Why do some towns grow and others not? The demographic components of change for the period 1976-2013*

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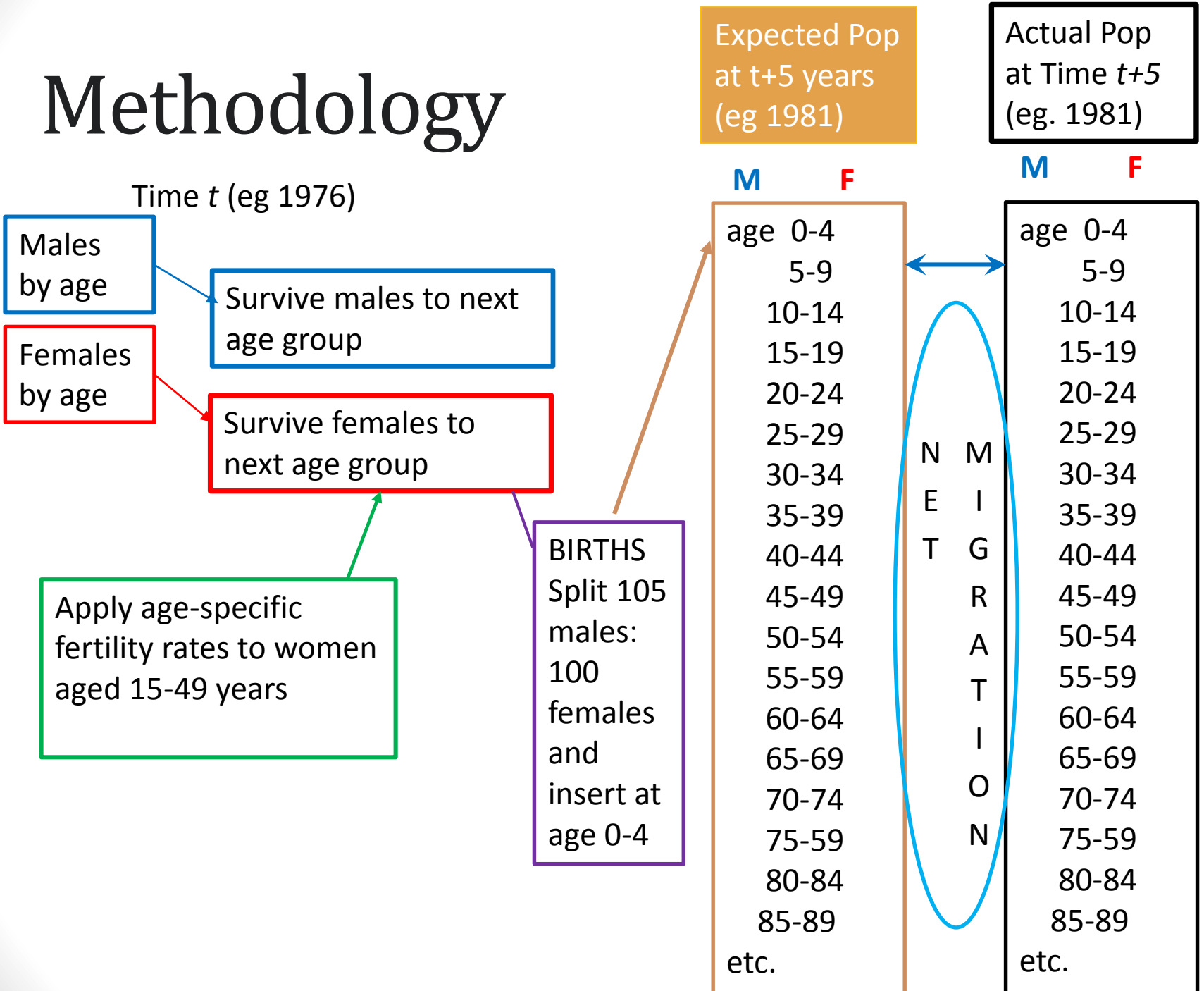
*Marsden project [MAU1308]. **The subnational mechanisms of the ending of population growth – towards a theory of depopulation*

Methodology for obtaining components

- Data for the eight Censuses 1976-2013 (at 2013 boundaries) were generated for five year age groups (0-4…80+ years), by sex
- Assumptions regarding age-specific fertility and survivorship rates were prorated using TA level data (indirect standardization)
  - ASFRS at TA level were available for 1996-2013
  - For 1976-1991, the average ASFR for 1996 and 2001 for each TA was compared with that for total NZ and their ratios used as a multiplier, against observed data for total NZ
  - Survivorship rates for 2005-07 and 2012-14 were available at TA level. The 2005-07 ratio to rates for total NZ was used as a multiplier to back-project rates for 1976-2001.
- Data for each observation (e.g., 1976) were projected forward five years using conventional cohort component methodology
- Projected data ('Expected' population) was compared with data for next observation ('Actual' population) – e.g., Expected 1981 compared with Actual 1981.
- Births, deaths and estimated net migration (as a residual, by age) were extracted.

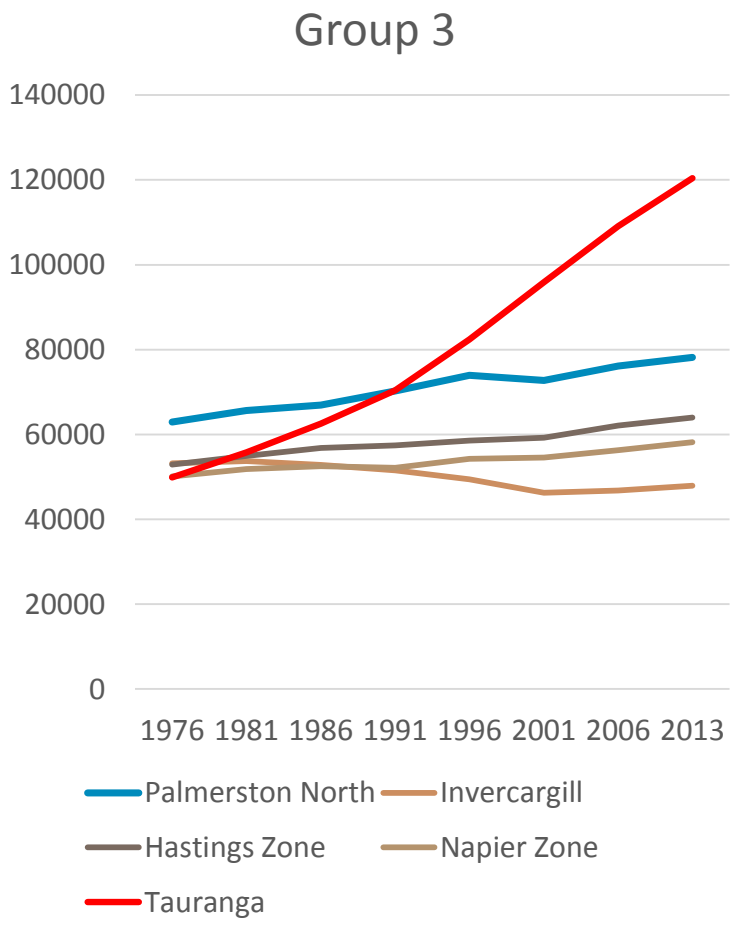
Methodology

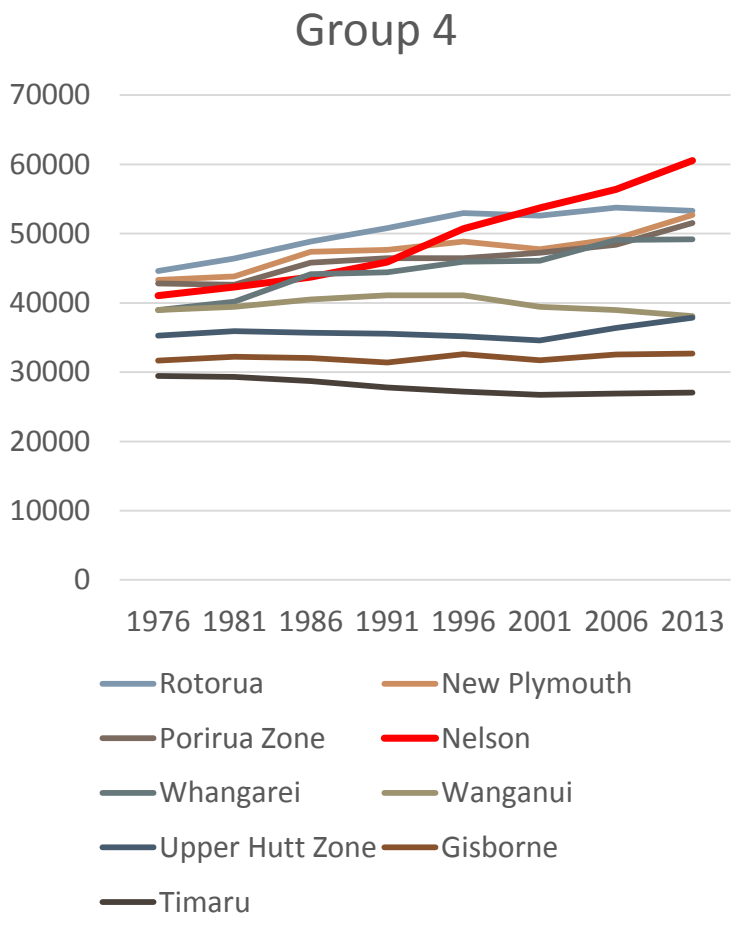


Disclaimer

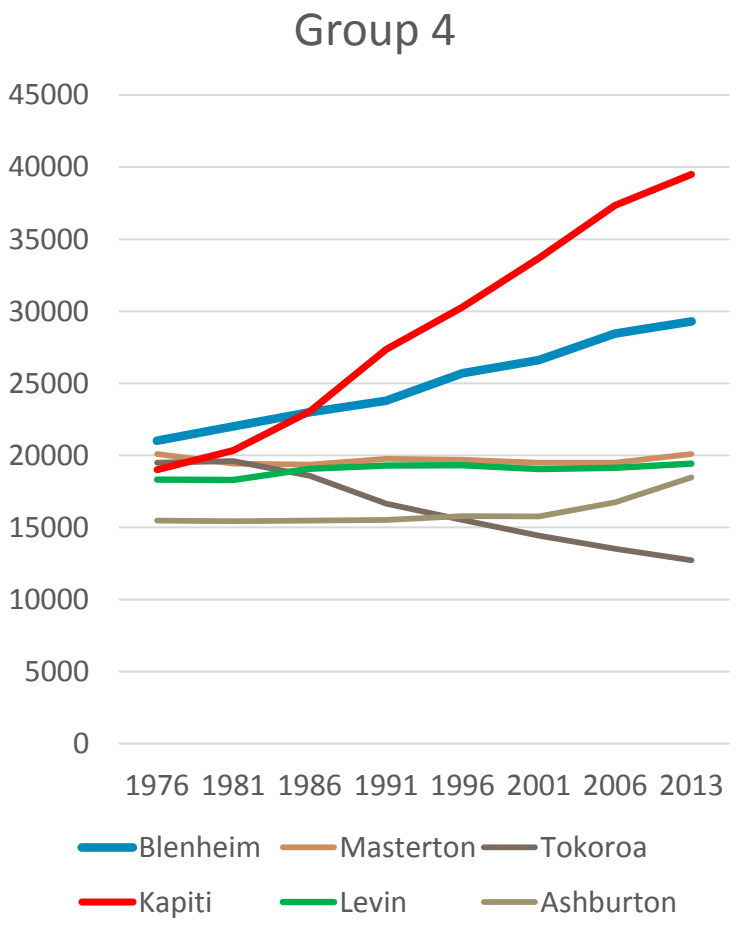
- Access to [most of] the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975.
- The tables for towns and rural centres were created by Dave Maré (Motu Research) under microdata access agreement with Statistics New Zealand, MAA2003/18. dave.mare@motu.org.nz. The tables contain counts of the 1976, 1981, 1986, 1991, 1996, 2001, 2006 and 2013 usual resident population by age and sex, grouped by 2013 geographic area boundaries (Territorial Authority and Urban Area). The Urban Area classification has been extended to identify rural centres (ua13=501) separately (using 2013 Area Unit codes). The allocation to 2013 geographic areas is based on a user-derived correspondence.
- The counts are not official statistics but should be thought of estimates intended for use in research.

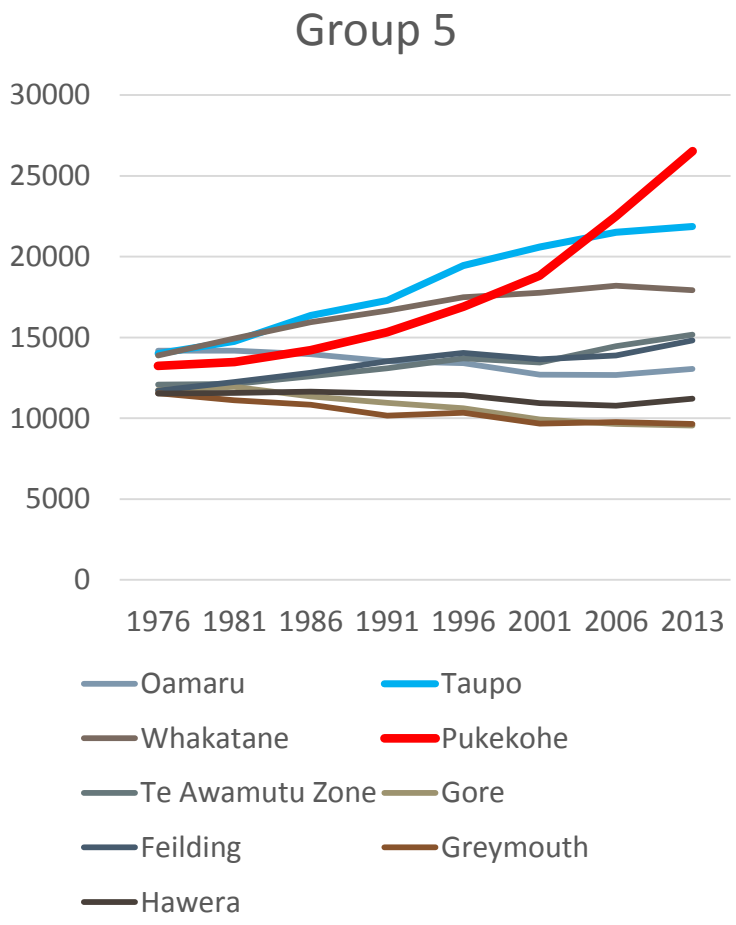
Runnaway towns (following Grimes and Tarrant 2013)



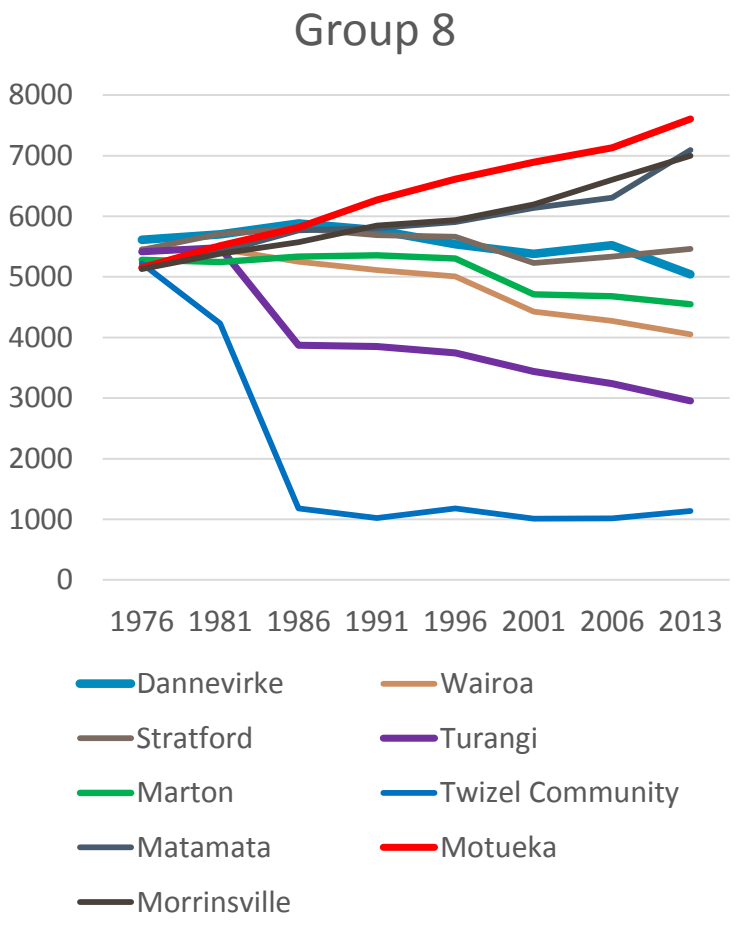


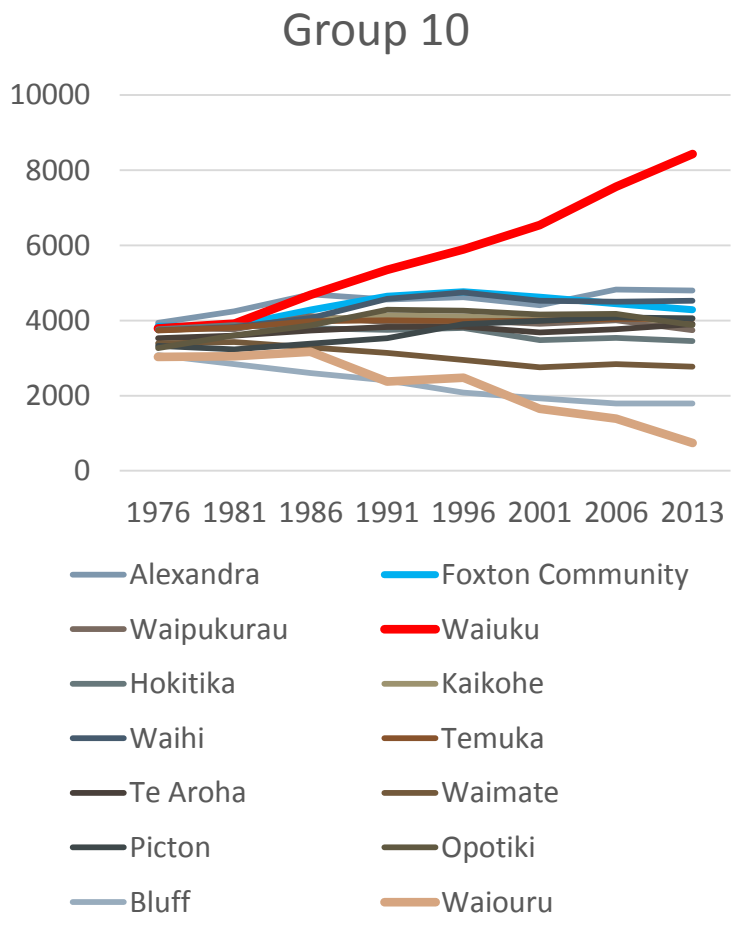
Runnaway towns (cont.)



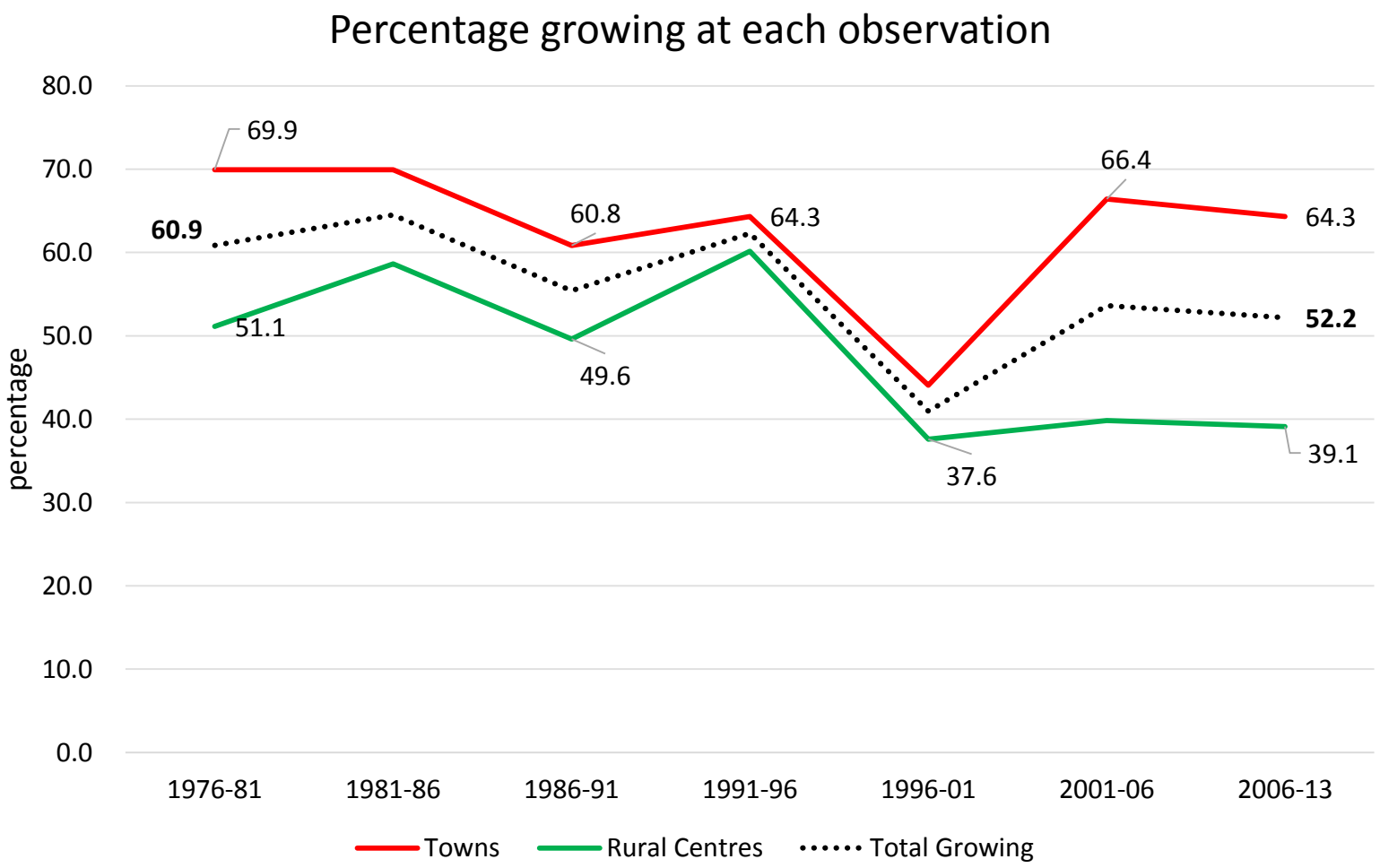


Runnaway towns (cont.)

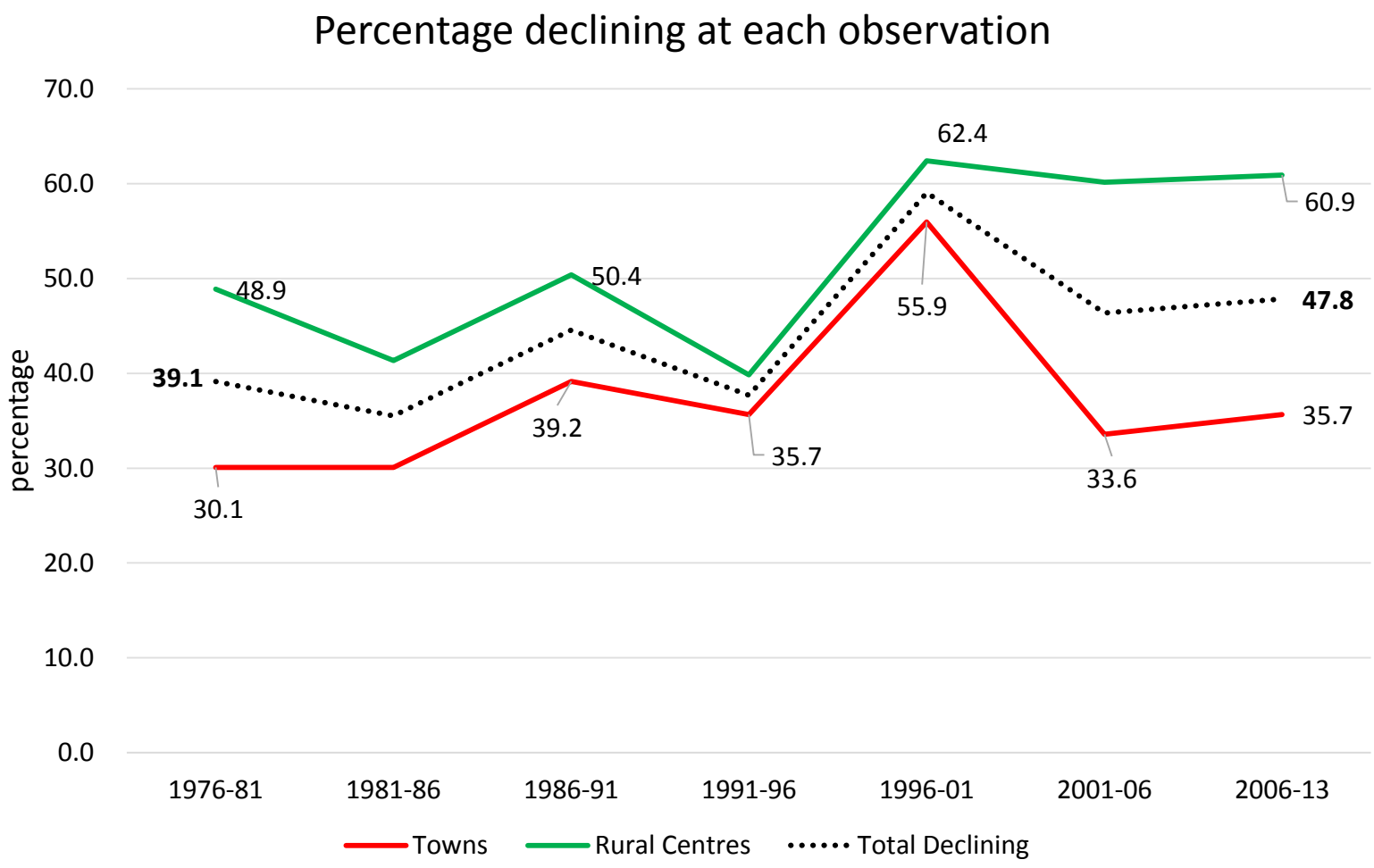




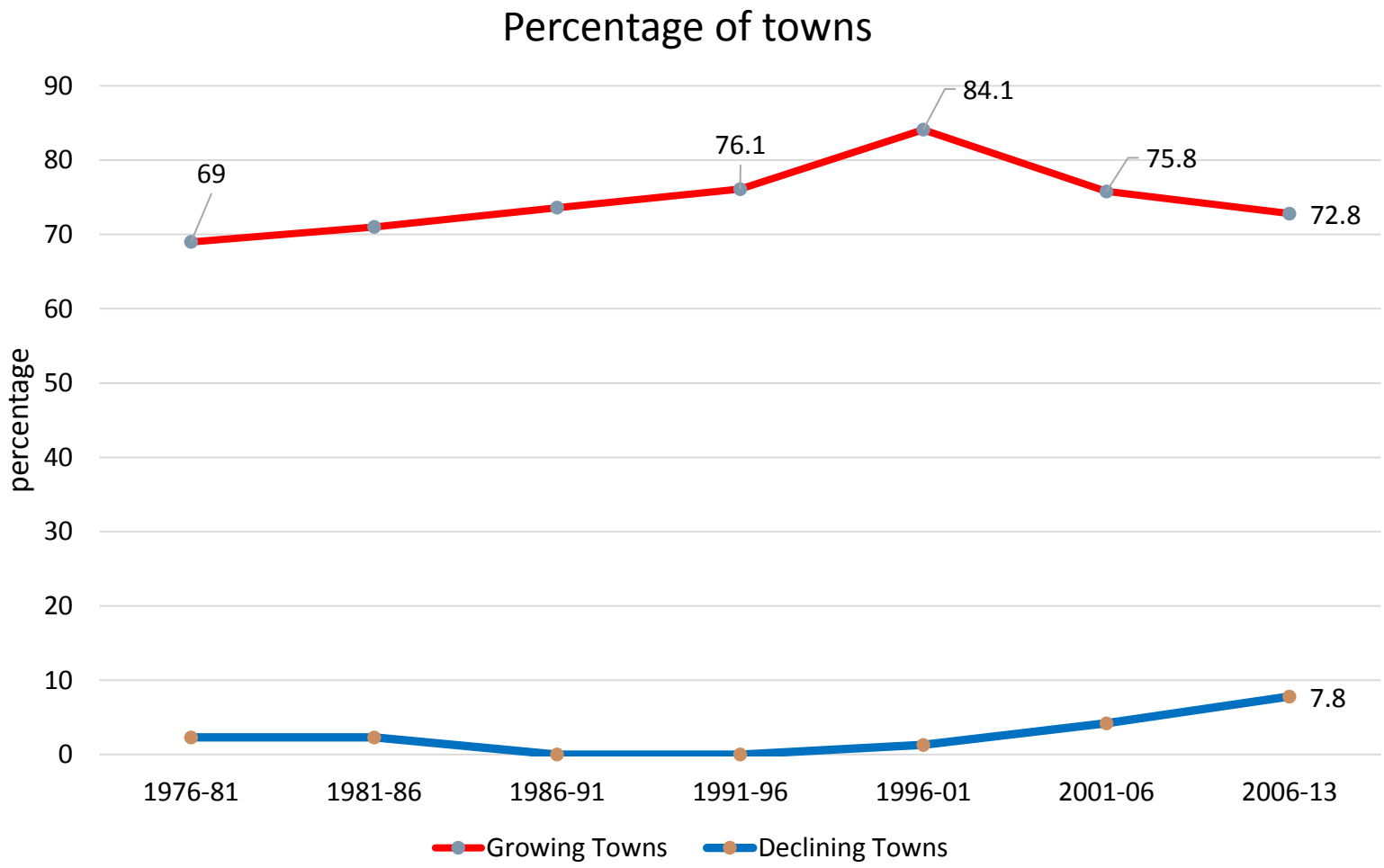
Growing Towns and Rural Centres



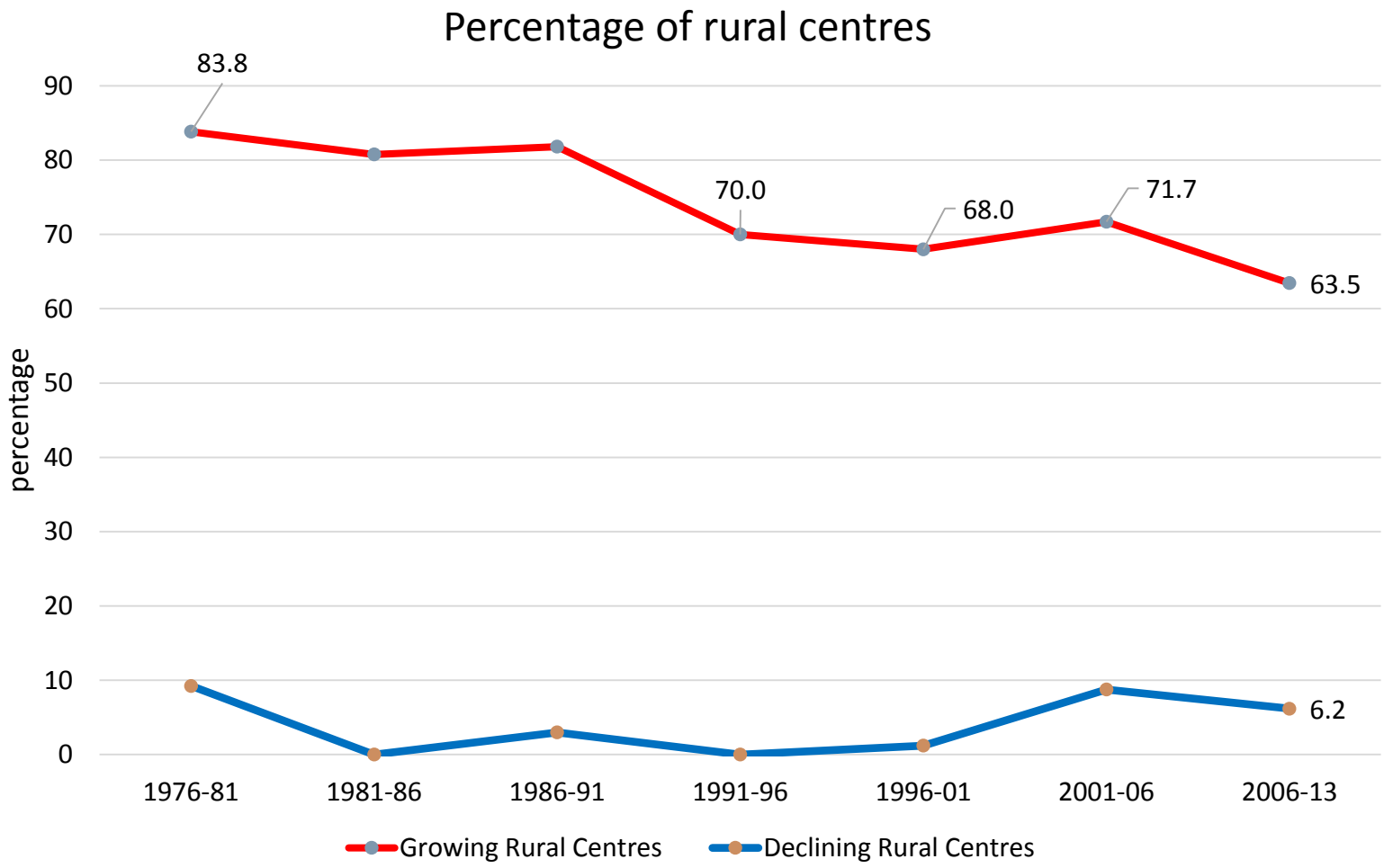
Declining Towns and Rural Centres



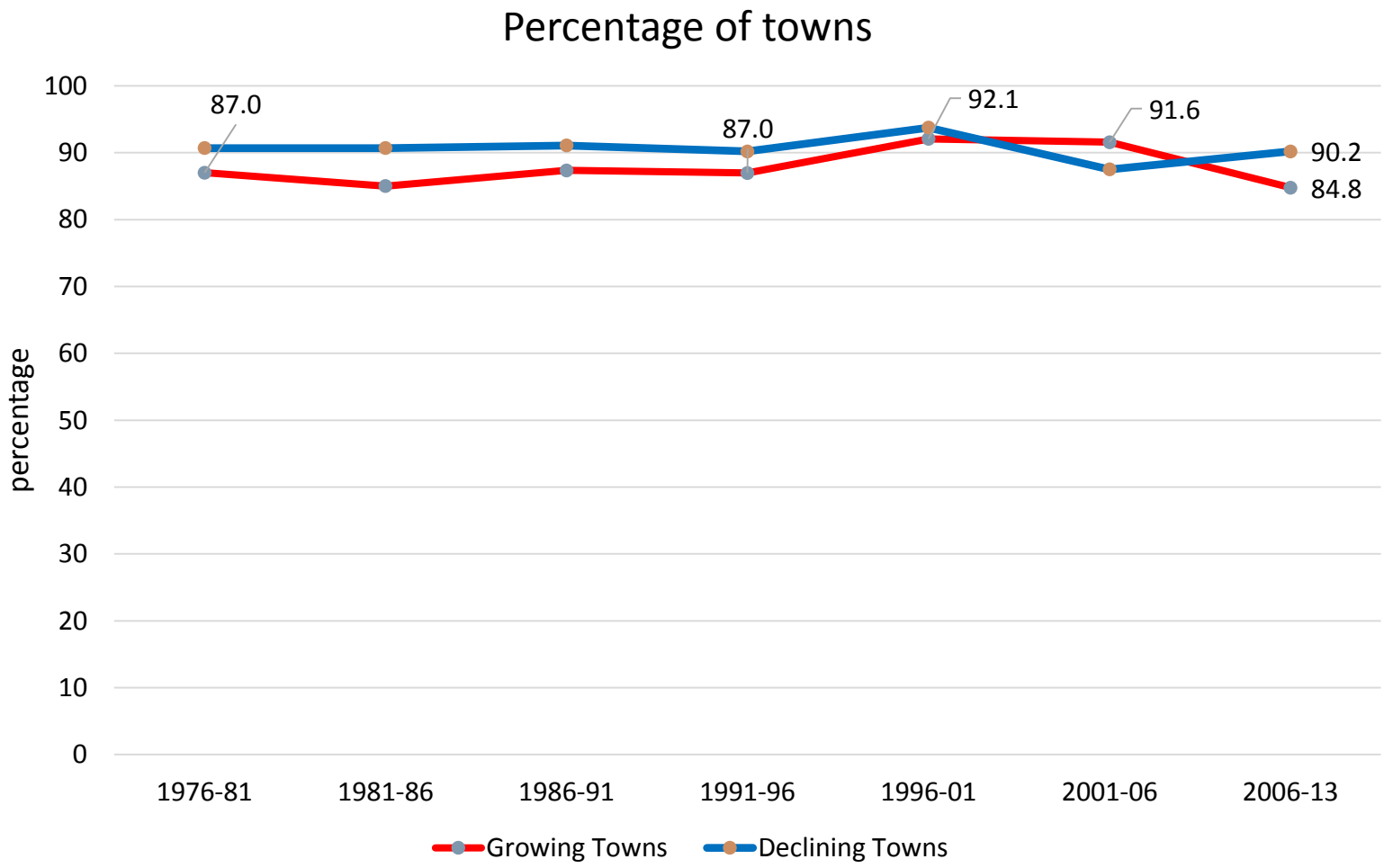
Towns experiencing net migration gain



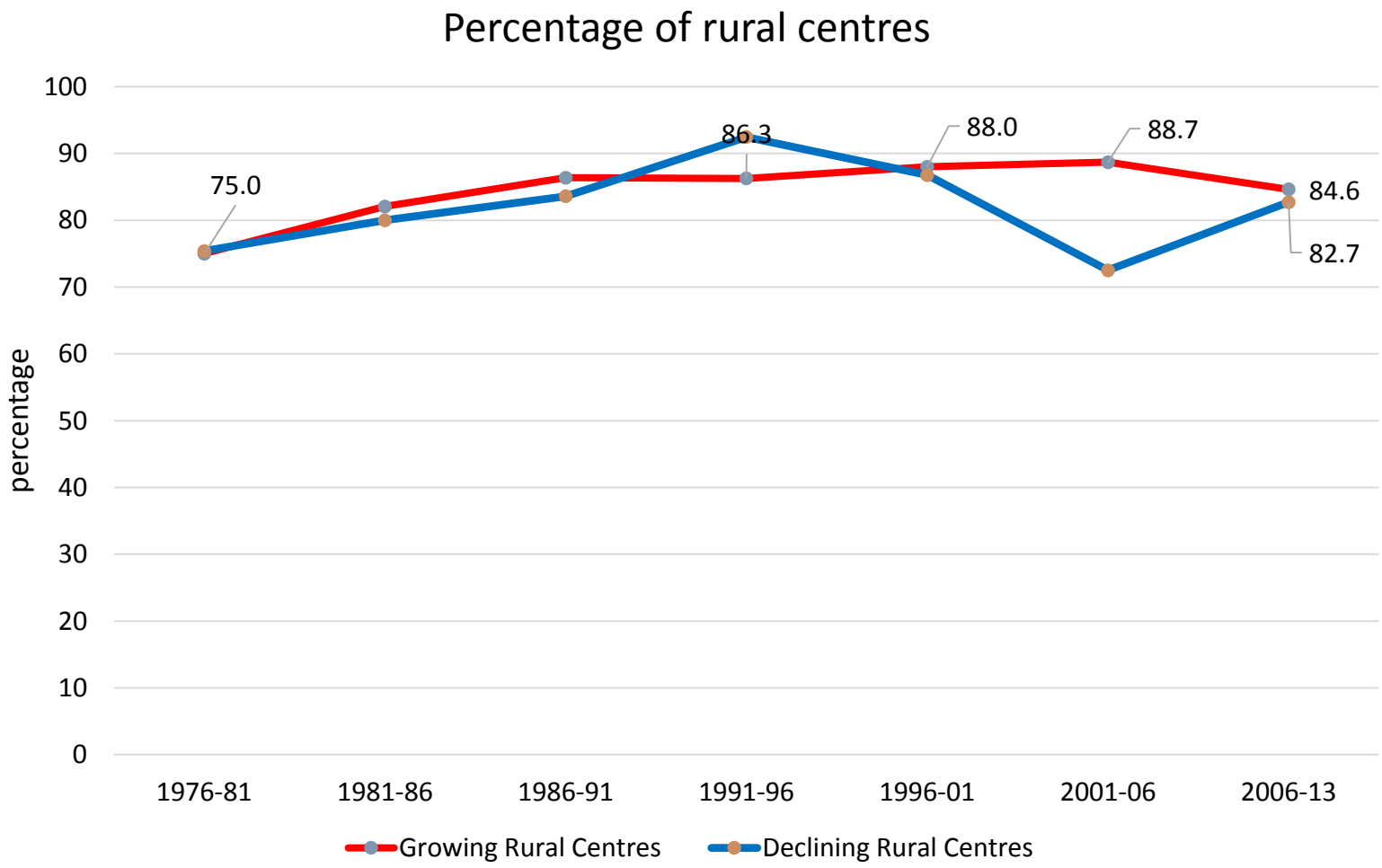
Rural Centres experiencing net migration gain



Towns experiencing natural increase



Rural Centres experiencing natural increase



Natural Decrease

Natural decrease is emerging as an intermittent phenomenon: only 3 jurisdictions experienced it at all seven observations; but 17% experienced more than once; 8 per cent more than five times

- 107 observations across towns (10.7 per cent of observations)
- 152 observations across rural centres (16.3 per cent)

- **Rural Centres more likely than towns to experience natural *decrease***
- **However – growing towns and rural centres more likely than declining towns and rural centres**

‘Old’ and ‘new’ forms of population decline*

Old form of decline

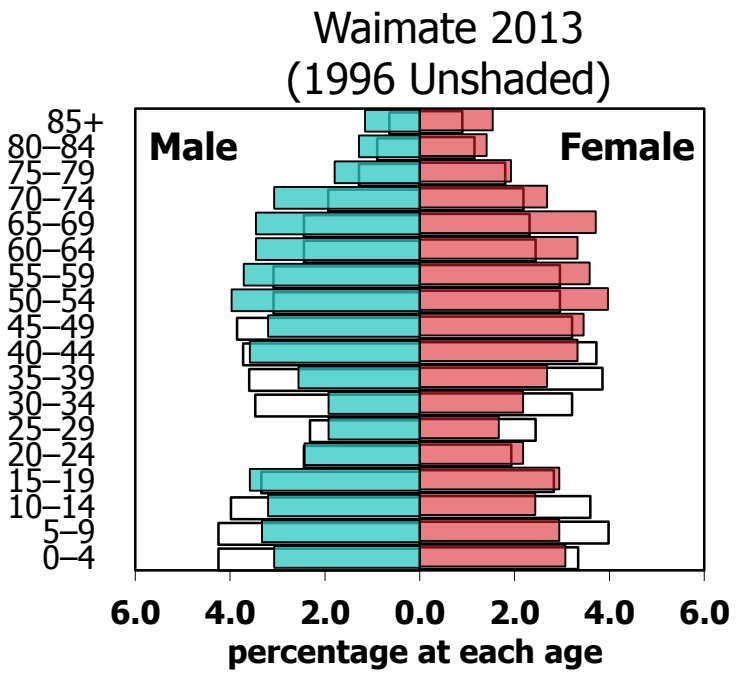
Net migration loss

– mainly of reproductive age people >> hollows out the age structure

New form of decline

Net migration loss + natural decline

– the loss of reproductive potential becomes self-reinforcing

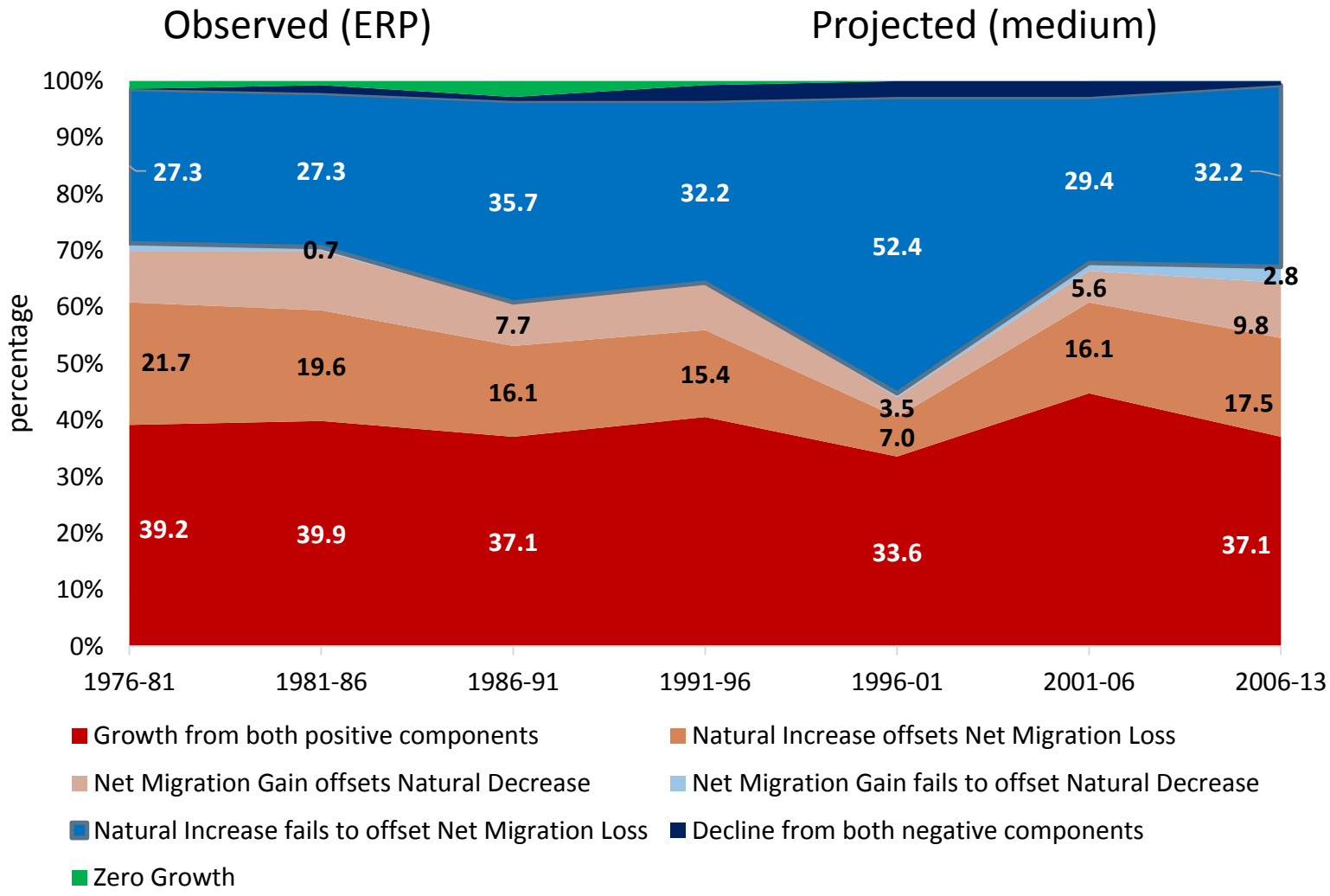


65+ years: 22.0% (1996 = 16%)

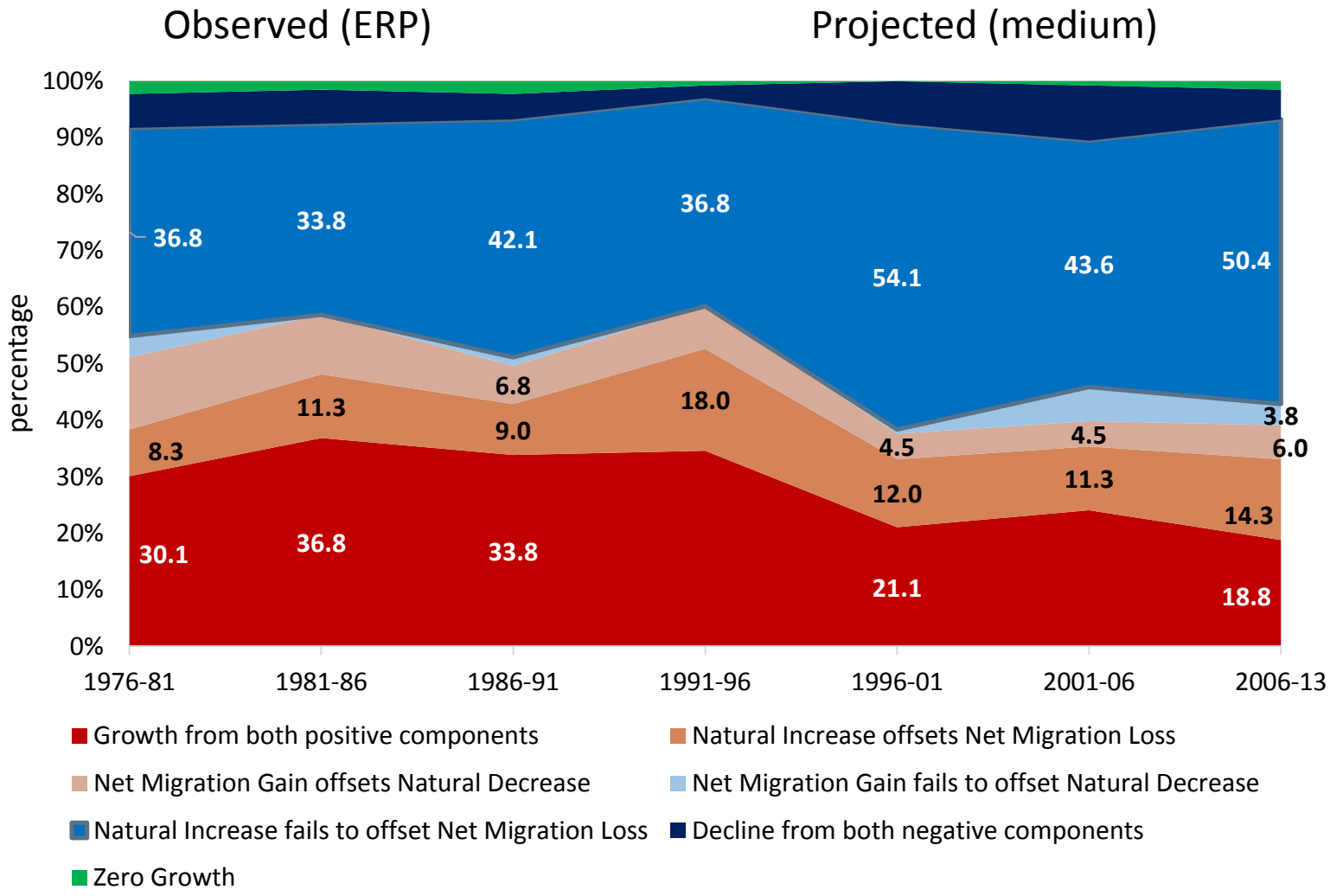
Statistics NZ Subnational ERP

*Burcher and Mai (2005) *Depopulation and its Consequences for the Regions of Europe.* Report Prepared for the Council of Europe, cited Matanle and Rausch (2011) *Japan’s Shrinking Regions in the 21st Century*

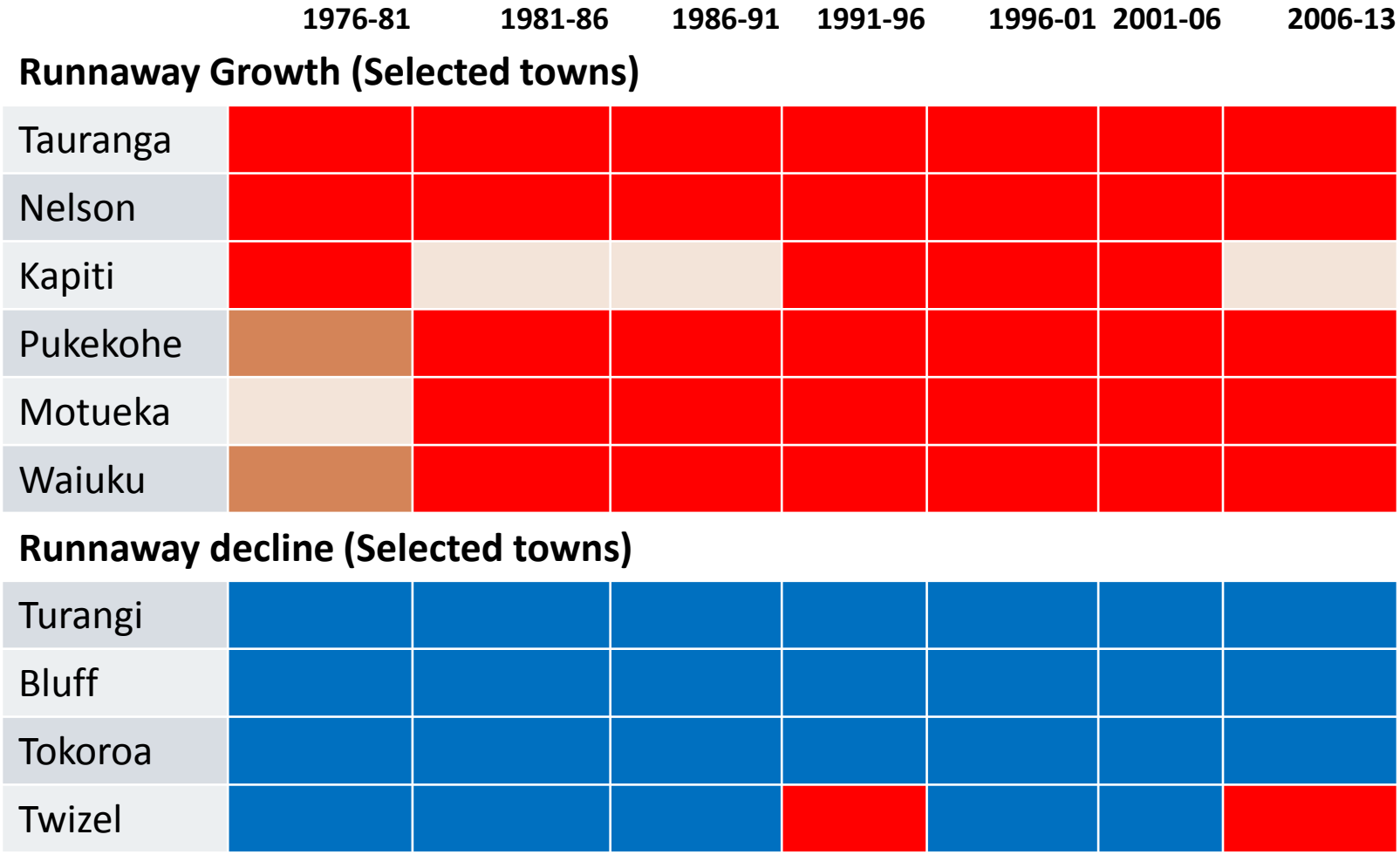
Towns (N = 143) – causes of growth/decline



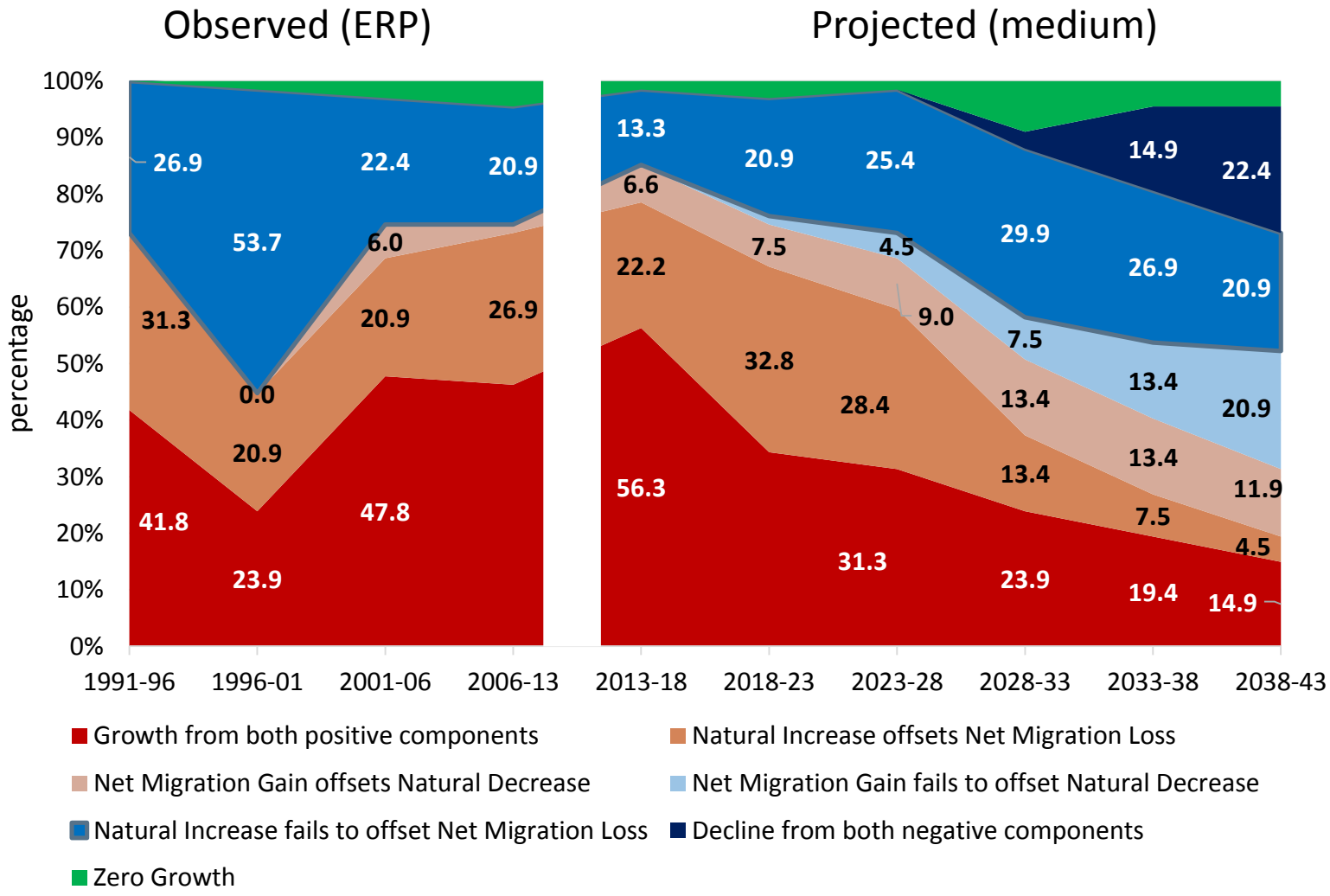
Rural Centres (N = 133) – causes of growth/decline



What were the demographics of those runaway towns?



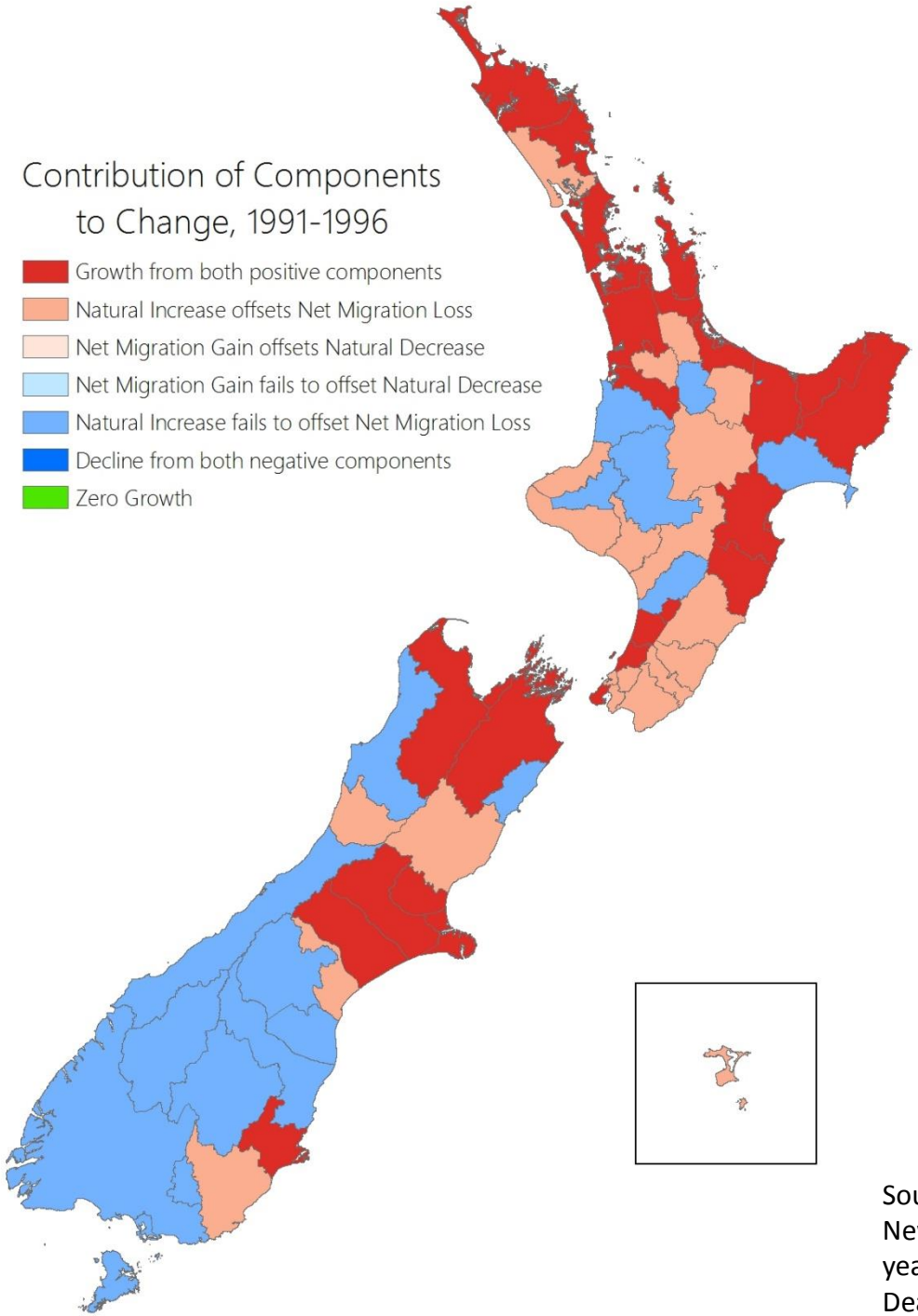
TAs (N = 67) – past and projected causes of growth/decline



Authors/Statistics NZ (ERP, and subnational projections 2015) Medium Variant

Components of change – past and projected

Territorial Authority Areas



Source: Authors/Statistics New Zealand (various years) Subnational Births, Deaths, ERP

Summary/Discussion Points Towns and Rural Centres

Growing towns and rural centres

- Fastest growing grew from both positive components
- … towns had higher natural increase than rural centres; however more towns than rural centres with >20% aged 65+ years; many had patches of natural decrease offset by net migration gain; so growing, but have strong internal momentum of decline (eg. Kapiti)

Declining towns and rural centres

- Greatest declines from natural increase failing to offset net migration decline ('old' form of decline)
- Only a few declined from both negative components (20 observations across 37 years) – the 'new' form of decline

Natural decrease:

- onset is intermittent, observed for towns across 11 per cent of observations; rural centres 16 per cent.
- Now affecting growing areas more than declining areas

Summary/Discussion Points Territorial Authority Areas

- **TA projections indicate continuation of trends at town and rural centre level:**
  - growth from both positive components projected to decline rapidly; decline from natural increase failing to offset net migration loss to increase;
  - Decline from both negative components ('new' form of decline) projected to impact from 2028 >>>>> 22% TAs 2038-43;
  - 30% TAs projected to decline 2028-33, 40% 2033-38, 55% 2038-43. By 2038 depopulation projected to affect 25% of total New Zealand population, up from current 10 per cent.

Tai Timu Tangata

MASSEY UNIVERSITY

THANKYOU

Tai timu tangata – taihoa e? The ebbing of the human tide – what will it mean for the people? New Zealand Royal Society Marsden project [Contract MAU1308].

**The subnational mechanisms of the ending of population growth – towards a theory of depopulation*

Natalie Jackson, Michael Cameron**, Lars Brabyn**, Ian Pool**, Bill Cochrane**, Dave Mare****

** Massey University*
***University of Waikato*
****Motu*

Nga Tangata Oho Mairangi

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

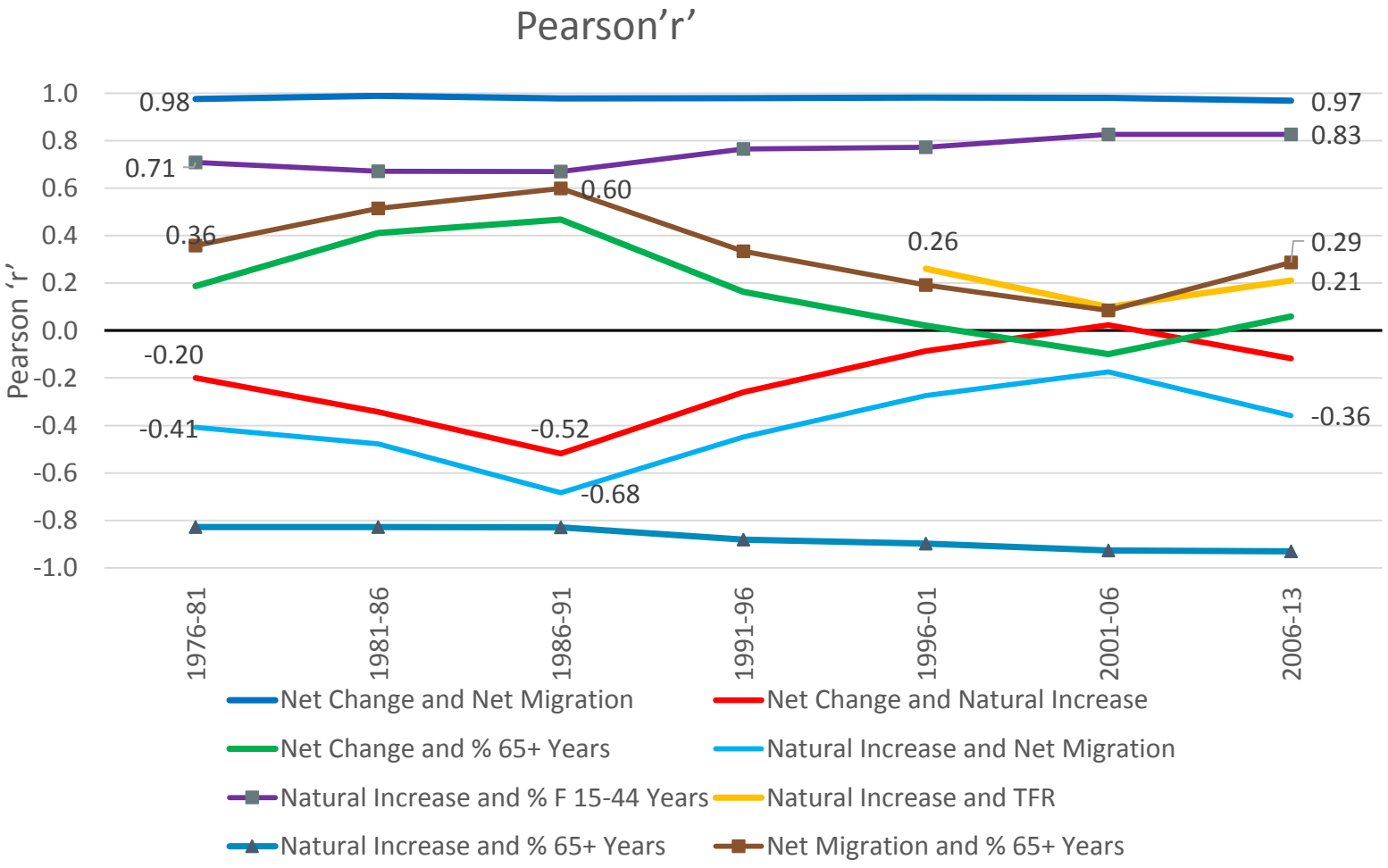
CaDDANZ
Capturing the Diversity Dividend of Aotearoa/New Zealand

SUPPORTING DATA

Towns and Rural Centers 1976-2013

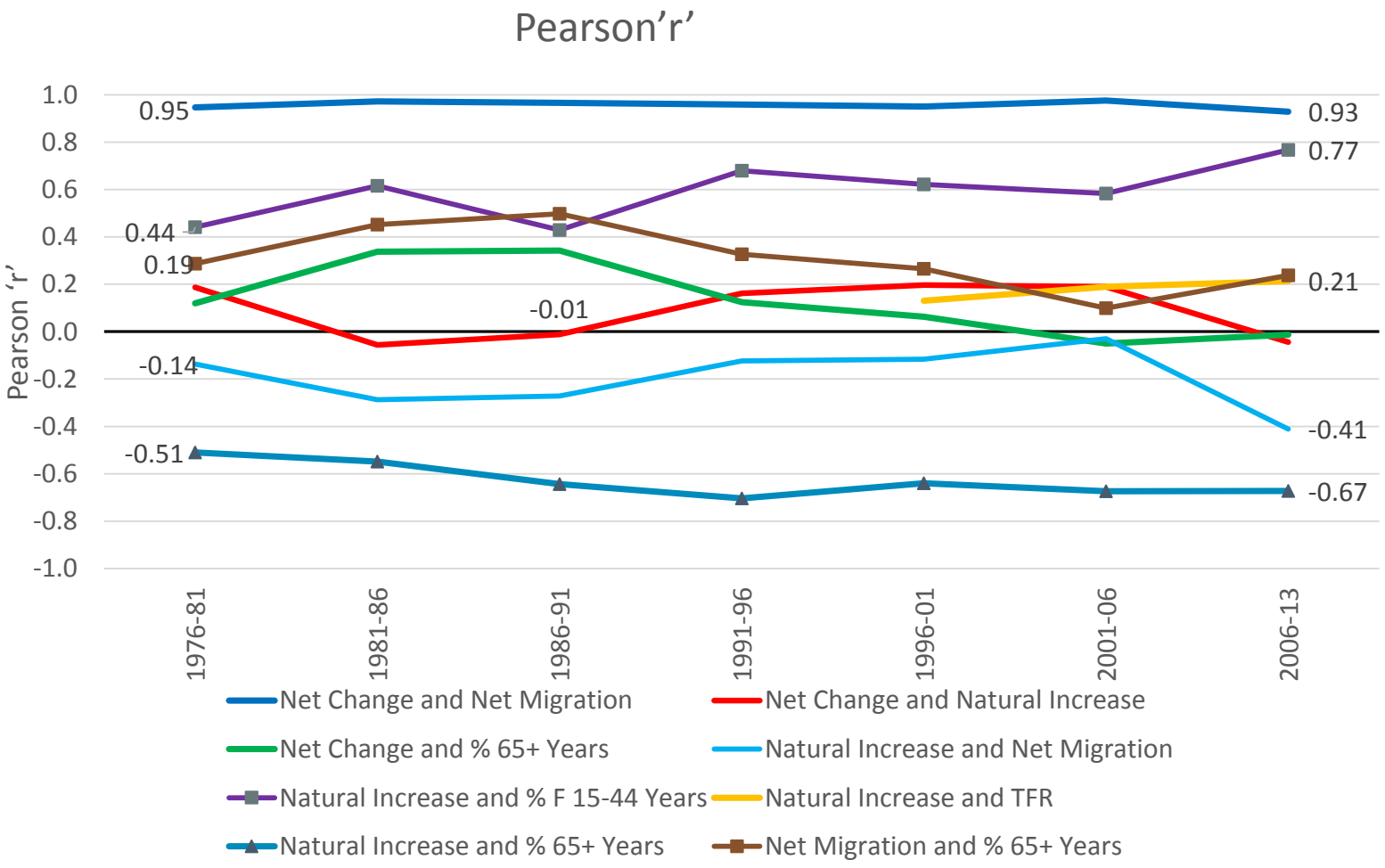
	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
Towns (143)							
Growing	69.9	69.9	60.8	64.3	44.1	66.4	64.3
Declining	28.7	29.4	36.4	35.0	55.9	33.6	35.7
Zero Growth	1.4	0.7	2.8	0.7	0.0	0.0	0.0
Rural Centres (133)							
Growing	51.1	58.6	49.6	60.2	37.6	39.8	39.1
Declining	46.6	39.8	48.1	39.1	62.4	59.4	59.4
Zero Growth	2.3	1.5	2.3	0.8	0.0	0.8	1.5

Correlations (Towns = 143)



Authors/Statistics NZ (ERP, and subnational projections 2015) Medium Variant

Correlations (Rural Centres = 133)



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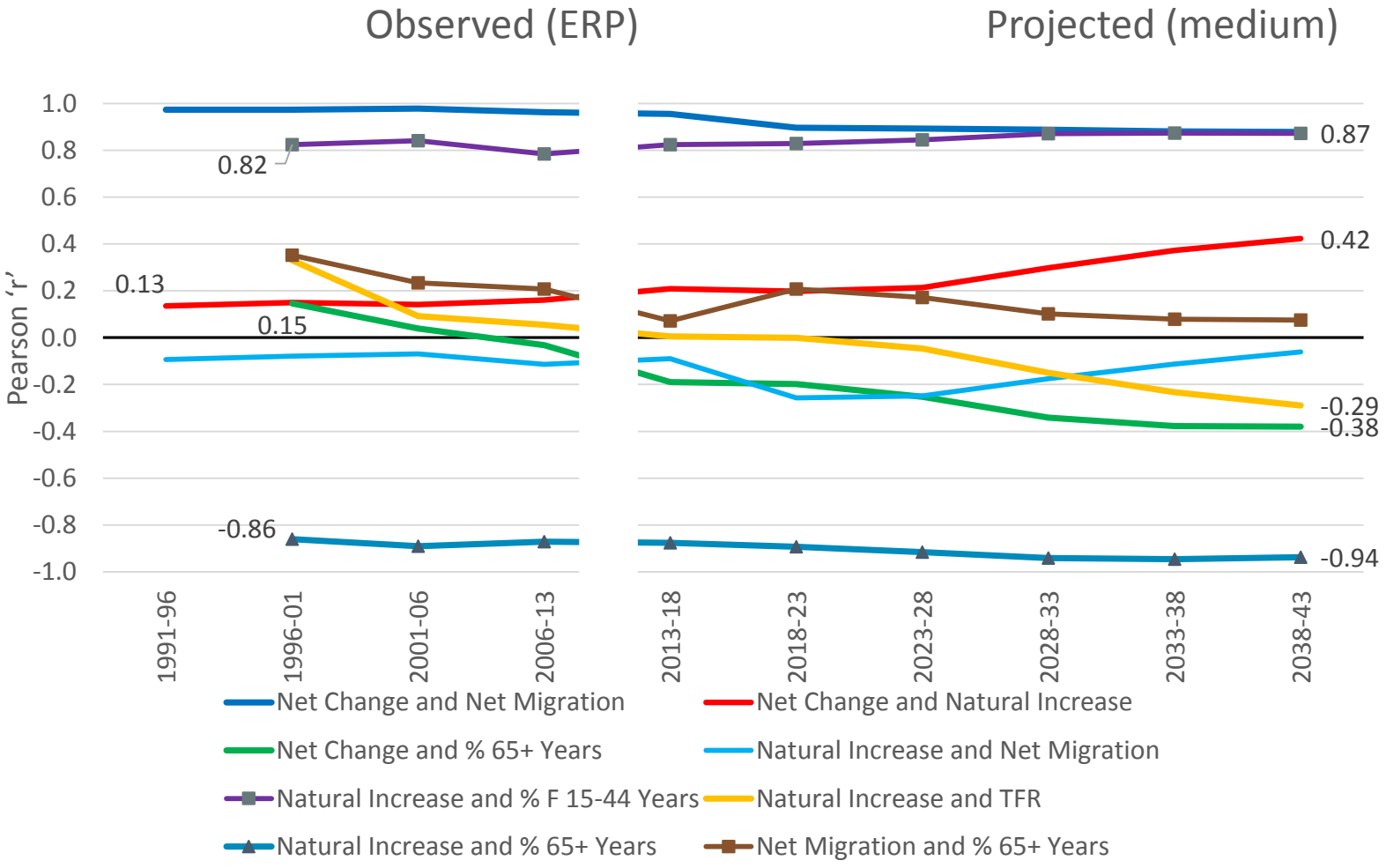
Correlations past and projected (TAs)



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