

# **Socio-economic inequality in young people's financial capabilities**

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Previous research has shown that the UK has low levels of financial literacy by international standards, particularly among those in lower socio-economic groups. This may, in turn, have an impact upon young people, with social inequalities in financial attitudes, behaviours and skills perpetuating across generations. Yet there has been relatively little empirical research on this topic to date, including how such inequalities may be linked to the parents' actions and financial education provided by schools. This paper provides new evidence on this issue for the UK. Using parent-child linked survey data from 3,745 families, we find sizeable socio-economic inequalities in young people's financial capabilities, aspects of their mindset, and their financial behaviours. 15-year-olds from disadvantaged backgrounds having similar financial skills to an 11-year-old from an affluent background. Sizeable differences are also observed in the financial education that socio-economically advantaged and disadvantaged children receive at school, and how they interact with their parents about money. Parental interactions can account for part of the socio-economic gap in money confidence, money management, financial connections, and financial behaviours, but less so in boosting financial abilities. However, we find no evidence of differences in financial education in schools driving differences in young people's financial capabilities.

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## 1. Introduction

Social mobility and the intergenerational transmission of inequalities has become a key public policy issue across the western world (OECD 2010; 2018). In the UK – the setting of this paper – various studies have argued that social mobility is relatively low by international standards (Blanden 2013, Jerrim and Macmillan, 2015), with little evidence of improvement over time (Blanden, Gregg and Macmillan 2013). Education is thought by many to be one of the key channels by which intergenerational transmission of social status occurs (Blanden, Gregg and Macmillan 2007, Blanden and Macmillan 2016; Arenas and Hindriks 2021), with young people from affluent backgrounds getting better grades at school (Sutherland, Ilie and Vignoles 2015), attending better universities (Jerrim, Chmielewski and Parker 2015), leading to better and more highly paid jobs (Jerrim et al. 2016). Yet inequalities in such skills are also known to emerge early in life (Feinstein 2003), with differences in academic abilities sustained – and even potentially widening – into adult life (Goodman, Gregg and Washbrook 2011, Crawford, Macmillan, and Vignoles 2015).

A second, largely independent, literature has also emerged with respect to young people's and adults' financial capabilities. Most work in this area has pointed towards a large proportion of the adult population having relatively low levels of financial literacy (OECD 2016), with some evidence suggesting the UK performs poorly in this area by international standards. For instance, Bhutoria, Jerrim and Vignoles (2018) found that one in three UK adults could not work out the correct change from their shopping, with a similar proportion unable to calculate the discount applied to an item of food successfully. Such lack of basic financial skills is not evenly distributed across the population, but is a problem that is particularly prevalent amongst lower socio-economic groups (Office for National Statistics 2015).

Low socio-economic status households are more likely to take out high-interest loans and to fall into problematic debt (Hanson et al 2014; Hood, Joyce and Sturrock 2018; Office for National Statistics 2019). While this is primarily due to their lower incomes and lack of alternatives, lower levels of financial literacy may also lead to a “double-jeopardy” effect if not only do such families earn less money, but also manage what they do have less effectively. They hence become at particular risk of suffering financial stress and anxiety, with the associated negative mental health and wellbeing implications that this brings (Businelle et al. 2014). This also has an impact upon their offspring, through both having fewer resources to invest in their child's upbringing and the negative atmosphere that financial insecurity brings

into the home (Berger and Houle 2016, 2019). Together, these factors have the potential to perpetuate a lack of financial skills, debt problems and financial insecurity across generations.

Somewhat surprisingly, there is little existing work that attempts to bring these two literatures together. There is a particular dearth of evidence investigating the link between family background and the development of financial capabilities in the next generation, including the age when such links are established and the various channels via which such associations are generated. This paper contributes to filling this gap in the evidence base. It does so by developing a framework for how socio-economic disparities in financial skills are generated, including the intergenerational transmission of these skills, and presenting new empirical evidence on this matter for the UK.

There has of course been some previous work exploring variation in financial capabilities by socio-economic status, both within the UK and internationally. This has however been relatively limited and often small-scale, with a recent review noting how there are currently “*few studies on children and young people and financial capability*” (Walker, Goldsmith and Bragg 2018). This is particularly true of research exploring differences between socio-economic groups. There are, nevertheless, some important exceptions, particularly internationally. For instance, Lusardi, Mitchell and Curto (2010) used data from the United States to investigate the financial skills of a sample of young adults in their twenties. They found that financial literacy was strongly associated with socio-economic characteristics, with a “*college-educated male whose parents had stocks and retirement savings about 45 percentage points more likely to know about risk diversification than a female with less than a high school education whose parents were not wealthy.*” Similarly, Mahdavi and Horton (2014) found that father’s education level was linked to financial literacy of their daughters in the US, despite a relatively homogenous sample.<sup>1</sup> Kim and Chatterjee (2013), again from US, found a link between parental socio-economic status and financial worries, potentially then impacting upon the financial socialisation of young people. Similarly, research from Japan shows that socio-economic status of adults – many of whom were parents – was linked to their financial literacy skills (Kadoya and Khan 2020).

In the UK, research from the Money Advice Service (2016) noted how children from lower-income households were at greatest risk of developing low levels of financial capability. That said, summarising the evidence on the link between family background and young people’s

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<sup>1</sup> all being alumni from one highly-selective university in the United States

financial capability, Walker, Goldsmith and Bragg (2018) note how “*children growing up in low income homes may be at greater risk of poor financial capability, but also learn more about the techniques their parents use to manage financially*” suggesting the potential for positive, as well as negative, links with some specific capabilities.

Although this existing work is insightful, a number of important issues have yet to be resolved. As noted above, there remain significant gaps in our knowledge about socio-economic differences in children’s financial capabilities. Few studies have considered the point at which such inequalities emerge, or whether they appear to grow or shrink with age. Limited theoretical or empirical consideration has been given to the channels by which these inequalities develop, and only a handful of studies have been based upon data from the UK. We therefore attempt to address these issues within this paper, providing important new evidence on socio-economic differences in young people’s financial skills, and inequalities into the inputs that are likely to nurture their development.

To preview our key findings, we find substantial socio-economic differences in certain aspects of young people’s financial capabilities, but not others. One of the most notable differences is in terms of financial capabilities, with 15-year-olds from disadvantaged backgrounds having similar financial skills to an 11-year-old from an affluent background. Clear and important differences are also found with respect to the financial education delivered by schools, with lower socio-economic groups less likely to be taught about key money issues than their more affluent peers. This difference in financial education provision is particularly stark at the end of primary school, highlighting a specific area where curricular reform could make a difference to this issue. We also find evidence of differences between socio-economic groups in parent-child interactions with money, encompassing both conversation and demonstration. Many of the differences we observe occur when children are young (i.e. even at age 7 – the earliest age group for which we have data available), suggesting the importance of early intervention as the most effective approach to narrowing these inequalities. While these parent-child interactions can account for some of the socio-economic gaps in financial capabilities they are more limited in other domains. Differences in financial education also play a limited role in accounting for the socio-economic gap. Taken together, the findings paint a picture of important inequalities in the inputs into children’s financial development, as well as their eventual behaviours and capabilities, which are partly driven by parent-child interactions.

The paper proceeds as follows. Our theoretical framework and research questions are set out in section 2. In section 3 we describe the 2019 Children and Young People’s Financial Capability Survey data we analyse, while section 4 presents our empirical methodology. Results are then presented in section 5, with conclusions and policy implications following in section 6.

## **2. Framework and research questions**

Figure 1 illustrates our intergenerational transmission framework, capturing the various channels via which family background may influence young people’s financial capability and subsequently their financial behaviour. This brings together theoretical models of financial learning and behaviour (most notably Clark and Ghezelayagh 2018) and well-established models of intergenerational transmission (e.g. Jerrim and Macmillan 2015; Haveman and Wolfe 1995) into a unified framework.

### **<< Figure 1 >>**

Within this framework, socio-economic background is linked to young people’s financial capabilities through two main channels: parents and schools. Parents and schools can have a direct effect on financial capabilities, and indirect effects through their influence on young people’s cognitive and socio-emotional skills. We consider each route in turn.

#### The direct role of parents

First, and central to all such intergenerational frameworks, is the direct role that parents play in passing on their own attributes and learned behaviours, including financial behaviours and skills. As Figure 1 illustrates, the children’s financial capabilities are directly influenced by their parents through five key channels: (a) their financial confidence; (b) their parenting behaviours; (c) their place as role models; (d) their attitudes towards teaching their children about finance and (e) their own financial knowledge and behaviours. We now take these each in turn.

Parents differ in their financial confidence, with this variation potentially correlated with socio-economic status. For instance, due to a lack of financial education themselves – or as a result of their own precarious financial position – parents in low socio-economic status households may be less confident in their ability to manage money than those heading more socio-economically advantaged households. If so, this may directly impact upon their children’s financial abilities due to less confidence in passing on financial knowledge. This may in part

reflect the fact that they themselves lack important financial life-skills (e.g. how to set and stick to a budget or savings plan) – and are thus unable to develop these skills successfully in their offspring. It is of course arguable (and thus an empirical question) whether lower socio-economic status families are indeed less financially confident and capable than high socio-economic status families. For instance, it could be that because advantaged socio-economic households have more money, they do not need to be so “savvy” with it, or can afford to pay others to manage their money on their behalf – and may thus have lower levels of financial confidence themselves. This would be consistent with some of the findings of Walker, Goldsmith and Bragg (2018) and mean that the role played by such intergenerational links may therefore be more complex than first meets the eye.

Another important difference is likely to be in terms of parenting behaviours. One key decision parents make is how much financial responsibility to give to their children. By giving children greater financial autonomy, they may pick up financial skills – including becoming more adept at money management – by putting their knowledge into practice. In particular, children may only develop sound financial abilities if they learn how to work with money themselves, with parents also involving them in making financial decisions. It is not immediately clear, however, whether this channel will exacerbate socio-economic inequalities in financial skills or not, given that there is limited evidence on how financial parenting practices are linked to family background (see Conlon, Peycheva and Landzaat 2018 for a discussion of the evidence available).

Third, parents may influence their offspring’s financial development via their actions as role models. This may be through the frequency and quality of the conversations that they have with their children about money, or through demonstrations surrounding how money can be managed and used. They may also, in turn, involve their children in demonstrations – such as by encouraging their children to pay for items using the correct change in shops. Indeed, one way to think about this channel is that it represents the route via which parents actively attempt to pass on their financial skills to their children. For instance, high and low socio-economic status families could be equal in terms of their financial capabilities. Yet if high socio-economic status parents are more active in talking to their children about money – and demonstrating how it can be effectively managed and deployed – then socio-economic inequalities may still emerge in young people’s financial attitudes, behaviours and skills.

Parents also have different attitudes towards teaching their children about money, including the age to start teaching them such skills. To the extent that habits emerge early in life, parents may have more impact upon their offspring's financial abilities, mindset and behaviours if they start teaching them when they are young. For instance, as previously noted, existing evidence suggests that social inequalities in other cognitive and socio-emotional dimensions can be observed as soon as they can be reliably measured (as young as age 3) and then persist, and indeed widen, all the way into adulthood (Goodman, Gregg and Washbrook 2011, Crawford, Macmillan, and Vignoles 2015). Within this context, a strong argument can be made for early intervention by parents, teaching their children about money and finances from a young age. Again, however, there is currently little empirical evidence on this matter, including the extent to which there are socio-economic differences in the age at which parents start teaching their offspring about money.

Finally, parents may influence their offspring's financial skills through their own financial behaviours. Socio-economic differences in such behaviours could of course be driven by differences in financial position (e.g. lower socio-economic status families saving money less frequently) but may still end up influencing the skills, behaviours and mindset of their offspring. Likewise, families from different socio-economic backgrounds may differ in their attitudes to risk and their willingness to take on debt, particularly financial products where there are high-interest charges. This may then may make their children more likely to consider such products as a normal part of financial life, and thus be willing to consider using them themselves. Alternatively, it could be the case that greater exposure to such products through the behaviour of their parents – and the associated financial difficulties that these bring – lead to young people developing a better understanding of how they work, thus building their financial skills. Differential exposure to such parental financial behaviours by socio-economic status may then contribute to socio-economic differences in children's financial capabilities and later financial outcomes.

### The direct role of schools

The second major route through which young people from different backgrounds may develop different financial capabilities is their schooling – young people from affluent family backgrounds tend to attend different schools to their more disadvantaged peers. Specifically, they tend to go to schools with higher levels of achievement (Allen, Burgess and McKenna 2014), more experienced teachers (Allen and Sims 2018) and better school inspection grades

(Hutchinson 2016). The school they attend may also differ in the financial education that they provide, in terms of both their quantity and quality, which has been shown to have sizeable impacts on financial knowledge and smaller ones on financial behaviours (Kaiser & Menkhoff, 2019). For instance, more time might be made available in the curriculum in schools with more advantaged intakes to hone young people's financial skills, or more time may be devoted to this topic within personal and social education classes. Likewise, financial education may also be delivered in better and more engaging ways in socio-economically advantaged schools, if there are indeed non-trivial differences across schools in teacher quality. This thus represents the second major route through which socio-economic inequalities in children's financial capabilities emerge.

#### Indirect associations through cognitive and socio-emotional skills

Both parents and schools also indirectly influence young people's financial capabilities through their effect on young people's cognitive skills and academic abilities. A now large and wide-ranging literature has illustrated how young people from disadvantaged backgrounds have lower levels of academic achievement than their more advantaged peers (Jerrim 2012) and that these differences emerge very early in life (Feinstein 2003). As being financially capable involves a certain level of cognitive skill – particularly in terms of arithmetic and mathematics – this represents one of the key mechanisms via which family background influences young people's financial development. Importantly, drawing on evidence from the existing literature on socio-economic inequalities and skill formation, one would anticipate this to be driving a difference in children's financial knowledge and skills from early in life.

A related sub-strand of the intergenerational transmission literature has focused upon the link between family background and offspring's socio-emotional skills (Blanden, Gregg and Macmillan 2007). In particular, it has been shown that children from disadvantaged social backgrounds tend to have more behavioural problems, lower levels of perseverance and tend to be less patient than their more advantaged peers (McGrath and Elgar 2015; Delaney and Doyle 2012). Socio-economic groups also differ in terms of their self-confidence and self-efficacy (Bannink, Pearce and Hope 2016), with those from affluent backgrounds being more likely to believe that they have the ability to determine their success in the future (Destin et al. 2019). Such socio-emotional traits are also thought to be important determinants of young people's financial capabilities (Clark and Ghezelayagh 2018). Take attitudes towards saving, for example. Those individuals with high levels of perseverance will be more likely to stick to



long-term savings plans in order to reach their financial goals. Similarly, if one has low levels of self-efficacy – believing that they have little ability to influence their future – then there is little reason for them to budget or make long-term financial plans. Consequently, the well-established link between family background and socio-emotional skills is likely also to generate intergenerational inequalities in financial capabilities, behaviours and skills.

### Children’s financial capabilities and behaviours

All of this demonstrates how parents and schools may affect young people’s financial capabilities, both directly (e.g. through parental financial behaviours and financial education in schools) and indirectly (e.g. through their role in developing young people’s academic abilities and socio-emotional skills). Yet it is important to note that children’s financial capabilities is a multi-dimensional construct, with its different components likely to be impacted in different ways. The existing literature hence typically divides children’s financial capabilities into three distinct constructs, as depicted within Figure 1.

The first is financial abilities – the extent that young people know and understand key financial issues (e.g. interest rates, inflation). The second is their “financial mindset”; for instance, whether they set themselves financial goals, their attitudes towards saving, debt and seeking value-for-money, as well as their confidence in money management. The last is their “connection” to the financial world, illustrated by their engagement with appropriate financial services (e.g. bank accounts). Importantly, socio-economic inequalities may emerge in some aspects of young people’s financial capabilities (e.g. their financial skills) but possibly not in others (e.g. their financial mindset).

Finally, on the right-hand side of Figure 1, socio-economic differences in young people’s financial capabilities result in socio-economic inequalities in financial behaviours. This includes differences in whether/how they budget, save, plan and respond to financial “shocks” (e.g. how they would pay for an unexpected bill). These behaviours – developed during childhood and adolescence – then to some extent become ingrained, and continue to influence their financial skills and behaviours into adulthood.

### Research questions

The framework outlined above motivates the following four research questions. To begin we will examine whether there are indeed socio-economic differences in young people’s financial capabilities and ultimately their financial behaviours, and, if so, how this varies across its

different components (abilities, mindset and connection). As noted above, there are clear reasons to believe that socio-economic gaps will emerge in some areas (e.g. financial abilities), but in others (e.g. financial mindset) it is less clear. Moreover, there is currently little evidence surrounding the age at which such socio-economic gaps in financial skills emerge, and whether they are exacerbated or reduced as young people progress through their time at school. By addressing research question 1 we will provide new evidence on such issues, capturing the wider association between family background and children's financial capabilities, through all the various channels that these may occur. Thus, in summary:

*RQ1. Are there socio-economic differences in young people's financial capabilities and behaviours? If so, how big are these gaps, and at what age do they first emerge?*

Next, we turn our attention to two of the key channels from our framework via which family background is associated with children's financial capabilities – parents and schools. With respect to the former, Figure 1 illustrates how there are five possible routes through which parents directly affect their offspring's capabilities – their financial self-confidence, the financial responsibilities they offer their children, role modelling, their attitudes towards teaching their child about money and their own financial behaviours. In research question 2 we will explore whether there are socio-economic differences in each of the above, and the age at which such differences start to be observed. This will, in-turn, help to inform whether socio-economic inequalities and intergenerational transmission of financial capabilities may operate through such channels. Research question 2 is therefore:

*RQ2. Are there socio-economic differences in parental inputs into developing their children's financial skills? At what age during children's lives do these start to emerge?*

Similarly, our framework illustrates a potentially important role for schools. Specifically, if the quantity and quality of financial education does indeed vary across schools – particularly by the socio-economic composition of their intake – then this will be another key pathway via which inequalities in financial capabilities materialise. We explore this possibility in research question 3 by asking:

*RQ3. Do children from disadvantaged socio-economic backgrounds receive less financial education (both in terms of quantity and quality) through their school than their more advantaged peers? If so, how does this vary by school year group?*

Finally, Figure 1 also illustrates how differences in (more general) cognitive and socio-emotional skills are also likely to drive socio-economic gaps in young people's financial capabilities. This then raises the question of how large socio-economic disparities in financial

capabilities are once these two more general pathways have been taken into account. In other words, is there something specific or different about the inequality we observe in financial skills or are these merely a reflection of inequalities that we already know to exist in other areas (e.g. school performance in general)? And, if socio-economic gaps do still remain after accounting for the cognitive and socio-emotional skills channels, to what extent can the remainder be explained by our direct channels - the role played by parents and financial education provision in schools? Addressing such issues may, potentially, help inform whether general or more targeted interventions (i.e. interventions focused upon improving school performance in general, or financial capabilities more specifically) are likely to bear most fruit in reducing inequalities in young people's financial skills. Hence our final research question is:

*RQ4. Are there socio-economic differences in children's financial capabilities after accounting for differences in their academic and socio-emotional skills? To what extent can parenting behaviours and financial education delivered by schools 'explain' any of the remaining difference?*

### **3. Data**

#### Survey design

The data we use are drawn from the 2019 Children and Young People's Financial Capability Survey (CYPFCS). This measures financial capabilities and behaviour amongst young people aged between 7 and 17 across the UK. It gathered information from young people about their financial skills, knowledge, mindset and connection. Importantly, it also included a parental questionnaire, capturing information about family background, parenting behaviours (focused upon financial issues) and the household's interactions with money, finance and debt. In the majority of cases, the child's mother completed the parental survey (70%), with a quarter of responses from fathers, and the remaining 5% another household member (mostly step-mothers or step-fathers).

A mix of face-to-face and online interviewing with respondents was used, resulting in a final sample of 3,745 children (1,308 face-to-face and 2,437 online). The survey used a quota sampling approach to attempt to be representative of the wider population, with sample boosts in Scotland, Wales and Northern Ireland to ensure a sufficient number of observations. Final sample sizes by country were 2,067 in England, 731 in Scotland, 526 in Wales and 421 in Northern Ireland. Weights are supplied as part of the dataset to make the sample comparable to the national population in terms of a selection of background characteristics (most notable

age, gender, nation, urban/rural location, ethnicity and Index of Multiple Deprivation). These weights are applied throughout the analysis.

To investigate how representative the weighted data are of their intended population, Table 1 compares the distribution of key characteristics from the CYPFCS sample with data from the Labour Force Survey (LFS) – a large, nationally representative household survey that uses a gold-standard random sampling methodology. We restrict the LFS sample to those with school-aged children in the household to facilitate a meaningful comparison.

### **<< Table 1 >>**

Overall, the distribution of key observable variables within the CYPFCS are broadly comparable to those within the LFS. For instance, overall homeownership rates appear similar (59 percent versus 56 percent), although with the CYPFCS having a slightly greater share of respondents who own their property outright. In terms of demographics, ethnicity, age and marital status appear comparable across the two surveys, although with the CYPFCS having slightly more single-parent households (23 percent) than the LFS (16 percent). The distribution of educational qualifications is also similar, with the only slight difference being in terms of the percentage that hold a degree (40 percent in the CYPFCS versus 32 percent in the LFS). On the other hand, the LFS has a greater share of respondents who report working full-time (61 percent) than the CYPFCS (51 percent). Finally, the percentage of children who attend a private school in the CYPFCS is similar to the percentage across the broader population (six versus seven percent). Thus, our overall interpretation of Table 1 is that it is somewhat reassuring, suggesting that the composition of the CYPFCS is reasonably similar to key characteristics across the broader population, after weights have been applied.

#### Measures

Our measure of socio-economic status is constructed by combining six indicators into a single socio-economic status scale (following widespread practice in the literature: Kolenikov and Angeles 2009; Chowdry et al. 2013; Anders 2017). We combine information on the educational qualifications held by the responding parent; whether the responding parent achieved a C grade in GCSE English (or equivalent); whether the responding parent achieved a C grade in GCSE mathematics (or equivalent); the occupational of the main income earner (which is then classified using the National Statistics Socio-Economic Classification groups); household income (using a banded question); and the household's Index of Multiple Deprivation decile. This is then divided into three equally sized groups, which we use to define young people from

“low”, “average” and “high” socio-economic backgrounds. The average household income of the low socio-economic status group is £17,601, compared to £59,121 for the high socio-economic status group. Similarly, just 8 percent of parents in the low socio-economic status group hold a degree, compared to 82 percent for the high socio-economic status group.

Our measures of children’s financial abilities focus around three components from our framework in Figure 1: financial abilities, financial mindset and financial connections. Financial abilities are measured using test questions around financial concepts, products, and tasks such as interpreting bank statements. Financial mindset are measured based on attitudes to savings and debt, self-efficacy (perception of control over financial situation), financial anxiety, and financial confidence. Financial connections are measured based on young people’s interactions with any bank account, and in particular a savings account. The financial behaviours of young people in our data are measured based on their savings behaviours, their money management, and their ‘savvy decision making’, related to their interest in finding value for money in purchases.

As shown in Figure 1, there are five routes through which parents can influence their children’s financial capabilities and behaviours, including their own financial confidence, their parental behaviours in terms of giving financial responsibility to children, their position as role models, their attitudes towards teaching children about money, and their own financial behaviours. Our measure of financial confidence include parental measures of financial anxiety, financial self-efficacy, and financial confidence.

Measures of parental behaviours are measured using three scales; one focused on who has responsibility for spending and saving with children’s money; one capturing parental delegation of responsibility for paying for certain items for the child; a third capturing rules around money and the strictness of these rules in relation to the child; and measures of the weekly pocket money of the children, and what proportion of the household income this is.

Parental role modelling is measured based on two components, one focused on conversations between parents and children about money, and one based on actions of parents showing children how to interact with money. Parental attitudes to financial education are captured using three scales, including the importance of teaching children about money, their perceived ability to help their children to learn about money, and the appropriate age to engage with children about money. Finally, parental financial behaviours are measured using indicators of

their savings behaviour, their ability to pay unexpected bills, and their interactions with high interest debt and credit cards.

To measure the quality and quantity of financial education in schools, children were asked whether they had been taught about a range of financial concepts, including money topics, money planning, and money choices. The only measure of the quality of this education is a self-reported scale on the ‘usefulness’ of the education received from the child’s perspective, and whether ‘it made a difference’ to their use of money.

Finally, our measures of cognitive and socio-emotional skills are based on parent’s reports of their children’s cognitive achievement in very coarse form (at, above, or below age expectations), and the extent to which they are quick to anger, and often disobedient. We also have three child-reported metrics on their self-perceived perseverance, irritability, and agreeableness.

These variables are used as covariates within parts of our analysis as laid out by the framework and research questions in Section 2. Full details of the measures and their constructs can be found in Data Appendix C.

#### 4. Methods

##### Research question 1-3

In research questions 1-3, we investigate socio-economic differences in our outcomes of interest, including children’s financial capabilities and behaviours, parental inputs, and school provision of financial education, where responses take the form of either individual metrics or overall scale scores. These conditional differences are estimated using Ordinary Least Squares (OLS) regression models of the form:

$$O_i = \alpha + \beta_{1a} \cdot SES_i + \sigma \cdot G_i + \theta \cdot A_i + \tau \cdot H_i + \rho \cdot M_i + \varepsilon_i \quad (M1)$$

Where:

$O_i$  = One of the outcome measures of interest (e.g. children’s financial capabilities) for child  $i$ .

$SES_i$  = A vector of dummy variables capturing socio-economic groups (low, medium, high).

$G_i$  = A dummy variable capturing the child’s gender.

$A_i$  = The child’s age.

$H_i$  = A categorical indicator of how much help the child received when completing the questionnaire (none, a little, a lot).

$M_i$  = Which parent/guardian completed the questionnaire (mother, father, other)

$\varepsilon_i$  = Random error term.

The coefficient of interest from this model is  $\beta_{1a}$  which provides an estimate of socio-economic disparities in the outcome under investigation. As all continuous outcome scales have been standardised, estimates can be interpreted in terms of effect sizes. However, to further aid communication of results, we also discuss magnitudes for continuous outcome measures using percentile ranks (i.e. the number of places high and low socio-economic status groups would differ by – on average – in a ranking of 100 children). Where individual items/questions are investigated, the  $\beta$  parameters will capture probability differences (when the variable has been dichotomised into binary form). To help facilitate communication of the results, we also present a set of predicted outcomes for an illustrative child from a low socio-economic background and an illustrative child from a high socio-economic background. With reference to equation (1), these illustrative children are set to be an 11-year-old boy who had a little help from their parents when answering the questions and whose mother completed the parental component of the survey (and who otherwise differ only in terms of their socio-economic background). To check the robustness of results, alternative estimation approaches for binary/ordinal questions (e.g. logistic regression) are presented in Appendix B.

For those outcomes where a socio-economic gap is observed, we then explore how these differ by the child's age. This is done by including an interaction into our analysis model:

$$O_i = \alpha + \beta_{1b}.SES_i + \sigma.G_i + \theta.A_i + \tau.H_i + \rho.M_i + \gamma.SES_i * A_i + \varepsilon_i \quad (M1b)$$

This model is first estimated with both socio-economic status and age treated as categorical variables (note that there are approximately 350 observations per age group).<sup>2</sup> Predicted outcomes are then generated for our illustrative high and low socio-economic status children, with these then plotted on a graph to illustrate whether they grow, decline or stay stable as children grow older. We then investigate this issue more formally by re-estimating model (2) treating age as a continuous variable. The parameter of interest from this version of the model

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<sup>2</sup> The maximum size is 425 for seven-year-olds, while the smallest group is 17-year-olds (270 observations).

is  $\gamma$ . This captures the extent that the magnitude of socio-economic disparities in our outcomes of interest change per one year increase in the child's age.

#### Research question 4

For those outcomes where a socio-economic gap is found during research questions 1 – 3, we investigate the extent that these gaps can be “explained” (in a statistical sense) by socio-economic differences in young people's academic and socio-emotional skills. In other words, are socio-economic differences in financial capabilities, behaviours and inputs merely a reflection of these other factors, rather than being specific to financial education per se? To do so, we estimate the following regression model, using multiple imputation (with ten imputation cycles) to account for any missing covariate data:

$$O_i = \alpha + \beta_2.SES_i + \sigma.G_i + \theta.A_i + \tau.H_i + \rho.M_i + \varkappa.Ac_i + \omega.S_i + \varepsilon_i \quad (M2)$$

The parameter of interest from this model is  $\beta_2$ ; this captures whether there continues to be socio-economic differences in the outcomes after accounting for socio-economic differences in more general academic abilities and socio-emotional skills. Moreover, the differences between  $\beta_1$  and  $\beta_2$  provides an estimate of how much of the socio-economic status gap in the outcome can be attributed to differences in young people's academic and socio-emotional skills (or, at least, those that are measured within the data).

We then estimate analogous models focusing upon the extent that young people's financial capabilities and behaviours can be “explained” by parental behaviours and financial education in schools. This is based upon a comparison of the results from model (M1) with those from two further regression models:

$$O_i = \alpha + \beta_3.SES_i + \sigma.G_i + \theta.A_i + \tau.H_i + \rho.M_i + \emptyset.Par_i + \varepsilon_i \quad (M3)$$

$$O_i = \alpha + \beta_4.SES_i + \sigma.G_i + \theta.A_i + \tau.H_i + \rho.M_i + \vartheta.FinEd_i + \varepsilon_i \quad (M4)$$

Where:

$FinEd_i$  = A vector of variables capturing the quantity and quality of financial education in schools (as outlined in section 3).

$Par_i$  = A vector of variables capturing the role of parents in developing their children's financial capabilities (as outlined in section 3).



By comparing the  $\beta$  estimates across these models we can explore the role of parents and schools in the financial capability gap. For instance, the difference between  $\beta_1$  and  $\beta_4$  will capture the extent that differences in the quantity and quality of financial education provided within schools can explain any socio-economic status inequality in young people's financial capabilities. Similarly, the difference between  $\beta_1$  and  $\beta_3$  will provide an estimate of the extent that the socio-economic gap in young people's financial capabilities and behaviours can be explained by direct parental inputs (at least those that can be observed within the data).

Finally, we will also estimate a model including all cognitive, socio-emotional, parent and school controls where a socio-economic difference was observed when addressing research questions 1-3:

$$O_i = \alpha + \beta_5.SES_i + \sigma.G_i + \theta.A_i + \tau.H_i + \rho.M_i + \kappa.Ac_i + \omega.S_i + \vartheta.FinEd_i + \phi.Par_i + \varepsilon_i \quad (M5)$$

This final model will capture the joint role of all these inputs together, with  $\beta_5$  thus capturing socio-economic differences in young people's financial capabilities that cannot be explained via the channels set out in our framework (i.e. are not captured by our measures of parental inputs, academic achievement, socio-emotional skills and financial education in schools).

### Limitations

The aforementioned approach provides an exploratory analysis of the magnitude of socio-economic financial capability gaps, including differences in the inputs and the age at which they emerge. Although it will provide new insight into these issues, it is also important to make clear the limitations of this approach.

Most importantly, the analysis will provide evidence of conditional associations only, and will not be able to establish cause and effect. Specifically, other important factors may not be observed in the data which may play some role in developing young people's financial capabilities. Second, the quality of the available measures is – in some places – limited (e.g. the measurement of children's academic abilities is self-reported and coarse). This may, in turn, mean we can only partially account for the potential confounding effect of such factors upon young people's financial behaviour and skills. Finally, there may be parental and school inputs that are not measured within the data (or are only measured with a degree of error). This could, in turn, mean we underestimate the importance of such channels in the development of children's financial capabilities (and the role that they may play in exacerbating or reducing

socio-economic inequalities in this area). These important caveats should be kept in mind when interpreting the results.

## 5. Results

*RQ1. Are there socio-economic differences in young people's financial capabilities and behaviours? If so, how big are these gaps, and at what age do they first emerge?*

Table 2 presents results of our investigations into socio-economic gaps in young people's financial capabilities. The second and third column from the left presents a predicted outcome for an illustrative child from a low and high socio-economic background, with the 'gap' referring to the difference between these figures.

### << Table 2 >>

Starting with young people's financial abilities, we find evidence of a substantial difference by socio-economic background: young people from advantaged backgrounds score 0.42 standard deviations higher on our financial ability scale than their peers from disadvantaged backgrounds. To put this finding into context, if we were to rank 100 children in terms of their financial abilities, those from affluent families would rank (on average) 12 places higher in the distribution than children from disadvantaged families.<sup>3</sup> This is a sizeable difference, and puts into context the gap in key financial skills that underpins young people's financial behaviours.

In Appendix Table A1, we illustrate how the estimated size of the socio-economic gap in young people's financial capabilities change as they age. Specifically, this presents the estimated change in the socio-economic gap for each one year increase in the child's age.<sup>4</sup> Interestingly, with respect to financial abilities, the estimated socio-economic gap remains stable from age 11 through to age 17. This is also illustrated in Figure 2a, where we plot estimated outcomes by age for a hypothetical child from a low and high socio-economic status background, with the two lines running parallel. In an alternative way of thinking about the magnitude of the socio-economic gaps, this also highlights that a 15-year-old from a low socio-economic status background has broadly the same financial abilities as an 11-year-old from an affluent background; the former will leave secondary school with roughly the same financial abilities as the former had when they started secondary school.

### << Figure 2 >>

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<sup>3</sup> For example, say 1<sup>st</sup> position in this ranking was the best, and 100<sup>th</sup> the worst. Then the average rank of high socio-economic status children would be 44<sup>th</sup> position, compared to 56<sup>th</sup> for low SES children.

<sup>4</sup> This is based upon a model including a socio-economic status-by-(linear) age interaction, as noted in section 4.

Returning to Table 2, results with respect to financial mindset are more mixed. There are two areas where clear socio-economic differences emerge. The first is attitudes towards saving; socio-economically advantaged young people have a more positive mindset towards saving than disadvantaged young people. The magnitude of the gap – although half the size of that for financial abilities – is not trivial (effect size = 0.2 – equivalent to a difference of approximately five places in a ranking of 100 children). Similarly, the second aspect where low and high socio-economic status young people differ substantively is their attitudes towards money management. Specifically, socio-economically advantaged young people are approximately seven percentage points more likely to believe that learning how to manage money is important than their disadvantaged peers (e.g. 93 percent versus around 86 percent for our illustrative young people from advantaged and disadvantaged backgrounds). A slight difference can also be observed with respect to young people's confidence with money; on average, low socio-economic status children scored 6.9 on the 0-10 scale (in reference to the question "*how confident do you feel in managing your money*") compared to 7.2 for high socio-economic status children.

On the whole, there is again relatively little suggestion that the magnitude of socio-economic differences in financial mindsets alter as young people age (see Appendix Table A1). One notable exception is with respect to the percent who believe it is important to learn how to manage money. This is illustrated by Figure 2b, displaying trajectories by age in the likelihood of believing learning to manage money is important for our illustrative high and low socio-economic status children. In particular, there is a clear narrowing of the socio-economic status gap as children age. For instance, during primary school (ages 7-11) children from advantaged backgrounds are approximately 10 to 15 percentage points more likely to believe learning how to manage money is important than children from disadvantaged backgrounds. Yet, from age 13 onwards, the socio-economic gap has all but disappeared. Thus, with respect to this aspect of children's financial mindset, socio-economic differences can only be observed amongst younger age groups.

Next, Table 2 turns to young people's financial connection – where substantial socio-economic differences again emerge. Those children with affluent parents are 21 percentage points more likely to have a bank account and are 17 percentage points more likely to have a savings account than disadvantaged children. Moreover, even amongst the subset of children who have their own bank account, those from advantaged backgrounds are more likely to regularly use and engage with it (though the difference is relatively small; effect size = 0.13). There is hence

clear evidence that the financial connection of young people to some extent depends upon their family background.

With respect to changes with age, on most occasions the magnitude of the socio-economic gap in financial connection is broadly stable. One exception with the clearest difference is for the probability of having a bank account. This is illustrated in Figure 2c, where we plot the probability of having a bank account by age for our illustrative children from high and low socio-economic status backgrounds. The difference stands out as greatest when children are young, and then declines during the teenage years. For instance, at age 10, children from an affluent background are around 25 percentage points more likely to have a bank account than their disadvantaged peers (e.g. 63 versus 37 percent probability for our illustrative high and low socio-economic status children respectively). Yet, by age 15, this gap in the probability has shrunk to around 10 percentage points (86 versus 75 percent probability). Hence, as with individuals' perceptions of the importance of learning how to manage money, one of the distinctive features of socio-economic inequality in this aspect of children's financial connection is that the gaps seem to be greatest when children are young, in this case particularly driven by young people from disadvantaged backgrounds playing 'catch up' in engaging with this aspect of personal finance.

Finally, the last section of Table 2 examines inequalities in children's behaviours. Given that our framework in Figure 1 suggests that SES differences in financial capabilities may lead, in turn, to SES differences in financial behaviours, it is perhaps unsurprising then that we see sizeable socio-economic differences in young people's saving behaviours. Young people from affluent backgrounds are more likely to save some of their money, and for a longer period of time. The difference is equivalent to an effect size of 0.40 on our "savings behaviour" scale, or a difference of roughly 12 places in a ranking of 100 children. This point is also reiterated in Table 2 by low socio-economic status children being 11 percentage points more likely to not know what they currently have saved (26 percent probability for our illustrative low socio-economic status child versus 15 percent for our illustrative high socio-economic status child). The other behaviour where there is a clear socio-economic gap is with respect to savvy financial decision making; high socio-economic status children are more likely to take steps to get value-for-money when shopping than children from disadvantaged backgrounds (effect size = 0.22; approximately five places difference in a ranking of 100 children). On the other hand, there is

little clear difference by socio-economic group in terms of making financial plans, while results for budgeting using a spreadsheet or online resource are somewhat inconclusive.<sup>5</sup>

*RO2. Are there socio-economic differences in parental inputs into developing their children's financial skills? At what age during children's lives do these start to emerge?*

Table 3 provides our estimates of socio-economic inequalities in parental inputs into their children's financial capabilities. The first set of estimates illustrates how there are sizeable socio-economic differences in parental financial self-confidence. Given their less secure financial positions, it is perhaps not surprising that low socio-economic status parents are much more likely to feel anxious about their financial situation than high socio-economic status parents (56 versus 40 percent for our illustrative individuals). High socio-economic status parents express more confidence in money management and are less likely to have low levels of financial self-efficacy than low socio-economic status parents. For instance, our illustrative low socio-economic status parent had a 35 percent chance of agreeing with the statement “*nothing I do will make much difference to my financial situation*”, compared to a 24 percent for our illustrative high socio-economic status parent.

On the other hand, evidence of socio-economic differences is more mixed when it comes to parental financial behaviours. Table 3 reveals that – likely due to their comparative lack of financial resources – lower socio-economic status families are much less likely to save regularly (33 percent rarely/never save for our illustrative low socio-economic status family, compared to just 9 percent for our illustrative high socio-economic status family) and are more likely to have to use credit to pay an unexpected bill (42 percent chance versus 12 percent chance). Interestingly, high and low socio-economic status households are equally likely to have a store card or a payday loan, while high socio-economic status families are *more* likely to have a credit card not paid off in full each month, potentially due to their greater capacity to service such high-interest debt. Nevertheless, this illustrates that while disadvantaged parents may be more likely to display certain negative financial behaviours, likely due to their comparative lack of financial resources, there are other areas – particularly surrounding the use of certain high-interest financial products – where there is no socio-economic difference, or the situation is even reversed.

<< **Table 3** >>

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<sup>5</sup> No child below age 13 reported using a spreadsheet or online budgeting tool to keep track of their spending.

The financial responsibility parents give to their children – also presented in Table 3 – is also somewhat mixed in its socio-economic patterning. Disadvantaged families are slightly *more* likely to let their children decide how to spend/save their own money than high socio-economic status families (effect size = -0.15 or around four places difference in a ranking of 100 children), although the magnitude of this difference is rather small. On the other hand, high socio-economic status parents are more likely to set clear money rules for their children and to stick to them, although again the size of the gap is small (our illustrative low socio-economic status parent scored 6.4 out of 10 in response to the question “*I set clear rules or agreements for my child about money that I stick to*” compared to 6.7 for our illustrative high socio-economic status parent). Finally, the inferences made about the generosity of pocket money low and high socio-economic status children receive from their parents depend upon how this is measured. While young people from affluent backgrounds receive more pocket money in absolute terms (of approximately £2.50 per week) those from disadvantaged backgrounds receive a greater share as a proportion of household income (approximately four percent for our illustrative child from a disadvantaged background compared to two percent for a child from an advantaged background). Thus, in summary, there is little clear evidence that there are substantive socio-economic differences in the financial responsibilities that parents afford their offspring.

Turning to our fourth dimension of parental inputs, there are important socio-economic differences in terms of parental role modelling of financial behaviours. We see socio-economic gaps in terms of parental conversations with, and demonstrations to, their children about money. Young people from socio-economically disadvantaged backgrounds are somewhat more likely to have frequent conversations with their parents about money than their peers from disadvantaged backgrounds, though the difference is relatively modest (effect size = 0.20, or a difference of around four positions in a ranking of 100 children). The same holds true in reference to parental money demonstrations, though again the magnitude of the gap is small (effect size = 0.13, or a difference of around three rank positions out of 100).

Finally, Table 3 also explores differences in parental attitudes towards teaching children about money. On the whole, differences between high and low socio-economic status parents are small in terms of beliefs about money. More affluent parents are slightly more likely to believe that teaching their offspring about money is important (four percentage point difference) and slightly less likely to believe that teaching children about money should be left until they are older (effect size = 0.12). There was essentially no difference in the probability of high and low socio-economic status parents believing children should be protected from understanding how

money works (just a two percentage point gap). However, a bigger socio-economic gap can be observed with respect to parental confidence in teaching their offspring about money (see the final row of Table 3). Specifically, socio-economically advantaged parents are much more confident in their ability to teach their children about money than low socio-economic status parents (effect size = 0.32, or a difference of around 10 places in a ranking of 100 children). Hence, in general, the attitudes of socioeconomically advantaged and disadvantaged parents towards teaching children about money are mixed – while there are limited differences in terms of beliefs about financial education, higher socio-economic status parents exhibit more confidence to do so.

In terms of how the socio-economic gradient changes as children age, for most indicators considered in Table 3 there is no clear evidence of either a growth or decline (see Appendix Table A2 for further details). In other words, where there are socio-economic differences, they seem to emerge early in life and then are maintained at a similar level. One interesting exception, however, is with respect to conversations about money – as illustrated in Figure 3. In particular, it seems that socio-economic differences in parent-child conversations are greatest before the age of 10. Then, once young people become teenagers, there is little difference in parent-child money conversations between socio-economic groups. It therefore seems that socio-economic disparities in the frequency of parent-child money conversations reflect differing opinions on the appropriate time to begin such conversations.

**<< Figure 3 >>**

*RQ3. Do children from disadvantaged socio-economic backgrounds receive less financial education (both in terms of quantity and quality) through their school than their more advantaged peers? If so, how does this vary by school year group?*

Table 4 turns to our results for socio-economic differences in financial education provided by schools. This provides clear and consistent evidence of sizeable socio-economic gaps, with young people from disadvantaged backgrounds much less likely to cover key financial issues during school lessons than their more advantaged peers. Particularly large differences can be observed amongst primary age pupils, most notably with respect to “money topics” (e.g. learning about different ways to pay for things, adding up the cost of different shopping items) and “money planning” (e.g. learning about how money is earned and saved). The socio-economic gap on these scales for primary pupils is around 0.3-0.4 standard deviations – equivalent to a difference of around 10 positions in a ranking of 100 children. Differences in the financial education received by advantaged and disadvantaged children can also be

observed amongst secondary age pupils, albeit the magnitude of the gap is somewhat smaller (effect sizes of around 0.20-0.25).

These findings are reiterated by the fact that high socio-economic status children are also more likely to report that they have received lessons about money at school which they found “very useful” – although the overall percentages are quite low (e.g. our illustrative high socio-economic status child had only a 14 percent chance of reporting that they had financial education lessons that they found very useful, compared to 8 percent for our illustrative low socio-economic status child). One caveat, however, is that the final row of Table 4 provides little evidence that financial education in schools had a differential impact upon socio-economic groups in terms of changing money behaviours.

#### << Table 4 >>

Figure 4 provides further investigation of the socio-economic gap in financial education amongst primary school pupils, demonstrating how this changes between age 7 (around Year 2) and age 10 (around Year 5). This clearly illustrates how, at age 7, the financial education provided to advantaged and disadvantaged children is on a broadly equal footing. Yet, as children advance through primary school, it seems that high socio-economic status children are far more likely report learning about additional money issues, while the trajectory for socio-economically disadvantaged children is essentially flat. In other words, it seems that increasing the requirement for financial education during the latter stages of primary school has the potential to increase the amount of financial education disadvantaged young people receive and, hence, narrow the socioeconomic gap. This finding is reiterated by Appendix Table A3 and Appendix Figure A1, which illustrates how the socio-economic gap in the proportion of children reporting that they have received very useful financial education lessons is greatest during primary school.

#### << Figure 4 >>

*RQ4. Are there socio-economic differences in children’s financial capabilities after accounting for differences in their academic and socio-emotional skills? To what extent can parenting behaviours and financial education delivered by schools ‘explain’ any of the remaining difference?*

To consider our final research question, Table 5 presents results from our series of models that attempt to “explain” socio-economic gaps in young people’s financial capabilities, for those models where we found significant socio-economic gaps in financial capabilities and



behaviours of young people. The baseline estimates are presented in model M1, where only a standard basic set of background controls have been included as described in our methods section. Models M2 to M4 then add either a set of cognitive and socio-emotional controls (M2), parental controls (M3) or school controls (M4). Model M5 then presents estimates from the full model specification, where all variables (including all cognitive, socio-emotional, parental and school controls) are included in the model simultaneously. While we reiterate the point that the results presented in Table 5 represent conditional associations only – and do not necessarily capture cause and effect – they nevertheless provide some insight into what may be the important correlates or drivers of socio-economic disparities in young people’s financial capabilities and behaviours.

### << Table 5 >>

Starting with a comparison between M1 (base controls) and M2 (cognitive and socio-emotional controls) we can see that the magnitude of the socio-economic gap differs in several areas. For instance, the difference between socio-economically advantaged and disadvantaged children’s financial capabilities is reduced by around one-third (from an effect size of 0.42 to 0.28) once our measures of cognitive and socio-emotional skills have been added. Thus, as anticipated, part of the socio-economic gap in children’s financial abilities is a reflection of differences in their (more general) academic abilities. Yet there also remains a sizeable difference between socio-economic groups, even once our measures of these areas have been taken into account.

Other areas where there are substantive differences between M1 and M2 include two aspects of children’s financial mindset: attitudes towards saving (where the socio-economic gap falls by a half) and their confidence with money (where the socio-economic gap is reduced to essentially zero). Similarly, differences between socio-economic groups in their cognitive and socio-emotional skills explains roughly one-third of the inequality in their savings behaviours and half the difference in the propensity to seek value for money. This suggests that there are other areas – outside of just financial abilities – where socio-economic differences in broader (i.e. not finance-specific) skills may play an important role.

However, it is important to caveat the above with two key points. First, there are some other aspects of young people’s financial capabilities (e.g. their “financial connection”) where the magnitude of the socio-economic gap is largely unchanged between M1 and M2; i.e. there are some other inequalities that do not seem to be related to socio-economic differences in these more general skills. Second, in several areas – including financial abilities, money confidence

and savings behaviour – large socio-economic gaps remain even once academic abilities and socio-emotional skills differences have been controlled. Socio-economic inequality in financial capabilities is complex with some elements largely driven by more general inequalities, some that seem independent of those inequalities, and some that fall in between.

Turning to the comparison between M1 (base controls) and M3 (parental controls) a broadly similar pattern emerges; the addition of the parental controls leads to a non-trivial reduction in the estimated socio-economic gaps in some areas, but not in others. Some of the areas with the biggest changes are with respect to financial mindset; approximately two-thirds of the socio-economic difference in young people's views about the importance of learning about money management and their money confidence is explained by differences in parental inputs. Similarly, these parental inputs "explain" more of the socio-economic gap in young people's financial connection than the cognitive and socio-emotional controls included in model M2. For instance, the difference in the probability of advantaged and disadvantaged children having a bank/savings account falls by a third between M1 and M3. In contrast, attitudes towards savings remains broadly unaltered. Likewise, the change in the socio-economic gap in young people's financial abilities has only been modestly reduced with the addition of parental controls.

The role played by parents in their offspring's behaviour is somewhat clearer. The addition of our parental inputs explains a sizeable proportion of the socio-economic difference in both savings behaviours and savvy financial decision making. When taken together, this points towards a potentially important direct role played by parents in some key areas, for example money confidence, money management, financial connection, and directly observed financial behaviours, but perhaps only an indirect role in others. It could be the case, for example, that their role in boosting their offspring's financial abilities may mostly come through their role in developing more broadly their cognitive and socio-emotional skills.

A rather different story emerges when one compares estimates across model M1 (base controls only) and M4 (school controls). On almost all occasions – with the potential exception of socio-economic differences in money confidence – the socio-economic gap is not reduced with the addition of the available school controls. For instance, the magnitude of the difference between socio-economics groups in financial abilities (0.42 effect size in model M1 and 0.37 in model M4), attitudes towards saving (0.20 effect size versus 0.18) and savvy financial decision making (0.22 effect size versus 0.17) declines only slightly.

We believe that there are two potential explanations for this result. One is that the socio-economic gap that we observe in the financial education provided by schools doesn't feed through into making a difference to young people's financial capabilities and behaviours (which is possible if the quantity and quality of financial education provided by schools is in general quite limited). The other is that the measures available do not fully capture the importance of financial education provided by schools for the development of young people's capabilities. Unfortunately, it is not possible to tease apart these two explanations with the data currently available. Nevertheless, overall, Table 5 provides no evidence that inequalities in the quantity and quality of financial education currently provided by schools is directly driving inequalities in young people's financial abilities, mindset, connections and behaviours (outside of their potential role in more generally developing young people's cognitive and socio-emotional skills). We note, however, meta-analytic causal evidence (Kaiser & Menkhoff, 2019) of the potential for such school-based financial education to make a difference if well-designed.

Finally, M5 presents results from the full model including controls for cognitive and socio-emotional skills, along with parental inputs and school measures. On the whole, these estimates reiterate many of the points made in the discussion above. In particular, the simultaneous inclusion of all controls in the model together does not (on most occasions) lead to much further change in the parameter estimates from model M2 (where just cognitive and socio-emotional controls were included), other than a handful of areas where the financial inputs of parents may potentially have a direct role (e.g. financial connection, learning about money management). It does, however, highlight a handful of key areas where a substantial socio-economic gap remains even after the inclusion of the full set of controls – and is hence due to other (unobserved) factors. These are financial abilities (where, in total, more than half the socio-economic gap has not been explained), financial connection (e.g. disadvantaged children are still 13 percentage points less likely to have a bank account than their more affluent peers, even after accounting for the full set of available controls) and savings behaviours (where, again, only around half of the socio-economic gap can be explained). This suggests that there may be other areas which contribute to socio-economic differences in financial capabilities, or that there are other aspects of what parents/schools do that are not included with the model (and are not measured within the data available).

## **6. Conclusions**

Developing sound financial capabilities is vital in order to navigate 21<sup>st</sup> century society. Within an increasingly complex world, and with crucial decisions with significant financial

implications being taken at a relatively early age (e.g. whether to go to university), it is important that young people have the right knowledge, attitude and skills to ensure their choices are well-informed and rational. Yet, existing evidence suggests that the UK has low levels of financial literacy by international standards, particularly amongst disadvantaged socio-economic groups (Bhutoria, Jerrim and Vignoles 2018). There has also been much concern in the UK about a lack of social mobility and the propensity for educational and social problems to perpetuate across generations (Social Mobility Commission 2019). This includes intergenerational cycles of money problems, poverty, and debt, which may be linked to socio-economic inequalities in the development of financial capabilities amongst young people. Understanding more about inequalities in young people's financial skills, including when they emerge and how they might be related to the inputs made by both parents and schools, is hence an issue of pressing academic and public policy concern.

It is therefore perhaps surprising that the literature on social mobility and the literature regarding financial literacy have not previously been brought together. Indeed, a recent review of inequalities in young people's financial capabilities noted how there is "*very little literature on vulnerability [including socio-economic vulnerability] in the context of children and young people's financial capability*". The key aim of this paper has hence been to bring these two literatures together. Specifically, we have sought to build upon previous models of how financial capabilities in children and young people develop (Clark and Ghezelayagh 2018) and produce new empirical evidence on this matter for the UK. In doing so, we hope to have shed new light into what has otherwise been an understudied area of socio-economic inequality and of intergenerational persistence.

Using parent-child linked survey data for the UK, we have found sizeable socio-economic gaps in young people's financial capabilities. For the most part, these seem to emerge early in life – i.e. many differences can be observed in children as young as age 7 – and then in some dimensions continue into the teenage years. Only part of these socio-economic gaps in financial capabilities can be explained in our data by differences in other more widely studied areas where we know such inequalities also exist – most notably cognitive and socio-emotional skills. Hence it seems that socio-economic differences in financial capabilities may not merely be a reflection of inequalities in these other areas.

Evidence has also emerged of substantial socio-economic differences in certain parental and school inputs into their offspring's financial capability development. Young people from

disadvantaged backgrounds have less frequent money conversations with their parents and are less likely to be shown how money “works”. They are also less likely to report covering key money issues during their school lessons, with a particularly big socio-economic status gap in financial education provision towards the end of primary school.

More generally, there is some evidence that certain inputs made by parents/schools differ most between social groups when they are quite young, with those young people from affluent background having greater exposure to financial education (through both their parents and their schools) before they start secondary education.

While there is evidence that these parental inputs drive socio-economic gaps in particular financial capabilities (money confidence, money management, and financial connections) and financial behaviours, we are unable to find much evidence for schooling inputs making a big difference in explaining the SES gap in financial capabilities. However, we acknowledge the particular limitations of our measures in this respect, and the potential for school-based financial education to still have an effect here if it were better measured (Kaiser & Menkhoff, 2019).

It is also important to note the limitations of this work and important areas in need of further research. First, the data were collected using a quota – rather than a gold-standard probabilistic – sampling methodology. Although we have found the sample to be broadly comparable to the national population for a selection of key observable characteristics, future studies drawing probabilistic samples (and achieving a high response rate) will further help ensure we can generalise these results with confidence. Second, a key part of our study has been to investigate the role played by parents. Yet, as with many social surveys, only one parent completed the household questionnaire (typically the child’s mother). Future studies should seek to capture data about financial parenting behaviours from both parents where possible, allowing for further analysis that distinguishes the contributions made by mothers and fathers. Third, the quality of some of the measures available is somewhat limited, such as the information collected about children’s educational achievement and socio-emotional skills. An inexpensive way to enhance future data collections would be to seek consent from participants to allow administrative data linkages (e.g. to children’s educational records). Fourth, the data available are cross-sectional, providing a snapshot of respondents’ financial skills, attitudes, mindsets and behaviours at a single point in time. Longitudinal data – tracking the financial capability of individual children as they age – would likely yield richer insight into this aspect of their

development. Fifth, our analysis illustrates how gaps in certain financial capabilities emerge early; differences in some areas can already be observed at age 7. Future data collections – and survey instrument development – focusing upon younger children (e.g. four to six-year-olds) may provide further insight into when such socio-economic inequalities in financial capabilities start to emerge. Finally, due to the observational nature of the data, all our estimates refer to conditional associations only, and should not be interpreted as capturing cause and effect.

Despite these limitations, the evidence generated in this paper has some potentially important implications for policy and practice. With sizeable socio-economic gaps emerging, the issue of inequality in financial capabilities – particularly amongst young people – needs much more public scrutiny and debate. Our results generally point towards a need for young people from disadvantaged backgrounds to be engaged with about money at earlier points in their life. This includes both through the actions of parents and schools, with a particular need to review how financial education is provided in the primary curriculum – particularly to lower-achieving pupils and those from disadvantaged social backgrounds. Yet banks and other financial providers could potentially play an important role as well. With socio-economically disadvantaged children being much less likely to have a bank account – particularly when they are young – it may mean they are less likely to develop a firm connection with the financial world. To help improve financial connection – and particularly aspects of their mindset and skills – banks should do more to encourage use of their services amongst disadvantaged socio-economic families and their children. This might include, for instance, dedicated bank accounts for low socio-economic status children which pay higher rates of interest or that provide rewards for positive saving behaviours.

Thus, the challenges we have highlighted in this paper are unlikely to be solved by one single group or policy: there is no silver bullet. Rather, it will require coordinated action amongst policymakers, financial service providers, schools and parents, tackling the problems from several different directions. Unless this is done with some urgency, society risks children from low socio-economic status backgrounds being ill-equipped to successfully engage with the financial world, potentially leading them into money problems, poverty and debt in later life.

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**Table 1. Comparison of the CYPFCS data to the Labour Force Survey**

	<b>CYPFCS</b>	<b>LFS</b>
<b>Homeownership</b>		
% Own outright	12	8
% Own with mortgage	47	48
% Other	40	43
<b>Ethnicity</b>		
% White	80	77
% Black	5	6
% Asian	10	14
% Other	5	4
<b>Marital status</b>		
% Single	11	16
% Married / cohabiting	79	74
% Other	10	9
<b>Average age</b>		
	41	41
<b>Educational qualification</b>		
% No qualifications	6	7
% GCSEs	21	20
% Alevels	14	19
% University below degree	11	8
% Degree	40	32
% Other	9	13
<b>Employment status</b>		
% Full-time	51	61
% Part-time	22	20
% Other	27	18
<b>Single parent household</b>		
% No	77	85
% Yes	23	15
<b>Private school</b>		
% No	94	93
% Yes	6	7*

Note: Data for private schools drawn from <https://www.isc.co.uk/research/>. LFS data based upon April-June 2019 quarter, restricted to respondents who are the household head or their spouse, aged under 60 and with a dependent child aged between 5 and 16 in the household (n = 2,440).

**Table 2. Socio-economic differences in children's financial capabilities and behaviours**

	Low SES	High SES	Gap	P-value	N
<b>Financial abilities</b>					
Average test scores (ES)	-0.12	0.54	0.42*	0.00	2,251
<b>Financial mindset</b>					
Attitudes towards saving (ES)	-0.13	0.06	0.20*	0.00	3,739
Bad attitude towards debt (%)	9	6	3	0.06	2,110
Financial self-efficacy (%)	18	17	-1	0.74	2,251
Financial anxiety (%)	21	18	-3	0.23	2,251
Learn how to manage money (%)	86	93	7*	0.00	3,739
Money confidence (0-10)	6.9	7.2	0.2*	0.05	2,251
<b>Financial connection</b>					
Have bank account (%)	81	100	21*	0.00	3,739
Have savings account (%)	39	56	17*	0.00	3,739
Connection with bank account (ES)	0.44	0.57	0.13*	0.01	2,289
<b>Financial behaviours</b>					
Savings behaviour (ES)	-0.24	0.16	0.40*	0.00	3,567
Plan how to pay for things (%)	29	33	4	0.36	1,170
Doesn't know how much they have saved (%)	26	15	-11*	0.00	3,623
Keep track of money in spreadsheet (%)	4	6	1*	0.02	3,739
Savvy decision making (ES)	-0.02	0.20	0.22*	0.00	2,204

Note: (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey and which parent completed the survey. P-value refers to the test of whether the difference between high and low socio-economic groups is equal to zero. \* indicates statistical significance at the five percent level.

**Table 3. Socio-economic differences in parental inputs into offspring's financial skills**

	Low SES	High SES	Gap	P- value	N
<b>Parental financial confidence</b>					
Anxious about financial situation (%)	56	40	-16*	0.00	3,739
Low financial self-efficacy (%)	35	24	-11*	0.00	3,739
Confidence in managing money (0-10 scale)	7.1	7.8	0.8*	0.00	3,739
<b>Parental financial behaviour</b>					
Rarely or never save (%)	33	9	-24*	0.00	3,693
Use credit to pay unexpected bill (%)	42	12	-30*	0.00	3,601
Has store card or payday loan (%)	22	21	-1	0.72	3,739
Credit card not paid off each month (%)	23	31	8*	0.00	3,739
<b>Financial responsibility given to child</b>					
Child decides how to spend/save own money (ES)	0.59	0.44	-0.15*	0.00	3,358
Uses own money for discretionary items (ES)	0.25	0.35	0.10	0.06	2,251
Set and stick to clear money rules (0-10 scale)	6.4	6.7	0.3*	0.00	3,739
Weekly pocket money (£)	12.0	14.4	2.5*	0.00	2,487
Weekly pocket money (% household income)	3.8	1.9	-1.9*	0.00	2,098
<b>Role modeling</b>					
Frequent money conversations with child (ES)	0.33	0.53	0.20*	0.00	3,708
Frequent money demonstrations to child (ES)	0.37	0.50	0.13*	0.00	3,714
<b>Attitudes towards teaching about money</b>					
Believe children should be protected from money (%)	19	21	2	0.33	3,739
Believe important to teach about money (%)	90	93	3*	0.04	3,739
Believe should teach children when older (ES)	0.40	0.29	-0.12*	0.01	3,599
Confidence in teaching children (ES)	-0.21	0.11	0.32*	0.00	3,739

Note: (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey and which parent completed the survey. P-value refers to the test of whether the difference between high and low socio-economic groups is equal to zero. \* indicates statistical significance at the five percent level.

**Table 4. Socio-economic differences in school inputs into offspring's financial skills**

	Low SES	High SES	Gap	P-value	N
<b>Financial education in schools</b>					
<b>7 to 10 year olds</b>					
Money topics (ES)	0.32	0.70	0.38*	0.00	1,488
Money planning (ES)	0.68	0.98	0.30*	0.00	1,488
Money choices (ES)	0.64	0.83	0.19*	0.01	1,488
<b>11 to 17 year olds</b>					
Money topics (ES)	-0.01	0.21	0.22*	0.00	2,251
Financial risks and security (ES)	-0.06	0.18	0.24*	0.00	2,251
<b>Quality of financial education</b>					
Had useful money lessons (%)	8	14	6*	0.00	3,710
Lessons changed money behaviour (%)	40	43	4	0.14	3,168

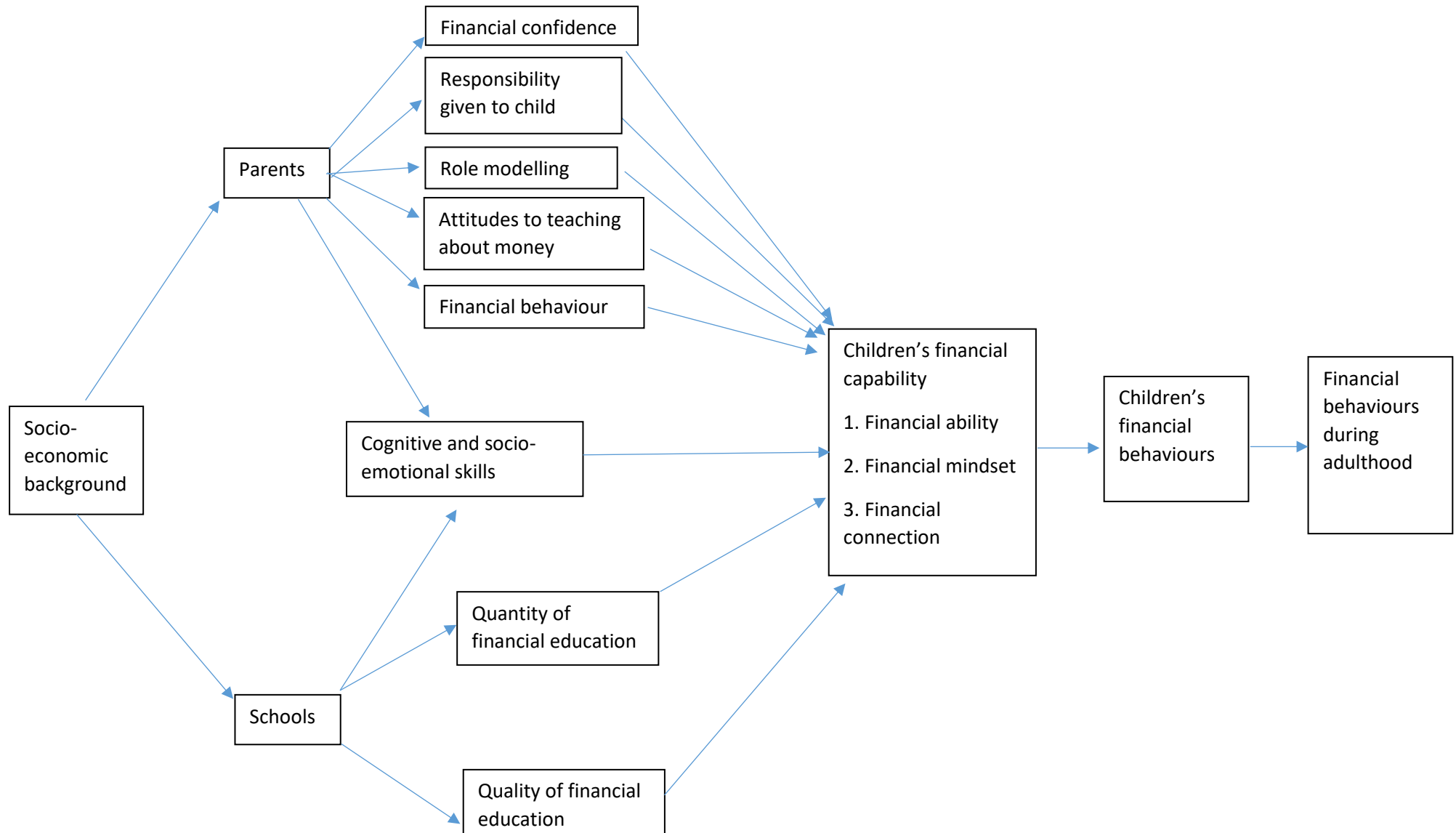
Note: (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey and which parent completed the survey. P-value refers to the test of whether the difference between high and low socio-economic groups is equal to zero.

**Table 5. The role of cognitive skills, socio-emotional skills, parents and schools in explaining socio-economic gaps in children's financial skills and capabilities**

	M1		M2		M3		M4		M5	
	Gap	P-value	Gap	P-value	Gap	P-value	Gap	P-value	Gap	P-value
<b>Financial abilities</b>										
Average test scores (ES)	0.42*	0.00	0.28*	0.00	0.34*	0.00	0.37*	0.00	0.25*	0.00
<b>Financial mindset (ES)</b>										
Attitudes towards saving (ES)	0.20*	0.00	0.09	0.05	0.16*	0.00	0.18*	0.00	0.10	0.05
Learn how to manage money (%)	6*	0.00	4*	0.04	2	0.17	4*	0.02	1	0.68
Money confidence (0-10)	0.23*	0.05	-0.01	0.91	0.07	0.53	0.16	0.21	-0.07	0.53
<b>Financial connection</b>										
Have bank account (%)	21*	0.00	18*	0.00	15*	0.00	19*	0.00	13*	0.00
Have savings account (%)	17*	0.00	14*	0.00	10*	0.00	15*	0.00	8*	0.00
<b>Financial behaviours</b>										
Savings behaviour (ES)	0.40*	0.00	0.28*	0.00	0.26*	0.00	0.38*	0.00	0.20*	0.00
Savvy decision making (ES)	0.22*	0.00	0.10	0.11	0.16*	0.01	0.17*	0.01	0.06	0.35
<b>Additional controls</b>										
Cognitive skills	-		Y		-		-		Y	
Socio-emotional skills	-		Y		-		-		Y	
Parent controls	-		-		Y		-		Y	
School controls	-		-		-		Y		Y	

Notes: (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. All models control for gender, age, help the child received in completing the survey and which parent completed the survey. Gap refers to the difference in the outcome between high and low socio-economic status groups. P-value refers to the test of whether the difference between high and low socio-economic groups is equal to zero. \* indicates statistical significance at the five percent level.

**Figure 1. Intergenerational framework of financial literacy skills**

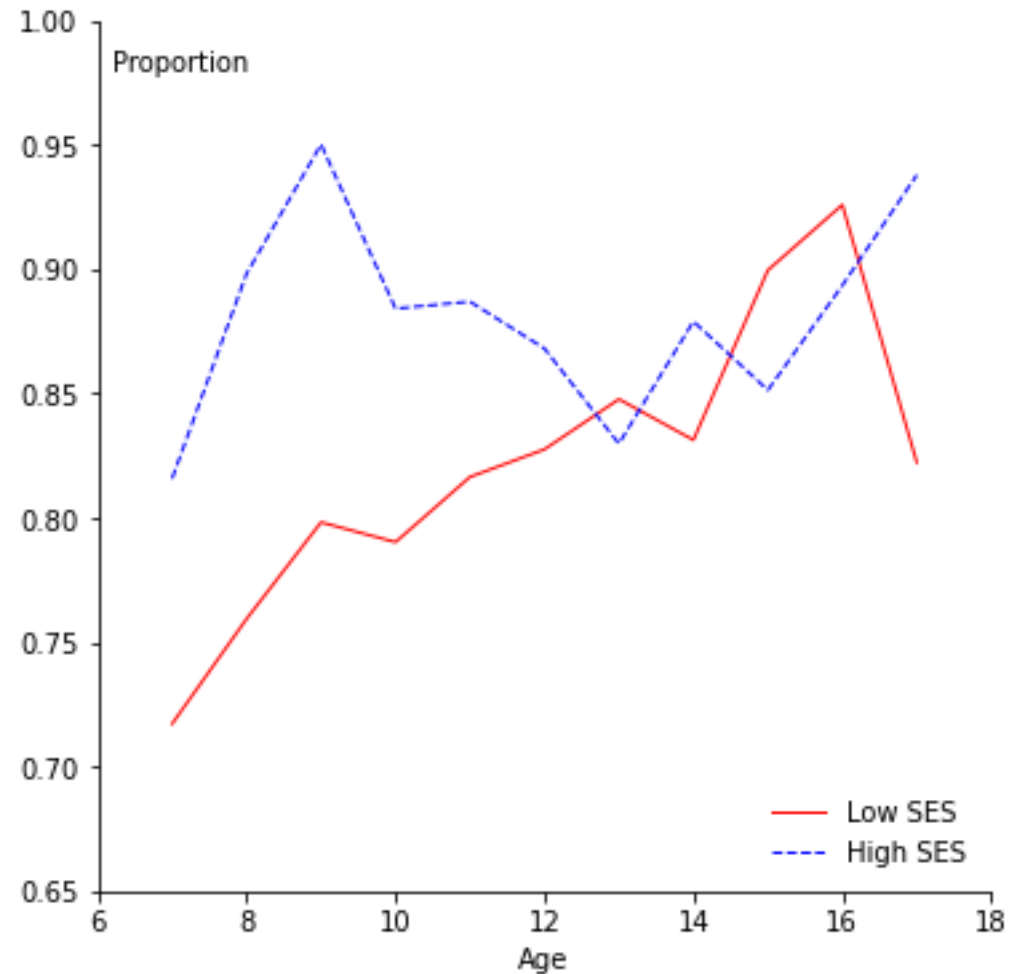
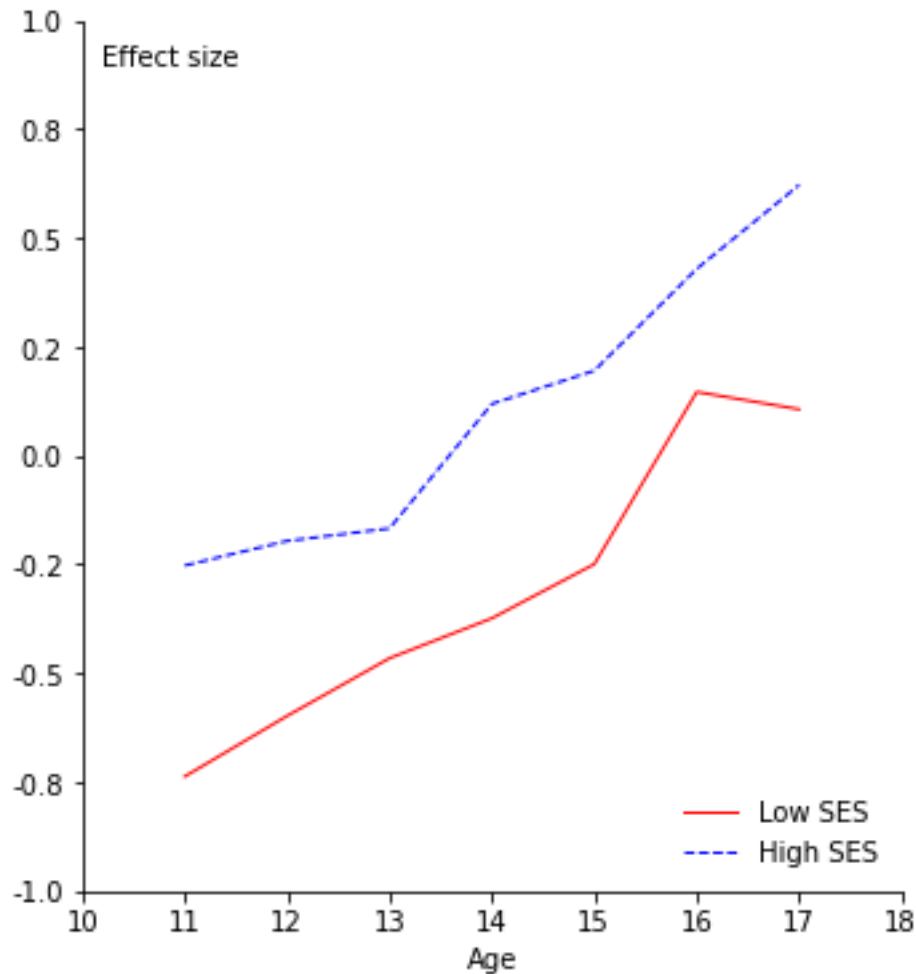




**Figure 2. Change in socio-economic status gap in selected capabilities as children age.**

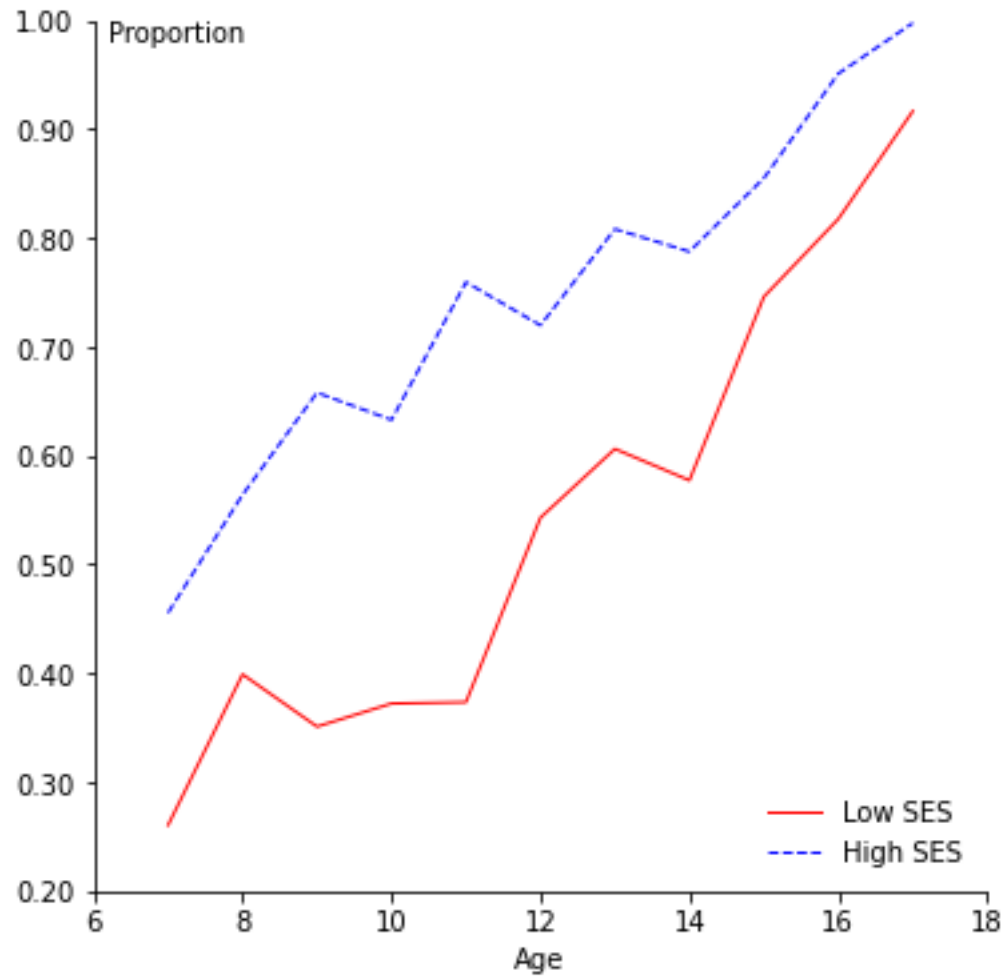
(a) Financial abilities

(b) Importance of learning how to manage money



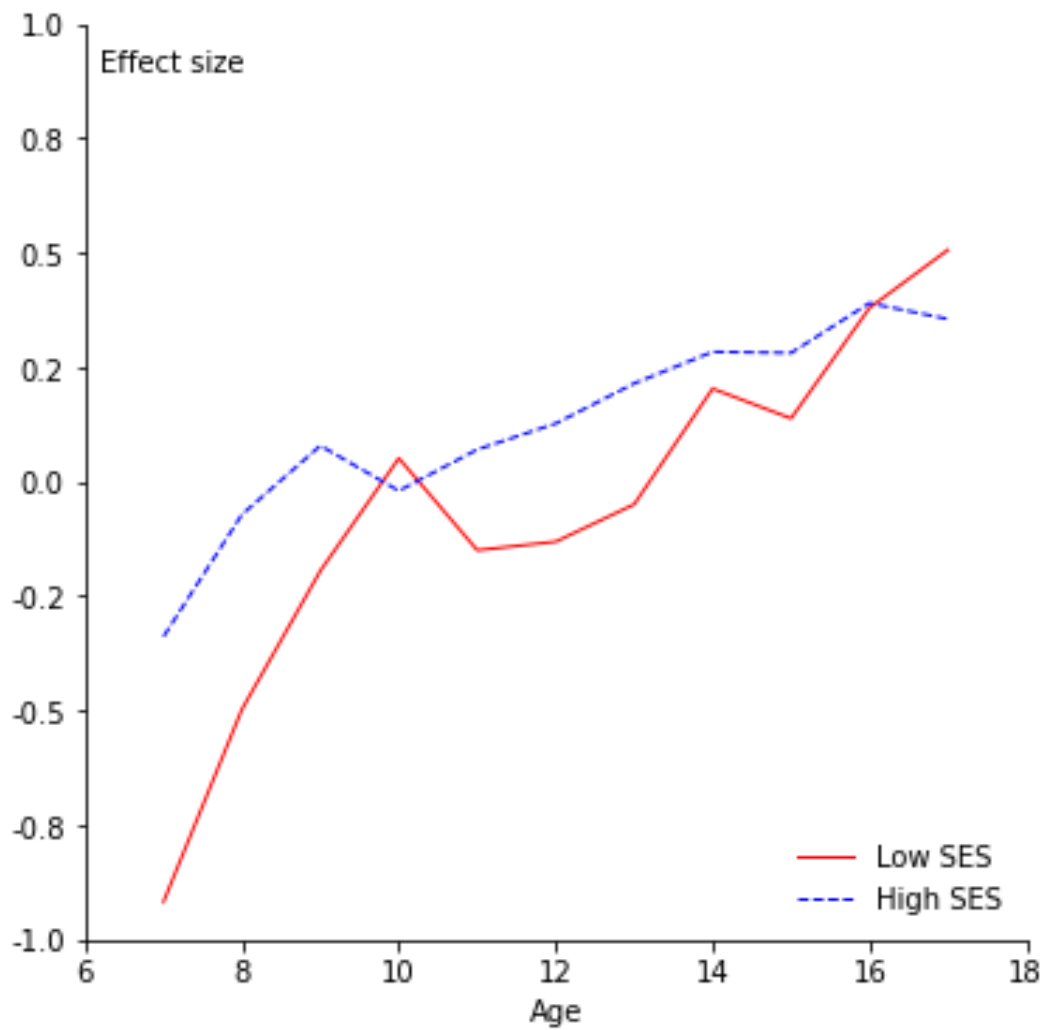
Notes: Estimates refer to predicted outcomes for our illustrative high and low SES children (a boy who had some help completing the survey and whose mother completed the parental survey). Estimates refer to effect sizes (left-hand graph) or proportion in agreement (right-hand graph).

(c) Proportion with a bank account



Notes: Estimates refer to predicted outcomes for our illustrative high and low SES children (a boy who had some help completing the survey and whose mother completed the parental survey). Estimates refer to predicted proportion of our illustrative children who have a bank account by age.

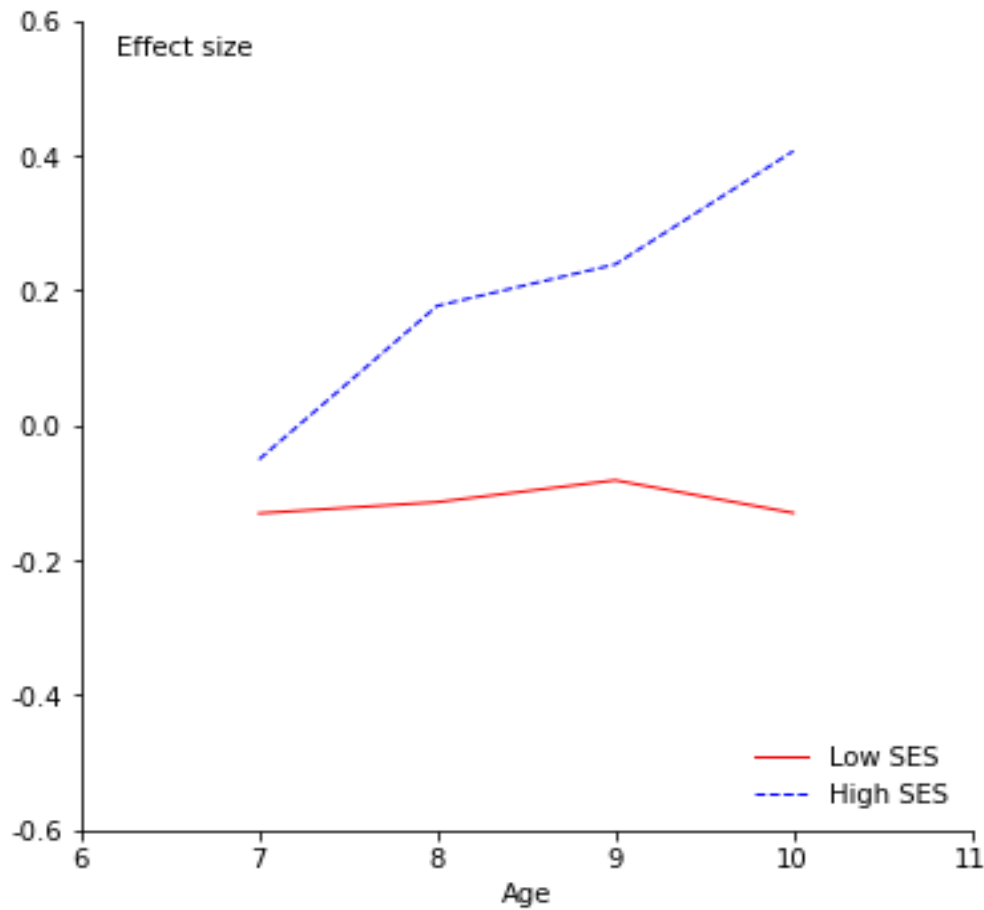
**Figure 3. Change in parent-child money conversations as children age**



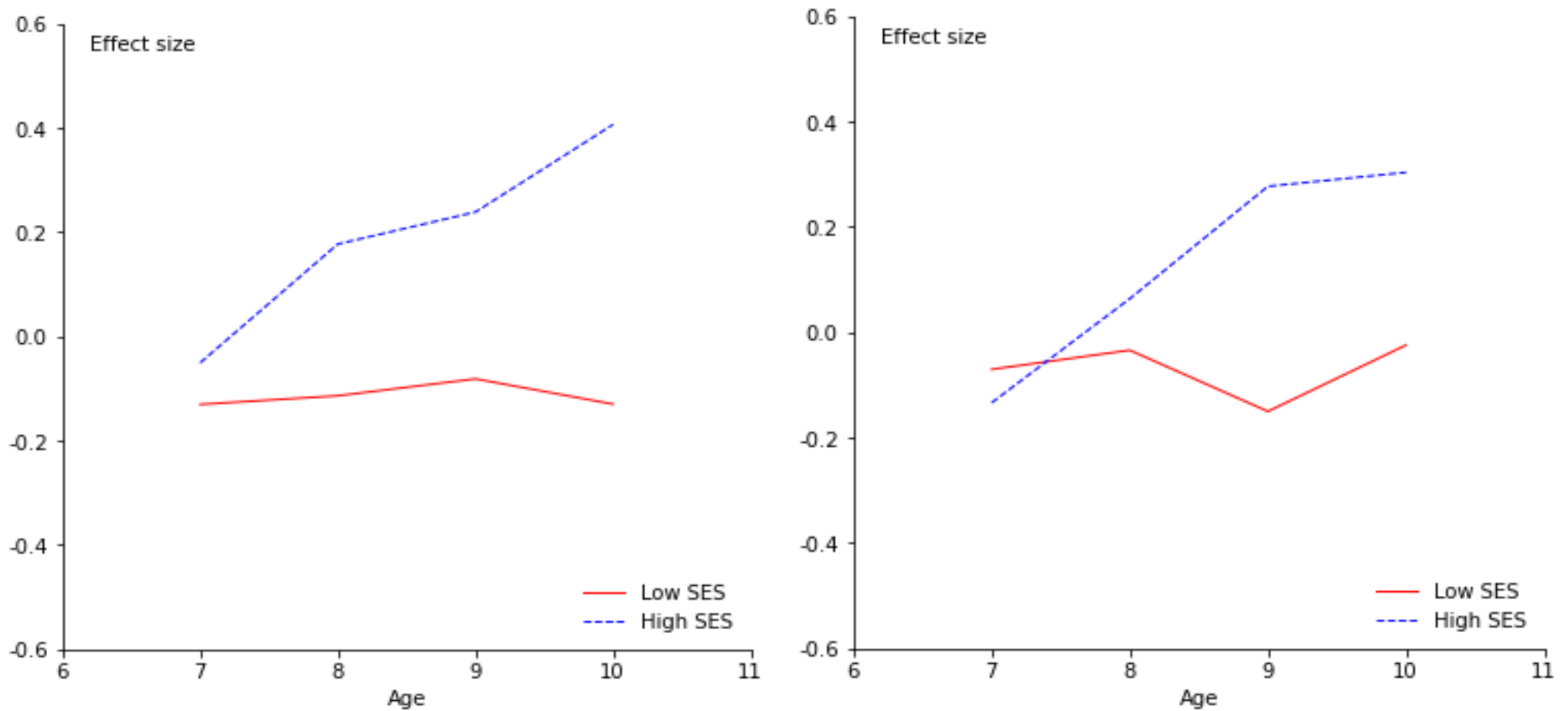
Notes: Estimates refer to predicted outcomes for our illustrative high and low SES children (a boy who had some help completing the survey and whose mother completed the parental survey). Estimates refer to effect sizes.

**Figure 4. Change in socio-economic status gap in financial education provided to primary school pupils**

(a) Money planning



(b) Money choices



Notes: Estimates refer to predicted outcomes for our illustrative high and low SES children (a boy who had some help completing the survey and whose mother completed the parental survey). Estimates refer to effect sizes.

**Appendix Table A1. Change in the SES gap by age for children's financial capabilities and behaviours**

	Change in SES gap per year	P-value	N
<b>Financial abilities</b>			
Average test scores (ES)	-0.00	0.88	2,251
<b>Financial mindset</b>			
Attitudes towards saving (ES)	-0.03	0.08	3,739
Bad attitude towards debt (%)	-0.3	0.66	2,110
Financial self-efficacy (%)	0.8	0.49	2,251
Financial anxiety (%)	-0.6	0.62	2,251
Learn how to manage money (%)	-1.4*	0.01	3,739
Money confidence (0-10 scale)	-0.0	0.41	2,251
<b>Financial connection</b>			
Have bank account (%)	-1.4*	0.02	3,739
Have savings account (%)	0.0	0.95	3,739
Connection with bank account (ES)	-0.03	0.09	2,289
<b>Financial behaviours</b>			
Savings behaviour	-0.02	0.12	3,567
Plan how to pay for things (%)	1.9	0.60	1,170
Doesn't know how much they have saved (%)	0.8	0.21	3,623
Keep track of money in spreadsheet (%)	0.6*	0.00	3,739
Savvy decision making	-0.03	0.26	2,204

Note: Estimates refer to change in socio-economic status gap per each year increase in age. (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey, whether the child's mother, father or another family member completed the survey and an age-by-socio-economic status interaction. P-value refers to the test of whether the interaction between age and socio-economic status is different from zero - \* indicates statistical significance at the five percent level.

**Appendix Table A2. Change in the SES gap by age for parental inputs into offspring's financial skills**

	Change in SES gap per year	P-value	N
<b>Parental financial confidence</b>			
Anxious about financial situation (%)	-0.6	0.42	3,739
Low financial self-efficacy (%)	0.0	0.99	3,739
Confidence in managing money (0-10 scale)	-0.0	0.43	3,739
<b>Parental financial behaviour</b>			
Rarely or never save (%)	-3.7*	0.02	2,110
Use credit to pay unexpected bill (%)	1.2	0.07	3,601
Has store card or payday loan (%)	0.6	0.36	3,739
Credit card not paid off each month (%)	-0.8	0.24	3,739
<b>Financial responsibility given to child</b>			
Child decides how to spend/save own money (ES)	0.02	0.20	3,358
Uses own money for discretionary items (ES)	-0.02	0.50	2,251
Set and stick to clear money rules (0-10 scale)	0.0	0.95	3,739
Weekly pocket money (£)	-0.1	0.65	2,487
Weekly pocket money (% household income)	-0.2*	0.00	2,098
<b>Role modeling</b>			
Frequent money conversations with child (ES)	-0.05*	0.00	3,708
Frequent money demonstrations to child (ES)	-0.03*	0.02	3,714
<b>Attitudes towards teaching about money</b>			
Believe children should be protected from money (%)	-0.3	0.56	3,739
Believe important to teach about money (%)	1.0*	0.03	3,739
Believe should teach children when older (ES)	0.01	0.54	3,599
Confidence in teaching children (ES)	-0.01	0.35	3,739

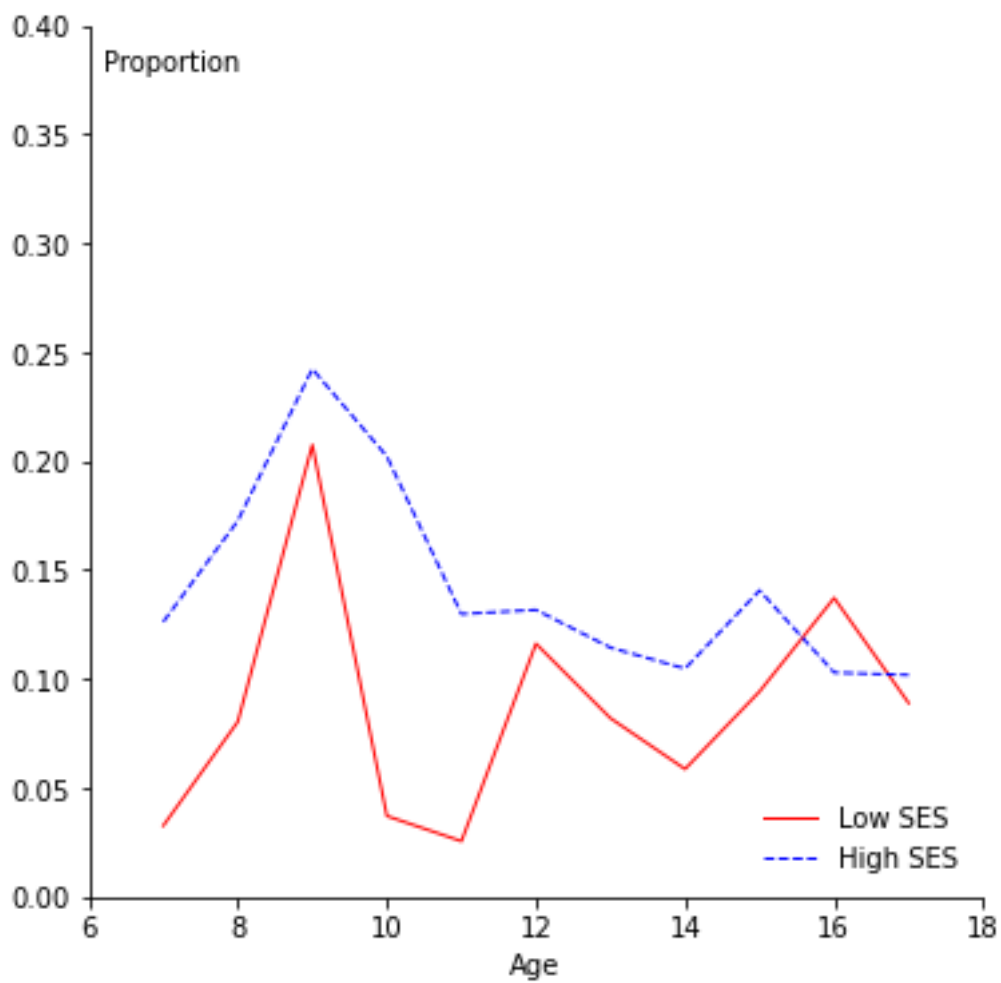
Note: Estimates refer to change in socio-economic status gap per each year increase in age. (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey, whether the child's mother, father or another family member completed the survey and an age-by-socio-economic status interaction. P-value refers to the test of whether the interaction between age and socio-economic status is different from zero.

**Appendix Table A3. Change in the SES gap by age for school inputs into offspring's financial skills**

	Change in SES gap per year	P-value	N
<b>Financial education in schools</b>			
<b>7 to 10 year olds</b>			
Money topics (ES)	0.04	0.56	1,488
Money planning (ES)	0.14*	0.05	1,488
Money choices (ES)	0.15*	0.03	1,488
<b>11 to 17 year olds</b>			
Money topics (ES)	-0.02	0.55	2,251
Financial risks and security (ES)	-0.02	0.58	2,251
<b>Quality of financial education</b>			
Had useful money lessons (%)	-1.1*	0.04	3,710
Lessons changed money behaviour (%)	-0.5	0.51	3,168

Note: Estimates refer to change in socio-economic status gap per each year increase in age. (ES) indicates results reported in terms of effect sizes, while (%) refers to percentage differences. Results based upon OLS regression model controlling for gender, age, help the child received in completing the survey, whether the child's mother, father or another family member completed the survey and an age-by-socio-economic status interaction. P-value refers to the test of whether the interaction between age and socio-economic status is different from zero.

**Appendix Figure A1. Change by age in the socio-economic gap in the percentage of children reporting that they had money lessons and found them to be very useful**





**Appendix Table B1. Logistic regression estimates for binary outcomes. Research questions 1 -3 (main effects)**

	Low SES	High SES	Odds- ratio	P- value	N
<b>Children's financial capabilities</b>					
Bad attitude towards debt (%)	9	6	0.61	0.06	2,110
Financial self-efficacy (%)	18	17	0.95	0.74	2,251
Financial anxiety (%)	21	18	0.83	0.23	2,251
Learn how to manage money (%)	87	92	1.65	0.00	3,739
Have bank account (%)	82	93	2.81	0.00	3,739
Have savings account (%)	38	58	2.18	0.00	3,739
Plan how to pay for things (%)	28	32	1.20	0.34	1,170
Doesn't know how much they have saved (%)	25	16	0.60	0.00	3,623
Keep track of money in spreadsheet (%)	5	12	2.84	0.03	3,739
<b>Parental inputs</b>					
Anxious about financial situation (%)	56	40	0.51	0.00	3,739
Low financial self-efficacy (%)	35	24	0.58	0.00	3,739
Rarely or never save (%)	32	10	0.22	0.00	3,693
Use credit to pay unexpected bill (%)	41	13	0.21	0.00	3,601
Has store card or payday loan (%)	22	21	0.96	0.73	3,739
Credit card not paid off each month (%)	24	31	1.45	0.00	3,739
Believe children should be protected from money (%)	19	21	1.13	0.33	3,739
Believe important to teach about money (%)	90	92	1.36	0.04	3,739
<b>School inputs</b>					
Had useful money lessons (%)	9	13	1.63	0.00	3,710
Lessons changed money behaviour (%)	40	43	1.17	0.14	3,168

Note: Predicted outcomes for low and high SES groups reported as percentages. The socio-economic gap is reported in terms of an odds-ratio. Results based upon logistic regression model controlling for gender, age, help the child received in completing the survey and which parent completed the survey. Predicted outcomes for an 11-year-old boy who had a little help from their parent in completing the survey, and whose mother completed the parental questionnaire. P-value refers to the test of whether the difference between high and low socio-economic groups is equal to zero.

## C. Data Appendix

### Socio-economic status

As part of the parental survey, a number of questions were asked about socio-economic background. This included (a) the educational qualifications held by the responding parent; (b) whether the responding parent achieved a C grade in GCSE English (or equivalent); (c) whether the responding parent achieved a C grade in GCSE mathematics (or equivalent); (d) the occupational of the main income earner (which is then classified using the National Statistics Socio-Economic Classification groups); (e) household income (using a banded question); and (f) home postcode from which is derived the household's Index of Multiple Deprivation decile.

Following widespread practice in the literature (Kolenikov and Angeles 2009; Chowdry et al. 2013; Anders 2017) these six indicators are combined into a single socio-economic status scale. In this paper, we have constructed this measure by estimating an Item-Response Theory (IRT) graded-response model, with each of the indicators assumed to be capturing an underlying socio-economic status construct.<sup>6</sup> We divide the scale into thirds, in order to define our low, medium and high socio-economic status groups.

### Children's financial abilities

As illustrated by Figure 1, our framework conceives of young people's financial capabilities as being formed of three components. The first is their financial abilities. To measure this construct, within the CYPFCS questionnaire a number of "test" style questions were asked to those age 11 and above.<sup>7</sup> A total of 11 questions were asked to all children age 11 and above, with a further 20 additional questions asked to those age 14 to 17. These covered issues such as:

- Knowledge of financial concepts (e.g. *pick the word that best fits the description "the amount the price of things in shops go up by"*). Age 11+.

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<sup>6</sup> Others who have constructed such a multidimensional socio-economic status index have often used a principal components analysis (PCA) rather than IRT. Our preference for IRT here is that it provides a convenient means of handling missing data on the five constructs. We have however also created the scale using a principal components analysis instead, finding it to correlate very highly ( $r=0.94$ ) with the scale generated via IRT.

<sup>7</sup> A small number of easier questions were also asked to 7-10 year-olds, though initial exploratory analysis suggested that these may suffer from ceiling effects.

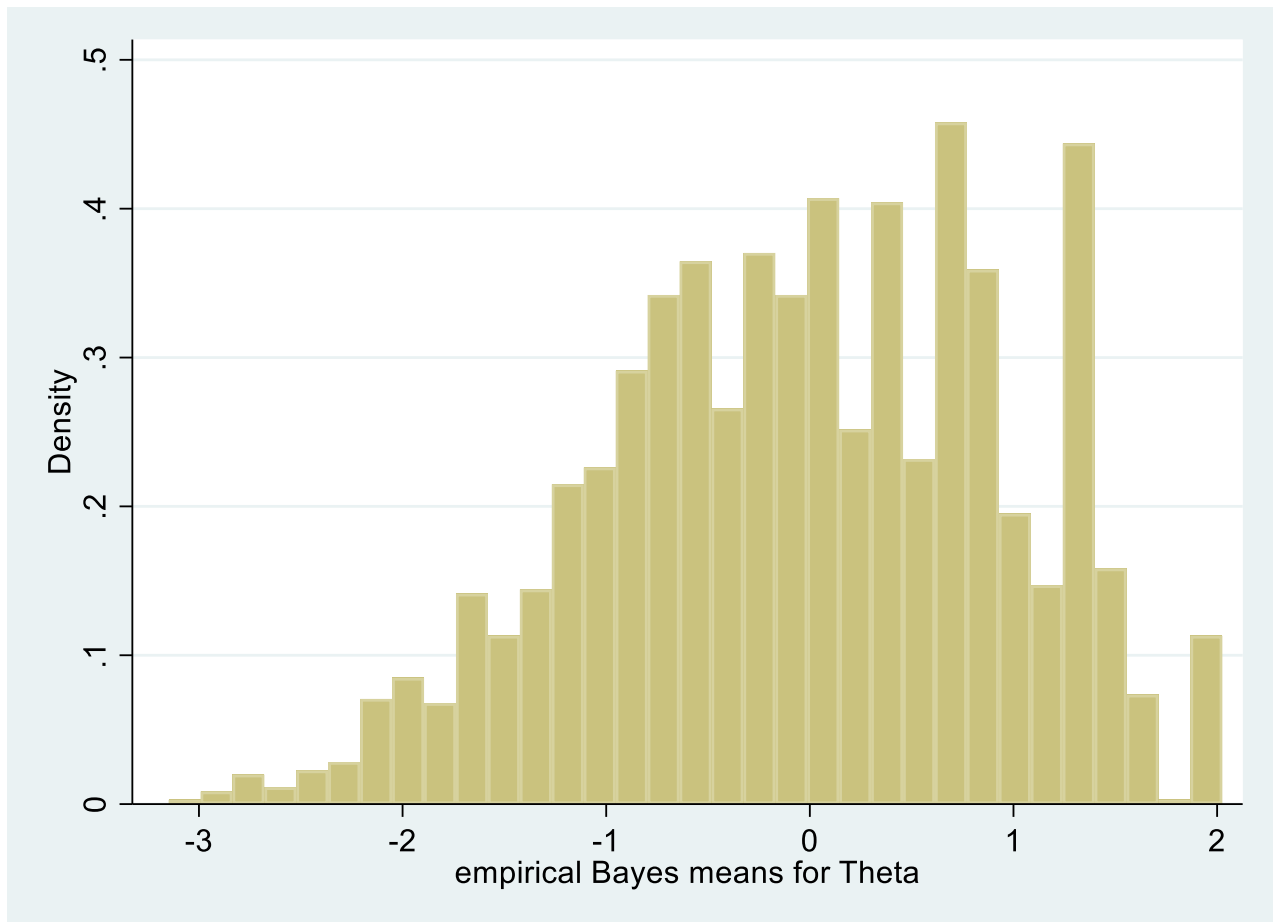
- Knowledge of financial products (e.g. *“of the following, which ones make your money grow, and which ones have to be paid back later”* with responses including mortgage, government bond). Age 14+.
- Knowing what adults have to pay for (*“Which of the following things do most adults pay for, and which do most adults get for free?”* e.g. water, internet, visits to GP). Age 11+.
- Understanding the consequences of not paying council tax (*“What would be the consequence if you weren't able to pay your council tax”* e.g. nothing, your things may be taken by a debt collector). Age 14+.
- Interpreting financial documents such as bank statements. Age 14+.
- Understanding interest payments and inflation (e.g. *If the inflation rate is 5% and the interest rate you get on your savings is 3%, will your savings have more, less or the same amount of buying power in a year's time?*). Age 11+.

Responses to each question was converted to binary format (1= correct; 0 = incorrect). A two-parameter IRT model was then estimated to convert these responses into an overall “financial abilities” scale score (based upon the Expected A Posteriori values).<sup>8</sup> This scale score has then been standardised to mean zero and standard deviation one. The distribution of the scale derived can be found in Figure C1.

**Figure C1. The distribution of young people financial abilities scale score**

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<sup>8</sup> Note that the 11 questions answered by all 11-17 year-olds act as “anchors” in this process, allowing the questions answered by just 14-17 year-olds to be placed upon the same scale.



### Children's financial mindset

The second capability from framework 1 is financial mindset. Within our analysis, five aspects of young people's financial mindset are explored.

The first captures their attitudes towards saving. All children were asked how much they would save if they were given (a) £10 and (b) £100. We have combined these responses into a single index. This has been done using a principal components analysis – rather than IRT – due to the continuous nature of the observed variables. This scale is then standardised to mean zero and standard deviation one, and forms our indicator of children's savings mindset.

Second, we consider young people's attitudes towards debt. This was measured using a single question to all children age 11 and above: *which one best describes how you feel about borrowing money*:

- *I'd rather not borrow money* (54% of respondents)

- *Borrowing money is OK; but only if I can pay it back* (40%)
- *Borrowing money does not bother me at all, even if I can't afford to pay it back* (6%)

We convert this into a binary variable, indicating whether the child has a bad attitude towards debt – i.e. whether they are willing to borrow money even if they can't pay it back (1) or not (0).

Third, young people's financial self-efficacy (the extent that they believe that they have control over their financial situation) is investigated, measured by the following question: "*Nothing I do will make much difference to my money situation*". (Strongly disagree to strongly agree).

Fourth, we also consider their anxiety about money: "*Thinking about my money makes me anxious*" (Strongly disagree to strongly agree).

Finally, we investigate young people's views on the importance of learning how to manage their money, and their confidence in doing so. This is measured via the following two items:

- "*It is important to learn how to manage your money*" (strongly disagree to strongly agree)
- "*How confident do you feel managing your money?*" (0-10 scale)

### Children's financial connection

Our third measure of children's financial capabilities is their financial connections. Children's financial connections are measured by their use and engagement with their bank account. This is captured via the question:

- *A bank account (or building society account) is somewhere people can keep their money rather than keeping it at home. Do you have a bank account (or building society account) of your own?*

To those who respond "yes", they are then asked "*do you know what type of bank account you have*":

- Current account
- Savings account
- I have both a current and a savings account
- I don't know what type of bank account I have

We use the above information to explore socio-economic differences in children having a bank account and – in particular – a savings account.

Next, children were also asked (if they said they had a bank account) whether they do any of the following with this account themselves:

- Put money in
- Take money out
- Look after my bank details
- Check my bank balance
- Use a debit card
- Internet banking
- Mobile banking
- Go into bank

From the above a scale is formed, capturing how connected children are with their bank account (if they have one).

#### Children's financial behaviours

Three indicators of young people's financial behaviours are considered. The first is whether they actively save, measured by the following questions:

- *When you get money, how often do you save at least some of it, say by putting it in a piggy bank or cash box or into your bank account? (Every time I get money, most times, sometimes, never).*
- *How often do you put money aside into your savings? (Every week, Every month, Most months, Some months, but not others, Rarely or never).*
- *What is the longest time you have saved up for? For example to buy something you wanted? (I haven't saved up money before, Less than a week, More than a week but less than month, More than a month but less than a year, More than a year).*

An IRT graded response model is used to convert these three indicators into a single scale (Cronbach's alpha = 0.62). This "active savings" scale is then standardised to mean zero and standard deviation one.

The second behaviour we consider is children's money management, measured using three items:

- *How often do you plan how you are going to pay for things you need?* (five point scale: never – always).
- *Do you know how much money you have in total, including in your bank and in other places?* (No, yes roughly, yes exactly)
- Whether the child uses a spreadsheet or online budgeting tool to keep track of the money they get and spend (yes/no)

Finally, we investigate shopping habits and – in particular – whether young people “shop around” and look for value for money. This is measured by the following questions:

- *When you want to buy something for yourself, how often do you look in different places or stores to compare prices?* (never, rarely, sometimes, often)
- *When you want to buy something for yourself, do you think about whether the item is good value for money?* (never, rarely, sometimes, often)

Responses to these two questions are combined via an IRT graded response model into a single “*savvy decision making*” scale (Cronbach’s alpha = 0.61), which is then standardised to mean zero and standard deviation one.

#### Parental financial confidence

Parental financial confidence is captured through the following three indicators:

- Financial anxiety. *Thinking about my financial situation makes me anxious* (strongly disagree – strongly agree)
- Financial self-efficacy. *Nothing I do will make much difference to my financial situation* (strongly disagree – strongly agree).
- Financial confidence. How confident do you feel managing your money? (0-10 scale).

Rather than form a composite indicator, we explore socio-economic differences in each of these quite distinct measures separately.

#### Parental financial behaviour

The data also includes indicators of household financial behaviour, captured through the following four indicators:

- Savings. *Which of these best describes how often you put money aside into savings?* (Rarely or never; Some months, but not others; Most months; Every month)

- Ability to pay unexpected bill. *Thinking about an unexpected bill which you have to pay within seven days from today. Which, if any of the following would you do to pay a bill of £300?* Binary variable, coded as one if they indicated any of the following: use a form of credit or overdraft, get the money from friends or family as a gift or loan, have to sell personal/household item(s), would not be able to pay this expense.
- High-interest debt. Whether they have high-interest debt product (pay-day loan or store card).
- Credit card. Whether they have a credit card that they do not pay off in full each month.

Rather than form a composite indicator out of these quite distinct aspects of parental financial behaviour, we explore socio-economic differences in each of these measures separately.

#### Financial responsibility parents give to child

The responsibility parents give to their children with respect to finances is measured in four ways. First, a graded response model is used to combine the following three questions into a scale (Cronbach's alpha = 0.71) capturing who has responsibility for the spending and saving decisions made with the child's money:

- Parent report of how child's money is spent. *Who is mainly responsible for deciding how child's day-to-day money is spent?* (parents, child, decide together).
- Child report of how child's money spent. *When you have money, who usually decides what you spend it on?* (My parents or carers decide; I decide; We both decide)
- Child report of how child's money saved. *When you have money, who usually decides whether you save any of it?* (My parents or carers decide; I decide; We both decide)

A second scale is then created via capturing whether parents delegate responsibility of paying for certain items to their child, using their own money (Cronbach's alpha = 0.73). This is based upon the following question asked with respect to six items (non-school clothes, snacks or sweets, presents for other people, toiletries and cosmetics, toys/games/gadgets, going out with their friends):

- *Does child pay for any of the following things out of their own money?* (No – their parents or carers pay for this for them; Yes – they sometimes pay for this from their own money; Yes – they pay for this from their own money)



The third scale captures whether parents set rules around money and the strictness with which these are applied. This is measured by the question: *I set clear rules or agreements for child about money that I stick to (0-10 scale)*

Finally, parents were asked “*how often does child receive pocket money or allowance*” and “*how much pocket money or allowance does child receive per occasion*”. From this we calculate the weekly pocket money of children. We also create a second variable – dividing pocket money per week by weekly household income (using the mid-point of the reported income bracket) – to create a percentage of household income that is given to the child in the form of pocket money. This will in turn help to account for the fact that high socio-economic families have greater capacity to give their children more pocket money.

### Role modelling

The part played by parents as role models is divided into two components. The first captures the conversations parents have with their children about money. This is captured by parents’ responses to the following question: “*how often do you talk to child about the following*” (never, rarely, sometimes, often) with respect to the following:

- *Where the money your household has comes from*
- *The choices you make when spending your money*
- *The fact that advertising happens online, such as in search results, games, and videos*
- *The risks associated with borrowing money, and the impact of getting into debt*
- *What careers they could do in the future*

The second component refers to money demonstrations, with an IRT scale created based upon how often parents reported showing their child how to do the following:

- *The different ways you pay for things, e.g. by cash or card*
- *How to set a budget*
- *How to check your bank balance*
- *How to shop around to save money*
- *How you pay the different household bills*

### Attitudes towards teaching children about money

Parental attitudes towards teaching children about money are operationalised into three dimensions. The first refers to parental views on whether it is important to teach children how

to manage money, or to protect them from how it works. This is measured by two questions (strongly agree to strongly disagree):

- *Children should be protected from understanding how money*
- *It is important to help your children learn how to manage their money*

The second area is parental confidence in their ability to teach their children and affect their behaviour. This is measured via an IRT scale ( $\alpha = 0.63$ ) created by the following four questions:

- *I can affect how my children will behave around money when they grow up* (strongly disagree – strongly agree)
- *I don't know how to talk to my child/children about money* (strongly disagree – strongly agree)
- *I feel able to be a good role model for my children around money* (strongly disagree – strongly agree)
- *How confident do you feel talking to your child/children about how to manage money* (0-10 scale)

The final area captures parental attitudes to the appropriate age to start teaching children about money. This is measured using a numeric scale based upon responses to the following question: “*At what age group do you think parents and carers should start doing the following with their children to help them become good with their money when they grow up?*”

- *Talk about bills that need to be paid (e.g. heating, electric, phone etc)*
- *Teach the importance of saving*
- *Give them their own spending money/allowance*
- *Involve them in basic family spending decisions e.g. food shopping*
- *Let them manage their own day-to-day money without supervision*
- *Give them responsibility for saving for something they want*
- *Encourage them to think about what to do with their money*
- *Talk to them about debt and borrowing*

Along with numeric responses to the question “*at what age do you think?*”:

- *A person's money habits and attitudes, for example being a spender or a saver, get established?*

- *That children should have the freedom to start making mistakes with their money and learn from them?*

#### Quantity of financial education in schools

Children aged 7-10 were asked at set of questions about whether they had learned about any of the following at school:

- Money topics (4 items). *“Have you learned about these money topics at school?”* (e.g. Different ways of paying for things; Adding up the cost of different things)
- Money planning (8 items). *“And have you learned about any of these money planning topics at school?”* (e.g. How money is earned, saving money).
- Money choices (5 items). *“And have you learned about any of these topics at school about money choices?”* (e.g. How to spot advertising that is trying to sell you something; Finding good value for money when you buy things).

The questions asked to 11-17 year-olds about their financial education were different, and focused upon more advanced concepts:

- Money topics (13 items). *“Have you learned about these money topics at school?”* (e.g. how pensions work, government taxes).
- Financial risks and security (6 items). *“And have you learned about any of these money topics at school about risks and security?”* (e.g. Recognising ways that advertising may try to influence my saving and spending; Where to get help or advice about money; Money risks such as gambling, investing, borrowing, not being insured).

The above have been converted into a set of five separate scales (two for 7-10 year-olds and three for 11-17 year olds), each capturing different aspects of their financial education in school.

#### Quality of financial education in schools

Unfortunately, no direct measure of the quality of financial education offered in schools is available within the data. The measures used in this paper relate to the young people’s perceptions of the financial education they received, and the impact it had upon them. This is firstly measured by their responses to the following direct question asking them how useful they felt financial education lessons were: *“have you learnt about how to manage your money in school or college? How useful was it?”*

- Did not do lessons
- Not useful at all
- Not very useful
- Fairly useful
- Very useful

We then also consider their responses to the following question “*It made a difference to what I do with my money*” (strongly agree to strongly disagree).

#### Children’s academic achievement

As the CYPFCS survey covers young people age 7 to 17 measuring academic achievement was a challenge. Consequently, the following question was included in the parental questionnaire, covering children’s recent performance in two key subjects (English and mathematics): To capture children’s academic achievement, parents were asked “*thinking about your child’s last school report, did your child’s teacher say they were performing?*”

- At age expectations
- Above age expectations
- Below age expectations

There are some clear limitations with these data, including the potential for recall/reporting error and their coarse nature. They nevertheless provide some indication of young people’s academic abilities in these two key subject areas.

#### Children’s general socio-emotional skills

Three socio-emotional skills were captured as part of the survey: perseverance, irritability and agreeableness. These were captured via the following three questions in the child questionnaire (each using a five-point scale – strongly disagree to strongly agree):

- Perseverance: *I carry on with a task whether it is difficult or not*
- Irritability: *I get angry quickly*
- Agreeableness: *I am generally willing to do what is asked of me (for example - by teachers or parents)*

With a further two questions also included in the parental questionnaire (not at all true to very true):

- *To what extent would you say that your child is irritable or quick to get angry*
- *To what extent would you say that your child is often disobedient*

Using the data described in the previous section we construct several continuous scales. These are usually constructed as Expected A Posteriori (EAP) estimates from a two-parameter IRT model (or graded response model for ordinal questions).<sup>9</sup> These are then standardised to mean zero and standard deviation one, allowing us to interpret differences in such variables as ‘effect sizes’ (although it should be noted that we are not claiming these are causal effects). Table C1 provides further detail about the constructs for which such scales have been created, accompanied by details of the age groups they are available for and their internal consistency (based upon Cronbach’s alpha).

On several occasions we also investigate differences in responses to some individual questions. This is done where either the question is of particular interest (e.g. whether the child has a bank account), where there were few other questions on the same topic which could reasonably be grouped together, or if the variable was already reported on a quasi-continuous (e.g. 0 to 10) scale.

**Table C1. Summary of the key variables used in the analysis**  
(a) Child

	Number of items	Type	Alpha	Ages	N
<b>Children's financial capabilities</b>					
<u>Abilities</u>					
Financial ability scale	31	IRT Scale	0.73 (11+) 0.76 (14+)	11 to 17	2,256
<u>Mindset</u>					
Savings mindset	2	PCA Scale	-	7 to 17	3,745
Bad attitudes towards debt	1	Item	-		
Financial self-efficacy	1	Item	-	11 to 17	2,256
Financial anxiety	1	Item	-	11 to 17	2,256
Importance money management	1	Item	-	7 to 17	3,745
Confidence in money management	1	0-10 scale	-	11 to 17	2,256
<u>Financial connection</u>					
Has bank account	1	Item	-	7 to 17	3,745
Has savings account	1	Item	-	7 to 17	3,745
Interaction with bank account	8	IRT Scale	0.89	7 to 17	2,291
<b>Children's financial behaviours</b>					
Active saving	3	IRT Scale	0.62	7 to 17	3,573

<sup>9</sup> One exception is the “savings mindset” scale where a principal components analysis has been used, due to the continuous (rather than categorical) nature of the observed variables.

Savvy decision making	2	IRT Scale	0.61	11 to 17	2,209
<u>Money management</u>					
Plan how to pay	1	Item	-	14 to 17	1,173
Know the amount they have saved	1	Item	-	7 to 17	3,629
Track money in spreadsheet	1	Item	-	14 to 17	1,206

## (b) Parents

	Items	Type	Alpha	Ages	N
<b>Parental financial capabilities</b>					
Financial anxiety	1	Item	-	7 to 17	3,745
Financial self-efficacy	1	Item	-	7 to 17	3,745
Financial confidence	1	0-10 scale	-	7 to 17	3,745
<b>Parental financial behaviour</b>					
Savings	1	Item	-	7 to 17	3,699
Ability to pay unexpected bill	1	Item	-	7 to 17	3,607
High-interest debt	1	Item	-	7 to 17	3,745
Credit card not paid off in full	1	Item	-	7 to 17	3,745
<b>Financial responsibility given to child</b>					
Child involvement in saving/spending	3	IRT scale	0.71	7 to 17	3,363
Paying for discretionary items	6	IRT scale	0.73	11 to 17	2,256
Money rules	1	0-10	-	7 to 17	3,745
Pocket money (absolute value)	1	£ per week % of HH	-	7 to 17	2,491
Pocket money (relative value)	1	income	-	7 to 17	2,103
<b>Role modelling</b>					
Money conversations	5	IRT scale	0.71	7 to 17	3,714
Money demonstrations	5	IRT scale	0.8	7 to 17	3,720
<b>Attitudes towards teaching about money</b>					
Children protected from money	1	Item	-	7 to 17	3,745
Important to teach children about money	1	Item	-	7 to 17	3,745
Age to teach about money	10	IRT scale	0.78	7 to 17	3,745
Ability to influence children's money habits					
Parents confidence in teaching children	1	IRT scale	0.63	7 to 17	3,745

## (c) Schools

	Number items	Type	Alpha	Ages	N
<b>Financial education in schools</b>					
<u>7 to 10 year olds</u>					
Money topics	4	IRT scale	0.69	7 to 10	1,489
Money planning	8	IRT scale	0.79	7 to 10	1,489
Money choices	5	IRT scale	0.68	7 to 10	1,489
<u>11 to 17 year olds</u>					
Money topics	13	IRT scale	0.84	11 to 17	2,256
Financial risks and security	6	IRT scale	0.80	11 to 17	2,256
<b>Quality of financial education</b>					
How useful financial education lessons	1	Item	-	7 to 17	3,716
Made a difference to money behaviour	1	Item	-	7 to 17	3,174