School absenteeism and academic achievement

Is missing out on school more detrimental for students from lower socioeconomic backgrounds?

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Outline

1. ESRC SDAI project
2. Motivation
3. Theoretical considerations
4. Data and methods
5. Findings
6. Closing remarks

ESRC SDAI project

Project details

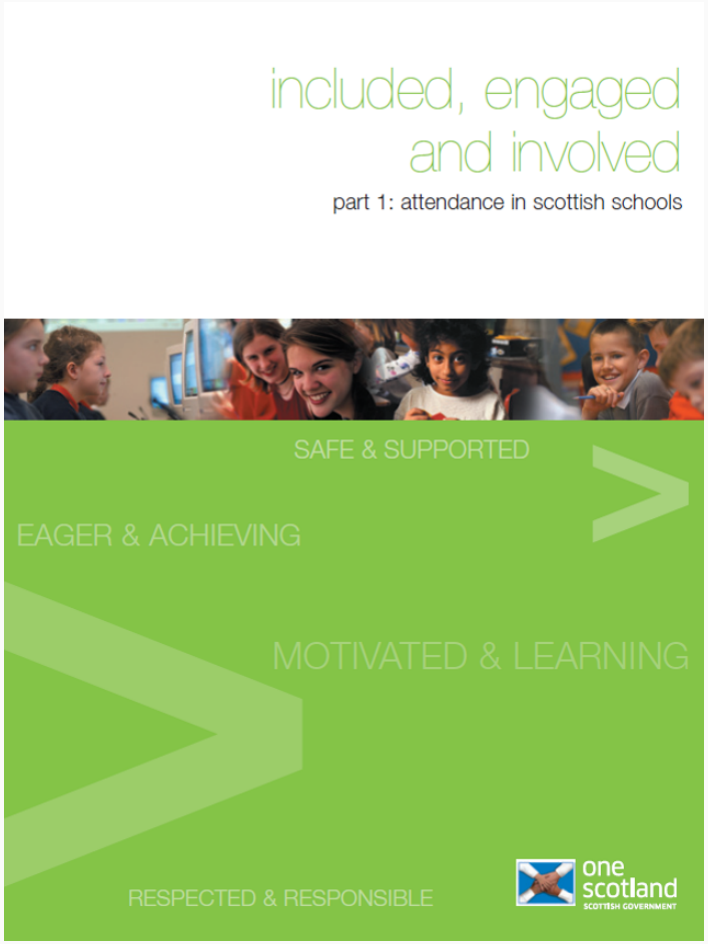
- Title: Family background and educational attainment: An investigation into the mediating role of school absenteeism
- Funder: Economic and Social Research Council Secondary Data Analysis Initiative (ESRC SDAI)
- Period: September 2018 - March 2022 (no-cost extension due to Covid-19)
- Team: Markus Klein (PI), Edward Sosu (Co-I)
- Non-academic partners: General Teaching Council Scotland (GTCS) and Poverty Alliance

Aims of the project

- To investigate the role of school absenteeism in the socioeconomic achievement gap in Scotland
- To exploit unique longitudinal data linking sources from the Scottish Census, administrative school Census and SQA data;
- To provide evidence based policy recommendations on how to reduce school absenteeism and mitigate the harmful consequences of school absenteeism.

  $\rightarrow$ To our knowledge there is limited research on the determinants and consequences of school absenteeism in Scotland (and the UK)

Attendance policy in Scotland

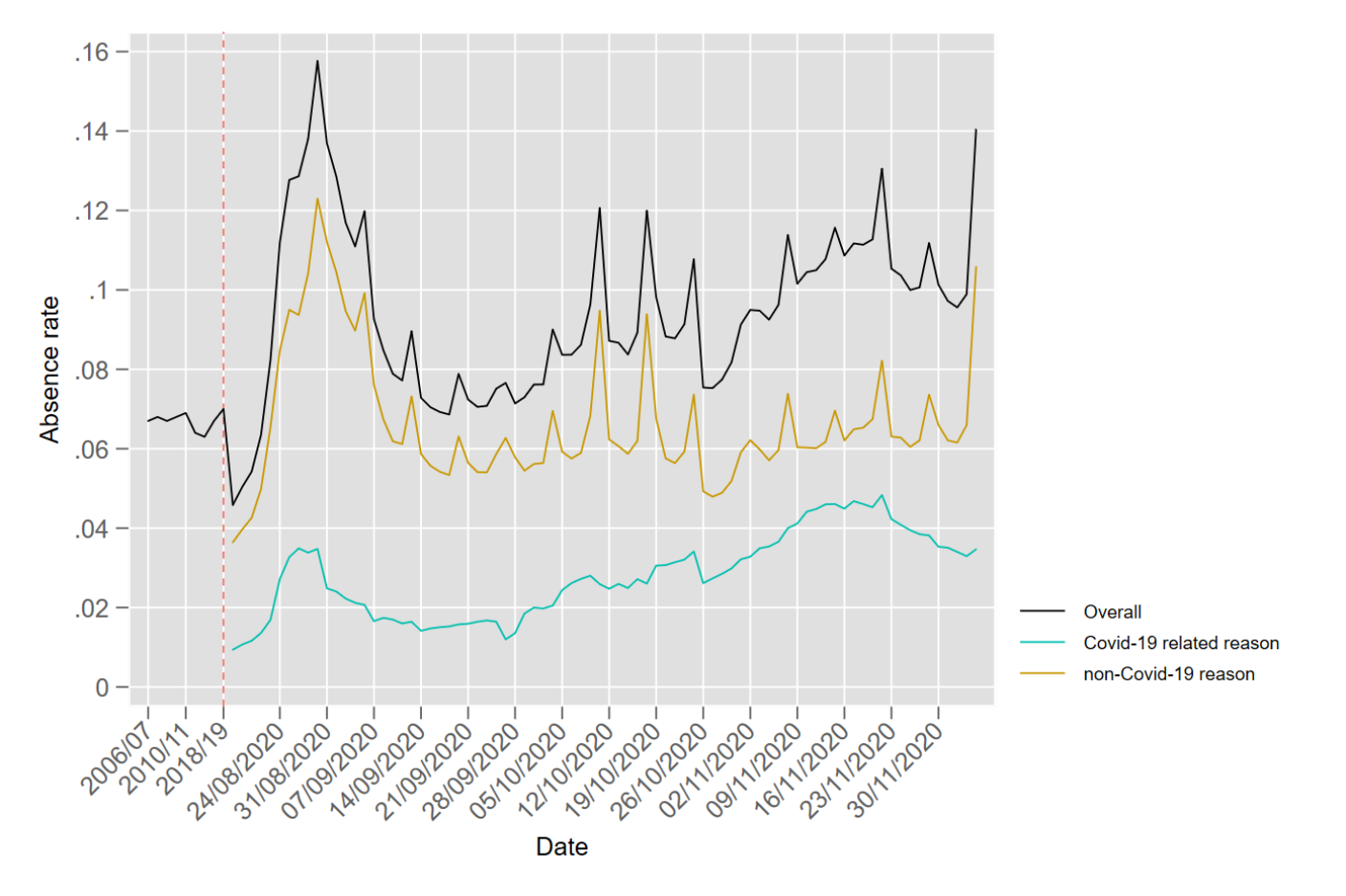


- Recording attendance: at least twice each day - Present, lateness, absent (authorised/unauthorised)
- Follow up on absences: immediately check up with parent's/guardian's contact
- Authorised absence: Sickness, medical and dental appointments, bereavements, lack of transport, religious observances
- Unauthorised absence: Truancy, including unexplained absences, parent is refusing to send child to school

School absenteeism in Scotland

- The proportion of half days lost due to unexplained absences from school, including truancy, has risen from 0.7 per cent in 2005-06 to 1.7 per cent in 2018-19
- Unauthorised holidays hit their highest level in 2018-19, with the proportion of half days lost due to unauthorised holidays rising from 0.4 per cent in 2005-06 to 0.7 per cent.
- In 2018/19, SIMD 1 (most deprived) were absent 9.6 per cent of half days; SIMD 5 (least deprived) were absent only 4.7 per cent of half days

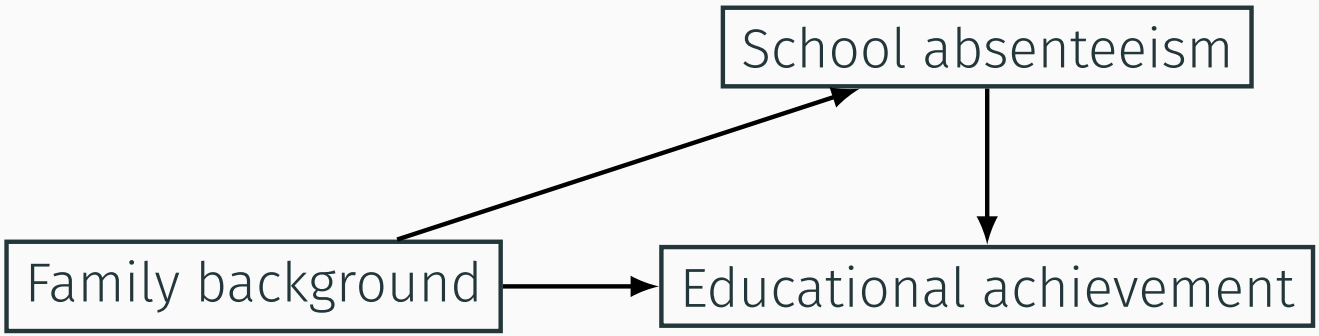
Covid-19 and school absenteeism



Source: Scottish Government's national daily school attendance records after the first lockdown, own calculations

Published in: Sosu, E., and Klein, M. (2021). Socioeconomic disparities in school absenteeism after the first wave of COVID-19 school closures in Scotland. Research Brief. University of Strathclyde.

The mediating role of school absenteeism



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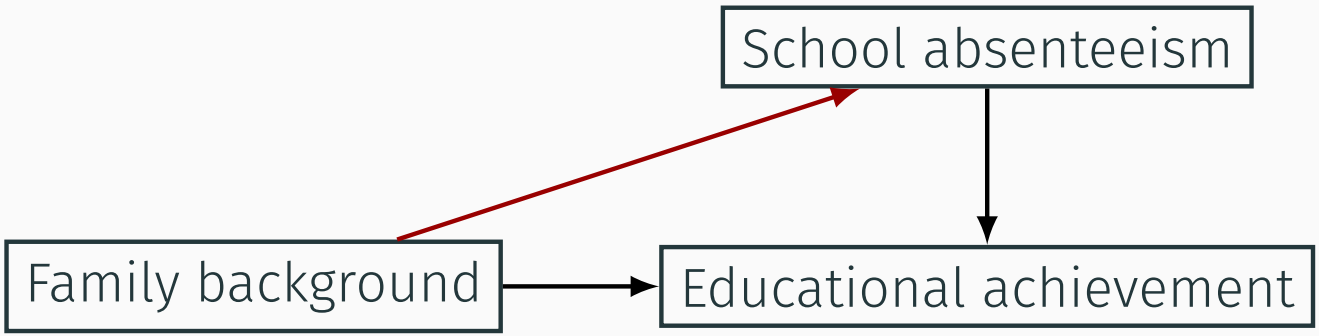

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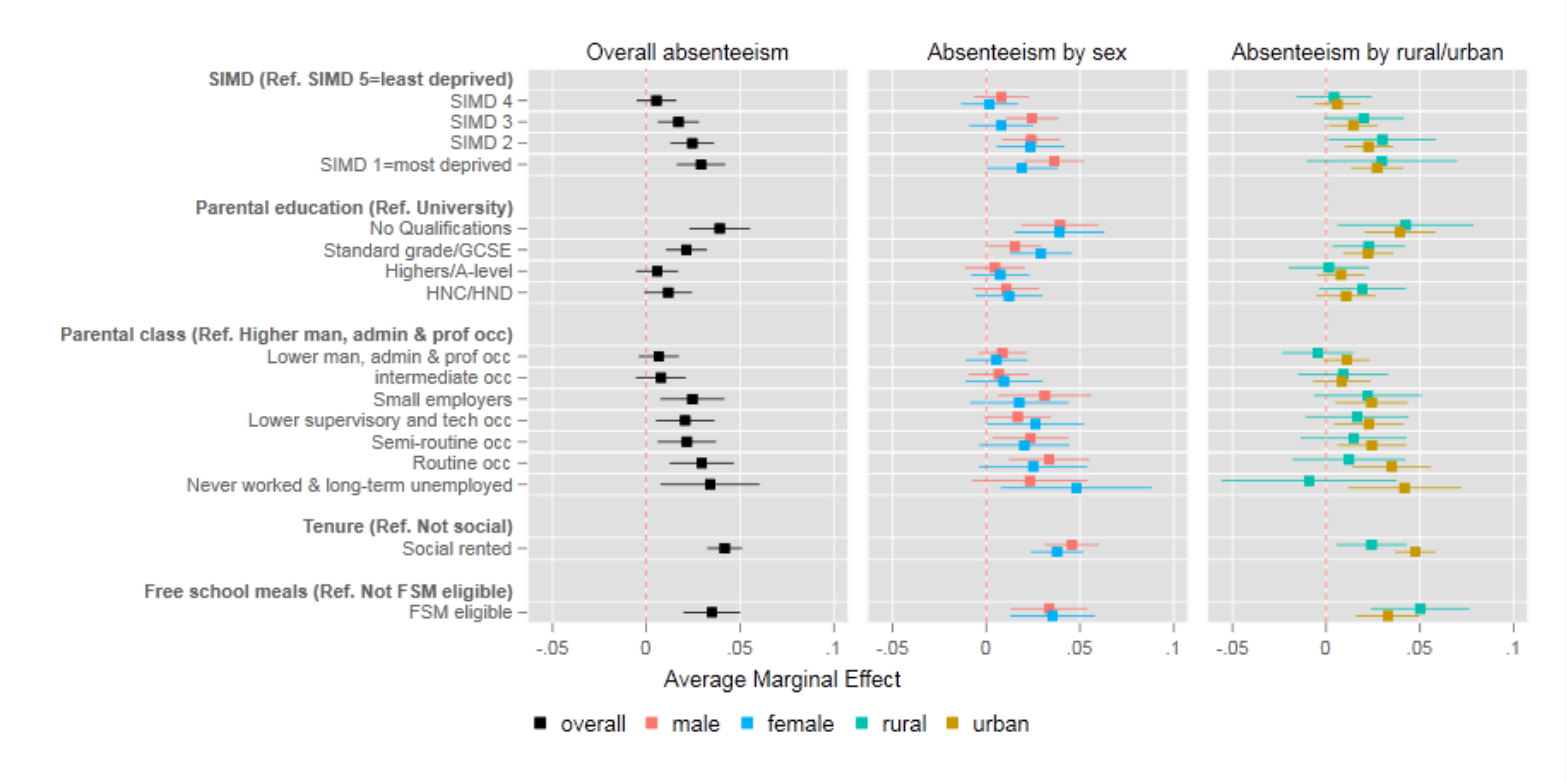

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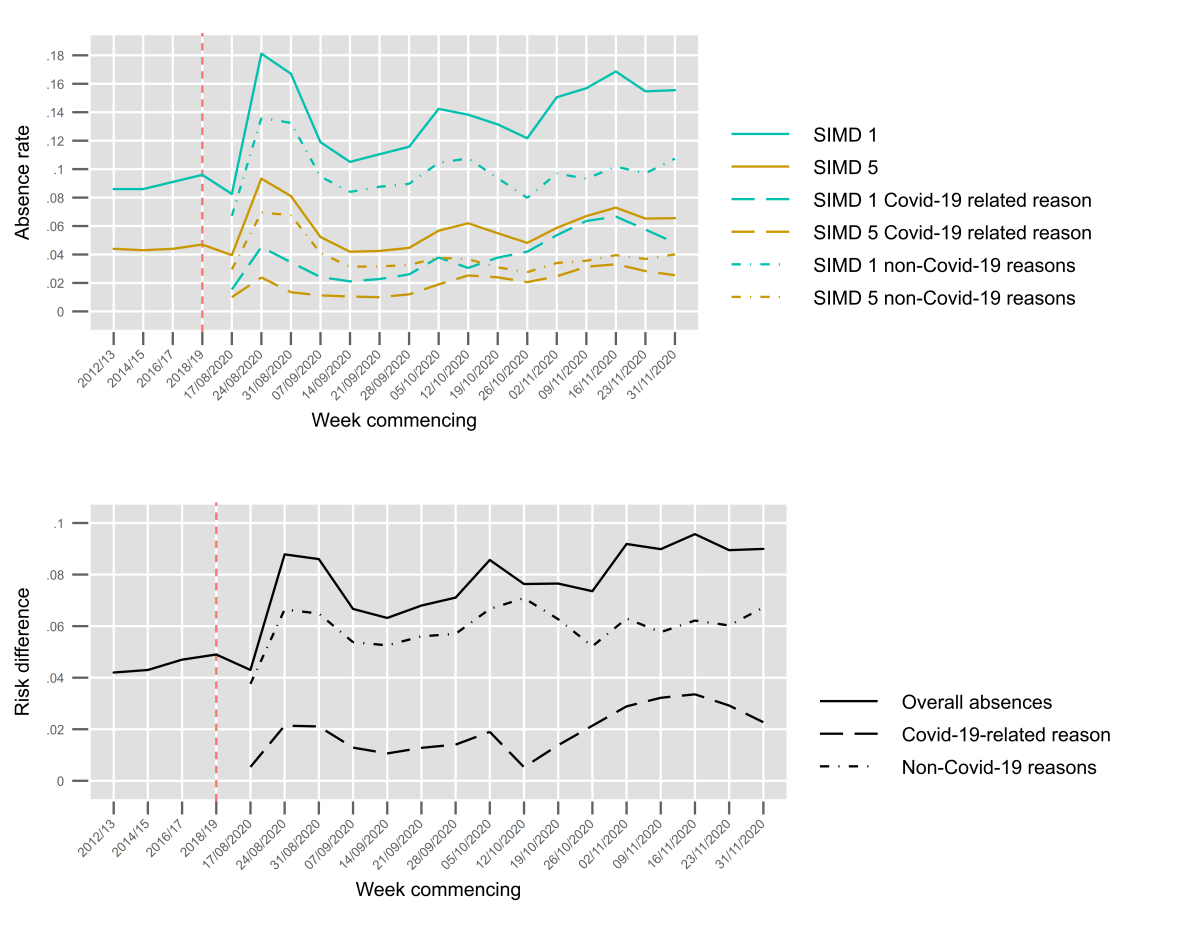
Covid-19 and socioeconomic disparities in absenteeism



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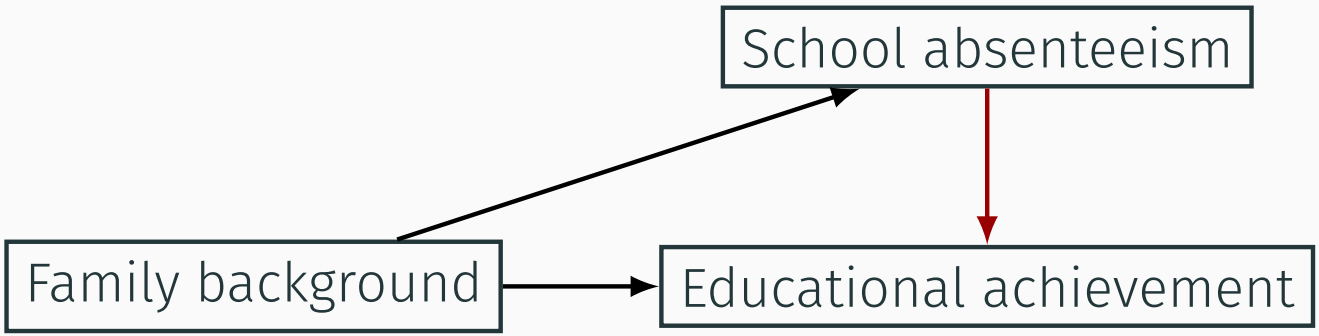

Motivation

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  - Limited evidence on more precise reasons (Hancock et al., 2017)
- Investigating more precise reasons informs us about potential mechanisms

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- Low-SES students have a higher risk of school absenteeism than high-SES students (Klein et al., 2020)
- Absences may cause greater harm to low-SES students → families have fewer resources to compensate for lost instructional time
- **But**: Studies on the moderating role of family SES are sparse and inconclusive (e.g. Ready, 2010; Smerillo et al., 2018)

Research Questions

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- RQ2: Does the effect vary depending on the form of absenteeism (sickness-related absence, exceptional domestic circumstances, family holidays, truancy, temporary exclusion)?
- RQ3: Does the socioeconomic background moderate the effect of absenteeism on academic achievement?

Theoretical considerations

School absenteeism and academic achievement

- Faucet theory: Students enhance their skills through frequent exposure to schooling; stop making educational gains once the exposure is turned off (Alexander et al., 2001).

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- Frequently absent students may feel less integrated in their class and struggle to participate in classroom activities

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- **Truancy**: link to problem behaviour, e.g. alcohol, substance abuse, crime and delinquency (e.g., Henry and Huizinga, 2007; Hirschfield and Gasper, 2011)
- **Temporary exclusion** can emotionally and psychologically alienate students from their teachers → feelings of isolation, stigmatization, or disengagement (Arcia, 2006)

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- **Sickness absence/Exceptional domestic circumstances**: Students motivated to make up for lost instructional time; teachers and parents more likely to support students if absence was authorised
- **Family holidays**: Students only absent for a limited amount of time; parents only go on holidays on term-time if students do well

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- High-SES parents have resources to compensate for school absences and help their children to catch up with missed school lessons (Ready, 2010)

  $\rightarrow$ School absenteeism more detrimental to academic achievement among students from low-SES families

Data and methods

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- NHS health data (e.g., maternity and birth records) can be linked but are not part of the core SLS database

Our SLS sample

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  - SQA achievement records available

Outcome: Academic achievement

Course Level	Award	Tariff Points
Advanced Higher	A	120
CSYS	A	120
Advanced Higher	B	100
CSYS	B	100
Advanced Higher	C	80
CSYS	C	80
Advanced Higher	D	72
Higher	A	72
Higher	B	60
Higher	C	48
Higher	D	42
Intermediate 2	A	42
Standard Grade	1	38
Intermediate 2	B	35
Intermediate 2	C	28
Standard Grade	2	28
Intermediate 2	D	24
Intermediate 1	A	24
Standard Grade	3	22
Intermediate 1	B	20
Advanced Higher	Unit	20
Intermediate 1	C	16
Standard Grade	4	16
Higher	Unit	12
Intermediate 1	D	12
Standard Grade	5	11
Standard Grade	6	8
Access 3	Cluster	8
Intermediate 2	Unit	7
Unallocated Unit	(NC Module)	6
Unallocated Unit	(Short Course)	6
Intermediate 1	Unit	4
Standard Grade	7	3
Access 3	Unit	2
Access 2	Unit	1
Baccalaureate Interdisciplinary project	1	60
Baccalaureate Interdisciplinary project	2	50
Baccalaureate Interdisciplinary project	3	40

Source: Scottish Government (2010)

Historical SQA results summarised with the Unified Points Score Scale (extended version of the UCAS Scottish Tariff points system) at the end of S4 (age 15-16) and S5/S6 (age 16-18).

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- Other covariates: ethnicity, place of residence, child's sex, child's age, family structure, number of siblings, mother's age at birth, child health, parental health, parental caring status, child's additional support needs

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- School fixed effects: accounting for any between-school differences
- Moderation by SES: modelling interaction terms between absenteeism and socioeconomic dimensions

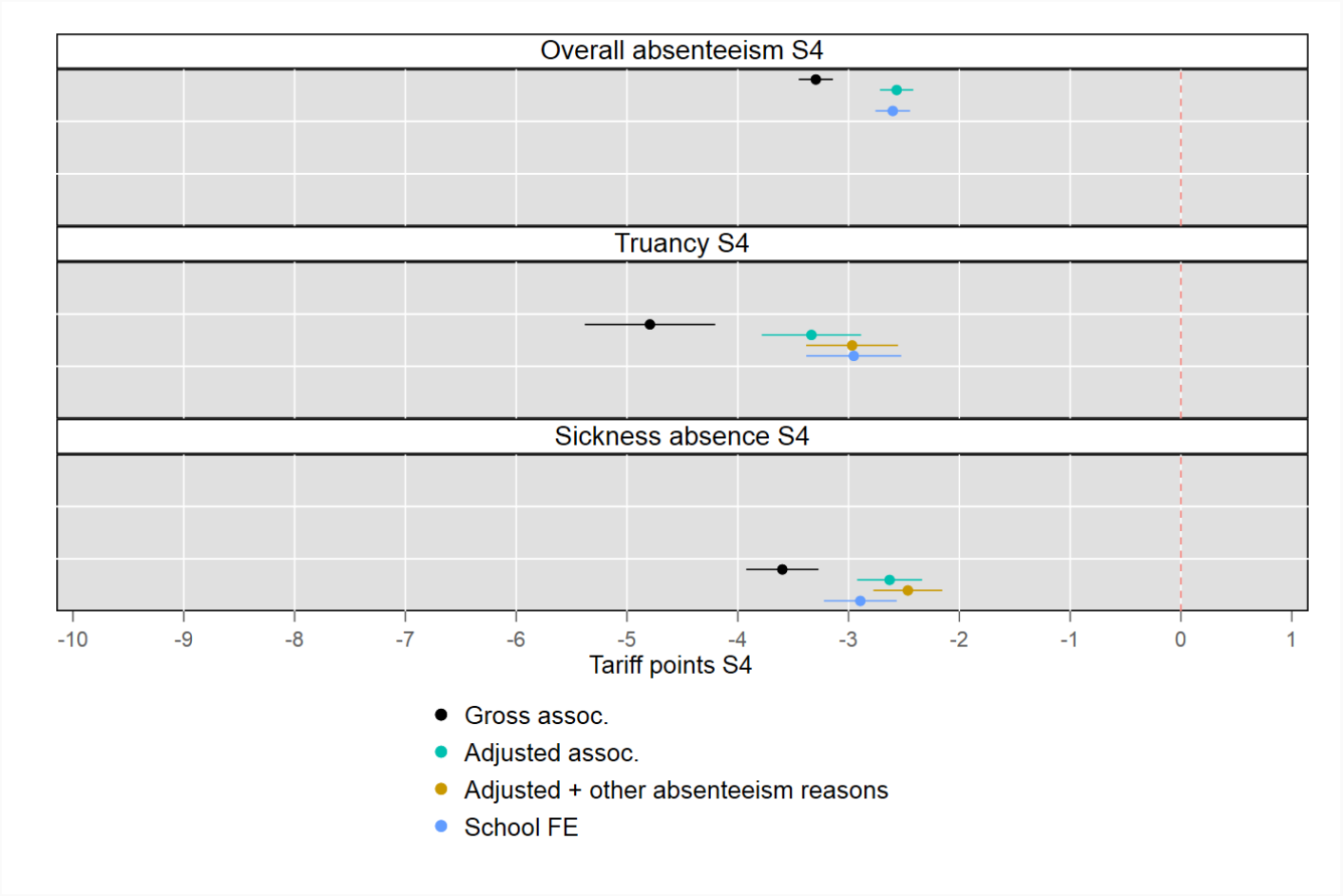
Findings

Summary statistics (n = 4,419)

	Mean/Proportion	SD
Academic achievement S4		
Tariff score	181.77	73.78
Absenteeism forms S4		
Overall	0.14	0.12
Truancy	0.02	0.05
Sickness absence	0.05	0.07
Temporary exclusion	0.05	
Except. domestic circumst.	0.11	
Family holidays	0.15	

Source: Scottish Longitudinal Study, own calculations

Absenteeism and academic achievement in S4



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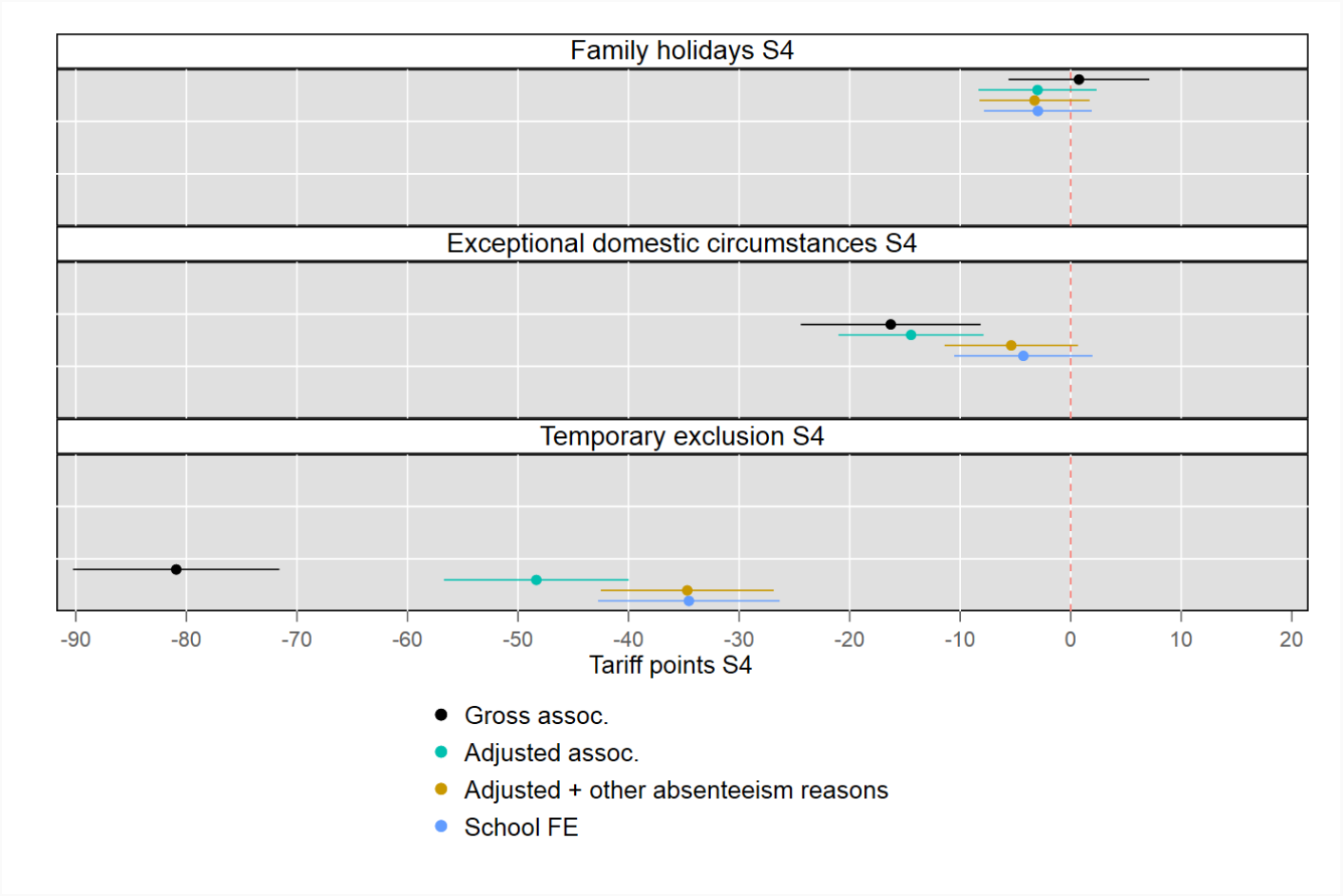
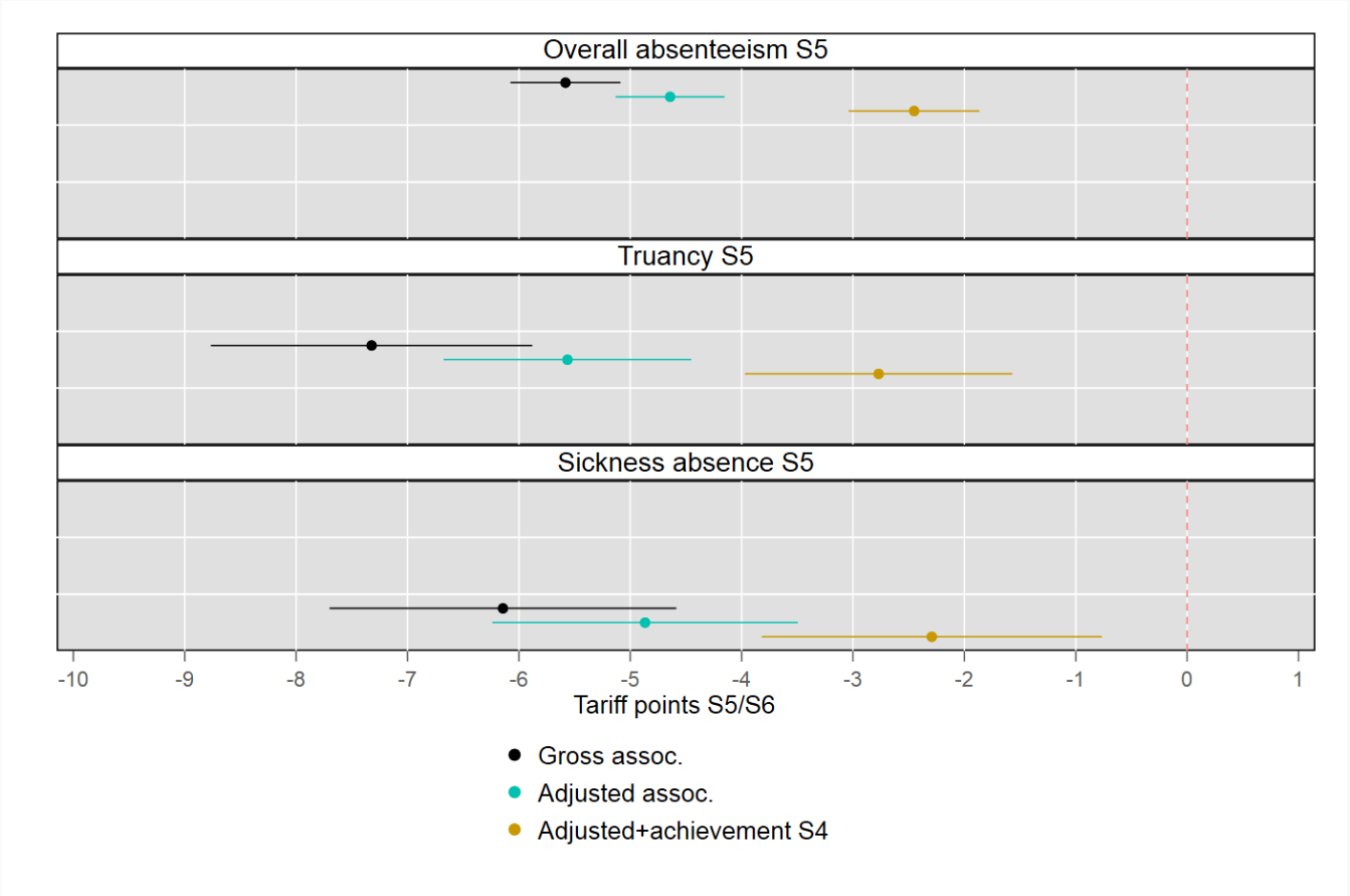


Source: Scottish Longitudinal Study, own calculations

Absenteeism and academic achievement in S5/S6



Source: Scottish Longitudinal Study, own calculations

Note: All models weighted by inverse probability of dropout to correct for nonrandom school continuation

Robustness checks

- Adjusting for additional covariates from NHS data (e.g., low birth weight, parents concerned about behaviour at age 4), n=1,692 $\rightarrow$ weighted by inverse probability of censoring

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- First difference model: estimating the effect of within-student changes in absenteeism on academic achievement progress, n=3,351

  $\rightarrow$ Both robustness checks did not change the substantive findings

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    - Health pathway
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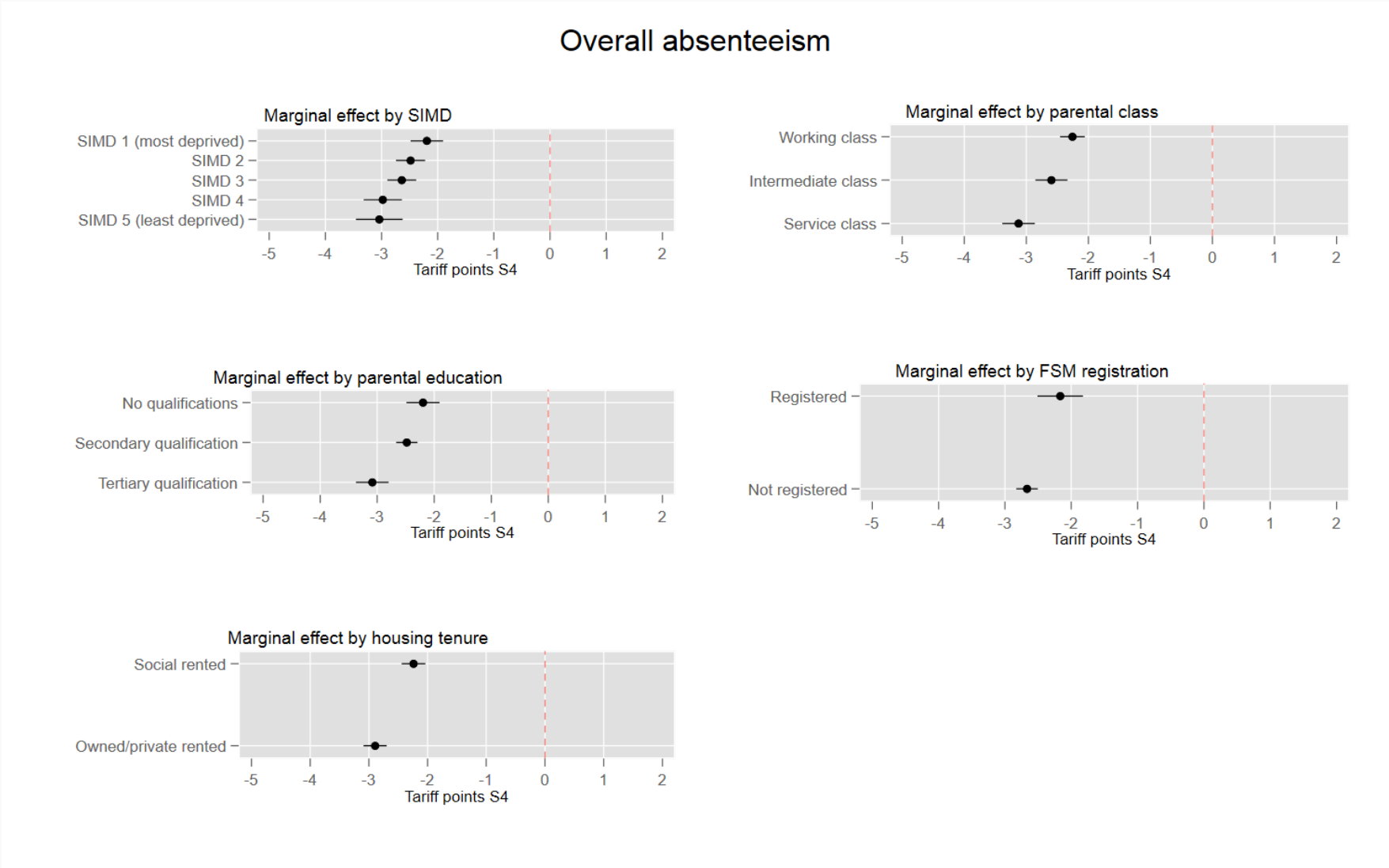
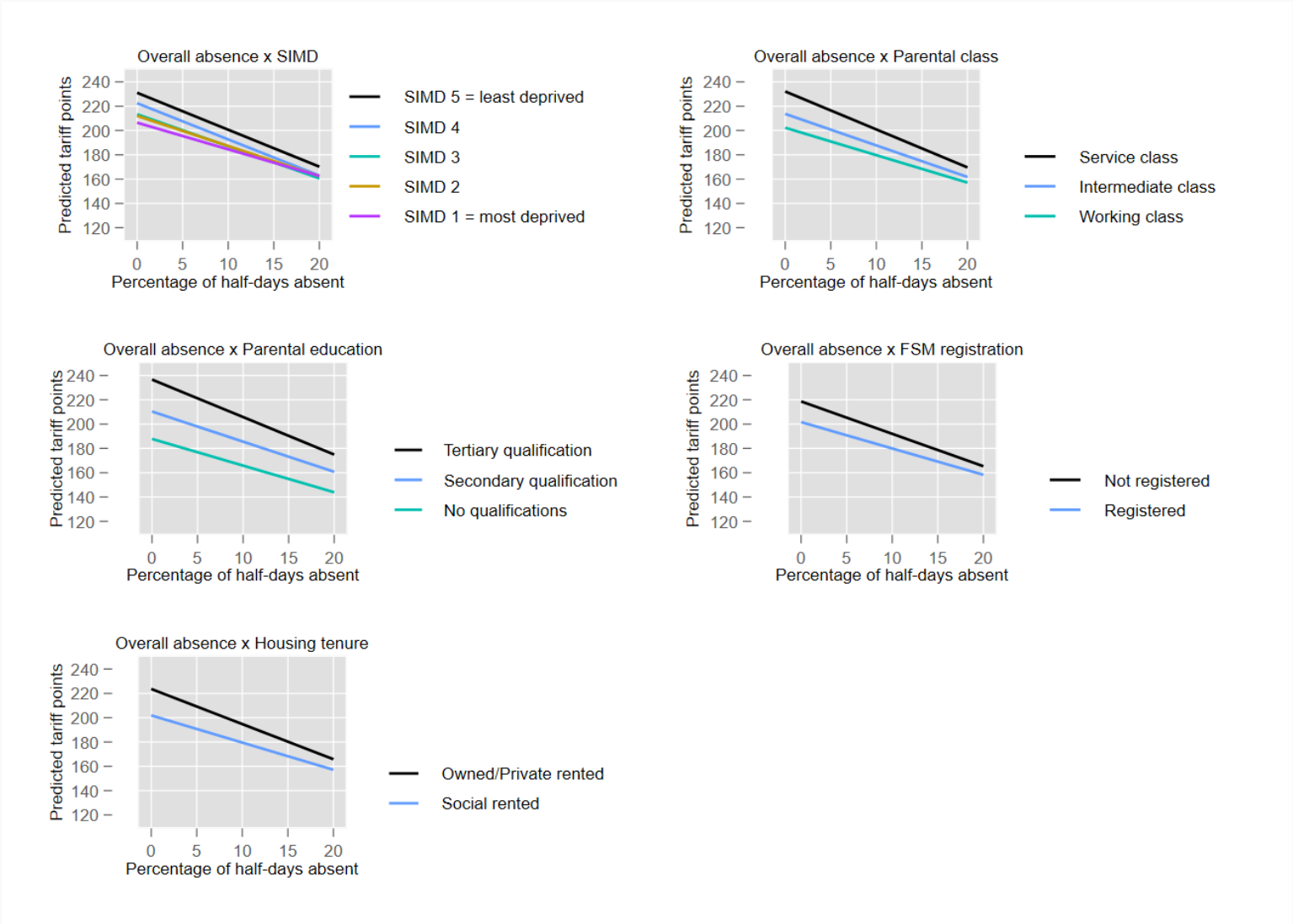
SES moderation: Marginal effects



Source: Scottish Longitudinal Study, own calculations

SES moderation: Predicted tariff scores



Source: Scottish Longitudinal Study, own calculations

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- Contrary to our expectations, effects are smaller among children from lower socioeconomic backgrounds
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- Heterogeneity in the effect of absence may reflect differences in the quality of education students receive at school.

Closing remarks

Conclusion

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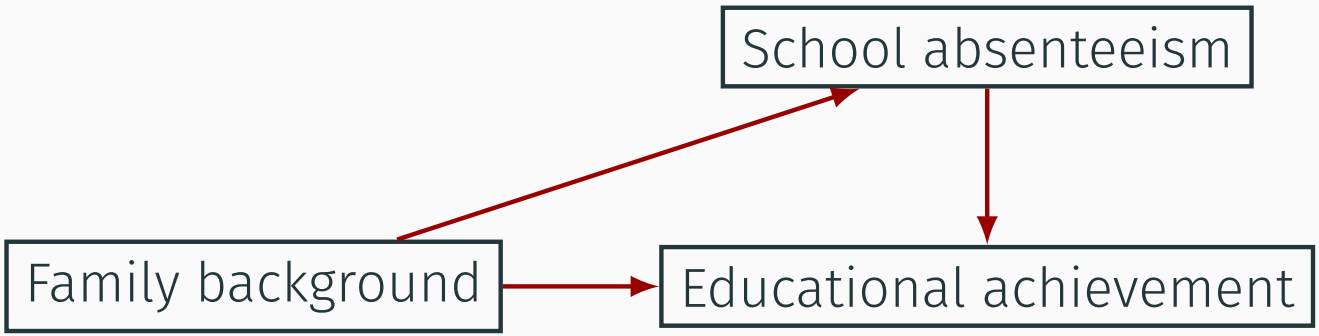
- Not all forms of school absenteeism are detrimental to student achievement
- ”Problematic” absenteeism (truancy, temporary exclusion) and authorised absences (sickness) lead to poorer achievement
- School absenteeism is detrimental to achievement among all children, but less so among children from lower socioeconomic backgrounds

Work in progress: mediation analysis



Future plans

- School absenteeism and post-school destinations

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- Family structure and school absenteeism

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- Tardiness

Disclaimer

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For more information on the SLS, please visit: http://sls.lscs.ac.uk

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Thank you!

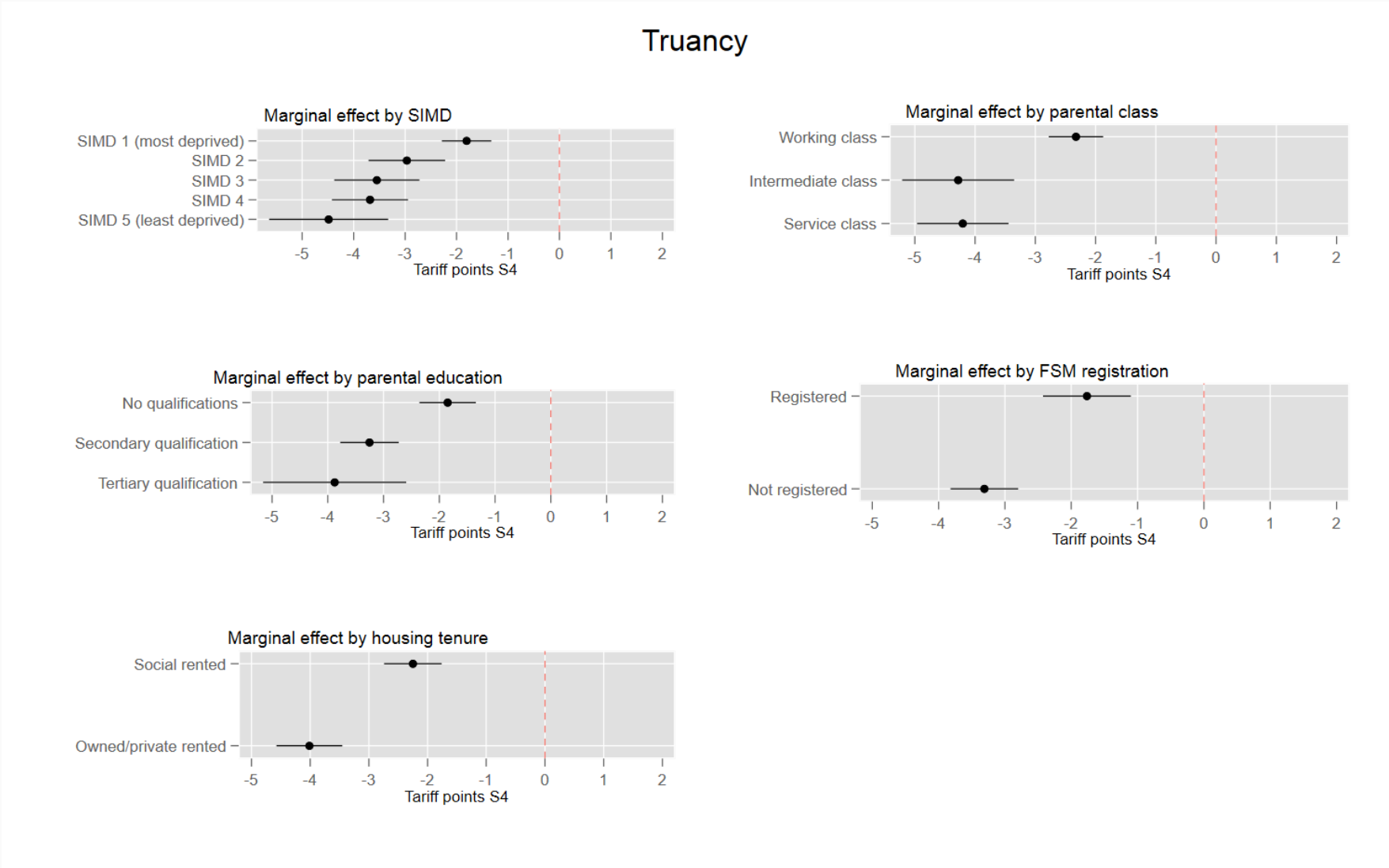
First difference model

Table 2. Summary of first difference regressions predicting change in academic achievement (tariff points) from S4 to S5/S6 (n=3,351)

	M1	M2	M1	M2	M1	M2
Δ Overall absenteeism	-3.20***	-3.18***				
	(0.23)	(0.23)				
Δ Sickness absence			-1.65***	-1.67***		
			(0.35)	(0.35)		
Δ Truancy					-2.16***	-2.20***
					(0.43)	(0.44)
Controlling for Δ FSM and Δ ASN	No	Yes	No	Yes	No	Yes

Source. Scottish Longitudinal Study, own calculations. *Note.* * $p < .05$, ** $p < .01$, *** $p < .001$. Cluster-robust standard errors in parentheses. FSM = Free school meal registration; ASN = Additional support needs.

SES moderation: Marginal effects



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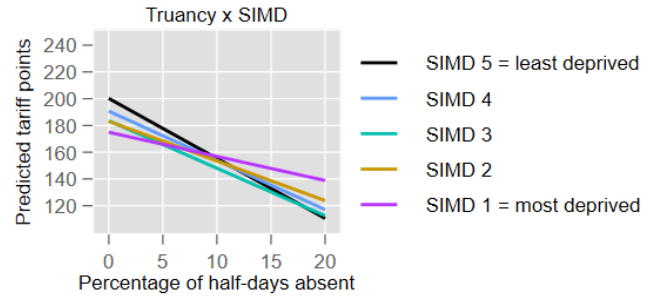

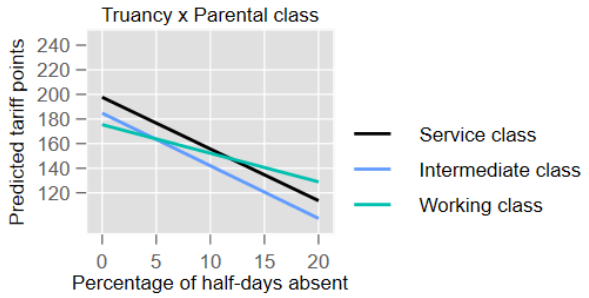

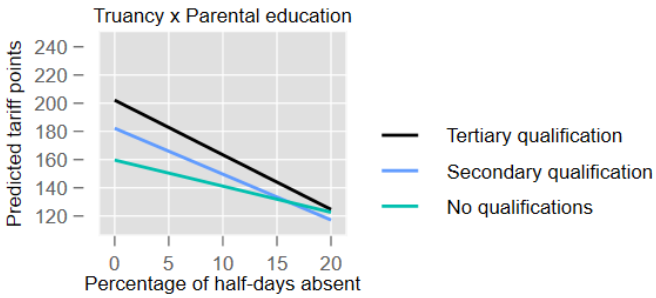

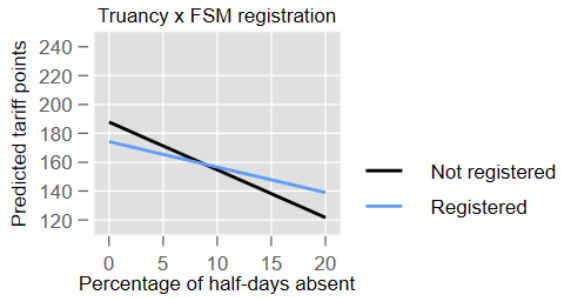

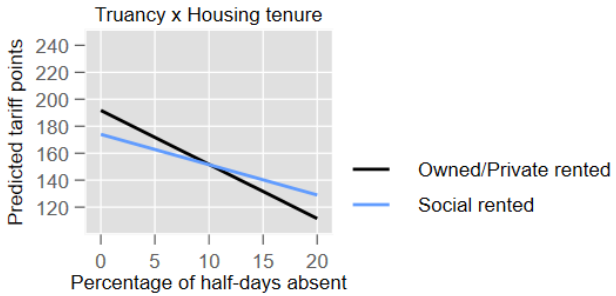

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