Social inequalities in language development and achievement

The compensatory potential of education

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ECEC conference, Helsinki, Sep 24, 2025

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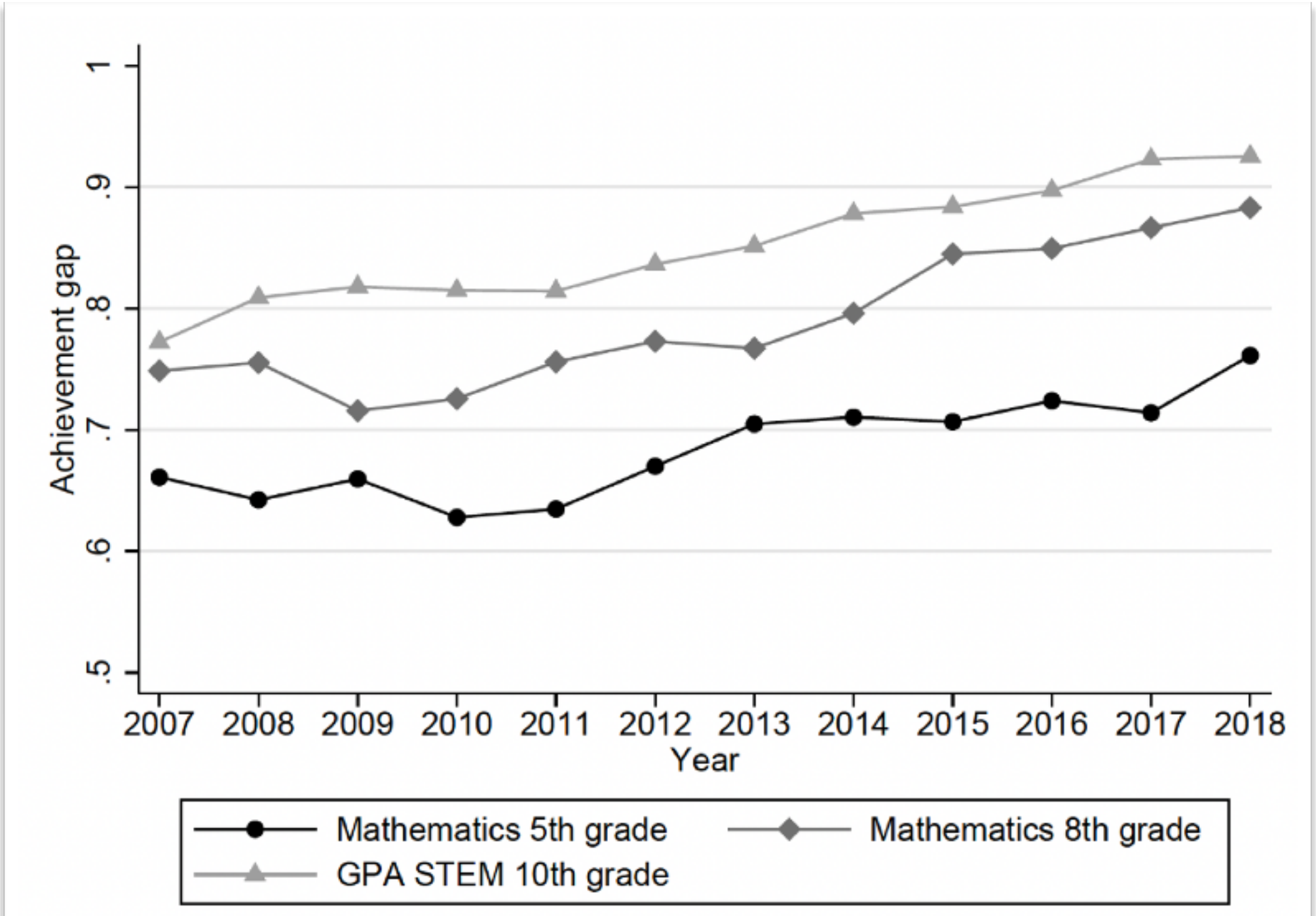
Part I:

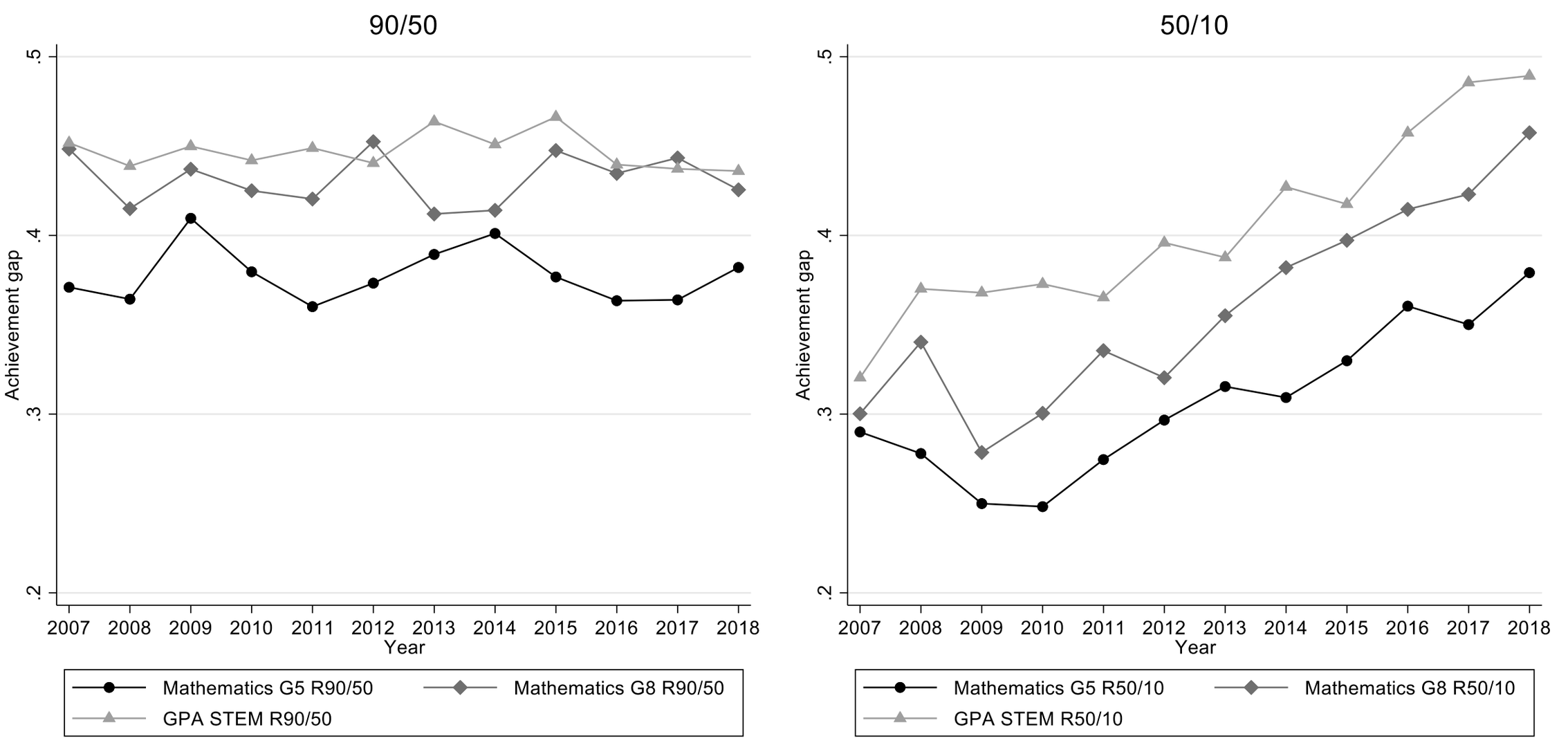
Socioal inequalities

Income inequality in achievement



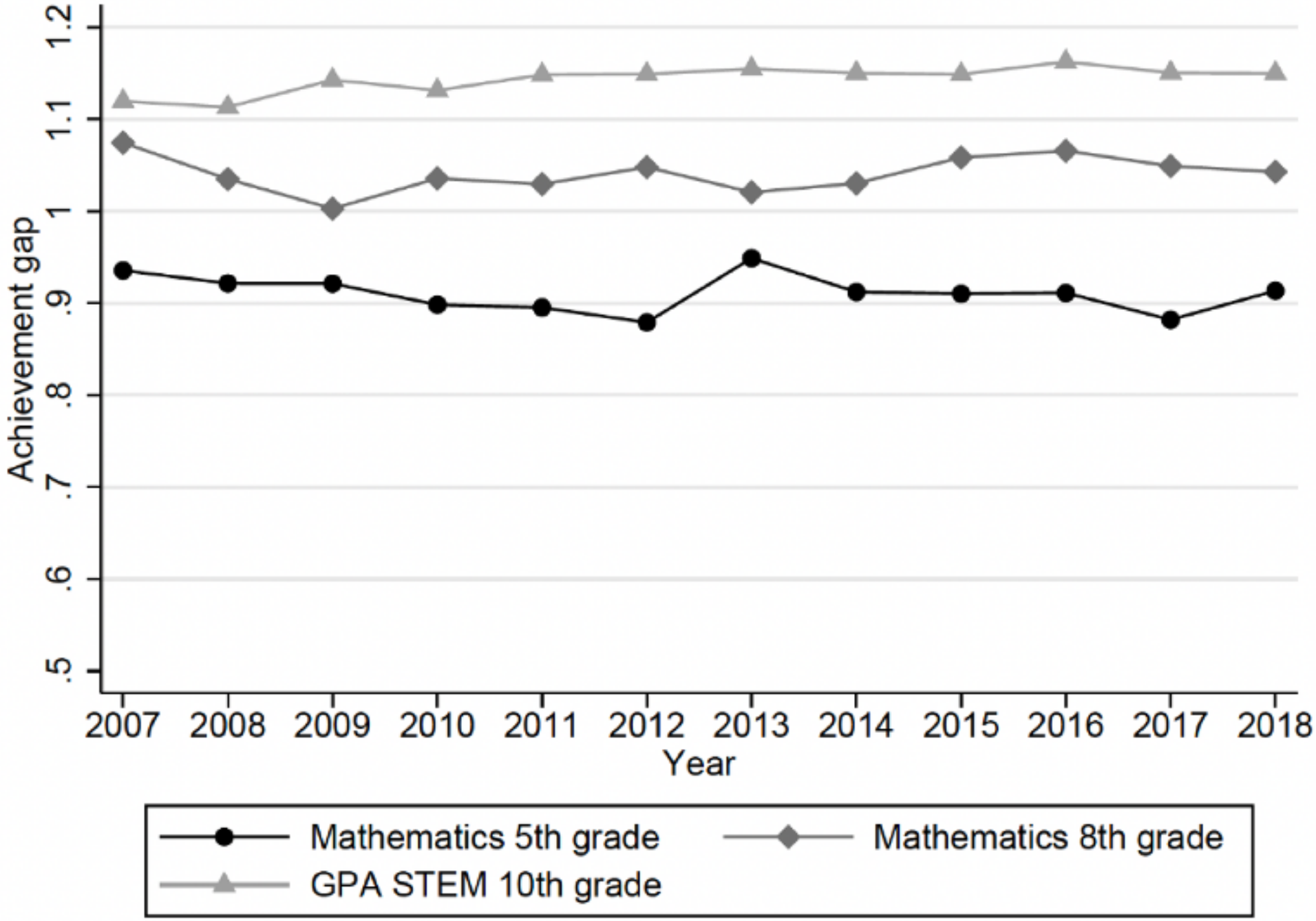
Sandsør, Zachrisson, Karoly, & Dearing, 2023

Changes among those with least



Sandsør, Zachrisson, Karoly, & Dearing, 2023

Educational inequalities in achievement



Sandsør, Zachrisson, Karoly, & Dearing, 2023

Variations despite background

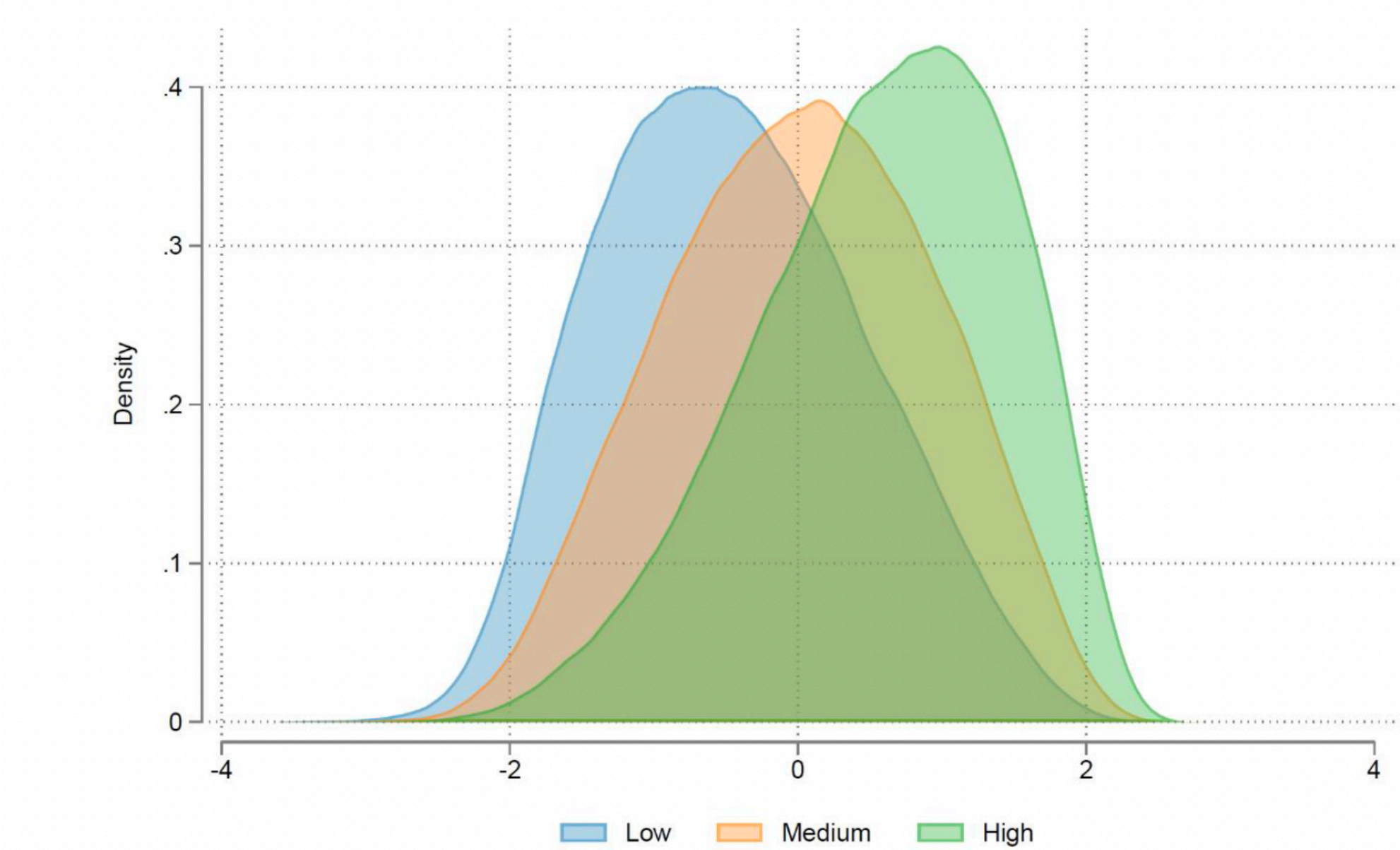


Figure 1: Achievement differences in standardized tests in 8th grade by parental education.

Borgen & Zachrisson, 2024

Differences appear early

Language development from age 2 (not before)

Parental education

Economic dazzles

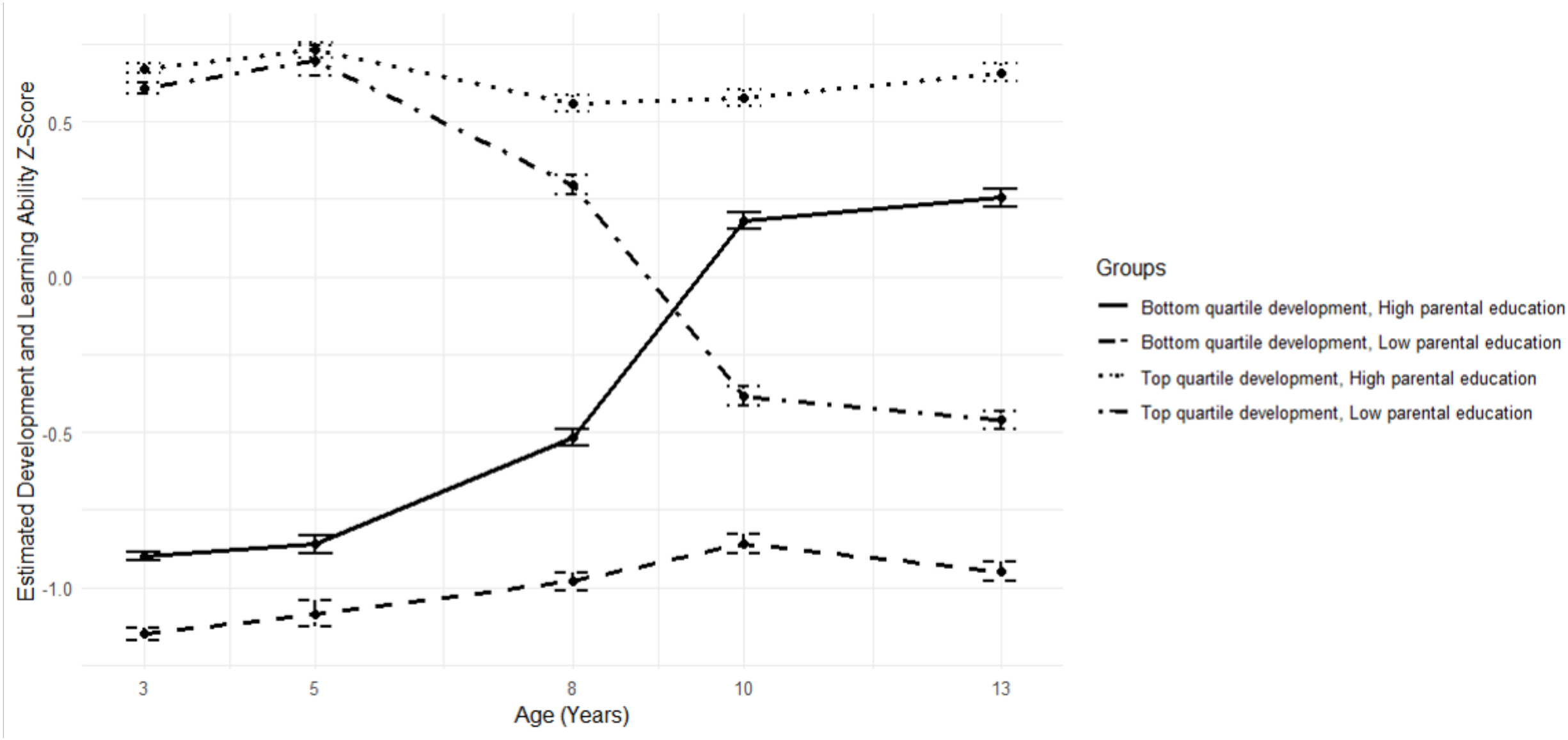
Minority background

Increase by school entry

Ribeiro, Zachrisson, Nærde, Wang, Brandlistuen, & Passaretta., 2022

Developmental trajectories

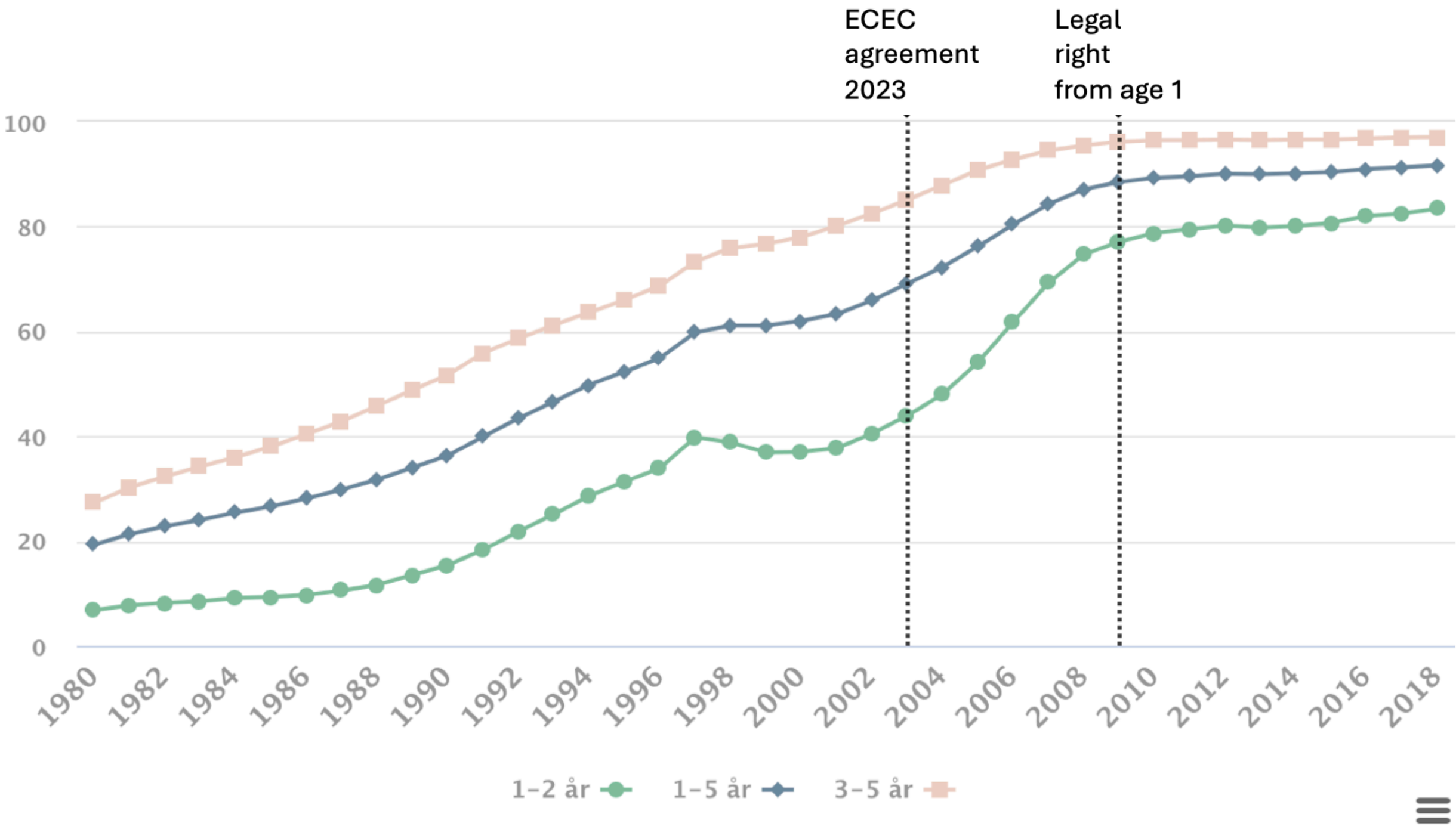
By initial skill and parental education



Halvorsen, Zachrisson, Wolke, & Brandlistuen, submitted

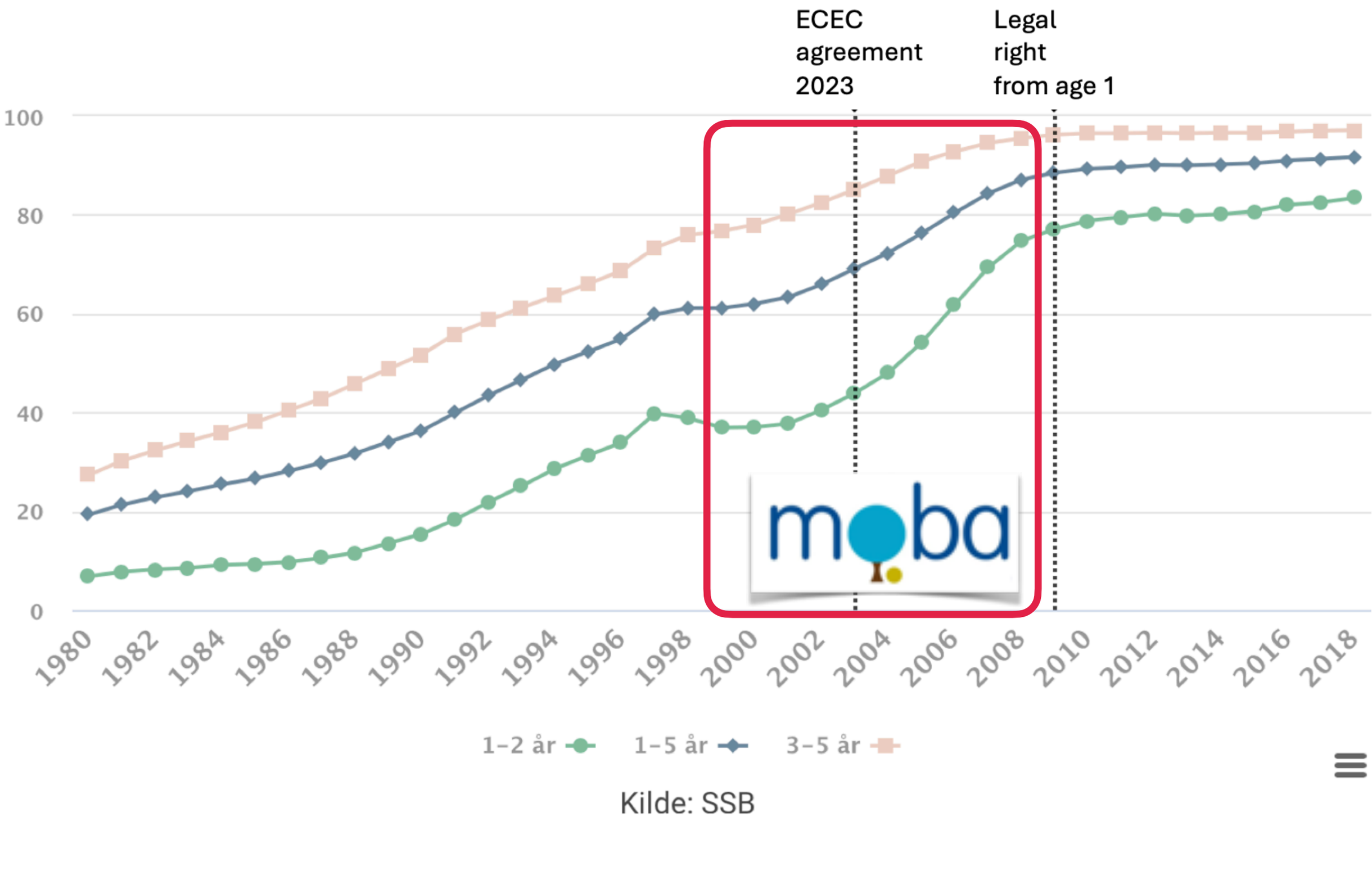
Part II:
The compensatory potential of education

ECEC coverage (%) by age groups



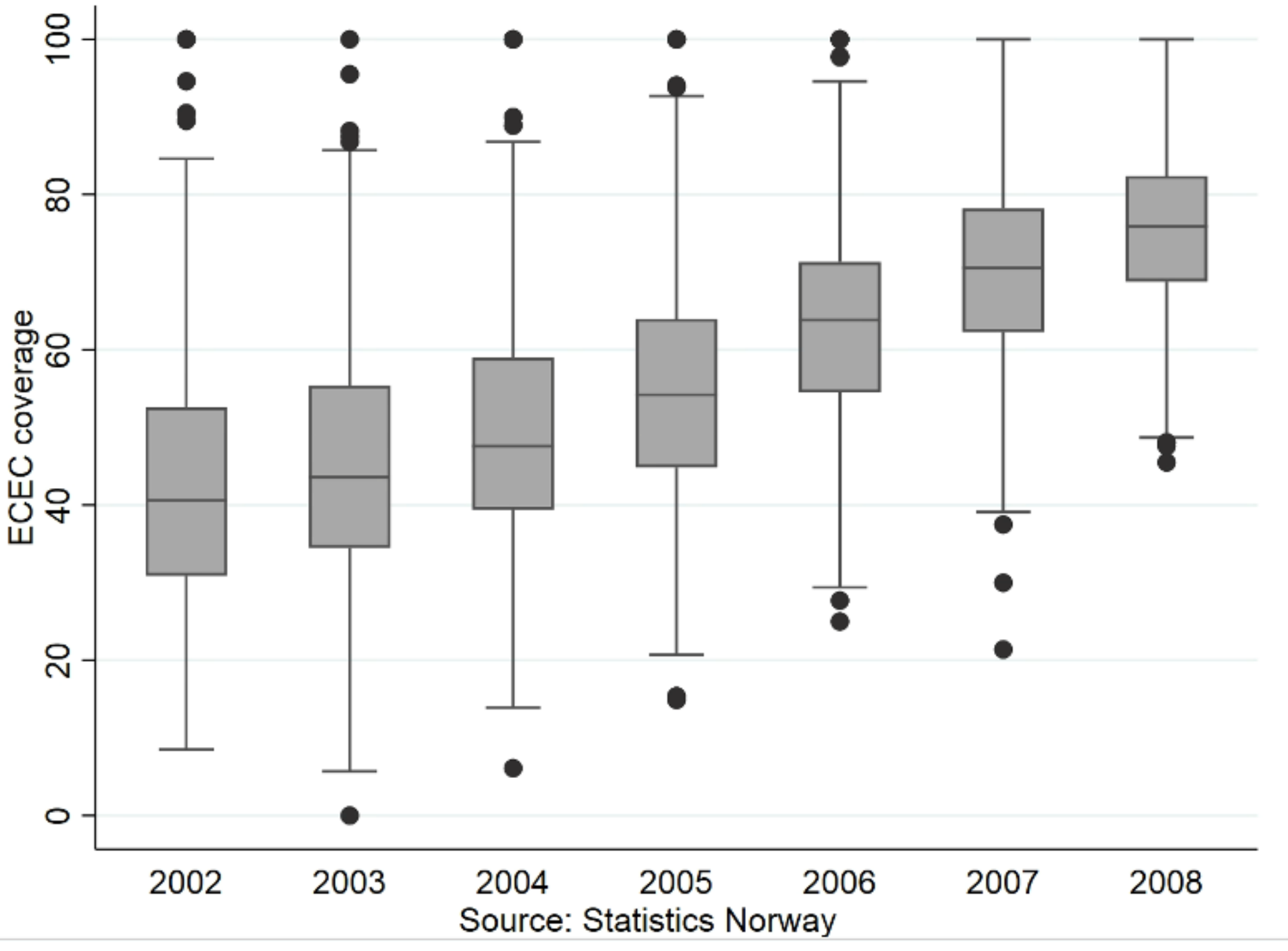
Kilde: SSB

ECEC coverage (%) by age groups



Kilde: SSB

Municipality-level variation in coverage of ECEC for 1-2 year olds

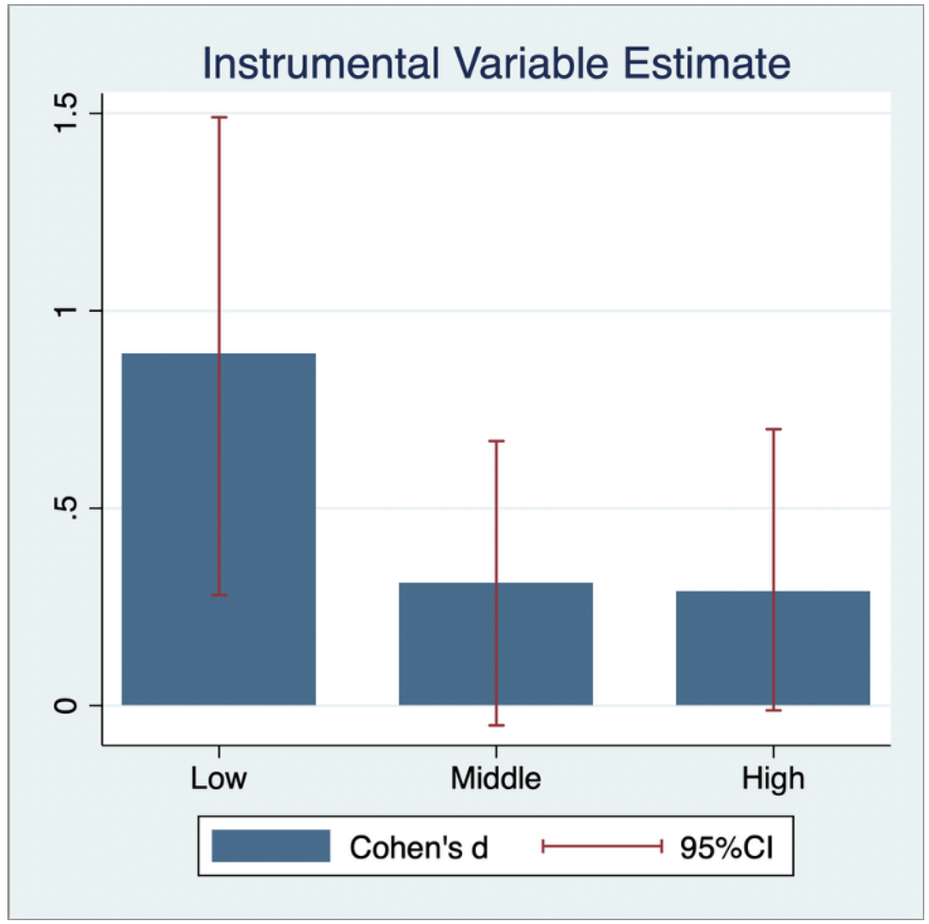


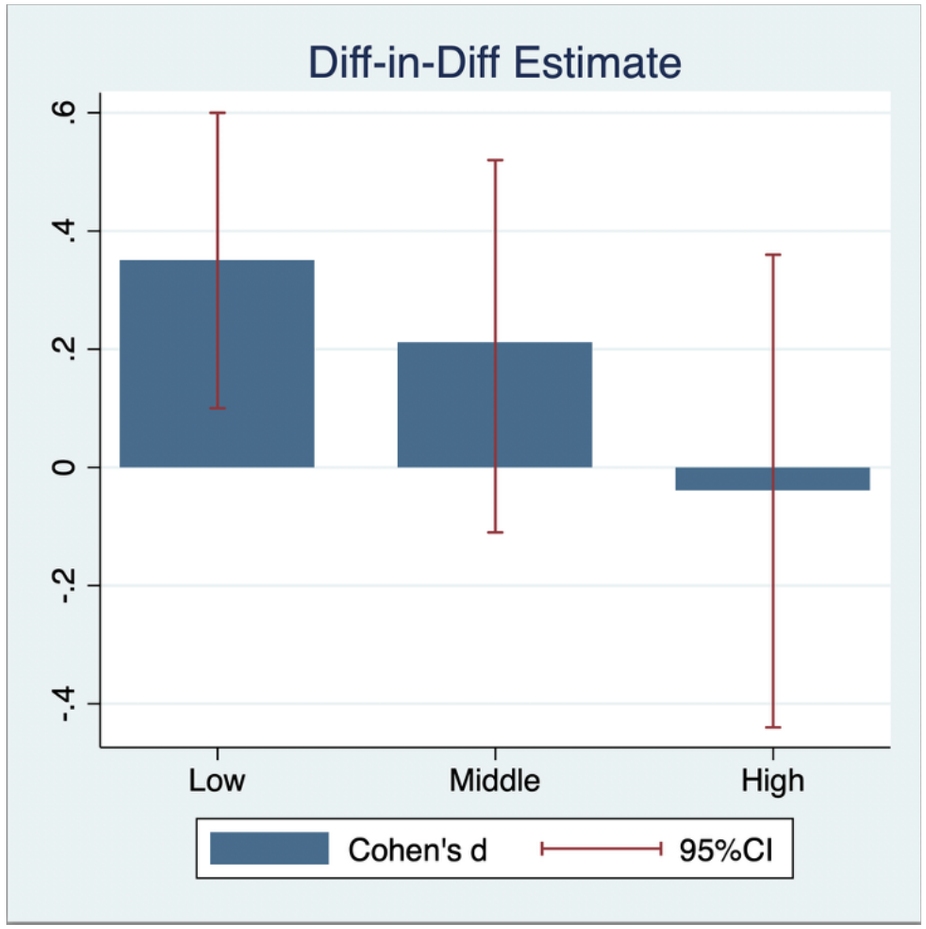
ECEC and language skills in MoBa

N= 60K, 2002-2006

ECEC attendance 18 mo, Language skills 36 mo, maternal reports

Income from Statistics Norway





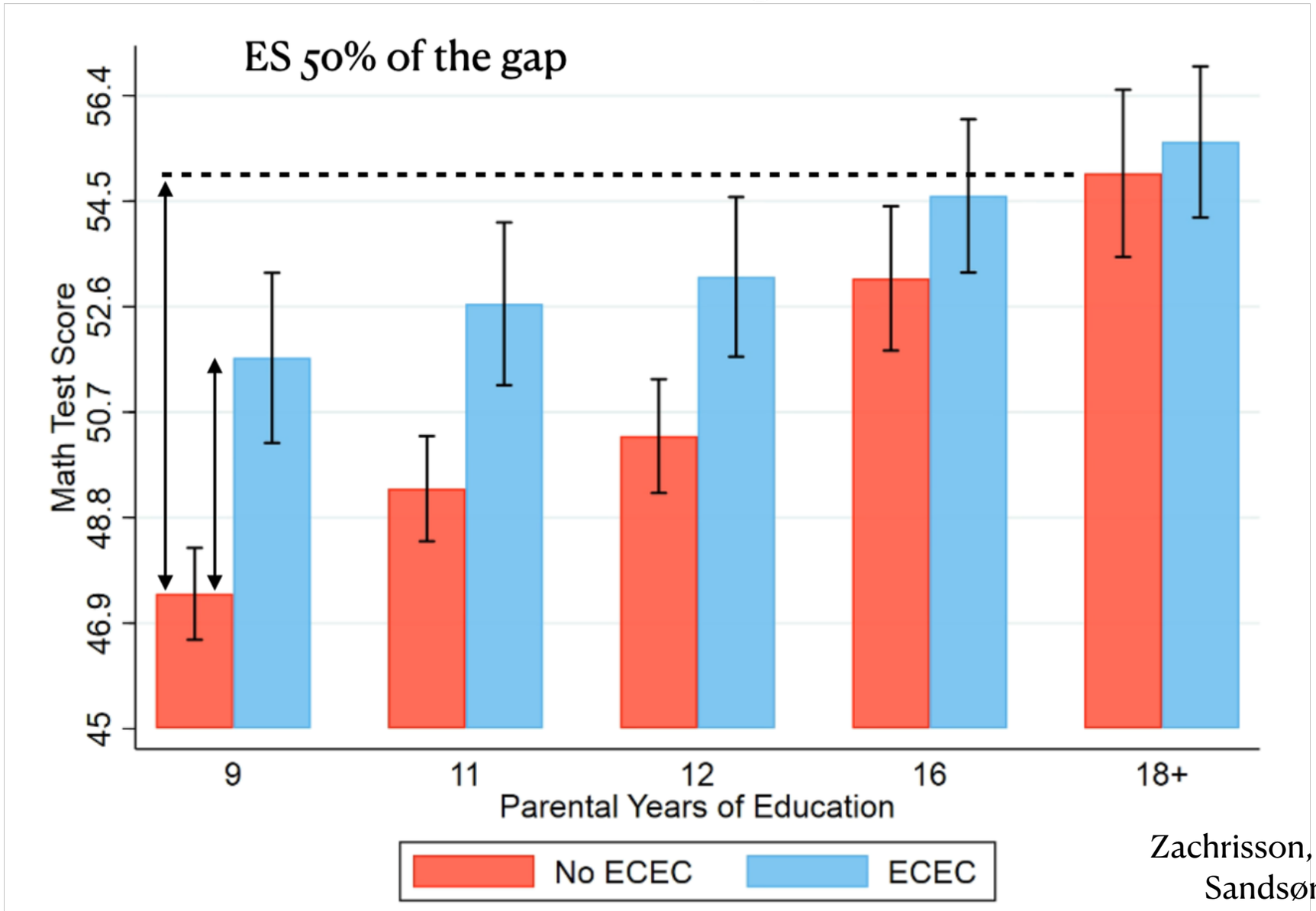
Dearing, Zachrisson, Mykletun, Toppelberg, 2018

ECEC and 5th gr tests scores in MoBa

N= 100K, 2002-2008

ECEC attendance 18 mo

National test scores in Math & Reading from Statistics Norway



Zachrisson, Dearing, Borgen, Sandsør, Karoly, 2024

ECEC and 5th-9th gr tests scores Norway

N= 300K (population), 2002-2008

ECEC age of entry

National test scores in Math & Reading from Statistics Norway

	(1) Read_5	(2) Math_5	(3) Read_8	(4) Math_8	(5) Read_9	(6) Math_9
mnths_at_ccstart	-0.001	-0.006	0.003	-0.008*	0.000	-0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

	(1) Read_5	(2) Math_5	(3) Read_8	(4) Math_8	(5) Read_9	(6) Math_9
Mother no HS	-0.016**	-0.020***	-0.012*	-0.022***	-0.012	-0.021***
	(0.008)	(0.007)	(0.007)	(0.008)	(0.008)	(0.007)
Mother HS	0.002	-0.004	0.006	-0.005	0.002	-0.004
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Girls	-0.000	-0.004	0.007	-0.004	0.003	-0.004
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
Boys	-0.002	-0.009*	0.000	-0.009**	-0.002	-0.008*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Low income	-0.001	-0.007	0.003	-0.008	-0.001	-0.006
	(0.005)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)
High income	-0.002	-0.006	0.003	-0.007*	0.000	-0.007
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Almås, Drange, Meghir, Zachrisson, in preparation

Long-term effects of ECEC 3-6yr olds

Age 30-33

4% Higher incomes

0.3 years longer education

6% lower dropout from HS

5% less likely of benefits

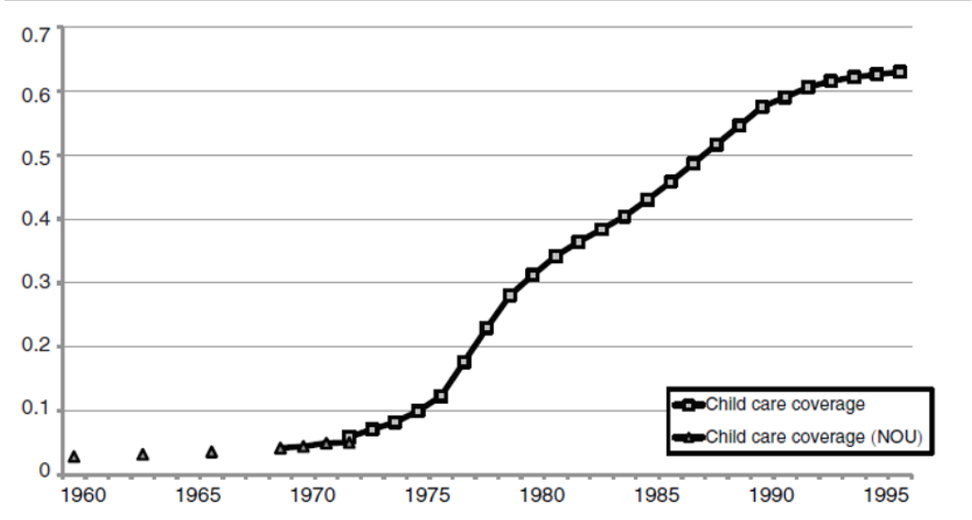


FIGURE 1. CHILD CARE COVERAGE RATE IN NORWAY 1960–1996 FOR CHILDREN 3–6 YEARS OLD

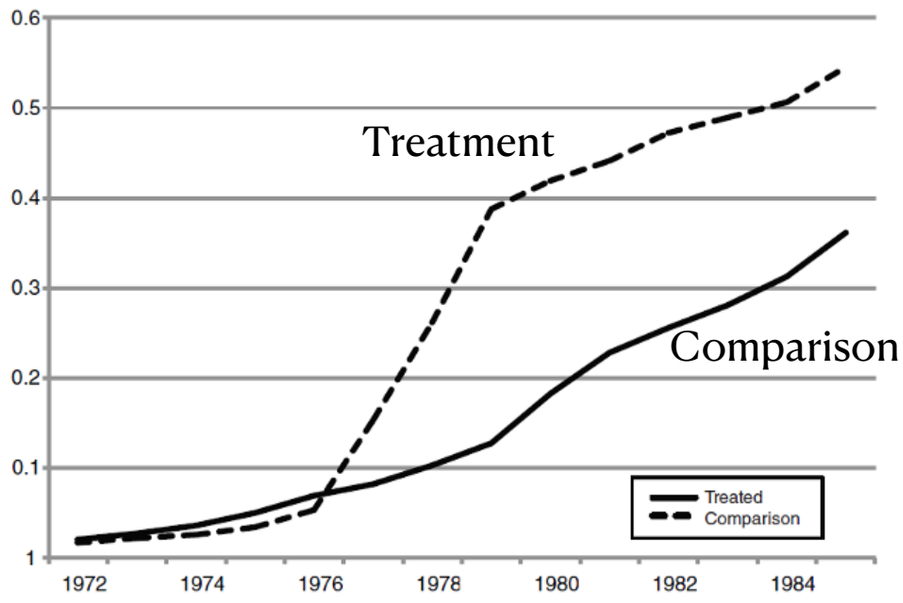
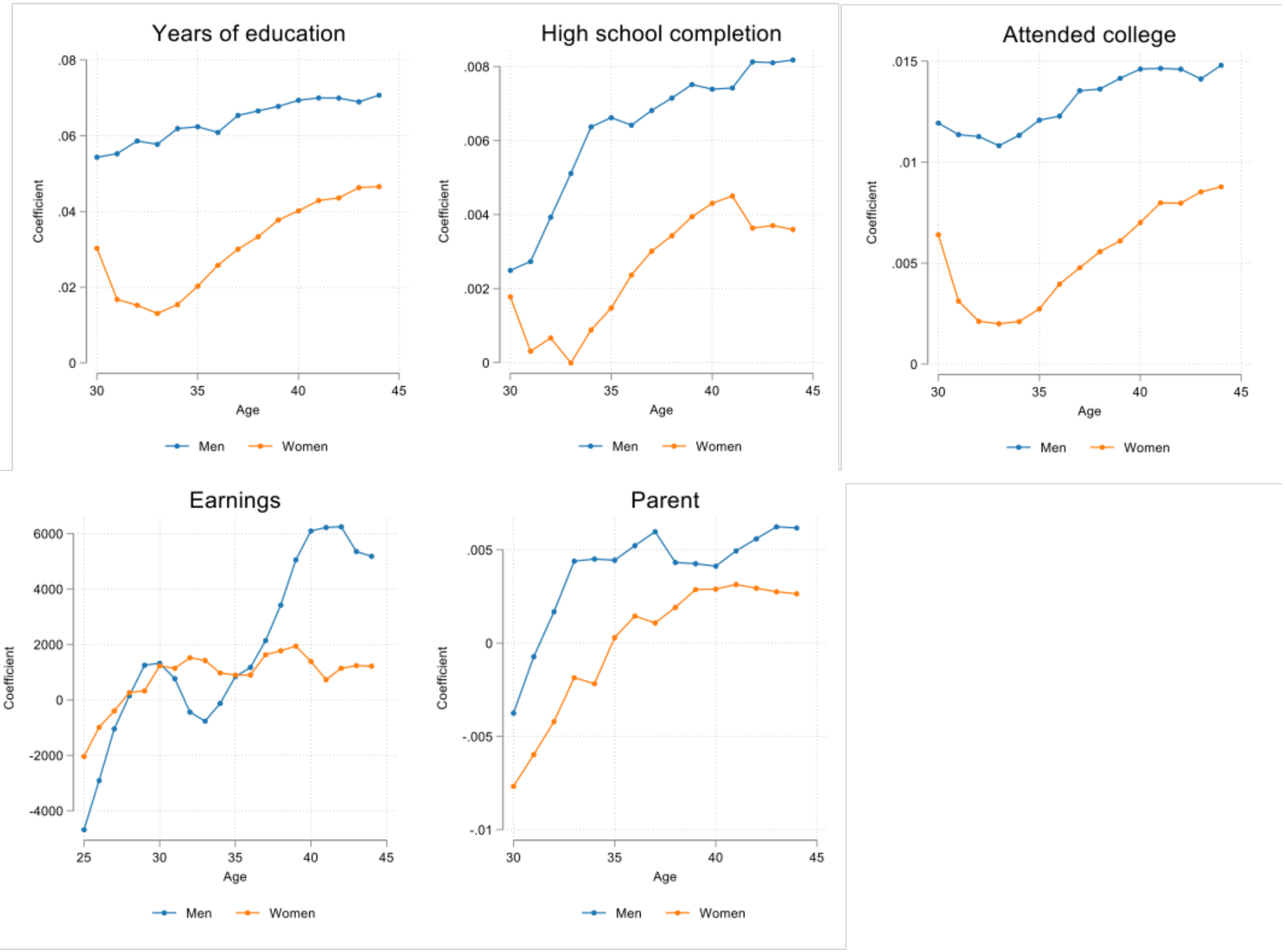


FIGURE 2. CHILD CARE COVERAGE RATES 1972–1985 FOR 3–6 YEAR OLDS IN TREATMENT AND COMPARISON MUNICIPALITIES

Havnes & Mogstad, 2011; 2015

Does it hold into mid 40's?



Borgen, Mogstad, Sandsør, Zachrisson, in preparation

Can schools compensate?

Family income and school achievement

Associations within schools

National tests and family income

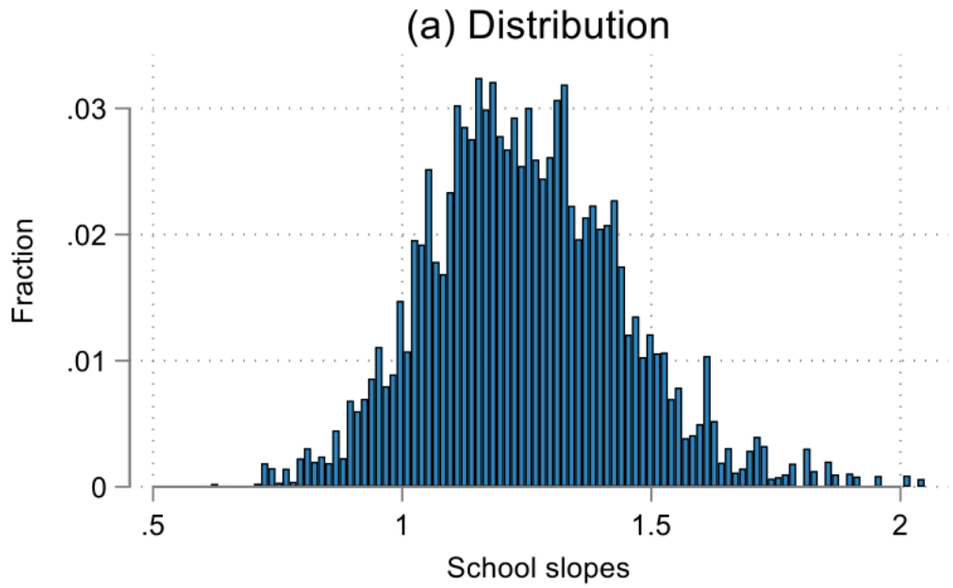
0 to 16% explained variance

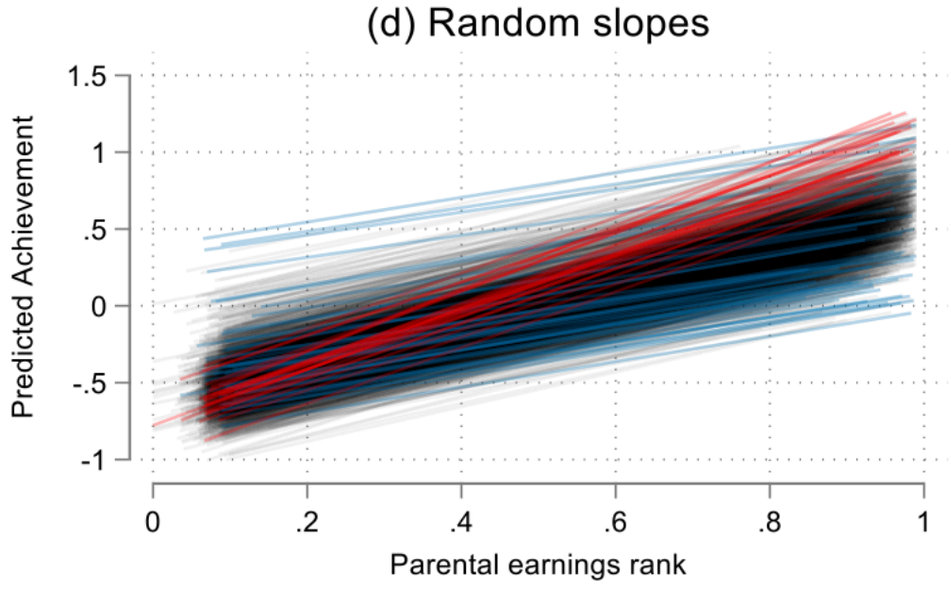
Not SES factors

School Value Added matters

Same schools

Compensate for ADHD





Borgen et al., 2025; Cheesman et al., 2022

Discussion: The tension

Contrasting trends

Socioeconomic inequalities

ECEC compensates

Discussion: Remaining questions

ECEC

«The Nordic ECEC model»

Key to long-term effects?

Schools

What are the active ingredients of compensation?

References (published)

Borgen, N. T., & Zachrisson, H. D. (2024). How neighbourhood effects vary by achievement level. *European Sociological Review, 41*(2), 215-231. doi:10.1093/esr/jcae034

Borgen, N. T., Zachrisson, H. D., & Sandsør, A. M. J. (2025). *Schools equalizing or exacerbating inequality? Between-school variability in the relationship between socioeconomic background and academic achievement*. Retrieved from https://osf.io/tw9r4/download

Cheesman, R., Eilertsen, E. M., Ayorech, Z., Borgen, N. T., Andreassen, O. A., Larsson, H., . . . Ystrom, E. (2022). How interactions between ADHD and schools affect educational achievement: a family-based genetically sensitive study. *Journal of Child Psychology and Psychiatry, 63*(10), 1174-1185.

Dearing, E., Zachrisson, H. D., Mykletun, A., & Toppelberg, C. O. (2018). Estimating the Consequences of Norway's National Scale-Up of Early Childhood Education and Care (Beginning in Infancy) for Early Language Skills. *AERA Open, 4*(1), 1-16. doi:10.1177/2332858418756598

Havnes, T., & Mogstad, M. (2011). No child left behind: Subsidized child care and children's long-run outcomes. *American Economic Journal: Economic Policy, 3*(2), 97-129.

Havnes, T., & Mogstad, M. (2015). Is universal child care leveling the playing field? *Journal of Public Economics, 127*, 100-114. doi:http://dx.doi.org/10.1016/j.jpubeco.2014.04.007

Ribeiro, L. A., Zachrisson, H. D., Nærde, A., Wang, M. V., Brandlistuen, R. E., & Passaretta, G. (2023). Socioeconomic disparities in early language development in two Norwegian samples. *Applied Developmental Science, 27*(2), 172-188. doi:10.1080/10888691.2022.2051510

Sandsør, A. M. J., Zachrisson, H. D., Karoly, L. A., & Dearing, E. (2023). The widening achievement gap between rich and poor in a Nordic country. *Educational Researcher, 52*(4), 195-205. doi:10.3102/0013189x221142596

Zachrisson, H. D., Dearing, E., Borgen, N. T., Sandsør, A. M. J., & and Karoly, L. A. (2024). Universal Early Childhood Education and Care for Toddlers and Achievement Outcomes in Middle Childhood. *Journal of Research on Educational Effectiveness, 17*(2), 259-287. doi:10.1080/19345747.2023.2187325