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**No 7 Nov 2016**

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*Te Rūnanga Tātari Tatauranga*

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Te Rūnanga Tātari Tatauranga | National Institute of Demographic and Economic Analysis

Te Whare Wānanga o Waikato | The University of Waikato

Private Bag 3105 | Hamilton 3240 | Waikato, New Zealand

Email: [nidea@waikato.ac.nz](mailto:nidea@waikato.ac.nz) | visit us at: [www.waikato.ac.nz/nidea/](http://www.waikato.ac.nz/nidea/)

**ISSN 2230-441X (Print) ISSN 2230-4428 (Online)**

# New Zealand's towns and rural centres 1976-2013 – experimental components of growth<sup>1,2</sup>

Natalie Jackson, Lars Brabyn and Dave Maré

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The views expressed in this report are those of the authors and do not reflect any official position on the part of NIDEA or the University of Waikato.

## New Zealand's towns and rural centres 1976-2013 – experimental components of growth<sup>1,2</sup>

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<sup>1</sup> Work on this paper was supported by a New Zealand Royal Society Marsden-Funded programme of research: *Tai Timu Tangata: Taihoa e?* (The subnational mechanisms of the ending of population growth: Towards a theory of depopulation) [Contract MAU1308].

<sup>2</sup> **Description:** 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](mailto: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. Just to reiterate the disclaimer, the counts are not official statistics but should be thought of estimates intended for use in research.

**Disclaimer:** Access to 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 results presented in these tables are the work of the author, not Statistics New Zealand

## Abstract

In this paper we report on the approximate size, rate of change and contribution of migration and natural increase for 276 New Zealand towns and rural centres for the period 1976-2013. We also consider, by way of the Pearson correlation coefficient ('r'), a limited set of explanatory variables. We undertook this exercise as part of a broader analysis seeking to understand why some towns and centres grow and others don't, following the formative work on urban populations by Grimes and Tarrant (2013). We also wanted to examine the extent to which New Zealand's towns and rural centres may be following their international counterparts in declining from what Burcher and Mai (2005) propose is a 'new' form of population decline (where net migration loss is accompanied by natural decrease). However because the components of change (migration, births and deaths) are not available for most of these jurisdictions we had to first extract them via statistical means.

Overall, we find a generally clustered pattern of growth and decline that fits well with Grimes and Tarrant's results for their 60 main urban areas. We find that both growth from the combined effect of net migration gain and natural increase, and from natural increase offsetting net migration loss, is slowly giving way to decline from natural increase being unable to conceal net migration loss, more so for rural centres than towns. We also find the new form of population decline to be present, but as yet affecting very small numbers of towns and rural centres. At the same time, towns are more likely than rural centres to have proportions aged 65+ years in excess of 20 per cent. As a result they are experiencing a faster shift to natural decrease than rural centres.

In this paper we report on the approximate size, rate of change and contribution of migration and natural increase (births minus deaths) for 276 New Zealand towns and rural centres for the period 1976-2013. We also consider, by way of the Pearson correlation coefficient ( $r$ ), a limited set of explanatory variables following Johnson, Field and Poston (2015) in their comparison of the 'counties' of the United States (US) and Europe.

We undertook this exercise as part of a broader analysis seeking to understand why some towns and centres grow and others don't (Brabyn and Jackson forthcoming)<sup>3</sup>, following the formative work on urban populations by Grimes and Tarrant (2013). We also wanted to examine the extent to which New Zealand's towns and rural centres may be following their international counterparts and declining from a new form of decline (where net migration loss is accompanied by natural decrease<sup>4</sup>) rather than the 'old' form (where natural increase was insufficient to offset net migration loss), as proposed by Burcher and Mai (2005, cited in Matanle and Rausch 2011: 19-20, 46-47). However because the components of change (migration, births and deaths) are not available for most of these jurisdictions, we had to first extract them via statistical means. In order to accommodate boundary changes, births by age of mother and population by age and sex also had to be aggregated to 2013 geographic area boundaries. The data sources and methodology are outlined below, followed by an overview of the results. Eight appendices contain detailed data generated by the analysis.

#### **Data Sources and Methodology:**

Ordinarily New Zealand's census of population and dwellings is carried out in March at five year intervals (1976, 1981 etc.). However, with Statistics New Zealand's head office located in Christchurch, the 2011 Christchurch earthquakes caused the 2011 census to be delayed to March 2013, resulting in a disruption to the time series and a seven year gap between 2006 and 2013. Where relevant, results are annualised.

**Population data:** Mesh-block level counts of the usually resident population by 5-year age group (to 80+ years) and sex for all census years 1976-2013 were aggregated to the 2013 geographic area boundaries at urban area (UA) level (Database 1). The allocation to 2013 geographic areas was based on a 'user-derived correspondence'. The counts are not official statistics but should be thought of

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<sup>3</sup> Both papers are supported by a Royal Society Marsden Fund grant (Contract MAU1308 - The subnational mechanisms of the ending of population growth. Towards a theory of depopulation).

<sup>4</sup> Natural decrease is where deaths exceed births.

experimental estimates intended for use in research.<sup>5</sup> This exercise resulted in data for 143 urban areas and 133 rural centres.

**Birth and survivorship rates** for all years for which these data were required are not available at urban area or rural centre level, and were instead constructed using indirect standardisation. In order to construct birth rates we purchased a customised dataset from Statistics New Zealand (2016) covering births by 5-year age group of mother for the period 1997-2013 (June years) at territorial authority area (TA) level and 2013 geographic boundaries. Survivorship (Lx) rates by age and sex for each TA were accessed for the years 2005-07 and 2012-14 (Statistics New Zealand 2015a).

**Calculating missing birth rates via indirect standardisation** was done in two main steps. First, age-specific fertility rates were constructed for each of New Zealand's 67 TAs for the June years 1996-97, 2001-02, and 2006-2013, using number of births by age of mother as sourced above, and female estimated resident population counts for corresponding 5-year age groups 15-49 years sourced from Statistics New Zealand (2015b). The age-specific fertility rates for 1996 and 2001 were then summed and averaged (for each age group and each TA), and their ratio to the equivalent rates for total New Zealand constructed (drawing on Statistics New Zealand 2015c). These relative age-specific fertility ratios for each TA were then held constant and multiplied by the equivalent rates for total New Zealand for the missing years, 1976, 1981, 1986, and 1991. That is, the national values were retrospectively inflated or deflated by the relevant ratio, for each of the four observations 1976-1991, to generate approximate TA level age-specific rates for those years.

The second step involved constructing age-specific fertility rates for each town and rural centre, by applying the age-specific rates for the TA in which each is located to the number of women in each 5-year age group 15-49 years, in each town and rural centre (from Database 1).

The resulting birth rates and numbers at TA level differ slightly from those published by Statistics New Zealand (2015d) because they are constructed experimentally using both the 'estimated resident population count' (ERP) which includes adjustments for births, deaths and migration occurring between March and the ERP date (typically June or December), and the 'usually resident population count' (URP) at each five-yearly census (which is taken in March). As with the underlying population counts, the fertility data should be thought of as best approximations extracted for these research purposes.

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<sup>5</sup> Disclaimer: Access to the data for Database 1 was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in these tables are the work of the author, not Statistics New Zealand.

**Calculating missing survivorship rates via indirect standardisation** was similarly done in two steps. First,  $L_x$  values (the average number alive in each age group<sup>6</sup>) by 5-year age group and sex for each TA for two Life-Table periods, 2005-07 and 2012-14, were compared to the average number alive in the preceding 5-year age group. This process produced sex- and age-specific survivorship ratios for each five-year age group to 95+ years, for these two observations (for the purposes of this exercise, considered to be 2006 and 2013). The 2006 ratios were then compared with their national equivalents, to generate relative survivorship ratios for each TA for the missing years: 1976, 1981, 1986, 1991, 1996, and 2001. That is, for each of those observations, the national values were retrospectively inflated or deflated by the relevant sex- and age-specific survivorship ratios for each TA in 2005-2007, to generate approximate TA level rates.

The second step involved constructing sex- and age-specific survivorship rates for each town and rural centre, by applying the rates for the TA in which each is located, to the number of males and females in each five year age group, in each town and rural centre (Database 1). In order to survive age groups above 80 years, the 80+ year age group from Database 1 was prorated to 80-84, 85-89, 90-94 and 95+ years according to the New Zealand distribution (by sex) at those ages.

Again the resulting data are 'best approximations' based on calendar year survivorship ratios and census usually resident population counts.

When the resulting data are compared with published birth and death numbers for each TA, which are available for all years 1992-2013, there is strong correspondence, and the model is thus considered sufficiently robust to use for our purposes of calculating the components of change for towns and rural centres. This is done using cohort component analysis and the 'residual' method for separating net migration from net change (e.g., Rowland 2003, Chapter 12).

**Calculating components of change by the residual method:** The resulting fertility and survivorship rates were used in a conventional cohort component analysis to separate out the contributing effects of both net migration and natural increase. First, survivorship rates for each age group were applied to the baseline usually resident population numbers for each individual observation (separately by sex), and fertility rates applied to survived women aged 15-49 years. The resulting births were summed and apportioned male/female according to the standard sex ratio for New Zealand (105 males per 100 females). Births were entered at age 0-4 years, and all other age groups 'aged' by five years. The resulting 'expected' population by age and sex was then compared to the actual population at the relevant observation (for example, the survived and 'reproduced'

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<sup>6</sup>  $L_x$  values are a statistical function of the Life Table, via which life expectancy is calculated.

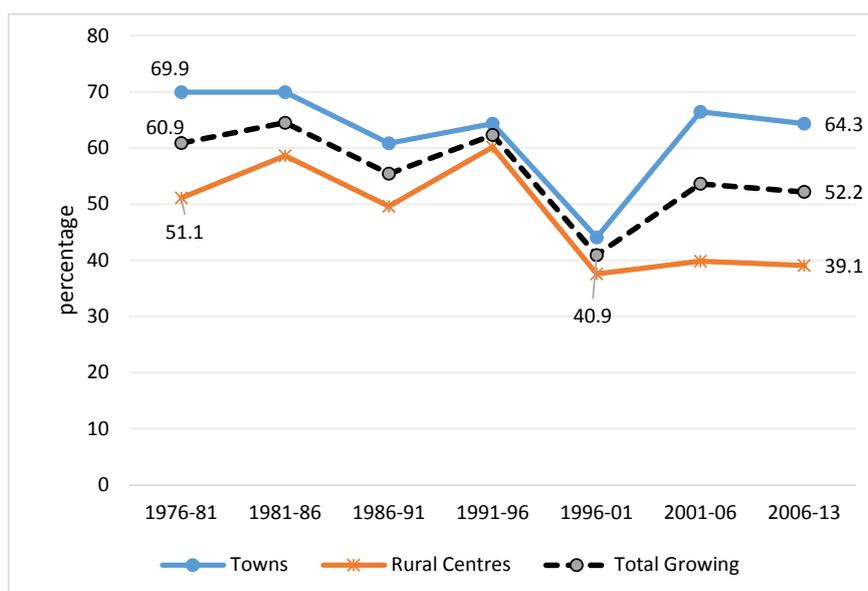
population from 1976 was compared to the actual population for 1981), and the difference at each age (five-year age group) taken to be a residual measure of net migration by age across the five year period. Subtracting total estimated migration from net change in population size between the two observations in turn generates the natural increase component, which in turn is disaggregated into its births and deaths components by summing each individual component generated at each step.

**Results:** As indicated, all results in this paper should be seen as best approximations produced primarily for research purposes and they differ slightly from numbers published by Statistics New Zealand (where such data are available); however comparison with published data indicates they are sufficiently robust. Additionally, because the model treats all towns and rural centres in an identical manner, the relative trends can be considered strongly indicative of actual differences in the demographic causes of growth and decline between these jurisdictions. It should be further noted that the analysis excludes a sizeable and overall increasing number of people from very small 'townships', collectively numbering 398,430 persons in 1976 and 514,000 in 2013, and aggregated in one category as 'other rural', and a small and overall declining number 'not classified', 4,620 in 1976 and 690 in 2013. Accordingly, when discussing the data for individual towns and rural centres, where relevant, we report on both number/percentage of towns, and percentage of the total New Zealand population, affected. We also draw briefly on demographic transition theory (Davis 1945; Notestein 1945; Coale 1973; Lutz, Sanderson and Sherbov 2004) to assist interpretation of the trends.

We find that the majority of New Zealand's 143 towns grew between each census 1976-2013 (Figure 1 and Table 1, see also Appendix A for underlying numbers). The only period where this did not occur was between 1996 and 2001, when just under 41 per cent experienced growth. However there is an overall decline to the trend, with just on 70 per cent of towns experiencing growth between 1976 and 1981, falling to 64.3 per cent between 2006 and 2013 (noting that the latter is also for a seven year period).

The trend was similar for New Zealand's 133 rural centres, but occurred at lower levels, with 51 per cent (N=68) growing at the beginning of the period and 39 per cent (N=52) at the end (Figure 1). In the relatively low growth period 1996-01, less than 38 per cent of rural centres grew (N=50), and as indicated, proportions have scarcely risen above that since. Overall, 61 per cent of towns and rural centres were growing at the beginning of the period, and 52 per cent at the end.

**Figure 1: Percentage of towns and rural centres growing in size between census years 1976-2013**



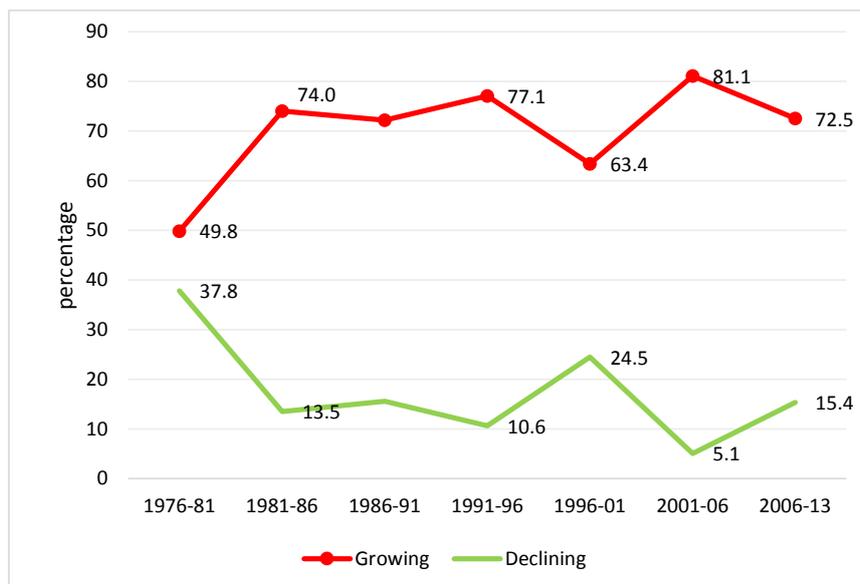
Missing from Figure 1 but shown on Table 1 are the small number of towns and rural centres that were experiencing zero growth at each observation. The trends for each individual jurisdiction indicate they are declining in size, so while have been shown separately in most of the following tables and graphs, they should be thought of as declining in most instances. With this caveat in mind they have been included among persons living in declining towns in Figure 2 and Table 2 (following).

**Table 1: Percentage of Towns and Rural Centres growing or declining in size or experiencing zero growth between census years, 1976-2013**

	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
<b>Towns</b>							
Growing	69.9	69.9	60.8	64.3	44.1	66.4	64.3
Declining	28.7	29.4	37.1	35.0	55.9	33.6	35.7
Zero Growth	1.4	0.7	2.1	0.7	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	143	143	143	143	143	143	143
<b>Rural Centres</b>							
Growing	51.1	58.6	49.6	60.2	37.6	39.8	39.1
Declining	47.4	39.8	50.4	39.8	62.4	59.4	59.4
Zero Growth	1.5	1.5	0.0	0.0	0.0	0.8	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	133	133	133	133	133	133	133
<b>Total</b>							
Growing	60.9	64.5	55.4	62.3	40.9	53.6	52.2
Declining	37.7	34.4	43.5	37.3	59.1	46.0	47.1
Zero Growth	1.4	1.1	1.1	0.4	0.0	0.4	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	276	276	276	276	276	276	276

Figure 2 and Table 2 express these data in terms of population numbers and percentages affected by growth and decline. The period 1976-2013 was, as elsewhere, one of continuing urbanisation for New Zealand. However the transition was nearly complete in 1976, with just on 86 per cent of the total New Zealand population living in the 143 towns in both 1976 and 2013 (at 2013 boundaries), and the proportion in rural centres declining slightly from 2.2 to 1.7 per cent. Accounting for the difference, the proportion living in an 'other rural' area has remained constant at just over 12 per cent (Table 2). New Zealand's continuing urbanisation over the period thus reflects not so much further rural to urban shifts, but rather an increase in the proportion of the population living in growing towns, from 48 to 72 per cent, and a decline in the proportion living everywhere else: in rural centres irrespective of whether growing or declining, and in declining towns.

**Figure 2: Percentage of New Zealand population living in growing/declining towns and rural centres, 1976-2013**



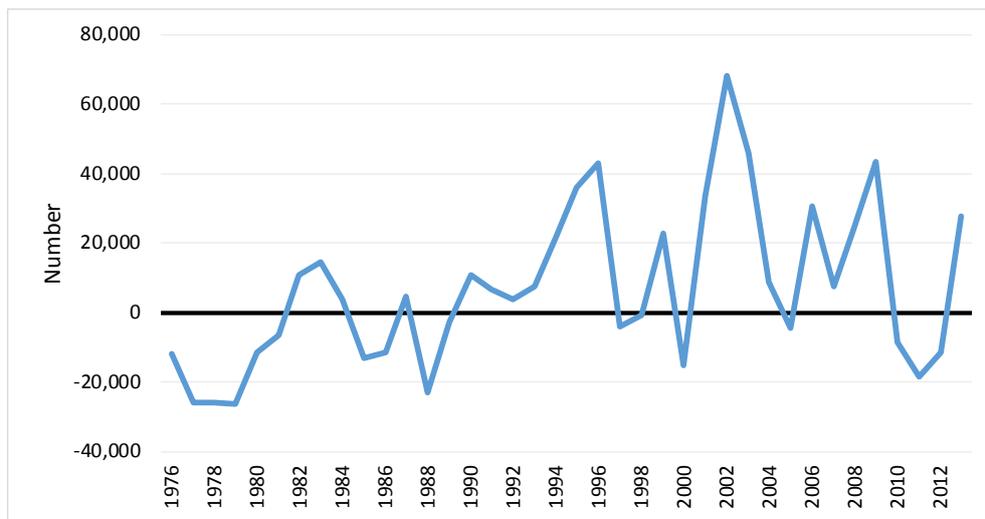
**Table 2: Number and percentage of New Zealand population living in growing/declining towns and rural centres, 1976-2013, by size/percentage at end year of period**

	Population in:							Percentage of New Zealand Population in:						
	1981	1986	1991	1996	2001	2006	2013	1981	1986	1991	1996	2001	2006	2013
Growing Towns	1525011	2372385	2398671	2740335	2342157	3286848	3040221	48.5	72.7	71.1	75.7	62.7	81.6	71.7
Declining Towns	1162017	412728	491616	358347	870819	187155	615210	37.0	12.6	14.6	9.9	23.3	4.6	14.5
Towns (Total People)	2687028	2785113	2890287	3098682	3212976	3474003	3655431	85.5	85.3	85.7	85.6	86.0	86.2	86.2
Growing Rural Centres	41142	42747	37452	47598	27153	34806	35940	1.3	1.3	1.1	1.3	0.7	0.9	0.8
Declining Rural Centres	27681	28470	34638	26967	44760	36702	36009	0.9	0.9	1.0	0.7	1.2	0.9	0.8
Rural Centres (Total People)	68823	71217	72090	74565	71913	71508	71949	2.2	2.2	2.1	2.1	1.9	1.8	1.7
Growing (Total)	1566153	2415132	2436123	2787933	2369310	3267354	3076161	49.8	74.0	72.2	77.1	63.4	81.1	72.5
Declining (Total)	1189698	441198	526254	385314	915579	205266	651219	37.8	13.5	15.6	10.6	24.5	5.1	15.4
Total People (Classified)	2755851	2856330	2962377	3173247	3284889	3472620	3727380	87.7	87.5	87.8	87.7	87.9	86.2	87.9
Other Rural (inc. Offshore)	386661	405171	410901	443412	451320	481617	513963	12.3	12.4	12.2	12.3	12.1	12.0	12.1
Not Classified	792	1749	654	1665	1095	828	690	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Population	3143304	3263250	3373932	3618324	3737304	4027956	4242033	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes: People living in towns experiencing zero growth have been included in declining towns

The trends indicate a correlation with international migration (Figure 3). In the low growth period 1996-2001 noted above, New Zealand experienced three years of net international migration loss, and in the high growth period, 2001-2006, significant net gain in all years, followed by negative migration again in 2005 and 2010-12. Undoubtedly these shifts are reflected in the growth and implied decline at urban and rural centre level. However New Zealand also experienced net international migration loss across much of the 1970s and 1980s, when the largest proportions of towns and rural centres grew, suggesting that international migration does not explain everything. Indeed most of New Zealand's growth has historically been due to natural increase—the difference between births and deaths—which has tended to conceal underlying migration loss. Even in numerically dominant Auckland, natural increase has accounted for around 58 per cent of growth over the past two decades (Jackson 2016: 49, see also Pool, Baxendine and Cochrane 200; dine, Cochrane and Lindop 2005). This component is now diminishing, as population ageing results in proportionately fewer people at reproductive age, and will end in most areas over the next few decades (Jackson and Cameron 2016). Accordingly, we present the findings first in terms of 'cluster' according to population size in 1976, and then in terms of the contribution to growth or decline of net migration and natural increase.

**Figure 3: Estimated Net Migration (December Years), 1976-2013**



Source: Statistics New Zealand 2015b

**Change based on usual resident population size in 1976.** Following Grimes and Tarrant (2013), Figure 4 shows data for all towns and rural centres with over 3,000 people in 1976, clustered into 10 groups and covering a total of 78 towns. These towns accounted for 81.8 per cent of the New Zealand population in 1976 and 82.4 per cent in 2013, essentially no change. In order to dampen down its dominant size for comparative purposes, Auckland is presented under its four separate zones (Northern, Central, Western and Southern), although collectively it was the single largest urban area in all years, with Christchurch second-largest, dropping to 3<sup>rd</sup> after the 2011 earthquakes. Among the Auckland zones, Central Auckland was the single largest in both 1976 and 2013, but the slowest growing (+46 per cent between 1976 and 2013), and in fact experienced short-term decline between 1976 and 1981. Southern Auckland has doubled in size, while Northern and Western Auckland have each almost done so (see Table 3).

The largest town in 1976 in each group is depicted by a dashed line on the graphs and bolded font on Table 3. Focusing first on these data it can be seen that among the groups, the largest town in 1976 remained the largest in 2013 only two cases: Central Auckland Zone (Group 1) and Cambridge Zone (Group 7); in all other cases the 1976 leader has been superseded by one or more towns. Notable also is the number of towns among these relatively large areas (compared with town populations numbering fewer than 3,000 in 1976, see below and Appendix B) evidencing population decline, with 27 of these 78 'large' towns (34.6 per cent) smaller in 2013 than in 1996. Additionally, a general pattern emerges which indicates that the smaller the group's population size in 1976, the greater the variance in 2013, observable from Table 3 in terms of greater changes in rank.

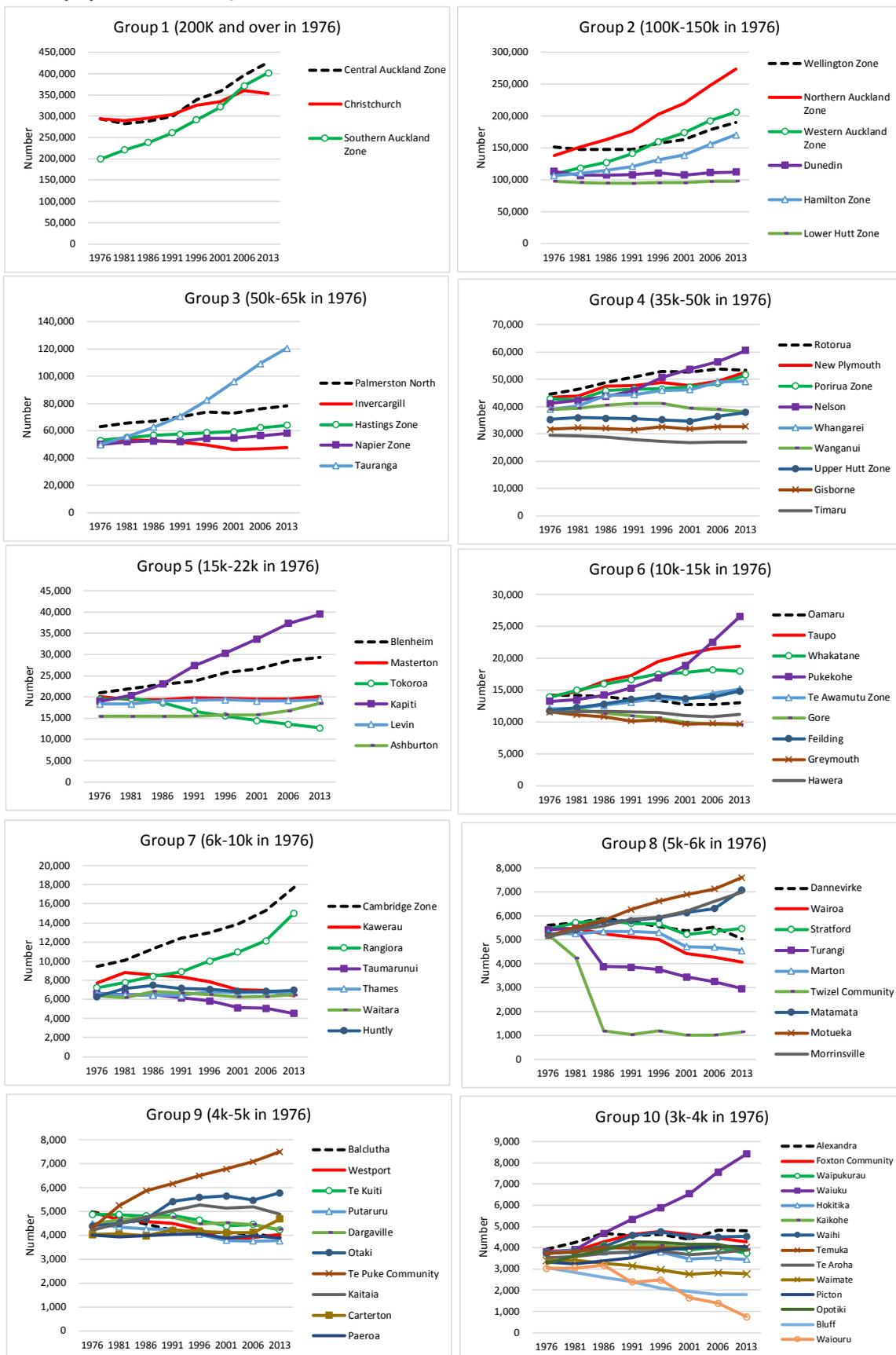
The changes in rank on Table 3 (based on all 276 towns and rural centres) between 1976 and 2013 indicate that 11 of the largest towns in 1976 were no longer among those towns in 2013, prominent among them Twizel (falling from #51 to #136), Bluff (from #77 to #109) and Waiouru (from #78 to #171). The 11 towns which replaced them are discussed further below.

Overall, we find a generally clustered pattern of growth and decline that fits well with Grimes and Tarrant's (2013) results for their 60 main urban areas.<sup>7</sup> Because we start from a later base (1976) than Grimes and Tarrant, we cannot directly compare the data, but see similar trends and patterns. For example, although grouped with different towns in 1926 and 1976, Tauranga's runaway growth has continued among our towns, rising from smallest to largest of our Group 3 towns and from #14 to #8. Rising from #18 to #13, Nelson similarly shows the same escalating growth among our Group 4 towns as it does among Grimes and Tarrant's Group 5 towns, although in our Group 4 towns it leads the group from 2001, while in 2006 it is still ascending through Grimes and Tarrant's Group 5 towns. Decline over the 1976-2006 period in the Grimes and Tarrant data is also reflected among our towns, notably for Dunedin and Wanganui which featured in Grimes and Tarrant's largest group in 1926, and in our Group 2 and 4 towns, respectively, in 1976. However in terms of rank they remain among the larger towns, Dunedin falling from #7 to #9 and Wanganui from #20 to #21. Increasing variance between growth and decline *vis-à-vis* group baseline size is also greater among Grimes and Tarrant's smaller than larger towns, as it is with ours. Generally, therefore, both studies agree that some of the larger towns in both 1926 and 1976 have not been immune to decline, while many of the smaller towns have grown significantly—but with increasing variance among each group, the smaller the baseline size.

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<sup>7</sup> Towns were included in the Grimes and Tarrant database if they met at least one of the following criteria: a) They were categorised as an "urban area" by Statistics New Zealand (SNZ) in 2006; b) They were categorised as a "secondary urban area" by SNZ in 1986; c) The borough population was at least 3,000 in 1956; d) The borough population was at least 1,500 in 1926. These criteria capture all significant towns in 1926 and 1956, as well as larger urban areas in 1986 and 2006, but notably exclude towns like Kawerau and Queenstown which did not meet all criteria.

**Figure 4: Numbers 1976-2013 for towns over 3,000 in 1976, clustered by size in 1976 (usually resident population count)**



**Table 3: Numbers, change (%) and rank (1976, 2013) for towns over 3,000 people in 1976 and clustered by size in 1976 (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change 1976-2013 (%)	Rank in 1976	Rank in 2013	Change in Rank
<b>Group 1</b>												
Central Auckland Zone	294627	281757	288873	299628	338163	359454	395982	427101	45.0	1	1	0
Christchurch	293298	290169	295746	303411	325251	334107	360765	353346	20.5	2	3	(1)
<b>Southern Auckland Zone</b>	<b>199110</b>	<b>221223</b>	<b>238212</b>	<b>261426</b>	<b>291654</b>	<b>321516</b>	<b>371718</b>	<b>401892</b>	<b>101.8</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Group 2</b>												
Wellington Zone	151695	147054	147087	147792	156987	163086	178680	190062	25.3	4	6	(2)
<b>Northern Auckland Zone</b>	<b>138006</b>	<b>151263</b>	<b>162888</b>	<b>176253</b>	<b>202284</b>	<b>219894</b>	<b>248115</b>	<b>273588</b>	<b>98.2</b>	<b>5</b>	<b>4</b>	<b>1</b>
Western Auckland Zone	109182	118146	126975	140940	159738	173616	192318	206247	88.9	6	5	1
Dunedin	113208	106968	107331	107523	110790	107088	111000	112023	(1.0)	7	9	(2)
Hamilton Zone	106188	109938	114723	120687	131331	138792	155262	170562	60.6	8	7	1
Lower Hutt Zone	97398	95724	94776	94380	95382	95022	97146	97650	0.3	9	10	(1)
<b>Group 3</b>												
Palmerston North	62958	65667	66963	70287	73926	72777	76110	78201	24.2	10	11	(1)
Invercargill	53175	53745	52818	51540	49404	46305	46773	47895	(9.9)	11	19	(8)
Hastings Zone	52887	54963	56859	57402	58587	59208	62118	63999	21.0	12	12	0
Napier Zone	50127	51846	52524	52122	54297	54537	56286	58218	16.1	13	14	(1)
<b>Tauranga</b>	<b>49881</b>	<b>55752</b>	<b>62574</b>	<b>70443</b>	<b>82383</b>	<b>95934</b>	<b>109131</b>	<b>120414</b>	<b>141.4</b>	<b>14</b>	<b>8</b>	<b>6</b>
<b>Group 4</b>												
Rotorua	44625	46425	48855	50772	52953	52605	53766	53268	19.4	15	15	0
New Plymouth	43299	43818	47370	47652	48870	47763	49281	52686	21.7	16	16	0
Porirua Zone	42792	42606	45825	46428	46443	47220	48396	51537	20.4	17	17	0
<b>Nelson</b>	<b>41058</b>	<b>42270</b>	<b>43725</b>	<b>45476</b>	<b>50694</b>	<b>53688</b>	<b>56367</b>	<b>60558</b>	<b>47.5</b>	<b>18</b>	<b>13</b>	<b>5</b>
Whangarei	38979	40170	44118	44406	45963	46104	49080	49167	26.1	19	18	1
Wanganui	38952	39435	40512	41100	41097	39420	38988	38088	(2.2)	20	21	(1)
Upper Hutt Zone	35253	35919	35670	35547	35190	34599	36399	37875	7.4	21	22	(1)
Gisborne	31650	32205	32016	31401	32607	31719	32526	32694	3.3	22	23	(1)
Timaru	29451	29301	28692	27783	27171	26745	26886	27051	(8.1)	23	25	(2)
<b>Group 5</b>												
Blenheim	21018	22017	22992	23781	25698	26607	28443	29298	39.4	24	24	0
Masterton	20088	19431	19353	19767	19689	19497	19494	20100	0.1	25	28	(3)
Tokoroa	19491	19605	18585	16650	15528	14430	13527	12714	(34.8)	26	37	(11)
<b>Kapiti</b>	<b>19005</b>	<b>20340</b>	<b>23037</b>	<b>27345</b>	<b>30288</b>	<b>33672</b>	<b>37347</b>	<b>39498</b>	<b>107.8</b>	<b>27</b>	<b>20</b>	<b>7</b>
Levin	18324	18297	19071	19290	19326	19047	19134	19437	6.1	28	29	(1)
Ashburton	15474	15438	15474	15531	15786	15774	16740	18468	19.3	29	30	(1)
<b>Group 6</b>												
Oamaru	14190	14184	13968	13539	13416	12696	12681	13050	(8.0)	30	36	(6)
Taupo	14007	14754	16359	17301	19443	20610	21510	21864	56.1	31	27	4
Whakatane	13893	14943	15942	16662	17496	17778	18207	17934	29.1	32	31	1
<b>Pukekohe</b>	<b>13248</b>	<b>13485</b>	<b>14217</b>	<b>15324</b>	<b>16914</b>	<b>18825</b>	<b>22518</b>	<b>26526</b>	<b>100.2</b>	<b>33</b>	<b>26</b>	<b>7</b>
Te Awamutu Zone	12096	12129	12603	13089	13710	13449	14454	15180	25.5	34	33	1
Gore	11745	11940	11352	10956	10617	9927	9648	9552	(18.7)	35	42	(7)
Feilding	11718	12246	12816	13530	14040	13641	13890	14823	26.5	36	35	1
Greymouth	11547	11109	10836	10161	10353	9675	9777	9660	(16.3)	37	40	(3)
Hawera	11538	11580	11643	11535	11436	10944	10773	11220	(2.8)	38	39	(1)
<b>Group 7</b>												
Cambridge Zone	9417	10119	11316	12372	13005	13890	15300	17706	88.0	39	32	7
Kawerau	7722	8784	8565	8337	7830	6975	6921	6363	(17.6)	40	54	(14)
<b>Rangiora</b>	<b>7215</b>	<b>7761</b>	<b>8415</b>	<b>8877</b>	<b>9999</b>	<b>10950</b>	<b>12138</b>	<b>15018</b>	<b>108.1</b>	<b>41</b>	<b>34</b>	<b>7</b>
Taumarunui	6612	6522	6468	6141	5832	5136	5052	4503	(31.9)	42	63	(21)
Thames	6603	6432	6414	6411	6810	6705	6756	6693	1.4	43	50	(7)
Waitara	6339	6177	6837	6678	6507	6246	6291	6483	2.3	44	52	(8)
Huntly	6279	7158	7464	7152	7068	6819	6834	6957	10.8	45	49	(4)
<b>Group 8</b>												
Dannevirke	5610	5700	5880	5769	5541	5379	5520	5043	(10.1)	46	57	(11)
Wairoa	5457	5463	5250	5112	5007	4428	4272	4050	(25.8)	47	72	(25)
Stratford	5445	5709	5799	5688	5664	5229	5337	5463	0.3	48	56	(8)
Turangi	5415	5484	3870	3852	3747	3441	3240	2955	(45.4)	49	87	(38)
Marton	5280	5247	5337	5355	5301	4710	4680	4548	(13.9)	50	61	(11)
Twizel Community	5223	4233	1179	1020	1179	1011	1017	1137	(78.2)	51	136	(85)
Matamata	5175	5409	5769	5805	5907	6138	6309	7092	37.0	52	47	5
<b>Motueka</b>	<b>5151</b>	<b>5514</b>	<b>5814</b>	<b>6270</b>	<b>6612</b>	<b>6891</b>	<b>7128</b>	<b>7605</b>	<b>47.6</b>	<b>53</b>	<b>45</b>	<b>8</b>
Morrinsville	5127	5385	5571	5847	5937	6198	6603	6996	36.5	54	48	6
<b>Group 9</b>												
Balclutha	4983	4725	4467	4212	4137	4104	4065	3918	(21.4)	55	76	(21)
Westport	4950	4650	4581	4494	4239	3783	3897	4032	(18.5)	56	74	(18)
Te Kuiti	4878	4863	4815	4827	4629	4392	4452	4221	(13.5)	57	68	(11)
Putaruru	4488	4350	4260	4248	4047	3786	3765	3777	(15.8)	58	82	(24)
Dargaville	4467	4647	4767	4764	4479	4530	4455	4251	(4.8)	59	66	(7)
Otaki	4386	4494	4680	5421	5580	5643	5463	5778	31.7	60	55	5
<b>Te Puke Community</b>	<b>4299</b>	<b>5247</b>	<b>5868</b>	<b>6165</b>	<b>6495</b>	<b>6774</b>	<b>7080</b>	<b>7494</b>	<b>74.3</b>	<b>61</b>	<b>46</b>	<b>15</b>
Kaitiaki	4215	4494	4749	5049	5280	5148	5202	4887	15.9	62	58	4
Carterton	4029	4056	3984	4212	4167	4101	4122	4686	16.3	63	60	3
Paeroa	4017	3924	3996	4026	4062	3879	3975	3885	(3.3)	64	80	(16)
<b>Group 10</b>												
Alexandra	3936	4248	4698	4557	4617	4407	4824	4800	22.0	65	59	6
Foxton Community	3846	3861	4278	4641	4761	4620	4446	4287	11.5	66	65	1
Waipukurau	3810	3771	4116	3957	4002	3909	4008	3741	(1.8)	67	83	(16)
<b>Waiuku</b>	<b>3792</b>	<b>3918</b>	<b>4683</b>	<b>5349</b>	<b>5895</b>	<b>6537</b>	<b>7563</b>	<b>8427</b>	<b>122.2</b>	<b>68</b>	<b>43</b>	<b>25</b>
Hokitika	3765	3876	3789	3750	3801	3480	3537	3450	(8.4)	69	85	(16)
Kaikohe	3741	3816	4014	4137	4107	4023	4113	3915	4.7	70	77	(7)
Waipi	3741	3828	4062	4575	4743	4524	4503	4527	21.0	71	62	9
Temuka	3735	3807	3984	4005	3981	3996	4044	4047	8.4	72	73	(1)
Te Aroha	3531	3597	3732	3831	3840	3684	3771	3906	10.6	73	79	(6)
Waimate	3393	3423	3279	3141	2952	2757	2835	2775	(18.2)	74	88	(14)
Picton	3324	3231	3387	3531	3906	3990	4086	4056	22.0	75	70	5
Opotiki	3261	3603	3870	4287	4263	4158	4176	3876	18.9	76	81	(5)
Bluff	3075	2835	2601	2409	2082	1932	1788	1794	(41.7)	77	109	(32)
Waiouru	3033	3051	3171	2376	2478	1647	1383	741	(75.6)	78	171	(93)
<b>Total these towns</b>	<b>2537946</b>	<b>2585274</b>	<b>2673159</b>	<b>2771910</b>	<b>2969394</b>	<b>3077721</b>	<b>3326187</b>	<b>3493329</b>	<b>37.6</b>	<b>...</b>	<b>...</b>	<b>...</b>
These towns as % of Total NZ	81.8	82.2	81.9	82.2	82.1	82.4	82.6	82.4	...	...	...	...

Pre-empting the later analysis on the demographic contributors to the growth and decline of towns and rural centres, we find no instances of net decline at any observation slowing the growth of the extra-ordinary ‘leader’ towns of each group, and only occasional instances of either natural decrease (three observations for Kapiti and one for Motueka) or net migration loss (one observation each for Western Auckland, Pukekohe and Waiuku); the two negative components never occur together. For the most part these towns have experienced both unchecked natural increase and net migration gains. However with the exception of the four Auckland Zones (all in Groups 1 and 2) and Pukekohe (the runaway leader of Group 6), the remaining fastest growing towns all have somewhat older age structures than the average (Appendix C), indicating the presence of substantial retiree migration. This was particularly the case for Tauranga, Nelson, Kapiti, Cambridge, Motueka and Te Puke, the fastest growing towns of Groups 3, 4, 5, 7, 8 and 9, with Waiuku, the leading town of Group 10, close behind. This is of some importance, because in total, those living in towns have somewhat younger age structures than those living in rural centres, and have not aged as fast. The findings suggest that these older ‘leader’ towns will soon begin to experience natural decrease, as has already been evidenced for Kapiti and Motueka, and this onset is likely to check their currently greater growth.

We do not report in detail on the data for all towns and rural centres with populations smaller than 3,000 people in 1976 (refer Appendix B). Instead we turn to a brief analysis of those that have either grown or declined substantially since 1976. Substantial growth will refer to towns and rural centres with populations of 3,000 or fewer in 1976 that have at least doubled in size (Table 4); significant decline to similarly sized towns and rural centres in 1976 that have declined by more than 25 per cent (Table 5).

**Jurisdictions that have more than doubled in size since 1976:** Table 4 indicates that 40 of jurisdictions with fewer than 3,000 people in 1976 have more than doubled in size since 1976, with 21 growing by over 200 per cent, and four by over 500 per cent. The 11 towns replacing the 1976 leaders in Table 3 are all in this group: Rolleston (#41 in 2013), Wanaka (#53), Snell’s Beach (#67), Queenstown (#38), Cromwell (#69), Whitianga (#64), Kerikeri (#51), Lincoln (#75), Katikati (#71), Waiheke Island (#44) and Warkworth (#78). Of note is that all are either adjacent to a large city, beach or lake, or are a major tourist centre—as are most other towns and rural centres on Table 4. In 1976 these jurisdictions accounted for just 1.0 per cent of New Zealand’s population, and in 2013, for 2.5 per cent.

**Table 4: Numbers, change (%) and rank (1976, 2013) for towns and rural centres with populations fewer than 3,000 people in 1976 and more than doubling in size 1976-2013, ordered by growth rate (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change in size 1976- 2013 (%)	Rank in 1976 (of 276)	Rank in 2013 (of 276)	Change in Rank
Rolleston	1059	933	1107	1308	1467	2667	4953	9555	802.3	126	41	85
RurC_Pegasus	129	18	12	30	42	39	33	1050	714.0	273	144	129
Mangawhai Heads	162	252	435	543	699	720	852	1086	570.4	270	142	128
RurC_Kinloch	81	138	174	222	258	279	327	489	503.7	275	209	66
Arrowtown	420	447	738	900	1428	1692	2151	2445	482.1	216	93	123
Wanaka	1176	1260	1602	1851	2523	3330	5037	6474	450.5	122	53	69
RurC_Kaukapakapa	81	75	99	117	162	180	450	444	448.1	274	221	53
Snells Beach	801	1173	2076	2739	3177	3648	3948	4239	429.2	145	67	78
RurC_Mahurangi	72	81	159	150	168	204	282	354	391.7	276	246	30
RurC_Athenree	147	186	270	396	504	516	612	675	359.2	271	181	90
Woodend	600	1005	1224	1260	1584	2247	2679	2751	358.5	176	89	87
RurC_Parakai Urban	240	303	477	600	735	798	858	1047	336.3	261	146	115
Queenstown	2925	3042	4059	5145	7539	8565	10440	11502	293.2	79	38	41
RurC_Pauanui Beach	207	252	393	582	645	699	744	750	262.3	264	169	95
RurC_Haruru Falls	249	327	429	495	594	678	786	867	248.2	259	155	104
Mapua	606	744	960	1041	1269	1617	1878	2013	232.2	175	100	75
Cromwell	1278	2310	3423	2709	2613	2667	3585	4146	224.4	115	69	46
Whitianga	1365	1704	2094	2424	2994	3078	3765	4368	220.0	112	64	48
Kerikeri	2082	2598	3096	3468	4197	4881	5856	6504	212.4	90	51	39
Lincoln	1257	1386	1914	1686	2367	2208	2835	3924	212.2	118	75	43
RurC_Te Horo	267	327	414	516	612	639	675	807	202.2	255	160	95
Katikati Community	1374	1704	2016	2346	2661	2916	3579	4056	195.2	111	71	40
Waiheke Island	2838	3081	4293	5430	6285	7137	7689	8238	190.3	81	44	37
Whangamata	1218	1521	2244	3174	3765	3963	3555	3474	185.2	120	84	36
RurC_Waikuku	318	360	447	588	726	825	858	900	183.0	244	153	91
RurC_Island View-Pios Beach	192	249	321	441	567	609	561	543	182.8	266	197	69
RurC_Muriwai Beach	405	420	567	738	879	1077	1044	1131	179.3	221	137	84
Brightwater	651	858	933	1023	1242	1425	1791	1749	168.7	168	110	58
RurC_Egmont Village	225	354	459	492	495	468	483	597	165.3	262	189	73
Ngunguru	594	636	984	1017	1266	1290	1425	1527	157.1	179	118	61
Warkworth	1602	1788	2052	2295	2475	2826	3270	3909	144.0	105	78	27
RurC_Himatangi Beach	177	216	339	468	528	540	450	429	142.4	269	230	39
Taipa Bay-Mangonui	708	876	1038	1266	1494	1587	1569	1662	134.7	159	114	45
Tairua	531	639	933	1137	1440	1461	1266	1230	131.6	199	134	65
RurC_Maketu Community	462	681	732	864	987	999	1179	1047	126.6	211	145	66
Amberley	705	846	858	867	1023	1140	1302	1575	123.4	160	117	43
RurC_Maungatapere	597	708	753	684	924	1053	1278	1323	121.6	178	129	49
Wakefield	951	996	1122	1245	1419	1497	1875	2106	121.5	133	99	34
Helensville	1266	1554	1581	1896	2079	2217	2532	2643	108.8	116	91	25
Raglan	1323	1416	1809	2316	2634	2667	2637	2736	106.8	114	90	24
Total these towns	31341	37464	48636	56469	68466	77049	91089	106365	...	...	...	...
These towns as % of Total NZ	1.0	1.2	1.5	1.7	1.9	2.1	2.3	2.5	...	...	...	...

**Jurisdictions that have declined by more than 20 per cent:** At the other end of the scale, 41 towns and rural centres each declined by more than 25 per cent across the 1976-2013 period, and all declined in rank (Table 5). Notable among these are forestry, mining and hydro towns and rural centres, and towns/centres adjacent to previously important railway stations and military camps. All are essentially rural and none match the three main characteristics of the above high growth rate small towns and centres. None were among the leader group in 1976, but five were nevertheless in the top 100 (of 276): Patea (#92 in 1976), Taihape (#83), Murapara (#80), Moerewa (#89) and Shannon (#99). In 1976 these towns and rural centres accounted for 1.2 per cent of New Zealand's population, and in 2013, for just 0.5 per cent.

**Table 5: Numbers, change (%) and rank (1976, 2013) for towns and rural centres with populations fewer than 3,000 people in 1976 and declining more than 25 per cent 1976-2013, ordered by rate of decline (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change in size 1976- 2013 (%)	Rank in 1976 (of 276)	Rank in 2013 (of 276)	Change in Rank
RurC_Otematata	690	417	414	420	360	243	186	186	-73.0	163	275	(112)
RurC_Ohura	435	420	438	333	372	222	162	129	-70.3	213	276	(63)
RurC_Ohai	717	717	696	522	513	399	354	303	-57.7	157	254	(97)
RurC_Mangakino	1662	1608	1608	1584	1500	1281	1020	744	-55.2	101	170	(69)
RurC_Kaingaroa Forest	930	795	699	588	582	549	486	423	-54.5	135	231	(96)
RurC_Waitoa	579	594	564	534	438	360	318	303	-47.7	184	255	(71)
Patea	2028	1989	1608	1491	1401	1302	1143	1098	-45.9	92	140	(48)
Taihape	2784	2592	2490	2118	2007	1806	1788	1509	-45.8	83	120	(37)
RurC_Tuai	402	354	369	327	267	270	252	219	-45.5	222	272	(50)
RurC_Nightcaps	534	462	471	426	396	339	309	294	-44.9	197	261	(64)
RurC_Kaponga	534	423	420	384	393	351	372	303	-43.3	196	256	(60)
Murupara	2913	3006	2595	2394	2205	1959	1839	1656	-43.2	80	115	(35)
RurC_Meremere	813	645	618	525	468	354	462	468	-42.4	144	214	(70)
RurC_Harihari	552	528	558	429	390	348	348	327	-40.8	192	250	(58)
RurC_Tuatapere	915	912	873	750	738	681	582	558	-39.0	136	194	(58)
RurC_Owaka	474	450	411	429	402	363	327	303	-36.1	208	257	(49)
RurC_Rahotu	381	357	339	342	312	300	252	252	-33.9	225	270	(45)
RurC_Waverley	1197	1260	1152	1008	960	906	861	798	-33.3	121	161	(40)
RurC_Eketahuna	654	597	654	714	642	579	456	441	-32.6	167	222	(55)
Moerewa	2100	2082	1929	1899	1695	1659	1536	1431	-31.9	89	125	(36)
RurC_Ratana Community	477	456	462	429	441	426	366	327	-31.4	207	251	(44)
RurC_Ranfurly	966	990	972	906	846	732	711	663	-31.4	130	183	(53)
RurC_Kaitangata	1107	1053	951	882	864	789	810	762	-31.2	123	166	(43)
RurC_Hector-Ngakawau	318	330	318	306	357	300	231	219	-31.1	242	273	(31)
RurC_Nuhaka	372	357	393	339	327	327	294	258	-30.6	228	268	(40)
RurC_Lumsden Community	582	591	546	501	504	450	411	405	-30.4	183	235	(52)
RurC_Hunterville	615	573	510	507	453	507	441	429	-30.2	173	226	(53)
RurC_Piopio	567	534	501	507	486	471	468	396	-30.2	187	236	(49)
RurC_Clinton	408	468	411	387	345	318	291	285	-30.1	218	264	(46)
RurC_Otautau	951	924	882	846	813	729	753	669	-29.7	134	182	(48)
Ohakune	1395	1389	1437	1320	1389	1293	1098	987	-29.2	109	150	(41)
RurC_Lawrence	582	582	567	534	537	474	432	417	-28.4	182	233	(51)
RurC_Burnham Military Camp	1518	1767	1656	1335	1467	1137	1206	1089	-28.3	107	141	(34)
RurC_Frasertown	354	354	345	366	333	291	300	255	-28.0	232	269	(37)
RurC_Wyndham	738	774	711	645	639	573	516	534	-27.6	156	200	(44)
RurC_Roxburgh	717	708	687	681	741	618	612	522	-27.2	158	202	(44)
RurC_Kerepehi	585	531	546	504	504	501	513	429	-26.7	181	227	(46)
RurC_Waitati	699	354	384	504	531	495	501	513	-26.6	162	205	(43)
Shannon	1692	1500	1632	1557	1446	1407	1371	1242	-26.6	99	132	(33)
RurC_Manutuke	699	663	723	711	738	639	603	522	-25.3	161	203	(42)
RurC_Pareora	573	546	516	492	501	465	450	429	-25.1	186	228	(42)
Total these towns	37209	35652	34056	31476	30303	27213	25431	23097	...	...	...	...
These towns as % of Total NZ	1.2	1.1	1.0	0.9	0.8	0.7	0.6	0.5	...	...	...	...

**Slower growing/declining towns and rural centres:** Sitting in between these extremes of growth and decline among New Zealand’s smaller towns and rural centres are the remaining 117 towns and centres which either grew by less than 100 per cent (72 towns), or declined by less than 25 per cent (45 towns) – included at Appendix B. By and large, the growing towns/centres in this group are characterised by similar features to those noted for larger growing towns/centres in Tables 4 and 5 above: proximity to a large city, beach or lake, or are a major tourist centre; they also include a number of rural townships arguably gaining population with changes in agricultural land-use over the late 1990s and early 2000s, namely changes from forestry, sheep and beef to dairying. Most small and ‘moderately’ declining towns/centres, on the other hand, have similar characteristics to

those on Table 5: a predominance of forestry, mining and hydro towns, and proximity to previously important railway stations and military camps; they also include towns somewhat more remote from main centres. This is not to say that they do not also have among them beach and life-style attractions, such as Opunake (declining by 18 per cent and falling from #103 to #128) and Tokomaru Bay (declining by 22 per cent and falling from #202 to #238), but rather that they are typically more remote than their growing counterparts.

**Demographic drivers of change:** Although population change is popularly equated with migration, two other factors play a large and often unacknowledged role: natural increase or decrease, and ageing-in-place whereby larger cohorts replace smaller ones, or vice-versa (known as population ‘momentum’). Here our cohort component projection methodology accounts for underlying changes in cohort size, so momentum is not examined as a separate item. Instead we turn first and briefly to the contribution of natural increase, estimated, as outlined above, by applying age-specific birth rates to the survived and migrated female reproductive age population at each five-year observation. We then turn to the difference in number between the survived and reproduced cohorts from one census year (the ‘expected’ population at time t+5) and the estimated population (by age and sex) at the subsequent census, their sum providing an approximation of net migration. Finally we present the combined information (contribution of natural increase and net migration) in terms of correlations with changes in size, structural ageing, and each other. The data cover all 143 towns and 133 rural centres.

**Contribution to change by natural increase:** The percentage of New Zealand’s towns and rural centres experiencing natural increase grew slightly across the period 1976-2013, from 82.2 to 85.9 per cent (Table 6), with declining jurisdictions more likely than their growing counterparts to experience natural increase across the earlier part of the period, and vice-versa towards the end (Figure 5).

**Figure 5: Percentage of Towns and Rural Centres Experiencing Natural Increase, 1976-2013, by Whether Growing or Declining**

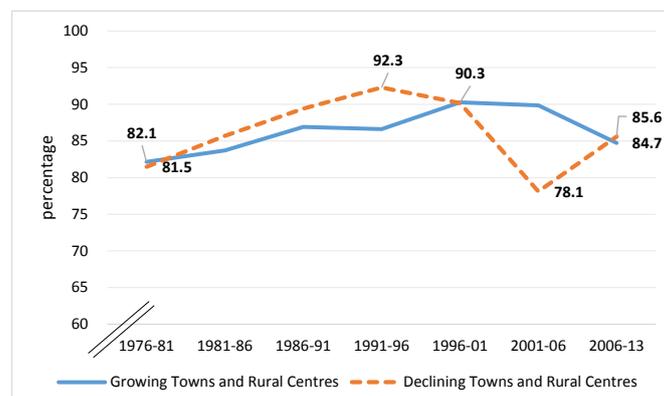


Table 6 shows that the overall increase in natural increase was experienced by rural centres only, with that increase greater for growing than declining rural centres. Both growing and declining towns experienced a small reduction in the proportions gaining from natural increase, with that decline greater for growing towns. At the same time, a slightly greater proportion of towns than rural centres experienced natural increase at all but one observation (1991-96).

For declining towns and rural centres the proportion experiencing natural increase also peaked earlier than for growing jurisdictions, around 1991 and 1996 respectively (Figure 5)—indicating the onset of natural decrease for the remaining jurisdictions.

**Table 6: Number and Percentage of Towns and Rural Centres Experiencing Natural Increase, 1976-2013 by Whether Growing or Declining**

	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13	Change 1976-2013
<b>Number Experiencing Natural Increase</b>								
<b>Towns</b>								
Growing Towns	87	85	76	79	58	86	78	...
Declining Towns	39	39	52	46	75	42	46	...
Zero Growth	0	1	2	1	0	0	0	...
Total Towns, Natural Increase	126	125	130	126	133	128	124	...
<b>Rural Centres</b>								
Growing Rural Centres	51	64	57	70	44	47	44	...
Declining Rural Centres	49	45	58	50	72	58	67	...
Zero Growth	1	1	0	0	0	1	2	...
Total Rural Centres, Natural Increase	101	110	115	120	116	106	113	...
<b>Total</b>								
Growing Towns and Rural Centres	138	149	133	149	102	133	122	...
Declining Towns and Rural Centres	88	84	110	96	147	100	113	...
Zero Growth	1	2	2	1	0	1	2	...
Total Towns/Rural Centres, Natural Increase	227	235	245	246	249	234	237	...
<b>Percentage Experiencing Natural Increase</b>								
<b>Towns</b>								
Growing Towns	87.0	85.0	87.4	85.9	92.1	90.5	84.8	(2.5)
Declining Towns	90.7	90.7	92.9	90.2	93.8	87.5	90.2	(0.6)
Zero Growth	0.0	0.7	1.4	0.7	0.0	0.0	0.0	...
Total Towns (143), Natural Increase	88.1	87.4	90.9	88.1	93.0	89.5	86.7	(1.6)
<b>Rural Centres</b>								
Growing Rural Centres	75.0	82.1	86.4	87.5	88.0	88.7	84.6	12.8
Declining Rural Centres	75.4	81.8	86.6	94.3	86.7	72.5	82.7	9.7
Zero Growth	0.7	0.7	0.0	0.0	0.0	0.7	1.5	100.0
Total Rural Centres (133), Natural Increase	75.9	82.7	86.5	90.2	87.2	79.7	85.0	11.9
<b>Total</b>								
Growing Towns and Rural Centres	82.1	83.7	86.9	86.6	90.3	89.9	84.7	3.1
Declining Towns and Rural Centres	81.5	85.7	89.4	92.3	90.2	78.1	85.6	5.1
Zero Growth	0.4	0.7	0.7	0.4	0.0	0.4	0.7	101.4
Total Towns/Rural Centres (276), Natural Increase	82.2	85.1	88.8	89.1	90.2	84.8	85.9	4.4

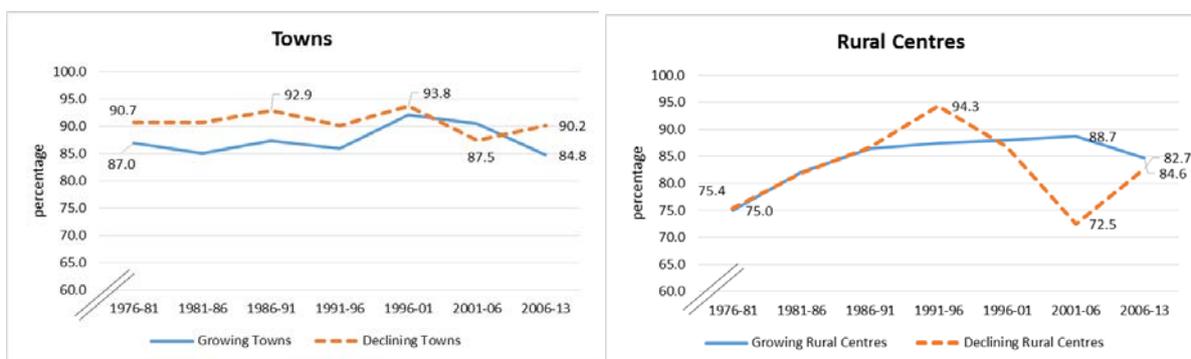
The overall picture that emerges is of towns losing their natural increase at a faster rate than rural centres, and growing towns more so than declining towns. In 2013, 19 towns were experiencing natural decrease, up from 17 in 1976, while for rural centres the number declined from 32 to 20. This spatial difference relates to changing age structural dynamics. Although people living in New

Zealand’s towns are, on average, younger than those living in rural centres (Appendices C and D respectively), this is only true to the extent that the difference is driven by a few very large and very youthful cities. New Zealand’s towns are simultaneously somewhat more likely than its rural centres to have proportions aged 65+ years in excess of 20 per cent (in 2013, 41 per cent of towns compared with 29 per cent of rural centres), and this explains the former’s more rapid shift to natural decrease.

Table 6 also shows that jurisdictions experiencing both zero growth and natural increase were very few in number irrespective of town or rural centre status. These sparse data cannot be considered definitive of any trends, but it is worth noting that the zero growth currently being experienced by them is mostly not the type theorised of in demographic transition theory, which is driven by the end of natural increase and the stabilising of the age structure. That is, the zero growth in these data is the result of natural increase offset by net migration loss of the same magnitude. The underlying data indicate that zero growth has, thus far, been a stage through which New Zealand’s towns and rural centres have fleetingly passed, mostly on their way to continued migration-driven decline.

These findings are further illustrated in Figure 6, which indicates that for most of the 1976-2013 period, higher proportions of declining than growing towns experienced natural increase (and thus vice-versa—higher proportions of growing towns experienced natural decrease). The only exception was between 2001 and 2006. There was essentially no difference between growing and declining rural centres until 1991. Between 1991 and 1996 declining rural centres were, like declining towns, more likely to experience natural increase, while between 2001 and 2006 for towns, and since 2001 for rural centres, the opposite was the case.

**Figure 6: Percentage of Growing and Declining Towns and Rural Centres Experiencing Natural Increase, 1976-2013**



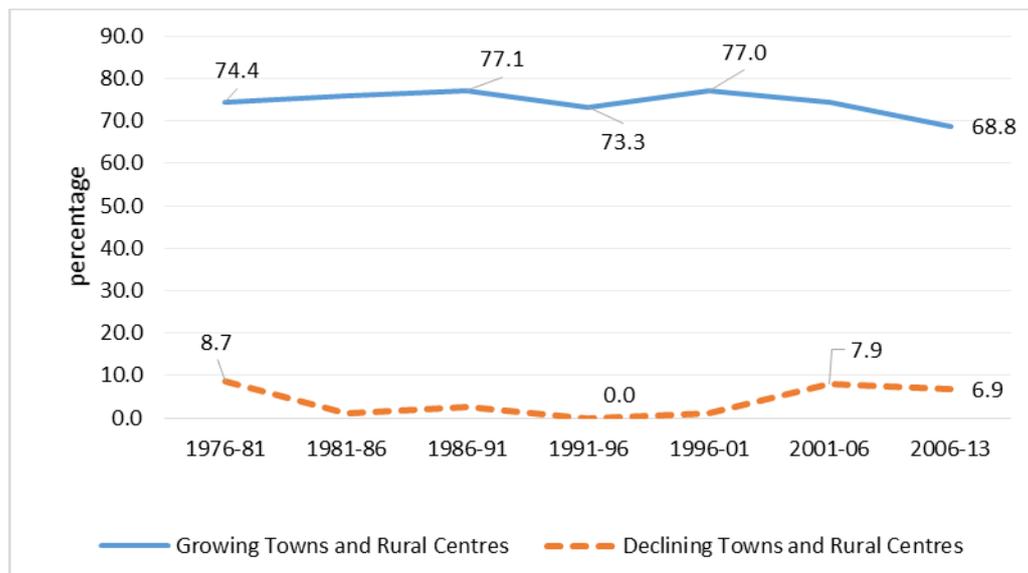
Source: Authors (2016)/Statistics New Zealand

**Contribution to change by net migration:** Net migration gain is, as would be expected, strongly associated with growing towns and rural centres, while declining jurisdictions are substantially more likely to experience net migration loss (Figures 7 and 8, and Table 7). In the period 1991-96, all declining towns and rural centres experienced net migration loss, and also, by implication, natural decrease, discussed further below.

At the same time, not all growing jurisdictions experienced net migration gain, or at least, not in every period, the proportion growing from migration falling from just on 74.4 per cent 1976-81 to 68.8 per cent 2006-13. Notably, these proportions are also lower than those growing from natural increase; in the ‘missing’ cases, the cause of growth was, by implication, natural increase. For example, between 2006 and 2013, 144 towns and rural centres grew (52.2 per cent) (Table 1 and Appendix A), but only 99 experienced net migration gain (Table 7). This indicates that 45 growing towns and rural centres experienced net migration loss and grew from natural increase alone.

Again, towns and rural centres experiencing both zero growth and net migration gain are too few in number to discuss in detail, but it is noted that they pertain only to the early part of the period. The combination of zero growth and net migration gain does, however, imply that natural decrease was present in the same magnitude as the migration gain, in order to result in zero growth.

**Figure 7: Percentage of Towns and Rural Centres Experiencing Net Migration Gain, 1976-2013, by Whether Growing or Declining**



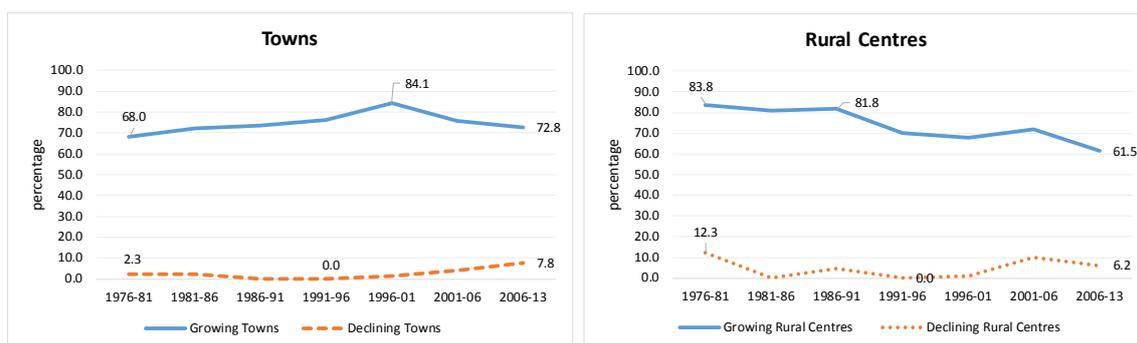
**Table 7: Number and Percentage of Towns and Rural Centres Experiencing Net Migration Gain, 1976-2013 by Whether Growing or Declining**

	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13	Change 1976-2013
<b>Number Experiencing Net Migration Gain</b>								
<b>Towns</b>								
Growing Towns	68	72	64	70	53	72	67	...
Declining Towns	1	1	0	0	1	2	4	...
Zero Growth	2	0	1	0	0	0	0	...
Total Towns, Net Migration Gain	71	73	65	70	54	74	71	...
<b>Rural Centres</b>								
Growing Rural Centres	57	63	54	56	34	38	32	...
Declining Rural Centres	8	0	3	0	1	8	5	...
Zero Growth	1	1	0	0	0	0	0	...
Total Rural Centres, Net Migration Gain	66	64	57	56	35	46	37	...
<b>Total</b>								
Growing Towns and Rural Centres	125	135	118	126	87	110	99	...
Declining Towns and Rural Centres	9	1	3	0	2	10	9	...
Zero Growth	3	1	1	0	0	0	0	...
Total Towns/Rural Centres, Net Migration Gain	137	137	122	126	89	120	108	...
<b>Percentage Experiencing Net Migration Gain</b>								
<b>Towns</b>								
Growing Towns	68.0	72.0	73.6	76.1	84.1	75.8	72.8	7.1
Declining Towns	2.3	2.3	0.0	0.0	1.3	4.2	7.8	237.3
Zero Growth	1.4	0.0	0.7	0.0	0.0	0.0	0.0	(100.0)
Total Towns (143), Net Migration Gain	49.7	51.0	45.5	49.0	37.8	51.7	49.7	0.0
<b>Rural Centres</b>								
Growing Rural Centres	83.8	80.8	81.8	70.0	68.0	71.7	61.5	(26.6)
Declining Rural Centres	12.3	0.0	4.5	0.0	1.2	10.0	6.2	(49.8)
Zero Growth	0.7	0.7	0.0	0.0	0.0	0.0	0.0	(100.0)
Total Rural Centres (133), Net Migration Gain	49.6	48.1	42.9	42.1	26.3	34.6	27.8	(43.9)
<b>Total</b>								
Growing Towns and Rural Centres	74.4	75.8	77.1	73.3	77.0	74.3	68.8	(7.6)
Declining Towns and Rural Centres	8.7	1.1	2.5	0.0	1.2	7.9	6.9	(20.0)
Zero Growth	75.0	33.3	33.3	0.0	...	0.0	0.0	(100.0)
Total Towns/Rural Centres (276), Net Migration Gain	49.6	49.6	44.2	45.7	32.2	43.5	39.1	(21.2)

Overall, the proportion of growing towns experiencing net migration gain grew over the period, from 68.0 per cent between 1976 and 1981 to 72.8 per cent between 2006 and 2013, although the latter was lower than its peak in the 1996-01 period (84.1 per cent). Declining towns also saw an overall increase in gain from net migration, from 2.3 per cent 1976-81 to 7.8 per cent 2006-13, although across the 1986-91 and 1991-96 periods, none experienced net migration gain.

By contrast, both growing and declining rural centres saw a substantial decrease in the likelihood of net migration gain, or in other words, increasing percentages experienced net migration loss. Again, for growing rural centres, natural increase explains the difference; between 2006 and 2013, 52 rural centres grew (39.1 per cent, Table 1 and Appendix A). Table 7 shows that just 32 grew from net migration gain, implying that 20 grew from natural increase alone.

**Figure 8: Percentage of Growing and Declining Towns and Rural Centres Experiencing Net Migration Gain, 1976-2013**

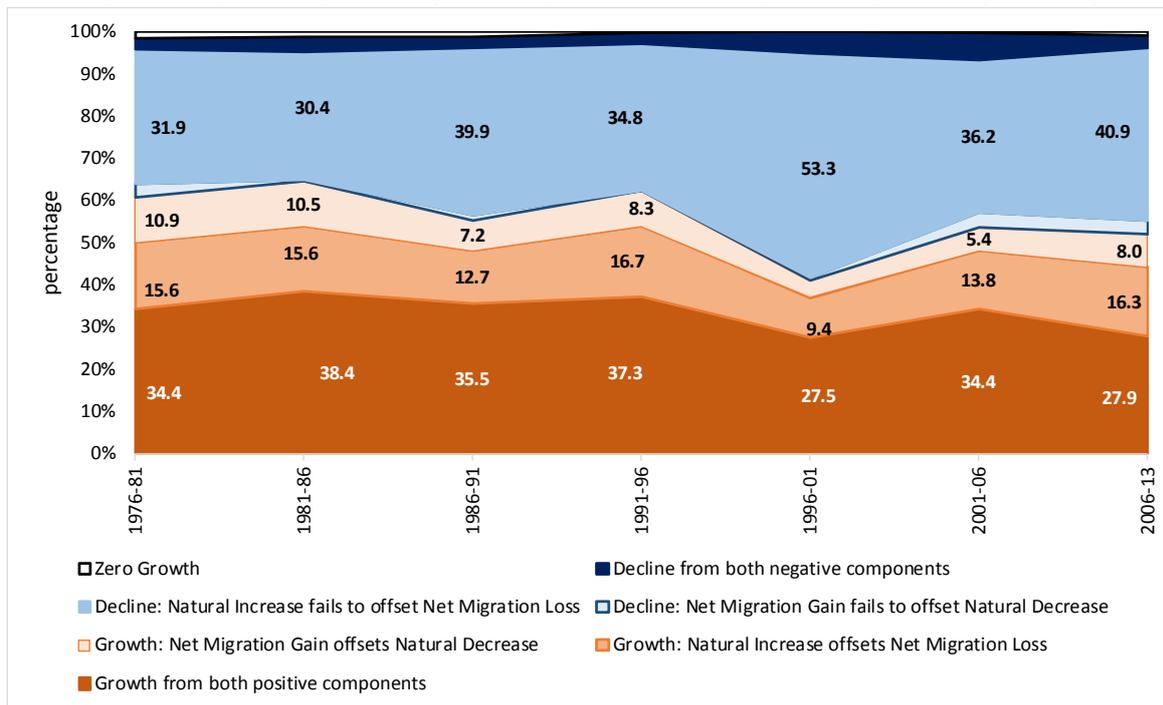


**Combined effects:** Turning to these combined effects, Table 8 and Figure 9 illustrate with reference to three types of growth and three of decline, along with zero growth (Jackson and Cameron 2016). The overarching picture is that growth from both components in combination (natural increase plus net migration gain) is diminishing, while decline from natural increase failing to offset net migration loss (the ‘old’ form of decline) is increasing—with the latter becoming the single largest component of change since 1996, although, as above, the trends are by no means monotonic. Growth from natural increase offsetting net migration loss has remained relatively stable at around 14-16 per cent with the exception of the period 1996-01, when it fell to 9 per cent. Growth from net migration gain offsetting natural decrease affects somewhat fewer jurisdictions and has diminished overall, while decline from net migration gain failing to offset natural decrease affects fewer again, and ended the period the same as it began, pertaining to just three per cent of jurisdictions. Decline from both negative components—the ‘new’ form of decline, is present at all observations, but has played a relatively small role, albeit slightly larger for the decade 1996-2006. Zero growth was the smallest outcome at all but two observations.

**Table 8: Percentage of Towns and Rural Centres (Combined) by Components of Growth, 1976-2013**

		1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
Growth	Growth from both positive components	34.4	38.4	35.5	37.3	27.5	34.4	27.9
	Natural Increase offsets Net Migration Loss	15.6	15.6	12.7	16.7	9.4	13.8	16.3
	Net Migration Gain offsets Natural Decrease	10.9	10.5	7.2	8.3	4.0	5.4	8.0
Decline	Net Migration Gain fails to offset Natural Decrease	3.3	0.4	1.1	0.0	0.7	3.6	3.3
	Natural Increase fails to offset Net Migration Loss	31.9	30.4	39.9	34.8	53.3	36.2	40.9
	Decline from both negative components	2.5	3.6	2.5	2.5	5.1	6.2	2.9
Zero Growth		1.4	1.1	1.1	0.4	0.0	0.4	0.7
	Number	276	276	276	276	276	276	276

**Figure 9: Percentage of Towns and Rural Centres (Combined) by Components of Growth, 1976-2013**



Disaggregating the data by town or rural centre jurisdiction reveals strong similarity in the trends (Figure 10 and Table 9). However rural centres have consistently been somewhat less likely than towns to experience growth from both natural increase and net migration gain, and somewhat more likely to have seen decline from natural increase failing to offset net migration loss, with the latter pertaining to half of rural centres across the period 2006-13. At the same time the substantial increase in this element experienced across the 1996-01 period (Figure 9) is equally present for both towns and rural centres, with barely two percentage points difference at that observation (52.4 and 54.1 per cent respectively).

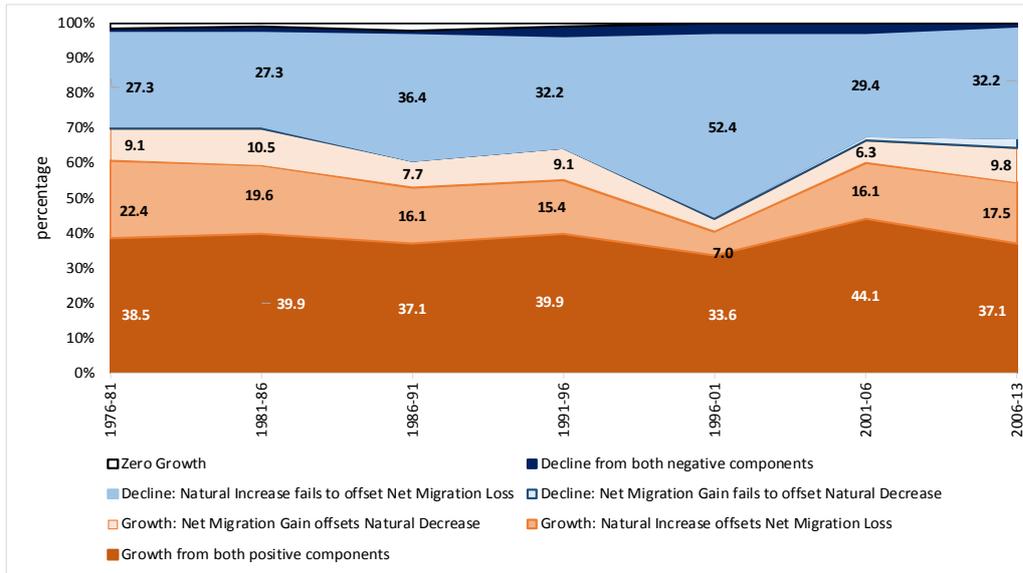
Growth from net migration gain offsetting natural decrease, and from natural increase offsetting net migration loss, also evidence similar trends for both jurisdictions. The former is as yet a relatively minor contributor to growth in both town and rural centre cases, due in part to the relatively small number of jurisdictions experiencing natural decrease. The latter (growth from natural increase offsetting net migration loss) is larger for towns but has diminished overall (from 22.4 per cent 1976-81 to 17.5 per cent 2006-13), while increasing for rural centres (from 8.3 to 15.0 per cent).

Decline caused by net migration gain failing to offset natural decrease is, again, a relatively minor component, but greater for the rural centres. Decline from both negative components (natural decrease and net migration loss) has also played a small role, but somewhat larger for rural centres.

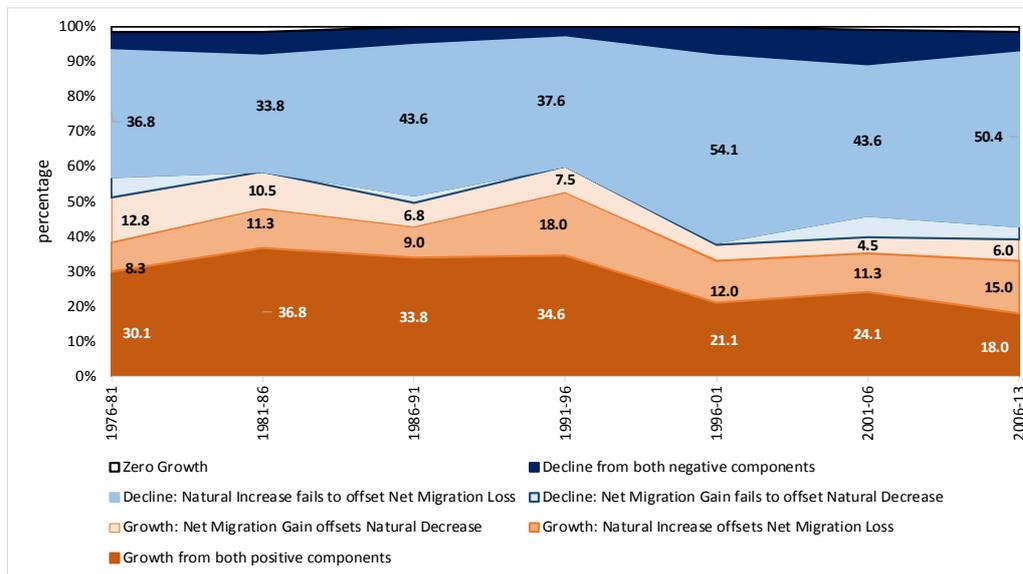
As noted above, zero growth is also a minor player, more prevalent for rural centres than towns, but seemingly a transitional status, as opposed to an 'end point' as indicated by transition theory.

**Figure 10: Percentage of Towns and Rural Centres by Components of Growth and Town and Rural Jurisdiction, 1976-2013**

**Towns**



**Rural Centres**



**Table 9: Percentage of Towns and Rural Centres by Components of Growth and Town and Rural Jurisdiction, 1976-2013**

		1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
<b>Towns</b>								
Growth	Growth from both positive components	38.5	39.9	37.1	39.9	33.6	44.1	37.1
	Natural Increase offsets Net Migration Loss	22.4	19.6	16.1	15.4	7.0	16.1	17.5
	Net Migration Gain offsets Natural Decrease	9.1	10.5	7.7	9.1	3.5	6.3	9.8
Decline	Net Migration Gain fails to offset Natural Decrease	0.7	0.7	0.0	0.0	0.7	1.4	2.8
	Natural Increase fails to offset Net Migration Loss	27.3	27.3	36.4	32.2	52.4	29.4	32.2
	Decline from both negative components	0.7	1.4	0.7	2.8	2.8	2.8	0.7
<b>Zero Growth</b>		1.4	0.7	2.1	0.7	0.0	0.0	0.0
	Number	143	143	143	143	143	143	143
<b>Summary (Towns)</b>								
	Growth	69.9	69.9	60.8	64.3	44.1	66.4	64.3
	Decline	28.7	29.4	37.1	35.0	55.9	33.6	35.7
	(Natural Decline)	11.9	12.6	9.1	11.9	7.0	10.5	13.3
<b>Rural Centres</b>								
Growth	Growth from both positive components	30.1	36.8	33.8	34.6	21.1	24.1	18.0
	Natural Increase offsets Net Migration Loss	8.3	11.3	9.0	18.0	12.0	11.3	15.0
	Net Migration Gain offsets Natural Decrease	12.8	10.5	6.8	7.5	4.5	4.5	6.0
Decline	Net Migration Gain fails to offset Natural Decrease	6.0	0.0	2.3	0.0	0.8	6.0	3.8
	Natural Increase fails to offset Net Migration Loss	36.8	33.8	43.6	37.6	54.1	43.6	50.4
	Decline from both negative components	4.5	6.0	4.5	2.3	7.5	9.8	5.3
<b>Zero Growth</b>		1.5	1.5	0.0	0.0	0.0	0.8	1.5
	Number	133	133	133	133	133	133	133
<b>Summary (Rural Centres)</b>								
	Growth	51.1	58.6	49.6	60.2	37.6	39.8	39.1
	Decline	47.4	39.8	50.4	39.8	62.4	59.4	59.4
	(Natural Decline)	24.1	17.3	13.5	9.8	12.8	20.3	15.0

In sum, the trends are similar but differ in subtle ways that have important implications for future growth as structural ageing progresses. For example, net migration loss has always been a greater issue for the rural centres than the towns, but in the past much of it was concealed by natural increase, resulting in overall growth. With natural increase both projected to fall, and slightly more prevalent for towns, it will be increasingly difficult for rural centres to offset underlying net migration loss. Given that they are also seeing diminishing growth from the combined effect of both positive (natural increase and net migration gain) components, and greater percentages declining from the negative components in combination, rural centres will have increasingly limited ability to reverse the trends. This does not mean that many towns are not facing similar demographic challenges, as several of the larger and fastest growing towns have relatively old age structures and appear to be growing largely from retiree migration (and momentum, from larger cohorts replacing smaller ones), but rather, that their greater positive growth components will protect them for longer.

In order to consider the relative strength of these relationships, we now apply the Pearson Correlation Coefficient 'r'<sup>8</sup> to them in various combinations (Figure 11 and Table 10). Following Johnson et al. (2015) we also incorporate three additional explanatory variables: percentage aged 65+ years, as an indicator of the extent of structural ageing (Appendices C and D); percentage of the female population aged 15-44 years, as an indicator of capacity for natural increase to sustain population growth (Appendices E and F); and the total fertility rate (TFR) as an indicator of its relationship with natural increase (see Appendices G and H). Unfortunately we do not have TFR data for more than three observations, and it is an approximation only, based on the TFR for the TA that each town or rural centre is located in; these data must thus be viewed with particular care. Also, rather than include Johnson et al.'s geographic breakdown of metropolitan and non-metropolitan aggregations, we present our findings separately for towns and rural centres, as above. Methodologically it should be noted that each data point carries equal weight, irrespective of size. Relatedly, one rural centre<sup>9</sup> growing by over 3,000 per cent at the final observation was deemed an outlier, substantially biasing the results, and was removed from the correlation analysis.

**Correlations and explanatory variables:** As indicated above, the correlation between net growth and net migration gain is both positive and very strong for both towns and rural centres, slightly stronger for the former than the latter but never below +0.92: thus, intuitively correctly, areas with higher net migration gain have higher growth (Figure 11 and Table 10)—and vice-versa. That is, in the case of declining towns and rural centres, the positive correlation is also reflecting that both net growth and net migration were negative.

The second-strongest positive relationship for both towns and rural centres, across all but one period for rural centres, is for natural increase and the percentage of females aged 15-44 years. As proposed by Johnston et al. (2015: 667), areas with the lowest proportion of women at these ages have a higher experience of natural *decrease*, resulting in an inverse relationship. In our analysis, relatively few jurisdictions yet have natural decrease and we have a strong positive relationship because it is showing that towns and rural centres with the highest proportions are experiencing the highest natural increase, and vice-versa. Our findings thus concur with Johnson et al., that the lower the proportion of women in their main childbearing ages, the more difficult it is for them to sustain the natural increase required to offset migration loss.

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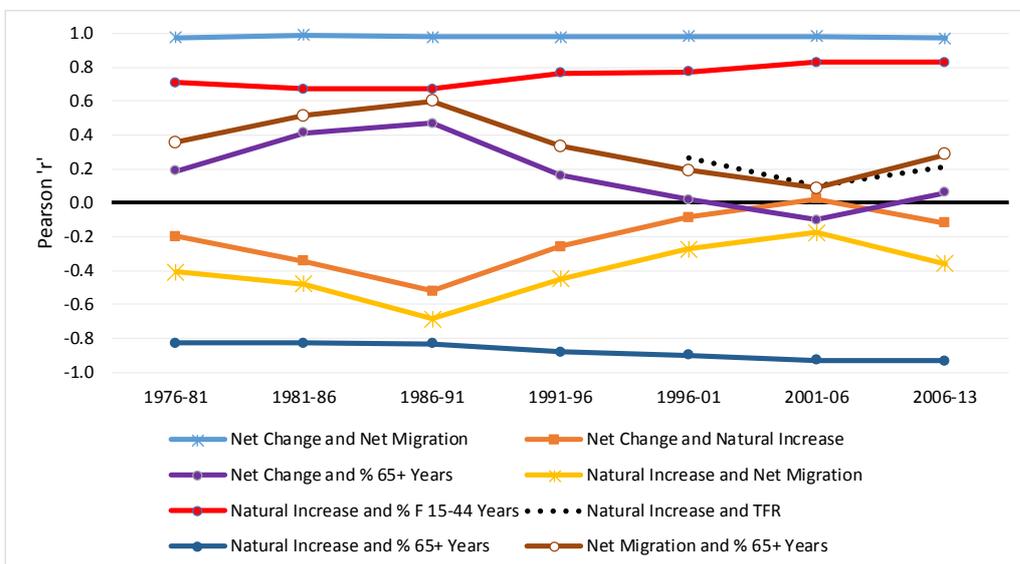
<sup>8</sup> The Pearson product moment correlation coefficient 'r' measures the linear strength of the relationship between two arrays of data, with +1.00 meaning that each item moved in exactly the same direction at the same rate of change (whether positively or negatively), and -1.00 meaning that each item moved in the opposite direction.

<sup>9</sup> Rural Centre Pegasus grew from 33 to 1,050 between 2006 and 2013.

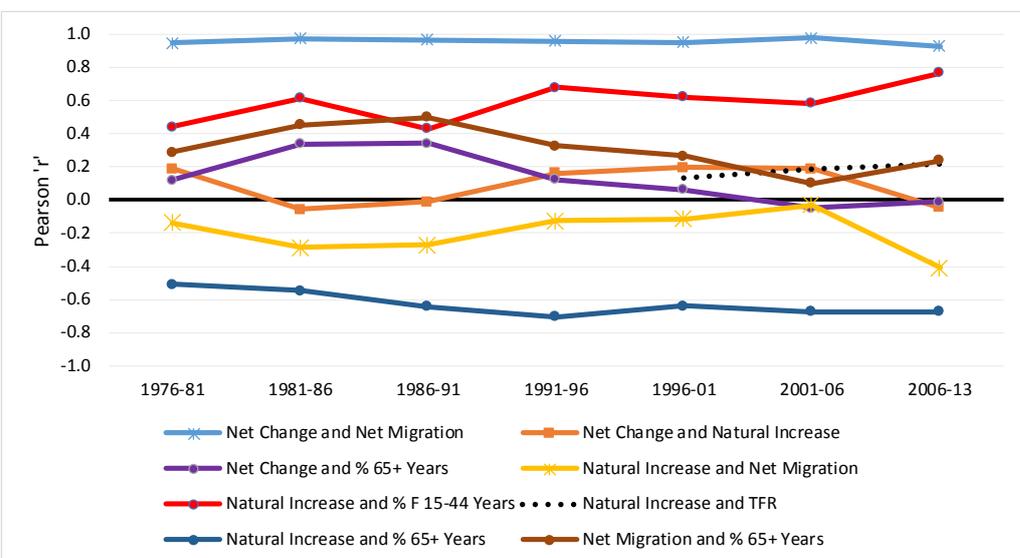
Notably, these relationships are substantially stronger than those between natural increase and the TFR, for both towns and rural centres—albeit there are only three observations on which to deliberate. While also positive, suggesting that the higher the TFR, the higher the natural increase (and vice versa), the relatively weak values indicate that there is very little relationship between the two, and indicates that it is net migration loss (implicitly of reproductive age people) and/or increasing numbers at older ages, rather than very low fertility, that is presently associated with New Zealand’s current shift to natural decrease.

**Figure 11: Pearson Correlation Coefficients for Selected Combinations of Variables, 1976-2013 by Town and Rural Centre Jurisdiction**

**Towns**



**Rural Centres**



**Table 10: Pearson Correlation Coefficients for Selected Combinations of Variables, 1976-2013 by Town and Rural Centre Jurisdiction**

	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
<b>Towns</b>							
Net Change and Net Migration	0.9760	0.9891	0.9787	0.9795	0.9817	0.9804	0.9692
Net Change and Natural Increase	-0.1990	-0.3424	-0.5188	-0.2595	-0.0862	0.0230	-0.1174
Net Change and % 65+ Years	0.1869	0.4111	0.4681	0.1627	0.0207	-0.0989	0.0594
Natural Increase and Net Migration	-0.4074	-0.4771	-0.6831	-0.4486	-0.2746	-0.1744	-0.3583
Natural Increase and % F 15-44 Years	0.7080	0.6711	0.6698	0.7649	0.7720	0.8269	0.8270
Natural Increase and TFR	...	...	...	...	0.2612	0.0992	0.2111
Natural Increase and % 65+ Years	-0.8279	-0.8279	-0.8298	-0.8806	-0.8981	-0.9266	-0.9305
Net Migration and % 65+ Years	0.3579	0.5144	0.5990	0.3341	0.1919	0.0852	0.2865
<b>Rural Centres</b>							
Net Change and Net Migration	0.9475	0.9724	0.9657	0.9593	0.9510	0.9759	0.9290
Net Change and Natural Increase	0.1876	-0.0557	-0.0120	0.1614	0.1967	0.1891	-0.0445
Net Change and % 65+ Years	0.1203	0.3374	0.3429	0.1243	0.0631	-0.0501	-0.0124
Natural Increase and Net Migration	-0.1365	-0.2870	-0.2712	-0.1239	-0.1160	-0.0296	-0.4110
Natural Increase and % F 15-44 Years	0.4412	0.6153	0.4286	0.6800	0.6220	0.5829	0.7672
Natural Increase and TFR	...	...	...	...	0.1308	0.1892	0.2138
Natural Increase and % 65+ Years	-0.5097	-0.5490	-0.6437	-0.7044	-0.6403	-0.6738	-0.6729
Net Migration and % 65+ Years	0.2873	0.4519	0.4972	0.3266	0.2658	0.0986	0.2379

\* Pearson's 'r' measures the linear strength of a relationship between two arrays of data, with +1.00 meaning that each item moved in exactly the same direction at the same rate of change, and -1.00 meaning that each item moved in the opposite direction

Also showing generally positive but weak relationships for both towns and rural centres are both net migration and percentage aged 65+ years, and net change and percentage aged 65+ years. In both cases the relationships strengthen around 1986-91, but then reduce and are virtually non-existent from the mid-1990s. These correlations indicate that, at this point, there is minimal relationship between the size of the 65+ year population of an area and its overall growth, although migration-related movements of those aged 65+ years may have contributed to net growth in the early part of the period.

Seemingly a mirror image of those trends, the relationship between net change and natural increase is either weakly or moderately negative (for towns) or fluctuates between weakly positive and negative (for rural centres). The strongest negative values (e.g. towns between 1986 and 1991) indicate that the higher the net growth, the lower the natural increase, and vice versa. In effect the underlying data suggest it was the latter, with relatively low levels of net growth and relatively high levels of natural increase occurring across that period. Closely tracking these trends, but with a slightly stronger negative relationship for both towns and rural centres, is the relationship between natural increase and net migration: the higher the net migration, the lower the natural increase, and vice-versa. Again this is strongest for towns around the 1986-91 period, and for rural centres across the 1980s, and again is largely explained by low levels of net migration and relatively high natural increase at the time.

By contrast with the generally positive but relatively weak relationships between the percentage aged 65+ years, and both net migration, and net change, the importance of the relative size of the older population is seen in the relationship between percentage 65+ years and natural increase. At all observations this relationship is strongly or moderately negative, and more so for towns than rural centres. Overall this trend is indicating that the higher the percentage aged 65+ years, the lower the natural increase, as was similarly found for US and European counties by Johnson et al. (2015: 665-666). That this relationship is somewhat stronger for New Zealand's towns than rural centres appears to reflect the earlier finding that many towns have relatively old age structures, with proportions at older ages presumably increasing the number of deaths. At the same time, New Zealand's urban fertility rates have historically been lower than rural rates (Pool et al. 2004; Pool, et al. 2005; Pool, Dharmalingham and Sceats 2007). While a greater proportion of towns than rural centres are experiencing natural increase (refer Table 6 above), that proportion is falling at a faster rate than for rural centres.

### **Summary and Discussion**

In this paper we have generated experimental back-projections of population change for 143 New Zealand towns and 133 rural centres, for the period 1976-2013. In the process we have produced previously unavailable patterns and trends in the long-term components of change in the form of natural increase and net migration. Potential users of these data should refer back to the caveats given in the introduction concerning the development of these data for research purposes. The data approximate the 2013 geographic boundaries used by Statistics New Zealand for the entire period based on 'user derived correspondence', and have been extracted by using the technique of indirect standardisation; population numbers may thus differ slightly to those held in historical records, but we consider them robust for comparison between jurisdictions.

We find that the majority of New Zealand's towns grew across the period 1976-2013, although this did not occur between 1996 and 2001 when New Zealand experienced a period of net international migration loss, and from 1981 was not the case for rural centres. There is an overall decline to the trend for both jurisdictions, with just on 70 per cent of towns and 51 per cent of rural centres experiencing growth in the 1976-81 period, falling to 64 and 39 per cent respectively between 2006 and 2013 (noting that the latter covers a seven year period).

Seeking to compare these findings with those of Grimes and Tarrant (2013) for 60 urban areas for the period 1926-2006, we grouped the largest towns into ten clusters according to size in 1976. In total these accounted for around 82 per cent of the New Zealand population at each of the eight census observations. Although we begin our analysis at a later date (1976 compared with 1926 for

Grimes and Tarrant) we find the same generally clustered pattern of growth and decline for towns and rural centres, each group having just one or two 'leader' towns showing runaway growth.

We go further in our analysis, to ask what demographic drivers (natural increase and net migration, in varying combinations) have contributed to those trends. Although a few of the leader towns were found to have experienced either natural decrease or net migration loss at one or other observation (across eight observations), for the great majority their extraordinary growth reflects constant positive contributions from natural increase and net migration, with no incidence of net decline. However a surprising finding was that with the exception of the four Auckland Zones (North, Central, West, and South) and Pukekohe, the fastest growing towns in each group have somewhat older age structures than the average, indicating the presence of substantial retiree migration (and/or ageing-in-place). This was the case for Tauranga, Nelson, Kapiti, Cambridge, Motueka, Te Puke and Waiuku, the fastest growing towns of Groups 3, 4, 5, 7, 8, 9 and 10. The findings have implications for the continued rapid growth of these towns, as they are likely to see the onset natural decrease in the near future, already evidenced for two (Kapiti and Motueka).

We do not report in detail on the data for all towns and rural centres with populations smaller than 3,000 people in 1976. Instead we undertook a brief analysis of those that have either more than doubled since 1976, or declined by more than 25 per cent. We find that 40 have more than doubled in size, with 21 growing by over 200 per cent, and four by over 500 per cent. All are either adjacent to a large city, beach or lake, or are a major tourist centres. In 1976 these jurisdictions accounted for just 1.0 per cent of New Zealand's population, and in 2013, for 2.5 per cent.

At the other end of the scale, 41 towns and rural centres each declined by more than 25 per cent. In 1976 they accounted for 1.2 per cent of New Zealand's population, and in 2013, for just 0.5 per cent. Notable among this group are forestry, mining and hydro towns and rural centres, and towns/centres adjacent to previously important railway stations and military camps.

Sitting in between these extremes are the remaining 117 towns and centres which either grew by less than 100 per cent (72 towns), or declined by less than 25 per cent (45 towns). By and large, the growing towns/centres in this group are characterised by similar features to those of larger growing towns/centres, while most small and moderately declining towns/centres have similar characteristics to the extreme declining towns and centres. Among them there are jurisdictions with lifestyle attractions, but most are more remote than their significantly growing or declining counterparts.

Growing and declining towns and rural centres are characterised by similar demographic characteristics, but with different combinations having a greater or lesser role. Surprisingly, natural increase was slightly more prevalent across most of the 1976-2013 period for towns than it was for rural centres, although increased overall for rural centres and declined for towns. The decline was slightly greater for declining towns, and the increase slightly greater for growing rural centres. Declining towns and centres have historically had higher contributions from natural increase than their growing counterparts, but the evidence suggests this picture could be changing, with growing jurisdictions potentially more likely to grow from natural increase than their declining counterparts—a shift which would have implications for the ability of declining jurisdictions to offset net migration loss. However this trend may be mediated by the counter trend of hyper-ageing, where towns and rural centres that are currently growing from an influx of older people will lose their natural increase more rapidly than those growing from an influx of youth.

Net migration gain is, as might be expected, strongly associated with population growth, and net migration loss with population decline. At the same time, not all growing jurisdictions experienced net migration gain. For many, the cause of growth was natural increase, while the opposite was the case for a smaller number of declining jurisdictions, on the one hand experiencing net migration gain, but on the other, natural decrease which resulted overall in net decline.

These cross-cutting components of growth and decline showed that rural centres have consistently been somewhat less likely than towns to experience growth from both natural increase and net migration gain, and somewhat more likely to be seeing decline from natural increase failing to offset net migration loss (Burcher and Mai's 'old' form of decline), with the latter affecting half of all rural centres at the end of the period. Reflecting the underlying trends in natural increase, growth from that component offsetting net migration loss has increased for rural centres, but declined for towns.

Growth from net migration gain offsetting natural decrease, and decline caused by net migration gain failing to offset natural decrease, are as yet relatively minor contributors to population change in both towns and rural centres, primarily due to the relatively small number of jurisdictions yet experiencing natural decrease. Similarly, decline from both natural decrease and net migration loss in combination (the 'new' form of decline), and zero growth, have each played a small role which has been greater for rural centres. At this stage, however, zero growth in subnational New Zealand is seemingly a transitional status, as opposed to the 'end point' indicated by transition theory.

Correlating these variables in different combinations using the Pearson's Correlation Coefficient confirms that net migration gain and net growth go hand-in-hand, as do net migration loss and net decline. However almost as strong correlations were found between natural increase and structural

ageing (as indicated by percentage aged 65+ years), and natural increase and the percentage of women aged 15-44 years; natural increase declining as both structural ageing increases and the proportion at key reproductive age declines. By contrast, at this stage in New Zealand, the total fertility rate has only a very weak relationship with natural increase or decrease.

Across the period 1976-2013 the largely invisible role of natural increase has thus been more closely related to the outcome of population growth or decline in New Zealand than either net migration or fertility rates *per se*. Migration-driven structural ageing, or, more aptly, age-selective migration, will thus almost certainly see continuing reductions in natural increase, particularly in larger towns where growth is disproportionately at retiree ages, and in declining rural centres where there is both net outmigration of younger people, especially women of reproductive age, and/or ageing-in-place. Migration gains of younger people to larger towns and cities also tends to be characterised by falling fertility rates (Pool et al. 2007). These trends will increasingly reduce the ability of natural increase to offset future net migration loss. In rural centres, the proportion aged 65+ years is on average greater than in the towns and is increasing at a faster rate, but rural birth rates have historically been higher. At the same time substantially more towns than rural centres are now experiencing hyper-aging, where the proportion aged 65+ years exceeds 20 per cent, hastening the end of natural increase.

Formally correlating the migration data for towns and rural centres generated by this project, by age, with data on natural and social amenity is expected to give further insight into which towns and rural centres are 'at risk' of growing or declining, and why (Brabyn and Jackson forthcoming). For now we can hypothesise that those characteristics that have been pushing and pulling migrants will continue to interact with age, and will in many cases further diminish natural increase.

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**Appendix A: Number of Towns and Rural Centres growing or declining in size or experiencing zero growth between census years, 1976-2013**

	1976-81	1981-86	1986-91	1991-96	1996-01	2001-06	2006-13
<b>Number</b>							
<b>Towns</b>							
Growing	100	100	87	92	63	95	92
Declining	41	42	53	50	80	48	51
Zero Growth	2	1	3	1	0	0	0
<b>Total</b>	<b>143</b>						
<b>Rural Centres</b>							
Growing	68	78	66	80	50	53	52
Declining	63	53	67	53	83	79	79
Zero Growth	2	2	0	0	0	1	2
<b>Total</b>	<b>133</b>						
<b>Total</b>							
Growing	168	178	153	172	113	148	144
Declining	104	95	120	103	163	127	130
Zero Growth	4	3	3	1	0	1	2
<b>Total</b>	<b>276</b>						

**Appendix B: Numbers, change (%) and rank (1976, 2013) for towns and rural centres with fewer than 3,000 people in 1976, ordered by size in 1976 (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change 1976- 2013 (%)	Rank in 1976	Rank in 2013
Queenstown	2925	3042	4059	5145	7539	8565	10440	11502	293.2	79	38
Murupara	2913	3006	2595	2394	2205	1959	1839	1656	-43.2	80	115
Waiheke Island	2838	3081	4293	5430	6285	7137	7689	8238	190.3	81	44
Pahiatua	2787	2823	2868	2910	2721	2610	2562	2412	-13.5	82	94
Taihape	2784	2592	2490	2118	2007	1806	1788	1509	-45.8	83	120
Otorohanga	2673	2679	2748	2655	2655	2631	2589	2514	-5.9	84	92
Inglewood	2628	2862	3240	3204	3192	2946	3090	3243	23.4	85	86
Featherston	2517	2511	2520	2634	2418	2325	2343	2250	-10.6	86	96
Eltham	2421	2406	2421	2265	2004	2100	1983	1944	-19.7	87	103
Milton	2235	2262	2211	2088	2016	1917	1887	1926	-13.8	88	106
Moerewa	2100	2082	1929	1899	1695	1659	1536	1431	-31.9	89	125
Kerikeri	2082	2598	3096	3468	4197	4881	5856	6504	212.4	90	51
Geraldine	2055	2136	2121	2127	2232	2205	2244	2301	12.0	91	95
Patea	2028	1989	1608	1491	1401	1302	1143	1098	-45.9	92	140
Winton	2028	2085	2139	2127	2190	2100	2088	2211	9.0	93	97
Bulls	2007	1908	1776	1731	1863	1758	1659	1515	-24.5	94	119
Kaikoura	2004	2076	2070	2037	2217	2106	2172	1971	-1.6	95	101
Greytown	1938	1887	1896	2022	1962	2046	2064	2202	13.6	96	98
Waipawa	1869	1797	1917	1845	1917	1875	1923	1968	5.3	97	102
Wellsford	1695	1650	1638	1710	1650	1740	1671	1698	0.2	98	113
Shannon	1692	1500	1632	1557	1446	1407	1371	1242	-26.6	99	132
Riverton	1680	1773	1815	1845	1830	1653	1512	1431	-14.8	100	126
RurC_Mangakino	1662	1608	1608	1584	1500	1281	1020	744	-55.2	101	170
Edgecumbe	1629	1980	1881	1851	1764	1671	1626	1638	0.6	102	116
Opunake	1629	1776	1719	1650	1596	1497	1365	1335	-18.0	103	128
Kawakawa	1608	1569	1518	1485	1458	1401	1347	1221	-24.1	104	135
Warkworth	1602	1788	2052	2295	2475	2826	3270	3909	144.0	105	78
Woodville	1599	1656	1608	1650	1569	1479	1401	1401	-12.4	106	127
RurC_Burnham Military Camp	1518	1767	1656	1335	1467	1137	1206	1089	-28.3	107	141
Martinborough	1431	1371	1434	1560	1458	1356	1329	1473	2.9	108	123
Ohakune	1395	1389	1437	1320	1389	1293	1098	987	-29.2	109	150
Te Anau	1386	1545	1599	1500	1782	1854	1899	1911	37.9	110	107
Katikati Community	1374	1704	2016	2346	2661	2916	3579	4056	195.2	111	71
Whitianga	1365	1704	2094	2424	2994	3078	3765	4368	220.0	112	64
Waihi Beach	1362	1353	1566	1788	1914	1911	1776	1935	42.1	113	104
Raglan	1323	1416	1809	2316	2634	2667	2637	2736	106.8	114	90
Cromwell	1278	2310	3423	2709	2613	2667	3585	4146	224.4	115	69
Helensville	1266	1554	1581	1896	2079	2217	2532	2643	108.8	116	91
Reefton	1266	1200	1179	1089	1047	987	948	1026	-19.0	117	147
Lincoln	1257	1386	1914	1686	2367	2208	2835	3924	212.2	118	75
Raetihi	1236	1257	1323	1233	1167	1068	1035	1002	-18.9	119	149
Whangamata	1218	1521	2244	3174	3765	3963	3555	3474	185.2	120	84
RurC_Waverley	1197	1260	1152	1008	960	906	861	798	-33.3	121	161
Wanaka	1176	1260	1602	1851	2523	3330	5037	6474	450.5	122	53
RurC_Kaitangata	1107	1053	951	882	864	789	810	762	-31.2	123	166
Takaka	1089	1206	1185	1218	1224	1188	1152	1236	13.5	124	133
Paihia	1065	1128	1308	1428	1827	1839	1773	1719	61.4	125	111
Rolleston	1059	933	1107	1308	1467	2667	4953	9555	802.3	126	41
Darfield	1053	1158	1122	1164	1299	1404	1671	1935	83.8	127	105
Pleasant Point	990	1107	1119	1200	1221	1158	1173	1278	29.1	128	130
RurC_Manaiia	969	1017	1032	1101	1089	951	927	960	-0.9	129	151
RurC_Ranfurlly	966	990	972	906	846	732	711	663	-31.4	130	183
RurC_Tapanui	966	1068	972	819	885	846	747	726	-24.8	131	172
Oxford	954	963	1125	1353	1476	1581	1716	1905	99.7	132	108
Wakefield	951	996	1122	1245	1419	1497	1875	2106	121.5	133	99
RurC_Otautau	951	924	882	846	813	729	753	669	-29.7	134	182
RurC_Kaingaroa Forest	930	795	699	588	582	549	486	423	-54.5	135	231
RurC_Tuatapere	915	912	873	750	738	681	582	558	-39.0	136	194
RurC_Palmerston	900	900	840	882	906	807	804	795	-11.7	137	163
RurC_Fairlie	891	894	807	762	846	723	717	696	-21.9	138	176
Leeston	888	1041	1083	1170	1290	1275	1302	1506	69.6	139	121
Methven	888	945	930	1002	1095	1164	1401	1707	92.2	140	112
Waikouaiti	888	882	873	1008	1170	1095	1095	1122	26.4	141	138

**Appendix B (cont.): Numbers, change (%) and rank (1976, 2013) for towns and rural centres with fewer than 3,000 people in 1976, ordered by size in 1976 (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change 1976- 2013 (%)	Rank in 1976	Rank in 2013
RurC_Riwaka	846	774	843	798	858	876	849	870	2.8	142	154
Coromandel	834	1062	1179	1323	1473	1437	1476	1503	80.2	143	122
RurC_Meremere	813	645	618	525	468	354	462	468	-42.4	144	214
Snells Beach	801	1173	2076	2739	3177	3648	3948	4239	429.2	145	67
RurC_Taneatua	798	921	921	879	879	750	792	786	-1.5	146	164
Te Kauwhata	777	852	969	969	1026	1095	1194	1473	89.6	147	124
RurC_Maungaturoto	777	819	897	900	846	750	834	753	-3.1	148	167
RurC_Wallacetown	777	699	711	687	681	627	591	663	-14.7	149	184
RurC_Tirau	771	693	723	744	750	726	729	693	-10.1	150	178
RurC_Ruatoria	768	864	894	852	858	840	753	750	-2.3	151	168
RurC_Makara-Ohariu	762	666	621	645	660	702	759	840	10.2	152	158
RurC_Te Puru-Thornton Bay	756	834	870	942	1014	954	942	846	11.9	153	157
RurC_Dobson	750	750	804	759	747	744	669	678	-9.6	154	180
RurC_Tolaga Bay	738	699	732	774	897	870	831	765	3.7	155	165
RurC_Wyndham	738	774	711	645	639	573	516	534	-27.6	156	200
RurC_Ohai	717	717	696	522	513	399	354	303	-57.7	157	254
RurC_Roxburgh	717	708	687	681	741	618	612	522	-27.2	158	202
Taipa Bay-Mangonui	708	876	1038	1266	1494	1587	1569	1662	134.7	159	114
Amberley	705	846	858	867	1023	1140	1302	1575	123.4	160	117
RurC_Manutuke	699	663	723	711	738	639	603	522	-25.3	161	203
RurC_Waitati	699	354	384	504	531	495	501	513	-26.6	162	205
RurC_Otematata	690	417	414	420	360	243	186	186	-73.0	163	275
RurC_Ahipara	687	687	762	921	924	1041	1122	1065	55.0	164	143
Rakaia	681	693	687	696	780	837	942	1110	63.0	165	139
Ngatea	669	828	885	975	1002	1074	1164	1245	86.1	166	131
RurC_Eketahuna	654	597	654	714	642	579	456	441	-32.6	167	222
Brightwater	651	858	933	1023	1242	1425	1791	1749	168.7	168	110
RurC_Murchison	651	648	633	582	582	555	498	489	-24.9	169	207
RurC_Te Karaka	636	567	567	582	600	552	543	480	-24.5	170	211
RurC_Russell	618	702	729	783	789	804	819	720	16.5	171	173
RurC_Hanmer Springs	615	612	639	531	582	681	732	840	36.6	172	159
RurC_Hunterville	615	573	510	507	453	507	441	429	-30.2	173	226
RurC_Te Teko	615	594	594	642	633	630	627	489	-20.5	174	208
Mapua	606	744	960	1041	1269	1617	1878	2013	232.2	175	100
Woodend	600	1005	1224	1260	1584	2247	2679	2751	358.5	176	89
RurC_Bombay	597	738	720	891	876	750	807	798	33.7	177	162
RurC_Maungatapere	597	708	753	684	924	1053	1278	1323	121.6	178	129
Ngunguru	594	636	984	1017	1266	1290	1425	1527	157.1	179	118
RurC_Edendale Community	591	591	603	579	567	570	513	552	-6.6	180	195
RurC_Kerepehi	585	531	546	504	504	501	513	429	-26.7	181	227
RurC_Lawrence	582	582	567	534	537	474	432	417	-28.4	182	233
RurC_Lumsden Community	582	591	546	501	504	450	411	405	-30.4	183	235
RurC_Waitoa	579	594	564	534	438	360	318	303	-47.7	184	255
RurC_Waharoa	576	576	633	645	555	534	507	465	-19.3	185	215
RurC_Pareora	573	546	516	492	501	465	450	429	-25.1	186	228
RurC_Piopio	567	534	501	507	486	471	468	396	-30.2	187	236
RurC_Reporoa	567	591	585	672	588	555	477	450	-20.6	188	218
RurC_Seddon	567	570	543	582	549	474	513	504	-11.1	189	206
RurC_Ohaeawai	564	624	615	609	678	726	711	717	27.1	190	174
RurC_Clyde	555	678	855	774	849	825	918	1011	82.2	191	148
RurC_Harihari	552	528	558	429	390	348	348	327	-40.8	192	250
RurC_Akaroa	546	585	597	606	642	576	567	624	14.3	193	186
RurC_Mamaku	537	480	537	645	606	693	726	690	28.5	194	179
RurC_Matata	537	528	582	624	618	666	642	645	20.1	195	185
RurC_Kaponga	534	423	420	384	393	351	372	303	-43.3	196	256
RurC_Nightcaps	534	462	471	426	396	339	309	294	-44.9	197	261
RurC_Southbridge	534	591	612	636	675	717	735	861	61.2	198	156
Tairua	531	639	933	1137	1440	1461	1266	1230	131.6	199	134
RurC_Waimana	525	582	534	600	660	654	615	576	9.7	200	192
RurC_Ruawai	522	558	522	495	471	453	426	432	-17.2	201	225
RurC_Tokomaru Bay	504	495	564	519	477	462	447	393	-22.0	202	238
RurC_Okaihau	495	603	588	597	642	690	717	696	40.6	203	177
RurC_Outram	495	534	576	594	636	609	642	708	43.0	204	175
RurC_Te Kopuru	492	522	522	495	495	480	453	465	-5.5	205	216
RurC_Takapau	480	477	564	597	582	582	513	522	8.8	206	204

**Appendix B (cont.): Numbers, change (%) and rank (1976, 2013) for towns and rural centres with fewer than 3,000 people in 1976, ordered by size in 1976 (usually resident population count)**

	1976	1981	1986	1991	1996	2001	2006	2013	Change 1976- 2013 (%)	Rank in 1976	Rank in 2013
RurC_Ratana Community	477	456	462	429	441	426	366	327	-31.4	207	251
RurC_Owaka	474	450	411	429	402	363	327	303	-36.1	208	257
RurC_Cheviot	471	420	432	468	444	393	390	369	-21.7	209	243
RurC_Paengaroa	471	618	612	657	729	831	900	906	92.4	210	152
RurC_Maketu Community	462	681	732	864	987	999	1179	1047	126.6	211	145
RurC_Okato	456	489	489	486	495	519	531	561	23.0	212	193
RurC_Ohura	435	420	438	333	372	222	162	129	-70.3	213	276
RurC_Karamea	432	480	477	450	450	444	420	375	-13.2	214	240
RurC_Riversdale Community	432	429	408	378	366	363	393	375	-13.2	215	241
Arrowtown	420	447	738	900	1428	1692	2151	2445	482.1	216	93
RurC_Patutahi	411	396	366	351	351	360	375	345	-16.1	217	247
RurC_Clinton	408	468	411	387	345	318	291	285	-30.1	218	264
RurC_Halcombe	408	333	372	399	414	435	432	534	30.9	219	201
RurC_Culverden	405	477	441	423	399	396	420	423	4.4	220	232
RurC_Muriwai Beach	405	420	567	738	879	1077	1044	1131	179.3	221	137
RurC_Tuai	402	354	369	327	267	270	252	219	-45.5	222	272
RurC_Rongotea	399	495	549	582	639	612	591	594	48.9	223	190
RurC_Blackball	381	360	345	372	399	324	327	288	-24.4	224	263
RurC_Rahotu	381	357	339	342	312	300	252	252	-33.9	225	270
RurC_Kaiwaka	378	294	324	399	438	537	537	579	53.2	226	191
RurC_Awanui	372	339	312	345	351	369	351	336	-9.7	227	248
RurC_Nuhaka	372	357	393	339	327	327	294	258	-30.6	228	268
RurC_Dunsandel	363	339	318	312	387	402	429	471	29.8	229	212
RurC_Ross	360	336	360	339	375	315	291	297	-17.5	230	260
RurC_Sanson	360	408	465	516	519	495	495	537	49.2	231	198
RurC_Frasertown	354	354	345	366	333	291	300	255	-28.0	232	269
RurC_Otane	354	369	450	534	516	546	519	537	51.7	233	199
RurC_Stirling	354	327	339	315	321	297	309	303	-14.4	234	258
RurC_Taitapu	339	387	399	435	450	417	411	624	84.1	235	187
RurC_Urenui	339	333	414	408	414	417	429	429	26.5	236	229
RurC_Rawene	333	339	378	450	519	462	438	471	41.4	237	213
RurC_Sefton	330	417	408	438	489	501	582	624	89.1	238	188
RurC_Kaeo	327	378	396	495	525	495	495	456	39.4	239	217
RurC_Kurou	327	477	486	471	411	387	339	312	-4.6	240	252
RurC_Woodlands	327	333	339	303	297	279	255	261	-20.2	241	266
RurC_Hector-Ngakawau	318	330	318	306	357	300	231	219	-31.1	242	273
RurC_Karitane	318	360	348	399	444	399	348	360	13.2	243	245
RurC_Waikuku	318	360	447	588	726	825	858	900	183.0	244	153
RurC_Havelock	309	333	390	420	504	471	486	486	57.3	245	210
RurC_Warrington	309	294	345	372	408	399	426	450	45.6	246	219
RurC_Kawhia Community	303	360	399	465	645	507	387	336	10.9	247	249
RurC_Tapawera	300	432	423	390	408	384	405	396	32.0	248	237
RurC_Waiau	300	309	261	252	276	255	252	261	-13.0	249	267
RurC_Manapouri	288	288	306	255	216	240	306	231	-19.8	250	271
RurC_Tokomaru	288	303	468	561	591	549	516	549	90.6	251	196
RurC_Cust	267	348	429	453	363	399	429	447	67.4	252	220
RurC_Omapere and Opononi	267	279	318	429	510	597	477	414	55.1	253	234
RurC_Opuia East	267	339	363	354	333	342	354	291	9.0	254	262
RurC_Te Horo	267	327	414	516	612	639	675	807	202.2	255	160
RurC_Hampden	261	252	294	318	309	303	300	300	14.9	256	259
RurC_Leigh	255	294	318	396	423	423	390	441	72.9	257	223
RurC_Kakanui	252	321	339	411	429	414	414	375	48.8	258	242
RurC_Haruru Falls	249	327	429	495	594	678	786	867	248.2	259	155
RurC_Franz Josef	240	195	249	213	288	354	429	441	83.8	260	224
RurC_Parakai Urban	240	303	477	600	735	798	858	1047	336.3	261	146
RurC_Egmont Village	225	354	459	492	495	468	483	597	165.3	262	189
RurC_Lake Tekapo	222	255	279	192	297	303	318	369	66.2	263	244
RurC_Pauanui Beach	207	252	393	582	645	699	744	750	262.3	264	169
RurC_Te Kaha	207	189	303	318	363	375	303	387	87.0	265	239
RurC_Island View-Pios Beach	192	249	321	441	567	609	561	543	182.8	266	197
RurC_Omarama	186	207	309	384	354	279	231	270	45.2	267	265
RurC_Fox Glacier	177	153	174	162	249	255	375	306	72.9	268	253
RurC_Himatangi Beach	177	216	339	468	528	540	450	429	142.4	269	230
Mangawhai Heads	162	252	435	543	699	720	852	1086	570.4	270	142
RurC_Athenree	147	186	270	396	504	516	612	675	359.2	271	181
RurC_Mt Cook	132	219	270	195	279	234	213	192	45.5	272	274
RurC_Pegasus	129	18	12	30	42	39	33	1050	714.0	273	144
RurC_Kaukapakapa	81	75	99	117	162	180	450	444	448.1	274	221
RurC_Kinloch	81	138	174	222	258	279	327	489	503.7	275	209
RurC_Mahurangi	72	81	159	150	168	204	282	354	391.7	276	246
Not Classified	4620	792	1749	654	1665	1095	828	690	-85.06	...	...
Rural (Incl.some Off Shore Is.)	398430	386661	405171	410901	443412	451320	481617	513963	29.0	...	...
Total New Zealand	3103266	3143307	3263286	3373929	3618303	3737277	4027947	4242051	36.7	...	...

## Appendix C: Percentage aged 65+ years, 1976-2013, New Zealand Towns

	1976	1981	1986	1991	1996	2001	2006	2013
Alexandra	11.6	14.2	14.3	18.3	21.0	23.6	23.1	27.1
Amberley	8.9	9.9	14.9	19.8	22.7	28.1	28.5	32.1
Arrowtown	10.4	14.8	9.8	12.8	11.3	11.4	11.4	12.0
Ashburton	12.4	14.3	16.1	18.4	20.4	21.3	21.2	21.5
Balclutha	8.3	10.7	12.8	14.3	17.2	17.7	19.2	22.4
Blenheim	10.4	11.9	12.7	14.6	15.5	16.7	17.1	20.3
Bluff	5.9	6.8	7.7	8.6	10.7	13.0	14.6	19.0
Brightwater	6.9	4.9	7.1	6.5	7.5	8.6	8.7	13.0
Bulls	6.1	6.9	6.9	9.4	10.8	13.8	14.1	17.3
Cambridge Zone	11.2	12.5	13.0	14.0	15.0	15.5	17.1	18.1
Carterton	11.2	12.3	13.9	15.6	17.7	18.7	19.4	23.5
Central Auckland Zone	12.6	13.9	13.7	12.9	11.3	10.2	9.5	10.4
Christchurch	10.2	11.5	12.4	13.3	13.5	13.6	13.5	15.0
Coromandel	16.7	15.8	14.5	16.6	16.9	16.9	17.9	23.2
Cromwell	12.1	7.0	5.2	8.2	12.8	16.4	14.0	17.5
Dannevirke	15.0	14.7	15.1	14.9	16.6	17.6	18.4	21.5
Darfield	8.0	9.8	11.5	16.0	18.6	20.0	19.1	21.8
Dargaville	11.5	12.3	13.4	15.4	17.5	18.4	20.6	24.8
Dunedin	11.0	12.4	12.6	13.0	13.2	13.5	13.5	14.9
Edgecumbe	3.5	3.8	6.5	7.8	10.1	11.5	12.3	13.5
Eltham	10.3	10.1	9.9	11.0	13.3	13.0	14.1	16.1
Featherstone	6.9	8.0	8.4	9.6	12.0	13.3	14.1	18.1
Feilding	11.2	12.7	13.5	14.3	14.5	15.4	16.7	18.8
Foxton Community	18.6	19.8	19.2	19.0	20.5	21.8	22.0	25.7
Geraldine	18.5	21.5	21.7	23.3	24.2	25.7	26.0	28.5
Gisborne	10.1	10.8	11.5	12.5	12.9	13.2	13.4	14.9
Gore	10.6	11.3	12.6	14.1	15.8	17.3	19.2	21.4
Greymouth	10.0	11.1	11.5	12.9	12.8	14.1	15.2	18.2
Greytown	12.6	15.1	17.4	19.2	23.2	22.5	24.1	27.6
Hamilton Zone	6.7	7.8	8.5	9.3	9.5	9.8	9.9	11.4
Hastings Zone	9.9	10.6	11.0	12.1	12.7	13.3	13.6	16.1
Hawera	11.2	12.2	12.8	13.6	14.3	15.1	16.0	17.3
Helensville	7.8	8.7	11.8	11.1	11.4	10.8	12.1	14.4
Hokitika	11.1	12.5	12.9	14.5	14.0	15.5	16.7	19.4
Huntly	7.6	8.5	8.9	11.0	12.3	13.1	13.6	14.5
Inglewood	9.9	10.6	10.3	12.6	14.4	16.8	18.1	17.6
Invercargill	9.0	9.9	10.4	11.5	12.8	14.1	14.7	16.1
Kaikohe	6.2	7.9	9.2	8.9	9.9	9.9	10.8	12.5
Kaikoura	11.7	12.1	13.7	16.0	16.6	18.1	17.8	23.5
Kaitaia	8.0	9.8	10.7	12.8	13.8	15.4	16.0	18.2
Kapiti	15.3	18.4	19.9	20.3	22.2	23.3	24.4	26.0
Katikati Community	14.8	14.2	16.6	19.9	23.5	28.0	33.0	34.3
Kawakawa	5.1	4.6	6.9	8.1	9.2	8.4	9.2	12.3
Kawerau	1.4	1.7	2.7	3.7	6.2	9.2	12.5	17.7
Kerikeri	9.7	12.4	12.8	15.1	17.5	19.8	20.4	24.2
Leeston	10.5	12.2	15.2	16.5	16.8	16.4	16.3	18.2
Levin	13.9	15.1	15.9	17.4	19.0	20.4	22.5	25.7
Lincoln	4.5	6.3	7.1	10.9	8.8	10.1	11.1	11.7
Lower Hutt Zone	8.5	9.7	10.3	10.3	10.6	10.5	10.9	12.8
Mangawhai Heads	23.6	26.7	18.2	24.7	30.0	28.1	25.2	34.3
Mapua	16.9	14.2	12.5	14.1	12.6	12.3	16.4	20.4
Martinborough	12.2	14.3	14.0	14.5	17.2	16.8	19.6	21.3
Marton	9.9	11.7	12.8	14.3	15.9	18.0	19.9	22.5
Masterton	9.9	10.9	12.1	13.5	15.4	16.7	18.2	20.0
Matamata	11.5	14.0	15.1	17.7	20.4	21.4	24.7	26.5
(cont.)								

## Appendix C (cont.) Percentage aged 65+ years, 1976-2013, New Zealand Towns

	1976	1981	1986	1991	1996	2001	2006	2013
Methven	9.2	8.5	9.1	12.7	13.1	14.2	14.3	14.7
Milton	12.0	12.7	14.0	16.0	16.6	17.7	18.3	19.6
Moerewa	4.0	3.6	3.9	4.7	5.7	5.8	7.2	11.6
Morrinsville	11.3	12.4	14.0	15.0	15.6	16.2	18.6	19.6
Motueka	12.2	13.3	14.7	16.4	17.2	18.0	19.3	24.3
Murupara	1.0	1.3	1.7	2.1	3.8	5.1	7.3	9.6
Napier Zone	10.0	11.1	12.1	13.9	14.6	15.2	15.5	18.6
Nelson	11.5	12.7	13.6	14.7	14.6	14.7	15.0	18.1
New Plymouth	11.1	12.7	12.6	13.9	14.6	15.9	16.3	17.8
Ngatea	5.4	6.6	9.5	12.4	16.6	18.8	23.0	27.1
Ngunguru	11.4	9.5	9.5	13.9	18.0	20.1	22.0	23.5
Northern Auckland Zone	9.2	10.6	11.8	12.4	12.5	12.1	12.1	14.1
Oamaru	15.2	16.0	17.3	19.0	20.3	22.9	23.6	25.0
Ohakune	4.9	5.6	5.3	5.2	6.5	7.0	8.5	14.6
Opotiki	9.8	10.7	12.3	12.4	13.7	13.8	14.3	16.1
Opunake	10.5	9.5	11.2	13.4	15.9	18.0	19.1	21.3
Otaki	18.4	18.7	21.9	21.3	22.7	22.9	22.9	25.4
Otorohanga	9.6	11.2	12.4	14.3	15.1	15.3	17.0	18.6
Oxford	13.2	15.0	15.2	15.5	16.4	18.4	19.3	22.9
Paeroa	10.3	11.9	11.6	15.1	16.2	19.3	21.6	26.3
Pahiatua	11.5	11.4	13.3	14.6	16.6	17.9	18.5	20.8
Paihia	13.5	13.7	12.4	16.0	16.2	18.3	19.5	24.1
Palmerston North	9.0	9.3	10.0	10.1	10.3	11.2	11.5	13.3
Patea	7.4	7.7	11.2	12.9	15.6	16.5	17.3	20.5
Picton	11.1	13.4	15.4	17.4	17.3	19.6	21.0	27.1
Pleasant Point	6.7	9.0	11.5	13.8	17.4	18.4	20.8	18.6
Porirua Zone	3.6	4.2	4.8	5.8	7.0	6.9	7.9	10.3
Pukekohe	9.3	10.8	11.7	11.9	11.9	11.7	11.4	13.7
Putaruru	6.7	7.8	9.7	11.7	14.2	17.6	18.7	23.1
Queenstown	6.4	8.0	7.1	7.9	7.2	7.5	6.9	8.2
Raetihi	6.7	6.0	6.1	9.2	10.8	9.5	9.3	9.3
Raglan	24.5	24.6	23.6	21.7	20.2	17.3	15.0	16.1
Rakaia	11.2	14.5	15.3	18.5	18.5	17.4	16.3	18.4
Rangiora	12.2	13.6	14.6	15.4	16.3	16.6	19.0	21.3
Reefton	11.2	14.6	15.3	18.1	17.2	17.4	19.0	17.9
Riverton	17.4	16.2	17.8	18.8	17.7	19.9	20.8	26.5
Rolleston	3.7	2.6	3.8	3.4	4.3	4.8	5.3	7.0
Rotorua	6.0	7.5	8.5	9.8	10.7	11.4	12.0	14.3
Shannon	8.6	8.8	8.8	10.8	13.2	12.6	13.3	17.8
Snells Beach	14.6	14.7	16.8	20.5	25.7	25.4	26.0	30.4
Southern Auckland Zone	5.5	6.3	7.0	7.7	8.3	8.5	8.5	10.2
Stratford	12.3	13.1	13.9	16.2	17.8	19.3	19.5	20.4
Taihape	6.4	7.4	9.0	11.3	11.6	13.8	15.7	17.6
Taipa Bay-Mangonui	18.9	18.8	21.4	22.1	23.4	23.2	25.0	27.5
Tairua	11.3	16.6	18.0	22.7	26.9	26.0	28.7	36.2
Takaka	8.0	8.4	10.4	14.1	15.7	16.4	17.5	19.1
Taumarunui	7.2	8.0	9.1	10.4	12.4	14.9	15.9	17.9
Taupo	6.1	7.6	8.9	11.0	11.9	13.5	15.1	18.3
Tauranga	11.4	13.6	15.0	16.6	17.3	17.4	17.6	19.5
Te Anau	3.4	4.2	5.3	7.0	8.4	11.3	11.5	16.0
Te Aroha	14.1	15.0	14.9	16.0	18.4	21.2	23.5	26.6
Te Awamutu Zone	11.3	12.6	13.2	13.6	14.4	15.6	16.8	18.5

(cont.)

## Appendix C (cont.): Percentage aged 65+ years, 1976-2013, New Zealand Towns

	1976	1981	1986	1991	1996	2001	2006	2013
Te Kauwhata	5.5	13.7	16.6	18.6	20.2	22.7	22.2	25.2
Te Kuiti	8.6	9.1	10.4	10.8	12.3	13.7	13.8	15.9
Te Puke Community	9.1	10.9	12.2	15.7	17.8	19.0	19.8	19.8
Temuka	12.9	14.3	16.5	18.2	19.5	19.6	20.8	23.4
Thames	14.9	16.0	17.6	18.8	19.7	21.5	24.9	28.3
Timaru	12.5	13.6	14.9	16.4	17.4	18.7	19.5	21.3
Tokoroa	1.5	2.0	3.0	4.4	6.6	8.3	12.3	15.4
Turangi	1.6	2.2	5.3	7.2	10.1	11.9	14.3	17.7
Twizel Community	0.4	0.5	1.8	5.9	10.2	14.5	16.0	21.1
Upper Hutt Zone	5.2	6.2	7.6	9.2	10.9	12.3	12.9	14.9
Waiheke Island	26.5	26.1	20.5	17.2	14.9	13.9	13.0	18.6
Waihi	15.6	16.4	16.8	15.8	16.2	19.2	21.8	26.3
Waihi Beach	20.9	25.2	25.7	24.8	23.6	21.6	19.1	24.1
Waikouaiti	13.6	14.2	17.5	16.4	16.7	21.1	23.8	30.6
Waimate	18.5	20.6	24.0	27.3	28.4	29.7	31.7	35.8
Waiouru	0.3	0.4	0.3	0.8	0.7	0.9	1.1	2.8
Waipawa	11.4	12.0	12.0	14.3	15.8	15.7	15.0	19.3
Waipukurau	10.4	12.9	13.2	15.8	16.6	18.2	19.3	22.2
Wairoa	8.0	9.1	9.7	10.5	11.3	13.6	13.6	16.1
Waitara	9.2	10.0	10.3	11.5	13.7	15.9	17.0	18.7
Waiuku	7.8	9.8	9.4	10.1	11.3	11.4	12.7	15.8
Wakefield	7.9	10.3	12.3	14.2	13.4	13.5	10.2	11.9
Wanaka	11.6	15.0	14.7	18.3	17.2	16.7	13.1	16.7
Wanganui	12.9	13.8	14.1	14.9	15.8	16.8	18.0	20.0
Warkworth	11.6	15.6	17.3	20.7	25.5	23.4	23.9	26.3
Wellington Zone	8.7	9.3	9.3	9.1	8.8	8.6	8.4	9.5
Wellsford	6.9	8.9	11.2	14.0	15.3	15.5	15.4	18.9
Western Auckland Zone	5.4	5.9	6.8	7.5	8.4	8.8	9.4	10.9
Westport	11.6	13.5	14.1	15.2	16.7	18.9	18.9	19.4
Whakatane	7.8	9.1	11.4	13.1	14.1	14.6	15.8	18.7
Whangamata	15.6	20.0	17.4	21.2	24.8	27.7	28.5	34.6
Whangarei	9.0	10.5	10.9	12.9	13.9	15.2	16.0	18.6
Whitianga	15.1	16.4	17.2	20.2	18.6	19.4	18.5	22.7
Winton	11.5	14.8	18.2	22.9	25.6	26.9	27.8	25.9
Woodend	7.0	5.4	6.9	7.9	10.1	8.9	11.4	16.6
Woodville	12.2	12.4	14.2	13.8	14.3	15.7	17.3	20.2
Total (Towns)	9.4	10.5	11.2	11.9	12.3	12.5	12.7	14.4

## Appendix D: Percentage aged 65+ years, 1976-2013, New Zealand Rural Centres

	1976	1981	1986	1991	1996	2001	2006	2013
Rural Centre Ahipara	8.9	11.1	9.5	9.1	11.0	10.8	11.3	14.4
Rural Centre Akaroa	15.6	18.1	23.6	29.4	30.5	31.2	28.5	31.2
Rural Centre Athenree	25.5	21.9	19.1	25.0	30.1	31.3	28.2	32.1
Rural Centre Awanui	6.3	5.4	11.5	12.9	9.6	13.2	9.4	10.6
Rural Centre Blackball	16.5	18.2	18.4	15.6	13.0	14.4	11.8	15.3
Rural Centre Bombay	5.5	4.9	6.3	6.0	6.2	8.8	9.7	12.7
Rural Centre Burnham Military Camp	0.2	0.0	0.4	0.2	0.6	1.1	2.0	0.6
Rural Centre Cheviot	5.8	7.4	11.8	12.4	17.8	23.1	26.9	30.4
Rural Centre Clinton	9.0	7.6	9.3	14.1	14.2	16.3	14.1	18.3
Rural Centre Clyde	10.8	11.1	9.9	14.3	17.4	19.9	18.2	24.1
Rural Centre Culverden	4.5	2.5	5.4	4.9	8.9	11.4	12.4	17.6
Rural Centre Cust	6.8	5.3	5.7	5.4	9.2	10.4	16.2	17.7
Rural Centre Dobson	10.5	10.6	8.9	9.2	10.5	10.4	10.3	12.6
Rural Centre Dunsandel	8.2	10.8	10.6	11.7	9.4	8.9	11.0	12.1
Rural Centre Edendale Community	13.1	14.4	13.0	18.3	17.6	18.9	19.6	16.4
Rural Centre Egmont Village	9.1	6.6	4.6	5.5	6.1	5.2	7.6	10.0
Rural Centre Eketahuna	12.9	13.6	13.2	14.4	17.0	16.2	19.2	24.1
Rural Centre Fairlie	11.8	14.9	14.5	18.0	16.5	20.1	21.3	29.1
Rural Centre Fox Glacier	3.4	7.5	6.8	11.1	4.9	6.0	5.8	6.1
Rural Centre Franz Josef	3.7	2.9	2.4	5.6	3.1	4.3	4.3	5.4
Rural Centre Frasertown	5.2	6.0	7.9	9.8	10.5	12.2	10.9	22.9
Rural Centre Halcombe	9.6	7.1	6.5	8.3	8.0	7.9	7.7	10.0
Rural Centre Hampden	23.3	31.3	25.3	22.9	22.5	27.7	26.3	35.7
Rural Centre Hanmer Springs	6.3	9.8	11.0	14.7	16.4	13.1	12.9	14.6
Rural Centre Harihari	3.2	1.7	2.2	4.9	7.9	9.3	9.5	16.8
Rural Centre Haruru Falls	4.9	7.3	6.3	10.9	14.9	15.9	17.1	22.9
Rural Centre Havelock	13.6	11.9	11.8	11.5	17.1	17.6	16.8	25.6
Rural Centre Hector-Ngakawau	13.0	17.9	19.3	17.8	13.8	19.8	23.4	22.2
Rural Centre Himatangi Beach	28.6	25.0	15.3	14.2	16.3	16.3	13.2	18.1
Rural Centre Hunterville	6.3	10.1	13.5	18.5	20.5	16.8	17.2	20.8
Rural Centre Island View-Pios Beach	15.6	18.1	22.2	16.2	20.9	18.0	18.8	24.3
Rural Centre Kaeo	10.3	13.7	11.3	10.2	12.6	11.6	16.0	20.1
Rural Centre Kaingaroa Forest	0.3	0.4	0.4	1.5	3.1	3.3	3.8	8.3
Rural Centre Kaitangata	11.1	9.9	9.7	10.3	9.8	13.0	12.3	14.1
Rural Centre Kaiwaka	6.3	8.1	5.7	6.0	6.7	7.3	10.6	12.6
Rural Centre Kakanui	17.6	14.0	12.6	12.4	12.7	17.8	20.3	26.0
Rural Centre Kaponga	4.5	9.3	10.3	9.3	8.8	10.5	9.1	11.1
Rural Centre Karamea	5.6	7.5	7.5	6.7	7.9	14.5	16.4	18.5
Rural Centre Karitane	18.1	20.7	18.1	15.8	16.3	21.8	23.1	27.3
Rural Centre Kaukapakapa	13.8	19.2	15.2	13.5	10.9	11.3	7.9	8.7
Rural Centre Kawhia Community	21.6	21.3	21.1	19.4	19.8	19.9	25.2	28.3
Rural Centre Kerepehi	3.6	5.0	3.8	4.2	8.7	7.7	10.0	12.7
Rural Centre Kinloch	14.3	12.5	13.3	21.6	20.7	22.2	22.0	20.5
Rural Centre Kurow	10.9	9.3	12.9	16.9	19.9	24.0	26.5	34.9
Rural Centre Lake Tekapo	1.3	2.4	4.3	4.7	7.1	10.1	12.4	12.4
Rural Centre Lawrence	13.8	12.6	11.6	15.6	13.6	17.8	17.1	18.1
Rural Centre Leigh	18.2	18.4	16.8	18.9	20.1	19.6	17.5	20.0
Rural Centre Lumsden Community	6.7	7.7	10.4	13.2	13.0	14.5	15.7	17.9
Rural Centre Mahurangi	15.4	32.1	20.0	31.4	25.9	20.9	15.2	25.2
Rural Centre Makara-Ohariu	4.7	6.3	5.3	5.2	8.1	8.2	7.6	8.7
Rural Centre Maketu Community	12.4	13.7	12.9	12.1	13.4	13.9	13.1	17.5
Rural Centre Mamaku	6.2	6.3	6.6	4.2	5.0	5.6	5.8	9.6
Rural Centre Manaia	9.9	11.8	12.7	11.7	10.1	12.1	13.0	15.5
Rural Centre Manapouri	5.1	5.1	4.8	8.0	9.6	11.4	13.0	23.4
Rural Centre Mangakino	12.9	17.1	16.1	15.2	14.4	14.3	15.4	17.9

(cont.)

## Appendix D (cont.): Percentage aged 65+ years, 1976-2013, New Zealand Rural Centres

	1976	1981	1986	1991	1996	2001	2006	2013
Rural Centre Manutuke	4.3	6.8	6.3	7.7	8.1	7.6	9.5	14.9
Rural Centre Matata	8.3	9.7	9.3	11.2	13.7	12.2	15.1	19.2
Rural Centre Maungatapere	4.0	4.2	5.6	7.0	7.9	12.5	13.6	17.2
Rural Centre Maungaturoto	7.4	7.0	7.3	8.7	10.8	12.8	12.7	17.8
Rural Centre Meremere	1.5	1.9	1.5	2.8	5.7	9.6	6.5	8.9
Rural Centre Mt Cook	0.0	1.4	2.2	3.0	4.2	8.7	2.9	1.6
Rural Centre Murchison	6.0	7.4	10.0	12.1	13.5	15.3	18.8	21.3
Rural Centre Muriwai Beach	13.6	12.9	12.8	9.8	8.6	7.2	5.8	9.3
Rural Centre Nightcaps	9.0	14.2	14.2	14.2	15.9	17.1	18.4	23.2
Rural Centre Nuhaka	8.1	9.2	9.2	8.9	8.5	8.3	14.4	20.7
Rural Centre Ohaeawai	4.3	7.7	9.3	11.3	13.8	11.6	14.8	19.9
Rural Centre Ohai	8.0	8.0	8.7	10.3	10.5	11.4	12.5	18.6
Rural Centre Ohura	8.3	7.9	5.6	6.3	5.6	9.5	10.9	21.4
Rural Centre Okaihau	9.0	9.0	8.7	10.1	11.2	12.3	9.7	12.5
Rural Centre Okato	8.6	11.6	9.2	9.9	11.4	10.5	13.1	12.4
Rural Centre Omapere and Opononi	12.4	19.1	16.0	14.7	14.4	15.1	17.2	19.1
Rural Centre Omarama	6.7	5.7	2.0	5.5	7.6	10.4	8.9	12.1
Rural Centre Opua East	14.6	13.4	14.2	11.7	14.3	15.9	17.8	33.3
Rural Centre Otane	11.7	9.1	7.9	6.1	8.0	5.6	8.1	14.7
Rural Centre Otautau	7.9	10.0	10.9	12.1	14.3	14.7	14.7	18.6
Rural Centre Otematata	3.9	8.7	9.6	9.2	12.6	19.7	25.4	33.3
Rural Centre Outram	10.4	14.1	15.3	15.4	13.7	12.1	12.1	14.5
Rural Centre Owaka	15.4	15.1	14.9	13.6	15.0	14.7	13.1	16.0
Rural Centre Paengaroa	8.4	7.7	6.9	8.7	8.7	8.8	9.5	12.2
Rural Centre Palmerston	17.3	19.0	19.3	20.5	20.1	24.5	27.7	28.8
Rural Centre Parakai Urban	15.0	11.0	7.0	10.4	11.8	10.5	12.0	18.9
Rural Centre Pareora	5.3	7.7	6.4	8.6	9.0	11.6	11.4	14.2
Rural Centre Patutahi	5.9	5.3	5.7	6.1	8.5	8.3	6.6	11.5
Rural Centre Pauanui Beach	7.1	16.7	22.7	31.1	37.2	36.2	37.4	43.8
Rural Centre Piopio	5.8	7.9	8.9	10.8	13.8	15.7	14.6	17.6
Rural Centre Rahotu	6.2	7.5	8.2	9.5	9.7	9.1	12.2	13.4
Rural Centre Ranfurly	7.8	12.1	13.0	14.6	20.6	29.3	33.5	32.9
Rural Centre Ratana Community	4.4	4.0	4.5	2.1	5.4	7.0	11.4	15.6
Rural Centre Rawene	10.8	15.8	17.5	13.2	13.7	14.5	17.2	20.5
Rural Centre Reporoa	1.6	2.0	1.0	3.6	3.1	3.8	5.0	9.9
Rural Centre Riversdale Community	7.7	8.4	10.4	10.4	15.0	17.2	17.0	15.4
Rural Centre Riwaka	7.4	8.2	8.5	8.9	9.4	10.6	13.8	15.4
Rural Centre Rongotea	9.0	7.2	6.5	7.3	8.5	9.9	12.2	16.4
Rural Centre Ross	9.4	12.6	12.9	14.7	15.2	18.9	17.2	18.9
Rural Centre Roxburgh	15.7	21.6	24.8	24.8	20.4	24.4	27.1	33.5
Rural Centre Ruatoria	5.1	4.9	4.7	6.7	7.0	7.9	6.4	7.7
Rural Centre Ruawai	10.5	8.6	12.6	15.0	18.4	16.0	21.1	24.5
Rural Centre Russell	12.4	14.5	16.1	16.9	19.1	17.8	19.5	28.0
Rural Centre Sanson	10.2	9.0	8.4	11.8	9.4	12.1	12.1	12.5
Rural Centre Seddon	5.8	8.0	8.9	7.9	8.8	12.7	12.3	15.4
Rural Centre Sefton	7.1	5.8	6.6	8.8	8.8	9.0	9.1	11.2
Rural Centre Southbridge	11.2	9.2	12.1	11.0	11.6	9.6	11.5	11.0
Rural Centre Stirling	7.1	9.3	9.0	9.5	12.4	11.1	10.9	9.1
Rural Centre Taitapu	7.8	6.9	7.5	6.8	8.6	8.6	8.1	10.8
Rural Centre Takapau	8.0	9.6	9.0	10.7	10.4	13.3	12.9	15.0
Rural Centre Taneatua	4.2	3.6	3.9	5.4	5.5	5.6	6.1	7.7
Rural Centre Tapanui	8.7	7.6	9.3	17.6	17.7	18.1	21.1	25.7
Rural Centre Tapawera	2.0	2.1	3.5	5.4	5.1	8.7	9.5	12.1
Rural Centre Te Horo	14.8	18.2	12.4	10.3	11.4	15.1	11.8	17.5

(cont.)

## Appendix D (cont.): Percentage aged 65+ years, 1976-2013, New Zealand Rural Centres

	1976	1981	1986	1991	1996	2001	2006	2013
Rural Centre Te Kaha	7.2	9.2	12.1	12.4	9.8	10.4	13.6	19.7
Rural Centre Te Karaka	3.8	6.3	4.3	5.1	6.0	8.8	7.7	9.9
Rural Centre Te Kopuru	11.0	13.8	14.7	17.9	16.0	15.7	19.3	19.6
Rural Centre Te Puru-Thornton Bay	24.3	27.7	27.5	25.4	21.2	22.0	21.3	33.2
Rural Centre Te Teko	2.9	4.6	4.6	6.1	4.8	6.8	4.9	9.3
Rural Centre Tirau	7.8	9.6	10.0	11.0	12.0	14.1	17.5	18.7
Rural Centre Tokomaru	8.4	6.9	5.8	5.9	4.1	4.4	5.8	9.3
Rural Centre Tokomaru Bay	10.7	8.1	9.1	7.5	9.5	9.9	12.6	14.6
Rural Centre Tolaga Bay	5.3	6.4	8.6	10.2	11.8	10.4	9.1	12.8
Rural Centre Tuai	3.0	4.2	4.2	4.7	4.6	6.7	6.1	9.5
Rural Centre Tuatapere	5.9	7.9	11.4	14.0	12.2	13.4	17.5	24.4
Rural Centre Urenui	20.2	17.1	14.3	13.4	17.3	19.3	20.9	25.9
Rural Centre Waharoa	4.7	5.8	3.8	4.7	5.9	8.0	10.6	6.4
Rural Centre Waiiau	10.2	10.4	11.5	14.1	10.9	12.9	14.4	15.3
Rural Centre Waikuku	13.0	8.4	10.1	7.7	7.1	8.8	8.8	11.4
Rural Centre Waimana	6.9	5.3	4.5	3.1	5.0	7.3	7.4	6.8
Rural Centre Waitati	30.8	12.8	10.0	16.9	14.9	9.1	6.0	11.2
Rural Centre Waitoa	6.8	6.5	5.3	5.1	5.5	8.3	12.3	15.4
Rural Centre Wallacetown	3.1	3.5	4.7	6.1	9.2	9.7	10.0	10.4
Rural Centre Warrington	9.9	11.6	8.9	7.9	10.0	9.2	9.4	16.3
Rural Centre Waverley	7.6	8.6	10.7	13.7	15.0	17.0	19.2	21.5
Rural Centre Woodlands	4.5	6.4	10.5	11.9	11.1	10.5	11.8	12.6
Rural Centre Wyndham	8.6	10.9	12.2	14.0	15.0	15.7	18.0	18.7
Total Rural Centres	8.7	9.6	10.0	11.2	12.1	13.2	13.9	17.1
Omitted*								
Rural Centre Pegasus	9.3	12.5	0.0	7.7	6.3	11.8	21.4	12.9

\*Rural Centre Pegasus was omitted from the correlation analysis because of extremely low numbers until 2006, following which the town grew by over 3000%. This outlier overly biased the analysis

## Appendix E: Percentage Women aged 15-44 years, 1976-2013, New Zealand Towns

	1976	1981	1986	1991	1996	2001	2006	2013
Alexandra	36.2	39.4	40.9	40.5	36.3	31.3	32.3	26.8
Amberley	37.8	38.2	39.5	34.4	33.0	28.1	28.2	27.1
Arrowtown	39.1	43.4	45.0	43.4	46.2	43.3	44.6	38.6
Ashburton	37.8	38.7	40.4	39.7	36.6	34.4	34.2	33.2
Balclutha	40.4	41.5	43.1	42.8	39.9	37.1	33.6	32.1
Blenheim	39.9	42.0	43.5	41.8	40.8	38.1	37.2	34.3
Bluff	43.3	45.5	47.1	46.1	41.9	39.8	37.2	30.3
Brightwater	48.1	47.5	46.1	50.0	46.1	45.9	42.6	37.6
Bulls	43.9	47.3	46.8	47.7	46.1	43.9	43.8	39.4
Cambridge Zone	39.1	41.3	43.3	43.8	42.1	40.1	37.1	34.3
Carterton	38.1	40.6	39.7	40.7	38.2	34.9	34.0	30.1
Central Auckland Zone	42.7	44.6	47.4	49.3	50.3	50.0	50.7	48.1
Christchurch	42.4	44.0	46.0	46.9	46.3	44.3	43.2	40.1
Coromandel	32.1	37.1	39.7	37.7	36.2	34.3	33.3	27.8
Cromwell	35.7	46.5	48.3	49.9	41.2	37.3	40.9	35.7
Dannevirke	36.4	39.5	40.7	41.2	38.8	35.9	35.4	31.6
Darfield	38.8	43.4	40.9	37.8	37.0	36.0	34.3	32.7
Dargaville	38.8	39.6	41.9	40.9	36.3	34.6	32.3	29.6
Dunedin	42.3	43.6	46.8	48.9	49.4	47.7	47.7	45.3
Edgecumbe	43.1	45.8	48.4	47.4	46.0	38.1	38.8	39.9
Eltham	39.8	42.3	44.8	42.4	38.9	40.7	37.8	34.9
Featherston	40.6	42.9	46.0	46.2	40.8	37.6	34.4	33.6
Feilding	38.3	39.6	41.5	43.3	41.5	39.0	37.6	34.5
Foxton Community	30.7	33.3	36.4	36.7	33.5	31.5	32.5	29.2
Geraldine	30.9	33.1	34.1	32.2	31.9	29.9	29.0	24.9
Gisborne	39.0	42.3	43.4	43.1	41.9	40.5	38.7	36.9
Gore	38.7	41.0	42.5	42.3	40.4	37.2	34.8	31.6
Greymouth	40.7	44.0	46.0	44.6	43.0	39.0	38.1	35.5
Greytown	36.4	36.3	36.2	38.6	36.6	31.4	28.6	26.1
Hamilton Zone	46.2	47.9	50.1	50.2	49.5	47.0	46.3	43.8
Hastings Zone	40.1	42.6	44.0	44.2	42.0	39.5	38.4	35.2
Hawera	38.1	40.4	41.1	41.6	41.1	39.1	37.2	36.0
Helensville	39.3	42.5	41.1	45.0	42.4	43.0	40.9	37.8
Hokitika	37.5	43.5	45.3	42.7	41.5	38.1	36.6	33.4
Huntly	39.8	41.6	42.4	43.1	41.8	40.2	39.0	36.6
Inglewood	38.1	40.0	43.8	45.8	43.0	38.0	34.9	35.9
Invercargill	41.6	44.2	45.1	45.6	44.4	41.8	40.7	38.3
Kaikohe	39.8	43.5	44.4	45.6	42.3	40.7	39.0	36.3
Kaikoura	34.5	41.1	42.0	39.6	39.5	35.8	38.7	31.9
Kaitaia	41.5	42.2	42.0	42.1	41.6	38.8	37.3	33.6
Kapiti	35.3	35.1	35.8	36.8	34.5	32.1	31.2	28.8
Katikati Community	31.3	37.0	35.9	37.0	30.7	29.0	26.4	25.3
Kawakawa	44.4	43.2	48.2	45.9	42.2	42.6	41.5	34.0
Kawerau	45.0	46.8	48.4	48.4	45.8	40.7	38.2	35.6
Kerikeri	36.6	40.0	42.0	39.5	35.1	32.4	31.6	28.5
Leeston	36.8	35.4	42.1	39.9	41.0	37.8	37.8	32.8
Levin	37.1	39.0	40.8	39.8	37.5	34.8	31.6	28.9
Lincoln	47.3	51.9	57.2	50.7	58.7	50.0	46.6	46.1
Lower Hutt Zone	42.1	44.1	46.1	47.5	45.7	44.5	43.3	40.3
Mangawhai Heads	20.7	19.5	28.2	28.7	24.0	21.6	25.2	21.3
Mapua	35.1	37.1	44.0	42.8	41.0	37.6	30.7	24.7
Martinborough	35.8	36.3	37.6	40.8	37.1	36.4	33.8	29.5
Marton	39.0	40.9	41.2	40.1	39.1	36.0	32.8	31.4
Masterton	40.4	41.8	41.6	41.3	39.7	36.9	34.6	33.5
Matamata	37.1	39.7	38.9	39.0	35.8	35.4	30.8	31.1
(cont.)								

**Appendix E (cont.): Percentage Women aged 15-44 years, 1976-2013, New Zealand Towns**

	1976	1981	1986	1991	1996	2001	2006	2013
Methven	40.3	41.0	45.0	43.6	43.7	40.4	36.8	38.7
Milton	38.1	38.9	38.8	39.7	39.0	36.9	31.7	33.0
Moerewa	39.7	45.3	45.5	47.2	45.4	42.1	41.2	40.4
Morrinsville	38.2	39.6	41.8	41.0	41.5	37.5	35.5	34.1
Motueka	36.0	40.1	41.3	42.2	39.5	36.8	35.1	31.4
Murupara	42.8	47.6	48.1	50.5	48.1	41.8	40.8	40.1
Napier Zone	40.1	42.4	44.1	43.1	41.6	39.3	38.3	34.3
Nelson	39.1	41.8	43.9	44.0	42.9	40.8	38.5	33.9
New Plymouth	40.4	41.8	44.4	44.0	42.3	39.3	38.4	35.9
Ngatea	44.8	47.8	42.2	42.9	36.4	34.2	30.8	29.3
Ngunguru	34.7	34.6	43.3	39.2	34.8	31.2	31.8	26.6
Northern Auckland Zone	42.5	44.7	46.1	46.5	44.9	43.5	43.4	40.5
Oamaru	35.2	36.6	37.8	37.5	36.6	33.0	29.6	28.4
Ohakune	41.2	48.0	51.3	50.0	48.5	42.5	39.9	39.0
Opotiki	36.1	40.3	40.8	42.0	40.1	37.7	35.7	34.1
Opunake	35.9	39.9	42.4	40.4	37.3	36.1	34.1	34.1
Otaki	33.9	34.7	33.2	34.4	32.7	32.4	32.1	29.6
Otorohanga	40.4	41.0	42.3	41.5	39.8	37.6	34.9	33.2
Oxford	35.8	36.2	38.6	40.7	38.4	34.9	30.3	28.7
Paeroa	39.8	41.1	43.5	41.2	38.2	33.2	31.8	29.3
Pahiatua	36.9	39.0	40.6	42.9	41.0	37.0	34.5	31.8
Paihia	36.0	40.2	44.9	38.8	38.1	36.9	34.2	31.9
Palmerston North	45.5	48.7	50.9	51.7	51.0	47.6	46.7	44.0
Patea	36.9	42.6	39.7	39.3	37.2	33.9	32.7	30.2
Picton	36.9	37.8	40.0	39.1	36.7	33.6	32.2	25.9
Pleasant Point	43.7	41.9	40.7	38.8	37.6	35.4	31.3	31.6
Porirua Zone	43.5	46.8	50.0	50.0	47.0	45.3	43.8	40.8
Pukekohe	39.8	41.5	44.0	45.8	43.5	42.5	41.5	39.1
Putaruru	39.4	42.4	43.3	40.8	40.0	37.0	35.0	30.9
Queenstown	53.5	55.4	58.4	58.5	60.7	58.5	61.1	59.2
Raetihi	35.4	43.3	44.3	42.1	43.9	41.5	39.0	38.7
Raglan	26.3	30.5	32.4	37.3	36.8	38.9	40.4	37.7
Rakaia	40.2	36.3	38.1	37.7	33.9	35.6	34.8	32.8
Rangiora	38.4	39.2	41.5	42.7	40.7	37.8	34.9	32.8
Reefton	37.1	39.8	41.4	36.8	37.4	37.6	34.2	33.5
Riverton	33.2	36.6	36.7	36.8	35.2	32.7	31.7	29.4
Rolleston	46.5	49.7	50.3	55.0	49.4	49.2	48.7	43.8
Rotorua	43.9	45.7	47.6	46.9	45.4	43.4	40.9	37.9
Shannon	39.3	39.7	41.0	40.5	38.5	39.7	39.4	34.1
Snells Beach	32.3	32.3	37.2	34.3	30.1	29.0	29.1	25.4
Southern Auckland Zone	44.2	46.8	48.8	48.7	46.9	45.1	44.9	42.9
Stratford	38.5	39.5	40.3	39.3	39.4	36.6	35.5	34.7
Taihape	42.5	44.7	44.9	43.5	41.1	37.5	39.7	34.5
Taipa Bay-Mangonui	26.3	30.6	32.6	31.8	30.9	27.6	24.9	24.5
Tairua	29.4	30.9	30.2	29.6	25.9	28.2	27.1	18.3
Takaka	36.8	42.9	44.9	44.1	38.8	39.6	33.5	33.5
Taumarunui	41.4	44.9	45.8	44.3	40.6	37.0	35.0	31.7
Taupo	44.0	46.0	47.0	45.8	43.3	40.4	38.5	35.5
Tauranga	38.6	40.4	41.5	40.8	39.6	38.3	37.3	34.5
Te Anau	54.8	52.8	52.8	50.8	49.7	46.3	47.3	39.3
Te Aroha	36.1	37.7	41.2	38.0	36.7	33.8	32.3	29.1
Te Awamutu Zone	38.9	41.2	43.1	42.1	41.7	38.9	37.5	34.5
(cont.)								

**Appendix E (cont.): Percentage Women aged 15-44 years, 1976-2013, New Zealand Towns**

	1976	1981	1986	1991	1996	2001	2006	2013
Te Kauwhata	40.0	41.3	35.7	36.7	34.4	31.7	30.7	32.5
Te Kuiti	42.0	43.9	44.3	44.7	41.7	40.8	38.7	36.1
Te Puke Community	38.9	40.8	41.8	38.3	37.2	35.3	35.3	33.9
Temuka	35.6	38.4	37.9	39.1	36.6	34.5	33.4	31.1
Thames	37.6	38.8	39.2	39.2	37.2	34.2	29.8	26.1
Timaru	37.7	40.3	41.7	41.3	39.5	37.0	35.4	33.0
Tokoroa	46.5	48.7	50.0	48.8	45.1	42.3	38.1	36.5
Turangi	43.5	46.8	45.5	45.2	41.8	39.6	38.7	33.7
Twizel Community	49.4	49.2	48.9	44.6	46.1	36.0	37.0	27.6
Upper Hutt Zone	45.6	46.9	48.4	48.2	45.4	42.0	40.0	38.2
Waiheke Island	24.7	30.0	36.7	39.9	38.5	37.9	37.7	32.0
Waihi	34.5	36.0	39.6	41.1	39.1	32.4	28.1	27.7
Waihi Beach	28.6	30.1	30.9	32.2	33.0	31.7	32.1	27.5
Waikouaiti	35.5	37.7	38.8	36.4	37.1	32.3	30.4	23.2
Waimate	31.9	33.4	32.6	31.4	30.0	27.1	24.2	23.0
Waiouru	50.7	57.4	62.0	59.3	60.8	57.0	54.6	51.5
Waipawa	37.1	38.1	41.2	40.4	38.3	38.0	37.6	33.1
Waipukurau	39.8	40.1	41.2	41.0	39.9	36.6	35.5	29.2
Wairoa	40.1	40.2	41.7	41.5	41.4	38.0	35.9	35.2
Waitara	39.8	42.8	45.4	45.4	41.6	38.1	36.6	33.2
Waiuku	41.6	41.9	45.4	46.2	43.3	41.9	39.8	36.0
Wakefield	37.6	41.1	41.1	45.7	43.0	41.5	41.3	36.0
Wanaka	40.7	39.0	43.6	38.7	41.7	39.2	43.3	37.4
Wanganui	37.5	39.9	41.9	41.3	40.6	37.6	35.8	32.8
Warkworth	35.4	37.7	39.7	34.7	31.9	32.9	30.6	29.3
Wellington Zone	47.7	49.9	52.6	54.6	54.1	52.9	53.1	49.9
Wellsford	39.9	41.0	43.7	41.0	37.9	38.2	36.6	33.2
Western Auckland Zone	46.3	48.2	49.7	50.6	48.2	46.6	45.6	42.9
Westport	37.1	38.6	41.7	41.7	37.9	35.0	35.2	33.4
Whakatane	40.9	42.4	42.8	43.1	41.3	39.5	36.7	33.8
Whangamata	32.3	32.7	36.7	33.2	29.8	27.1	26.3	22.7
Whangarei	41.4	43.1	45.7	44.3	42.2	39.8	38.0	34.7
Whitianga	31.7	36.0	34.7	33.2	36.0	33.1	32.1	28.1
Winton	37.6	39.4	37.8	35.5	32.9	31.6	30.9	28.9
Woodend	48.0	50.0	49.0	46.3	46.0	43.4	39.2	34.1
Woodville	35.3	36.7	39.1	43.6	39.9	39.1	34.4	32.6

## Appendix F: Percentage Women aged 15-44 years, 1976-2013, New Zealand Rural Centres

	1976	1981	1986	1991	1996	2001	2006	2013
RurC_Ahipara	37.7	36.3	43.1	41.1	41.0	40.7	41.3	30.9
RurC_Akaroa	30.2	32.0	30.8	30.8	29.2	28.0	27.0	24.8
RurC_Athenree	24.0	38.7	40.9	30.4	27.4	23.0	26.5	23.4
RurC_Awanui	42.4	41.8	48.1	43.1	47.5	45.2	40.3	38.3
RurC_Blackball	33.3	32.2	42.4	42.9	38.1	38.5	33.3	29.5
RurC_Bombay	44.9	50.0	45.9	41.9	44.0	43.3	38.8	31.8
RurC_Burnham Military Camp	52.9	56.8	59.6	68.1	63.9	62.7	66.7	69.1
RurC_Cheviot	44.9	47.9	43.9	35.5	32.4	29.0	29.9	23.3
RurC_Clinton	43.5	43.8	45.5	47.5	38.9	32.7	36.7	28.6
RurC_Clyde	35.2	38.3	45.1	40.3	35.7	31.9	32.4	26.3
RurC_Culverden	43.5	48.6	44.8	45.1	38.2	40.3	32.8	36.6
RurC_Cust	40.9	43.1	38.2	38.7	35.7	35.9	27.9	30.3
RurC_Dobson	41.5	42.0	47.0	45.5	46.4	38.2	39.3	34.3
RurC_Dunsandel	43.5	40.7	44.2	44.9	46.6	46.9	40.8	37.3
RurC_Edendale Community	38.9	36.7	39.6	34.4	37.2	35.2	32.9	35.6
RurC_Egmont Village	48.6	46.4	50.0	47.6	47.5	40.8	43.0	36.6
RurC_Eketahuna	33.6	36.3	35.7	36.4	33.9	35.4	34.2	34.7
RurC_Fairlie	35.3	39.3	39.1	37.7	34.3	35.2	28.6	26.3
RurC_Fox Glacier	57.7	65.2	69.2	64.0	68.4	67.4	58.7	60.4
RurC_Franz Josef	61.5	68.8	70.7	60.6	60.9	59.0	68.1	64.8
RurC_Frasertown	39.3	44.6	43.4	47.5	40.4	44.7	39.2	28.2
RurC_Halcombe	40.3	50.0	50.8	48.4	48.4	43.7	38.4	36.3
RurC_Hampden	20.8	25.6	31.4	31.4	38.5	22.0	22.0	21.2
RurC_Hanmer Springs	42.5	45.8	48.0	41.7	40.8	38.1	42.3	38.9
RurC_Harihari	48.8	48.1	48.9	48.6	36.9	39.0	34.6	37.7
RurC_Haruru Falls	43.9	44.2	45.8	45.6	41.2	38.2	35.8	27.5
RurC_Havelock	34.0	38.2	41.9	41.8	36.7	38.2	35.4	26.9
RurC_Hector-Ngakawau	29.6	34.0	39.6	41.7	40.3	34.0	38.9	25.7
RurC_Himatangi Beach	19.4	30.3	35.1	36.4	36.5	33.7	33.8	26.5
RurC_Hunterville	38.7	43.0	41.6	38.4	34.9	33.3	31.5	25.3
RurC_Island View-Pios Beach	30.3	33.3	34.6	32.9	32.6	30.1	27.5	23.7
RurC_Kaeo	42.6	38.7	47.1	38.8	37.6	38.1	35.4	27.6
RurC_Kaingaroa Forest	45.7	54.6	55.7	50.5	51.8	45.2	44.9	40.9
RurC_Kaitangata	37.0	42.4	45.6	43.5	45.7	43.7	40.9	36.3
RurC_Kaiwaka	34.9	44.7	45.8	49.2	43.7	42.5	40.9	37.5
RurC_Kakanui	38.5	38.5	44.8	36.8	32.4	27.4	30.4	22.7
RurC_Kaponga	42.2	44.8	42.6	41.9	40.6	41.3	42.6	33.3
RurC_Karamea	38.6	40.8	49.4	44.0	37.3	33.8	34.8	26.6
RurC_Karitane	35.7	35.9	36.1	38.2	36.1	30.9	31.1	25.0
RurC_Kaukapakapa	31.3	50.0	47.1	31.6	44.4	45.2	43.1	38.7
RurC_Kawhia Community	17.6	29.3	31.3	35.1	33.0	27.6	31.8	20.0
RurC_Kerepehi	43.7	45.9	50.5	43.5	44.2	43.4	42.2	35.8
RurC_Kinloch	45.5	28.6	35.7	27.0	35.6	33.3	32.1	26.5
RurC_Kurow	46.2	39.5	41.6	38.2	33.3	29.0	26.8	23.5
RurC_Lake Tekapo	44.7	55.8	50.0	56.3	52.9	51.0	48.1	49.2
RurC_Lawrence	34.0	35.3	44.0	37.4	41.7	36.9	34.7	29.9
RurC_Leigh	26.8	31.3	32.1	35.4	32.4	31.8	36.9	31.2
RurC_Lumsden Community	43.8	42.3	44.8	42.5	41.8	41.1	38.7	34.4
RurC_Mahurangi	45.5	45.5	41.7	32.0	25.0	22.9	27.1	22.0
RurC_Makara-Ohariu	46.2	49.5	50.0	48.6	47.6	45.8	43.8	34.8
RurC_Maketu Community	32.9	32.8	35.7	40.1	39.4	38.3	36.0	35.2
RurC_Mamaku	40.7	42.3	50.6	49.0	50.0	42.9	41.5	36.0
RurC_Manaiia	37.6	39.5	40.7	38.6	41.0	36.8	39.6	34.6
RurC_Manapouri	52.2	51.2	53.2	51.3	58.1	43.2	42.6	22.2
RurC_Mangakino	33.1	35.9	35.6	38.7	39.0	37.5	35.1	31.0

(cont.)

**Appendix F (cont.): Percentage Women aged 15-44 years, 1976-2013, New Zealand Rural Centres**

	1976	1981	1986	1991	1996	2001	2006	2013
RurC_Manutuke	40.7	42.9	40.7	43.4	47.2	44.2	37.4	30.6
RurC_Matata	34.9	38.6	36.3	41.0	37.1	35.7	33.3	31.9
RurC_Maungatapere	40.8	44.2	48.7	45.1	41.2	36.7	34.3	27.6
RurC_Maungaturoto	38.2	42.1	46.1	40.7	44.4	38.4	40.3	34.4
RurC_Mt Cook	84.2	81.3	86.4	86.7	88.6	68.4	71.4	64.7
RurC_Meremere	46.0	45.0	54.3	43.6	44.9	40.7	39.7	40.3
RurC_Murchison	37.3	44.3	43.4	43.6	36.6	38.0	31.0	29.8
RurC_Muriwai Beach	37.3	36.4	45.1	49.6	52.8	50.6	50.3	41.0
RurC_Nightcaps	32.2	37.3	39.4	36.9	38.3	37.3	38.3	25.6
RurC_Nuhaka	34.4	36.8	42.2	45.5	41.1	43.4	34.1	35.0
RurC_Ohaeawai	38.2	43.3	44.4	45.0	39.6	35.8	33.1	24.6
RurC_Ohai	36.3	42.5	43.1	39.3	41.7	42.2	40.7	32.7
RurC_Ohura	37.3	47.5	42.4	45.1	49.0	50.0	29.6	26.3
RurC_Okaihau	35.4	42.4	43.6	46.6	42.3	35.0	38.9	37.7
RurC_Okato	42.9	44.3	45.0	48.2	41.2	39.5	40.2	40.4
RurC_Omapere and Opononi	27.3	27.1	33.3	37.5	38.4	31.0	37.9	31.1
RurC_Omarama	54.8	59.5	54.0	53.2	47.5	40.0	38.2	38.1
RurC_Opua East	34.1	41.2	43.8	41.7	34.5	29.8	29.0	16.3
RurC_Otane	35.7	42.6	45.5	50.0	46.5	44.4	42.4	34.8
RurC_Otautau	38.4	40.7	42.7	43.5	37.9	38.1	36.1	33.0
RurC_Rural Centre Otematata	40.4	37.5	42.6	43.1	39.3	33.3	25.0	24.1
RurC_Outram	40.2	35.5	40.8	48.0	43.1	41.0	38.9	35.3
RurC_Owaka	32.9	35.9	43.5	42.7	41.8	40.0	30.2	34.6
RurC_Paengaroa	37.0	46.0	45.5	44.4	41.0	43.4	39.7	38.8
RurC_Palmerston	30.3	34.8	37.1	34.7	37.4	31.6	31.1	25.2
RurC_Parakai Urban	39.0	45.8	47.6	49.0	50.0	46.3	40.5	33.1
RurC_Pareora	45.6	42.5	45.8	38.8	43.9	38.0	35.2	33.3
RurC_Patutahi	40.0	43.8	50.0	50.8	46.7	46.7	43.8	36.2
RurC_Pauanui Beach	38.2	27.9	26.5	25.3	22.6	16.8	20.2	14.3
RurC_Piopio	40.6	44.8	39.1	42.5	36.5	35.3	38.5	36.8
RurC_Rahotu	38.3	41.0	42.6	41.5	37.5	44.7	42.5	31.7
RurC_Ranfurlly	40.7	41.6	43.0	35.1	31.9	29.0	28.8	23.7
RurC_Ratana Community	42.0	43.8	54.3	49.3	43.1	40.3	40.6	35.9
RurC_Rawene	39.3	40.4	43.3	38.4	37.4	38.5	29.5	25.3
RurC_Reporoa	50.0	50.0	50.5	54.4	50.5	43.6	47.4	36.8
RurC_Riversdale Community	40.5	43.8	40.6	44.1	37.5	39.1	38.2	38.7
RurC_Riwaka	46.4	43.2	47.9	43.2	41.2	40.6	40.3	36.1
RurC_Rongotea	40.9	46.9	48.3	45.0	47.1	41.0	38.7	34.7
RurC_Ross	38.6	37.7	40.7	45.3	40.3	35.4	30.4	25.0
RurC_Roxburgh	36.5	34.4	37.3	34.2	37.5	27.3	25.9	25.3
RurC_Ruatoria	36.0	40.0	42.4	48.6	40.4	39.3	42.3	31.7
RurC_Ruawai	40.2	39.8	38.9	38.6	37.5	35.4	28.8	22.1
RurC_Russell	38.0	38.5	38.0	38.2	34.5	34.3	24.1	22.4
RurC_Sanson	43.3	37.7	45.6	45.9	45.9	38.2	37.3	40.0
RurC_Seddon	37.9	42.9	41.8	45.3	39.3	42.5	42.5	33.3
RurC_Sefton	34.5	43.8	46.9	48.5	41.3	42.9	38.4	35.5
RurC_Southbridge	40.7	46.0	45.0	45.4	43.5	40.5	33.0	36.8
RurC_Stirling	35.6	46.2	44.6	51.0	42.0	42.6	47.9	39.2
RurC_Taitapu	43.9	43.9	40.3	50.7	44.9	41.8	32.8	31.7
RurC_Takapau	36.7	39.7	47.3	45.5	43.2	40.0	39.1	35.3
RurC_Taneatua	40.0	40.7	41.4	43.0	42.7	43.7	43.7	40.4
RurC_Tapanui	36.0	43.8	41.6	39.4	41.5	36.7	32.5	29.8
RurC_Tapawera	46.3	51.5	50.7	47.0	47.1	41.9	47.7	35.9
RurC_Te Horo	34.9	35.8	39.4	48.2	38.0	32.1	38.1	26.5

(cont.)

## Appendix F (cont.): Percentage Women aged 15-44 years, 1976-2013, New Zealand Rural Centres

	1976	1981	1986	1991	1996	2001	2006	2013
RurC_Te Kaha	31.3	25.8	36.5	39.6	35.0	33.9	39.2	31.1
RurC_Te Karaka	39.4	40.9	46.9	45.8	48.4	49.4	47.7	36.5
RurC_Te Kopuru	36.6	36.9	36.5	34.1	32.2	32.9	27.6	27.5
RurC_Te Puru-Thornton Bay	26.4	27.2	28.4	35.5	32.1	25.9	24.7	14.9
RurC_Te Teko	40.0	40.0	44.7	45.6	43.8	40.4	42.1	37.6
RurC_Tirau	40.9	43.0	40.2	42.3	37.9	35.7	31.7	33.6
RurC_Tokomaru	43.8	41.2	45.6	49.5	48.5	50.5	45.9	40.0
RurC_Tokomaru Bay	34.9	38.3	47.3	45.6	40.8	40.8	35.2	29.7
RurC_Tolaga Bay	34.4	36.4	40.8	41.5	40.7	38.5	36.8	32.3
RurC_Tuai	44.3	41.4	45.0	47.3	44.7	38.6	36.8	38.9
RurC_Tuatapere	38.9	47.2	45.2	39.2	36.2	36.6	34.7	37.1
RurC_Urenui	30.5	37.9	45.1	39.4	35.6	34.2	35.6	28.8
RurC_Waharoa	45.8	48.4	46.2	47.1	45.7	46.5	41.6	40.5
RurC_Waiiau	40.9	42.6	41.5	50.0	44.2	41.0	30.8	37.2
RurC_Waikuku	38.8	47.3	56.5	50.0	51.7	45.6	40.7	36.4
RurC_Waimana	36.0	44.9	44.4	43.8	46.6	44.3	38.2	32.4
RurC_Waitati	33.1	44.1	45.5	49.4	44.7	44.6	39.8	33.3
RurC_Waitoa	43.5	46.0	48.4	50.6	43.5	46.7	46.2	34.8
RurC_Rural Centre Wallaceto	45.3	49.1	47.4	46.8	44.5	48.0	43.0	38.6
RurC_Warrington	41.2	43.5	47.5	48.4	49.3	43.5	38.9	30.1
RurC_Waverley	37.9	40.6	42.9	41.2	35.3	33.3	31.5	31.9
RurC_Woodlands	44.4	47.1	44.4	50.0	45.7	44.4	38.9	26.2
RurC_Wyndham	39.7	38.7	38.5	41.8	42.5	40.6	38.6	36.6
Omitted*								
<b>RurC_Pegasus</b>	<b>30.0</b>	<b>66.7</b>	<b>300.0</b>	<b>80.0</b>	<b>83.3</b>	<b>50.0</b>	<b>66.7</b>	<b>37.7</b>

\*Rural Centre Pegasus was omitted from the correlation analysis because of extremely low numbers until 2006, following which the town grew by over 3000%. This outlier overly biased the analysis

## Appendix G: TFR of Territorial Authority Area in which town/rural centre located

Town	TA of town location	1996	2001	2006
Alexandra	Central Otago	1.6	2.2	2.2
Amberley	Hurunui	2.3	2.1	2.1
Arrowtown	Queenstown Lakes	1.3	1.4	1.3
Ashburton	Ashburton	2.0	2.1	2.2
Balclutha	Clutha	2.0	2.2	2.2
Blenheim	Marlborough District	1.9	1.9	2.1
Bluff	Invercargill City	1.8	2.1	1.8
Brightwater	Tasman District	1.6	1.8	2.1
Bulls	Rangitikei District	2.1	2.5	2.0
Cambridge Zone	Waipa District	2.0	2.0	2.2
Carterton	Carterton District	2.1	2.2	2.4
Central Auckland Zone	Auckland	2.0	2.0	2.0
Christchurch	Christchurch City	1.6	1.6	1.7
Coromandel	Thames-Coromandel District	2.0	2.4	2.2
Cromwell	Central Otago District	1.6	2.2	2.2
Dannevirke	Tararua District	2.3	2.5	2.9
Darfield	Selwyn District	1.6	1.7	2.0
Dargaville	Kaipara District	2.5	2.7	2.7
Dunedin	Dunedin City	1.5	1.5	1.5
Edgecumbe	Whakatane District	2.4	2.3	2.7
Eltham	South Taranaki District	2.1	2.2	2.4
Featherstone	South Wairarapa District	2.1	2.1	2.7
Feilding	Manawatu District	1.9	2.2	2.3
Foxton Community	Horowhenua District	2.3	2.3	2.6
Geraldine	Timaru District	1.8	1.9	1.9
Gisborne	Gisborne District	2.4	2.8	2.8
Gore	Gore District	2.1	2.2	2.2
Greymouth	Grey District	2.0	2.2	2.1
Greytown	South Wairarapa District	2.1	2.1	2.7
Hamilton Zone	Hamilton City	1.9	1.9	1.9
Hastings Zone	Hastings District	2.4	2.5	2.5
Hawera	South Taranaki District	2.1	2.2	2.4
Helensville	Auckland	2.0	2.0	2.0
Hokitika	Westland District	1.8	1.9	1.7
Huntly	Waikato District	2.3	2.5	2.6
Inglewood	New Plymouth District	1.9	2.0	2.0
Invercargill	Invercargill City	1.8	2.1	1.8
Kaikōhe	Far North District	2.5	2.6	2.9
Kaikoura	Kaikoura District	2.1	2.4	1.4
Kaitiā	Far North District	2.5	2.6	2.9
Kapiti	Kapiti Coast District	1.8	2.3	2.1
Katikati Community	Western Bay of Plenty District	2.5	2.4	2.4
Kawakawa	Far North District	2.5	2.6	2.9
Kawerau	Kawerau District	2.7	2.6	3.0
Kerikeri	Far North District	2.5	2.6	2.9
Leeston	Selwyn District	1.6	1.7	2.0
Levin	Horowhenua District	2.3	2.3	2.6
Lincoln	Selwyn District	1.6	1.7	2.0
Lower Hutt Zone	Lower Hutt City	2.0	2.0	2.1
Mangawhai Heads	Kaipara District	2.5	2.7	2.7
Mapua	Tasman District	1.6	1.8	2.1
Martinborough	South Wairarapa District	2.1	2.1	2.7
Marion	Rangitikei District	2.1	2.5	2.0
Masterton	Masterton District	2.3	2.2	2.3
Matamata	Matamata-Piako District	2.3	2.3	2.4
(cont.)				

**Appendix G (cont.): TFR of Territorial Authority Area in which town/rural centre located**

Town	TA of town location	1996	2001	2006
Methven	Ashburton District	2.0	2.1	2.2
Milton	Clutha District	2.0	2.2	2.2
Moerewa	Far North District	2.5	2.6	2.9
Morrinsville	Matamata-Piako District	2.3	2.3	2.4
Motueka	Tasman District	1.6	1.8	2.1
Murupara	Whakatane District	2.4	2.3	2.7
Napier Zone	Napier City	2.2	2.0	2.1
Nelson	Nelson City	1.6	1.9	1.8
New Plymouth	New Plymouth District	1.9	2.0	2.0
Ngatea	Hauraki District	2.2	2.4	2.2
Ngunguru	Whangarei District	2.2	2.3	2.5
Northern Auckland Zone	Auckland	2.0	2.0	2.0
Oamaru	Waitaki District	1.9	1.9	1.9
Ohakune	Ruapehu District	2.4	2.5	2.8
Opotiki	Opotiki District	2.7	2.9	2.9
Opunake	South Taranaki District	2.1	2.2	2.4
Otaki	Kapiti Coast District	1.8	2.3	2.1
Otematata	Waitaki District	1.9	1.9	1.9
Otorohanga	Otorohanga District	2.3	2.2	2.4
Oxford	Waimakariri District	1.8	2.1	2.0
Paeroa	Hauraki District	2.2	2.4	2.2
Pahiatua	Tararua District	2.3	2.5	2.9
Paihia	Far North District	2.5	2.6	2.9
Palmerston North	Palmerston North City	1.8	1.8	1.8
Patea	South Taranaki District	2.1	2.2	2.4
Picton	Marlborough District	1.9	1.9	2.1
Pleasant Point	Timaru District	1.8	1.9	1.9
Porirua Zone	Porirua City	2.4	2.6	2.5
Pukekohe	Auckland	2.0	2.0	2.0
Putaruru	South Waikato District	2.7	2.5	2.5
Queenstown	Queenstown-Lakes District	1.3	1.4	1.3
Raetihi	Ruapehu District	2.4	2.5	2.8
Raglan	Waikato District	2.3	2.5	2.6
Rakaia	Ashburton District	2.0	2.1	2.2
Rangiora	Waimakariri District	1.8	2.1	2.0
Reefton	Buller District	1.8	2.1	2.5
Riverton	Southland District	1.8	1.9	2.3
Rolleston	Selwyn District	1.6	1.7	2.0
Rotorua	Rotorua District	2.3	2.3	2.5
Shannon	Horowhenua District	2.3	2.3	2.6
Snells Beach	Auckland	2.0	2.0	2.0
Southern Auckland Zone	Auckland	2.0	2.0	2.0
Stratford	Stratford District	2.2	2.1	2.4
Taihape	Rangitikei District	2.1	2.5	2.0
Taipa Bay-Mangonui	Far North District	2.5	2.6	2.9
Tairua	Thames-Coromandel District	2.0	2.4	2.2
Takaka	Tasman District	1.6	1.8	2.1
Taumarunui	Ruapehu District	2.4	2.5	2.8
Taupo	Taupo District	2.3	2.1	2.2
Tauranga	Tauranga City	2.2	2.2	2.2
Te Anau	Southland District	1.8	1.9	2.3
Te Aroha	Matamata-Piako District	2.3	2.3	2.4
Te Awamutu Zone	Waipa District	2.0	2.0	2.2

(cont.)

**Appendix G (cont.): TFR of Territorial Authority Area in which town located**

Town	TA of town location	1996	2001	2006
Te Kauwhata	Waikato District	2.3	2.5	2.6
Te Kuiti	Waitomo District	2.4	2.5	2.7
Te Puke Community	Western Bay of Plenty District	2.5	2.4	2.4
Temuka	Timaru District	1.8	1.9	1.9
Thames	Thames-Coromandel District	2.0	2.4	2.2
Timaru	Timaru District	1.8	1.9	1.9
Tokoroa	South Waikato District	2.7	2.5	2.5
Turangi	Taupo District	2.3	2.1	2.2
Twizel Community	Mackenzie District	1.8	1.7	1.9
Upper Hutt Zone	Upper Hutt City	1.8	2.1	2.2
Waiheke Island	Auckland	2.0	2.0	2.0
Waihi	Hauraki District	2.2	2.4	2.2
Waihi Beach	Western Bay of Plenty District	2.5	2.4	2.4
Waikouaiti	Dunedin City	1.5	1.5	1.5
Waimate	Waimate District	2.3	1.9	2.1
Waiouru	Ruapehu District	2.4	2.5	2.8
Waipawa	Central Hawke's Bay District	2.1	2.2	2.4
Waipukurau	Central Hawke's Bay District	2.1	2.2	2.4
Wairoa	Wairoa District	2.7	2.8	2.9
Waitara	New Plymouth District	1.9	2.0	2.0
Waiuku	Auckland	2.0	2.0	2.0
Wakefield	Tasman District	1.6	1.8	2.1
Wallacetown	Southland District	1.8	1.9	2.3
Wanaka	Queenstown-Lakes District	1.3	1.4	1.3
Wanganui	Wanganui District	2.1	2.3	2.5
Warkworth	Auckland	2.0	2.0	2.0
Wellington Zone	Wellington City	1.4	1.5	1.5
Wellsford	Auckland	2.0	2.0	2.0
Western Auckland Zone	Auckland	2.0	2.0	2.0
Westport	Buller District	1.8	2.1	2.5
Whakatane	Whakatane District	2.4	2.3	2.7
Whangamata	Thames-Coromandel District	2.0	2.4	2.2
Whangarei	Whangarei District	2.2	2.3	2.5
Whitianga	Thames-Coromandel District	2.0	2.4	2.2
Winton	Southland District	1.8	1.9	2.3
Woodend	Waimakariri District	1.8	2.1	2.0
Woodville	Tararua District	2.3	2.5	2.9

## Appendix H: TFR of Territorial Authority Area in which Rural Centre located

Rural Centre	TA of Rural Centre location	1996	2001	2006
Rural Centre Ahipara	Far North District	2.5	2.6	2.9
Rural Centre Akaroa	Christchurch City	1.6	1.6	1.7
Rural Centre Athenree	Western Bay of Plenty District	2.5	2.4	2.4
Rural Centre Awanui	Far North District	2.5	2.6	2.9
Rural Centre Blackball	Grey District	2.0	2.2	2.1
Rural Centre Bombay	Auckland	2.0	2.0	2.0
Rural Centre Burnham Military Camp	Selwyn District	1.6	1.7	2.0
Rural Centre Cheviot	Hurunui District	2.3	2.1	2.1
Rural Centre Clinton	Clutha District	2.0	2.2	2.2
Rural Centre Clyde	Central Otago District	1.6	2.2	2.2
Rural Centre Culverden	Hurunui District	2.3	2.1	2.1
Rural Centre Cust	Waimakariri District	1.8	2.1	2.0
Rural Centre Dobson	Grey District	2.0	2.2	2.1
Rural Centre Dunsandel	Selwyn District	1.6	1.7	2.0
Rural Centre Edendale Community	Southland District	1.8	1.9	2.3
Rural Centre Egmont Village	New Plymouth District	1.9	2.0	2.0
Rural Centre Eketahuna	Tararua District	2.3	2.5	2.9
Rural Centre Fairlie	Mackenzie District	1.8	1.7	1.9
Rural Centre Fox Glacier	Westland District	1.8	1.9	1.7
Rural Centre Franz Josef	Westland District	1.8	1.9	1.7
Rural Centre Frasertown	Wairoa District	2.7	2.8	2.9
Rural Centre Halcombe	Manawatu District	1.9	2.2	2.3
Rural Centre Hampden	Waitaki District	1.9	1.9	1.9
Rural Centre Hanmer Springs	Hurunui District	2.3	2.1	2.1
Rural Centre Harihari	Westland District	1.8	1.9	1.7
Rural Centre Haruru Falls	Far North District	2.5	2.6	2.9
Rural Centre Havelock	Marlborough District	1.9	1.9	2.1
Rural Centre Hector-Ngakawau	Buller District	1.8	2.1	2.5
Rural Centre Himatangi Beach	Manawatu District	1.9	2.2	2.3
Rural Centre Hunterville	Rangitikei District	2.1	2.5	2.0
Rural Centre Island View-Pios Beach	Western Bay of Plenty District	2.5	2.4	2.4
Rural Centre Kaeo	Far North District	2.5	2.6	2.9
Rural Centre Kaingaroa Forest	Rotorua District	2.3	2.3	2.5
Rural Centre Kaitangata	Clutha District	2.0	2.2	2.2
Rural Centre Kaiwaka	Kaipara District	2.5	2.7	2.7
Rural Centre Kakanui	Waitaki District	1.9	1.9	1.9
Rural Centre Kaponga	South Taranaki District	2.1	2.2	2.4
Rural Centre Karamea	Buller District	1.8	2.1	2.5
Rural Centre Karitane	Dunedin City	1.5	1.5	1.5
Rural Centre Kaukapakapa	Auckland	2.0	2.0	2.0
Rural Centre Kawhia Community	Otorohanga District	2.3	2.2	2.4
Rural Centre Kerepehi	Hauraki District	2.2	2.4	2.2
Rural Centre Kinloch	Taupo District	2.3	2.1	2.2
Rural Centre Kurow	Waitaki District	1.9	1.9	1.9
Rural Centre Lake Tekapo	Mackenzie District	1.8	1.7	1.9
Rural Centre Lawrence	Clutha District	2.0	2.2	2.2
Rural Centre Leigh	Auckland	2.0	2.0	2.0
Rural Centre Lumsden Community	Southland District	1.8	1.9	2.3
Rural Centre Mahurangi	Auckland	2.0	2.0	2.0
Rural Centre Makara-Ohariu	Wellington City	1.4	1.5	1.5
Rural Centre Maketu Community	Western Bay of Plenty District	2.5	2.4	2.4
Rural Centre Mamaku	Rotorua District	2.3	2.3	2.5
Rural Centre Manaia	South Taranaki District	2.1	2.2	2.4
Rural Centre Manapouri	Southland District	1.8	1.9	2.3
Rural Centre Mangakino	Taupo District	2.3	2.1	2.2

(cont.)

## Appendix H (cont.): TFR of Territorial Authority Area in which Rural Centre located

Rural Centre	TA of Rural Centre location	1996	2001	2006
Rural Centre Manutuke	Gisborne District	2.4	2.8	2.8
Rural Centre Matata	Whakatane District	2.4	2.3	2.7
Rural Centre Maungatapere	Whangarei District	2.2	2.3	2.5
Rural Centre Maungaturoto	Kaipara District	2.5	2.7	2.7
Rural Centre Meremere	Waikato District	2.3	2.5	2.6
Rural Centre Mt Cook	Mackenzie District	1.8	1.7	1.9
Rural Centre Murchison	Tasman District	1.6	1.8	2.1
Rural Centre Muriwai Beach	Auckland	2.0	2.0	2.0
Rural Centre Nightcaps	Southland District	1.8	1.9	2.3
Rural Centre Nuhaka	Waioa District	2.7	2.8	2.9
Rural Centre Ohaeawai	Far North District	2.5	2.6	2.9
Rural Centre Ohai	Southland District	1.8	1.9	2.3
Rural Centre Ohura	Ruapehu District	2.4	2.5	2.8
Rural Centre Okaihau	Far North District	2.5	2.6	2.9
Rural Centre Okato	New Plymouth District	1.9	2.0	2.0
Rural Centre Omapere and Opononi	Far North District	2.5	2.6	2.9
Rural Centre Omarama	Waitaki District	1.9	1.9	1.9
Rural Centre Opua East	Far North District	2.5	2.6	2.9
Rural Centre Otane	Central Hawke's Bay District	2.1	2.2	2.4
Rural Centre Otautau	Southland District	1.8	1.9	2.3
Rural Centre Outram	Dunedin City	1.5	1.5	1.5
Rural Centre Owaka	Clutha District	2.0	2.2	2.2
Rural Centre Paengaroa	Western Bay of Plenty District	2.5	2.4	2.4
Rural Centre Palmerston	Waitaki District	1.9	1.9	1.9
Rural Centre Parakai Urban	Auckland	2.0	2.0	2.0
Rural Centre Pareora	Timaru District	1.8	1.9	1.9
Rural Centre Patutahi	Gisborne District	2.4	2.8	2.8
Rural Centre Pauanui Beach	Thames-Coromandel District	2.0	2.4	2.2
Rural Centre Piopio	Waitomo District	2.4	2.5	2.7
Rural Centre Rahotu	South Taranaki District	2.1	2.2	2.4
Rural Centre Ranfurly	Central Otago District	1.6	2.2	2.2
Rural Centre Ratana Community	Rangitikei District	2.1	2.5	2.0
Rural Centre Rawene	Far North District	2.5	2.6	2.9
Rural Centre Reporoa	Rotorua District	2.3	2.3	2.5
Rural Centre Riversdale Community	Southland District	1.8	1.9	2.3
Rural Centre Riwaka	Tasman District	1.6	1.8	2.1
Rural Centre Rongotea	Manawatu District	1.9	2.2	2.3
Rural Centre Ross	Westland District	1.8	1.9	1.7
Rural Centre Roxburgh	Central Otago District	1.6	2.2	2.2
Rural Centre Ruatoria	Gisborne District	2.4	2.8	2.8
Rural Centre Ruawai	Kaipara District	2.5	2.7	2.7
Rural Centre Russell	Far North District	2.5	2.6	2.9
Rural Centre Sanson	Manawatu District	1.9	2.2	2.3
Rural Centre Seddon	Marlborough District	1.9	1.9	2.1
Rural Centre Sefton	Waimakariri District	1.8	2.1	2.0
Rural Centre Southbridge	Selwyn District	1.6	1.7	2.0
Rural Centre Stirling	Clutha District	2.0	2.2	2.2
Rural Centre Taitapu	Selwyn District	1.6	1.7	2.0
Rural Centre Takapau	Central Hawke's Bay District	2.1	2.2	2.4
Rural Centre Taneatua	Whakatane District	2.4	2.3	2.7
Rural Centre Tapanui	Clutha District	2.0	2.2	2.2
Rural Centre Tapawera	Tasman District	1.6	1.8	2.1
Rural Centre Te Horo	Kapiti Coast District	1.8	2.3	2.1

(cont.)

## Appendix H (cont.): TFR of Territorial Authority Area in which Rural Centre located

Rural Centre	TA of Rural Centre location	1996	2001	2006
Rural Centre Te Kaha	Opotiki District	2.7	2.9	2.9
Rural Centre Te Karaka	Gisborne District	2.4	2.8	2.8
Rural Centre Te Kopuru	Kaipara District	2.5	2.7	2.7
Rural Centre Te Puru-Thornton Bay	Thames-Coromandel District	2.0	2.4	2.2
Rural Centre Te Teko	Whakatane District	2.4	2.3	2.7
Rural Centre Tirau	South Waikato District	2.7	2.5	2.5
Rural Centre Tokomaru	Horowhenua District	2.3	2.3	2.6
Rural Centre Tokomaru Bay	Gisborne District	2.4	2.8	2.8
Rural Centre Tolaga Bay	Gisborne District	2.4	2.8	2.8
Rural Centre Tuai	Wairoa District	2.7	2.8	2.9
Rural Centre Tuatapere	Southland District	1.8	1.9	2.3
Rural Centre Urenui	New Plymouth District	1.9	2.0	2.0
Rural Centre Waharoa	Matamata-Piako District	2.3	2.3	2.4
Rural Centre Waiau	Hurunui District	2.3	2.1	2.1
Rural Centre Waikuku	Waimakariri District	1.8	2.1	2.0
Rural Centre Waimana	Whakatane District	2.4	2.3	2.7
Rural Centre Waitati	Dunedin City	1.5	1.5	1.5
Rural Centre Waitoa	Matamata-Piako District	2.3	2.3	2.4
Rural Centre Warrington	Dunedin City	1.5	1.5	1.5
Rural Centre Waverley	South Taranaki District	2.1	2.2	2.4
Rural Centre Woodlands	Southland District	1.8	1.9	2.3
Rural Centre Wyndham	Southland District	1.8	1.9	2.3
<b>Omitted*</b>				
<b>Rural Centre Pegasus</b>	<b>Waimakariri District</b>	<b>1.8</b>	<b>2.1</b>	<b>2.0</b>

*\*Rural Centre Pegasus was omitted from the correlation analysis because of extremely low numbers until 2006, following which the town grew by over 3000%. This outlier overly biased the analysis*