

Online Appendix for: "Trends in International Assessments and Outcomes in Adulthood"

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A Additional Tables and Figures

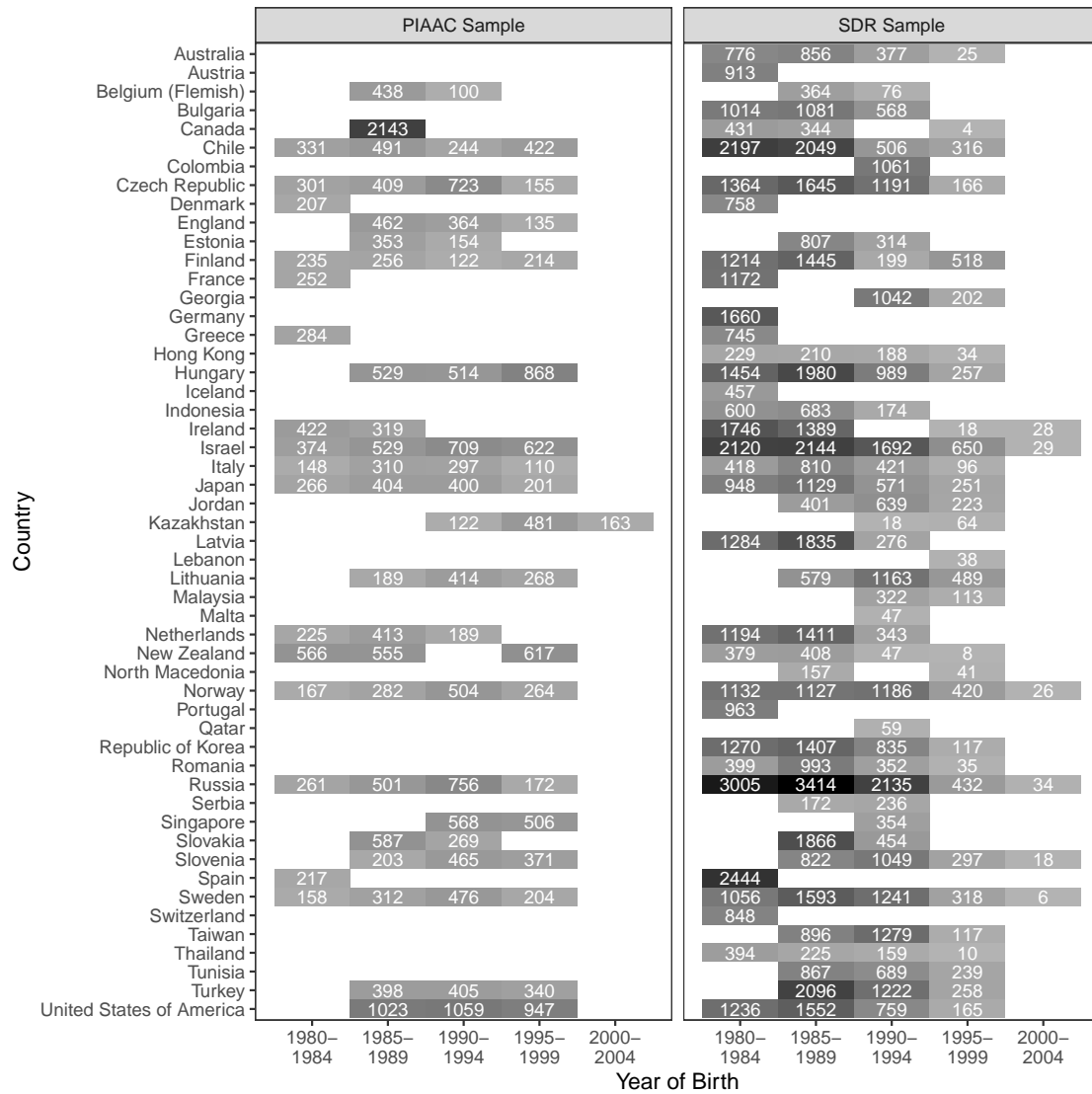


Figure A.1: Data Coverage by Country and Year of Birth

Note: Figure displays the number of observations in each country-by-year of birth cell, separately for the PIAAC and SDR samples.

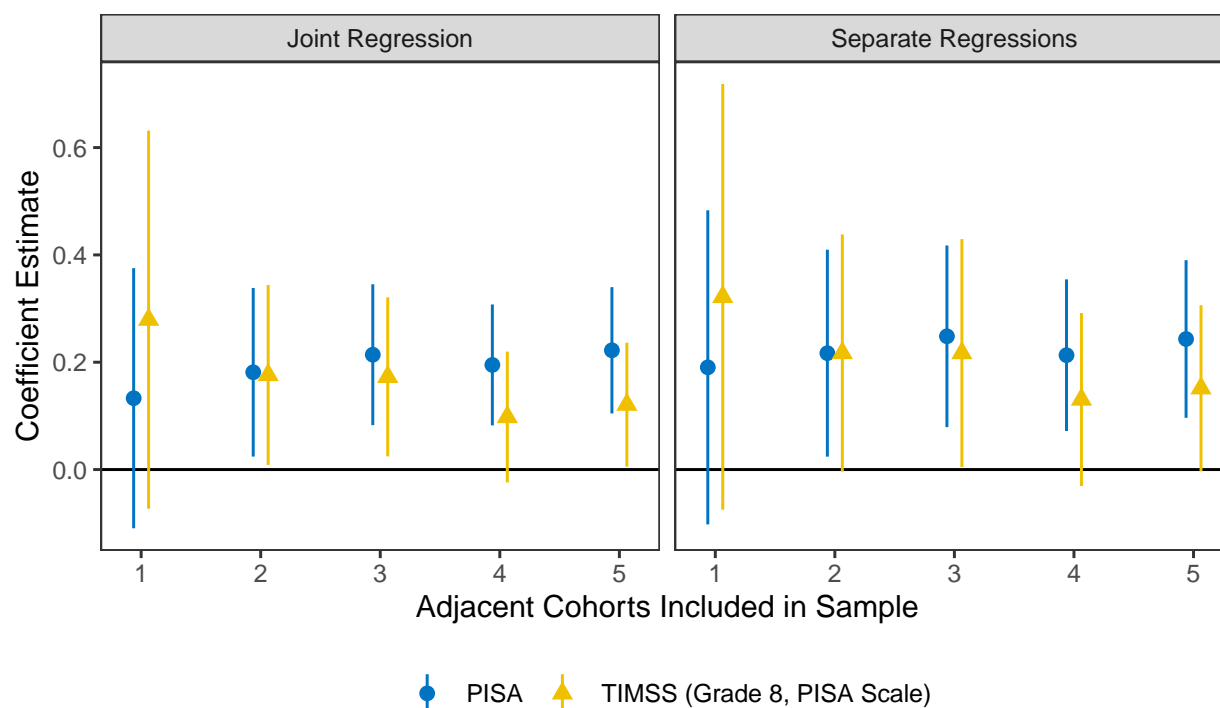


Figure A.2: Relationship Between Adulthood Numeracy and Adolescent Test Scores by Country Birth Cohort: Coefficient Estimates and Adjacent Cohorts Included in Sample

Note: Figure displays regression coefficients estimating the relationship between average PISA and TIMSS math scores and PIAAC numeracy scores. Plotted coefficients show the estimated effect of PISA and TIMSS scores in data that includes the specified number of adjacent cohorts. The "Joint Regression" panel summarizes the results of 5 separate regressions; each regression includes PISA and TIMSS as independent variables. The "Separate Regressions" panel summarizes the results of 10 separate regressions; each regression includes either PISA or TIMSS as an independent variable. All regressions include controls for age and age-squared, fixed effects for gender, test year, and region-age and region-age-squared interactions. See notes for Table 2 for details.

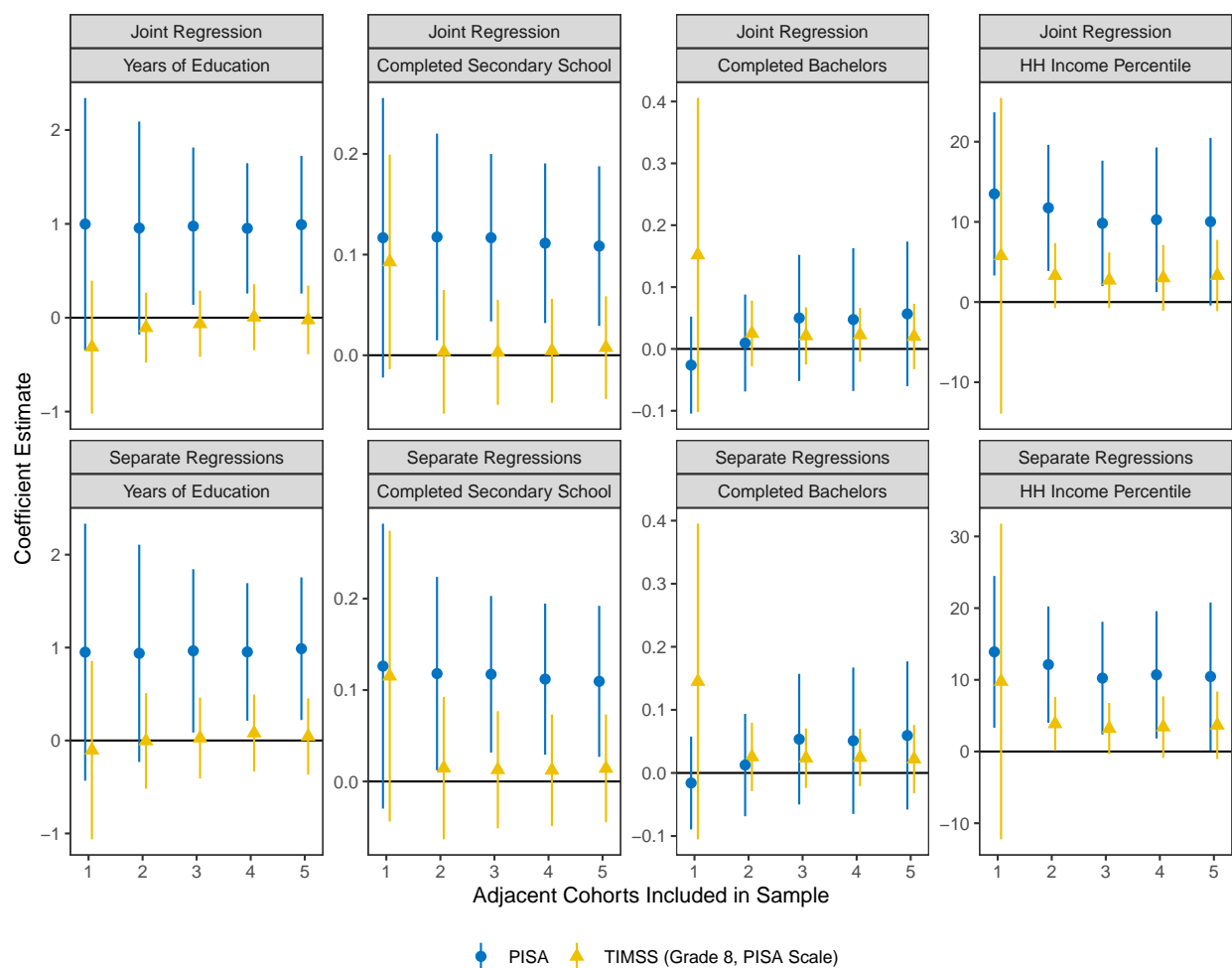


Figure A.3: Relationship Between Adulthood Outcomes and Adolescent Test Scores by Country Birth Cohort: Coefficient Estimates and Adjacent Cohorts Included in Sample

Note: Figure displays regression coefficients estimating the relationship between average PISA and TIMSS math scores and adulthood outcomes in SDR data. See notes for Figure A.2 for details.

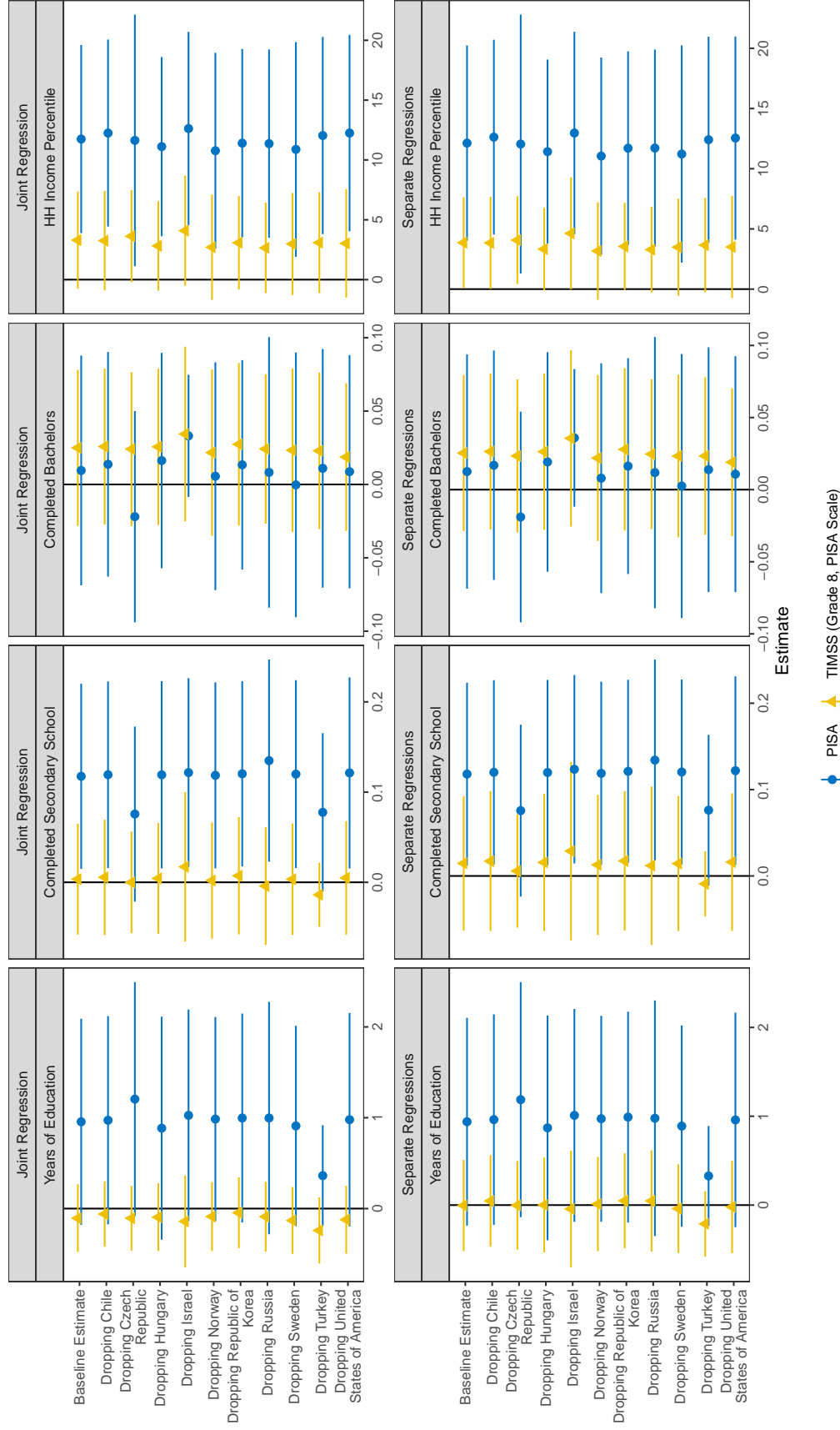


Figure A.4: Relationship Between Adulthood Outcomes and Adolescent Test Scores by Country Birth Cohort: Sensitivity to Country Omission

Note: Figure displays regression coefficients estimating the relationship between average PISA and TIMSS math scores and adulthood outcomes in SDR data. In each panel, "Baseline Estimate" reflects the estimate shown in Table 3 Columns 7 and 8 (for separate regressions) and 9 (for joint regressions). All other rows show equivalent coefficients after dropping one country from the data. Each "Joint Regression" panel summarizes the results of 11 separate regressions; each regression includes PISA and TIMSS as independent variables. Each "Separate Regressions" panel summarizes the results of 22 separate regressions; each regression includes either PISA or TIMSS as an independent variable. All regressions include fixed effects for age, gender, survey year, region-by-age, and country-by-survey year. See notes for Table 2 for details.

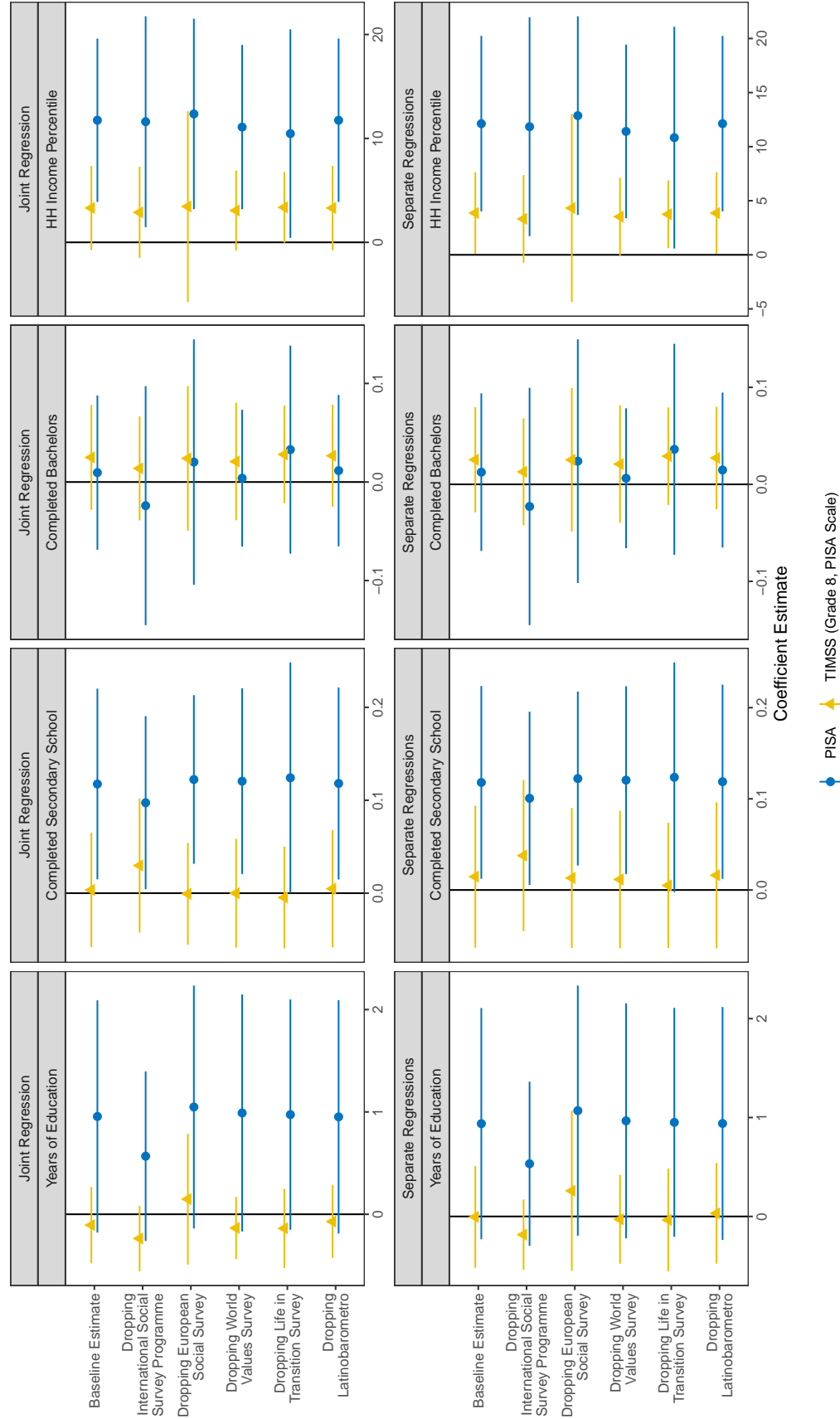


Figure A.5: Relationship Between Adulthood Outcomes and Adolescent Test Scores by Country Birth Cohort: Sensitivity to Survey Omission

Note: Figure displays regression coefficients estimating the relationship between average PISA and TIMSS math scores and adulthood outcomes in SDR data. In each panel, “Baseline Estimate” reflects the estimate shown in Table 3 Columns 7 and 8 (for separate regressions) and 9 (for joint regressions). All other rows show equivalent coefficients after dropping one survey from the data. See notes for Figure A.4 for details.

Table A.1: Secular Test Score Growth in PISA versus TIMSS

	(1)	(2)	(3)
Dependent Variable: PISA or TIMSS Test Score			
Year	-0.011** (0.004)	-0.001 (0.002)	
Year \times Test = TIMSS (Grade 8, PISA Scale)	0.012* (0.005)	0.013*** (0.003)	0.014*** (0.003)
Num.Obs.	3333105	3333105	3333105
R2	0.019	0.350	0.362
Test FEs	✓	✓	✓
Country FEs		✓	✓
Country Time Trend			✓

Note: Table displays regression results estimating differences in over-time growth in PISA and Grade 8 TIMSS math scores. Data is stacked student-level test results from PISA and Grade 8 TIMSS math assessments. Both PISA and TIMSS scores are transformed to the PISA scale based on the procedure in Gust et al. (2024) after incorporating the sample restrictions described in Section 2. Robust standard errors clustered at the country level and adjusted for multiple imputation using Rubin’s rule in parentheses. Observations are weighted by $w_{ict} / \sum_{i \in ct} w_{ict}$, where w_{ict} is individual i in country c for test t ’s sampling weight, and $\sum_{i \in c} w_{ict}$ denotes the sum of sampling weights in country c and test t . Here, test t refers to a test (PISA or Grade 8 TIMSS) and year (e.g. 1999, 2000, etc.) combination. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table A.2: Sensitivity of Income Estimates to Controls for Household Composition

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Main Income Estimates									
PISA	7.470** (2.357)		7.608** (2.334)	7.512*** (1.665)		7.549*** (1.591)	12.127** (3.684)		11.749** (3.572)
TIMSS (Grade 8, PISA Scale)		3.908* (1.312)	4.031* (1.494)		3.427* (1.361)	3.465+ (1.578)		3.859* (1.712)	3.303 (1.844)
Num.Obs.	1336	1336	1336	1336	1336	1336	1336	1336	1336
R2	0.566	0.565	0.567	0.585	0.584	0.587	0.715	0.711	0.716
p-value: PISA = TIMSS	-	0.256	0.216	-	0.096	0.067	-	0.027	0.013
Panel B: Main Income Estimates with Household Size Controls									
PISA	6.172* (2.505)		6.255* (2.673)	6.848** (1.924)		6.850** (2.067)	11.149* (3.689)		10.746* (3.634)
TIMSS (Grade 8, PISA Scale)		4.271** (1.203)	4.326** (1.320)		3.815* (1.393)	3.817* (1.536)		4.236* (1.484)	3.760* (1.534)
Mean Household Size	4.730*** (0.962)	4.741*** (0.941)	4.680*** (0.951)	4.331*** (0.904)	4.356*** (0.884)	4.292*** (0.892)	4.971*** (1.053)	5.091*** (1.080)	4.946*** (1.053)
p-value: PISA = TIMSS	-	0.523	0.503	-	0.282	0.257	-	0.044	0.021
Num.Obs.	1238	1238	1238	1238	1238	1238	1238	1238	1238
R2	0.597	0.597	0.599	0.612	0.611	0.613	0.738	0.735	0.739
Country FEs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Age FEs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Survey Year FEs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Region-by-Age FEs				✓	✓	✓	✓	✓	✓
Country-by-Survey Year FEs							✓	✓	✓

Note: Table displays regression results estimating the relationship between average PISA and TIMSS math scores and percentile of household income in SDR data. Panel A does not include any controls for household composition. Panel B includes average household size. In the table, PISA and TIMSS represent average PISA and TIMSS scores at the country-by-birth cohort level. See notes for Table 2 for details.

Table A.3: Relationship Between Adulthood Outcomes and Adolescent Test Scores by Country Birth Cohort: PIAAC Sample

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Years of Education; Sample: 16+ Years Old						
PISA	0.872 (0.510)		0.764 (0.488)	0.807 (0.785)		0.938 (0.736)
TIMSS (Grade 8, PISA Scale)		1.074* (0.496)	1.077* (0.388)		0.821 (0.756)	1.286 (1.053)
Num.Obs.	221	221	221	221	221	221
R2	0.923	0.923	0.936	0.925	0.925	0.950
p-value: PISA = TIMSS	-	0.675	0.638	-	0.984	0.744
Panel B: Complete Secondary School; Sample: 19+ Years Old						
PISA	0.103 (0.067)		0.120+ (0.058)	0.073 (0.070)		0.089 (0.075)
TIMSS (Grade 8, PISA Scale)		0.055 (0.055)	0.076 (0.055)		0.051 (0.052)	0.101 (0.096)
Num.Obs.	177	177	177	177	177	177
R2	0.937	0.935	0.952	0.941	0.941	0.962
p-value: PISA = TIMSS	-	0.493	0.553	-	0.764	0.925
Panel C: Completed Bachelors; Sample: 24+ Years Old						
PISA	0.031 (0.115)		0.029 (0.102)	0.099 (0.141)		0.068 (0.156)
TIMSS (Grade 8, PISA Scale)		0.023 (0.114)	0.027 (0.118)		0.122* (0.037)	0.150** (0.033)
Num.Obs.	104	104	104	104	104	104
R2	0.917	0.917	0.922	0.939	0.942	0.957
p-value: PISA = TIMSS	-	0.955	0.985	-	0.856	0.489
Panel D: log(Monthly Earnings, PPP Adjusted); Sample: 24+ Years Old						
PISA	-0.025 (0.181)		-0.003 (0.180)	0.286* (0.104)		0.357+ (0.186)
TIMSS (Grade 8, PISA Scale)		0.160+ (0.081)	0.156 (0.087)		0.135 (0.083)	0.205* (0.066)
Num.Obs.	92	92	92	92	92	92
R2	0.959	0.961	0.962	0.967	0.967	0.976
p-value: PISA = TIMSS	-	0.407	0.442	-	0.218	0.323
Panel E: Monthly Earnings, PPP Adjusted; Sample: 24+ Years Old						
PISA	4588.273+ (2193.314)		4607.638+ (2060.269)	254.775 (1164.053)		1165.092* (445.779)
TIMSS (Grade 8, PISA Scale)		3702.985 (3975.247)	3772.081 (3411.108)		-656.633 (1267.066)	137.179 (707.280)
Num.Obs.	92	92	92	92	92	92
R2	0.430	0.443	0.491	0.781	0.782	0.969
p-value: PISA = TIMSS	-	0.782	0.786	-	0.322	0.002
Panel F: Yearly Income Percentile Rank; Sample: 24+ Years Old						
PISA	7.422 (4.014)		7.939 (4.481)	10.858+ (5.268)		11.814 (9.833)
TIMSS (Grade 8, PISA Scale)		0.575 (5.594)	1.423 (4.709)		1.551 (5.597)	3.556 (4.412)
Num.Obs.	104	104	104	104	104	104
R2	0.930	0.928	0.937	0.934	0.932	0.953
p-value: PISA = TIMSS	-	0.342	0.334	-	0.041	0.210
Country FEs	✓	✓	✓	✓	✓	✓
Age and Age ²	✓	✓	✓	✓	✓	✓
Test Year FEs	✓	✓	✓	✓	✓	✓
Region-by-Age and Region-by-Age ²				✓	✓	✓

Note: Table displays regression results estimating the relationship between average PISA and TIMSS math scores and adulthood outcomes in PIAAC data. See notes for Table 2 for details.