Mechanisms of Matthew effects in social investment

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Social Policy department seminar

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Roadmap

The problem: social investment vs the Matthew effect

A potential solution: specialization as a comparative advantage?

Empirical design

Findings 1: no more specialisation?

Findings 2: changing access to signals of success

- Affiliation
- Skill signals

Conclusion: a Matthew Effect – for increasingly few?

Implications: re-inforcing signals of specialisation

Traditional view: Education ≠ Social policy

A nation's educational effort, especially at the higher levels, is chiefly a contribution to…enhanced mobility for those judged to be potentially able or skilled

- Wilensky 1975

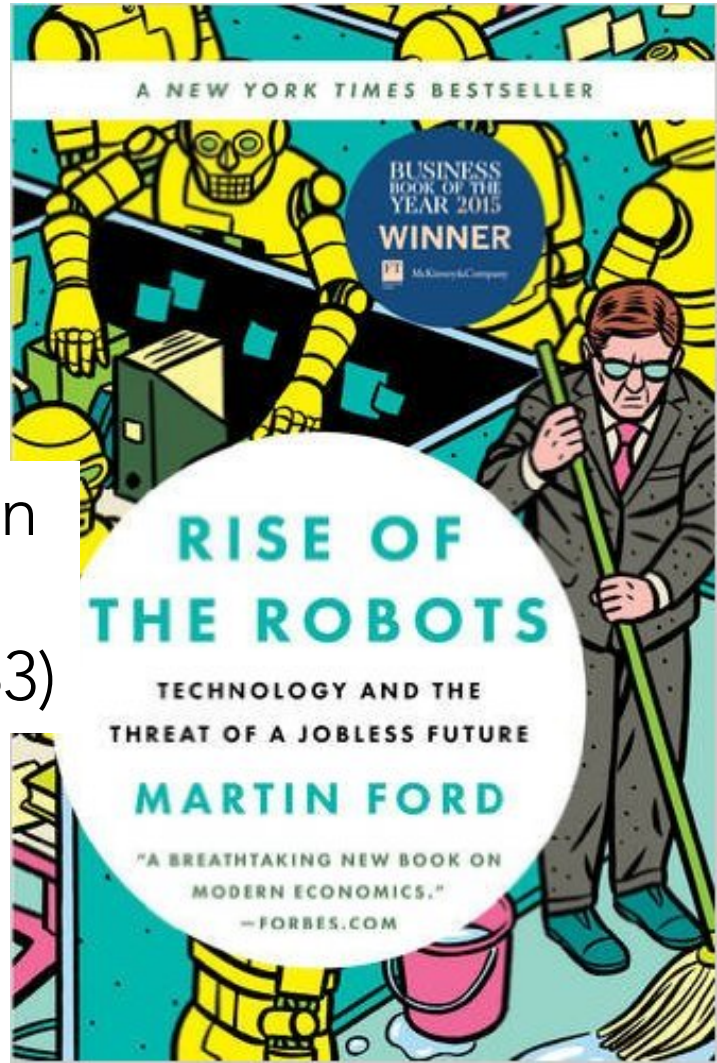
See Busemeyer, Marius R. 2014. Skills and Inequality: Partisan Politics and the Political Economy of Education Reforms in Western Welfare States. Cambridge, United Kingdom ; New York: Cambridge University Press.

Contemporary view:
Education = social investment

Building on:

Human capital theory

Skill-biased technological change



> "The general idea is that we should value education as a public good. We *all* benefit when the people around us are more educated…" (Ford, 2016, p. 263)

See e.g. Autor, David H. 2014. 'Skills, Education, and the Rise of Earnings Inequality among the "Other 99 Percent"'. Science 344 (6186): 843–51.

But…

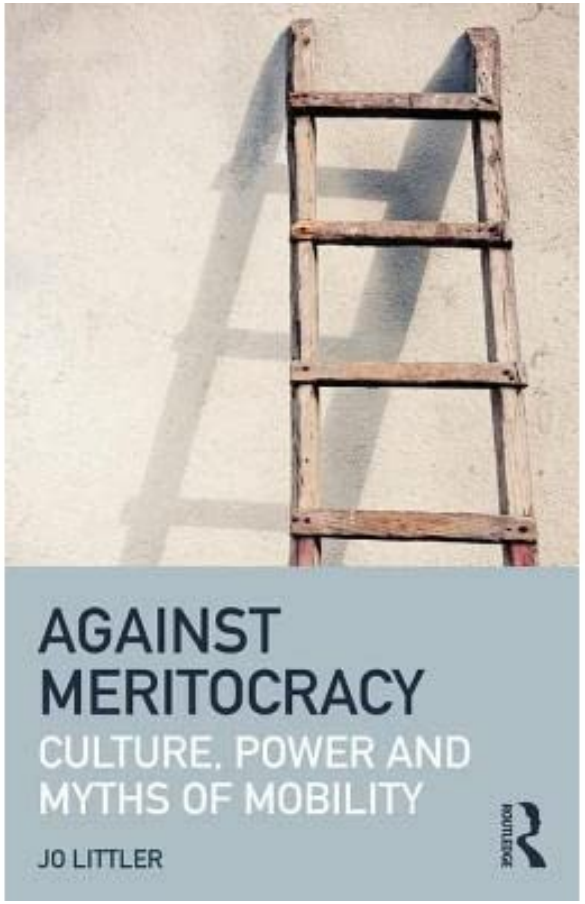
what if, in this social investment paradigm, the “rich”
(the skilled, those with access to skill development)

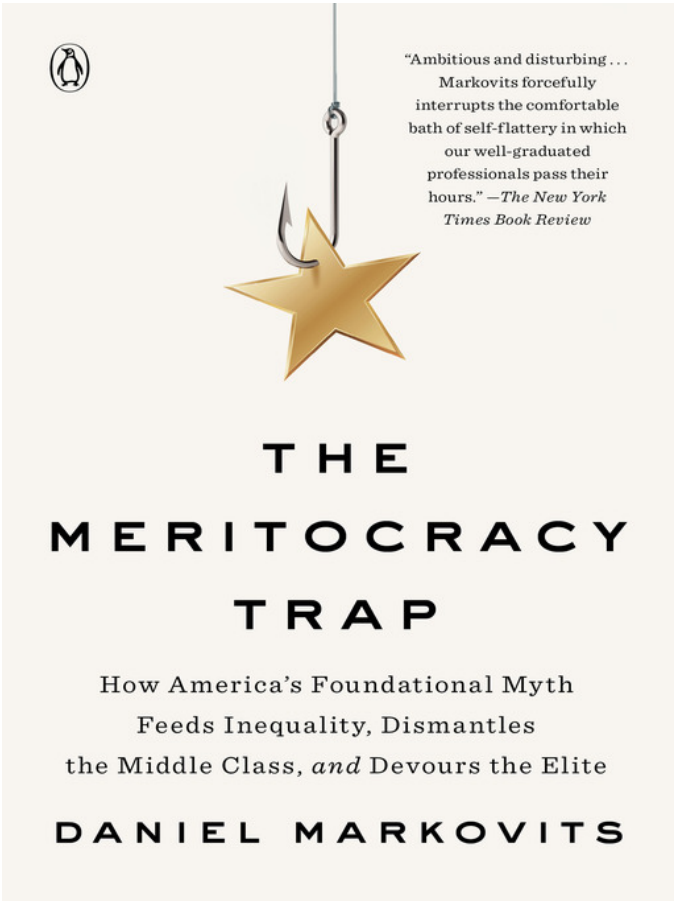
just get “richer”
(get more skilled, get more access to skill development)

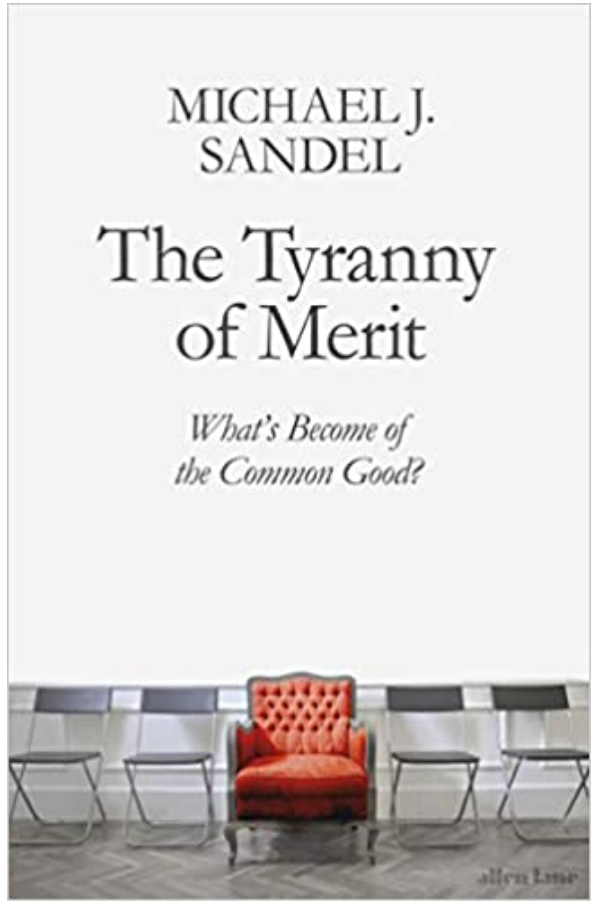
i.e. a ‘Matthew effect’

See e.g. Bonoli, Guiliano, Bea Cantillon, and Wim Van Lancker. 2017. ‘Social Investment and the Matthew Effect: Limits to a Strategy’. In *The Uses of Social Investment*, edited by Anton Hemerijck. Oxford, New York: Oxford University Press.

-> crisis in ‘meritocracies’







Can policy influence the balance?

Public good

Equaliser

Multiplier

e.g. gaps reduce during primaryeducation (Bradbury et al.)

Positional good

Differentiator

Zero-sum

e.g. effectively maintained inequality (Lucas)

See Bol, Thijs. 2015. 'Has Education Become More Positional? Educational Expansion and Labour Market Outcomes, 1985–2007'. Acta Sociologica 58 (2): 105–20.

Credential design

GRADING SYSTEM

01 + 02 + 03 + 04 + 05 = ATAR

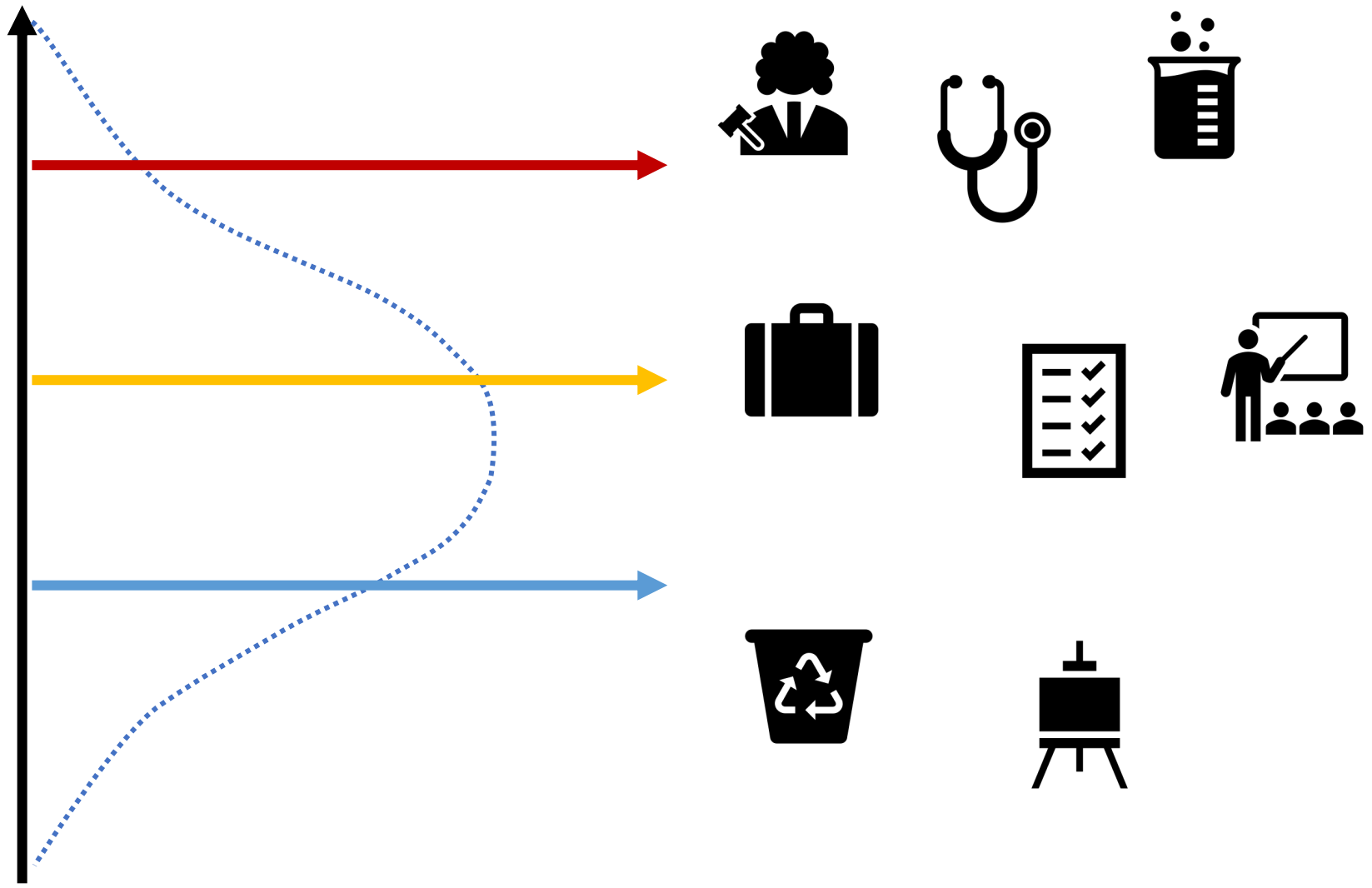
100% Of Best Four Subjects + 50% Of Weakest Subjects = ATAR

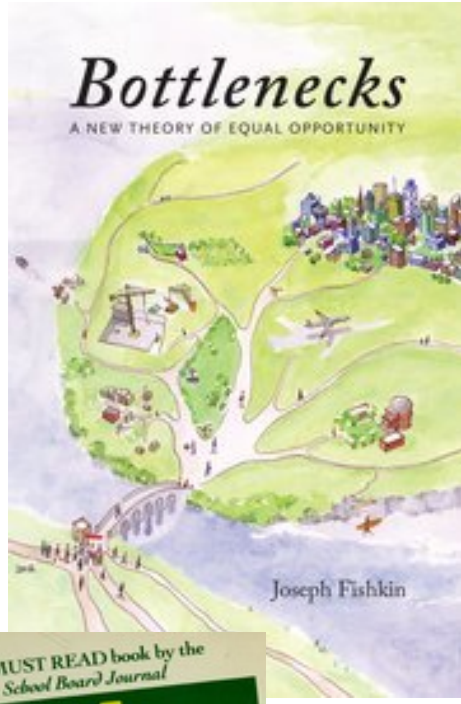
NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MATAURANGA O AOTEAROA

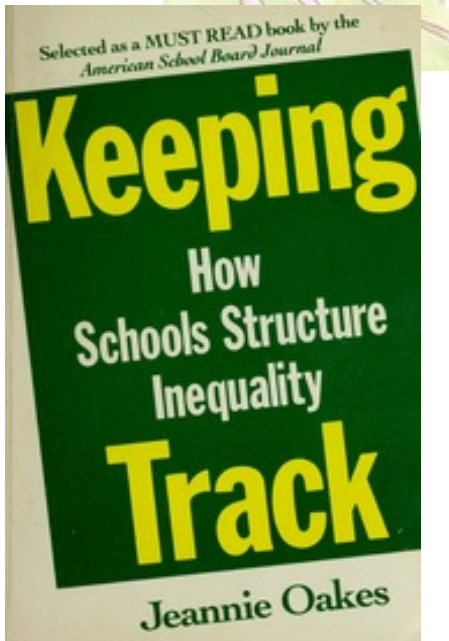
NCEA

NATIONAL CERTIFICATE OF EDUCATIONAL ACHIEVEMENT

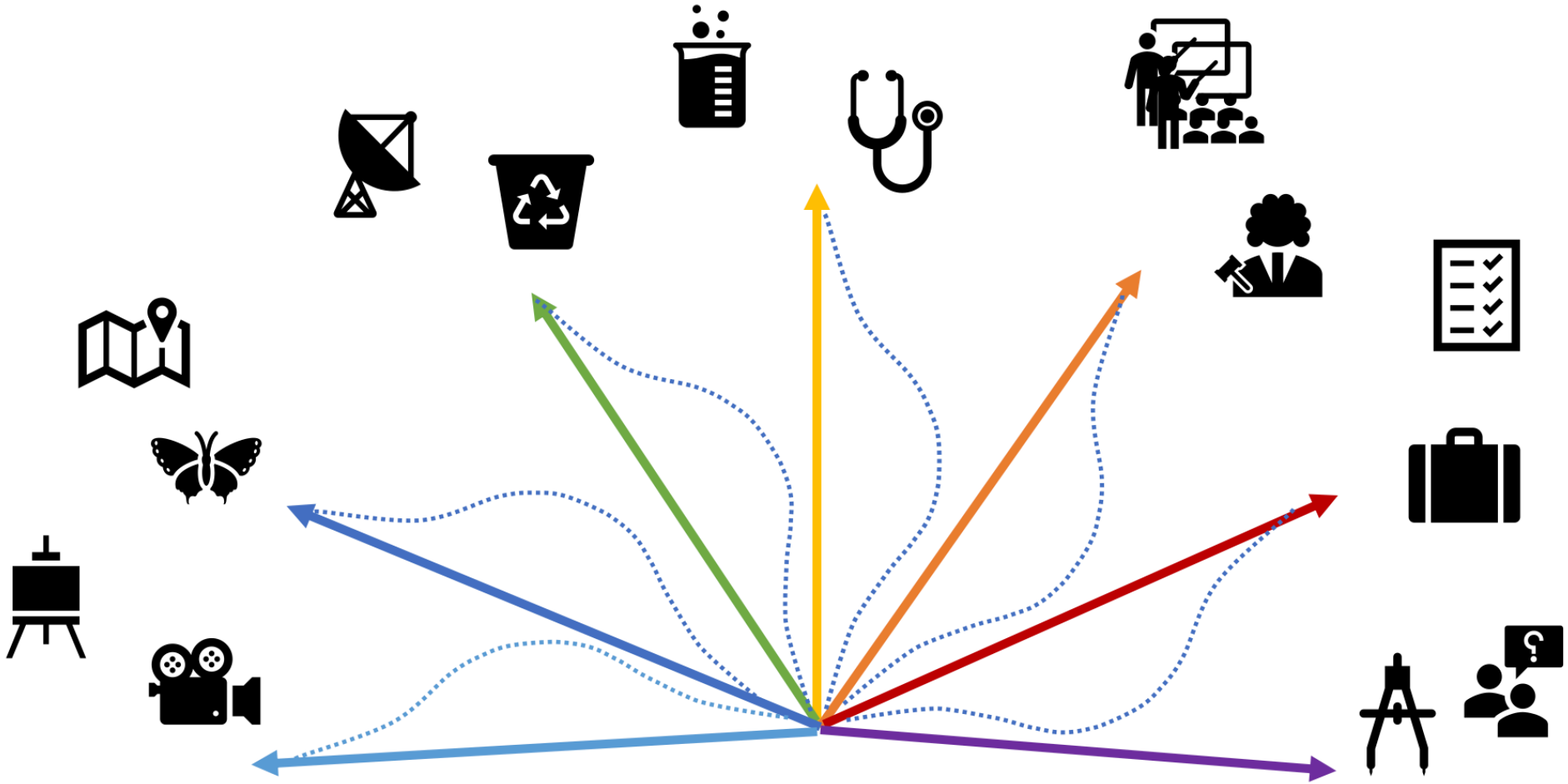
From sorting and stratification…

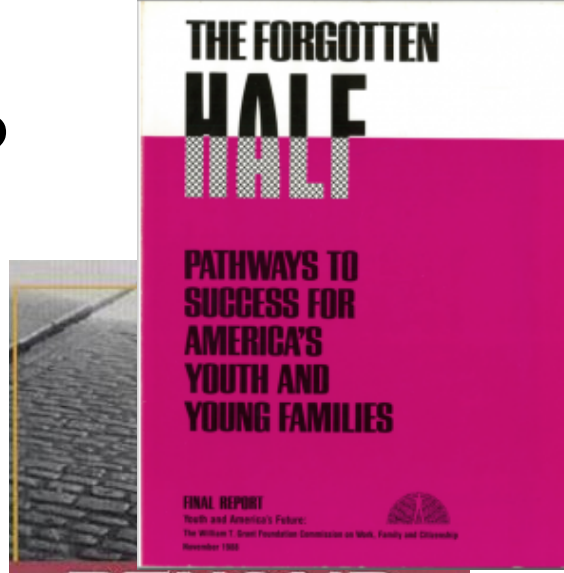


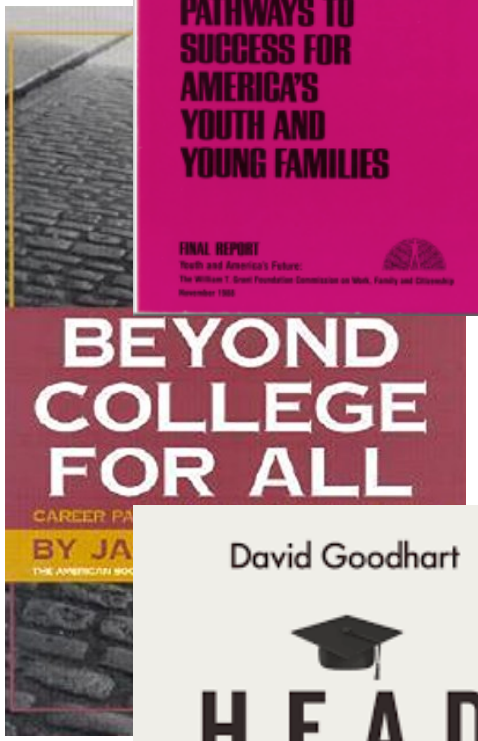




to specialization as comparative advantage?

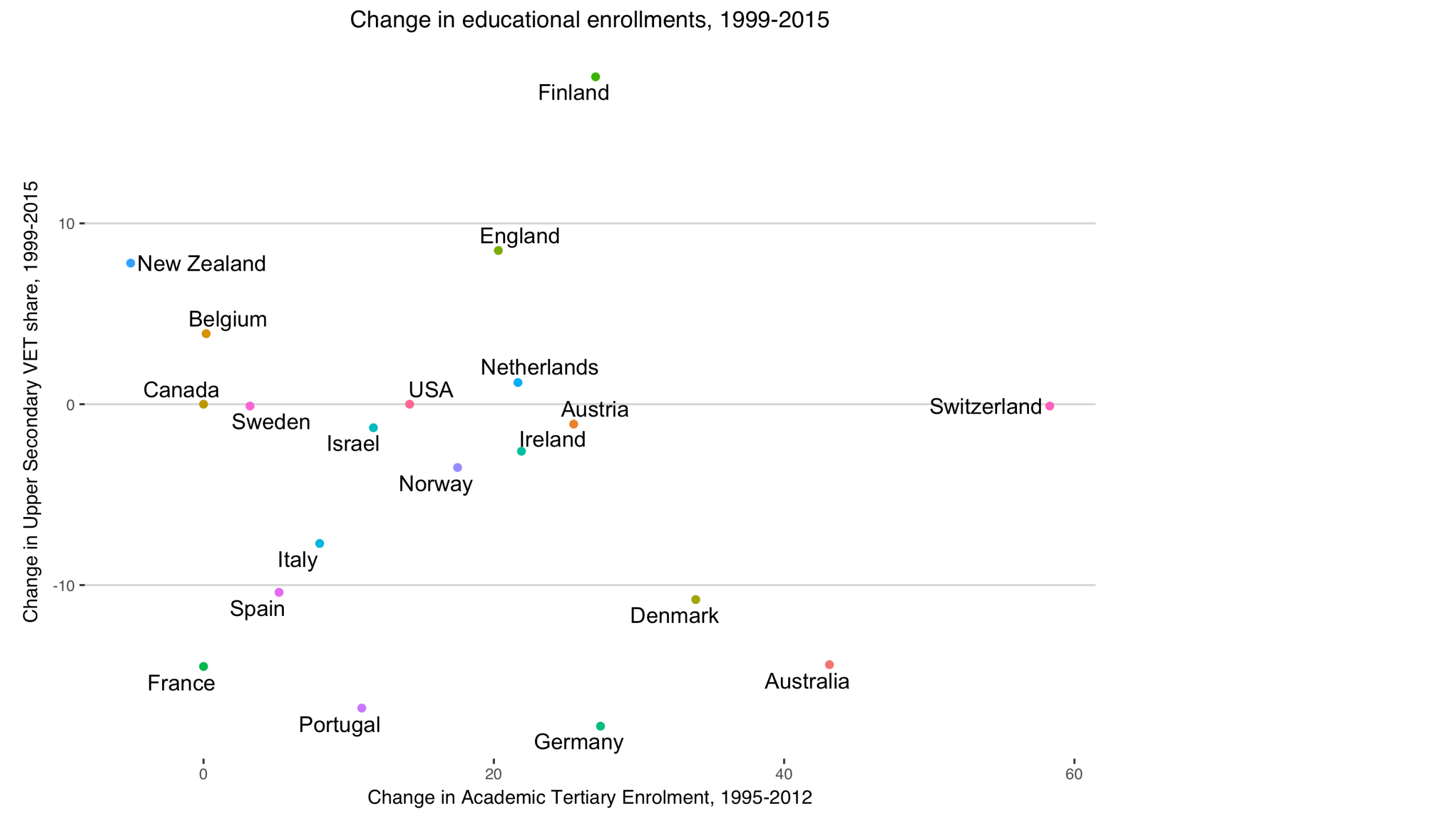






Question

As *higher education* expands, do more of ‘the rest’ opt for vocational education – as a means to gain comparative advantage?


Change in educational enrollments, 1999-2015
Finland
England
New Zealand
Belgium
Netherlands
Canada
USA
Switzerland
Austria
Sweden
Israel
Ireland
Norway
Italy
Spain
Denmark
France
Australia
Portugal
Germany
10
0
-10
0
20
40
60
Change in Upper Secondary VET share, 1999-2015
Change in Academic Tertiary Enrolment, 1995-2012

Question & Puzzle

As *higher education* expands, do more of ‘the rest’ opt for vocational education – as a means to gain comparative advantage?

Since we observe no consistent relationship between HE expansion and upper secondary vocational expansion, what explains the variation?

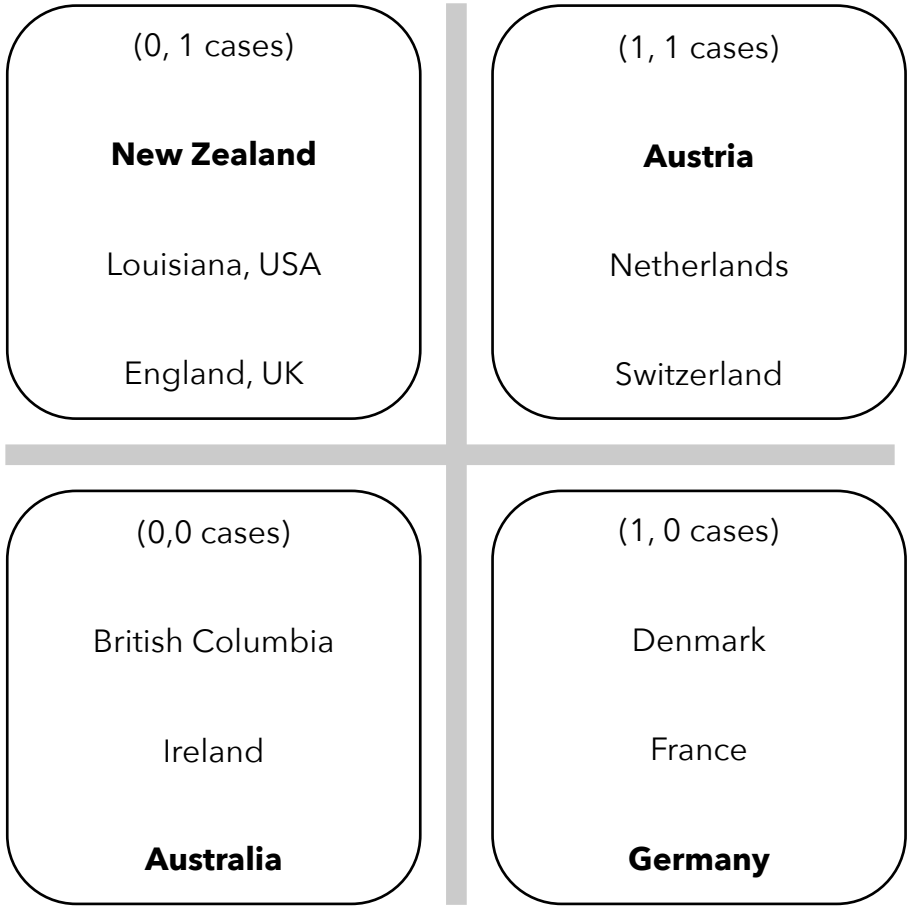
Empirical design

Following Goertz (2017) on multimethod research design

Case selection: most similar, most different -> more leverage to identify explanations

Data collection: historical trends in secondary, upper secondary and tertiary enrolment across sub-jurisdictions (states); 102 interviews; parliamentary records; database of media articles

Data analysis: developing and testing multiple explanations. Validity rests on consistency and credibility of final explanation against totality of data



Y axis: trend of upper secondary vocational enrolment

X axis: secondary education structure (comprehensive vs tracked+vocational)

But measurement error…

	1998	2001	2004	2007	2010	2012
Australia	**0**	**39**	**38**	**35**	**27**	**30**
Austria	**-3**	**-3**	**0**	**0**	**0**	**0**
Belgium	na	10	8	10	13	13
Canada	0	14	na	na	na	na
Denmark	22	22	13	16	15	18
Finland	12	16	17	21	21	21
Germany	**4**	**5**	**6**	**7**	**12**	**12**
Greece	1	-1	-1	5	4	6
Iceland	9	10	11	13	12	12
Netherlands	11	11	11	11	12	15
NZ	**0**	**0**	**0**	**0**	**19**	**15**
Spain	6	10	8	12	11	13
Sweden	-9	6	-3	0	-3	2
Switzerland	3	3	3	4	4	5
U.K.	15	21	22	-1	1	5

*Percentage point difference between **upper secondary vocational share** (L3V / L3) amongst all ages vs amongst 15-19 year olds, select OECD countries*

…and other challenges to the initial premises

Germany

Abitur as the **new normal**: Share of 20-24-year-olds holding a study qualification rose from 26% in 1995 to **53%** in 2017

Apprenticeship as a **post-18 activity**: Share of apprenticeship **under 18** fell from 49% in 1995 to **27%** in 2016

Austria

Over half of higher education entrance now granted through **vocational schools** (BHS): 53% of all Matura qualifications were granted by BHS in 2017 – but this is a long-standing situation

Stability in apprenticeship share but rise of **state-provided training**: From 1995-2016 the number of companies offering apprenticeship training fell by over a quarter

Australia

Vocational enrolment increasingly dominated by Vocational Education and Training in schools (VETiS): by 2017, **47%** of the senior secondary school cohort was enrolled in a **VETiS course**

VET for young people is not occupationally-specific: at the level that represents entry to a vocational (cert III), the most popular field is **Sports & Recreation**; the highest completion rate is in **Office studies**, at **38%**

New Zealand

Vocational enrolment is low: Vocational enrolment for 15-19-year-olds is **half** of what is implied by UOE

Vocational learning is falling: In the past ten years, the number of vocational units taken as part of the school-leaving certificate has **halved**

Conclusions from descriptive data

Loss of vocational specialization at the secondary level

-> much labelled ‘vocational’ is not really occupationally specific

The share of ‘true’ secondary vocational is explained by changes in tracking

-> **no one** ‘choosing’ upper secondary vocational education

-> logic of specialisation ***no longer*** operating at upper secondary

(in these cases…)

…and new theory:

Two common trends in policy choices **and** social processes which are better explanations for education backlash / crisis in meritocracy:

Across cases, the emerging **opportunity and incentive structure** advantages the already advantaged – through opportunity for:

Affiliation + Skill signals

See Podolny, Joel M. 2010. Status Signals: A Sociological Study of Market Competition. Princeton University Press.
Karpik, Lucien. 2010. Valuing the Unique: The Economics of Singularities. Princeton: Princeton University Press.

Changing conditions for affiliation, across cases

Germany, Australia, NZ; less so Austria: **increased school choice** at lower secondary

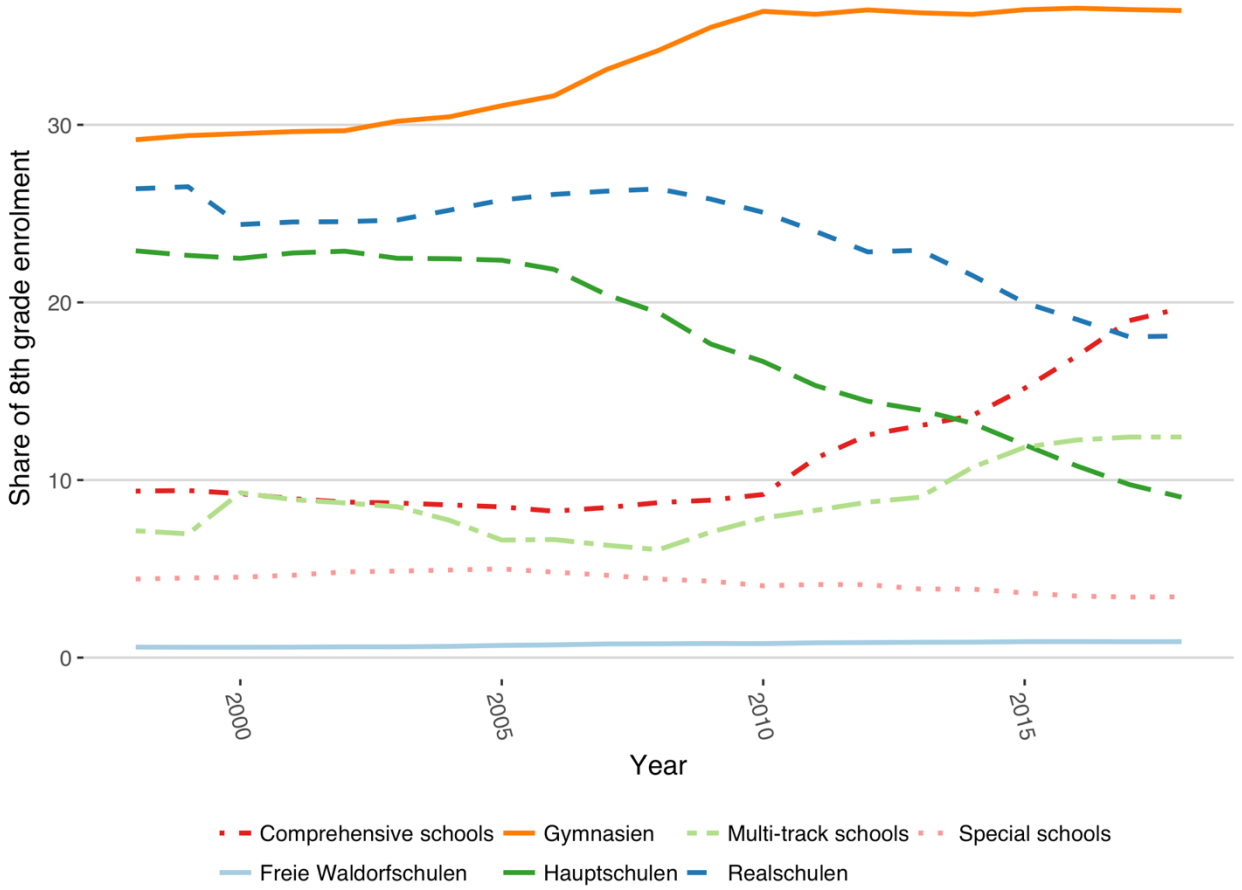
-> more sorting

-> expansion of school types with academic pathways

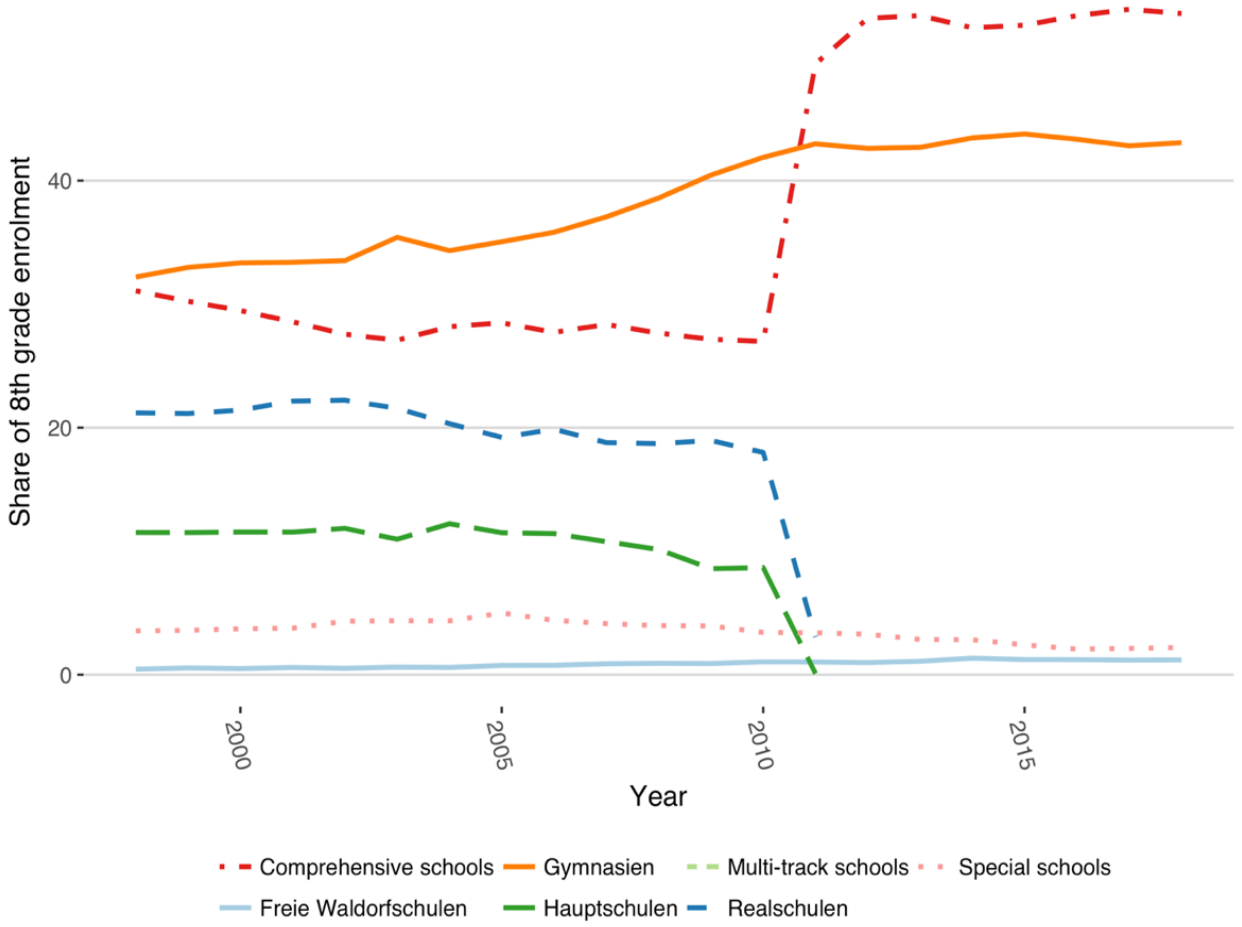
But increase in choice is **limited** and **stratified**: by attainment, class, and ethnicity.

-> ***quasi-tracked*** systems: more advantaged, higher-attaining students have choice (i.e. can ***affiliate***); others do not.

Increased school choice in Germany…



Germany: 8th grade enrolment by school type, 1998-2017. 8th grade is a middle year of secondary education, prior to the earliest stage in which some students may leave for apprenticeships, and after the orientation phase used in some states.



Berlin: 8th grade enrolment by school type, 1998-2017.

… for some

Why they end up in my school rather than any other? That's a good question. **It's basically where you live.** When you get born in this kind of district you go to a kindergarten in this district and then to a primary school and then you go to my secondary school. I don't think the reputation's very good. There are three pretty bad reviews on google about my school. So of course **if I would be a parent I wouldn't send them to this school**.

… like 2km from my school there is a kindergarten, and I was talking to those teachers there, and basically all the children there are white. …people notice the area is still cheaper, and there's more green areas and freedom for children to play and grow up, and **so they move there**. …

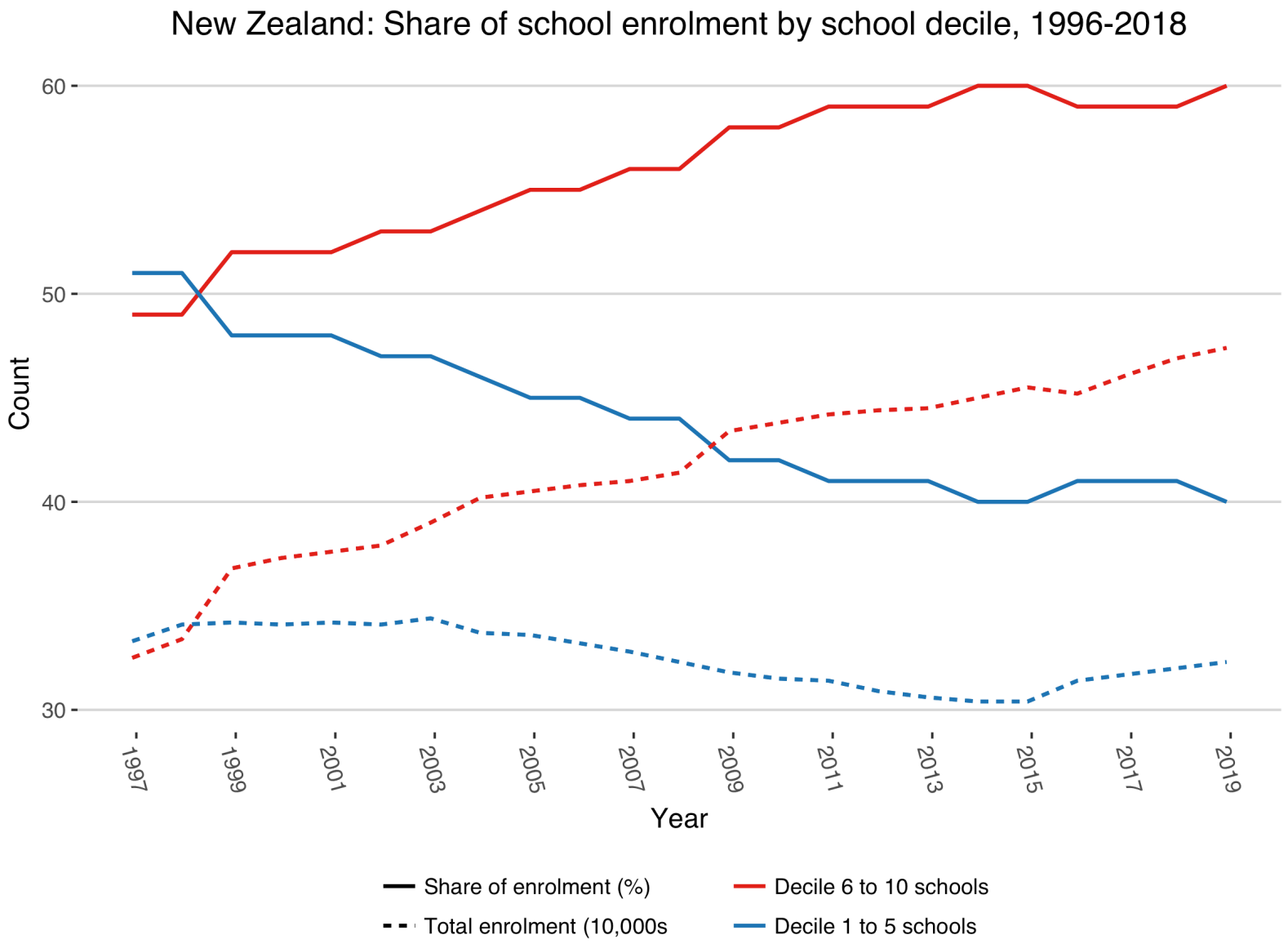
So there is a different school in the neighbourhood, similar to my school, and rumours say **they don't accept everyone**. So for example we just got a new student in my class and she's a very challenging student, she dropped out of another school so they moved to this area, and she applied to this other school, and they said they're full. And **my school is accepting everyone basically**.

- Hamburg comprehensive school teacher

The *Hauptschule* has become a problem of course, regarded as a school for the low achievers, for migrant populations, all other problematic parts of the population, and the broad middle class says that's not an option for our kids. And *Realschule* has started to show similar signs, so you're left with Gymnasium as the mainstream option, and that drives the qualification people go for.

- Policy advisor in NRW, Germany

Sorting in New Zealand



New school choice policies in 1989-1991

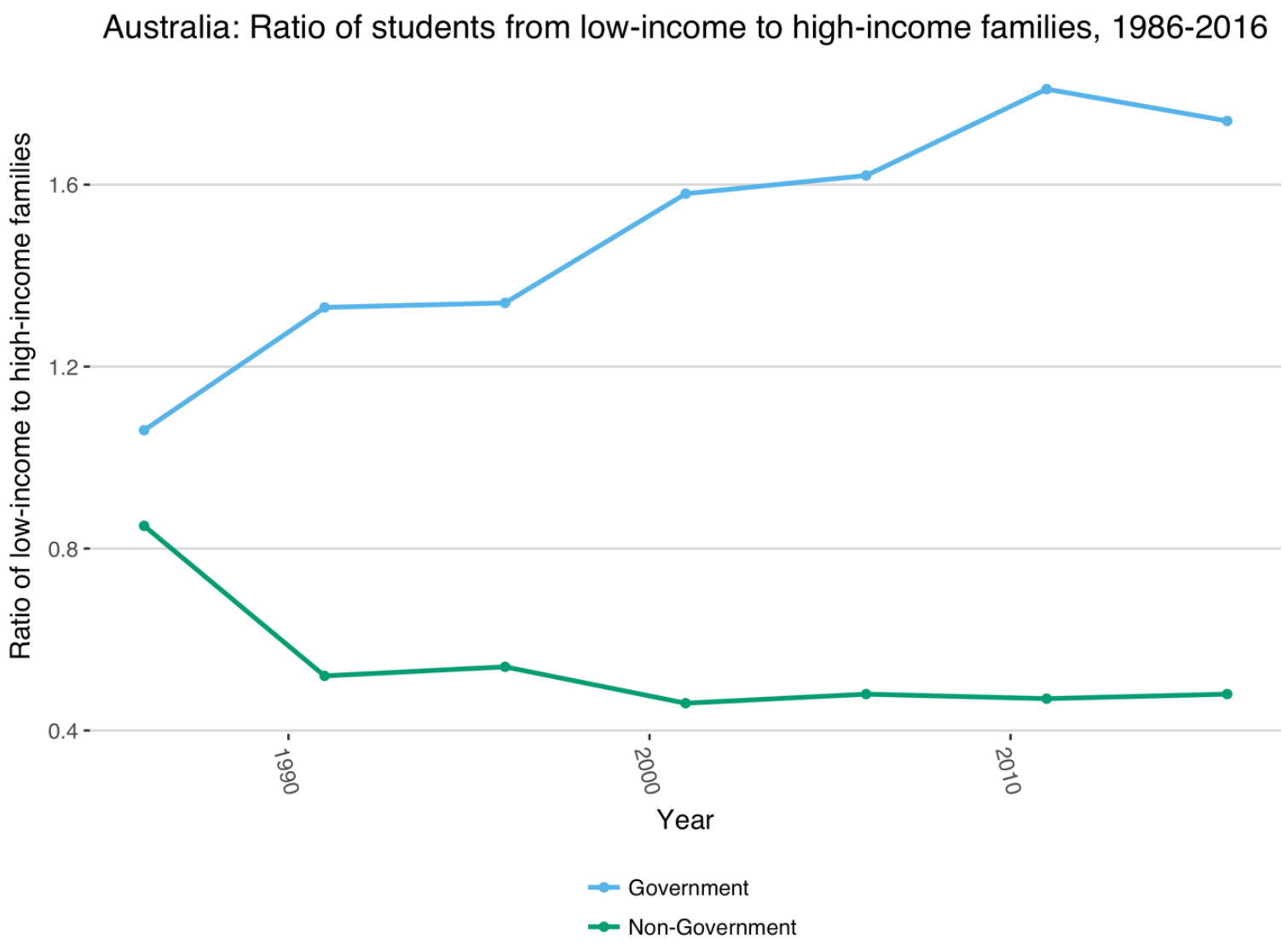
Expansion of 'high decile' schools (schools with higher SES students)

A lot left behind…

Enhanced advantage

	Decile 1-3	Decile 4-7	Decile 8-10
1997 school leavers starting at a tertiary education institution in 1998	26%	40%	54%
2018 year 13 students gaining NCEA with University Entrance	27.6%	47.6%	65.3%

Sorting in Australia



Expansion of "non-government" schools options (Catholic and Independent schools)

Loss of higher income students

Widened disparities of income, SES, and attainment between schools

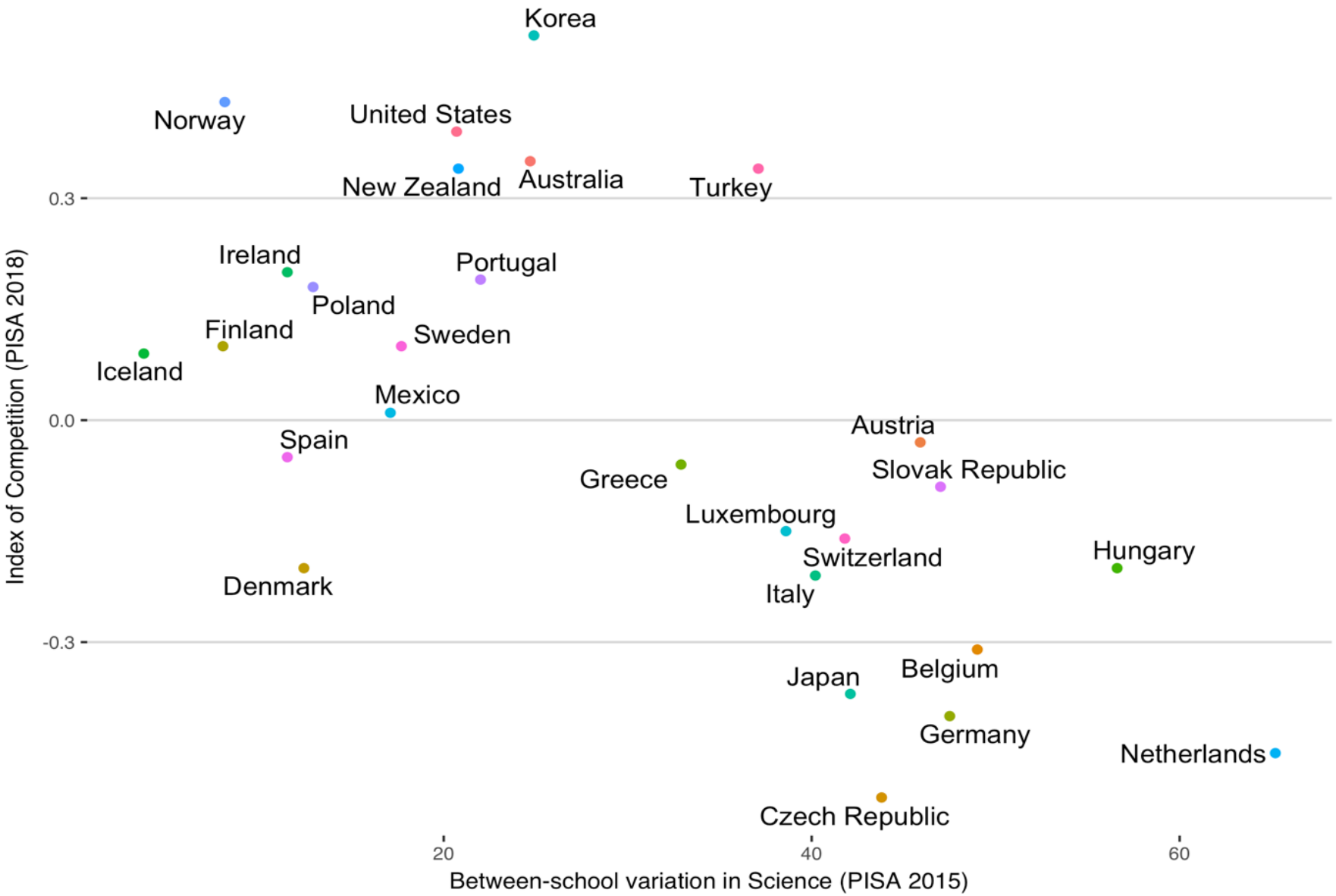
Lower income students more concentrated in government schools ("residualization")

Enhanced advantage

	Government	Catholic	Independent
LSAY 1995 cohort studying for a Bachelors' degree in 2000	27.9% (21.0 – 42.6)	45.7% (39.8 – 54.4)	55.2% (41.0 – 66.2)
LSAY 2009 cohort studying for a Bachelors' degree in 2013	38.1% (25.0 – 58.0)	55.8% (40.9 – 71.3)	63.2% (36.5 – 77.1)

Values in brackets = share of lowest and highest socioeconomic quartiles reaching that outcome, from that school type

De-tracking -> more competition?



Competitiveness at school experience (Index of competition, PISA 2018) in relation to an indicator of **tracking** (between-school variation in performance in Science, PISA 2015)

Less tracking -> more competitive

Changing access to skill signals, across cases

Reduction in differentiating assessments or reporting

-> **Weaker** signals for **lower** performing students

More centralized assessments for HE entry

-> **Strengthening** of signal for **higher** performing students

More **competitive**

-> winner takes all systems?

Efforts to equalize attainment -> **weaker signal**

Australia	New Zealand	Germany	Austria
1997: reform of NSW Higher School Certificate to encompass all upper secondary learning 2008: First year of standards-based NAPLAN testing (English, Math, Science in grades 3, 6, 9) 2009: Council of Australian governments target of 90% attainment of "Year 12 or equivalent" by 2015	2002: NCEA introduced in competency based mode, combining 'achievement' and 'unit' standards 2005: Complaints about reliability of NCEA 2012: Better Public Services (BPS) target for 85% attainment at NCEA Level 2	2003: KMK approval of first national standards in German, Math, English/French 2006: benchmarking assessments against national standards in grades 3 and 8 2009: national standards for the Hauptschulabschluss as an interim qualification 2010: (re) abolition of 'top notes' in NRW	2003: Initiation of a low-profile project to develop national standards in German and Math (grades 4 and 8) and English (grade 8) 2008: Founding of BIFIE, responsible for educational monitoring and standards development

Final exams are more centralized -> **stronger signal**

Australia	New Zealand	Germany	Austria
2009: Adoption of nationwide Australian Tertiary Admission rank (ATAR) 2017: Queensland final state set to adopt the Australian Tertiary Admission rank and increase external assessment	2005: re-introduction of scholarship exam, with improved method of scaling results	2005: additional Länder opt for centralized assessment in the Abitur 2007: KMK agree new nationwide standards for central Abitur subjects (German, Math, English/French) (implemented from 2012)	2009: agreement of law for Zentralmatura 2013: Zentralmatura in AHS; introduced in the BHS 2014

Loss of signals for some; stronger signals for others

The **information on social skills** such as behavior, diligence or order **would make it easier** for companies to give young people with bad grades a chance at a training place.

- DIHK (German Chamber of Commerce) President, commenting on a DIHK survey with employers to *Die Zeit*, 2012)

the scholarship exam …is marked on a standards-based assessment first **then ranked heavily**, so you might get an 8 but then suddenly 8s turn into 4s, because of where everyone is, but the irony is **that was sort of the system that saved it**.

- New Zealand school teacher

Increase in *competition*

Through:

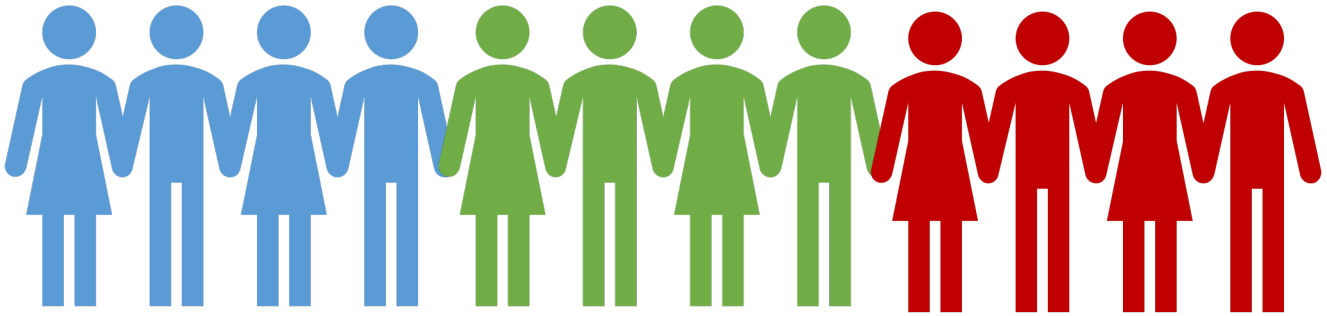
- Inclusive qualification frameworks: all outcomes / results are comparable (commensurable)

- Centralized assessments
  - More credible (can support more high stakes judgments)
  - More granular (distinguish fewer winners)

See e.g. Fang, Dawei, Thomas Noe, and Philipp Strack. 2019. 'Turning Up the Heat: The Discouraging Effect of Competition in Contests'. Journal of Political Economy 128 (5): 1940–75.

The significance of centralized assessment

Less advantaged



More advantaged

differentiated by teacher report cards

differentiated by credential and occupational specialty

differentiated by academic credential

vocational option

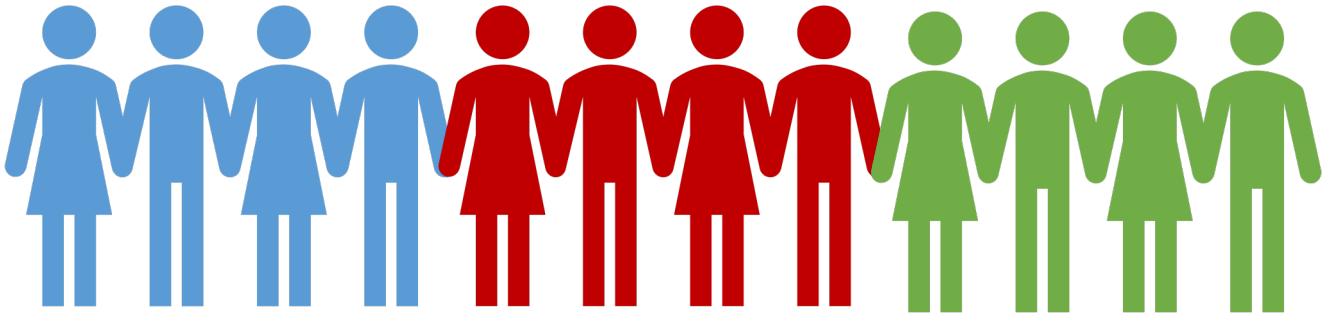
comparative advantage (hybrid option)

academic option

Without centralized assessment

The significance of centralized assessment

Less advantaged



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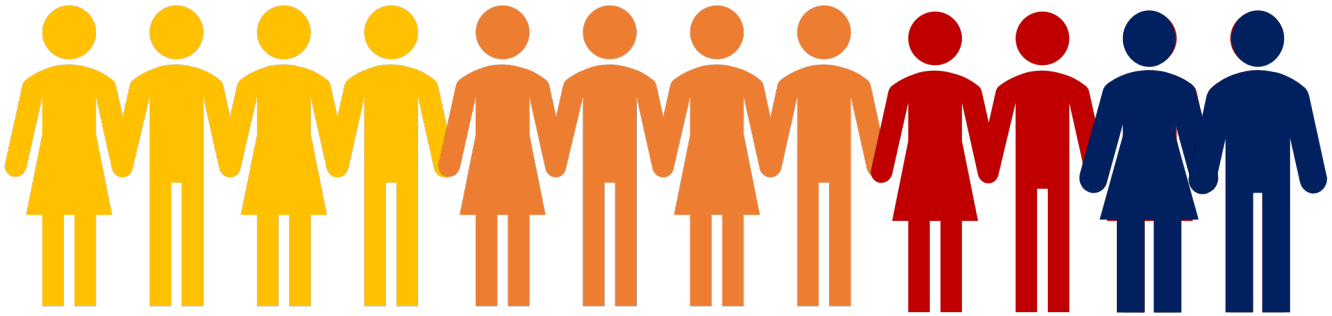

More advantaged

no good option to differentiate

no good option to differentiate

differentiates by scoring highly

aims for school-leaving credential

aims for academic option

With centralized assessment

Final key factor: Predictability

Today, students can find out exactly what they need to know for the Abitur through the respective ‘Obligatory’ and can prepare themselves for the examinations in a targeted manner. According to my observation, pupils today are much better prepared for the oral exam (as a general requirement) than in my school days – with corresponding results.

- Zeitonline commentator, 2017

Conclusions

Despite reorganization towards more comprehensive systems, there is still a strata of schools serving students with lower resources or lower prior attainment, who do not have opportunity to access skill signals

Through centralization/commensuration, system structures have become **more competitive *and* more predictable**

-> relatively ***more*** opportunity and incentives for the ***top***-performing students and/or those with the most family resources to access the best preparation

-> Matthew Effect ***and*** crisis of meritocracy

Implications

School choice tends towards stratification by attainment and future pathways -> **quasi-tracking**

If quasi-tracking is inevitable -> need for **equity policies** at points of selection into further opportunities to learn (e.g. contextual offers, affirmative action)

Education **needs to provide formal skill signals** – otherwise stakeholders rely on informal ones (such as status of high school, class, ethnicity, or gender)

Could **better skill signals** help to create specialization rather than stratification?