CaDDANZ
Capturing the Diversity Dividend of Aotearoa/New Zealand

Superdiverse Aotearoa: Dimensions of past and future ethnic diversity in New Zealand and its regions

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Acknowledgements

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CADDANZ

- In the CADDANZ programme, we are not only concerned with looking at New Zealand's past and current experience of diversity, but we are also looking ahead to the future
- In terms of future focus, we are doing this quantitatively through two methods:
  - Subnational ethnic population projections
  - Spatial microsimulation modelling
- Today's presentation covers some ongoing work based on the first of these two methods

Diversity in New Zealand

- New Zealand is incredibly ethnically diverse
  - In the 2013 Census, Statistics New Zealand recorded over 80 ethnic groups that each had at least 1,000 members, in a total population of around 4.2 million
- In the Census, people self-report their ethnic affiliation or identity – it is not strictly based on race or descent
  - Many people report multiple ethnic affiliations

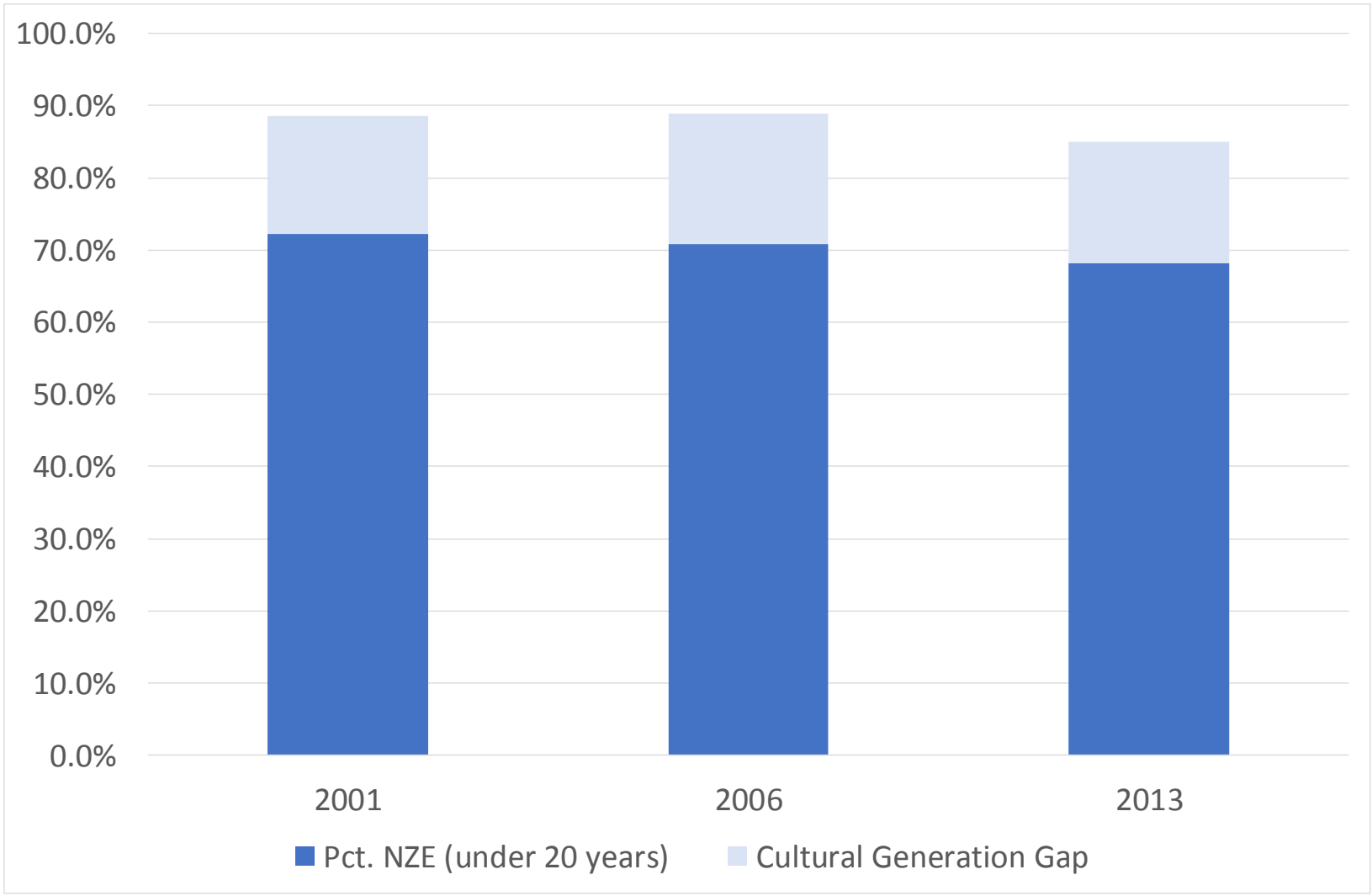
NZ Official Ethnic Classification

Level 1 Classification	Level 3 Classification
1 European	111 New Zealand European
	121 British and Irish
	122 Dutch
	123 Greek
	124 Polish
	125 South Slav
	…
2 Māori	211 Māori
3 Pacific Peoples	311 Samoan
	321 Cook Islands Māori
	331 Tongan
	…
4 Asian	411 Filipino
	412 Cambodian
	413 Vietnamese
	…
5 Middle Eastern/Latin American/African	511 Middle Eastern
	521 Latin American
	…
6 Other Ethnicity	611 Other Ethnicity

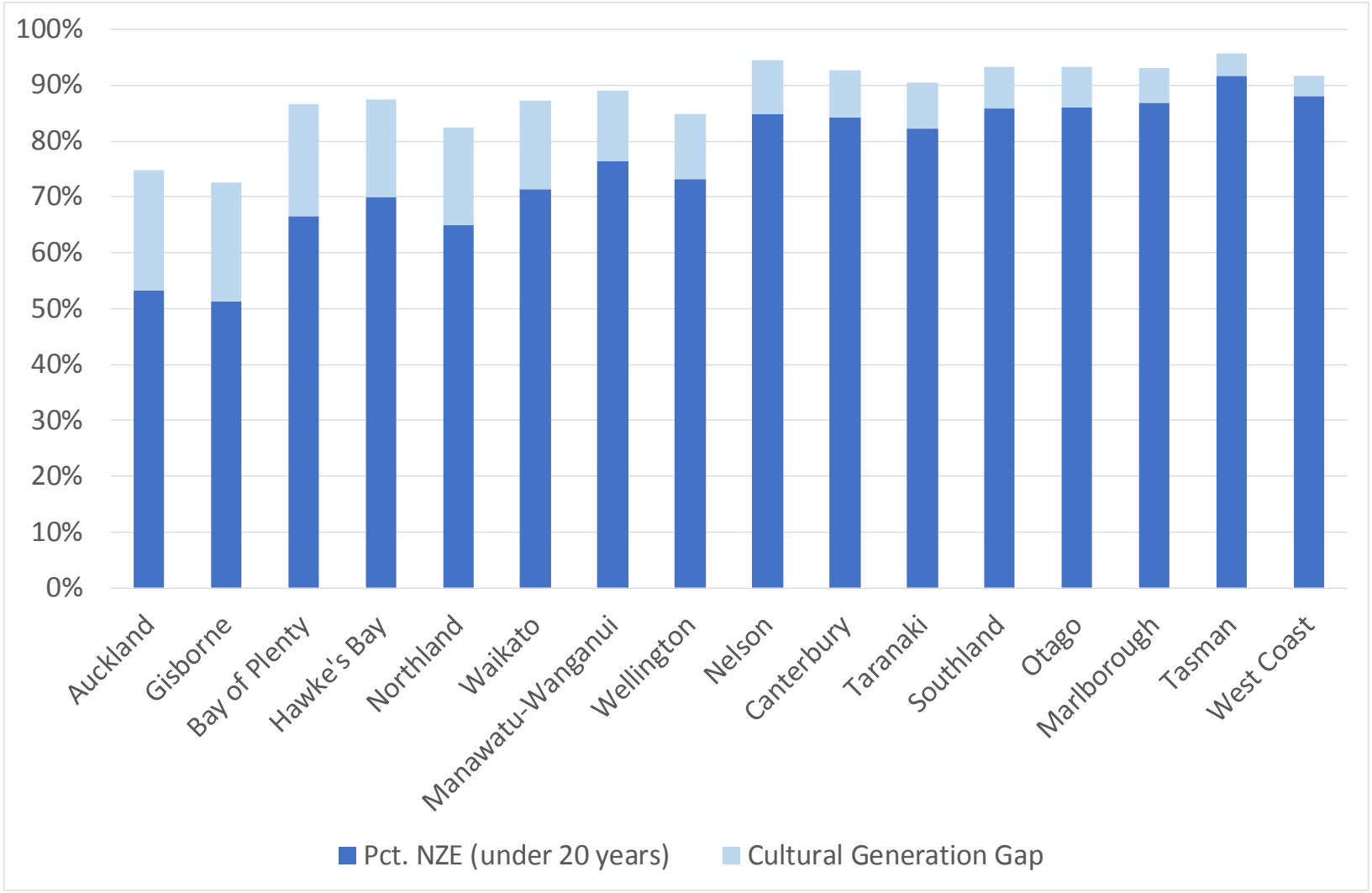
The cultural generation gap

- US demographer William Frey described the "cultural generation gap" as the gap "between the increasingly diverse child population and a largely white older population"
- For NZ and the regions, I calculate the cultural generation gap as the difference between the percentage of seniors (aged 65 years and over) who report NZ European/Pākehā or New Zealander (NZE) as one of the ethnic groups to which they belong, and the percentage of children (aged under 20 years) who report NZE as one of their ethnic groups

NZ's cultural generation gap



The cultural generation gap across NZ regions, 2013



Ethnic projections in New Zealand

- The official ethnic population projections for New Zealand were updated in 2017 (nationally in May and sub-nationally in October)
- These official projections are based on a Bayesian stochastic variant of the cohort component methodology
- They include projections for the 'Level 1' ethnic groups (New Zealand European or Other, Maori, Pacific, Asian, and Middle Eastern/Latin American/African), as well as for the first time a limited number of the larger 'Level 2' ethnicities (Chinese, Indian, Samoan)

Methods

- In this paper, we instead adopt a modified Hamilton-Perry projection method to the projection of small ethnic groups, with a projection horizon of 25 years (2013-2038)
- We project **national** ethnic populations for 37 "Level 3 ethnicities" (from the SNZ standard ethnic classification) that jointly capture most of the population
- We then project **sub-national** ethnic populations for a subset of these ethnicities (essentially all region-groups with 2013 populations of 500 or more) for the 16 regions of New Zealand

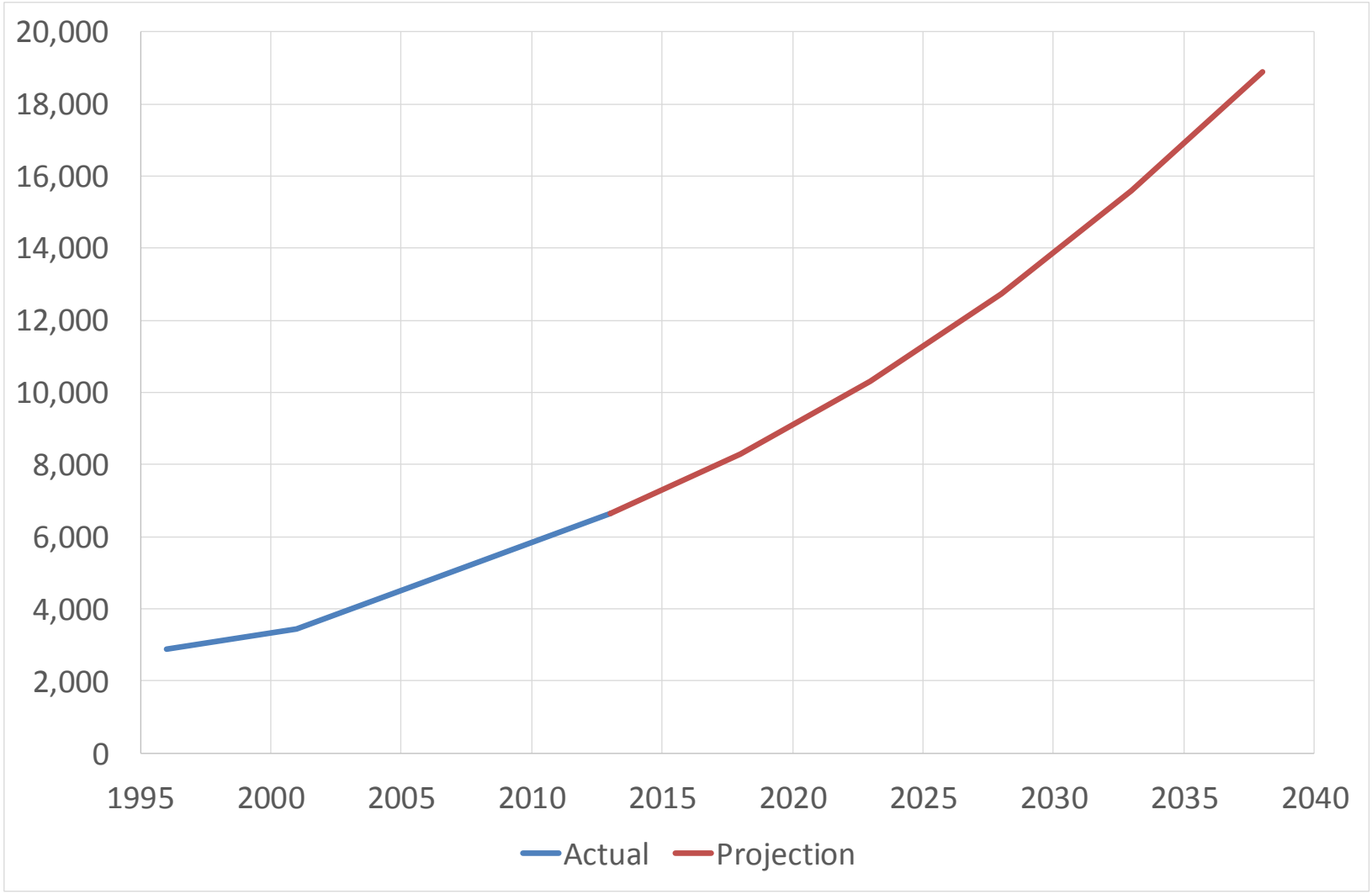
The modified Hamilton-Perry method

- The Hamilton-Perry method is deceptively simple
  - Using two Census datasets five years apart, a cohort change ratio (CCR) is calculated for each five-year age-sex cohort
  - Each five-year age-sex cohort can then be projected forward based on this ratio
  - The exception is the age cohort 0-4 years, which is instead projected based on the child-woman ratio (CWR), using the number of women aged 20-44 years

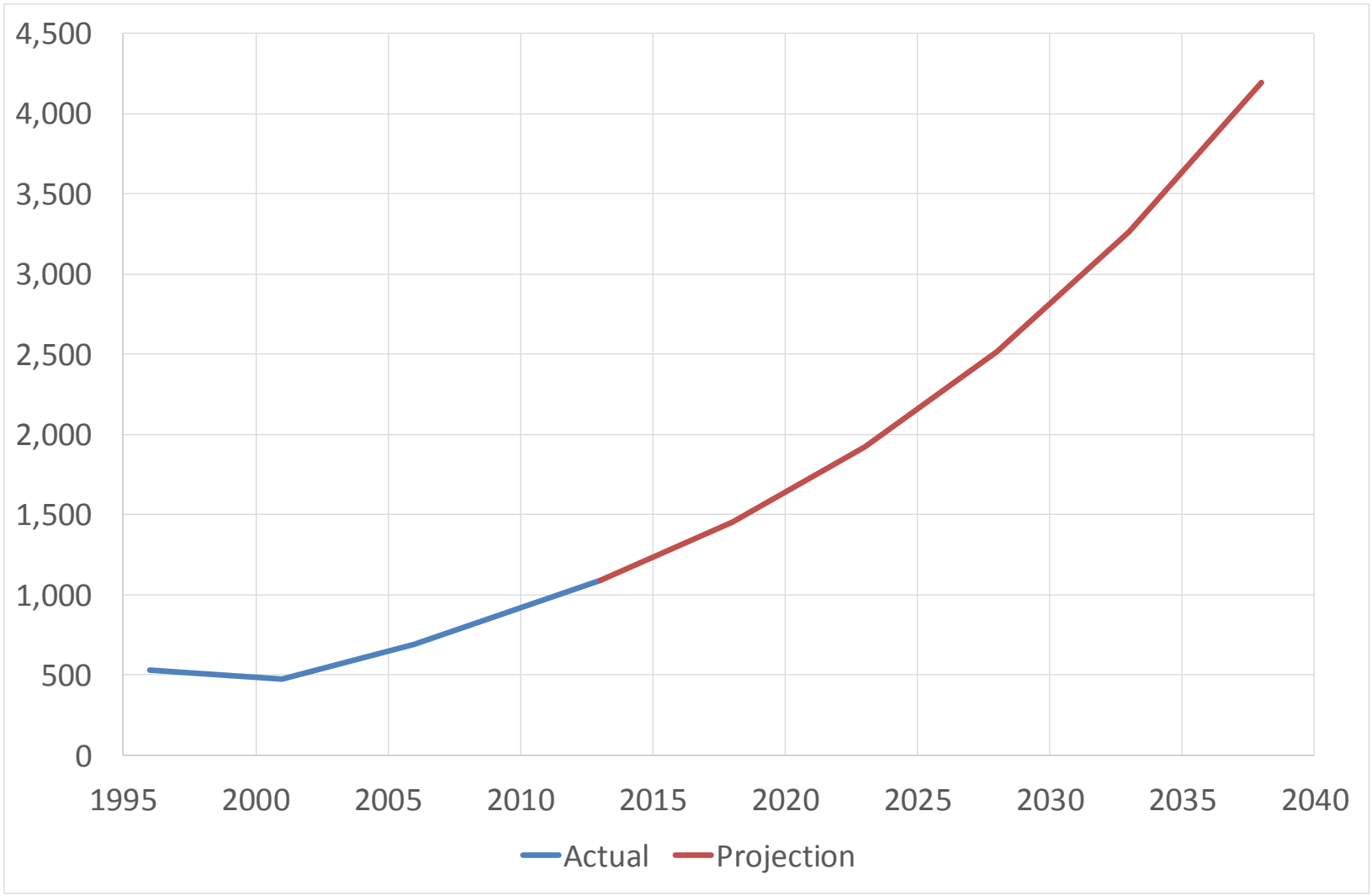
Methods

- Unlike previous research using the Hamilton-Perry method, which has used it to project small *area* populations, we apply the method for projecting small *ethnic* group populations
- We have previously presented results on a deterministic version of this model (at ERSA 2018 and NARSC 2017), which mostly show plausible projections with forecast errors that are similar to those found for small *area* projections
- Following Swanson et al. (2010), we constrained the five-year CCRs to be between 0.9 and 1.25 and the five-year CWRs (by sex) to be between 0.16 and 0.3
- We apply a stochastic projections approach, but due to time constraints I won't be presenting those results today

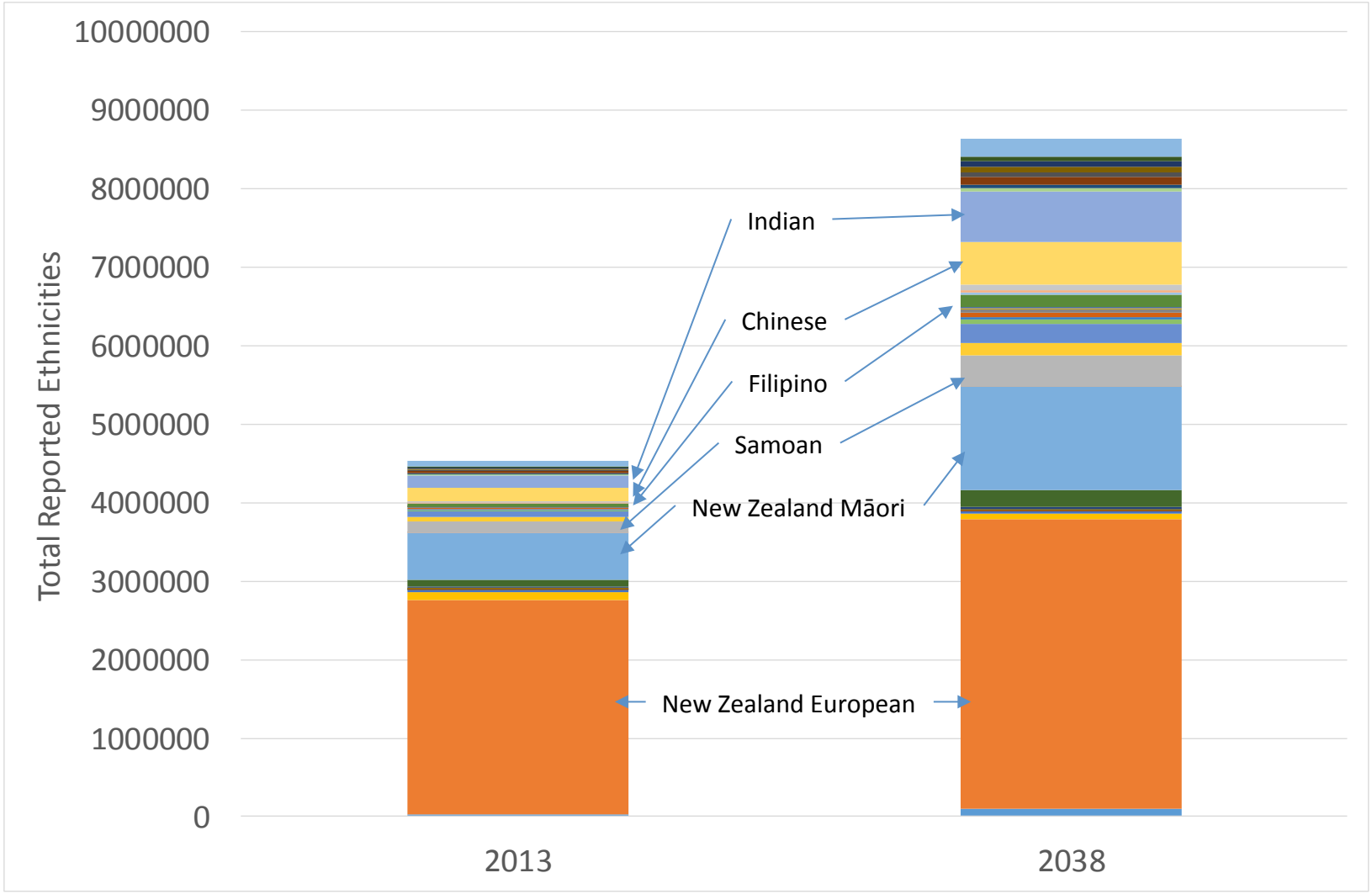
Deterministic results – 2013-base projections: Vietnamese population (national)



Deterministic results – 2013-base projections: Fijian population (Waikato)



Diversity, 2013 and 2038 (national deterministic projection)



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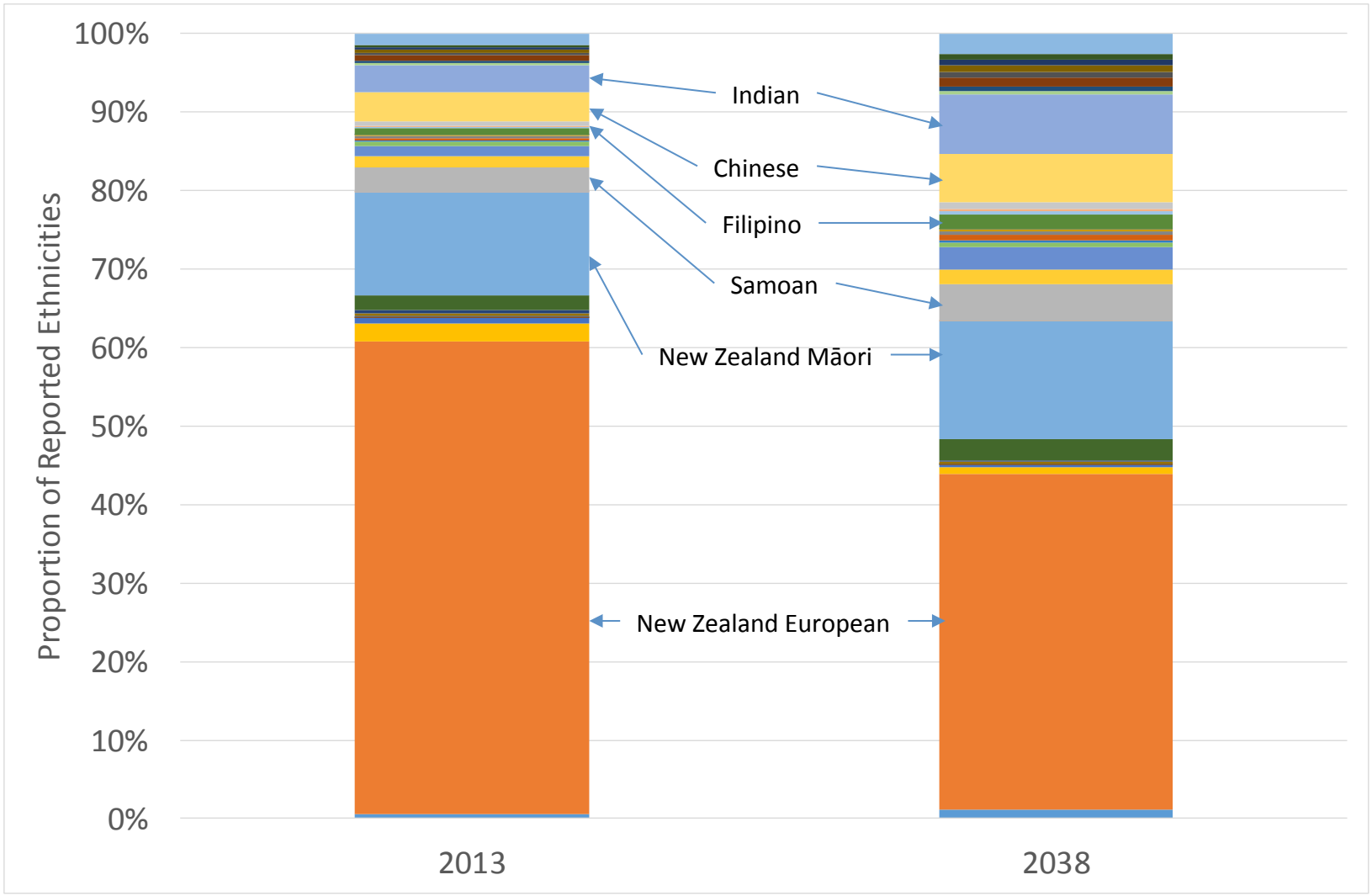
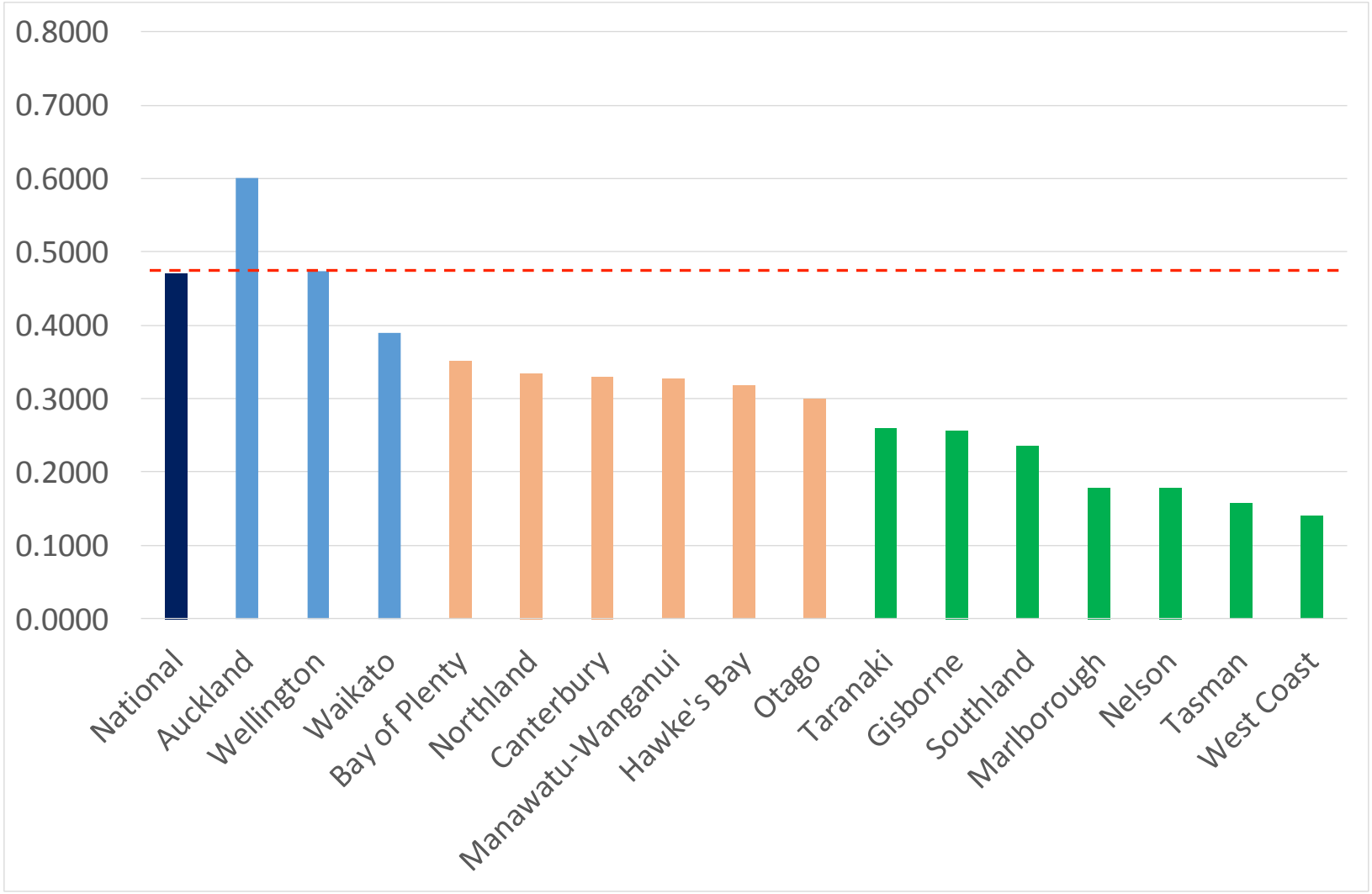
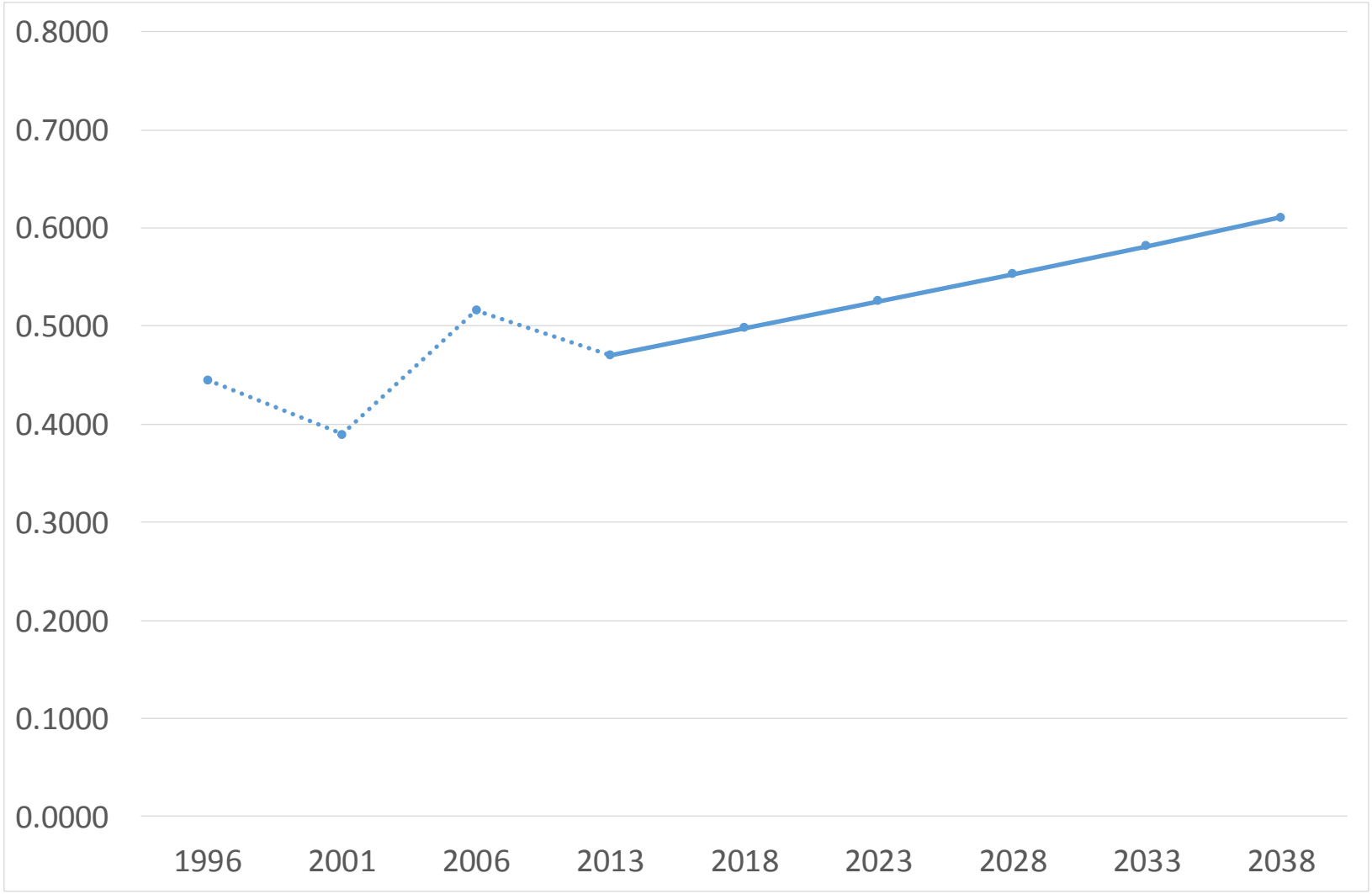


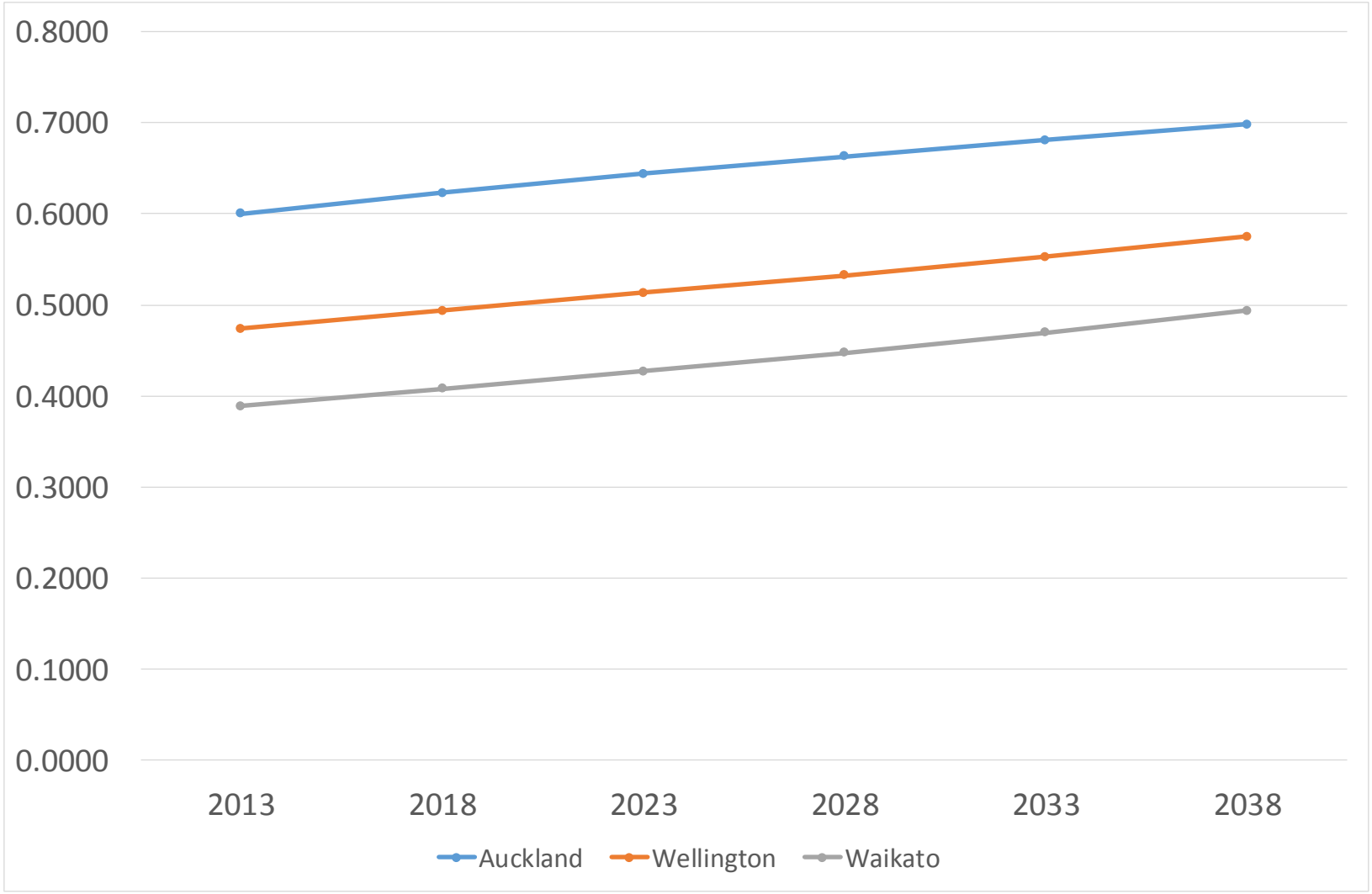
Entropy-based evenness index, 2013



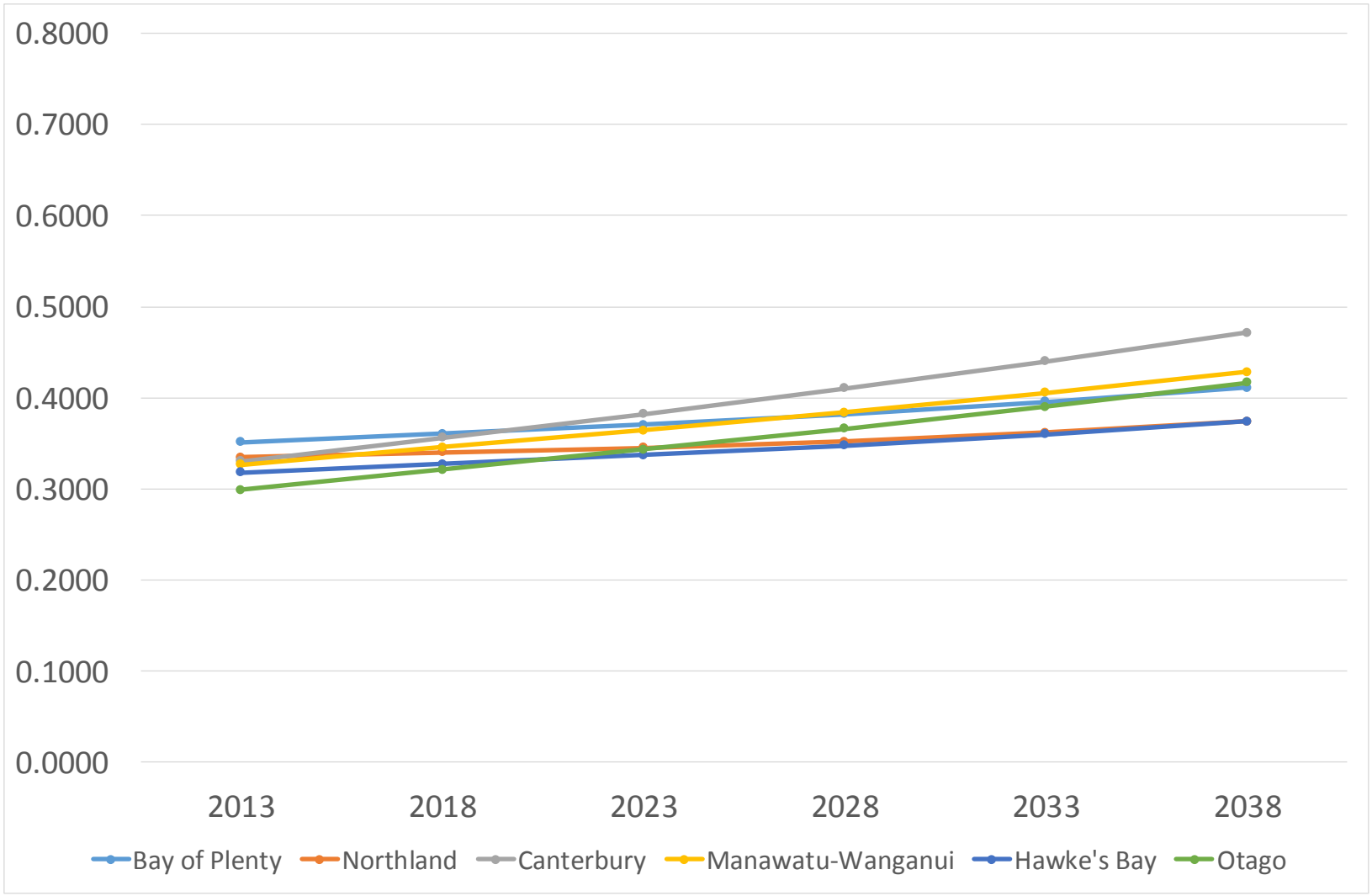
Entropy-based evenness index, 1996-2038 (national, deterministic projection)



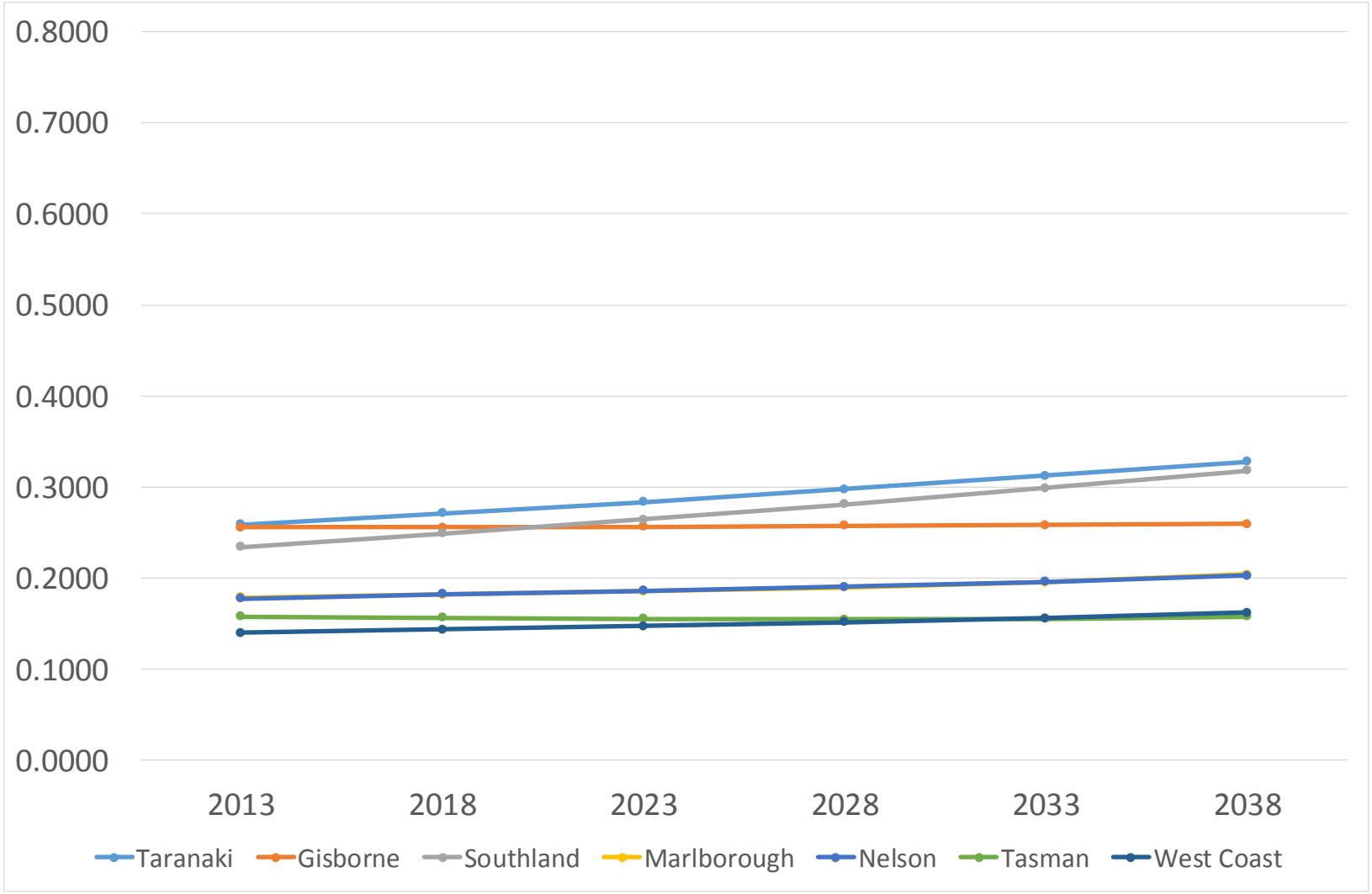
Entropy-based evenness index, 2013-2038 (deterministic projections)



Entropy-based evenness index, 2013-2038 (deterministic projections)



Entropy-based evenness index, 2013-2038 (deterministic projections)



Conclusions

- Ethnic diversity in New Zealand is increasing, and projected to increase into the future
- Diversity is projected to increase substantially in all regions, except for Tasman and Gisborne
  - This highlights the inadequacy of the 'cultural generation gap' measure as an indicator of future diversity for New Zealand regions, as Gisborne and Tasman are at opposite ends based on the cultural generation gap measure
- Auckland, Wellington and Waikato are the most diverse now, and are projected to remain the most diverse into the future
- Canterbury, Manawatu-Wanganui, and Otago are projected to increase in diversity faster than other regions with similar initial diversity

Where to from here?

- These are still preliminary results from the projection models. We will be doing further work to refine the models
- The base populations need to be adjusted from the Census Usually Resident Population to the Estimated Usually Resident Population
  - For the most part, this is a simple scaling exercise
- We have been making adjustments to account for the seven-year Census period (2006-2013) in the projections model, but subsequent simulation modelling (and long arguments between the co-authors) has demonstrated that this is actually unnecessary

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