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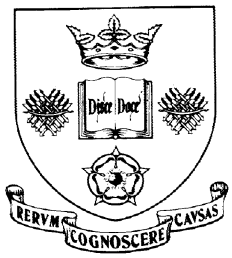

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Abstract: In this paper, we analyse the saving behaviour of a sample of children drawn from the 2002 and 2007 *Child Development Supplements* of the U.S. *Panel Study of Income Dynamics*. In particular, we focus on the influence of children's expectations and attitudes towards the future on the total level of children's savings as well as on savings specifically for future education and savings for other purposes. Overall, our findings suggest that the saving behaviour of children, as measured by the level of savings, appears to be influenced by their expectations, especially expectations regarding future educational attainment and life expectancy. Specifically, the level of savings held by children is monotonically increasing in the expected level of educational attainment and children who are pessimistic about their future life expectancy are found to hold lower levels of savings, which is consistent with discounting future consumption heavily.

Key Words: Expectations; Household Finances; Intergenerational Analysis; Saving.

JEL Classification: D12; D14

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1. Introduction and Background

In the aftermath of the recent financial crisis, there has been increasing interest in the financial literacy of young adults and in the role of financial education in preparing children and young adults for entry into a complex economic and financial environment. Evidence has suggested that the financial literacy of children and young adults is somewhat lacking. For example, Lusardi et al. (2008) find that only 27% of young individuals in their sample drawn from the U.S. *National Longitudinal Survey of Youth* were knowledgeable about basic financial concepts. Hence, it is perhaps not surprising that a number of individuals encounter financial problems during adulthood: Garon (2012), p. 1, comments that, in the U.S., 'it has become painfully clear that millions lack the savings to protect themselves against foreclosures, unemployment, medical emergencies, and impoverished retirements.' Hence, the general consensus amongst academics and policy-makers is that we are not saving enough, especially in the context of saving for retirement, yet research into how attitudes towards saving are influenced at an early stage of the life cycle is relatively scarce.

From a policy perspective, in the U.S., there has been evidence reported in support of financial education programmes as a means to enhance financial outcomes. For example, Bernheim et al. (2001) explore the effect of high school financial curriculum mandates, which were adopted by some U.S. states, on asset accumulation and saving during adulthood. Such mandates were found to increase exposure to financial education. Moreover, asset accumulation and saving were found to be higher amongst individuals who received such education. In addition, the findings indicated a positive relationship between the amount saved during adulthood and having saved as a child via a bank account. Not surprisingly, some states in the U.S. have started to

require financial education at high school: for example, Cole and Shastry (2009) report that 28 U.S. states have mandatory financial literacy programmes at high school. However, their findings, which are based on a different data set and instrumental variable strategy to that of Bernheim et al. (2001), indicate that some U.S. state mandated financial literacy programmes did not influence saving behaviour, suggesting that the role of such programmes may be less clear-cut. Despite such evidence, there has been increasing support for formal financial education at elementary school, see, for example, Sherraden et al., 2011, who explore a four year elementary school based programme, '*I Can Save*', where those children who participated in the programme attained higher scores in a fourth grade financial literacy test than those in the control group.[1]

It is apparent that children and young adults may acquire financial literacy skills from their parents as well as from school and formal education. For example, Mandell (2007) reports that parents are the key source of financial information for students at high school. Such findings tie in with the recent education literature exploring the relationship between the educational attainment of parents and their children (see Black and Devereux, 2011, for a recent survey), where extensive empirical evidence has supported the existence of a strong positive intergenerational association in educational attainment, which clearly has implications for future income and wealth generation.[2] A related strand of the literature on intergenerational aspects of economic and financial attitudes has focused on estimating the

[1] There has also been recent interest amongst policy-makers in the U.K. in promoting financial literacy amongst children and adults to enhance financial outcomes. For example, 'Economic Well-being and Financial Capability' forms part of the U.K. National Curriculum for schools, albeit a non-statutory component, with the aim of teaching school pupils to manage their money and finances effectively. Guidance on how to incorporate personal finance education into the curriculum is provided nationally by the Department for Education.

[2] See Brown et al. (2011) for discussion of possible explanations for this positive intergenerational relationship.

intergenerational elasticity of wealth between parents and their adult children. For example, Charles and Hurst (2003) estimate this elasticity at 0.37 for the U.S. using data from the *Panel Study of Income Dynamics* (*PSID*), whilst Arrondel (2009) reports an estimate of 0.22 for France. Thus, the findings in the existing literature support a sizeable intergenerational correlation of wealth.

Despite such increasing interest in financial literacy, financial outcomes and financial education programmes, research on the saving behaviour and the financial decision-making of children and young adults remains relatively scarce, especially in the economics literature. Furthermore, as Elliott et al. (2011), p. 1101, comment 'research and policy on savings often overlooks children as agents, capable of saving.' Although, as Crossley et al. (2012) argue, children are unlikely to hold significant financial assets or to be faced with any 'substantive financial decisions', it is apparent that they may be faced with decisions on a smaller scale such as whether to save for a toy or the latest mobile phone and such decision-making may shape their attitudes towards finances in the future. In addition, the rising consumption of children and young adults has started to attract the attention of researchers leading to more focus on this increasingly important aspect of household financial decision-making (Sherraden et al., 2011).

There is growing interest in this area from a range of disciplines including economics, education and psychology and sociology. For example, using U.S. data, Knowles and Postlewaite (2004) find that parents' saving behaviour influences the saving behaviour of their adult offspring. Similarly, Cronqvist and Siegel (2010), using data on Swedish twins aged between 18 and 65, explore the origins of saving behaviour. Their findings suggest that an individual's propensity to save is influenced by genetic factors and social transmission from parents to their offspring, where

parent to offspring transmission in saving behaviour is found to be important for young individuals. There has also been some interest in the saving behaviour of young children in the economic psychology literature. For example, Otto et al. (2006) explore children's use of saving strategies in the context of saving for a toy when faced with income uncertainty. The results indicated that children aged between 9 and 12 are able to formally manage their money, with children aged 12 frequently making 'bank' deposits as a means to avoid the temptation to spend tokens on, for example, sweets.

We contribute to the existing literature on household finances by exploring the saving behaviour of children. In particular, we focus on the influence of children's expectations and attitudes towards the future on their saving behaviour. Although individuals' expectations play a central role in economic theory, microeconometric evidence of their causes and effects is, somewhat surprisingly, relatively sparse. The work that does exist is predominately focused on adults' financial expectations, exploring the motivation behind, for example, debt accumulation, spending, saving and investment (see, for example, Brown et al., 2005, 2008, Das and van Soest, 1999 and Souleles, 2004). Hence, we expand this literature by analysing the influence of the expectations of children on their saving behaviour, thereby bringing together two relatively unexplored areas of the economics literature. Overall, our findings suggest that the saving behaviour of children, as measured by the level of savings, appears to be influenced by their expectations, especially in the case of expectations regarding future educational attainment and life expectancy. Specifically, the level of savings held by children is monotonically increasing in the expected level of educational attainment and children who are pessimistic about their future life expectancy are

found to hold lower levels of savings, which is consistent with heavy discounting of future consumption.

2. Data and Methodology

We analyse data drawn from the U.S. *Panel Study of Income Dynamics* (*PSID*), which is a panel of households ongoing since 1968 conducted at the Institute for Social Research, University of Michigan. We focus on data from the 2002 and 2007 *Child Development Supplements (CDS),* which provide additional information relating to parents in the *PSID* and their children, with the objective being to provide information on early human capital formation. We match the information in the *CDS* with that available in the main head of family *PSID* questionnaires for 2001 and 2007, which provide information on household characteristics.[3] Our sample comprises 2,646 observations.

With respect to information on the saving behaviour of children, children aged 12 to 17 were asked: *Do you have a savings or bank account in your name?* Those that responded that they had such an account were asked to specify how much was in the account. The responses thus provide information relating to the stock of savings held by the children at that point in time. The children were also asked the following: *are you saving some of this money for future schooling, like college?*; *how much have you saved for future schooling?;* and *are you saving this money for something besides school?* Hence, we distinguish between three different types of saving in our empirical analysis: the amount of total saving (ts_{it}) of child *i* at time *t*; the amount saved for educational purposes (es_{it}) of child *i* at time *t*; and the total amount saved for non educational purposes (os_{it}) of child *i* at time *t*.

[3] All monetary variables used in our analysis are deflated to 2007 prices.

We are also able to construct a proxy for the flow of saving since information on the total income (y_{it}) and expenditure of the child (e_{it}) is available, the proxy for the flow of saving being defined as the difference between these two measures, $sf_{it} = y_{it} - e_{it}$. The weekly income received by children is the sum of that received from parental allowances or pocket money and income earned from part-time work. With respect to the expenditure of child *i* at time *t*, e_{it} , we focus on total expenditure per week on: music, games, clothes, books, going out, cars, public transport, hobbies and gifts.

As stated above, we focus on the relationship between children's expectations and attitudes towards the future and their saving behaviour. The *CDS* provides information on expectations and attitudes relating to a range of areas, which we exploit in order to compare the influences of expectations regarding different aspects of the child's life. Specifically, we analyse educational expectations as discerned from the child's responses to the following question: *Many people do not get as much education as they would like. How far do you think you will actually go in school? Do you think you will: leave high school before graduation; graduate from high school; graduate from a two-year community college; graduate from a vocational school; attend a four-year college; graduate from a four-year college; or get more than four years of college.* We also analyse the influence of the frequency at which the child worries that they will not get a good job when they are an adult and the frequency at which the child feels discouraged about the future, distinguishing between: 1 to 3 times a week; and almost daily/every day. We also explore the influence of the child believing that there is 'no chance' that they will have enough money to support themselves and their family comfortably by age 30. Finally, in order to explore the

extent to which the child may discount the future, we analyse the influence of the child believing that they will not live past the age of 21.

To analyse the relationship between expectations and children's saving behaviour, we treat ts_{it}, es_{it}, and os_{it} as censored dependent variables in our econometric analysis since they cannot have negative values. For total savings, ts_{it}, approximately 62.6% of children hold no savings. With respect to savings for future education (es_{it}) and for other reasons (os_{it}), the percentages who hold no savings are 77.4% and 76.9%, respectively. Figure 1 shows the distribution of the natural logarithm of total savings, for those children who hold savings, and also for savings for educational purposes and for other reasons. Following Bertaut and Starr-McCluer (2002), we employ a censored regression approach to ascertain the determinants of $\ln(ts_{it})$, $\ln(es_{it})$ and $\ln(os_{it})$, which allows for the truncation of the dependent variables.[4] As the distributions of the dependent variables are highly skewed, following Gropp et al. (1997), we specify logarithmic dependent variables. We denote by $\ln(ts_{it}^{*})$, $\ln(es_{it}^{*})$ and $\ln(os_{it}^{*})$ the corresponding untruncated latent variables, which theoretically can have negative values.

We model each dependent variable via a random effects tobit specification, as shown below for $\ln(ts_{it})$:

$$\ln(ts_{it}^{*}) = \boldsymbol{\beta}' \boldsymbol{X}_{it} + \gamma Exp_{it} + \nu_{it} = \boldsymbol{\theta}' \boldsymbol{Z}_{it} + \nu_{it} \quad (1)$$

$$\ln(ts_{it}) = \ln(ts_{it}^{*}) \qquad if \quad \ln(ts_{it}^{*}) > 0 \quad (2)$$

$$\ln(ts_{it}) = 0 \qquad otherwise \quad (3)$$

[4] In order to deal with the zero values of the dependent variables, we add one to each series.

where the total savings of child i at time t are given by ts_{it} such that i=1,…,n and t=1,…,T, $\boldsymbol{X}_{it}$ denotes a vector of child and household characteristics, Exp_{it} denotes the measure of expectations and ν_{it} is the stochastic disturbance term. The structure of the error terms is given as follows: $\nu_{it} = \alpha_i + \eta_{it}$, where α_i is an individual specific unobservable effect, and η_{it} is a random error term, $\eta_{it} \sim IID\left(0, \sigma_{it}^2\right)$.

Figure 2 shows the distribution of sf_{it}, where approximately 54% of observations of $sf_{it} = y_{it} - e_{it}$ are negative, i.e. where weekly expenditure exceeds weekly income indicating a gap between income and consumption behaviour, which may be met by transfers from parents or other relatives given that children cannot enter into formal credit arrangements. In order to explore the determinants of $\ln\left(sf_{it}\right)$, we conduct quantile analysis given the continuous nature of the dependent variable (see Koenker and Bassett Jr., 1978), where $\ln\left(sf_{it}\right) = \ln\left(y_{it} - e_{it}\right)$ if $\left(y_{it} - e_{it}\right) > 0$; $\ln\left(sf_{it}\right) = (-1)\ln\left(\left|y_{it} - e_{it}\right|\right)$ if $\left(y_{it} - e_{it}\right) < 0$, otherwise $\ln\left(sf_{it}\right)$ is set to zero since there are no values of $\left(y_{it} - e_{it}\right)$ between zero and unity. As stated by Brown and Taylor (2008), the advantage of quantile regression analysis over regression at the mean (i.e. OLS) is that it provides an analysis of different parts of the conditional distribution hence providing a fuller description of the entire distribution. This is because when considering the effect of an explanatory variable on the dependent variable, under quantile regression analysis, the effect is allowed to vary at different quantiles of the conditional distribution. Thus, instead of assuming that covariates shift only the location or the scale of the conditional distribution, quantile regression explores the potential effects of covariates on the shape of the distribution. Hence, independent variables, which are statistically insignificant under regression at the

mean, may have a statistically significant role at certain parts of the saving distribution or may differ in terms of the magnitude of the effect, Koenker and Hallock (2001). The quantile regression approach is given by:

$$\ln\left(sf_{it}\right) = \boldsymbol{\pi}_{\theta}^{'}\boldsymbol{X}_{it} + \phi_{\theta}Exp_{it} + \varepsilon_{\theta it}, \tag{4}$$

where $\varepsilon_{\theta it}$ is the error term associated with the θ^{th} quantile of $\ln\left(sf_{it}\right)$ and $Quant_{\theta}\left(\varepsilon_{\theta it}\left|\boldsymbol{X}_{it}, Exp_{it}\right.\right) = 0$. The θ^{th} conditional quantile of $\ln\left(sf_{it}\right)$ for a given set of characteristics, $\boldsymbol{X}_{it}$ and expectations, Exp_{it}, is denoted by:

$$Quant_{\theta}\left\{\ln\left(sf_{it}\right)\left|\boldsymbol{X}_{it}, Exp_{it}\right.\right\} = \boldsymbol{\pi}_{\theta}^{'}\boldsymbol{X}_{it} + \phi_{\theta}Exp_{it}, \tag{5}$$

where $\boldsymbol{\pi}_{\theta}$ and ϕ_{θ} denote vectors of parameters. We explore each percentile of the distribution in order to investigate whether the influence of expectations is uniform across the distribution.

In terms of the explanatory variables included in the tobit and quantile analyses, we control for characteristics of the child including: gender; ethnicity; and age. We also control for the number of books that the child has as well as the children's standardized scores in the widely used Woodcock-Johnson Revised Achievement Tests, namely, the applied problems test, the letter word identification test and the passage comprehension test.[5] In the tobit analysis, we control for the child's weekly allowance which is related to chores '*like yard work or cleaning the house*', the child's weekly allowance which is unrelated to chores[6] and the weekly pay

[5] These tests have been validated extensively (see Woodcock and Johnson, 1990, for further details of the tests). Each academic test score is standardized, i.e. normalised to have zero mean and standard deviation of unity.

[6] Our focus on the two different types of parental allowance allows for different effects from the two types of transfer, which have attracted attention in the existing literature. For example, Barnet-Verzat and Wolff (2002) explore the motives behind intergenerational financial transfers focusing on pocket money and discuss three main motives in the economics literature for transfers from parents to children: 'altruism, exchange and preference shaping.' Altruistic motives refer to the 'warm glow' parents may enjoy from giving their children money whereas exchange motives refer to the services

received by the child for part-time work.[7] In order to control for other financial transfers received by the child, we control for total annual spending on the child by household members as well as such expenditure by non household members. In terms of household characteristics, we control for: annual total household income; household wealth; and whether the house is owned outright or via a mortgage. We also control for whether the household has done any of the following or has had any of the following happen as a result of economic problems over the last 12 months: sold possessions or cashed in life insurance; postponed major purchases or medical care; borrowed money from friends or relatives; fallen behind in paying bills; filed for or taken bankruptcy, had a creditor call or visit to demand payment, had wages attached or garnisheed by a creditor, had a lien filed against the property as a bill could not be paid or had the home, car or other property repossessed; or moved to cheaper accommodation. Finally, we include state controls to allow for regional differences in the provision of financial education in schools. Summary statistics related to all of the variables used in our econometric analysis are presented in Table A1 in the appendix.

3. Results

Random Effects Tobit Analysis of Saving

The results relating to the random effects tobit analysis of the determinants of the level of total savings of the child are presented in Table 1, where each column controls for a different type of expectation, namely expectations regarding employment, the future, life expectancy, income and education. Marginal effects are

children may provide to parents such as carrying out household chores and preference shaping relates to the provision of economic education.

[7] A small number of studies have explored the relationship between parental allowances and children's labour supply. For example, Wolff (2006) explores the interaction between these two sources of income using cross-sectional French survey data and finds that the labour supply of children in education aged between 16 and 22 is not influenced by the amount of parental financial transfers, which the child takes as exogenously given.

presented throughout and are derived from the derivative of the conditional expected value of the truncated logged response, given the covariates, with respect to the covariates, $\boldsymbol{Z}_{it}$. The conditional expected value function of the truncated logged response, such as $\ln(ts_{it})$ from equation (1), is given by the following $E\{\ln(ts_{it})|\boldsymbol{Z}_{it}\} = \Phi(\boldsymbol{\theta}'\boldsymbol{Z}_{it}/\sigma)\boldsymbol{\theta}'\boldsymbol{Z}_{it} + \sigma\{\phi(\boldsymbol{\theta}'\boldsymbol{Z}_{it}/\sigma)\}$ (and will be heavily weighted towards zero), where ϕ and Φ denote the density and cumulative distribution of the standard normal. The standard error of the regression is given by σ. Differentiation of the expected value function with respect to $\boldsymbol{Z}_{kit}$, the k^{th} covariate, gives: $\partial E\{\ln(ts_{it})|\boldsymbol{Z}_{it}\}/\partial \boldsymbol{Z}_{kit} = \Phi(\boldsymbol{\theta}'\boldsymbol{Z}_{it}/\sigma)\theta_k = prob\{\ln(ts_{it}) > 0|\boldsymbol{Z}_{it}\}\theta_k$. The probability of having a positive outcome can be approximated by the scaling factor, i.e. the proportion of uncensored observations of the dependent variable. The marginal effects reported in Tables 1 and 2 are found by multiplying the estimated coefficients through by the relevant scaling factor.

It is apparent that concerns regarding getting a job in adulthood do not appear to influence the amount of savings held by the child. In contrast, if the child feels discouraged about the future almost daily or every day is inversely associated with the level of savings. Such feelings may lead to the child discounting the future heavily with less concern for saving. In a similar vein, there is a very large and highly statistically significant inverse effect on the level of saving if the child believes that there is no chance that he/she will live beyond 21. Such findings are consistent with focusing on current consumption rather than saving for the future. However, if the child believes that there is no chance that they will earn enough income by the age of 30 to support a family is also characterised by a relatively large and statistically significant negative effect. It may be the case that such concern about the future

reflects current financial difficulties or constraints faced by the child and, hence, a low balance in their bank account. With respect to educational expectations, it is clear that expectations about all levels of education are positively related to the level of savings relative to expecting to leave high school before graduation. Furthermore, with the exception of the category relating to expecting to attend a four year college, it is apparent that the estimated effects are monotonically increasing in expectation of attaining a higher level of education.[8,9]

Given that the focus of our analysis is on the role of expectations, we comment only briefly on the results relating to the other explanatory variables, which have consistent effects across the five specifications. Gender does not appear to influence the amount of saving whereas age and being white are both positively associated with the amount of saving. It is interesting to see that the applied problems test score, which reflects aptitude in mathematics, is positively associated with the level of savings whilst the letter-word and passage comprehension tests both have statistically insignificant influences.

The importance of distinguishing between the sources of income of the children is apparent with income associated with part-time work having a positive

[8] It may be the case that the child's expectations about their future educational attainment are picking up the aspirations of their parents. In the 2002 and 2007 *CDS*, information is provided by the primary care giver on what they hope their child will achieve, specifically they are asked: *In the best of all worlds, how much schooling would you like the child to complete?* The response categories to this question closely mirror those provided by the child (see Section 2). We have also estimated specifications including binary indicators for the parent's aspirations about their child's educational attainment as well as incorporating the child's own expectations regarding their future schooling. Interestingly, for each type of saving, only the educational expectations of the child matter with the aspirations of the parent always being jointly statistically insignificant at the 5 per cent level.

[9] We have also investigated whether children's expectations still matter when we control for parental education as it could be argued that such parental background characteristics might shape children's expectations and, hence, the expectations covariates could be simply picking up the positive correlation with the omitted variable. However, the statistical significance and magnitude of the marginal effects associated with the expectations variables remain unaltered throughout if parental education is included. As a further robustness check, we also restricted the age of the children in the sample to 12-15 year olds as arguably older children might already have plans regarding going to college and, hence, they may have accumulated higher savings for this. The effects of expectations about life expectancy, income and education are all unaffected in terms of magnitude and statistical significance.

influence on the amount of savings, the amount of the allowance that is unrelated to chores having a negative influence and the amount of the allowance associated with chores being characterised by a statistically insignificant influence. The influence of the allowance that is unrelated to chores may be similar to a windfall effect characterised by a large marginal propensity to consume from this additional unearned income. For example, Imbens et al. (2001), who analyse a sample of U.S. lottery players, find that recent winners are estimated to have lower savings rates than individuals who won the lottery some time ago and that non-winners save more in retirement accounts than winners.

With respect to household characteristics, household wealth is positively related to the level of savings. Some of the controls for the existence of household financial problems exert negative influences on the child's level of savings, with the exception of having sold possessions or life insurance which exerts a relatively large positive influence. It may be the case that this positive influence reflects the fact that the household was able to afford such purchases in the past or, alternatively, the money raised may have been transferred to the child.

For brevity, in Table 2, where we decompose the total saving of the child into savings for education (Panel A) and savings for other purposes (Panel B), we only present the results related to the expectations variables. It is apparent that the pattern of the results in Table 2 Panel A is generally in line with that presented in Table 1, albeit with the magnitudes of the effects being somewhat larger. This is especially apparent in the case of the inverse effect associated with the child believing that they have no chance of living beyond the age of 21. The effects associated with educational expectations are also heightened relative to those in Table 1, with the effects once again being monotonically increasing in magnitude with the expected

level of educational attainment.[10] In Table 2 Panel B, the results follow the same pattern albeit with larger effects estimated in the cases of income expectations in adulthood and educational expectations relative to those presented in Table 2 Panel A.[11]

Overall, our findings suggest that the saving behaviour of children, as measured by the level of savings, appears to be influenced by their expectations, especially in the case of expectations regarding future educational attainment and life expectancy. Finally, if all of the expectations variables are entered simultaneously then only the child's expectations about educational attainment and life expectancy are statistically significant, where the marginal effect of the latter dominates in terms of magnitude.

Quantile Analysis of the Difference between Income and Expenditure

Tables 3A to 3C summarise the results from the quantile analysis presenting the effects of the five types of expectations on each percentile of the distribution of our proxy for the flow of saving, $sf_{it} = y_{it} - e_{it}$. Negative values for the average difference between income and expenditure exist across the 10^{th} to the 50^{th} deciles, with this part of the distribution being characterised by expenditure in excess of income.

In Table 3A, it is apparent that having concerns regarding future employment almost every day or daily is inversely associated with the two lowest deciles of the distribution of the gap between income and expenditure, where the extent to which expenditure exceeds income is at its largest. Such concerns, hence, appear to lower the extent to which the child tends to consume beyond their income, whereas concerns

[10] In the 2002 and 2007 *CDS*, the primary care giver is asked: *Other than what you told me about already, do you have money set aside for the child to attend college or other future schooling?* If included as an additional control, the natural logarithm of this variable has a positive and statistically significant association with the child's total savings and savings towards education, having the largest influence on the latter, but is unrelated to the child's savings for other purposes.

[11] If we jointly model savings for education and savings for other purposes, the correlation parameter is statistically insignificant suggesting that these two types of savings are independent.

regarding the future more generally do not appear to influence the difference between the children's income and expenditure.

Turning to Table 3B, it is apparent that educational expectations generally have large and highly statistically significant inverse effects across the 10th to 50th deciles of the distribution of the gap between income and expenditure, namely, those parts of the distribution characterised by consumption in excess of income. Beyond the 50th decile, the effects of educational expectations generally fail to attain statistical significance. Our findings, thus, suggest that having educational expectations pertaining to any level of education, which exceeds leaving high school prior to graduation, is strongly inversely associated with levels of consumption in excess of income.[12] In contrast, the results summarised in Table 3C indicate that if the child believes there is no chance that they will live past 21 has a large and highly statistically significant influence on the 10th to 50th deciles of the distribution of our proxy for the flow of savings suggesting that such expectations are positively related to consumption in excess of income which accords with discounting the future heavily. Similarly, if the child believes there is no chance that he/she will have enough income by the age of 30 to support their family is positively associated with the 10th to 50th deciles of the distribution of the gap between income and consumption, which is associated with the part of distribution where consumption exceeds income. It is also apparent that positive and statistically significant influences are also found at the 60th and 70th deciles, although the positive influence is monotonically decreasing in terms of magnitude moving towards the 90th decile.

Hence, the findings from the quantile analysis endorse the findings from the tobit analysis in that children's expectations about and attitudes towards the future,

[12] We have also explored the influence of parental aspirations regarding their child's educational attainment on the flow of savings. As found above for the stock of savings, only the child's expectations regarding education are found to be statistically significant.

especially those relating to education and life expectancy, are found to be important influences on their saving behaviour. Our empirical analysis thus provides an insight into the factors that influence children and young adults in living either within (where income exceeds consumption) or beyond (where consumption exceeds income) their means at an early stage of their life.

4. Conclusion

The U.S. economy has been characterised historically by low savings rates. For example, Garon (2012), page 4, who explores the history of savings promotion in Europe, the U.S., Japan and other Asian countries, comments, with reference to savings rates in OECD countries over the period 1985 to 2008, that: 'by nearly every measure, the United States jumps out as exceptional in its low saving and turbocharged consumption.' Clearly, in the U.S., the focus has historically been placed on consumption rather than saving as a means to enhance economic growth with heavy reliance on the expansion of credit. It is apparent, however, that households with low or no savings but which hold debt are particularly vulnerable to financial shocks such as redundancy or increases in the cost of living as well as to changes in their personal lives such as having children or getting divorced. It is important, therefore, that further research on the saving behaviour of individuals and households is conducted in order to aid our understanding of this aspect of financial decision-making. Given the importance of education and human capital acquisition during childhood, it is apparent that analysing the saving behaviour of children may be a fruitful line of enquiry. As well as contributing to the existing literature on household finances by exploring the saving behaviour of children, our analysis also serves to inform us about the influence of children's expectations, which, to our knowledge, has not attracted attention in the existing economics literature.

Overall, our findings suggest that the saving behaviour of children, as measured by the level of savings, appears to be influenced by their expectations, especially in the case of expectations regarding future educational attainment and life expectancy. Specifically, the level of savings held by children is monotonically increasing in the expected level of educational attainment and children who are pessimistic about their future life expectancy are found to hold lower levels of savings, which is consistent with discounting future consumption heavily. We find that such influences are heightened in terms of magnitude in the context of the amount of savings held specifically for the purposes of future education. Our findings thus suggest that, as in the case of adulthood, expectations and attitudes towards the future influence financial decision-making and serve to play an important role in the accumulation of savings. Given that behaviour in childhood may influence that in adulthood, our findings offer an insight into the determinants of saving behaviour at an early stage of the life cycle and hopefully will serve to stimulate future research in this relatively unexplored area.

References

Arrondel, L. (2009). 'My Father was Right: The Transmission of Values between Generations.' Paris School of Economics Working Paper Number 2009-12.

Barnet-Verzat, C. and F.-C. Wolff (2002). 'Motives for Pocket Money Allowance and Family Incentives.' *Journal of Economic Psychology*, 23, 339-366.

Bernheim, B. D., Garrett, D. M. and D. M. Maki (2001). 'Education and Saving: The Long-Term Effects of High School Financial Curriculum Mandates.' *Journal of Public Economics*, 80, 436-467.

Bertaut, C. and M. Starr-McCluer (2002). 'Household Portfolios in the U.S.' In *Household Portfolios*, Guiso, L., Haliassos, M. and T. Jappelli (eds). MIT Press.

Black, S. E. and P. J. Devereux (2011). 'Recent Developments in Intergenerational Mobility.' In *The Handbook of Labor Economics*, O. Ashenfelter and D. Card (Eds.) Chapter 16, 1487-1541.

Brown, S., Garino, G., Taylor, K. and S. Wheatley Price (2005). 'Debt and Financial Expectations: An Individual and Household Level Analysis.' *Economic Inquiry*, 43, 100-120.

Brown, S., Garino, G. and K. Taylor (2008). 'Mortgages and Financial Expectations: A Household Level Analysis.' *Southern Economic Journal*, 74, 857-878.

Brown, S., McIntosh, S. and K. Taylor (2011). 'Following in Your Parents Footsteps? Empirical Analysis of Matched Parent-Offspring Test Scores.' *Oxford Bulletin of Economics and Statistics*, 73(1), 40-58.

Brown, S. and K. Taylor (2008). 'Household Debt and Financial Assets: Evidence from Germany, Great Britain and the USA.' *Journal of the Royal Statistical Society, Series A*, 171(3), 615-643.

Charles, K. and E. Hurst (2003). 'The Correlation of Wealth across Generations.' *Journal of Political Economy*, 111, 1155-1182.

Cole, S. and G. K. Shastry (2009). 'Smart Money: The Effect of Education, Cognitive Ability and Financial Literacy on Financial Market Participation.' Harvard Business School Working Paper 09-071.

Cronqvist, H. and S. Siegel (2010). 'The Origins of Savings Behavior.' Institute for Financial Research, Stockholm, Research Report Number 73 September 2010.

Crossley, T. F., Emmerson, C. and A. Leicester (2012). 'Raising Household Saving.' British Academy Policy Centre Publication, February 2012.

Das, M. and A. van Soest (1999). 'A Panel Data model for Subjective Information on Household Income Growth.' *Journal of Economic Behaviour and Organisation*, 40, 409-26.

Elliott, W., Choi, E. H., Destin, M. and K. H. Lim (2011). 'The Age Old Question, which comes first? A Simultaneous Test of Children's Savings and Children's College-bound Identity.' *Children and Youth Services Review*, 33, 1101-1111.

Garon, S. (2012). *Beyond Our Means: Why America Spends While the World Saves*. Princeton University Press.

Gropp, R., Scholz, J.K. and M. J. White (1997). 'Personal Bankruptcy and Credit Supply and Demand.' *Quarterly Journal of Economics*, 112, 217-251.

Imbens, G. W., Rubin, D. B. and B. I. Sacerdote (2001). 'Estimating the Effect of Unearned Income on Labor Earnings, Savings and Consumption: Evidence from a Survey of Lottery Players.' *American Economic Review*, 91(4), 778-794.

Koenker, R. and G. Bassett Jr. (1978). 'Regression Quantiles.' *Econometrica*, 46, 33-50.

Koenker, R. and K. Hollock (2001). 'Quantile Regression.' *Journal of Economic Perspectives*, 15,143-56.

Knowles, J. and A. Postlewaite (2004). 'Do Children Learn to Save from their Parents?' Mimeo, University of Pennsylvania.

Lusardi, A., Mitchell, O. S. and V. Curto (2008). 'Financial Literacy among the Young.' University of Michigan Retirement Research Center Working Paper WP 2008-191.

Mandell, L. (2007). 'Financial Education in High School.' In Lusardi, A. (Editor), *Overcoming the Saving Slump: How to increase the Effectiveness of Financial Education and Saving Programs*, SUNY-Buffalo Press.

Otto, A. M. C., Schots, P. A. M., Westerman, J. A. J. and P. Webley (2006). 'Children's Use of Saving Strategies: An Experimental Approach.' *Journal of Economic Psychology*, 27, 57-72.

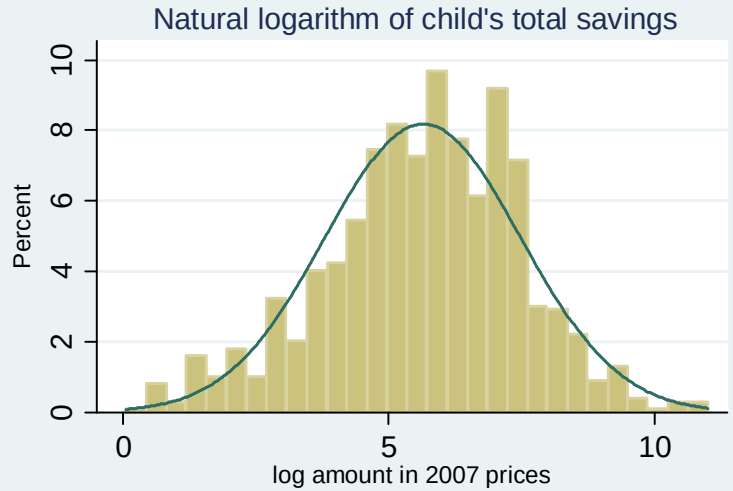
Sherraden, M. S., Johnson, L. Guo, B. and W. Elliott III (2011). 'Financial Capability in Children: Effects of Participation in a School-Based Financial Education and Savings Program.' *Journal of Family and Economic Issues*, 32, 385-399.

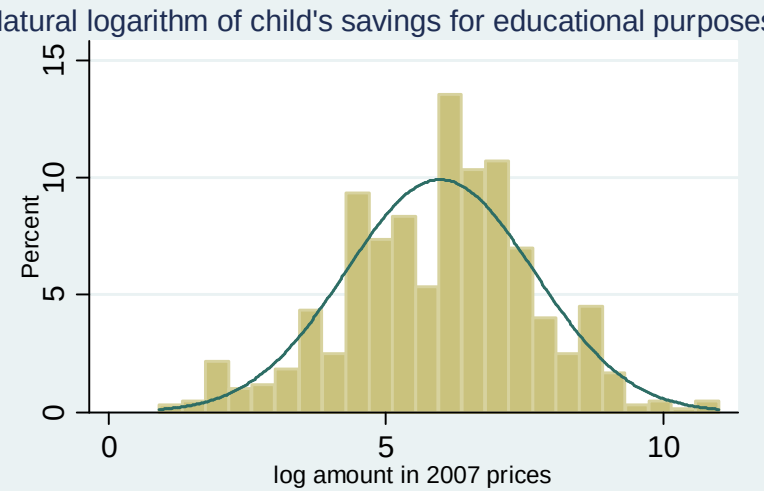
Souleles, N. S. (2004). 'Expectations, Heterogenous Forecast Errors, and Consumption: Micro Evidence from the Michigan Consumer Sentiment Surveys.' *Journal of Money, Credit, and Banking*, 36, 39-72.

Wolff, F.-C. (2006). 'Parental Transfers and the Labor Supply of Children.' *Journal of Population Economics*, 19, 853-877.

Woodcock, R. W. and Johnson, M. B. (1990). *Woodcock-Johnson Psycho-educational Battery Revised*. Allen, TX: DLM Teaching Resources.

FIGURE 1: Distribution of children's total savings; savings for educational purposes; and savings for any other reason: Conditional on saving





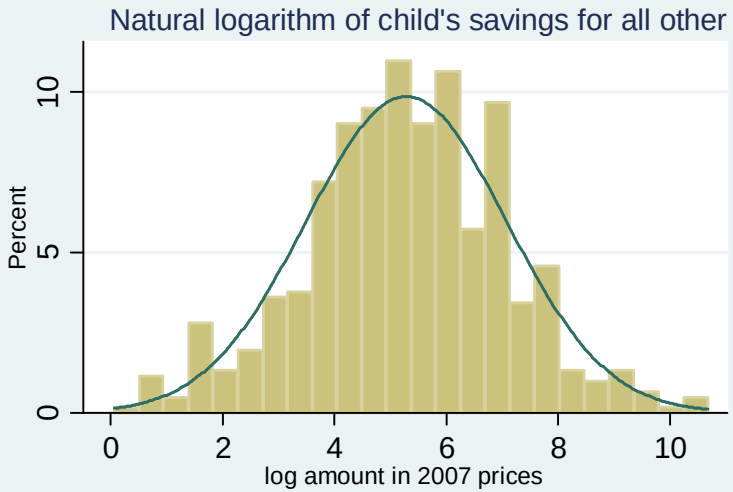


FIGURE 2: Distribution of the difference between children's income and expenditure

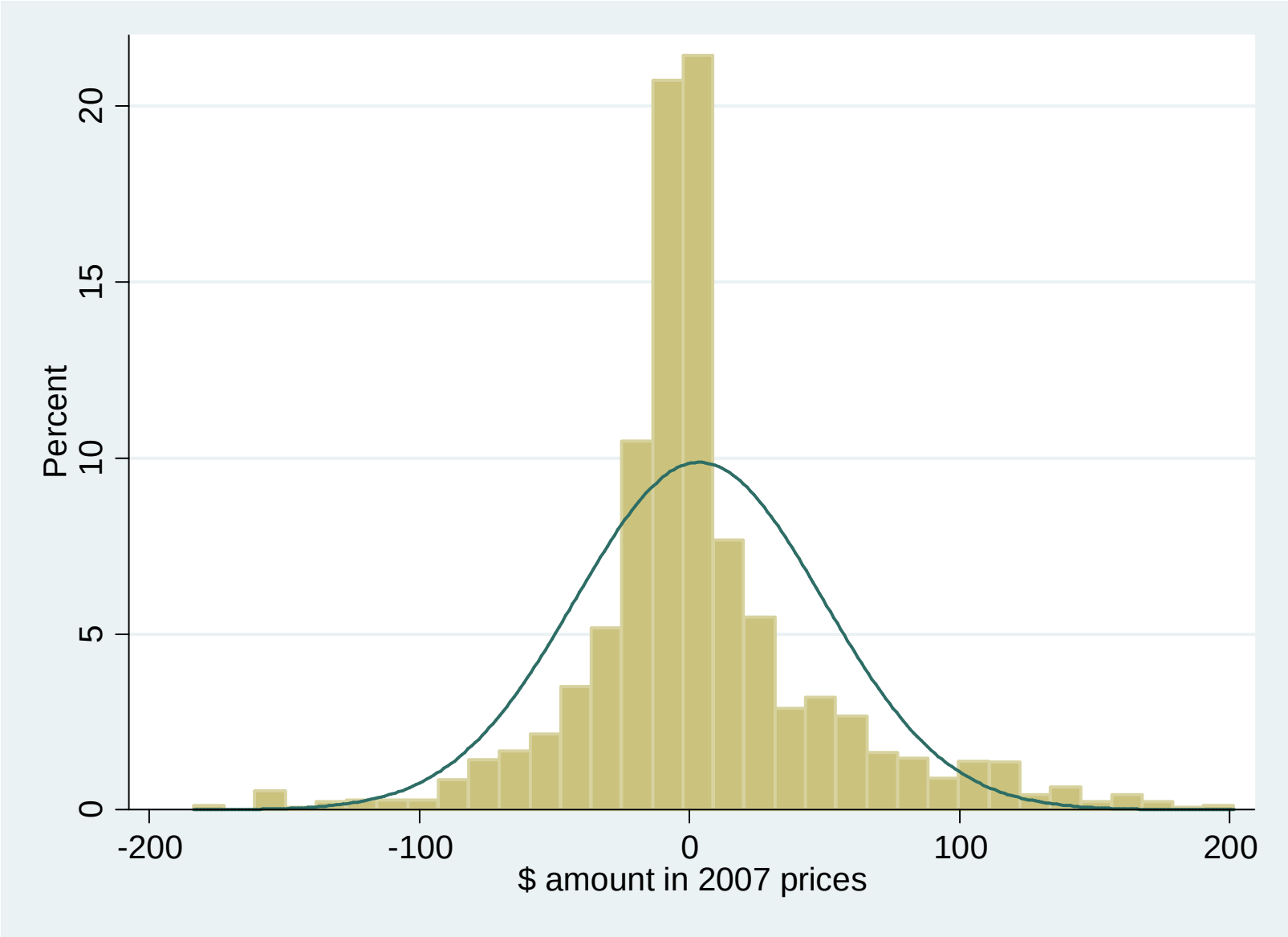


TABLE 1: The determinants of the amount the child saves – random effects tobit model

EXPECTATIONS ABOUT:	**Employment**		**Future**		**Life expectancy**		**Income**		**Education**	
	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*
Male	0.1415	*0.85*	0.1213	*0.73*	0.1303	*0.79*	0.1209	*0.73*	0.2112	*1.27*
White	0.7431	*3.76*	0.7512	*3.81*	0.4446	*2.27*	0.4964	*2.54*	0.6043	*3.09*
Age	0.2652	*5.55*	0.2716	*5.69*	0.1265	*2.64*	0.1260	*2.63*	0.1560	*3.26*
Number of books child has	0.5365	*5.46*	0.5377	*5.48*	0.5582	*5.79*	0.5570	*5.78*	0.4726	*4.84*
Standardised letter word test score	0.1858	*1.04*	0.1805	*1.02*	0.1869	*1.06*	0.1908	*1.08*	0.1857	*0.81*
Standardised passage comprehension test score	0.0363	*0.21*	0.0187	*0.11*	0.0235	*0.14*	0.0119	*0.07*	-0.0185	*0.11*
Standardised applied problems test score	0.5354	*3.75*	0.5076	*3.58*	0.4800	*3.41*	0.4824	*3.43*	0.3912	*2.77*
Log allowance child gets from chores	0.1015	*1.65*	0.1003	*1.63*	0.0239	*0.40*	0.0311	*0.51*	0.0463	*0.77*
Log allowance child	-0.2329	*3.91*	-0.2349	*3.95*	-0.2153	*3.65*	-0.2228	*3.78*	-0.2181	*3.70*
Log pay child receives from employment	0.4207	*6.88*	0.4156	*6.81*	0.4230	*7.11*	0.4388	*7.36*	0.4305	*7.21*
Log spending on child by household members	0.0057	*0.23*	0.0100	*0.41*	0.0136	*0.56*	0.0161	*0.67*	0.0268	*1.10*
Log spending on child by non household members	0.0570	*2.01*	0.0570	*2.02*	0.0428	*1.53*	0.0467	*1.67*	0.0514	*1.85*
Log total household income	0.0148	*0.28*	0.0136	*0.26*	0.0285	*0.55*	0.0057	*0.11*	0.0234	*0.45*
Log household wealth	0.0672	*2.76*	0.0651	*2.68*	0.0761	*3.16*	0.0795	*3.30*	0.0713	*2.96*
Home owned/mortgage	0.4041	*1.95*	0.3966	*1.91*	0.4196	*2.05*	0.4422	*2.16*	0.3611	*1.77*
Household financial problems in the last 12 months:										
Sold possessions/life insurance	1.0136	*2.49*	0.9948	*2.45*	1.0282	*2.55*	1.0763	*2.68*	1.0216	*2.54*
Borrowed from friends/relatives	-0.4746	*1.80*	-0.4390	*1.66*	-0.5080	*1.96*	-0.4637	*1.79*	-0.5100	*1.96*
Behind in paying bills	-1.4459	*5.89*	-1.4589	*5.94*	-1.4427	*5.96*	-1.4891	*6.15*	-1.4109	*5.84*
Postponed a major purchase	0.1138	*0.58*	0.0967	*0.51*	0.1610	*0.83*	0.1329	*0.69*	0.1370	*0.71*
Bankruptcy/loan/creditors	0.3399	*1.50*	0.3342	*1.48*	0.2836	*1.27*	0.3261	*1.47*	0.3119	*1.40*
Moved to cheaper accommodation	-0.8657	*2.04*	-0.8614	*2.03*	-0.8736	*2.11*	-0.9476	*2.28*	-0.9330	*2.26*
The Child's expectations:										
Worry about getting job 1-3 times per week	-0.1944	*0.86*	–		–		–		–	
Worry about a getting job almost daily/ every day	-0.1435	*0.43*	–		–		–		–	
Feel discouraged about the future 1-3 times per week	–		-0.3204	*1.55*	–		–		–	
Feel discouraged about the future almost daily/ every day	–		-0.9264	*2.79*	–		–		–	
No chance will live past 21	–		–		-3.1242	*8.60*	–		–	
No chance that by 30 enough income to support a family	–		–		–		-2.8277	*8.99*	–	
Expect to graduate from high school	–		–		–		–		1.4983	*5.43*
Expect to graduate from 2 year community college	–		–		–		–		1.9063	*7.25*
Expect to graduate from vocational school	–		–		–		–		2.0124	*6.48*
Expect to attend 4 year college	–		–		–		–		1.8622	*7.20*
Expect to graduate 4 year college	–		–		–		–		2.0976	*9.22*
Expect to get more than 4 years college	–		–		–		–		2.2056	*9.17*
Wald, Chi. Squared (*d*); p value	572.14; *p=[0.000]*		577.11; *p=[0.000]*		581.13; *p=[0.000]*		593.00; *p=[0.000]*		616.66; *p=[0.000]*	
Controls	State dummy variables									
OBSERVATIONS	2,646									

TABLE 2: The determinants of the amount the child saves: decomposition – random effects tobit model

EXPECTATIONS ABOUT:	**Employment**		**Future**		**Life expectancy**		**Income**		**Education**	
PANEL A: Amount saved for educational purposes	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*
The Child's expectations:										
Worry about getting job 1-3 times per week	-0.0001	*0.01*	–		–		–		–	
Worry about a getting job almost daily/ every day	-0.2799	*1.45*	–		–		–		–	
Feel discouraged about the future 1-3 times per week	–		-0.2621	*2.22*	–		–		–	
Feel discouraged about the future almost daily/ every day	–		-0.2710	*1.49*	–		–		–	
No chance will live past 21	–		–		-1.5497	*5.94*	–		–	
No chance that by 30 enough income to support a family	–		–		–		-1.6503	*8.25*	–	
Expect to graduate from high school	–		–		–		–		0.5993	*2.18*
Expect to graduate from 2 year community college	–		–		–		–		1.2153	*4.90*
Expect to graduate from vocational school	–		–		–		–		1.2179	*4.12*
Expect to attend 4 year college	–		–		–		–		1.3558	*5.64*
Expect to graduate 4 year college	–		–		–		–		1.5708	*7.32*
Expect to get more than 4 years college	–		–		–		–		1.6590	*7.35*
Wald, Chi. Squared (*d*); p value	261.42; *p=[0.000]*		263.43; *p=[0.000]*		274.16; *p=[0.000]*		277.88; *p=[0.000]*		297.09; *p=[0.000]*	
Controls	As in Table 1									
OBSERVATIONS	2,646									
EXPECTATIONS ABOUT:	**Employment**		**Future**		**Life expectancy**		**Income**		**Education**	
PANEL B: Amount saved for other purposes	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*	M.E.	*TSTAT*
The Child's expectations:										
Worry about getting job 1-3 times per week	-0.1242	*1.05*	–		–		–		–	
Worry about a getting job almost daily/ every day	0.1025	*0.61*	–		–		–		–	
Feel discouraged about the future 1-3 times per week	–		-0.0018	*0.02*	–		–		–	
Feel discouraged about the future almost daily/ every day	–		-0.3352	*1.92*	–		–		–	
No chance will live past 21	–		–		-2.0437	*5.26*	–		–	
No chance that by 30 enough income to support a family	–		–		–		-1.5163	*5.16*	–	
Expect to graduate from high school	–		–		–		–		1.0380	*4.38*
Expect to graduate from 2 year community college	–		–		–		–		1.1193	*4.87*
Expect to graduate from vocational school	–		–		–		–		1.2799	*4.77*
Expect to attend 4 year college	–		–		–		–		0.9805	*4.29*
Expect to graduate 4 year college	–		–		–		–		1.1049	*5.55*
Expect to get more than 4 years college	–		–		–		–		1.0511	*4.99*
Wald, Chi. Squared (*d*); p value	297.34; *p=[0.000]*		297.62; *p=[0.000]*		294.04; *p=[0.000]*		301.41; *p=[0.000]*		306.72; *p=[0.000]*	
Controls	As in Table 1									
OBSERVATIONS	2,646									

TABLE 3A: The determinants of the difference between the child's income and expenditure, the role of employment and future expectations – quantile regression

	EXPECTATIONS ABOUT:							
	EMPLOYMENT: worry about getting a job				**FUTURE:** feel discouraged			
	1-3 times per week		almost daily/ every day		1-3 times per week		almost daily/ every day	
	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*
10th Decile	-0.2531	*2.21*	-0.5419	*3.29*	-0.1460	*1.01*	-0.1307	*0.62*
20th Decile	-0.2124	*1.50*	-0.4511	*2.26*	-0.0850	*0.55*	-0.2376	*1.11*
30th Decile	-0.2529	*1.68*	-0.3635	*1.72*	-0.0157	*0.11*	-0.1818	*0.85*
40th Decile	-0.2313	*1.47*	-0.4689	*2.13*	-0.2122	*1.23*	-0.3316	*1.33*
50th Decile	-0.0289	*0.11*	-0.2930	*0.79*	-0.2778	*1.12*	-0.4380	*1.23*
60th Decile	-0.0558	*-0.22*	-0.2418	*0.68*	-0.4299	*1.95*	-0.3669	*1.15*
70th Decile	-0.1271	*0.70*	-0.1722	*0.69*	-0.3571	*1.90*	-0.3032	*1.13*
80th Decile	-0.0698	*0.37*	-0.0514	*0.20*	-0.1866	*1.21*	-0.1118	*0.50*
90th Decile	-0.1443	*1.19*	-0.0603	*0.36*	-0.0715	*0.67*	-0.0355	*0.23*
Controls	As in Table 1							
OBSERVATIONS	2,646							

TABLE 3B: The determinants of the difference between the child's income and expenditure, the role of education expectations – quantile regression

	EXPECTATIONS ABOUT: FUTURE EDUCATION											
	Graduate from high school		Graduate 2 year community college		Graduate from vocational college		Attend 4 year college		Graduate 4 year college		Get more than 4 years college	
	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*	COEF	*TSTAT*
10th Decile	-1.1512	*5.13*	-1.1476	*5.36*	-1.5281	*6.05*	-1.3969	*6.83*	-1.2356	*7.26*	-1.3120	*6.98*
20th Decile	-1.5007	*9.17*	-1.5553	*9.75*	-1.8093	*9.23*	-1.7045	*11.08*	-1.4828	*11.74*	-1.7151	*12.09*
30th Decile	-1.2993	*6.08*	-1.3989	*6.73*	-1.2296	*4.69*	-1.5883	*7.93*	-1.3764	*8.33*	-1.7161	*9.25*
40th Decile	-1.1826	*4.52*	-1.3595	*5.36*	-0.9282	*2.90*	-1.5068	*6.12*	-1.4007	*6.89*	-1.6986	*7.51*
50th Decile	-1.0305	*2.99*	-1.6896	*6.30*	-0.5247	*1.54*	-1.3070	*4.97*	-1.2633	*5.86*	-1.6015	*6.67*
60th Decile	-0.4720	*0.89*	-0.9946	*1.94*	-0.4074	*0.63*	-1.0772	*2.15*	-0.7571	*1.85*	-0.7753	*1.71*
70th Decile	-0.4509	*1.41*	-0.7188	*2.32*	-0.4017	*1.02*	-0.7604	*2.50*	-0.5393	*2.16*	-0.6011	*2.19*
80th Decile	-0.2510	*0.91*	-0.5510	*2.05*	-0.3092	*0.92*	-0.4570	*1.73*	-0.2909	*1.35*	-0.3699	*1.35*
90th Decile	-0.0716	*0.34*	-0.2900	*1.42*	-0.1034	*0.41*	-0.1014	*0.52*	-0.2034	*1.24*	-0.1392	*0.76*
Controls	As in Table 1											
OBSERVATIONS	2,646											

TABLE 3C: The determinants of the difference between the child's income and expenditure, the role of expectations about life expectancy and future income – quantile regression

	EXPECTATIONS ABOUT:			
	LIFE EXPECTANCY: No chance will live past 21		**INCOME:** No chance that by 30 enough income to support a family	
	COEF	*TSTAT*	COEF	*TSTAT*
10th Decile	2.1457	*12.05*	2.1854	*14.21*
20th Decile	1.8368	*11.99*	1.9188	*12.38*
30th Decile	1.6120	*7.81*	1.6885	*12.00*
40th Decile	1.2447	*4.95*	1.3861	*5.08*
50th Decile	1.0285	*3.65*	1.2159	*3.30*
60th Decile	0.7210	*2.10*	1.0041	*3.29*
70th Decile	0.3714	*1.17*	0.6555	*2.89*
80th Decile	0.2843	*1.27*	0.4363	*1.77*
90th Decile	0.1101	*0.66*	0.1644	*0.93*
Controls	As in Table 1			
OBSERVATIONS	2,646			

TABLE A1: Summary Statistics

	MEAN	*STD*
Dependent variables		
Log child's total savings in 2007 prices, $\ln(ts_{it})$	2.1136	*2.9545*
Log child's savings for educational purposes in 2007 prices, $\ln(es_{it})$	1.3529	*2.6278*
Log child's saving for other purposes in 2007 prices, $\ln(os_{it})$	1.2181	*2.3857*
Log difference between child's income and expenditure, $\ln(sf_{it})$	-0.1064	*2.9620*
Independent variables		
Male {0, 1}	0.4996	*0.5001*
White {0, 1}	0.3292	*0.4701*
Age	15.0208	*2.0229*
Number of books child has	3.3707	*0.9524*
Letter word test score [#]	47.1081	*6.3519*
Passage comprehension test score [#]	27.8979	*5.4275*
Applied problems test score [#]	40.1527	*6.9929*
Log allowance child gets from chores	0.6505	*1.3801*
Log allowance child	0.8581	*1.5497*
Log pay child receives from employment	0.5499	*1.3329*
Log spending on child by household members	3.7444	*3.7904*
Log spending on child by non household members	2.9984	*3.0119*
Log total household income	10.3181	*1.7778*
Log household wealth	5.2825	*4.0976*
Home owned/mortgage {0, 1}	0.6633	*0.4727*
Household financial problems in the last 12 months:		
Sold possessions/life insurance {0, 1}	0.4271	*0.2022*
Borrowed from friends/relatives {0, 1}	0.2109	*0.4080*
Behind in paying bills {0, 1}	0.3050	*0.4605*
Postponed a major purchase {0, 1}	0.3163	*0.4651*
Bankruptcy/loan/creditors {0, 1}	0.2532	*0.4349*
Moved to cheaper accommodation {0, 1}	0.0601	*0.2377*
The Child's expectations:		
Worry about getting job 1-3 times per week {0, 1}	0.1659	*0.3721*
Worry about a getting job almost daily/ every day {0, 1}	0.0789	*0.2698*
Feel discouraged about the future 1-3 times per week {0, 1}	0.2082	*0.4061*
Feel discouraged about the future almost daily/ every day {0, 1}	0.0907	*0.2872*
No chance will live past 21 {0, 1}	0.0896	*0.2856*
No chance that by 30 enough income to support a family {0, 1}	0.0929	*0.2904*
Expect to graduate from high school {0, 1}	0.0907	*0.2872*
Expect to graduate from 2 year community college {0, 1}	0.0982	*0.2977*
Expect to graduate from vocational school {0, 1}	0.0457	*0.2089*
Expect to attend 4 year college {0, 1}	0.1017	*0.3022*
Expect to graduate 4 year college {0, 1}	0.3587	*0.4797*
Expect to get more than 4 years college {0, 1}	0.1795	*0.3839*
OBSERVATIONS	2,646	

Notes: [#]in the empirical analysis we standardize the test scores to have zero mean and standard deviation of unity.