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**Financial Teaching and
Financial Understanding
amongst Young People**

*By Georgios A. Panos and Robert
E. Wright*

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Financial Teaching and Financial Understanding amongst Young People

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Abstract: This paper examines the gender gap in financial understanding amongst 11-18 year-olds in Scotland. A regression analysis is carried out based on individual-level data collected in the 2014 *Young People in Scotland Survey* ($N=2,016$). This survey was supplemented with questions measuring financial understanding, along with questions relating to the teaching of economics, finance and business studies as school subjects. The analysis suggests that there is a large gender gap favouring males of nearly 30%. In addition, the teaching of economics, finance and business studies has a large positive effect on financial understanding. This effect is about four times larger for males compared to females. An Oaxaca-Blinder decomposition suggests that most of the gender gap is explained by this difference. More generally, the analysis suggests that the beginnings of the adult gender gap in financial understanding are when individuals are in school.

JEL classification: D12, I19, I29, G53

Keywords: Financial understanding, young people, Scotland

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1. Introduction

Research has consistently shown that there is a sizeable gender gap in financial understanding amongst adults in both rich and poor countries (Cupak et al., 2018). There is a small, but growing, body of research that suggests that there is also a gender gap in financial understanding amongst young people, including those of school-age (Blaschke, 2022; Bottazzi and Lusardi, 2021; Driva, Lührmann and Winter, 2016; Longobardi, Pagliuca and Regoli, A., 2018; OECD, 2014; Preston and Wright, 2024; Razen, M., et al, 2021; Tzora, et al., 2023). This relative lack of research is surprising given, like other forms of disadvantage, the gender gap in financial understanding in adulthood may be rooted in early-life experience when individuals are in school or possibly before (Fletcher and Wright, 2024). Therefore, the understanding the causes of the adult gender gap may depend on understanding the causes of the youth gender gap.

This paper examines the gender gap in financial understanding amongst young people aged 11-18 years in Scotland with individual-level survey data. The main empirical focus is the impact of the teaching of economics, finance and business studies in school. We believe our analysis advances the existing literature in several ways. First, we know of no research that has evaluated how the financial teaching in schools effects financial amongst amongst students. Second (and consequently), we know of no research that examined gender differences in this relationship. Third, Scotland is a valuable case study since, like the United Kingdom, the country scores highly in international rankings of adult financial literacy, but also has a sizable adult gender gap in financial literacy.

2. Method

The analysis is based on individual-level data collected in the 2014 *Young People in Scotland Survey (YPiS)*. It is an annual school-based survey of students aged 11-18 years across the six “Forms” (*YearS1-YearS6*) that make up the secondary school system. For international comparison purposes, each “Form” overlaps two calendar years and is broadly similar to the last two years of primary school and four year high

school in the American system. The average age of students in each form is: $YearS1=11.8$; $YearS2=12.8$; $YearS3=13.8$; $YearS4=14.7$; $YearS5=15.7$; and $YearS6=16.7$ years. *YPiS* was established in 1985 and is extensively used by the Scottish Government to collect policy-relevant information. It is carried out and managed by *Ipsos-MORI Scotland* (2024). In 2014, 2,016 students from 55 schools in 103 classes were interviewed. Detailed demographic and socio-economic information is collected about the student, their family and their school. *Ipsos-MORI* released to us additional information relating to students and their schools based on residential “data-zones”, which are small area statistics base on neighborhood-level aggregation. Weights are used to make the sample representative of the wider population of young people in Scotland.

At the request of the authors, nine additional questions were added to the 2014 *YPiS* survey. Six of these questions were four-category multiple-choice questions, with a single correct response category, aimed at testing various dimensions of financial understanding. They are similar in structure to the “financial literacy” questions popularized by Lusardi and Mitchell (2014) with the dimensions being: sales discounts; simple interest; simple inflation; compound interest; money illusion; and net-present value. These questions are not strictly financial literacy questions because *Ipsos-MORI*, after pre-testing, advised against including questions about financial-risk taking.

Regression analysis is used to evaluate the relationship between financial understanding and a set of possible explanatory factors. The dependent variable is the number of correct responses across the six financial understanding variables (i.e., the range is from zero to six correct responses). Three questions were included that asked if the student had been exposed to the teaching in economics, finance and business studies. These questions not only refer to dedicated courses in these subjects. The teaching of economics, finance and business studies is part of other subjects, such as mathematics, modern studies and history. These questions also capture this type of teaching. These three questions were used to construct a dummy variable if the student had been exposed to “any” teaching in these subjects (*EconFinBus*).

The remaining variables are including primarily as control variables—in this paper, these variables are not of direct interest to us. They include dummy variables for Form ($YearS2$ - $YearS6$), with $S1$ being the excluded category. Dummy variables were also

included for the student's place of birth: *Scotland*; *Rest of the UK*; and *Foreign-born*, with *Foreign-born* as the excluded category. A dummy is included for *Urban residence*.

Several variables were included aiming at capturing the student's socio-economic background. These include a dummy variable for "Very good" self-assessed housing conditions. The *Scottish Index of Multiple Deprivation (SIMD)* for the student's residence is also included (*SIMD-residence*). SIMD is a composite index based on seven domains (current income, employment, health, education, skills and training, housing, geographic access and crime) aimed at measuring deprivation, poverty and disadvantage at the "data-zone" neighborhood-level (Scottish Government, 2024).

Variables were also included relating to the student's school. These include *Class size* and *School size*. A dummy for *Catholic-school* is included. *School capacity* is the number of students enrolled relative government-set target. Two continuous variables are included that capture the mix of students. The first is *Minority student-share*, which is the percentage of students who are members of a visible minority. The second is the *Deprived student-share*, which is the percentage of students who live in the 20% most deprived areas as defined by the Scottish Government.

3. Results

Table 1 reports summary statistics for the variables included in the analysis broken down by gender. The mean number of correct responses is 2.42 for males and 1.88 for females, an advantage for males of over half a question (0.54) or 28.5%. Table 1 also shows that there is a gender gap for each of the six questions (the questions are ordered in the table by difficulty). It is also worth noting that more females (70.0%) than males (63.8%) report being exposed to financial teaching. This is a gender gap opposite to the gender gap in financial understanding. Therefore, the gender gap cannot be explained away by females participating less in financial teaching. With respect to the control variables, few of the differences between males and females are statistically significant.

Column (1) of Table 2 shows the regression estimates for males and females together. The coefficient of *EconFinBus* is large at +0.544 and highly statistically significant

($p < 1\%$), suggesting that students who report being exposed to financial teaching have higher financial understanding. However, the coefficient on the dummy, *Male*, is also large at + 0.605 and highly statistically significant ($p < 1\%$). *EconFinBus* and *Male* are very similar in terms of magnitude, suggesting the “advantage” of financial education is offset by the “disadvantage” of being female. Columns (2) and (3) show the estimates separately for males and females. The coefficient of *EconFinBus* for males is +0.854, which is four times larger than for females at +0.213. This is evidence that suggests that financial teaching is considerably less effective for females compared to males. Such a finding is consistent with the gender stereotype explanation put forth by Bottazzi and Lusardi (2021) and Driva, Lührmann and Winter (2016).

Table 3 reports the key findings of a Blinder-Oaxaca decomposition of the gender gap. The “explained component”, which is essentially the part of the gap that can be attributed to differences in mean values, is negative (-0.060, -11.2%), suggesting that females have a slight advantage. However, this component is not statistically significant even at the generous 10% level. This suggests, not surprisingly, that gender differences in the included variables contribute very little to the understanding of the gender gap (see Table 1).

The “unexplained component”, which is essentially the part of the gap that can be attributed to differences in coefficients, is positive and large (+0.598, +111.1%) and highly statistically significant, suggesting that females have a large disadvantage. Most of this component can be attributed to gender differences in the coefficients of *EconFinBus*. The decomposition suggests that that this is nearly 80% of the gender gap in financial understanding. This about 2.5 times more than can be attributed to the student and school characteristics included in the analysis.

4. Conclusion

This paper confirms that there is a large gender gap in financial understanding amongst young people aged 11-18 years in Scotland. A regression analysis suggests that the teaching of economics, finance and business studies as school subjects has a large positive effect on financial understanding. In addition, most of the gap can be explained

by such teaching being much less effective for females. More generally, the analysis suggests that the beginnings of the adult gender gap in financial understanding are established when individuals are in school. Clearly research is needed to establish the causal mechanisms generating gender bias in the relationship between financial teaching and financial understanding.

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Table 1
Summary Statistics for Variables Included in Analysis of Financial
Understanding of Scottish Students Aged 11-18 in 2014

Group:	(1)	(2)	(3)	(4)
	Both sexes	Male	Female	(2)-(3)
<u>Financial understanding:</u>				
<i>Number correct responses</i>	2.15	2.42	1.88	+0.54***
<i>Correct by question (%):</i>				
-Q1: Sales discounts	56.7%	63.0%	50.5%	+12.5***
-Q2: Simple interest	52.7%	57.0%	48.4%	+8.7**
-Q3: Simple inflation	40.2%	44.8%	35.6%	+9.1***
-Q4: Compound interest	28.4%	33.1%	23.7%	+9.4***
-Q5: Money illusion	20.0%	24.6%	15.5%	+9.1***
-Q6: Net present value (NPV)	17.3%	19.8%	14.8%	+5.0**
<u>Financial teaching:</u>				
<i>EconFinBus (%)</i>	66.8%	63.8%	70.0%	-5.77**
<u>Student characteristics:</u>				
<i>Male (%)</i>	-	49.6%	50.4%	-0.08%
<i>Form (school year):</i>				
-YearS1	17.5%	17.3%	17.7%	-0.45
-YearS2	17.6%	18.7%	16.6%	2.06
-YearS3	17.9%	19.1%	16.7%	2.37
-YearS4	18.6%	18.3%	18.8%	-0.50
-YearS5	16.5%	15.2%	17.7%	-2.52
-YearS6-	11.9%	11.5%	12.4%	-0.97
<i>Place of birth (%):</i>				
-Scotland	83.0%	82.6%	83.3%	-0.67
-Rest of UK	4.5%	4.3%	4.8%	-0.54
-Foreign-born	12.5%	13.1%	11.9%	1.22
<i>Urban residence (%)</i>	60.7%	61.1%	60.4%	+0.70
<i>Housing condition: Very Good(%)</i>	59.9%	58.1%	57.6%	58.6%
<i>SIMD residence (%)</i>	3402	3444	3361	+83.6
<i>Age</i>	14.13	14.13	14.12	+0.01
<u>School characteristics:</u>				
<i>School size</i>	3.20	3.19	3.21	1.16
<i>Class size</i>	21.54	21.46	21.62	-0.16
<i>Catholic school (%)</i>	11.0%	10.3%	11.7%	-1.39
<i>School capacity (%)</i>	79.7%	80.2%	79.2%	+1.06
<i>Minority-students share(%)</i>	8.15%	8.27%	8.04%	+0.23
<i>Deprived-students share (%)</i>	14.8%	14.5%	15.0%	-0.49

Notes: Statistical significant levels for difference are: * $p < 10\%$, ** $p < 5\%$, *** $p < 1\%$

Source: 2014 *Young People in Scotland Survey*

Table 2

Regression Estimates of Financial Understanding of Scottish Students Aged 11-18 in 2014

	(1) Both-sexes	(2) Males	(3) Females
<i>Male</i>	0.605*** [0.093]	–	–
<i>EconFinBus</i>	0.544*** [0.089]	0.854*** [0.135]	0.213** [0.102]
<i>School YearS2</i>	0.542*** [0.110]	0.290 [0.198]	0.860*** [0.153]
<i>School YearS3</i>	0.657*** [0.147]	0.438* [0.230]	1.020*** [0.176]
<i>School YearS4</i>	0.841*** [0.144]	0.706*** [0.210]	1.037*** [0.150]
<i>School YearS5</i>	1.426*** [0.150]	1.517*** [0.277]	1.476*** [0.117]
<i>School YearS6</i>	1.754*** [0.182]	1.698*** [0.313]	1.876*** [0.163]
<i>Born-rest-of-UK</i>	0.302* [0.159]	0.329 [0.273]	0.191 [0.243]
<i>Foreign-born</i>	-0.261** [0.129]	-0.409** [0.196]	-0.129 [0.151]
<i>Urban-residence</i>	-0.031 [0.105]	-0.018 [0.161]	-0.020 [0.149]
<i>Housing-condition(Very Good)</i>	0.162* [0.095]	0.074 [0.132]	0.270** [0.105]
<i>SIMD-residence</i>	0.092*** [0.032]	0.078* [0.046]	0.088*** [0.031]
<i>School-size</i>	-0.007 [0.036]	-0.034 [0.075]	0.029 [0.055]
<i>Class-size</i>	0.009 [0.010]	0.016 [0.021]	0.004 [0.011]
<i>Catholic-school</i>	0.329 [0.262]	0.561 [0.403]	0.082 [0.238]
<i>School-capacity</i>	0.003 [0.004]	0.001 [0.007]	0.004 [0.004]
<i>Minority-students-share</i>	-0.011 [0.008]	-0.015 [0.012]	-0.009 [0.013]
<i>Deprived-students-share</i>	0.0001 [0.006]	-0.006 [0.009]	0.008 [0.006]
<i>Constant</i>	-0.045 [0.352]	0.768 [0.586]	-0.277 [0.345]
<i>R²(%)</i>	18.7%	19.8%	16.4%
<i>N</i>	2,016	988	1,028

Notes:

1. *Male*=1 dummy; *EconFinBus* =1 if exposed to teaching of economics and/or finance and/or business studies; *Born-rest-of-UK*=1 for born in England, Wales or Northern Ireland, *Foreign-born*=1 if not born in UK (excluded category born in Scotland); *Urban-residence*=1 dummy for living in an urban area; *Housing-condition(Very Good)*=1 dummy if self-assessed housing conditions reported to be “Very good”; *SIMD-residence*=neighbourhood-level deprivation score where individual lives; *School-size*=number of students in school; *Class-size*=number of students in class; *Catholic-school*=1 dummy for Catholic school; *School-capacity*=students enrolled relative government-set target as a percentage; *Minority-students-share*=minority students share of all students in school; *Deprived-students-share*=deprived students share of all students in school.

2. Statistical significant levels: *p<10%; **p<5%; and ***p<1%

Source: 2014 *Young People in Scotland Survey*

Table 3
Oaxaca-Blinder Decomposition of the Gender Gap in Financial Understanding
of Scottish Students

Component	(1) Amount	(2) % Share of gender gap
<u>Explained component:</u>		
<i>(a) EconFinBus</i>	-0.029	-5.4%
<i>(b) Student+School controls</i>	<u>-0.031</u>	<u>-5.8%</u>
<i><u>Explained component total (a+b)</u></i>	-0.060	-11.2%
<u>Unexplained component:</u>		
<i>(c) EconFinBus</i>	0.425	79.0%
<i>(d) Student+School controls</i>	0.173	32.2%
<i><u>Unexplained component total (c+d)</u></i>	<u>0.598***</u>	<u>111.1%</u>
<i>Gender gap (a+b+c+d)</i>	0.538***	100%

Notes:

1. $Gap = FU_M - FU_F$;

Explained component = $\beta_M(X_M - X_F)$; and

Unexplained component = $(\beta_M - \beta_F)X_F$

2. Statistical significant levels: *p<10%; **p<5%; and ***p<1%

3. %Share of gender gap of component j ($j=a, b, c$ or d) = $j/0.538 \times 100$

Source: 2014 *Young People in Scotland Survey*

Appendix Figures:

Figure A1

Understanding of finance by form: %Correct (by question & #questions)

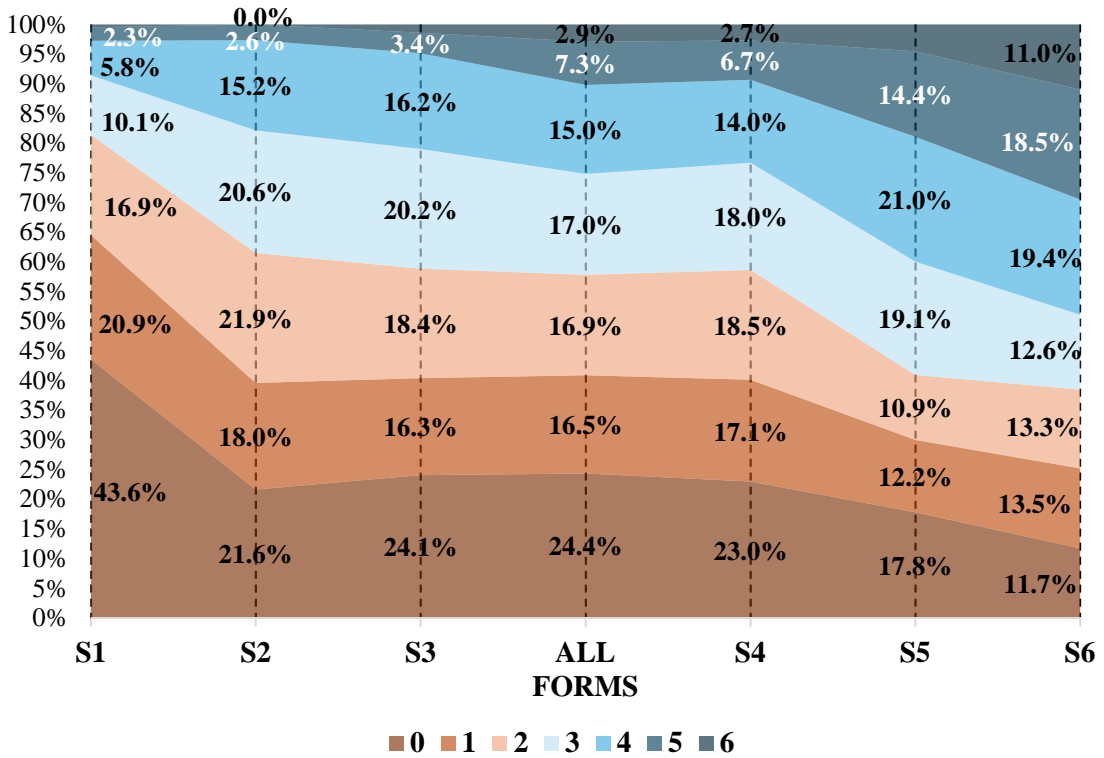
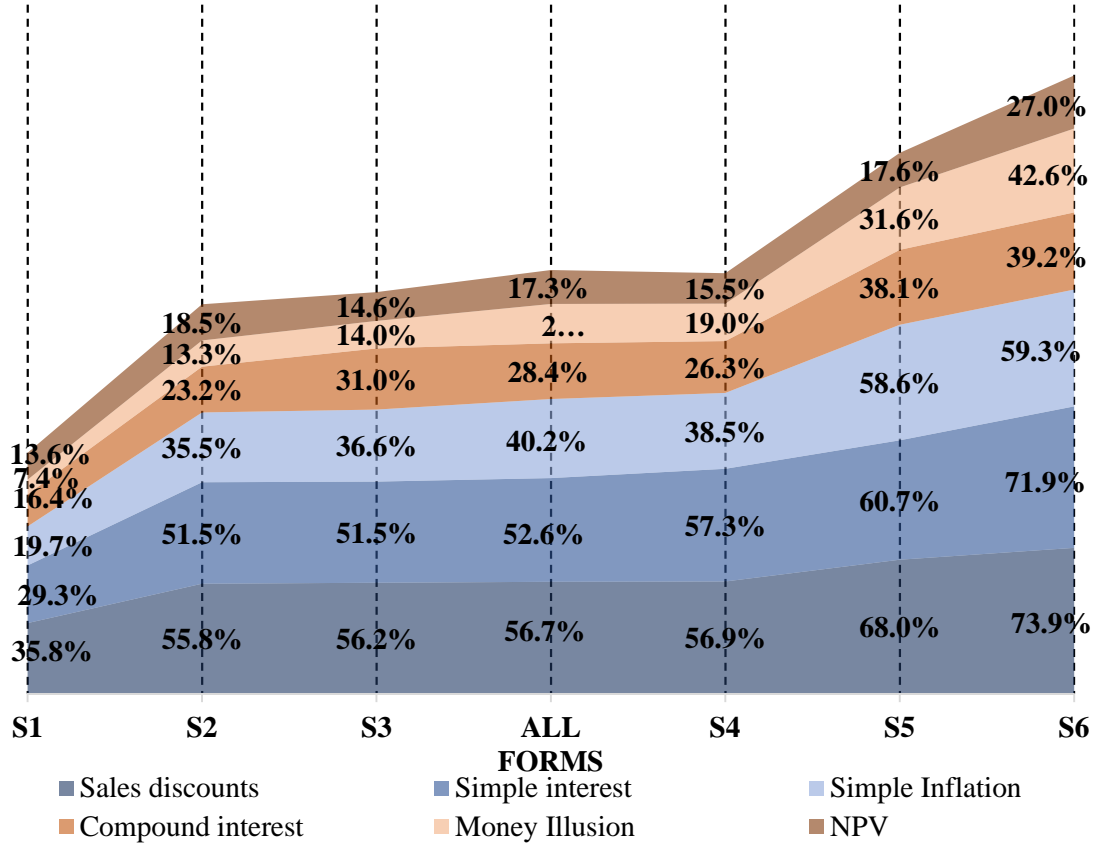


Figure A2

Gender gap in understanding of finance: Difference_(Male-Female) (by question & #questions)

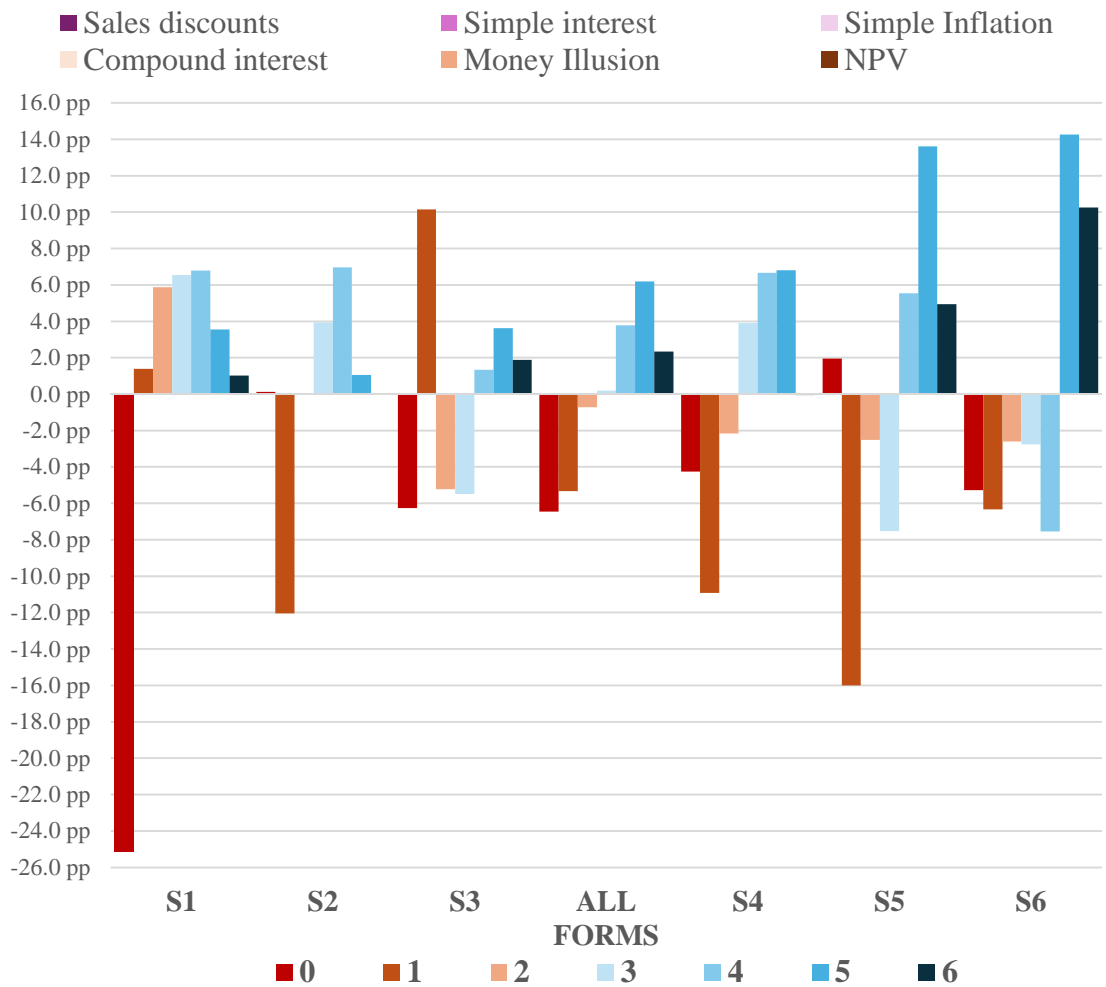
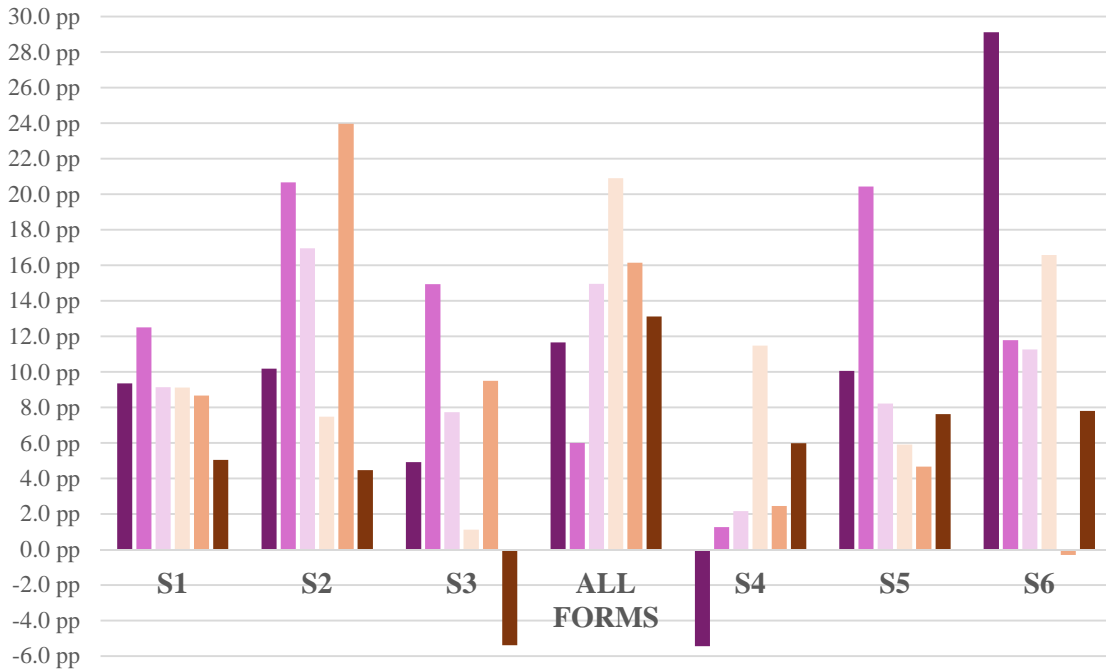


Figure A3
Exposure to business, economics and finance by form

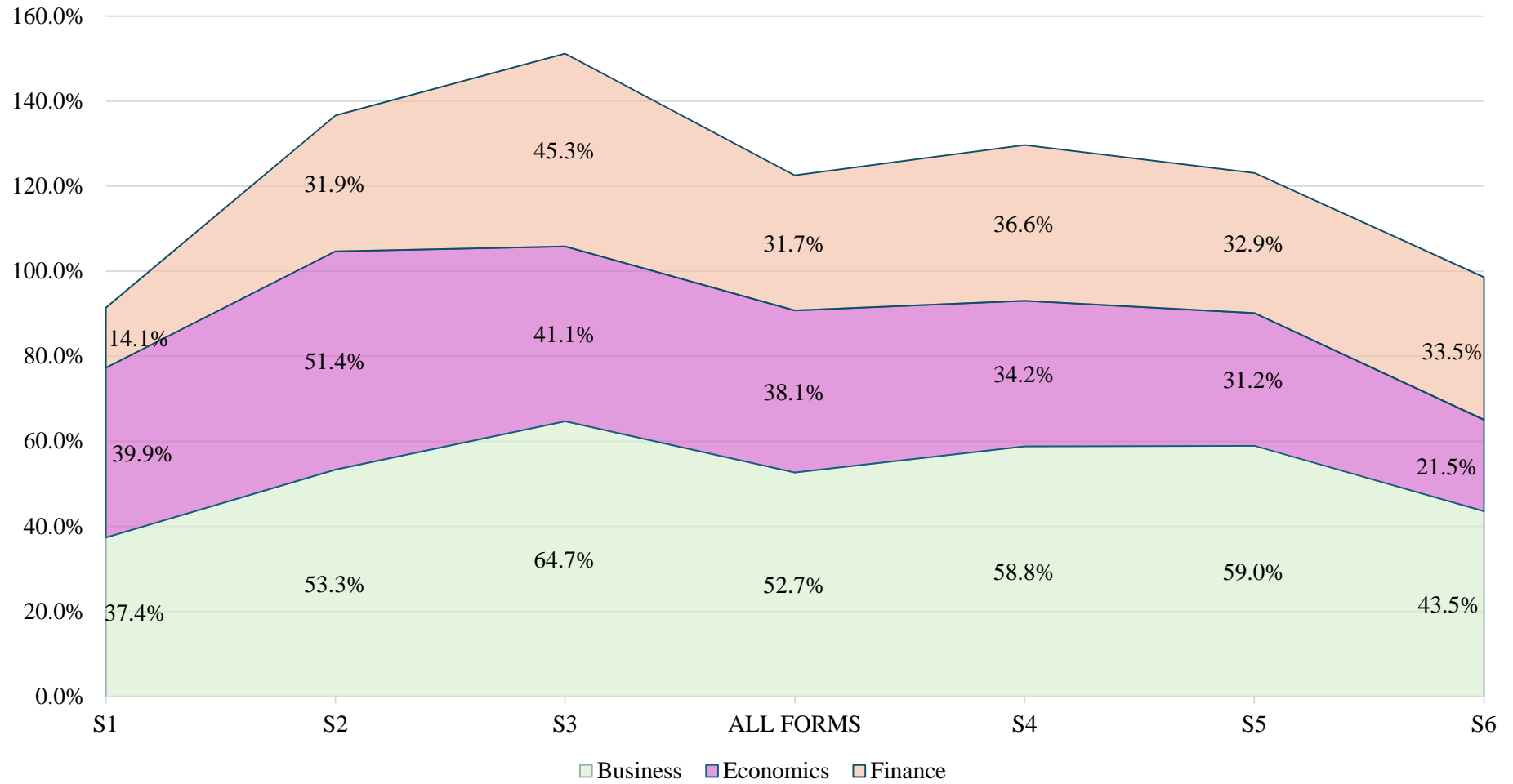


Figure A4
Exposure variables in detail

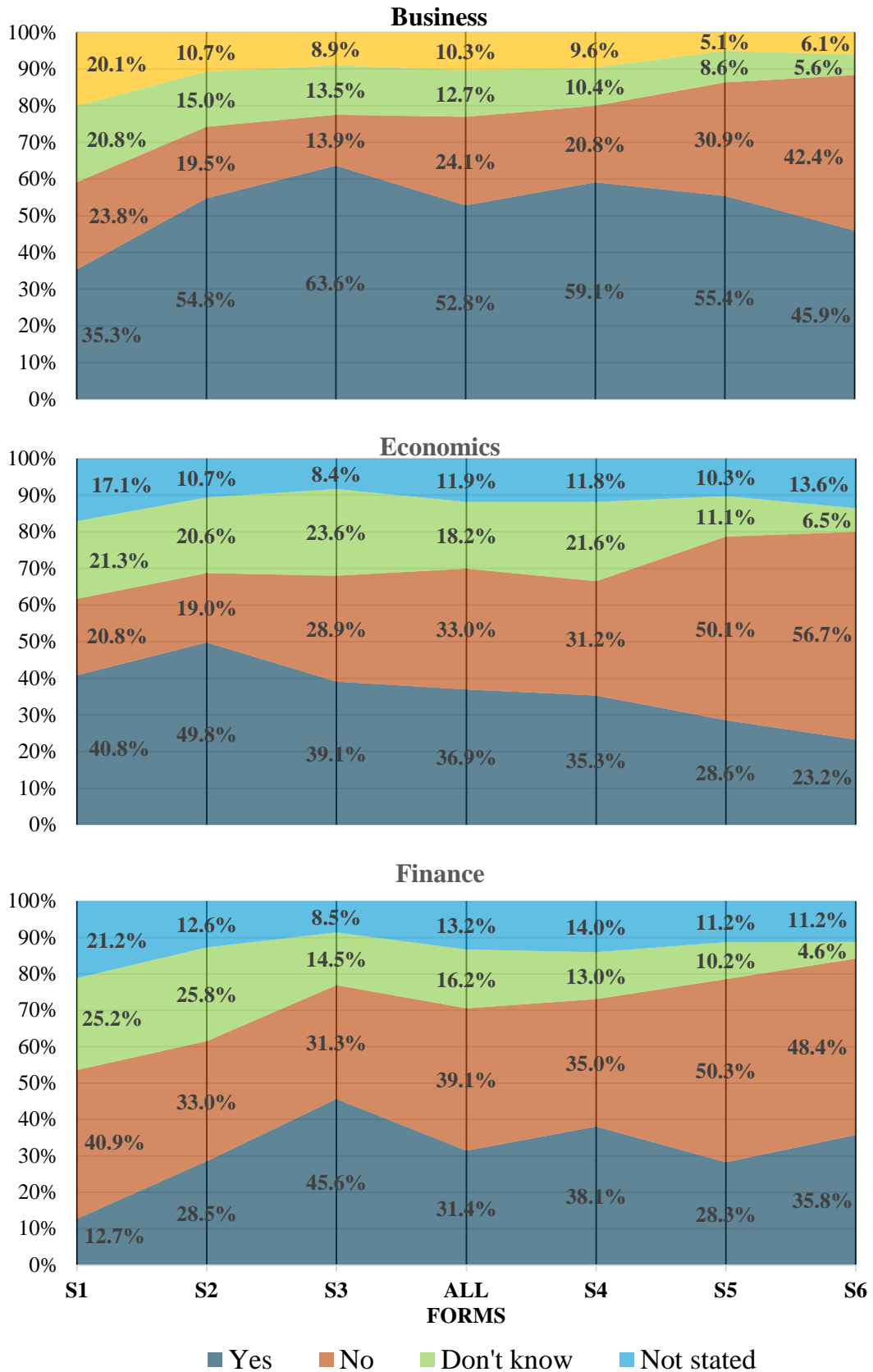
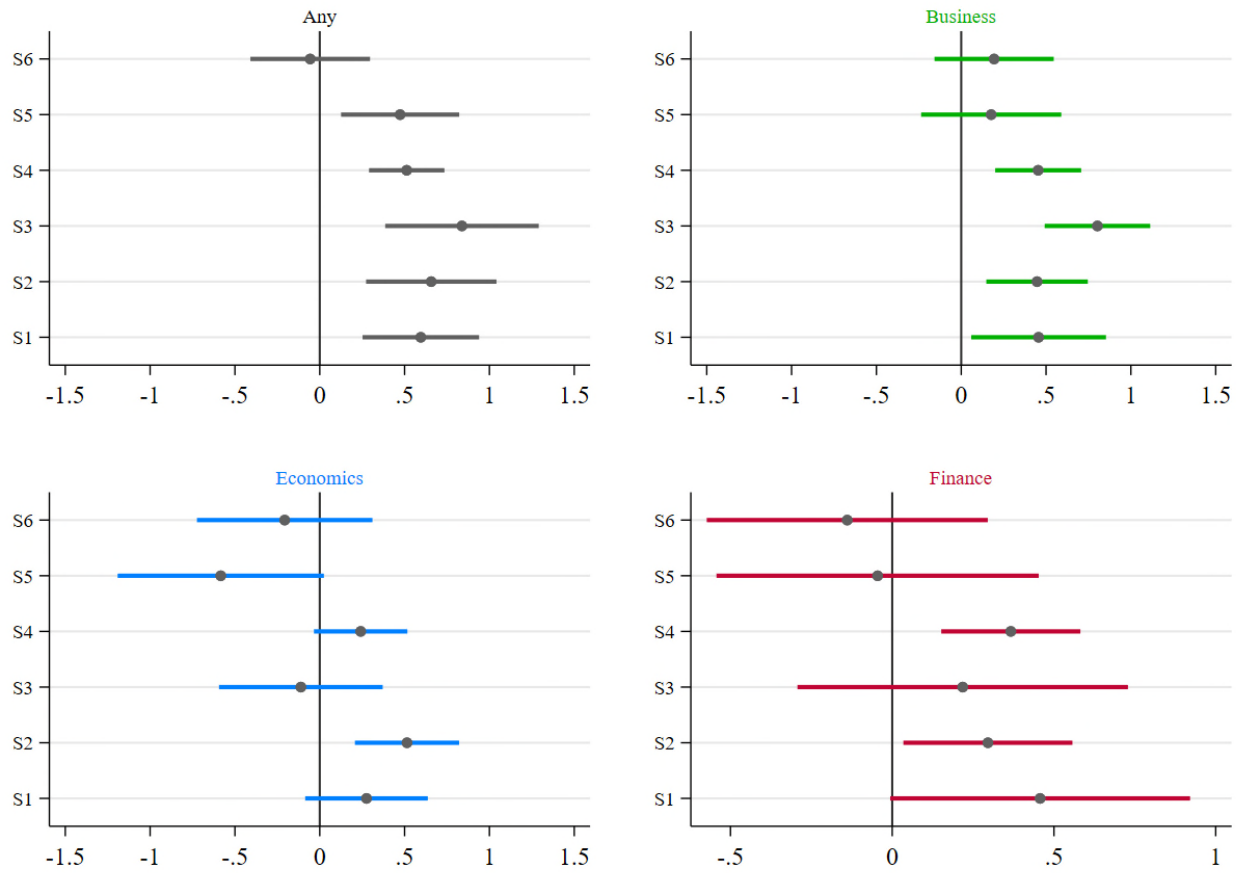


Figure A5
Coefficient plots of the effect of exposure by form



Notes: The effect plot of the effect of each exposure variable on financial literacy, from separate regressions by form (i.e., school grade).

Appendix Tables:

Table A1
The questions

<i>Compound interest</i>	Suppose you had £100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? More than £102	Exactly £102	Less than £102	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
<i>Net present value</i>	Imagine again that you have £100 in a bank account. The interest rate for this account is 1% per year and inflation is 2% per year. After 1 year, how much would you be able to buy with the money? More than today	Exactly the same	Less than today	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
<i>Simple inflation</i>	Suppose that by this time next year, the money that you earn or get from your parents has doubled and the prices of all the things you like to buy have also doubled. By this time next year, how much will you be able to buy assuming you buy the same things? More than today	Exactly the same	Less than today	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
<i>Sales discount</i>	Let's assume that you saw a TV-set of the same model on sale in two different shops. In both shops the price is £1,000. One shop offers a discount of £150, while the other one offers a 10% discount. Which discount is the best bargain? A £150 discount	A 10% discount	Don't know	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
<i>Simple interest</i>	Suppose you had £100 in a bank account and the interest rate of the account was 20% per year. You do not spend any of the money. After five years, how much would you have? More than £200	Exactly £200	Less than £200	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
<i>Time value of money</i>	A friend is given a £10,000 gift from their grandparents. His younger sister will be given the same amount in 3 years. Who will be richer? My friend	His younger sister	They will be equally rich	PLEASE TICK <input type="checkbox"/> ONE BOX ONLY Don't know
Have you been taught about any of the subjects listed below in school?				
	Economics	Yes	No	Don't know
	Finance	Yes	No	Don't know
	Business studies	Yes	No	Don't know

Table A2
Subject-exposure matrix: #Observations and Unweighted Proportions

	None	Business	Economics	Finance	All subjects	Total
None	665 <i>(33.0%)</i>	–	–	–	–	–
Business	–	359 <i>(17.8%)</i>	201 <i>(10.0%)</i>	162 <i>(8.0%)</i>	–	–
Economics	–	201 <i>(10.0%)</i>	151 <i>(7.5%)</i>	76 <i>(3.8%)</i>	–	–
Finance	–	162 <i>(8.0%)</i>	76 <i>(3.8%)</i>	62 <i>(3.1%)</i>	–	–
All subjects	–	–	–	–	340 <i>(16.9%)</i>	–
Total	–	–	–	–	–	2,016 <i>(100.0%)</i>

Table A3
Weighted pairwise correlation matrix

	FL: #Correct	FL: #Wrong	FL: #DK	FL: #DA	Any exposure	Business exposure	Economics exposure	Finance exposure	Male	Age	Foreign-born	Urban region	Very good housing condition	SIMD ₂₀₁₂ student rank	%School capacity	Catholic school	%Students(Minority ethnic groups)	%Students(Living in 20% most deprived zones)	School size	Class size	
FL: #Correct	1.00																				
FL: #Wrong	0.09*	1.00																			
FL: #DK	-0.68*	-0.48*	1.00																		
FL: #DA	-0.33*	-0.27*	-0.23*	1.00																	
Any exposure	0.16*	0.17*	0.01	-0.36*	1.00																
Business exposure	0.15*	0.11*	-0.02	-0.27*	0.75*	1.00															
Economics exposure	-0.01	0.14*	0.05	-0.19*	0.54*	0.27*	1.00														
Finance exposure	0.10*	0.12*	-0.04	-0.18*	0.48*	0.36*	0.38*	1.00													
Male	0.16*	0.08*	-0.21*	0.06	-0.06	-0.08*	-0.01	-0.01	1.00												
Age	0.30*	-0.02	-0.16*	-0.16*	0.02	0.06	-0.15*	0.11*	0.01	1.00											
Foreign-born	-0.08*	0.02	0.03	0.05	-0.04	-0.01	-0.01	-0.01	0.02	-0.04	1.00										
Urban region	-0.01	-0.02	0.01	0.02	0.01	0.07*	-0.01	0.01	0.01	-0.01	0.08*	1.00									
Very good housing condition	0.10*	0.06	-0.06	-0.09*	0.09*	0.06	0.06	0.08*	0.01	-0.03	-0.11*	-0.02	1.00								
SIMD ₂₀₁₂ student rank	0.15*	0.03	-0.05	-0.14*	0.09*	0.09*	-0.01	0.05	0.02	0.08*	-0.04	-0.02	0.13*	1.00							
%School capacity	0.11*	-0.02	-0.05	-0.06	0.05	0.09*	-0.05	0.05	0.03	0.14*	0.04	0.26*	0.02	0.30*	1.00						
Catholic school	0.10*	0.02	-0.08*	-0.02	0.04	0.01	-0.01	0.05	-0.02	0.16*	0.03	0.21*	0.05	-0.10*	0.23*	1.00					
%Students(Minority ethnic groups)	0.03	-0.02	0.06	-0.07	0.01	0.01	-0.03	0.03	0.02	0.14*	0.15*	0.41*	-0.04	0.09*	0.31*	0.28*	1.00				
%Students(Living-in-20%-most-deprived-zones)	0.01	0.03	0.02	-0.07*	0.07*	0.02	0.07	0.07	-0.02	-0.03	-0.05	-0.33*	0.06*	-0.14*	-0.22*	0.22*	-0.32*	1.00			
School size	0.03	0.01	-0.01	-0.03	-0.01	0.06	-0.05	-0.05	-0.01	-0.02	-0.01	0.46*	0.02	0.18*	0.57*	0.17*	0.26*	-0.42*	1.00		
Class size	0.01	0.03	0.02	-0.06	0.02	-0.02	0.04	0.02	-0.02	-0.07*	0.04	0.28*	0.03	-0.04	0.25*	0.33*	0.33*	-0.05	0.37*	1.00	

Notes: The asterisk denotes significance at the 1% level

Appendix Table A4

The determinants of financial understanding of Scottish students

Exposure variable <i>Sub-sample</i>	(A) Any exposure			(B) Business			(C) Economics			(D) Finance		
	<i>Pooled</i>	<i>Male</i>	<i>Female</i>	<i>Pooled</i>	<i>Male</i>	<i>Female</i>	<i>Pooled</i>	<i>Male</i>	<i>Female</i>	<i>Pooled</i>	<i>Male</i>	<i>Female</i>
	(A ₁)	(B ₁)	(C ₁)	(A ₂)	(B ₂)	(C ₂)	(A ₃)	(B ₃)	(C ₃)	(A ₄)	(B ₄)	(C ₄)
Male	0.605*** [0.093]	-	-	0.610*** [0.093]	-	-	0.572*** [0.096]	-	-	0.572*** [0.097]	-	-
Exposure	0.544*** [0.089]	0.854*** [0.135]	0.213** [0.102]	0.481*** [0.088]	0.725*** [0.128]	0.245** [0.099]	0.086 [0.106]	0.354*** [0.130]	-0.156 [0.140]	0.197** [0.098]	0.450*** [0.118]	-0.039 [0.113]
Form: -S1-	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}
-"-: -S2-	0.542*** [0.110]	0.29 [0.198]	0.860*** [0.153]	0.557*** [0.121]	0.298 [0.221]	0.859*** [0.151]	0.625*** [0.122]	0.348 [0.214]	0.929*** [0.155]	0.603*** [0.127]	0.311 [0.227]	0.916*** [0.158]
-"-: -S3-	0.657*** [0.147]	0.438* [0.230]	1.020*** [0.176]	0.626*** [0.155]	0.357 [0.233]	1.000*** [0.180]	0.756*** [0.154]	0.517** [0.236]	1.086*** [0.170]	0.692*** [0.162]	0.373 [0.250]	1.095*** [0.179]
-"-: -S4-	0.841*** [0.144]	0.706*** [0.210]	1.037*** [0.150]	0.792*** [0.155]	0.603** [0.230]	1.012*** [0.149]	0.911*** [0.160]	0.793*** [0.231]	1.065*** [0.153]	0.857*** [0.159]	0.671*** [0.238]	1.083*** [0.154]
-"-: -S5-	1.426*** [0.150]	1.517*** [0.277]	1.476*** [0.117]	1.389*** [0.156]	1.423*** [0.289]	1.454*** [0.110]	1.481*** [0.162]	1.541*** [0.294]	1.529*** [0.123]	1.441*** [0.162]	1.438*** [0.302]	1.537*** [0.123]
-"-: -S6-	1.754*** [0.182]	1.698*** [0.313]	1.876*** [0.163]	1.741*** [0.199]	1.682*** [0.345]	1.863*** [0.159]	1.801*** [0.203]	1.750*** [0.337]	1.874*** [0.164]	1.742*** [0.198]	1.603*** [0.346]	1.911*** [0.168]
Urban residence	-0.031 [0.105]	-0.018 [0.161]	-0.020 [0.149]	-0.057 [0.108]	-0.035 [0.172]	-0.047 [0.143]	-0.024 [0.108]	-0.054 [0.160]	0.002 [0.151]	-0.027 [0.106]	-0.077 [0.162]	-0.004 [0.153]
SIMD 2012 rank (residence)	0.092*** [0.032]	0.078* [0.046]	0.088*** [0.031]	0.096*** [0.031]	0.088* [0.047]	0.090*** [0.031]	0.105*** [0.033]	0.115** [0.049]	0.086*** [0.031]	0.102*** [0.033]	0.104** [0.050]	0.087*** [0.031]
Good housing condition	0.162* [0.095]	0.074 [0.132]	0.270** [0.105]	0.175* [0.093]	0.09 [0.131]	0.275*** [0.104]	0.182* [0.093]	0.08 [0.137]	0.292*** [0.102]	0.177* [0.095]	0.077 [0.136]	0.283*** [0.103]
Place of birth: Scotland	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}	{Ref.}
-"-: UK	0.302* [0.159]	0.329 [0.273]	0.191 [0.243]	0.311* [0.161]	0.395 [0.276]	0.182 [0.242]	0.293* [0.159]	0.282 [0.248]	0.187 [0.246]	0.300* [0.160]	0.322 [0.252]	0.184 [0.245]
-"-: Outside UK	-0.261** [0.129]	-0.409** [0.196]	-0.129 [0.151]	-0.287** [0.129]	-0.443** [0.198]	-0.134 [0.151]	-0.287** [0.130]	-0.401** [0.197]	-0.157 [0.157]	-0.285** [0.130]	-0.407** [0.198]	-0.155 [0.155]

Table A4 continued in next page

Table A4 continued from last page

	(A ₁)	(B ₁)	(C ₁)	(A ₂)	(B ₂)	(C ₂)	(A ₃)	(B ₃)	(C ₃)	(A ₄)	(B ₄)	(C ₄)
Catholic school	0.329	0.561	0.082	0.361	0.595	0.097	0.343	0.559	0.094	0.345	0.568	0.091
	[0.262]	[0.403]	[0.238]	[0.269]	[0.408]	[0.237]	[0.275]	[0.421]	[0.237]	[0.276]	[0.428]	[0.240]
%School capacity	-0.011	-0.015	-0.009	-0.01	-0.012	-0.008	-0.011	-0.015	-0.01	-0.011	-0.014	-0.01
	[0.008]	[0.012]	[0.013]	[0.009]	[0.013]	[0.013]	[0.009]	[0.012]	[0.013]	[0.009]	[0.012]	[0.013]
%Students(Minority ethnic groups)	0.003	0.001	0.004	0.002	0.001	0.004	0.003	0.002	0.004	0.003	0.001	0.004
	[0.004]	[0.007]	[0.004]	[0.004]	[0.007]	[0.004]	[0.004]	[0.007]	[0.004]	[0.004]	[0.007]	[0.004]
%Students(Living-in-20%-most-deprived-zones)	-0.011	-0.015	-0.009	-0.01	-0.012	-0.008	-0.011	-0.015	-0.01	-0.011	-0.014	-0.01
	[0.008]	[0.012]	[0.013]	[0.009]	[0.013]	[0.013]	[0.009]	[0.012]	[0.013]	[0.009]	[0.012]	[0.013]
School size	0.001	-0.006	0.008	0.001	-0.006	0.007	0.002	-0.007	0.008	0.001	-0.006	0.009
	[0.006]	[0.009]	[0.006]	[0.006]	[0.010]	[0.006]	[0.006]	[0.010]	[0.006]	[0.006]	[0.010]	[0.006]
Class size	-0.007	-0.034	0.029	-0.019	-0.054	0.025	-0.014	-0.04	0.02	-0.009	-0.023	0.025
	[0.036]	[0.075]	[0.055]	[0.037]	[0.079]	[0.054]	[0.039]	[0.081]	[0.055]	[0.040]	[0.085]	[0.055]
Constant term	0.009	0.016	0.004	0.013	0.022	0.005	0.011	0.016	0.006	0.01	0.016	0.005
	[0.010]	[0.021]	[0.011]	[0.010]	[0.021]	[0.011]	[0.010]	[0.021]	[0.010]	[0.010]	[0.022]	[0.011]
#Observations	2,016	988	1,028	2,016	988	1,028	2,016	988	1,028	2,016	988	1,028
R ²	0.187	0.198	0.164	0.184	0.186	0.165	0.167	0.157	0.162	0.169	0.161	0.160

Notes: The table presents coefficients from a linear regression model, along with robust standard errors in brackets, clustered at the school-class level. The specification also includes local authority fixed effects (31). The asterisks denote the following levels of significance: p<0.10, ** p<0.05, *** p<0.01.

Appendix Table A5
Oaxaca decompositions

<i>Exposure variable:</i>	(1) <i>Any</i>	(2) <i>Business</i>	(3) <i>Economics</i>	(4) <i>Finance</i>
Overall:	Difference = 0.538*** = 2.423*** (Male) - 1.885*** (Female)			
Total explained	-0.060 [0.038]	-0.064* [0.036]	-0.030 [0.032]	-0.030 [0.033]
Total unexplained	0.598*** [0.089]	0.602*** [0.090]	0.568*** [0.091]	0.568*** [0.093]
Explained due to:				
Teaching	-0.029** [0.014]	-0.032** [0.014]	-0.001 [0.002]	-0.001 [0.005]
Student characteristics	-0.027 [0.032]	-0.026 [0.032]	-0.025 [0.033]	-0.025 [0.032]
School characteristics	-0.004 [0.009]	-0.005 [0.010]	-0.004 [0.010]	-0.004 [0.010]
Unexplained due to:				
Teaching	0.425*** [0.110]	0.249*** [0.087]	0.188*** [0.067]	0.154*** [0.048]
Student characteristics	-0.143 [0.276]	-0.120 [0.278]	-0.051 [0.290]	-0.105 [0.289]
School characteristics	-0.412 [0.543]	-0.291 [0.552]	-0.404 [0.549]	-0.421 [0.569]
Constant term	0.727 [0.620]	0.763 [0.615]	0.835 [0.629]	0.940 [0.634]
<i>#Observations</i>	<i>2,016</i>	<i>2,016</i>	<i>2,016</i>	<i>2,016</i>

Notes: Student characteristics include grades S1-S6 (6 dummy variables), the 2012 SIMD rank of the datazone of the student's residence (higher values indicate more affluent areas), a dummy variable for the condition of the student's home being described as good or very good (top 2 categories of in a 5-item response scale), 3 dummies for place of birth, e.g., Scotland, rest of UK, and foreign-born, and a dummy variables for urban region of residence. School characteristics include a dummy variable for Catholic school, 3 continuous variables for the percentage of students from minority ethnic groups, the percentage of students from the top 20% most deprived areas in Scotland, the capacity of the school in terms of the percentage of students enrolled relative to the government's set target, and continuous variables for school size and class size. All results are robust to alternative specifications with class (103 dummy variables), school (55 dummy variables), and local-authority fixed effects (31 dummy variables). These results are available by the authors upon request. The asterisks denote the following levels of significance: p<0.10, ** p<0.05, *** p<0.01.



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