

# Measuring migration in a time of pandemic: predictive modelling and sub-populations in New Zealand

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# Outcomes-based



Classification model estimates likelihood of migrant crossing

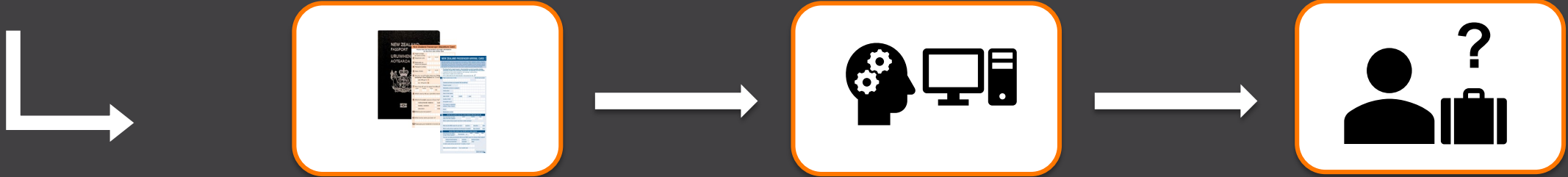
Subsequent border crossing either does or does not occur

Outcome at 16 months is used to classify migrant status



Border crossing

# Intentions-based (previous method)

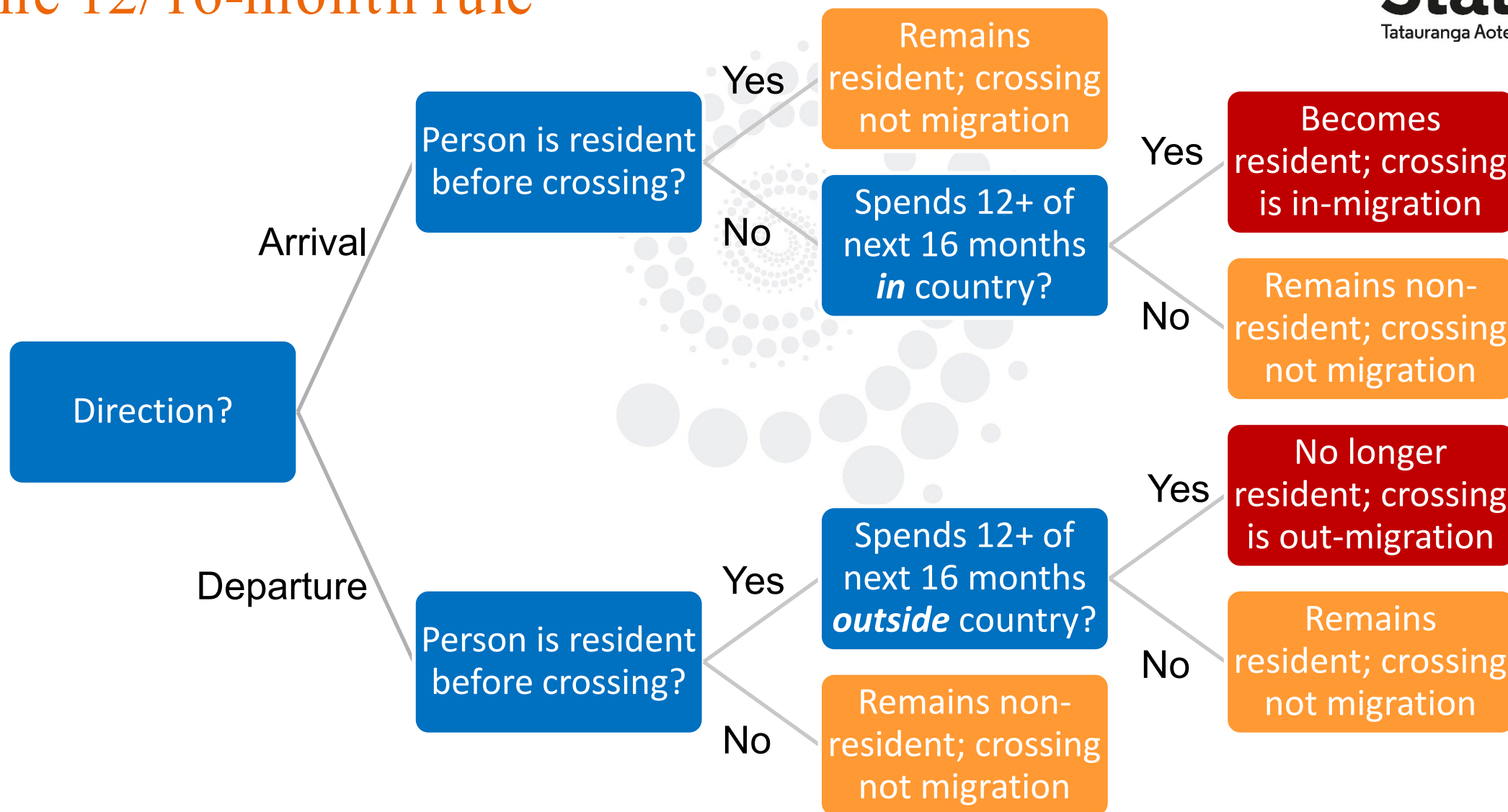


Passenger states intention of travel

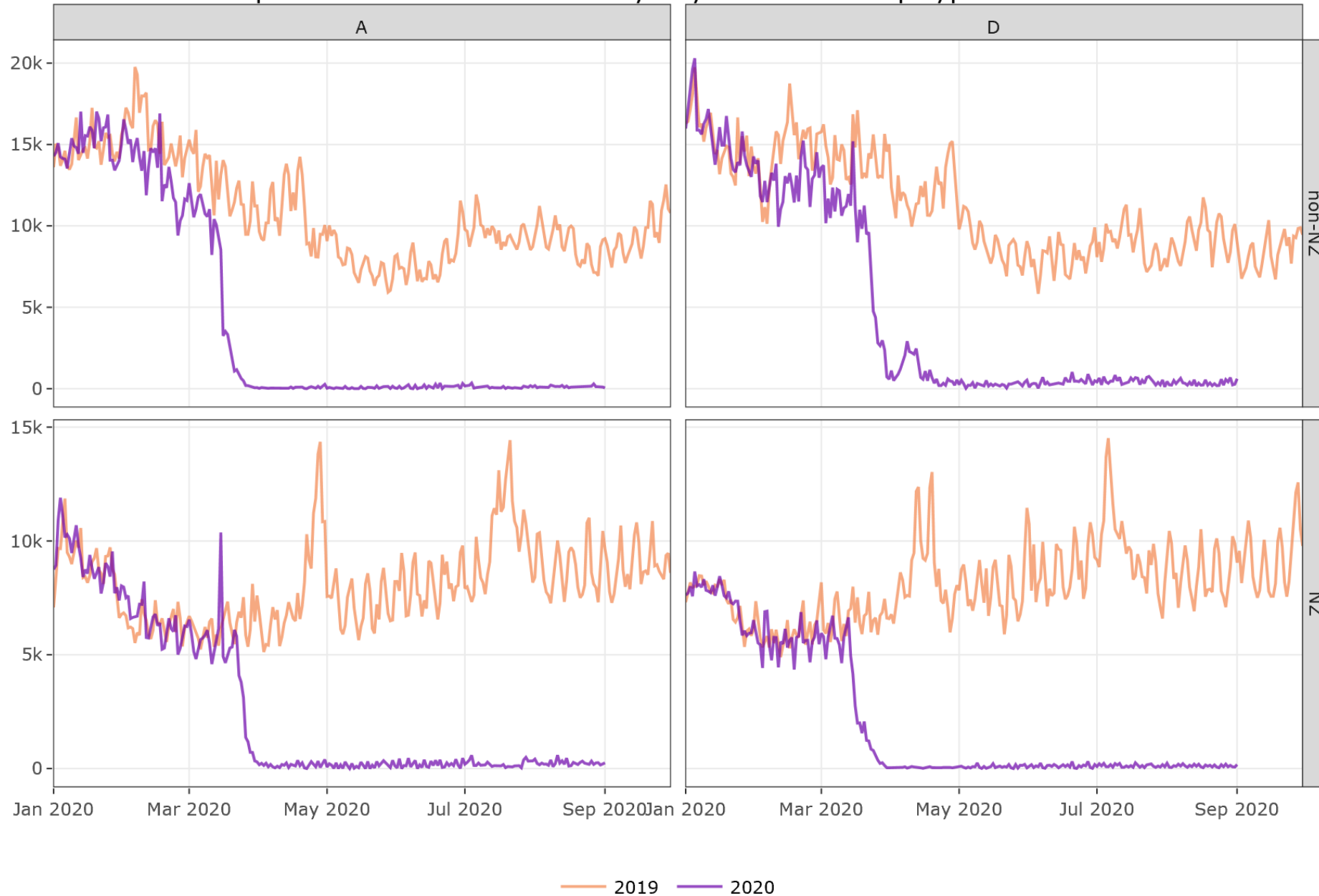
Stated intention used to classify migrant status

Outcome of border crossing unknown

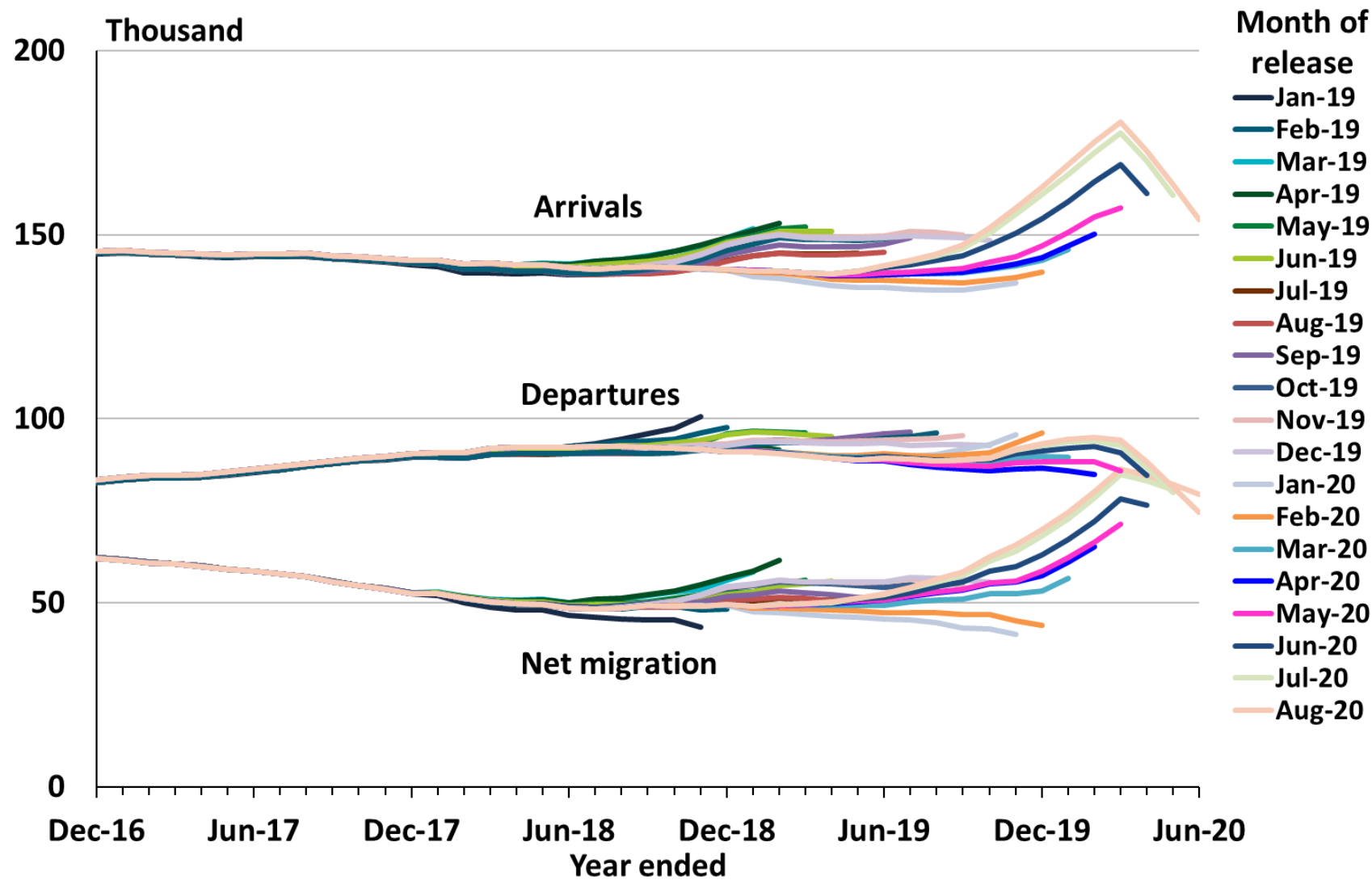
# The 12/16-month rule



Arrivals and departures across NZ border by day and citizenship type

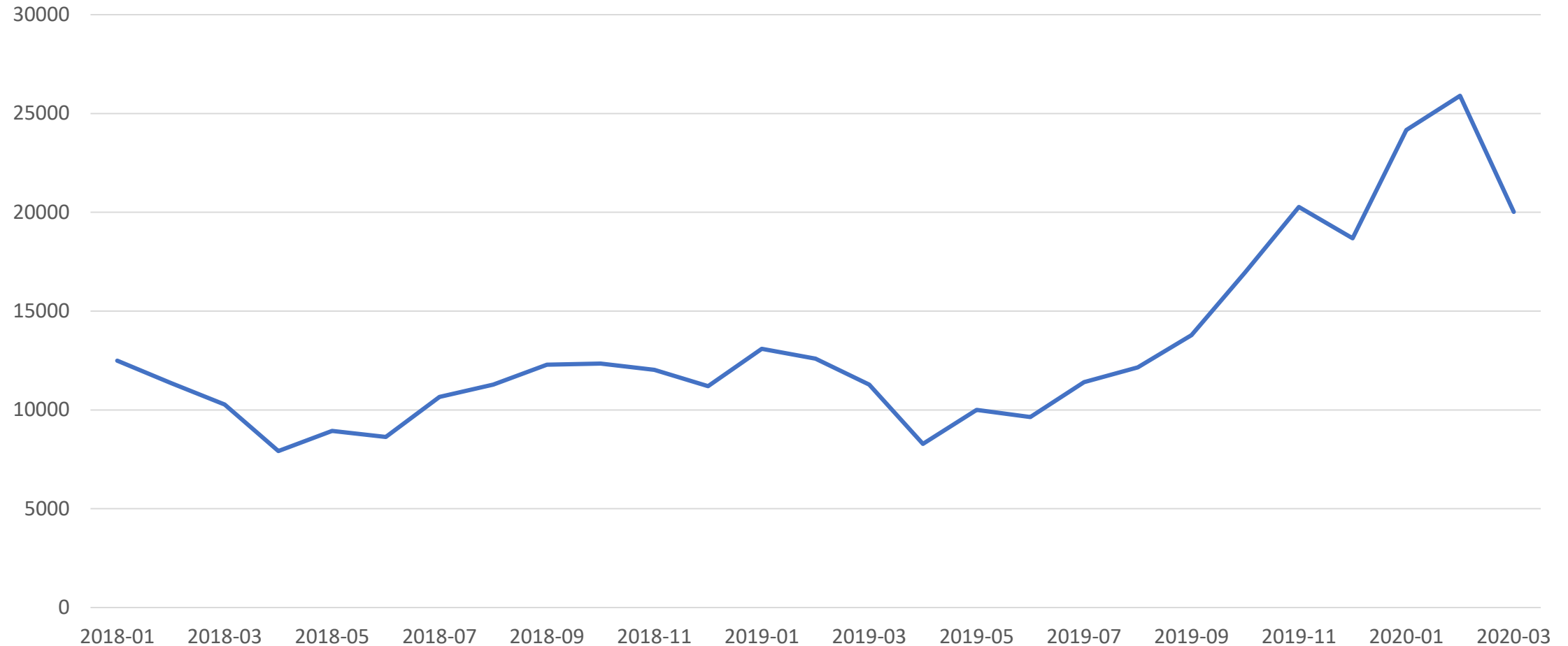


# Revisions in modelled migration estimates



# An atypical subpopulation is driving “migration”

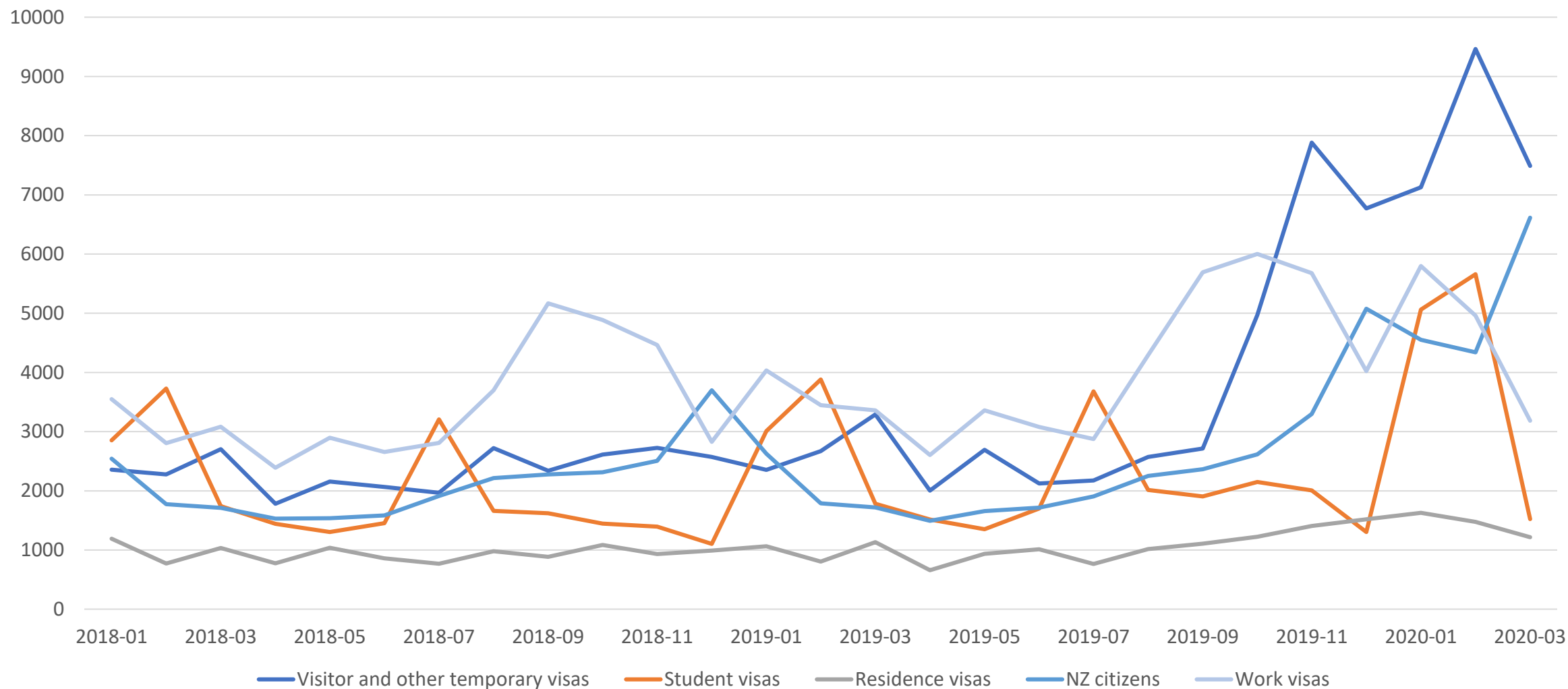
All non-resident\* arrivals who remain in NZ 6 months after arriving, by month of arrival



\* Includes both migrant and non-migrant arrivals

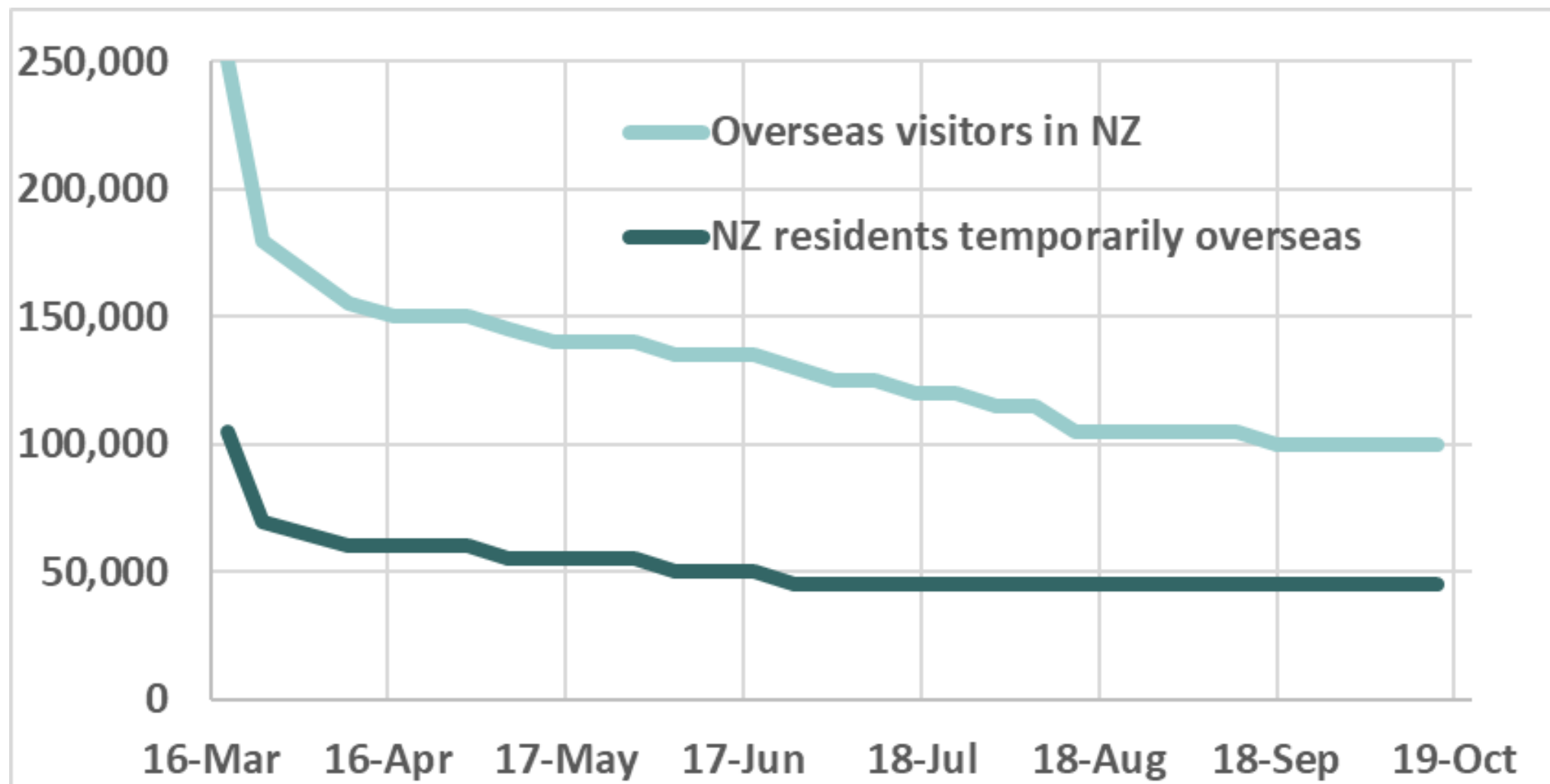
# Non residents still in New Zealand by visa on entry

Non-resident arrivals\* who remain in NZ 6 months after arriving, by month of arrival



\* Includes both migrant and non-migrant arrivals

# Temporary population stocks by date in 2020





# General observations and concluding remarks

- High “migration” numbers are driven by atypical sub-populations present in New Zealand
  - Significantly higher visitor numbers,
  - Not traditional migrants, do not have the same accesses to support/employment and government programmes
- No evidence of “mass migration” back to NZ since COVID – most increases driven by people “stuck” here
- Models, especially changes in estimation probabilities provide insight
- The standard population concepts of migration may no longer be appropriate

# Questions for discussion

- Do we need broader concepts of populations, especially during a pandemic/natural disasters?
- Should we encourage policy makers to engage with probabilistic estimates, and *\*changes\** in those estimates?
- How do we articulate what such changes mean for decision makers?

END