The demographic forces shaping New Zealand’s future

Natalie Jackson

Professor of Demography, Director, National Institute of Demographic and Economic Analysis (NIDEA)

Plenary Address to PANZ Conference, Auckland
Monday 29th November 2011
Forces from the North: Fertility Trends

- Fertility Rates versus % woman at reproductive age?
- Reproductive efficiency
- Educating Rita
  - Partnering Rita..
Booms and Blips – NZ TFR 1860s - present

TFR (Births per woman)

- Source A
- Source B
- Source C
- Source D

Baby Boom (Official)

Current Baby ‘Boom’
Will we have another baby boom?

• **Low fertility = an efficiency gain**
  — Cars versus horses - Unlikely to be reversed

• **Reproductive efficiency**
  — The work associated with reproducing the species has decreased, hopefully permanently, freeing women, their energy and resources for other forms of production = self-reinforcing
    • McInnes and Diaz 2007

• **Education..**
  — Increased education, decreased reproduction go hand in hand

• **Older childbearing = greater familial stability?**
Birth Rates, or Numbers of Mums and Dads?

In a low fertility context, which comes first?
The role of reproductive age people in birth numbers

Bay of Plenty 2006

Auckland Region 2006

With own age structure/ASFRs: **3,889** Births
With AKL age structure/own ASFRs: **4,305** Births

With own age structure/ASFRs: **21,695** Births
With BOP age structure/own ASFRs: **20,110** Births
Educating Rita: Percentage of Females with Bachelor Degree or Higher By Cohort and Age, 1981-2006

Stats NZ (2010) Customised Database
Will there be a Rob for Rita?? Percentage Males with Bachelor Degree or Higher By Cohort and Age, 1981-2006

Stats NZ (2010) Customised Database
Will we see a fertility-taxation spiral?

- Increasing structural ageing >> increasing taxation >> increasing labour force participation >> declining fertility >> increased structural ageing >> increasing taxation >> participation >>>

- Rita.. Can you balance it all??!!

Based on the 'Fertility-Taxation spiral' argument (Weaver 1986; Ricardo-Campbell 1986; Demeny 1987)
However.. a small baby blip to accommodate in the interim

New Zealand - Births

Projected

High

Medium

Next year’s school entrants (TGYH)

Source: Statistics New Zealand
• May be underestimating life expectancy at older ages..
• Profound numerical ageing
The Boomers are out there and heading your way..
And we don’t know where or when the rainbow will end

‘Rectangularisation’ of the New Zealand survival curve

Life expectancy at birth for females born in these years

- 1934-38 (68.5 Years)
- 1950-52 (71.3 years)
- 1970-72 (74.6 years)
- 1990-92 (78.7 years)
- 2005-07 (82.2 Years)

Source: Statistics NZ various years
Our projection assumptions may under-estimate numbers

<table>
<thead>
<tr>
<th>Life expectancy gains – actual and projected</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>((E_0)) Average months gained per year</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ACTUAL gains</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1995-97 to 2000-02</td>
<td>4.6</td>
<td>3.4</td>
</tr>
<tr>
<td>2000-02 to 2005-07</td>
<td>4.1</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>High assumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Males 88.6; Fem 91.2)</td>
<td>2.4</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Med assumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Males 85.6; Fem 88.7)</td>
<td>1.8</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Low assumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Males 82.6; Fem 86.2)</td>
<td>1.1</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Actual calculated from Statistics NZ Demographic Trends 2009, Table 4.15
We can’t get all the answers from overseas..

NZ one of only four *true* boom countries:

New Zealand (TFR 4.2)
Canada (TFR 3.9)
USA (TFR 3.8)
Australia (TFR 3.6)

*Teitelbaum and Winter (1985: 68)*
NZ will have the MDCs most profound experience of numerical ageing

Source: US International Database (Broad age groups)
Connecting the pieces
Growth, but mostly at the older ages

- 2011-2016 (+205K; 4.6%)
- 2011-2026 (+566K; 12.8%)

Stats NZ (2009) Series 5 = TFR 1.9; ANM 10,000
Projected Change by Broad Age Group

<table>
<thead>
<tr>
<th>Total NZ Series 5</th>
<th>65+ Years</th>
<th>All other age groups combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2016 (4.6%)</td>
<td>19.1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>2011-2026 (12.8%)</td>
<td>61.0%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

Stats NZ (2009) Series 5 = TFR 1.9; ANM 10,000

©NIDEA
More elderly than children in just 12 years

Observed

Projected (Series 5)

Stats NZ (2009) Series 5 = TFR 1.9; ANM 10,000
How realistic is this?

Life Expectancy at birth and age of eligibility for universal superannuation

- Females
- Males
- Age of Eligibility

Source: Statistics NZ
Get ready for a [permanently] longer work-life

Ho, Firkin, Good News!!
Can the retirement speech: The Sheriff of Canberra, Sir Kevin of Rudd & His Mate, The Black Swan, have decreed that 67 is the new 65! Obviously they reckon you have a couple of killer years left in you yet, Old Son!!
Forces from (or to?) the West: Migration
Young New Zealanders like to travel

Net Permanent/Long-Term migration, NZ Citizens

Source: Stats NZ
They don’t always return

- Actual and Expected population in 2001

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Actual in 2001</th>
<th>Expected in 2001</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-9</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>100,000</td>
<td>100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>150,000</td>
<td>150,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>200,000</td>
<td>200,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>250,000</td>
<td>250,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td>300,000</td>
<td>300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td>350,000</td>
<td>350,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td>400,000</td>
<td>400,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-49</td>
<td>500,000</td>
<td>500,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-54</td>
<td>600,000</td>
<td>600,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55-59</td>
<td>700,000</td>
<td>700,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-64</td>
<td>800,000</td>
<td>800,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65-69</td>
<td>1,000,000</td>
<td>1,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70-74</td>
<td>1,500,000</td>
<td>1,500,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75-79</td>
<td>2,000,000</td>
<td>2,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80-84</td>
<td>2,500,000</td>
<td>2,500,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>85-89</td>
<td>3,000,000</td>
<td>3,000,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90+</td>
<td>3,500,000</td>
<td>3,500,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mix migration loss with declining birth rates, and stir...
Migration is not exactly a reliable ‘answer’

Calculated from Statistics New Zealand (various years), Births, Deaths, Estimated Resident Population
But migration does give us multiculturalism – watch this space (an ‘age-specific phenomenon’ – Graeme Hugo)

NZ Overseas-Born by age, 2006

Source: Stats NZ Table Builder
Forces from North, South and West, meet East

- Demographic bifurcation
- The trends differ markedly at the local level, and by ethnicity
- They will culminate in increasing competition for labour supply, participation of young people
- The end of growth in many regions
Key demographic indicators to watch

- Fewer labour market entrants than exits
- Less than 20 % in key reproductive ages (20-39 years)
- More elderly than children
- More deaths than births
- Natural / Absolute decline
Migration-driven, accelerated ageing..

Thames-Coromandel 2010 (NZ Unshaded)

Hauraki 2010 (NZ Unshaded)

Entry/Exit 6:10

Entry/Exit 9:10
Where have all the young people gone? Gone

to cities everyone..

Auckland Super City
(NZ Unshaded)

Hamilton City
(1996 Unshaded)

Entry/Exit 16/10

Entry/Exit 19/10
A regionally-unfolding end to excess labour market supply

Percentage TA’s with fewer labour market entrants than exits

(15-24:55-64 years)

Calculated from Stats NZ, sub-national ERPs and Projections = Medium Series: ANM 10,000, TFR 1.9
Projected change by age: Waikato Region – 2006-2031

Source: Stats NZ, sub-national ERPs and Projections = Medium Series: ANM 10,000, TFR 1.9
## TA’s in Zero Growth / Absolute Decline 2006-2010 (22%)

<table>
<thead>
<tr>
<th>Region</th>
<th>%</th>
<th>Region</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruapehu</td>
<td>-3.6</td>
<td>South Waikato</td>
<td>-1.3</td>
</tr>
<tr>
<td>Wairoa</td>
<td>-3.2</td>
<td>South Taranaki</td>
<td>-1.1</td>
</tr>
<tr>
<td>Kawerau</td>
<td>-2.2</td>
<td>Gore</td>
<td>-0.8</td>
</tr>
<tr>
<td>Opotiki</td>
<td>-2.2</td>
<td>Wanganui</td>
<td>-0.7</td>
</tr>
<tr>
<td>Rangitikei</td>
<td>-2.0</td>
<td>Waitomo</td>
<td>-0.4</td>
</tr>
<tr>
<td>Tararua</td>
<td>-1.7</td>
<td>Whakatane</td>
<td>-0.3</td>
</tr>
<tr>
<td>Chatham Islands</td>
<td>-1.5</td>
<td>Otorohanga</td>
<td>-0.2</td>
</tr>
</tbody>
</table>

*Source: Statistics New Zealand Infoshare, Tables DPE006AA; DPE051AA*
Regional decline – is it a problem?

• ‘Unless accompanied by concomitant decline at the national level, the internal shifting balance is devoid of strategic or major political consequences of adjustment to changed realities of comparative regional advantage’ (Coleman and Rowthorn 2011: 219).

• Try telling that to employers.. home owners.. teachers.. farmers
Who will buy our farms?

Grain, Sheep and Beef Farmers – 2006 (med age 50 years)

- **Females**
  - Self-Employed, Without Employees
  - Employer
  - Paid Employee
  - Unpaid Family Worker
  - Not Elsewhere Included

Statistics New Zealand Customised Database (Census 2006)
Some good news!! A [potential] ‘collateral dividend’*

Source: Stats NZ 2006 Census *Multiple Count Ethnicity
Charting our course

• Understand what population ageing is, the forces driving it, what it [really] means
  – The young will be in ever shorter supply and ever-greater demand – it will be good for them (and us)
  – NZ will increasingly compete for migrants (locally, nationally, globally; between industries)
  – The trends will not reverse
  – Population growth will end, sooner in some places
  – Respond to the demography, stop trying to change it

• Trends and patterns outside the major cities are very important
  – Non-urban areas will struggle to survive unless regional ageing is on the government agenda
  – Who will buy our houses, farms, teach our kids?
• Thankyou

• natalie.jackson@waikato.ac.nz
• www.waikato.ac.nz/nidea