Parental net wealth and personal consumption

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Abstract

This paper uses data from the 1988 to 1991 PSID to examine the relationship between parental net wealth and consumption behavior of adult children. In a model where the probability of receiving a future transfer from the parent is an increasing function of the level of parental net wealth, a non-linear relationship is expected. The results in this study are consistent with such a relationship. Parental net wealth is found to have a positive influence on children’s consumption only at very high levels. In addition, this relationship appears to apply only to parental housing wealth and not parental non-housing wealth.

JEL classification: E21; D12

Keywords: Consumption; Intergenerational transfers; Mental accounts

1. Introduction

This paper will study the link between parental net wealth and consumption by children. Previous work on consumption has focused mainly on the importance of retirement, precautionary motives, and liquidity constraints in consumption decisions (for example, Deaton, 1992; Carroll, 1992; Zeldes, 1989). A relationship between parental net wealth and children’s consumption behavior is anticipated since an expected inheritance or future inter vivos transfer is likely a function of parental net wealth. While most studies on bequests have dealt with the decision to give a bequest, only a few studies have approached bequests from the standpoint of the recipient. Weil (1994) uses data from the 1984 Panel Study of Income Dynamics (PSID) and finds that those who either received an inheritance or expect
an inheritance consume more than those who do not. Engelhardt (1996) uses data from the 1984 to 1989 PSID and finds that those who received an inheritance reduce their savings up to a dollar for each dollar of inheritance received. Hrung (2002) uses the 1988–1991 PSID and finds that the marginal propensity to consume (MPC) for parental housing wealth is roughly half the MPC for own housing wealth. However, that study did not investigate non-housing wealth. Finally, Tomes (1982) and Joulfaian and Wilhelm (1994) find that inheritances received are not important in labor supply decisions.

I use data from the 1988 to 1991 PSID to examine the relationship between parental net wealth and consumption behavior of adult children. The 1988 PSID contains estimates of parental net wealth by the children. Also, per child estimates of parental net wealth are constructed perhaps to reflect better what a child can expect to receive as a future transfer. In a model where the probability of receiving a transfer varies with the level of parental wealth, there will be a non-linear relationship between parental net wealth and children’s consumption. The results in this paper are consistent with such a relationship. I also find that parental housing wealth has a positive influence on consumption, but parental non-housing wealth has no relationship with consumption. This result is consistent with a “mental accounts” framework for different forms of wealth (Shefrin and Thaler, 1988) and recent work on the wealth effect (Case et al., 2001).

Section 2 contains a simple illustrative model. The empirical framework and data description is found in Section 3. Section 4 presents the main empirical results while Section 5 presents results with parental housing wealth separated from parental non-housing wealth. Section 6 concludes.

2. A simple model

To examine the theoretical relationship between parental net wealth and children’s consumption, consider a simple two-period model with quadratic utility:

$$\max E(U) = \max \left( \alpha C_1 - \frac{1}{2} \beta C_1^2 + \alpha C_2 - \frac{1}{2} \beta C_2^2 \right)$$

s.t.

$$C_2 = Y_1 - C_1 + E(I_2)$$

and

$$I_2 = \begin{cases} \mu_1 & \text{with probability } (1 - p), \\ \mu_2 & \text{with probability } p \end{cases}$$

where $C_1$ and $C_2$ represent consumption in periods 1 and 2, respectively, $Y_1$ represents first period income, and $I_2$ represents a bequest that will be received in period 2 ($I_2$ may also represent an inter vivos gift to be received in period 2). In this example, I set $\mu_1$ equal to zero so that the expected value of $I_2$ is $p\mu_2$. The innovation here is that the probability of receiving a bequest is an increasing function of parental wealth, which is represented by $\mu_2$. This reflects the reasonable assumption that increased parental wealth increases the probability that children will receive a future transfer. Greater parental wealth may also lead
to children altering behavior in an attempt to secure a transfer (see Bernheim et al., 1985; Perozek, 1998). A valid probability function must satisfy the following two conditions:

\[ p(x) = 0 \quad \text{if} \quad x \in (-\infty, 0), \quad \lim_{x \to \infty} p(x) = 1 \]

An example of a valid function is \( p(\mu_2) = \max(0, \mu_2/(\mu_2 + K)) \), where \( K \) is some arbitrary positive constant. Using this function and solving the model, we find that optimal consumption in the first period is the following for positive \( \mu_2 \):

\[ C_1^* = \frac{Y_1}{2} + \frac{E(I_2)}{2} = \frac{Y_1}{2} + \frac{\mu_2^2}{2(\mu_2 + K)} \]

and

\[ \frac{\partial C_1^*}{\partial \mu_2} = \frac{\mu_2(\mu_2 + 2K)}{2(\mu_2 + K)^2} > 0 \]

Since an inheritance increases children’s lifetime resources, any forward looking model will predict a positive relationship between expected inheritances and children’s consumption. In a standard case with fixed \( p \), the derivative of first-period consumption with respect to parental wealth is a positive constant and the relationship between children’s consumption and parental wealth is linear. Here, the difference is that the derivative varies with the level of parental wealth for a non-linear relationship between children’s consumption and parental wealth. Parental wealth would be expected to have a small influence on children’s consumption at low levels of parental wealth, but high levels of parental wealth would be expected to have a large influence on children’s consumption as an inheritance becomes more certain.

3. Empirical framework and data

In an ideal setting, I would use panel data to investigate the relationship between changes in children’s consumption and changes in parental net wealth. However, to my knowledge, such information is not available. The 1988 wave of the PSID is the only year of the survey with information on parental net wealth. I am therefore limited to a cross-sectional analysis. Based on the analysis in Weil, the basic econometric model to be estimated is a reduced-form consumption function:

\[ \text{Consumption} = f(\text{parental net wealth, own net wealth, } Z) + \varepsilon \]

where \( \varepsilon \) is a random error term and \( Z \) includes other independent variables such as marital status, number of children, and age of head. Consumption will be the log of consumption and parental net wealth will be the estimate of parental net wealth provided by the child split into various group dummy variables. This deletes observations with zero consumption, but keeps those with zero or negative values for parental net wealth.

The data studied comes from the 1988 to 1991 waves of the PSID. The 1988 PSID is unique in that it contains children’s estimates of the net wealth of parents AND any in-laws.\(^1\)

\(^1\) For example, the net wealth of the head of household’s parents is variable V15841. Unfortunately, parental net wealth is given a value of zero in the PSID if the child reports negative net wealth for the parents.
This is important since it is children’s estimates of parental net wealth that should influence their consumption decisions, not the true values. Thus, parent-reported net wealth is not needed and no matching of parents and children is required for the regressions. Parental net wealth includes major possessions such as housing and other investments and debt. Pension assets are not included in this variable. The analysis is essentially cross-sectional, but different waves of the PSID are needed since certain items for the analysis are only available in different years. The panel aspect of the PSID is utilized in the calculation of average disposable income (after-tax income) from 1987 to 1990, which will be used as a measure of permanent income.

Total consumption spending is not available in the PSID, so the dependent variable will be a proxy for total consumption based on the method developed by Skinner (1987) and will utilize information on housing value, annual rent, and food expenditures at home and away from home. Unfortunately, most of the information needed for this calculation is available only in the 1990 PSID and not in the 1988 PSID. I base my calculation of consumption on food expenditures (at home and away from home) and annual rent that come from the 1990 PSID, and housing value that comes from the 1988 PSID. To construct a consumption measure for 1988 to correspond with the parental net wealth value reported in the 1988 PSID, I deflate the variables from 1990 by their respective CPI measures.

As for net wealth of the children, this information is available in the 1988 PSID although a more detailed measure can be found in the 1989 PSID. Respondents in the 1988 PSID were asked the value of their assets if all their possessions (including home) were sold, all investments turned to cash, and all debts paid. Net wealth will be divided into category dummy variables so the 1988 measure will be sufficient for this study even though negative net wealth is given a value of zero.

Since data from multiple years are being utilized, the sample is restricted to those who did not change marital status from 1988 to 1990. This is necessary since marriage/divorce will often result in a dramatic change in household income and average income from 1987 to 1990 will be an independent variable in the following analysis. In addition, to obtain the cleanest possible sample, it is also restricted to singles whose parents are both still alive and to married couples with both sets of parents still alive; parents must also share assets. This prevents previous direct inheritances from confounding the results. The sample in this study is therefore smaller and on average younger than the sample studied in Weil. The parental net wealth variable includes assets of both sets of parents if the respondent is married. The final sample includes over 1,400 households.

Table 1 presents the means for the variables in this study as well as medians for the main variables of interest. The table shows that consumption is not skewed heavily in any particular direction. Mean consumption of $17,210 is higher than the median of $14,562. Estimated parental net wealth has a mean of almost $250,000, but a median of $100,000. This reflects the fact that negative net wealth is given a value of zero in the 1988 PSID. Of

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2 See Altonji et al. (1992) for a study on intergenerational linkages that does explicitly link parents and children in the PSID. They find that household consumption is not independent of the distribution of extended family resources.

3 The 1991 PSID is needed for the calculation of 1990 disposable income.

4 Net wealth in the 1989 PSID is allowed to be negative.
Table 1
Means and medians of variables (observations = 1,409)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption ($)</td>
<td>17,210</td>
<td>14,562</td>
</tr>
<tr>
<td>Parental net wealth ($)</td>
<td>2,49,589</td>
<td>1,00,000</td>
</tr>
<tr>
<td>Parental net wealth per child ($)</td>
<td>76,112</td>
<td>25,000</td>
</tr>
<tr>
<td>Permanent income (average disposable income, 1987–1990) ($)</td>
<td>30,111</td>
<td>26,710</td>
</tr>
<tr>
<td>Own wealth ($)</td>
<td>42,261</td>
<td>10,000</td>
</tr>
<tr>
<td>Age of head in 1990</td>
<td>33</td>
<td>–</td>
</tr>
<tr>
<td>Number of children under age 18</td>
<td>1.720</td>
<td>–</td>
</tr>
<tr>
<td>1 (head has more than high school degree) (%)</td>
<td>61</td>
<td>–</td>
</tr>
<tr>
<td>1 (non-white) (%)</td>
<td>26</td>
<td>–</td>
</tr>
<tr>
<td>1 (married) (%)</td>
<td>69</td>
<td>–</td>
</tr>
</tbody>
</table>

* Negative values for these variables were coded as zero wealth in the 1988 PSID.

Table 2
Mean of variables by parental net wealth classes

<table>
<thead>
<tr>
<th>Parental net wealth</th>
<th>Observations</th>
<th>Consumption ($)</th>
<th>Own wealth ($)</th>
<th>Permanent income ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ $ 0</td>
<td>243</td>
<td>10,150</td>
<td>4,451</td>
<td>15,594</td>
</tr>
<tr>
<td>$ 0–25,000</td>
<td>199</td>
<td>11,313</td>
<td>8,997</td>
<td>17,435</td>
</tr>
<tr>
<td>$ 25,000–75,000</td>
<td>191</td>
<td>12,920</td>
<td>14,164</td>
<td>24,907</td>
</tr>
<tr>
<td>$ 75,000–15,000</td>
<td>261</td>
<td>18,841</td>
<td>26,052</td>
<td>33,771</td>
</tr>
<tr>
<td>$ 15,000+</td>
<td>515</td>
<td>23,584</td>
<td>91,591</td>
<td>41,935</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Parental net wealth per child</th>
<th>Observations</th>
<th>Consumption ($)</th>
<th>Own wealth ($)</th>
<th>Permanent income ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ $ 0</td>
<td>243</td>
<td>10,150</td>
<td>4,451</td>
<td>15,594</td>
</tr>
<tr>
<td>$ 0–25,000</td>
<td>465</td>
<td>12,576</td>
<td>13,472</td>
<td>22,889</td>
</tr>
<tr>
<td>$ 25,000–75,000</td>
<td>326</td>
<td>19,797</td>
<td>37,242</td>
<td>35,544</td>
</tr>
<tr>
<td>$ 75,000–1,50,000</td>
<td>221</td>
<td>26,333</td>
<td>1,02,052</td>
<td>44,048</td>
</tr>
<tr>
<td>$ 1,50,000+</td>
<td>154</td>
<td>23,773</td>
<td>1,13,675</td>
<td>43,326</td>
</tr>
</tbody>
</table>

* Negative wealth coded as zero wealth in 1988 PSID.

interest will also be a per child measure of parental net wealth. This may be a more realistic measure of what a child can expect to receive.5 This measure takes the estimated parental net wealth of the head of household and divides by 1 plus the number of siblings for the head. This is then added to the corresponding measure for the spouse, if one is present. Naturally, the mean for this measure is much lower at $ 76,112 and the median is $ 25,000. Among the other variables in Table 1, 61 percent of the sample has a head of household with more than a high school degree, 26 percent is non-white, and 69 percent of the sample is married. For the regressions, age and wealth category variables will be used instead of levels or logs of these variables. This was done for wealth since negative net wealth is coded as zero net wealth for parents and children in the 1988 PSID.

Table 2 presents tabulations by parental net wealth class. The break levels for the groups are arbitrarily chosen, and these are the wealth groups for which the regression results will be

presented. The top panel of Table 2 shows that there is a positive correlation between parental net wealth and children’s consumption, children’s net wealth, and children’s permanent income. The children of parents with net wealth in the highest wealth group have average consumption that is more than double that of children of parents with zero or negative net wealth.

The situation changes somewhat when parental net wealth is divided by number of children. First of all, the distribution of children’s households is less skewed towards the high end in the bottom panel of Table 2. Secondly, children of parents with per child net wealth between $75,000 and $150,000 actually experience higher average consumption and have higher average permanent income than children of parents with per child net wealth greater than $150,000.

4. Results

Table 3 presents ordinary least squares (OLS) regression results. The first two columns present results with parental wealth measures and other demographic variables as independent variables. Own-wealth measures are not included. The excluded group for the parental wealth categories is parents with negative or zero net wealth. In column (1), there is no relationship between parental wealth and children’s consumption except for those whose parents have net wealth greater than $150,000. These children consume 20.65 percent more than children with parents of less wealth. For the other variables, age and marital status do not appear to influence consumption in that their coefficients are not statistically significant.
Those with more children as well as those with higher permanent income and households where the head has more than a high school degree consume more. Non-whites are found to consume substantially less than whites.

In column (2), parental wealth is divided by total number of children and then divided into categories. As mentioned above, this may be a more realistic measure of what a child may expect to receive from his parents in the form of a future wealth transfer. The results in column (2) show that parental wealth up to $ 25,000 does not influence children’s consumption. The coefficient for this group is negative and not significant at the 95 percent confidence level. The coefficients for the highest three parental wealth groups are very significant. The children of parents with per child net wealth greater than $ 75,000 consume almost 30 percent more than children with parents of negative or no wealth. A test that the coefficients for the top two parental wealth groups are equal could not be rejected at the 95 percent confidence level. The coefficients for the other demographic variables are virtually unchanged from column (1). This non-linear relationship between parental wealth and children’s consumption is consistent with the model presented earlier where the probability of receiving a future transfer from the parent increases with the level of parental net wealth.

In column (3), own wealth category variables are added to the specification. The parental wealth coefficients exhibit a pattern similar to before although the coefficients for the two highest parental wealth groups are now substantially smaller in magnitude. The coefficients for the three highest parental wealth groups are significant and a test of equality for the two highest parental wealth group coefficients could not be rejected at the 90 percent confidence level. The other coefficients for the demographic variables are also similar to their values in column (2).

The own wealth coefficients exhibit an interesting pattern. The excluded group is those with negative or zero own wealth. The coefficient for those with net wealth between zero and $ 25,000 is negative, but insignificant. Those with own wealth between $ 25,000 and $ 75,000 consume 19.46 percent more than the excluded group. Those with own wealth between $ 75,000 and $ 150,000 consume on average 45.44 percent more than the excluded group. But those with own wealth above $ 150,000 consume only on average 26.58 percent more than the excluded group. These results illustrate the difficulty in using own wealth in this cross-sectional analysis. The results for own wealth may not be so surprising if the goal for some households is the accumulation of non-housing wealth for its own sake (see the “Capitalist Spirit” model in Carroll, 2000). The super-thrifty will naturally consume little and accumulate wealth, and this may be reflected in the cross-sectional results in this study.

This issue should not be a problem when examining parental wealth, however. If anything, thrifty parents who accumulate wealth would be expected to have thrifty children. So any unobserved preferences for savings common to parents and children would lead to a downward bias in the relationship between parental wealth and children’s consumption, which was presented in Table 3.

5. Housing vs. non-housing wealth

A recent study by Case et al. uses aggregate panel data on consumption, housing, and stock market wealth for 14 countries to investigate the wealth effect. They find evidence
of a strong housing wealth effect, but little evidence of a stock market wealth effect. In order to investigate further the results in Table 3, I separate parental wealth into housing and non-housing components. The 1988 PSID contains information on parental housing value but only a category variable for remaining mortgage principal for the parents. The value of remaining mortgage principal for the parents is unavailable, so an accurate decomposition of parental wealth is not possible for most parents. I therefore limit the sample to only those children (if married, for both the husband and wife) whose parents do not have any remaining mortgage principal. The sample for this analysis is less than 500 households, and all single households were eliminated by the sample selection criteria. None of the parental housing wealth values (or per child parental housing wealth values) were under $25,000. I keep the categories consistent with previous regressions, so there are only three parental housing value coefficients.

Table 4 presents the results of separating housing wealth and non-housing wealth for the parents. In column (1), the parental housing value coefficients become more positive as parental housing value increases while the parental non-housing coefficients show no discernible pattern. However, none of the parental wealth coefficients are statistically significant.

The results do differ with per child parental net wealth used as the measure of parental net wealth as in column (2). The per child housing value coefficients are all positive, statistically significant, and increasing in magnitude. The per child non-housing wealth coefficients, on the other hand, are still statistically insignificant, and they exhibit no discernible pattern. These results support theories of consumption where agents segregate their wealth (in this case, their parent’s wealth) into different “mental accounts”, each to its own relationship with consumption (Shefrin and Thaler). Instead, children have a better idea of what their parent’s house is worth than their parent’s non-housing wealth because housing is more

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6 Levin (1998) studies the Retirement History Survey and finds little evidence of a housing wealth effect on consumption. However, his sample consists of household heads aged 57–62 in 1969, so his results may not be comparable to the results in this study where the sample is much younger.

7 In the case of own-wealth, Thaler (1990) argues that the marginal propensity to consume out of housing wealth is smaller than for other more liquid types of wealth.
observable than their parent’s stock portfolio. This may be part of the explanation for the imprecise estimates for parental non-housing wealth.

6. Conclusion

This paper has studied the relationship between parental net wealth and children’s consumption behavior. I examine the 1988 PSID which contains children’s estimates of parents net wealth. The results show that there is a non-linear relationship between parental net wealth and children’s consumption. There is no relationship between low levels of parental net wealth and children’s consumption, but there is a strong positive influence of high levels of parental net wealth and children’s consumption. This is consistent with a model showing that the probability of receiving a future transfer from the parent (either inter vivos or as a bequest) increases with the level of parental net wealth.

After dividing per child parental wealth into housing wealth and non-housing wealth, I find a substantial positive housing wealth effect and an insignificant non-housing wealth effect. This result is consistent with recent work on the wealth effect as well as past work supporting the “mental accounts” framework claiming that the marginal propensity to consume from wealth varies by type of wealth. The results in this study suggest that the housing market and intergenerational transfers are important elements in understanding consumption behavior.

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References