The rise in teenagers skipping school across English-speaking countries. Evidence from PISA

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Abstract

Many countries are grappling with the long shadow that COVID has cast over their education systems, including dramatic increases in absence from school. This paper presents new insights into this issue by investigating how the proportion of teenagers skipping school has changed following the COVID-19 pandemic across the developed world. We find that this problem is mainly confined to industrialised English-speaking nations, especially affecting teenage girls. In contrast, the proportion of 15-year-olds skipping school remains similar to pre-pandemic levels in most other members of the OECD. Counter to much of the previous literature into COVID-induced learning loss, we find no evidence of a link between student truancy and length of school closures. Our results do highlight, however, that English-speaking nations risk falling behind their international competitors unless radical action is taken to reduce the growing number of teenagers regularly skipping school.

Key Words: PISA, absence, truancy, COVID-19, school closures, learning loss.

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1. Introduction

Attendance has long been a key issue for the education sector (Klein & Sosu, 2024). Put simply, if young people are not in school, then how can we expect them to learn? While there are several factors that can lead young people to not attend school (e.g., long-term illness, mental health issues), truancy – i.e., skipping classes without good reason – is of particular concern. Such behaviour has previously been linked to a range of negative outcomes, including dropping out of school (National Forum on Education Statistics, 2009), involvement with crime (Rocque et al., 2017) and lower school grades (Bosworth, 1994; Buscha & Conte, 2014). Truancy is also most prevalent amongst the most vulnerable groups (Sosu et al., 2021), thus perpetuating intergenerational inequalities. Minimising instances of young people skipping school is hence likely to play an important role in raising levels of educational achievement, particularly amongst the most socially disadvantaged groups.

Unfortunately, concerns regarding school attendance have increased sharply since the COVID-19 pandemic. Studies drawing on data from individual countries have pointed towards increasing rates of school absence, particularly among English-speaking industrialised countries. Recent examples include evidence for England (Long & Roberts, 2024), Australia (Parliament of Australia, 2023), New Zealand (Devine et al., 2023) and the United States (Fuller et al., 2023). A common explanation for increasing levels of school absence is that the pandemic – and associated school closures – led to young people getting out of the habit of going to school (Malkus, 2024). This is then posited to have had lasting consequences, with some children no longer feeling compelled to attend. Moreover, since the pandemic, several studies have also pointed towards a decline in student behaviour (Scottish Government, 2023). Thus, while other factors may be contributing to increased school absence rates since the pandemic (e.g., increasing levels of mental ill-health), heightened levels of truancy – particularly amongst adolescents – is important to understand as a distinct issue.

Much has already been written about the educational impacts of COVID-19 and associated school closures (e.g., Montacute et al., 2022). This includes a now substantial international literature on learning loss (Betthäuser et al., 2023). Yet, while there are some existing studies into the link between COVID-19, school closures and lasting impact on school attendance, the evidence here remains more limited. For instance, in qualitative interviews with 39 parents and 31 professionals, McDonald et al. (2023) found anxiety, challenges with adapting to school routines and concerns regarding academic catch-up are driving post-COVID absences in England, particularly amongst young people with special educational needs and pre-existing

anxiety problems. Research by the Welsh Parliament (2022) indicated how a range of factors – including anxiety, wellbeing and school engagement issues – have got worse since COVID-19, contributing to the sustained increase in school absence rates. They also suggest that this has been exacerbated by more relaxed attitudes to learning and attendance amongst both pupils and parents. Lester and Michelson (2024) argue that rising school absence rates are being driven by "emotionally based school avoidance", including negative (e.g. avoidance of anxiety and stressful situations) and positive (e.g. gaining attention from parents, pursuit of pleasurable activities outside of school) reinforcers. They go on to argue that "there is compelling evidence that the pandemic …. have acted to amplify known risk factors" (Lester & Michelson, 2024, p. 3). This is supported by Hamilton (2024), who links the rise in school absences to young people's sense of belonging at school, suggesting that bullying, peer-rejection, disciplinary policies and non-inclusive teaching practices may be having a particularly detrimental impact on the attendance of neurodiverse pupils. Using state-level data from the United States, Dee (2024) finds a positive and statistically significant correlation between the length of remote instruction and growth in school absence rates. However, they fail to find any association between increasing prevalence of wellbeing issues (e.g., unhappiness, hopelessness) since the pandemic and the post-pandemic growth in chronic absenteeism. Similar evidence has also emerged from South Africa, where Anakpo et al. (2024) have highlighted large declines in school attendance following the COVID-19 pandemic, with this being a particular challenge facing non-White females living in rural locations. Noting the recent rise in chronic absenteeism in the United States, Malkus (2024, p.13) argues that "post-pandemic chronic absenteeism looks more like a cultural problem. During the pandemic, altered school practices loosened established norms for school attendance, and over the past few years, students and families have grown accustomed to these new norms. The pandemic surge in chronic absenteeism may not support this cultural diagnosis, but the post-pandemic durability of that surge does."

While these studies have built our understanding of the lasting impacts COVID-19 on the education sector, important gaps in the evidence base remain. In particular, the key issue currently facing policymakers and school leaders in several countries – continued high levels of school absence – remains underexplored. This includes analyses focused on specific types of school absence – such as truancy – that may require different responses by policymakers and practitioners than others (e.g., increased physical and mental health issues). Likewise, most existing analyses have considered the evidence from single countries in isolation and have not

taken a global perspective. For instance, is the post-pandemic rise in truancy only affecting a handful of specific, culturally similar nations, or is this a truly global problem? And to what extent can this increase in truancy be linked back to the length of COVID-induced school closures?

The central aim of this paper is to provide international evidence on such issues. Our analysis begins by identifying the countries where truancy rates have risen substantially since COVID-19, also checking whether such identification is robust to the potential presence of existing upward trends in truancy. In other words, is this truly a global phenomenon, and to what extent do increases coincide with the timing of the COVID-19 pandemic? We also explore variation in these trends across key demographic groups (gender and socio-economic background) to understand better whether this is a particularly pressing matter for young people from certain social backgrounds. Research question 1 is therefore:

- Research question 1. Which countries have experienced an increased in student truancy rates following the COVID-19 pandemic? How do increases vary across key demographic groups?

We then turn to how truancy rates are linked to the length of school closures. Specifically, given the previous evidence on learning loss (Jakubowski et al., 2024), our hypothesis is that the increase in truancy rates is greater in countries where schools were shut for longer. This may be due, for instance, to young people's detachment from school increasing the longer they were not required to attend in-person (Lester and Michelson, 2024). Importantly, we can consider the evidence on this matter both at the country level (i.e., are countries with longer lockdowns now experiencing a greater rise in truancy rates) and at the student level (i.e., when a student's school was closed for longer, are they now more likely to play truant)? Our second research question is therefore:

- Research question 2. To what extent is there an association between length of school closures and increases in student truancy?

Finally, we consider how this increase in the truancy rate is linked to student achievement. For instance, a wide body of prior research has shown how lower levels of attendance are linked to lower levels of performance at school, and on to later life outcomes (e.g., Dräger et al., 2024). Hence any increase in the student truancy rate is likely to lead to lower levels of performance in standardised tests, with this decline being concentrated within certain demographic groups (e.g., young people from disadvantaged socio-economic backgrounds). In our final research

question, we hence attempt to model how recent increases in student truancy rates in selected countries may have impacted its most recent PISA scores. Research question 3 is thus:

- Research question 3. How might the post-pandemic increase in student truancy rates be associated with declining PISA mathematics scores in selected OECD countries?

2. Data

The data that we use are drawn from four waves (2012, 2015, 2018, 2022) of the Organisation for Economic Co-Operation and Development (OECD) Programme for International Student Assessment (PISA)[4]. This is an international study of 15-year-olds' academic achievement that is now conducted in around 80 countries, including all members of the OECD. The data are collected using a stratified, clustered sample design. In each country at least 200 schools are first selected as the primary sampling unit, with a random selection of around 40 15-year-olds then selected within each. Response rates in most countries are high (e.g. in the 2022 wave, the average across all countries was that 93% of schools and 89% of students selected participated), though in some nations (e.g. the United States, the United Kingdom) overall participation rates were lower (see OECD, 2023, Chapter 13 for further details). Throughout our analysis we account for the complex PISA survey design by applying the student and Balanced Repeated Replication (BRR) weights supplied within the international dataset. These fully account for the clustering and stratification used in the survey design (Jerrim et al., 2017).

As part of PISA, students respond to a 30-minute background questionnaire. From the 2012 study onwards this has included the following question, with four possible response options:

"*In the last two full weeks of school, how often did the following things occur? I skipped a whole school day*" [Never, one or two times, three or four times, five or more times]

However, our preliminary investigations of the data – and of the national adaptions made to the PISA questionnaire – have highlighted an issue that seems to have affected responses to this question in the 2015 wave in a small number of countries. Specifically, for some countries, the wording of the question differed in PISA 2015, when students were asked whether they missed a school day (rather than skipped). This materially alters the question, so that encompasses all forms of absence rather than just truancy. We have therefore excluded the

[4] Earlier waves were not used as they did not include questions about truancy.

PISA 2015 data for the following countries that were affected by this issue: England, Northern Ireland, Wales, United States and Finland.

To facilitate presentation of our results across many countries at several time points, we convert responses to this question into a binary variable. When doing so, we analyse the proportion of 15-year-olds who report having skipped any school over the last two weeks (i.e., the top three categories are combined and compared to the Never category as the reference group).

In our second research question, we consider how the change in the student truancy rate following the pandemic is associated with the length of COVID-induced school closures. As part of the PISA background questionnaire, students were asked the following question on this issue:

In the last three years, was your school building ever closed for more than a week because of the following reasons? Because of COVID-19. [1. No, Yes, up to 1 month; 2. Yes, more than 1 month and up to 3 months; 3. Yes, more than 3 months and up to 6 months; 4. Yes, more than 6 months and up to 12 months; 5. Yes, more than 12 months]

With the following guidance provided:

"*Do not count the time that your school was scheduled to be closed for school holiday or vacations. If you changed schools during the past three years, please count the time across all schools you attended. If your school had to close and reopen multiple times, please count all closing times*".

We have used responses to this question to derive a continuous measure for each student capturing the number of months they reported their school building to be closed during the pandemic.[5] Table 1 provides details on this measure for each country, including the mean, standard deviation and intra-cluster correlation (which captures the extent that students attending the same school reported experiencing similar lengths of school closures). As the reports of individual students are likely to suffer from a degree of measurement error, we also create a school-level aggregate of this variable, calculated as the mean response provided by students within each school.

<< Table 1 >>

[5] "No" was coded as 0 months. "More than 1 month" and "up to 3 months" was coded as 2 months. "Yes, more than 3 months" and "up to 6 months" was coded as 4.5 months. "Yes, more than 6 months" and "up to 12 months" was coded as 9 months. "Yes, more than 12 months" was coded as 15 months.

In our country-level analysis, information on school closures is drawn from two sources. First, we take the average length of school closure reported by students described in the paragraph above. This has the advantage of specifically attempting to measure how the students in the PISA sample were affected by school closures. Second, we draw upon data from the Oxford Covid-19 Government Response Tracker (OxCGRT) (Hale et al., 2021). For each country and each day from 1 January 2020 to 31 December 2022 the dataset records whether schools were subject to 0) no measures, 1) recommended closing or all schools open with alterations resulting in significant differences compared to normal operations, 2) required closing of at least some kinds of schools, or 3) required closing of all schools.[6] We sum up the number of days up until May 2022 in which all schools are closed (i.e., category 3). This provides an alternative country-level indicator of the length of school closures. The correlation between our two country-level school closure measures is 0.56 when including all PISA countries, rising to 0.69 when we just include data from members of the OECD. Some of this difference will be driven by measurement error, while some will be due to the different handling of holidays (where schools are closed at the start of a holiday period and open immediately thereafter, OxCGRT defines schools as closed due to COVID-19 up until the last day of the holiday, which is consistent for its purposes but different to the PISA question). Nevertheless, the two measures lead to very similar results. The results using the first measure (average of student reports) are presented in the main text, while those using the second measure (using data from the Covid-19 Government Response Tracker) are provided in Appendix A.

Within parts of our analysis, we also draw on other measures captured in the PISA background questionnaire, including gender and socio-economic background. The latter is captured by the PISA Economic, Social and Cultural Status (ESCS) index, which combines information on parental education, parental occupation and household possessions into a single scale. Our focus is typically on the difference in truancy rates across the most and least third of students within each country when using this scale.

In our final research question, we consider how the increase in student truancy rates is associated with PISA test scores. The PISA test lasts two hours and covers three core subjects (reading, mathematics and science). Student responses to the test questions are converted into test scores by the survey organisers using an Item-Response Theory (IRT) model. To reflect

[6] We use the Majority variant of this measure, as providing the best guide to the experience of most young people without being able to disaggregate by vaccination status. Further notes on the interpretation of the variable is provided at https://github.com/OxCGRT/covid-policy-dataset/blob/main/documentation_and_codebook.md#c1---school-closures

the uncertainty from the PISA test using a multiple matrix test design (i.e., each student only responds to a subset of all test questions) these scores come in the form of "plausible values". We follow recommended practise in analysing such data, estimating each of our models separately using each plausible value in turn, and then combining the results (see Jerrim et al., 2017, for further details). This is implemented via the Stata (StataCorp, 2023) package REPEST (Avvisati & Keslair, 2024).

3. Methods

Research question 1

To address research question 1, we explore in which countries the truancy rate has increased post pandemic (2022) relative to before (2012-2018). This will be done in two ways. First, for each country, we pool the data across the 2012-2018 PISA sweeps, calculate the truancy rate, and then compare it to the truancy rate in PISA 2022. A two-sample t-test is then conducted to establish whether the change in the truancy rate pre/post pandemic is statistically significant. These are the results reported in the main text. In Appendix B we replicate this analysis focusing on just the change between PISA 2015/2018 and PISA 2022 instead. This approach is also used to explore differences within each country by (a) gender and (b) terciles of the socio-economic status scale.

While simple, transparent and easy to interpret, a potential limitation of this approach is that it does not take into account that levels of truancy in a country could have been rising before the pandemic. We, thus, also use a second approach where we pool the data across all four (2012-2022) sweeps, and then estimate a linear probability model of the form:

$$Truancy_{ijt} = \alpha + \beta.Year_t + \gamma.2022_t + \varepsilon_{ijt} \quad (1)$$

Where:

$Truancy_{ij}$ = A binary variable coded 0 if student i in school j in year t reports not truanting at all over the last two weeks, and 1 if they reported playing truant at all over the past two weeks; $Year_t$ = A linear time trend. 2022_t = A binary variable, coded 1 for the 2022 sweep and 0 for the 2012, 2015 and 2018 sweeps; and ε_{ijt} is a random error term.

This model is estimated separately for each country.

The intuition underpinning this model is that the β parameter will reflect that trend in truancy rates that had already been occurring over the 2012-2018 period. The γ parameter – which is

our primary interest –thus estimates the extent to which truancy levels in the 2022 PISA sweep were above what one would have anticipated extrapolating from the pre-pandemic (2012-2018) trend. This is, effectively, an interrupted time series design. Results from this model are reported separately in Appendix C.

Research question 2

Following much of the international evidence on school closures and learning loss (Jakubowski et al, 2024; Kennedy & Strietholt, 2023), we begin by presenting results from a country-level analysis; have student truancy rates increased more in countries that experienced longer school closures? Estimates will be presented on a scatterplot, with length of school closures plotted along the horizontal axis and our estimates of the increase in the truancy rate since the pandemic (taken from our main analysis for Research Question 1) plotted on the vertical axis.

We then turn to our student-level analysis. The following linear probability model is estimated using the PISA 2022 data for each country:

$$T_{ijk} = \alpha + \beta.C_{ijk} + \gamma.D_{ijk} + \mu_k + \varepsilon_{ij} \qquad (4)$$

Where:

T_{ijk} = A binary variable, coded 1 if young person i in school j in country k reported played truant at any point over the last 2 weeks; C_{ijk} = Student reports of how many months their school building was closed over the previous three years; D_{ijk} = A vector of background student controls, including gender, immigrant status, ESCS index and whether the student has repeated a grade; μ_k = A vector of country-level fixed effects; and ε_{ijk} = A random error term.

The parameter estimate of interest (β) captures the association between length of school closures experienced by the student (C_{ijk}) and whether they were truant at any point over the last two weeks (T_{ijk}), conditional on the other factors included in the model. Estimates are presented separately for when the variable capturing school closures is based on their own reports (C_{ijk}) or when the average is taken across all students in the school ($\overline{C_{jk}}$).

Research question 3.

To conclude, we conduct a basic simulation of how the increase in truancy rates observed within selected countries may be related to recent declines in PISA mathematics scores. This follows a three-step process, conducted separately by country.

First, we estimate the association between PISA mathematics scores (outcome) and student truancy (covariate) in the pre-pandemic (2012-2018) sample. This is estimated via an OLS regression model, including controls for socio-economic status, immigrant status, grade repetition and school fixed effects. Estimates from the model provide us with a guide of how student truancy is linked to PISA maths scores. Second, we establish how the distribution of student truancy has changed before (PISA 2012-2018) and after (PISA 2022) the pandemic. This provides information on how the truancy rate in the country has risen. Finally, we multiply the coefficients obtained from step 1 with the increase in the truancy rate obtained from step 2. This results in a ballpark figure for how much one might anticipate PISA mathematics scores to decline given the rise in the truancy rate. A walk-through example of this calculation using the data for England can be found in Appendix D.

4. Results

Research question 1. Change in truancy rates following the pandemic.

Figure 1 begins by illustrating how the percentage of 15-year-olds skipping school has changed before (horizontal axis) and after (vertical axis) the COVID-19 pandemic. The diagonal line illustrates where the pre/post pandemic truancy rate is equal. This is supplemented by Table 2, illustrating the change in truancy across OECD countries pre/post pandemic, and where the differences are statistically significant.

<< Figure 1 >>

<< Table 2 >>

One immediately striking feature is the substantial increase in truancy that has occurred across the nine Anglophone countries, highlighted in green circles (Figure 1) and shading (Table 2). All nine English-speaking nations sit well above the 45-degree line and have experienced amongst the largest percentage point increase in truancy since the pandemic. Indeed, amongst OECD nations, only Poland and Italy have experienced a similar increase. For instance, in New Zealand, the truancy rate reported amongst teenagers in PISA 2022 was around 16 percentage points higher than the average across the 2012-2018 PISA waves. Similar increases can also be seen for the other Anglophone nations, including Wales (13 percentage points), Australia (12 percentage points), the United States (9 percentage points) and England (9 percentage points). This compares to an average across OECD nations of less than three-percentage points. In-fact, most other OECD nations have seen little change in the truancy rate following the

pandemic, or even a decline. The result is that now the nine Anglophone nations have amongst the highest truancy rate amongst 15-year-olds across the developed world.

Table 3 – in conjunction with Appendix C – provides further detail on this matter, focusing on whether an increasing trend in truancy can be observed across Anglophone nations prior to COVID-19 (i.e. between 2012 and 2018). There is no evidence that this is the case in Australia, Northern Ireland, the United States, Scotland, Canada and England, where truancy figures were similar across the 2012, 2015 and 2018 waves. While there was a seven-percentage point increase in the truancy rate in Wales prior to the pandemic, this is based on data from just two time points (2012 and 2018), with it thus unclear as to whether this was an established trend or not. On the other hand, in New Zealand, there has clearly been a sustained increase in truancy over the last decade, although this may still have been exacerbated by COVID. With respect to Ireland, the truancy rate reported by students in PISA 2012 was unusually low, meaning that the pre/post pandemic change reported in Figure 1 and Table 2 may be overstated. However, as Appendix B illustrates, there continues to be a substantial increase in the truancy rate in Ireland in the PISA 2022 cycle, relative to PISA 2015 and 2018. The bottom two rows of Table 3 then serve to reiterate our key finding – while truancy rates across the OECD remained broadly stable between 2012 and 2022, they have increased sharply within English-speaking nations, particularly since COVID-19.

<< Table 3 >>

Next, we turn to how gender differences in teenagers skipping school have evolved since the pandemic. These results are presented in Figure 2a. Values along the horizontal axis refer to the percentage point differences in skipping school between boys and girls within the 2012-2018 PISA cycles. Analogous figures from PISA 2022 are presented on the vertical axis. Negative values indicate that girls are more likely to report skipping school than boys. Likewise, countries that sit below the 45-degree line are where the gender gap has grown following the pandemic – i.e., where girls are increasingly more likely to report skipping school than boys.

<< Figure 2 >>

An immediate point of note is that almost all countries sit below the 45-degree line. In other words, girls have becoming increasingly more likely to skip school relative to boys across OECD countries since COVID-19, increasing the size of the gender gap in countries where girls were already more likely to play truant. This result is supported by the evidence presented

in Table 4, which illustrates the size of the gender gap in skipping school before (PISA 2012-2018) and after (PISA 2022) the pandemic. Out of the 38 OECD countries with data available, there has been a statistically significant change in the gender gap in 15 nations at the 5% level, and a further four nations at the 10% level. On each occasion, it is girls who have become significantly more likely to report skipping school than boys. Indeed, there is no country where the opposite holds true.

<< Table 4 >>

The nine Anglophone nations also exhibit this pattern; following the pandemic, girls have becoming increasingly likely to report skipping school relative to boys. This change is however only statistically significant at the 5% level in three of the English-speaking nations (New Zealand, Wales, Ireland), with one further (England) at the 10% level. What is more striking, however, is the magnitude of the gender gap in truancy in these nations in the most recent (2022) PISA cycle. In particular, the nine Anglophone nations are amongst the furthest south in Figure 2a, indicating that the difference in skipping school between girls and boys is now bigger than most other developed countries. This is again supported by the results presented in Table 4. In the average OECD nation, there is virtually no difference between girls and boys in their tendency to skip school in the 2022 PISA wave (a -1.4 percentage-point difference). Yet, in England, the United States, Ireland and New Zealand girls are six percentage points more likely to skip school than boys, with this reaching seven percentage points in Wales. Hence, English-speaking education systems now seem to have a particular problem in the level of unauthorised absences amongst teenage girls.

To conclude, Figure 2b and Table 5 present evidence on socio-economic differences in skipping school, defined as the difference between the most and least advantaged third of students according to the PISA ESCS scale. Positive values indicate that teenagers from disadvantaged socio-economic backgrounds are more likely to skip school than their more advantaged peers.

<< Table 5 >>

Overall, there is no clear pattern to the results; the countries in Figure 2b are somewhat randomly scattered around the 45-degree line, with (generally small) increases in some countries offset by (generally small) decreases in others. Indeed, there are only four OECD nations where the increase in the socio-economic gap in truancy is statistically significant at the 5% level following COVID-19 (Estonia, Mexico, Germany and Norway). Yet, in the same

number countries, we observe that the socio-economic gap in truancy has declined (United States, Israel, Hungary and Portugal). It is consequently unsurprising to see that – in the bottom row of Table 5 – the socio-economic gap in skipping school amongst teenagers across the OECD remains unchanged (standing at six percentage points both before and after the COVID-19 pandemic).

With respect to the nine Anglophone countries, only the results for the United States are particularly notable. This is the country with the greatest reduction in the socio-economic gap in truancies following COVID-19, falling from a 10-percentage point difference across PISA 2012-2018 to 4-percentage points in PISA 2022. This, however, is *not* being driven by a reduction in truancy amongst the most disadvantaged students. Rather, it is a symptom of the most socio-economically advantaged teenagers in the United States being more likely to skip school now than previously.

Research question 2. The link between length of school closures and increases in student truancy

To address our second research question, we begin by presenting the cross-country correlation between the length of school closures and the increase in the truancy rate each country has experienced since the pandemic. These results are presented in Figure 3. Panel (a) includes only OECD countries, while all countries with data available are included in panel (b). The dashed line reflects the line of best fit (bivariate OLS regression estimate). Appendix A presents alternative results using a different measure of the length of school closures (very similar results are obtained).

<< Figure 3 >>

There is no clear evidence of an association between school closures and an increase in the student truancy rate at the country level. The results in panel (a) – based on only OECD countries – points towards a positive, though very weak, correlation (Pearson r = +0.17). In panel (b) – where data is included from all available countries – the correlation is negative and weak (Pearson r = -0.16). Figure 3 thus provides little evidence that the length of school closures due to COVID-19 is associated with the on-going increase in the student truancy rate.

Table 6 builds on this analysis by presenting results from our student level models. Figures in the left-hand column are where students' own reports regarding the length of school closures are used. The right-hand column presents analogous results, but now measuring school closures

using the average report of 15-year-olds within their school. The estimates refer to the percentage point increase in the likelihood that a student plays truant per each additional month their school was closed (e.g., a coefficient of one would imply that each month a school was closed, the student truancy rate increased by one percentage point).

<< Table 6 >>

There is again no clear pattern to the results, either when looking across countries or when comparing estimates based on students-own versus school-average reports. Focusing on the left-hand column (students own reports of school closures), the average coefficient across OECD countries stands at just 0.2. This implies that five months of school closures during COVID (a typical length in many countries – see Table 1) is associated with just a one percentage point increase in the proportion of students' skipping school (a negligible effect). There are also only 8 OECD nations where the estimate is both positive and statistically significant at the 5% level; the remaining 27 counties produce a null effect. Moreover, it is only in Canada and Iceland where we find consistent evidence of a positive, statistically significant association between school closures and truancy across the two sets of results (student and school-average reports). Indeed, on average across OECD countries, the estimate using school-average reports of school closures is effectively zero. Together, the results from Table 6 thus fail to provide convincing evidence that the length of school closures and student truancy rates are linked.

One potential explanation for these null findings could be that the information reported on school closures by individual students contain non-trivial amounts of measurement error. The descriptive data presented in the Data section (Table 1) – specifically, the intra-cluster correlation for student reports of how long their school buildings were closed – provide a degree of support for this view. This illustrated how, for several countries, the intra-cluster correlation was relatively low; for 7 of the 35 countries, the intra-cluster correlation sits as 0.05 or below, with it averaging 0.10 across OECD countries.

There are, however, some countries in Table 1 where the intra-cluster correlation is higher, and thus where there are greater levels of agreement amongst students within the same school about how long their school buildings were closed. Notable examples include Australia (intra-cluster correlation = 0.33), the United States (0.20) and Mexico (0.18). Examining the results for these specific countries in Table 6, one can see that there are again null (or even negative) effects in each. Thus, even in instances where there are higher levels of agreement amongst students

about the length of school closures, we still find no evidence that this is related to increases in truancy rates.

Research question 3. Potential relationship with PISA mathematics scores

Table 7 concludes by presenting results from our basic simulation regarding how the increase in the truancy rate observed in Anglophone countries may negatively affect their average PISA mathematics scores. We find that the increase in truancy observed since the pandemic may be associated with a modest fall in average PISA mathematics scores, ranging from -1.3 test points in Northern Ireland to -4.6 test points in New Zealand. These may be considered relatively small, though non-trivial reductions, given that we only consider levels of student truancy at a single point within one academic year.

5. Conclusions

The COVID-19 pandemic has had a significant impact on education systems across the world. While the crisis that led to widespread school closures is now over, its legacy continues to cast a dark shadow across many parts of the education sector. One such example is pupil absence rates, which remain above pre-pandemic levels in some parts of the world. This may undermine ongoing attempts to boost young people's knowledge and skills. It is consequently little wonder that, in some countries, the crisis in school attendance has risen to the top of the education policy agenda.

This paper has sought to contribute new insights into this matter by presenting a detailed analysis of one particularly important component of school absences – truancy (i.e., young people choosing to skip school). Few previous post-COVID studies have focused on this specific issue, particularly from a global perspective. In doing so, our analysis has presented novel evidence on where truancy is a growing problem, whether this is concentrated amongst specific demographic groups, and how this may be linked to COVID-induced school closures. It has thus presented the most comprehensive analysis on student truancy across the post-COVID world to date.

Our results illustrate how increasing numbers of teenagers skipping school is a particular challenge facing English-speaking members of the OECD. While most other developed nations have seen little increase in truancy rates since COVID-19, there have been considerable increases in Anglophone nations including Australia, England, Wales and the United States. Yet we find little evidence that these increasing truancy rates are linked to longer school

closures, either within most individual nations or globally. The results nevertheless highlight the stark challenges with unauthorised pupil absence that many (particularly English-speaking) countries now face.

Globally, the increase in truancy seems to be driven by an increasing proportion of teenage girls skipping school. Gender gaps again stand out in the English-speaking nations, where girls are significantly more likely to report skipping school than boys. In making this observation, we are mindful of the increasing rates of poor mental health, especially concentrated among girls, including as a result of the COVID-19 pandemic (Mansfield et al., 2022). It seems plausible that a rise in lower-level mental health challenges (that, hence, do not necessarily lead to sickness absence) disproportionately among girls could lead to a decision to skip school on a day when, for example, experiencing heightened anxiety and, hence, play a role in explaining our findings. We stress that are not able to test this hypothesis but think it may be worth future exploration.

The increase in truancy rates we observe in English-speaking nations is consistent with other recent studies. For instance, the pattern we observe for increasing truancy level mirrors analyses of school absence data conducted in England (Long & Roberts, 2024), Australia (Parliament of Australia, 2023), New Zealand (Devine et al., 2023) and the United States (Fuller et al., 2023). However, our analysis has also shown how similar challenges are *not* being reported in many other European and East Asian nations – and that this is a particular problem facing the English-speaking world. On the other hand, our finding that increasing truancy rates do not seem to be linked to school closures runs counter to most of the existing literature on COVID-learning loss (e.g. Jakubowski et al, 2024; Kennedy & Strietholt, 2023). We have, of course, studied a rather different outcome (truancy rather than standardised test scores) and thus the fact we obtain rather different results is not entirely unexpected.

There are of course limitations to our study which are important to note. First, information on student truancy is based on students' self-reports. It is possible that some demographic groups – and young people in some countries – may report this information more reliably than others. It is plausible – albeit somewhat unlikely – that mis-reporting of this information could have changed following the pandemic, potentially affecting our results. Second, similarly, much of our analysis on school closures have been based on information reported by students. While this has some important advantages – including potentially capturing nuances of how individual students were impacted (given differences within and across countries on school

closure rules) – these data may also suffer from some recall and reporting issues. Third, in many countries, non-response rates increased in PISA 2022, particularly at the student level. This could lead us to underestimate truancy levels in this most recent round of PISA data. Finally, our analysis of the link between school closures and truancy rates are correlational rather than causal. Hence – like most existing literature into COVID-induced school closures – we are unable to establish cause and effect.

Our findings nevertheless have some important implications. While we can only speculate about the factors driving the increasing truancy rate in English-speaking countries, other authors have suggested that cultural factors may be playing an important role (Malkus, 2024). Given the cultural similarities of industrialised Anglophone countries, our results are consistent with this view. For some, the established routine and cultural acceptance that children should attend school whenever possible – and the social stigma attached to persistent absence – has diminished since the pandemic. This mindset is something that the Anglophone countries need to change, and quickly. It is vital that young people skipping school does not become the new norm, or that it becomes socially acceptable. While returning to the pre-pandemic status quo may be challenging, it is imperative that government, schools, parents and local communities work together to ensure young people feel motivated – and obligation – to attend school regularly.

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Table 1. Student reports of length of time building was closed due to COVID

Country	Average length (months)	Standard deviation (months)	Intra-cluster correlation
Mexico	8.18	6.73	0.18
Turkey	7.20	6.17	0.10
Scotland	7.19	4.29	0.06
Ireland	6.59	4.17	0.04
Chile	6.58	6.58	0.12
USA	6.20	5.30	0.20
Czech Republic	6.17	4.78	0.14
England	5.83	5.08	0.08
Wales	5.70	5.42	0.07
Germany	5.65	4.10	0.16
Italy	5.30	4.58	0.12
Greece	5.29	4.70	0.07
Poland	5.28	4.77	0.11
Slovak Republic	5.06	4.61	0.17
Netherlands	4.98	3.87	0.09
Canada	4.78	4.39	0.08
Northern Ireland	4.68	5.06	0.05
Hong Kong	4.63	4.59	0.05
Israel	4.36	4.15	0.11
Slovenia	4.36	3.87	0.12
Estonia	4.17	3.46	0.05
Australia	4.06	4.06	0.33
Austria	4.03	3.78	0.13
Hungary	3.92	3.76	0.15
Belgium	3.88	3.55	0.11
Spain	3.62	3.86	0.04
Portugal	3.48	3.75	0.06
Lithuania	3.44	4.76	0.06
New Zealand	3.28	2.80	0.13
France	2.86	2.93	0.09
Finland	2.80	2.69	0.07
Switzerland	2.39	2.57	0.10
South Korea	1.99	3.36	0.05
Japan	1.71	2.22	0.07
Sweden	1.60	2.40	0.15
Iceland	1.44	2.36	0.04
OECD average	**4.52**	**4.15**	**0.10**

Notes: Shading should be read vertically. Green shading indicates lower average length/standard deviation of school closures, and higher intra-cluster correlations of student reports; red shading indicates the reverse.

Table 2. The percentage of 15-year-olds skipping school before (2012-2018) and after (2022) the COVID-19 pandemic

Country	Two-letter code	Pre-pandemic truancy %	Standard error	Post-pandemic truancy %	Standard error	Change since pandemic
Ireland	IE	19.3	0.4	41.1	0.8	21.8**
New Zealand	NZ	23.3	0.4	38.8	0.9	15.5**
Wales	WAL	24.6	0.8	37.4	1.4	12.8**
Australia	AU	31.1	0.3	43.0	0.5	11.8**
Poland	PL	19.7	0.5	29.4	1.0	9.8**
USA	US	20.5	0.5	29.0	0.9	8.5**
England	ENG	17.2	0.5	25.7	0.9	8.5**
Italy	IT	53.1	0.4	60.8	0.8	7.7**
Northern Ireland	NI	25.5	0.7	33.1	1.2	7.6**
Canada	CA	21.0	0.3	28.6	0.6	7.6**
Scotland	SCO	21.5	0.5	28.9	1.0	7.3**
Denmark	DK	15.0	0.3	20.4	0.6	5.4**
Greece	GR	23.1	0.4	28.4	0.8	5.2**
Germany	DE	8.3	0.3	11.4	0.6	3.1**
Norway	NO	11.3	0.3	13.9	0.5	2.7**
Finland	FI	11.7	0.4	14.2	0.5	2.5**
Iceland	IS	4.4	0.2	6.8	0.5	2.5**
Turkey	TR	50.9	0.6	53.2	0.8	2.4**
Israel	IL	33.7	0.4	35.6	0.9	1.9*
Austria	AT	11.6	0.3	12.9	0.5	1.3**
Belgium	BE	7.0	0.2	8.3	0.4	1.3**
Spain	ES	27.2	0.4	28.3	0.5	1.0
Sweden	SE	8.7	0.3	9.5	0.4	0.9*
France	FR	12.0	0.3	12.8	0.5	0.9
Switzerland	CH	9.1	0.4	9.9	0.5	0.8
Netherlands	NL	4.9	0.2	5.6	0.4	0.7
Estonia	ET	18.5	0.4	19.2	0.7	0.7
Japan	JP	1.8	0.1	1.6	0.2	-0.2
South Korea	KR	1.9	0.2	1.4	0.3	-0.6*
Czech Republic	CZ	8.1	0.3	6.9	0.3	-1.2**
Hong Kong	HK	4.7	0.2	2.6	0.3	-2.0**
Slovenia	SI	14.6	0.3	12.6	0.4	-2.0**
Hungary	HU	8.9	0.3	5.7	0.4	-3.1**
Chile	CL	9.0	0.3	5.7	0.4	-3.3**
Lithuania	LT	22.4	0.4	17.7	0.6	-4.6**
Mexico	MX	24.6	0.4	18.6	0.8	-5.9**
Portugal	PT	22.5	0.4	5.0	0.3	-17.5**
Slovak Republic	SK	25.8	0.5	7.8	0.5	-17.9**
OECD average		**17.9**		**20.3**		**2.5**

Notes: Figures refer to the percent of 15-year-olds who reported having skipped school at any point over the previous two weeks. The change column indicates the percentage-point difference before (PISA 2012-2018) and after (PISA 2022) the COVID-19 pandemic. * and ** indicate where the change following the pandemic is statistically significant at the 5% level. English-speaking countries are highlighted in green.

Table 3. The percentage of 15-year-olds reporting skipping school by PISA cycle. Comparison across English-speaking countries.

Country	2012	2015	2018	2022
Australia	32	29	33	43
Ireland	4	24	30	41
New Zealand	17	25	29	39
Wales	22	-	29	37
Northern Ireland	26	-	25	33
USA	21	-	20	29
Scotland	23	19	22	29
Canada	22	18	23	29
England	17	-	18	26
Anglophone average	**20**	**23**	**25**	**34**
OECD average	**15**	**18**	**21**	**19**

Notes: Figures refer to the percent of 15-year-olds who reported skipping school at least one time in the past two weeks. Green/red shading indicates where the percentage skipping school is lower/higher.

Table 4. Gender differences in the percentage of 15-year-olds skipping school before (2012-2018) and after (2022) the COVID-19 pandemic

Country	Two-letter code	Pre-pandemic gender gap	Standard error	Post-pandemic gender gap	Standard error	Change since pandemic
South Korea	KR	0.7	0.3	1.6	0.5	0.9
Slovak Republic	SK	1.2	1.1	1.6	0.8	0.4
Australia	AU	-3.7	0.5	-3.4	1.0	0.2
Chile	CL	2.3	0.5	2.5	0.7	0.2
Netherlands	NL	0.3	0.4	0.4	0.7	0.1
Japan	JP	0.6	0.2	0.5	0.3	-0.1
Belgium	BE	2.5	0.4	2.4	0.7	-0.1
Turkey	TR	8.1	1.0	7.8	1.4	-0.3
Hungary	HU	2.3	0.6	1.9	0.6	-0.4
Czech Republic	CZ	1.6	0.5	0.9	0.6	-0.7
Hong Kong	HK	0.8	0.4	-0.1	0.5	-0.9
Germany	DE	0.6	0.5	-0.5	0.9	-1.1
Canada	CA	-2.3	0.5	-3.6	1.3	-1.2
Italy	IT	0.1	0.7	-1.4	1.3	-1.5
Iceland	IS	1.5	0.4	-0.1	0.8	-1.6*
Norway	NO	1.7	0.6	0.1	1.0	-1.6
Portugal	PT	2.6	0.8	0.6	0.7	-1.9*
Mexico	MX	4.0	0.6	1.7	1.1	-2.3*
Spain	ES	-1.6	0.5	-4.3	0.9	-2.7**
Scotland	SCO	-1.1	0.8	-3.8	1.6	-2.7
Slovenia	SI	5.6	0.6	2.8	0.9	-2.8**
Sweden	SE	0.4	0.5	-2.4	0.8	-2.8**
Israel	IL	1.1	0.9	-2.0	1.6	-3.1
England	ENG	-2.1	1.0	-5.8	1.6	-3.6*
USA	US	-2.6	0.9	-6.3	1.4	-3.7
Ireland	IE	-2.0	0.8	-6.0	1.6	-3.9**
Lithuania	LT	6.9	0.7	2.8	1.0	-4.1**
Northern Ireland	NI	-0.5	1.6	-4.9	2.4	-4.4
France	FR	4.0	0.6	-0.6	0.8	-4.6**
Denmark	DK	0.4	0.6	-4.4	1.2	-4.7**
Austria	AT	0.5	0.6	-4.6	0.8	-5.0**
Switzerland	CH	3.2	0.6	-2.2	0.8	-5.4**
Estonia	ET	0.2	0.7	-5.2	1.0	-5.5**
Finland	FI	0.9	0.7	-4.8	0.8	-5.7**
New Zealand	NZ	-0.1	0.8	-6.1	1.5	-6.0**
Wales	WAL	-0.4	1.1	-7.2	1.8	-6.8**
Greece	GR	9.2	0.8	2.0	1.1	-7.2**
Poland	PL	6.1	0.8	-1.5	1.6	-7.6**
OECD average		**1.4**		**-1.4**		**-2.7**

Notes: Gender gap refers to the truancy rate for boys minus the truancy rate for girls. Negative values therefore indicate where girls are more likely to skip school than boys. Negative values in the change column indicate where girls are increasingly more likely to skip schools than boys following the pandemic. * and ** indicate where the change since the pandemic is statistically significant at the 10% and 5% levels. English-speaking countries are highlighted in green.

Table 5. Socio-economic differences in the percentage of 15-year-olds skipping school before (2012-2018) and after (2022) the COVID-19 pandemic.

Country	Two-letter code	Pre-pandemic SES gap	Standard error	Post-pandemic SES gap	Standard error	Change since pandemic
Estonia	ET	7.3	-0.8	12.7	-1.4	5.5**
Mexico	MX	0.0	-0.9	5.1	-1.6	5.1**
Germany	DE	3.6	-0.7	7.4	-1.1	3.8**
Norway	NO	2.9	-0.6	6.3	-1.0	3.4**
Slovak Republic	SK	5.5	-1.0	8.2	-1.1	2.7*
Austria	AT	3.0	-0.7	5.5	-1.3	2.5*
Ireland	IE	5.0	-1.0	7.5	-1.8	2.4
Poland	PL	5.0	-0.9	7.3	-1.9	2.3
Finland	FI	5.9	-0.8	7.7	-1.1	1.8
Belgium	BE	4.6	-0.5	6.2	-0.8	1.6*
Italy	IT	9.6	-1.0	11.1	-1.8	1.5
Sweden	SE	5.7	-0.6	7.1	-0.9	1.4
Slovenia	SI	6.1	-0.8	7.3	-1.2	1.3
Lithuania	LT	10.5	-0.9	11.7	-1.3	1.2
Netherlands	NL	1.3	-0.5	2.4	-0.9	1.1
France	FR	9.1	-0.6	10.1	-1.1	1.0
Switzerland	CH	3.0	-0.6	4.1	-1.0	1.0
Iceland	IS	2.9	-0.6	3.7	-1.1	0.8
Czech Republic	CZ	3.5	-0.7	3.7	-0.8	0.3
Canada	CA	6.5	-0.6	6.8	-1.5	0.2
Wales	WAL	11.5	-1.3	11.7	-2.7	0.2
South Korea	KR	1.5	-0.3	1.6	-0.8	0.1
Japan	JP	0.8	-0.3	0.6	-0.5	-0.2
New Zealand	NZ	11.8	-0.8	11.4	-2.0	-0.4
Turkey	TR	-8.1	-1.2	-8.7	-1.4	-0.6
Scotland	SCO	13.5	-1.3	12.8	-2.4	-0.6
Spain	ES	11.2	-0.8	10.3	-1.0	-1.0
England	ENG	7.6	-1.1	6.4	-1.8	-1.2
Hong Kong	HK	-0.3	-0.5	-1.6	-0.8	-1.3
Chile	CL	3.2	-0.6	1.4	-0.8	-1.8*
Australia	AU	10.2	-0.8	7.5	-1.4	-2.7*
Denmark	DK	8.5	-0.8	5.8	-1.5	-2.7*
Greece	GR	4.1	-0.8	1.0	-1.6	-3.1*
Portugal	PT	7.3	-1.0	4.1	-0.7	-3.3**
Hungary	HU	6.7	-0.8	3.4	-0.8	-3.4**
Northern Ireland	NI	13.2	-1.8	7.3	-3.1	-5.8
Israel	IL	5.1	-0.9	-1.1	-1.6	-6.2**
USA	US	10.1	-1.1	3.8	-1.6	-6.2**
OECD average		**5.8**		**5.8**		**0.0**

Notes: Socio-economic gap refers to the truancy rate for the most disadvantaged third of students minus the truancy rate for most advantaged third of students. Positive values therefore indicate where disadvantaged students are more likely to skip school than their more advantaged peers. Negative values in the change column indicate where the socio-economic gap in skipping school has *decreased* following the pandemic. * and ** indicate where the change since the pandemic is statistically significant at the 10% and 5% levels. English-speaking countries are highlighted in green.

Table 6. The association between school closures and student truancy rates

Country	Student report: Percentage point change in truancy per each month increase in school closure	Student report: Standard error	School-average report: Percentage point change in truancy per each month increase in school closure	School-average report: standard error
Iceland	0.76**	0.25	1.86**	0.71
Finland	0.68**	0.18	-0.35	0.86
Ireland	0.46**	0.19	0.40	0.95
Switzerland	0.46	0.28	-0.20	0.92
Sweden	0.40**	0.19	0.54	0.55
Canada	0.39**	0.10	3.26**	0.42
Wales	0.30	0.24	-2.54**	1.04
Greece	0.28*	0.15	0.69	0.76
Turkey	0.28**	0.08	0.98*	0.55
Hungary	0.27**	0.11	0.35	0.56
Spain	0.27**	0.11	0.40	0.71
Poland	0.24	0.16	0.29	0.79
Northern Ireland	0.23	0.17	-2.86**	1.04
Austria	0.21*	0.12	-0.01	0.56
USA	0.17	0.16	0.04	0.33
Lithuania	0.17	0.10	1.74**	0.57
France	0.16	0.19	0.53	0.85
Israel	0.15	0.15	3.09**	0.72
Belgium	0.14	0.10	-0.77	0.48
Estonia	0.12	0.19	-1.48*	0.88
Hong Kong	0.12**	0.05	0.22	0.43
England	0.11	0.16	0.00	0.61
Slovak Republic	0.08	0.10	-0.54*	0.32
Germany	0.07	0.12	-0.20	0.45
South Korea	0.05	0.06	0.38	0.52
Chile	0.02	0.06	-0.17	0.31
Scotland	-0.02	0.21	0.58	1.24
Netherlands	-0.04	0.12	-1.50**	0.49
Czech Republic	-0.05	0.09	-0.61**	0.28
New Zealand	-0.06	0.29	-0.17	0.99
Portugal	-0.06	0.10	-0.52	0.35
Mexico	-0.07	0.09	-1.15**	0.40
Australia	-0.11	0.15	-0.70**	0.24
Italy	-0.21	0.15	0.83	0.51
Slovenia	-0.21	0.16	-1.95**	0.40
Average	**0.17**	**0.15**	**0.01**	**0.62**

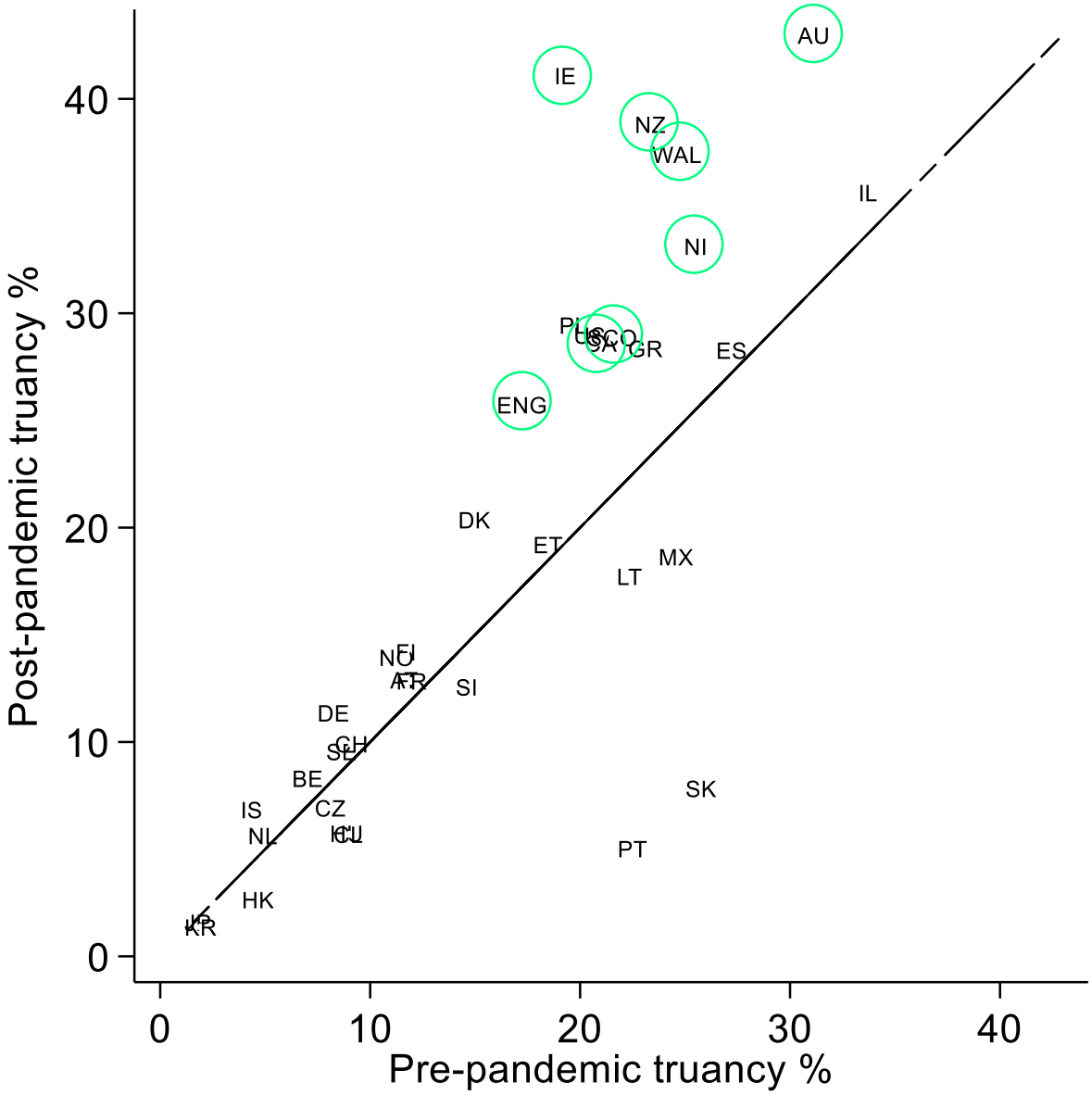
Notes: Figures refer to the percentage point change in the probability of skipping school associated with each additional month of school closure. Figures on the left use information on school closures reported by individual students. Figures on the right use the average length of school closure reported by students in the school. * and ** indicate where estimates are statistically significant at the 10% and 5% levels. English-speaking countries are highlighted in green.

Table 7. Possible impact on average PISA scores

Country	Estimated cost of truancy in PISA points
Northern Ireland	-1.3 points
United States	-1.6 points
Scotland	-2.1 points
Canada	-2.3 points
Australia	-3.3 points
England	-3.7 points
Ireland	-3.9 points
Wales	-4.1 points
New Zealand	-4.6 points

Notes: Figures refer to the estimated decline in average PISA maths scores associated with the increase in truancy rates following the COVID-19 pandemic.

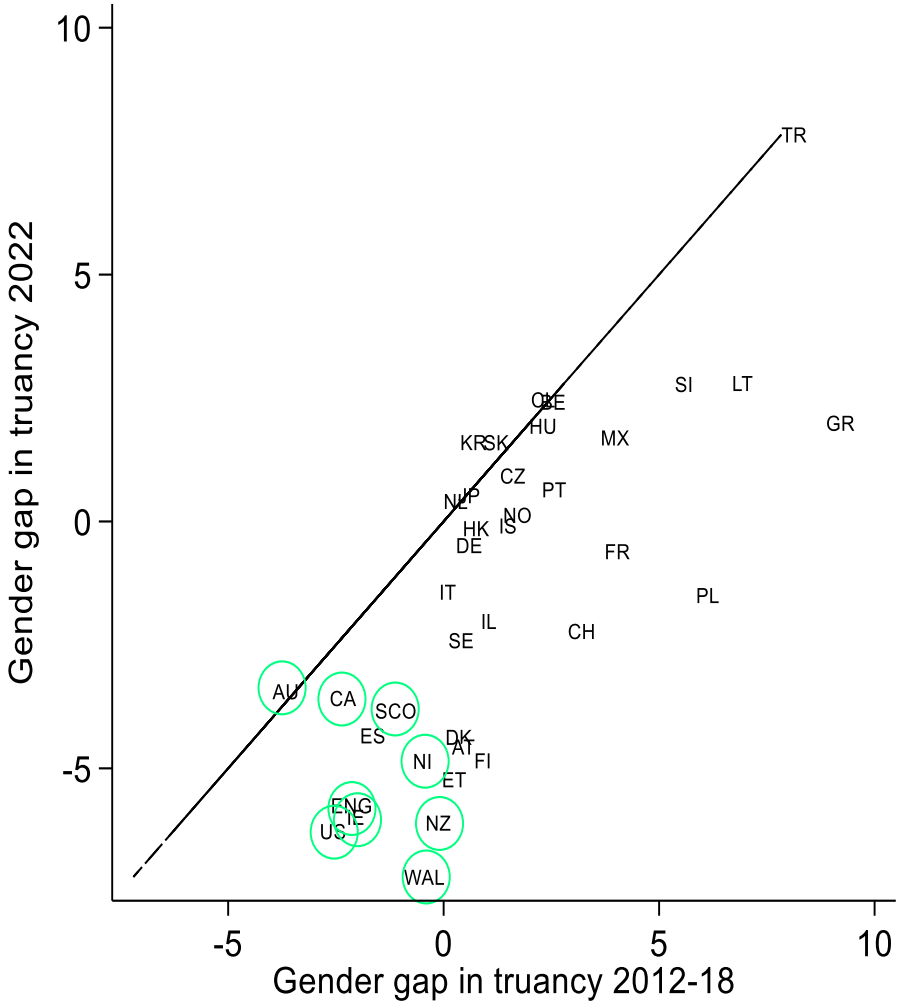
Figure 1. The percentage of 15-year-olds skipping school before (2012-2018) and after (2022) the COVID-19 pandemic



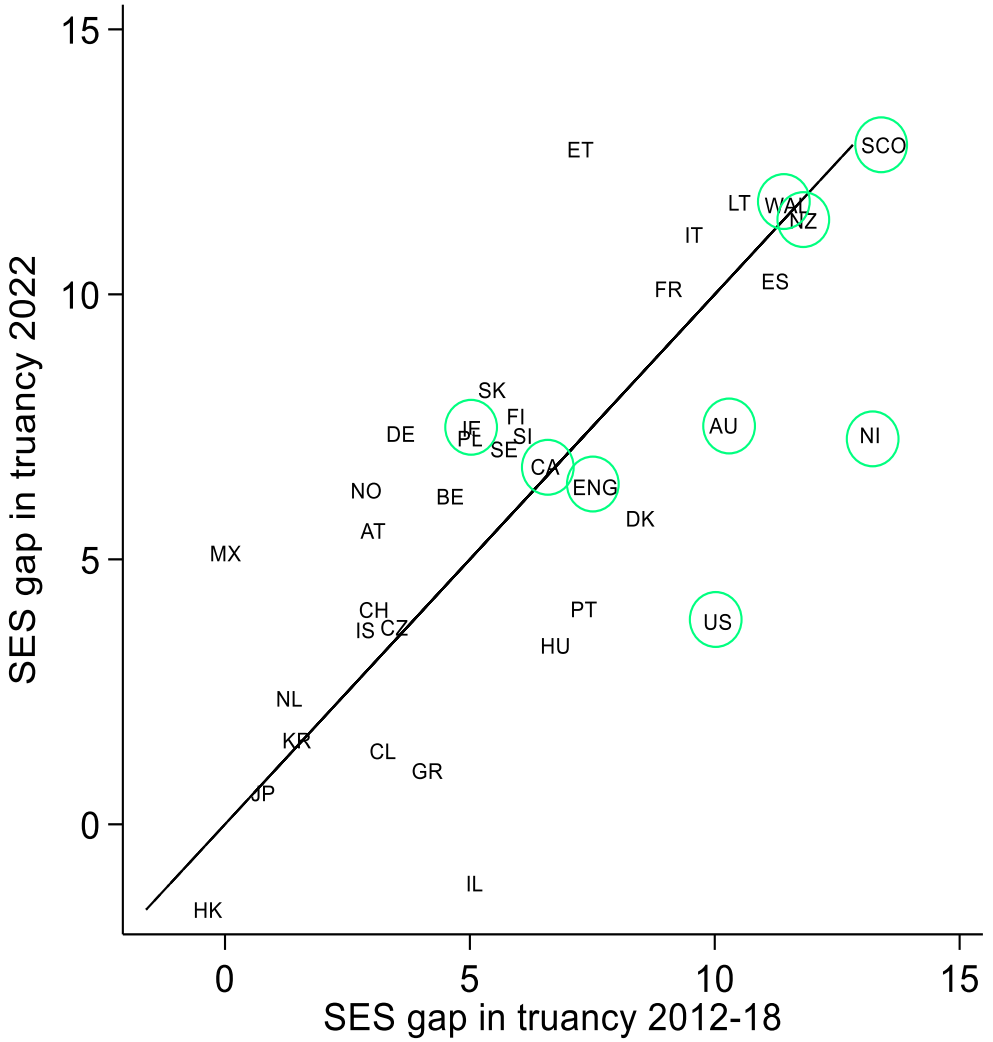
Notes: Figures refer to the percent of 15-year-olds who reported having skipped school at any point over the past two weeks. Pre-pandemic figures along the horizontal axis is the average across the 2012-2018 PISA waves. Post-pandemic figures along the vertical axis uses data from PISA 2022. English-speaking countries highlighted in green circles. See Table 2 for the two-letter country codes. Data for Italy and Turkey not presented in the scatterplot to aid presentation of results (see Table 2 for the estimates for these countries).

Figure 2. Gender and socio-economic gaps in skipping school at any point in last two weeks pre and post pandemic

(a) Gender gap



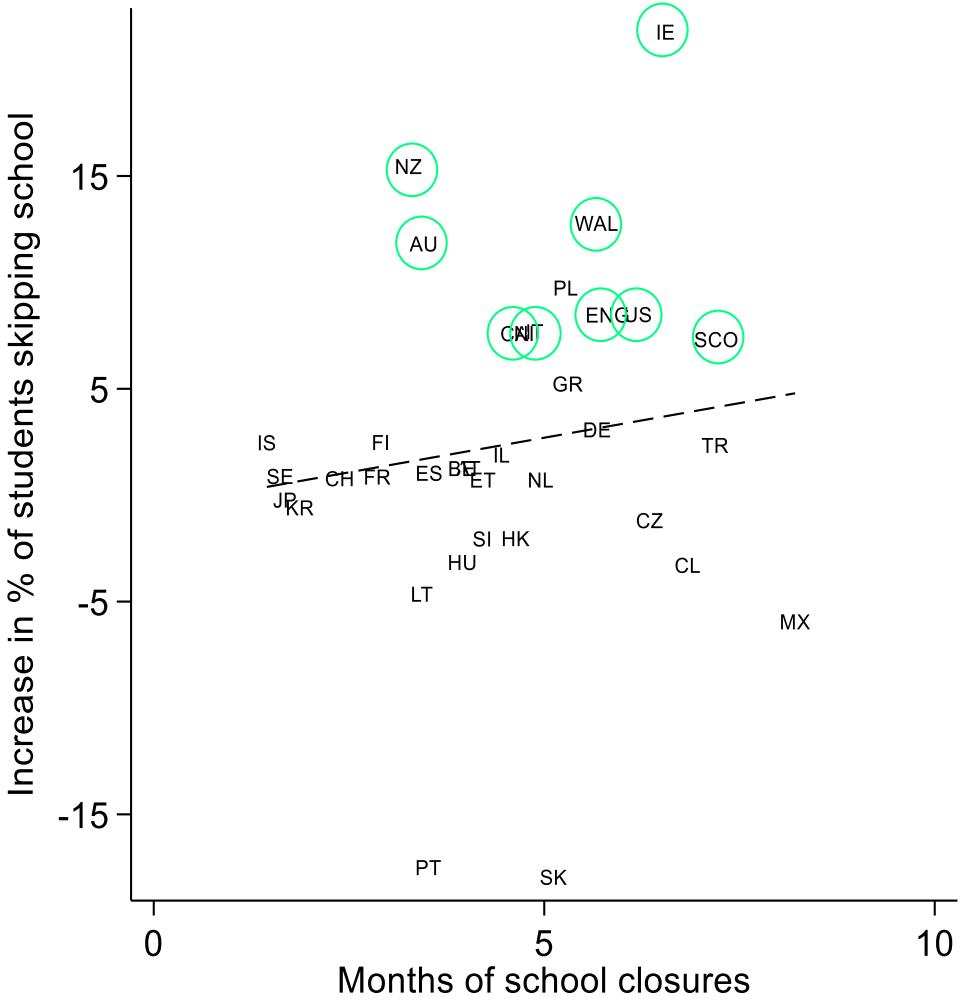
(b) Socio-economic gap



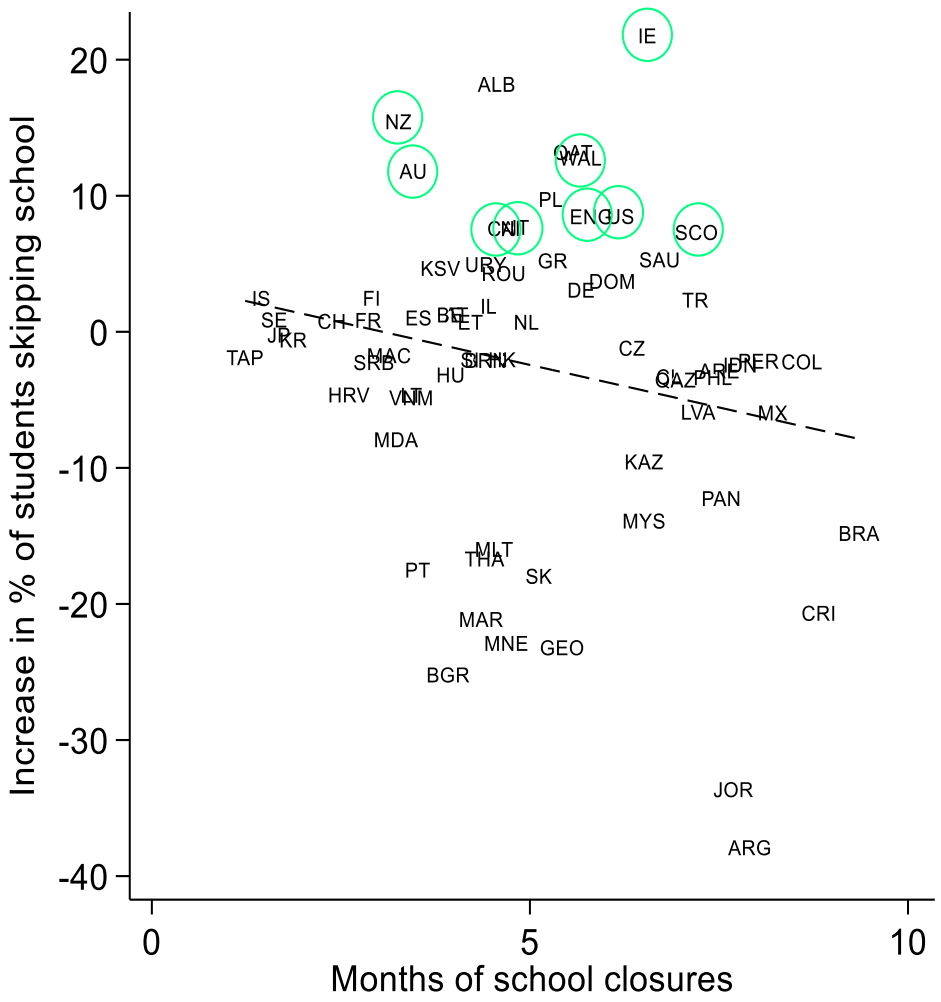
Notes: Negative figures in the left-hand panel indicate the truancy rate is higher for girls than boys. Figures in the right-hand panel illustrate differences between teenagers in the bottom versus top third of the socio-economic status distribution. English-speaking countries in green circles. Diagonal lines illustrate where the gender/socio-economic gap has remained unchanged before/after the pandemic. See Table 2 for two-letter country codes.

Figure 3. The country-level relationship between school closures and the increase in the truancy rate

(a) OECD countries only



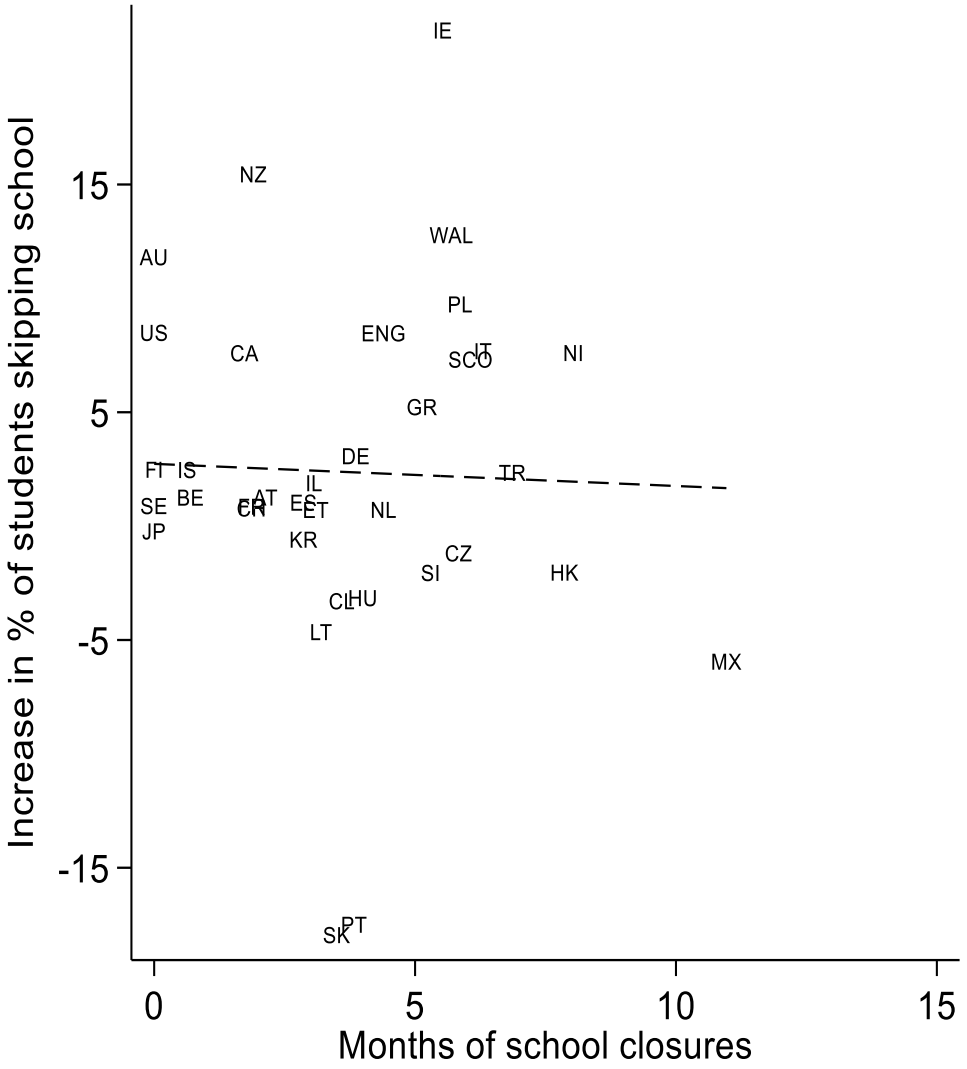
(b) All countries



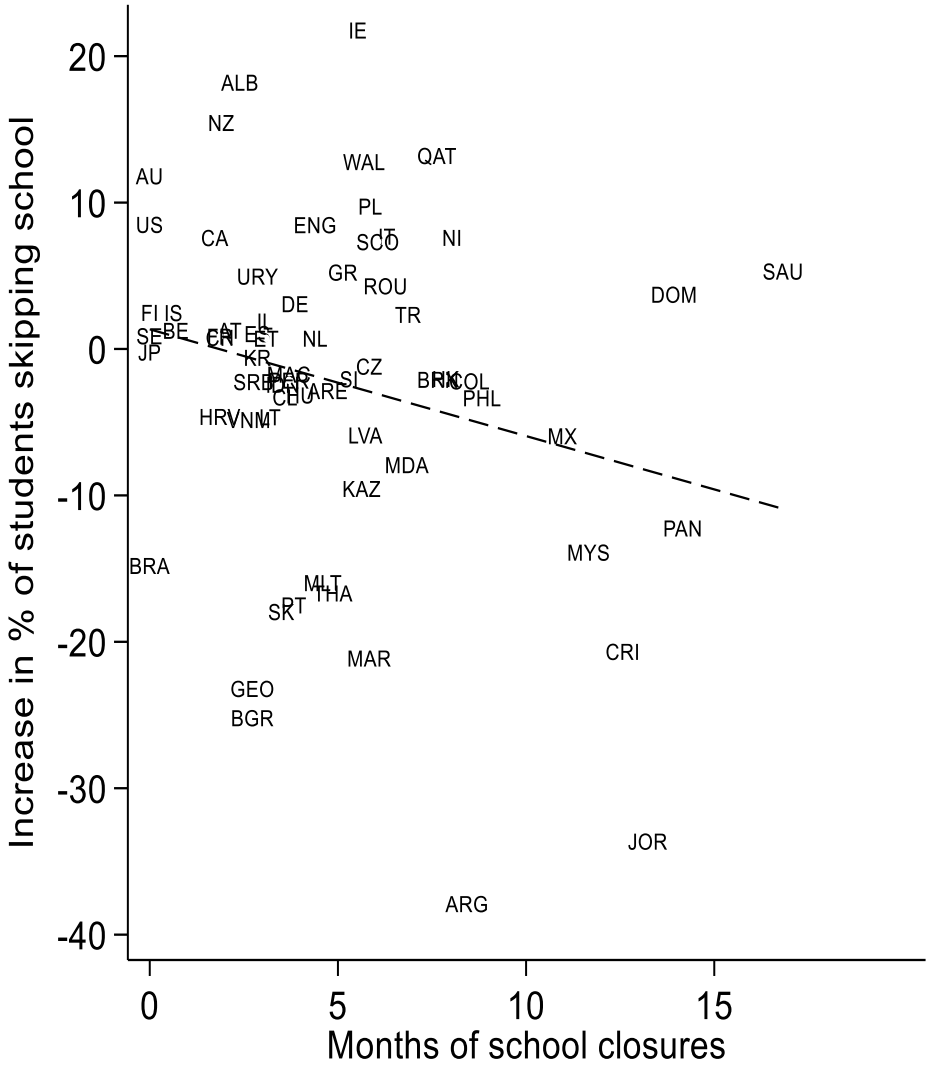
Notes: Values along the horizontal axis refer to the number of months schools were closed due to COVID-19. This information is based upon the country-level average of student reports. Values on the vertical axis refer to the increase in the percent of students skipping school before (PISA 2012-18) and after (PISA 2022) the pandemic (these are the values in the right-hand column of Table 2). The country-level OLS estimate of the association is represented by the dashed line. Correlation is +0.17 in the panel on the left and -0.16 in the panel on the right. See Table 2 for two-letter country codes. English-speaking countries in green circles.

Appendix A. Alternative estimates of country-level relationship between school closures and the increase in the truancy rate using a different measure of school closures.

(a) OECD countries only



(b) All countries



Appendix B. Alternative estimates of the pre/post pandemic change in student truancy excluding the data from PISA 2012

Table B1. The percentage of 15-year-olds skipping school before (2015-2018) and after (2022) the COVID-19 pandemic

Country	Two-letter code	Pre-pandemic truancy %	Standard error	Post-pandemic truancy %	Standard error	Change since pandemic
Ireland	IE	26.9	0.5	41.1	0.8	14.2**
Australia	AU	30.8	0.4	43.0	0.5	12.2**
New Zealand	NZ	26.8	0.5	38.8	0.9	12.0**
USA	US	19.9	0.8	29.0	0.9	9.1**
Wales	WAL	28.8	1.3	37.4	1.4	8.6**
Scotland	SCO	20.6	0.6	28.9	1.0	8.3**
Canada	CA	20.4	0.3	28.6	0.6	8.2**
England	ENG	17.7	0.6	25.7	0.9	8.0**
Northern Ireland	NI	25.3	1.1	33.1	1.2	7.8**
Poland	PL	22.0	0.7	29.4	1.0	7.5**
Italy	IT	56.0	0.6	60.8	0.8	4.8**
Greece	GR	23.9	0.5	28.4	0.8	4.5**
Turkey	TR	49.2	0.6	53.2	0.8	4.0**
Denmark	DK	18.2	0.5	20.4	0.6	2.1**
Spain	ES	26.8	0.5	28.3	0.5	1.5**
Iceland	IS	5.7	0.3	6.8	0.5	1.1**
Finland	FI	13.2	0.6	14.2	0.5	1.0
Germany	DE	10.4	0.4	11.4	0.6	0.9
Belgium	BE	7.9	0.2	8.3	0.4	0.4
Norway	NO	13.5	0.4	13.9	0.5	0.4
Israel	IL	35.3	0.7	35.6	0.9	0.3
Sweden	SE	9.5	0.4	9.5	0.4	0.1
Japan	JP	1.9	0.2	1.6	0.2	-0.3
France	FR	13.3	0.4	12.8	0.5	-0.4
Netherlands	NL	6.2	0.3	5.6	0.4	-0.6
South Korea	KR	2.0	0.2	1.4	0.3	-0.7*
Austria	AT	13.8	0.4	12.9	0.5	-0.9
Estonia	ET	20.2	0.5	19.2	0.7	-1.0
Switzerland	CH	11.7	0.5	9.9	0.5	-1.8**
Slovenia	SI	14.9	0.4	12.6	0.4	-2.3**
Czech Republic	CZ	9.3	0.3	6.9	0.3	-2.3**
Hong Kong	HK	5.1	0.2	2.6	0.3	-2.5**
Chile	CL	9.8	0.4	5.7	0.4	-4.1**
Hungary	HU	10.1	0.4	5.7	0.4	-4.4**
Lithuania	LT	24.6	0.5	17.7	0.6	-6.9**
Mexico	MX	26.8	0.6	18.6	0.8	-8.2**
Portugal	PT	24.2	0.5	5.0	0.3	-19.2**
Slovak Republic	SK	36.3	0.7	7.8	0.5	-28.4**
OECD average		**19.4**		**20.3**		**0.9**

Notes: Figures refer to the percent of 15-year-olds who reported having skipped school at any point over the previous two weeks. The change column indicates the percentage-point difference before (PISA 2015-2018) and after (PISA 2022) the COVID-19 pandemic. * and ** indicate where the change following the pandemic is statistically significant at the 5% level. English-speaking countries are highlighted in green.

Table B2. The percentage of 15-year-olds reporting skipping school by PISA cycle. Comparison across English-speaking countries.

Country	2015	2018	2022
Australia	29	33	43
Ireland	24	30	41
New Zealand	25	29	39
Wales	-	29	37
Northern Ireland	-	25	33
USA	-	20	29
Scotland	19	22	29
Canada	18	23	29
England	-	18	26
Anglophone average	**23**	**25**	**34**
OECD average	**18**	**21**	**19**

Notes: Figures refer to the percent of 15-year-olds who reported skipping school at least one time in the past two weeks. Green/red shading indicates where the percentage skipping school is lower/higher.

Table B3. Gender differences in the percentage of 15-year-olds skipping school before (2015-2018) and after (2022) the COVID-19 pandemic

Country	Two-letter code	Pre-pandemic gender gap	Standard error	Post-pandemic gender gap	Standard error	Change since pandemic
South Korea	KR	0.8	0.3	1.6	0.5	0.8
Japan	JP	0.6	0.2	0.5	0.3	0.0
Slovak Republic	SK	1.9	1.2	1.6	0.8	-0.3
Netherlands	NL	1.1	0.5	0.4	0.7	-0.7
Belgium	BE	3.1	0.5	2.4	0.7	-0.7
Czech Republic	CZ	1.8	0.6	0.9	0.6	-0.9
Chile	CL	3.4	0.7	2.5	0.7	-0.9
Italy	IT	-0.5	1.0	-1.4	1.3	-0.9
Australia	AU	-2.5	0.7	-3.4	1.0	-0.9
Hungary	HU	3.2	0.6	1.9	0.6	-1.3
Germany	DE	1.0	0.7	-0.5	0.9	-1.5
Turkey	TR	9.6	1.1	7.8	1.4	-1.7
Ireland	IE	-4.1	1.1	-6.0	1.6	-1.9
Hong Kong	HK	1.8	0.5	-0.1	0.5	-1.9**
Scotland	SCO	-1.9	1.1	-3.8	1.6	-2.0
Canada	CA	-1.5	0.6	-3.6	1.3	-2.0
Iceland	IS	2.2	0.5	-0.1	0.8	-2.3**
Norway	NO	3.0	0.7	0.1	1.0	-2.9**
Sweden	SE	0.7	0.6	-2.4	0.8	-3.1**
Spain	ES	-1.0	0.7	-4.3	0.9	-3.3**
Portugal	PT	4.4	0.9	0.6	0.7	-3.7**
Mexico	MX	5.6	0.8	1.7	1.1	-3.9**
USA	US	-2.3	1.1	-6.3	1.4	-3.9**
Northern Ireland	NI	-0.5	2.3	-4.9	2.4	-4.4
Lithuania	LT	7.2	0.8	2.8	1.0	-4.4**
Estonia	ET	-0.6	1.0	-5.2	1.0	-4.6**
Slovenia	SI	7.8	0.7	2.8	0.9	-5.0**
Israel	IL	3.2	1.3	-2.0	1.6	-5.2**
England	ENG	0.0	1.1	-5.8	1.6	-5.8**
Denmark	DK	1.5	0.8	-4.4	1.2	-5.8**
France	FR	5.3	0.8	-0.6	0.8	-5.9**
Austria	AT	1.5	0.7	-4.6	0.8	-6.0**
Switzerland	CH	4.2	0.8	-2.2	0.8	-6.4**
New Zealand	NZ	0.4	1.0	-6.1	1.5	-6.5**
Finland	FI	3.1	1.1	-4.8	0.8	-8.0**
Greece	GR	10.0	0.9	2.0	1.1	-8.0**
Poland	PL	7.6	0.8	-1.5	1.6	-9.1**
Wales	WAL	2.3	1.7	-7.2	1.8	-9.5**
OECD average		**2.2**		**-1.4**		**-3.5**

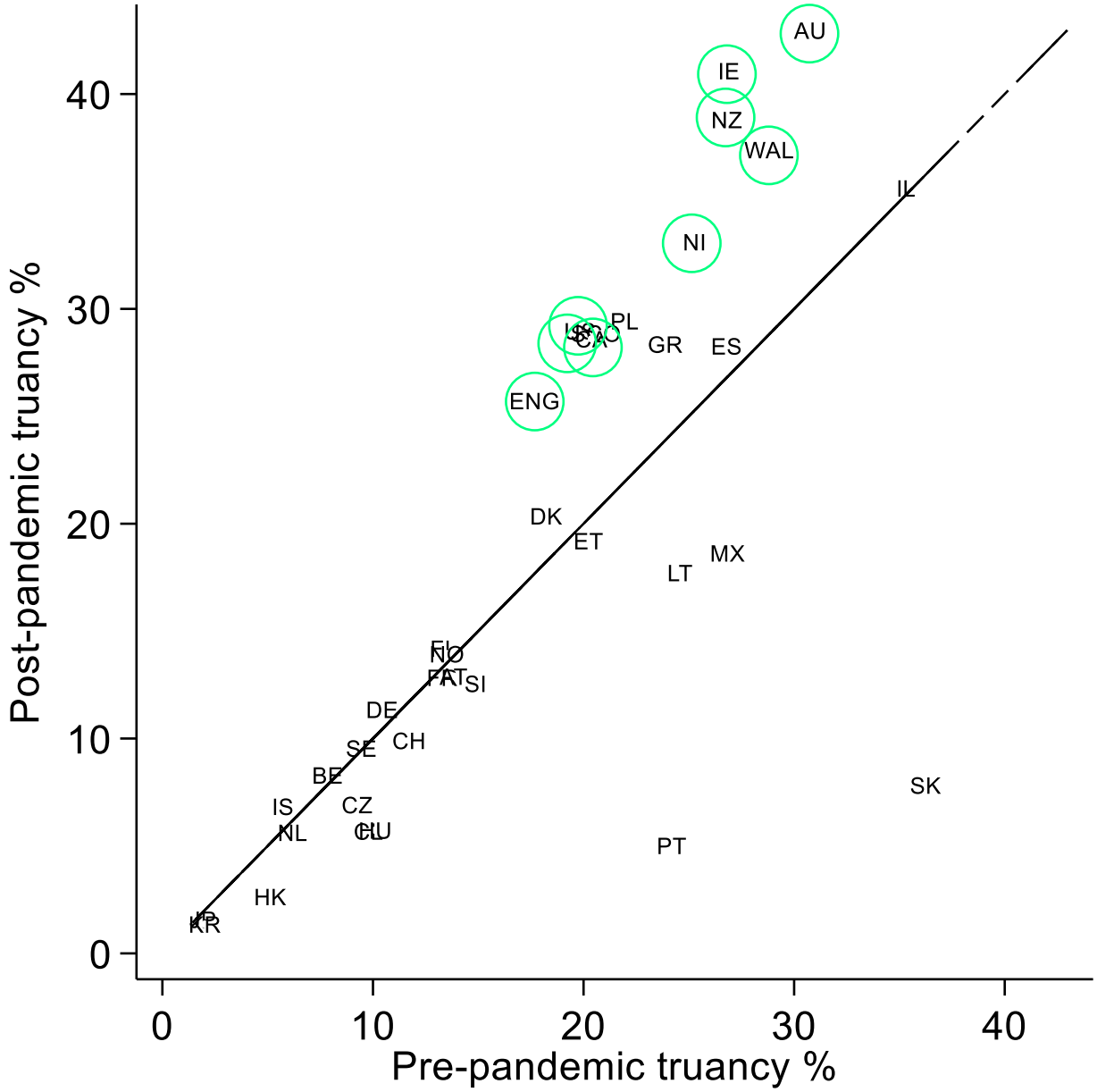
Notes: Gender gap refers to the truancy rate for boys minus the truancy rate for girls. Negative values therefore indicate where girls are more likely to skip school than boys. Negative values in the change column indicate where girls are increasingly more likely to skip schools than boys following the pandemic. * and ** indicate where the change since the pandemic is statistically significant at the 10% and 5% levels. English-speaking countries are highlighted in green.

Table B4. Socio-economic differences in the percentage of 15-year-olds skipping school before (2015-2018) and after (2022) the COVID-19 pandemic.

Country	Two-letter code	Pre-pandemic SES gap	Standard error	Post-pandemic SES gap	Standard error	Change since pandemic
Estonia	ET	8.6	-1.2	12.7	-1.4	4.2**
Mexico	MX	1.2	-1.4	5.1	-1.6	3.9*
Wales	WAL	8.2	-2.2	11.7	-2.7	3.5
Germany	DE	4.4	-0.9	7.4	-1.1	3.0**
Slovak Republic	SK	5.5	-1.3	8.2	-1.1	2.7
Norway	NO	3.9	-0.9	6.3	-1.0	2.4*
Scotland	SCO	10.9	-1.4	12.8	-2.4	2.0
Austria	AT	3.6	-0.9	5.5	-1.3	1.9
Poland	PL	5.4	-1.2	7.3	-1.9	1.9
New Zealand	NZ	9.5	-1.2	11.4	-2.0	1.8
Belgium	BE	4.5	-0.6	6.2	-0.8	1.7*
Slovenia	SI	5.8	-0.9	7.3	-1.2	1.5
Finland	FI	6.3	-1.0	7.7	-1.1	1.4
Lithuania	LT	10.3	-1.0	11.7	-1.3	1.4
Sweden	SE	6.0	-0.8	7.1	-0.9	1.1
Spain	ES	9.2	-1.0	10.3	-1.0	1.1
Ireland	IE	6.5	-1.3	7.5	-1.8	1.0
Netherlands	NL	1.4	-0.7	2.4	-0.9	0.9
Italy	IT	10.4	-1.4	11.1	-1.8	0.8
France	FR	9.7	-0.9	10.1	-1.1	0.4
Iceland	IS	3.6	-0.9	3.7	-1.1	0.0
South Korea	KR	1.6	-0.3	1.6	-0.8	0.0
Japan	JP	0.8	-0.3	0.6	-0.5	-0.2
Switzerland	CH	4.4	-0.8	4.1	-1.0	-0.4
Turkey	TR	-8.3	-1.4	-8.7	-1.4	-0.4
Hong Kong	HK	-1.0	-0.7	-1.6	-0.8	-0.6
Czech Republic	CZ	4.4	-0.8	3.7	-0.8	-0.6
Canada	CA	7.6	-0.6	6.8	-1.5	-0.9
Chile	CL	2.4	-0.8	1.4	-0.8	-1.0
Northern Ireland	NI	8.6	-2.5	7.3	-3.1	-1.2
Australia	AU	9.1	-0.9	7.5	-1.4	-1.5
Greece	GR	4.2	-1.1	1.0	-1.6	-3.2*
England	ENG	9.7	-1.5	6.4	-1.8	-3.3
Hungary	HU	6.8	-0.9	3.4	-0.8	-3.4**
Portugal	PT	7.8	-1.1	4.1	-0.7	-3.8**
Denmark	DK	10.0	-1.0	5.8	-1.5	-4.2**
USA	US	8.3	-1.8	3.8	-1.6	-4.5*
Israel	IL	4.4	-1.3	-1.1	-1.6	-5.5**
OECD average		**5.7**		**5.8**		**0.1**

Notes: Socio-economic gap refers to the truancy rate for the most disadvantaged third of students minus the truancy rate for most advantaged third of students. Positive values therefore indicate where disadvantaged students are more likely to skip school than their more advantaged peers. Negative values in the change column indicate where the socio-economic gap in skipping school has *decreased* following the pandemic. * and ** indicate where the change since the pandemic is statistically significant at the 10% and 5% levels. English-speaking countries are highlighted in green.

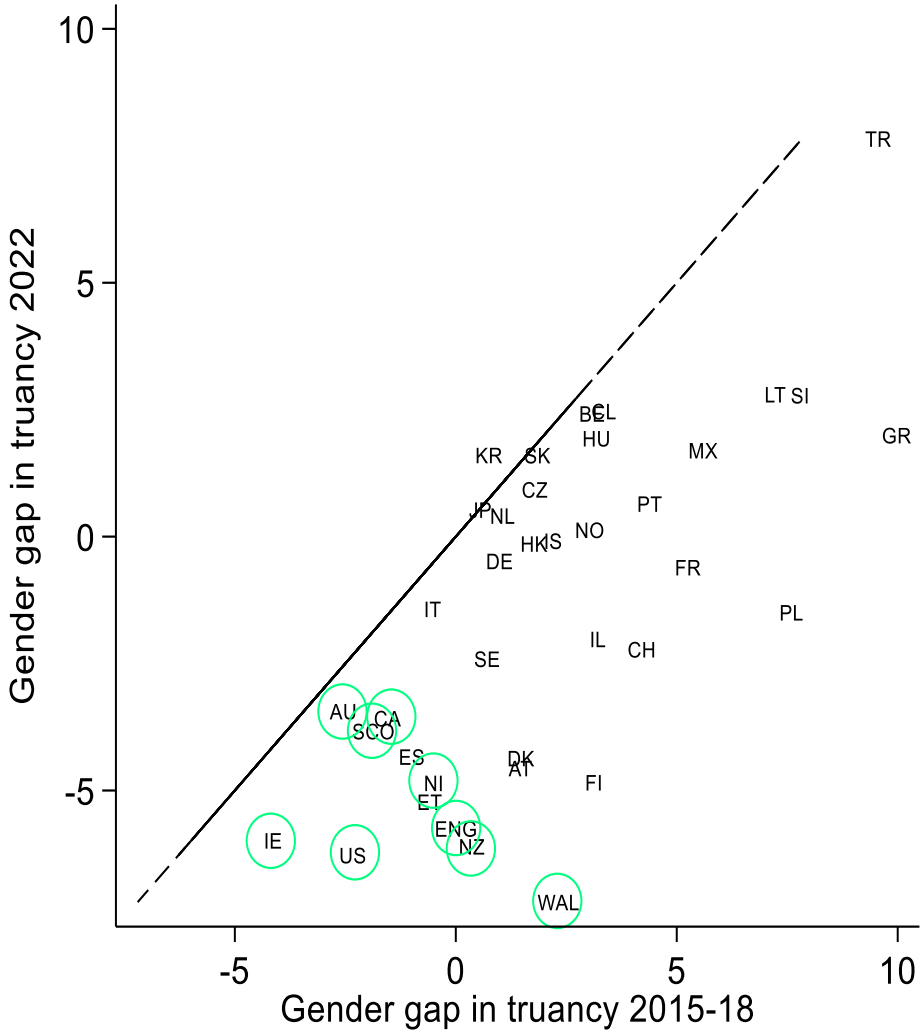
Figure B1. The percentage of 15-year-olds skipping school before (2015-2018) and after (2022) the COVID-19 pandemic



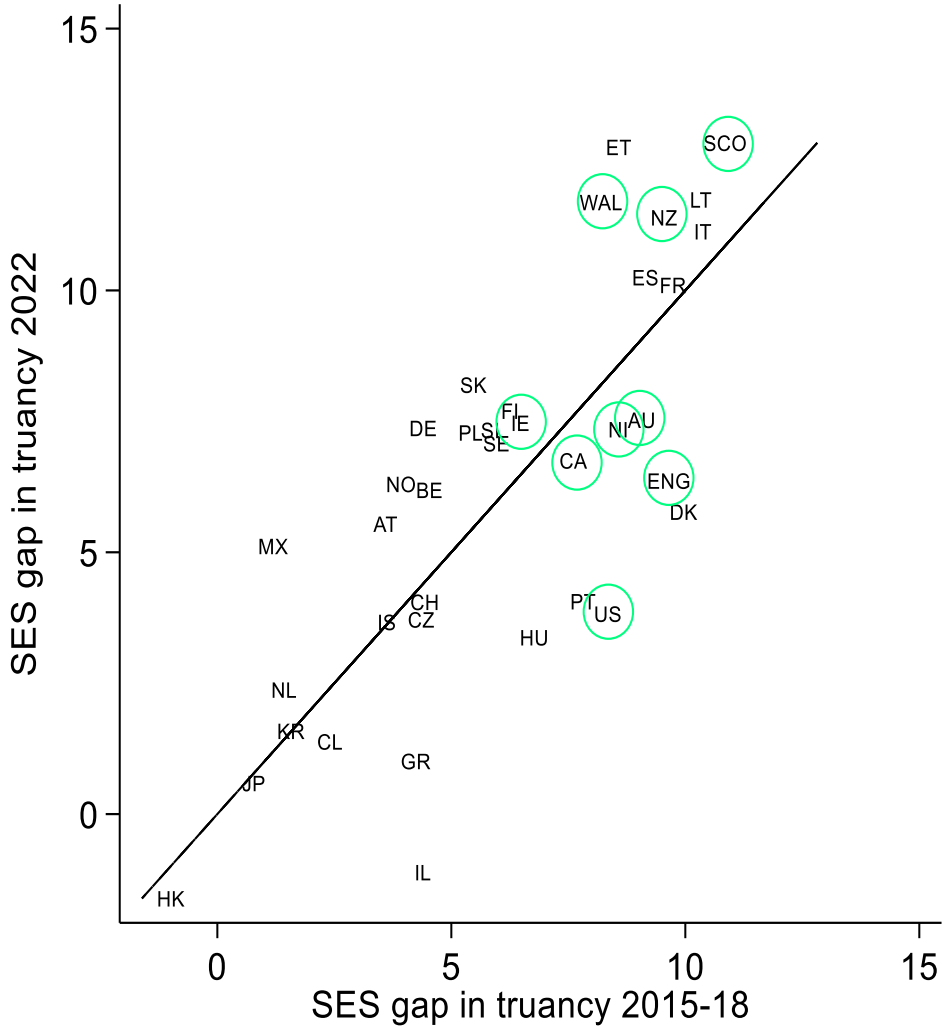
Notes: Figures refer to the percent of 15-year-olds who reported having skipped school at any point over the past two weeks. Pre-pandemic figures along the horizontal axis is the average across the 2015-2018 PISA waves. Post-pandemic figures along the vertical axis uses data from PISA 2022. English-speaking countries highlighted in green circles. See Table 1 for the two-letter country codes. Data for Italy and Turkey not presented in the scatterplot to aid presentation of results (see Table B1 for the estimates for these countries).

Figure B2. Gender and socio-economic gaps in skipping school at any point in last two weeks pre and post pandemic

(b) Gender gap



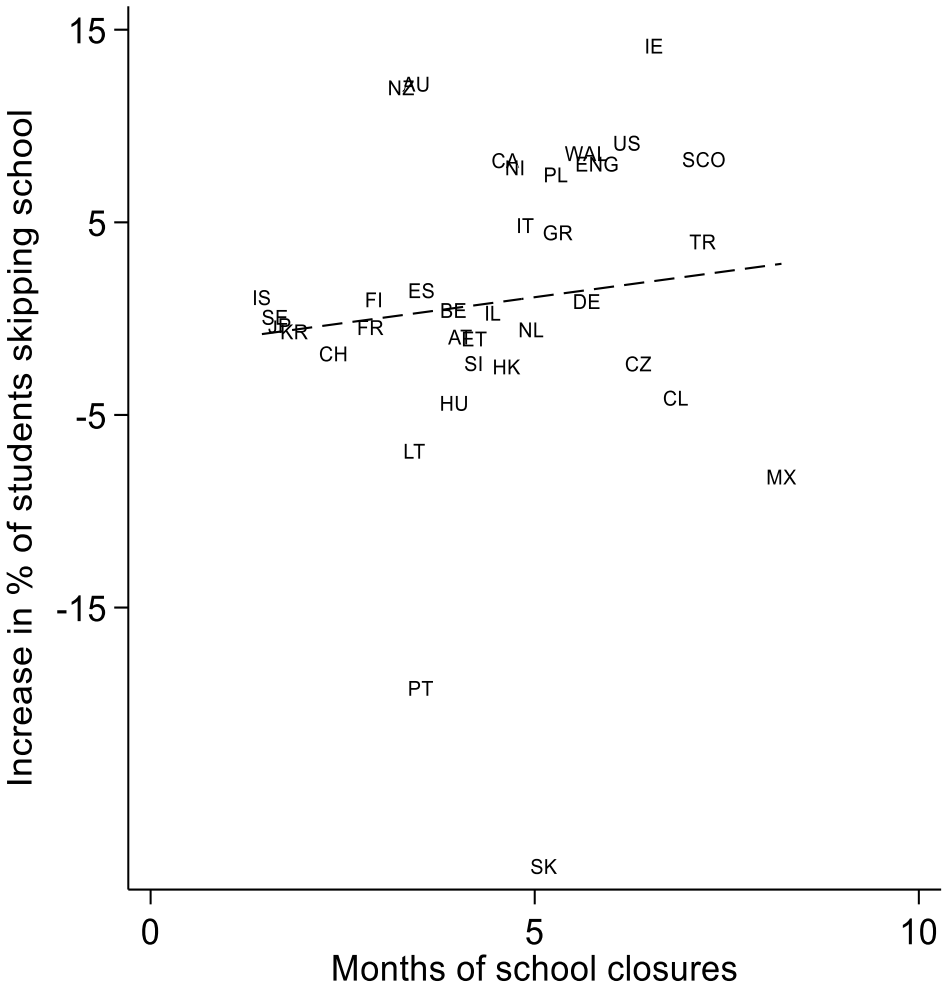
(b) Socio-economic gap



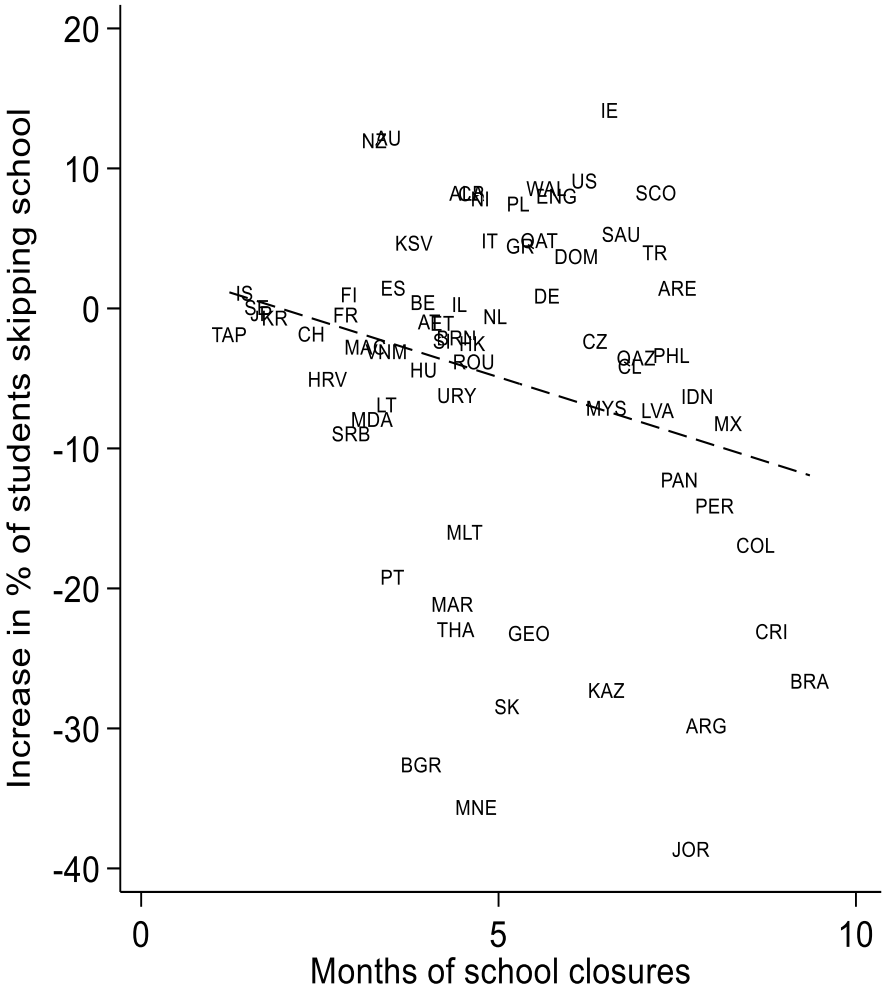
Notes: Negative figures in the left-hand panel indicate the truancy rate is higher for girls than boys. Figures in the right-hand panel illustrate differences between teenagers in the bottom versus top third of the socio-economic status distribution. English-speaking countries in green circles. Diagonal lines illustrate where the gender/socio-economic gap has remained unchanged before/after the pandemic. See Table B1 for two-letter country codes.

Figure B3. The country-level relationship between school closures and the increase in the truancy rate

(b) OECD countries only



(b) All countries



Notes: Values along the horizontal axis refer to the number of months schools were closed due to COVID-19. This information is based upon the country-level average of student reports. Values on the vertical axis refer to the increase in the percent of students skipping school before (PISA 2015-18) and after (PISA 2022) the pandemic (these are the values in the right-hand column of Table B1). The country-level OLS estimate of the association is represented by the dashed line. Correlation is +0.16 in the panel on the left and -0.18 in the panel on the right.

Appendix C. Modelling the change truancy pre/post pandemic accounting for a linear time trend.

Country	Two-letter code	Pandemic increase	Standard error
Australia	AU	10.7**	1.0
USA	US	9.9**	1.8
Scotland	SCO	9.0**	1.6
Northern Ireland	NI	8.1**	2.4
England	ENG	7.5**	1.4
Canada	CA	6.6**	1.0
Turkey	TR	5.4**	1.5
Wales	WAL	3.7*	2.1
New Zealand	NZ	1.0	1.6
Poland	PL	-0.1	1.8
Spain	ES	-0.5	1.3
Finland	FI	-0.9	1.1
Japan	JP	-0.9	0.6
South Korea	KR	-1.1*	0.6
Estonia	ET	-2.2	1.3
Sweden	SE	-2.4**	1.0
Belgium	BE	-2.5**	0.7
Greece	GR	-2.6*	1.5
Italy	IT	-2.9**	1.5
Iceland	IS	-3.9**	0.9
Netherlands	NL	-4.8**	0.9
Norway	NO	-5.2**	1.0
Hong Kong	HK	-5.5**	0.8
Slovenia	SI	-6.1**	1.0
Czech Republic	CZ	-6.6**	1.0
Chile	CL	-6.8**	1.1
France	FR	-6.9**	1.4
Denmark	DK	-7.0**	1.3
Germany	DE	-7.1**	1.3
Israel	IL	-7.4**	1.7
Ireland	IE	-9.0**	1.4
Hungary	HU	-9.4**	1.1
Austria	AT	-9.8**	1.1
Switzerland	CH	-12.1**	1.6
Lithuania	LT	-15.4**	1.6
Mexico	MX	-15.9**	1.5
Portugal	PT	-27.7**	1.2
Slovak Republic	SK	-33.7**	1.3
OECD average		**-4.1**	**1.3**

Appendix D. Example calculation for England of how the increase in the student truancy rate may lead to a reduction in average PISA mathematics scores.

In the first step of the process, we estimate the following OLS regression model for each country in turn.

$$P_{ij} = \alpha + \beta.T_{ij} + \gamma.SES_{ij} + \delta.Imm_{ij} + \theta.Repeat_{ij} + u_j + \varepsilon_i$$

Where:

P_{ij} = PISA mathematics scores

T_{ij} = Student reports of how often they skipped school over the last two weeks (reference: Never)

SES_{ij} = Socio-economic background control

Imm_{ij} = Control for immigrant status

$Repeat_{ij}$ = Control for grade repetition

u_j = School fixed effects

ε_i = Random error term

This is done using the STATA "repest" command (Avvisati & Keslair, 2024), ensuring that all the technical features of PISA (plausible values, replicate weights, student weights) are appropriately applied. The coefficients of interest from this model are captured within β; how student truancy is related to PISA test scores. These are reported for England in Appendix Table D1 below. For instance, a student that has skipped school three or four times over the last two weeks is estimated to achieve a PISA mathematics score 61 points below that of a student who has not skipped school.

Appendix Table D1. The association between student truancy and PISA mathematics scores in England

	Beta	SE
Did not skip	**REF**	**REF**
Once/Twice	-28.3	3.3
Three/four times	-61.4	10.2
Five or more time	-74.8	13.2

In the second step of our process, we establish how the student truancy distribution has changed over time. The results for England are presented in Appendix Table D2. For instance, the percent of students who report skipping school three or four times over the last fortnight has increased by 1.5 percentage points.

Appendix Table D2. The change in student truancy in England between PISA 2012-2018 (pre-pandemic) and PISA 2022 (post-pandemic)

	2012-18	2022	Difference
Did not skip	82.8%	74.3%	-8.5%
Once/Twice	14.5%	19.8%	5.3%
Three/four times	1.8%	3.2%	1.5%
Five or more time	1.0%	2.7%	1.7%
Total	**100**%	**100**%	**-**

Finally, we take the coefficients from Appendix Table D1 and multiple then by the "difference" column in Appendix Table D2. This results in the following calculation:

(0*-0.085) + (-28.3*0.053) + (-61.4*0.015) + (-74.8*0.017) = -3.7 points

For England, this process leads us to estimate – as a ballpark figure – that the increase in truancy in England since the pandemic could lead to a reduction in PISA mathematics scores by up to -3.7 points.