# The Correlation of Wealth Across Generations

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*Abstract*

This paper assesses the similarity in net worth between parents and their children, and explores alternative explanations for this similarity. Using a standard life cycle model, we show that, depending on the extent to which preferences for saving are correlated across generations, the relative magnitudes of the intergenerational wealth and income correlations are *a priori* indeterminate. We document substantial intergenerational persistence in wealth: the age adjusted correlation is between 0.23 and 0.50, similar in magnitude to the documented intergenerational income correlation. These intergenerational relationships are large, especially since we only focus on households who have not yet received bequests from their parents. Permanent income measures explain less than one-half of the raw intergenerational wealth correlation. Controlling for the receipt of large gifts, expected bequests and interfamily risk sharing explains a small amount of the remaining wealth correlation. Our model suggests that such a finding implies a sizeable intergenerational persistence in preferences for saving. We provide direct evidence for this claim. Using measures of preferences from the Panel Study of Income Dynamics, we show that the responses to survey questions designed to measure risk aversion are highly correlated between parents and their children.

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## I. Introduction

How the economic fortunes of children relate to those of their parents is a question which has long fascinated economists and other scientists. The degree to which children in a given society inherit their parents' economic positions is a measure of the degree to which economic inequality in any generation persists to the next. Social scientists have historically been very curious about both the *extent* and the *cause* of intergenerational fluidity and its dispersion across society's different groups. Is it the case that children are similar to their parents in economic positions because of the structure of economic opportunity in society? That is, are well-off parents able to protect and pass on their good fortunes to their children, irrespective of how innately different their children are from them? Or, are children and parents similar because children inherit, either biologically or through learning, characteristics from their parents which determine how they fare economically?

In this paper, we study the correlation in net worth between parents and their children.[1,2] An analysis of wealth can shed light on both the similarity between parents and children in their abilities to generate resources (as in the income they earn) and the intergenerational similarity in factors such as propensities to save out of income, which determine how those resources are allocated over time. Moreover, understanding wealth is an issue of independent interest in empirical economics. The large amount of heterogeneity in wealth, and the failure of income and other life cycle factors to explain that heterogeneity, suggests the possible importance of family background in the wealth generating process.[3] Identifying where this individual heterogeneity comes from and how it evolves across generations is an important step in more fully understanding household consumption and saving decisions.

Why may family background play an important role in a child's decision to accumulate wealth, conditional on the child's income? Possible answers include: (a) that because wealth, unlike income, can be transferred directly across generations, actual or expected gifts may be a direct input into the parent-child wealth correlation; (b) that high wealth parents can relax liquidity constraints faced by their children, freeing them to make investment choices with high returns such as home ownership or post secondary education; and (c) that high wealth parents may provide implicit wealth insurance for their children, enabling them to engage in high risk, high return investments, such as stock or business

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1 Our measure of net worth, formally defined below, includes financial assets, and housing, business and vehicle equity net of all debts outstanding.

2 There is much existing literature exploring the correlation in economic position, both empirically and theoretically, between parents and their children. Almost all of this literature exclusively focuses on occupation, earnings and income. As far as we know, Mulligan (1997) is the only other attempt to assess the relationship between parents' and children's wealth positions using recent data. His study documents an intergenerational wealth correlation but does not attempt to disentangle from where that correlation is coming. In the next section, we summarize Mulligan's work and discuss many of the differences between our work and his.

ownership, confident that the parents will limit the extent of the downside risk of these activities. The paper explicitly studies all of these explanations. In addition, it uses a variety of strategies to examine another possible explanation: the possibility that children inherit from their parents, either biologically or through financial learning, economic preferences which determine how many economic resources they generate, and what they do with the economic resources at their disposal.

The paper begins with a simple lifecycle consumption model in the spirit of Becker and Tomes (1979) or Ham and Mulligan (2000), designed to illustrate the role played by income and preference parameters in generating a parent-child wealth correlation. Should the wealth correlation theoretically be larger or smaller than the well-documented income correlation? The model permits a theoretical investigation of the relative size of the income and wealth correlation. We show that it is theoretically ambiguous which of these correlations is larger; their relative size depends on the intergenerational correlation in endowed preferences for saving. Furthermore, we show that according to our standard lifecycle savings model, any correlation in wealth that remains after controlling for income and transfers results from a correlation in preferences.

The empirical analysis focuses on parent-child financial wealth similarities measured before the child has received any inheritance from their parent. As discussed below, because of data limitations, we do not observe many parent child pairs in which both parents have become deceased at the time we measure child wealth.[4] Using both transition matrices and a series of regressions, we find evidence of substantial intergenerational persistence in wealth. The age adjusted correlation between parents and their children in terms of net worth is in the range of 0.25 - 0.52, similar to the documented correlation in permanent income between parents and their children. In our view, this correlation is large, especially since we only focus on households who have not yet received bequests from their parents. Controlling for measures of the permanent income of both parents and the child explains less than *one-half* of the raw intergenerational wealth correlation.

The paper then attempts to isolate the source of the similarity in wealth: how much of the similarity in wealth is due to similarity in income, how much to actual past or expected future transfers, and how much to the relaxing of liquidity constraints or inter-family risk sharing? We find that accounting for previous receipt of large gifts reduces the intergenerational wealth correlation slightly, but the remaining correlation is still large and statistically different from zero. We do find some evidence for the role of parental wealth insurance or the alleviation of liquidity constraints as being important - especially with the child's decision to invest in stocks. But, even controlling for the child's portfolio choice does not

[3] The large amount of heterogeneity in wealth conditional on income is well documented in the literature. See, for example, Hurst, Luoh and Stafford (1998), Samwick (1998), and Venti and Wise (2000).

[4] However, the expectation of bequests can be important in determining parental and child wealth. We explicitly control for expected bequests in both the theoretical and empirical work that follows.

explain the remaining intergenerational wealth correlation causing us to speculate that shared preferences or financial learning play a large and important role. In the final section of the paper, we present both direct and indirect evidence that part of the intergenerational correlation in wealth may derive from similarity in preferences. Using experimental survey data, we show that measures of risk are strongly correlated between parents and their children - especially at the tails of the risk aversion distribution.

## II. Related Literature

Most of the theoretical and empirical literature on the economic similarity between parents and children has focused on the correlation in income, earnings or labor supply (Becker and Tomes (1979), Loury (1981), Becker and Tomes (1986), Altonji and Dunn (1991), Solon (1992), Zimmerman (1992), Couch and Lillard (1994), Mulligan (1996), Mulligan (1997), Solon (1999), and Altonji and Dunn (2000), Ham and Mulligan (2000)).[5] The basic intuition across the theoretical models of the intergenerational income correlation derives from the fact that parents care about their child's well-being. In such models, the parent and child are "endowed" with preferences and innate ability. The parents optimally choose to invest in their children's human capital (which augments their ability) through financing educational expenditures. They continue financing education up to the point where the returns to financing an additional dollar of education equals the interest rate faced by the parents. After that point, if parents wish to increase their child's utility, they directly transfer wealth via a bequest. The degree of similarity in income between parents and children is a function of how much the parents care about their children, the intergenerational similarity in their endowment of preferences, and the intergenerational similarity in their endowments of ability plus the distribution of the shocks that idiosyncratically affect children's income.

Many authors have empirically estimated the income correlation. Once taking account of measurement errors in survey data, the consensus estimate of the income correlation between parents and their children is in the range of 0.4 to 0.6 (Mulligan (1997) and Solon (1999)). In other words, forty percent of the gap in permanent income between two parents is expected to remain between their two children. Despite the consensus about the size of the income correlation, many important questions about the similarity in economic position between parent and child remain unanswered (Solon 1999). What drives the intergenerational wealth correlation? Theory tells us what should matter, but offers little guidance as to how much each factor should matter. Is the similarity in endowed preferences between parents and children relatively large? Is the similarity in innate ability relatively small? Examining wealth similarities may help answer some of these questions.

[5] See Solon (1999) for a survey of the literature on intergenerational income correlations. See Mulligan (1997) for a survey of intergeneration correlations in income, earnings and consumption.

Relative to the literature on income correlations, the literature on the similarity in net worth is almost non-existent.[6] The small empirical literature on the correlation in financial wealth has mostly used specialized samples and historical data. Wahl (1995) uses parent-child pairs that can be identified from 1860 and 1870 Censuses. Instrumenting for parental wealth, she finds that the correlation in level-wealth between parents and children is 0.36 in the sample using 1860 data and 0.58 in the sample using 1870 data. Menchik (1979) uses data from Connecticut in the 1930s and 1940s to identify parents who died. He then followed as many of their sons as possible until their death. He estimated a coefficient on parental wealth from a log wealth equation of 0.76. Kearl and Pope (1986) using data from Utah Mormons in the 19th century finds an intergenerational wealth coefficient of 0.26.

One recent study does attempt to address the correlation in financial wealth in more recent periods. Mulligan (1997) uses data from the Panel Study of Income Dynamics (*PSID*) to estimate the intergenerational correlation in log earnings, log income, log consumption and log wealth. Although wealth was not the primary focus of his analysis, Mulligan reports an estimate of the similarity in wealth between parents and their children. Restricting the sample to those with non-negative wealth in the mid-1980s, Mulligan estimates the elasticity in log wealth between parents and their children to be between 0.32 to 0.43.[7]

Aside from Mulligan, no one has explored the wealth correlation between parents and children using data from the latter half of the 20th century. We extend his work in many directions. In addition to documenting the wealth correlation, ours is the first study to examine what factors - income, expected bequests, gifts, or preferences - determine where the intergenerational wealth correlation is coming from.[8,9] We explore how much of the correlation in wealth is due to the fact that income is correlated. In addition, we examine whether that parents, either by biologically or through learning, affect their

[6] Other recent papers study the extent and the reasons for correlation in parent-child economic outcomes. Cox, Ng, and Waldkirch (2000) document intergenerational consumption linkages. Altonji, Hayashi and Kotlikoff (1992) test for whether parents are indeed altruistic towards their children. Shea (2000) sets out to examine the reasons as to why income is correlated between parents and their children. He finds that unexpected innovations to a parent's income have little effect on the income of their children. He concludes that it is not the parent's money, per se, that drives the parent child income correlation.

[7] Mulligan measures parents and children both during the 1984 to 1989 waves of the *PSID*. He regresses average child log wealth between 1984 and 1989 on average parental log wealth between 1984 and 1989 and controls for parental and child age and marital status. The 0.32 estimate is from an OLS regression. The 0.43 estimate is from an IV regression in which he instruments for parental wealth using observed parental characteristics.

[8] Even in documenting the intergenerational wealth correlation, we differ from the approach taken by Mulligan. First, we do not restrict our analysis to households with positive wealth. As we show below, almost 20% of the children in our sample have zero or negative wealth. By excluding such observations from one's analysis, it is possible that the estimated wealth correlation could be biased. Our results suggest, however, that the extent of the intergenerational wealth correlation is not sensitive to whether these households are omitted. Second, with the large fraction of our sample of children with negative wealth and given the skewness of the wealth distribution, we take care to measure the wealth correlation *throughout* all the parents' and children's wealth distribution (using transition matrices).

[9] While Mulligan (1997) does not attempt to isolate the factors that explain the wealth correlation, Mulligan (1996) follows a similar approach as to the one employed in this paper with regards to explaining the intergenerational correlation in labor supply. He finds that there is strong evidence that 'work ethic' - an unobserved preference for work - is transmitted from parents to children.

children's propensity to accumulate wealth conditional on income. We offer explicit and implicit evidence that family background is important in determining a child's propensity to accumulate wealth, even after conditioning on the similarity in their incomes. In doing so, we provide direct evidence that survey measures of risk are highly correlated between parents and their children - especially at the tails of the risk distributions.

## III. A Model of Wealth Accumulation

What are the factors which can generate an intergerational correlation in wealth? What does the wealth correlation tell us which the literature focusing on measures of parent-child similarity in income does not? Is it possible to say *a priori* whether one would expect the correlation in wealth to be larger than the well-known correlation in income? In this section, we present a simple model of lifetime consumption designed to answer these questions. The aim is to motivate the empirical work which follows, to illustrate the set of factors which a standard model suggests should generate a correlation in wealth between parent and child, and to show the relationship between the measure which is the focus of this paper and the income correlation on which the previous literature has mostly focuses.

### *A. A Model of the Correlation in Wealth Across Generations*

The model is a simple over-lapping generations model, with both parents and children living for two time periods. Both parents and children earn income during the first period of their life, and receive no income in the second, during which they are retired. Parents are altruistic in the model, value their child's welfare, and can transfer income to their child in the form of a bequest at the time of the parents' death. For simplicity, we assume that all interest rates in the economy are equal to zero, each parent has only one child, parents cannot leave negative bequests, transfers take place only at the time of death and the dynasty ends with the children. It is trivial to extend the model by relaxing any of these assumptions.

We suppose that parents place a weight $\alpha$ on their child's utility. We assume that the child does not care about their parent in this simple model, and therefore makes no transfer to them. The child and parents derive utility from consumption, which they finance out of their income. Both parents and the child (indexed by *p* and *k*, respectively) discount future consumption, with the relevant discount factors being $\beta_p \leq 1$ and $\beta_k \leq 1$, respectively. Utility in any period, *t*, for both parent and child is $\frac{\gamma_j}{\gamma_j - 1} C_{jt}^{\gamma_j - 1/\gamma_j}$, $j = p,k$, where $\gamma_j$ is the coefficient of relative risk aversion.

A child chooses consumption in the first and second periods of her life, out of her income $Y_k$, and any transfers from her parents, *X*, to maximize:

$$U^k(C_k) = \frac{\gamma_k}{\gamma_k - 1} C_{k1}^{(\gamma_k - 1)/\gamma_k} + \beta_k \frac{\gamma_k}{\gamma_k - 1} C_{k2}^{(\gamma_k - 1)/\gamma_k}. \quad (1)$$

It is easy to show the optimal consumption choice for the child will be to set

$$C_{k1}^{*} = \Delta_k C_{k2}^{*} \quad (2)$$

where $\Delta_k = \beta_k^{-\gamma_k}$. Given the child's budget constraint, $C_{k2} = Y_k + X - C_{k1}$, the child's optimal consumption in the two period are given by:

$$C_{k1}^{*} = \frac{\Delta_k}{1+\Delta_k}(Y_k + X), \quad \text{and} \quad C_{k2}^{*} = \frac{1}{1+\Delta_k}(Y_k + X). \quad (3)$$

The parent chooses consumption in the two periods of his life, and the level of resources he wishes to transfer to his child. He makes these choices knowing that his child's optimal choices in the future will be given by (3). He therefore chooses his own consumption in both periods and the optimal bequest to leave to his child so as to maximize:

$$\frac{\gamma_p}{\gamma_p - 1} C_{p1}^{(\gamma_p - 1)/\gamma_p} + \beta_p \frac{\gamma_p}{\gamma_p - 1} C_{p2}^{(\gamma_p - 1)/\gamma_p} + \alpha\left[U^k(C_{k1}^{*}, C_{k2}^{*})\right]. \quad (4)$$

The parental budget constraint is:

$$Y_p = C_{p1} + C_{p2} + X. \quad (5)$$

It is straightforward to show that the optimization of (4) with respect to (5), yields an optimal consumption path for parental consumption, as a function of the optimal desired bequest, $X^*$, given by:

$$C_{p1}^{*} = \Delta_p C_{p2}^{*} = \frac{\Delta_p}{1+\Delta_p}\left(Y_p - X^*\right) \quad (6)$$

where $\Delta_p = \beta_p^{-\gamma_p}$.[10] The intuition for this result is that the parent equates their marginal utility of discounted consumption across the two periods, and these are both equal to the utility gain that the parent derives from a marginal transfer to the child. Parent and child wealth at the end of period 1, $W_p$ and $W_k$, respectively, can be also written as functions of optimal bequests, or

$$W_p = \frac{1}{1+\Delta_p}\left[Y_p + \Delta_p X^*\right] \quad (7)$$

[10] For expositional ease, at this point in the paper, we express optimal consumption and wealth as a function of X*, the optimal bequest. We explicitly solve for the level of optimal bequest below.

and

$$W_k = \frac{1}{1+\Delta_k}\left[Y_p - \Delta_k X^*\right] \quad (8)$$

The Case of No Parental Altruism ($\alpha$ = 0)

We are interested in the correlation between the wealth that the parent and child hold at the end of the first period of their respective lives. We begin by explicitly considering the case of no parental altruism ($\alpha$ = 0). By the Kuhn-Tucker conditions to the parent's optimization problem, we know that the optimal bequests, $X^*$, equals zero if $\alpha = 0$.

If $X^* = 0$, then (7) and (8) can be re-written as:

$$W_p = Y_p\left(\frac{1}{1+\Delta_p}\right), \quad \text{and} \quad W_k = Y_k\left(\frac{1}{1+\Delta_k}\right). \quad (9)$$

Defining the variables $\theta_p = \frac{1}{1+\Delta_p}$ and $\theta_k = \frac{1}{1+\Delta_k}$, and expressing wealth in logs, we get:

$$\tilde{W}_p = \tilde{Y}_p + \tilde{\theta}_p, \quad \text{and} \quad \tilde{W}_k = \tilde{Y}_k + \tilde{\theta}_k\ , \quad (10)$$

The log of household wealth is a linear function of log income and log preference endowments. We refer to $\theta_j$ as a measure of the household's 'endowed preferences', a summary statistic for both the household's time discount rate and their preference for risk. Given (10), the covariance between parent and child log wealth is the sum of four relevant co-variances. Specifically,

$$Cov\left(\tilde{W}_k,\tilde{W}_p\right) = Cov\left(\tilde{Y}_p,\tilde{Y}_k\right) + Cov\left(\tilde{\theta}_p,\tilde{\theta}_k\right) + Cov\left(\tilde{Y}_p,\tilde{\theta}_k\right) + Cov\left(\tilde{Y}_k,\tilde{\theta}_p\right) \quad (11)$$

Equation (11) shows that the covariance in log wealth between parent and child derive from covariance in their incomes, covariance in their preference, and the cross-covariance between income and preferences.

We assume that incomes for both parent and child are drawn from the same distribution with variance $\sigma_y^2$. These draws may or may not be independent; if correlated, let the correlation coefficient be $\rho_y$. Similarly, preferences for both parents and children are drawn from the same distribution with variance $\sigma_\theta^2$. The draws may or may not be correlated; if they are, the correlation is $\rho_\theta$. Suppose that the correlation between parent income and parent preferences is $\rho_{y_p\theta_p}$ and the correlation between child income and child preferences is $\rho_{y_k\theta_k}$. Finally suppose that all the own and cross-correlation between income and preferences are equal and given by $\rho_{y\theta}$.

It will often be useful to speak in terms of correlations rather than covariances. Given the above assumptions, the parents-child correlation in wealth, $\rho_w$, can be expressed as:

$$\rho_w = \frac{\rho_y\, \sigma_y^2 + \rho_\theta\, \sigma_\theta^2 + 2\rho_{y\theta}\, \sigma_y \sigma_\theta}{\left(\sigma_y^2 + \sigma_\theta^2 + 2\rho_{y\theta}\sigma_y\sigma_\theta\right)}\,. \tag{12}$$

Thus, according to our model, the intergenerational wealth correlation is the sum of the following three terms:

$$\rho_w = \rho_y\, \frac{\sigma_y^2}{\left(\sigma_y^2 + \sigma_\theta^2 + 2\rho_{y\theta}\sigma_y\sigma_\theta\right)} + \rho_\theta\, \frac{\sigma_\theta^2}{\left(\sigma_y^2 + \sigma_\theta^2 + 2\rho_{y\theta}\sigma_y\sigma_\theta\right)} + 2\rho_{y\theta}\, \frac{\sigma_y\sigma_y}{\left(\sigma_y^2 + \sigma_\theta^2 + 2\rho_{y\theta}\sigma_y\sigma_\theta\right)} \tag{13}$$

Expression (13) allows us to simply describe the intergenerational correlation in wealth under alternative scenarios. Importantly, we can also use (13) to theoretically illustrate the relationship between the wealth correlation, $\rho_w$, and the correlation in income, $\rho_y$. As noted, most of the previous work on the similarity in economic position between parent and child has focused on $\rho_y$. We therefore think it is useful to show how the correlation we study is theoretically related to the one which has dominated the literature. Also, the simple comparisons listed below show that the relative magnitude of the intergenerational income and wealth correlations is *a priori* indeterminate. Thus, the fact that we know something about the size of $\rho_y$ from previous work tells us little about the range into which $\rho_w$ must fall. This is clear in the different cases listed below. We do not list the case in which endowed preferences are not drawn from a distribution, but are instead fixed constants for both parent and child. Trivially, $\rho_w = \rho_y$ in that case.

- *Case 1. Uncorrelated Parent-Child Preferences, Correlated Parent-Child Incomes, No Own or Cross Correlation Between Income and Preferences*

With $\rho_\theta = 0$ and $\rho_{\theta y} = 0$, (13) simplifies to:

$$\rho_w = \frac{\rho_y\, \sigma_y^2}{\left(\sigma_y^2 + \sigma_\theta^2\right)} < \rho_y \tag{14}$$

The wealth correlation will be strictly smaller than the income correlation if preferences are drawn from a random distribution, but are uncorrelated across generations.

- *Case 2. Correlated Parent-Child Preferences, Correlated Parent-Child Incomes, No Own or Cross Correlation Between Income and Preferences*

$$\rho_w = \frac{\rho_y \sigma_y^2 + \rho_\theta \sigma_\theta^2}{\left(\sigma_y^2 + \sigma_\theta^2\right)}. \tag{15}$$

In this case, the relationship between the income and wealth correlations depend on the relative size of $\rho_\theta$ and $\rho_y$. Specifically, $\rho_w > \rho_y$ if and only if :

$$\rho_y \sigma_y^2 + \rho_\theta \sigma_\theta^2 > \rho_y \left(\sigma_y^2 + \sigma_\theta^2\right) \tag{16}$$

or

$$\rho_\theta > \rho_y. \tag{17}$$

With intergenerationally correlated preferences, no cross correlation between income and preferences and a positive income correlation between parents and children, the wealth correlation could be bigger or smaller than the income correlation depending on the relative size of the preference correlation.

- *Case 3. Correlated Parent-Child Preferences, Correlated Parent-Child Incomes, Own and Cross Correlation between Income and Preferences equal to* $\rho_{y\theta}$

$$\rho_w = \frac{\rho_y \sigma_y^2 + \rho_\theta \sigma_\theta^2 + 2\rho_{y\theta} \sigma_y \sigma_\theta}{\left(\sigma_y^2 + \sigma_\theta^2 + 2\rho_{y\theta} \sigma_y \sigma_\theta\right)}. \tag{18}$$

The wealth correlation exceeds the income correlation in this case if and only if

$$\rho_\theta > \rho_y - \left(1 - \rho_y\right) 2\rho_{y\theta} \frac{\sigma_y}{\sigma_\theta}. \tag{19}$$

Notice that by (17) and (19), a correlation between income and preferences makes it more likely that the wealth correlation will exceed the income correlation, for a given correlation in preferences.

The Case of Altruistic Parents ($\alpha > 0$)

It is easy to see how parental altruism, which manifests itself in the form of transfers from parents to child, would cause the empirical wealth correlation to depart from (13). For the maximization

problem described in Section III, a parent choosing his consumption and the optimal level of bequest will set:

$$U^{p}\,'\left(C_{p2}\right) \geq \alpha U^{k}\,'\left(C_{k2}\right) \tag{20}$$

In other words, parents attempt to equate the marginal utility of consumption across generations. Since bequests cannot be negative, it is possible that parental marginal utility at their optimal level of consumption will exceed the child's. Using the solutions to the optimal level of consumption above and with the caveat that *X** is bounded below at zero, it is easy to show that the optimal level of bequests is given by:

$$\frac{1}{1+\Delta_p}\left(Y_p - X^*\right) = \frac{\Delta_{pk}}{1+\Delta_k}\left(Y_k + X^*\right)^{\gamma_p/\gamma_k} \tag{21}$$

The total derivative of (21) yields $\partial X^*/\partial Y_k < 0$ and $\partial X^*/\partial Y_p > 0$. That is, the level of expected bequests is increasing in parent's income and falling in the child's. Richer parents give larger bequests to poorer children.

Suppose, as above, that wealth is measured at the end of period one, before any bequest or transfer is made. It can be shown that the estimated wealth correlation if there is a bequest motive will be less than or equal to the wealth correlation if there were no bequest motive. Furthermore if $X^*$ is strictly positive, then the wealth correlation with an expected bequest is always smaller than the wealth correlation with no expected bequest.[11] The intuition here is straightforward. Because they plan to give a transfer in the future, measured end of period 1 wealth for parents would be *higher* than it would be otherwise in the absence of this altruistic motive. On the other hand, then measured end of period 1 wealth of the child would be *lower* than it would be in the absence of this expectation. A transfer or bequest which a child expects to receive in the future should make the child less willing to save to finance future consumption. She saves less because she expects more future effective income. The expectation of a future parental transfer should weaken the parent-child wealth correlation.

Suppose next that parent and child wealth are observed after any altruistically-related transfer has occurred. An intra-vivos gift prior to the parent's death is not in the model, but is easy to analyze given the above structure. These transfers will lower measured parent's wealth relative to what it would be without altruism. Children who have *already* received a transfer have higher *effective income* in period 1. They should smooth save some of this income windfall for retirement consumption, so measured post-transfer child wealth should *rise* relative to the no altruism case. Taken together, if there is an altruistic motive, and wealth is observed after these transfers occur, the measured intergenerational

[11] The proof is straight forward. Contact authors for the details.

wealth correlation should *fall* relative to the no-altruism case. The receipt of past gifts should make the observed parent-child correlation higher than would be true otherwise.

### *B. An Empirical Assessment of the Wealth Correlation*

The previous discussion suggests that a natural way to empirically assess the impact of parental wealth on child wealth would be to estimate a linear regression of the form:

$$W_k = \delta_1 W_p + \varepsilon_k , \qquad (22)$$

where, as before, the $W$'s denote wealth, and where $\varepsilon_k$ is a random error term. Under ideal conditions, the OLS estimate of the intergenerational wealth correlation given in (13), $\rho_w$, would be $\delta_1$ weighted by the ratio of the standard deviation of parental wealth to the standard deviation of child wealth. In our empirical work that follows, we refer to our estimate of $\delta_1$ as the regression coefficient on parental wealth and our estimate of $\rho_w$ as the statistical intergenerational wealth correlation.

According to the above model, if we measure parents and children before any parent-child transfer occurs, controlling for income will allow us to assess whether preferences are correlated between parents and their children. Consider a second regression, which adds controls for parent and child income, $Y_p$ and $Y_k$ , to regression (22):

$$W_k = \delta_2 W_p + Y_p + Y_k + \varepsilon_k . \qquad (23)$$

The difference between the estimated parameters $\delta_1$ and $\delta_2$ measures how much of the raw intergenerational wealth correlation, as given by (13), is accounted for by income. The simple theory above suggests that if $\delta_2 > 0$, and there are *no* intra-vivos transfers, preferences must be correlated across parents and their children. Notice that if there is a positive correlation between income and preferences, some of the preference correlation will be captured by our income controls.

In some of the empirical work that follows, we will include additional vectors of variables, denoted as $Z_k$ and $Z_p$, to our estimation of (22) and (23), where as before the *p* and *k* subscripts denote that the vector of variables refers to either the parent or the child. As discussed in our empirical work below, the variables in $Z_k$ and $Z_p$ will control for demographic factors such as age and marital status, other factors captured by the above model such as actual and expected parental transfers, and influences on parental and child wealth not captured by the above model such as interfamily risk sharing, imperfect capital markets and education.

The structure of available micro-data on wealth poses many challenges for our effort to estimate the parent-child wealth similarity using (22) and (23). Two are particularly noteworthy. First, reported

wealth is likely fraught with measurement error. While irrelevant for the child wealth variable in a regression context if the measurement error is classical, mis-measured parental wealth would produce an attenuated estimate of the intergenerational wealth correlation. Second, as will be shown below, the wealth distribution has a long right tail. Thus, the error term $\varepsilon$ is clearly not symmetric. The technique of making a logarithmic transformation to deal with a "long-tailed" distribution, as is often done for income, is less than ideal here because of the large number of observations with negative or zero wealth.

To address the potential mis-measurement of wealth, we exploit the panel structure of the available data and use as the measure of parental wealth the average of reported wealth over multiple time periods.[12] In addition, as has been often done in the income correlations literature, we sometimes instrument for parental wealth using parental educational attainment. As we show below, parental educational attainment has strong predictive power for parental wealth, but parental educational attainment could have an independent effect on the child's wealth accumulation. As a result, the estimated coefficients from the instrumental variable (IV) regressions will tend to overstate the correlation between parental and child wealth. But, the downward biased OLS estimate and the upward biased IV estimate will provide a range for the true effect.

One of our attempts to deal with the extreme skewness of the wealth data is a quantile regressions at the median on a regression such as (22). The median regression is less sensitive to outliers in the dependent variable. For robustness, we also estimate the correlation of log wealth between parents and children for those parent-child pairs where both have positive wealth values. Using this range of techniques, it is possible to narrow the range in which the true correlation of wealth across generations likely lies in the sample.

Its problems aside, the technique of estimating similarity with regressions such as (22) and (23) is informative about the degree in similarity in wealth across generations in *absolute* levels. Our second approach to measuring similarity lacks this feature but has other things to recommend it. We analyze intergenerational transition matrices of parents' and children's positions in the wealth distribution. If the distribution of wealth (or wealth, net of other factors) is divided into equal segments, such as quintiles, a wealth transition matrix summarizes the correspondence between the parent's wealth quintile and the child's wealth quintile. Each element $p_{ik}$ of such a matrix indicates the probability that a child belongs to $k^{th}$ quintile in the wealth distribution of children, given that her parents belong to quintile $i$ in the wealth distribution of parents. The more independent children's wealth is from parent's wealth, the greater the probability that the elements of the transition matrix are close to one-fifth. Intuitively, independence between parental and child wealth means that parents of any given wealth status should be equally likely

[12] See Solon (1992) for a similar approach with respect to income, and see Zimmerman (1992) for a useful discussion of potential biases in income correlations.

to see their offspring come to occupy any wealth quintile. The greater the departure of the elements of the transition matrix from 0.2, the greater the intergenerational similarity in wealth.

The benefit of analyzing transition matrices is that no strong assumption need be made about the underlying distribution of parental or child wealth. Additionally, unlike the various regressions we estimate, the transition matrix approach provides information on the persistence of wealth throughout the wealth distribution.

## IV. DATA

The paper uses data from the *Panel Study of Income Dynamics* (*PSID*). The *PSID* is a large scale survey started in 1968 which tracks the socio and economic variables of a given family over time. In each year of the survey, demographic questions such as age, race, family composition, and education levels are asked of all members of the households. Among other information, the survey asks each household detailed questions about labor market participation and earned labor income.

Occasionally, the *PSID* supplements the main data set with special modules from time to time. In 1984, 1989, 1994 and 1999, the *PSID* asked households extensive questions about their wealth position. For the measure of wealth, we sum together the household's holding of real estate - own or main home, second home, rental real estate, land contract holdings - cars, trucks, motor homes, boats, farm or business, stocks, bonds, mutual funds, saving and checking accounts, money market funds, certificate of deposit, government savings bonds, Treasury bills, Individual Retirement Accounts, bond funds, cash value of life insurance policies, valuable collections for investment purposes, and rights in a trust or estate, less mortgage, credit card , and other debt on such assets. Aside from pensions (both private and public), the *PSID* data provides a relatively complete picture of household financial wealth.[13] All dollar values in the paper are in 1996 dollars.

The *PSID* was designed, in part, to study economic mobility across generations. As such, the data set takes uncommon care to track and survey children of core sample respondents. The children of core sample members become part of the *PSID* core sample as they leave their parents' household and form their own households. All new households that have become part of the *PSID* after the original sample was formed are the children or grandchildren of that original sample. This intergenerational feature of the sample design makes the *PSID* an ideal data set to analyze the similarity of wealth position between parents and children.

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[13] The *PSID* wealth data has been shown to match *Survey of Consumer Finance* Data (*SCF*) and Flow of Funds data up to the top 1 percentile. Given that *PSID* does not over sample the "very rich", the wealth distributions of the *PSID* and the *SCF* do not align for the top 1 percent of the wealth distributions. However, many authors find that the *PSID* wealth data accurately depicts household wealth positions for the remainder of the distribution. See Hurst, Luoh and Stafford (1998) and Juster, Smith and Stafford (1999) for a complete description of the *PSID* wealth data and comparability of this data with wealth data from other sources.

Parent-child pairs at risk to be in the sample consist of families in which a child was between 25 and 65 in the 1999 survey; where the parents were not retired in 1984; and where the parents were part of the survey in both 1984 and 1999. We emphasize non-retirement status because of the desire to capture households during the time in their life cycles when they are accumulating wealth. We measure parents over the 1984 and 1989 periods and children in 1999 to better compare the two at similar points in their life cycle.[14] It bears emphasizing that we measure the similarity between parents and children at a time when the parent is still alive. This paper does not address the effect of bequests to children after parental death on the parental wealth correlation. Given our focus, the sample includes only families in which the child in 1999 has at least one core sample parents known to be alive in 1999. Even had we sought to study the effect of bequests, the *PSID* data are not now suited to this purpose. There were only 70 parent-child pairs in which both non-retired parents in 1984 were known to have died by 1999. And, for most of these families, information on bequests is coarse or missing. Finally, we excluded either parents or children who had accumulated more than 1 million dollars in non-pension financial wealth.

Imposing the restrictions described above results in a sample of 1,648 parent-child pairs.[15] Table 1a outlines the means and standard deviation for the main variables of the analysis for both parents and children. Children, on average, were about 15 years younger in 1999 then their parents were in 1984. Not surprisingly, parents were more likely to be married and had higher wealth, portfolio component ownership rates and income.

Table 1b describes the financial wealth distribution for parents and children. The large fraction of children who have non-positive wealth is quite noticeable in the table. By contrast, most parents hold positive wealth. This result is also not surprising, given that, on average, we measure parents later in the life cycle. Table 1b also illustrates the skewness of the wealth distribution. The absolute difference in the 10th percentile of child's wealth and the median of child's wealth is one-sixth the absolute difference between the median of child's wealth and the 90th percentile of child's wealth.

As discussed above, we will attempt to deal with this skewness in the wealth distribution by using the log of wealth in some of the empirical specifications. Given the large amount of children with zero or negative wealth values, the number of households in the sample will necessarily be smaller when we use log wealth. We prefer not to exclude any of the data and as a result focus on OLS and median regressions using the *level* of household wealth. However, for completeness and consistency with the theory, we report and discuss the results using both wealth levels and the log of wealth.

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[14] Ideally, we would like to measure parents' and children's wealth at the same age, but we are prevented from doing so by the fact that the wealth measures in the *PSID* are currently at most fifteen years apart.

[15] There were about 250 parents who were in the sample in 1984 but dropped out of the sample prior to 1999. We also removed these parent-child pairs from our sample because we were could not determine whether the parents had died during the intervening years. We estimated all of the regressions with and without these households included and the results were essentially unchanged.

The next section begins the analysis with a summary of the intergenerational wealth correlation. How similar are the unadjusted and demographic adjusted wealth correlations relative to the observed income correlations documented in the literature?

## V. Parent-Child Wealth Similarity

*Age-Adjusted Similarity Between Parents' and Children's Wealth Position*

Table 2 presents a transition matrix depicting the raw, age adjusted and age-marital status adjusted relative wealth position of parents and their children. The transition matrix describes the probability that a child will end up in wealth quintile *i* given that their parent's wealth was in quintile *j*. The probabilities sum to one along the column entries. As discussed above, the age adjustment is important because we measure parents and children at different life cycle points. Because wealth likely differs across one and two member families, we also control for whether the household head is married. To get the age-adjusted wealth measures, we run a first stage median regression of child's (parents') wealth on child's (parents') age and age squared. When also adjusting for marital status, we include a dummy for whether the household head was married in the first stage regression. The residuals from these first stage regressions are our measures of age and age-marital status adjusted wealth.

The unadjusted and age-adjusted wealth measures portray a very similar picture of the similarity of relative wealth position across parents and children, both qualitatively and quantitatively. The age-adjusted numbers in the table indicate that 37.1% of parents in the lowest quintile of the parental age-adjusted wealth distribution had children who ended up in the lowest wealth quintile of the children's age-adjusted wealth distribution, 19.5% of parents in the second wealth quintile will have children in the lowest wealth quintile, and so on.

The intergenerational persistence in relative wealth position is dramatic in the tails of the parental wealth distribution. Adjusting for age, over 37% of parents in the lowest wealth quintile will have children who will be in the lowest wealth quintile. Almost 70% of the children of low wealth parents will never make it to the top three quintiles of their own age-adjusted wealth distribution. And, conditional on having a parent in the lowest wealth quintile, only 7% of the children will make it to the highest wealth quintile of their generation and only 19% rise to either of the top two wealth quintiles. Thus, despite modest mobility within the wealth distribution, the overwhelming majority of children are unable to break free from the low wealth status of their parents.

A similar pattern is evident at the top end of the parental age adjusted wealth distribution. Almost 40% of high wealth parents will have children who end up in the top quintile of their age adjusted wealth distribution, and almost two-thirds have children who fall in the top two quintiles of the age adjusted

wealth distributions. Less than 6% of the children of high wealth parents fall to the lowest quintile of the children's age adjusted wealth distribution. Both very low and very high relative wealth position is strongly persistent across generations.

The overall pattern persists after adjusting for marital status. Of parents who start in the lowest age-marital status adjusted wealth quintile, 26.67% have children who end up in the lowest age-marital status adjusted wealth quintile and 53% have children who end up in the lowest two age-marital status adjusted wealth quintile. At the top end of the parental age-marital status wealth distribution, 64% have children who end up in the two quintiles of their age-marital status distribution.

Table 2 starkly depicts the persistence of wealth position from parents to children. In every parental wealth quintile (for the unadjusted, age adjusted and age-marital status adjusted wealth measures), the diagonal element of the matrix is the largest. Furthermore, the probability that a child ends up in a wealth quintile different from the one occupied by his parent is monotonically decreasing the further away that quintile is from the parents'. For example, for parents in the third age-adjusted wealth quintile, 31.7% of their children end up in the third age-adjusted wealth quintile. Twenty-six percent of their children end up in the second age-adjusted wealth quintile, and 10.24% are to be found in the first age adjusted wealth quintile. A similar pattern is evident for each of the parental wealth quintiles. These results indicate that children are most likely to fall into a wealth quintile exactly like that of their parents, and are very unlikely to end up in a dramatically different one.

From Table 2, we conclude that focusing only on parental wealth position, by far the best predictor of a child's relative wealth position is her parent's wealth position. A likelihood ratio chi-squared test confirms the persistence plainly evident in the table: we can reject that the entries in the unadjusted, the age adjusted or the age/marriage adjusted transition matrix are equal to each other at any standard statistical level ($p$-value for all = 0.000).

*Age-Adjusted Similarity in Absolute Wealth Between Parents and Children*

Table 3 presents the results of various regressions of the *level* of child wealth on the *level* of parental wealth. As noted above, the independent variable is *average* parental wealth between 1984 and 1989, where the averaging is meant to minimize the potential classical measurement error in wealth reporting. The child's wealth is measured in 1999, and any potential classical measurement error in the child's wealth will be absorbed in the regression error. An OLS regression of child's wealth level in 1999 on the average parental wealth level between 1984 and 1999 (column I of Table 3) yields a coefficient on parental wealth of 0.207 (standard error = 0.029). For every extra dollar of wealth held by a parent, the child's wealth is predicted to be 21 cents higher. Or, for every one dollar gap between two parents, twenty one cents of that gap will persist between their children. Furthermore, notice that the $R$-squared

for this regression is 0.078. Almost 8 percent of the variance in child's wealth can be explained simply by controlling for parental wealth.

Adjusting for age and age squared of both the parent and the child (column II of Table 3) does not change the basic results. The coefficient on parental wealth of 0.188 indicates that every extra dollar of wealth held by a parent raises a child's wealth by 19 cents. The second row of Table 3 shows the results of quantile regression estimated at the median of child's wealth on parental wealth. The estimated persistence at the median is slightly lower in both cases. Focusing on the age adjusted results, a one dollar increase in parental wealth increases the child's wealth by 14.9 cents. The results also change little when controls for the parents' and the child's marital status are added (column III of Table 3). The OLS and median regression coefficients on parental wealth are, respectively, 0.173 and 0.124 (*p*-values = 0.000 for both).

As noted above, the results above may be downwards biased because of measurement error in parental wealth. Using average parental wealth over multiple years minimizes this problem, but need not totally eliminate it. We further deal with the measurement error concern by instrumenting for parental wealth using the parent's level of educational attainment. The educational level of a household has strong predictive power for household wealth, even when other demographic controls and income are included in the specification.[16] An obvious shortcoming of this approach is that educational attainment may have an independent effect on household wealth accumulation. Children from higher educated households may be more financially sophisticated and, as a result, may be more likely to accumulate wealth when compared to otherwise identical children from less-educated families. The estimate from an IV regression with parental educational attainment as an instrument for parental wealth will, as a result, possibly be biased upwards. However, the OLS estimate and the IV estimate should provide lower and upper bounds on the true correlation between parental and child wealth.[17] The IV estimate of the correlation between parental and child wealth in the age adjusted specification is 0.386, providing a range for the true estimate of between 0.188 and 0.386.

How do these numbers compare to the income correlations found in the literature? Many authors who focus on the intergeneration similarity in income do not report the intergenerational correlation in income but, instead, report the intergenerational income elasticity - i.e., the coefficient on log parental income in a regression of log child income on log parental income and age controls. Using the mean wealth levels given in Table 1a and using the estimated OLS coefficient from Table 3, we can compute a

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[16] See Hurst, Luoh and Stafford (1998) for results on the role of education in household wealth accumulation using *PSID* wealth data from 1989 and 1994. In our specification, we control for education by including two dummy variables: whether the household head had less than a high school education and whether the household head had exactly 12 years of schooling. The omitted category was whether the household head had more than a high school education.

[17] The use of educational attainment as an instrument for parental income is a common technique used in the literature which calculates the intergenerational correlation in income. For an example, see Solon (1992) or Mulligan (1997).

similar intergenerational elasticity at the mean for wealth. The ratio of mean wealth for parents and children is 2.03. Converting the OLS estimate to an elasticity, we find that a 1% increase in parental wealth corresponds to a 0.35% increase in child wealth.[18] Using the OLS and IV estimates, we compute a range of intergenerational wealth elasticities between 0.35 and 0.76 - similar to the range of intergenerational income elasticities reported in the survey by Solon (1999).[19]

We also estimate the correlation in child *log* wealth and parent *log* wealth on the portion of the analysis sample where both the parent and the child have positive wealth. These regression results using log wealth, and with and without demographic controls, are reported in columns IV and V, respectively, of Table 3. The results are quite similar to the income elasticity documented in the literature and the intergenerational wealth elasticity documented above (0.34 (OLS) - 0.71 (IV), column V of Table 3). The range of elasticities reported by Mulligan (1997) using *PSID* data from an early time period also falls within the range of elasticities we report.

As discussed in Section III, the estimated coefficient on parental wealth using either level or log wealth is not a true estimate of the "statistical correlation" between parental and child wealth. The regression coefficient estimate is only an estimate of the statistical correlation when the standard deviations of parental and child wealth are equal to each other. As seen in Table 1a, this is not the case with parental and child wealth in the sample. To compute an estimate of the statistical correlation in wealth across parents and their children, we adjust the coefficient on parental wealth in the regressions reported in Table 3 by the ratio of the standard deviation of parental wealth to the standard deviation of child wealth. From Table 1a, this ratio is 1.35, implying an estimated intergenerational statistical wealth correlation in the range of 0.23 (OLS specification) to 0.50 (IV specification), using the regression results from column III of Table 3. The ratio of the standard deviation of log wealth is 0.85 resulting in an estimated intergenerational statistical wealth correlation in the range of 0.29 (OLS) to 0.60 (IV), using the regression results from column V of Table 3. Again, the results match rather well those found by Zimmerman (1992) who found estimates of the intergenerational statistical correlation in income to be in the range of 0.30 to 0.50.

The results in this section reveal that there is a strong intergenerational similarity in financial wealth. The magnitude of the correlation is similar to that found by researchers who have estimated the intergenerational income correlation. In section III, we set out a simple life cycle model in which the

[18] The elasticity was computed as the coefficient of parental wealth in regression III of table 3 multiplied by the ratio of the means of parental wealth to child wealth. For our OLS specification with age and marital status controls, we get 0.173 * 2.03 = 0.351.

[19] Regressing log average child income on log average parental income and age controls, Solon (1991) estimates a coefficient on log parental income in the range of 0.41 (OLS) to 0.53 (IV). Zimmerman (1991) estimates the elasticity to be in the range of 0.30 (OLS) to 0.50 (IV), while Mulligan (1997) finds estimates in the range of 0.33 (OLS) and 0.53 (IV). Using a similar approach on our data, we find that the elasticity in log average family income between parents and their children was in a range of 0.36 (OLS) to 0.60 (IV).

correlation in wealth is, at least, partially determined by the intergenerational correlation in income. To what extent does similarity in permanent income across parents and their children *explain* the similarity in wealth across parents and their children? We address this question in the next section.

## VI. The Effect of Income on Intergenerational Wealth Similarity

How much of the intergenerational similarity in wealth is due to the intergenerational similarity in income? In this section, we repeat the transition matrix and regression analyses of the intergenerational wealth correlation to account for the similarity in income between parents and their children. As shown in section III, if the draws of endowed preferences are independent between parents and their children, all of the wealth correlation should be explained by the income correlation. But, if parent and child preferences are correlated (and not perfectly correlated with income), controlling for income will not explain all of the parent-child wealth correlation.

The model assumed a measure of lifetime income for each household and that the household wealth is measured at the end of income generating years. But the available data measures household income and wealth at different points during the household's working years. As a result, we neither have a full measure of lifetime income, nor is wealth measured at the moment prior to retirement. To account for these two facts, we use many different income controls in the analysis. We use actual earned family labor income averaged over multiple years prior to the measurement of the household's wealth to get a sense of the household's perceived permanent income.

Though not explicitly indicated in the model, current household wealth is a function not only of the *level* of income, but also of expected income *growth* into the future. Households with a given level of earned permanent income in the recent past but a steeper projected income profile over the near future should be expected to have lower wealth holdings than an otherwise comparable household with a flatter projected income profile. Additionally, precautionary theories of savings (Deaton (1991); Carroll (1994)) also indicate that households with a larger expected variance of income, should be more likely to accumulate wealth so as to buffer any successive draws of negative income shocks. The income controls below account for actual level, expected lifecycle trajectory and predicted future variance.

We measure a household's average level of labor income, as the 5-year average of family labor income over the period of our wealth measurement for both parents and children. Parental family labor income was averaged over the period 1983-1987 and children's family labor income was averaged over 1992-1996.[20] To calculate the household's expected lifecycle income trajectory, we used the *PSID* full panel of households from 1980 to 1997 and regressed the family labor income of non-retired heads on

[20] 1996 income (reported in the 1997 survey) is the latest year of income that is currently available from the *PSID*.

the age of the head and age squared. We separately ran this regression for a series of occupation, education, race, and sex cells.[21] Using the coefficients on age and age squared from these regressions, we predicted for both parents and children their expected total earned labor income between the ages of 25 and 65 and the fraction of that total income that they were predicted to have earned at their current lifecycle position based on which of the race, sex, occupation and educational status cells the person occupied. Households with higher expected total lifetime income and households who have earned a larger percent of that income at their current lifecycle age should be more likely to have accumulated greater amounts of wealth conditional on their age.

We predict expected future income variance in much the same way we computed the household's predicted lifecycle income trajectory. Using the full sample of *PSID* households, we segmented the households into education-occupation-race-gender cells. For each of these cells, we computed the standard deviation of income over the 1980 - 1994 period. Using the education, occupation, race and gender of the household head for both parents and children, we applied this predicted income volatility measure to both parents and children.

The first entry in Table 4 presents the age-marriage adjusted transition matrix reported in Table 2 (for comparison). The second entry nets out the effect of both actual income levels and predicted lifecycle income trajectories from age-marital status adjusted wealth. That is, we regressed wealth on age, age squared, marital status, average labor income, predicted total household earnings, and the fraction of total earnings predicted to have been earned at the household's current age separately for both parents and children. Individuals are sorted into wealth quintiles based on their position in the distribution of the residuals from these regressions. A comparison of the two estimates within any cell in the Table 4 shows that much of the correlation in wealth position derives from correlation in actual income levels and predicted lifecycle income trajectories.

The first interesting result is that diagonal elements of the matrix in Table 4 are much smaller after controlling for income. The best predictor of the child's relative wealth position is no longer their parents relative wealth position, once income similarities are accounted for. Nonetheless, there still appears to be some intergenerational persistence even after controlling for income. Parents in the lowest wealth quintile remain less likely to have a child who makes it to the highest wealth quintile after controlling for the effects of income. And, parents in the highest wealth quintile are twice as likely to have a child who makes it to the highest wealth quintile as they are to have a child who ends up in the lowest wealth quintile. The likelihood ratio chi squared test that all the elements of the matrix are equal

[21] We used 9 occupational categories (computed by the *PSID*), 3 education classes (less than high school, just high school and more than high school), black and white race cells and whether the head was male or female. In total, we estimated the expected income profile separately for 97 occupation-education-race-sex cells. We had less than 108 possible cells either because there

to 0.2 is rejected (*p*-value = 0.000) suggesting that some persistence still remains even after controlling fully for income.

Table 5 shows the effect of income similarity on the absolute similarity in parent-child wealth. Each entry is the coefficient on the parental wealth variable from a child wealth regression which include a particular set of controls. In column I of the table, we present the age-marriage adjusted results shown in Table 3 (for comparison) – the regression with only child and parental age, age squared and marital status as regressors. In column II of Table 5, we add in controls for the parent's and child's average family labor income. Consistent with the results in the transition matrix found in Table 4, the estimated coefficient on parental wealth falls dramatically from 0.173 to 0.124 (a 28% reduction) in the OLS regression. The decline in the coefficient at the median was equally dramatic - from 0.124 to 0.073 (a 41% reduction). Likewise, the IV estimate with average income as a control (using parental educational attainment as the instrument for parental wealth) falls from 0.376 to 0.252 (a 33% reduction). After controlling for income, the OLS, quantile and IV estimated coefficient on parental wealth still remained strongly statistically significant, with t-values of 4.0, 8.1 and 2.8, respectively. Controlling for measures of average household labor income explains a large portion of the intergenerational wealth correlation, but a large statistically significant gap still remains.

Controlling for predicted total lifetime income, predicted lifecycle income trajectory and predicted income variance do little to further explain the intergenerational wealth correlation. In column III of Table 5, we include the households predicted total lifetime earnings and the predicted fraction of total income earned at the household's current age. The point estimates in column III are slightly smaller than the point estimates in column II. The OLS coefficient on parental wealth fell from 0.124 to 0.116 with the addition of predicted lifecycle income controls. There was no effect on the quantile or the instrumental variables regression coefficients with the additional income controls.[22] Similarly, including measures of the predicted variance of income has no additional effect on the parent-child wealth correlation in the OLS, quantile or instrumental variables regressions (column IV of table 5).

Controlling for income fully causes the range of the point estimate on parental wealth to fall from 0.173 - 0.376 (column I) to 0.118 - 0.245 (column IV). Converting these points estimates into an estimate of the statistical correlation, we get that the estimated correlation range falls from 0.23 (OLS) - 0.51 (IV) to 0.16 (OLS) - 0.33 (IV). Less than one-half the correlation in wealth can be explained once controlling for income.

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were no observations in some cells or because there were to few observations in these cells to run a meaningful regression. In such cases, some cells were grouped together.

[22] Including predicted lifecycle income controls in a specification without measures of average family labor income for either the parent or the child causes the wealth correlation to fall from 0.173 to 0.136 in an OLS specification.

Including actual income earned of the parent and child essentially controls for any intergenerational correlated "ability" which is valued by the labor market. But, households may have different levels types of "ability" which, while correlated with wealth accumulation, are distinct from skills valued by the labor market. To capture differences in ability between households which are uncorrelated with income, we directly include the educational status of both the parents and children in the regression. We are positing that there could be skills learned through education like an introduction to financial markets which would help in wealth accumulation. Given that educational levels are correlated between parents and their children, this financial sophistication distinct from labor market valued skills could explain part of the parent-child wealth correlation. In column V of Table 5, we include the educational level of parents and children in the regression specification with the full set of age, marital status and income controls.[23] Adding the educational variables has essentially no effect on the parent child wealth correlation. In other words, education essentially has no independent effect on the intergenerational wealth correlation once controlling for income.

Column VI of Table 5 displays the results of the effect of income and education using log parental and child wealth. These results are consistent with the results found using the level of wealth - less than half of the parent-child wealth correlation can be explained by the parent child income correlation.

The results in this section are mixed. As suggested by a model of wealth accumulation and life-cycle consumption, income level, expected lifecycle income trajectory and predicted income variance do indeed explain a non-trivial fraction of the intergenerational wealth similarity. But, fully controlling for income accounts for less than one-half of the similarity in wealth that we document. According to the theory outlined in section III, the simple lifecycle model with no parent-child transfers would attribute the remaining wealth correlation to a positive correlation in preferences. In the remaining sections, we discuss and analyze the effects of other possible explanatory factors.[24]

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[23] It should be noted that the instrumental variables specification could not be performed in column V of Table 5 since we were using our instrument as a regressor.

[24] Although not discussed in the text, we tested empirically other potential explanations for the remaining parent child wealth correlation. The fact that parents and child may live in the same locality may make them susceptible to similar shocks to portfolio value (in particular, housing wealth). Given that we measure parents and children 15 years apart, we are skeptical of this. But, if shocks are strongly persistent, such an argument could be plausible. To test for this, we included a dummy variable equal to 1 if the child currently lives in the same state as their parent into the regression reported in column V of Table 6 (both parent and child state of residence measured in 1997). The point estimate on parental wealth remained exactly the same as reported in column V of Table 6, although the dummy variable on living in the same state did come in positive (point estimate = 11,468 with a p-value of 0.106). The results were very similar if we measured parental state of residence as of 1989. Additionally, we included the total number of children of both the parent and the child (measured in 1997) as separate regressors in a regression similar to that reported in column V of Table 6. Neither of the variables accounting for the number of children of the parent or the child entered significantly, nor did they impact the coefficient on parental wealth. Controlling for income and education likely proxies for much of the effect of family size on the wealth generating process.

## VII. Past and Expected Parental Gifts and Intergenerational Wealth Similarity

Wealth, unlike earnings, can be directly transferred from parents to their children. We have focused on measuring parent and child wealth prior to the giving of a bequest at the time of the parents' death. However, as seen in section III, the expectation of a bequest can still effect the saving behavior of both parents and children. Additionally, transfers between parents and children often times occur before death. Although, the theoretical model abstracted from these intra-vivos gifts, we attempt to account in the empirical specifications for such transfers during the parents' lifetime.

We have already discussed why a bequest motive weakens the observed intergenerational wealth correlation relative to the intergenerational income correlation. If the expected bequest was exogenous, controlling for the expected bequest in our empirical work should actually cause the estimated intergenerational wealth correlation to increase. This result should hold after controlling for income. But, the expected bequest is not exogenous. As shown in section III, it is a function of both income and endowments (including the intensity of the bequest motive) of the parents and children. Given that the regressions already control for both parental and child income, we have already proxied for a large portion of the expected bequest. Since the remaining portion of the expected bequest is a function of preferences, the inclusion of a measure of expected bequest in the empirical specification may be read acting as a control for household preferences.

The *PSID*, in 1994, asked respondents about their probability of leaving a bequest of $10,000 or $100,000. No information was asked about how much of a bequest the household expected to receive. As our measure of expected bequest, we used the max of the probability that the parent would leave a $10,000 bequest and the probability that the parent would leave a $100,000 bequest. We adjusted the parents' reported expected bequest by the number of children that the parent had. This adjusted expected bequest variable measures the amount of the bequest that could be expected to flow to a given child.

In the sample, twenty-eight percent of all households plan to give no bequest. The median bequest was $2,667 per child, with the mean bequest being $12,994 per child. These numbers will be lower than aggregate statistics on the average bequests per child because the maximum bequest per child in the data set is $100,000. We regressed the adjusted expected bequest measure on permanent income of both the parent and the child, and age controls. As predicted by the theory, parents with higher permanent income were statistically more likely to plan to give a bequest (coefficient = 0.166, standard error = 0.011). The coefficient on child income was also positive (coefficient = 0.038, standard error 0.012). Older parents were more likely to plan to leave a larger bequest. The adjusted r-squared on this regression was 0.159. As suspected, controlling for income explains a large portion of the variation in adjusted expected bequests in the sample.

The results of including this adjusted expected bequest measure into the model are shown in column I of Table 6. The specification includes the same income, education, and demographic controls as in column V of Table 5. In the OLS regression, the coefficient on parental wealth fell, as we expect, from 0.115 to 0.106 (with a standard error of 0.030). The same result holds at the median. Accounting for expected bequests lowers the estimated intergenerational wealth correlation.

Data from the *PSID* also allows us to explore the extent to which past parental gift giving explains the remaining intergenerational wealth similarity. In 1989, 1994 and 1999, the *PSID* asked respondents whether they had received a large gift of more than $10,000 during the proceeding 5 years. If so, they asked for the amount of the gifts. This gift measure poses three potential empirical problems. First, there is no information on gifts received before 1984. Large gifts prior to 1984 could account for wealth similarity between parents and children in the sample, after controlling fully for income.

Second, *PSID* does not inquire about the source of the gift. Grandparents or a member of a spouse's family could have been the source of the gift. This problem will likely bias us against finding a correlation between parent's and children wealth once controlling for the gifts received. By attributing all the of the gift giving to the parents of our parent-child pairs, we increase the children's wealth which will, on average, explain more of the correlation than would actually be explained if we had only a measure of parental gifts. Finally, and most importantly, we only observe gifts over $10,000. If a large number of gifts are smaller than $10,000, especially for parents with low initial wealth, the gift measure will not fully capture the extent of intervivos transfers between parents and their children.

Ten percent of the children in the sample received gifts in excess of $10,000 between 1984 and 1999. Gifts averaged $83,000 per gift per receiving household, with a median of $34,000. To test the effect of gifts on the remaining correlation in wealth between parents and children, we subtracted gifts children received during the 1984-1999 period from their 1999 wealth. Given that we measure parents before the gift giving period (1984), we do not have to adjust parental wealth. By subtracting off gifts received by the children we ask, in effect: What would be the intergenerational wealth if no wealth were transferred during the parent’s lifetime?

The second column of Table 6 presents the parental wealth coefficient from a regression with child wealth net of gifts received as the dependent variable. This adjustment makes the mean of the dependent variable $80,000, with a standard deviation of $140,152. The regression includes the same regressors as in the first column of Table 6. As expected, subtracting off the direct amount of intravivos transfers lowers the observed wealth correlation. Parents are likely to give gifts when their wealth is high relative to their children. By giving a gift, parents raise their children’s wealth, bringing it closer to theirs. The coefficient on parental wealth in the OLS regression falls from 0.106 to 0.089.

Two things are of particular note from the analysis of expected bequests and actual gifts. First, transfers from parents to children are endogenously determined. Having controlled for income directly, accounting for these transfers likely proxies for differences in households in various preference parameters and the extent that parents are altruistic. Second, the correlation in wealth between parents and their children is still large and statistically different from zero (correlation = 0.12) even after controlling for expected bequests and actual past gift giving.[25]

## VIII. Capital Market Imperfections, Portfolio Choice and the Parent-Child Wealth Correlation

The model in Section III illustrates the role of income, intergenerational transfers and preferences in comprising the intergenerational wealth correlation. Empirically, after controlling for income and transfers, a sizeable correlation in wealth persists between parents and their children. Can we conclude that the remaining similarity in savings is due to a similarity in preferences? Or, is it that imperfections in capital markets can explain the remaining wealth correlation? In this section, we explore these questions.

*Portfolio Composition and the Parent-Child Wealth Correlation*

There are two reasons why incomplete capital markets may explain the remaining intergenerational wealth correlation. First, parents with high wealth are better able to assist their children in the face of unfortunate events. One such event could be the financial loss suffered in a risky financial investment which turns out badly. That is, wealthy parents may provide wealth insurance to their children against the down-side risk from risky investments. As a result, children of these parents may be more likely to undertake such investments, with possible positive effects on their wealth as a result. Second, wealthy parents may be better able to relax the liquidity constraints faced by their children in market transactions. Large fixed costs present in accessing certain portfolio components (housing, stocks, business) may otherwise prevent children from holding their wealth in these forms (See Engelhardt (1996), Charles and Hurst (2001), and Vissing-Jorgenson (2000)). Wealthy parents may be able to help children overcome these financial constraints.

Our attempt to assess the role of imperfect capital markets on the large remaining parent-child wealth correlation is broken into two steps. First, we explore whether the child's portfolio choice reduces the remaining intergenerational wealth correlation. We then attempt to determine whether the systematic relationship between the child's portfolio choice and parental wealth is explained by imperfect capital markets, or by shared preferences and learned behavior.

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[25] The correlation is the coefficient on parental wealth (0.089) multiplied by the ratio of the standard deviation of parental

A simple way to assess whether the portfolio choices made by children are in fact related to parental wealth, and the effect this has on the intergenerational wealth correlation is to include indicators of a child's ownership of risky assets to the regression reported in column II of Table 6. We explore two risky portfolio choices of the child: stock ownership and business ownership. The first column of Table 7 includes an indicator variable for whether the child owns stocks into the regression of child wealth net of gifts received specified in column II of Table 6. The inclusion of the stock ownership variable reduces the coefficient on parental wealth from 0.089 to 0.081 (standard error = 0.030). Column II of Table 7 adds a binary variable for whether a child owns a business as separate indicator of a risky investment decision to the regression specified in column one. The estimated coefficient falls even further (to 0.068, standard error 0.028), in the OLS regression with the addition of the business ownership dummy. Overall, adding proxies for risky financial actions on the part of the child causes the parental wealth coefficient to fall by about an additional 22% (from 0.089 to 0.068). It should be noted that even with the inclusion of the portfolio choice components the remaining statistical intergenerational wealth correlation remains positive and statistically different from zero (correlation = 0.09, standard error = 0.04).

These results in Table 7 indicate that children of wealthy parents engage in riskier financial decisions. But as alluded to above, neither the insurance nor liquidity argument need be the reason for this. Parental wealth levels could be related to the investment decisions made by children because wealthy parents may have provided environments in which children may be more likely to learn about or value particular types of investment actions. Or, it could be that parents are wealthy because of their own willingness to take high-risk, but high-yield, investment actions. Because of biological inheritance alone, the children of such parents may themselves be quite likely to possess whatever character traits raise the odds of investment in risky financial vehicles. The next section explores the extent to which the portfolio composition indicators proxy for unmeasured shared endowments, rather than for the insurance effects discussed above.

*The Correlation of Portfolio Choice Across Generations*

To what extent does the effect of portfolio component ownership on the wealth correlation indicate shared endowments such as financial human capital, or risk preferences, between parents and their children? Notice that the arguments that parents provide insurance or ease liquidity constraints suggest that it is the *level* of parental wealth which is important to the child's portfolio decision; how parental wealth is held should be relatively unimportant. On the other hand, similar endowments between

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wealth to child's wealth net of gifts ($187,502/$140,152 = 1.34).

parent and child would mean that the portfolio decisions of parents affect the portfolio decisions of children, regardless of the level of parental wealth.

Table 8 reports the result of whether children *entered* into different portfolio components between 1989 and 1999 as a function of their *own* wealth in 1989, their *parents'* average wealth between 1984 and 1989, and their *parents'* portfolio decision as of 1984.[26] The regressions also control for age, demographic and income controls of the child. We find a number of interesting results. First, whether the child enters a business is positively affected by whether parents had made the same decision many years before. Children of parents who owned a business were 7.4 percentage points more likely to become a business owner as compared to children of parents who did not own a business. Since the average probability of entering into business ownership was 0.155, this represents an increase of 45.2%. Second, the effect of parents own portfolio decisions is not evident with child stock ownership entry.[27] Third, the level of parental wealth is independently important for whether a child enters the stock market but it is not independently important for whether the child owns a business.[28] Finally, the child's own wealth as of 1989 is not important for either the decision to become a business or stock owner.

The results lend credence to the interfamily insurance hypothesis discussed above, as far as entry into stock ownership is concerned. Children of wealthy parents may be more likely to invest in the stock market if they know that their parents could bail them out if ever they realized a low (or negative) realized return. Oddly, this result is not reproduced for entry into business ownership - a very risky venture. Children of business owners are much more likely to become business owners, *regardless* of parental wealth, if their parent is a business owner. This suggests that there could be another role played by the family (learning of entrepreneurial skills, family obligation, similarity in risk preferences) that lend itself to business ownership being propagated across generations.

The analysis indicates that portfolios are similar between parents and children, independent of the level of the parental wealth (at least for business ownership). Are similar preferences or financial

[26] The analysis in Table 8 differs from that in the main sample of analysis in that we focus on the decisions that the children made over the ten year period between 1989 and 1999 rather than their decisions at one point in time (i.e., 1999). Focusing on the *change* in behavior accounts for any potential endogeniety between child wealth and child portfolio component. The sample sizes in Table 8 differ from that of our main sample analysis for two reasons. First, we impose that children be in the sample as of 1989 – requirement which meant that children who had not yet formed their own households in 1989 were dropped from the main sample. Second, we analyze households who had not owned the particular portfolio component as of 1989 and analyze whether these households transitioned into the portfolio component as of 1999.

[27] Chiteji and Stafford (2000) also test for relationship in stock ownership propensities between parents and children, and report a weak correlation between these decisions. Our tests differ from their for a number of reasons. First, we examine the *transition* into stock ownership rather than the relationship in the level. Also, unlike Chiteji and Stafford, we control for parental wealth in the child stock ownership decision. We believe that this second difference principally explains why they find an intergenerational correlation and we do not.

[28] These results are consistent with much existing empirical literature on business ownership. Hurst and Lusardi (2000) show that liquidity constraints are not important in business ownership. Yet, they find that parental business ownership is a strong predictor of a child's business ownership. The role of parental self employment as a strong statistical predictor of child's self employment is robust in the literature in many samples and with the inclusion of many different controls. See Evans and Leighton (1989), Blanchflower and Oswald (1998), and Fairlie (1999) for some recent examples.

learning the source of this similarity? We provide further evidence for this hypothesis in the next section.

## IX. The Correlation of Preferences Across Generations?

Are preferences actually correlated between parents and their children? Both biological inheritance and the influence of factors like financial learning or mimicry suggest that such similarity exists and, as shown in the theoretical model, preferences certainly matter in the wealth generation process. Unfortunately, empirically accounting for the influence of such factors is difficult. First, preferences are likely to be highly correlated with income. Conditioning on income, therefore, would be capturing the portion of the wealth correlation due directly to the income correlation and indirectly to the preference correlation. Second, information on financial learning, time preference rates and risk aversion is simply not readily available in most data sets used by economists.

In this section, we use new, experimental data from a 1996 supplement to the *PSID* to explore the extent to which one specific wealth-relevant endowment measure – an index of risk tolerance - is correlated across parents and their children.[29] From a series of questions put to respondent about the circumstances under which they would take different hypothetical gambles, *PSID* respondents can be sorted into four distinct levels of risk tolerance as measured by their response to the *PSID* questions. We summarize the distribution of this index, and then measure its effect on various financial choices. We conclude with evidence on the correlation of this index between parents and children.

The *PSID* risk aversion measures are computed from an identical set of questions to those used by by Barsky et. al (1997), who show that these measures predict risky household behavior by respondents in the Health and Retirement Survey. The question in the *PSID* is as follows: "Suppose you had a job that guaranteed you income for life equal to your current, total income. And that job was (your/your family's) only source of income. Then you are given the opportunity to take a new, and equally good job with a 50-50 chance that it will cut your income by a third or, on the other hand, it could double your income with a 50-50 probability. Would you take that new job?" Based on the response to that question, the *PSID* asks follow-ups about jobs that double their income with a 50 percent probability or either cut your income by, 10%, 20%, 50%, or 75% with a 50 percent probability. Assuming a CES utility function and correcting for measurement error, the *PSID* reports four distinct categories of risk aversion based on the household's response. Barksy et. al (1997) summarize the procedure on how the

[29] The risk aversion questions were only asked to PSID respondents in the 1996 survey. Furthermore, the questions were only put to households who were working in 1996. Our sample that is used to analyze the similarity in risk aversion is thus different from the samples used in the analyses in the previous sections. Appropriate sample sizes are listed on all tables.

risk aversion parameters are computed using the Health and Retirement Survey data. The same procedure was used by the *PSID* staff to compute the risk aversion measures using the *PSID* data.

Table 9a shows the distribution of risk aversion categories for both parents and children. We classify the risk aversion measure into four categories: very high risk aversion, high risk aversion, medium risk aversion, or low risk aversion.[30] Sixty-four percent of parents and thirty-nine percent of children fell into the very high risk aversion category.[31] These households were not likely to enter a gamble that doubled their income with a 50% probability and reduced their income by 20% with a 50% probability. Overall, the measure suggests that parents are more risk averse than their children – a result which is not unexpected if risk aversion increases with age.[32]

Table 9b measures how the risk tolerance measures affects stock and business ownership of parents and children in the *PSID*. In the first column of the table, we regress parental business ownership on a set of indicator variables denoting the risk tolerance category into which the person falls, and a series of parental demographic and income controls. The "very high" risk aversion measure is the omitted category. Parents with the lowest risk aversion measure were 15 percentage points more likely to own a business (*p*-value - 0.000). With a base ownership rate of 0.328, this represents a 46% increase in the probability of business ownership. Parents who are the least risk averse are most likely to engage in the risky activity of business ownership.

Risk aversion also predicts stock ownership for parents (column II of Table 9b). Parents with the lowest risk aversion are 13 percentage points more likely to own stocks (a 27% increase over the mean ownership rate). The results for business ownership for children mirror the results for the parents. Children with the highest risk aversion are the least likely to own a business. For example, children with the *lowest* level of risk aversion are 7.3 percentage points *more* likely to own a business, an increase of 50% over the mean child business ownership rates. With stock ownership, children with medium and low risk aversion were also far more likely to own stocks than children with very high risk aversion, although only the medium risk aversion group was statistically different from zero.

Table 9b suggests that, whatever its limitations, the risk tolerance parameter available in the data appears to be related to financial choices. We turn now to the next natural question: How is this variable related between parents and children?

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[30] Assuming CES preferences, the four categories (very high risk aversion, high risk aversion, medium risk aversion and low risk aversion) correspond to estimated risk aversion measures of 6.67, 3.57, 2.86 and 1.75, respectively. See Barsky et al (1996) for a discussion of how the risk aversion measures were calculated.

[31] The sample sizes for the risk aversion questions are 781 households for the parents and 1,316 households for the children. The sample size is smaller for the parents because of the large proportion of parents who were retired in 1996. The risk aversion questions were only asked of working households.

[32] Although, we can not rule out cohort effects as the reason that the risk aversion measures differ between parents and their children.

Table 10 estimates linearity probability estimates of the probability that a child is in a particular risk tolerance category, given the category to which his parent belongs. In all of the regressions, parents in the “very high” risk aversion category are the omitted group. The results in Panel A of Table 10 are from a regression of child risk aversion on parental risk aversion and no other controls. The panel indicates that substantial similarity in risk tolerance category between parents and children, especially at the tails. Children with a very high risk aversion measure are most likely to have parents who themselves had a very high risk aversion measure, and children with low risk aversion measures are most likely to come from parents who had the lowest risk aversion measure. A child is 10 percentage points *more* likely to have the lowest risk aversion measure if there parent had the lowest risk aversion measure compared to if their parent the very high risk aversion measure (p-value = 0.023). This represents a 40% increase in probability over the sample mean of twenty-five percent. Notice that children with high and medium levels of risk aversion have no statistical relationship to their parent's risk aversion measure. The same basic pattern is evident in Panel B of the table, where the regression also controls for the child's age, education, income status and wealth.

The results suggest that there is a strong similarity in preference parameters, especially at the tails of the risk aversion distribution. Very risk averse parents or the least risk averse parents are likely to have children with similar risk preferences. No such relationship holds between parents and children with less extreme preferences. Given that portfolio components are correlated between parents and their children (at least business ownership) regardless of parental wealth and that risk aversion measures are correlated between parents and their children, we conclude that a correlation in endowments likely explains part of the remaining intergenerational correlation in wealth.[33]

## X. Conclusion

Economists and other scientists have long been interested both in the question of how economic fortunes of children relate to those of their parents, and the reasons for any intergenerational persistence. Most previous work in economics has limited its focus to income or earnings correlations. Furthermore, it is well documented that there is a large amount of heterogeneity in wealth, and the failure of income and other life cycle factors to explain that heterogeneity, suggests the possible importance of family background in the wealth generating process. Identifying the source of this individual heterogeneity and how it evolves across generations is an important step in more fully understanding household consumption and saving decisions. In this paper, we assess the similarity between parents and children

[33] Including the parent and child’s risk aversion measures directly into the regression reported in column V of table 5 caused the coefficient on parental wealth to fall slightly (from 0.118 to 0.113). Of all the risk aversion measures, only the high and medium risk aversion measures for the child were statistically significant when the very high risk aversion measures of both the parent and the child were excluded (point estimates with t-stats in parenthesis, respectively: 17,080 (1.74) and 30,463 (2.44)).

in their levels of wealth holdings. We also offer suggestive evidence about the role played by preferences - either innate or learned – in determining individual level, and study how preferences are correlated across generations.

We begin with a simple model of the intergenerational wealth correlation. We show that knowing the magnitude of the intergenerational income correlation tells us little about the magnitude of the intergenerational wealth correlation. The intergenerational correlation in pre-bequest wealth can be smaller, larger or equal to the income correlation depending on the nature of the intergenerational correlation in preferences and the correlation between preferences and income. The standard lifecycle model predicts that any intergenerational correlation in wealth which remains after controlling for parent and child income and controlling directly for transfers is due to a correlation in preferences.

Using data from the *PSID*, we next show that there is substantial intergenerational persistence in wealth; the raw wealth correlation between parents and their children of between 0.23 and 0.50 is similar in magnitude to income. These intergenerational relationships are large, especially since we only focus on households who have not yet received bequests from their parents. Controlling for measures of the permanent income of both parents and the child only explains less than one-half of the raw intergenerational wealth correlation. Put another way, the results indicate that if lifetime income were completely equalized between parents whose wealth was 1 dollar apart, the gap between their children's wealth would only less than one-half lower than before the income equalization.

Apart from income, there are other reasons why the children of wealthy parents themselves turn out wealthy. We find that the receipt of large gifts is not the reason: controlling for the receipt of gifts does little to adjust the remaining correlation in wealth. On the other hand, we present results which suggest that wealthy parents may provide insurance to their children, or that their wealth may relax their children's liquidity constraints. More wealth on the part of parents appears to enable children to undertake high-risk, high return investments in corporate equities. However, investment in private businesses seems to depend not on the level of parental wealth, but on whether the parents themselves owned a business. Again, this suggests that for some portfolio decisions, parental characteristics aside from parental wealth are important.

After controlling for income, demographics, education, direct transfers and portfolio composition, we still find a sizeable and statistically significant intergenerational correlation in wealth. These controls only explain about 60 percent of the initial age adjusted intergenerational wealth correlation. We speculate that financial learning and shared preferences can explain a large portion of the remaining correlation in portfolio composition and wealth levels between parents and their children. In the final section of the paper, we present direct evidence that preferences are, in fact, correlated across

generations. Using experimental survey data, we show that measures of risk are strongly correlated between parents and their children - especially at the tails of the risk aversion distribution.

One interesting area for future research is the source of this intergenerational correlation in preferences. Our data do not permit us to distinguish whether the intergenerational similarity in preferences derive from learning and mimicry, on the one hand, or biological transmission, on the other. That is, we do not study here the extent to which preferences are *learned* and that to which they are *innate*. Answering this question will further not only our understanding about the evolution of preferences but, more generally, will further our understanding of households' consumption and saving decisions.

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**Table 1a: Means and Standard Deviations of Wealth and Demographic Variables (1,648 Parent-Child Pairs)**

| | **Children(1999)** | | **Parents(1984-1989 average)** | |
|---|---|---|---|---|
| *Variable* | *Mean* | *Standard Deviation* | *Mean* | *Standard Deviation* |
| Age | 36.9 | 7.2 | 51.4 | 7.9 |
| Marital Status | 0.544 | 0.498 | 0.830 | 0.335 |
| Total Number of Children | 1.29 | 1.27 | 3.96 | 2.41 |
| Average Family Labor Income | 49,169 | 37,764 | 60,873 | 38,598 |
| Wealth | 84,008 | 139,228 | 170,661 | 187,502 |
| % Owning Stocks | 0.258 | 0.438 | 0.452 | 0.498 |
| % Owning a Home | 0.598 | 0.490 | 0.886 | 0.317 |
| % Owning a Business | 0.130 | 0.337 | 0.254 | 0.435 |

Sample: All *PSID* parent-child pairs where the parents were in the *PSID* during 1984-1989 samples and alive in 1999 and where their children were in the sample in 1999. Parents were restricted to being non-retired and between the ages of 25 and 65 in 1984. Children were restricted to be between the ages of 25 and 65 in 1999. Both parents and children were restricted to having measured wealth greater than -$50 thousand and less than $1 million.

Data from the core sample of the Panel Study of Income Dynamics (*PSID*) was used for all analyses.
Wealth data came from the 1984, 1989, and 1999 *PSID* Wealth Supplements.
All data weighted using PSID core sample weights.

**Table 1b: Wealth Distribution for Children in 1999 and Parents Averaged Over 1984 and 1989**

| *Distribution* | *Child's Wealth (1999)* | *Parents' Wealth (1984-1989 average)* |
|---|---|---|
| 5th percentile | -10,300 | 3,400 |
| 10th percentile | -1,900 | 12,500 |
| 20th percentile | 2,400 | 37,100 |
| 25th percentile | 5,200 | 46,900 |
| 40th percentile | 19,400 | 80,000 |
| Median | 32,500 | 112,800 |
| 60th percentile | 53,700 | 145,600 |
| 75th percentile | 98,500 | 219,700 |
| 80th percentile | 124,000 | 263,700 |
| 90th percentile | 232,800 | 402,000 |
| 95th percentile | 371,500 | 585,000 |
| Observations | 1,648 | 1,648 |

## Table 2: Intergenerational Transition Matrix of Wealth Position, With and Without Age Controls

### Entries are Column Percentages

| *Child's Wealth Quintile (1999)* | *Parental Wealth Quintile (1984-1989)* 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. ***Unadjusted*** | ***35.22*** | ***27.98*** | ***17.32*** | ***10.74*** | ***9.90*** |
| *Age Adjusted* | *37.13* | *19.53* | *10.24* | *8.10* | *5.81* |
| Age/Marriage Adjusted | 26.27 | 19.46 | 15.76 | 12.67 | 8.52 |
| 2. ***Unadjusted*** | ***34.41*** | ***28.27*** | ***26.77*** | ***13.81*** | ***10.92*** |
| **Age Adjusted** | **29.70** | **28.28** | **25.98** | **14.18** | **13.46** |
| Age/Marriage Adjusted | 25.32 | 30.24 | 22.73 | 16.53 | 10.49 |
| 3. ***Unadjusted*** | ***17.41*** | ***20.83*** | ***28.61*** | ***22.51*** | ***16.04*** |
| **Age Adjusted** | **14.36** | **25.95** | **31.76** | **27.09** | **16.82** |
| Age/Marriage Adjusted | 25.32 | 25.15 | 26.15 | 23.42 | 17.05 |
| 4. ***Unadjusted*** | ***9.72*** | ***15.48*** | ***18.90*** | ***31.20*** | ***26.62*** |
| **Age Adjusted** | **11.39** | **16.62** | **21.52** | **32.15** | **27.22** |
| Age/Marriage Adjusted | 14.87 | 16.77 | 24.15 | 28.37 | 26.56 |
| 5. ***Unadjusted*** | ***3.24*** | ***7.44*** | ***8.40*** | ***21.74*** | ***36.52*** |
| **Age Adjusted** | **7.43** | **9.62** | **10.50** | **18.48** | **36.70** |
| Age/Marriage Adjusted | 8.23 | 8.38 | 11.21 | 19.01 | 37.38 |

* Sample: All *PSID* parent-child pairs where the parents were in the *PSID* during 1984-1989 samples and alive in 1999 and where their children were in the sample in 1999. Parents were restricted to being non-retired and between the ages of 25 and 65 in 1984. Children were restricted to be between the ages of 25 and 65 in 1999. Both parents and children were restricted to having measured wealth greater than -$50 thousand and less than $1 million (1,647 observations).
* The second entry reports wealth adjusted by age and age squared. Both parent and children's wealth were adjusted using a first stage median regression of wealth on age and age squared. The correlation of the residuals is presented in the second entry of Table 2.
* Likelihood ratio $\chi^2$ statistic that each cell is equal to the other for the unadjusted wealth entries: $\chi^2$ = 327.59 (*p*-value = 0.000).
* Likelihood ratio $\chi^2$ statistic that each cell is equal to the other for the age adjusted wealth entries: $\chi^2$ = 292.43 (*p*-value = 0.000).
* Likelihood ratio $\chi^2$ statistic that each cell is equal to the other for the age-marriage adjusted wealth entries: $\chi^2$ = 202.6 (*p*-value = 0.000).

**Table 3: Regression Estimates of Intergenerational Wealth Similarity:**
**Unadjusted, Age Adjusted and Age and Marital Status Adjusted**
**(Coefficient on Parental Wealth or Log Parental Wealth Reported)**

| | I | II | III | IV | V |
|---|---|---|---|---|---|
| OLS Regression Coefficient | 0.207 | 0.188 | 0.173 | 0.413 | 0.344 |
| | (0.029) | (0.029) | (0.027) | (0.041) | (0.035) |
| Quantile Regression Coefficient (median) | 0.162 | 0.139 | 0.124 | 0.467 | 0.354 |
| | (0.010) | (0.008) | (0.008) | (0.038) | (0.040) |
| Instrumental Variable Regression Coefficient | 0.314 | 0.386 | 0.376 | 0.603 | 0.709 |
| | (0.060) | (0.059) | (0.058) | (0.108) | (0.100) |
| Wealth Measures: Level or Log? | Level | Level | Level | Log | Log |
| Age Controls Included? | No | Yes | Yes | No | Yes |
| Marital Status Controls Included? | No | No | Yes | No | Yes |
| **Estimated Statistical Correlation (OLS estimate)** | **0.280** | **0.254** | **0.234** | **0.351** | **0.292** |
| **Estimated Statistical Correlation (IV estimate)** | **0.424** | **0.521** | **0.508** | **0.513** | **0.603** |
| Adjusted R-Squared (OLS Regression) | 0.078 | 0.150 | 0.184 | 0.112 | 0.259 |

* Sample: All *PSID* parent-child pairs where the parents were in the *PSID* during 1984-1989 samples and alive in 1999 and where their children were in the sample in 1999. Parents were restricted to being non-retired and between the ages of 25 and 65 in 1984. Children were restricted to be between the ages of 25 and 65 in 1999. Both parents and children were restricted to having measured wealth greater than -$50 thousand and less than $1 million Columns IV and V are further restricted to having parent-child pairs with positive wealth. Sample size for level of wealth regressions (columns I-II): 1,647. Sample size for log wealth regressions (columns IV and V): 1,392.

*Column I* reports the coefficient on parental wealth in a regression of child wealth level on parental wealth level.
*Column II* reports the coefficient on parental wealth in a regression of child wealth level on parental wealth level and: age of head and age squared of both the parent and the child.
*Column III* reports the coefficient on parental wealth in a regression of child wealth level on parental wealth level and: age, age squared and the marital status of both parent and child.
*Column IV* reports the coefficient on parental wealth in a regression of the log of child wealth on the log of parental wealth.
*Column V* reports the coefficient on parental wealth in a regression of log child wealth on log parental wealth and: age, age squared and the marital status of both parent and child.

For the instrumental variable regressions, educational status of the parent was used as the instrument for parental wealth.
Standard errors for OLS and IV regressions (in parenthesis) are robust to heteroskedasticity and within-family correlation. Data weighted using *PSID* core sample weights.

**Table 4: Intergenerational Transition Matrix of Wealth Position, Adjusted by Age, Marital Status and Income Controls**

**(Entries are Column Percentages)**

| *Child's Wealth Quintile (1999)* | *Parental Wealth Quintile (1984-1989)* 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. **Age/Marriage Adjusted** | **26.27** | **19.46** | **15.76** | **12.67** | **8.52** |
| *Age/Marriage/Income Adjusted* | *22.37* | *20.56* | *13.70* | *18.87* | *14.81* |
| 2. **Age/Marriage Adjusted** | **25.32** | **30.24** | **22.73** | **16.53** | **10.49** |
| *Age/Marriage/Income Adjusted* | *23.68* | *23.61* | *23.03* | *22.64* | *15.56* |
| 3. **Age/Marriage Adjusted** | **25.32** | **25.15** | **26.15** | **23.42** | **17.05** |
| *Age/Marriage/Income Adjusted* | *22.70* | *25.28* | *23.91* | *20.49* | *15.56* |
| 4. **Age/Marriage Adjusted** | **14.87** | **16.77** | **24.15** | **28.37** | **26.56** |
| *Age/Marriage/Income Adjusted* | *20.72* | *20.83* | *24.78* | *21.56* | *24.07* |
| 5. **Age/Marriage Adjusted** | **8.23** | **8.38** | **11.21** | **19.01** | **37.38** |
| *Age/Marriage/Income Adjusted* | *10.53* | *9.72* | *14.58* | *16.44* | *30.00* |

* Sample: See Footnote to Table 3 for sample descriptions.

* The first entry of Table 4 re-reports wealth adjusted by age, age squared and marital status (from Table 2). The second entry of Table 4 reports wealth adjusted by age, age squared, marital status, average household 5 year labor income, predicted household lifetime income, and the predicted fraction of total lifetime income accumulated by the household at the household's current age. Both parent and children's wealth were adjusted using a first stage median regression of wealth on the age/income controls. The correlation of the residuals from the first stage regression is presented in the second entry of Table 4.

* Likelihood ratio $\chi^2$ statistic that each cell is equal to the other for the age/marriage/income adjusted wealth entries: $\chi^2 = 75.25$ ($p$-value = 0.000)

**Table 5: Regression Estimates of Intergenerational Wealth Similarity, Adjusting for Income**

| | I | II | III | IV | V | VI |
|---|---|---|---|---|---|---|
| OLS Regression | 0.173<br>(0.027) | 0.124<br>(0.031) | 0.116<br>(0.031) | 0.118<br>(0.031) | 0.115<br>(0.030) | 0.215<br>(0.037) |
| Quantile Regression (median) | 0.124<br>(0.008) | 0.073<br>(0.009) | 0.074<br>(0.010) | 0.068<br>(0.009) | 0.066<br>(0.011) | 0.207<br>(0.044) |
| Instrumental Variable Regression | 0.376<br>(0.058) | 0.252<br>(0.089) | 0.254<br>(0.105) | 0.245<br>(0.092) | NA | 0.666<br>(0.289) |
| Wealth Measure: Level or Log? | Level | Level | Level | Level | Level | Log |
| Controls: Age and Marital Status? | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls: Actual Five Year Average Income? | No | Yes | Yes | Yes | Yes | Yes |
| Controls: Predicted Income Trajectory? | No | No | Yes | Yes | Yes | Yes |
| Controls: Predicted Income Volatility? | No | No | No | Yes | Yes | Yes |
| Controls: Actual Educational Attainment? | No | No | No | No | Yes | No |
| **Estimated Statistical Correlation (OLS)** | **0.234** | **0.167** | **0.157** | **0.159** | **0.155** | **0.183** |
| **Estimated Statistical Correlation (IV)** | **0.508** | **0.340** | **0.343** | **0.331** | **NA** | **0.566** |
| Adjusted R-Squared (OLS Regression) | 0.184 | 0.344 | 0.349 | 0.351 | 0.354 | 0.366 |

* Sample: See Footnote to Table 3 for sample descriptions. For the instrumental variable regression, educational status of the parent was used as the instrument for parental wealth. Standard errors for OLS and IV regressions are robust to heteroskedasticity and within-family correlation. Data weighted using *PSID* core sample weights.

* *Column I* reports the coefficient on parental wealth level in a regression of child wealth level on parental wealth and: age, age squared and marital status of both the parent and the child (re-reported from column II of Table 3).

* *Column II* reports the coefficient on parental wealth level in a regression of child wealth on parental wealth level and: controls for age, martial status, and five-year average household labor income level for both the parent and the child.

* *Column III* reports the coefficient on parental wealth level in a regression of child wealth level on parental wealth level and: controls for age, martial status, five-year average income level, and a set of controls measuring the predicted permanent income and the predicted fraction of permanent income received thus far for both the parent and the child.

* *Column IV* reports the coefficient on parental wealth level in a regression of child wealth on parental wealth level: and the controls from regression III and measures of the predicted income variance for both parents and the child.

* *Column V* reports the coefficient on parental wealth in a regression of child wealth on parental wealth: and the controls from regression IV and measures of the child's level of educational attainment.

* *Column VI* reports the coefficient on log parental wealth in a regression of log child wealth on log parental wealth and the same controls from Column IV.

**Table 6: Regression Estimates of Intergenerational Wealth Similarity, Adjusting for Expected Bequests and Intravivos Transfers**

| | I | II |
|---|---|---|
| OLS Regression | 0.106<br>(0.030) | 0.089<br>(0.031) |
| Quantile Regression (median) | 0.063<br>(0.010) | 0.041<br>(0.009) |
| Wealth Measure: Level or Log? | Level | Level |
| Demographic and Income Controls Included? | Yes | Yes |
| Expected Bequest Control Included? | Yes | Yes |
| Dependent Variable | Child Wealth Level | Child Wealth Level Net of Intravivos Transfers |
| **Estimated Statistical Correlation (OLS)** | **0.143** | **0.119** |
| Adjusted R-squared from OLS Regression | 0.356 | 0.339 |

* Sample: See Footnote to Table 3 for sample descriptions. Standard errors (in parenthesis) for OLS regressions are robust to heteroskedasticity and within-family correlation. Data weighted using *PSID* core sample weights.

*Column I* reports the coefficient on parental wealth level in a regression of child's wealth level on parental wealth level and: age, predicted lifecycle income controls, actual average income controls, and the level of educational attainment for both the parent and the child and a measure of the parent's expected bequest to the child.

*Column II* reports the coefficient on parental wealth level in a regression of *child's wealth level net of gifts received* on parental wealth level and: age, predicted lifecycle income controls, actual average income controls, and the level of educational attainment for both the parent and the child and a measure of the parent's expected bequest to the child.

Mean/Median of child's wealth once removing gifts received from parents between 1989 and 1999: $80,000 (mean), $30,300 (median), $140,152 (standard deviation). Ratio of standard deviation of parental wealth (Table 1a) to the standard deviation of child wealth net of transfers received is 1.34.

**Table 7: Regression Estimates of Intergenerational Wealth Similarity, Adjusting for Portfolio Composition**

| | I | II |
|---|---|---|
| OLS Regression | 0.081<br>(0.030) | 0.068<br>(0.028) |
| Quantile Regression (median) | 0.048<br>(0.010) | 0.041<br>(0.008) |
| Wealth Measure: Level or Log? | Level | Level |
| Demographic and Income Controls Included? | Yes | Yes |
| Expected Bequest Control Included? | Yes | Yes |
| Control: Does the Child Own Stocks? | Yes | Yes |
| Control: Does the Child Own a Business? | No | Yes |
| Dependent Variable | Child's Wealth Net of Intravivos Transfers | Child's Wealth Net of Intravivos Transfers |
| **Estimated Statistical Correlation (OLS)** | **0.109** | **0.091** |
| Adjusted R-squared from OLS Regression | 0.376 | 0.417 |

* Sample: See Footnote to Table 3 for sample descriptions. Standard errors (in parenthesis) for OLS regressions are robust to heteroskedasticity and within-family correlation. Data weighted using *PSID* core sample weights.

*Column I* reports the coefficient on parental wealth level in a regression of *child's wealth level net of gifts* received on parental wealth level and: age, predicted lifecycle income controls, actual average income controls, the level of educational attainment for both the parent and the child, a measure of the parent's expected bequest to the child and an indicator of whether the child owns stocks.

*Column II* reports the coefficient on parental wealth level in a regression of *child's wealth level net of gifts* received on parental wealth level and: age, predicted lifecycle income controls, actual average income level controls, the level of educational attainment for both the parent and the child, a measure of the parent's expected bequest to the child, an indicator of whether the child owns stocks and an indicator of whether the child owns a business.

Mean/Median of child's wealth once removing gifts received from parents between 1989 and 1999: $80,000 (mean) and $30,300 (median)

## Table 8: Linear Probability Estimates of Intergenerational Similarity in Portfolio Choice

| *Controls* | *Enter Stock-Ownership* | *Enter Business-Ownership* |
|---|---|---|
| Parent Own Stock (1984-1989)? | 0.045<br>(0.049) | 0.017<br>(0.035) |
| Parent Own Business (1984-1989)? | -0.001<br>(0.060) | **0.069**<br>**(0.038)** |
| Parent Wealth (1984-1989) | **3.55 E-7**<br>**(1.55 E-7)** | 4.95 E-8<br>(1.04 E-7) |
| Child Wealth (1989) | -6.95 E-8<br>(4.62 E-7) | 4.76 E-8<br>(4.44 E-7) |
| Age/Demographic/Income Controls? | Yes | Yes |
| Adjusted R-Squared | 0.167 | 0.060 |
| Mean: Dependent Variable | 0.355 | 0.155 |
| % Owning Portfolio Component ('89) | 0.222 | 0.089 |
| Sample Size | 587 | 683 |

* Sample: See Footnote to Table 3 for sample descriptions. Addition sample restrictions include: children were restricted to being between ages 25 and 45 in 1999. Standard errors (in parenthesis) for the linear probability regressions are robust to heteroskedasticity and within-family correlation. Data weighted using *PSID* core sample weights.

The dependent variable is a dummy variable indicating whether the child entered the portfolio ownership state between 1989 and 1999. For example, the first column of the table has as a dependent variable whether the child became a stock owner between 1989 and 1999 conditional on the child not owning stocks in 1989.

The regressions also include as regressors: the child's age, age squared, education, average labor income, labor income squared and predicted lifecycle income controls.

## Table 9a: The Distribution of Risk Aversion For Parents and Children

| *Estimated Risk Aversion Coefficient* | *Parents* | *Child* |
|---|---|---|
| Very High Risk Aversion | 0.640 | 0.389 |
| High Risk Aversion | 0.120 | 0.165 |
| Medium Risk Aversion | 0.084 | 0.195 |
| Low Risk Aversion | 0.155 | 0.251 |

* Sample: All *PSID* parent-child pairs where the parents were in the *PSID* during 1984-1989 samples and alive in 1999 and where their children were in the sample in 1999. Parents were restricted to being non-retired and between the ages of 25 and 65 in 1984. Children were restricted to be between the ages of 25 and 65 in 1999. Both parents and children were restricted to having measured wealth greater than -$50 thousand and less than $1 million. Further, for the parent sample, the parent had to be working in 1996 (781 households). For the child sample, the child had to be working in 1996 (1,316 households).

* Risk aversion measure from *PSID* 1996 Risk Aversion Supplement. See text for discussion

## Table 9b: Linear Probability Estimates of Effect of Risk Aversion on Household Portfolio Choice
## ("Very High" Risk Aversion Omitted Category)

| | **Parents (1984-1989)** | | **Child (1999)** | |
|---|---|---|---|---|
| *Risk-Aversion Coefficient* | *Business-Ownership* | *Stock-Ownership* | *Business-Ownership* | *Stock-Ownership* |
| Dummy: High Risk Aversion | -0.080<br>(0.050) | 0.061<br>(0.052) | **0.058**<br>**(0.027)** | 0.007<br>(0.033) |
| Dummy: Medium Risk Aversion | 0.036<br>(0.061) | -0.015<br>(0.064) | **0.067**<br>**(0.026)** | **0.088**<br>**(0.032)** |
| Dummy: Low Risk Aversion | **0.154**<br>**(0.047)** | **0.131**<br>**(0.049)** | **0.073**<br>**(0.024)** | 0.029<br>(0.029) |
| Age/Demographic/Income Controls? | Yes | Yes | Yes | Yes |
| Adjusted R-Squared | 0.053 | 0.125 | 0.061 | 0.140 |
| Percent Owning Asset | 0.328 | 0.468 | 0.139 | 0.272 |
| Sample Size | 781 | 781 | 1,316 | 1,316 |

* See note for Table 9a for a description of the sample. Results reported in Table 9b come from linear probability regressions of asset ownership (either stock or business) for both parents and children on their *PSID* risk aversion measures. The parents regression includes additional controls for their age, age squared, educational status, income, income squared and parameters for their expected income trajectory. Similar child specific controls were included for the child's regression.

**Table 10: Linear Probability Estimates of Relationship Between Child and Parent Risk Aversion Categories, With and Without Demographic, Income and Wealth Controls.**

*A. Parent-Child Risk Aversion Similarity without Demographic and Income Controls (Omitted Parental Risk Aversion Category: "Very High" Risk Aversion)*

| | *Child's Risk Aversion Measure* | | | |
|---|---|---|---|---|
| *Regressors* | *Very High* | *High* | *Medium* | *Low* |
| Parental Risk Aversion | | | | |
| Dummy: High Risk Aversion | -0.019<br>(0.061) | -0.003<br>(0.046) | 0.022<br>(0.050) | 0.001<br>(0.054) |
| Dummy: Medium Risk Aversion | -0.059<br>(0.070) | 0.014<br>(0.054) | 0.030<br>(0.058) | 0.015<br>(0.067) |
| Dummy: Low Risk Aversion | **-0.116**<br>**(0.052)** | -0.035<br>(0.041) | 0.051<br>(0.044) | **0.100**<br>**(0.043)** |
| Sample Size | 640 | 640 | 640 | 640 |

*B. Parent-Child Risk Aversion Similarity with Demographic, Income and Wealth Controls (Omitted Parental Risk Aversion Category: "Very High" Risk Aversion)*

| | *Child's Risk Aversion Measure* | | | |
|---|---|---|---|---|
| *Regressors* | *Very High* | *High* | *Medium* | *Low* |
| Parental Risk Aversion | | | | |
| Dummy: High Risk Aversion | -0.015<br>(0.062) | 0.001<br>(0.047) | 0.029<br>(0.049) | 0.014<br>(0.054) |
| Dummy: Medium Risk Aversion | -0.044<br>(0.072) | 0.021<br>(0.054) | 0.030<br>(0.058) | -0.006<br>(0.063) |
| Dummy: Low Risk Aversion | **-0.082**<br>**(0.049)** | -0.032<br>(0.042) | 0.046<br>(0.045) | **0.069**<br>**(0.041)** |
| Sample Size | 640 | 640 | 640 | 640 |

* Samples for Panels A and B: All *PSID* parent-child pairs where the parents were in the *PSID* during 1984-1989 samples and alive in 1999 and where their children were in the sample in 1999. Parents were restricted to being non-retired and between the ages of 25 and 65 in 1984. Children were restricted to be between the ages of 25 and 65 in 1999. Both parents and children were restricted to having measured wealth greater than -$50 thousand and less than $1 million. Furthermore, both parent and child must have been working in 1996 (see text for full discussion).
* For Panel B, demographic, income and wealth controls include child's: age, age squared, educational status, average income, predicted lifecycle income controls and household net wealth.