Are Extended Families Efficient?

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Short abstract:

This paper utilizes the structure of the data from the PSID to estimate the role of the extended family in the decision process of a household. The paper examines how the resources of specific members of the extended family outside of the household affect the spending patterns of the household. Next, the paper tests for Pareto efficiency of the extended family in the way that resources are shared between households of the same family. Lastly, the paper analyzes how the role of the extended family changes depending on one's position in the life cycle. We find that, even when accounting for fixed effects across the family, the resources of the family play a significant role in housing and education expenditures. The results show rejections of Pareto efficiency that suggests that there is an element of strategy in the decision process of the household outside the realm of the static model.

Long abstract:

The family plays a central role in many models of economic behavior. Whereas most empirical research has focused on resource allocation among co-residing family members, theory suggests that non co-resident family members may also be important actors in many decisions. For example, empirical studies have documented significant inter-generational transfers from parents to their non-cohabiting children and from children to their non-cohabiting elderly parents. The development literature is replete with evidence on the importance of remittances from migrants to family members who remain at home. This paper explores the extent to which the distribution of resources within the extended family affects the allocation of resources by non co-resident family members and, in so doing, provides empirical tests of theories of family behavior. It also assesses how the structure of extended families, i.e., the extent and nature of the inter- and intra-generational structure of families, affects such allocations.

Drawing on longitudinal data on families in the Panel Study of Income Dynamics (PSID), consumption decisions of households within the same extended family are examined. Individuals interviewed at baseline, in 1968, and their progeny have been followed for 40 years which yields an extremely rich resource for exploring the dynamics of decision-making within extended families.

In this paper, we exploit more extensive data from more recent PSID waves, and we also create more complete mappings of the extended family. The PSID has historically collected a limited amount of consumption data, centering on food expenses. Beginning in the 1999 wave, PSID collected new expenditure data on housing, education, transportation, health, and child care. Using this new data, we can identify a much greater proportion of consumption. We also construct family trees of "dynasties," defined as descendants of the originally sampled 1968 head (or wife) of household. In this manner, we are able to test for sharing behavior not only between non-co-resident parents and adult children but any relation. In particular, the length of the panel allows us to explore observations of households from three or more generations within specific families. After controlling for a rich set of socio-demographic characteristics, we compare the effect of own household resources on each outcome with the impact of the level and distribution of resources in the extended family.

Because one seldom has adequate data on the resources and consumption patterns of extended families, especially those who do not co-reside, it is typically (implicitly) assumed to not affect resource allocations in most existing empirical analyses of household resource allocations. Yet in the few studies that have access to adequate data, the assumption that extended family members do not matter is rejected for many of the allocation decisions we examine. Most notably, Altonji, Kotlikoff and Hayashi in a series of seminal papers reject the hypothesis that extended families behave as "unitary" decision-makers. Specifically, the unitary model predicts that only total resources of the extended family should matter, not the distribution of resources. The tests in these papers are conducted on earlier waves of the PSID, using a more limited measure of consumption. We update these tests with more recent waves of PSID data, using a more extensive set of measures of household consumption, as well as other measures of household and household member well-being. Using Working-Leser Engel curves to estimate the effects of own and "dynasty" resources on budget shares of consumption categories, we first find that the resources of the whole dynasty matter in determining expenditure patterns, and the dynasty's resources matter in a way significantly different than the household's own resources.

Upon dividing the dynasty's resources into specific, non-co-residing family members (i.e., parents, siblings, children), we see that the effects of their resources are significant and that the magnitude of their impact is dependent upon the specific family member. For the remaining tests, we focus on the dynasty resources being split by family member to try to capture the sources of the unitary hypothesis rejections.

Building on this foundation and following on the work of Chiappori, Browning and co-authors, we test whether extended households allocate resources (Pareto) *efficiently*. Intuitively, Pareto efficiency in this context can be characterized by a two-stage budgeting process in which the extended family allocates resources to each household and each household maximizes its own well-being. An empirical implication of Pareto efficiency is that the ratio of the impact of own resources to the impact of resources of other extended family members is constant across all decisions. Using the same data on

extended families from the PSID, we also reject simple versions of the Pareto efficiency hypothesis.

Given these initial findings, we go on to explore the factors that might account for the rejections of these hypotheses. It is plausible that there are unmeasured family-specific factors which are shared among non co-resident family members which would bias the estimated income effects in the models. These might include tastes, human capital, earnings capacity and lifetime expected wealth. To the extent that these shared factors are fixed over time, they can be swept out of the model by including an extended family (i.e., "dynasty") fixed effect. These models highlight the role that transitory variation in the distribution of extended family resources plays in decision-making of households. We find that the models of complete sharing (the unitary model) and of no sharing within extended families are both rejected. We also find rejections of the model of Pareto efficiency in the extended family when using fixed effects. These results suggest that there is an element of strategy in the decision process of the household outside the realm of the static model of family interactions.

As a way of investigating whether the hypothesis rejections are related to timing in the life cycle, we explore the relationship between the structure of extended families and the properties of their resource allocations. Because the PSID has been conducted for forty years, many of the extended families in PSID are only loosely connected. For example, a small fraction of PSID families are distributed across more than 15 different households in PSID. We look more explicitly at how much we can explain these rejections by the structure of the household and family through estimation that focuses on observed families with three levels of generations: grandparents-parents-grandchildren. By interacting the resource measures with age of the household head, we see that different family members have different impacts on spending patterns whether the head is young (under 40) or old (over 40).

We then interact the resource variables with dummies for existence of a household member in specific age ranges. We find that the resources of households with older heads have twice as much impact on education expenditures than younger heads when there exists someone in the 19-25 year old range. Also, parents' resources are more likely to be significant and have a larger magnitude in determining education expenditures for older heads of households when a 19-25 year old is present in the household. This hints that grandparents choose to play a bigger role later in life in their grandchildren's schooling decisions.

We also see evidence of parents' resources having a positive impact on housing expenditures for their older head offspring when a 13-18 year old is present but a negative impact when a 19-25 year old is present. For the young heads, their parents resources only matter for housing when there is nobody present, and this is negatively significant and of a very large magnitude.

Finally, we perform some additional specifications to check the robustness of our results. This includes running regressions on the log of total expenditures (not just the

shares), log of specific consumption category expenditures, and the square root of specific consumption category expenditures to avoid the issue of the log function when households have values of zero. We are also in the process at looking for instruments for better estimation.