



Bay of Plenty Region and its Territorial Authorities

Demographic Profile 1986 - 2031

Report prepared for the Bay of Plenty Regional Council by
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Population size and growth

1. The population of the BOP Region has grown steadily over the past twenty-five years, from 194,622 in 1986 to approximately 277,300 in 2012, an increase of 43 per cent. Steady growth is anticipated to continue throughout the projection period, the population reaching approximately 317,370 by 2031 (14.5 per cent above 2011). Conversely the high and low variant assumptions would deliver a BOP Region population in 2031 of either 353,860 or 282,000 respectively. Eighty per cent of the growth under the medium assumption is projected to be at 65+ years.
2. Tauranga City has consistently comprised the largest proportion of the region's population, increasing its share from 30.9 per cent in 1986 to 42.0 per cent in 2012. The city's population increased by 93.4 per cent over the period 1986-2012, thereby also contributing to the majority of the region's growth (68.0 per cent). The second greatest growth was experienced by Western BOP (69.8 per cent, contributing 22.7 per cent to the region's growth). This growth was augmented by smaller contributions from Rotorua (9.4 per cent), Whakatāne (10.3 per cent), and Ōpōtiki (7.1 per cent), while Kawerau declined by 16.9 per cent.

Components of change

3. The main component of the BOP Region's growth has been natural increase, augmented by sizeable net migration gains across the 1992-1998 and 2001-2006 periods. Net migration decline occurring between 2011 and 2012 stands out as an anomalous situation for the region.
4. Both Tauranga City and Western BOP experienced greater than average growth over the 1986-2012 period, mainly due to their higher than average gains from estimated net migration, while Ōpōtiki, Whakatāne and Rotorua grew mainly from natural increase. In the case of Kawerau, which experienced overall decline, natural increase was strong, but was fully offset by net migration loss.
5. Components of change by age that are free of cohort size effects show that between both 1996 and 2001, and 2001 and 2006, the BOP Region experienced notable net migration loss at 15-24 years of age, while equally notable net migration gains were experienced at all other ages.
6. *Known* Net Migration (from internal and international data sources) indicates net migration loss at both 15-19 and 20-24 years, for both internal and international migration, for both periods 1996-2001 and 2001-2006. Net internal migration was strongly positive at all other ages across both periods, while a net international migration was negative at all ages between 1996 and 2001, turning to gain at several ages, most notably 30-34 and 35-39 years, between 2001 and 2006.

Age structure and population ageing

7. At Regional Council (RC) level, and from a cross-sectional perspective (that is, change by age group rather than cohort), all age groups above 40 years grew across the period 1996-2012, while



numbers at 5-9, 25-29, 30-34, and 35-39 years of age declined. Despite net migration loss at 15-19 and 20-24 years, overall numbers increased due to larger cohorts replacing smaller ones. The trends resulted in the proportion aged 0-14 years declining monotonically, from 25.0 per cent in 1996 to 21.4 per cent in 2012, while the proportion aged 65+ years increased from 12.9 to 16.9 per cent. For Total New Zealand the proportion aged 65+ years in 2012 was 13.8 per cent, up from 11.5 per cent in 1996, making the BOP Region's age structure somewhat older than that of the national population, and ageing faster.

8. The age-sex structures of the Territorial Authorities (TAs) which comprise the BOP Region differ greatly. Unlike other cities, Tauranga City has a smaller proportion of people aged in their twenties and thirties, and, along with the Region's other TAs, has an 'hourglass' age structure, typically—but not always—reflecting net migration loss at young adult ages. Rotorua, Whakatāne and Kawerau each have disproportions of children, while Western BOP has a somewhat greater proportion of elderly. However, the apparent disproportions of children in Rotorua, Whakatāne and Kawerau are very much a reflection of the trends at other ages; each TA in fact shows a sizeable decline in birth numbers over the period, a reflection of the net loss of people at key reproductive age.
9. Between 1996 and 2012 the trends resulted in most of the region's TAs experiencing decline in most age groups below 40 years, against universal increases in all age groups above age 50. Two general exceptions to the trends at the younger ages were Tauranga City and Western Bay of Plenty.

Labour market implications of changing age structure

10. The changes by age have important implications for the labour market (and educational demand). The Labour Market 'entry/exit ratio' (for people aged 15-24 : 55-64 years) for the BOP Region has fallen steadily since 1996, from 14.9 people at labour market entry age for every 10 in the 'retirement zone', to just 10.6 in 2012 (a decline of 28.9 per cent). This is lower than the national ratio, with Total New Zealand in 2012 having 12.8 people at entry age per 10 at exit age.
11. At TA level, all entry: exit ratios declined significantly over the period 1996-2012, the greatest declines in the region occurring for Kawerau (37.4 per cent), Whakatāne (36.3 per cent) and Rotorua (35.5 per cent). In these three TAs, the decline was greater than occurred nationally (29.9 per cent). Decline in this index was smallest for Ōpōtiki (19.4 per cent), but in all other cases exceeded 20 per cent. The Western BOP already had fewer people at labour market entry than exit age in 1996, falling to 7.7 per 10 in 2012.

Ethnic composition, size and growth

12. Between 1996 and 2006 each of the region's ethnic groups grew in size, but somewhat less so for the Māori population. Although accounting for 24.7 per cent of the region's growth, the Māori population grew by just eight per cent during the period 1996-2006, while the European-origin population grew by 14 per cent, accounting for 69.5 per cent of growth. The region's Pacific Island



population grew by almost 31 per cent but contributed just 2.5 per cent of growth. The region's Asian population more than doubled between 1996 and 2006, but similarly accounted for only 3.0 per cent of growth, while the relatively small Middle Eastern/Latin American/African (MELAA) population grew by 85 per cent, contributing just 0.3 per cent of growth.

13. These trends conceal sizeable differences by TA in terms of each ethnic group's contribution to local growth. People of European origin made the greatest contribution to the growth of four TAs: Tauranga City (79.3 per cent), Western BOP (79.4 per cent), Rotorua (60.4 per cent) and Whakatāne (59.4 per cent), while growth in the number of people of Māori origin made the single-greatest contribution to the growth of Kawerau (50.7 per cent) and Ōpōtiki (48.9 per cent). Two TAs (namely Whakatāne and Ōpōtiki) experienced underlying decline in the number of Māori and European-origin, while Kawerau experienced a decline in numbers across all ethnic groups. Despite consistently high growth rates, the numerically smaller MELAA population made an extremely small contribution to growth in each TA.
14. In 2006, Tauranga City was home to the single-largest proportion of those of MELAA origin aged 15-24 years, while the vast majority of Māori and Pacific Islanders, especially those aged 55-64 and 65+ years, lived outside the city. After Rotorua, young and middle-aged Māori (0-54 years) were more likely to live in Tauranga than anywhere else, while Tauranga was disproportionately favoured by those of European origin.

Ethnic age composition and ageing

15. As elsewhere in New Zealand, the age structures of the region's major ethnic groups differ markedly, with the European-origin population relatively old, the Māori and Pacific Island populations relatively young, and the Asian population falling in between, closer to the age structure of European. When considered together, the general picture is that the Māori and Pacific Island populations increase their share as age decreases, while the European-origin population increases its share as age increases. The picture is significantly less linear for the Asian population, where the largest population shares are at 15-24 and 25-54 years. Within that picture, Māori comprise a somewhat larger share of the BOP Region's population than they do at a national level, the situation similar across all broad age groups. Asian people on the other hand comprise a smaller share of the BOP Region's population than nationally, and the situation is again similar by age.

Population projections

16. In addition to increasing by around 14.5 per cent between 2011 and 2031, the medium variant population projections indicate that four-fifths of the BOP Region's projected growth will be at 65+ years, while decline is expected at 40-54 years of age as the baby boomer cohort ages.
17. The gains are not likely to be shared evenly across either the age distribution or by TA, with only Tauranga City projected to experience overall gains in all broad age groups, and all other TAs



expected to see decline across most younger and middle age groups. One TA (Kawerau) is projected to experience decline in all age groups below 75 years, and a further two (Whakatāne and Ōpōtiki), in all but one age group below 65 years, while decline at 0-24 and 40-54 years is projected for Rotorua. By contrast, all TAs are projected to experience substantial growth in both numbers and proportions at 65+ years, with this growth accounting for *all* growth (and/or offsetting decline) in all but Tauranga City. The trends imply a continuation of substantial growth for Tauranga City and Western BOP (31.2 and 16.6 per cent respectively), low growth for Rotorua (1.1 per cent), and decline for Whakatāne, Kawerau and Ōpōtiki.

18. Projections to 2021 for the BOP Region by major ethnic group (multiple count ethnicity) show the European/Other population growing only slightly (7.6 per cent) against a 10.8 per cent increase for Māori. The projected increases for the Pacific Island and Asian populations are somewhat larger (35.6 and 43.2 per cent respectively), in part reflecting their smaller bases. Net migration is expected to be the main driver of growth for the European/Other population. In contrast, for Māori and Pacific Island populations, natural increase is the primary driver of growth, although for Māori this component declines over time. By 2016, natural increase for Māori is projected to be greater than for European/Other in absolute terms, despite their smaller population share, and this margin increases by 2021. For Māori the declining contribution from natural increase offsets accompanying net migration loss, the two components together explaining the low projected rates of growth for this population. For Pacific Peoples and those of Asian origin, natural increase is projected to grow, while migration is projected to be stable for both.
19. Projections indicate continuing marked differences by ethnicity and age. The 65+ year European/Other population is projected to increase by 31.0 per cent, compared with 56.1 per cent for Māori, 66.7 per cent for the Pacific Island population and 128.6 per cent for the Asian population (the larger increases for the latter three reflecting their currently smaller 65+ year populations). For the European/Other population the increase in the elderly population accounts for the majority of that population's projected growth, with smaller growth projected at all ages below 65 years. Growth is projected at all ages for the other ethnic groups, but less so for Māori than for the Pacific Island and Asian populations.
20. The data suggest only modest change in the overall ethnic composition of the region, with the European/ Other share falling by two percentage points to 67.2 per cent by 2021, Māori and Pacific Island shares increasing slightly (by 0.1 and 0.6 percentage points respectively), and the Asian population accounting for 4.6 per cent by 2021, up from 3.5 per cent in 2011. As is the case within each group, there are greater differences in share by age, although the European/Other population will continue to account for the majority of each age group.



Labour market implications of projected change in age structure

21. The BOP Region is likely to see further reduction in the number of people at labour market 'entry' (15-24 years) than 'exit' (55-64 years) age across most of the projection period, falling from 11 'entrants' per 10 'exits' in 2011, to 8 per 10 between 2016 and 2021, before rising to around 9 per 10 in 2031 when the recently born baby blip will have reached the labour market.
22. Reflecting its relative youthfulness overall, Kawerau currently (2012) has the highest ratio of people at labour market entry to exit age (14.1 per 10), while the significantly older Western BOP has the lowest, 7.7 people aged 15-24 for every 10 aged 55-64. Ratios for Ōpōtiki, Whakatāne and Tauranga are currently only slightly above 10 entrants per 10 exits. Ratios for all TAs fall steadily until between 2026 and 2031, in most cases to below parity (one entrant per exit) after which they again rise slightly (and temporarily) due to the arrival in the labour market of the recently born baby blip.

Natural increase implications of changing age structure

23. For the BOP Region, the ratio of elderly (65+ years) to children (0-14 years) is projected to increase rapidly from its present 0.7 (7 elderly for every 10 children), to 1.3 by 2031 (13 for every 10). This profound shift to more elderly than children will by then be contributing to diminishing levels of natural increase, as will the fractionally diminished proportion projected to be at the key reproductive ages (22.2 per cent in 2031, down from 22.5 per cent in 2011).
24. For most of the BOP Region's TAs, proportions at the key reproductive ages (20-39 years) are projected to decline steadily across the period. Kawerau and Ōpōtiki are exceptions, with proportions projected to rise slightly, to end the period to just above their 2011 levels. The projected declines are greatest for Western BOP and Whakatāne. However more notable are the relatively low proportions already at these ages in Western BOP and Ōpōtiki (18.5 and 19.3 per cent), and the fact that all BOP TAs have lower proportions than is the case nationally (26.8 per cent). These low proportions will drive down natural increase.
25. As also indicated, the trends at reproductive age are closely associated with shifts in the ratio of elderly to children, which are projected to rise substantially in all TAs. Both Tauranga and Western BOP are expected to have more elderly than children by 2016. They will be joined by Ōpōtiki around 2021 and the remaining TAs in 2026, while the cross over is projected to occur at BOP Region level around 2021 (nationally around 2026).
26. The general reduction in the proportion at the key reproductive ages, alongside the underlying assumptions regarding future birth and life expectancy rates which continue to change the ratio of old to young, result in a projected decline in natural increase for all TAs. Natural increase for Kawerau is also projected to fall to as low as 40 (more births than deaths) and for Ōpōtiki 90 (more births than deaths) per five year period by the end of the projection period. However no Bay of Plenty Region TA is expected to experience natural decline during the projection period.



Industrial change

27. A special topic section provides an overview of the BOP region's changing industrial age structure across the period 1996-2006, focusing on its overall labour force and four largest industries, and concluding with an overview of all industries employing more than 1,000 people (40 of 158 industries at 3-digit level). Given the BOP region's relatively older population, two of its four largest industries have somewhat older age structures than the total regional workforce, uppermost among them Horticulture and Fruit Growers, pointing to forthcoming competition for labour force entrants, and urgency in attention to succession planning.



What you need to know about these data

Data sources: All data used in this report have been sourced from Statistics New Zealand. Most have been accessed via Infoshare or Table Builder (NZ.Stat), while some have come from purchased, customised databases specially prepared for NIDEA by Statistics New Zealand. Because the data come from different collections and/or are aggregated in different ways, for example by ethnicity or labour force status, and small cell sizes have been rounded by Statistics New Zealand to protect individuals, they often generate different totals. While considerable care has been taken to ensure that such inter- and intra-collection discontinuities are acknowledged and accounted for, for example via footnotes to tables or in the text, the disparities are not usually large, and typically do not affect the story being told. The matter is drawn to the attention of readers who are often concerned when numbers which ‘should’ be the same, are not. The time-series data in Figures 1.1.1 and 1.1.2 further below, collected under different methods of aggregation, are a particular case in point.

Ethnicity: The ‘multiple count’ method of enumerating the population by ethnic group is another case worthy of special note. The ethnic concept underlying data used in in this report is:

‘the ethnic group or groups that people identify with or feel they belong to. Ethnicity is self-perceived and people can belong to more than one ethnic group. For example, people can identify with Māori ethnicity even though they may not be descended from a Māori ancestor. Conversely, people may choose to not identify with Māori ethnicity even though they are descended from a Māori ancestor’ (Statistics New Zealand 2010a).

Counting people more than once makes analysis of the data and its interpretation particularly difficult. Some analysts prefer to calculate proportions based on the summed numbers in each ethnic group, which is the approach taken here, while others prefer to use the total population count as the denominator (eg., for a region). The problem with the latter method is that proportions sum to well over 100 per cent, making it difficult to interpret the resulting graphs. The approach in this paper has been to identify the extent of the ‘over count’.

Residual method for estimating total net migration: This paper uses a residual method for estimating net migration. First, deaths for a given observation (e.g., one single year) are subtracted from births to give an estimate of natural increase. Second, the Estimated Resident Population (ERP) at one observation is subtracted from the ERP at the previous observation, to give an estimate of net change between the two observations. Third, natural increase for that observation is subtracted from net change, to give the component due to Estimated Net Migration.



Residual method for estimating inter-censal migration by age and sex: A similar method is used for estimating net migration by age between two observations for which there are appropriate data (e.g., five year census periods). First, ERP numbers by age and sex for one observation are ‘survived’ based on the probability of surviving to the next age group (at national level). Second, births for each Territorial Authority (TA) or region are apportioned male/female according to the sex ratio (105 males/100 females), and entered at age 0-4. Third, the survived numbers for each age/sex group are ‘aged’ by five years, to become the expected population for the next observation. Fourth, expected numbers for each age/sex group are subtracted from actual numbers at the next census, to derive an estimate of net migration for each age/sex.

Projections: The population projections used in this paper are in most cases based on Statistics New Zealand’s (2009) medium set of assumptions, but comparison with the high and low variants have been included where useful. At national level the medium assumptions are that the total fertility rate (TFR) will decline from its present 2.1 births per woman to 1.9 births per woman by 2026; that life expectancy will continue to increase but at a decelerating rate, and that annual net international migration will be 12,000 per year. International and internal migration at the subnational level is also accounted for, the assumptions reflecting observed net migration during each five-year period 1981-2006. The assumptions are included in Appendix 3. When interpreting these data it is important to remember that demographic projections of future demand are not forecasts in the sense that they incorporate interventions that may change the demographic future. Rather, they simply indicate what future demand will be if the underlying assumptions regarding births, deaths, migration prevail.

Industry: The industry data used in the Special Topic (Section 7) are drawn from a time-series database developed by Statistics New Zealand to NIDEA specifications. They pertain to the employed population only. Data are given for three Census observations (1996, 2001 and 2006) and have been customised so that the industrial classification and geographic region is internally consistent across the period. The industrial classification is based on ANZSIC96 V4.1 at the three-digit level.



Feature Article – Population ageing in a nutshell

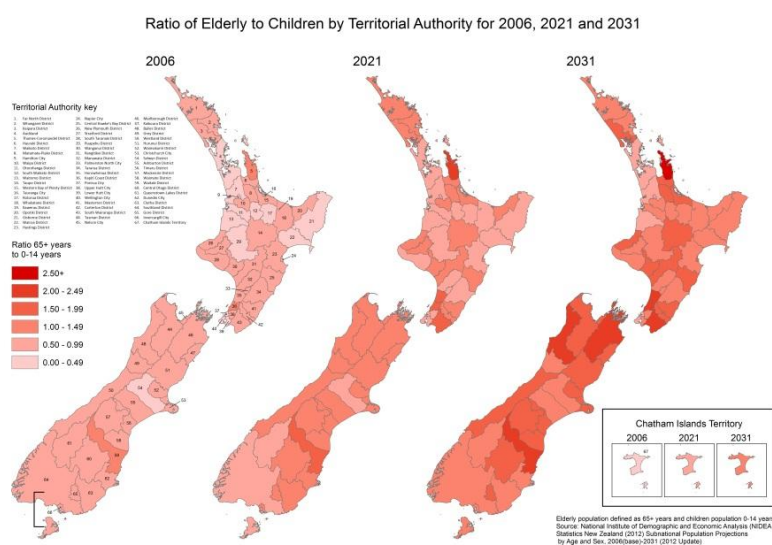
As elsewhere, population ageing is unfolding at markedly different rates across New Zealand. This diversity is caused by different mixes in the drivers of population ageing: birth rates, longevity (survivorship) and migration:

- Declining birth rates decrease the proportion of the population that is young and concomitantly increase the proportion at older ages.
- More people living longer adds to the numbers at older ages, and in the process further swells the proportion at those ages.
- When an area experiences net migration loss, which occurs mainly at 20-39 years, it removes both the young people themselves and their reproductive potential, further pushing up the median age.
- Where an area experiences net migration gains at retiree ages, both the numbers and proportions at those ages are further augmented, further accelerating structural ageing.

The overall outcome of these processes is an incremental—and in some cases rapid—shift to more elderly than children, more deaths than births, and to the end of growth and onset of what is expected to be permanent population decline, something not seen in modern populations until its recent onset in Japan and much of Europe.

Figure 1 provides an overview of the first of these trends (more elderly than children) at Territorial Authority level (TA). In 1996, no TA had more elderly than children. By 2006 that had become 3 TAs (4.5 per cent); by 2021 it is projected to be the case for 41 TAs (61.2 per cent); and by 2031, for 61 TAs (91.0 per cent).

Figure 1: Ratio of elderly (65+ years) to children (0-14 years), 2006, 2021 and 2031



As indicated, the process of population ageing generates two even more profound shifts: from natural increase, where births exceed deaths—as they have for all of New Zealand’s modern history—to natural decline, where deaths exceed births; and from absolute growth to absolute decline, once there are insufficient migrants to offset the ‘lost’ births and increased deaths. In New Zealand, the shift to natural decline is not expected to occur nationally until the second half of the Century. However, the crossover is already occurring in three TAs (Waitaki, Thames Coromandel, and Horowhenua) and is projected to be the case in 22 TAs (30 per cent) by 2031.

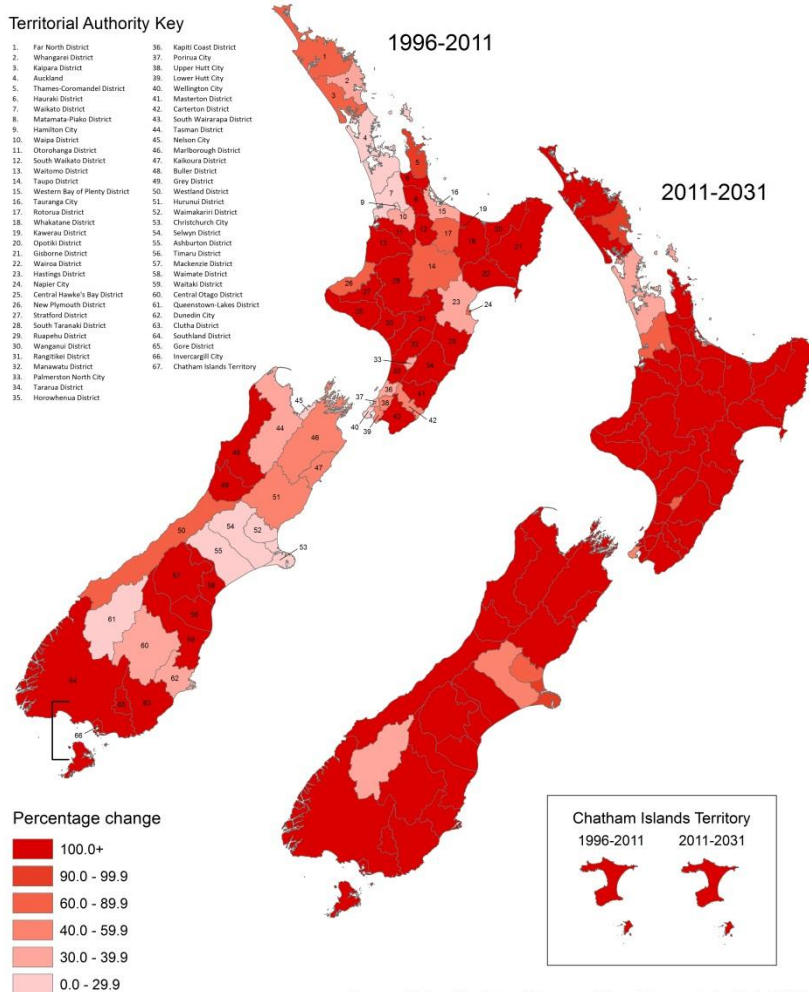
The final piece of jigsaw is a slow but equally inexorable shift from the ‘old’ form of population decline, which was caused by net migration loss that was greater than natural increase, to the ‘new’ form, where net migration loss is both accompanied by – and further contributes to – natural decline. Currently 24 (36 per cent) of New Zealand’s TAs are declining in absolute terms, but only one TA (Waitaki) has yet experienced the new (dual) form of decline. By 2031, the dual form is projected to be the case for seven TAs (10 per cent), alongside a further 15 TAs (22 per cent) experiencing decline from net migration loss only, and one experiencing decline from natural decline only. While it is still some way off for most TAs, the new form of population decline will be especially challenging because it will be self-reinforcing: ever-fewer young adults to bear the children, and ever-more elderly who have completed their childbearing years.

In the interim, it is critical to understand that for 56 TAs (84 per cent), all future ‘growth’ to 2031 will be at 65+ years (Figure 2)—and that in 23 of these TAs, that growth will be insufficient to offset overall decline at other ages. While the number declining will actually be one fewer than between 1996 and 2011 (due to a higher net migration assumption going forward), there will also be some shift share effects, with six TAs coming marginally out of decline, and five entering it—meaning that in reality 29 TAs (43 per cent) are at the end of their growth stage.

Between 2011 and 2031, only eleven TAs are projected to see less than 100 per cent of their growth at 65+ years: Christchurch and Whangarei (each 95+ per cent at 65+ years), Waikato, Palmerston North City, and Waimakiriri (60-63 per cent), Wellington City, Selwyn and Tauranga City (44-46 per cent), and Auckland City, Hamilton City, and Queenstown (36-37 per cent). The trends are thus both pervasive and inexorable. At national level, they mean that two-thirds of growth will be at 65+ years, the underlying trends at subnational level concealed largely by Auckland.



Contribution to change by 65+ year old population by Territorial Authority, 1996-2011 and 2011-2031



Source: National Institute of Demographic and Economic Analysis (NIDEA)
 Statistics New Zealand (2012) Subnational Population Projections
 by Age and Sex, 2006(base)-2031 (2012 Update)

To place New Zealand's situation in a global context, we can look at trends across the 58 More Developed Countries (MDCs) – of which New Zealand is one of the most youthful. Over the next 20 years, the population of the MDCs aged 65+ years will grow by around 98 million, *while all other age groups combined will decline by 41 million*. In anyone's language, those numbers will cause the scales to tip. Currently across the MDCs there is exactly one person aged 65+ years per child aged 0-14; by 2031 there will be 1.5. The shift is also unavoidable, because the 65+ population of 2031 is already 45+ years old. We know how many there are, and the rate at which they will die (and international migration at older ages is minimal). At the younger ages, only those aged less than 20 years are not yet born – but again we know approximately how many there will be in 2031 because we know how many people there will be at the key parenting ages (they are already teenagers) and we can be fairly certain that they are not going to return to having three or four children per woman as was the case during the baby boom (when their grandparents were born).



The global trends provide New Zealand with a salutary warning. The diminishing pool of youth in the other 57 OECD countries is the pool within which New Zealand competes for many of its skilled migrants. Increasing competition for these migrants will increasingly make it difficult for New Zealand to achieve the migration assumptions in the population projections drawn on above. Attention is increasingly being turned to the developing countries where there is still a significant excess supply of young people. However, attracting them to, and retaining them in New Zealand will require more attention to settlement issues and equity than is presently the case. As one of the youngest of the developed countries, those migrant whom New Zealand attracts *and trains* will be of ever-greater interest to our structurally older counterparts.

The following demographic profile for the Bay of Plenty (BOP) Region should be read with this broad context in mind. While the region is still growing strongly overall, there are marked differences at TA level. They show that shift to the end of growth is a sequentially-unfolding phenomenon, with plenty of early warning signals. We can plot its course and plan ahead. However the clock is ticking and has been doing so for many years, as the retrospective elements of this profile will clearly identify. The crossing of any one of a handful of thresholds (see Box 1) by a TA means that it has entered the end of its growth phase. As indicated above, some regions may temporarily revert, but it is unlikely that they will resume significant or sustained growth. These issues are being investigated more deeply by researchers at the National Institute of Demographic and Economic Analysis (NIDEA) and their colleagues at Massey University:

Nga Tangata Oho Mairangi: Regional Impacts of Demographic and Economic Change – 2013-2014: MBIE-funded project led by Professor Paul Spoonley (Massey University) and Professor Jacques Poot (NIDEA). Key Researchers: Associate Professor Robin Pearce and Dr Trudi Cain (Massey University), Professor Natalie Jackson, Dr Dave Mare and Dr Michael Cameron (NIDEA).

The sub-national mechanisms of the ending of population growth. Towards a theory of depopulation: Marsden-funded project led by Professor Natalie Jackson. The research team consists of Dr Dave Mare, Dr Michael Cameron, Dr Bill Cochrane, Dr Lars Brabyn, and Emeritus Professor Ian Pool (all of NIDEA).

Box 1: Key thresholds indicating end of growth phase

- Onset of youth deficit (proportion of population aged 15-24 years declines below 15 per cent)
- Fewer people at labour market 'entry' than 'exit' age (15-24: 55-64 years; 20-29: 60-69 years)
- More elderly than children (65+ : 0-14 years)
- Key reproductive age population declines below 15 per cent of the population
- More deaths than births (natural decline)
- Absolute decline

Natalie Jackson

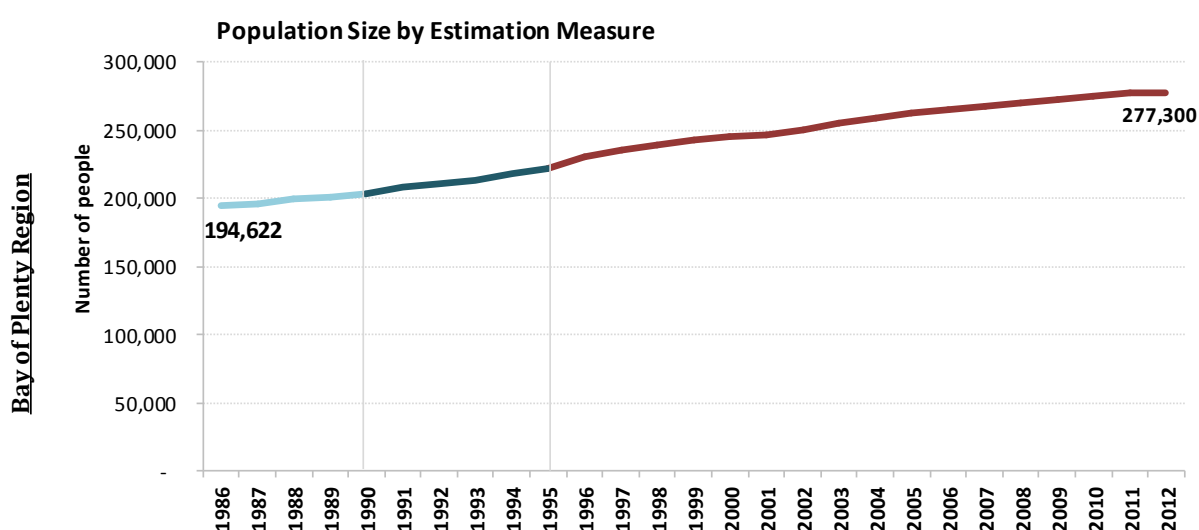


1.0 Population Trends

1.1 Population Size and Growth

The population of the BOP Region has grown steadily over the past twenty-six years, from 194,622 in 1986 to approximately 277,300 in 2012, an increase of 43 per cent (Figure 1.1.1; see Appendix 1.1 for underlying data). Differences in the timing and methods of estimating population size across the period mean that the trends cannot be accepted as rigorously continuous; however there is sufficient correspondence to indicate that growth has been approximately as depicted.

Figure 1.1.1: Population of Bay of Plenty Region, 1986-2012



Source: Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

1986-1990: Census Night Resident Population (Census-Adjusted) Intercensal Estimates (March Years)

1991-1995: Census Night Resident Population (unadjusted for Census 1996) (March Years)

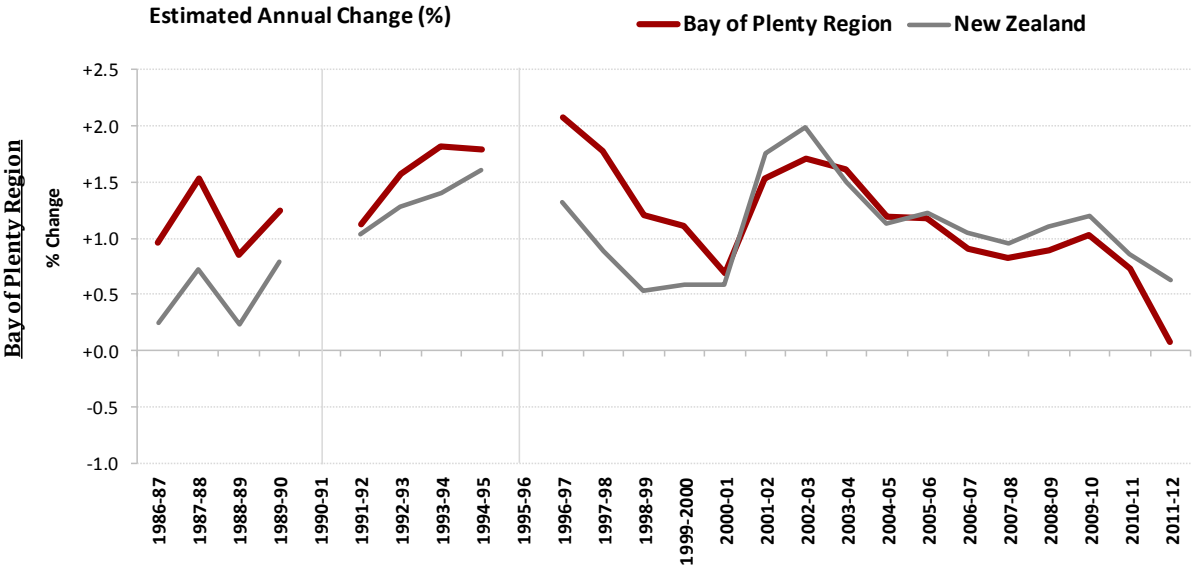
1996 onwards: Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous

Figure 1.1.2 shows the trends in terms of annual growth rates, with the data collection discontinuities identified by gaps. Data are also compared with total New Zealand. Growth for the BOP Region has largely mirrored the national trend. From the mid-1980s until 2000-01, BOP's growth was typically somewhat above the national level. Since then, its growth has generally been lower.



Figure 1.1.2: Annual Population Growth Rate, Bay of Plenty Region and Total New Zealand, 1986-2012



Source: Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

1986-1990: Census Night Resident Population (Census-Adjusted) Intercensal Estimates (March Years)

1991-1995: Census Night Resident Population (unadjusted for Census 1996) (March Years)

1996 onwards: Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous

Table 1.1.1 compares the annual growth rates of the six TA areas which comprise the BOP Region, and Table 1.1.2, the contribution of each TA to the region’s population (see Appendices 1.1 and 1.2 for underlying numbers).

Tauranga City has consistently comprised the largest proportion of the region’s population (in 2012 accounting for 42.0 per cent - Table 1.1.2). The city’s population increased by 93.4 per cent over the period 1986-2012 (Table 1.1.1), accounting for the majority of the region’s growth (68.0 per cent) (Table 1.1.2). Western BOP (the third-largest TA) experienced growth of 69.8 per cent (contributing 22.7 per cent to the region’s growth), while Rotorua District (the second-largest TA) saw relatively minor growth of 9.4 per cent (contributing 7.1 per cent to the region’s growth). The Whakatāne and Ōpōtiki districts each also experienced relatively minor growth (10.3 and 7.1 per cent respectively), together contributing 4.6 per cent to overall growth, while the population of Kawerau declined over the 1986-2012 period by 16.9 per cent, reducing the region’s growth by 1.7 per cent.



Table 1.1.1: Annual and Total Population Change (%), Bay of Plenty Region and its TAs, Total New Zealand 1986-2012

		Tauranga City	Western BOP	Rotorua	Whakatāne	Kawerau	Ōpōtiki	Bay of Plenty	New Zealand
Estimated Defacto Population (Adjusted for 1991 Census) ⁽¹⁾ (March Years)	1986	...	...	...	...	...	...	...	...
	1987	+1.8	+2.2	-0.0	+0.7	-0.7	+1.1	+1.0	+0.3
	1988	+2.3	+2.5	+1.0	+0.6	+0.0	+1.8	+1.5	+0.7
	1989	+1.6	+1.1	+0.6	+0.3	-0.6	+1.3	+0.9	+0.2
	1990	+1.9	+2.1	+0.5	+0.6	-0.6	+1.3	+1.2	+0.8
Estimated Defacto Population (unadjusted for Census 1996) ⁽¹⁾ (March Years)	1991	...	...	...	...	...	...	...	...
	1992	+2.0	+2.2	+0.0	+0.6	-0.3	+2.0	+1.1	+1.0
	1993	+2.2	+2.6	+0.9	+0.6	-0.2	+1.5	+1.6	+1.3
	1994	+3.0	+2.2	+1.1	+0.9	-0.1	+1.6	+1.8	+1.4
	1995	+3.3	+2.2	+0.9	+0.9	-1.0	+1.4	+1.8	+1.6
Estimated Usual Resident Population (June Years) ⁽²⁾	1996	...	...	...	...	...	...	...	...
	1997	+4.3	+2.5	+0.5	+0.6	-1.4	-0.3	+2.1	+1.3
	1998	+3.8	+2.5	+0.6	+0.0	-1.9	+0.1	+1.8	+0.9
	1999	+3.1	+1.6	-0.3	-0.3	-2.4	+0.0	+1.2	+0.5
	2000	+2.8	+1.8	-0.1	-0.3	-2.7	+0.0	+1.1	+0.6
	2001	+2.1	+0.8	-0.1	-0.3	-2.3	-1.2	+0.7	+0.6
	2002	+2.7	+1.8	+0.7	+0.3	+0.3	-0.2	+1.5	+1.8
	2003	+3.1	+2.3	+0.7	+0.0	-0.3	-0.1	+1.7	+2.0
	2004	+2.9	+2.0	+0.3	+0.6	-0.8	-0.2	+1.6	+1.5
	2005	+2.6	+2.2	-0.1	-0.3	-0.4	-1.2	+1.2	+1.1
	2006	+2.2	+1.7	+0.1	+0.6	-0.7	-1.4	+1.2	+1.2
	2007	+2.1	+1.4	-0.1	-0.3	-1.1	-0.7	+0.9	+1.0
	2008	+1.5	+1.4	+0.1	+0.0	-0.3	-0.9	+0.8	+1.0
	2009	+1.7	+1.4	+0.1	-0.3	-0.6	-0.4	+0.9	+1.1
	2010	+1.5	+1.3	+0.6	+0.3	-0.3	-0.2	+1.0	+1.2
	2011	+1.2	+0.9	+0.4	+0.3	-0.7	-0.6	+0.7	+0.9
	2012	+0.6	-0.2	-0.1	-0.3	-0.4	-2.7	+0.1	+0.6
	1986-2012*	+93.4	+69.8	+9.4	+10.3	-16.9	+7.1	+42.5	+34.0

Source: (1) Statistics New Zealand, Yearbook collection 1893-2012

(2) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(1996+) (Annual-Jun)

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous



Table 1.1.2: Contribution (%) to the Bay of Plenty Region's population by TA, 1986-2012

	Tauranga City	Western BOP	Rotorua	Whakatāne	Kawerau	Ōpōtiki	Bay of Plenty REGION	Residual
1986	30.9	13.8	32.3	16.0	4.3	4.2	101.6	-1.6
1987	31.2	14.0	32.0	16.0	4.2	4.2	101.6	-1.6
1988	31.4	14.1	31.8	15.8	4.1	4.2	101.6	-1.6
1989	31.7	14.2	31.8	15.8	4.1	4.2	101.6	-1.6
1990	31.9	14.3	31.5	15.7	4.0	4.2	101.5	-1.5
1991	32.3	14.5	31.3	15.4	3.9	4.2	101.6	-1.6
1992	32.6	14.6	30.9	15.3	3.9	4.2	101.6	-1.6
1993	32.8	14.8	30.7	15.2	3.8	4.2	101.5	-1.5
1994	33.2	14.8	30.5	15.1	3.7	4.2	101.5	-1.5
1995	33.7	14.9	30.2	14.9	3.6	4.2	101.6	-1.6
1996	34.6	15.4	28.9	14.8	3.5	4.2	101.5	-1.5
1997	35.3	15.5	28.4	14.6	3.4	4.1	101.4	-1.4
1998	36.1	15.6	28.1	14.4	3.3	4.0	101.4	-1.4
1999	36.7	15.7	27.7	14.1	3.2	4.0	101.4	-1.4
2000	37.4	15.8	27.3	13.9	3.0	3.9	101.4	-1.4
2001	37.9	15.8	27.1	13.8	3.0	3.8	101.4	-1.4
2002	38.3	15.8	26.9	13.6	2.9	3.8	101.3	-1.3
2003	38.8	15.9	26.6	13.4	2.9	3.7	101.4	-1.4
2004	39.3	16.0	26.3	13.3	2.8	3.6	101.3	-1.3
2005	39.9	16.1	25.9	13.1	2.7	3.6	101.3	-1.3
2006	40.3	16.2	25.7	13.0	2.7	3.5	101.3	-1.3
2007	40.8	16.3	25.4	12.9	2.6	3.4	101.3	-1.3
2008	41.0	16.4	25.2	12.7	2.6	3.4	101.3	-1.3
2009	41.4	16.5	25.0	12.6	2.6	3.3	101.3	-1.3
2010	41.5	16.5	24.9	12.5	2.5	3.3	101.3	-1.3
2011	41.8	16.5	24.9	12.5	2.5	3.2	101.3	-1.3
2012	42.0	16.5	24.8	12.4	2.5	3.1	101.3	-1.3
1986-2012*	68.0	22.7	7.1	3.9	-1.7	0.7	100.7	-0.7

Source: (1) Statistics New Zealand, Yearbook collection 1893-2012

(2) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(1996+) (Annual-Jun)

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous

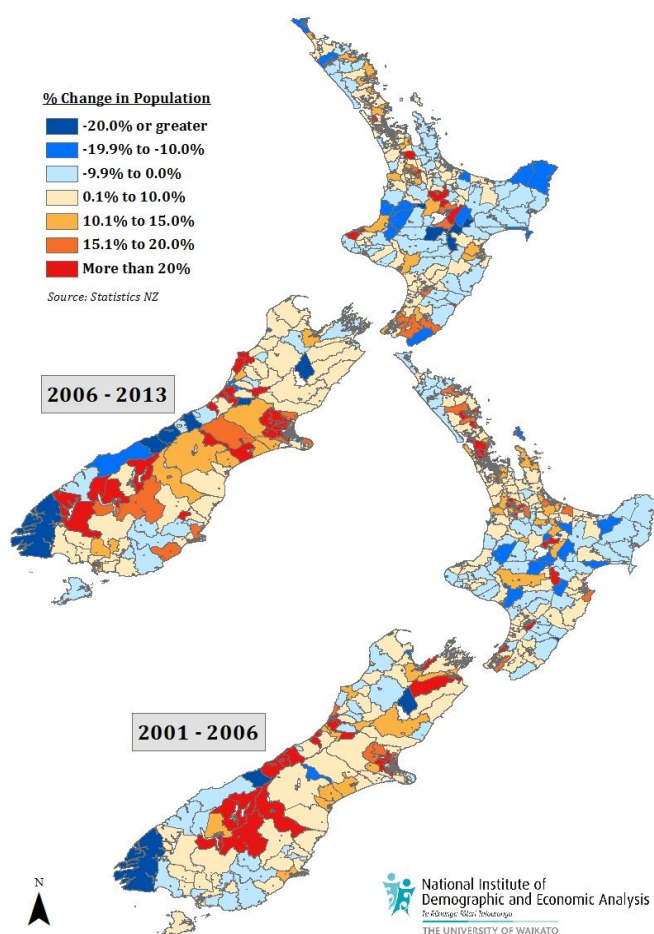


1.2 Census 2013 – First Insights

The first data release from the 2013 Census has made it possible to include in this report a snapshot of the changes in the usually resident population for the two periods, 2001-2006 and 2006-2013. Figures 1.2.1 and 1.2.2 show the percentage change in the 'usual resident' population at the Census Area Unit (CAU) level for Total New Zealand and the BOP Region respectively¹.

The usually resident population of New Zealand increased by 5.3 percent over the seven year period, 2006-2013. The pattern of change was not distributed evenly. Almost one-third of CAUs with a population of over 10 residents declined in number across the period (affecting 613 of the total 1,869 CAUs). This is a notable increase from the 475 CAUs (25.4 per cent) which recorded a decline in population over the previous inter-censal period (2001-2006). Perhaps the most notable new change is the growing spread of decline in North Island.

Figure 1.2.1: Percentage Change in the Usually Resident Population of Census Area Units (CAU), 2001-2006 and 2006-2013: Total New Zealand



¹ CAUs are aggregations of meshblocks which are non-administrative areas. CAUs may be aggregated at various levels to define common administrative areas such as urban communities, territorial authorities or regional council areas.



In keeping with the national picture, the Census Usually Resident Population of the BOP Region grew by 4.0 per cent between 2006 and 2013 (Table 1.2.1), a little lower than the ERP growth (4.8 per cent, see Appendix 1.1)—the discrepancy likely to reduce when the 2013 Census-based ERP data are released. At the same time, over two-fifths (52 CAUs, 44.1 per cent) of the region’s 127 CAUs declined in size (Table 1.2.2), and as also occurred nationally, the decline was more widespread than between 2001 and 2006, when 33 of the region’s CAUs declined (28.0 per cent) (Figure 1.2.3). These trends resulted in Kawerau, Ōpōtiki, Rotorua and Whakatāne experiencing decline between 2006 and 2013, whereas between 2001 and 2006 only Kawerau and Ōpōtiki had declined.

This increase in the number/proportion of BOP CAUs recording a decline in population numbers between 2006 and 2013 compared to the previous period is most significant for Rotorua district, where 25 CAUs (64 per cent) declined in size between 2006 and 2013, compared to 15 (38 per cent) between 2001 and 2006, Whakatāne (12 CAUs compared to eight; 63 cf. 42 per cent), and Tauranga City (five CAUs compared to two; 14 cf. 6 per cent). For Ōpōtiki the situation was essentially a continuation of the previous trend (4 of the 5 CAUs declining in both periods).

Figure 1.2.2: Percentage Change in the Usually Resident Population of Census Area Units (CAU) within each Territorial Authority (TA) boundary, 2001-2006 and 2006-2013: BOP Region

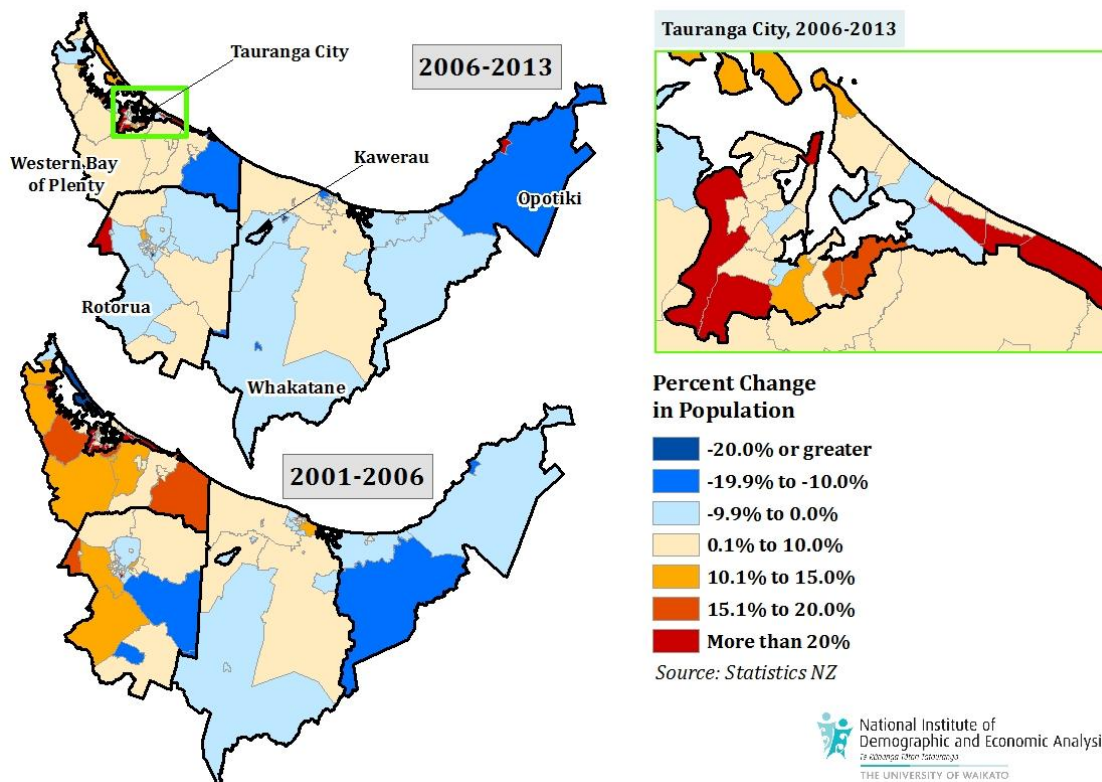


Table 1.2.1: Census Usually Resident Population of the BOP Region living in each TA in 2001, 2006, 2013; and population change over the inter-censal periods

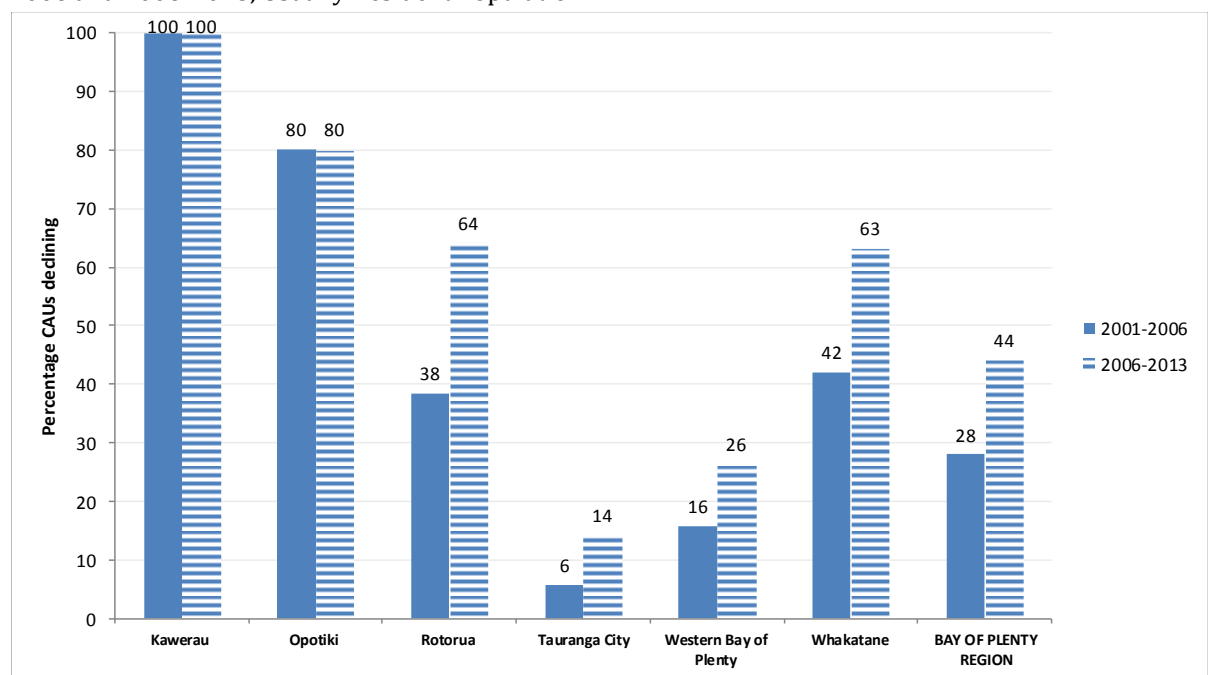
Territorial Authority (TA)	Census Usually Resident Population			Change 2001-2006			Change 2006-2013		
	2001	2006	2013	Number	Percent	Average annual change (Percent) ⁽¹⁾	Number	Percent	Average annual change (Percent) ⁽¹⁾
Kawerau District	6,975	6,921	6,363	-54	-0.8	-0.2	-558	-8.1	-1.2
Opotiki District	9,150	8,976	8,433	-174	-1.9	-0.4	-543	-6.0	-0.9
Rotorua District	64,473	65,901	65,280	+1,428	+2.2	+0.4	-621	-0.9	-0.1
Tauranga City	91,146	103,881	114,789	+12,735	+14.0	+2.8	+10,908	+10.5	+1.5
Western Bay of Plenty District	37,995	41,826	43,695	+3,831	+10.1	+2.0	+1,869	+4.5	+0.6
Whakatane District	32,868	33,297	32,688	+429	+1.3	+0.3	-609	-1.8	-0.3
Bay of Plenty Region	242,607	260,802	271,248	+18,195	+7.5	+1.5	+10,446	+4.0	+0.6

Table 1.2.2: Number of Census Area Unit (CAU) populations growing/declining between 2001-2006 and 2006-2013 by TA for the Census Usually Resident Population of the BOP Region

Territorial Authority (TA)	Number of CAUs*	Population Change 2001-2006		Population Change 2006-2013	
		Growth	Decline	Growth	Decline
Kawerau District	1	0 (0%)	1 (100%)	0 (0%)	1 (100%)
Opotiki District	5	1 (20%)	4 (80%)	1 (20%)	4 (80%)
Rotorua District	39	24 (62%)	15 (38%)	14 (36%)	25 (64%)
Tauranga City	35	33 (94%)	2 (6%)	30 (86%)	5 (14%)
Western Bay of Plenty District	19	16 (84%)	3 (16%)	14 (74%)	5 (26%)
Whakatane District	19	11 (58%)	8 (42%)	7 (37%)	12 (63%)
Bay of Plenty Region	118	85 (72%)	33 (28%)	66 (56%)	52 (44%)

* Only CAUs with usually resident population of more than 10 in either of the three Census years, 2001, 2006 and 2013 are included.

Figure 1.2.3: Percentage of CAUs declining in population size within each TA in the BOP Region, 2001-2006 and 2006-2013, Usually Resident Population



* Only CAUs with usually resident population of more than 10 in either of the three Census years, 2001, 2006 and 2013 are included.

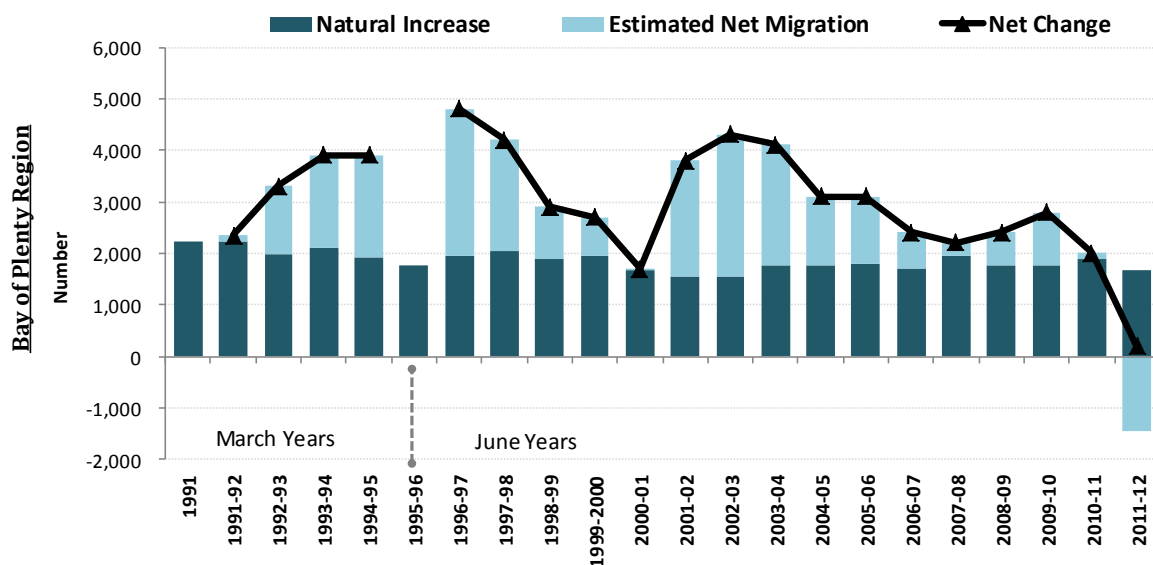


2.0 Components of Change

2.1 Natural Increase and Net Migration

Figure 2.1.1 shows the estimated components of change contributing to growth for the BOP Region across the period 1991-2012 (see Table 2.1.1 for underlying data, and note the lack of an estimate for residual migration for 1991 and the 1995-1996 period due to methodological changes in the underlying data collection). Clearly, natural increase (the difference between births and deaths) has been the major component of the region's growth across the period, while net migration contributed most significantly around the mid to late-1990s and early 2000s. However, net migration loss—arguably anomalous for the BOP—almost completely offset natural growth between 2011 and 2012.

Figure 2.1.1: Natural Increase, Net Migration and Net Change 1991-2012, Bay of Plenty Region



**Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year*

Data for Total New Zealand (Figure 2.1.2) indicate similar trends, although the national contribution from net migration has been typically lower than for the BOP Region, and negative net migration experienced nationally between 1998 and 2001 when it was mainly positive for the BOP Region. At the same time, data for the most recent year (2011-2012) indicate proportionately greater net migration loss for the BOP Region than for Total New Zealand.



Table 2.1.1: Components of Change, 1991-2012, Bay of Plenty Region and Total New Zealand

		Bay of Plenty REGION							New Zealand				
		Components of Change				Contribution to Net Change			Contribution to Net Change				
		Births ^a	Deaths ^b	Natural Increase <i>c = (a-b)</i>	Estimated Resident Population, ERP ^d	Net Change <i>e = (d_{t+1} - d_t)</i>	Estimated Migration <i>f = (e-c)</i>	Estimated Natural Increase (%)	Estimated Migration (%)	Net Change (%)	Estimated Natural Increase (%)	Estimated Migration (%)	Net Change (%)
March Year	1991	3,887	1,646	2,241	208,163	...	...	...	...	...	...	...	...
	1992	3,900	1,657	2,243	210,500	2,337	94	1.08	0.05	1.12	0.95	0.08	1.03
	1993	3,724	1,754	1,970	213,800	3,300	1,330	0.94	0.63	1.57	0.89	0.40	1.28
	1994	3,771	1,678	2,093	217,700	3,900	1,807	0.98	0.85	1.82	0.87	0.53	1.40
	1995	3,673	1,746	1,927	221,600	3,900	1,973	0.89	0.91	1.79	0.84	0.76	1.60
June Year	1996	3,672	1,893	1,779	230,600	...	...	...	...	...	...	...	...
	1997	3,846	1,906	1,940	235,400	4,800	2,860	0.84	1.24	2.08	0.79	0.53	1.32
	1998	3,850	1,800	2,050	239,600	4,200	2,150	0.87	0.91	1.78	0.78	0.11	0.89
	1999	3,755	1,869	1,886	242,500	2,900	1,014	0.79	0.42	1.21	0.75	-0.22	0.53
	2000	3,925	1,972	1,953	245,200	2,700	747	0.81	0.31	1.11	0.79	-0.20	0.59
	2001	3,615	1,933	1,682	246,900	1,700	18	0.69	0.01	0.69	0.76	-0.17	0.59
	2002	3,564	2,001	1,563	250,700	3,800	2,237	0.63	0.91	1.54	0.67	1.08	1.75
	2003	3,498	1,961	1,537	255,000	4,300	2,763	0.61	1.10	1.72	0.69	1.30	1.99
	2004	3,760	2,010	1,750	259,100	4,100	2,350	0.69	0.92	1.61	0.74	0.76	1.50
	2005	3,817	2,053	1,764	262,200	3,100	1,336	0.68	0.52	1.20	0.72	0.41	1.14
	2006	3,806	2,026	1,780	265,300	3,100	1,320	0.68	0.50	1.18	0.75	0.48	1.23
	2007	3,935	2,236	1,699	267,700	2,400	701	0.64	0.26	0.90	0.79	0.25	1.04
	2008	4,092	2,132	1,960	269,900	2,200	240	0.73	0.09	0.82	0.84	0.12	0.96
	2009	4,014	2,245	1,769	272,300	2,400	631	0.66	0.23	0.89	0.80	0.30	1.10
	2010	3,949	2,194	1,755	275,100	2,800	1,045	0.64	0.38	1.03	0.82	0.39	1.20
	2011	4,028	2,128	1,900	277,100	2,000	100	0.69	0.04	0.73	0.76	0.09	0.86
	2012	3,837	2,177	1,660	277,300	200	-1,460	0.60	-0.53	0.07	0.71	-0.08	0.63

Source: Compiled from Statistics New Zealand, Infoshare

(1) 1992-1995 Estimated Defacto Population (March Years); Statistics New Zealand, Yearbook collection 1893-2012

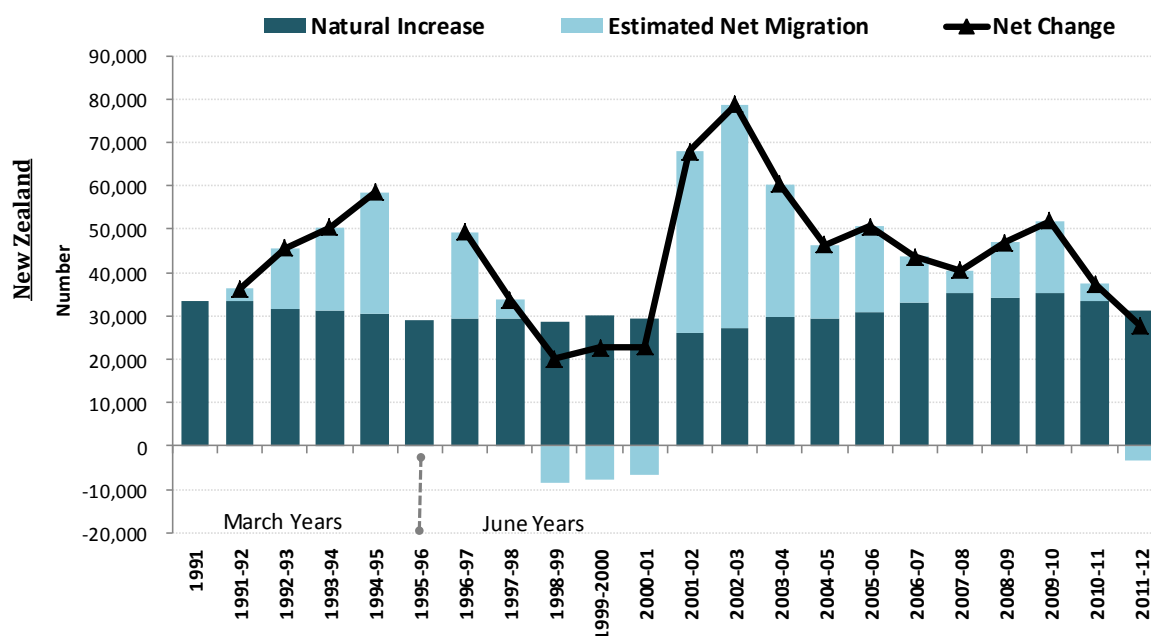
(2) Estimated Resident Population for Regions and TAs, at 30 June(1996+) (Annual-Jun), Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013

(3) Live births and Deaths by area, city/district councils and regional councils (Total population) (Annual-Jun). Table reference: VSB011AA, VSB016AA, VSD008AA, VSD018AA Last updated: 16 August 2013

^ Natural Increase, Net Migration and Net Change as a percentage of previous year's ERP



Figure 2.1.2: Natural Increase, Net Migration and Net Change 1991-2012, Total New Zealand



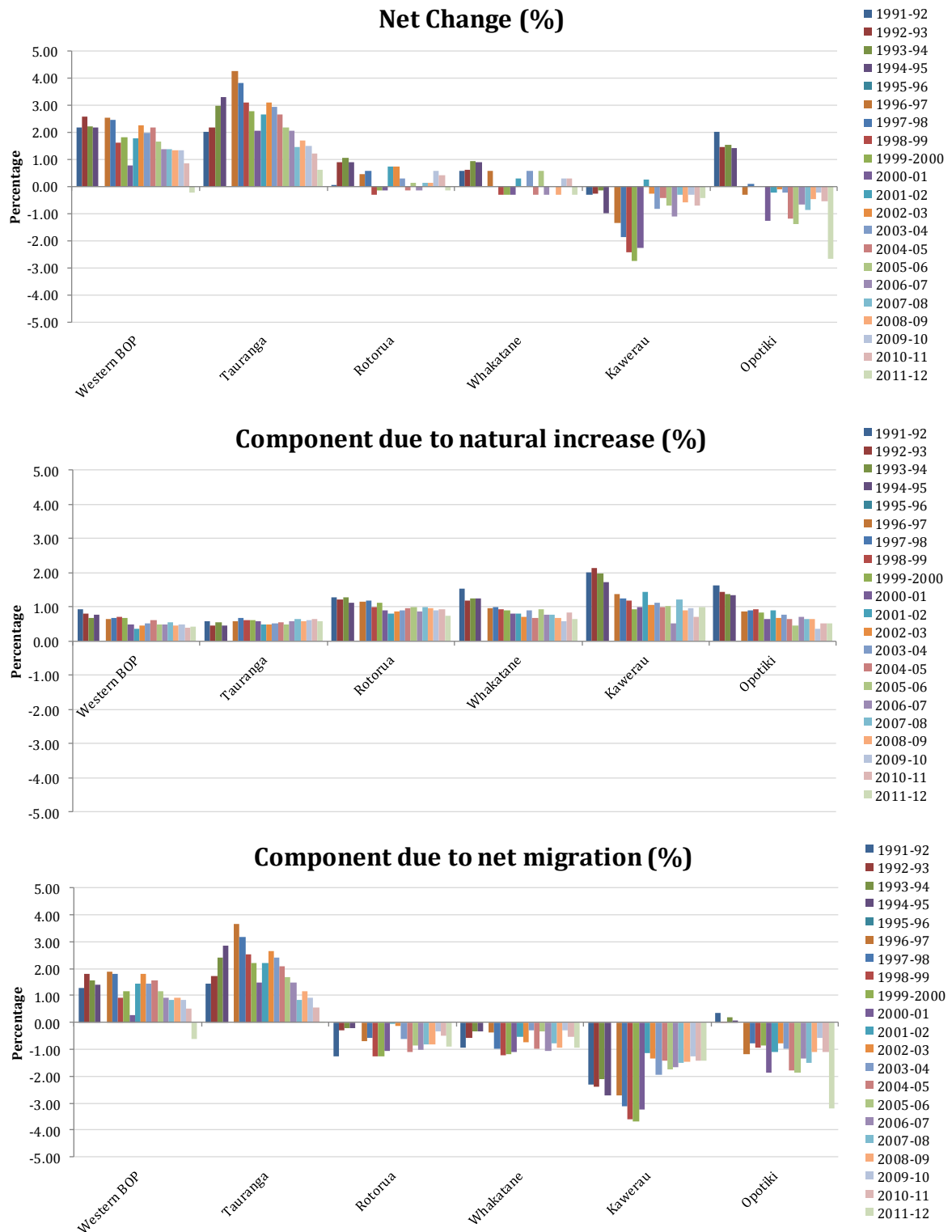
*Changes in timing and method of estimating Resident Population between 1995 and 1996 mean that only natural increase can be shown for that year

Comparative data for the TAs comprising the BOP Region are given in Figure 2.1.3 (see Appendices 1.3-1.4 for underlying data). The greater than average estimated growth over the 1986-2012 period seen earlier in Table 1.1.1 for Tauranga City (93.4 per cent) and Western BOP (69.8 per cent) is primarily due to their higher than average contributions from positive net migration (see also Map 2.1.1); in each case and in most years, natural increase played a somewhat smaller role.

The opposite is true for Rotorua (9.4 per cent), Whakatāne (10.3 per cent) and Ōpōtiki (7.1 per cent) districts, which each experienced net migration loss but saw their populations grow modestly from natural increase. In the case of Kawerau (-16.9 per cent), net migration loss has been the main driver for declining population, as this district can be seen to have experienced relatively sizeable natural increase.



Figure 2.1.3: Net change and Components of Change, TAs of the Bay of Plenty Region, 1991-2012



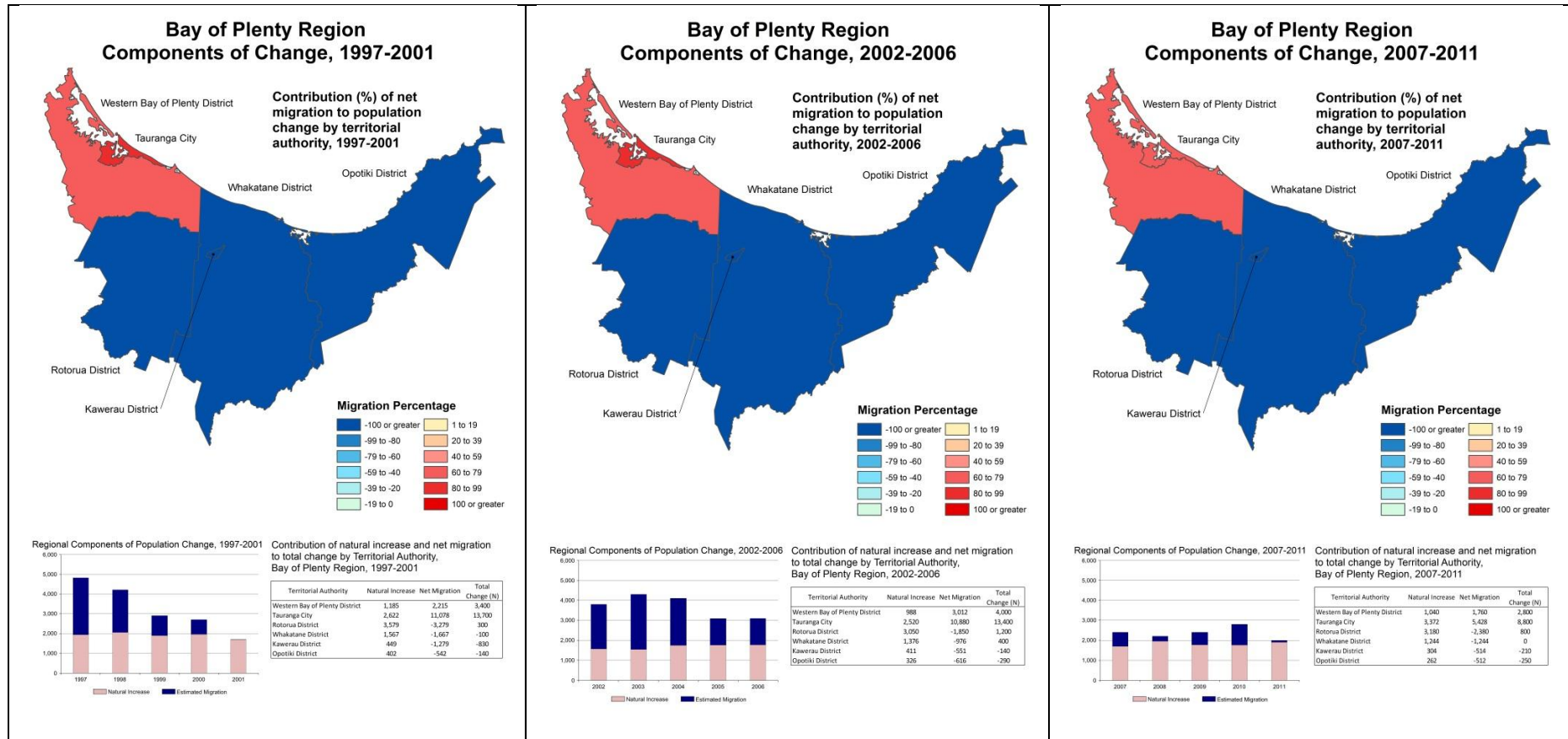
Source: Compiled from Statistics New Zealand Infoshare: Tables DPE051AA, VSB016AA, VSD018AA

(a) 1991-1995 Estimated Defacto; 1996-2011 Estimated Usually Resident Population (URP)

Natural Increase, Net Migration and Net Change as a percentage of previous year's URP



Map 2.1.1: Contribution of Net Migration to the TAs of the BOP Region, 1997-2001, 2002-2006, 2007-2011



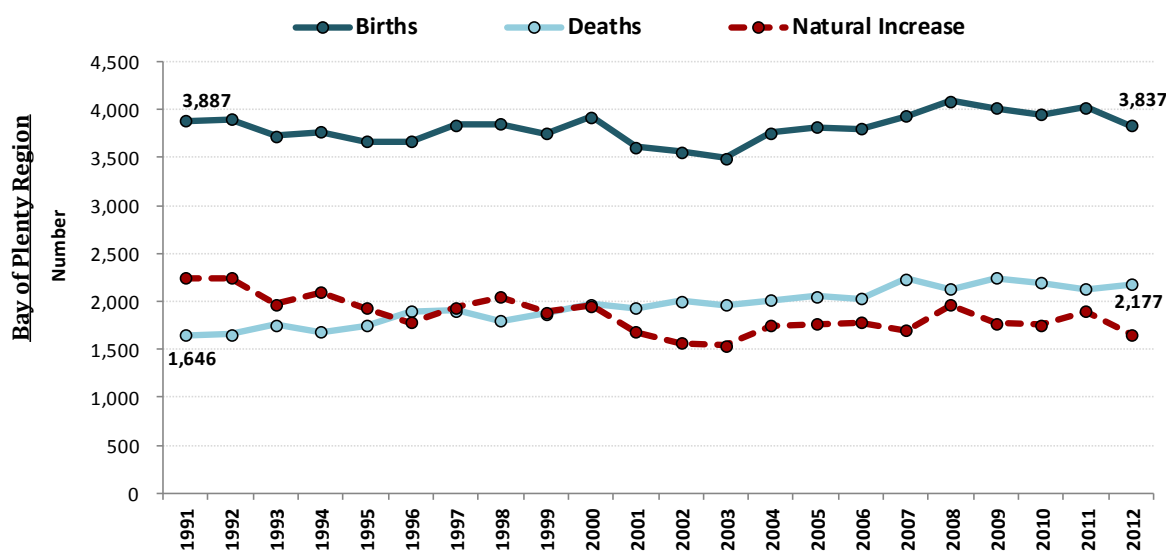
2.2 Births, Deaths and Natural Increase

Underlying the trends in natural increase shown above are those for births and deaths, depicted in Figure 2.2.1. Here as would be expected we see that the main driver of natural increase has been births which—as elsewhere in most of New Zealand—have increased since 2003, peaking for the BOP Region around 2008. For a number of reasons outlined below (most particularly the reducing size of the reproductive age cohort indicated in the section on age structures), birth numbers are unlikely to see a major increase in the future.

There has also been a steady increase in the number of deaths across the period, from 1,646 in 1991 to 2,177 in 2012 (32.3 per cent increase). However, the increase will soon accelerate as the Baby Boomer wave moves through the older age groups.

As the projections further below will show, the overall outcome of these opposing trends will be a continuing steady reduction in natural increase, a trend that will have a negative impact on the region’s longer-term potential for growth.

Figure 2.2.1: Births, Deaths and Natural Increase, Bay of Plenty Region 1991-2012



Compiled from Statistics New Zealand Infoshare: Births, Table VSB016AA; Deaths, Table VSD018AA

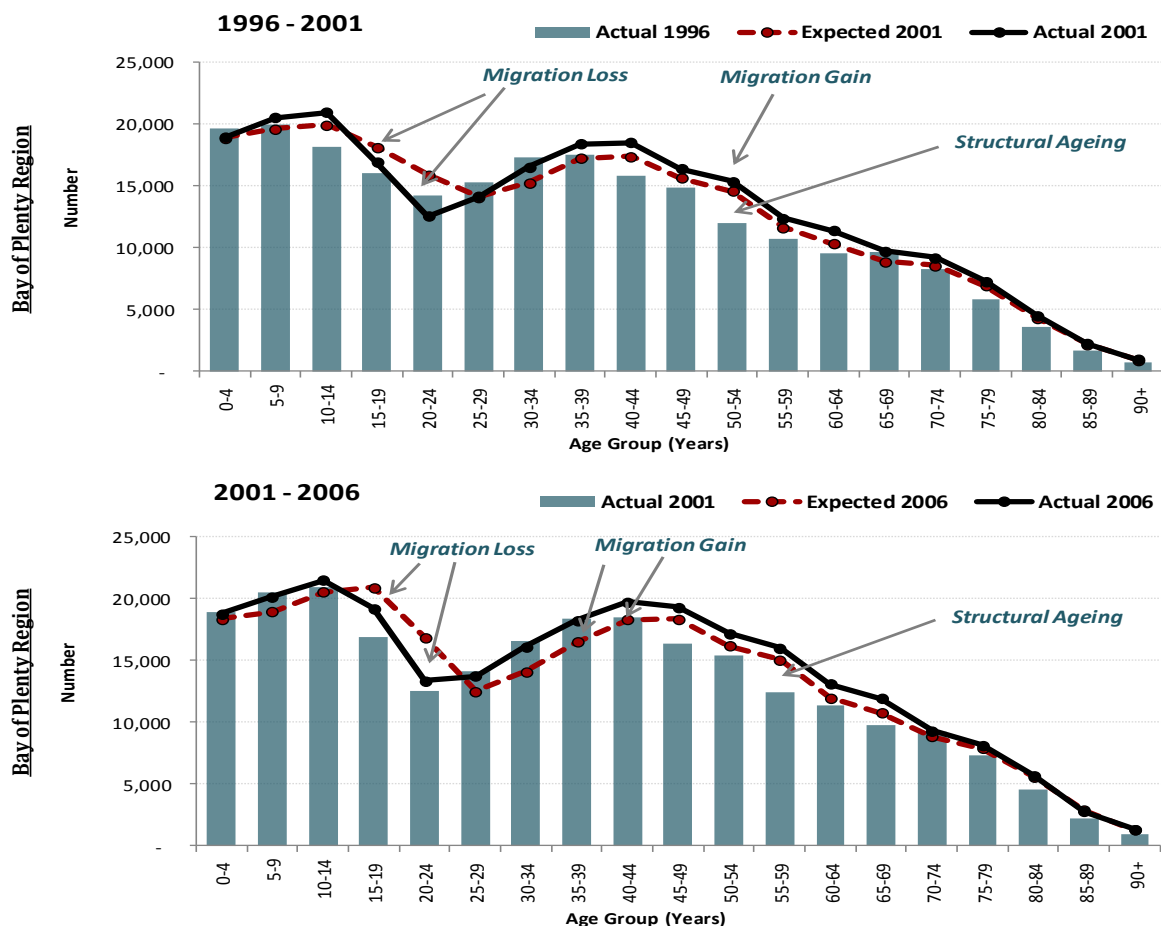


3.0 Components of Change by Age

3.1 Expected versus Actual Population

Using the residual method for estimating net migration described earlier, the components of change can be plotted by age. Figure 3.1.1 shows that between 1996 and 2001, the region experienced minor net migration loss at 15-19 years of age and greater loss at 20-24 years; both trends increased between 2001 and 2006. At other ages, net gains were widespread across both periods, particularly at 5-14 and 30-74 years, indicating the net arrival of parents and children and those of retiree age. Notable also is the impact of structural ageing which shows at 50-54 years across the 1996-2001 period, and at 55-59 years for 2001-2006. That is, the gap between numbers at the previous Census (columns) and Expected/Actual numbers at the subsequent Census reflects the movement of the Baby Boomer wave through the age structure (see Appendices 2.1 - 2.8 for data and TA graphs).

Figure 3.1.1: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Bay of Plenty Region



Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



3.2 Migration Flows – Demographic Accounting Model

The data in the previous section can be further disaggregated using a demographic accounting methodology (Jackson and Pawar 2013) to show the approximate composition of migration flows. This is done first in Figures 3.2.1 and 3.2.2 to show all components of change (1996-2001 and 2001-2006), and then in Figures 3.2.3, 3.2.4 and 3.2.5 to show the flows by age.

Figure 3.2.1 shows that between 1996 and 2001, the Estimated Resident Population (ERP) of the Bay of Plenty Region grew by approximately 16,300. Natural Increase (births minus deaths) accounted for 9,511 persons, and Estimated Net Migration, for 6,789 (Estimated Net Migration being the difference between Estimated Resident Population Change, and Natural Increase). From Estimated Net Migration we then account for 'known' Net Migration (2,614), which is comprised of known Net Internal Migration (8,664) and known Net International Permanent/Long Term (PLT) Migration (-6,050). This leaves an *unaccounted for* component of migration, which we call here 'residual' migration (4,175). Residual migration is a complex combination of (a) potential error in the initial estimation of the ERP by Statistics New Zealand, (b) international immigrants moving to a different locality to that stated on their Arrival form, (c) international emigrants leaving a different locality to that stated on their Departure form, and (d) internal migrants incorrectly stating where they live now or lived five years ago.

The model then further disaggregates each net migration component into its respective inflows and outflows (for the 196-2001 period, 34,926 internal immigrants and 26,262 internal emigrants; 11,664 PLT international immigrants and 17,714 PLT international emigrants).

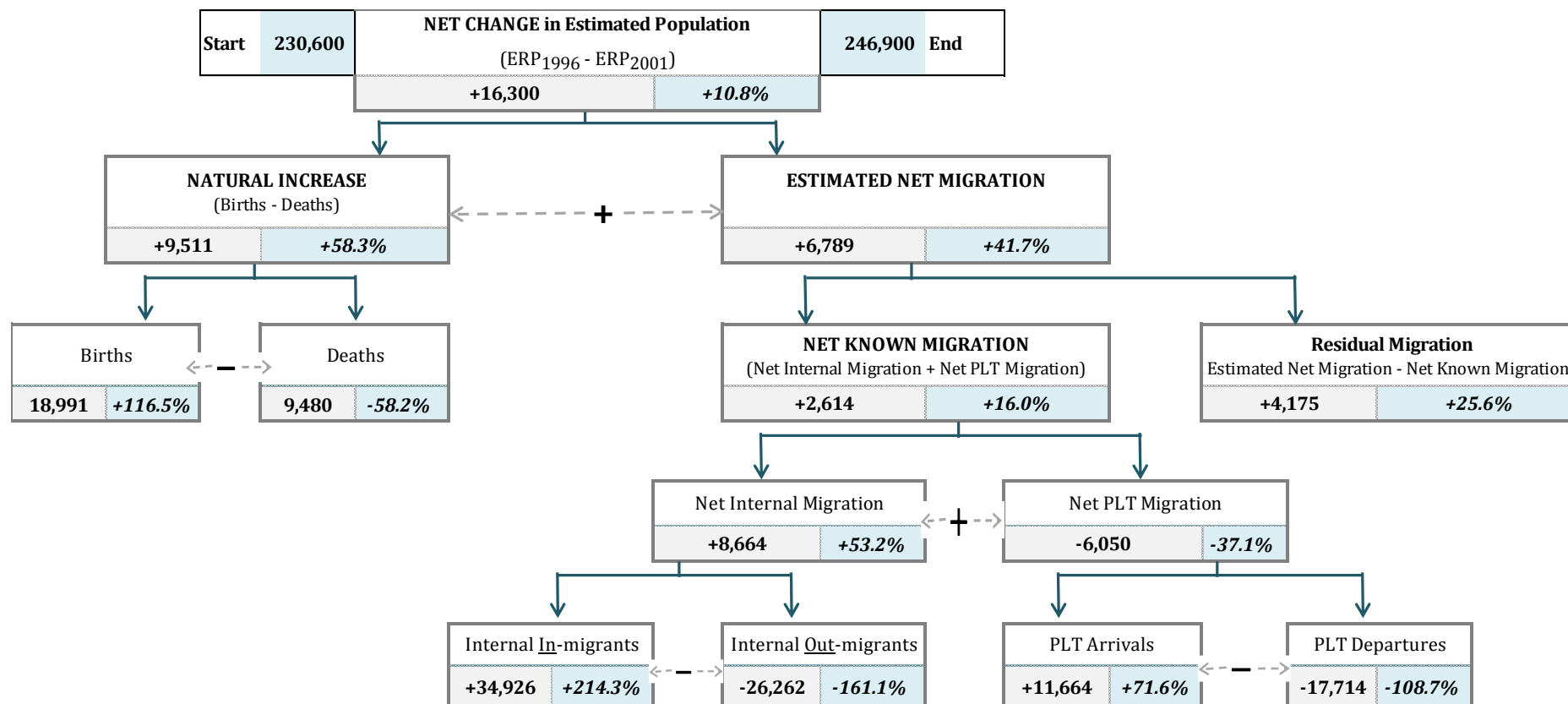
Figure 3.2.2 for the period 2001-2006 can be similarly read. Across that period, Estimated Net Migration increased (to 10,006), as did the 'known' Net Migration component (4,185) which similarly indicates a Net Internal Migration gain (5,895) accompanied by a Net PLT International loss (-1,710).

Figures 3.2.3 and 3.2.4 illustrate the same dataset by age group for each period, showing that all age groups experienced both inflows and outflows of both internal and international migrants, with the number of movements greatest for the characteristically high migration age group: 20-24 years.

The resulting age profile for *known* Net Migration is summarised in Figure 3.2.5. Known Net Migration is notably negative at 15-19 and 20-24 years for both internal and international migration, for both periods, but strongly positive at all other ages for internal migration. By contrast, net international migration was negative at all ages between 1996 and 2001, turning to gain at several ages between 2001 and 2006, most notably at 30-34 and 35-39 years.



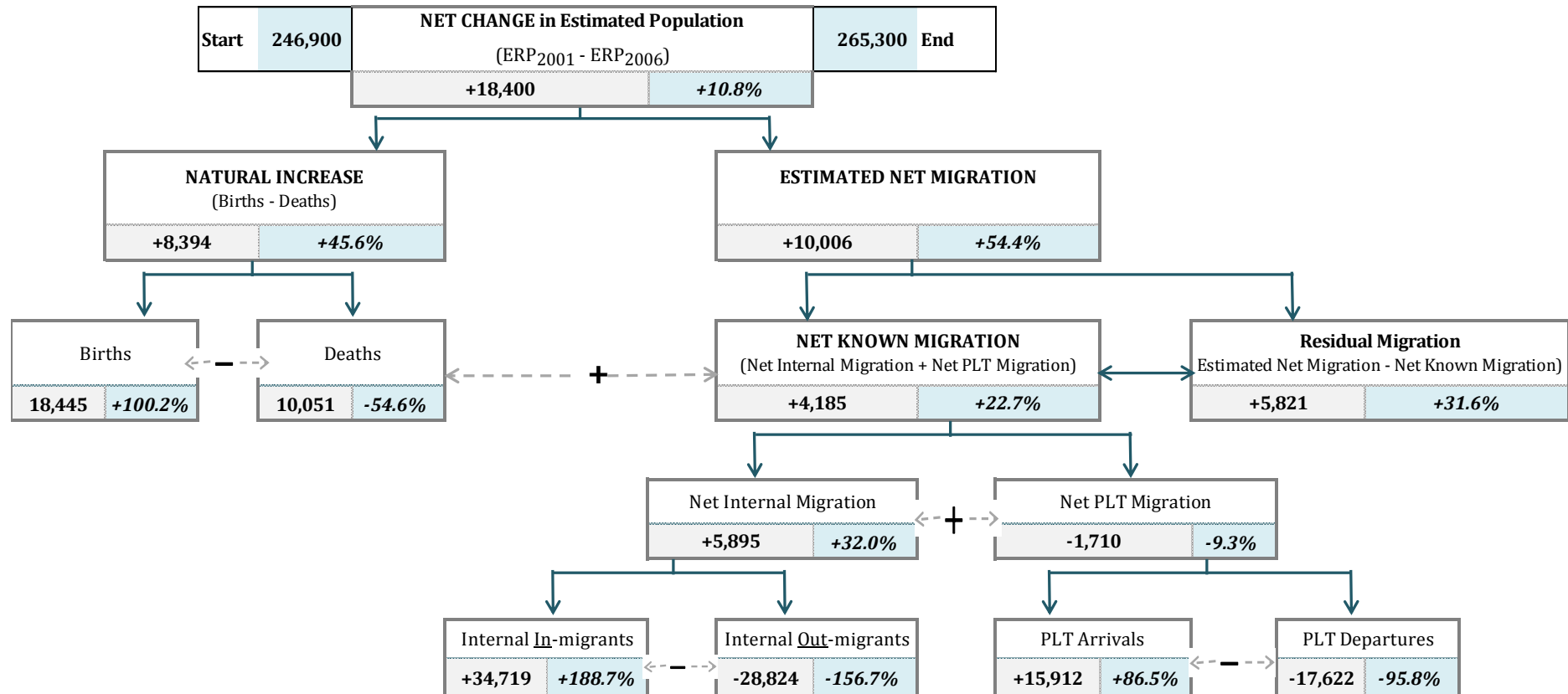
Figure 3.2.1: Components contributing to Estimated Resident Population, Bay of Plenty Region 1996-2001



Source: Jackson & Pawar (2013)/Statistics New Zealand various sources



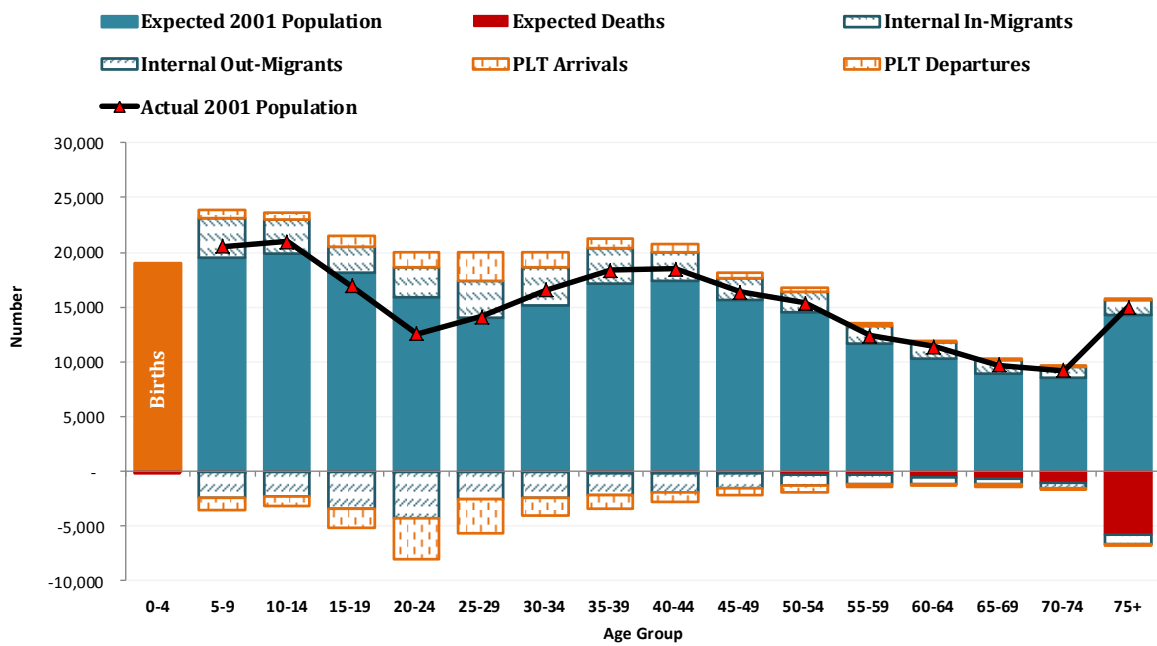
Figure 3.2.2: Components contributing to Estimated Resident Population, Bay of Plenty Region 2001-2006



Source: Jackson & Pawar (2013)/Statistics New Zealand various sources

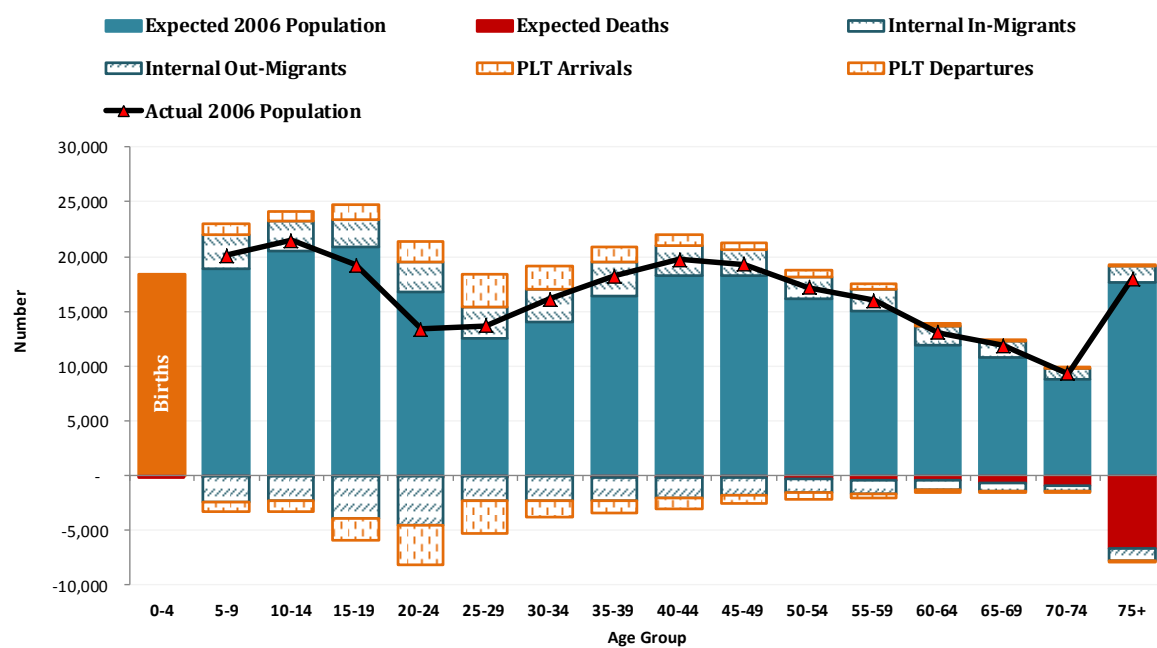


Figure 3.2.3: Components Contributing to Estimated Resident Population by Age, Bay of Plenty Region, 1996-2001



Source: Jackson & Pawar (2013)/Statistics New Zealand various sources

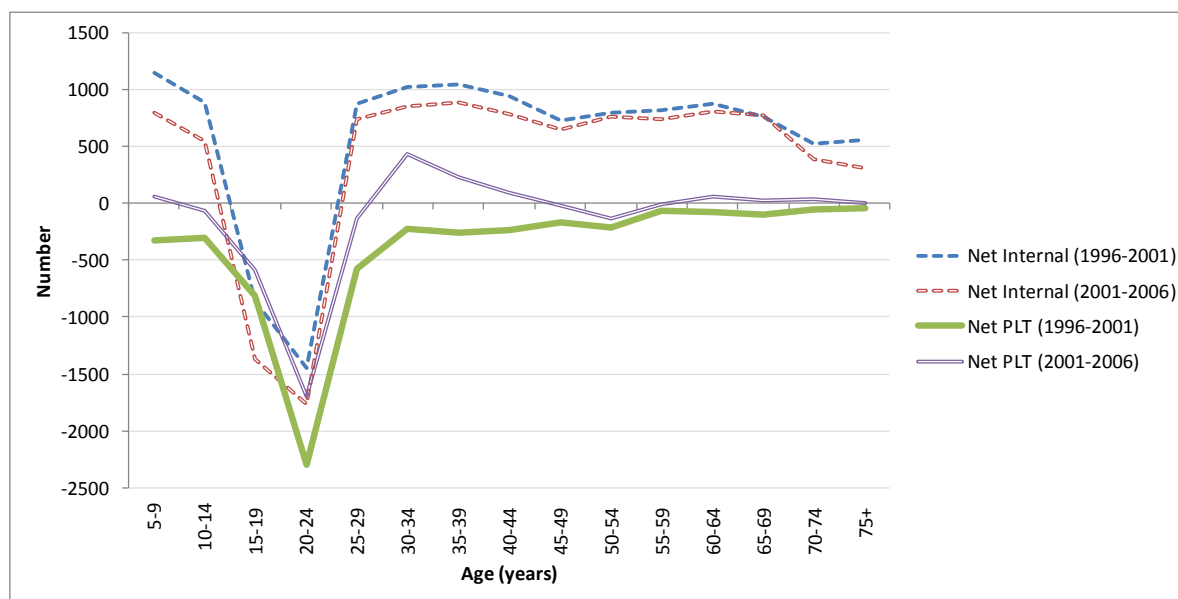
Figure 3.2.4: Components Contributing to Estimated Resident Population by Age, Bay of Plenty Region, 2001-2006



Source: Jackson & Pawar (2013)/Statistics New Zealand various sources



Figure 3.2.5: Estimated Age Profile of [Known] Net Internal and Net International (PLT) Migration, Bay of Plenty Region 1996-2001 and 2001-2006



Source: Jackson & Pawar (2013)/Statistics New Zealand various sources

The data in Figure 3.2.5 are particularly valuable in relation to developing the migration assumptions, as it must be reiterated that even when migration is positive overall, the region experiences reasonably consistent net loss at 15-24 years. The underlying data are presented in Table 3.2.1.

Table 3.2.1: Estimated Age Profile of [Known] Net Internal and Net International (PLT) Migration, Bay of Plenty Region 1996-2001 and 2001-2006

	Net Internal (1996-2001)	Net Internal (2001-2006)	Net PLT (1996-2001)	Net PLT (2001-2006)
5-9	1152	795	-332	64
10-14	885	543	-309	-69
15-19	-864	-1371	-809	-585
20-24	-1449	-1770	-2301	-1697
25-29	876	741	-575	-130
30-34	1026	852	-226	436
35-39	1041	882	-257	230
40-44	939	786	-231	93
45-49	729	654	-166	-22
50-54	798	762	-214	-131
55-59	822	738	-67	-6
60-64	873	813	-80	54
65-69	765	774	-96	26
70-74	519	384	-55	37
75+	558	306	-42	6

Source: Jackson & Pawar (2013)/Statistics New Zealand various sources



4.0 Age Structure and Population Ageing

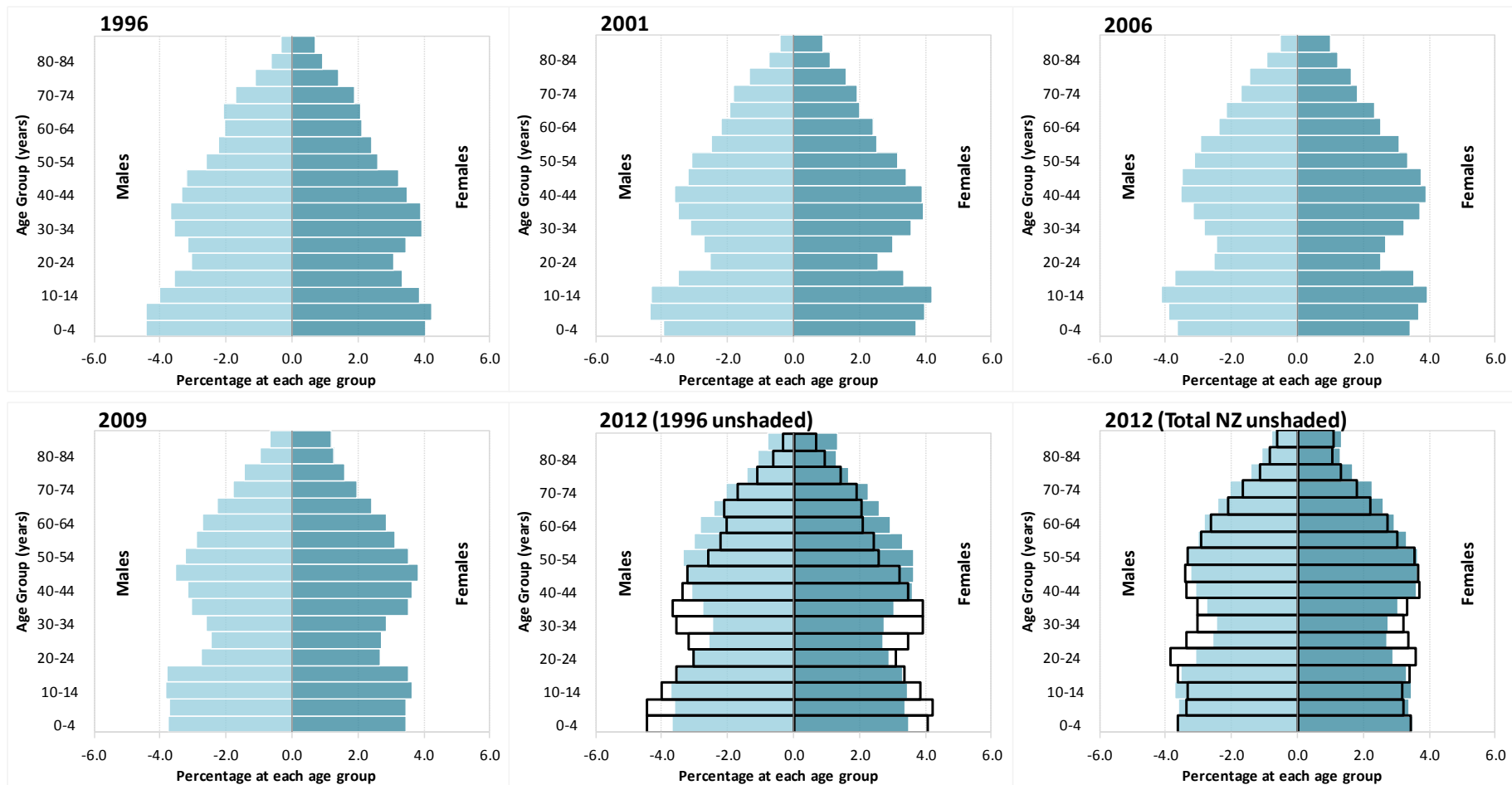
4.1 Numerical and Structural Ageing

The BOP Region has the seventh-oldest age structure out of the 16 Regional Council areas, and, as elsewhere, is ageing. It is ageing numerically, as more people survive to older ages, and structurally, as lower birth rates deliver relatively fewer babies and children into the base of the age structure *vis-à-vis* the size of the parental generation. It is also ageing structurally as the net migration losses at young adult ages and net migration gains at early retiree ages increase the median age. Together these dynamics cause the proportions at younger ages to decrease, and the elevated numbers at older ages to also become increased proportions.

The shifts can be detected in Figure 4.1.1 (see especially the lower middle panel which directly compares the region's age structure in 1996 and 2012). They are even clearer from Table 4.1.1, which shows that despite the recent increase in births and the net migration gains at most ages (with the exception of 15-19 and 20-24 years), the proportion of the BOP Region population aged 0-14 years has declined quite steadily, from 25.0 per cent in 1996 to 21.4 per cent in 2012 (-14.6 per cent); as have the proportions at 15-24 years (from 13.1 per cent in 1996 to 12.8 per cent in 2012; -1.9 per cent) and 25-54 years (from 40.2 per cent in 1996 to 36.8 per cent in 2012; -8.5 per cent). In contrast, the proportion aged 55-64 years has increased from 8.8 to 12.1 per cent (37.4 per cent), and that at 65+ years, from 12.9 to 16.9 per cent (31.3 per cent). For Total New Zealand the proportion aged 65+ years in 2012 is 13.8 per cent, up from 11.5 per cent in 1996 (19.7 per cent increase), making the BOP Region both somewhat older than the national average, and ageing faster. In sum, the gains from births and migration are slowing the pace of the BOP Region's structural ageing, but are unable to prevent it.



Figure 4.1.1: Age-Sex Structure Bay of Plenty Region, 1996-2012, and 2012 compared with 1996



Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, NIDEA, University of Waikato. Source data from Stats NZ Infoshare Estimated Subnational Population and TableBuilder: (RC, TA,AU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries)



Table 4.1.1: Summary Indicators of Change by Age, 1996-2012, Bay of Plenty Region and Total New Zealand

Distribution of population over broad age groups									
Broad Age Group (Yrs)	Population					Average Annual Change (%)			Annual Change (%) 2011-12
	1996	2001	2006	2011	2012	1996-2001	2001-2006	2006-2011	
0-14	57,740	60,400	60,320	59,770	59,260	+0.9	-0.0	-0.2	-0.9
15-24	30,170	29,460	32,550	35,640	35,580	-0.5	+2.1	+1.9	-0.2
25-54	92,720	99,320	104,190	103,370	101,990	+1.4	+1.0	-0.2	-1.3
55-64	20,300	23,780	29,050	33,290	33,530	+3.4	+4.4	+2.9	+0.7
65+	29,730	33,940	39,170	44,980	46,940	+2.8	+3.1	+3.0	+4.4
Bay of Plenty Region	230,660	246,900	265,280	277,050	277,300	+1.4	+1.5	+0.9	+0.1
New Zealand	3,732,000	3,880,500	4,184,500	4,405,200	4,433,100	+0.8	+1.6	+1.1	+0.6
Broad Age Group (Yrs)	Percentage Distribution					Average Annual Change (%)			Annual Change (%) 2011-12
	1996	2001	2006	2011	2012	1996-2001	2001-2006	2006-2011	
0-14	25.0	24.5	22.7	21.6	21.4	-0.5	-1.4	-1.0	-0.9
15-24	13.1	11.9	12.3	12.9	12.8	-1.8	+0.6	+1.0	-0.3
25-54	40.2	40.2	39.3	37.3	36.8	+0.0	-0.5	-1.0	-1.4
55-64	8.8	9.6	11.0	12.0	12.1	+1.9	+2.7	+1.9	+0.6
65+	12.9	13.7	14.8	16.2	16.9	+1.3	+1.5	+2.0	+4.3
Bay of Plenty Region	100.0	100.0	100.0	100.0	100.0	...	...	...	+0.0
Total NZ 65+ years	11.5	11.9	12.2	13.3	13.8	+0.6	+0.6	+1.8	+3.5
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)									
	Ratio					Average Annual Change (%)			Annual Change (%) 2011-12
	1996	2001	2006	2011	2012	1996-2001	2001-2006	2006-2011	
Bay of Plenty Region	14.9	12.4	11.2	10.7	10.6	-3.3	-1.9	-0.9	-0.9
New Zealand	18.3	15.2	14.1	13.0	12.8	-3.3	-1.5	-1.5	-1.5
Ratio Elderly to Children (Number 65+ per Child 0-14)									
	Ratio					Average Annual Change (%)			Annual Change (%) 2011-12
	1996	2001	2006	2011	2012	1996-2001	2001-2006	2006-2011	
Bay of Plenty Region	0.5	0.6	0.6	0.8	0.8	+1.8	+3.1	+3.2	+5.3
New Zealand	0.5	0.5	0.6	0.7	0.7	+1.0	+1.9	+2.8	+4.4

Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato

Notes: Source data from Stats NZ Infoshare Estimated Subnational Population (RC, TAAU) by Age and Sex at 30 June 1996, 2001 and 2006-2011 (2006 Boundaries)



The age-sex structures of the TAs which comprise the BOP Region differ markedly (Figure 4.1.2). By comparison with other New Zealand cities, Tauranga City has a smaller proportion of people aged 25-39 years, and this proportion has reduced since 1996. As a result its age structure is taking on a slight 'hourglass' age structure, similar to that for rural areas, which typically—but not always—reflects net migration loss at young adult ages (15-29 years). However, the bite in the age structure for Tauranga City is significantly less pronounced than for the region's other TAs, and the city has also had a fairly stable proportion of children across the period 1996-2012. Rotorua, Whakatāne and Kawerau each also have a sizeable proportion of children when compared with Western Bay of Plenty and Ōpōtiki, but in all cases these proportions have declined.

As indicated in Section 3.0 above, underlying these differences are various mixes in the components of population change. The bite at 25-39 years for Tauranga City, for example, is only fractionally the result of net migration loss (and then only at 20-24 years); rather, it is primarily due to net migration gains at the younger and older age groups either side, which act to accentuate the bite (see Appendix 2.3). The situation of notable gain at younger and older ages is equally pronounced for the Western Bay of Plenty, although that district did experience sizeable net loss at 15-24 years over both periods (Appendix 2.4).

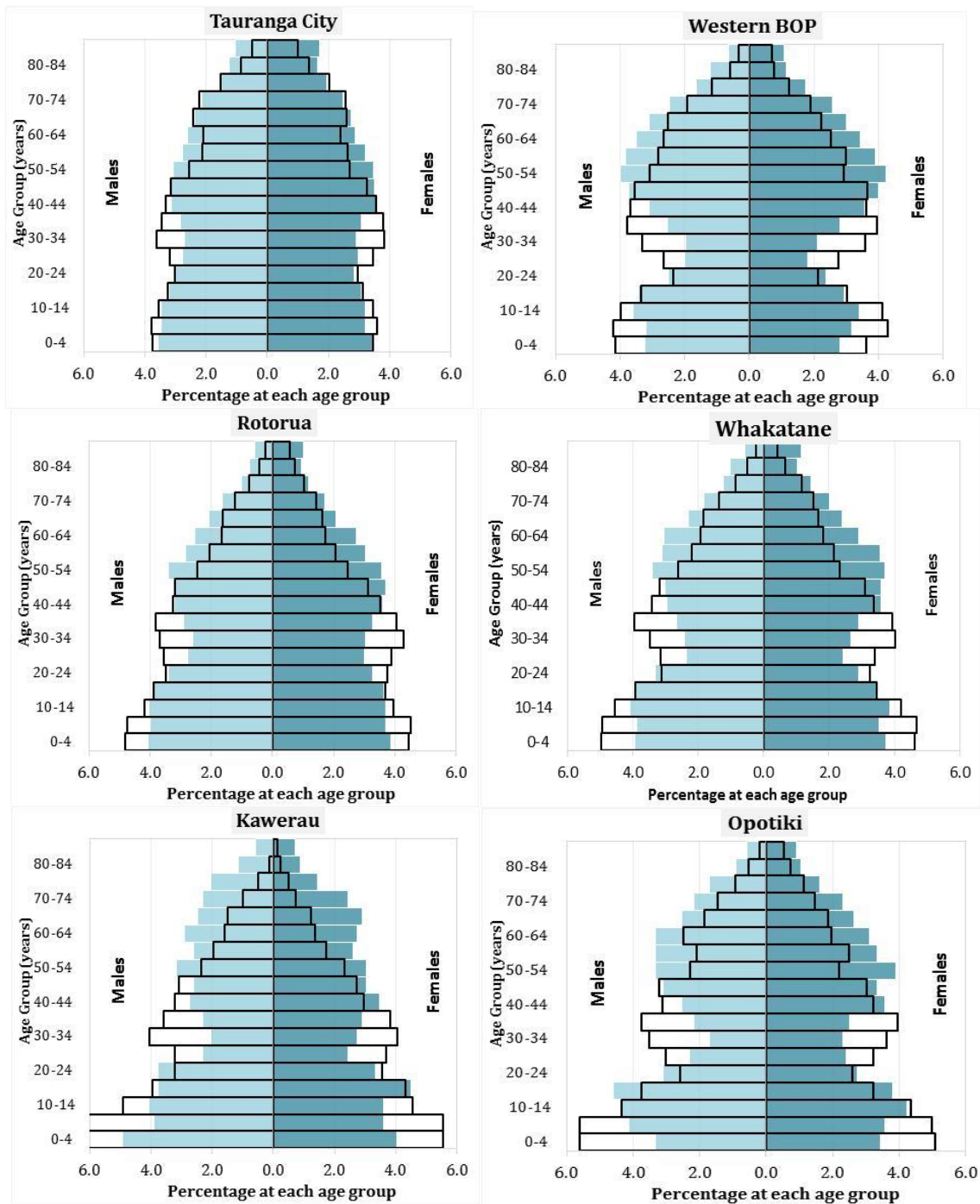
By contrast, the hourglass age structures of the remaining districts reflect disproportionate net migration loss at the young adult ages, which in most cases is quite accentuated, and for Kawerau extends to several other age groups as well (Appendices 2.5-2.8). However, Kawerau's losses diminished somewhat between 2001 and 2006, and a small net gain at 60-69 years was noted.

The underlying trends also explain the apparent disproportion of children in Rotorua, Whakatāne and Kawerau districts, which are echoes of the trends at other ages. All three TAs in fact showed decline in birth numbers over the period, in many cases reflecting the net loss of people of reproductive age.

The changes by age depicted in Figure 4.1.2 are given in Table 4.1.2. Here we see that between 1996 and 2012, four of the six TAs of the BOP Region experienced a decline in numbers at 0-14 years, while five experienced decline at 25-29, 30-34 and 35-39 years. Kawerau experienced net loss in all age groups below 49 years. The minimal changes at 20-24 years reflect the (temporary) replacement of a smaller cohort by a larger one, those currently at 20-24 years representing a baby blip born around 1991.



Figure 4.1.2: Age-Sex Structures of the TAs of the Bay of Plenty Region in 2012 compared with 1996 (unshaded)



Source: Jackson, N.O (2012) Subnational Age Structure Resource 1996-2011, NIDEA, University of Waikato. Source data from Stats NZ Infoshare Estimated Subnational Population and TableBuilder: (RC, TA,AU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries)



Table 4.1.2: Change in Numbers by Age (%), Bay of Plenty Region and its Territorial Authorities compared with Total New Zealand, 1996-2012

		Tauranga City	Western Bay of Plenty District	Rotorua District	Whakatane District	Kawerau District	Opotiki District	Bay of Plenty Region	New Zealand
		% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change
1996 - 2012	0-4	+42.1	+0.0	-11.7	-19.5	-34.0	-42.7	+1.4	+5.8
	5-9	+32.2	-3.6	-13.7	-22.5	-45.8	-34.3	-2.6	-1.5
	10-14	+38.4	+11.1	-2.0	-8.7	-31.2	-10.7	+9.7	+7.4
	15-19	+43.6	+28.9	+3.2	+1.2	-14.9	+9.0	+18.7	+14.9
	20-24	+43.9	+40.6	-4.8	-1.4	-10.9	+2.0	+17.1	+17.8
	25-29	+26.4	-9.3	-19.8	-26.3	-41.1	-31.7	-4.7	+4.6
	30-34	+9.6	-24.3	-26.8	-31.9	-50.0	-49.3	-16.4	-8.2
	35-39	+19.1	-11.6	-18.9	-29.3	-40.0	-44.6	-8.5	-5.2
	40-44	+43.2	+17.2	+3.5	-2.6	-14.0	-13.1	+17.0	+18.4
	45-49	+52.0	+38.0	+13.1	+6.0	-17.0	-6.7	+28.2	+25.5
	50-54	+81.8	+75.5	+46.8	+45.0	+13.2	+46.5	+62.3	+58.3
	55-59	+83.4	+71.6	+48.0	+54.4	+20.0	+31.8	+63.2	+60.3
	60-64	+78.4	+72.4	+61.1	+60.2	+62.5	+30.2	+67.4	+72.6
	65-69	+48.3	+65.3	+32.3	+35.0	+68.2	+25.0	+45.1	+41.4
	70-74	+40.8	+69.3	+29.8	+34.7	+135.7	+39.3	+43.5	+31.9
	75-79	+44.3	+81.4	+26.7	+33.3	+200.0	+45.0	+47.0	+29.3
	80-84	+90.4	+122.4	+50.0	+77.5	+366.7	+41.7	+83.9	+48.3
85+	+171.2	+116.2	+103.7	+160.9	+800.0	+85.7	+146.9	+93.9	
Total	+46.0	+28.5	+3.3	+0.6	-14.9	-9.6	+20.2	+18.8	

Source: Jackson, N.O (2013) Subnational Age Structure Resource 1996-2012, NIDEA, University of Waikato

Source data from Stats NZ TableBuilder Estimated Subnational Population by Age and Sex at 30 June (2006 Boundaries)

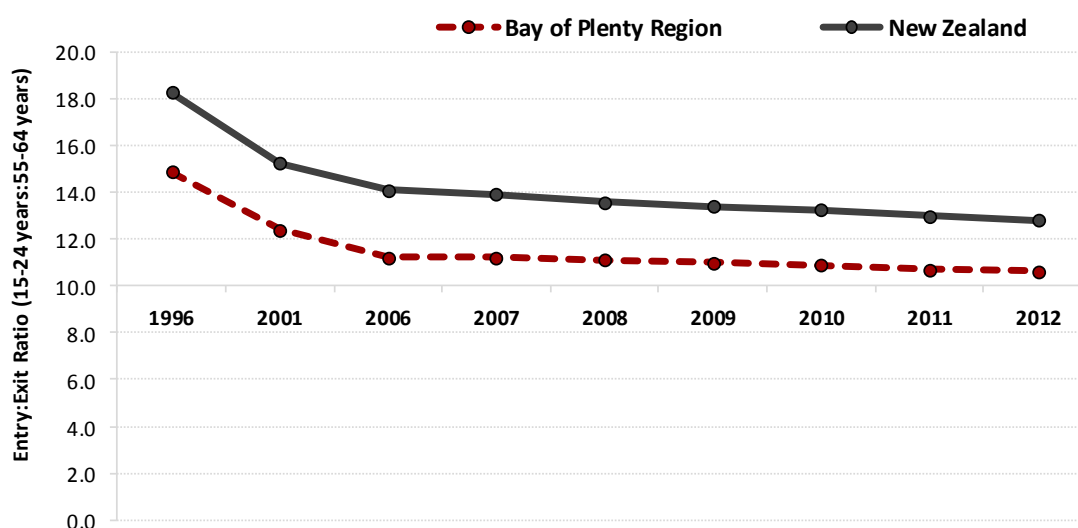


4.2 Labour Market Implications

Reflecting structural population ageing, Table 4.1.1 (above) showed that the BOP Region's Labour Market 'entry: exit ratio' has fallen since 1996, from 14.9 people at labour market entry age (15-24 years) for every 10 in the 'retirement zone' (55-64 years), to 10.6 per 10 in 2012 (illustrated here in Figure 4.2.1 – note differences in periodicity, the seemingly sharp decline at the beginning of the period reflecting five year observations which then shift to annual). As Figure 4.2.1 shows, the trend for the BOP Region is almost identical to, but significantly lower than that for Total New Zealand.

If older age groupings are used, for example 20-29 and 60-69 years (not shown here), the BOP Region in 2012 had just 10.4 entrants per 10 exits, while Total New Zealand had 14.7.

Figure 4.2.1: Labour Market Entry/Exit Ratio at 15-24 and 55-64 Years, Bay of Plenty Region and Total New Zealand, 1996-2012



Source: Jackson, N.O (2012) *Subnational Age Structure Resource 1996-2011*, NIDEA, University of Waikato. Source data from Stats NZ *Infoshare Estimated Subnational Population (RC, TAAU) by Age and Sex at 30 June 1996, 2001, 2006-2011 (2006 Boundaries)*

Table 4.2.1 gives the data for the TAs which comprise the BOP Region along with that for Total New Zealand. All entry: exit ratios declined significantly over the period 1996-2012, the greatest declines in the BOP Region occurring for Kawerau (37.4 per cent), Whakatāne (36.3 per cent) and Rotorua (35.5 per cent). In these three TAs, the decline was also greater than occurred nationally (29.9 per cent). For Tauranga City, Whakatāne and Ōpōtiki in 2012, the number of people at entry age was still slightly above the number in the retirement zone. By contrast, Western BOP had fewer people at labour market entry than exit age as far back as 1996, and by 2012 had just 7.7 per 10 (entrants per exits).



Table 4.2.1: Labour Market Entry: Exit Ratio (15-24:55-64 years), Bay of Plenty Region and its Territorial Authorities compared with Total New Zealand, 1996-2012 (entrants per 10 exits)

	Tauranga City	Western Bay of Plenty	Rotorua District	Whakatane	Kawerau	Opotiki	Bay of Plenty Region	New Zealand
1996	13.3	9.9	19.7	16.9	22.6	13.4	16.8	18.3
2001	11.8	8.4	16.0	14.0	14.1	11.7	12.0	15.2
2006	11.4	8.1	13.4	11.6	11.3	10.2	11.1	14.1
2007	11.4	8.2	13.3	11.5	12.1	10.5	11.5	13.9
2008	11.2	8.2	13.2	11.5	12.7	10.6	12.0	13.6
2009	11.1	8.0	13.1	11.4	13.3	10.9	12.2	13.4
2010	10.9	7.9	12.9	11.3	14.3	11.4	12.6	13.2
2011	10.7	7.8	12.9	10.9	14.0	10.8	13.0	13.0
2012	10.6	7.7	12.7	10.8	14.1	10.9	13.0	12.8
Change 1996-2012 (%)	-20.6	-22.2	-35.5	-36.3	-37.4	-19.1	-22.7	-29.9

Source: Jackson, N.O (2012) *Subnational Age Structure Resource 1996-2012*, National Institute of Demographic and Economic Analysis (NIDEA), University of Waikato

Source data from Stats NZ Infoshare *Estimated Subnational Population (RC, TA,AU) by Age and Sex at 30 June 1996, 2001 and 2006-2012*

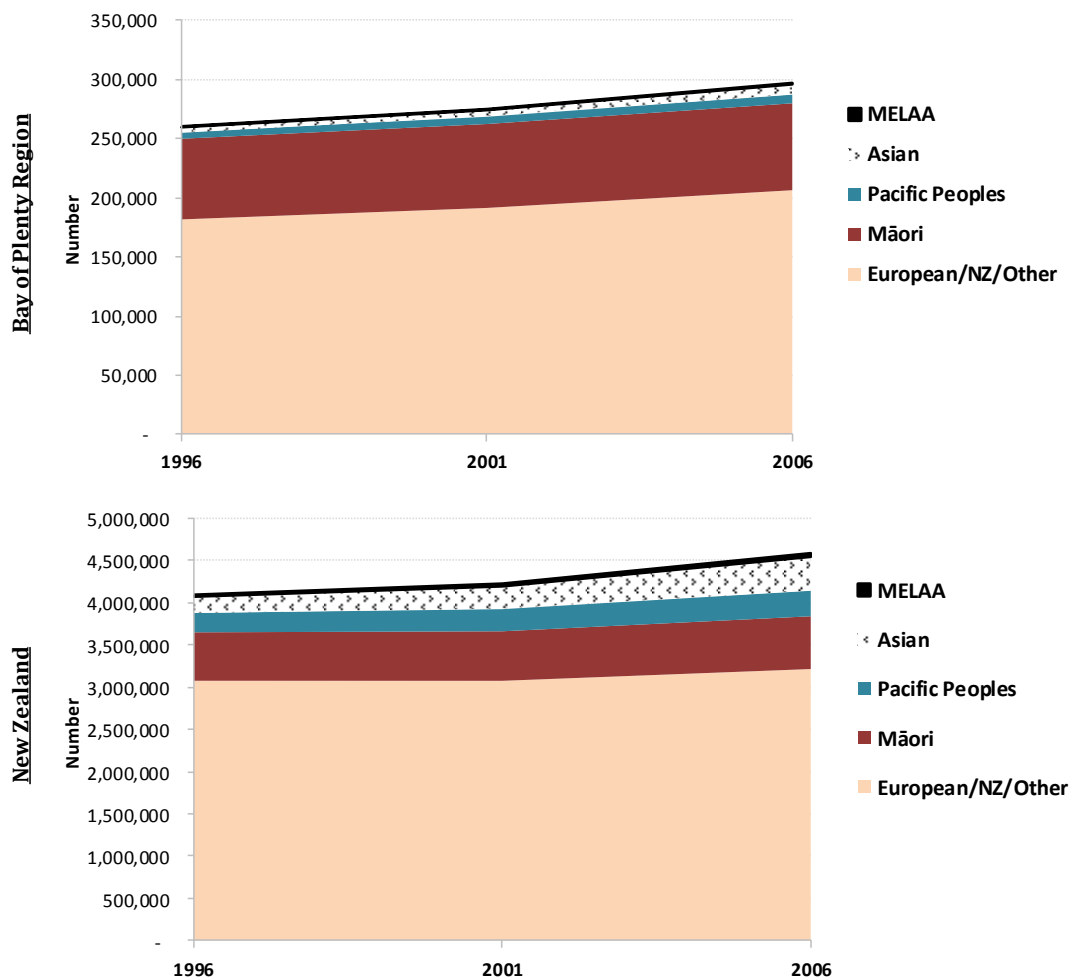


5.0 Ethnic Composition and Growth

5.1 Ethnic Composition and Growth

Figure 5.1.1 indicates the extent to which the major ethnic groups comprise and have contributed to the BOP Region's growth over the period 1996-2006 (see also Table 5.1.1). These 'multiple ethnic group' data² show that those identifying as European/New Zealander/Other – hereafter European—in the region grew in number (13.6 per cent) over the decade, but remained almost static as a proportion, 69.8 per cent in 1996 and 69.5 per cent in 2006. This is both a lower proportion and a smaller change than at national level, with the proportion European reducing from 75.2 to 70.1 per cent (-6.8 per cent).

Figure 5.1.1: Population by Major Ethnic Group (Multiple Count), Bay of Plenty Region and Total New Zealand 1996, 2001, 2006



Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 1996, 2001 and 2006

Notes: *People may be counted in more than one ethnic group

² The multiple ethnic group method of enumeration means that a proportion of people are counted more than once. Table 5.1.1 gives an approximation of the extent to which the method results in an over-count. Of the 565,329 people identifying with Māori ethnicity at the 2006 Census, 47 per cent (266,934) also identified with non-Māori ethnicities (Statistics New Zealand 2010a).



The region's Māori population also grew numerically (by 7.8 per cent), but its share declined from 26.2 per cent in 1996 to 24.7 per cent in 2006. In contrast, the three remaining ethnic groups each increased both numbers and share of the region's population. People of Pacific Island origin increased their share from 2.1 to 2.5 per cent (19.0 per cent increase), those identifying as Asian origin, from 1.7 to 3.0 per cent (76.5 per cent increase), and those identifying as Middle Eastern/Latin American/African (MELAA), from 0.2 to 0.3 per cent (50.0 per cent increase).

Despite not increasing its share of the region's population, the dominant size of the European population means that it still accounted for 67.3 per cent of the region's growth 1996-2006 (compared with just 28.2 per cent nationally) (Table 5.1.1). The region's Māori population also accounted for a greater share of growth than nationally: 14.4 per cent compared to 10.4 per cent nationally. By contrast, Pacific Peoples accounted for 4.7 per cent of growth, compared to 14.7 per cent nationally, and the Asian-origin population, for 12.5 per cent compared with 42.6 per cent nationally. The numerically smaller MELAA population accounted for 1.1 and 4.1 per cent of growth respectively.



Table 5.1.1: Population by Major Ethnic Group* (Multiple Count), BOP Region and Total New Zealand 1996-2006

		Population			Change: 1996-2006			Distribution (%)*		
		1996	2001	2006	Number	% Change	Contribution to Change (%)	1996	2001	2006
Bay of Plenty Region	European or Other Ethnicity (including New Zealander)	181,800	191,500	206,500	+24,700	+13.6	67.3	69.8	69.6	69.5
	Māori	68,200	71,000	73,500	+5,300	+7.8	14.4	26.2	25.8	24.7
	Pacific Peoples	5,590	6,130	7,300	+1,710	+30.6	4.7	2.1	2.2	2.5
	Asian	4,320	5,780	8,910	+4,590	+106.3	12.5	1.7	2.1	3.0
	Middle Eastern/Latin American/African (MELAA)	470	550	870	+400	+85.1	1.1	0.2	0.2	0.3
	Total	260,380	274,960	297,080	+36,700	+14.1	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	230,600	246,900	265,300		+15.0		...	...	...
	Ethnic 'overcount' (%)	12.9	11.4	12.0		...		...	...	...
New Zealand	European or Other Ethnicity (including New Zealander)	3,074,600	3,074,000	3,213,300	+138,700	+4.5	28.2	75.2	72.8	70.1
	Māori	573,200	585,900	624,300	+51,100	+8.9	10.4	14.0	13.9	13.6
	Pacific Peoples	229,300	261,800	301,600	+72,300	+31.5	14.7	5.6	6.2	6.6
	Asian	194,800	272,500	404,400	+209,600	+107.6	42.6	4.8	6.5	8.8
	Middle Eastern/Latin American/African (MELAA)	18,450	27,600	38,600	+20,150	+109.2	4.1	0.5	0.7	0.8
	Total	4,090,350	4,221,800	4,582,200	+491,850	+12.0	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	3,732,000	3,880,500	4,184,600		+12.1		...	...	...
	Ethnic 'overcount' (%)	9.6	8.8	9.5		...		...	...	...

Source: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 1996, 2001 and 2006

Notes: *Multiple Count means that people may be counted in more than one ethnic group - see Ethnic 'overcount' rows



Table 5.1.2 gives these data for the region's TAs. Across the 1996-2006 period the European-origin population declined both numerically and proportionately in three TAs, namely Whakatāne, Kawerau and Ōpōtiki, while in Rotorua it declined as a proportion only. In the two remaining TAs, European numbers increased over the period, but with growth rates either the lowest (Tauranga City) or second-lowest (Western BOP) by comparison with other ethnic groups.

With the exception of Tauranga City, the region's Māori populations also experienced comparatively low growth at TA level over the period, including negative change in Whakatāne (-1.7 per cent), Kawerau (-11.7 per cent) and Ōpōtiki (-4.2 per cent).

By contrast, both the Asian and MELAA populations experienced large increases in almost every TA in both absolute numbers and population share (the sole exception being Kawerau where the very small MELAA population declined). In particular, MELAA numbers more than doubled in Tauranga. Asian-origin numbers also more than doubled in Tauranga and Western BOP, and grew by more than 50 per cent in Rotorua.

Trends for Pacific-origin populations were mixed. Growth rates rank in the middle of those for the other ethnic groups; however, they range from comparatively high in Western BOP (90.7 per cent increase) and Tauranga (57.0 per cent), to relatively low in Rotorua (18.9 per cent) and Whakatāne (15.9 per cent). Ōpōtiki and Kawerau each saw a decline in the number of Pacific Peoples.

These trends conceal sizeable differences by TA in terms of each ethnic group's contribution to local growth. People of Asian origin made the greatest contribution in the growth of Rotorua (74.9 per cent), offsetting the decline in the numbers of European, while growth in the European origin population made the greatest contribution to the growth of Western BOP (73.3 per cent) and Tauranga (72.5 per cent). Those of European-origin also accounted for the single-greatest contribution to negative change in Kawerau (-50.0 per cent) and Ōpōtiki (-78.2 per cent). Despite seemingly high growth rates, the numerically smaller MELAA population made a relatively minor contribution to growth in each TA.

NB. The issue of ethnic 'over-count' should be kept in mind when interpreting these data; as high as 18.9 per cent for Kawerau in 2006. That is, the aggregate population for each area is inflated by the given proportion as the result of multiple counting by ethnicity, and is generally (but not definitively) higher where the proportion Māori is higher (2006 Pearson's correlation $r = 0.94$).

The Pearson's correlation coefficient (r) measures the strength of association between two arrays of data on a scale ranging from -1.0 to +1.0. An r of 1.0 would indicate that both indices moved in the same direction at the same rate; an r of -1.0, that each moved in the opposite direction at the same rate. In the present case, an r of 0.94 indicates that the higher the proportion Māori, the higher the level of multiple counting.



Table 5.1.2: Population by Major Ethnic Group* (Multiple Count), TAs of Bay of Plenty RC 1996-2006

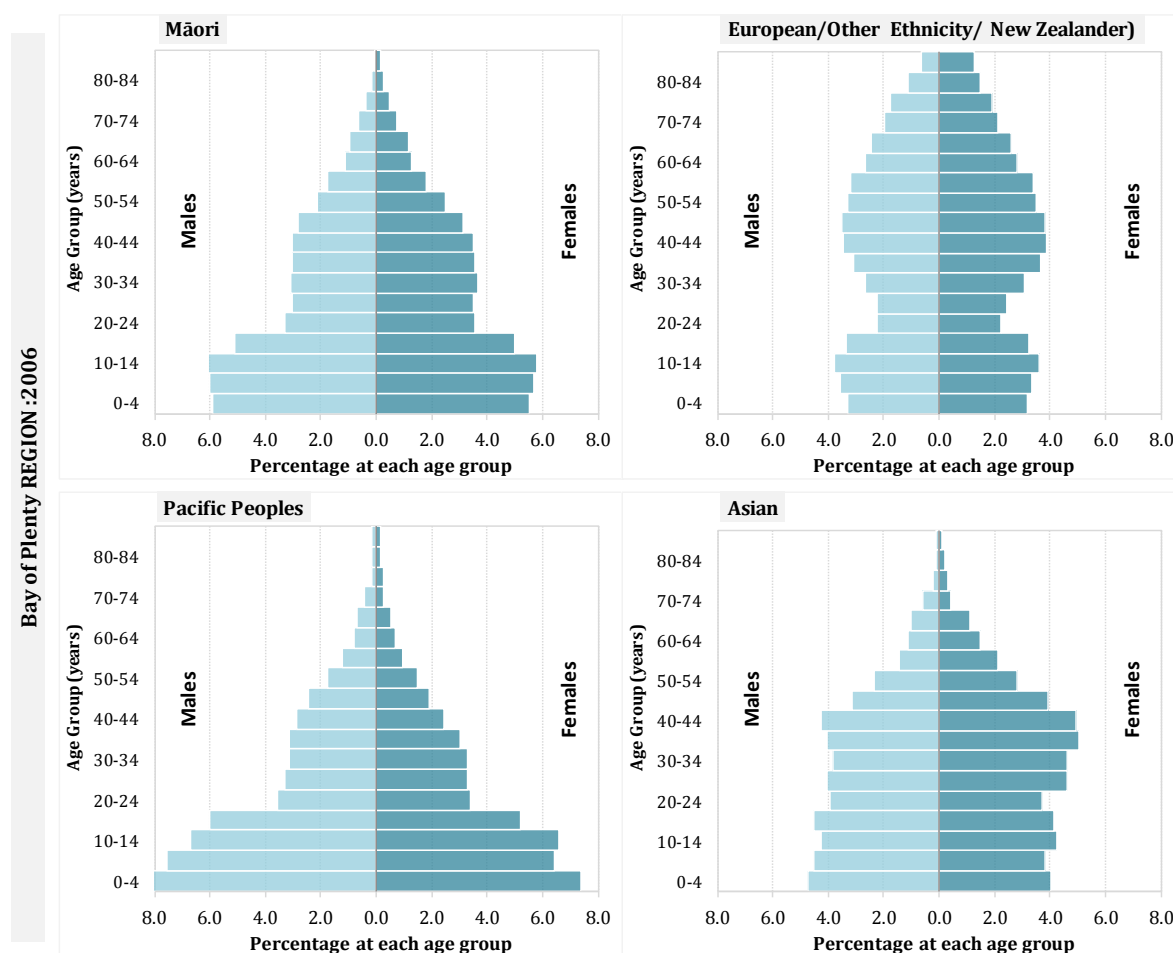
	Population			Change: 1996-2006			Distribution (%)*			
	1996	2001	2006	Number	% Change	Contribution to Change (%)	1996	2001	2006	
Tauranga City	European or Other Ethnicity (including New Zealander)	71,000	81,500	92,400	+21,400	+30.1	+72.5	81.5	80.6	79.3
	Māori	13,150	15,500	17,950	+4,800	+36.5	+16.3	15.1	15.3	15.4
	Pacific Peoples	1,280	1,550	2,010	+730	+57.0	+2.5	1.5	1.5	1.7
	Asian	1,460	2,380	3,810	+2,350	+161.0	+8.0	1.7	2.4	3.3
	Middle Eastern/Latin American/African (MELAA)	180	220	410	+230	+127.8	+0.8	0.2	0.2	0.4
	Total	87,070	101,150	116,580	+29,510	+33.9	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	79,600	93,300	106,700	...	+34.0	...	...	...	...
Ethnic 'overcount' (%)	9.4	8.4	9.3	...	...	...	...	...	...
Western Bay of Plenty	European or Other Ethnicity (including New Zealander)	31,600	33,900	37,200	+5,600	+17.7	+73.3	80.6	80.2	79.4
	Māori	6,750	7,090	7,600	+850	+12.6	+11.1	17.2	16.8	16.2
	Pacific Peoples	430	610	820	+390	+90.7	+5.1	1.1	1.4	1.8
	Asian	380	610	1,140	+760	+200.0	+9.9	1.0	1.4	2.4
	Middle Eastern/Latin American/African (MELAA)	50	60	90	+40	+80.0	+0.5	0.1	0.1	0.2
	Total	39,210	42,270	46,850	+7,640	+19.5	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	35,800	39,300	43,300	...	+20.9	...	...	...	...
Ethnic 'overcount' (%)	9.5	7.6	8.2	...	...	...	...	...	...
Rotorua	European or Other Ethnicity (including New Zealander)	48,800	47,400	47,800	-1,000	-2.0	-58.5	63.0	61.6	60.4
	Māori	23,900	24,400	24,700	+800	+3.3	+46.8	30.9	31.7	31.2
	Pacific Peoples	2,700	2,810	3,210	+510	+18.9	+29.8	3.5	3.6	4.1
	Asian	1,860	2,200	3,140	+1,280	+68.8	+74.9	2.4	2.9	4.0
	Middle Eastern/Latin American/African (MELAA)	150	180	270	+120	+80.0	+7.0	0.2	0.2	0.3
	Total	77,410	76,990	79,120	+1,710	+2.2	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	66,600	66,900	68,100	...	+2.3	...	...	...	...
Ethnic 'overcount' (%)	16.2	15.1	16.2	...	...	...	...	...	...
Whakatāne	European or Other Ethnicity (including New Zealander)	23,500	22,600	23,300	-200	-0.9	-166.7	59.8	58.7	59.4
	Māori	14,650	14,700	14,400	-250	-1.7	-208.3	37.3	38.2	36.7
	Pacific Peoples	690	700	800	+110	+15.9	+91.7	1.8	1.8	2.0
	Asian	420	430	610	+190	+45.2	+158.3	1.1	1.1	1.6
	Middle Eastern/Latin American/African (MELAA)	60	70	90	+30	+50.0	+25.0	0.2	0.2	0.2
	Total	39,320	38,500	39,200	-120	-0.3	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	34,200	34,100	34,500	...	+0.9	...	...	...	...
Ethnic 'overcount' (%)	15.0	12.9	13.6	...	...	...	...	...	...
Kawerau	European or Other Ethnicity (including New Zealander)	4,410	3,790	3,780	-630	-14.3	-50.0	45.2	44.1	44.5
	Māori	4,880	4,420	4,310	-570	-11.7	-45.2	50.0	51.4	50.7
	Pacific Peoples	320	280	280	-40	-12.5	-3.2	3.3	3.3	3.3
	Asian	140	100	130	-10	-7.1	-0.8	1.4	1.2	1.5
	Middle Eastern/Latin American/African (MELAA)	10	10	-	-10	-100.0	-0.8	0.1	0.1	0.0
	Total	9,760	8,600	8,500	-1,260	-12.9	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	8,120	7,290	7,150	...	-11.9	...	...	...	...
Ethnic 'overcount' (%)	20.2	18.0	18.9	...	...	...	...	...	...
Opōtiki	European or Other Ethnicity (including New Zealander)	5,560	5,200	5,130	-430	-7.7	-78.2	49.0	47.1	47.5
	Māori	5,510	5,530	5,280	-230	-4.2	-41.8	48.5	50.1	48.9
	Pacific Peoples	190	220	260	+70	+36.8	+12.7	1.7	2.0	2.4
	Asian	80	80	110	+30	+37.5	+5.5	0.7	0.7	1.0
	Middle Eastern/Latin American/African (MELAA)	10	10	20	+10	+100.0	+1.8	0.1	0.1	0.2
	Total	11,350	11,040	10,800	-550	-4.8	100.0	100.0	100.0	100.0
	Total People, Ethnicity Stated (without multiple count)	9,630	9,490	9,200	...	-4.5	...	...	...	...
Ethnic 'overcount' (%)	17.9	16.3	17.4	...	...	...	...	...	...



5.2 Ethnic Age Composition

Figure 5.2.1 provides a comparison of the BOP Region's major ethnic groups in 2006 by age. As was indicated in Table 5.1.1 above, this method of enumeration means that a portion of the population is counted in more than one ethnic group. In the BOP Region's case, the over-count for 2006 (when the totals by ethnic group are summed) was approximately 11.9 per cent. However, as can be seen by the markedly different age structures of each group in Figure 5.2.1, and summarised in Table 5.2.1 in terms of median age, this methodological complexity would have very little impact on the story by age composition.

Figure 5.2.1: Age-Sex Structure by Major Ethnic Group*, Bay of Plenty Region, 2006



Source: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 2006
 Notes: *Multiple count ethnicity means that people may be counted in more than one ethnic group



Table 5.2.1: Bay of Plenty and Total New Zealand Major Ethnic Groups by Median Age (Years), 2006

	European	Maori	Pacific	Asian	MELAA
Bay of Plenty	40.7	23.5	18.1	29.7	27.5
Total New Zealand	38.3	23.1	21.7	28.7	26.7

Source: Jackson, N.O (2011) Subnational Ethnic Age Structure Resource 1996, 2001, 2006, NIDEA.

Source data: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June

Notes: *Multiple count ethnicity means that people may be counted in more than one ethnic group

The underlying data (Table 5.2.2) identify that the region's Māori and Pacific Island populations aged 0-14 and 15-24 years greatly exceed their total shares. At age 0-14, for example, they account (together) for 38.8 per cent of the population of that age, compared to 27.2 per cent for all age groups combined.

Table 5.2.2: Ethnic Group* Percentage Share by Age Group and Region, 2006

		Māori	Pacific Peoples	Asian	MELAA	European / Other/NZ	Total*	Number*
Bay of Plenty	0-14	34.6	4.2	3.1	0.3	57.8	100.0	74,320
	15-24	32.6	3.5	3.8	0.4	59.8	100.0	38,305
	25-54	23.9	2.1	3.7	0.4	70.0	100.0	114,000
	55-64	14.6	0.9	1.8	0.1	82.5	100.0	30,225
	65+	9.0	0.5	0.9	0.1	89.4	100.0	40,155
	Total	24.7	2.5	3.0	0.3	69.5	100.0	297,005
New Zealand	0-14	20.2	10.4	7.9	1.0	60.6	100.0	1,064,730
	15-24	17.0	8.3	13.1	1.1	60.5	100.0	684,330
	25-54	12.4	5.8	10.0	1.0	70.8	100.0	1,870,490
	55-64	7.9	3.4	5.6	0.4	82.7	100.0	442,280
	65+	4.9	2.2	3.6	0.2	89.0	100.0	520,320
	Total	13.6	6.6	8.8	0.8	70.1	100.0	4,582,150

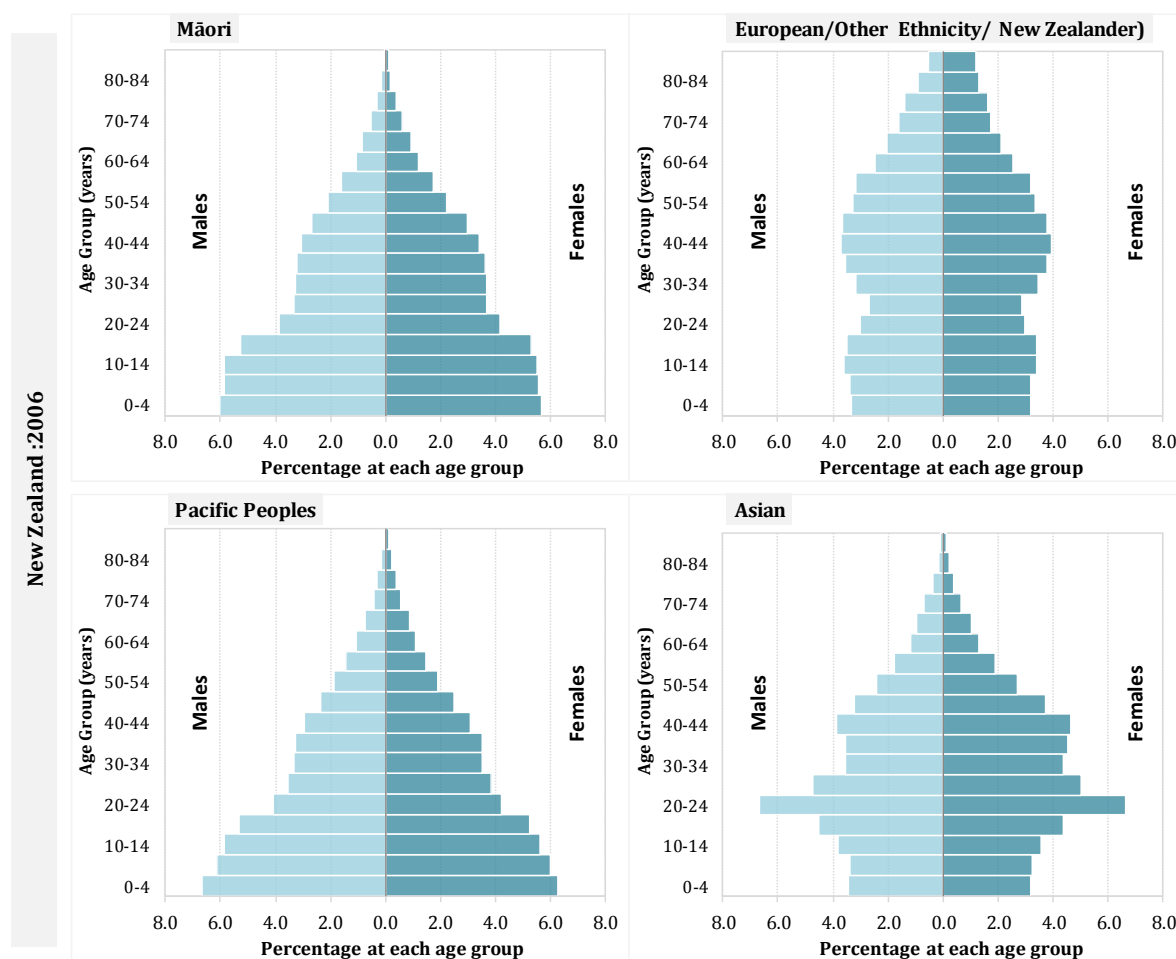
Source: Jackson, N.O (2011) Subnational Ethnic Age Structure Resource 1996, 2001, 2006, NIDEA. Source data: Statistics New Zealand, Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June

Notes: *Multiple count ethnicity means that people may be counted in more than one ethnic group

Figure 5.2.2 provides comparative graphical data for Total New Zealand. The national age structures for each ethnic group are very similar to those for the BOP Region. However the BOP region's European, Māori, Asian and MELAA populations are slightly older than their national level counterparts, while the Pacific Island population is slightly younger. Most notably, the significant 'wings' on the national level Asian population at 20-24 years (presumably reflecting education-related migration) are missing for the BOP region.



Figure 5.2.2: Age-Sex Structure by Major Ethnic Group*, Total New Zealand, 2006



Source: Statistics New Zealand, *Estimated Subnational Ethnic Population (RC,TA) by Age and Sex at 30 June 2006*
 Notes: *Multiple count ethnicity means that people may be counted in more than one ethnic group

Table 5.2.2 provides an overview of each group’s population share by broad age group for 2006. The general picture is that the Māori and Pacific Island populations increase their share as age decreases, while the European-origin population increases its share as age increases. The picture is significantly less linear for the Asian population, where the largest population shares are concentrated at 15-24 and 25-54 years.

Within that picture, young Māori comprise a larger share of the BOP Region’s youth (34.6 per cent) than they do at a national level (20.2 per cent), and the situation is similar at each older age. The Pacific Island and Asian populations on the other hand comprise a smaller share of the BOP Region’s youth (4.2 and 3.1 per cent respectively) than at a national level (10.4 and 7.9 per cent respectively), and again the situation is similar at each older age. The BOP Region’s European population claims a slightly smaller share of each age group than it does nationally, despite its smaller portion of Pacific Island, Asian and MELAA populations, primarily because of the region’s somewhat larger share of Māori.



Tables 5.2.3 to 5.2.6 provide summary data for the BOP Region's Māori, Pacific Island, Asian, and European origin populations by age across the period 1996-2006. Data for the MELAA population are not presented because of relatively small numbers by age.

Table 5.2.3 shows that the very youthful age structure of the BOP Region's Māori population results in more than one-third aged 0-14 years across all three observations, falling from 37.4 per cent in 1996 to 35.0 per cent in 2006. These proportions are in stark contrast to that population's 24.7 per cent total share in 2006 shown above in Table 5.1.2, and, despite this small decline, are clearly where the Māori population's contribution to the region's growth is concentrated. The population's relative youth is also evidenced in its very high labour market entry: exit ratio in 2006 of 28.3 at labour market entry age per 10 in the retirement zone (by comparison the 'all ethnic groups combined' ratio was 12.6 per 10 nationally and 10.6 per 10 for the BOP Region). However the region's Māori population is also ageing, with the labour market entry: exit ratio having fallen from 35.7 per 10 in 1996 (see also Section 6 on this topic). At 65+ years, both numbers and proportions have grown, with the BOP Māori population both older and ageing faster than its national counterpart.



Table 5.2.3: Summary Indicators, Bay of Plenty Region Māori Population, 1996, 2001, 2006

Distribution of population over broad age groups						Māori
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	25,480	26,430	25,700	+3.7	-2.8	+0.9
15-24	12,280	11,650	12,500	-5.1	+7.3	+1.8
25-54	24,520	26,360	27,220	+7.5	+3.3	+11.0
55-64	3,440	3,670	4,420	+6.7	+20.4	+28.5
65+	2,490	2,910	3,630	+16.9	+24.7	+45.8
Bay of Plenty Region Māori	68,210	71,020	73,470	+4.1	+3.4	+7.7
New Zealand Māori	573,200	586,000	624,300	+2.2	+6.5	+8.9
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	37.4	37.2	35.0	-0.4	-6.0	-6.4
15-24	18.0	16.4	17.0	-8.9	+3.7	-5.5
25-54	35.9	37.1	37.0	+3.3	-0.2	+3.1
55-64	5.0	5.2	6.0	+2.5	+16.4	+19.3
65+	3.7	4.1	4.9	+12.2	+20.6	+35.3
Bay of Plenty Region Māori	100.0	100.0	100.0	...	...	...
New Zealand Māori, % 65+ yrs	3.0	3.4	4.1	+11.8	+22.0	+36.4
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Māori	35.7	31.7	28.3	-11.1	-10.9	-20.8
New Zealand Māori	42.0	36.9	33.1	-12.1	-10.2	-21.1
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Māori	0.10	0.11	0.14	+12.7	+28.3	+44.5
New Zealand Māori	0.08	0.09	0.12	+11.8	+30.5	+45.9

Source: Jackson, N.O. (2011) *Subnational Age Structure Resource 1996, 2001, 2006*, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder *Estimated Subnational Population (RC,TA,AU) by Age and Sex at 30 June 96,01,06*.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group

The Pacific Island population of the BOP Region has an even greater proportion than Māori at the youngest ages, 43.0 per cent in 2006 (Table 5.2.4), resulting in a smaller proportion aged 65+ years (2.9 per cent). The latter is also a little lower than for the national Pacific Island population (3.8 per cent). At 65+ years, Pacific Island population numbers have grown, but marginally decreased as a proportion. Unlike the region's Māori population, the labour market entry: exit ratio for the region's Pacific People has increased from 44.8 per 10 in 1996 to 49.3 per 10 in 2006. As was the case for Māori, the Pacific Island population's contribution to the growth of the region is also heavily concentrated at the youngest ages.



Table 5.2.4: Summary Indicators, BOP Region Pacific Island Population, 1996, 2001, 2006

Distribution of population over broad age groups						Pacific Peoples
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	2,480	2,700	3,140	+8.9	+16.3	+26.6
15-24	1,030	1,060	1,330	+2.9	+25.5	+29.1
25-54	1,680	1,980	2,350	+17.9	+18.7	+39.9
55-64	230	220	270	-4.3	+22.7	+17.4
65+	180	190	210	+5.6	+10.5	+16.7
Bay of Plenty Region Pacific Peoples	5,600	6,150	7,300	+9.8	+18.7	+30.4
New Zealand Pacific Peoples	229,300	261,800	301,600	+14.2	+15.2	+31.5
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	44.3	43.9	43.0	-0.9	-2.0	-2.9
15-24	18.4	17.2	18.2	-6.3	+5.7	-0.9
25-54	30.0	32.2	32.2	+7.3	-0.0	+7.3
55-64	4.1	3.6	3.7	-12.9	+3.4	-9.9
65+	3.2	3.1	2.9	-3.9	-6.9	-10.5
Bay of Plenty Region Pacific Peoples	100.0	100.0	100.0	...	...	...
New Zealand Pacific Peoples, % 65+ yrs	3.1	3.4	3.8	+11.8	+11.8	+25.0
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Pacific Peoples	44.8	48.2	49.3	+7.6	+2.2	+10.0
New Zealand Pacific Peoples	47.1	40.0	37.2	-14.9	-7.0	-20.9
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Pacific Peoples	0.07	0.07	0.07	-3.0	-5.0	-7.9
New Zealand Pacific Peoples	0.08	0.09	0.10	+12.0	+16.8	+30.8

Source: Jackson, N.O. (2011) Subnational Age Structure Resource 1996, 2001, 2006, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder Estimated Subnational Population (RC,TA,AU) by Age and Sex at 30 June 96,01,06.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group

As noted above, the region's Asian population has a significantly different age structure to the region's other ethnic groups, with a little over one-quarter aged 0-14 years in 2006, and 4.3 per cent aged 65+ years (Table 5.2.5); the latter lower than its national counterpart (4.7 per cent). The most distinctive feature of the region's Asian population is its somewhat larger and stable proportion at



35-54 years. At 26: 10 in 2006, the ratio of Asian people at labour market entry to exit age was strongly positive; however this was significantly lower than the national ratio of 36:10.

Table 5.2.5: Summary Indicators, Bay of Plenty Region Asian Population, 1996, 2001, 2006

Distribution of population over broad age groups						Asian
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	1,340	1,590	2,280	+18.7	+43.4	+70.1
15-24	750	1,010	1,450	+34.7	+43.6	+93.3
25-54	1,940	2,670	4,240	+37.6	+58.8	+118.6
55-64	210	310	550	+47.6	+77.4	+161.9
65+	90	190	380	+111.1	+100.0	+322.2
Bay of Plenty Region Asian	4,330	5,770	8,900	+33.3	+54.2	+105.5
New Zealand Asian	194,800	272,400	404,300	+39.8	+48.4	+107.5
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	30.9	27.6	25.6	-11.0	-7.0	-17.2
15-24	17.3	17.5	16.3	+1.1	-6.9	-5.9
25-54	44.8	46.3	47.6	+3.3	+3.0	+6.3
55-64	4.8	5.4	6.2	+10.8	+15.0	+27.4
65+	2.1	3.3	4.3	+58.4	+29.7	+105.4
Bay of Plenty Region Asian	100.0	100.0	100.0	...	...	...
New Zealand Asian, % 65+ yrs	3.0	4.2	4.7	+37.9	+11.4	+53.7
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Asian	35.7	32.6	26.4	-8.8	-19.1	-26.2
New Zealand Asian	51.0	37.5	36.3	-26.3	-3.3	-28.7
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region Asian	0.07	0.12	0.17	+77.9	+39.5	+148.1
New Zealand Asian	0.12	0.19	0.23	+58.7	+21.6	+93.0

Source: Jackson, N.O. (2011) Subnational Age Structure Resource 1996, 2001, 2006, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder Estimated Subnational Population (RC,TAAU) by Age and Sex at 30 June 96,01,06.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group

The age-sex structure for the BOP Region's European-origin population (Table 5.2.6) stands in stark contrast to that for the other ethnic groups. With 17.4 per cent aged 65+ years in 2006, the European-origin population of the BOP Region is much older than both its regional and national counterparts, and is ageing somewhat faster. This disparity is strongly evident in the entry: exit ratio for the region's European-origin population, at just 9.2 people at entry age per 10 at exit age in 2006.



Falling from 12.5: 10 across the period, the decline is, however, slightly less pronounced than at national level.

Table 5.2.6: Summary Indicators, Bay of Plenty Region European/New Zealand/Other Population, 1996, 2001, 2006

Distribution of population over broad age groups						European /Other/NZ
Broad Age Group (Yrs)	Population			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	41,430	42,440	42,950	+2.4	+1.2	+3.7
15-24	21,730	20,680	22,890	-4.8	+10.7	+5.3
25-54	73,430	76,640	79,770	+4.4	+4.1	+8.6
55-64	17,430	20,390	24,950	+17.0	+22.4	+43.1
65+	27,760	31,330	35,910	+12.9	+14.6	+29.4
Bay of Plenty Region European /Other/NZ	181,780	191,480	206,470	+5.3	+7.8	+13.6
New Zealand European /Other/NZ	3,074,600	3,074,000	3,213,400	-0.0	+4.5	+4.5
Broad Age Group (Yrs)	Percentage Distribution			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
0-14	22.8	22.2	20.8	-2.8	-6.1	-8.7
15-24	12.0	10.8	11.1	-9.7	+2.7	-7.3
25-54	40.4	40.0	38.6	-0.9	-3.5	-4.4
55-64	9.6	10.6	12.1	+11.1	+13.5	+26.0
65+	15.3	16.4	17.4	+7.1	+6.3	+13.9
Bay of Plenty Region European /Other/NZ	100.0	100.0	100.0	...	...	...
New Zealand European /Other/NZ	13.2	13.8	14.4	+4.6	+4.1	+8.8
Ratio Labour Market Entrants to Exits (Number aged 15-24 per 10 persons aged 55-64)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region European /Other/NZ	12.5	10.1	9.2	-18.6	-9.5	-26.4
New Zealand European /Other/NZ	15.9	12.7	11.3	-20.1	-11.0	-28.9
Ratio Elderly to Children (Number 65+ per Child 0-14)						
	Ratio			Change (%) over 5 years		Change (%) over 10 years 1996 - 2006
	1996	2001	2006	1996-2001	2001-2006	
Bay of Plenty Region European /Other/NZ	0.67	0.74	0.84	+10.2	+13.3	+24.8
New Zealand European /Other/NZ	0.61	0.65	0.72	+6.1	+10.0	+16.7

Source: Jackson, N.O. (2011) Subnational Age Structure Resource 1996, 2001, 2006, NIDEA, University of Waikato.

Source data from Stats NZ TableBuilder Estimated Subnational Population (RC,TAU) by Age and Sex at 30 June 96,01,06.

Notes: Multiple count ethnicity means that people may be counted in more than one ethnic group

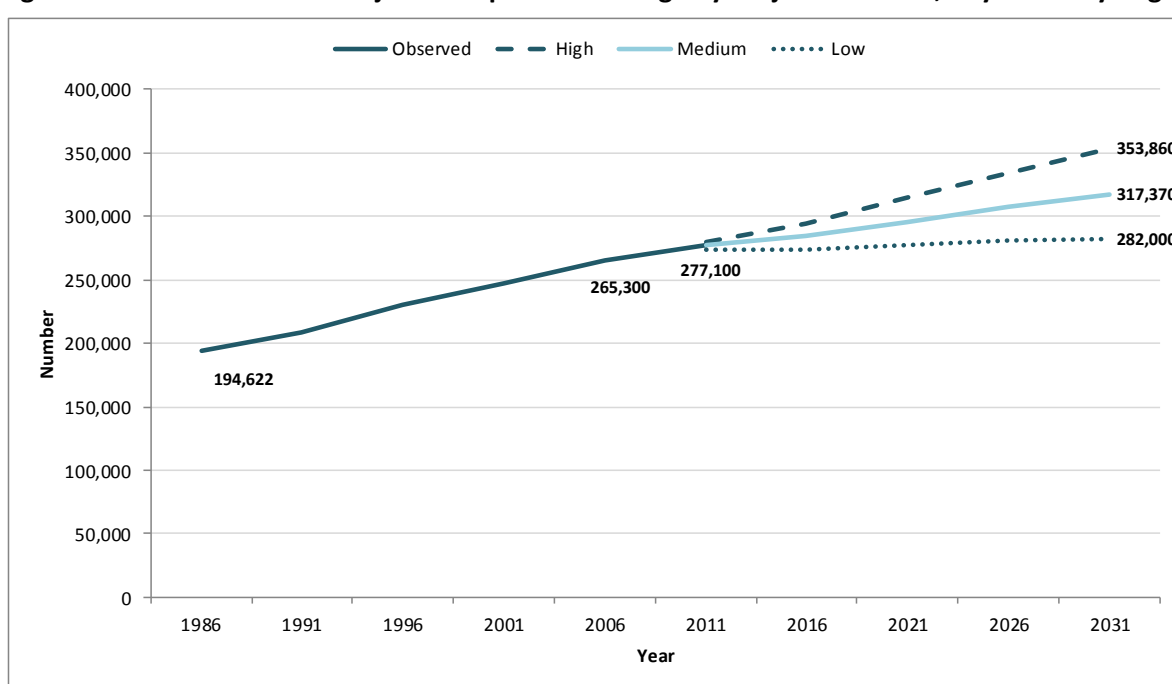


6.0 Population Projections

6.1 Size, Growth and Population Ageing

Under the medium series assumptions, the population of the BOP Region is projected to grow steadily, reaching approximately 317,370 by 2031, an increase of 14.5 per cent over 2011 (Figure 6.1.1 and Table 6.1.1). The high variant projections produce a 2031 population of 353,860 (an increase of 27.7 per cent), and the low projections, 282,000 (1.8 per cent) (see Appendices 3.1 and 3.2 for assumptions).

Figure 6.1.1: Observed and Projected Population Change by Projection Series, Bay of Plenty Region



Source: Statistics New Zealand, *Subnational Population Projections by Age and Sex, 2006 (base)- 2031 (October 2012 update)*

The gains are not shared evenly across the age distribution (Table 6.1.1 and Figure 6.1.2), with numbers projected to decline overall at 15-24 and 40-54 years, by 8.8 per cent and 7.5 per cent respectively. The population aged 65+ years is anticipated to grow both numerically (by 80.0 per cent between 2011 and 2031) and structurally (from 16.2 per cent in 2011 to 25.4 per cent by 2031), with the changes even more marked at 75+ and 85+ years.

Between 2011 and 2031, however, some important inter-censal changes are projected to occur. At 0-14 years, numbers decline across the 2011-2016 and 2021-2026 periods, then grow again between 2016-2021 (by 1,090) and 2026-2031 (by 800). At 15-24 years numbers decline between 2011 and 2016 (-1,370) and between 2016 and 2021 (-2,340), then growth similarly resumes. These age



structural transitions, which reflect the movement of the recently born baby blip through the age structure, have important planning implications, especially at school and labour market entry ages.

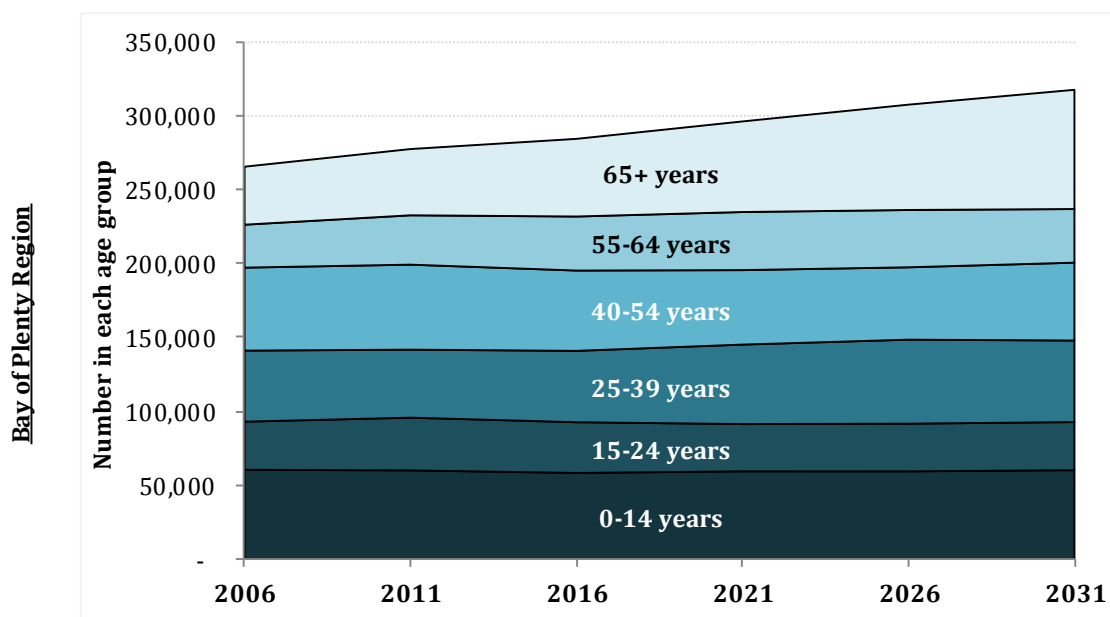
Table 6.1.1: Projected Population, Bay of Plenty Region, 2006-2021 (Medium Series)

	Numbers by age						Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
0-14 years	60,320	59,900	58,180	59,270	59,250	60,050	+0.3
15-24 years	32,550	35,670	34,300	31,960	32,260	32,530	-8.8
25-39 years	48,060	46,000	48,280	53,770	56,830	55,180	+20.0
40-54 years	56,130	57,520	54,320	50,380	48,940	52,670	-8.4
55-64 years	29,050	33,370	36,570	39,300	38,780	36,280	+8.7
65-74 years	21,200	24,500	28,870	33,670	37,560	40,550	+65.5
75-84 years	13,870	14,810	17,010	20,160	24,440	28,890	+95.1
85+ years	4,160	5,500	6,640	7,450	9,240	11,220	+104.0
Total	265,340	277,270	284,170	295,960	307,300	317,370	+14.5
65+ years	39,230	44,810	52,520	61,280	71,240	80,660	+80.0
Intercensal Change by Age (Numbers)							Change (N) 2011-2031
	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031		
0-14 years	...	(420)	(1,720)	1,090	(20)	800	150
15-24 years	...	3,120	(1,370)	(2,340)	300	270	(3,140)
25-39 years	...	(2,060)	2,280	5,490	3,060	(1,650)	9,180
40-54 years	...	1,390	(3,200)	(3,940)	(1,440)	3,730	(4,850)
55-64 years	...	4,320	3,200	2,730	(520)	(2,500)	2,910
65-74 years	...	3,300	4,370	4,800	3,890	2,990	16,050
75-84 years	...	940	2,200	3,150	4,280	4,450	14,080
85+ years	...	1,340	1,140	810	1,790	1,980	5,720
Total	...	11,930	6,900	11,790	11,340	10,070	40,100
65+ years	...	5,580	7,710	8,760	9,960	9,420	35,850
Age Distribution (% at each age group)							Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
0-14 years	22.7	21.6	20.5	20.0	19.3	18.9	-12.4
15-24 years	12.3	12.9	12.1	10.8	10.5	10.2	-20.3
25-39 years	18.1	16.6	17.0	18.2	18.5	17.4	+4.8
40-54 years	21.2	20.7	19.1	17.0	15.9	16.6	-20.0
55-64 years	10.9	12.0	12.9	13.3	12.6	11.4	-5.0
65-74 years	8.0	8.8	10.2	11.4	12.2	12.8	+44.6
75-84 years	5.2	5.3	6.0	6.8	8.0	9.1	+70.4
85+ years	1.6	2.0	2.3	2.5	3.0	3.5	+78.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	+0.0
65+ years	14.8	16.2	18.5	20.7	23.2	25.4	+57.3
Summary Measures							Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
LM Entrants/Exits							
(15-24/55-64 years)	1.1	1.1	0.9	0.8	0.8	0.9	-16.1
(20-29/60-69 years)	1.1	1.1	1.0	0.9	0.8	0.8	-25.4
Elderly/Children	0.7	0.7	0.9	1.0	1.2	1.3	+79.6
Reproductive (20-39 yrs)	23.1	22.5	22.8	23.3	23.1	22.2	-0.9
Proportion 65+ years	14.8	16.2	18.5	20.7	23.2	25.4	+57.3
Proportion 75+ years	6.8	7.3	8.3	9.3	11.0	12.6	+72.5
Growth (%) in 5 years	...	+4.5	+2.5	+4.1	+3.8	+3.3	+14.5
Annual average growth (%)	...	+0.9	+0.5	+0.8	+0.8	+0.7	+0.7

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Figure 6.1.2: Projected Change in Numbers by Broad Age Group, Bay of Plenty Region, 2006-2031, Medium Series

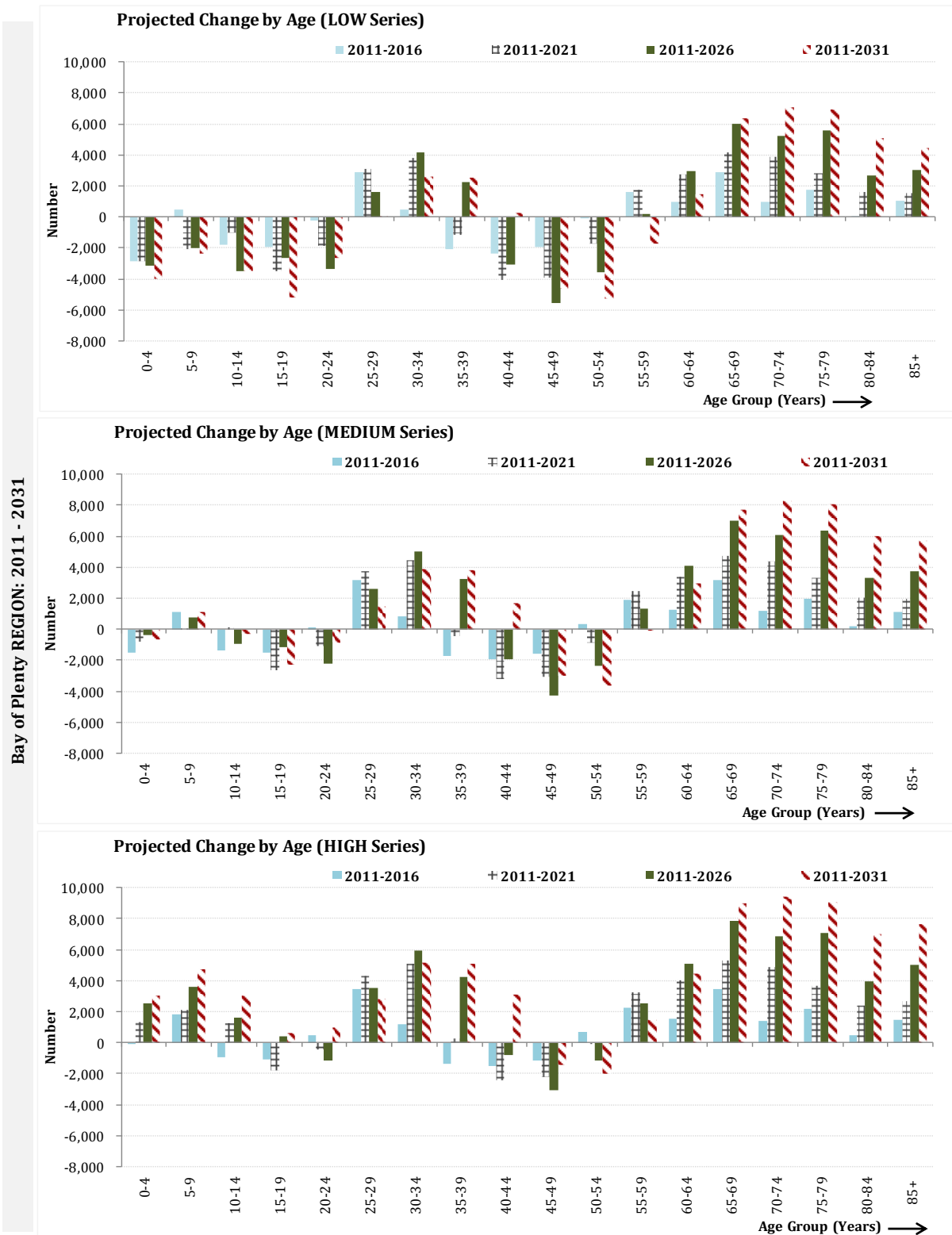


Source: Statistics New Zealand, *Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)*

Figure 6.1.3 compares these changes under the low, medium and high variant assumptions. Under the low variant projections, very few gains are projected below 55 years of age, and only a few more under the medium variant, while growth is overwhelmingly at 65+ years irrespective of the projection assumptions. Only under the high assumptions is growth spread more evenly across the younger, middle, and older age groups—although caution should be exercised in using this variant as the data assume not only higher net migration gains but also higher birth rates and life expectancy. Also of note is the inter-censal ebbing and flowing among the age groups as noted above; this is also the case nationally and reflects the passage of the different size cohorts through the age structure.



Figure 6.1.3: Projected Population Change by Age and Projection Series, Bay of Plenty Region



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Table 6.1.2 summarises the projected changes by age for the region's TAs under the medium variant assumptions (see Appendix 3.4 for assumptions and 3.5 for underlying numbers).

Only Tauranga City is projected to experience gains in every age group. Kawerau is projected to experience decline in all age groups below 75 years. A further two TAs (Whakatāne and Ōpōtiki) are projected to experience decline in all but one broad age group below 65 years (25-39 years), while decline at 0-24 and 40-54 years is projected for Rotorua.

By contrast, all TAs are projected to experience substantial growth in both numbers (Table 6.1.2) and proportions at 65+ years (Figure 6.1.4 and Table 6.1.3), with this growth accounting for *all* growth and/or offsetting overall decline at 0-64 years in all but Tauranga. The trends imply a continuation of substantial growth for Tauranga City and Western BOP (31.2 and 16.6 per cent respectively), low growth for Rotorua (1.1 per cent), and continued decline for Whakatāne, Kawerau and Ōpōtiki.

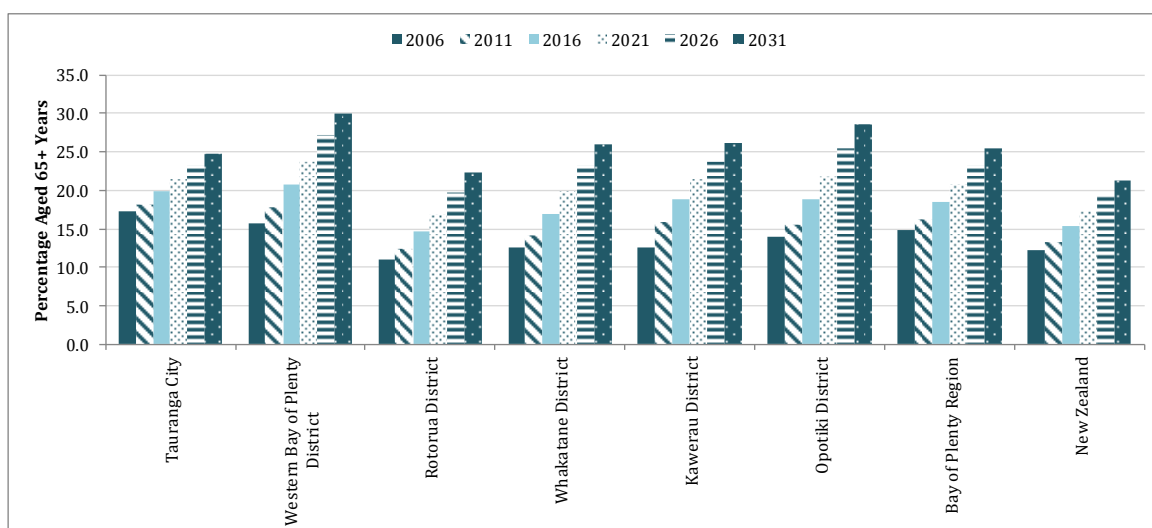
Table 6.1.2: Projected Change (%) in Numbers by Broad Age Group, Bay of Plenty Region, its TAs and Total New Zealand, 2011-2031, Medium Series

	Tauranga City	Western Bay of Plenty	Rotorua District	Whakatane District	Kawerau District	Opotiki District	Bay of Plenty	New Zealand
0-14 years	+19.4	+1.7	-13.4	-17.3	-31.6	-24.9	+0.3	+4.5
15-24 years	+13.9	-15.9	-20.0	-28.7	-45.8	-44.8	-8.8	-1.1
25-39 years	+36.3	+20.8	+5.0	+0.0	-10.3	+7.4	+20.0	+20.7
40-54 years	+9.6	-11.7	-20.5	-26.4	-44.0	-42.4	-8.4	-1.2
55-64 years	+26.0	+4.4	+2.8	-10.1	-27.6	-30.5	+8.7	+14.2
65-74 years	+69.8	+72.3	+68.4	+60.7	-4.3	+36.1	+65.5	+74.8
75-84 years	+84.8	+119.9	+104.8	+104.4	+61.8	+90.7	+95.1	+107.2
85+ years	+93.3	+165.5	+94.4	+85.1	+171.4	+83.3	+104.0	+101.5
Total	+31.2	+16.6	+1.1	-3.7	-23.0	-14.8	+14.5	+17.9
0-64 years	+20.7	-0.8	-10.4	-17.0	-32.4	-27.9	+1.8	+7.1
65+ years	+78.5	+96.6	+82.7	+77.4	+27.3	+57.2	+80.0	+88.5

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Figure 6.1.4: Projected Percentage Aged 65+ Years, Bay of Plenty Region, its TAs and Total New Zealand, 2006-2031, Medium Series



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006 (base)-2031 (October 2012 update)

Table 6.1.3: Projected Percentage Aged 65+ Years, Bay of Plenty Region, its TAs and Total New Zealand, 2006-2031 (and % Change 2011-2031), Medium Series

	Percentage Aged 65+ Years						Change (%) 2011-2031
	2006	2011	2016	2021	2026	2031	
Tauranga City	17.3	18.2	19.9	21.4	23.1	24.7	+36.0
Western Bay of Plenty	15.7	17.8	20.8	23.7	27.1	30.0	+68.6
Rotorua District	11.1	12.3	14.6	16.9	19.7	22.2	+80.7
Whakatane District	12.6	14.1	16.9	19.9	23.2	26.0	+84.3
Kawerau District	12.6	15.8	18.9	21.4	23.7	26.1	+65.3
Opotiki District	13.9	15.5	18.9	21.7	25.4	28.5	+84.5
Bay of Plenty Region	14.8	16.2	18.5	20.7	23.2	25.4	+57.3
New Zealand	12.2	13.3	15.3	17.2	19.3	21.3	+59.9

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006 (base)-2031 (October 2012 update)

The data show that Western BOP is projected to take over from Tauranga City as the region's oldest TA by 2016. Whilst younger in absolute terms, the even faster rate of ageing of the Whakatāne and Ōpōtiki districts should also be noted, followed closely by Rotorua.



6.2 Projections by Ethnicity

While counting population by ethnicity is difficult, projecting populations based on ethnic affiliation is even more difficult. The following projections have many caveats attached to them and should be read as indicative only. Among them is their multiple count base, the high degree of rounding of numbers, and, for some groups, low reliability of data by age because of small cell sizes. It should especially be noted that equivalent projection data are not available for the MELAA population and thus the distributions are indicative only.

Table 6.2.1 shows the European/Other population of the BOP Region growing only slightly (7.6 per cent) between 2011 and 2021 against a 10.8 per cent increase for Māori. The projected increases for the Pacific Island and Asian populations (35.6 and 43.2 per cent respectively) are somewhat larger, reflecting their smaller bases.

Net migration gain is expected to be the main driver of growth for the European/Other population. In contrast, for the Māori and Pacific Island populations, natural increase remains the primary driver of growth—and for Māori is already greater than for European in absolute terms, despite its smaller population share. For both populations, however, natural increase declines over time, and for Māori, accompanies net migration loss, the two components together explaining the relatively low projected rate of growth. For Pacific Peoples and those of Asian origin, natural increase is projected to grow slightly, while net migration is assumed to be stable for both.

There are marked differences by age. The 65+ year European/Other population is projected to increase by 31.0 per cent, compared with 56.1 per cent for Māori, 66.7 per cent for the Pacific Island population and 128.6 per cent for the Asian population. For the European/Other population the increase in the elderly population accounts for the majority of that population's overall 7.6 per cent projected growth, with small increases projected at all ages below 65 years. Growth is projected at all ages for all other ethnic groups, but less so for Māori.

By 2021 the median age of the European/Other population will be approximately 44.5 years, 13 years greater than for the region's Asian population (31.2 years), 19 years greater than for Māori (25.1 years) and 26 years greater than for Pacific Islanders (18.9 years). The gaps are projected to increase for the Māori and Pacific Island populations but to reduce for Asian.



Table 6.2.1: Population Projections for Bay of Plenty Region by Ethnic Group and Broad Age Group

Bay of Plenty region	Population ^(2,3) by age group (years) at 30 June					Projected components of population change, five years ended 30 June					Median age ⁽⁵⁾ (years) at 30 June
	0-14	15-39	40-64	65+	All ages	Births	Deaths	Natural increase	Net migration	Inter-ethnic mobility ⁽⁴⁾	
European/Other											
1996	41,400	59,700	52,900	27,800	181,800	0	0	0	0	0	36.2
2001	42,400	56,800	60,900	31,300	191,500	0	0	0	0	0	38.7
2006 (base)	43,000	58,200	69,400	35,900	206,500	0	0	0	0	0	40.7
2011	43,200	59,100	74,300	40,300	216,800	14,100	9,000	5,100	5,200	0	42.1
2016	43,400	59,900	75,600	46,600	225,400	13,700	9,800	3,900	4,700	0	43.4
2021	43,800	61,500	75,100	52,800	233,200	13,700	10,600	3,100	4,700	0	44.5
<i>Change 2011-2021 (%)</i>	<i>+1.4</i>	<i>+4.1</i>	<i>+1.1</i>	<i>+31.0</i>	<i>+7.6</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>
Māori											
1996	25,500	27,900	12,400	2,500	68,200	0	0	0	0	0	21.8
2001	26,400	26,900	14,700	2,900	71,000	0	0	0	0	0	22.5
2006 (base)	25,700	27,100	17,000	3,600	73,500	0	0	0	0	0	23.5
2011	26,600	28,200	18,900	4,100	77,800	9,800	2,000	7,800	-2,400	-1,100	23.3
2016	27,600	29,300	20,200	5,100	82,200	9,500	2,200	7,400	-1,900	-1,100	24.1
2021	28,600	30,600	20,600	6,400	86,200	9,400	2,400	7,000	-1,900	-1,200	25.1
<i>Change 2011-2021 (%)</i>	<i>+7.5</i>	<i>+8.5</i>	<i>+9.0</i>	<i>+56.1</i>	<i>+10.8</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>
Pacific Peoples											
1996	2,500	2,200	800	200	5,600	0	0	0	0	0	17.5
2001	2,700	2,300	900	200	6,100	0	0	0	0	0	18.1
2006 (base)	3,100	2,700	1,200	200	7,300	0	0	0	0	0	18.2
2011	3,700	3,200	1,500	300	8,700	1,500	100	1,300	100	-100	18.4
2016	4,400	3,700	1,800	400	10,200	1,600	100	1,400	100	-100	18.6
2021	5,000	4,300	2,000	500	11,800	1,800	200	1,600	100	-100	18.9
<i>Change 2011-2021 (%)</i>	<i>+35.1</i>	<i>+34.4</i>	<i>+33.3</i>	<i>+66.7</i>	<i>+35.6</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>
Asian											
1996	1,300	2,000	900	100	4,300	0	0	0	0	0	26.0
2001	1,600	2,500	1,400	200	5,800	0	0	0	0	0	28.1
2006 (base)	2,300	3,800	2,500	400	8,900	0	0	0	0	0	29.7
2011	2,800	4,600	3,000	700	11,100	1,200	100	1,100	1,200	-100	29.3
2016	3,600	5,300	3,400	1,100	13,400	1,500	100	1,300	1,200	-100	30.5
2021	4,600	6,000	3,700	1,600	15,900	1,700	200	1,500	1,200	-100	31.2
<i>Change 2011-2021 (%)</i>	<i>+64.3</i>	<i>+30.4</i>	<i>+23.3</i>	<i>+128.6</i>	<i>+43.2</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>	<i>...</i>

Source: Statistics New Zealand, Subnational Ethnic Population Projections (2006 Base - 2009 Update) Tables 4e, 4m, 4p, 4a

(1) Boundaries at 30 June 2009.

(2) These projections have as a base the estimated resident population of each ethnicity, of each area, at 30 June 2006 and incorporate medium fertility, medium migration, medium mortality, and medium inter-ethnic mobility assumptions for each area. Population estimates for 1996-2006 are derived from the respective 1996-2006 census usually resident population counts.

(3) Numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the TA. Projections are not available for all ethnic groups for all TA's.

(4) The net effect of people changing their ethnic identity.

(5) Half the population is younger, and half older, than this age.

Table 6.2.2 and Figure 6.2.1 provide an overview in terms of resulting population share by age (again the lack of data for the MELAA population should be noted). The data suggest only modest change in the overall ethnic composition of the region, with the European/Other share falling by two percentage points to 67.2 per cent by 2021, Māori and Pacific Island shares increasing slightly (by 0.1 and 0.6 percentage points respectively), and the Asian population reaching 4.6 per cent by 2021, up



from 3.5 per cent in 2011. There are greater differences by age, although the European/Other population will continue to account for the majority of each age group.

Table 6.2.2: Projected Population Share (%) by Broad Age Group and Ethnic Group*, Bay of Plenty Region, 2011-2021

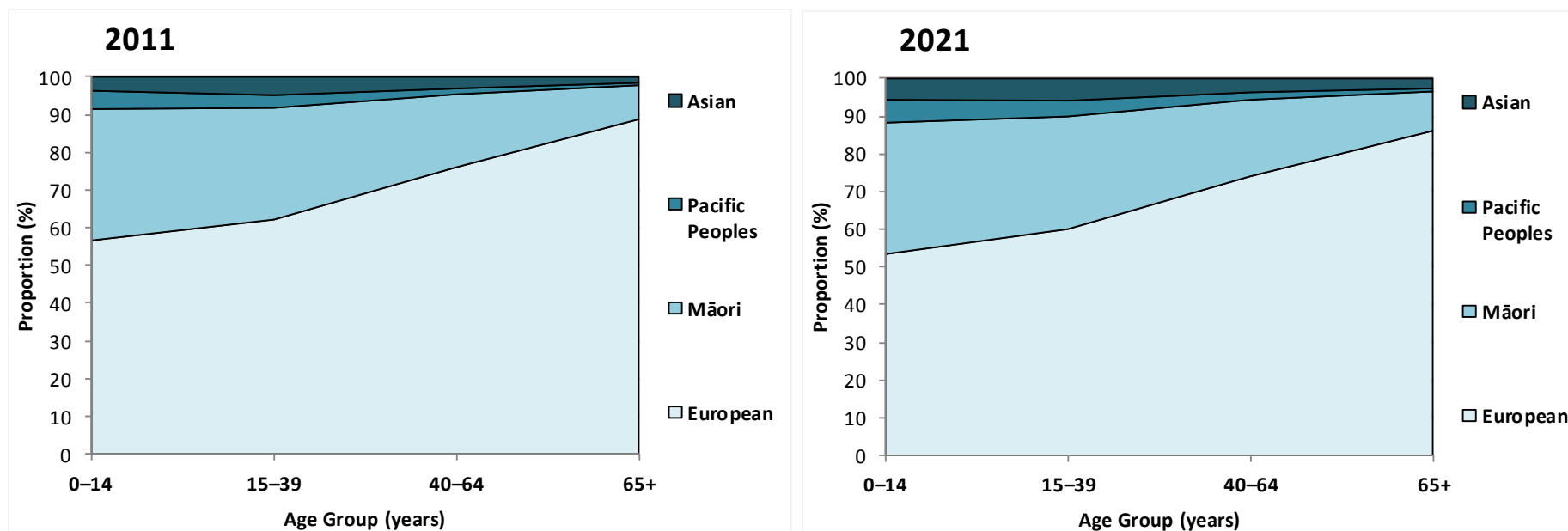
	0-14	15-39	40-64	65+	All ages
2011					
European	56.6	62.1	76.0	88.8	69.0
Māori	34.9	29.7	19.3	9.0	24.7
Pacific Peoples	4.8	3.4	1.5	0.7	2.8
Asian	3.7	4.8	3.1	1.5	3.5
Total	100.0	100.0	100.0	100.0	100.0
Number ⁽¹⁾	76,300	95,100	97,700	45,400	314,400
2016					
European	54.9	61.0	74.9	87.6	68.1
Māori	34.9	29.8	20.0	9.6	24.8
Pacific Peoples	5.6	3.8	1.8	0.8	3.1
Asian	4.6	5.4	3.4	2.1	4.0
Total	100.0	100.0	100.0	100.0	100.0
Number ⁽¹⁾	79,000	98,200	101,000	53,200	331,200
2021					
European	53.4	60.1	74.1	86.1	67.2
Māori	34.9	29.9	20.3	10.4	24.8
Pacific Peoples	6.1	4.2	2.0	0.8	3.4
Asian	5.6	5.9	3.6	2.6	4.6
Total	100.0	100.0	100.0	100.0	100.0
Number ⁽¹⁾	82,000	102,400	101,400	61,300	347,100

Source and Notes same as Table 5.2.1

(1) Underlying numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the region. Projections not available for all ethnic groups for all regions.



Figure 6.2.1: Projected Population of the Bay of Plenty Region by Major Ethnic Group* and Broad Age Group, 2011 and 2021



Source: Statistics New Zealand, Subnational Ethnic Population Projections (2006 Base - 2009 Update) Tables 4e, 4m, 4p, 4a

(1) Boundaries at 30 June 2009.

(2) These projections have as a base the estimated resident population of each ethnicity, of each area, at 30 June 2006 and incorporate medium fertility, medium migration, medium mortality, and medium inter-ethnic mobility assumptions for each area. Population estimates for 1996-2006 are derived from the respective 1996-2006 census usually resident population counts.

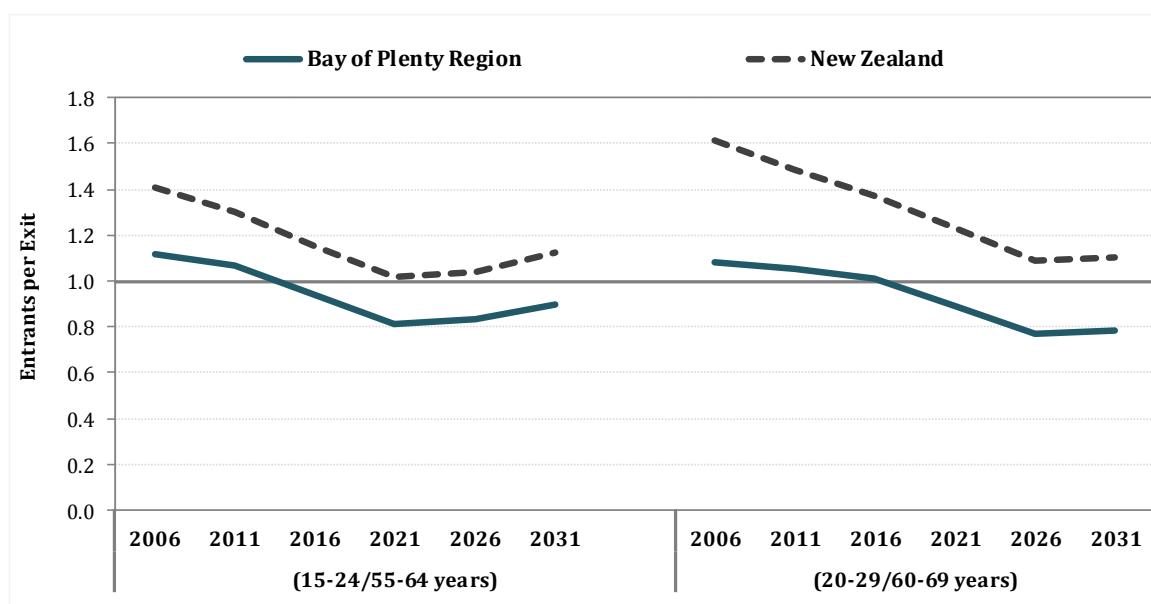
(3) The underlying numbers reflect the multiple count enumeration methodology and their sum is somewhat greater than the total projection for the region.



6.3 Labour Market Implications of Changing Age Structure

As noted earlier, population ageing drives other important demographic changes. One of the most important is change in the ratio of people at labour market entry age to those at ‘exit’ age. Various age groupings can be employed to calculate this ratio; here we use two: people aged 15-24 to those 55-64 years, and people aged 20-29 to those 60-69 years (Figure 6.3.1). Based on the first of these indices, the ratio for the BOP Region is somewhat lower than at national level, with fewer people at ‘entry’ than ‘exit’ age across most of the projection period. For BOP the ratio falls from 1.1 (11 ‘entrants’ per 10 ‘exits’) in 2011 to 0.8 (8 per 10) between 2016 and 2021, before rising to around 0.9 (9 per 10) in 2031; this is when the recently born baby blip will have reached the labour market (see also Table 6.1.1 above). When the ratio is based on those aged 20-29 and 60-69 years, it is even lower than for Total New Zealand, and drops to parity (ten per ten) five years later (see also Appendix 3.3). However as noted earlier, these population-based ratios say little about future labour market availability. All are also linked in a national (and international) labour market that will see increased competition for the participation of the young and greater need to encourage the retention of older workers. This demographically-tight labour market will have significant implications for labour costs as it unfolds. This will be particularly so for industries which have older age structures and are ageing faster than average, as outlined in the following special topic (Section 7.0), and for non-urban areas.

Figure 6.3.1: Projected Ratio of People at Labour Market Entry Age to Those Approaching Exit Age, Bay of Plenty Region and Total New Zealand, 2006-2031 (Medium Variant Assumptions)



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Table 6.3.1 provides similar information for the TAs which comprise the BOP Region. Kawerau currently (2011) has the highest ratio of people at labour market entry to exit age for the younger age groupings (14 per 10), while Rotorua has the highest ratio for the older age groupings (13 per 10). The ratios for Western BOP are consistently the lowest, already down to 8 people aged 15-24 for every 10 aged 55-64, and 7 aged 20-29 per 10 aged 60-69; those for Ōpōtiki are slightly above 10 entrants aged 15-24 per 10 exits aged 55-64, but below parity for the older age grouping. All ratios fall steadily until either 2026 or 2031, at which time the recently born baby blip will be swelling numbers in the younger labour market ages—however it should be noted that national projections beyond 2031 indicate that this rise will be temporary, as the largest baby boom cohorts will by then be leaving the labour market.

Table 6.3.1: Projected Ratio of People at Labour Market Entry Age to Those Approaching Exit Age, Bay of Plenty Region and its Territorial Authority Areas, 2006-2031 (Medium Variant Assumptions)

	Tauranga	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty Region	Total New Zealand
<i>15-24 year per 10 people aged 55-64 years</i>								
2006	1.1	0.8	1.3	1.2	1.1	1.0	1.1	1.4
2011	1.1	0.8	1.3	1.1	1.4	1.1	1.1	1.3
2016	1.0	0.6	1.1	0.9	1.2	1.0	0.9	1.2
2021	0.9	0.5	1.0	0.8	1.0	0.8	0.8	1.0
2026	0.9	0.5	1.0	0.8	1.0	0.7	0.8	1.0
2031	1.0	0.6	1.0	0.9	1.1	0.8	0.9	1.1
Change (%) 2011-2031	-9.6	-19.4	-22.1	-20.7	-25.1	-20.6	-16.1	-13.4
<i>20-29 years per 10 people aged 60-69 years</i>								
2006	1.1	0.6	1.5	1.1	1.0	0.9	1.1	1.6
2011	1.1	0.7	1.3	1.0	1.1	0.9	1.1	1.5
2016	1.1	0.7	1.2	1.0	1.3	0.9	1.0	1.4
2021	1.0	0.5	1.1	0.8	1.1	0.8	0.9	1.2
2026	0.9	0.4	0.9	0.7	0.9	0.7	0.8	1.1
2031	0.9	0.5	0.9	0.7	0.9	0.6	0.8	1.1
Change (%) 2011-2031	-20.2	-33.1	-29.9	-30.3	-15.3	-26.7	-25.4	-25.4

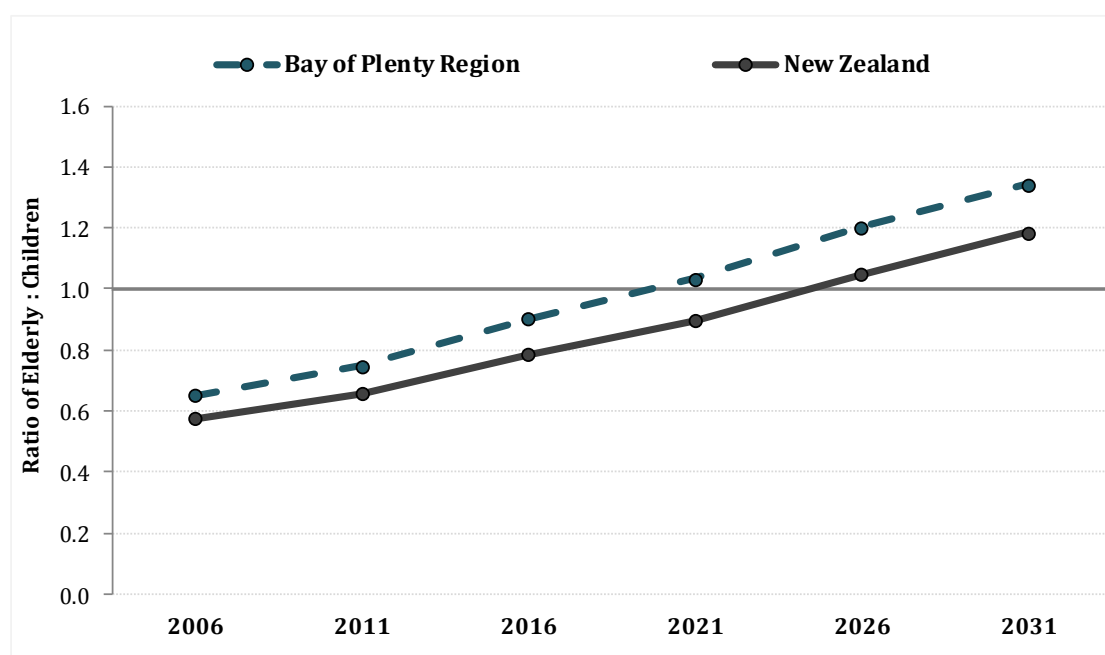
Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006 (based)- 2031 (October 2012 update)



6.4 Natural Increase Implications of Changing Age Structure

For the BOP Region, the ratio of elderly (65+ years) to children (0-14 years) is projected to increase rapidly from its present 0.7 (7 elderly for every 10 children), to 1.3 by 2031 (13 for every 10; Figure 6.4.1). This profound shift to more elderly than children (the cross over occurring around 2021, about five years earlier than for Total New Zealand) will by then be contributing to diminishing levels of natural increase (Figure 6.4.2), as will the slowly diminishing proportion projected to be at the key reproductive ages (22.2 per cent in 2031, down from 22.5 per cent in 2011) compared with Total New Zealand (25-27 per cent) (Figure 6.4.3).

Figure 6.4.1: Projected Ratio of Elderly (65+ Years) to Children (0-14 Years), Bay of Plenty Region and Total New Zealand, 2006-2031 (Medium Variant Assumptions)

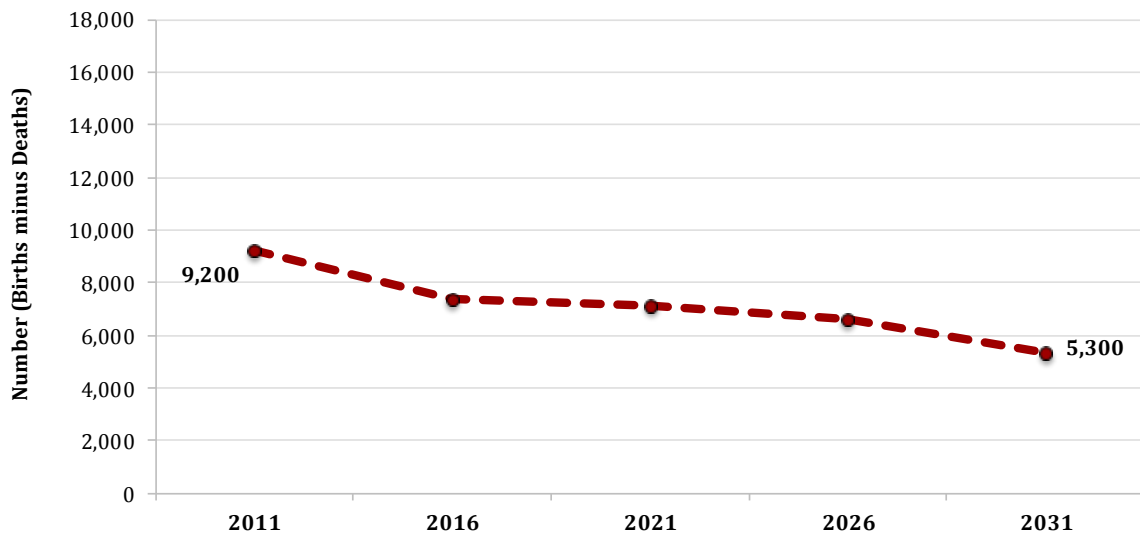


Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)

The proportion at key reproductive age (Figure 6.4.3) appears to be a particularly critical indicator of future growth. As noted in the short article at the beginning of this report, one-third of New Zealand's TAs have either stopped growing or declined in size since 1996. All had proportions aged 20-39 years lower than the national average, and thereby severe 'hour-glass' shaped age structures which are no longer conducive to sustained natural growth. Referring back to Section 2, natural increase is currently the major component of the BOP Region's growth and particularly of some of its TAs. As that component declines, growth – or maintenance of population size - will become ever more dependent on migration.

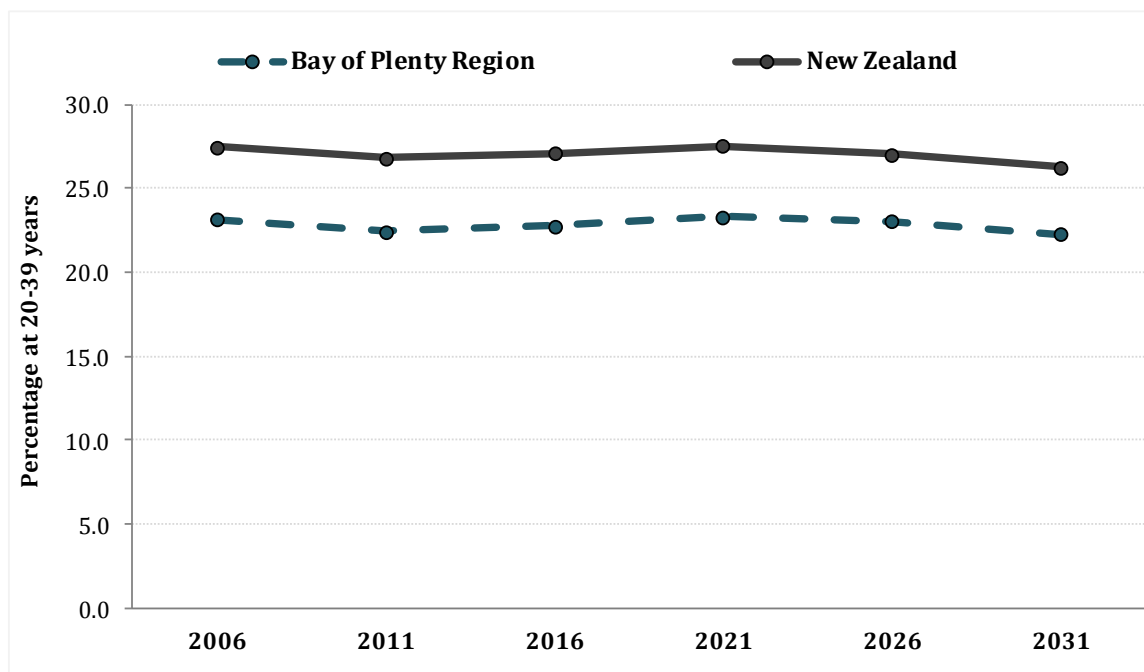


Figure 6.4.2: Projected Natural Increase, Bay of Plenty Region, 2011-2031 (Medium Variant Assumptions)



Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)

Figure 6.4.3: Projected Proportion at Key Reproductive Ages (20-39 Years), Bay of Plenty Region and Total New Zealand, 2006-2031 (Medium Variant Assumptions)



Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Tables 6.4.1 to 6.4.3 give the data for the TAs which comprise the BOP Region, beginning with the proportion of each TA at the key reproductive age (Table 6.4.1). For most TAs, these proportions decline steadily across the period, but in Kawerau and Ōpōtiki, they rise slightly from the middle of the period to just above their 2011 levels. The projected declines are greatest for Western BOP and Whakatāne (4.6 and 3.2 per cent). However the most notable features of Table 6.4.1 are the extremely low proportions already at these ages in Western BOP and Ōpōtiki (18.5 and 19.3 per cent), and the fact that all BOP TAs have lower proportions than is the case nationally. As indicated below, these low (and relatively low) proportions drive the end of natural increase.

Table 6.4.1: Projected Proportion at Key Reproductive Age (20-39 Years), Bay of Plenty Region and its Territorial Authority Areas, 2006-2031 (Medium Variant Assumptions)

	Tauranga	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty Region	Total New Zealand
2006	24.2	18.9	25.3	22.3	22.3	19.9	23.1	27.5
2011	23.3	18.5	24.4	22.0	22.3	19.3	22.5	26.8
2016	23.5	18.9	24.5	22.3	23.5	21.2	22.8	27.1
2021	24.2	19.3	24.9	22.7	23.7	22.6	23.3	27.5
2026	23.8	18.9	24.9	22.6	24.7	22.8	23.1	27.0
2031	23.4	17.6	23.9	21.3	23.1	21.2	22.2	26.3
Change (%) 2011-2031	+0.3	-4.6	-1.9	-3.2	+3.9	+9.8	-0.9	-2.0

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006 (based)-2031 (October 2012 update)

The changing proportions at reproductive age are closely associated with shifts in the ratio of elderly to children (Table 6.4.2), which are projected to rise substantially in all TAs. Currently, all TA's have more children (0-14 years) than people over the age of 65. However, Western BOP is expected to have more elderly than children by 2016, and Tauranga City, from 2021. By 2026, all TAs of the BOP region with the exception of Rotorua are projected to have more elderly than children.

Table 6.4.2: Projected Ratio of Elderly (65+ Years) to Children (0-14 Years), Bay of Plenty Region and its Territorial Authority Areas, 2006-2031 (Medium Variant Assumptions)

	Tauranga	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty Region	Total New Zealand
2006	0.8	0.7	0.4	0.5	0.5	0.5	0.7	0.6
2011	0.9	0.9	0.5	0.6	0.6	0.6	0.7	0.7
2016	1.0	1.1	0.7	0.8	0.8	0.9	0.9	0.8
2021	1.1	1.3	0.8	0.9	0.9	1.0	1.0	0.9
2026	1.2	1.5	1.0	1.1	1.1	1.2	1.2	1.0
2031	1.3	1.7	1.1	1.3	1.2	1.4	1.3	1.2
Change (%) 2011-2031	+49.5	+93.4	+110.9	+114.4	+86.0	+109.3	+79.6	+80.4

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006 (base)-2031 (October 2012 update)



The general reduction in the proportion of the population at the key reproductive ages, alongside the underlying assumptions regarding future birth and life expectancy rates which change the ratio of old to young, result in a projected decline in natural increase for all TAs (Table 6.4.3). By the end of the projection period, natural increase for Kawerau and Ōpōtiki is projected to fall as low as 40 and 90 (more births than deaths) per five years respectively.

Table 6.4.3: Projected Natural Increase (Five Year Period) Bay of Plenty Region and its Territorial Authority Areas, 2006-2031 (Medium Variant Assumptions)

	Tauranga City	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty	Total New Zealand
2006	...	...	...	...	...	...	...	...
2011	3500	1000	3200	1200	300	270	9200	171200
2016	2900	700	2700	1000	210	210	7400	153100
2021	3000	600	2500	800	160	190	7100	151800
2026	3200	500	2300	700	110	160	6600	146400
2031	3000	200	1800	400	40	90	5300	130100
Change	-14.3	-80.0	-43.8	-66.7	-86.7	-66.7	-42.4	-24
2011-2031 (%)								

Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)

As outlined throughout this profile, the trends mean that while the BOP Region is likely to continue to grow throughout the projection period, that growth will almost certainly be at a decreasing rate. As elsewhere in New Zealand, the region's overall growth will also become increasingly patchy at TA level, as its underlying drivers – births, deaths and migration – interact, and population ageing proceeds.



7.0 Industrial Change 1996-2006 – Special Topic 1

The extent (and speed) of population ageing and its impact on labour force entry: exit ratios also differ by industry. Industries which employ large proportions of younger people, such as supermarkets and grocery stores, by definition have youthful age structures; those employing large proportions of older people (especially in senior management positions) have older age structures. However industrial employment patterns by age are not of interest simply because they differ, but rather, in the context of population ageing, they provide important information for issues such as future labour supply and succession planning.

This section provides an overview of the changing age-sex structure of the BOP Region's employed labour force by employment status (self-employed, employer, paid employee etc.), first for the total labour force, then for the region's four largest industries (in 2006) at the three digit level: School Education (Primary and Secondary combined); Horticulture and Fruit Growing; Building and Construction; and Supermarket and Grocery Stores (see also Appendix 4). The data have been customised by Statistics New Zealand to be consistent in terms of industry and employment status across time. The section concludes with a brief overview of change in all BOP Region industries employing more than 1,000 people in 2006.

Figure 7.1.1 provides data for the BOP Region's total employed labour force (see also Appendix 4.1). Reflecting the trends outlined above, the average age of employed persons at each census was respectively 39.1, 41.1 and 42.3 years, an overall increase of 3.2 years (8.2 per cent). This is slightly higher than the average age for the Total New Zealand employed labour force at each observation: 38.3, 40.1 and 41.2 years (an increase of 2.9 years, 7.6 per cent), and the BOP Region's labour force is ageing slightly faster. The speed of this change is similarly evidenced in the increasing proportion aged 55+ years, from just 12.7 per cent in 1996 to 20.8 per cent in 2006 (63.0 per cent), and the ratio of those at labour force entry to exit age (here 15-24: 55+ years) falling from 14 per 10 in 1996, to just 7 per 10 in 2006. **NB** these data are for the employed labour *force*, as opposed to those at *labour market age* in the population.

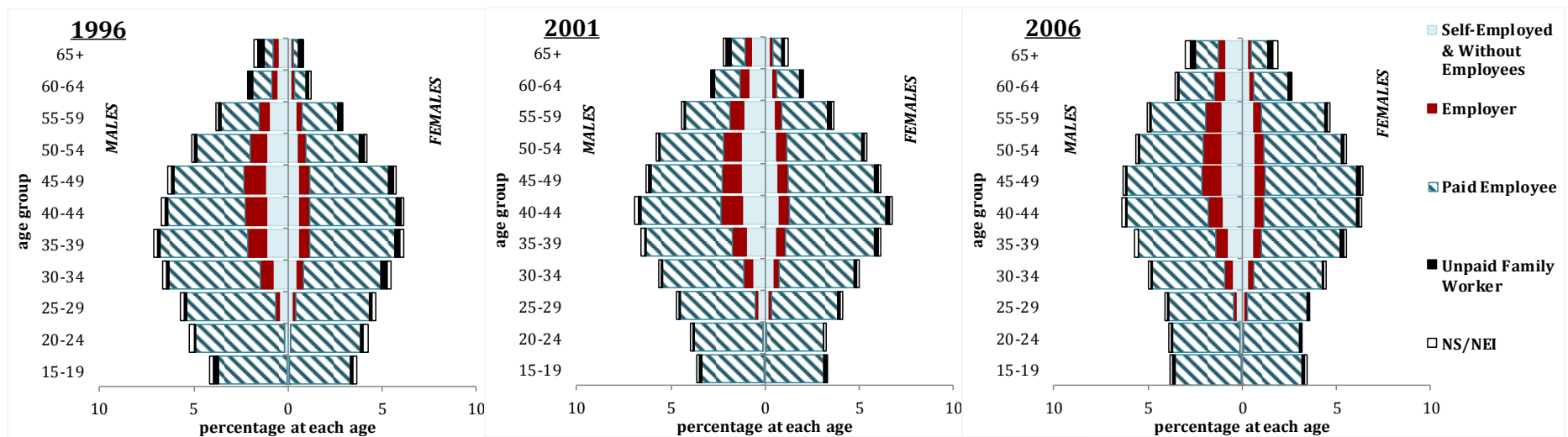
Differing somewhat from the total employed labour force is the region's single largest industrial grouping, School Education (ANZSIC96 V4.1 code N842), which is heavily feminised (Figure 7.1.2)—the sex ratio (males per female) having reduced slightly over time, from 0.4 in 1996 to 0.3 in 2006 (Appendix 4.2). The average age of BOP persons employed in this industry (45.1 years in 2006) is a little greater than the region's total labour force, and has shifted upwards since 1996 by 2.3 years (5.4 per cent). This is a lower rate of structural ageing than for both the Total New Zealand School Education workforce (5.9 per cent) and the Total New Zealand workforce (7.5 per cent). The nature of this industry means that there are no employers as such.



Figure 7.1.1: Age-Sex Structure and Employment Status of Employed Labour Force 1996, 2001, 2006, Bay of Plenty Region

Bay of Plenty Region

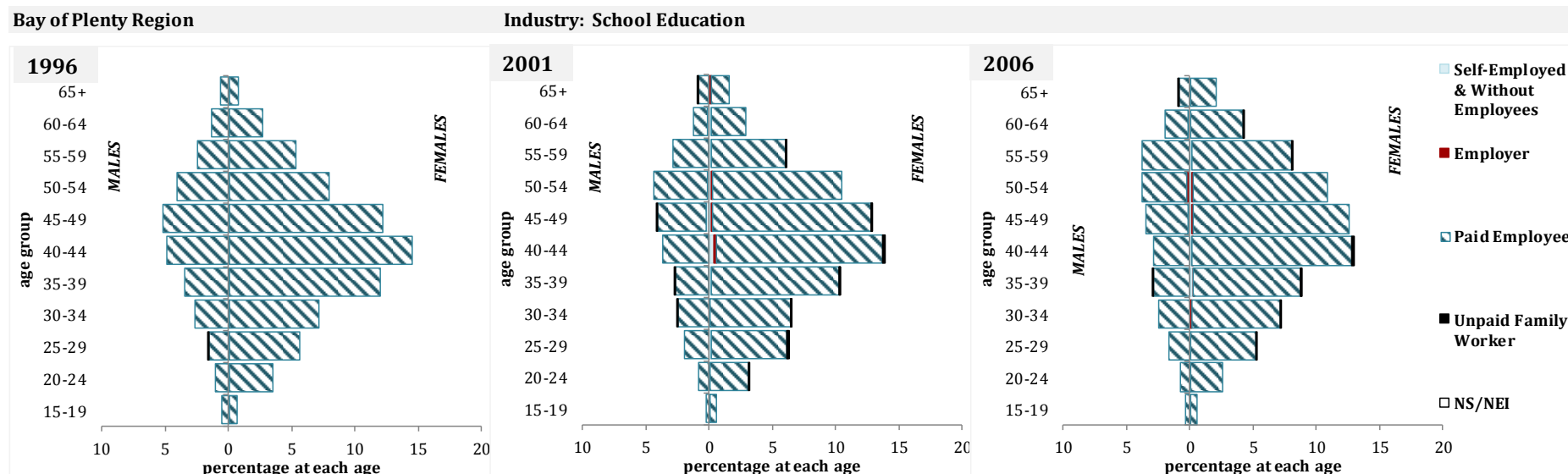
Industry: All Industries



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



Figure 7.1.2: Age-Sex Structure and Employment Status of the School Education [N842] 1996, 2001, 2006, Bay of Plenty Region



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



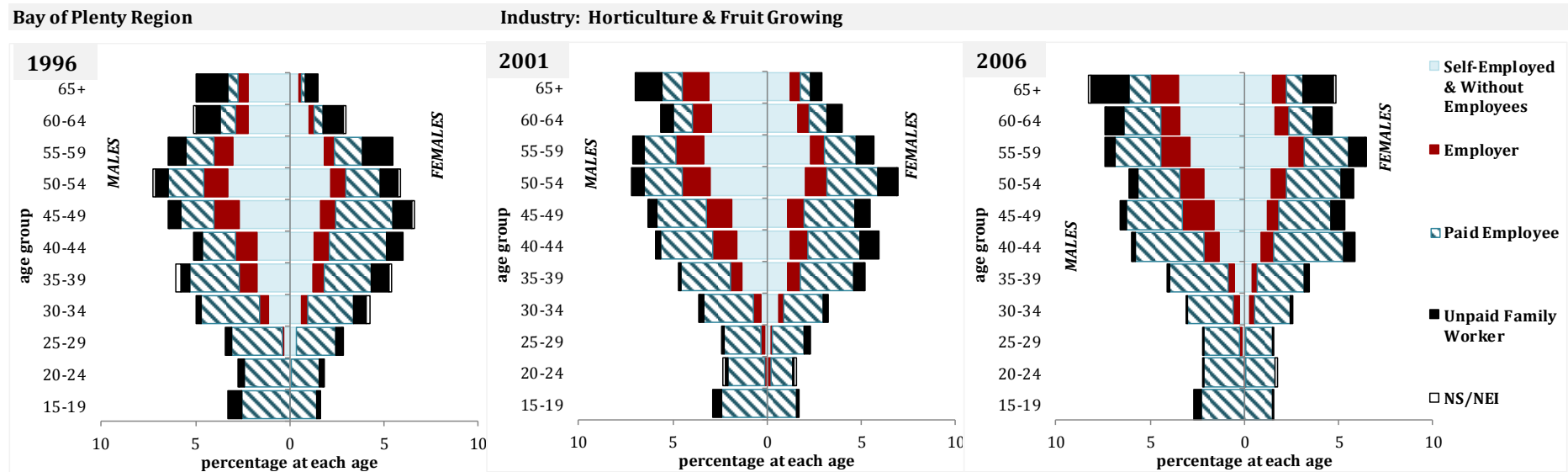
Significantly older again is the region's second largest industry (in 2006 employing 3,483 persons, an increase of 0.2 per cent over 1996): Horticulture and Fruit Growing (Figure 7.1.3, Appendix 4.3). The average age of those employed in this industry increased from 44.9 years in 1996 to 48.7 years in 2006 (3.8 years, 8.5 per cent), and the industry's entry: exit ratio fell from 4 per 10 (entrants per those in the retirement zone, 55+ years) in 1996, to just 2 per 10 in 2006. There are notable but intuitively correct differences in age structure by employment status, with the average age of those either self-employed or employing others in 2006 respectively 55.8 and 53.3 years, in each case around 5 years older than in 1996; while the average age of paid employees has increased from 38.1 to 42.0 years (Appendix 4.3). Males outnumbered females by a similar margin (12-13: 10) at each observation, but not markedly so.

Contrasting completely with the region's female dominated school education sector and the more evenly gendered horticulture sector is the region's third largest industry, Building and Construction (Figure 7.1.4, Appendix 4.4). Structural ageing in this heavily masculinised industry is also less advanced than in the previous two industries, with an average age in 2006 of just 40.5 years (having increased by only 1.9 years since 1996, 4.9 per cent). In 1996, just 10.0 per cent of those employed in this industry were aged 55+ years, while by 2006 that had increased to 17.9 per cent (a 78.0 per cent increase). The trends resulted in the labour force entry: exit ratio (15-24: 55+ years) falling from 17 entrants per 10 in the retirement zone in 1996, to 10 per 10 in 2006. Average age by employment status in 2006 indicates a difference of some 10 years between those either self-employed (46.7 years) or employing others (45.2 years) and their paid employees (35.5 years), a little greater than the gap in 1996.

The region's fourth largest industry is Supermarket and Grocery Stores, in 2006 employing 3,099 people (Figure 7.1.4, Appendix 4.5), significantly more than in 1996 (2,361) and explaining its rise from sixth to fourth rank. Its age-sex structure contrasts substantially with those for the three largest industries, albeit like school education it is somewhat feminised (sex ratio in 2006, 0.58 males per female, up from 0.49 in 1996). Widely understood as one of the youngest industries in terms of age structure, the average age of the BOP Region's Supermarket and Grocery personnel increased from 30.0 years in 1996 to 33.3 years in 2006 (3.3 years, 11.0 per cent), making it the region's third youngest industry of the 158 measured at 3-digit level. Nevertheless, it too is ageing, the proportion aged 55+ years having increased from 4.7 to 11.5 per cent 1996-2006, and causing the industry's labour force entry: exit ratio to fall dramatically, from 106 people at labour market entry age in 1996 per 10 aged 55+ years, to 38 per 10 in 2006. Reflecting the general pattern of the region's older than average age structure, the industry is also a little older on average than its Total New Zealand counterpart.



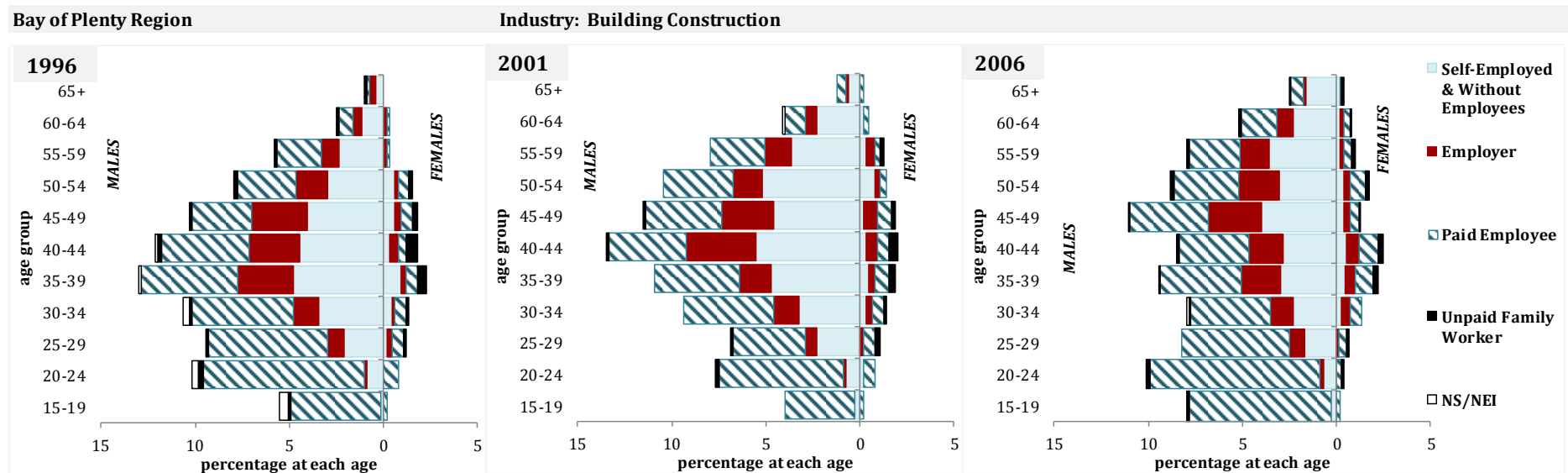
Figure 7.1.3: Age-Sex Structure and Employment Status, Horticulture & Fruit Growing [A011] 1996, 2001, 2006, Bay of Plenty Region



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



Figure 7.1.4: Age-Sex Structure and Employment Status, Building and Construction [E411] 1996, 2001, 2006, Bay of Plenty Region



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



Figure 7.1.5: Age-Sex Structure and Employment Status, Supermarket and Grocery Stores [G511] 1996, 2001, 2006, Bay of Plenty Region



Source: Jackson/Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006



Table 7.1.1 gives data for all BOP industries employing over 1,000 people in 2006 (accounting for 67 per cent of the region's employed workforce). As indicated above, the region's largest and second-largest industries have average ages above that of the total employed workforce, with the latter (Horticulture and Fruit Growing) having the tenth-oldest average age of all 158 industries at 3-digit level. Offsetting this workforce ageing to some extent are the below-average ages of the three next-largest industries: Building and Construction (3rd largest), Supermarket and Grocery Stores (4th largest), and Cafes and Restaurants (5th largest). However it goes without saying that people and skills are not exact replacements for each other. With the region's overall population ageing at a greater rate than the national population, it is critical that the ageing of its workforce is paid special attention.

Table 7.1.1: Bay of Plenty Industries Employing over 1,000 persons in 2006, Number, Average Age, and Change (%) 1996, 2001 and 2006 (Ranked largest to smallest in 2006)

Bay of Plenty Region	Number Employed			% Change 1996-2006	Average Age (in years)			% Change 1996-2006
	1996	2001	2006		1996	2001	2006	
School Education	4,077	5,100	5,277	+29.4	42.8	43.8	45.1	+5.3
Horticulture & Fruit Growing	3,501	3,516	3,489	-0.3	44.8	47.1	48.7	+8.5
Building Construction	1,986	1,959	3,330	+67.7	38.8	41.3	40.4	+4.3
Supermarket & Grocery Stores	2,349	2,670	3,084	+31.3	29.9	31.6	33.3	+11.1
Cafes & Restaurants	1,884	2,319	2,886	+53.2	31.3	31.0	32.0	+2.2
Hospitals & Nursing Homes	2,622	2,631	2,859	+9.0	41.3	42.7	44.9	+8.7
Community Care Services	1,539	2,460	2,859	+85.8	41.8	45.0	47.4	+13.5
Motor Vehicle Services	2,340	2,349	2,589	+10.6	34.6	37.0	39.1	+12.7
Other Health Services	924	2,169	2,565	+177.6	42.5	44.6	45.5	+6.9
Government Administration	2,523	2,274	2,508	-0.6	41.0	43.7	44.5	+8.6
Other Personal & Household Good Retailing	1,623	1,899	2,325	+43.3	39.7	41.1	42.5	+6.9
Accommodation	1,944	2,175	2,286	+17.6	38.3	40.7	41.9	+9.5
Marketing & Business Management Services	852	1,665	2,241	+163.0	40.2	40.8	43.5	+8.0
Other Business Services	1,407	1,674	2,235	+58.8	39.5	41.6	43.3	+9.5
Specialised Food Retailing	1,944	1,974	2,115	+8.8	34.3	34.0	34.5	+0.7
Dairy Cattle Farming	2,484	2,262	2,055	-17.3	39.4	41.5	42.5	+7.8
Other Personal Services	1,698	1,644	2,049	+20.7	37.2	40.1	40.8	+9.7
Services to Agriculture	849	1,551	2,034	+139.6	38.5	42.3	44.0	+14.3
Installation Trade Services	1,206	1,542	2,028	+68.2	38.1	40.3	41.3	+8.6
Legal & Accounting Services	1,401	1,527	1,947	+39.0	39.1	41.4	43.3	+10.9
Building Completion Services	1,167	1,311	1,794	+53.7	37.3	38.9	39.3	+5.5
Road Freight Transport	1,302	1,398	1,677	+28.8	39.2	41.4	44.3	+13.0
Industrial Machinery & Equipment Manufacturing	1,260	1,455	1,620	+28.6	37.2	39.6	42.0	+13.0
Technical Services	846	978	1,608	+90.1	39.3	41.9	42.5	+8.0
Real Estate Agents	969	969	1,485	+53.3	44.7	46.6	47.5	+6.2
Log Sawmilling & Timber Dressing	1,329	1,584	1,422	+7.0	35.3	37.0	39.4	+11.4
Furniture, Houseware & Appliance Retailing	999	1,020	1,419	+42.0	39.0	40.6	39.2	+0.5
Property Operators & Developers	867	1,068	1,407	+62.3	43.0	46.8	46.6	+8.2
Medical & Dental Services	864	1,125	1,398	+61.8	42.4	44.1	45.7	+7.9
Non-Building Construction	822	1,023	1,383	+68.2	39.4	40.8	42.0	+6.5
Forestry & Logging	1,932	1,542	1,242	-35.7	34.5	36.1	39.6	+14.8
Paper & Paper Product Manufacturing	1,875	1,581	1,236	-34.1	41.4	43.4	45.8	+10.7
Other Education	687	903	1,176	+71.2	41.4	42.5	45.0	+8.5
Grain, Sheep & Beef Cattle Farming	1,050	921	1,146	+9.1	46.8	47.9	49.7	+6.1
Builders Supplies Wholesaling	885	954	1,140	+28.8	38.0	40.3	41.2	+8.5
Clothing & Soft Good Retailing	936	867	1,119	+19.6	40.4	42.2	40.2	-0.6
Machinery & Equipment Wholesaling	816	1,062	1,092	+33.8	38.2	40.1	41.4	+8.3
Deposit Taking Financiers	1,011	840	1,068	+5.6	37.0	40.3	41.6	+12.4
Public Order & Safety Services	774	843	1,026	+32.6	39.4	40.8	43.2	+9.5
Post School Education	486	729	1,011	+108.0	42.1	43.5	44.9	+6.6
Industries employing over 1,000 persons in 2006	60,030	67,533	79,230	+32.0				
Bay of Plenty Region: Total Employed Labour Force	91,767	100,755	118,473	+29.1	39.1	41.1	42.3	+8.2



Appendix 1.1: Population Size and Growth by Enumeration Measure, Bay of Plenty Region and Total New Zealand 1986-2013

		Bay of Plenty REGION		New Zealand	
		Population Number	% Change from previous year	Population Number	% Change from previous year
Estimated Defacto Population (Adjusted for 1991 Census) (March Years) ⁽¹⁾	1986	194,622	...	3,307,084	...
	1987	196,500	+1.0	3,315,410	+0.3
	1988	199,500	+1.5	3,339,160	+0.7
	1989	201,200	+0.9	3,347,140	+0.2
	1990	203,700	+1.2	3,373,400	+0.8
Estimated Defacto Population (unadjusted for Census 1996) (March Years) ⁽¹⁾	1991	208,163	...	3,515,980	...
	1992	210,500	+1.1	3,552,240	+1.0
	1993	213,800	+1.6	3,597,850	+1.3
	1994	217,700	+1.8	3,648,260	+1.4
	1995	221,600	+1.8	3,706,710	+1.6
Estimated Usual Resident Population (June Years) ⁽²⁾	1996	230,600	....	3,732,000	....
	1997	235,400	+2.1	3,781,300	+1.3
	1998	239,600	+1.8	3,815,000	+0.9
	1999	242,500	+1.2	3,835,100	+0.5
	2000	245,200	+1.1	3,857,700	+0.6
	2001	246,900	+0.7	3,880,500	+0.6
	2002	250,700	+1.5	3,948,500	+1.8
	2003	255,000	+1.7	4,027,200	+2.0
	2004	259,100	+1.6	4,087,500	+1.5
	2005	262,200	+1.2	4,133,900	+1.1
	2006	265,300	+1.2	4,184,600	+1.2
	2007	267,700	+0.9	4,228,300	+1.0
	2008	269,900	+0.8	4,268,900	+1.0
	2009	272,300	+0.9	4,315,800	+1.1
	2010	275,100	+1.0	4,367,800	+1.2
	2011	277,100	+0.7	4,405,200	+0.9
	2012	277,300	+0.1	4,433,000	+0.6
2013	278,100	+0.3	4,470,800	+0.9	
1986-2013*		+83,478	+42.9	+1,163,716	+35.2

Source: (1) Statistics New Zealand, Yearbook collection 1893-2012

(2) Estimated Resident Population for Regional Council and Territorial Authority Areas, at 30 June(1996+) (Annual-Jun)

Table reference: DPE051AA and DPE052AA, Boundaries at 1 January 2013. Last updated: 22 October 2013 10:45am

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous



Appendix 1.2: Population Size and Growth, Bay of Plenty Region and its Territorial Authorities, 1986-2012

		Tauranga City	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty
Census Night Resident Population (Census-)	1986	60194	26912	62912	31185	8311	8134	194622
	1987	61300	27500	62900	31400	8250	8220	196500
	1988	62700	28200	63500	31600	8250	8370	199500
	1989	63700	28500	63900	31700	8200	8480	201200
	1990	64900	29100	64200	31900	8150	8590	203700
Census Night Resident Population (unadjusted for)	1991	67333	30137	65096	32112	8135	8676	208163
	1992	68700	30800	65100	32300	8110	8850	210500
	1993	70200	31600	65700	32500	8090	8980	213800
	1994	72300	32300	66400	32800	8080	9120	217700
	1995	74700	33000	67000	33100	8000	9250	221600
Estimated Usual Resident Population (June Years) ⁽²⁾	1996	79800	35600	66600	34200	8120	9630	230600
	1997	83200	36500	66900	34400	8010	9600	235400
	1998	86400	37400	67300	34400	7860	9610	239600
	1999	89100	38000	67100	34300	7670	9610	242500
	2000	91600	38700	67000	34200	7460	9610	245200
	2001	93500	39000	66900	34100	7290	9490	246900
	2002	96000	39700	67400	34200	7310	9470	250700
	2003	99000	40600	67900	34200	7290	9460	255000
	2004	101900	41400	68100	34400	7230	9440	259100
	2005	104600	42300	68000	34300	7200	9330	262200
	2006	106900	43000	68100	34500	7150	9200	265300
	2007	109100	43600	68000	34400	7070	9140	267700
	2008	110700	44200	68100	34400	7050	9060	269900
2009	112600	44800	68200	34300	7010	9020	272300	
2010	114300	45400	68600	34400	6990	9000	275100	
2011	115700	45800	68900	34500	6940	8950	277100	
2012	116400	45700	68800	34400	6910	8710	277300	
1986-2012*		56,206	18,788	5,888	3,215	-1,401	576	82,678

Source: (1) Statistics New Zealand, Infoshare, Tables DPE052AA and DPE051AA

(2) Statistics NZ, Infoshare, Estimated Resident Population for Territorial Authority and Regional Council Areas, at 30 June (1996+) (Annual-Jun)

Notes: *Changes in the timing and method of estimating Resident Population between 1991-1992 and 1995-1996 mean that the three sets of trends should be understood as discontinuous



Appendix 1.3: Percentage Point Contribution to Annual Net Change due to Natural Increase, Bay of Plenty Region and its Territorial Authorities, 1991-2012

		Tauranga City	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty	Total New Zealand
March Year	1991	...	...	...	...	...	...	...	...
	1992	0.59	0.94	1.27	1.52	2.02	1.64	1.08	0.95
	1993	0.44	0.79	1.22	1.19	2.13	1.44	0.94	0.89
	1994	0.57	0.67	1.29	1.24	1.99	1.37	0.98	0.87
	1995	0.46	0.78	1.11	1.24	1.73	1.34	0.89	0.84
June Year	1996	...	...	...	...	...	...	...	...
	1997	0.59	0.66	1.16	0.97	1.37	0.88	0.84	0.79
	1998	0.67	0.67	1.18	0.99	1.24	0.90	0.87	0.78
	1999	0.61	0.70	0.98	0.92	1.20	0.93	0.79	0.75
	2000	0.61	0.67	1.12	0.88	0.94	0.84	0.81	0.79
	2001	0.58	0.49	0.91	0.80	0.98	0.63	0.69	0.76
	2002	0.48	0.36	0.81	0.82	1.43	0.91	0.63	0.67
	2003	0.48	0.45	0.85	0.72	1.07	0.67	0.61	0.69
	2004	0.53	0.51	0.90	0.89	1.11	0.78	0.69	0.74
	2005	0.55	0.60	0.96	0.67	1.01	0.64	0.68	0.72
	2006	0.50	0.50	0.99	0.92	1.04	0.46	0.68	0.75
	2007	0.57	0.48	0.87	0.77	0.53	0.70	0.64	0.79
	2008	0.64	0.55	0.98	0.76	1.22	0.63	0.73	0.84
	2009	0.57	0.46	0.97	0.66	0.89	0.65	0.66	0.80
	2010	0.61	0.49	0.91	0.58	0.97	0.37	0.64	0.82
	2011	0.66	0.38	0.94	0.84	0.70	0.53	0.69	0.76
	2012	0.59	0.41	0.74	0.63	0.98	0.50	0.60	0.71

Source: Compiled from Statistics New Zealand Infoshare: Estimated Resident Population, Table DPE051AA; Births, Table VSB016AA; Deaths, Table VSD018AA

(a) 1991-1995 Estimated Defacto; 1996-2011 Estimated Usually Resident Population (URP)



Appendix 1.4: Percentage Point Contribution to Annual Net Change due to Net Migration, Bay of Plenty Region and its Territorial Authorities, 1991-2012

		Tauranga City	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty	Total New Zealand
March Year	1991	...	...	...	...	...	...	...	...
	1992	1.44	1.26	-1.27	-0.93	-2.32	0.37	0.05	0.08
	1993	1.74	1.81	-0.29	-0.57	-2.38	0.03	0.63	0.40
	1994	2.43	1.55	-0.22	-0.32	-2.11	0.19	0.85	0.53
	1995	2.86	1.38	-0.21	-0.32	-2.72	0.09	0.91	0.76
June Year	1996	...	...	...	...	...	...	...	...
	1997	3.68	1.87	-0.71	-0.39	-2.72	-1.19	1.24	0.53
	1998	3.18	1.80	-0.58	-0.99	-3.11	-0.79	0.91	0.11
	1999	2.52	0.90	-1.28	-1.22	-3.61	-0.93	0.42	-0.22
	2000	2.19	1.17	-1.27	-1.17	-3.68	-0.84	0.31	-0.20
	2001	1.50	0.28	-1.06	-1.09	-3.26	-1.88	0.01	-0.17
	2002	2.19	1.43	-0.06	-0.52	-1.15	-1.12	0.91	1.08
	2003	2.65	1.82	-0.11	-0.72	-1.34	-0.77	1.10	1.30
	2004	2.40	1.46	-0.61	-0.31	-1.93	-0.99	0.92	0.76
	2005	2.10	1.57	-1.11	-0.96	-1.42	-1.80	0.52	0.41
	2006	1.70	1.16	-0.84	-0.34	-1.74	-1.85	0.50	0.48
	2007	1.49	0.91	-1.01	-1.06	-1.65	-1.35	0.26	0.25
	2008	0.83	0.83	-0.83	-0.76	-1.50	-1.51	0.09	0.12
	2009	1.15	0.90	-0.82	-0.95	-1.46	-1.09	0.23	0.30
	2010	0.90	0.85	-0.32	-0.29	-1.26	-0.59	0.38	0.39
	2011	0.57	0.50	-0.50	-0.55	-1.42	-1.09	0.04	0.09
	2012	0.02	-0.63	-0.89	-0.92	-1.41	-3.18	-0.53	-0.08

Source: Compiled from Statistics New Zealand Infoshare: Estimated Resident Population, Table DPE051AA; Births, Table VSB016AA; Deaths, Table VSD018AA

(a) 1991-1995 Estimated Defacto; 1996-2011 Estimated Usually Resident Population (URP)



Appendix 2.1: Components of Change by Age (Bay of Plenty Region 1996-2001)

<i>Bay of Plenty Region</i>	Actual (Observed) 1996	Expected 2001	Actual (Observed) 2001	Actual (Observed) Change 1996-2001	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 1996-2001	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
0-4 Years	19,620	18,863	18,940	-680	77	-128	-629	-3.5	0.4	-0.7	-3.2
5-9 Years	19,960	19,591	20,510	550	919	-29	-340	2.8	4.6	-0.1	-1.7
10-14 Years	18,160	19,944	20,950	2,790	1,006	-16	1,800	15.4	5.5	-0.1	9.9
15-19 Years	15,990	18,119	16,900	910	-1,219	-41	2,170	5.7	-7.6	-0.3	13.6
20-24 Years	14,180	15,920	12,560	-1,620	-3,360	-70	1,810	-11.4	-23.7	-0.5	12.8
25-29 Years	15,310	14,116	14,150	-1,160	34	-64	-1,130	-7.6	0.2	-0.4	-7.4
30-34 Years	17,320	15,242	16,530	-790	1,288	-68	-2,010	-4.6	7.4	-0.4	-11.6
35-39 Years	17,510	17,235	18,380	870	1,145	-85	-190	5.0	6.5	-0.5	-1.1
40-44 Years	15,790	17,399	18,500	2,710	1,101	-111	1,720	17.2	7.0	-0.7	10.9
45-49 Years	14,820	15,638	16,380	1,560	742	-152	970	10.5	5.0	-1.0	6.5
50-54 Years	11,970	14,586	15,380	3,410	794	-234	2,850	28.5	6.6	-2.0	23.8
55-59 Years	10,750	11,659	12,380	1,630	721	-311	1,220	15.2	6.7	-2.9	11.3
60-64 Years	9,550	10,301	11,400	1,850	1,099	-449	1,200	19.4	11.5	-4.7	12.6
65-69 Years	9,610	8,908	9,730	120	822	-642	-60	1.2	8.6	-6.7	-0.6
70-74 Years	8,300	8,584	9,200	900	616	-1,026	1,310	10.8	7.4	-12.4	15.8
75-79 Years	5,830	6,925	7,280	1,450	355	-1,375	2,470	24.9	6.1	-23.6	42.4
80-84 Years	3,600	4,333	4,520	920	187	-1,497	2,230	25.6	5.2	-41.6	61.9
85-89 Years	1,684	2,180	2,230	546	50	-1,420	1,916	32.4	3.0	-84.3	113.7
90+ Years	706	916	980	274	64	-1,474	1,684	38.9	9.0	-208.9	238.7
Total	230,660	240,457	246,900	16,240	6,443	-9,194	18,991	7.0	2.8	-4.0	8.2

Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorshp 1995-2007

Notes: ~ As a percentage of Previous Observed Population



Appendix 2.2: Components of Change by Age (Bay of Plenty Region 2001-2006)

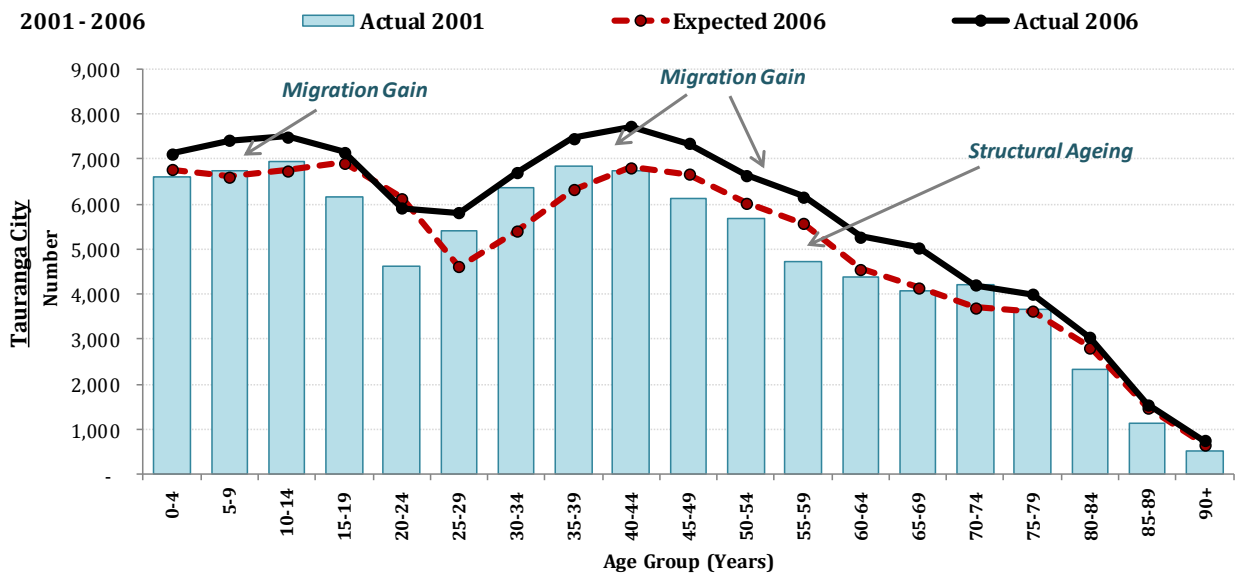
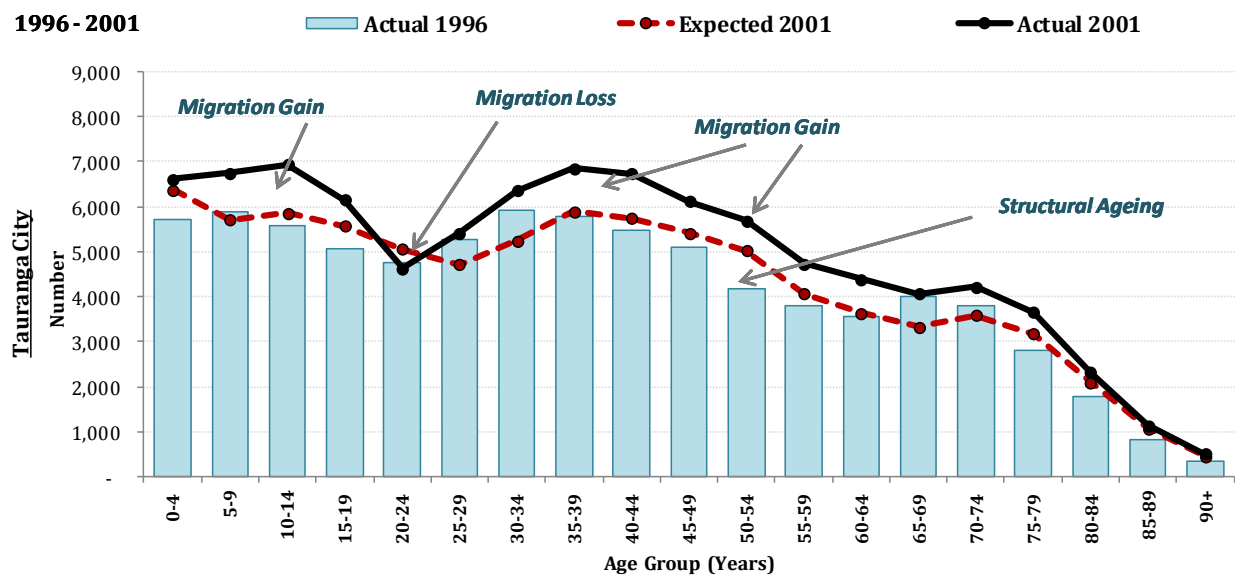
<i>Bay of Plenty Region</i>	Actual (Observed) 2001	Expected 2001	Actual (Observed) 2006	Actual (Observed) Change 2001-2006	Change due to Migration	Change due to Deaths	Change to cohort size	Actual (Observed) change 2001-2006	Change due to Migration ~	Change due to Deaths~	Change to cohort size~
	Number							Percentage (%)			
0-4 Years	18,940	18,338	18,750	-190	412	-107	-495	-1.0	2.2	-0.6	-2.6
5-9 Years	20,510	18,916	20,120	-390	1,204	-24	-1,570	-1.9	5.9	-0.1	-7.7
10-14 Years	20,950	20,496	21,450	500	954	-14	-440	2.4	4.6	-0.1	-2.1
15-19 Years	16,900	20,910	19,200	2,300	-1,710	-40	4,050	13.6	-10.1	-0.2	24.0
20-24 Years	12,560	16,840	13,350	790	-3,490	-60	4,340	6.3	-27.8	-0.5	34.6
25-29 Years	14,150	12,513	13,700	-450	1,187	-47	-1,590	-3.2	8.4	-0.3	-11.2
30-34 Years	16,530	14,097	16,100	-430	2,003	-53	-2,380	-2.6	12.1	-0.3	-14.4
35-39 Years	18,380	16,455	18,260	-120	1,805	-75	-1,850	-0.7	9.8	-0.4	-10.1
40-44 Years	18,500	18,268	19,700	1,200	1,432	-112	-120	6.5	7.7	-0.6	-0.6
45-49 Years	16,380	18,335	19,270	2,890	935	-165	2,120	17.6	5.7	-1.0	12.9
50-54 Years	15,380	16,157	17,160	1,780	1,003	-223	1,000	11.6	6.5	-1.5	6.5
55-59 Years	12,380	15,047	15,980	3,600	933	-333	3,000	29.1	7.5	-2.7	24.2
60-64 Years	11,400	11,948	13,070	1,670	1,122	-432	980	14.6	9.8	-3.8	8.6
65-69 Years	9,730	10,765	11,890	2,160	1,125	-635	1,670	22.2	11.6	-6.5	17.2
70-74 Years	9,200	8,857	9,310	110	453	-873	530	1.2	4.9	-9.5	5.8
75-79 Years	7,280	7,872	8,170	890	298	-1,328	1,920	12.2	4.1	-18.2	26.4
80-84 Years	4,520	5,606	5,700	1,180	94	-1,674	2,760	26.1	2.1	-37.0	61.1
85-89 Years	2,230	2,873	2,808	579	-64	-1,647	2,290	25.9	-2.9	-73.9	102.7
90+ Years	980	1,286	1,352	371	66	-1,924	2,230	37.9	6.7	-196.3	227.5
Total	246,900	255,579	265,340	18,440	9,761	-9,766	18,445	7.5	4.0	-4.0	7.5

Source: Jackson/from Statistics New Zealand ERP and New Zealand Survivorshp 1995-2007

Notes: ~ As a percentage of Previous Observed Population



Appendix 2.3: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Tauranga City

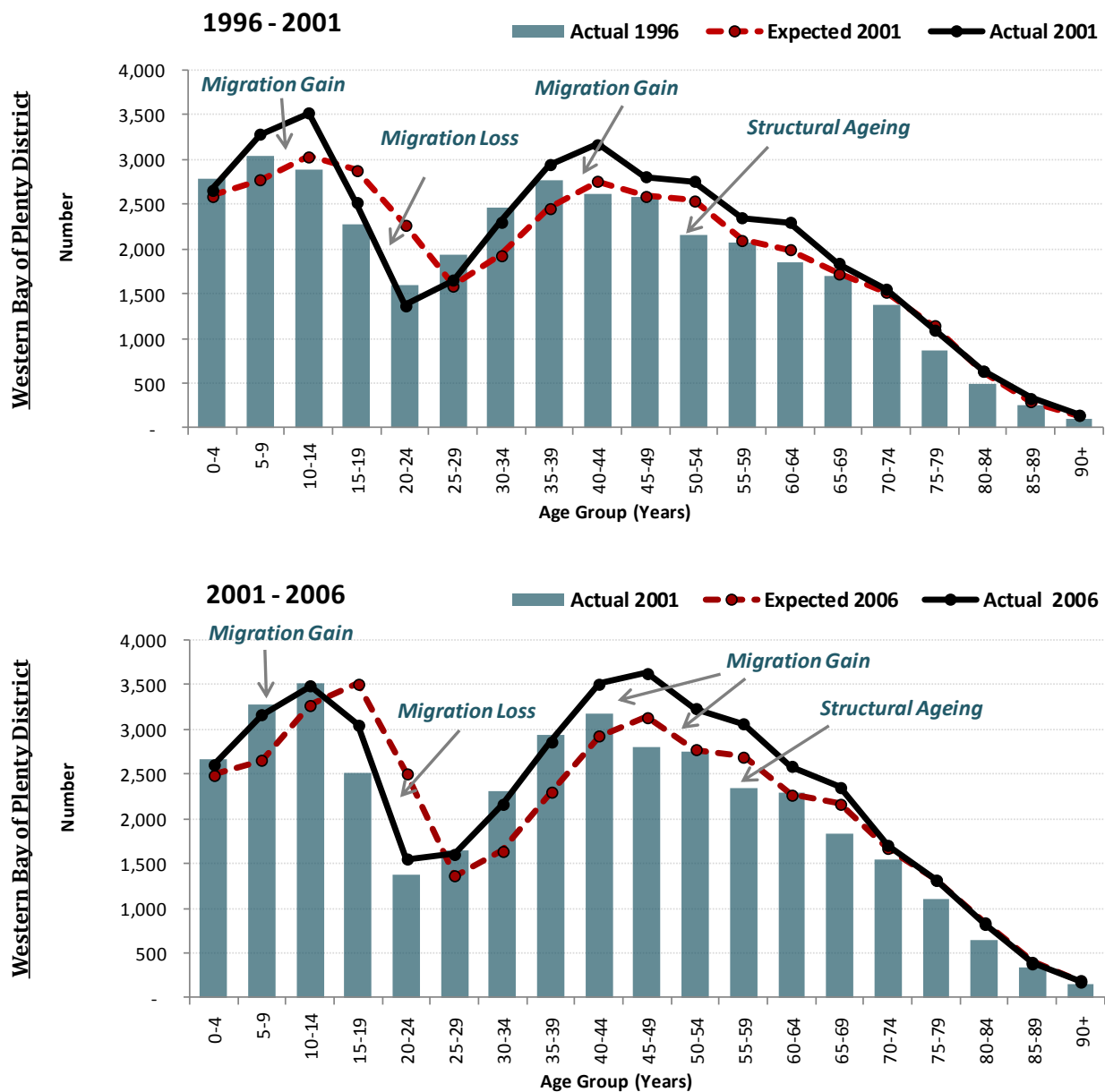


Source: Statistics NZ

Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



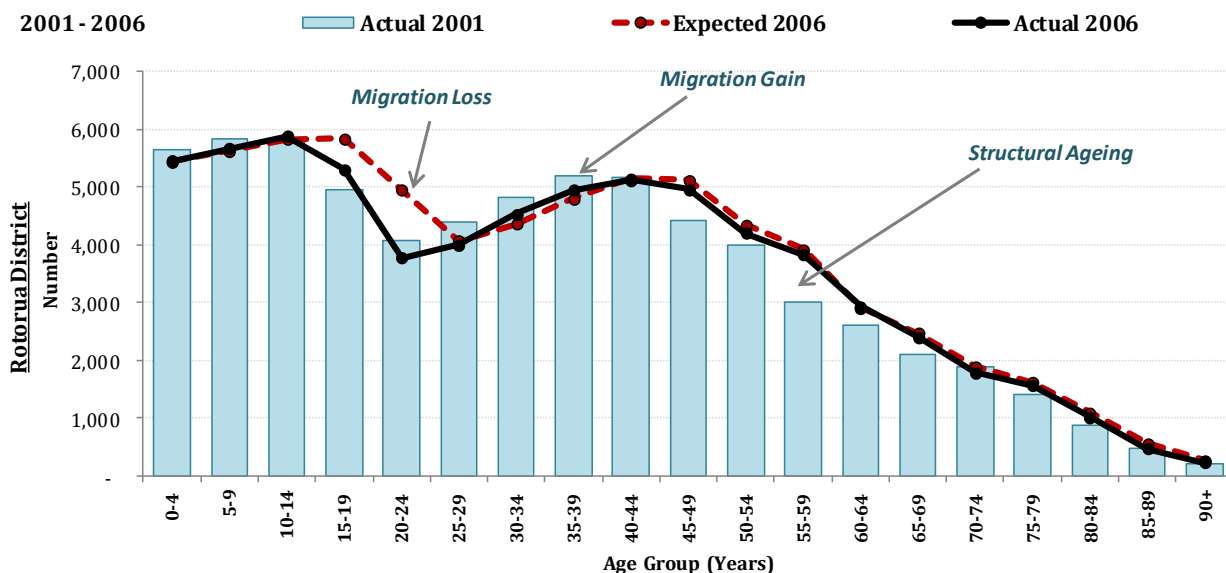
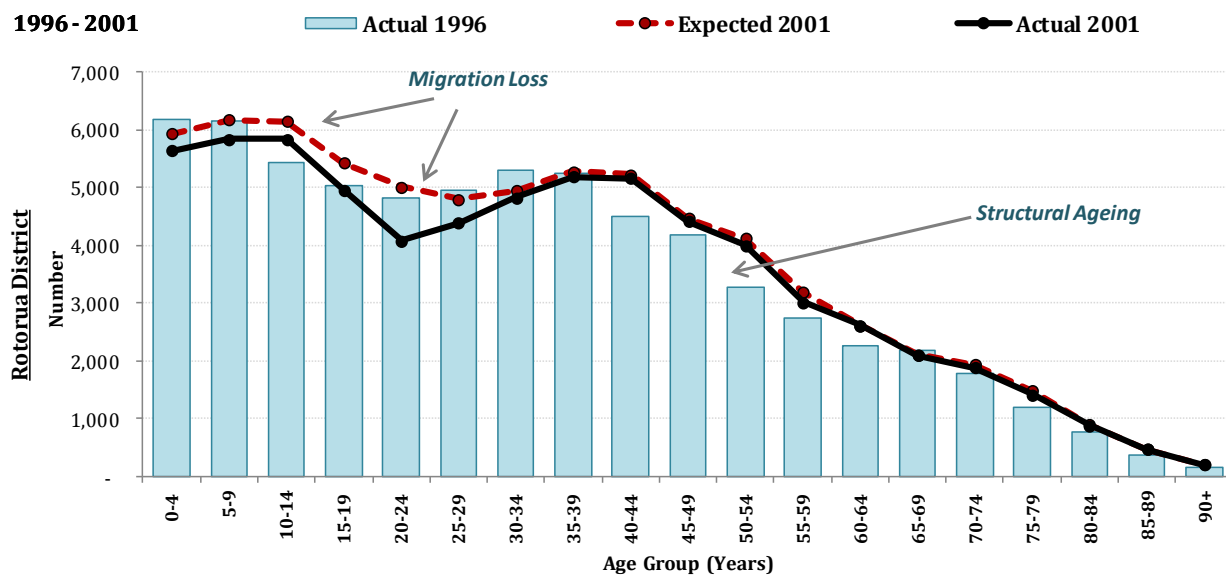
Appendix 2.4: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Western Bay of Plenty District



Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorshp 1995-2007



Appendix 2.5: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Rotorua District

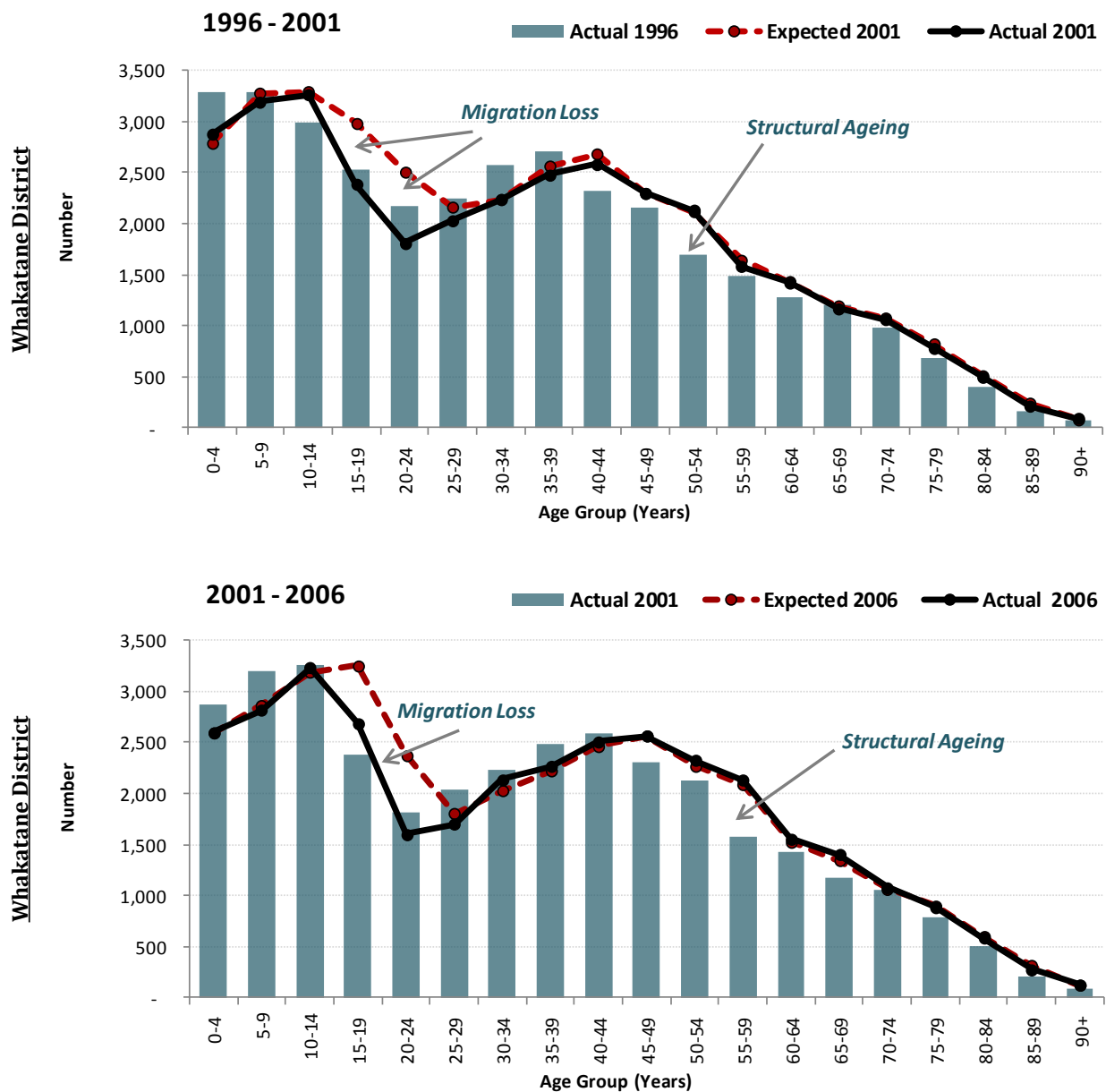


Source: Statistics NZ

Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



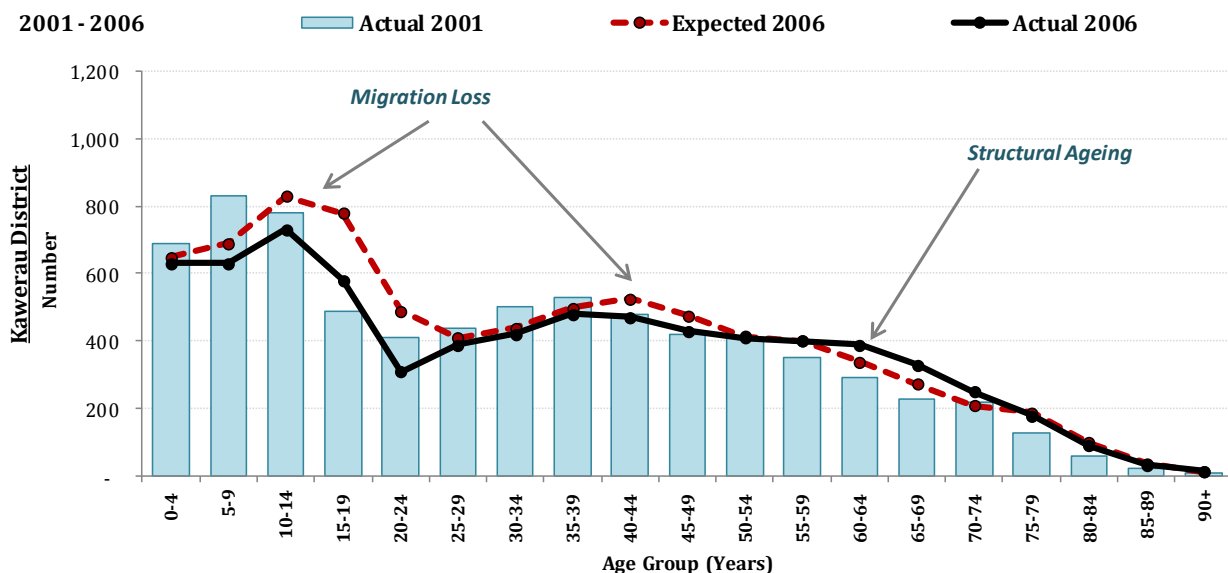
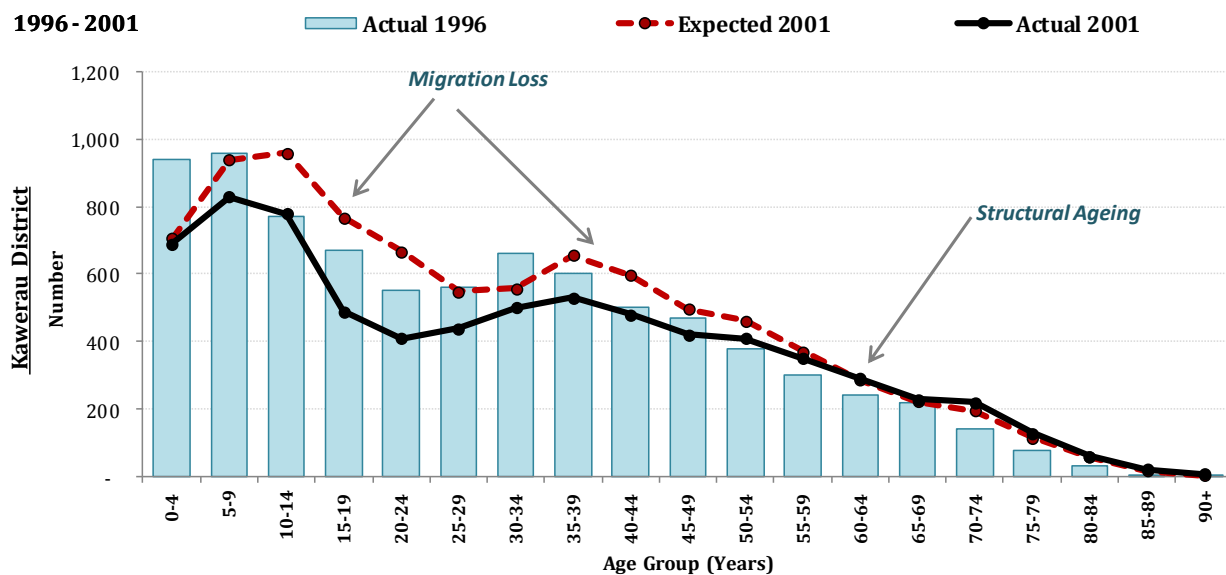
Appendix 2.6: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Whakatāne District



Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



Appendix 2.7: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Kawerau District

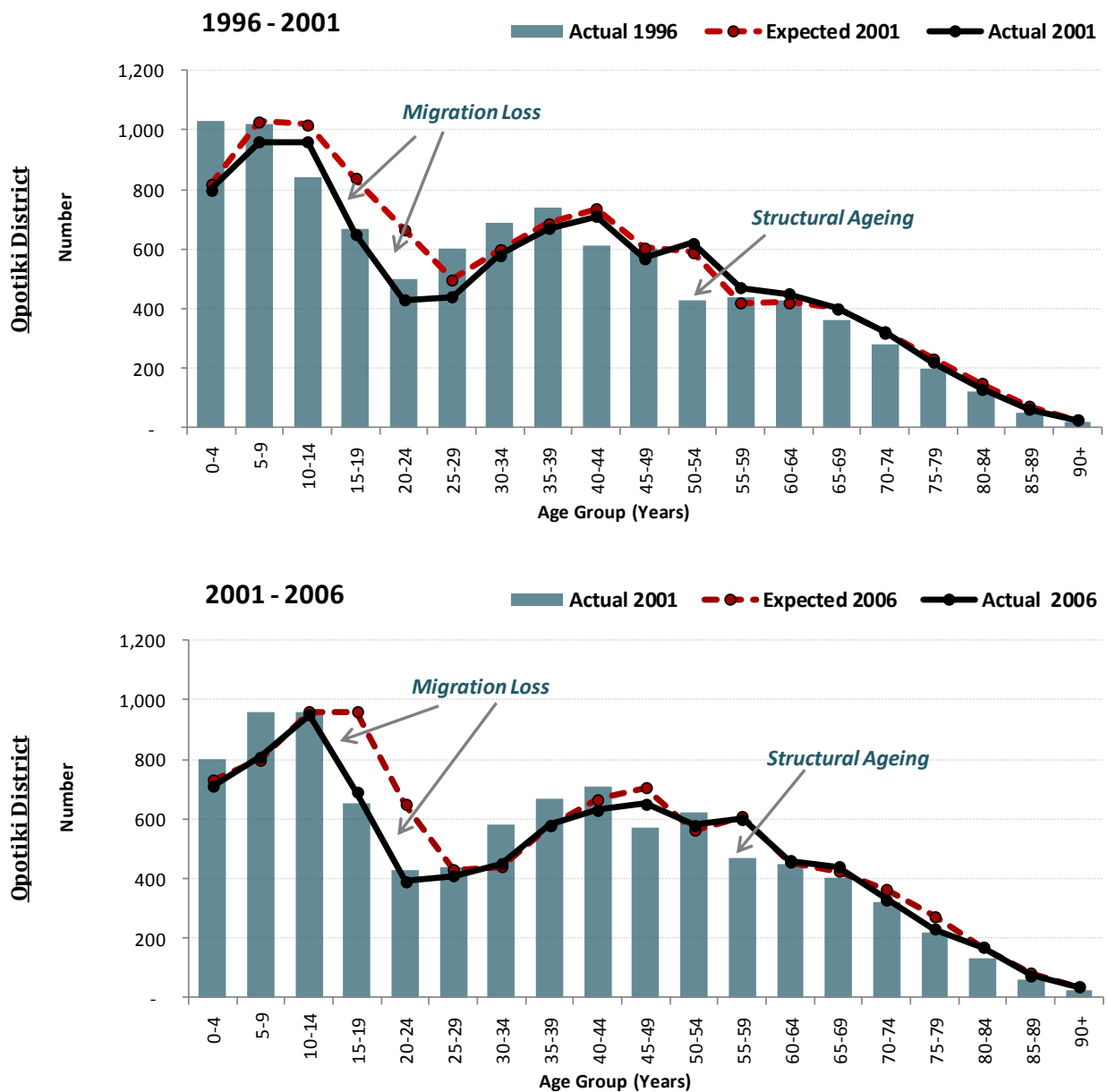


Source: Statistics NZ

Jackson/from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



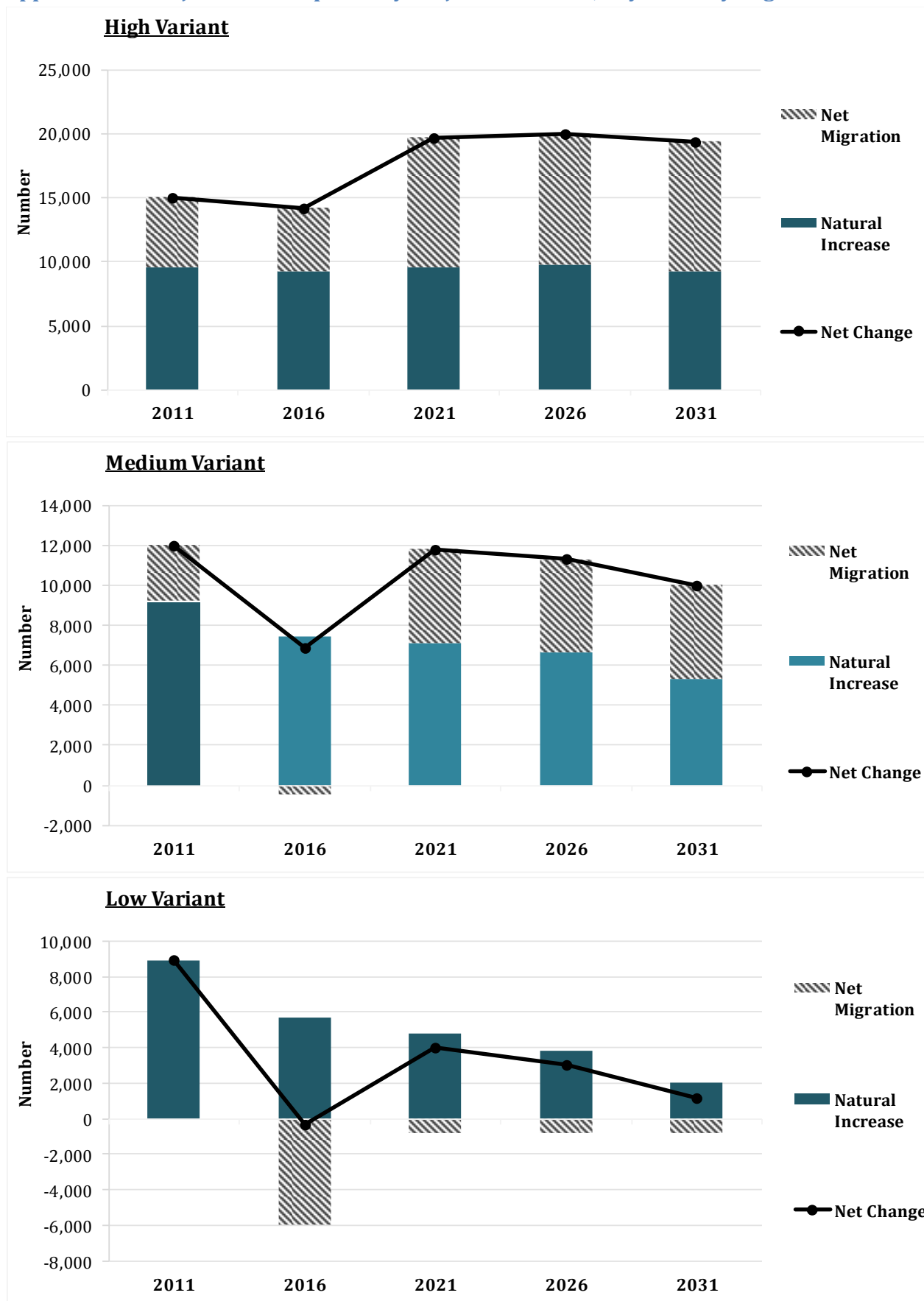
Appendix 2.8: Expected and Actual Population by Age, 1996-2001 and 2001-2006, Ōpōtiki District



Source: Jackson/ from Statistics New Zealand ERP and New Zealand Survivorship 1995-2007



Appendix 3.1: Projected Assumptions by Projection Variant, Bay of Plenty Region



Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)



Appendix 3.2: Projection Assumptions by Variant, Bay of Plenty Region

Bay of Plenty Region	2011	2016	2021	2026	2031	Change 2011-2031 (%)
HIGH						
Births (Live) - 5 years ended 30 June	20400	20600	21700	22800	23400	14.7
Deaths - 5 years ended 30 June	10900	11400	12200	13000	14100	29.4
Natural Increase - 5 years ended 30 June	9500	9200	9500	9800	9200	-3.2
Net Migration - 5 years ended 30 June	5500	5000	10200	10200	10200	85.5
Population at 30 June	280400	294600	314300	334400	353800	26.2
Median Age (Years) at 30 June	39.1	40.1	40.5	40.9	41.8	6.9
MEDIUM						
Births (Live) - 5 years ended 30 June	20100	19100	19500	19800	19600	-2.5
Deaths - 5 years ended 30 June	10900	11700	12400	13200	14300	31.2
Natural Increase - 5 years ended 30 June	9200	7400	7100	6600	5300	-42.4
Net Migration - 5 years ended 30 June	2800	-500	4700	4700	4700	67.9
Population at 30 June	277300	284200	296000	307300	317400	14.5
Median Age (Years) at 30 June	39.1	40.4	41	41.6	42.7	9.2
LOW						
Births (Live) - 5 years ended 30 June	19900	17600	17400	17100	16200	-18.6
Deaths - 5 years ended 30 June	11000	11900	12600	13200	14300	30.0
Natural Increase - 5 years ended 30 June	8900	5700	4800	3800	2000	-77.5
Net Migration - 5 years ended 30 June	0	-6000	-800	-800	-800	...
Population at 30 June	274200	273900	277800	280800	282000	2.8
Median Age (Years) at 30 June	39.2	40.7	41.5	42.4	43.6	11.2

Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)



Appendix 3.3: Projected Population, Total New Zealand, 2006-2031 (Medium Series)

	Numbers by age						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	888,320	894,460	895,880	918,410	922,190	934,760	+4.5
15-24 years	604,740	642,420	627,810	604,110	620,770	635,360	-1.1
25-39 years	858,960	856,580	912,400	1,004,920	1,045,250	1,033,890	+20.7
40-54 years	891,290	930,220	903,540	854,150	852,610	919,050	-1.2
55-64 years	429,670	494,440	544,290	592,840	596,600	564,790	+14.2
65-74 years	275,700	325,440	400,300	465,990	518,940	568,860	+74.8
75-84 years	177,780	188,510	215,810	261,810	330,290	390,510	+107.2
85+ years	58,140	73,110	86,190	95,790	117,780	147,350	+101.5
Total	4,184,600	4,405,180	4,586,220	4,798,020	5,004,430	5,194,570	+17.9
65+ years	511,620	587,060	702,300	823,590	967,010	1,106,720	+88.5
	Intercensal Change by Age (Numbers)						Change (N)
	2006-2011	2011-2016	2016-2021	2021-2026	2026-2031	2011-2031	
0-14 years	...	6,140	1,420	22,530	3,780	12,570	40,300
15-24 years	...	37,680	(14,610)	(23,700)	16,660	14,590	(7,060)
25-39 years	...	(2,380)	55,820	92,520	40,330	(11,360)	177,310
40-54 years	...	38,930	(26,680)	(49,390)	(1,540)	66,440	(11,170)
55-64 years	...	64,770	49,850	48,550	3,760	(31,810)	70,350
65-74 years	...	49,740	74,860	65,690	52,950	49,920	243,420
75-84 years	...	10,730	27,300	46,000	68,480	60,220	202,000
85+ years	...	14,970	13,080	9,600	21,990	29,570	74,240
Total	...	220,580	181,040	211,800	206,410	190,140	789,390
65+ years	...	75,440	115,240	121,290	143,420	139,710	519,660
	Age Distribution (% at each age group)						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
0-14 years	21.2	20.3	19.5	19.1	18.4	18.0	-11.4
15-24 years	14.5	14.6	13.7	12.6	12.4	12.2	-16.1
25-39 years	20.5	19.4	19.9	20.9	20.9	19.9	+2.4
40-54 years	21.3	21.1	19.7	17.8	17.0	17.7	-16.2
55-64 years	10.3	11.2	11.9	12.4	11.9	10.9	-3.1
65-74 years	6.6	7.4	8.7	9.7	10.4	11.0	+48.2
75-84 years	4.2	4.3	4.7	5.5	6.6	7.5	+75.7
85+ years	1.4	1.7	1.9	2.0	2.4	2.8	+70.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	+0.0
65+ years	12.2	13.3	15.3	17.2	19.3	21.3	+59.9
	Summary Measures						Change (%)
	2006	2011	2016	2021	2026	2031	2011-2031
LM Entrants/Exits							
(15-24/55-64 years)	1.4	1.3	1.2	1.0	1.0	1.1	-13.4
(20-29/60-69 years)	1.6	1.5	1.4	1.2	1.1	1.1	-25.4
Elderly/Children	0.6	0.7	0.8	0.9	1.0	1.2	+80.4
Reproductive (20-39 yrs)	27.5	26.8	27.1	27.5	27.0	26.3	-2.0
Proportion 65+ years	12.2	13.3	15.3	17.2	19.3	21.3	+59.9
Proportion 75+ years	5.6	5.9	6.6	7.5	9.0	10.4	+74.3
Growth (%) in 5 years	...	+5.3	+4.1	+4.6	+4.3	+3.8	+17.9
Annual average growth (%)	...	+1.1	+0.8	+0.9	+0.9	+0.8	+0.9

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Appendix 3.4: Projection Assumptions, Bay of Plenty Region TAs, 2011-2031 (Medium Series)

	2011	2016	2021	2026	2031	Change 2011-2031 (%)
Tauranga City						
Births (Live) - 5 years ended 30 June	8200	8100	8500	9000	9300	13.4
Deaths - 5 years ended 30 June	4700	5200	5500	5800	6300	34.0
Natural Increase - 5 years ended 30 June	3500	2900	3000	3200	3000	-14.3
Net Migration - 5 years ended 30 June	5400	3000	7000	7000	7000	29.6
Population at 30 June	115800	121700	131800	142000	151900	31.2
Median Age (Years) at 30 June	39.8	40.6	40.6	41.1	42	5.5
Western Bay of Plenty						
Births (Live) - 5 years ended 30 June	2700	2600	2700	2800	2700	0.0
Deaths - 5 years ended 30 June	1700	1900	2100	2300	2600	52.9
Natural Increase - 5 years ended 30 June	1000	700	600	500	200	-80.0
Net Migration - 5 years ended 30 June	1700	1000	1500	1500	1500	-11.8
Population at 30 June	45800	47500	49700	51700	53400	16.6
Median Age (Years) at 30 June	43.9	46	47.3	48	48.5	10.5
Rotorua						
Births (Live) - 5 years ended 30 June	5600	5200	5100	5000	4800	-14.3
Deaths - 5 years ended 30 June	2500	2500	2600	2800	3000	20.0
Natural Increase - 5 years ended 30 June	3200	2700	2500	2300	1800	-43.8
Net Migration - 5 years ended 30 June	-2400	-2400	-2000	-2000	-2000	-16.7
Population at 30 June	68900	69100	69600	69800	69700	1.2
Median Age (Years) at 30 June	35.5	36.5	37.4	38.4	39.9	12.4
Whakatane						
Births (Live) - 5 years ended 30 June	2600	2400	2300	2300	2100	-19.2
Deaths - 5 years ended 30 June	1400	1400	1500	1600	1700	21.4
Natural Increase - 5 years ended 30 June	1200	1000	800	700	400	-66.7
Net Migration - 5 years ended 30 June	-1200	-1200	-1000	-1000	-1000	-16.7
Population at 30 June	34500	34200	34100	33800	33200	-3.8
Median Age (Years) at 30 June	37.8	39.5	40.5	41.3	42.8	13.2
Kawerau						
Births (Live) - 5 years ended 30 June	610	540	510	480	420	-31.1
Deaths - 5 years ended 30 June	310	330	350	360	370	19.4
Natural Increase - 5 years ended 30 June	300	210	160	110	40	-86.7
Net Migration - 5 years ended 30 June	-500	-600	-500	-500	-500	0.0
Population at 30 June	6950	6560	6210	5830	5370	-22.7
Median Age (Years) at 30 June	35.2	36.7	37	37.9	39.6	12.5
Opotiki						
Births (Live) - 5 years ended 30 June	680	620	610	590	540	-20.6
Deaths - 5 years ended 30 June	410	410	420	430	450	9.8
Natural Increase - 5 years ended 30 June	270	210	190	160	90	-66.7
Net Migration - 5 years ended 30 June	-500	-500	-500	-500	-500	0.0
Population at 30 June	8960	8670	8370	8030	7610	-15.1
Median Age (Years) at 30 June	38.3	40	40.6	41	42.3	10.4

Source: Subnational Projected Population Characteristics, 2006(base)-2031 (October 2012 update)



Appendix 3.5: Projected Change by Broad Age Group (Numbers), Bay of Plenty Region and TAs, 2011-2031 (Medium Series)

	Tauranga City	Western Bay of Plenty	Rotorua	Whakatane	Kawerau	Opotiki	Bay of Plenty
0-14 years	4,600	150	(2,180)	(1,370)	(540)	(530)	150
15-24 years	1,980	(810)	(1,950)	(1,360)	(490)	(560)	(3,140)
25-39 years	7,350	1,310	620	00	(110)	90	9,180
40-54 years	2,230	(1,230)	(2,950)	(1,880)	(550)	(750)	(4,850)
55-64 years	3,440	290	210	(440)	(210)	(360)	2,910
65-74 years	7,440	3,470	3,350	1,700	(30)	300	16,050
75-84 years	6,180	3,010	2,820	1,660	210	390	14,080
85+ years	2,910	1,390	840	400	120	100	5,720
Total	36,130	7,580	760	(1,290)	(1,600)	(1,320)	40,100
65+ years	16,530	7,870	7,010	3,760	300	790	35,850

Source: Statistics New Zealand, Subnational Population Projections by Age and Sex, 2006(base)-2031 (October 2012 update)



Appendix 4.1: Average Age of Employed Labour Force by Employment Status, Bay of Plenty Region, 1996, 2001, 2006

Industry: All Industries	Male	Female	Total	Sex Ratio (Males/Females)	Average Age*
Bay of Plenty Region					
1996					
Self-Employed & Without Employees	7,734	3,708	11,442	2.1	45.9
Employer	5,589	2,655	8,244	2.1	45.1
Paid Employee	33,627	31,158	64,785	1.1	36.9
Unpaid Family Worker	1,665	2,160	3,825	0.8	43.8
NS/NEI	1,824	1,650	3,474	1.1	38.7
<i>All Employed</i>	<i>50,439</i>	<i>41,331</i>	<i>91,770</i>	<i>1.22</i>	<i>39.1</i>
2001					
Self-Employed & Without Employees	8,943	4,596	13,539	1.9	47.8
Employer	6,027	3,078	9,105	2.0	47.2
Paid Employee	35,922	36,414	72,336	1.0	38.8
Unpaid Family Worker	1,164	1,593	2,757	0.7	46.0
NS/NEI	1,629	1,383	3,012	1.2	42.6
<i>All Employed</i>	<i>53,685</i>	<i>47,064</i>	<i>100,749</i>	<i>1.14</i>	<i>41.1</i>
2006					
Self-Employed & Without Employees	9,759	5,403	15,162	1.8	49.1
Employer	6,699	3,438	10,137	1.9	48.4
Paid Employee	42,729	43,965	86,694	1.0	40.1
Unpaid Family Worker	1,200	1,689	2,889	0.7	48.6
NS/NEI	1,917	1,692	3,609	1.1	43.8
<i>All Employed</i>	<i>62,304</i>	<i>56,187</i>	<i>118,491</i>	<i>1.11</i>	<i>42.3</i>
Change 1996 - 2006					
Number	+11,865	+14,856	+26,721		
(%)	(+23.5)	(+35.9)	(+29.1)		
Employment Entry/Exit Ratio					
(15-24 years : 55+ years)	1.4	0.9	0.7		-49.1
Percentage aged 55+ years					
	12.7	16.4	20.8		+63.0
Sex Ratio by age (males/females)					
15-19 Years	1.2	1.1	1.1		-1.5
20-24 Years	1.2	1.2	1.2		-0.8
25-29 Years	1.2	1.2	1.2		-5.4
30-34 Years	1.2	1.1	1.1		-7.8
35-39 Years	1.2	1.1	1.0		-11.4
40-44 Years	1.1	1.0	1.0		-8.0
45-49 Years	1.1	1.0	1.0		-10.8
50-54 Years	1.2	1.1	1.0		-16.6
55-59 Years	1.3	1.2	1.1		-17.5
60-64 Years	1.8	1.4	1.4		-23.3
65+ Years	2.2	1.9	1.6		-26.8
<i>Total All Ages*</i>	<i>1.2</i>	<i>1.1</i>	<i>1.1</i>		<i>-9.1</i>

Source: Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

* Age not available for small cell sizes, thus summed totals by employment status are lower than summed totals by industry



Appendix 4.2: Average Age of Employed Labour Force by Employment Status, Bay of Plenty Region, 1996, 2001, 2006 School Education [N842]

Industry: School Education	Male	Female	Total	Sex Ratio (Males/Females)	Average Age*
Bay of Plenty Region					
1996					
Self-Employed & Without Employees	-	-	-	....	....
Employer	-	-	-	....	....
Paid Employee	1,137	2,934	4,071	0.4	42.9
Unpaid Family Worker	-	-	-	....	....
NS/NEI	3	-	3	....	27.5
<i>All Employed</i>	<i>1,140</i>	<i>2,934</i>	<i>4,074</i>	<i>0.39</i>	<i>42.8</i>
2001					
Self-Employed & Without Employees	39	63	102	0.6	47.6
Employer	-	27	27	0.0	48.6
Paid Employee	1,251	3,651	4,902	0.3	43.8
Unpaid Family Worker	-	15	15	0.0	37.5
NS/NEI	12	27	39	0.4	41.0
<i>All Employed</i>	<i>1,302</i>	<i>3,783</i>	<i>5,085</i>	<i>0.34</i>	<i>43.8</i>
2006					
Self-Employed & Without Employees	36	57	93	0.6	47.7
Employer	3	18	21	0.2	45.4
Paid Employee	1,278	3,867	5,145	0.3	45.0
Unpaid Family Worker	-	9	9	0.0	47.5
NS/NEI	6	15	21	0.4	43.2
<i>All Employed</i>	<i>1,323</i>	<i>3,966</i>	<i>5,289</i>	<i>0.33</i>	<i>45.1</i>

Change 1996 - 2006	Males	Females	Total
Number	+183	+1,032	+1,215
(%)	(+16.1)	(+35.2)	(+29.8)

	1996	2001	2006	Change 1996-2006 (%)
Employment Entry/Exit Ratio (15-24 years : 55+ years)	0.4	0.3	0.2	-54.1
Percentage aged 55+ years	13.2	15.5	21.0	+59.2
Sex Ratio by age (males/females)				
15-19 Years	0.9	0.6	0.6	-32.5
20-24 Years	0.3	0.3	0.3	-3.0
25-29 Years	0.3	0.3	0.3	+7.8
30-34 Years	0.4	0.4	0.3	-7.6
35-39 Years	0.3	0.3	0.3	+13.4
40-44 Years	0.3	0.3	0.2	-32.9
45-49 Years	0.4	0.3	0.3	-33.9
50-54 Years	0.5	0.4	0.3	-31.5
55-59 Years	0.5	0.5	0.5	+1.4
60-64 Years	0.5	0.4	0.5	-14.1
65+ Years	0.9	0.6	0.5	-47.5
<i>Total All Ages*</i>	<i>0.4</i>	<i>0.3</i>	<i>0.3</i>	<i>-14.1</i>

Source: Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

* Age not available for small cell sizes, thus summed totals by employment status are lower than summed totals by industry



Appendix 4.3: Average Age of Employed Labour Force by Employment Status, Bay of Plenty Region, 1996, 2001, 2006 Horticulture and Fruit Growing [A011]

Industry: Horticulture & Fruit Growing	Male	Female	Total	Sex Ratio (Males/Females)	Average Age*
Bay of Plenty Region					
1996					
Self-Employed & Without Employees	639	369	1,008	1.7	50.7
Employer	267	147	414	1.8	48.7
Paid Employee	750	687	1,437	1.1	38.1
Unpaid Family Worker	261	303	564	0.9	49.3
NS/NEI	27	27	54	1.0	43.9
<i>All Employed</i>	<i>1,944</i>	<i>1,533</i>	<i>3,477</i>	<i>1.27</i>	<i>44.9</i>
2001					
Self-Employed & Without Employees	636	402	1,038	1.6	53.4
Employer	324	210	534	1.5	51.1
Paid Employee	810	732	1,542	1.1	40.5
Unpaid Family Worker	174	225	399	0.8	50.5
NS/NEI	18	15	33	1.2	41.1
<i>All Employed</i>	<i>1,962</i>	<i>1,584</i>	<i>3,546</i>	<i>1.24</i>	<i>47.0</i>
2006					
Self-Employed & Without Employees	558	336	894	1.7	55.8
Employer	297	177	474	1.7	53.3
Paid Employee	912	786	1,698	1.2	42.0
Unpaid Family Worker	180	213	393	0.8	55.7
NS/NEI	12	12	24	1.0	51.3
<i>All Employed</i>	<i>1,959</i>	<i>1,524</i>	<i>3,483</i>	<i>1.29</i>	<i>48.7</i>

Change 1996 - 2006	Males	Females	Total
Number	+15	-09	+06
(%)	(+0.8)	(-0.6)	(+0.2)

	1996	2001	2006	Change 1996-2006 (%)
Employment Entry/Exit Ratio (15-24 years : 55+ years)	0.4	0.3	0.2	-41.7
Percentage aged 55+ years	26.4	32.3	39.0	+47.8
Sex Ratio by age (males/females)				
15-19 Years	2.0	1.7	1.7	-13.9
20-24 Years	1.5	1.6	1.3	-14.7
25-29 Years	1.2	1.1	1.4	+19.2
30-34 Years	1.2	1.1	1.2	+1.4
35-39 Years	1.1	0.9	1.2	+6.3
40-44 Years	0.9	1.0	1.0	+20.4
45-49 Years	1.0	1.2	1.2	+25.8
50-54 Years	1.2	1.0	1.1	-14.2
55-59 Years	1.2	1.3	1.1	-3.7
60-64 Years	1.7	1.4	1.6	-8.2
65+ Years	3.4	2.4	1.7	-49.8
<i>Total All Ages*</i>	<i>1.3</i>	<i>1.2</i>	<i>1.3</i>	<i>+1.4</i>

Source: Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

* Age not available for small cell sizes, thus summed totals by employment status are lower than summed totals by industry



Appendix 4.4: Average Age of Employed Labour Force by Employment Status, Bay of Plenty Region, 1996, 2001, 2006 Building and Construction [E411]

Industry: Building Construction	Male	Female	Total	Sex Ratio (Males/Females)	Average Age*
Bay of Plenty Region					
1996					
Self-Employed & Without Employees	540	60	600	9.0	42.8
Employer	288	39	327	7.4	43.6
Paid Employee	888	93	981	9.5	34.6
Unpaid Family Worker	33	36	69	0.9	41.0
NS/NEI	27	-	27	....	26.9
<i>All Employed</i>	<i>1,776</i>	<i>228</i>	<i>2,004</i>	<i>7.79</i>	<i>38.6</i>
2001					
Self-Employed & Without Employees	651	51	702	12.8	44.9
Employer	273	57	330	4.8	44.8
Paid Employee	774	102	876	7.6	37.3
Unpaid Family Worker	12	30	42	0.4	38.2
NS/NEI	3	-	3	....	62.5
<i>All Employed</i>	<i>1,713</i>	<i>240</i>	<i>1,953</i>	<i>7.14</i>	<i>41.4</i>
2006					
Self-Employed & Without Employees	849	84	933	10.1	46.7
Employer	453	93	546	4.9	45.2
Paid Employee	1,575	186	1,761	8.5	35.5
Unpaid Family Worker	30	45	75	0.7	44.5
NS/NEI	12	-	12	....	46.3
<i>All Employed</i>	<i>2,919</i>	<i>408</i>	<i>3,327</i>	<i>7.15</i>	<i>40.5</i>

Change 1996 - 2006	Males	Females	Total
Number	+1,143	+180	+1,323
(%)	(+64.4)	(+78.9)	(+66.0)

	1996	2001	2006	Change 1996-2006 (%)
Employment Entry/Exit Ratio (15-24 years : 55+ years)	1.7	0.8	1.0	-37.2
Percentage aged 55+ years	10.0	15.2	17.9	+78.0
Sex Ratio by age (males/females)				
15-19 Years	37.0	26.0	44.0	+18.9
20-24 Years	13.6	10.0	28.0	+105.9
25-29 Years	7.9	6.4	13.0	+65.1
30-34 Years	7.9	6.8	5.9	-25.6
35-39 Years	5.8	5.9	4.4	-24.6
40-44 Years	6.8	6.8	3.5	-48.4
45-49 Years	5.8	6.3	8.8	+52.8
50-54 Years	5.3	7.6	5.2	-2.7
55-59 Years	19.5	6.5	8.0	-59.0
60-64 Years	8.5	9.0	6.4	-24.2
65+ Years	...	8.0	7.0	...
<i>Total All Ages*</i>	<i>7.8</i>	<i>7.1</i>	<i>7.2</i>	<i>-8.2</i>

Source: Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

* Age not available for small cell sizes, thus summed totals by employment status are lower than summed totals by industry



Appendix 4.5: Average Age of Employed Labour Force by Employment Status, Bay of Plenty Region, 1996, 2001, 2006 Supermarket and Grocery Stores [G511]

Industry: Supermarket & Grocery Stores	Male	Female	Total	Sex Ratio (Males/Females)	Average Age*
Bay of Plenty Region					
1996					
Self-Employed & Without Employees	57	48	105	1.2	44.2
Employer	75	69	144	1.1	45.2
Paid Employee	612	1,419	2,031	0.4	28.1
Unpaid Family Worker	18	30	48	0.6	36.3
NS/NEI	12	21	33	0.6	26.1
<i>All Employed</i>	<i>774</i>	<i>1,587</i>	<i>2,361</i>	<i>0.49</i>	<i>30.0</i>
2001					
Self-Employed & Without Employees	42	36	78	1.2	44.2
Employer	75	69	144	1.1	44.7
Paid Employee	792	1,608	2,400	0.5	30.4
Unpaid Family Worker	15	18	33	0.8	38.9
NS/NEI	6	-	6	....	22.5
<i>All Employed</i>	<i>930</i>	<i>1,731</i>	<i>2,661</i>	<i>0.54</i>	<i>31.6</i>
2006					
Self-Employed & Without Employees	48	45	93	1.1	46.0
Employer	81	48	129	1.7	46.6
Paid Employee	978	1,857	2,835	0.5	32.2
Unpaid Family Worker	15	18	33	0.8	42.5
NS/NEI	6	3	9	2.0	29.2
<i>All Employed</i>	<i>1,128</i>	<i>1,971</i>	<i>3,099</i>	<i>0.57</i>	<i>33.3</i>

Change 1996 - 2006	Males	Females	Total
Number	+354	+384	+738
(%)	(+45.7)	(+24.2)	(+31.3)

	1996	2001	2006	Change 1996-2006 (%)
Employment Entry/Exit Ratio (15-24 years : 55+ years)	10.6	6.4	3.8	-64.3
Percentage aged 55+ years	4.7	7.2	11.5	+145.0

Sex Ratio by age (males/females)				
15-19 Years	0.5	0.7	0.8	+65.7
20-24 Years	0.6	0.6	0.7	+16.1
25-29 Years	0.5	0.6	0.5	+8.1
30-34 Years	0.5	0.4	0.6	+12.6
35-39 Years	0.4	0.4	0.4	+17.1
40-44 Years	0.3	0.3	0.4	+56.4
45-49 Years	0.4	0.3	0.3	-31.8
50-54 Years	0.7	0.4	0.3	-55.6
55-59 Years	0.5	0.7	0.3	-30.6
60-64 Years	1.3	0.5	0.8	-39.3
65+ Years	...	1.5	0.9	...
<i>Total All Ages*</i>	<i>0.5</i>	<i>0.5</i>	<i>0.6</i>	<i>+17.3</i>

Source: Statistics NZ Customised Database, Area of Usual Residence, Industry (ANZSIC96 V4.1) and Status in Employment by Age Group and Sex for the Employed Census Usually Resident Population Count Aged 15+ Years, 1996, 2001, 2006

* Age not available for small cell sizes, thus summed totals by employment status are lower than summed totals by industry



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