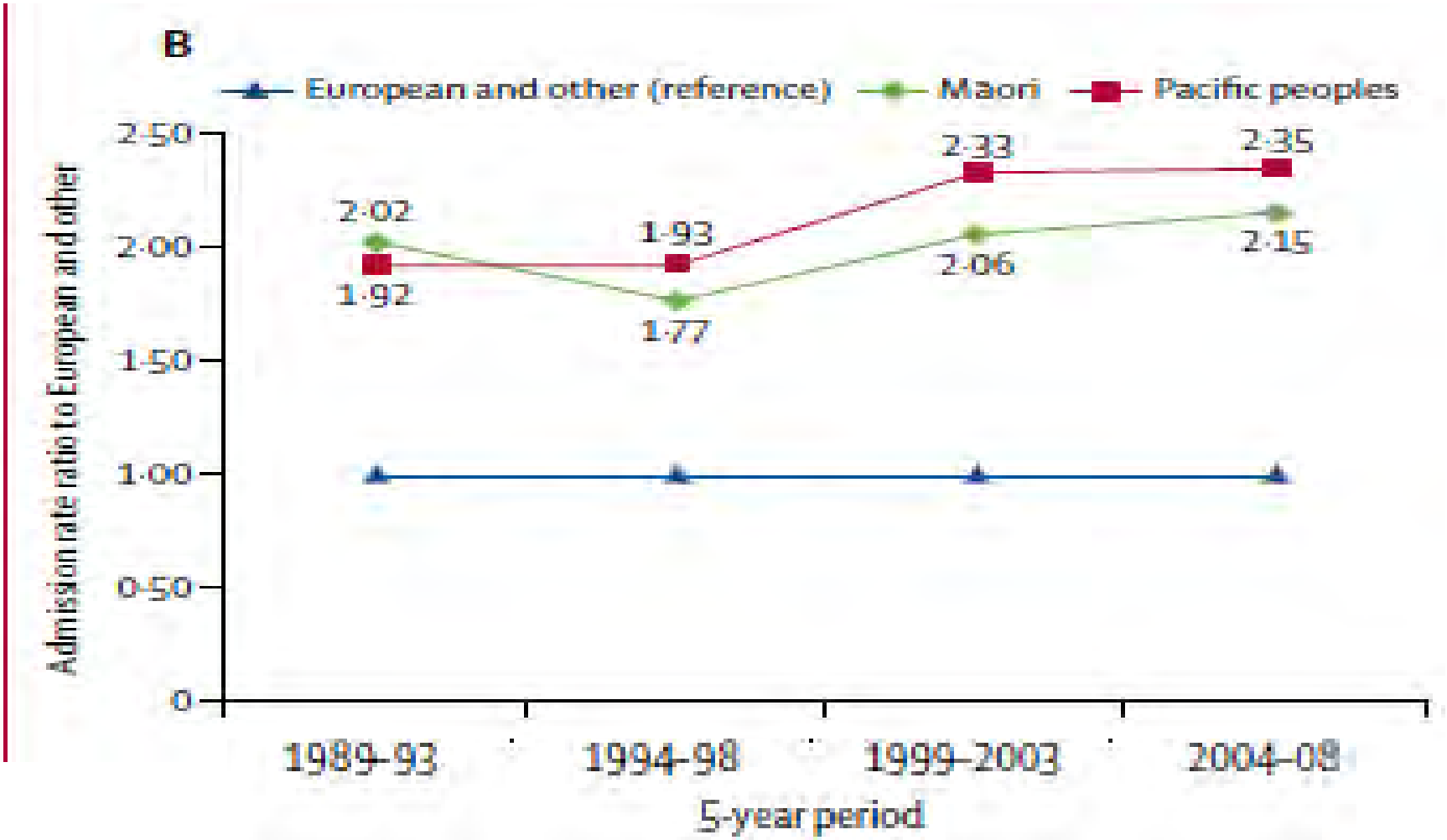
Increasing incidence of serious infectious diseases and inequalities in New Zealand: a national epidemiological study

Michael G Baker, Lucy Telfar Barnard, Amanda Kvalsvig, Ayesha Verrall, Jane Zhang, Michael Keall, Nick Wilson, Teresa Wall, Philippa Howden-Chapman

Summary
Background Although the burden of infectious diseases seems to be decreasing in developed countries, few national studies have measured the total incidence of these diseases. We aimed to develop and apply a robust systematic method for monitoring the epidemiology of serious infectious diseases.

Published Online
Month date, 2012
DOI:10.1016/S0140-6736(11)61780-7

Ratio of hospital admission rates for infectious diseases in New Zealand (1989-2008)



Baker, M., et al., Increasing incidence of serious infectious diseases and inequalities in New Zealand: a national epidemiological study. *The Lancet, 2012*

Importance of social housing

- Less than 5% of houses social housing, low levels internationally
- Liberal government began building social housing, but travel distance from jobs critical
- Early state housing integrated with amenities schools, transport and local communities
- Later state housing industrial
- Strong sense of place "*We Call it Home*"

Healthy Housing Programme (HHP)

- Social Housing Outcomes Worth cohort (SHOW) links 220,000 tenants to hospitalisations, 2004-2008
- After HHP, acute and arranged hospitalisations fell (27%) year after
- Fall in hospitalisations (61%) even more for most intensive intervention

Baker et al reports on www.healthyhousing.org.nz

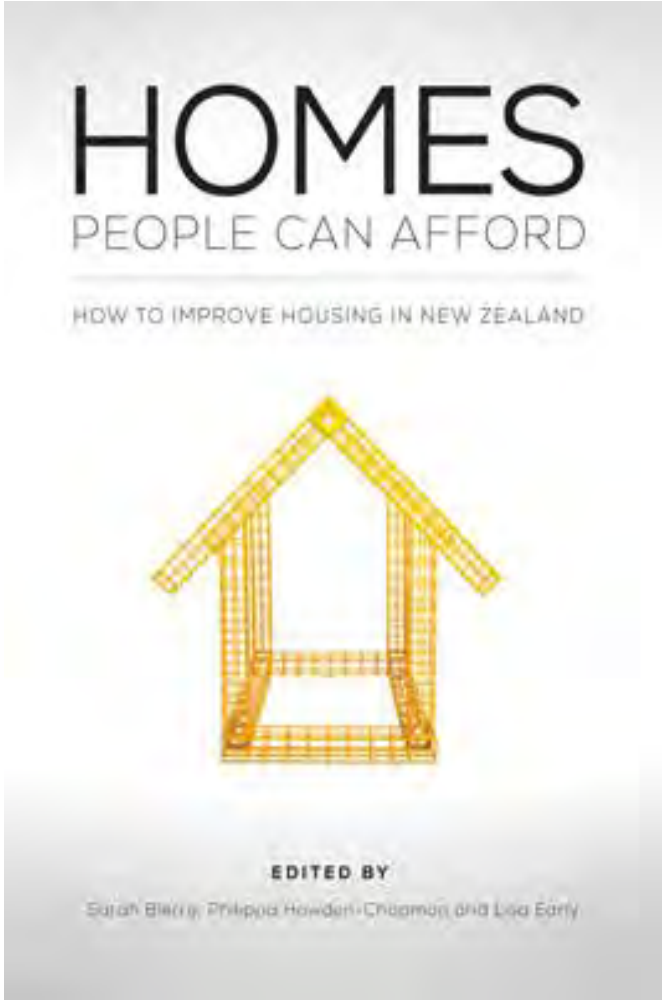
HEALTHY HOME INDEX

Rating tool links health and building science
Measures respiratory, and injury hazards & energy efficiency

HEALTHY HOME INDEX APPROVED

Rental Warrant of Fitness

- Combined effort of *He Kainga Oranga,* NZGBC & 5 councils (Auckland, Tauranga, Wellington, Christchurch and Dunedin)
- Pre-test of rental properties by trained assessors
- Interviews with tenants, landlords & assessors
- Pilot study of roll-out being planned



Integrated effects critical

- Housing densities & compact urban design define urban housing & transport energy use & urban pollution emissions
- Spatial integration of housing in neighbourhood business, schools and green spaces - for healthy active travel
- Housing/neighbourhood urban connectivity to urban centres via transit, walking and cycling infrastructure

Transit-oriented development Strasbourg, France

R.Chapman, 2009


TALIX WEIN
LUSH TIMES
FÄRBERE DEINE HAUT


No Dogs


Railway Stn
GO
GO PROMISE THE WORLD AT MT VIC LOOKOUT...GO WWW.METLINK.ORG.NZ OR
GOWELLINGTON
EPN271
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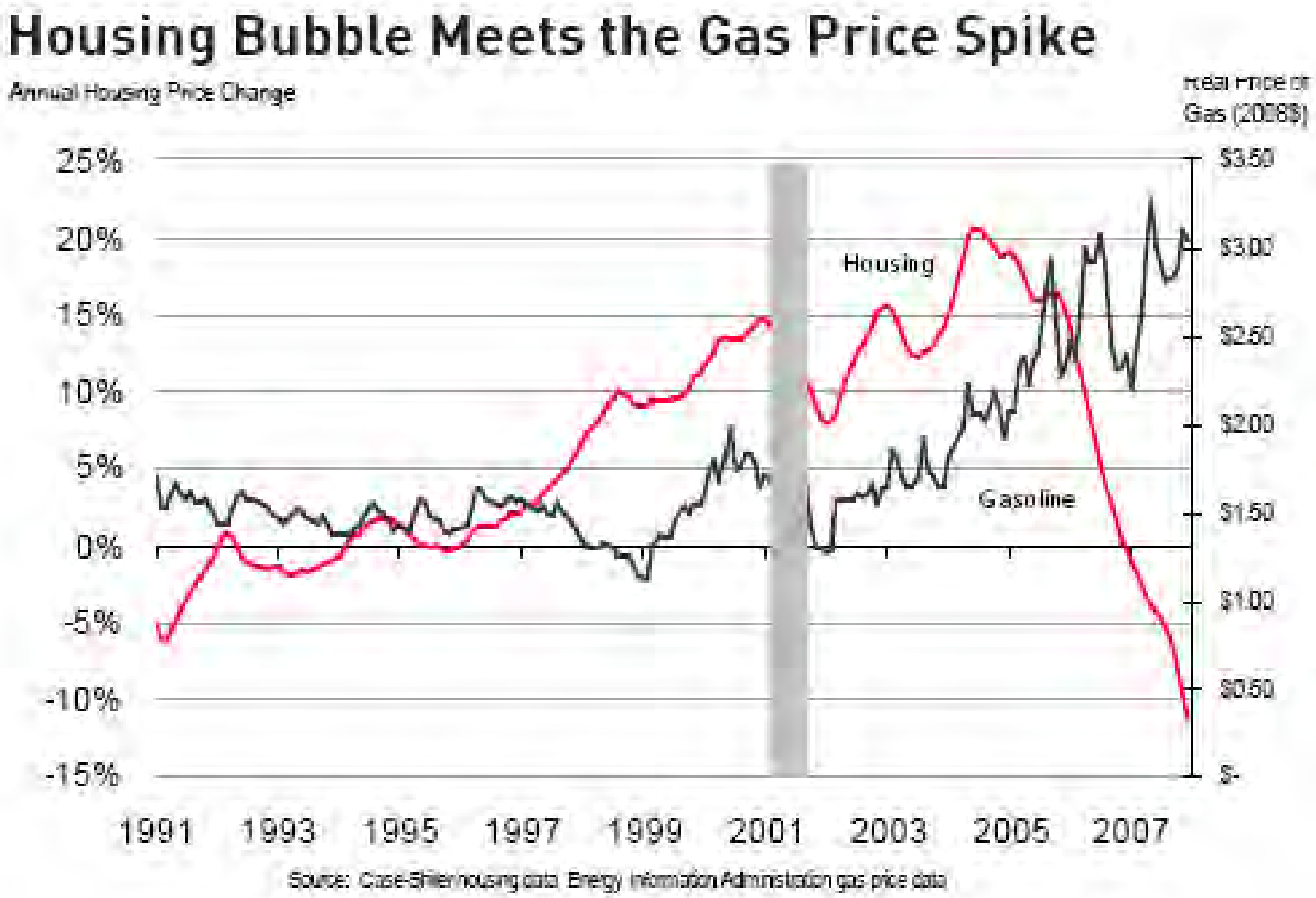
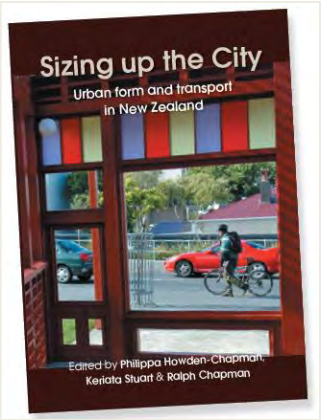
metlink
John St 47

House prices influenced by the price of petrol Cortright 2008

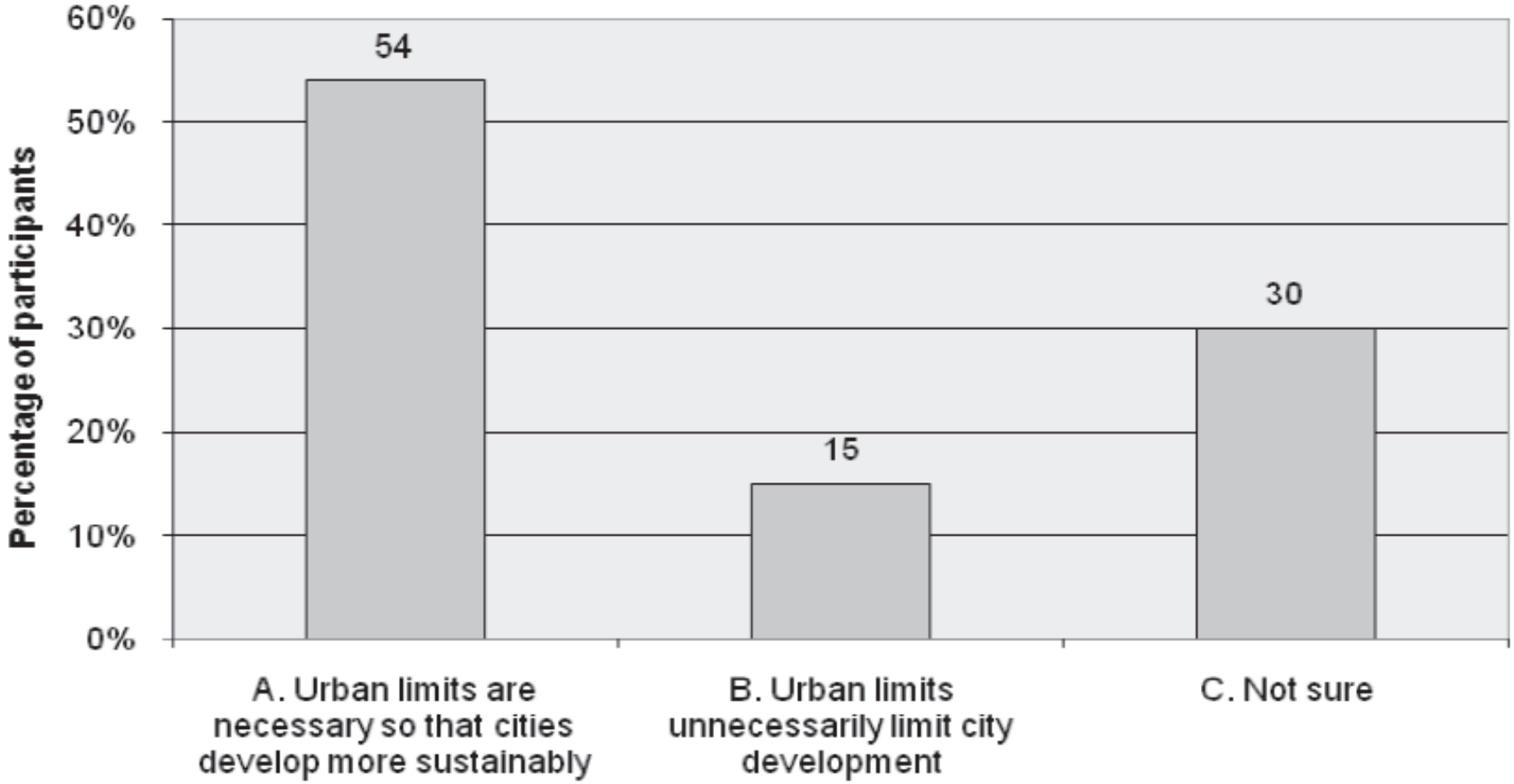


Urban locational preferences
For whom the city?



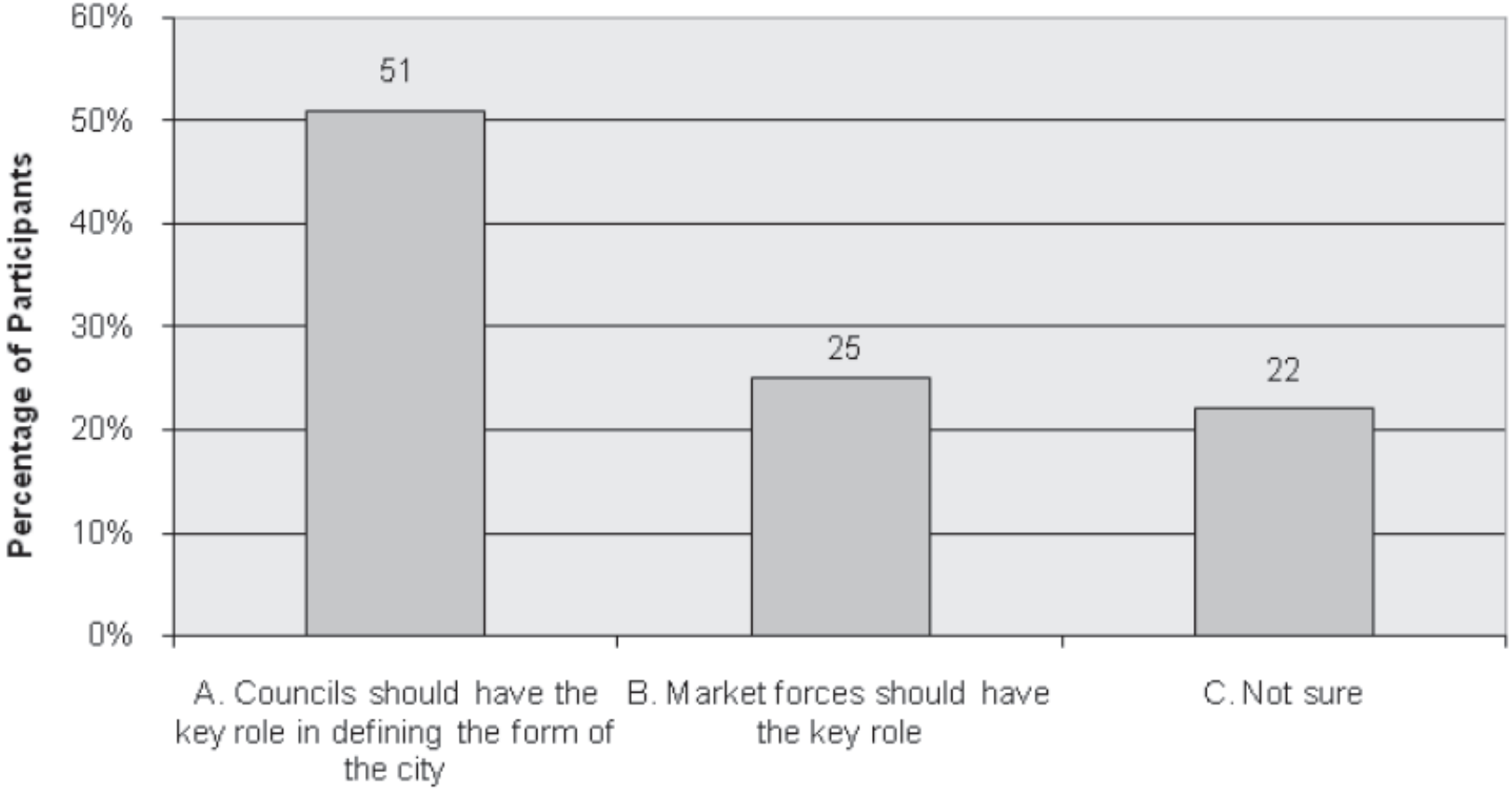
- Used *ShapeNZ* national sample, n~3200,
- Issues surveyed
  - urban sprawl, e.g. urban limits; council involvement in regulating urban development
  - living (location; housing type) preferences

Attitudes toward urban form: limits



Over three times as many respondents see urban limits as necessary than not

Attitudes toward *control* over urban form: council or market



Market forces generally seen as unsuitable or insufficient to adequately define the form of the city.

Attitudes toward *accessibility* of living location

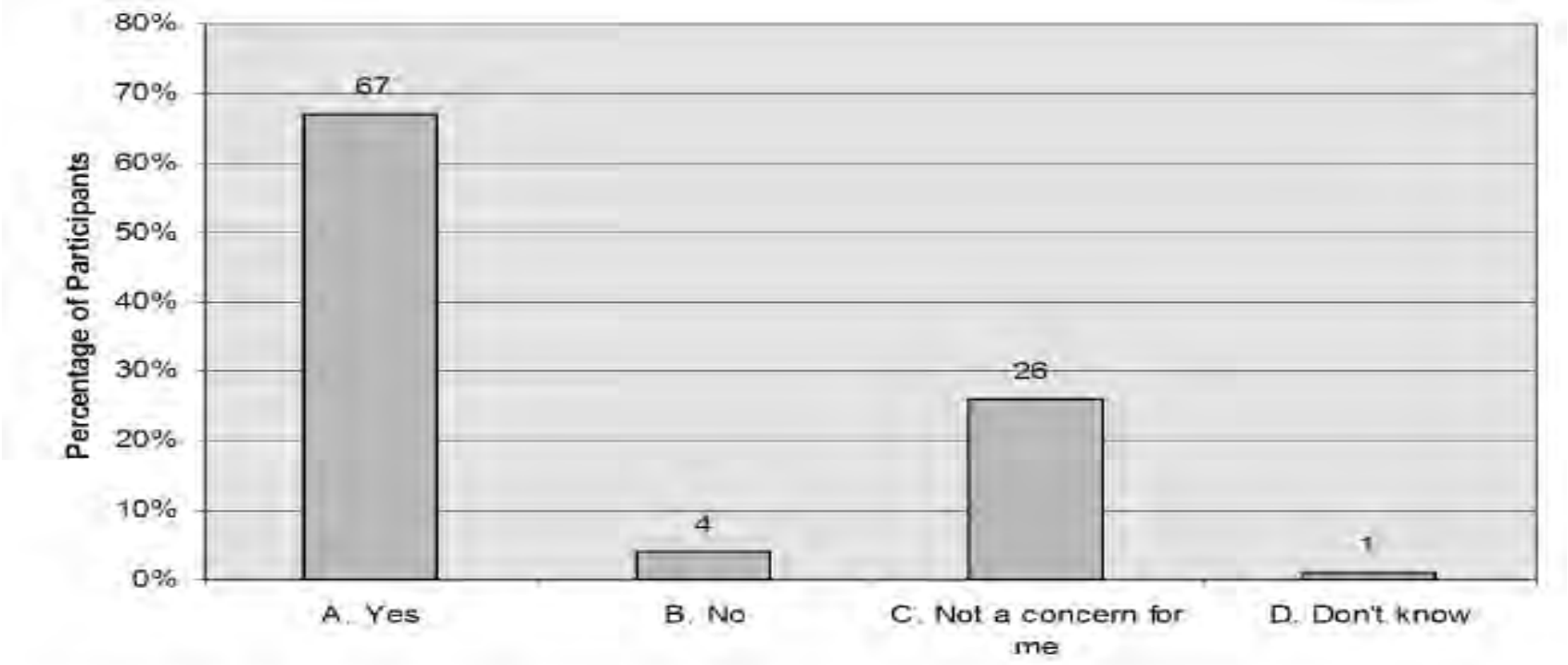
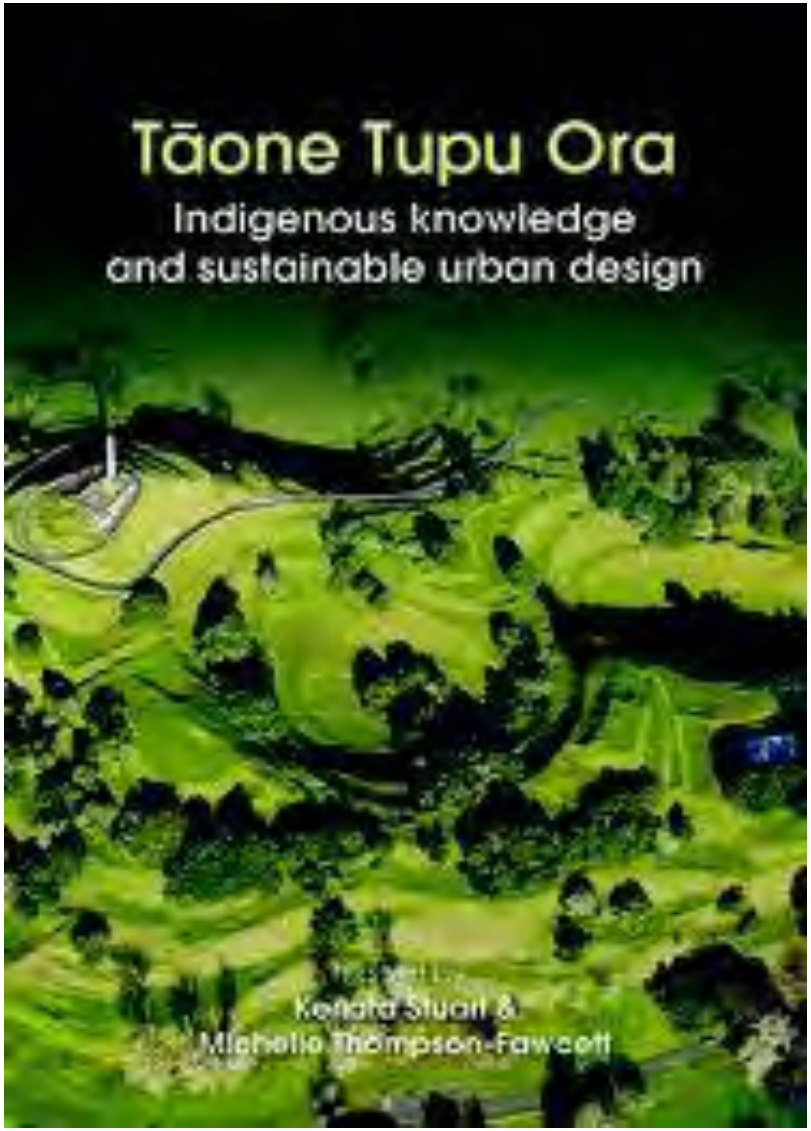


Figure 2.4 Significance of accessibility for living location. Responses to Question 18: Would you prefer to live within walking or cycling distance of some of the destinations you need to get to most often, like work, shops, parks, schools and transit stops?

A strong interest in accessible living – walking or cycling distance to everyday destinations


pepa's
www.pepas.fr
VENUS JEANS

Indigenous urban design



- Appropriateness of Māori models of pa & kainga to urban containment
- Importance of historical knowledge of streams and waterways - Christchurch liquefaction
- Plans for intensified suburbs with food production incorporated
- Innovative iwi urban community housing

WHO Housing and Health Guidelines in development

- Cold
- Heat
- Energy
- Housing safety and injuries
- Crowding
- Accessibility
- Active transport

Economic investment in housing can lead to substantial immediate & sustainable co-benefits for health and climate change mitigation. - WHO

Conclusion

- Fragmented housing policy and regulatory environment
- Lack of integrated housing strategy that addresses overall connections between private rentals, social rentals and home ownership
- Lack of integration of housing with land-use and transport policy
- NZ housing in poor condition
- Private housing has public consequences

Conclusion

- Co-benefits highlight positive externalities of improving housing
- Central and local government housing subsidies have high rate of social return
- National Science Challenge 11 Building Homes, Towns and Cities recently announced……