

PERSONAL SAVINGS AND FAMILY SIZE AND COMPOSITION :
THE UNRESOLVED ISSUE

Dov CHERNICHOVSKY

World Bank
Washington, D.C.

INTRODUCTION

Economic growth has been defined as a process of increasing income per capita. In various formulations of the dynamics of this process, savings and population have been considered key factors. Given a particular production technology and available resources, savings have been regarded as promoting economic growth by providing for capital (and technology) formation. Population, growth on the other hand, has been assumed to inhibit economic growth and development by suppressing the level of savings and creation of human and nonhuman capital, and by decreasing productivity per additional unit of labor. Thus, the "population problem" has been largely defined in conjunction with the effect of population on savings. This view is widely accepted, although the micro-economic foundations of the assumed relationship between population and savings are not clear.

The purpose of this paper is to examine briefly some of the basic issues and evidence about the relationship between family size and composition, and household or personal savings—which make up about 67% of India's and 61% of the U.S.'s total national savings¹. Of particular interest is the causal relationship between family size and composition (FSC) and household savings behavior over the family's life cycle. A better understanding of this relationship is essential for evaluating population policy as a vehicle for capital formation.

First, we examine some basic issues hindering the empirical evaluation of the relationship between family (population) size and composition, and personal savings, and discuss some macro economic evidence. Then, we discuss the underlying micro economic issues: the relationships between FSC and household consumption, income, and desired levels of assets. These relationships determine household lifetime savings.

* The views presented in this paper are those of the author and do not necessarily reflect the views of the World Bank.

¹

V. V. Bhatt, Some Aspects of Financial Policies and Central Banking in Developing Countries World Development, No. 2 October-December 1974.

A. POPULATION AND SAVING: SOME BASIC ISSUES AND MACRO-ECONOMIC EVIDENCE

Most of the evidence and conventional perceptions about the relationship between family (or population) size and personal savings are grounded in economic consumption functions, some features of which are discussed here 2. These functions are based on theories that share two major conceptual problems. First, although employed to explain saving behavior, by and large, they are not savings theories 3; savings are taken as a residual--the difference between income and consumption 4. Second, none of these theories considers family size and composition as part of their conceptual framework; although, there is little or no reason to assume family size and composition lesser important determinants of personal savings than household income, which is the major preoccupation of these theories. Consequently, the empirical treatment of this subject remains without any theoretical directives.

Empirically, the above problems have been compounded by particular econometric specifications and by the paucity of data on savings. For measurement purposes, economists have tried to get a "better fix" on the relevant budget, or income, constraint by (a) using the gross concept of "per capita income," and (b) attempting to "control for income" when estimating the effect of FSC on savings. The first assumes that the effect on savings of an increase in family (or population) size is similar to the effect of a reduction in income. The second disregards the effect of family size and composition on income. An additional related problem has been the measurement of family size; the convention has been to utilize the highly aggregated but simple count of "size," which conceals variations in household or population age and sex composition.

2

The major theories are often named by the hypotheses they suggest. Keynes' absolute or current income hypothesis, Keynes, J. M. The General Theory of Employment, Interest and Money, Harcourt Brace and Co., New York, 1936; Friedman's permanent income hypothesis, Friedman, M., A Theory of the Consumption Function, University Press, Princeton, 1957; The relative income hypothesis, formulated by Duesenberry, J. Income, Savings, and the Theory of Consumer Behavior, Harvard University Press, Cambridge, 1949; and the life cycle saving hypothesis (LSH), given in its latest version in Ando, A. and Modigliani, F. "The Life Cycle Hypothesis of Savings: Aggregate Implications and Tests." American Economic Review March 1963, 53, 55-84.

3

The LSH may be an exception in this particular respect.

4

The consumption functions based on the various theories, are a variant of $C = f(Y)$ where C is some measure of consumption and Y is some measure of income. Saving is defined as $S = Y - C$ or $S = Y - f(Y)$, i.e. $S = g(Y)$. There is no a priori reason to assume only this particular line of causality.

To illustrate some common types of estimates as well as to explore some macro-economic evidence, we bring results largely based on the Keynesian savings function

$$\frac{S}{N} = a + b \frac{Y}{N},$$

where $\frac{S}{N}$ is some measure of current savings per capita and $\frac{Y}{N}$ is some measure of current income per capita. In contrast with economists' traditional preoccupation with the parameter "b", the marginal propensity to save, we focus on the (largely ignored) parameter "a," which can give us some approximation of the effect of population size (N) on savings 5. Johnson and Chiu estimated this function for less developed countries (LDCs) and developed countries (DCs), and found that of the thirty countries included in the analyses only sixteen have negative "a"s. For only twelve of the sixteen the "a"s had a statistical significance level of about 5%. Almost all these twelve countries were developed countries 6. Using a more elaborate economic specification Chenery and Sirquin provide estimates between population size and the gross domestic savings ratio (S/Y). Tracing the "effect" of population on this measure of savings, one can show that this effect is negative for small, industry-oriented countries. It is positive for small, primary oriented countries 7. Thus, the two studies point to the possibility that controlling for income, population is negatively associated with domestic savings, in absolute terms or as a portion of income, in industrialized and developed countries. Such evidence can be reconciled with Modigliani's theoretical (LSH) and empirical assertions that faster rates of population growth, inducing growing proportions of the population in the labor force, may stimulate savings as a ratio of income 8.

In an effort to disaggregate the size or population measure by looking at its age structure, Leff estimated the effect of dependency rates (proportions of population below 14 years of age and above 65) on the aggregate savings

5 The above equation be rewritten as $S = a N + b Y$. That is, taking a rather simple approach, "a" can be used as an estimate of the effect of population on savings, controlling for income.

6 These countries are: Australia, Austria, Belgium, France, Germany, Ireland, Jamaica, Japan, the Netherlands, Rhodesia, Sweden and the U.K. Johnson, D.W. and Chiu, J. S. Y., "The Savings Income Relation in Underdeveloped and Developed Countries" The Economic Journal, Vol. 78 No. 310, June 1968, pp. 321-333.

7 Chenery, H.B., and Sirquin, M., Patterns of Development 1950-70, Oxford University Press, London, 1975. This conclusion is based on Tables S5 - S8, pp. 200-203.

8 Modigliani, F. "The Life Cycle Hypothesis of Savings and Intercountry Differences in the Savings Ratio," in Eltis, W.A. et al eds., Induction, Growth and Trade: Essays in Honor of Sir Roy Harrod, Oxford University Press, 1970, pp. 197-225.

ratio and on per capita savings 9. He found negative effects of these rates on savings. However, these findings were criticized on various grounds. Gupta, reestimating Leff's equations separately for LDCs and DCs, found that dependency rates have a negative effect on savings only in higher income-per-capita, or in developed countries 10. Thus, we cannot bring firm evidence about a negative association between aggregate savings and population size and composition in LDCs. Furthermore, the evidence presented precludes a fuller assessment of the effect of population on saving by not accounting for the impact on income of population 11.

Micro-economic studies of savings behavior have basically the same shortcomings as the macro-economic studies; they permit, however, a closer examination of the underlying issues. In a recent comprehensive study on household's savings, Lluch et al. provide some data from developing areas for computing zero-order correlations between family size and the household savings ratio (S/Y) 12. All the estimated correlations are positive--in line with the previous macro findings for such areas-- and are consistent with one or a combination of: (a) Household consumption increases less than proportionately to an increase in family size, for given income; (b) Household income increases with family size, or vice versa; (c) The household's desired level of assets increases with family size; and (d) The household's proportion of income spent on consumption (average propensity to consume) falls as household income increases, for a given size. Although debated at least empirically, the fourth point has been the focus of numerous studies that support this assertion 13. The rest of this paper will focus on the plausibility and evidence concerning the first three points, with particular emphasis on the relationship between growing children--the major determinant of family size and composition (FSC)--and household consumption, income, and asset holdings.

9 Leff, N.H., "Dependency Rates and Savings Rates," American Economic Review, Vol. 59, No. 5, December 1969, pp. 886-896.

10 Gupta, K.L. "Dependency Rates and Savings Rates," American Economic Review, Vol. 61, No. 3, June 1971, pp. 469-471.

11 That is, controlling for available capital and technology, there is scope for exploring the effect of population on income, which in turn has an effect on savings.

12 Lluch, C., Powell, A.A., and Williams R.A., Patterns in Household Demand and Savings, Oxford University Press, Oxford 1977. The above statement is based on data presented in Tables 5.5, p. 104; 6.2, pp. 124-125; 7.2, pp. 162-163; and 9.5, p. 228. These Tables refer, respectively, to household data from Korea, Mexico, four Latin American cities, and Yugoslavia.

13 See Mikessel, R. F., and Gisner, J. E. "The Nature of the Savings Function in Developing Countries: A Survey of Theoretical and Empirical Literature," Journal of Economic Literature, Vol. 11, No. 1, March 1973, pp. 1-26.

B. FAMILY SIZE AND COMPOSITION, AND HOUSEHOLD CONSUMPTION EXPENDITURES

Three interrelated issues are crucial to the discussion of the effect of family size, or children in a nuclear family, on household consumption while controlling for some measure of household wealth. These issues are: (a) Life cycle effects on household consumption and income; (b) the effect of FSC on the household's total consumption expenditures, given particular definitions of "size" and "consumption;" and (c) the specific changes in the composition of household consumption induced by FSC.

The demographic influences on the composition of household consumption are important as a separate issue because household expenditure on consumer durables and human capital--health and education--pose particular problems of definition. While these items are "classified" as consumption, their investment aspects are obvious.

The life-cycle saving hypothesis (LSH) predicts that individuals will save less and dissave as they age and approach the end of their life. Using an entirely different approach, Ghez and Becker, and Smith produce a similar prediction 14. According to them, individuals will consume more as they approach retirement, basically because they can command higher exogeneous market wages as they age, up to a particular point. These wages induce them to spend more time on market activities and less on household activities, ceteris paribus. To accommodate this life-cycle reallocation of time, they will consume more market goods substituting for home time. These hypotheses, which appear consistent with U.S. data, refer to individuals or nuclear households and to production patterns and social institutions that are common in DCs. Their applicability to LDCs, where social and economic institutions are different, is questionable 15.

The effect of FSC on household total consumption expenditure and composition is an empirical issue which is seriously hindered by the measurement of FSC. Most studies have used a simple count of "size", which can remain invariant for households of different demographic characteristics. The treatment of N in theoretical studies is almost non-existent, and its treatment in empirical studies, some of which are discussed below, has been

14 Ghez, R. G., and Becker, G. S., The Allocation of Time and Goods over the Life Cycle, Columbia University Press, New York: 1975, Smith, P. J., Assets and Labor Supply, The Rand Corporation R-1728-HEW, Santa Monica 1975.

15 Kelly A. C. and Williamson J. G., "Household Saving Behavior in Developing Economies: The Indonesian Case" Economic Development and Cultural Change, Vol. II, No. 3, April 1968.

fairly arbitrary 16. Prais and Houthakker made a pioneering attempt to disaggregate the term N to account for household-specific age and sex compositions in household expenditures studies 17. Others followed Prais and Houthakker's approach to include potential economies of scale in consumption, which is one obvious argument why household consumption does not necessarily increase proportionately with size, within a given range 18. However, these exercises, some results of which are summarized below, pertained only to particular groups of commodities.

Exploring some evidence, the effect of FSC on total household consumption, we first examine some studies that use only "family size" as an explanatory variable of household savings without considering composition and life-cycle issues. Snyder finds, using a sample from Sierra Leone, that the probability that households will have positive savings is not affected by household size 19. Estimating a functional relationship like the one specified on p. 3, Kelly and Williamson found negative and statistically significant "intercepts," indicating a negative effect of family size on household savings in Indonesian households 20. Similar findings (without information about statistical significance) are reported by Waldorf for different communities in Uganda 21. Since these findings do not reveal any composition and life-cycle effects, they best represent (predict) the behavior of the households that have the same family size as the "average" family of the sample. These households do not necessarily represent the sample or the population

-
- 16 Muellbauer shows how household composition affects the specification of particular demand functions as derived from the utility function. He does not address the more complex question of incorporating children in the utility function that underlies economic studies of fertility behavior. There is no theoretical follow-up to his discussion. Muellbauer, J. "Household Composition, Engel Curves and Welfare Comparisons between Households" European Economic Review, Vol. 5, No. 2, Aug. 1974, pp. 103-122. Economists' preoccupation with the composition of size resulted largely from the effort to substitute "income per capita" by more adequate measures for international comparisons. See discussion by Kleiman, E. "Age, Composition, Size of Households, and the Interpretation of Per Capita Income" Economic Development and Cultural Change, Vol. 15, No. 1, October 1966, pp. 37-58.
- 17 Prais, S. J., and Houthakker, H. S., The Analysis of Family Budgets, The University Press, Cambridge, 1955.
- 18 For example, Kim, K. S., A Study of Household Savings in Korea, Korea Development Institute, 1973.
- 19 Snyder, W. D., "Econometric Studies of Household Savings Behavior in Developing Countries: A Survey," The Journal of Development Studies, Vol. 10, No. 2, January 1974, pp. 139-53.
- 20 Op. cit.
- 21 Waldorf, H. W. "A Comparison of Savings Rates in Uganda: Africans, Asians, and Europeans," The Journal of Development Studies Vol. 13, No. 3, April 1977, pp. 228-237.

they are drawn from. Kelly and Williamson in their Indonesian study tried to estimate life-cycle effects on savings by stratifying their sample by age groups 22. They fail to reconcile their findings with the LSH, but their results are apparently influenced by the prevalence of extended households with more adults than are in nuclear "western" households.

Emphasizing the effect of children, Landsberger using Israeli and U.S. data showed that children under six were associated with a reduction in household consumption (increase in savings) and that only children ages 13 and above brings about an increase in household consumption 23. This evidence ties with other, not fully comparable, evidence from the U.S., even when there is an attempt to control for potential life cycle effects 24. The estimates presented in Table 1 are based on survey data of 216 households from a village in India; the results of the first equation are similar to the ones reported above, only children 16 and above exert a positive effect on household consumption when we control for household income and father's age.

Numerous studies in DCs have explored in a variety of ways the effect of FSC on particular consumption categories 25. It appears that as they grow older and in size, families make quantitative and qualitative changes in consumption patterns. There is no clear evidence that families necessarily substitute savings for size, particularly when we consider expenditures on education as part of personal savings. Children in developing areas seem to exhibit a similar effect on household consumption as children in developed economies, although probably for different reasons.

To sum up, the available evidence, which is subject to serious conceptual shortcomings, suggests that in LDCs and DCs, the negative effect of family size on savings, controlling for household income, relates to adults. Children in their lower teens and below may actually reduce household total consumption expenditures through qualitative and quantitative changes in composition in household consumption expenditure. These findings on the effect of children are mostly overstated because they do not account for life cycle variations in parents' consumption at least in households in DCs.

22 Op cit.

23 Landsberger, M. "An Integrated Model of Consumption and Market Activity: The Children Effect." American Statistical Association proceeding of 1971, pp. 137-42. Landsberger, M. "Children's Age as a Factor Affecting the Simultaneous Determination of Consumption and Labor Supply." The Southern Economic Journal, Vol. 40, No. 2, October, 1973. pp. 279-88.

24 Espenshade, T. J. "The Impact of Children on Household Savings: Age Versus Family Size," Population Studies, Vol. 29, No. 1, March 1975, pp. 123-125; Smith, op. cit.

25 Houtakker, and Prais, op.cit. Kim, op cit. Michael, R. T., The Effect of Education on Efficiency in Consumption, Columbia University Press, New York, 1972. Liviatan, N., Consumption Patterns in Israel Falk Project of Economic Research in Israel, Jerusalem, 1964. David, M. H., Family Composition and Consumption, North Holland Publishing Co., Amsterdam, 1962.

C. FAMILY SIZE AND COMPOSITION AND HOUSEHOLD INCOME

Households can maintain particular levels of consumption and savings by changing their income through their labor supply. Moreover, in a life-cycle context, children may add to the household's productive resources by providing more labor and, probably, assets. We examine in this section some issues and evidence which bear on these matters by looking briefly at the effects of growing children on the labor supply of married women and men, on availability of assets to the household, and on children's direct contribution to household income.

While the factors influencing married females' labor supply, both in developed and less developed countries are similar, the research about LDC emphasizes, among other social and developmental factors, the prevalence of income-producing activities compatible with child care. The evidence presented here, generally, deals with married females' labor supply where employment is incompatible with child care; some inference is made also about developing economies. The pattern of female labor force participation and hours worked by age in the U.S. and Israel is one of a sharp rise at the completion of schooling, followed by a sharp decline during the child-bearing years, and then a return to the market after the child-rearing age. This return to the labor market is influenced by, and interacts with, other female and household characteristics. However, after examining and controlling for other factors, Bowen and Finegan concluded: "it is the presence of children under six which takes precedence over all other aspects of the age distribution of children in determining the mother's labor force status 26." They go on to conclude that it is the age of the younger child, if under six, that determines labour force participation and hours worked. The presence of older children almost always increases labor force participation. Bowen and Finegan's conclusions are supported by numerous other studies concerning hours worked of married women based on U.S. and Israeli data 27.

Unfortunately, the author could not find comparable evidence on the effect of children by age on female labor force participation in LDCs. Elizaga presented interesting evidence on participation rates of women in Latin America 28. While he finds higher participation rates among single women, there is no evidence of a decrease in participation rates by age, even

26 Bowen, G. W. and Finegan T. A. The Economics of Labor Force Participation, Princeton University Press, Princeton, 1969, p. 99.

27 Landsberger, Smith, op. cit.; Ben-Porath, Y. "Economic Analysis of Fertility in Israel: Point and Counterpoint," Journal of Political Economy, Vol. 82, No. 2 March/April 1973, pp. 5202-33.

28 Elizaga, J. D., "The Participation of Women in the Labor Force of Latin America: Fertility and Other Factors." International Labor Review Vol. 109, No. 5, May/June 1974, pp. 519-38.

during prime childbearing ages, or by number of children, although there is a tendency of increasing participation rates of mothers as children grow older.

Harman, using data about Philippine housewives, found that the number of surviving children did not significantly affect female age-specific labor force participation rates. But although statistically insignificant, labor force participation increased with age. Harman's results showed that the number of family members over ten years of age had a significantly negative effect on the labor force participation rate of married women. He argued that these other family members may seek employment instead of the wife or mother 29.

The impact on the husband's labor force participation, or hours worked, with the advent of children has not been analyzed to the extent that women's participation rates have. The studies which do consider this issue, or the effect of family size in general, have posited that the effect of children will be positive, both on participation and on hours worked. It is argued that the presence of children that may result in the wife's withdrawal from the labor force, will result in an increase in the husband's hours worked to mitigate any decline in household income. Moreover, it is posited that since the new family member will increase the demand for market goods by the household, the husband will be induced to work more hours to provide the additional income. If the household wishes to spend more on children's education as well, it will further increase market time for the husband. Boskin presents evidence showing that the number of dependents has a significantly positive effect on the husband's labor force participation and on the hours worked primarily for whites in the U.S 30. Chez and Becker, and Smith present similar results 31.

Children may also have an effect on the productive assets available to the household in rural areas in LDC's. On the basis on a small Brazilian household survey Chernichovsky and de Almeida inferred that landlords are inclined to rent more land to households with more children 32. Unfortunately, little evidence is available to date on this subject.

29 Harman, A. J., Fertility and Economic Behavior of Families in the Philippines, Rand Corporation, Inc. Santa Monica, 1970.

30 Boskin, M. J., "The Economics of Labor Supply," in Cain & Watts eds. Income Maintenance and Labor Supply: Econometric Studies, Rand McNally College Pub. Co., Chicago 1973.

31 Op cit.

32 Chernichovsky, D., "Some Socio-economic Aspects of Fertility Behavior in Northeast Brazil." World Bank, Mimeo 1976; Anna Luiza Ozorio de Almeida, "Share Tenancy and Family Size in the Brazilian Northeast." National Bureau of Economic Research. New York, Working Paper, No. 200.

Children in LDCs start engaging in gainful activities at a relatively early age, and their contribution to household income apparently increases with age. Kelly, using a comprehensive econometric approach to link fertility behavior, household income, savings, and child mortality, found the effect of surviving children on household income in a Kenyan sample to be positive and one of the most significant statistically, after allowing for the potential effect of household income on fertility behavior 33. The estimated effect of children on household income presented in Table 1, equation 2, may represent well rural settings in LDCs. These estimates indicate the expected positive association between land holdings and education on household income. They also indicate that income does not have a profile corresponding to father's age. The estimated coefficients of the presumed effect on household income of children at home, by age groups, conform to the notion that grown children have a positive effect on household income. These coefficients and those estimated on father's age may actually imply that children, or rather sons, beyond age 15 take over the household's economic burden from their parents 34.

To conclude, children have a negative effect on mother's labor supply in DCs only when young because of the incompatibility of child care and market activities in those countries. There is an indication that the opposite may be true in LDCs. Children are likely to bring about an increase in household income through (a) an increase in the land available to households in LDCs, (b) an increase in father's labor supply at least in DCs and (c) through their direct contribution to household income in LDCs. None of these issues has been discussed in a life cycle context. Therefore, their impact on personal savings, ceteris paribus, is still an open issue.

D. FAMILY SIZE AND COMPOSITION AND DESIRED LEVELS OF ASSETS

Children clearly have an effect on their parents' desired levels of assets, or accumulated savings, including the amounts they wish to bequeath at the end of their life-time. Unfortunately, this statement is based on intuition rather than on theoretical and empirical scrutiny, mainly due to the connotation and empirical implications of the term "desired."

33 Kelly, A. C., "Interactions of Economic and Demographic Household Behavior." Presented at the National Bureau of Economic Research Conference on Population and Economic Changes in LDC, Philadelphia Oct. 1976. It should be noted that these results and the ones below account for children's "total" effect on household income through their own contribution as well the induced changes in parents' labor supply.

34 This positive association between children and income may also reflect a positive income effect on fertility; however, the pattern of increasing coefficients by children's age groups supports the notion that it is rather the effect of grown children on household income.

At this point, we can outline a few issues which may be dependent on particular socio-economic circumstances. First, we have to distinguish between two basic regimes: where children are "assets" and where they are not. Children are assets in LDCs insofar as they care for their aged parents and can provide for various needs of their families. They can thus be a substitute for financial savings and other assets that "perform" the same task in DCs. This particular hypothesis implies that parents may save less in terms of non-human capital and increase family size instead 35. Empirical evidence concerning this hypothesis is hard to come by and is circumstantial largely because it is hard to differentiate statistically between this hypothesis and the conventional hypothesis that children are a "drain" on income.

On the other hand, under any regime, parents are assumed to wish to bequeath property to their children. An intuitive notion prevailing in economic literature has been that parents wish to leave their children at least as well off as they had been 36. This may result from a pure consumption motive as well as an investment motive. Parents who "invest" more in their children may "benefit" from them in many ways. This notion can explain the increase in parents' labor supply brought about by children, and leads to the hypothesis that wealthier parents will try "investing" in each child more than parents who do not have as much wealth, *ceteris paribus*. Alternatively, a given number of children corresponds to a higher desired level of household assets among wealthier groups but less among low income groups.

An attempt to generalize for LDCs would imply that household will have lower desired levels of assets than in DCs because in LDC (a) children themselves are more likely to be regarded as assets and (b) the incentive to save for investing in children's human capital is smaller.

An attempt to deal with the overall relationship between children and savings is presented in the third equations in Table 1. Since income is not controlled in this equation, the coefficients on children supposedly capture the total effect of children on savings. These coefficients on children at home by age groups in the savings equation do not indicate any particular effect of children on savings when we control for land holdings and father's age 37. However, the coefficients on father's age in this equation

35 Chernichovsky, D., Fertility Behavior in Developing Economies: An Investment Approach, PhD. dissertation, City University of New York 1975.
Neher, Philip A., "Peasants, Procreation, and Pensions," American Economic Review, Vol. 61, No. 3, June 1971, pp. 380-89.

36 Bush, W., "Population and Mill's Peasant Proprietor Economy," History of Political Economy, Spring 1973, pp. 110-120.

37 Similar findings concerning the (no) effect of children on household saving in Kenya are reported by Kelly, A. C. "Interactions ... "op cit.

Table 1

REGRESSION COEFFICIENTS WITH HOUSEHOLD CONSUMPTION, INCOME, SAVINGS

AND ASSETS AS DEPENDENT VARIABLES (ORDINARY LEAST SQUARES)

(t statistic in parentheses)

<u>Independent Variables</u>	<u>-----Dependent Variable-----</u>		
	(1) <u>Consumption</u> (Rupees)	(2) <u>Income</u> (Rupees)	(3) <u>Savings</u> (Rupees)
Constant	-357.992	91.674	5187.464
Income (Rupees)	0.410 (13.742)	-- --	-- --
Father's age	91.937 (1.045)	26.781 (0.266)	-310.009 (-2.220)
(Father's age) ²	-1.448 (-1.454)	-0.444 (-0.388)	4.212 (2.668)
Value of land (Rupees)	-- --	0.755 (41.066)	0.042 (6.107)
Father's year of schooling	-- --	335.419 (5.562)	7.393 (0.095)
No. of children age 0-10	94.741 (0.825)	166.709 (1.278)	6.976 (0.032)
No. of children age 11-15	191.370 (1.105)	332.669 (1.608)	147.898 (0.535)
No. of children age 16-25	663.271 (3.802)	437.707 (2.080)	-370.103 (-1.330)
No. of children age 26 +	982.027 (1.780)	3937.061 (5.844)	902.547 (1.050)
R ²	0.63	0.72	0.35
F	44.79	65.34	12.18

imply, ceteris paribus, that on the average, savings decrease up to about age 37, and that when all the other variables are at their mean levels, savings are negative between ages 24 and 50. Such a life cycle pattern lends itself to an interesting interpretation when combined with the evidence from equations 1 and 2: (a) that father's age correlates with the number of children and the number of children in older age categories, (b) that there is no income profile that relates to father's age per-se, and (c) that only children above age 15 contribute to household income. It is conceivable, therefore, that younger children account for the drop and for the negative levels of savings, and that the increase, which is consistent with the time when children start contributing to household income, is induced by children's contribution to the household's income. Thus, these results, which do not conform to the LSH, are influenced by the life-cycle of extended households; positive savings occur at a phase when the households comprise old parents and their grownup children. Such a pattern is clearly influenced by particular social and economic conditions, the relationship of which to saving is still to be scrutinized.

F. CONCLUSION

Although the subject is crucial for understanding population policies and economic development, the relationship between FSC, largely determined by fertility behavior, and saving behavior remains an open issue.

The available but fragmented evidence suggests that in DCs small children may actually bring about a reduction in consumption expenditure, which increase as children grow up. At the same time, children bring about a change in their parents' labor supply; mothers work less when they have small children and fathers work more apparently throughout. There seems to be a combined effort on the part of the parents to save for children. It is not clear that children bring about negative personal savings only in developed countries, although cross country comparisons point in this direction.

Because of a lack of comparable research in LDCs, it is hard to indicate some systematic behavior that may link personal savings and FSC in those countries. Macro-evidence fails to show the negative relationship that is commonly alleged. From evidence presented here, it appears that as in LDCs, children have a negative effect on household consumption expenditures only in their later teens, when they start also to contribute to household income. The effect on savings at that time appears positive.

It is not clear how children affect savings over the parents' life-cycle, when all the above effects are considered, particularly in LDCs. This topic deserves more empirical research along the lines suggested for the U.S. by Smith and Landsberger, who try to link, respectively, between household labor supply and savings, and household labor supply and fertility behavior 38. We should be able to simulate an experimental situation whereby we shall be able to establish the life-time savings of two similar couples socio-economically one with less children--for biological reasons--and one with more. Such a model based on empirical data may yield the right answer on this issue.

38 Smith, Landsberger, op cit.

RESUME

Un problème non résolu : L'épargne personnelle et la taille et la composition de la famille

par Dov Chernichovsky*
Banque Mondiale

Le "problème démographique" se définit de façon générale conjointement avec l'effet, présumé négatif, de la population sur l'épargne personnelle et l'investissement en capital non humain dans les pays, développés ou non. Le présent document se propose d'examiner, sur le plan des concepts et sur le plan empirique, les problèmes relatifs aux relations fonctionnelles qui existent entre, d'une part, la taille et la composition de la famille - déterminées pour une large part par le comportement procréateur - et, d'autre part, l'épargne familiale ou personnelle, au cours du cycle de vie d'un ménage.

La recherche empirique dont cette question fait l'objet est entravée par de graves problèmes conceptuels et par le manque de données, surtout en ce qui concerne les pays en développement. Les enquêtes effectuées à l'échelon macro-économique ne font pas apparaître de relation négative entre l'importance de l'épargne et le chiffre de la population de ces pays. Il n'y a peut-être rien d'étonnant à cela, si l'on considère l'effet de la taille et de la composition des familles sur la consommation des ménages, leurs revenus et le niveau du patrimoine auquel ils aspirent.

Les renseignements recueillis sur le comportement des ménages à l'égard de la consommation montrent que, du moins dans les pays développés, seuls les enfants parvenus à l'âge adulte entraînent une augmentation de la consommation du ménage. Cette incidence particulière est masquée par l'augmentation éventuelle de la consommation des parents, toute leur vie durant, à mesure qu'ils prennent de l'âge. Lorsque la taille d'un ménage augmente et que se modifie sa composition, il semble que la structure de sa consommation se modifie des points de vue qualitatif et quantitatif; on ne peut nullement affirmer qu'un ménage sacrifiera forcément l'épargne en faveur de sa "taille". En outre, la taille de la famille affecte les revenus du ménage. Dans une famille, la présence de jeunes enfants entraîne une diminution de l'offre de travail de la mère mais augmente celle du père. Cette remarque s'applique surtout aux pays développés. Dans les pays en développement, les enfants peuvent même être à l'origine d'une augmentation de l'offre de travail de la femme. En outre, dans ces pays, les enfants contribuent directement au revenu du ménage, en participant très tôt à des activités productives dont ils font bénéficier leurs parents.

* Les opinions exprimées dans le présent document sont celles de l'auteur, et ne reflètent pas forcément le point de vue de la Banque Mondiale.

L'incidence de la taille de la famille sur l'importance du patrimoine n'est pas claire. Théoriquement, il semblerait que, dans les pays en développement, la modicité de la situation financière et la faible importance accordée au capital humain, jointes au fait que la famille au sens large peut éventuellement remplacer l'épargne, se traduisent par une moindre propension à économiser. Le rapport de cause à effet n'est cependant pas clair, et il est possible que certains ménages décident d'augmenter le nombre de leurs enfants parce qu'ils n'ont pas la possibilité d'épargner.

Cette question doit faire l'objet de recherches plus approfondies qui nous permettront de mieux comprendre les relations qui existent entre la politique démographique et l'épargne des ménages, considérée comme moyen de formation de capital.