



TE TAI ŌHANGA
THE TREASURY

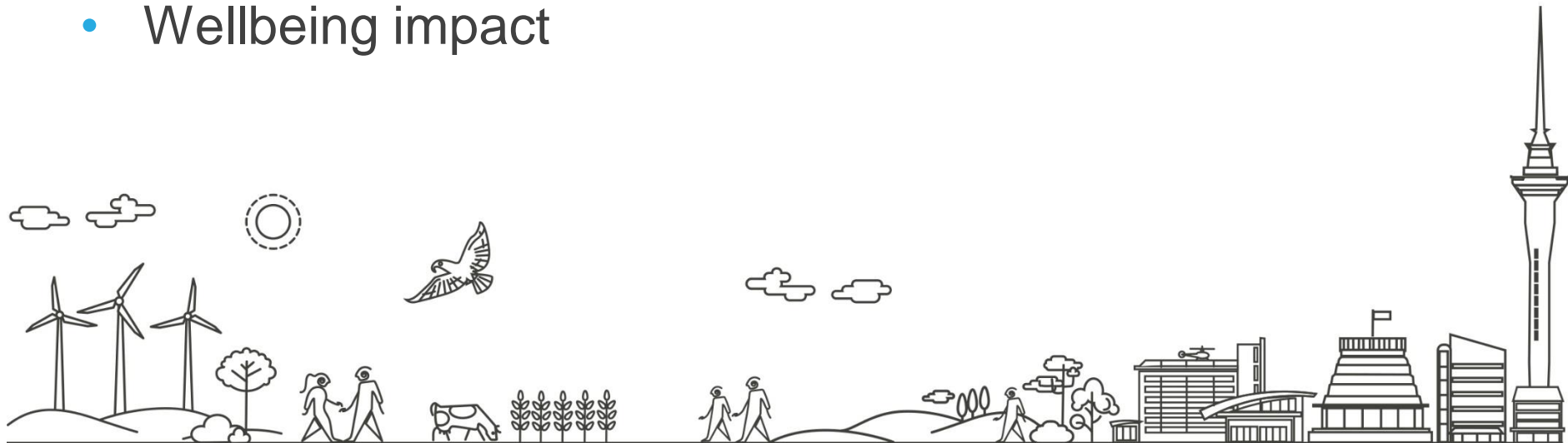
The Economic and Fiscal Implications of an Ageing Population

Melissa van Rensburg

15 November 2019

Outline

- About the Treasury
- Context (Long-term Fiscal Statement)
- Demographic trends
- Fiscal impacts
- Economic impacts
- Wellbeing impact



About the Treasury

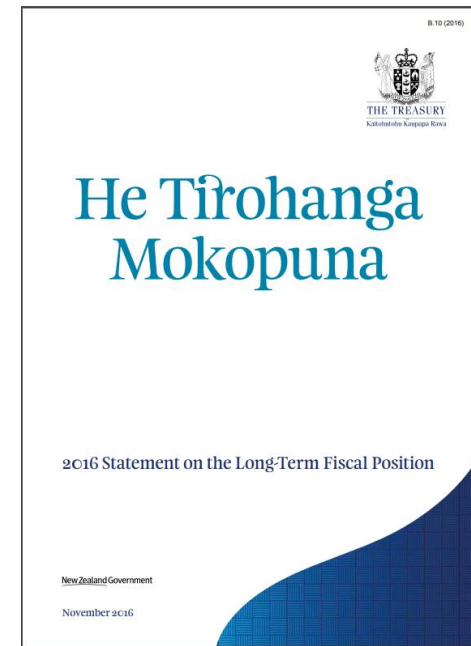
- The Treasury is NZ's lead advisor to the government on economic and fiscal policy
- Our vision is to be a world-leading treasury working towards higher living standards for New Zealanders
- A prerequisite of this is to ensure that successive governments' finances are sustainable over the long term



The Long-term Fiscal Statement

Purpose & Focus

- Treasury Document (not Government)
- PFA requirement
- 40 year time horizon
- Purpose:
 - Increase quality and depth of public information
 - Increase understanding of long-term consequences of policy decisions
 - Assist government in making fiscally sound decisions
- Focus: Long-term stresses on fiscal variables
 - Ageing population
 - Climate change



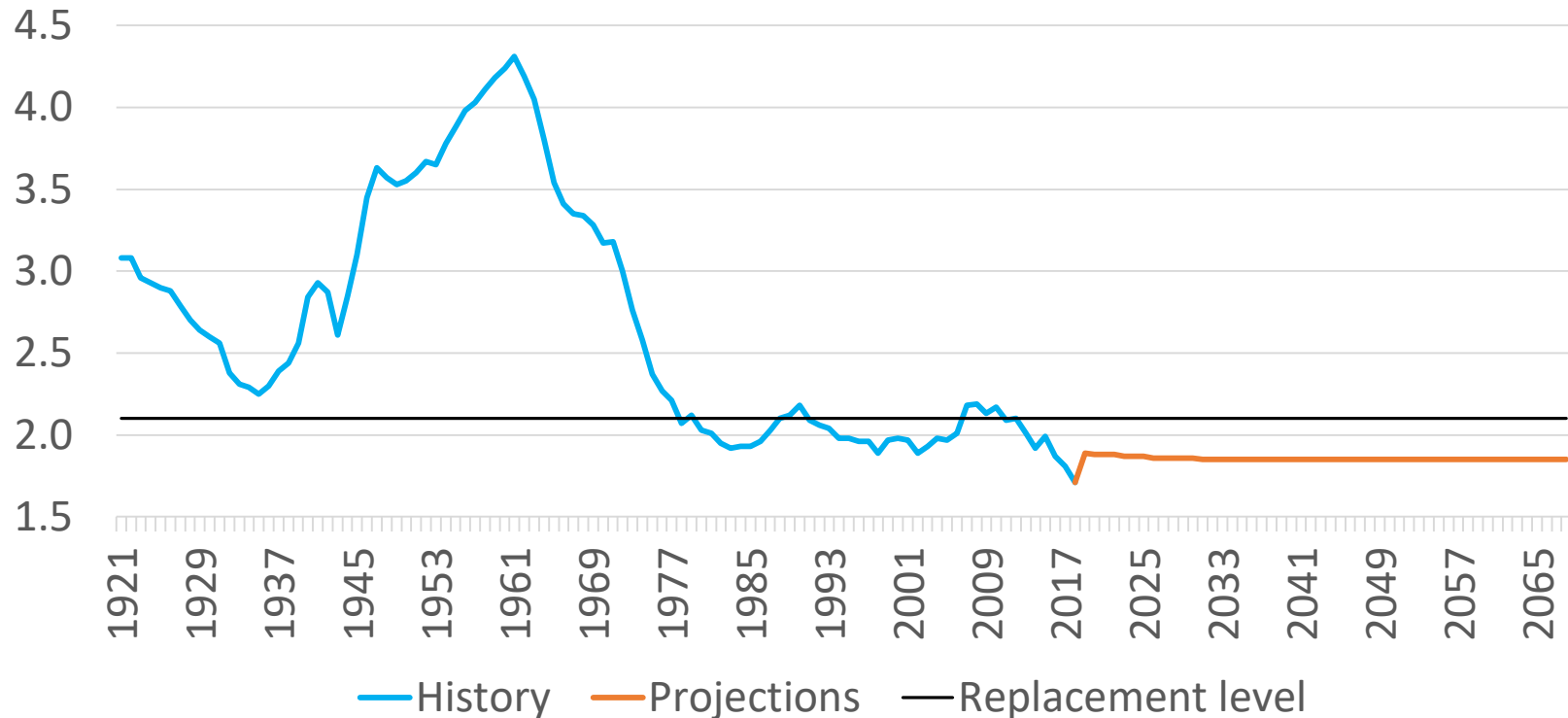
Demographic Trends

What is driving ageing in New Zealand?

1) Decline in fertility

- People are having fewer children (and later)

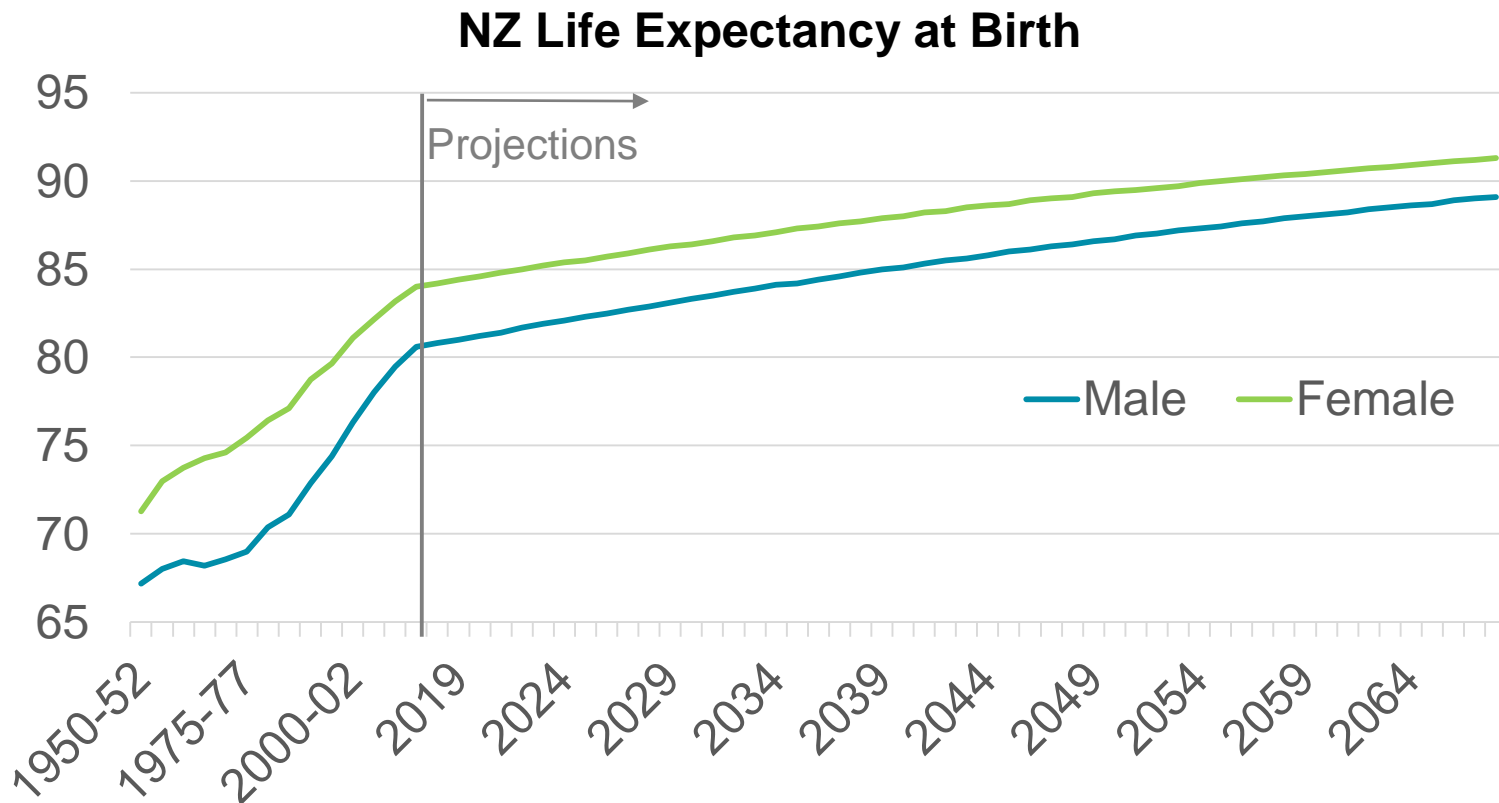
NZ Total Fertility Rate (live births per woman)



What is driving ageing in New Zealand?

2) Increase in life expectancy

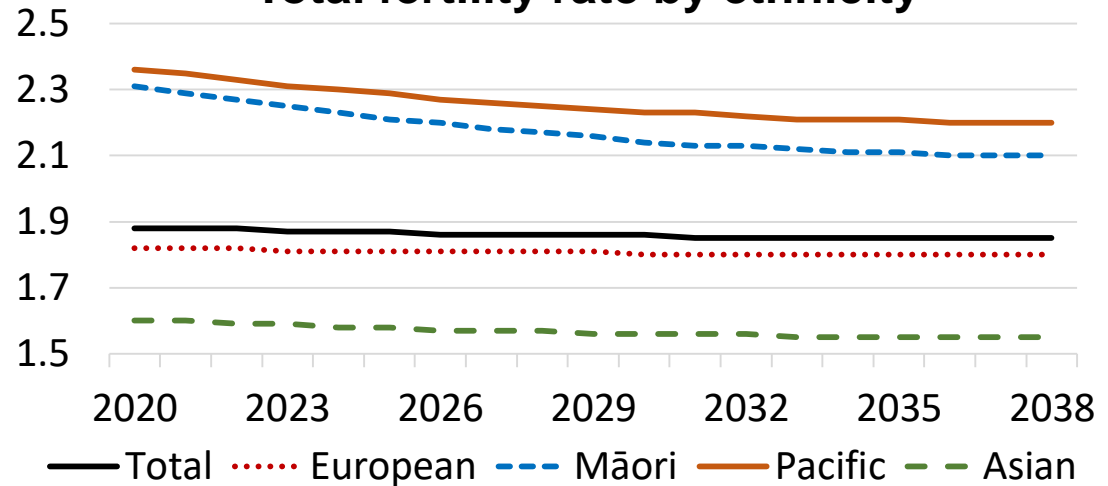
- People are living longer



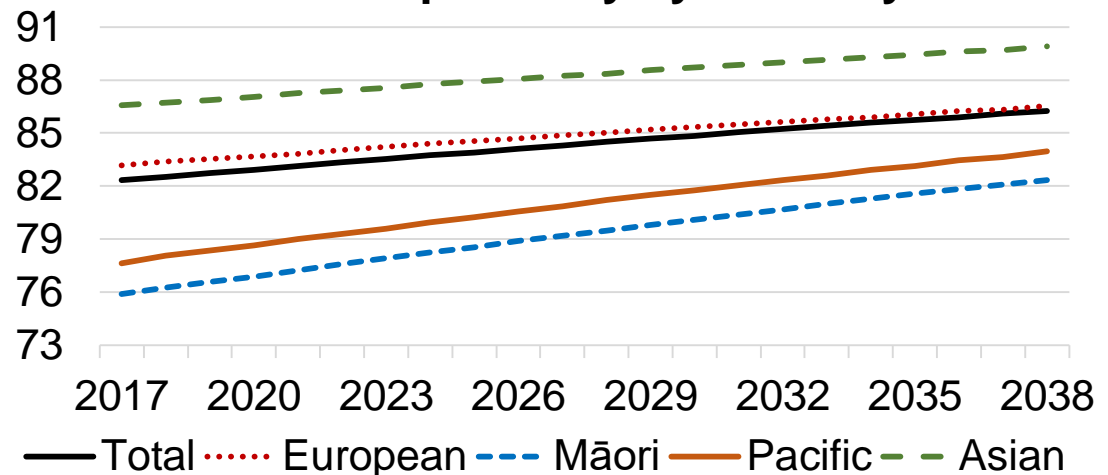
Not all groups are ageing at the same pace

- Māori and Pasifika have higher fertility rates than Europeans and Asians
- Māori and Pasifika have lower levels of life expectancy
- This means that Māori and Pasifika are not ageing at the same pace as people with European or Asian ethnicities

Total fertility rate by ethnicity

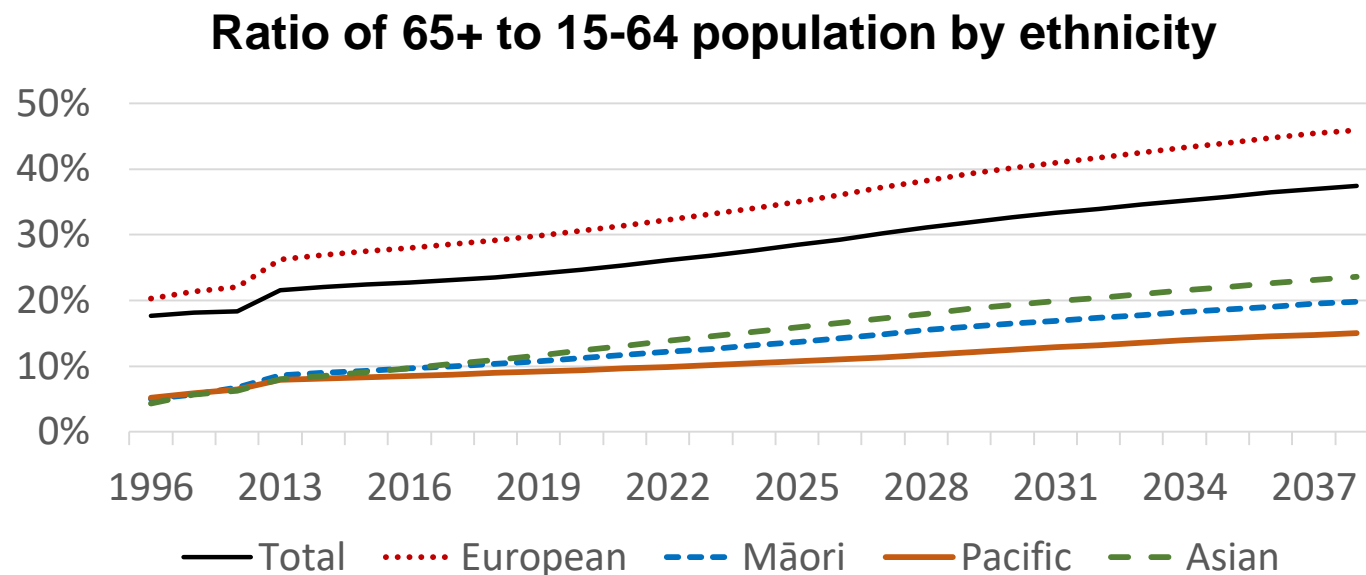


Life expectancy by ethnicity



Why does ageing matter?

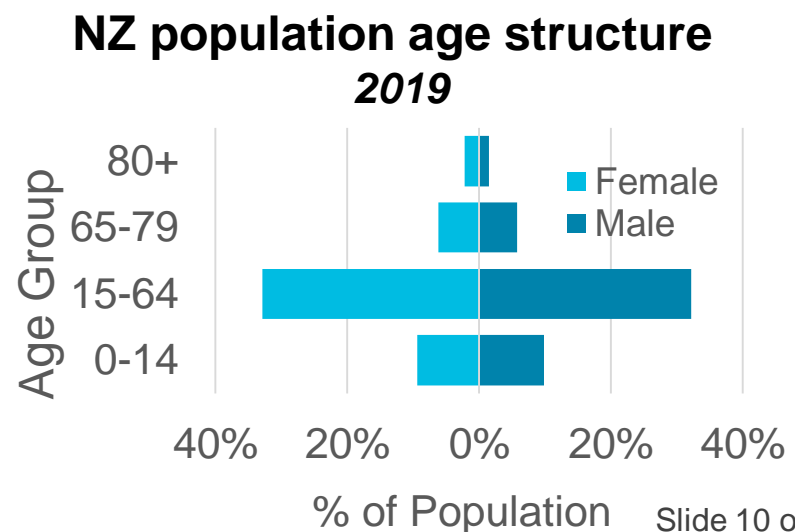
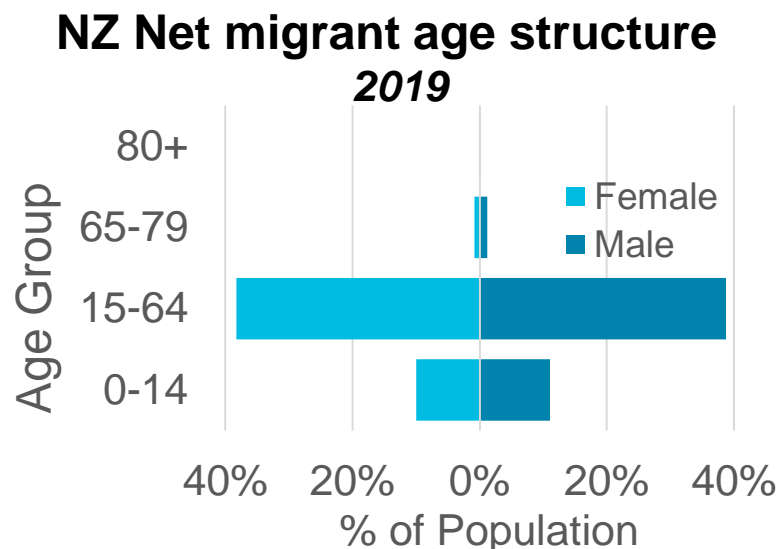
- Relatively fewer people are entering the labour force
- At the same time, the potential 'dependent' population is growing
- This leads to an increase in the so-called old-age dependency ratio
- Which in turn puts pressure on the working population and creates fiscal pressures



Can immigration offset ageing?

- Yes, but only partially...
 - Positive impact via 2 channels:
 - Migrants are young
 - Bigger proportion working-age
 - Bigger proportion in high-fertility ages
 - Migrant fertility rates are higher
 - Not so relevant in NZ case

Source: Stats NZ



Fiscal Impact

- a) Relatively lower tax base
- b) Pressure on spending
(Health & Pensions)

Fiscal Impact

- Relatively lower revenue due to slower growth in labour force
- Upward pressure on health spending
 - In 2013/14, the 75+ age group accounted for 6% of the population but received 26% of health funding
- Increase in pension costs
 - Increase in the number of people aged 65+
- If there is no policy response to these challenges, government debt will reach unsustainably high levels
- Therefore, there should be some kind of response, which could include a combination of:
 - Higher taxes
 - Decrease in other government expenditures
 - Change in legislation
 - Boost in economy's productive capacity

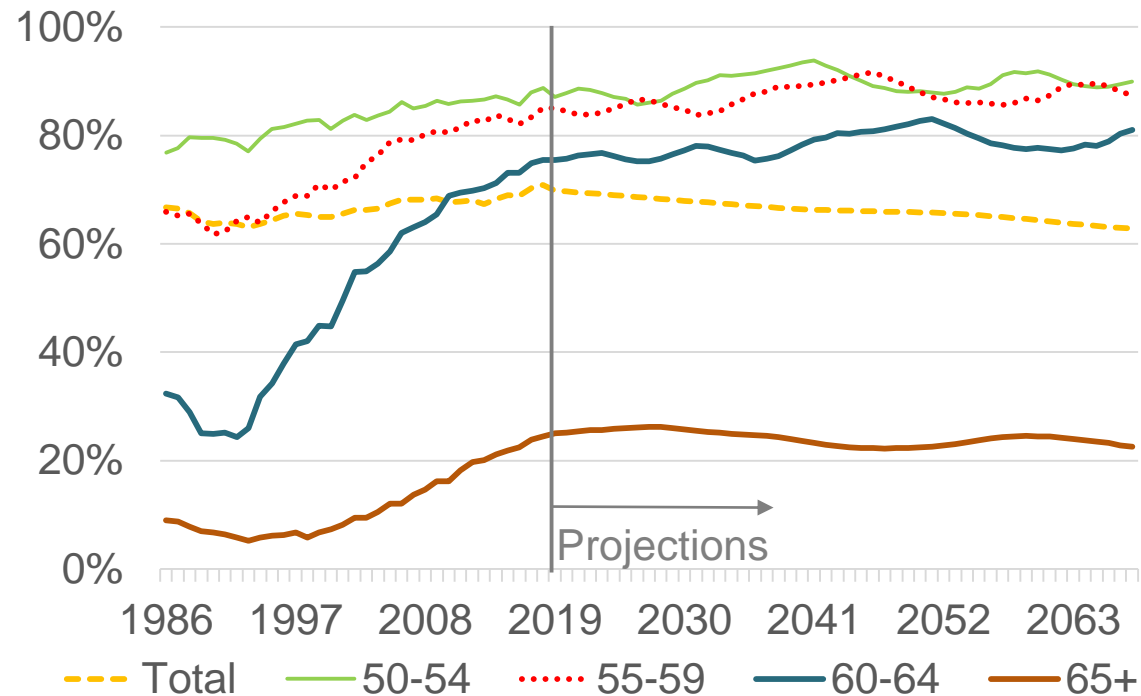
Economic Impact

1. Labour supply growth will decline, but by how much?

Steady rise in elderly LFPR

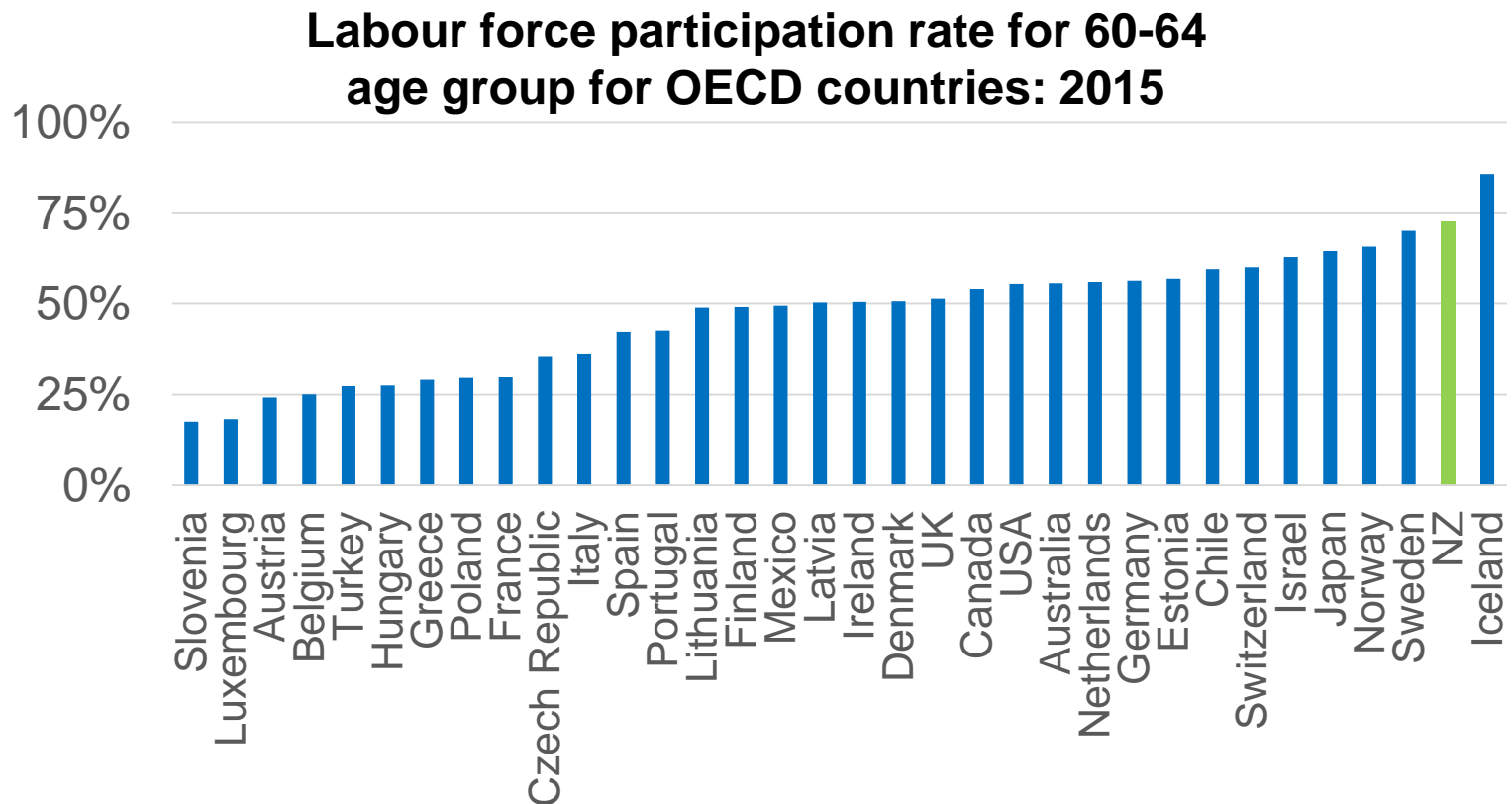
- Legislative changes
- Increase in life expectancy
- Improved health

Labour force participation rate for selected age groups
Both sexes



NZ elderly labour force participation compared to other countries

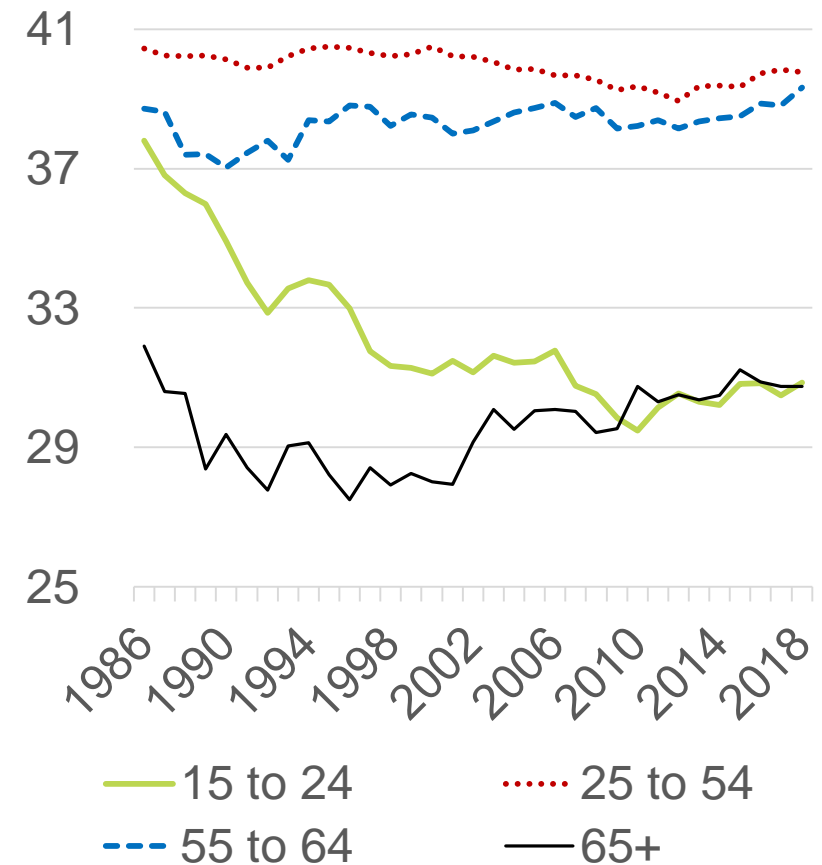
- NZ's LFPR among the elderly (esp. 60+) is already one of the highest compared to OECD countries



Hours worked

- What matters for labour supply is not only the participation rate, but also the number of hours that people work
- Older and younger workers more likely to work part-time
- Long-term downward trend in hours worked
 - Increase in incidence of part-time employment
 - Increase in number of leave days
- NZ hours worked likely to be overestimated
 - Difficult to make cross-country comparisons

Average Usual Weekly Hours Worked by Age Group (Both Sexes)

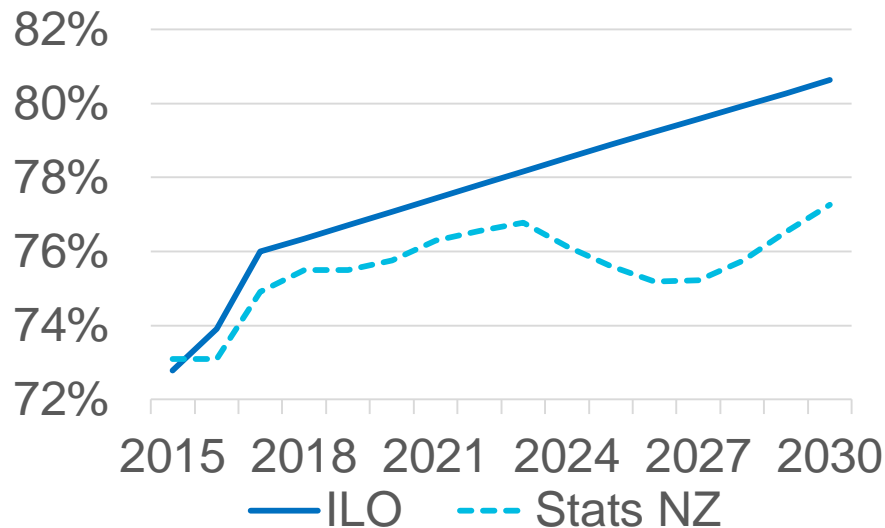


Source: OECD

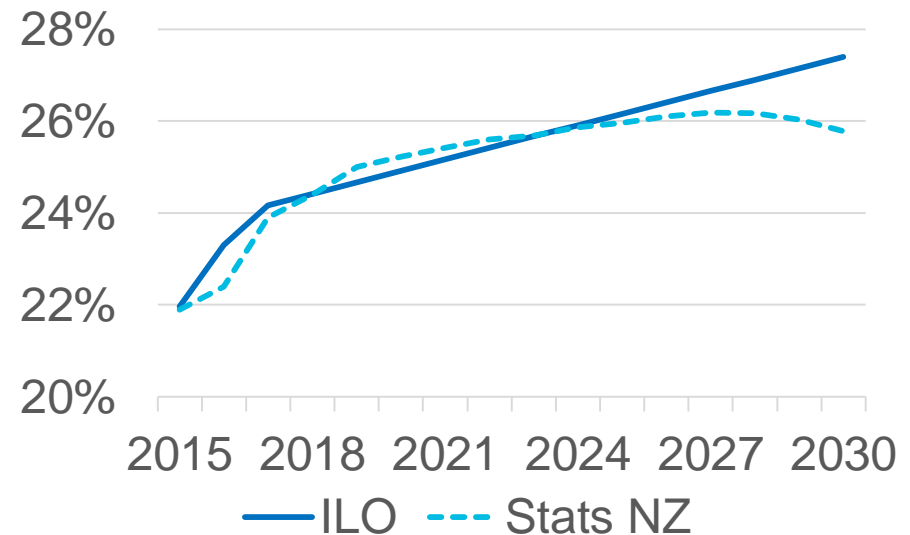
Is Stats NZ underestimating the future behavioural impact?

- Stats NZ projects a decline in LFPR in the 65+ age group
 - 22.6% by 2068, compared to 25% in 2019
- Might continue increasing instead?
 - Life expectancy and health likely to continue improving

Labour force participation projections for NZ 60-64 age group

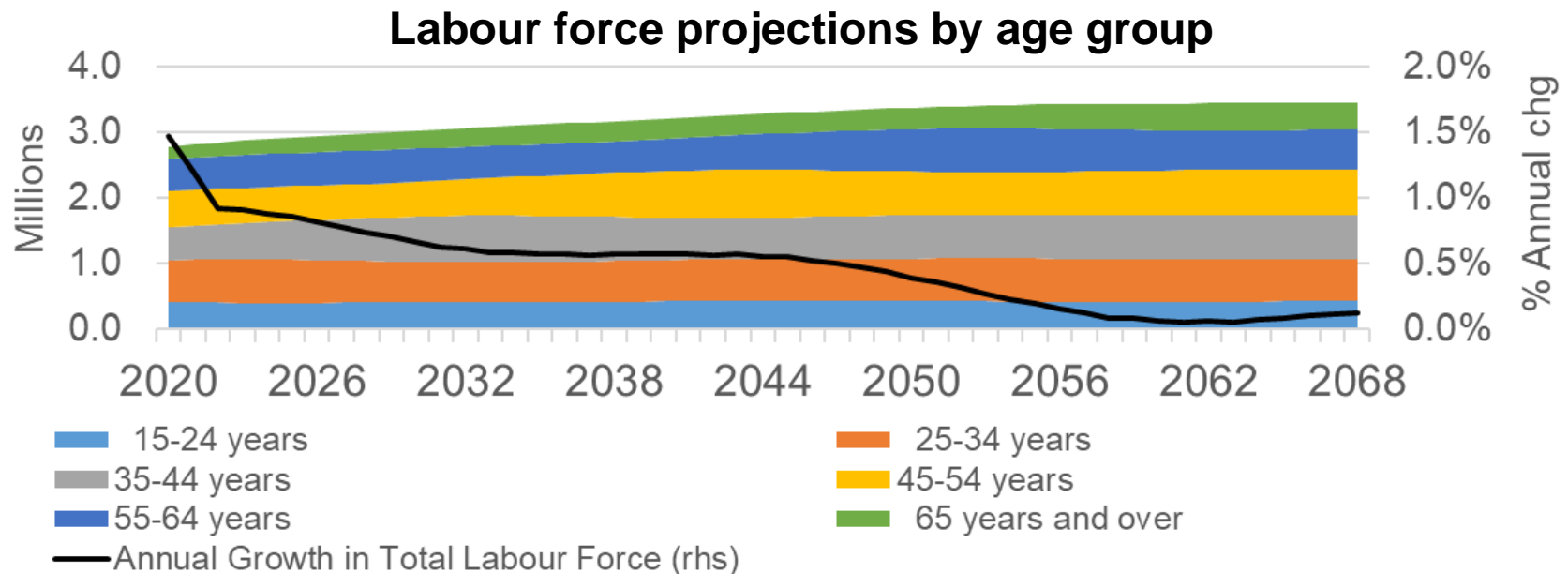


Labour force participation projections for NZ 65+ age group



Putting it all together

- NZ labour force to continue growing in absolute terms, though growth rate will slow
- Growth could be higher than projected by Stats NZ
 - Recent actual data higher than projections
 - LFPR of older workers and women might continue increasing in line with global trends



2. Will labour force productivity decline as the population ages?

Does productivity decline by age?

- Hypothesis: inverted U-shaped relationship
- Difficult to measure
- Various types of studies:
 - Cognitive abilities
 - Supervisors' ratings
 - Piece-rates
 - Employer-employee matched data sets
 - Age-specific employment and earnings structures
 - Macro-level

Cognitive abilities

- Negative relationship between age and some types of cognitive abilities
- Fluid vs. Crystallized intelligence
 - Fluid: Ability to reason, learn new things, solve problems
 - Crystallized: Accumulation of knowledge, facts and skills throughout life (=experience)
 - Fluid intelligence peaks in late 20s / early 30s
 - Crystallized intelligence peaks much later (60s) and doesn't decline as rapidly
- Net effect on work performance?



Studies of individual-level performance

- Supervisors' ratings
 - These types of studies find no relationship between age and performance
 - Subjective
- Piece rates
 - More direct and less subjective
 - Mostly finds negative relationship between age & productivity
 - But significant differences between industries
- Employer-employee datasets
 - Estimate contribution of employee to company's value-added
 - Inverted U-shaped relationship
- Selection bias?

Wage profiles by age

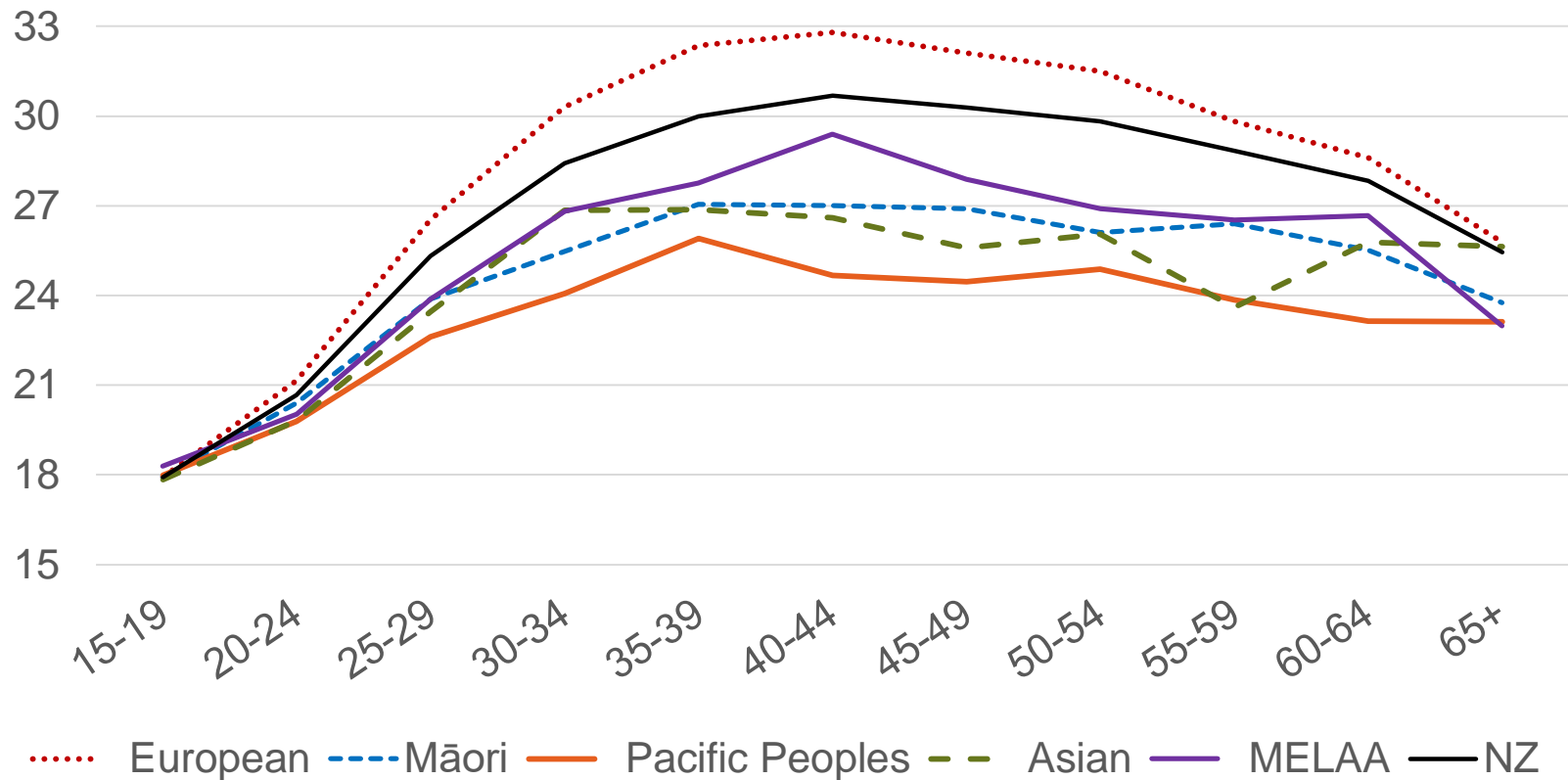
- In perfectly competitive markets, real wages = marginal product of labour
- So real wage growth = productivity growth
- Generally, we do tend to see an inverted U-shaped earnings/age profile (including for NZ)



Wage profiles by age: NZ data

Hourly earnings

Real median hourly earnings by age and ethnicity (2015-19 avg.)



Source: Treasury calculations with Stats NZ data. Nominal values deflated to 2010 price level.
Note: MELAA = Middle Eastern, Latin American and African

Conclusion

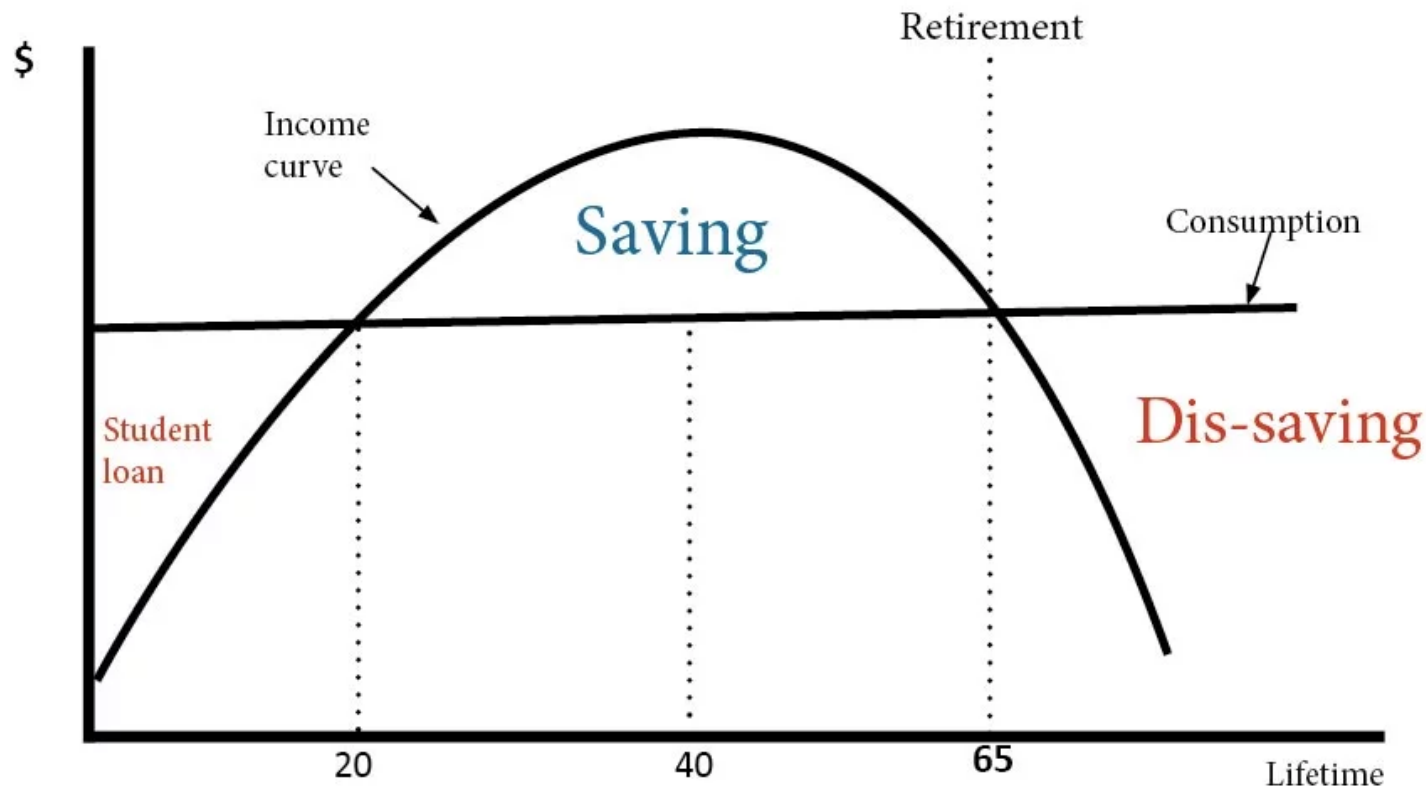
- Impact of ageing on productivity is uncertain
- Possible negative impact, as the proportion of workers aged 50+ increases
 - Deterioration in some of their cognitive and physical abilities
- But there are counter-effects:
 - Decline in the share of workers aged 15-24, who also have lower productivity levels, due mostly to their lack of work experience
 - Increased use of robots
 - Increase in capital intensity
 - Targeted training programmes, the value of experience, industry knowledge & networks



3. Will savings increase or decrease as the population ages?

What is the effect of ageing on savings?

- Life cycle hypothesis (LCH) [Modigliani & Brumberg, 1950s]
 - When making decisions about how much to consume and save, individuals take into account their entire expected lifetime earnings



What is the effect of ageing on savings?

- Net impact on savings?
 - Increase in savings in anticipation of longer retirement
 - Decline in savings once retired
- Depends on:
 - Savings culture
 - Government pensions
 - Private retirement industry
 - Investment returns
 - Risk aversion
 - Net worth levels
 - Desire for bequests



4. Impact on asset market prices
– depends on answer to
previous question (savings)

Impact on domestic asset markets

- Asset meltdown hypothesis (AMH)
 - As more people start drawing down on their retirement savings, this will tend to reduce asset prices and increase interest rates
 - Negative impact on capital accumulation and economic growth
- Empirical evidence
 - No meltdown, but significant negative impact
 - 2 key issues:
 - Pace at which the elderly draw down on their savings
 - Capital markets are not closed



5. How prepared are New Zealanders for their retirements?

Savings behaviour in NZ

- If we define net borrowers as everyone <25 and 65+, and net savers as everyone 25-64, NZ's net borrowers will start exceeding net savers by 2028
- NZ ranked 8th out of 37 countries in 2019 Melbourne Mercer Global Pension Index
 - How to improve sustainability of NZ's pension system?
- Most NZers aged 45-64 have made adequate provision for their retirement (*Le et al. 2009*)
- But, house ownership levels are declining at every age



6. Countries are not ageing at the same pace; international capital flows can help to diversify demographic risks

Role of international capital flows

- Countries that are ageing relatively more rapidly will have an excess capital stock, which can be invested in countries that are not ageing as rapidly
 - Increase effective return on capital in ageing countries
 - Depends on how freely capital can move
 - Capital controls, country risk factors, exchange rate risk, home bias
 - Can developing countries absorb this increase in capital?



7. Demand-side Effects: Impact on level and composition of consumption?

Effects of demand changes

- An ageing population may result in changes in:
 - **Types of goods** that are demanded
 - Older people have different needs and interests than younger people
 - But difficult to project what the consumption trends of older people of tomorrow will look like
 - **Level of consumption**
 - Older people tend to have a higher propensity to consume
 - But impact on overall consumption is uncertain – depends on levels of risk aversion, net worth levels, desire for bequests

Composition of spending

- Trends from Household Economic Survey* (hh expenditure as % of hh disposable income):
 - Spending on health and insurance increases with age;
 - Spending on household energy increases for oldest cohort (65+);
 - Spending on rent falls with age, while rates increase with age, reflecting shift from renting to home ownership;
 - Spending on education falls with age; and
 - Spending on fruit and vegetables increases slightly with age.



8. Wellbeing Impact?

Impact of ageing on wellbeing

- People are living longer, healthier lives, which is positive for wellbeing, provided:
 - Can at least maintain standard of living
 - Do not infringe on future generations to be able to enjoy the same benefits
- Wellbeing indicators (financial & non-financial) for current NZ elderly are better than population average
- Future generations should not be worse off (intergenerational equity)
- This necessitates an early fiscal response, which will have 2 benefits:
 - Allow people enough time to adjust to policy changes
 - Lower the overall cost of adjustment

Questions?

Appendix

Definitions & Sources

- Working-age population = 15+
- Prime working-age population = 25-54
- Labour force (LF) = employed + unemployed
- Labour force participation rate (LFPR) = Labour force / working age population

- Stats NZ
 - LF projections last updated in Dec'17
 - LF *quarterly* (Sep'13 - Jun'19) estimates recently reweighted to reflect new population data

- International Labour Organization (ILO)
 - LF projections last updated in Jul'18
 - They use 2017 UN population projections