

# Investigating the potential of admin data to provide birthplace and year and month of arrival in NZ information

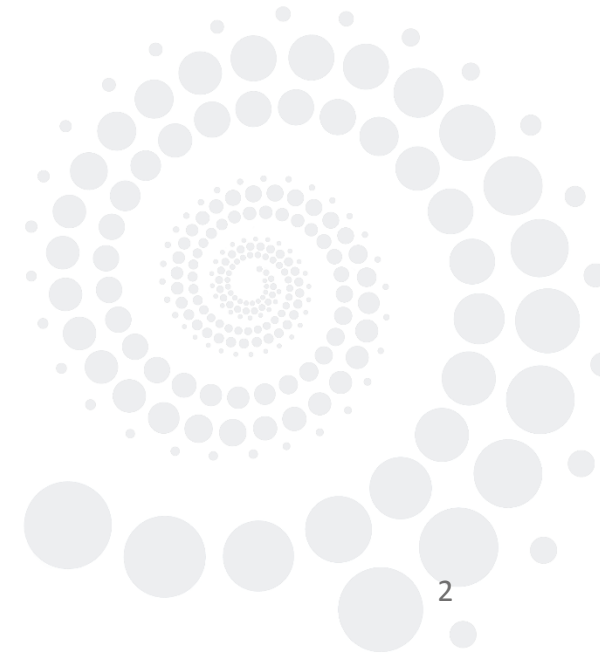
**Stats NZ**

(Prepared for PANZ 2019)



# Disclaimer

The results in this paper are not official statistics. The results presented herein are based on research undertaken by Stats NZ. All counts directly reported or underlying graphs and percentages have been confidentialised to protect individuals from identification.



Topic	Authors	Team
Birthplace Year/month of arrival	Megan Gath ( <a href="mailto:megan.gath@stats.govt.nz">megan.gath@stats.govt.nz</a> )  Susmita Das ( <a href="mailto:susmita.das@stats.govt.nz">susmita.das@stats.govt.nz</a> )	Administrative data
Applications for population statistics	Kirsten Nissen ( <a href="mailto:kirsten.nissen@stats.govt.nz">kirsten.nissen@stats.govt.nz</a> )	Pop Insights

## Why does census collect information on birthplace?

- Identifies the overseas-born population in NZ
- Combined with other census variables to inform assessment on demographic impact of immigration
- Users include government agencies, policy makers, researchers, and NGOs.

## Why does census collect information on years since arrival in NZ?

- An attribute of the overseas-born usual residents
- Helps to track socio-economic outcomes of immigrant population
- Users include government agencies, NGOs, and researchers.

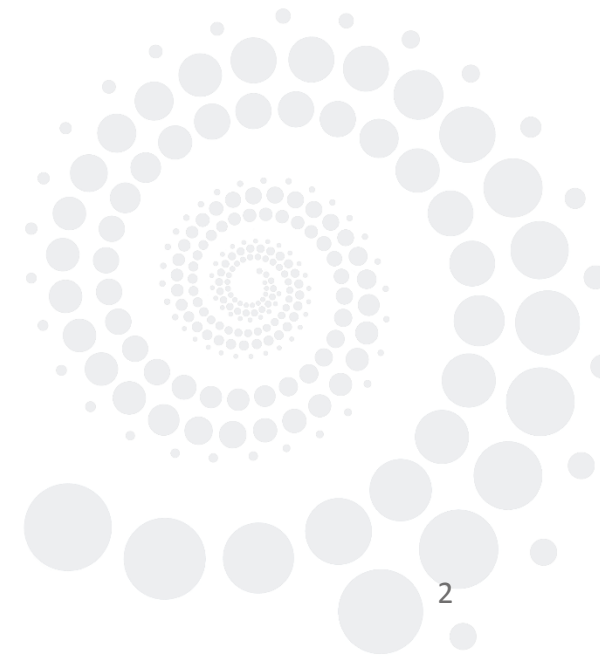
## Why birthplace and years since arrival in NZ in Census Transformation research?

Census Transformation (CT) research contributing towards transforming the full-enumeration census model to a combined census model

CT's meta data analysis had revealed that admin data on birthplace and year/month of permanent long-term arrivals was likely to be good.

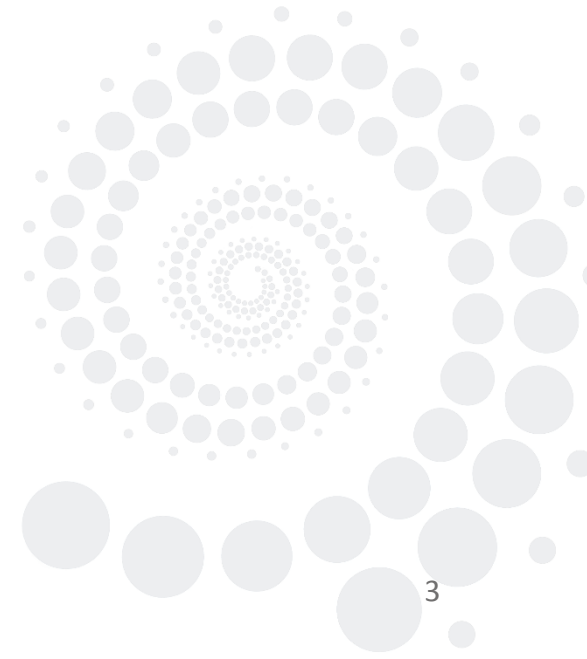
# Research questions

- Quality of birthplace and year of arrival in admin data?
- Can the census information on these variables be replaced by administrative data?



# How did we make the comparisons?

- Describe formal statistical concepts
- Describe data sources
- Compare:
  - Concepts and definitions
  - Aggregate counts and estimates
  - Individual records





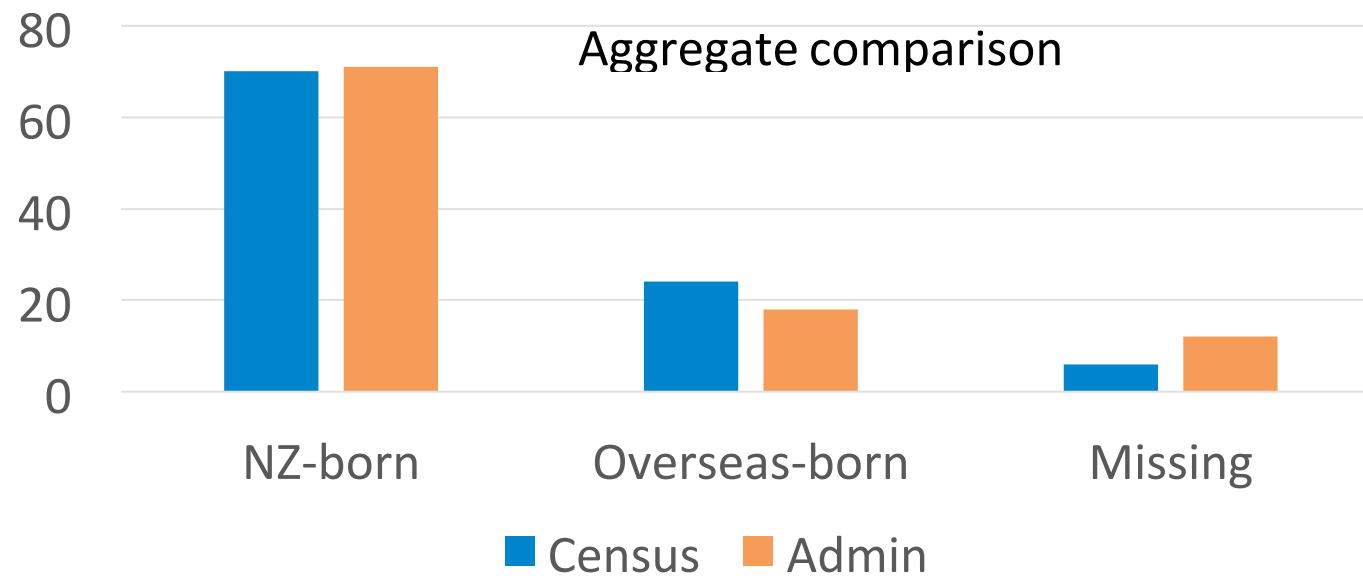
# Birthplace

	<b>Census 2013 (Truth dataset)</b>	<b>Admin data at 2013 (Test dataset)</b>
<b>Data source</b>	2013 Census form	DIA MBIE
<b>Scope</b>	Good	1997 onward



# Birthplace

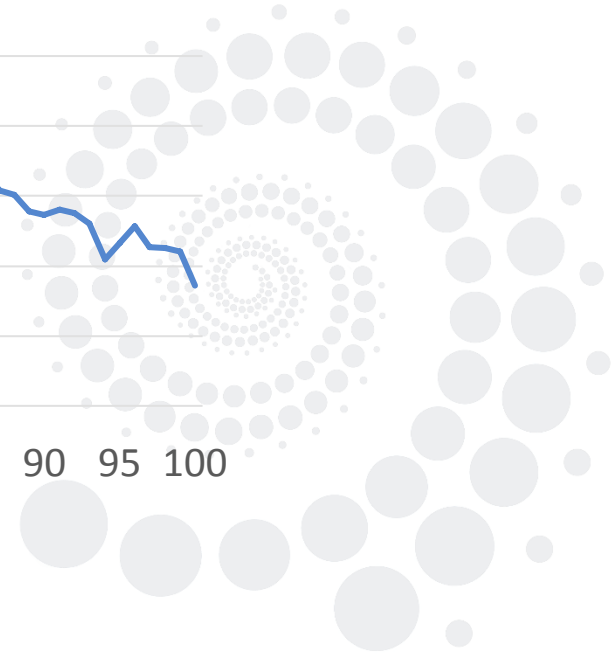
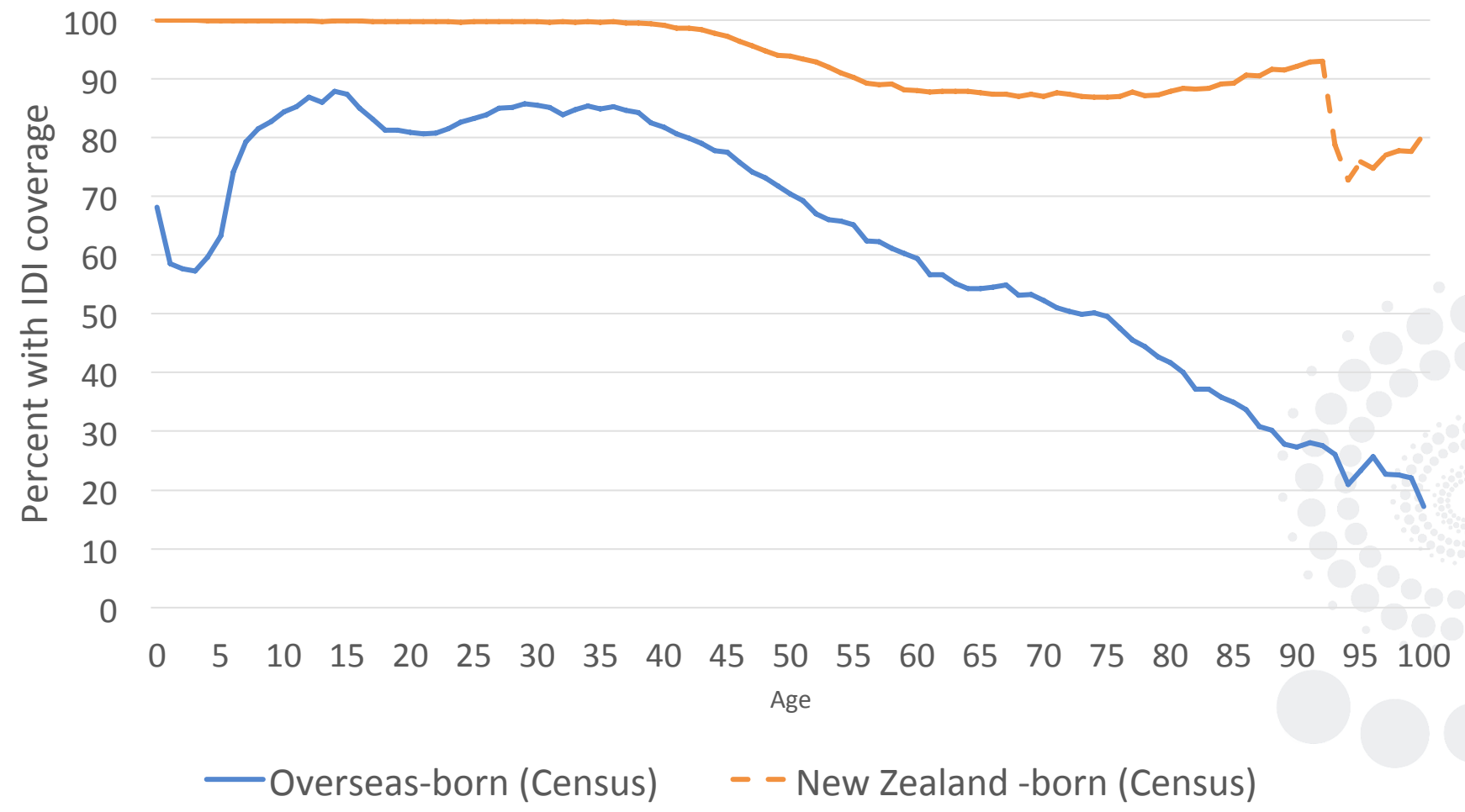
- Concepts align well
- Coverage is 94% in census and 88% in admin data





# Country of birth coverage by age

For census overseas-born and census NZ-born population





# Birthplace

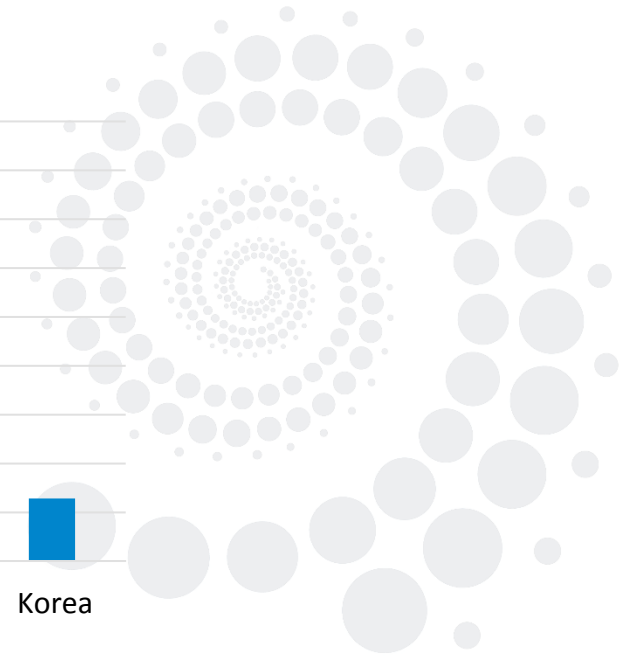
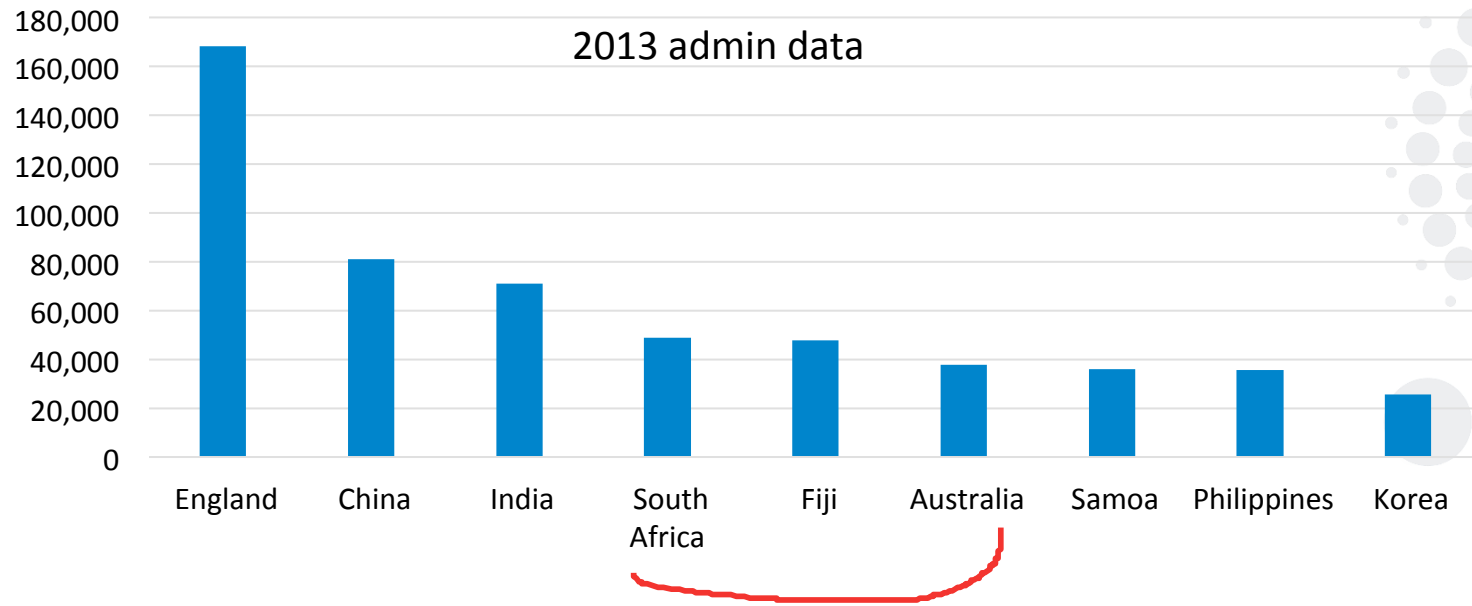
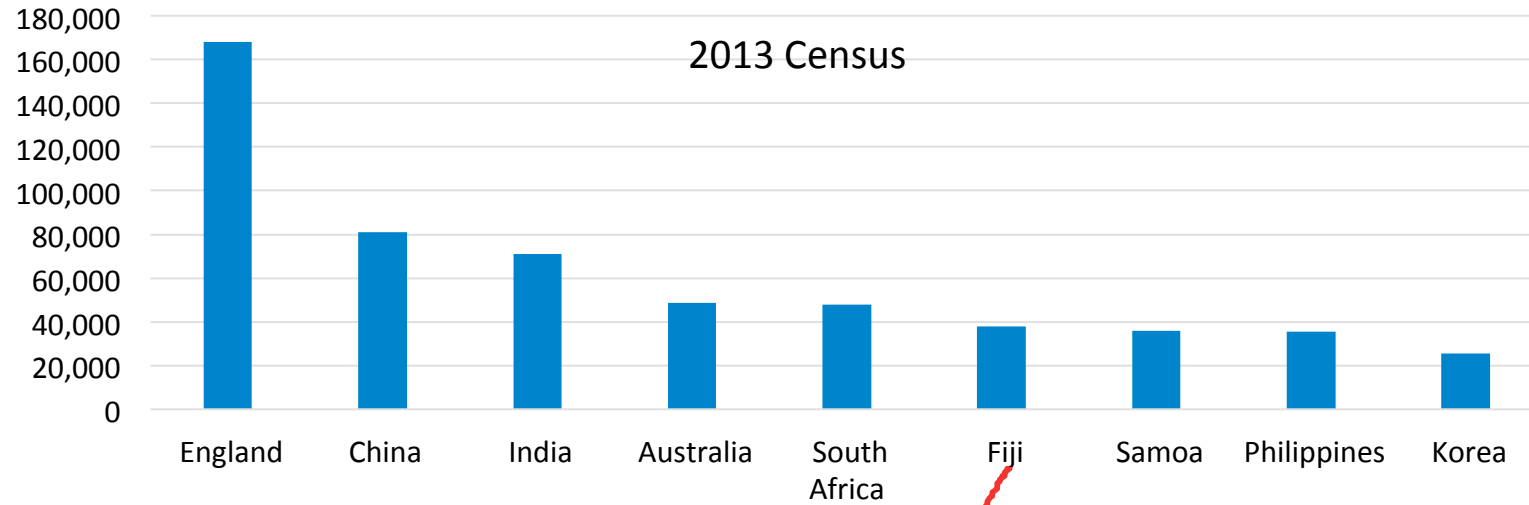
## Individual records level comparison

- For NZ-born records in census, the agreement rate was 96%
- For overseas-born records in census, the specific country-level agreement rate was 86%.





# Top ten countries of birth for overseas-born population in 2013 Census and admin data



# Year of arrival

	<b>Census 2013 (Truth dataset)</b>	<b>Admin data at 2013 (Test dataset)</b>
Data source	2013 Census form	12/16 months outcome based measure
Scope	Good	2001 onward



# Year of arrival

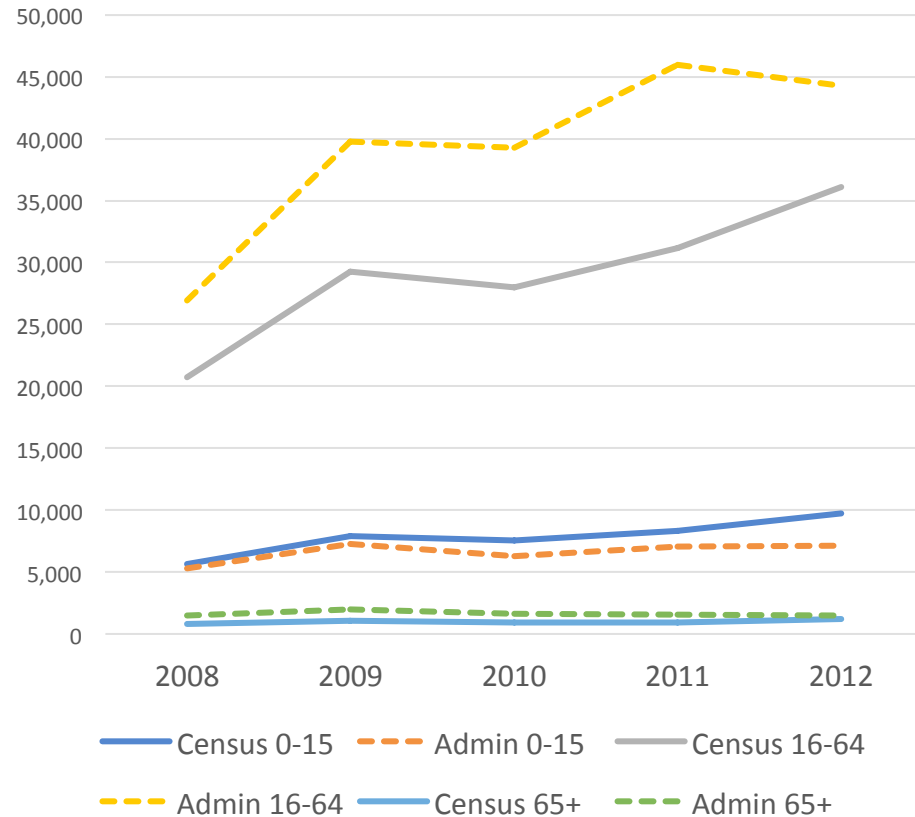
- Concepts align well
- Coverage is 96% in census and 36% in admin data



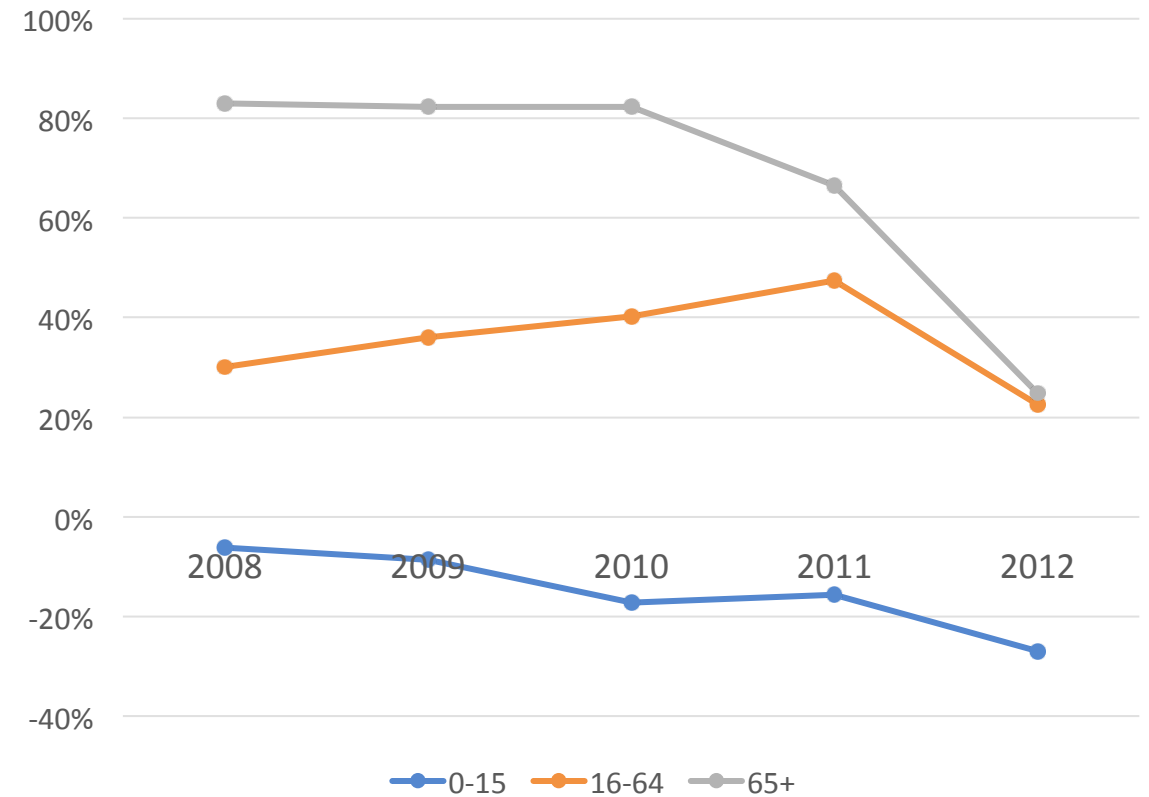
# Year of arrival in census and admin data

## By selected age-groups and for selected years

Count of long-term arrivals



Percentage difference between admin & census counts





# Year of arrival

## Individual record level comparison

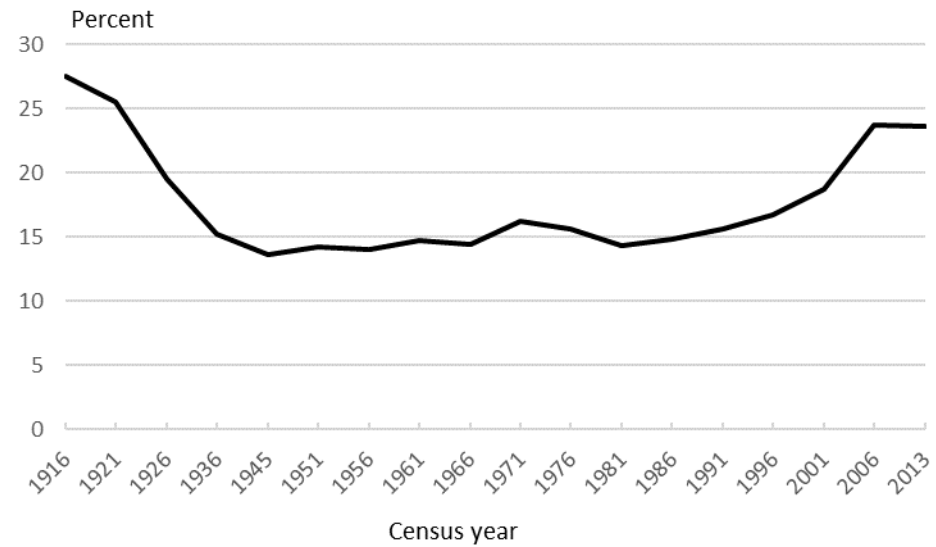
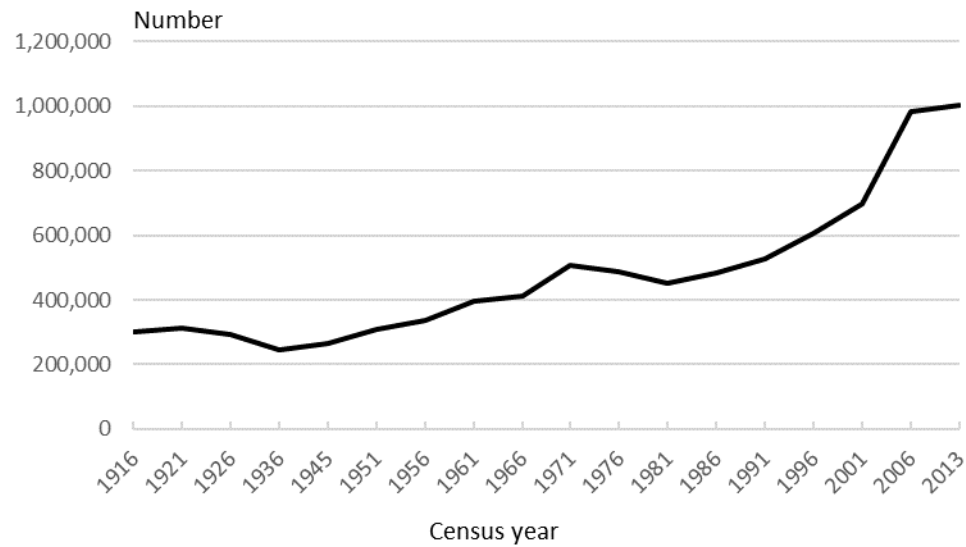
- When a record in census was compared with the same record in admin data, the information was consistent in 85% of the cases
  - When they disagreed (15%), it was usually by +/- 1 year.

# Summary for census-needs

- Admin data quality is good NZ-born people & for recent immigrants
- Both birthplace and year of arrival have good potential to be used for item imputation in the future
- Time-invariant attributes
  - Good agreement with census information
  - Combine historical census and admin data



# Proportion born overseas ~ a quarter of NZ population



# Country of birth

## - an additional demographic dimension

- Place of 'origin' is core dimension of identity
  - Citizenship/ nationality: legal concept
  - Ethnicity: cultural identity
- Account of nationalities settling in NZ or leaving NZ
  - Migrant status: specific movement and passport in person's travel history
- Border crossing data: relationship between citizenship and CoB
  - E.g. migration to NZ of South African born with Australian citizenship
- Census: relationship between ethnicity and CoB

# Capturing country of birth in IDI

- Border crossings
  - Historically, collected for PLT migrants only
  - New migration measure: system for collection in development
- Vitals collections
  - Births: country of birth of both parents
  - Deaths
  - Marriages
- Stats NZ IDI
  - Birth country of migrant arrivals and their geographic settlement
  - Net migration gains/ losses by CoB to communities
  - BUT coverage is an issue

# Quality limitations in reporting of population change by country of birth

- IDI-ERP: population estimates from administrative data
  - Coverage is not improving (approx. 88 percent in 2013 )
- Census-based population estimates
  - 2018 Census net-undercount measure includes NZ/ overseas-born variable
  - Measuring population change (natural increase and net migration) is possible
  - BUT considerable coverage limitations
- The census remains the most reliable source for now