Consumption and the extended family

HwaJung Choi [a,*], Kathleen McGarry [b], Robert F. Schoeni [a]

[a] *University of Michigan, United States*
[b] *University of California, Los Angeles, United States*

HIGHLIGHTS

- Empirical tests of the altruism and life-cycle models' predictions are conducted.
- Tests are based on national longitudinal data on consumption and own/extended family income.
- Little to no evidence is found in support of altruism.
- The extended family income affects own consumption, inconsistent with a simple life-cycle model.

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ABSTRACT

This study examines whether resources of the extended family influence consumption. Extending prior tests on just food consumption to total consumption, little to no evidence is found in support of the strict definition of altruism among related households. However, resources of the extended family / dynasty do affect one's own consumption.

1. Introduction

Empirical studies have examined the extent to which the economic decisions of extended family members are interconnected. Altonji, Hayashi, and Kotlikoff (AHK, 1992) is the most influential study of this type, where they find little evidence that income of extended family members affects food consumption. Furthermore, they find no empirical evidence in support of altruism as the underlying motivation for family behavior. AHK was limited by the fact that in their data – the Panel Study of Income Dynamics through 1985 – the only consumption category that could be analyzed was food consumption. Here we take advantage of the fact that the PSID subsequently significantly expanded the measurement of consumption, allowing us to study a much more comprehensive measure. Having more expansive data on

consumption may be important because food is a necessity so the effects of (own) income on food consumption are small relative to the effects on other components of consumption. AHK's conclusions that the income of the extended family has limited effects on food consumption may not characterize the effects on total consumption.

2. Data

The PSID expanded measures of consumption expenditures significantly in 1999, and again in 2005. With the new questions, the PSID captured roughly 70% of expenditures between 1999 and 2003 (food, housing, utilities, vehicles, transportation, health care, education, and child care) and 95% of expenditures from 2005 through 2011 (the prior list plus clothing and apparel, home repairs and maintenance, household furnishings and equipment, recreation and entertainment, and trips and vacations). Furthermore, estimates of spending based on the PSID align well with the estimates from the Consumer Expenditure Survey—the gold standard for consumption data (Li et al., 2010; Andreski et al., 2014). We report estimates for models for two time periods: 1999–2011 with

* Correspondence to: Department of Internal Medicine, University of Michigan, North Campus Research Complex, Building #14, Room G109, 2800 Plymouth Road, Ann Arbor, MI 48109, United States. Tel.: +1 734 647 4844; fax: +1 734 647 3301.
E-mail address: hwajungc@umich.edu (H. Choi).

Table 1
Number of individuals, PSID family units, and dynasties.

	Analytic sample without restricting to nested dynasties (Baseline sample)					All individuals 24 and older				
	Number of individuals (unit of analysis)	Number of heads	Number of wives	Number of PSID family units	Number of dynasties	Number of individuals (unit of analysis)	Number of heads	Number of wives	Number of PSID family units	Number of dynasties
1999	5 310	3 523	1 787	4 696	1 326	11 687	6 795	3 840	6 691	2 490
2001	5 686	3 758	1 928	5 031	1 359	12 318	7 168	4 065	7 079	2 426
2003	6 106	4 083	2 023	5 403	1 414	13 014	7 612	4 169	7 490	2 393
2005	6 594	4 396	2 198	5 817	1 452	13 469	7 806	4 331	7 665	2 347
2007	6 879	4 613	2 266	6 053	1 473	13 905	8 102	4 454	7 909	2 278
2009	7 380	4 995	2 385	6 496	1 517	14 594	8 514	4 599	8 335	2 244
2011	7 612	5 207	2 405	6 719	1 504	14 887	8 735	4 594	8 549	2 190
Total	45 567	30 575	14 992	40 215	10 045	93 874	54 732	30 052	53 718	16 368

Analytic sample: heads and wives 24 and older who have – in the same year – at least one non-coresident biological mother, father, child, or full/half sibling who is also a head or wife 24 or older.

the more limited set of measures, and 2005–2011 with the more expansive measures.

The PSID has two additional strengths. First, when children of PSID sample members leave a PSID household they continue to be interviewed by the survey. Second, the PSID contains detailed information on income, wealth, as well as consumption.

Our baseline sample consists of all PSID heads and wives aged 24 or over who have at least one non-co-resident relative (specifically, a biological mother, father, or child, or a half or full sibling) who is also a head or wife and at least 24 years old. The number of such individuals in each year is reported in Table 1.

We define a dynasty to include one's biological mother, father, child(ren), and full/half siblings who are also PSID heads or wives aged 24 or over and do not live in the same PSID family unit as that individual. The members of a dynasty can change over time as family members reach age 24 or become a head / wife, and because step-siblings may move in or out due to divorce or marriage by parents. Moreover, dynasty composition of a focal person may differ from the dynasty composition of a fellow dynasty member. Potential sources of such cases include in-law relationships, remarriage, grandchildren, and grandparents. About half of sample members are not nested within a dynasty.[1] For some empirical models we include dynasty fixed-effects. In these models we restrict the sample to individuals within dynasties where all members of a given dynasty share the same dynasty members.

Dynasty income and wealth is the average among family units within the dynasty, excluding those for one's own family unit. It is not clear whether AHK included the value of food stamps in their measure of food consumption. Therefore, we estimated models excluding and including food stamps and discuss both sets of results. CPI-U was used for the price adjustment, expressed in 2011 dollars. Descriptive statistics for all variables for each analysis sample are summarized in Table 2.

3. Testing altruism and life cycle models

The altruism model implies that own resources have no effect on own consumption once dynasty resources are controlled (AHK, 1992). The lifecycle model predicts that own resources influence own consumption. We test these predictions using AHK's econometric approach but with more expansive consumption data.

Altruism. The econometric model used for the static test of altruism is:

$$c_{ikt} = \beta' X_{ikt} + \varphi Y_{ikt} + \alpha_{it} + \mu_{ikt} \quad (1)$$

where c_{ikt} is log consumption (i.e., food 1999–2011; total 1999–2011; total, expanded 2005–2011) by household k of dynasty i in year t, X_{ikt} are demographic control variables (quadratic in the number of members in own household and average number of members of households within one's dynasty, own age and age of household head, own gender and the gender of household head, race of household head, marital status of household head), Y_{ikt} is log own household income excluding private transfers, α_{ti} is the dynasty fixed effect, and μ_{ikt} is the error term that is assumed to be uncorrelated with Y. All years of data are pooled (i.e., if an individual is observed n times, they contribute n observations to the analysis), and we include dummy variables for each year as controls.

The dynamic test is the first difference of (1):

$$\Delta c_{ikt} = \beta' \Delta X_{ikt} + \varphi \Delta Y_{ikt} + \Delta \alpha_{it} + \Delta \mu_{ikt}. \quad (2)$$

The test of altruism in Eqs. (1) and (2) is $\varphi = 0$. Standard errors for both models are White standard errors, allowing for clustering at the year-dynasty level. Because the PSID has surveyed respondents every two years since 1997, the first difference in our analysis is the difference between year t and year $t - 2$. Households are not stable units over time. For example, when a couple divorces the household splits. Therefore, all analyses use individual adults (PSID heads / wives) as the units of analysis.

To compare our results with AHK's, we begin by modeling food consumption but for the years of data on which we focus, 1999–2011 (Table 3). For the static models, we find that own income has a sizable effect, with an elasticity of 0.290 when the dynasty fixed effect is not included but we restrict to individuals in nested dynasties, very similar to AHK's estimate of 0.286 (Table 3, row 1, in brackets). Not restricting to nested dynasties leads to a very similar estimate, 0.303. Adding fixed effects lowers the income effect to 0.240, which is the same as AHK (0.240; their Table 3, row 1).

The dynamic test implies a substantially lower but still statistically significant effect of own household income: 0.075 without dynasty fixed effects and 0.090 with the fixed effects. Our dynamic estimates are smaller than AHK's. Including the amount of food stamps as food spending lowers the effect of own income; however, the effect of own income remains statistically significant and substantial.

As expected, own income has a larger effect on the broader measures of consumption. First consider consumption (excluding food stamps) that is consistently measured from 1999–2011. For

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[1] We also estimated models using a broader definition of dynasty where anyone in the same PSID "1968 ID" is defined as being members of the same dynasty. Our substantive findings did not change and therefore we do not report estimates using the broad definition.