

What do we know about system performance?

Presentation to Tomorrow's Schools
Task Force

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Before we start, our data
reality



Past



Present



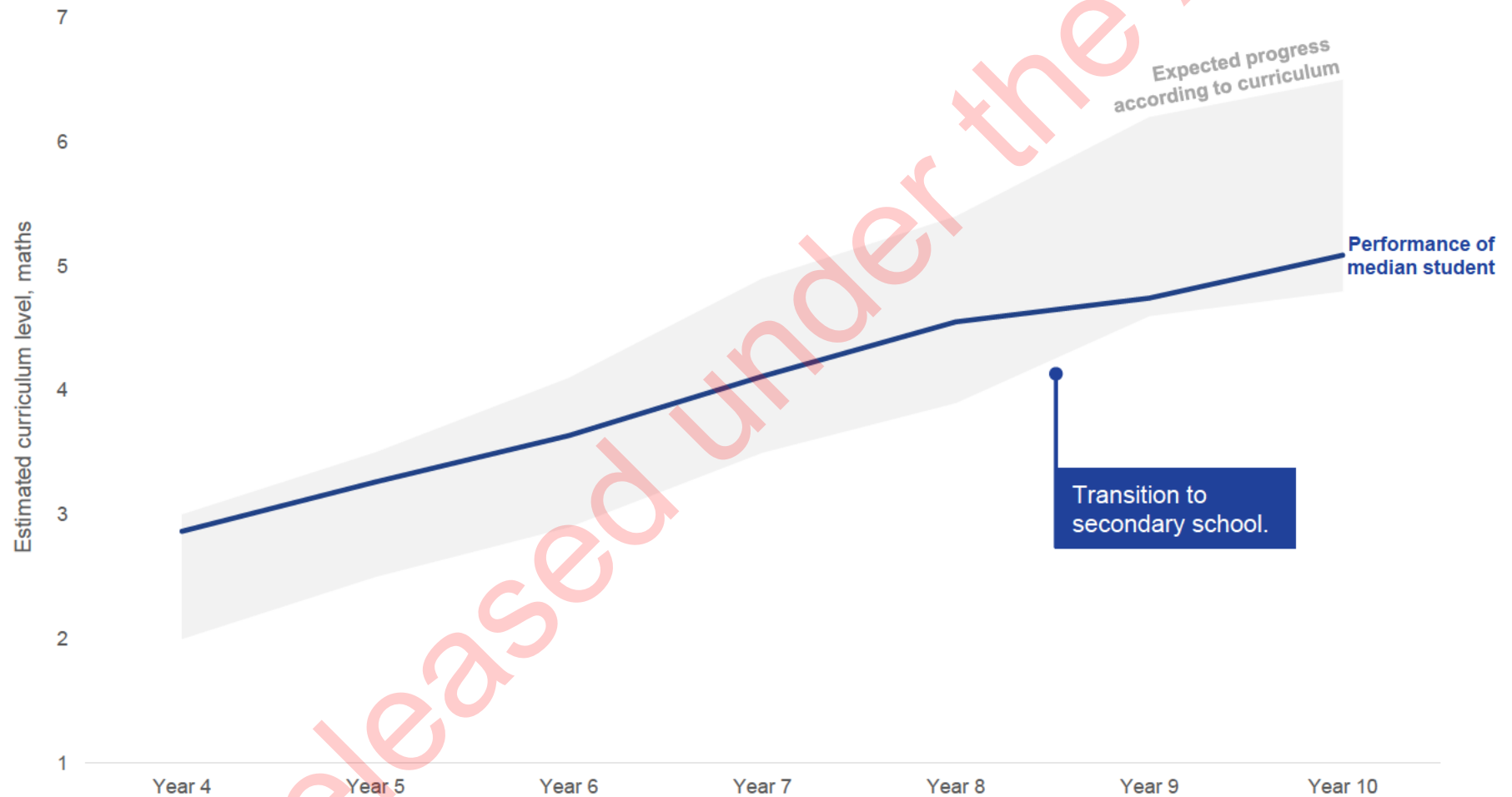
Future?

New Zealand punches above its weight



Source: OECD (2017). *Education at a Glance*.

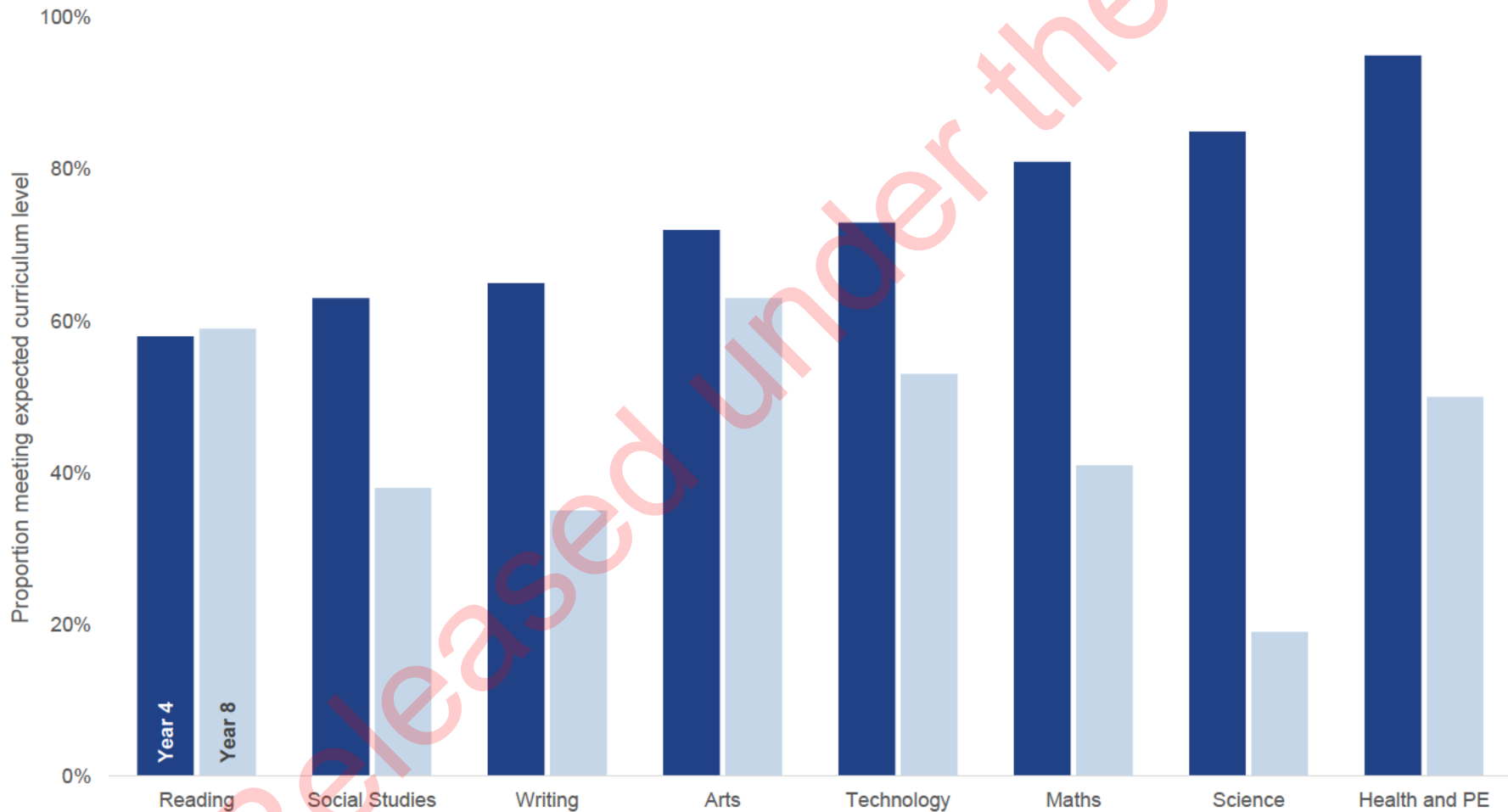
Student progress slows over time, particularly around Year 9



Note: Estimated curriculum level is based on where in the e-asTTle scale a student's score falls relative to score thresholds that indicate curriculum bands. For example, if a student's score is halfway between the cut-off for Level 3 and Level 4, that score is assigned a curriculum level of 3.5.

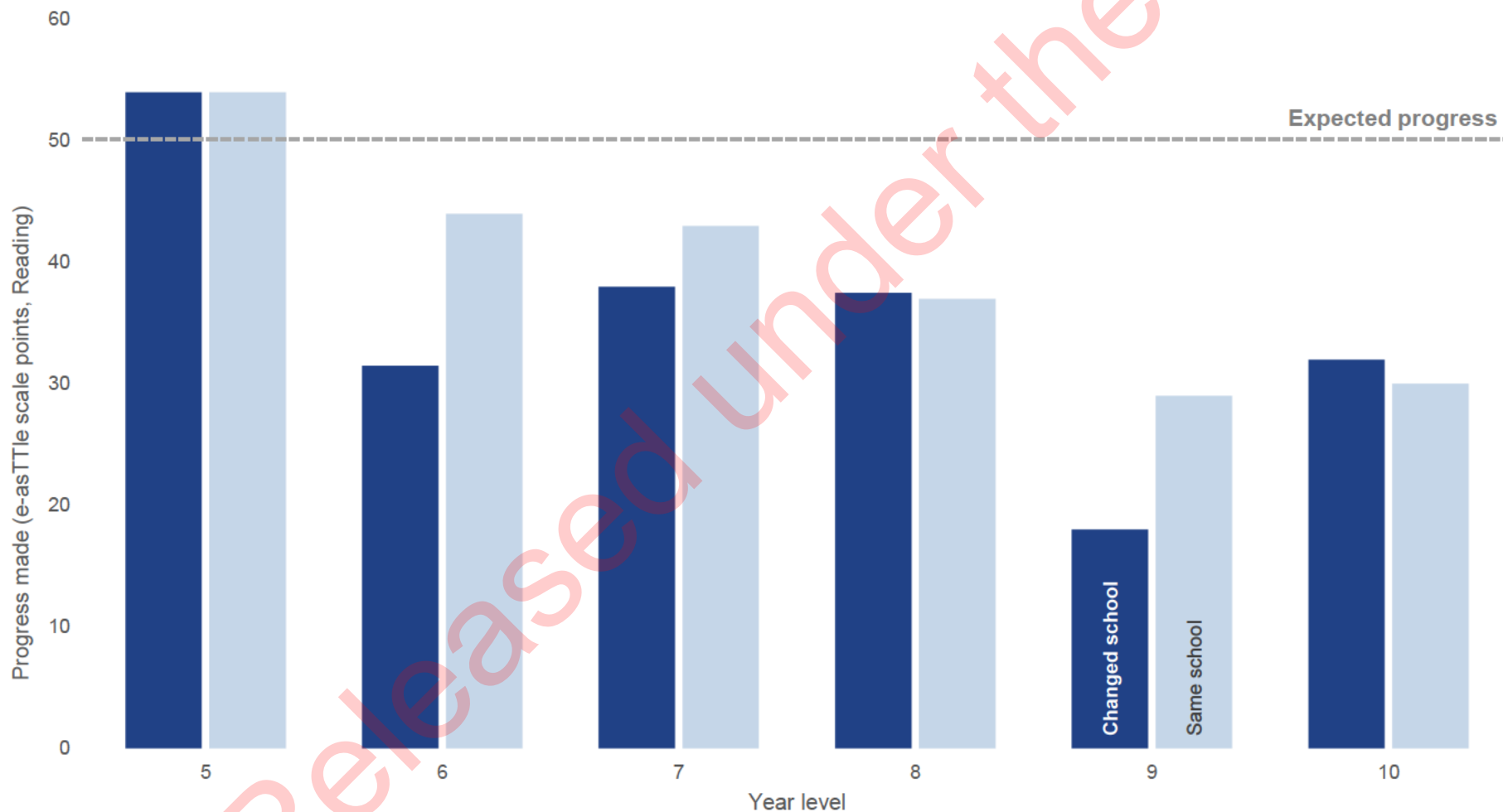
Source: Analysis based on e-asTTle data, 2016

The slowdown happens across most subjects



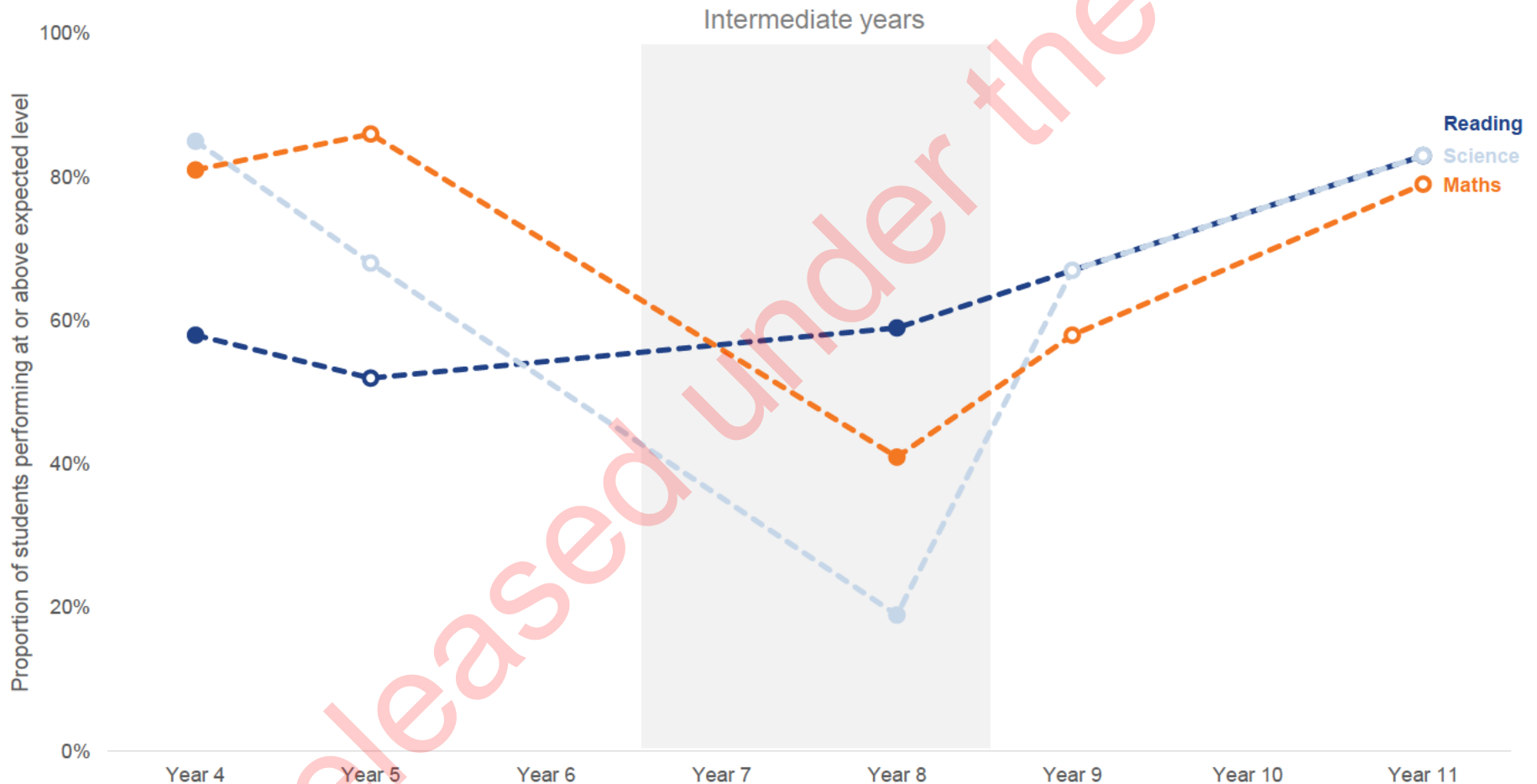
Source: NMSSA data, 2012-2015.

Changing school is associated with lower progress



Note: This graph is not tracking one cohort over time. Each bar in the graph shows the progress for matched pairs over two years. For example, the “Year 7” bar shows the difference in e-asTTle reading score for a group of students between Term 4, Year 6 and Term 4, Year 7.

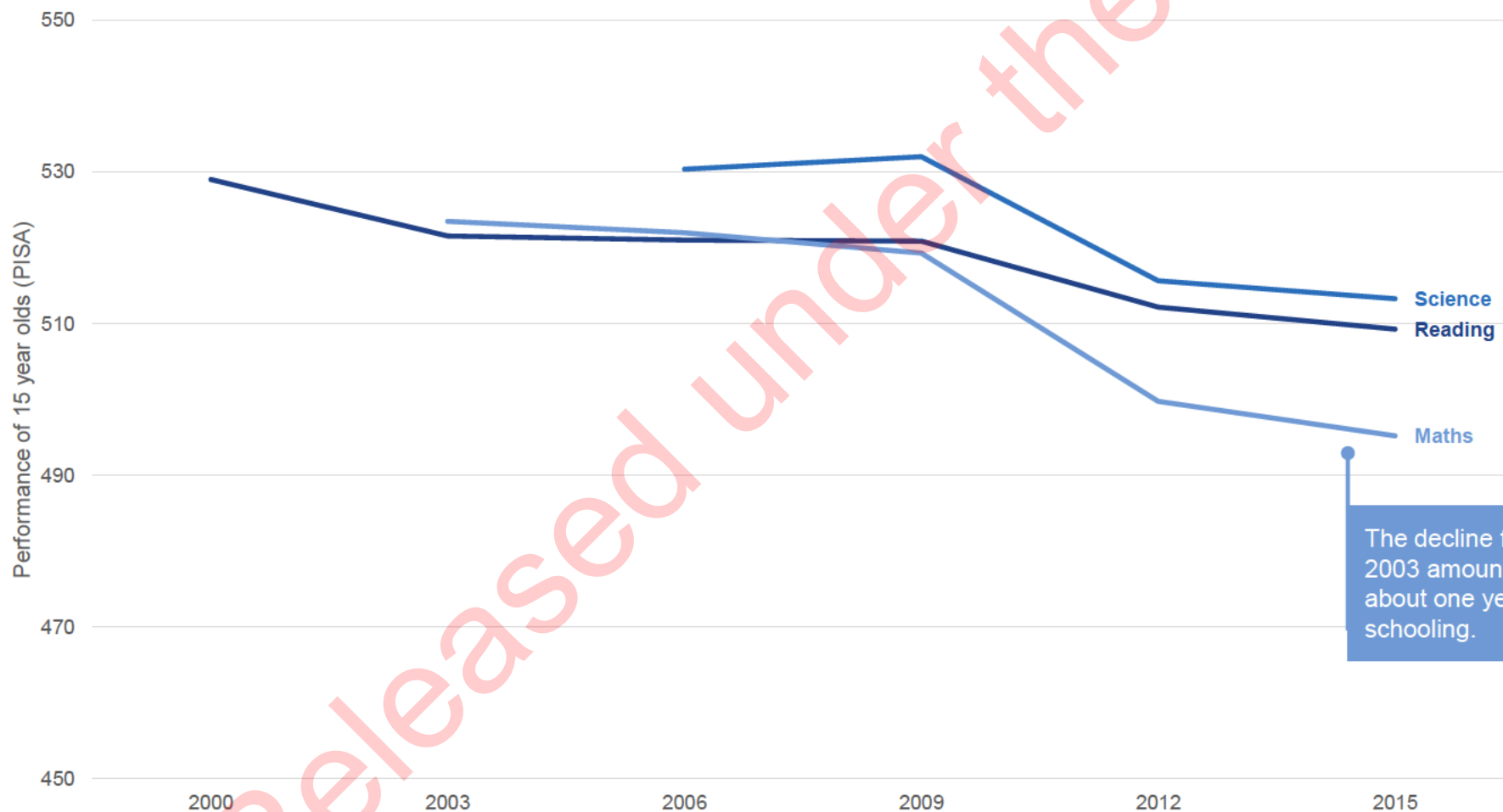
In contrast, we seem to get better in secondary school...



Note: Solid markers indicate performance against the NZ curriculum according to NMSSA. Hollow markers indicate performance against international benchmarks (intermediate proficiency/level 2) according to PISA/TIMSS/PIRLS.

Source: Analysis using PISA (2015); TIMSS (2014); PIRLS (2015); NMSSA (2012-2014)

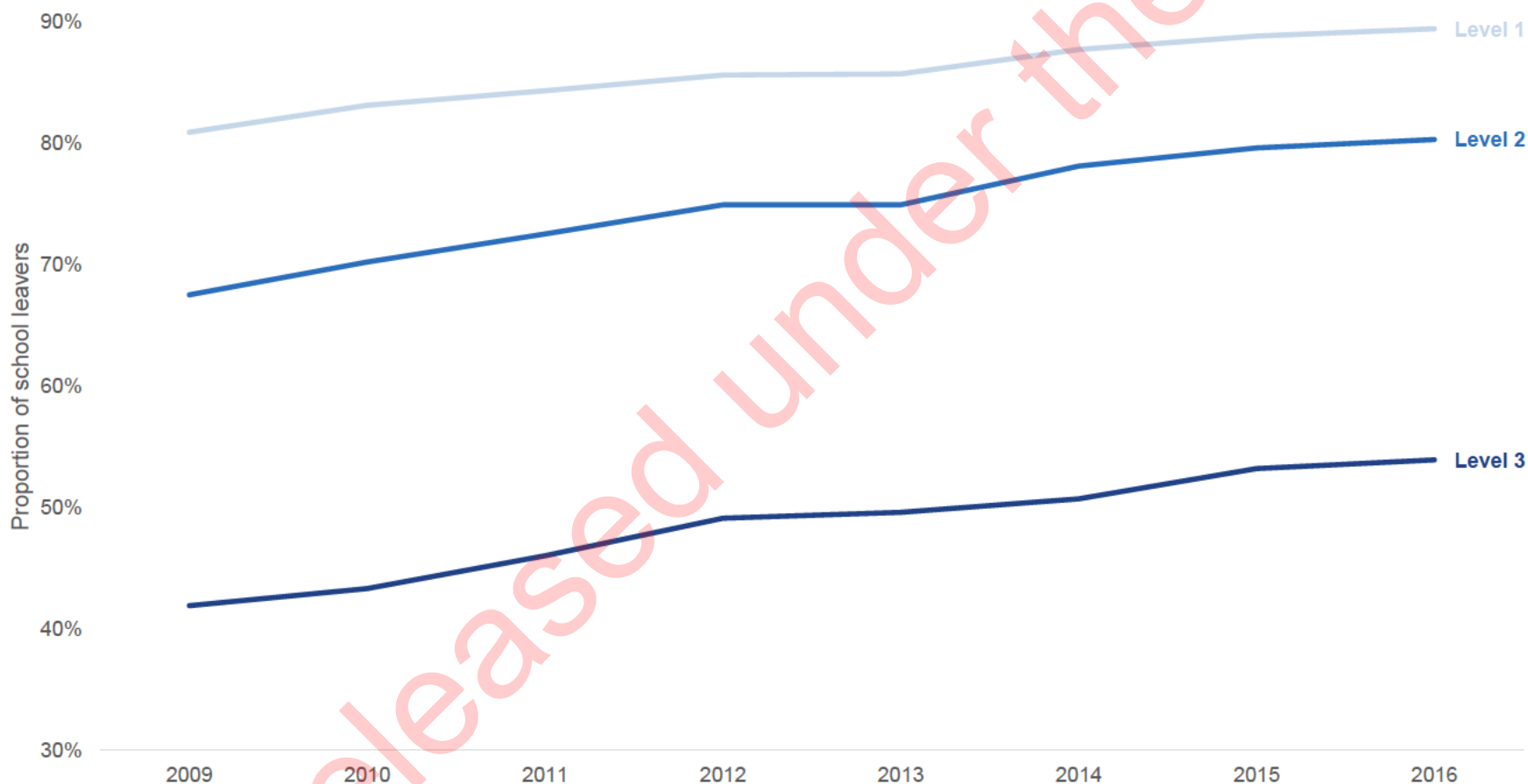
...But even here, performance is dropping



The decline from 2003 amounts to about one year of schooling.

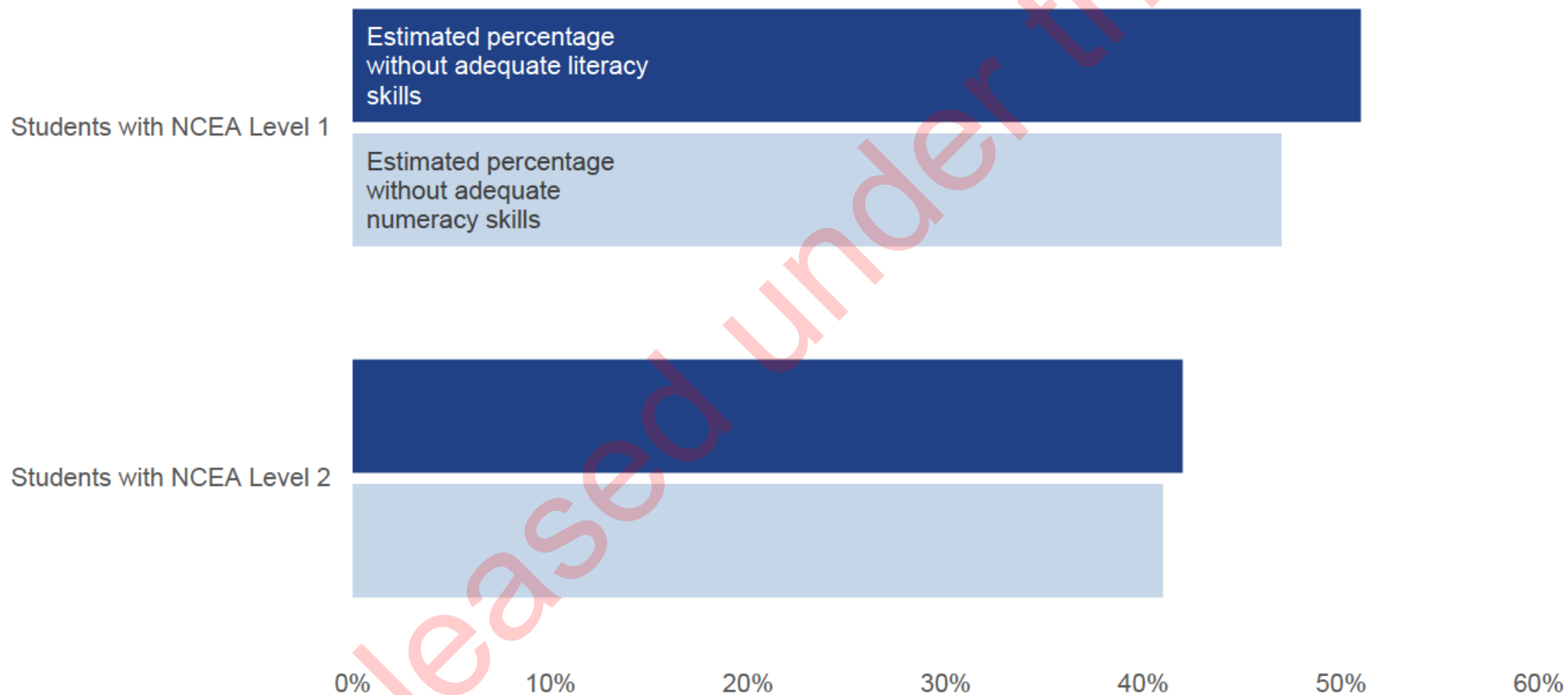
Note: Science scores are not comparable prior to 2006. Maths scores are not comparable prior to 2003.
Source: PISA 2000-2015.

NCEA results tell a different story



Source: educationcounts.govt.nz.

Is the bar high enough?



Note: "Adequate" literacy and numeracy skills are taken to be band 3 of the OECD Programme for the International Assessment of Adult Competencies (PIAAC) survey. The OECD defines this as a baseline level necessary to operate in an information-rich society.

Source: Thomas, G., Johnston, M. & Ward, J. (2014). *Alignment of literacy and numeracy measures*. Research for the Tertiary Education Commission.

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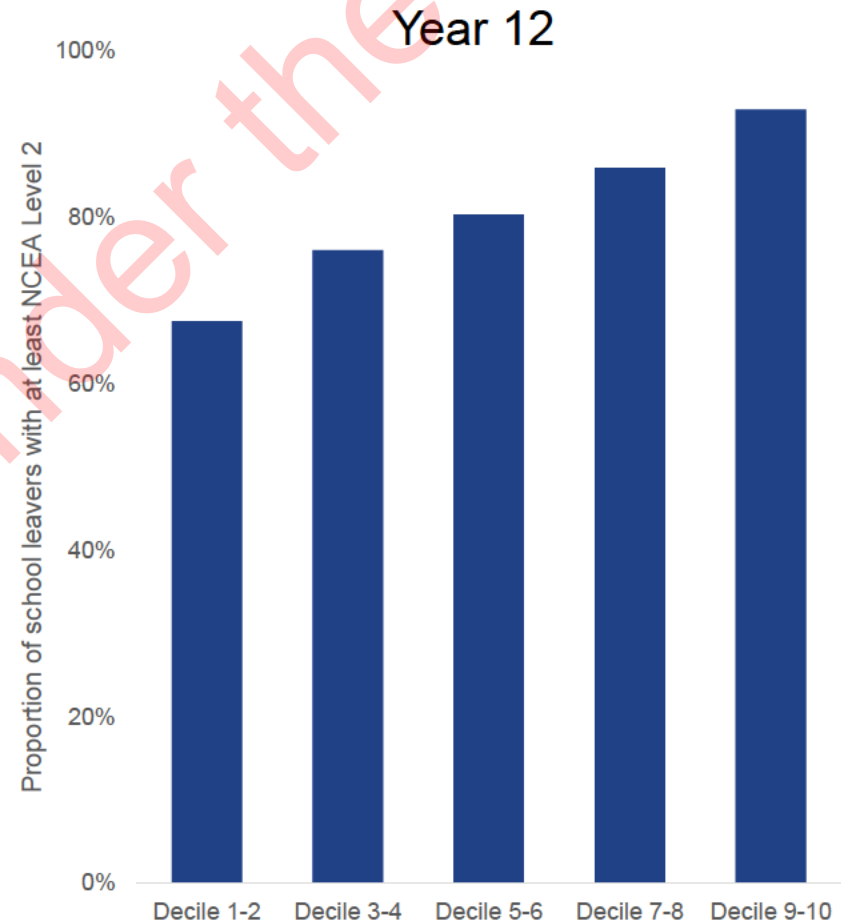
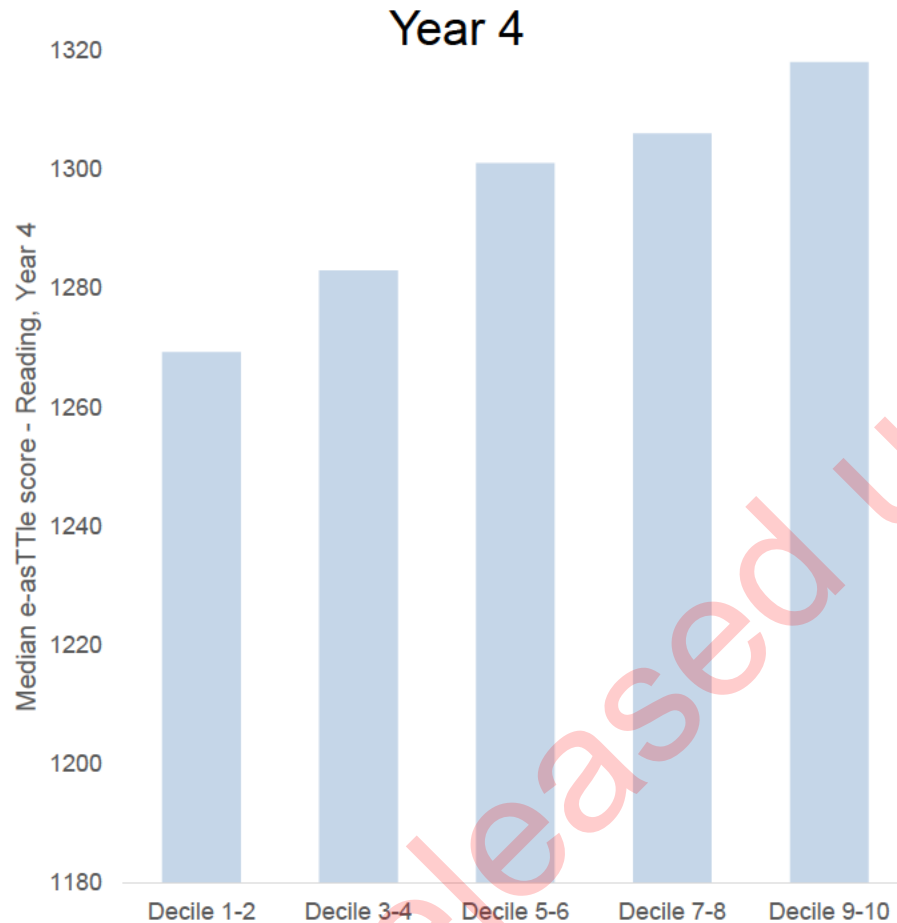
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The equity story

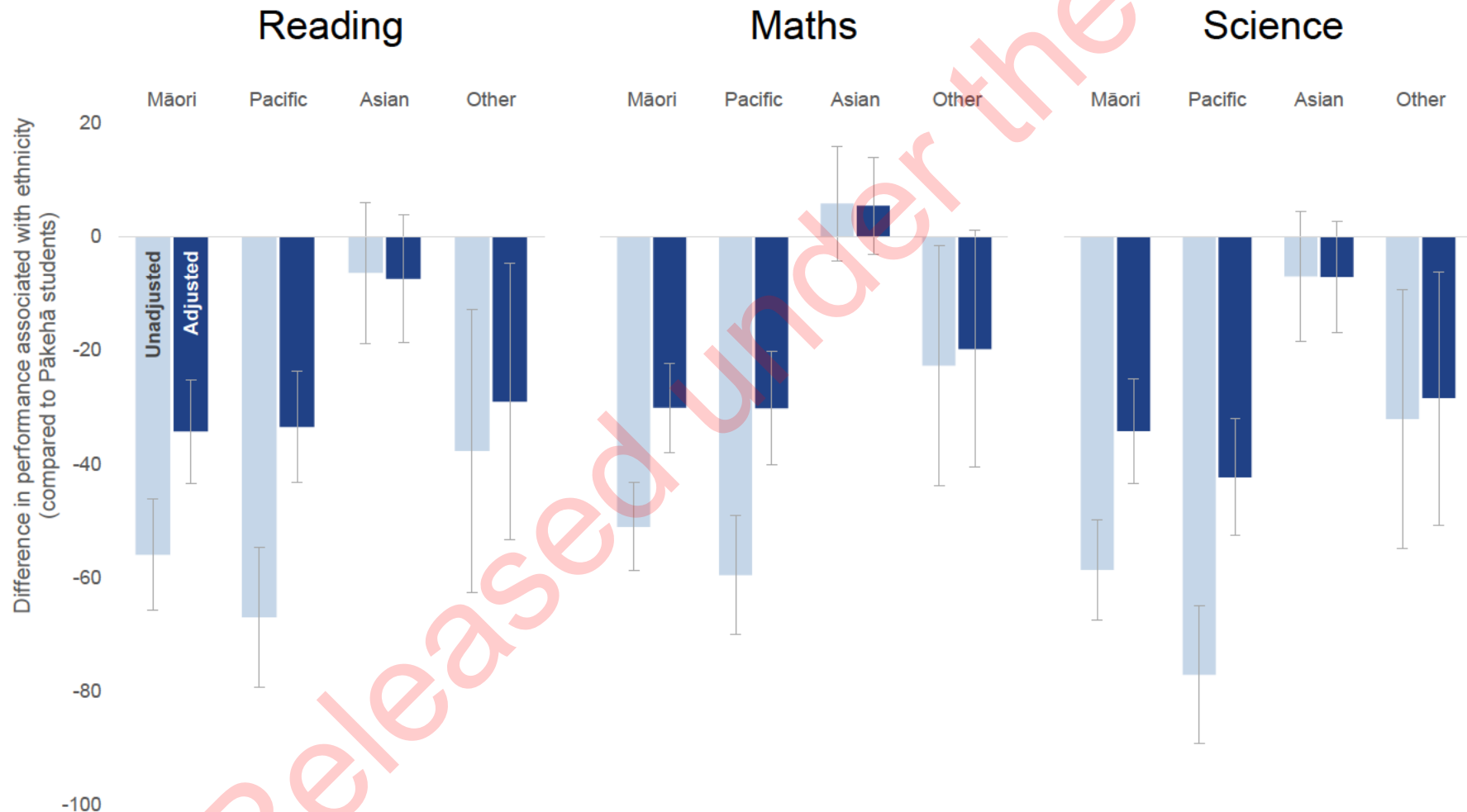
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There are socioeconomic gaps throughout schooling



Source: Analysis of e-asTTle data (2016); educationcounts.govt.nz for NCEA data.

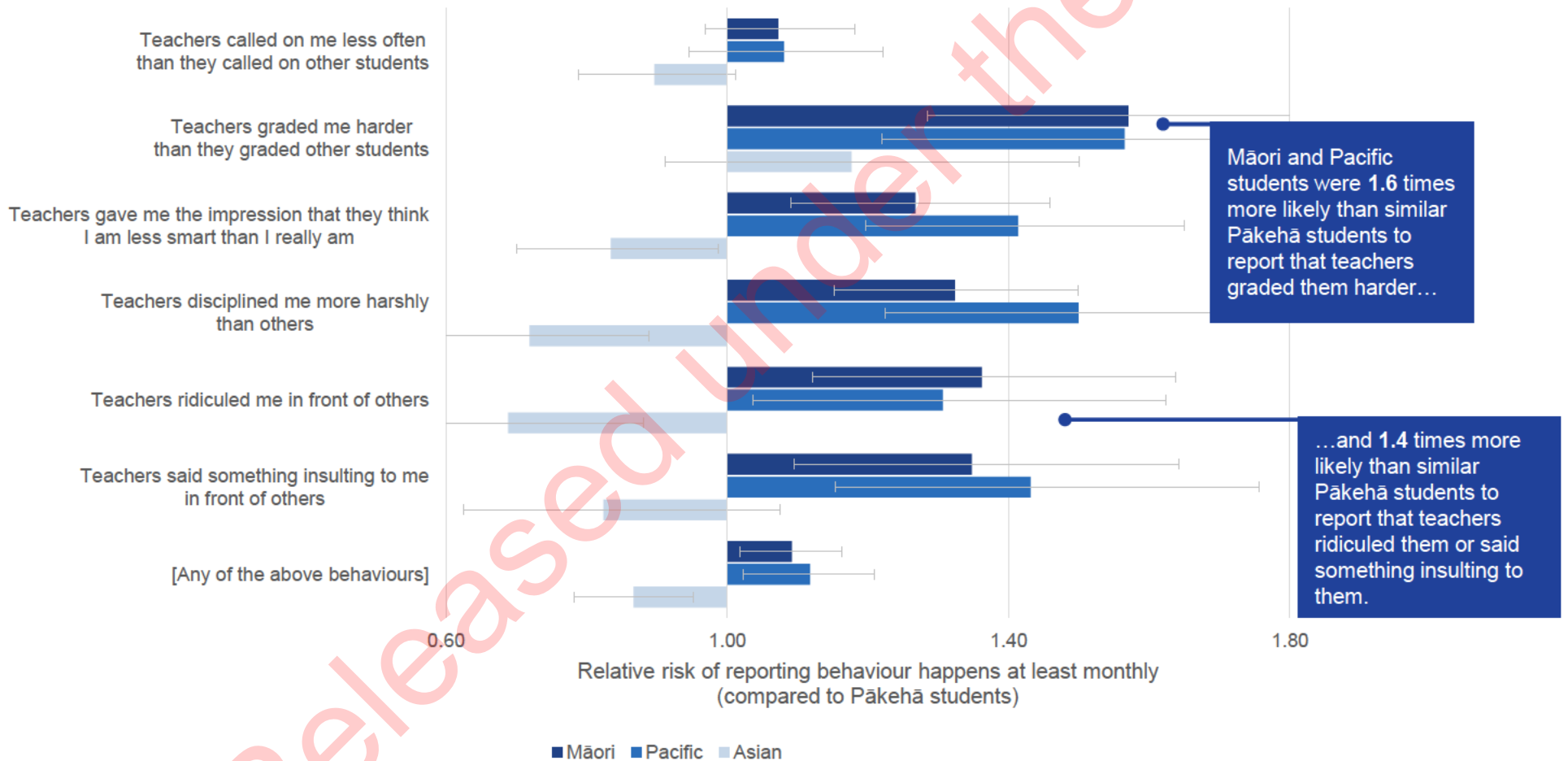
Only some of the differences in outcomes can be explained by SES



Notes: The "unadjusted" effects are the differences in student scores associated with ethnicity without taking account of differences in student background. The "adjusted" effects are the remaining differences associated with ethnicity after adjusting for the effects of student socioeconomic background, student gender, and school decile. Students were asked to select all ethnicities that applied to them, and so some students are included in multiple categories.

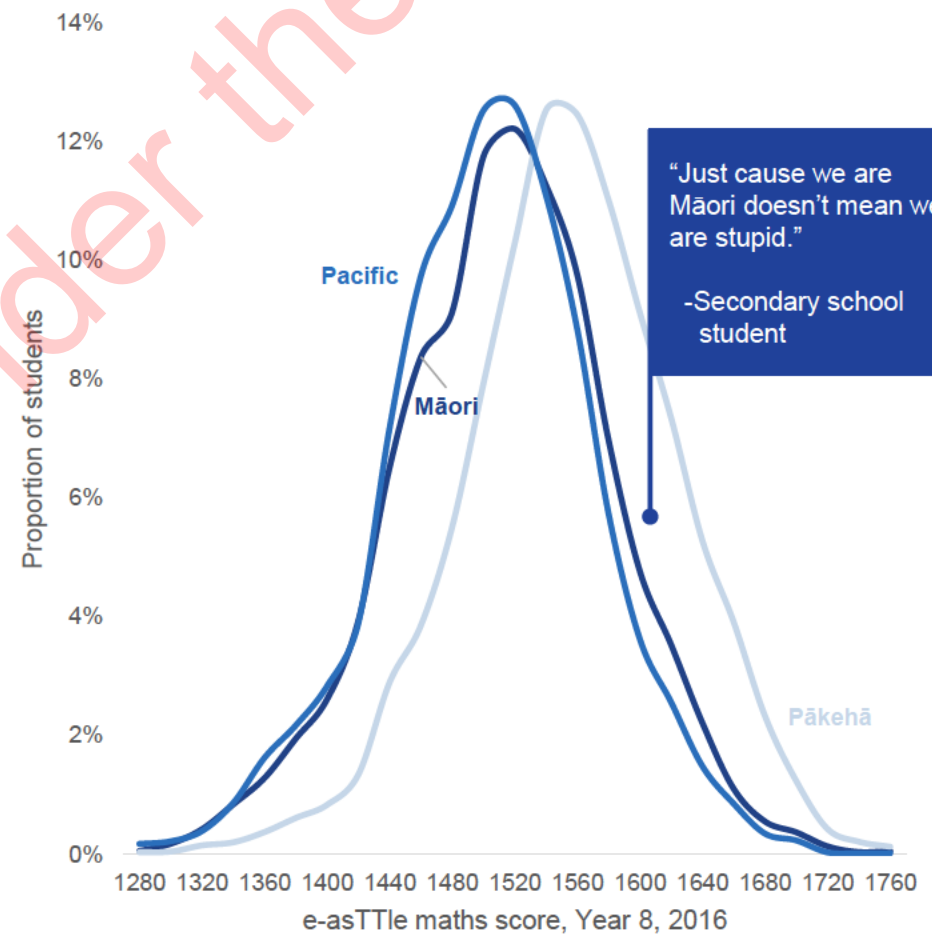
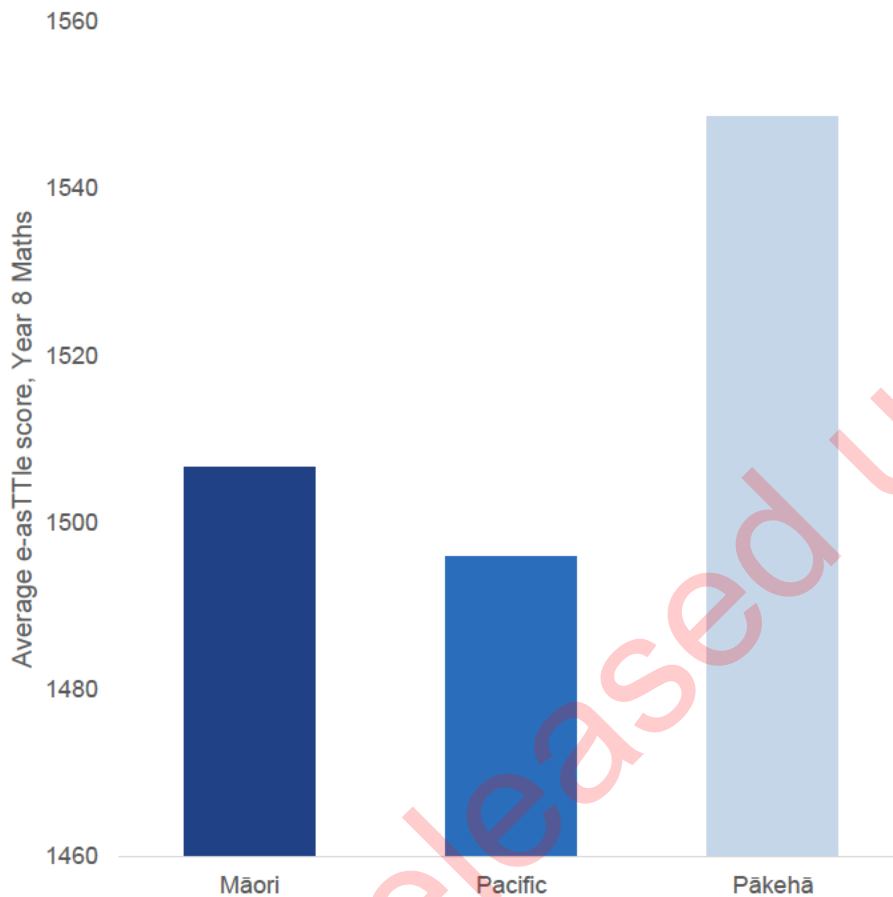
Source: Analysis of PISA (2015) data.

We need to grapple with stigma and unconscious bias



Note: The above effects are after adjusting for the effects of student socioeconomic background, student gender, and school decile.
 Source: Analysis of PISA (2015) data.

But SES is not destiny



Source: Analysis of e-asTTle data; quote: Children’s Commissioner (2018). *Education matters to me.*

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But we need to focus on differences among students *within* schools as well as differences *between* schools



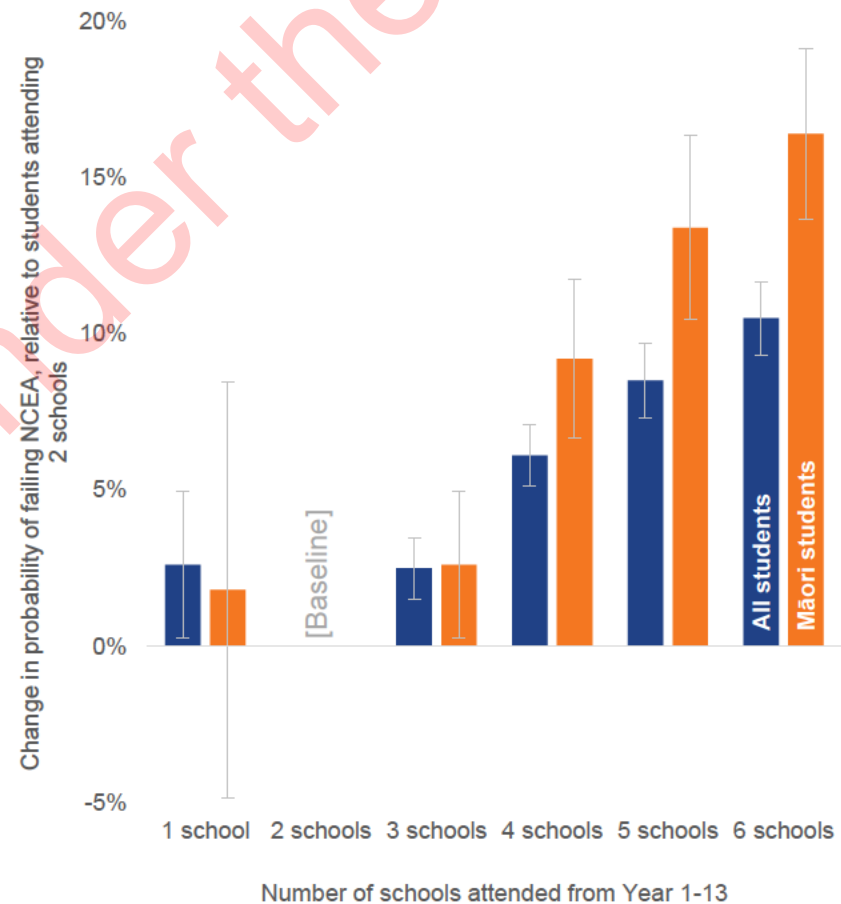
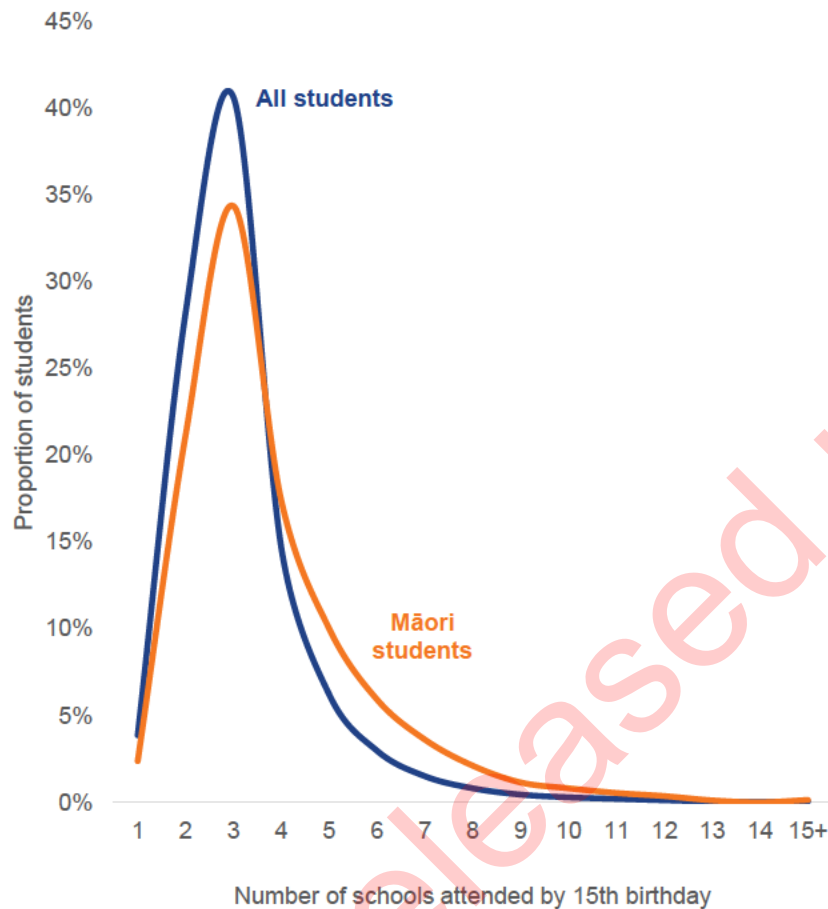
Note: Selected countries only are shown in the above figure. Across all 68 countries participating in PISA, New Zealand ranks 11th in this measure.

Source: OECD (2015). *PISA 2015 results (Volume I)*.

We need to focus on wellbeing

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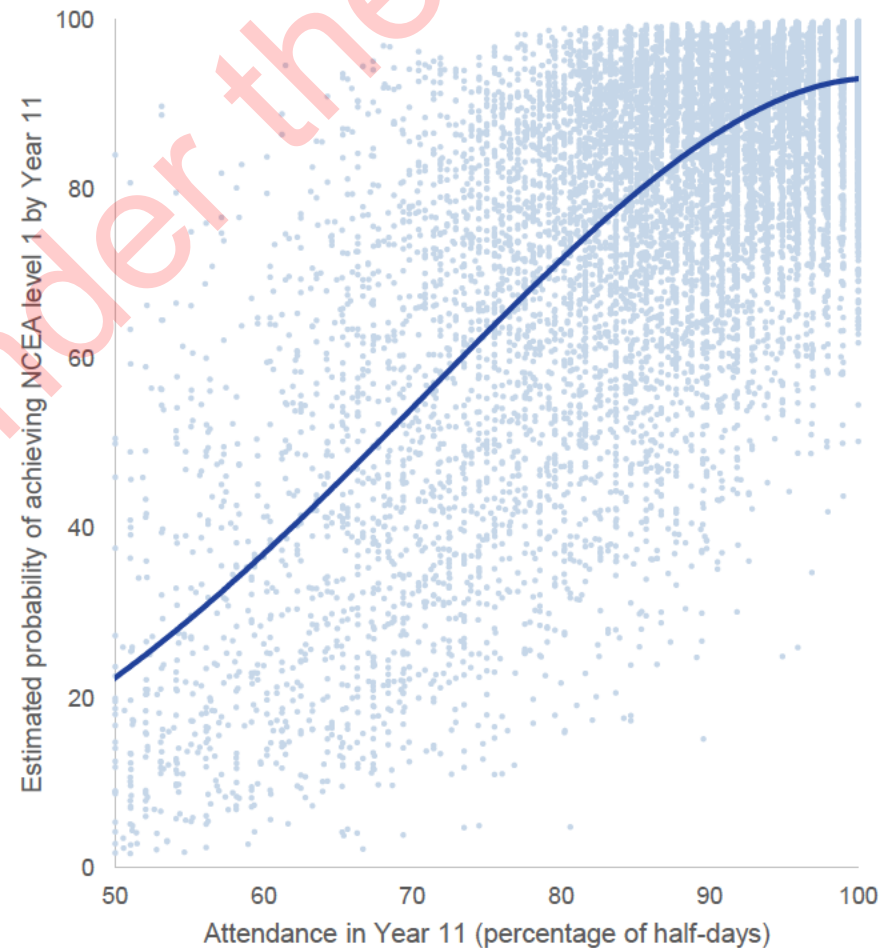
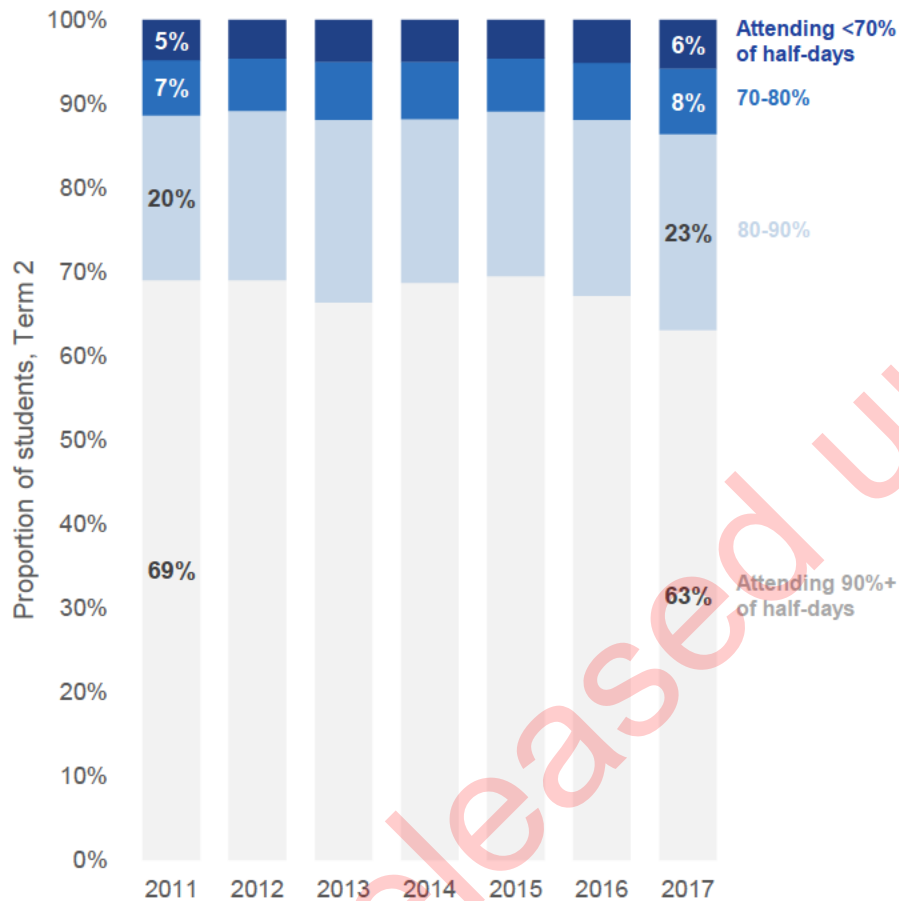
Student transience disrupts learning – affecting some students more than others



Note: Estimates of impact of transience on probability of NCEA level 2 adjust for the effects of a wide range of student, family and school characteristics.

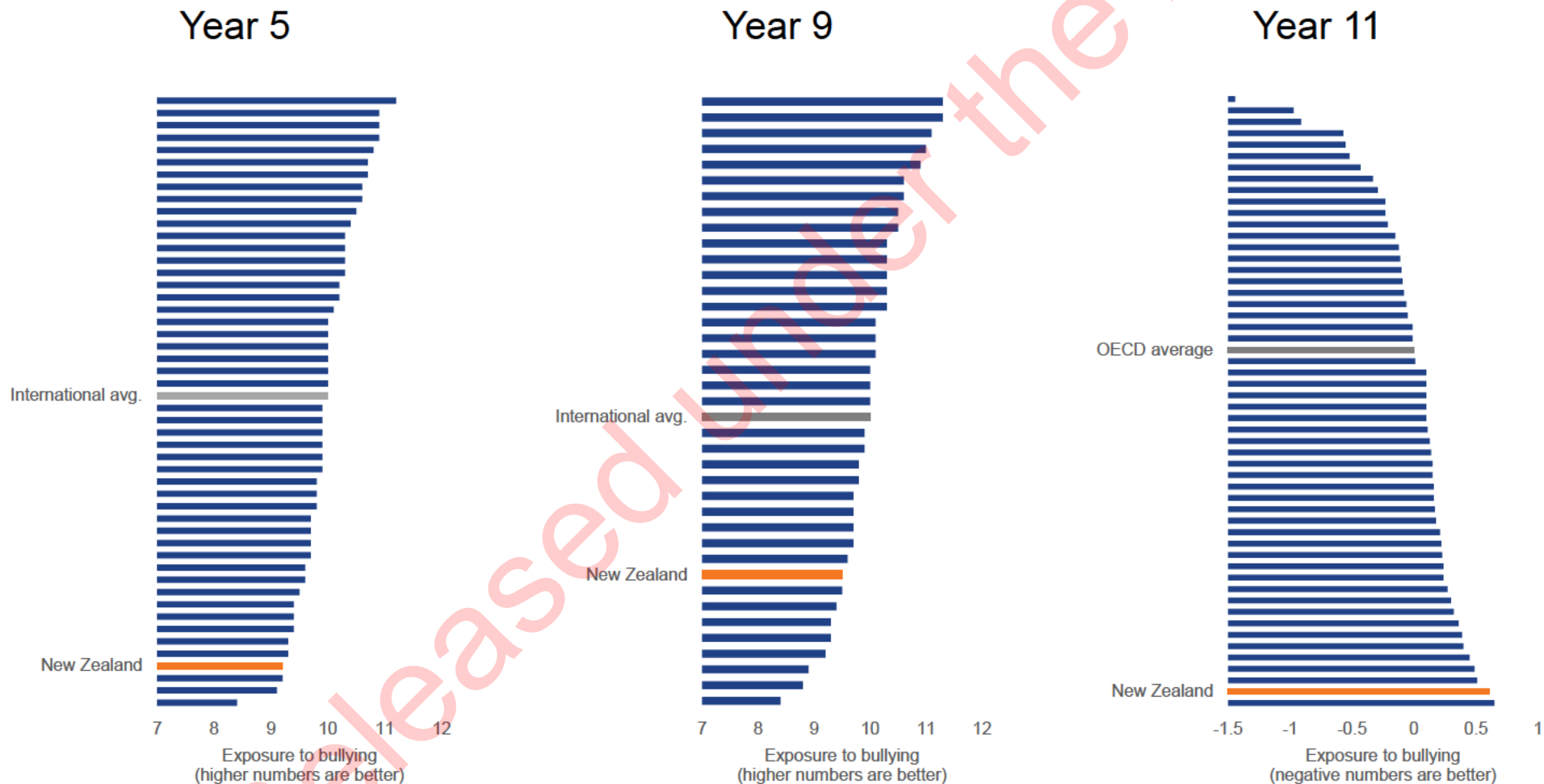
Source: Dixon, S. (2018). *Student mobility across schools and its links to under-achievement*. NZ Treasury working paper 18/01.

Student attendance is low compared to other countries, and it is dropping



Source: Ministry of Education (2018). *New Zealand schools attendance survey: Term 2, 2017 results*.

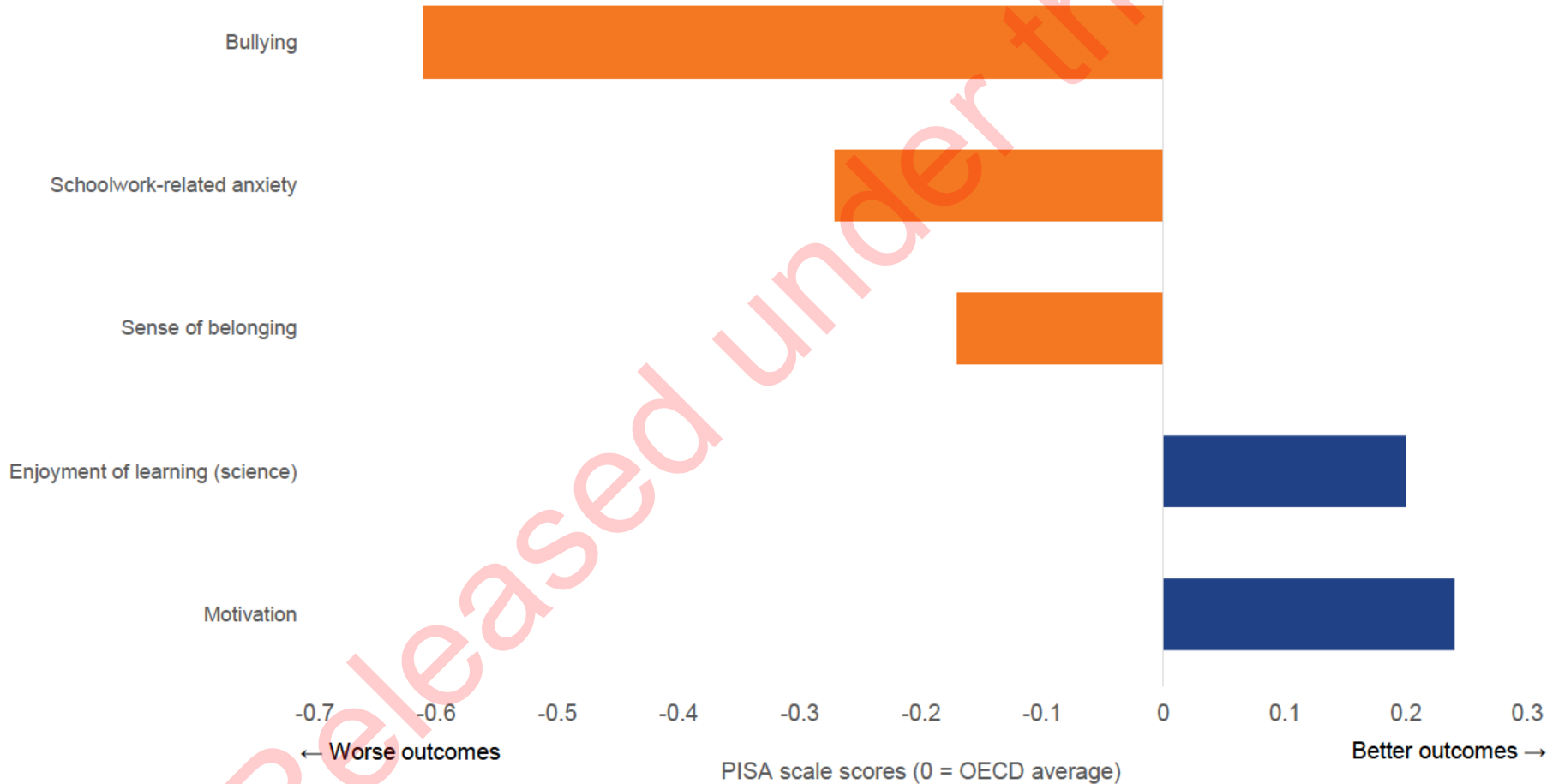
We have a problem with bullying



Note: The scale for Year 11 (15 year olds) is reversed; a higher value on this scale indicates students reported more exposure to bullying.

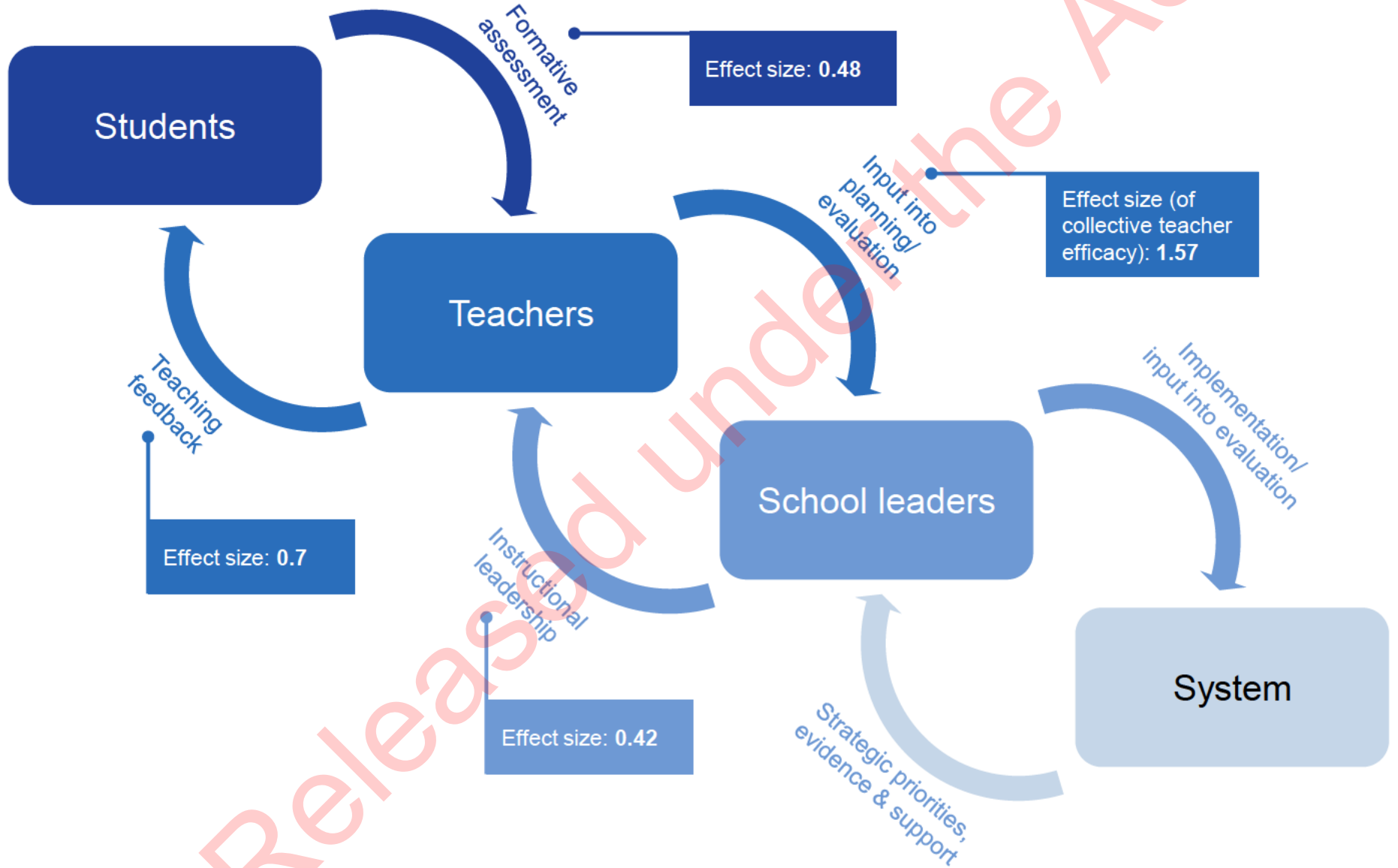
Source: For Year 5: Mullis et al. (2017). *PIRLS 2016 international results in reading*. For Year 9: Mullis et al. (2016). *TIMSS 2015 international results in mathematics*. For Year 11: OECD (2016). *PISA 2015 results: Students well-being (Volume III)*.

Wellbeing data shows some divergent outcomes



It is all about feedback

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Where are we likely to get the greatest return on investment?

Cognitive behaviour therapy to high risk male secondary school students

+ \$2.35

Early childhood education and parenting programme for disadvantaged families of newborns to 3 year olds

– \$1.15

Peer tutoring: pairing a struggling student with an older student or one from the same class

+ \$133.59

Social skills programme for primary schools, focused on teaching social-emotional competencies and self-regulation skills

+ \$0.51

Source: Washington State Institute for Public Policy (2017). *Benefit-cost results: Pre-K to 12 education.*

We **shape** an **education** system that delivers
equitable and **excellent outcomes**

He mea **tārai** e mātou te **mātauranga**
kia **rangatira** ai, kia **mana taurite** ai ōna **huanga**



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New Zealand Government