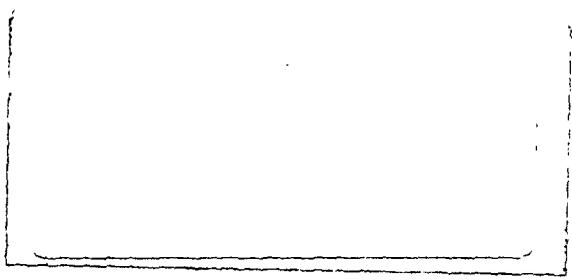


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# **Demography and Poverty**

Michael Lipton

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# **Demography and Poverty**

**Michael Lipton**

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RECONSTRUCTION AND DEVELOPMENT  
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## ABSTRACT

This paper uses national samples and village studies to examine the demographic characteristics of households at high risk of poverty or ultra-poverty. Before industrialization in now-developed countries, such households were likely to be smaller than others; normally, the opposite is true in low-income countries now. Yet status (job, asset-holding, etc.) continues to be positively linked to household size. In Section II, these facts are traced to differences, over space and time, in marriage-age, fertility, family/household ratio, and family complexity, and to a lesser extent to differential mortality, migration, and life-cycle effects. Section III turns from household size to household structure; poverty risk in today's LICs usually shows strong positive links with high child/adult ratios, weak negative links with age of household head, and very weak links with sex-composition. Scale-economies to household consumption are little researched, but may also affect poverty risk.

Many relationships in Secs. II and III weaken, or vanish, among the very poorest. Moreover, inferences to time-series (e.g. about what urbanization does to household size) are more than usually complicated. However, the relationships support strong implications for poverty measurement (Sec. IV), though much more tentative suggestions for policy. Outlay per household is an almost useless poverty measure; outlay per person is almost as good as outlay per consumer unit for broad allocative purposes, though not for "diagnosing" the poverty problems of particular households. Demographic assay, to assess how major policies affect big households with many children, could improve the poverty impact of many types of government action.

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## CHARACTERISTICS OF POOR AND POOREST: GENERAL INTRODUCTION TO WORKING PAPERS

### (a) Origins

In 1982, a Bank-wide Task Force reported on the impact of Bank activities on poor people. It showed that the proportion of the Bank's lending directed mainly at people in absolute or relative poverty had risen sharply - from about 5% in 1968 to 30% in 1980. Moreover, such activities showed rates of return at least as good as conventional lending, and succeeded, as intended, in benefiting mainly the poor. However, "neither borrowers nor lenders have been very effective in benefiting people who lack productive assets - the poorest 20%" (World Bank, 1983, pp. 11, 3, 5, 6-7). The report stressed the need for increasing the salience of poverty reduction in Bank "policy dialogue" with developing countries. But what can they learn from each other about appropriate policies for the poorest 20%?

While working with Alexander Shakow and Norman Hicks on the secretariat of the Task Force, the author of the present paper was examining the characteristics of the poor and the poorest. This search was given special urgency by the Bank's partial success in raising the productivity of the poor, and its relative failure to do the same for the poorest. It may be, of course, that the "power structure" somehow prevents the poorest quintile of households in low-income countries - or the poorest decile in middle-income countries - from sharing the fruits of growth, while allowing moderately poor people to do so. Before accepting such a complicated hypothesis, however, we should look at the alternative: that very poor people (unlike the moderately poor) have characteristics that affect their capacity to benefit from development programs.

This is one of four linked Working Papers that aim to identify such characteristics, if any. Three in the series - dealing with nutrition, labor and demography - will appear early in 1983, and the fourth, on assets, later that year.

### (b) Data sources

It had been hoped to draw mainly on data sets for two ecologically comparable poor regions, one Asian and one African, each with micro-information from good village studies supported by regional data from larger sample surveys. Partly to follow data availability, partly to ensure that climatic fluctuations would permit study of variability as a poverty problem, we selected semi-arid areas in N.W. India and N. Nigeria. In N.W. India, main emphasis was to be placed on Rajasthan, Gujarat and Maharashtra; the first two States permit the use of village studies by the Agro-economic Research Centre at Vallabh Vidyanagar (e.g. Brahmhatt, 1977; R. Patel, 1964, 1964a; V. Patel, 1973), and the last two of Pravin Visaria's disaggregations of National Sample Survey data by household outlay-per-person deciles (Visaria, 1977, 1978, 1980, 1980a). In N. Nigeria, outstanding work at the Ahmadu Bello University (Department of Agricultural Economics) has produced three good surveys, each covering three villages (Simmons, 1976; Norman, 1976; Matlon, cited in Norman et al., 1981).

As work progressed, however, it proved essential to support hypotheses from these sources with other enquiries, urban and rural, from a wide range of LDCs.

(c) Discontinuities

Not because this was originally expected or planned, but because of the accumulating evidence, the method of these Working Papers came increasingly to involve a search, not simply for relationships between poverty and other characteristics (e.g. participation rates, caloric inadequacy or family size), but for discontinuities in these relationships. It transpired that in LICs such discontinuities usually occurred, not at the "poverty line" (i.e., not between the "poor" and the rest), but at a much lower level of income or outlay, per person or per consumer unit: the level of ultra-poverty.

This is consistent with discontinuities observed in experimental work on producers' behavior. Notably, farmers exhibit "threshold" changes in behavior (in respect of risk-aversion, reluctance to innovate, and - given the technology - reversal of the usual inverse relationship between size of operated farm and yield-per-acre) not around the poverty-line, but around the much lower level of welfare at which subsistence appears to be endangered.

The discontinuities do not normally take the form of sudden, sharp rises or falls - as income or outlay, per person or per consumer unit, increases - in the proportion of persons within a given income or outlay interval. Rather there are reversals or intensifications - i.e., respectively, turning-points or points of inflexion - in behavior, as welfare changes around levels of great poverty. It is well known that per-person income and outlay are usually distributed more or less lognormally. However, as these crude "welfare" indicators fall, adult female workforce participation rates increase until a "welfare" level signifying extreme poverty is reached - and then decrease with further falls in welfare. Ratios of food spending to total outlay, around much the same point on the "welfare" scale, shift from steady rises as poverty increases, to a more or less constant 80-85% level. Unemployment rates, a steadily increasing function of poverty, increase more sharply at very low income levels, and become more seasonally unstable.

(d) Causality

On such issues, and generally, these Working Papers try to remain agnostic about causality. For example, we find that income-per-person (and other welfare indicators) tend to increase fairly steadily as household size falls, yet paradoxically also tend to be higher among groups of households with higher wealth or status. In seeking to reconcile these two findings we try not to make our explanations dependent upon whether large family size is cause or effect of (i) higher status or asset ownership, and/or (ii) smaller welfare at a given status or wealth level. Perhaps larger households get poorer, as Malthus posited; perhaps poorer households decide, or are driven, to get larger, as is averred by economic demographers of both Marxist and neo-classical persuasions.

The scarce and scattered data, the extreme rarity of time-series, and our ignorance of how very poor people reach decisions all suggest that one should defer attempts to make strong causal statements. These papers "explore the space" relating poverty to, say, economic and demographic characteristics. We must discover the direction and strength of the relationships, the gaps in observations on variables, and the turning-points or points of inflexion. Only then can we make sensible claims about causal directions. The author is too interested in policy inferences (and too incautious) to abjure all causal hypothesizing. However, the preferred form of conclusion should usually, at this stage, be neutral between "A causes B", "B causes A", and "C causes A and B". These papers are a first shot at outlining the shape, under different circumstances, of functional relations between poverty-variables (A) and characteristics-variables (B). Causal specification is largely left for others.

(e) Policy for a non-underclass

What, if any, policy conclusions can be drawn from causally inexplicit relationships? The answer depends on the nature, alterability, and costs of remedying the characteristics associated with moderate and extreme poverty. In particular, is remedying those characteristics likely to enable an affected person significantly to raise his or her outlay or income in a self-sustained way? Or is such improvement, instead, the likeliest way to remedy them? The answer to that question is logically independent of whether the characteristics "caused" the poverty level in the first place, or were caused by it.

Hence we may be able to identify important policy implications of the "characteristics-poverty-ultrapoverty" links - implications independent of the causality of these links. One such implication is central to our whole enquiry. We find that the ultra-poor have very different behavioral characteristics from other poor (and nonpoor) people. Do these characteristics mean that most of the ultra-poor belong to an "underclass"?

It has been argued that the poorest 5-15 percent of people in developed countries have "underclass" characteristics rendering it impossible, or prohibitively costly, to enable them to raise their income and productivity in a self-sustained way. These characteristics may be linked to misfortune (e.g. persistent mental deficiency in persons recently released from hospitals), to earlier choice (e.g. alcoholism), or even to demographic circumstance (e.g. widowed and childless status). Whatever the moral issues, and whether the characteristics cause poverty or are caused by it, the result is the same: the "underclass" cannot at reasonable cost be helped to help itself out of poverty, but must rely on social-security payments or on charity.

The evidence of these Working Papers strongly indicates that the great majority of the ultra-poor in LDCs are not, in this sense, an unreachable "underclass". Their extreme poverty is associated with lack of promising human and physical assets; with weak labor-market positions; with large families, high dependency ratios, and very high infant mortality; and with significant risks of nutritional damage. Only tiny proportions of the Third World's ultra-poor could survive as drug addicts, alcoholics, mental

defectives, or even single-member families. These ultra-poor are mostly a resource, not a burdensome underclass.

This raises a second policy issue, also largely independent of the causal links between characteristics and ultra-poverty. Does an ultra-poor group require different projects and policies, to achieve self-sustained improvements in income and productivity, from those required by the moderately poor? These working papers suggest that "food and health first", especially for children - and policies to improve capacity to contest labor and asset markets - may be necessary preconditions for improved productivity for the ultra-poor. Otherwise, benefits from "poor people's projects" will continue to stop at the second quintile.

## DEMOGRAPHY AND POVERTY

### I. INTRODUCTION

Within a country, what demographic characteristics tend to be found in households 1/ with a high risk of poverty or ultra-poverty? 2/ To ask this question in a policy context is really to ask four related questions. This paper tackles them separately, to simplify the exposition. However, it may be helpful to say a little about them (and their interconnection) at the beginning. The four questions concern: relationships between incidence of poverty and (1) household size, (2) household structure; (3) appropriate denominator in measuring adequacy of household "resources"; 3/ and (4) implications for policies against poverty.

The first question, treated in Section II, is: what relationships exist between the size of a household (number of persons) and the likelihood that it will be poor or ultra-poor? "Household size" comprises the family's adults (who usually work and earn); its children (who usually consume but do not earn); and non-family servants and lodgers (both usually absent in poor households). Household size is also affected by distinct, but interrelated, demographic events - birth, household splitting through migration, household formation through marriage, death; such effects can be influenced by poverty (as when undernutrition increases infant mortality), or can themselves influence poverty (as when dependency burdens increase). Moreover, households may be unusually large because they are complex, i.e. not nuclear; 4/ because they are at a certain stage in the family cycle; or because they have experienced unusual patterns of demographic events. Each of these three "size-increasing" variables, for given values of the other two, has distinct relationships to the incidence of household poverty: negative in the case of complexity, positive but short-lived for "swollen" phases of the family cycle, positive and long-lasting if a given family has acquired unusually many children who have survived into, say, the age-group 3-8. In view of these intricacies, it is fortunate that a quite clear answer emerges to the first question (pp. 7-13).

Section III turns to the question: given the number of persons in a household, how is the household's risk of poverty connected to its demographic structure by age and sex - including the age and sex of head of household, the ratio of dependents to persons of "working age", and the probable position of that structure in the family cycle? The demographic structure of poor households is linked to their size in three ways: static, dynamic and definitional. The static links appear, for example, in cross-sections that, in total populations of an area, show that smaller households are likelier to be female-headed, yet that female-headedness and largeness are each independently linked, positively and significantly, to the incidence of poverty. The dynamic links concern the different potential, of households with different age- and sex-structures, to alter future size and capacity to earn. The definitional links arise from the widespread wish to measure household size, not by number of persons, but in some sense by number of units of requirement.

Section IV asks: should the poverty or ultra-poverty of a household, and thence the incidence of poverty in a group (e.g. female-headed households), be measured by reference to the inadequacy of "resources" per household, per person, or per unit of requirement? If all persons had the same needs, if household size were statistically independent of both resources and resources-per-person, and if there were neither economies nor diseconomies of scale in consumption, then per-household measures would suffice. Since bigger households clearly tend to have more earners and thus higher total "resources", however, low resources-per-household indicate an indeterminate mixture of household poverty and household smallness. This is only very slightly - and again indeterminately - offset by the tendency of smaller households to have higher needs-per-person (adult/child ratios); by the positive correlation between poverty and household size; 5/ and by (modest) economies of scale in consumption. Hence, as shown empirically in earlier Bank work (such as Datta and Meerman, 1980), income or outlay per household, while widely used to "measure poverty", is demonstrably, and usually completely, worthless for this purpose, because it misclassifies many large poor households as non-poor, and many small non-poor households as poor. Per-person measures are much better; somewhat better still, though costly and controversial, are indicators of resources per consumer unit, whether measured crudely by means of adult-equivalents or subtly by means of equivalence scales (Deaton and Muellbauer, 1983).

Finally, Section V asks: what does the present state of knowledge about the links between poverty, household size, and household demographic structure - and the implications of that knowledge for identifying the incidence of poor households and hence persons - mean for policy? We shall seek only limited and modest answers, mainly because the links are not causally clear. For example, if we do not know whether some households have a high incidence of poverty because they are big, or whether they are big because they are poor, then it is not clear which issue - say, assets for the poor, or incentives to keep families small - is best tackled first. 6/ However, a good deal can be said on the policy issues, without specifying the directions of causation, simply by virtue of being able to identify what sorts of "household demographics" are likely to be associated empirically with a high risk of poverty. Not only can we more easily identify the types of place or time in which a given project is likely to affect poor households, if we can find where or when households have demographic features linked with poverty. At least as important is the prospect of diagnosing the sorts of productive activity through which households, in various common poverty-linked demographic circumstances, can escape from poverty. For example, consider the case of expanded asset-ownership associated with extra rural informal-sector non-farm income. The type of assets and activities readily open to female-headed households with small children, to big male-headed households, and to old and single persons will be quite distinct.

## II. POVERTY AND HOUSEHOLD SIZE

### (a) Historically, poor households tended to be small

This section will argue that poverty is nowadays strongly linked to big household size. Two prior objections are (1) that too few people live in big households to account for much of a phenomenon as pervasive as LDC poverty, and (2) that historically poor households were smaller than better-off ones. How are such objections to be met?

It used to be widely believed that, in now-developed countries (NDCs) before industrialization and in most developing societies still, households tended to be large, often complex. However, the Cambridge Group for History of Population and Social Structure (see especially Laslett and Wall (eds.), 1972) has shown that the nuclear household of 2 to 6 persons has, in most cultures at most times, predominated (except in some of the serf-based societies of Eastern Europe, where the seigneur applied pressures for peasant complexity: Czap, 1983, esp. p. 145). Between 1574 and 1821, in 100 English communities with relatively good data, mean household size (MHS), excluding institutions, averaged 4.8, and 73% of households were of size 2-6 (Laslett, 1972, pp. 133, 146). Similar data are reported from the pre-industrial history of almost all Western countries; even in exceptional cases such as Serbia, large complex households remain a minority (Laslett and Wall (eds.), 1972, passim; Wall et al. (eds.), 1983, passim). Comparable results are found in recent developing-country censuses, showing in the mid-1960s "no bona fide case of a national average household size larger than six" (Burch, 1972, p. 91). Historical sociology in developing countries, as with Shah's careful analysis of Gujarati census data from 1821 to 1951, suggests if anything even smaller households - and with even less tendency to dwindle over time - than prevailed in the West (A. Shah, 1968).

Low mean household size (MHS) cuts the scope for downward variation - in either rich or poor households - and a fortiori for linkage between such variation and wealth or poverty. Moreover, though most NDC series show very gentle downtrends in MHS over several centuries, there is no tendency, as households or communities differentiate themselves upward in early industrialization, for MHS or complexity to fall sharply. If anything, there is a slight increase - around 1750 in England 7/ (Wachter and Laslett, 1978, p. 76; Wall, 1972, pp. 191-2), and in 1920-65 in Japan (Nakane, 1972, p. 531).

As if to make more surprising the proposition that big households now tend to be poor, historical evidence suggests that such modest upward variation in household size as did exist in NDCs accompanied greater affluence, permitting a net inflow of servants, early marriage with many children, and/or complex family structures, within a relatively large family house. In sharp contrast to recent evidence from poor countries, child/adult ratios in Tuscany in 1427 appear to have risen sharply with household wealth (Klapisch, p. 274) - pulling up MHS with them, at least among the 10,000-odd Florentine families listed (ibid., p. 277). In 23 Polish villages in 1789, peasant affluence clearly meant higher child/adult ratios and hence bigger households (Kochanowicz, 1983, pp. 158-9). In Hirase, Japan, around

1818, again "the wealthier households...were...larger than average for this area" (Nakane, p. 528). In a hundred English communities from 1574 to 1821, laborers and paupers respectively showed MHSs of 4.5 and 4.0, as against the 4.8 averaged by all households (Laslett, 1972, pp. 133,154). Hajnal summarizes the conclusion of pre-industrial demography: "It is often said ... that the rich can maintain larger households than the poor. There is some truth in this proposition" (Hajnal, 1982, p. 454).

We need to explain the possibility, and then to demonstrate the fact, that - despite generally small and nuclear households; and despite historical evidence that poorer families used to be smaller than others - there is today sufficient variation in household size, and in a direction sufficiently different from that of historical data, for LDC poverty to crowd heavily into big households. The fact does seem clear-cut in almost all LDCs, despite occasional counter-examples (e.g. Hull and Hull, 1976). However, in reconciling the new fact to the old evidence, we shall bear in mind a curious paradox, which, because it so sharply illuminates the demography of poverty, will be at the center of this paper. It is the paradox that in today's LDCs, although in total populations (in defiance of historical NDC experience) big families tend to be poor families, groups of households with relatively low status - the assetless, the female-headed, the landless, the remote, the low-caste - tend to be relatively small, just as the historical evidence suggests. 8/

(b) Current and recent evidence: big households tend to be poor

Almost every recent study, at whatever level of disaggregation, for either a particular group or a total population, shows the incidence of poverty and MHS increasing together. Table 1, calculated from Visaria's presentation of decile-wise relationships for several rural and urban South Asian populations, shows very high rank correlations. For all-India data, three pooled cross-sections of 4118 rural households - for 1968-9, 1970-1 and 1971-2 - confirm that "the probability of a [household's] being poor increases with its size", both for total populations and for cultivating households and day-wage households sampled separately (Gaiha, 1982, pp. 24, 32).

Table 2 gives more detail - from large urban and rural samples for 1973-4 - for three States in Western India; once again, MHS is significantly larger for the poorest (MEP below Rs. 34 per month) than for the poor (Rs. 34-43), and much larger for both than for less-poor groups. Table 2 also shows that higher child/adult ratios are responsible for much of the larger MHS among the poor, again in sharp contrast to historical data, but as we see in Section III confirmed by evidence from elsewhere. However, Table 2 confirms - indeed sharpens - the historical hints (p. 7) that urbanization does not help the poor to escape poverty by reducing family size; poor and ultra-poor households are substantially larger in Western Indian towns than in Western Indian villages, though the opposite is true of better-off households.

Does this strong size-poverty link - established for several Asian countries, in some detail for India, and for particular States

within India - persist within the small community, or is it a so-called "ecological fallacy" (Dasgupta, 1977, pp. 90-92), in which better-off places show lower average household size than do poorer places, although within a typical community poorer households might be no bigger than the average for that place? This may be so. Seventeen of the village surveys, carried out by an outstanding Indian center for such studies between 1961 and 1975, in Gujarat and Rajasthan show average size of household and average income for the village surveyed (Table 3). A village's income per person, deflated by a rough-and-ready price indicator to allow for the differences in survey years, in fact shows a very weak (not significant even at 10%) negative link to the village's mean household size. 9/ So we must look at studies of small localities to confirm that in today's LDCs it is poor households, and not just poor places, that show higher MHS.

Direct local evidence for the Western Indian places, comparable with the regional evidence of Table 2, is unfortunately scarce, because most of the village surveys took place in the early 1960s, and at that time AERCs normally reported households grouped by total, instead of per-person, income or outlay. The few Western Indian studies giving an income-per-person scaling (V. Patel, 1980; B. Singh, 1981) do confirm, in total populations of a village, that poorer households have larger MHS. Such an association is also shown for individual villages or small groups of villages elsewhere in India (Parthasarathy and Rama Rao, 1973, Table 8). Within each of two villages in Bangladesh, too, "for the two most important food consumption items - food and vegetables - the [regression] evidence is very clear that larger families do worse" (Mahmud and McIntosh, 1980).

All these data measure MHS and requirements in numbers of persons. Bigger households in LDCs nowadays tend to have lower income or outlay per person. But big households also tend to have higher child/adult ratios (Table 2 and pp. 43-4). Might this reduce requirements per household sufficiently to render big households no needier than small ones?

Table 4 represents the outcome of a crude attempt to see if the size-poverty relationship among households also applies when size is measured in "consumer units", weighted as in Schofield (1979, p. 149) rather than in persons - and, incidentally, to provide further micro-evidence of the size-poverty relationship, and to see if it applies to Africa. A positive, localized link between poverty and household "size in CUs" appears in these Zaria villages; the regressions of Table 4 are supported by differences, significant at 5 percent, in MHS as between (i) the poorest 20 percent of households by income-per-CU (8.5 CUs), and (ii) the other 80 percent (6.1). This is confirmed in the three villages in another area of Northern Nigeria, Sokoto; the respective sizes were (i) 5.1 and (ii) 4.3. 10/ The positive size-poverty relationship in Nigeria also seems to apply to urban data (Rouis, 1980, p. 26), though the methodology is not entirely clear.

The NSS rounds also suggest that households with many persons are in India relatively likely to reveal shortage of capacity to buy calories per CU (Rao, 1979, p. 117). This also suggests that the poverty-size relationship applies, even after the linkage of size to

high child/adult ratios (and hence lower requirements) is allowed for. So does the greater vulnerability to illness, undernutrition and death revealed by older siblings and large households (Birdsall, 1977, p. 75; Lipton, 1983).

Three cautionary notes should be added. First, some large households may alleviate poverty via scale-economies in consumption, though these are probably small for poor households in LDCs (Sec. IV(d)). Second, larger households tend to have more earners, and hence may fail to report a greater proportion of income or outlay than smaller households, especially if only one earner - normally the household head - is interviewed (Cain, pers. comm., 1982); conversely, however, the smaller and on balance better-off households are likelier to conceal affluence from enquirers, for fear of taxation. Third, the positive size-poverty link need not always be smooth. (i) In rural India, a big 1968 sample showed risk of being in the poorest household decile (or the poorest 30%) by income-per-person steadily rising as household size increased from 1 to 9, but it fell for very big households of 10 or more (Gaiha and Kazmi, 1982, Table 9, pp. 24, 30, 32), and the linear positive size-poverty link was accordingly braked by a negative link between household size squared and poverty. (ii) In three villages in Kano, N. Nigeria, MHS fell steadily as income-per-CU rose to the ninth decile, but size increased in the highest income-per-CU decile (Norman, 1981, p. 76, citing Matlon). (iii) Above all, there is strong Indian evidence (Table 12) that MHS and poverty are uncorrelated for the poorest 5-15 per cent in a State. 11/

Despite occasional doubts and some apparent exceptions, the data at macro- and micro-level are clear enough to be fairly certain that, as a general rule, poverty and large household size within a locality go together. This is consistent with the new consensus that average households are and were, in the great majority of countries, small and nuclear; Table 2 shows even village average household sizes varying from 3.97 to 7.27 across seventeen places in two Indian States alone, and the further scope for intra-village (or intra-city) variation leaves plenty of room for substantial variations, between poor and non-poor households, in MHS.

The effects of this are dramatic. One example (of many that could be given) comes from the sample of 4118 households in rural India in 1968. Outlay-per-person fell below a plausible "poverty line" in 31 percent of 1- and 2-person households, but in 88 percent of households with 7 to 9 members (Gaiha and Kazmi, 1982, p. 18). The direction and statistical significance - though not the size - of such effects of household size upon the risk of falling below an income-per-person ("Actual income II") specification of the poverty-line appear to be stable and consistent, both over time and as between major occupational groups. Thus, for about 900 casual-labor households in rural India, a rise of one person in MHS was associated (at the means) with a .17 rise in the logarithm of the risk of poverty in 1968, and a .46 rise in 1970; both associations were significant at 5%. For about 2350 cultivator households, the respective figures were .0371 (10%) and .1654 (5%) (Gaiha, 1983, Tables 18 and 19) - the lower impact here being probably due to the association of more land with larger households (see fn. 8 above).

In explaining this positive size-poverty link - a reversal of historical experience - we need, however, also to confront the linkage of high-status groups to large household size. Here, apparently inconsistently, historical experience persists still.

(c) High-status groups still tend to have bigger households

The historical evidence that high status accompanied large household size was first convincingly marshaled for the English data by Laslett (1965, 2nd. ed. 1971, pp. 26, 72). In Goodnestone-next-Wingham, Kent, in 1676, three households of "gentry" averaged 9.0 persons; 26 yeomen's households, 5.8; 9 tradesmen's, 3.9; 12 laborers', 3.2; and 12 "poor men's", 2.1. Similar relationships applied to 100 English parishes with relatively good data averaged over 1574-1821: gentry 6.65, yeomen 5.9, laborers 4.5, and so on, with samples sufficient to ensure that inter-group differences are significant at 5 percent.

Similar relationships have since been uncovered for many pre-industrial and early-developing societies. Among 4808 households of known occupation in Florence in 1427, nobles and lawyers (45 households) averaged 5.8 persons per household, major crafts (483) 5.5, minor crafts (841) 4.6, shopkeepers and services (1665) 4.3, farmers (24) 4.4, and unskilled laborers and workers (1750) 3.7 (Klapisch, 1972, p. 277). In the town of Romans in S.W. France in 1586, the much higher propensity of households of higher social status to include both resident servants and extended kin (Ladurie, 1979, pp. 4-5) must have rendered them considerably larger than other households, since both groups apparently had similar and large numbers of children per household (*ibid.*, p. 5). In Japan around 1640-1720, status also appears to have affected inter-village differences in household size, with prosperous commercial and fishing villages showing significantly bigger household averages than poorer farming villages (Nakane, 1972, p. 521).

On status-size links, historical evidence for pre-industrial and early developing societies is almost entirely supported by recent evidence. After extensive review of Asian and African micro-data, one author concludes: "In stratified societies, the upper status groups tend to have larger domestic units" (Goody, 1972, p. 122). Since, however, the evidence now reverses the finding - which seemed reasonable when Goody wrote - that nowadays "richer ... farmers live in larger groups than the average for [their] community" (*ibid.*, p. 122), we need to examine the status-size link separately from the poverty-size link, for the two links now seem to pull household sizes in opposite directions.

Poorer people now tend to have bigger households. Yet so do higher-status groups, on several indicators of status. Let us first consider landholding. For 4118 rural households in India in 1968-70, landlessness affected 65 percent of one-person households, 36 percent of 2-6 person households, and 21 percent of larger households; average household size rose from 4.8 among households with below 1 ha. to 9.8 among households owning above 14.5 ha. (Gaiha and Kazmi, 1982, pp.22-3). In big State samples, the simple  $r$  between (1) the midpoint of the

range of holding size reported for each of seven household groups and (ii) that group's average household size was +.9486 in rural Gujarat and +.9499 in rural Maharashtra. The addition of landless households, to create an eighth pair of observations, hardly affects the results, which remain significant at 1% (calculated from Visaria, 1978, Table 1). Still in Western India (Table 3) but now at village level, laborers' households - i.e. those deriving most income from employee work and thus normally operating little land - were, in almost every village surveyed in 1961-75, a good deal smaller than "owner-operator" households, deriving most income from owned farmland. This is confirmed for ten Central Gujarat villages in 1969-70 (Singh, 1980, p. 278), and for the 1970s for eight villages in coastal Andhra (Parthasarathy and Rama Rao, 1973, p. A-119); and in three Kerala districts marital fertility, both in 1965-70 and in 1975-80, rose sharply and significantly as land owned rose (Zachariah and Kurup, 1982, Table 3). <sup>12/</sup> Landholding and household size were linked positively outside India - e.g. in a large rural sample (Peach and Januszi, 1979, Table D-1) and in two villages (Mahmud and McIntosh, 1980, p. 506), in Bangladesh; and in three villages in Sokoto, N. Nigeria (Norman et al., 1976, pp.32, 37; 47, 58; 71, 83).

Suggestive evidence extends this positive link of household size to assets, beyond farmland. Larger households have been associated with a greater incidence of plough ownership (Katsina, N. Nigeria, 1967: Anthony and Johnston, 1968, p. 48a); of livestock (Corsica 1769-71: Dupâquier and Jadin, 1972, p. 295); and of total wealth (Florence 1427 - though completely assetless households were somewhat larger than those with few assets: Klapisch, 1972, p. 277). These relationships may be partly life-cyclical. In rural Botswana, increasing age of male household heads, and presumably average household size, accompany "rapid asset growth" (Kossoudji and Mueller, 1980, p. 22). Both in Karnataka and in parts of Nigeria, parental house space - itself a major asset by value - appears to affect the age at which adult children are pressed to form separate households (J. Caldwell, pers. comm., Dec. 1982).

Occupational structure, like asset-holding, strongly links high status with large family size, in both historical and recent studies. The data from Florence in 1427 (p. 11) are echoed in recent work; for example, in the Central Provinces of Kenya in 1971-2, the size of rural laborer households averaged 4.88, and of cultivator households 6.07 (Collier and Lal, 1980, p. 40). Table 3 provides telling evidence that, in specific Western Indian villages around 1962-75, households depending for most of their income upon owner-cultivation, trade, transport, and the professions were significantly bigger than laborer households. Laborers and cultivators, respectively, averaged over 13 villages in Gujarat (at various dates between 1961 and 1973), numbered 4.8 and 6.6 persons per household; over 7 villages in Rajasthan the respective averages were 5.1 and 6.0 (Table 3). Both differences were significant at 1%, and were found in a large majority of individual villages. Singh (1981, p. 278) reports similar findings in ten Central Gujarat villages in 1969-70. The difference, like the ambivalent position of craft households, appears also to apply in Southern Karnataka (J. Caldwell, pers. comm., Dec. 1982). <sup>13/</sup> Generally we know too little about the relationship of household size and structure to occupations. It is an important issue, affecting the viability for poor

households of alternative forms of informal-sector family enterprise. However, the correlation between high-status work and large households is clear.

Western Indian caste structure, for twelve villages in the 1960s, provides a parallel link between bigger and high-caste households (Table 5). "Intermediate caste" households comprise mostly the dominant farmer castes, such as the Jats. They are substantially bigger than "other" (i.e. lower-caste), scheduled-caste, and non-Hindu households in the Gujarat villages, and somewhat bigger in Rajasthan. These groups comprise the overwhelming majority of Indians classified by religion or caste, and confirm the general "high status - big households" rule; interestingly, in these villages, a few of the highest-status groups (Brahmans, Baniyas, Jains) <sup>14/</sup> appear to be exceptions, showing relatively small households. This may be a typical phenomenon, though the exception for Brahmans is also claimed by Kolenda (A. Shah, 1973, p. 224); Oscar Lewis's classic North Indian study, for "Rampur" in 1953, shows the 15 Brahman households averaging 7.3 members, not far below the 78 Jat households (8.3) and well above the 38 scheduled-caste households (5.2) (cited in Goody, 1972, p. 113). A Tibetan village also shows a clear link between big households and high status (Carrasco, 1959, pp. 67-9).

Female-headedness is also associated with low social and political status in most underdeveloped communities. For obvious reasons, female-headedness is also associated with small household size. This was true historically, e.g. in early-industrializing Rheims in 1802 (Fauve-Chamoux, 1983, p. 480). In today's LICs, Visaria (1980, p. 59) shows dramatic declines in the proportion of female heads as household size increased for ten large South Asian samples in 1968-74: for example, in rural Maharashtra (1972-3), females comprised 61 per cent of one-person, 6 per cent of five-person, and 2 per cent of nine-person household heads; in Malaysia (1973) the corresponding figures were 35 percent, 15 percent, and 12 percent. In Botswana, the 1974-5 Rural Income Distribution Survey (1974-5) also showed that female-headed households were smaller, but only if no adult male was present: the 47% of households with a resident male head averaged 7.3 members; the 14% that were female-headed but contained a resident adult male, 7.6; and the 29% female-headed without a resident adult male, only 5.1 (Kossoudji and Mueller, 1980, p. 11).

We can now state, quite sharply, a demographic paradox of poverty in today's LDCs. In total populations, larger households tend to be poorer (the opposite of most historical situations). Yet many status-scalings - by land owned or operated, by wealth, by type of work, by caste or other social status, by sex of household head - link low status, now as in the historical past, to smaller households. In analyzing this apparent contradiction, we shall come to understand much about the demographic characteristics of the poor.

(d) Poverty, status and household size: possible explanations

It is useful to distinguish seven demographic variables, related to MHS, and each possibly related also to poverty. Each variable may help or hinder our task of explaining why poverty, in LICs now but not in NDCs in the past, goes with large MHS; or why low asset and job status goes with small MHS; or both. The first six household variables affect principally the size of the family, i.e. the numbers of coresident kin. Only the seventh variable explicitly deals with household members who are not family members.

The first three variables are standard demographic indicators. First, mortality risks over a lifetime may vary with the level of poverty; usually this applies much more to infant, and to a lesser extent child, mortality than at later ages. Second, live births per year per cohabiting couple, given the couple's ages, can differ between poor and other persons or groups. Third, the duration of cohabitation 15/ can vary - can start or end at a different average age, can be interrupted with different frequency, or can show different (usually small) probabilities of not happening at all.

Fourth - if we turn to variables affecting demography indirectly, i.e. not by changing birth or death rates instantaneously - rich and poor persons or groups may show different propensities to form separate households when the children marry, or (if they do not at once separate) different periods of complex family living. (Complex families, of this "multiple" nature or otherwise, 16/ are likely to imply larger households in three ways, as compared with nuclear families: directly, by retaining the child and adding a spouse; by increasing the proportion of fertile couples; and by changing the mortality risk of the household). Fifth, sets of households may differ in respect of in-migration or out-migration. Sixth, their household size may reflect, not lifelong associations with them of their members, but temporary passage through parts of a life-cycle. For example, laborers may tend to average smaller MHS because they are "waiting" to inherit parents' land, to enlarge their households by having children, and to move from the status-group of "laborer" to that of "owner-cultivator".

Our final variable allows for possible inequality between household and co-resident family. One set, A, of households may be more likely to include non-family members - especially resident servants or lodgers - than another set, B. This normally has a "double-gear" effect on MHS differences between the sets, for set B is then normally more likely to cut household size, e.g. as adolescents leave B to go into domestic service with set A.

There is no reason why just one of these seven variables should help to explain either or both parts of our paradox. Nor need every variable even point in the right direction (i.e. associate large MHS with poverty in LICs now, affluence in NDC history, or high status). Indeed, both these things are very unlikely. Reality is more usually messy than elegant.

Moreover, this particular (sevenfold) classification of correlates of household size has no logical primacy; it just happens to follow one pattern of frequently available recent data. Logically, one could as well separate factors causing household formation, household separation, and household size between formation and separation. Relevant, too, are the classifications of successful historical "predictors" of mean household size for communities,

i.e. urban or rural places: for 382 places in Suwa county, Japan, in 1671-1870 (Hayami and Uchida, 1972, pp. 488-92), and 100 in England in 1574-1821 (Laslett, 1972, p. 155). The only common successful "predictors" were the proportions of households headed by married couples ( $r = .600$  on MHS for Japan,  $.296$  for England) and with servants ( $.444$  and  $.599$ ). Whichever way one cuts the cake, it is of major analytical and policy importance which potential correlates turn out in fact to be associated with different household size.

(e) Mortality, poverty and mean household size (MHS)

Historical data, permitting inferences about group differences in age-specific mortality within NDCs during the pre-industrial or early-industrializing periods, are scarce and controversial. However, there are two prima facie reasons to believe that the ratios of poor or low-status households' death-rates to those of other households, for most age-groups, were substantially lower for NDCs, especially in the pre-industrial period, than in today's LDCs. First, many killing infections and other transmissible diseases, from bubonic plague to malaria, are not so very different, in incidence or in virulence, as between a country's gentry and laborers, or rich and poor. It is above all such diseases whose incidence, and hence contribution to death-rates, has plummeted worldwide since the late nineteenth century. <sup>17/</sup> Second, knowledge about how to avoid other diseases, notably puerperal fever, dysentery and TB, has advanced enormously, as between NDC pre-industrial history and today's LDCs. Thus better-off or better-educated people in poor countries have become able to greatly reduce their risks - e.g. by boiling drinking-water, by purchasing hygienic childbirth, or by choosing to live in a suburb with better sewerage.

Certainly, at the crudest level of comparison, country cross-sections today reveal strong links between mortality and severe potential poverty as suggested by low real GNP per person. As a country's GNP per person, in constant 1963 prices, "rose" to about \$400-500, but not for further rises, there were big mortality "declines" both in the 1930s and - from a lower base, due to an improved health environment - in the 1960s (Preston, cited in Schultz, 1981, p. 117).

Let us assume (until p. 18) that groups with death-rates above the national average do not offset this by also featuring higher fertility, greater household complexity, or other factors tending to pull MHS up. In that case, high-mortality groups will also feature low MHS. Indeed, the younger the ages at which a group suffers abnormally high rates of death, the greater is the proportionate cut in the group's MHS.

In LDCs today, inter-group variation in mortality is much greater in early life. The relatively reliable Sample Registration Survey (SRS) showed that inter-State male infant mortality rates (IMRs) in 1972 ranged from 75 in Kerala to 210 in Uttar Pradesh (the respective female IMRs were 62 and 259); at age 5, male life expectancy was 61.8 in Kerala and 55.9 in UP (female, 60.7 and 49.9) (Dyson, 1979, cited in Ruzicka, 1982, Table 8). A 1979 Indian survey covering some 750,000 SRS households found proportionate gaps, by caste, maternal education, and local infrastructure, in IMRs well above the gaps in death-rates at ages 1-4 (Ruzicka, 1982, Table 9) and even these gaps were well above any that are plausible at later ages. African mortality

estimates are generally much less reliable, but again suggest that - with the important exception of West Africa - differences in infant and child mortality account for the great mass of differences in life expectation at birth, and that inter-country and probably inter-group differences in adult mortality are relatively very small (A. Hill, 1981, pp. 32-4, 79-84). To the extent that inter-household mortality differences are not compensated - or are less than fully compensated - by other differences affecting household size, the earliness of high and differential death risks in LDCs must mean that they greatly affect inter-group variation in MHS.

\* \* \*

But how do groups of households in LDCs vary in respect of death risks? First, one should refer to an unusual yet important effect: unusual in that it tends to cut MHS in poorer and lower-status households by raising their adult, as well as infant and child, mortality. African research "has universally found that mortality at all ages is substantially lower in urban areas than in rural areas" (A. Hill, 1981, p. 35). In India, there is "indisputably higher [age-specific] mortality of rural [persons] at every age-group compared to urban" (Mitra, 1978, p. 223); indeed, for under-fives, and less certainly for adult men, the gap substantially widened in the 1970s (Ruzicka, 1982, Tables 5-6). Poor households, and poor people, are in most regions heavily over-represented in rural areas, so that higher rural death-risks - assuming no, or incomplete, compensation via fertility or otherwise - would mean smaller rural households. This is a powerful effect, because (while also affecting adults) excess rural mortality still strikes infants hardest - IMRs, in two good Indian surveys in early the 1970s, were 136 and 137 in rural areas, but 90 and 92 in towns (Natrajan, n.d., p. 7).

The effect of death-rate differences, in making rural households smaller than urban, should apply especially to poor people, who have much greater difficulty than the better-off in escaping from such risks by using modern public-health, medical, or nutritional assets or knowledge. The recency of many African conurbations, however, and the consequent large proportion of recent immigrants with incomplete or single households, means that African data are unsuitable to check this proposition. Indian data, though, do support it.

It is not only that Indian urban households show MHS significantly, and probably increasingly, above rural levels; this does probably mean, among other things, that urban status raises MHS by reducing depletion by death, especially child death. More tellingly, as poverty worsens, Indian urban MHS rises much more steeply than rural - so that in some States well-off urban households are actually smaller than rural households with similar MEP, although poor urban households are much bigger than their equally poor rural counterparts (Table 2). This is largely due to the high child/adult ratio of the urban poor. Their children - and to a lesser extent their adults - are far likelier to survive in cities than in villages (the exact reverse of the position in industrialising England: McKeown, 1979, p. 76). In today's LICs, once towns do not comprise mainly recent immigrants, urban status tends to confer (i) relatively greater real MEP, given household size; (ii) for this and other reasons, lower death-risk, given real MDP; (iii) for poorer people, a large MHS (as more children, especially, survive), relative both to less-poor townspeople and to equally poor villagers. Poorer households are

bigger, in both town and country; but urban residence confers on the poor the capacity to avoid many child deaths that they would suffer in the villages, and thus makes their households relatively bigger still.

A second possible "group link" of status to household size is via differential female mortality. Especially among girls, female excess mortality in some parts of India and Bangladesh (Miller, 1982; Chen et al., 1981) is undoubted. However, its causes are disputed, and "there is no trace in African data of ... marked systematic female disadvantage in mortality (Hill, 1981, p. 35). Even in the few parts of South Asia where households have been shown to discriminate against the survival chances of girls, it is unclear whether this discrimination especially cuts MHS in poorer or lower-status households (Chen et al., 1981; Levinson, cited in Carloni, 1981; Lipton, 1983) or in higher-status ones (Miller, 1982, and the evidence there cited). Hence the effect on the size-poverty relationship of India's higher rural female mortality in all age-groups from birth up to 34 years (Mitra, 1978, p. 223), accompanying a higher propensity among Indian rural females to be in smaller households, is not clear. Moreover, evidence from Western India, Sri Lanka, Nepal, Taiwan and Malaysia clearly shows that women are not over-represented in the lower deciles of households by MEP (Visaria, 1980, p. 60).

So urban "status" lowers death-risk; usually raises settled MHS; and (at least in India) especially raises MHS among the poor. Female status (while seldom affecting death-risk much) sometimes raises it; is associated with membership of lower-MHS households with high proportions of females; but appears unrelated to household poverty, though certainly not to individual female disadvantage (Lipton, 1983a). What of gaps between groups more overtly linked with poverty or status? In 1978, scheduled castes showed IMRs of 159 in rural India, as against 136 for Hindus (but 108 for the generally poorer Muslims: Ruzicka, 1982, Table 9). In rural Karnataka (Mysore) in 1961, laborers and "temporary tenants" had IMRs over 67% higher than owner-cultivators farming over 3 acres or "permanent tenants" with over 3 acres. A recent analysis of child mortality in two States, based on the 1951 Census, shows that the proportion of children dying before the age of 5 was then 10% higher among farm laborers than among farm operators in Madhya Pradesh, and 42% higher (on a much lower base - of about half the rate) in Kerala (Mitra, 1978, p. 21; Natrajan, n.d., p. 12). This should be set against the evidence that only the nutritional status associated with extreme poverty - such as afflicts 10-15% of Indians (and at most 20% of children) - increases infant and child mortality (Chen, 1980, pp. 1836-45; Lipton, 1983, pp. 21-3). Thus these differences in rates of infant mortality must be associated with a very great overlap between the high-mortality groups and the extremely poor.

In urban and rural Karnataka, moreover, housing-related indicators of economic levels - such as are likely to discriminate between poor, poorest and other - were linked strongly, in the expected direction, to both infant and overall death-rates (Mitra, 1978, p. 210), and this also applied to a 1978 all-India survey for IMRs: in rural areas, living in a village with electricity, water-supply or medical facilities was associated with IMRs lower by about 30 percent (Ruzicka, 1982, Table 9).

An Indonesian study implicitly relates the large urban-rural gap in

survivorship ratios in 1972-3 to higher urban levels of maternal education - itself largely a surrogate for income; holding the mother's education and income constant, we find that the urban-rural mortality gap vanishes (calculated from Hull and Hull, 1976, pp. 8, 15). In African studies, "mortality is also invariably lower among children of women with education" (A. Hill, 1981, p. 35). In India in 1978, rural IMR was 132 for children born to illiterate mothers, but 64 where mothers had completed primary education; the comparable urban rates were 81 and 49 (Ruzicka, 1982, Table 9).

Do these relationships help to explain the links between poverty and MHS? Higher infant and child mortality - and slightly higher subsequent mortality - among poor groups, and poor households in total populations, obviously cuts MHS, relative to other households, directly. Thus the relatively high IMR among laborers (and probably among the associated castes), rural women, villagers, the ill-housed, etc., does directly relate to their smaller MHS. It renders smaller households for low-status groups easier to explain - and for less-poor persons, harder. If indeed receding tides of general infection and ignorance have left, even more important than in the past, those life-threatening illnesses best avoided by adequate education or income (p. 15), then the growing direct effect of differential death-risk in reducing poor people's MHS poverty to low MHS (though it could explain why the very poorest households (fn. 11), where alone IMR shoots up, are still no larger than the other poor). However, the direct effect is not the whole story. Higher mortality in poor households might "trigger" indirect responses that actually raised MHS relative to other households. This is very unlikely to operate via a positive effect of mortality upon household complexity. Indeed, since lower life expectancy means that parents of resident married children die sooner, it implies - under most norms of household formation - fewer complex (and thus normally even smaller) households for poor and/or low-status persons. However, simulations suggest that such effects, even from big differences in mortality, are very small (Wachter and Hammell, 1978, p. 48).

More important, however, is a much more plausible way in which the higher mortality of low-status households can actually raise their MHS: by triggering sufficient higher fertility, via either longer cohabitation or higher fecundity (sections (f)-(g)). The apparently higher mortality, within each job and status group, at low income and asset levels may be outweighed by higher fertility - replacement fertility on insurance principles (Cassen, 1978, pp. 60-61), or due to earlier cessation of post-partum amenorrhoea as infants die. Thus higher mortality in poor households, paradoxically, could help explain why their MHS tends to be larger in total populations, and therefore a fortiori within most income or status-groups.

## (f) Fertility and the poor

### 1. Direct impact on household size

Households with higher fertility, unless it is outweighed by other factors, are bigger households. Japanese historical evidence suggests that, in the long run, it is not outweighed, though short-run localized links of fertility to family size are rather weak (Hayami and Uchida, 1972, p. 496). In today's LDCs, where infant mortality has fallen, greater or lesser

responsive declines in fertility could well be a main explanation of why household sizes differ.

The number of children born to a woman in her life is the outcome of her age of menarche, her age of menopause, frequency of intercourse between those ages, proportion leading to conceptions, and proportion of conceptions followed by completed pregnancy. Unfortunately, very few data sets analyse these variables separately. More usual is classification of rural or urban women, sometimes by age-groups, by (i) numbers of children ever-born, dealt with in this section; and (ii) age of marriage (Section (g)). Both these classifications are sometimes further broken down by income or outlay per person in the woman's household, by the household's apparent main occupation or social group, or by the level of mother's or father's education (of course closely linked to income-per-person). Another approach seeks to discover whether the poorer, lower-status, or otherwise "different" woman also differs in respect of "intervening variables" affecting either children ever-born to her per year of sexually active union, or else proportion of her life spent in such union; such variables are physical fecundity, marital disruption, and post-partum abstinence (Hull and Hull, 1976, p. 19, fn.; Davis and Blake, 1956). Finally, income or status-group might be related to such aspects of fertility through physical determination, or through optimising choices as stressed by the "Yale school" (Schultz, 1981).

The balance of evidence (Birdsall, 1974, pp. 5-7, and 1980, pp. 53-6; Hull and Hull, 1976, p. 9) suggests an "inverted-U" overall income-fertility relationship. This almost certainly holds across LDCs. National fertility probably rises as annual average income-per-person rises up to a low threshold (perhaps \$125 in East Asia and \$300 in Latin America, in 1965 prices), mainly because, below that threshold, some women's physical fecundity is reduced by severe undernutrition (sometimes by famine) and by disease. However, once that threshold of poverty is surpassed, increasing income-per-person - being associated with higher levels of female education, lower infant and child mortality, and (as schools replace child-labor) a rising opportunity-cost of children - reduces fertility, though at a falling rate as a family approaches levels of reasonably adequate living.

Broadly, often strongly, supportive evidence for part or all of this relationship is available from cross-sections within LDCs, viz. Iran, India, Puerto Rico, Turkey, the Philippines and Taiwan (Birdsall, 1974, 1980). Karnataka in 1961 appeared exactly to confirm the "inverted U". Bangalore, presumably the best-off city, showed a clear positive link between apparent fertility and likely poverty - the 7% of women in the worst housing showed a 25% higher crude birth-rate than the remaining 93%; in other towns, no clear relationship prevailed; and in the relatively poor rural areas, very low socio-economic status accompanied lower lifetime fertility. There, women over 15 in households deriving income mainly as "agricultural laborers and temporary tenants" averaged 6% fewer children than "owner-cultivators with less than 3 acres and permanent tenants with less than 5 acres" and 12.5% fewer than larger cultivators - highly significant figures for such big samples - and shared, respectively, 16% and 25% lower birth-rates per woman aged 15-44 (Mittra, 1978, pp. 209-10).

A similar pattern prevailed in Colombia. Age-specific fertility is negatively associated with both husband's and wife's wage-rate in towns - but

positively (except for younger wives) in the (much poorer) rural areas (Schultz, 1981, p. 177). 18/

One tentative interpretation is this. Laborers - and presumably the associated social (e.g. caste) groups - suffer higher infant and child mortality than cultivators. While they sometimes compensate via higher fertility - marital fertility differentials by caste in Kerala (Zachariah and Kurup, 1982, Table 2) being an example - the very poorest often, far from over-insuring (p. 23), show lower fertility. Hence, in part, the inter-group link between low status and low household size. However, poorer people (though not the very poorest) within each job and status group not only show rather higher infant and child mortality rates, but "overcompensate" with higher replacement fertility, both because of shorter post-partum amenorrhoea due to higher IMRs, and to insure against them. Hence, in part, the intra-group (and aggregate) link between poverty and high household size. The weakness of this link for the very poorest (fn. 11) could be explained by their concentration in low-status groups.

Work in the Punjab (Wyon and Gordon, 1971; Kielmann et al., 1978) appears to support this. Moreover, the data from Matar Taluka in rural Gujarat (1965-75) suggest that the intra-group relationship is strongest at the low end of the income scale - among the poorest, and some of the poor - and that their higher replacement fertility tends to inhibit asset formation and keep these poorest poor (Repetto and Deolalikar, n.d., p. 57). This higher fertility reflects (i) (perfectly rational) over-insurance against what are, for the very poorest who alone are at poverty-induced nutritional threat to infant life, genuinely higher risks, and (ii) the low net costs of small children in these groups (Cassen, 1978).

Extreme poverty, at least, however, does also have links to factors that reduce fertility, and hence, other things being equal, family size. Severe undernutrition probably reduces fecundity, retards menarche (first menstruation), reduces fecundity between menarche and menopause, and accelerates menopause (Frisch, 1978, 1980, 1982). Fertility may also increase directly with hygiene in ways especially discriminating against the poorest. Several fertility indicators in Kerala in 1965-80 were positively linked to house quality variables, especially to toilet facilities (Zachariah and Kurup, 1982, Table 3).

Apart from such extreme physical fertility effects, choice by poorer couples occasionally also reduces fertility. They are likelier to be temporarily separated by the migration of just one partner. They also - as in a village in Central Java in 1972-3 - feature much greater voluntary post-partum abstinence, and more marital disruption. Nevertheless, in the same village, poorer couples show shorter interpregnancy intervals (Hull and Hull, pp. 26-9). If we judge by worldwide KAP survey evidence, the poor normally make less use of the more modern and effective methods of contraception. There is no doubt that the poor, but not always the poorest, show higher marital fertility in the great majority of LIC situations.

One interpretation of the inverse-U relationship between fertility (y) and income per person (x) is suggested by the strong positive link between child wage-rates and couple fertility (Schultz, 1981, pp. 50-1). This link could well associate fertility with poverty, by leading poor couples (for whom

alone child labor is an important income source - Lipton, 1983a, Sec. II(d) - since others are likelier to prefer to postpone and enlarge income benefits by educating their children) to choose higher fertility. However, the correlation could also associate fertility among the poor with escape from extreme poverty, as children's earnings - net of child costs - raised household income-per-CU for the more fertile poor. Like the extreme physical effects, this may help to account for the inverse-U relationship.

In the NW Indian villages, the very poorest are likeliest to be "isolated" from the rest of the population in a group with distinct job, status, and assets: the low-caste landless laborers. If this is generally the case, then the inverse-U shaped fertility-income function could be a "linker", helping to explain both legs of our central puzzle (p. 13). Over most of the range, fertility tends to fall as income-per-CU rises; but for, say, the poorest 10-20 percent, who tend to be in a separate status-group (especially at the very poorest "end"), the reverse relationship may apply. For the whole population, a positive fertility-poverty correlation would be found (as in the Kerala sample: Zachariah and Kurup, 1982, Table 2), because of the dominance of the "less-poor 80%" in the regressions; but, as between groups, the overlap of low-status and very poor households could connect very low status to somewhat lower fertility. This is consistent with the weakening of MHS-poverty relationships among the ultra-poor (fn. 11).

How might parental choice link larger household size, via higher fertility, to (A) poorer families in LDCs now, (B) better-off families in the pre-industrial past of now-rich countries (Klapisch, 1972, p. 274; Laslett, 1972, pp. 153-4), (C) higher-status families, usually now, almost always in the past? The "Yale school" seeks to interpret data as if couples choose, at the same time, probable family size - partly by weighting expected couple income from children's work against costs of parental time spent in child care - and couple income and leisure. It is also argued that the effect of reduced poverty "on fertility depends on the source of the increment to income, and hence the 'price-of-time effect'", i.e. the opportunity-cost of extra child care, "embodied in that source". It is argued that, unless extra couple income is achieved in ways that would be inhibited by extra child care, it will not affect fertility and thus household size: "Would we expect fertility in ... Libya to fall because per capita incomes are among the highest in the world?" (Schultz, 1981, p. 5). 19/ This explanation of (A) above, by reference mainly to substitution of (high) earnings for child-care in better-off households, but not in worse-off ones - this virtual denial of income-effect - could account for (A) alone. It could also handle (B) above, albeit tortuously, e.g. if it were argued that the greater prevalence of servants in the pre-industrial West drastically cut costs of marginal child-care for the rich, but not for the poor, as compared with LDCs today; better-off children's higher potential earnings could perhaps have weighed more heavily then (making richer couples relatively fertile), although their higher potential opportunity-costs do so now (making richer couples choose lower fertility).

However, it is hard to expel income-effect from the voluntarist account of (A) above. Partly this is because of three sorts of evidence that income-effect induces women to divert time away from work - evidence that should apply just as well to the decision to have more children. (i) As income-per-CU rises, women withdraw from the workforce, though potential

earnings presumably rise. (ii) This is also true as women transfer from village to town (Lipton, 1983a, Sec. II(d)). (iii) And female education - which plainly raises potential earnings - does not significantly cut age-specific maternal fertility if the education ends before primary completion, or at all for older rural women (Stycos et al., 1978, for Costa Rica; Schultz, 1981, pp. 120-1, for Colombia; Zachariah and Kurup, Table 2, for marital fertility aged 20-40 in Kerala; Hull and Hull, p. 10, for Indonesia). 20/ Partly, to explain (A) above via parental response to the cost of child care (higher in richer households if, but only if, mothers could earn more than in poorer ones) - via pure substitution-effect without income-effect - is implausible because of (C) above. Higher status, work-group, or access to earned assets must often be associated more convincingly with potential earnings (foregone in the event of child care) than is higher income-per-CU. Yet such social differentiation is associated with bigger households, more fertility, and more child-care in the higher-status groups: the reverse of what substitution-effect alone would induce. We do know that normal negative substitution-effect relates female wage-rates to female participation rates (e.g. Smith (ed.), 1980; Quizon and Evenson, 1982); hence, both in (C) above and in regard to the three types of evidence listed, we can be confident that effects other than substitution-effect are at work in the opposite direction.

Moreover, we may need to explain fertility differences among status, job, and asset classes by social variables, not just by income and substitution effects. It is quite plausible to reconcile (A), (B) and (C) above by hypothesizing that (A) is due to income and substitution effects together; that the price of child-care, relative to the discounted potential earnings of children, was much lower for the rich, as compared to the poor, in the pre-industrial West than in today's LDCs, explaining (B); but that status-groups generate habits, expectations and norms regarding fertility, explaining (C). All this is tentative, almost speculative, partly because data are scarce. However, differential fertility of unions - and its links, biological or socio-economic, to poverty, nutrition and health, and job-asset-status group - should prove crucial in reconciling the apparent paradox on p. 13.

## 2. Links between fertility and mortality

As with mortality, so with fertility: we have concentrated on its direct links with household size, as they might render poorer households bigger (or households with poverty-related status, job or asset positions smaller) than others. Indirect links might associate mortality or fertility with the size of such households either via the process of household formation and division, or via reciprocal effects between fertility and mortality. It is hard to see how different household formation rules or timings could greatly affect mortality or fertility; and, though it is quite conceivable that changes in mortality or fertility could alter family size by changing the time during which a household is simple or complex (e.g. if high death-rates swiftly eliminate the patriarch in a multiple family 21/), simulation shows that this does not make much difference for plausible values (Wachter and Hammell, 1978). Hence "indirect links", if important, must be between fertility and mortality.

For example, if a child's death caused its parents to increase

planned births by more than one - e.g. because it improved the perceived case for insurance, in order to achieve a given completed family size norm - that death might increase family size. If so, higher child mortality among poor households would not out their size, as our ceteris paribus presentation on pp. 18-22 has implied. Many links between mortality and fertility - biological or economic-optimising, in both causal directions, and with either positive or negative sign - have been hypothesised (an excellent summary is Nugent and Walther, 1981, pp. 29-33).

Such links can be collapsed into two sets. Via replacement effects of mortality on fertility, extra children are produced to compensate for past child deaths (partly, wholly, or, as above, more than wholly). Via crowding effects of fertility on mortality, more children in a family alter - normally, increase - the death-risks to the siblings and, except possibly for the second pregnancy, to the mother in childbirth. Replacement effects arise partly as deliberately-chosen compensation, and partly because pregnancy prospects increase when suckling ceases. In the Kerala study in 1981-82 "the average birth interval was 22.7 months if the initial birth ended in a death within the first month ... 27.6 months if [not, but within] the first year; 33.4 months" otherwise (Zachariah and Kurup, 1982, p. 18). Replacement may well be more than complete, as a form of rational insurance to reach a given family size norm, because "child losses are more frequent among women who experienced such a loss previously" (Ruzicka, 1982, p. 26). However, the importance of the opposite, crowding, effect - habitually neglected in discussions of "over-insurance" against child deaths, via replacement effects above unity - is exemplified by Indian evidence from the early 1970s that, as the birth interval from the previous child rose from "less than 1.5 years" to "more than 4.5", the IMR fell by over 75 percent (Ruzicka, 1982, p. 24).

To test the net outcome of the two effects, 95 post-war populations were sampled, to discover whether "the number of living offspring of women of a specific age is roughly constant in a particular year, regardless of child mortality". It proved impossible to reject the hypothesis that over a woman's lifetime "cross-sectional variation in cumulative fertility is exactly compensating for variation in child mortality", i.e. that positive replacement effects and (normally) negative crowding effects were equal. A Brazilian time-series has similar implications. However, in several LDCs, rural-urban fertility gaps appear to imply overcorrection for child mortality gaps - i.e. if the national replacement rate is unity, it is usually more in rural and less in urban areas (Schultz, 1981, pp. 137-40). That, in turn, seems almost wholly traceable to higher levels of urban education, especially female (and hence later marriage and lower couple fertility), rather than to higher rural replacement fertility at given levels of education (Birdsall, 1980, p. 52). Indeed, micro-studies suggest a substantially greater "derivative of births with respect to child deaths" for urban than for rural areas (Schultz, 1981, pp. 141-3).

Do these links between fertility and mortality help explain why big households now tend to be poor; and/or why poor groups tend to contain persons who live in smaller households? It is tempting to argue that child replacement effect must be highest relative to crowding effect for the poorest, and least for the well-off, because family size and child/adult ratios do increase with poverty (since, as we see on pp. 33-8, family structures and net emigration rates if anything offset this relationship; it

has to be births and deaths that explain it). That tempting argument is unsound. Replacement effect is only one of many determinants of birth-rates; and crowding effect, of death-rates. Indeed, the "derivative of births with respect to child deaths" appears to be higher for the better-off than for the poor (and for Rio de Janeiro than for India); but it is not clear whether this finding (reported in Schultz, 1981, pp. 141-3) nets out crowding effects, viz. the derivative of child deaths with respect to births. If so, the finding is surprising, because it would operate against the known positive link of poverty to household size; but it would not be inconsistent with that link.

We know too little about (environmentally variable?) relationships of poverty levels to (i) fertility, (ii) mortality - even if they are treated separately as if there were no crowding and replacement effects - and a fortiori (iii) the modifications due to (non-linear?) variation with income-per-CU in exposure to crowding effect, and in propensities to insure via replacement effect. Since undernutrition significantly increases death-risk only if severe (Chen et al., 1981; Lipton, 1983), commonsense suggests that crowding effect is greater in the poorest families than elsewhere, and that - if the old-age-security motive is predominant, and the net cost of extra children to the parents small - insurance via replacement effect would also matter most to such families.

(g) Age of marriage and duration of unions

We are fairly certain that - holding education constant - poverty and low status normally characterize people who marry later, cohabit for shorter proportions of their marriage, and are fertile for shorter portions of the periods of cohabitation; but that female education has similar effects, although it normally goes with wealth and status. Inferences from these facts to MHS are fraught with difficulties, however. Why?

For each variable that might be related to mean household size (MHS) - e.g. for mortality, marital fertility, age and duration of marriage - we have to ask three questions. What is the usual sign (+ or -) of the direct relationship, assuming other variables that might affect MHS do not alter? How does the importance of the direct relationship, given its usual sign, vary among sets of households at different levels of poverty (e.g. MEP) and of status (e.g. landholding, job, caste)? Are there indirect relationships, e.g. via the effect of mortality upon fertility, and if so how do these differ among the household sets?

In the case of the two variables so far considered, the third question, that of indirect relationships, could be, if not ignored, reasonably treated as subsidiary. (Thus replacement effect and sib crowding effect have plainly offsetting effects on MHS). Therefore, the answer to the first question, about sign of relationship, was fairly straightforward. So we could concentrate on the second question, differential levels of the variable, and hence directly of MHS, among poverty- and status-groups. For example, marital fertility obviously raises MHS; within the normal range of variation, it is not greatly altered by other demographic variables; so we could concentrate on the inter-group differences in the variable's effect on MHS.

Duration of cohabitation - which is overwhelmingly dependent on age

of marriage - does not permit this simplified reduction of three questions to the second only. It interacts with two variables, household structure and overall (though not greatly age-specific marital) fertility, and therefore has major indirect relationships with household size, raising the third question, and making the second (direct relationships, and the differences in their effect on MHS as between groups of households) hard to sort out. Indeed, by concentrating on one or other indirect effect, some analysts have appeared to turn the answer to even the first question - the sign of the relationship between marriage-age and MHS - into a near-tautology.

Unfortunately, the "tautology", for different experts, asserts relationships of opposite sign! Some argue that later marriage, via longer retention of unmarried children in the average household, must increase MHS: "Assum[ing] that (i) all household heads (HH) are men; (ii) every man becomes a HH if he survives long enough; and (iii) once a man is a HH he remains an HH, [then, because MHS equals total population divided by number of heads of household, we can assert that:] if men become HHs later in life, there will, at any one time, be fewer household heads [and] thus fewer households and MHS will be greater" (Hajnal, 1982, p. 463-4).

Others argue that later marriage, by decreasing average lifetime fertility, must make households smaller: "If the age at marriage falls, [then because over the fertile period the per-woman] birth-rate rises ... MHS will [rise]" (Hayami and Uchida, 1972, p. 499).

Plainly, each of these conflicting propositions can be stated, on distinct assumptions, as a tautology. If births-per-woman are unaffected by age of marriage, and if - to take one set of household formation rules consistent with Hajnal's three assumptions - all children leave the parental home to set up new households if and only if they marry, then later marriage must increase MHS. If children's period of residence with parents is unaffected by their age of marriage, but births-per-person vary inversely with it, then later marriage must reduce MHS. Unfortunately for simplicity, it is fairly obvious that later marriage reduces births-per-woman (for a summary of the strong effects in LDCs, see Birdsall, 1974, pp. 26-7, and 1980, pp. 49 (fn. 4), 57-8) and tends to prolong each partner's period of residence at a parental home. The effects are further complicated by two factors. First, multiple households (fn. 16) retain married sons or daughters for varying periods, and are liable to become smaller - through death of the parent(s) - as the children's marriage age is delayed. This is an important effect where mortality is high; simulations suggest that, under one plausible set of household formation rules, a rise in bride's age of marriage from 19 to 25 reduces the proportion of nuclear households from 62 percent to 54 percent (Wachter and Hammell, 1978, p. 49). (This is especially suggestive in explaining links of poverty to higher MHS, because nuclearity, tending on its own to make later marriage increase family size where mortality is high, is - like both mortality and delayed marriage - associated with poverty: see below, pp. 27-32).

The second complication is that household splitting (whether multiple households are common or rare) often happens for reasons other than marriage, especially migration. Solitary male migration is a very common "life-cycle" phenomenon, especially for the rural poor but not ultra-poor (Sec. (i)). To the extent that later marriage delays the conversion of these one-person,

mainly male, migrant households into married couples later, it reduces MHS, even assuming that the couple's lifetime fertility is unaffected. To the extent that later marriage affects mainly complete families, where the partners had, before their marriage, resided with their parents, the "Hajnal effect" predominates, and MHS increases.

It is my strong hunch - presented as such, in this Working Paper, for critical review - that in the fairly long term Hajnal effect is overwhelmed by the effect of early marriage in raising female lifetime fertility; so that early marriage indeed goes with larger family size. This hunch arises because there are so many ways to escape the assumptions required for the Hajnal effect. Children can split from the parental household before marriage, e.g. by migration; and they need not split from it after marriage. The number of CUs that can be supported by a household's main occupations - and possibly the size of the house, to judge by evidence from both Nigeria and Karnataka (Caldwell, 1982, pers. comm.) - substantially affects, for the poor perhaps largely determines, the number of adults it supports over and above the parental couple. Later marriage would, therefore, by adding temporarily to the size of the parental home, induce offsetting factors, viz. a greater propensity by the parents to encourage migration by unmarried children, and a lesser propensity to retain the married couple in the parental home for any significant period. It is, however, not nearly so easy to offset the increase in size due to higher fertility and more small children, especially in a nuclear family. So in what follows it is assumed, plausibly but of course pending proper testing, that in the fairly long run MHS-increasing effects (via more births-per-woman) of early marriage in a group strongly outweigh MHS-reducing effects (via briefer retention in the parental home of potential new heads of small households).

Historical, and to a lesser extent recent, work suggests that later marriage accompanies bad harvests, recessions, and - given the level of education - cross-sectional poverty (Cassen, 1978, pp. 22-30; Schultz, p. 13; Laslett, 1971, p. 86, and 1972, p. 154; Birdsall, 1974, pp. 27-8). Historically, prolonged resident service was a major factor enlarging MHS in richer, and reducing it in poorer, households (see below, Sec. (k)) - a factor closely connected to delayed marriage by the poor (Hajnal, 1982, pp. 482-3). Resident service is normally much less important in today's LDCs than historically in the NDCs; this weakens one major factor associating poverty with later marriage (and hence, we hypothesize, with smaller MHS). Moreover, education is spreading; it is strongly linked (i) to higher income or MEP (and less strongly, to higher status, job or asset position), and (ii) to delayed marriage; both the links are strongest for female post-primary, but are not confined to that form of education. For example, for a large sample of wives in Kerala in 1980, the regression coefficient upon "years of schooling" (holding desired family size and KAP constant) of "age at marriage" among women aged over 25 was 0.69 ( $F = 5.5$ , sig. at 5%); "educational achievement is the principal determinant of age at marriage [which] showed an increase of 3.7 years over a 25-year period". Since "for a boy, his chance of receiving a good dowry is much brighter ... when he completes his education", and since this "chance" is anyway much likelier to be important for persons of higher income and status, the spread of post-primary education associates delayed marriage (and hence, we hypothesize, lower MHS) with better-off people - reversing the historical association - even where such education is

overwhelmingly male; this can be inferred from the strong association, in the Kerala data, between higher caste, higher MEP, and age of bride at marriage even holding her schooling constant (Zachariah and Kurup, 1982, Tables 4-5 and pp. 20-22).

While age of marriage is the main channel through which duration of cohabitation influences inter-household variations in MHS - the incidence of illegitimacy, historically in NDCs (Laslett, 1971, p. 142) and currently, we suspect, in most Asian and African communities being rather small, well below 5 percent - also important are duration and interruption of marriage. In most of Africa, migrant male mineworking - and in much of Latin America, migrant female domestic service - often leaves single, widowed, divorced or abandoned women. These tend to be poor by association with three things: their status and its socially ascribed disadvantages, their own or their husbands' type of unskilled labor, and their households' high dependency ratio. In section III(c) below, we show that much of the excess poverty of female-headed households - which are normally smaller than male-headed households - is associated with their heads' greater propensity to be widowed, divorced or "abandoned", a factor obviously also responsible in part for the household's smallness, both by definition and because the male's absence probably reduces incentives to children to prolong their own stay (e.g. inheritance). In a Central Javanese village in 1972-3, among the poorest women aged 40-44, one-quarter of potential reproductive time had been lost through marital disruption, as against 9% for middle-income and 2% for better-off women (Hull and Hull, 1976, p. 23, fn.)

This curtailment of unions may be as important as the numerical effect of an absent spouse in "linking" the relative smallness of female-headed households to their relative poverty. In general, marital fertility seems to outweigh duration of unions - at least as represented by the main component of the latter, age at marriage - as an influence on how income-groups or status-groups differ in respect of the number of children ever born to a couple. In rural Karnataka in 1961, in households of "laborers and temporary tenants" a 9.2% higher proportion of women aged 15-44 were married than was the case in the households of less-poor (top 70% by land-holding) owner-cultivators and permanent tenants. However, per 1,000 currently-married women aged 15-44, the former group had 12.6% fewer births (Mitra, 1978, p. 213). Income-specific evidence, within groups or otherwise, for India is not available, but education, literacy and urban residence - all independently associated with later marriage (Cassen, 1978, p. 51) - are all linked also to higher income, both as between job and status groups and within them. But the link of mother's education and literacy to fertility decline is stronger than their link to age of marriage. Through both routes, the low level of female education among the poorest may alone go far to explain their large families.

(h) Complex households: larger, but rare, especially for poor and low-status

Household complexity in most LICs probably takes two main forms: lateral extension of several married siblings, and multiplicity of couples from successive generations (normally because one or more married children stay in a parental household). Complexity normally increases a group's MHS. Complexity is held by some to be bad for "development" and to be associated

to share income with related couples who are less energetic. Others claim that complexity is good for "development", because each couple provides insurance to others in the same household, and thus encourages risk-taking (presumably pooled reserves could permit other scale-economies also).

Our concern is not to adjudicate these disputes, but to ask whether complexity can help in explaining the correlations of high MHS with household poverty (now), household affluence (historically), and/or high status, job and asset positions (now and historically). However, the disputes are relevant to these questions, for three reasons. First, if complexity were clearly "developmental" (or anti-developmental), then - assuming at least some of the benefits to be internalized - that would create long-term links of complexity to affluence (or poverty), at least in growing economies. Second, settlement of the disputes would have major policy implications, for the sort of family structure (and implicitly MHS) which investment and incentive policies should seek to reward or penalize. Third, the disputants often each imply a teleology, in which "development" would lead to major falls in complexity (and probably MHS), especially in more-successful and less-poor household groups, if complexity impeded development incentive - or to rises in complexity and MHS, again especially among the non-poor, if complexity assisted development via insurance.

Both the pro-complexity and the anti-complexity view are unhistorical, and rather unempirical. Both are unhistorical, because they see complexity or nuclearity as a given condition, tending simply to change the pattern of growth, poverty and development - whereas most sociologists increasingly emphasize how such societal norms are flexible, and adaptive to economic circumstance, even if supported by quite elaborate structures of norms or theologies (see, for instance, Rudolph and Rudolph, 1967). And pro-complexity and anti-complexity are unempirical, because they look neither at forms of activity - small farming, rural carpentry, urban hawking? - in order to identify the sectors and places in which complexity (and other determinants of higher MHS) increase or worsen the prospect of escape from poverty, nor at the evidence about the levels and trends, in various circumstances, of complexity itself.

Such historical evidence as we have suggests that multiple or extended households in pre-industrial Europe, even Eastern Europe - except Russia and Serbia - seldom accounted for more than 10-20 percent of homes and 15-25 percent of persons; that, cross-sectionally, such households were, and are, especially rare among the poor; and that there is no systematic relationship, in time-series, between complexity (in its various forms) and the various indicators of household poverty-reduction or "development". The process of "Sanskritization" (Srinivas, 1962) - of imitation by poor households, as poverty recedes, of the styles of life common in higher-status exemplars - extends far beyond Hinduism or India, and may today push the urbanising or self-enriching household towards complexity, at least as strongly as the clear links between MHS and poverty push it the other way. In any case, it is clear that the cross-section association of poverty and nuclearity has not (in any low-income society for which we have evidence) yet been overborne by any time-series dissociation between them that might exist.

Complex households are likely to be bigger than others. In Aidan-ka-Was, Rajasthan, in 1961-2 - a village of 47 households and 303 persons - all eleven households with nine or more members, containing 37% of the village's population, were complex, as against 13 of the 24 households with 5-8 members (49%), and only one of the twelve smaller households (14%) (Choudhary, 1964, pp. 137-40). In the early 1970s, "complex" MHS was 14.9 persons in Mali villages, and "nuclear" MHS was 5.1 (about half the households being nuclear). Comparable figures in three Northern Nigerian areas, each for three villages, were 7.1 and 4.9 in Sokoto (72% nuclear); 10.9 and 6.2 in Zaria (51% nuclear); and 7.5% and 5.1% in Bauchi (64% nuclear) (Norman *et al.*, 1981, pp. 21-2). In two Bangladesh villages the gaps were smaller: 7.42 (5.86) in Bhatpara, 7.26 (5.99) in Bhabanipur (Khan *et al.*, 1981, pp. 8, 10).

Does the larger average size of complex households mean that groups - by location, status, MEP, etc. - with a bigger proportion of complex households will usually show higher MHS? It need not follow, for familiar reasons of "ecological fallacy"; for example, a community, initially comprising entirely nuclear households, could - while maintaining the same total number of households and persons - transfer members from some nuclear households to other related nuclear households, making the latter complex (and bigger in MHS than the former), but obviously without changing community MHS. A cross-section version of such a situation, indeed, must underlie the claims for England (1574-1821) that "mean household size in a community does not appear to be correlated at all highly with" the proportion of complex households (Laslett, 1972, p. 126; a similar lack of relationship among Indian groups is posited by Shah, 1968). Yet in reality, for 64 English communities in 1574-1821, the simple  $r$  between MHS and complexity, averaging Laslett's two indicators of the latter, is  $+0.3412$  (Laslett *et al.*, 1978, pp. 70-73). The three villages in each of three Nigerian areas (Norman *et al.*, 1981, pp. 21-2) show a close relationship between MHS and complexity, though  $N = 3$  is too few to conclude much! Anyway, the link of complexity to MHS is stronger across groups than across places.

How strong is the inference from a group's high degree of complexity to its high MHS? This must partly depend on the extent of endogamy within that household group. Pressures within a caste, status-group, or asset-owning group tend fairly strongly towards endogamy; much more weakly so, for an income, MEP or occupational group; and for many localities, such as Indian villages, the pressures are towards exogamy. The "more endogamous" a group, the likelier it is that high MHS among its subgroup of complex households is "purchased" at the cost of lower MHS among its (complement) subgroup of nuclear, including sole, households; though if this "purchase" goes far enough it eliminates some of the smaller nuclear households, e.g. by retaining married offspring inside the parental home.

In general, however, for both households and (less certainly) household groups, greater complexity accompanies greater size. Before we show that complexity also goes with lesser poverty and higher status - in cross-sections, but not clearly in time-series - we need to examine whether complexity is at all "important". The incidences cited from Africa and India on p. 29 suggest that significant proportions of households - and even more, given the larger typical size of complex households, of persons - are affected

by complexity at any moment of sampling; and since the couples heading many nuclear households, at any such moment, have previously been embedded in an in-law's home (and have then turned two nuclear households into one complex household), a substantially larger proportion of households has had some experience of complexity during its family cycle. However, there is some reason to believe (A. Shah, 1968) that our scanty Indian village data somewhat overestimate the average rural incidence of complex households. Epstein obtained 8-10% for two Karnataka villages in 1953, which "conforms to the all-India picture" (A. Shah, 1973, p. 199), but a rather higher proportion, say 15% nationally, may be applicable: cf. the 20-29% estimated from a small sample of studies by Kolenda (1968, p. 390) and the 32% in Shah's Gujarat village (*ibid.*, p. 27).

Certainly, in the history of most NDCs, Laslett's teams have demonstrated that complexity is far less important than was once believed. Of 64 relatively well-documented English settlements (sampled data range from 1574 to 1821), about 8.6% of households were "solitary"; 3.2% "no family", including a few unmarried or widowed siblings; 71.2% nuclear; 11.9% extended; 3.7% multiple; and about 1% indeterminate (Laslett *et al.*, 1978, p. 74). One in six households, and perhaps one in four or five persons, lived in complex households. Other pre-industrial NDCs, except in Serbia and parts of Russia, appear to show a similarly small incidence of complexity, very seldom reaching 25% of households (Dupâquier and Jadin, 1972, pp. 290-1, for Corsica; van der Woude, 1972, pp. 306-7, for the Netherlands; Andorka and Faragó, 1983, pp. 288, 293, for Hungary; Schmidtbauer, 1983, pp. 364-6, for Austria; Danhieux, 1983, p. 414, for Flanders). Simulations of the effect of quite large changes in mortality (Wachter and Hammell, 1978, esp. p. 48) show that this low complexity cannot be attributed, to any significant degree, to high death-rates among families "wanting" to remain complex - e.g. by a high risk that heads of multiple households, who are mostly fathers sharing a house with their married children living at home, would anyway be old enough to die soon. A low incidence of complex households is due mainly, not to demographic variables (though marriage-age is of some importance), but to a preference for nuclearity.

There is, however, evidence associating such preference with high status, asset, and job positions; for India, perhaps surprisingly but quite clearly and understandably, 22/ with absence of industrialization and urbanization; and to a lesser extent with poverty (lower MEP).

Shah demonstrated the linkage of high caste status to complexity, both for his Gujarati village in both 1955 and in 1821 (A. Shah, 1973, pp. 93-101; see also Kolenda, 1968). He also indicates that complexity is linked with urbanization, and perhaps industrialization also (see especially Lambert, 1963, for Poona), from a wide range of almost unanimous quantitative studies, for post-Independence India as a whole (*ibid.*, pp. 148-51).

Other historical and recent data confirm this. In England from 1570 to 1820, great houses were much likelier than the poor to have complex households (Laslett, 1971, pp. 95, 181; 1978, pp. 93-4) Data for Romans, S. France, in 1586 confirm this (Ladurie, 1979, p. 4). In Florence in 1427, 22.7 percent of the 427 richest households contained two or more nuclear family units, as against 6-9 percent of 9374 other households (Klapisch, 1972, pp. 277, 279). The data in the 1983 papers reported above (p. 30) provide

unanimous support for the link between complexity, status and affluence from pre-industrial NDCs. Similarly, a review of post-war African and Asian data concludes that "households ... consisting of kin and non-kin generally occur among richer individuals" (Goody, 1972, p. 122). In Aidan-ka-Was, Rajasthan, in 1961-2, the scheduled castes (the likeliest "poor group") were mainly nucleated; but 19 out of 32 intermediate (mainly farming) castes were joint (Choudhary, 1964, pp. 137-40). In Patadia village, Gujarat, in 1963, the 71 scheduled-tribe families (plus the non-Hindu family) were split 50-50 between complex and nuclear; but ten of the twelve non-scheduled Hindu families were complex (Shetty, 1963, p. 40). In urban Malaysia, poorer households also tended to be simpler (Mazumdar, 1981, pp. 4-5). In rural Bangladesh, 66% of nuclear (but "only" 47% of extended) families in Bhatpara village cultivated below one acre; the respective proportions were 81% (75%) in Bhabanipur village (Khan et al., 1981, p. 8). 23/

What are the mechanisms? First, extendedness - where feasible - may well decrease risk of poverty given family size. For example, in three N. Nigerian villages in 1974-5, all six large nuclear households (over 9 residents) were among the poorest 30% of all households by income-per-CU, as against 7 of the 19 large - and 1 of the 5 largest - extended households (Matlon, 1979). This may be linked with economies of scale in consumption (Sec. IV (d)).

Second, poverty accompanies nuclearity partly because both go with low workforce/dependent ratios. In a 1975 urban sample in Malaysia, "joint households help families escape from poverty, because [they] add more to earning strength than to dependency" (Mazumdar, 1981, p. 359). In nine N. Nigerian villages, extended families averaged about 25% fewer dependents per male adult than nuclear families (Norman et al., 1981, p. 22). This could mean that (i) extended families are less prone to child mortality, or less fertile, than nuclear families; or that (ii) extended families are easier to form and keep together when the various nuclear couples have few small children. If (i) occurs, it is an effect (rather than a cause) of a low incidence of poverty; extended families, because less likely to suffer from very low income-per-CU, would indeed be expected to show lower child mortality than nuclear families. As for (ii), the evidence does not show any systematic relationship - given the level of income per person or per CU - between nuclearity, or extendedness, and low (or high) fertility (Nugent and Walther, 1981, p. 14; Mitra, 1978, pp. 224-5).

Third, the complex household can be a sign of status, to which people aspire as their status increases. This is associated with "Sanskritization" in India, and helps to account not only for the close relationships of complexity to higher castes, but also for its persistence, even increase - though not from a high base level - with growth, industrialization, and urbanization (A. Shah, 1973).

Finally, there are the three major "economic" explanations of "multiple downward extension" (Laslett and Wall, 1972, pp. 30-31) - married children living in a household of which one of their parents is the head - which, even if itself short-lived, is probably the starting-point of most household complexity. Two of these explanations explicitly suggest that particular groups of not-very-poor people would be likeliest to be involved.

One theory suggests that extended families are most common where the experience of the elderly is rendered valuable by environmental uncertainty or fluctuation. Across Indian districts, high farm profit variability is significantly linked to the incidence of extended families. Farming families, especially in risky areas, would then be more prone to "extendedness" than (normally poorer) labor households, and so it turns out (Rosenzweig and Wolpin, 1979, p. 4 and Table 4).

Another explanation of why better-off people are less unlikely to have complex households is wealth transfer - the "will-shaking" theory of household complexity (Butler, 1903). Less-poor fathers can keep their working children on the family farm (or in the firm) by the lure of inheritance; the poorest, in particular, have little to pass on. "Poor men's gandaye [extended family farm systems in Northern Nigeria] effectively collapse because their sons migrate, concentrate on outside work, or fail to obey them" (P. Hill, 1972, p. 147). Inheritance rules, written or implicit, in many communities stipulate "that children live with and care for their parents", and types of joint household have been empirically linked to types of inheritance system that promise advantage to the younger members (Nugent and Walther, 1981, p. 18).

These two explanations - experience and will-shaking - address the question of why a son or daughter might prefer not to nucleate upon marriage; both favor non-nucleation much more in households with heritable assets. (So does the obvious fact that a multi-couple household is more tolerable if it can afford to allot each couple a separate bedroom.) The other common explanation, search for security in old age, addresses the question of why the parents might seek a non-nuclear solution. Since absolute risk aversion increases as income-per-CU falls, and since the poorest have fewest prospects of a secure old age unless supported by their family, parental demand for extendedness is presumably highest among the poorest; yet we know that extendedness is least prevalent there. Therefore, the correlation, with poverty, of parents' "demand" for extendedness must be outweighed by the correlation, with affluence, of married children's "supply" (given the "income-elasticities" of the two functions).

Extended families tend to be bigger and better-off than nuclear families. They therefore could help to explain why higher-status groups tend to have larger families. The evidence from Patadia and Aidan-ka-Was, locating high propensities to extendedness as a characteristic of such groups (rather than of individuals), supports this; so does Shah's evidence, and so do the frequent links between social group membership, type and scale of asset holding, inheritance system, relevance of experience of elders, and family type. But why do the poor in total populations have bigger families? Here, extendedness seems to point the wrong way, for it is less frequent among the poor. If extendedness is a norm for groups - the high-caste, the landed, etc. - and is only weakly linked to poverty if status is held constant, that "wrong pointer" is removed, but the data do not cast any light on this issue.

(1) Migration: the relationship to differences in MHS

If an individual is likelier to migrate from poorer - or lower-status - households than other households (even without thereby changing them from complex to nuclear in form), then such emigration would tend to make these households of origin smaller than others. Since individual migration in MICs is concentrated among single young persons, their households of destination would also tend to initially (and for the first few years afterwards, perhaps) to show both relative-status and MEP characteristics similar to those of the households of origin. Thus migration - at least of some important types - tends to reduce MHS in the status and MEP groups that are more affected by it, or among which it is becoming more important relative to other groups.

Before looking at the evidence, and the impact on poverty-status-MHS relationships, we should stress that they are almost unaffected by the three main sorts of migration - all largely intra-rural - in LICs. Marriage migration (usually for a few miles only, to meet the requirements of village exogamy) remains much the likeliest explanation of any observation that a person in India (Bose, 1967), and probably in most other LICs, lives away from his or her birthplace; although one can build models where marriage migration is associated with systematic differences in MHS by poverty or status, such models are not plausible. Total household migration appears to be less important, as a share of long-term migration, among the better-off than among the poor (Connell et al., 1976, pp. 12-13), but it, too, would not seem to alter the migrant households' MHS. Temporary migration for a few weeks, usually to seasonal farmwork, is similarly "poor-selective" (ibid., pp. 79-80, 122-3) but by definition leaves inter-group variations in "normal" MHS unaffected - though it could help explain low MHS among laborers in peak-season surveys!

Therefore, in asking whether migration affects MHS differently among poor and others, or among low-status and others, we are enquiring mainly into long-run, individual (as against household), non-marriage, and mainly rural-to-urban migration - hereafter "LINUM". Prior to this enquiry, three facts should be stressed. First, the proportions of LIC - as opposed to MIC - populations who undertake LINUM, and hence the rate of urbanization and the urban shares in most LICs, are quite small (Lipton, 1982). For example, in 1961 only one Indian in 33 was for any reason a rural-born town-dweller (Bose, 1967), so these persons are unlikely to account for much of the very strong size-poverty or size-status links.

Second, LICs show a quite new link between LINUM and poverty-status-MHS relationships. In most pre- and early-industrial NDCs - and even now in Latin America - LINUM tended to produce female-headed, and hence (p. 13) relatively small, urban households. In today's LICs in Asia and Africa, LINUM is predominantly young and male (Connell et al., 1976, p. 39). Since migrating male-headed households tend to be larger, and for other reasons also, such migration does not appear to counter the tendency for urban households, especially among poorer persons (Table 2), to be at least as big as rural households in LICs. 24/

Third, the effects on the poverty-status-MHS links from LINUM are not only small and historically novel, but also very complex and hard to isolate

from other factors. Thus (i) an MEP-decile or status group, exposed to an unusually high rate of such migration, would show below-average MHS in originating households, if other things were equal. However, they are unequal, because multi-sibling households and persons of higher birth-order are more prone to emigration (Connell *et al.*, 1976, p. 46). LINUM therefore tends to be higher from households with high MHS (Harbison, 1982, p. 232). Indeed, this even shows up as somewhat above-average MHS, even after LINUM, in the originating households (Lucas, 1982, p. 19, for Botswana). As for the effect of an above-average LINUM upon a group's MHS in destination households, it is presumably positive if migrants join kin, negative if they set up new one-person homes. Moreover (ii) LINUM selects the fairly-poor and fairly-affluent - principally young men from the second-highest and second-lowest quintiles of households by MEP - from unequal villages. Further, (iii) these migrants tend, respectively, to be students (or persons following relatives in a "chain" to assured jobs), and work-seeking "step" migrants (Connell *et al.*, 1976, pp. 198-200) - so even LINUM is not uniform in type. Finally, (iv) successful LINUM migrants - and they are many, since LINUM selects risk-takers, the better-educated, and people with better information - move up both MEP and status scales, while unsuccessful ones often return (daVanzo, 1982, pp. 115-7); both groups change MHS in the process.

As far as urban households are concerned, recent ones, formed by immigrants or otherwise, tend to have lower MHS. Are they also poorer? It appears to have become almost a new conventional wisdom that the urban poor, recent immigrants, underemployed, and informal workers are practically non-overlapping groups. At least, it seems to be suggested, membership of any one group renders membership of any other less likely (Bromley, ed., 1978; Lloyd, 1979; Mohan and Hartline, 1980). If this were so, then the normally smaller families of recent migrants would be linked to lower risk of poverty.

However, the evidence for the new view is primarily Latin American, and even there it is thin. In Africa and South Asia - in the LICs especially - detailed survey work confirms that recent urban immigrants are likelier than other urban persons to be young men with no, or small, households; to be unemployed, informal, or casual in workforce status; and to have low income-per-CU (Papanek, 1975; Sabot, 1977; Lipton, 1983a, Sec. III. d.4). At the urban end, in countries with substantial poverty, destination households for LINUM therefore tend to "link" poverty and low status - relative to settled urban households - with lower MHS. (Clearly this is overwhelmed by other, non-migration linkers, for urban MHS is strongly and positively linked to poverty: see Table 2).

At the rural end, we have crudely characterized above the households most liable to LINUM. The poor, rather than the poorest, are pushed out into a wandering, probably increasingly rural, quest for work; the modestly better-off, rather than those tied to substantial rural assets, are able to support temporary costs of their sons' "pull" migration towards urban schools and jobs. What is the impact on rural households' size-poverty nexus from such migration patterns?

For Rajasthan and Gujarat, medium-term migration of individuals from households is significantly contributing to reduced MHS in some villages. For 11 villages, average household size and the proportion of out-migrants to the

population of reporting households are inversely related ( $r = -.6154$ , significant at 5%); the same relationship holds for student and working migrants separately (Connell *et al.*, 1976, p. 193; household size from Tables 1-3 of this chapter). <sup>25/</sup> Thus - although at household level it is the bigger households, with more siblings, which tend to become smaller via emigration - villages with substantial emigration, at least in this Indian data set, average lower MHS.

Which rural households can get smaller, and so perhaps escape poverty, by this process? Agricultural laborers, at least in North and East India, appear to migrate (i) as total households rather than as individuals, and/or (ii) for temporary rural, rather than medium-term urban, settlement. It is in the intermediate castes - including the main "dominant" farming castes - that fairly high emigration rates reflect the chances for better-off households to reduce size and increase income (*ibid.*, pp. 187-8).

In rural areas, therefore, migration helps to link poverty to large MHS within the intermediate castes, and therefore within total populations. Small MHS among laborers, as an occupation or as a caste-linked group, is not as such associated with total migration; but laborers' relatively greater poverty (and hence shortage of information, education, and risk-taking capacity) is associated with types of migration - seasonal, step, or total-household - offering relatively unpromising prospects. Thus, as between rural groups, emigration does not help to link smallness (among labor households) to poverty, because it is the less-poor non-laboring castes that are likelier to reduce MHS via emigration.

Thus, in towns, migration helps explain the link of low-status groups to low MHS, but makes it harder to explain the link of poverty to high MHS. In rural areas, the opposite applies. But in either case, since only LINUM has obviously major effects upon MHS and is itself rather small (p. 33), the contribution of migration to poverty-status-MHS links is smallish also.

Finally, individual migration (tending to decrease MHS) and joint or extended families (tending to reduce it) often go together. Hence, among any particular set of households, they offset each other's impact on family size as a cause of poverty. Extended and joint families provide structures favorable to - and empirically are correlated with (Connell *et al.*, 1976, p. 48) - the trying-out, communicating, initially risk-bearing and -sharing, ultimately portfolio-diversifying process of chain migration (Stark, 1975). Conversely, in Northern Nigeria, nucleation, male gandu, and female pardah combine to prevent any but short-term, seasonal migration (Connell *et al.*, 1976, p. 48).

#### (j) Family cycles and MHS

The history of most couples and their offspring - from marriage, through the period when there are small non-earning children, to the time when children increasingly augment family income, and ultimately to the departure of the children from one or both surviving parents - may link poverty or status to MHS in two ways. First, family history may affect poverty (or status) and MHS together; for example, it is often claimed that the completed but young family and the single-member, especially widow, family are

particularly likely to be poor. Second, the different household formation patterns of groups, in a society, with distinct status or affluence - for example through later marriage, or greater household complexity, among the better-off - may give such groups distinct family histories, and hence MHSs. Both effects vary among societies and over time, and can be drastically altered by "the requirements of domestic production" (Sieder and Mitterauer, 1983, pp. 339-45) or by an unbalanced sex-ratio (Wall, 1983, p. 473).

Ideally a long-term panel survey is needed to investigate these two effects. Lacking this, we can examine age of household head, child/adult ratios, and reported marriage age in various group, though we then risk misreading genuine societal change as "merely" a difference between older and younger household heads, etc. The overall discussion of family cycles, as they interact with poverty and status, is left to Sec. III(d), but two conclusions from that discussion are relevant to our topic here - the effect of the family cycle on poverty-status-MHS links. First, the cycle seems to have much less relationship to poverty in most of today's LICs than in pre-industrial history in most NDCs (p. 54; cf. Hajnal, 1982). Second, in several Indian villages, poverty is attributable to the family-cycle to the extent that jobs and land are not automatically ascribed to persons born into a particular lifelong status-group, viz. a caste (pp. 54-5).

The first finding reduces somewhat the likely power of family-cycles - unless they are very different among groups in an LDC community - to explain poverty-status-MHS relationships there. The second finding, however, could help explain why groups rigidly "condemned" to low status and poor earnings prospects keep small MHSs. Parents in such groups see little prospect that maturing children can overcome the barriers against training for, or entry to, lucrative trades or professions. They may thus see little gain from having many children.

The "old" end of the life-cycle in LICs is clearer: it has very little to do with poverty-status-MHS links. Contrary to the experience of rich countries today - and with one major exception, that of widows in some Islamic societies - the old, unsupported, single-person household of low status is not a major source even of relative poverty, though micro-level evidence seems to be limited. In two village surveys, from the 1960s, in each of two Indian States (Rajasthan and Gujarat), single-member status is quite a good proxy for "widowed or deserted" and "old and alone" phases of some life-cycles. Some 7.7% of the 983 households in these four villages are single-membered, but these contain only 1.5% of the 5,200 persons. Among scheduled castes and tribes, 9.2% of the 130 households, with 1.9% of the 621 persons, are single-membered (R. Patel, 1964, p. 71; and 1964a, p. 421; M. Desai, 1966, p. 37; anon., 1971, p. 30). These differences (non-significant at 5%) are less than one would expect from the smaller average size of scheduled-caste households. These phases in the family cycle, at least in these villages, contribute very little to the extreme poverty of the scheduled castes and tribes. In Kerala (Caldwell *et al.*, 1982, pp. 28) this may be because isolated widowhood is so parlous for the poor that they go to great lengths to avoid it.

As for occupation-linked poverty, only one village survey each in Rajasthan and Gujarat shows single-member families by main income source. While 11.0% of all 372 households (and 2.1% of 1,939 persons) in the two

villages had single-member status, laborers actually featured lower incidences - 5.5% of 110 labor households, 1.1% of 541 persons (Patel, 1964a, p. 43; anon., 1971, p. 31). These are only a few villages; but it does not look as if the family-cycle phase that creates single-member households, in rural India at least, is a major reason why either laborers or low-status social groups are very poor despite small household size. The reasons for believing that this is more generally true are the negative empirical link in several LICs between age and risk of poverty (Sec. III(b)); and the need for old single non-workers, where there is no social security, to subsist from savings or family support, in either case breaking the link with relative poverty that is assumed in Western societies. The absence of a clear, stable or consistent link between poverty-risk and age of household head, both among laboring and among cultivating households, is confirmed by Gaiha's rural Indian sample for 1968-70 (Gaiha, 1973, Tables 18, 19).

However, some evidence that the prime-age phases of the family cycle contribute to both the within-group and the total-population relationships of poverty to MHS is considered in Sec. III(d). In a sense, indeed, the argument that - since most families in most groups are nuclear - the phases when a household contains many small children "pulls together" poverty and high MHS does not require elaborate empirical support.

We can also be confident that family cycles mean that point surveys overestimate (i) disutility due to poverty, and (ii) association of poverty with inequality. Both are weakened to the extent that the members of the "poorest decile" - for example - of households by income-per-CU at survey time are not always in that decile. Good and bad luck alone make this likely; systematic family cycle variations strengthen the likelihood.

However, great caution is needed in attributing poverty or affluence, or big or small households, to "the" family cycle. It varies across cultures - though the small nuclear family norm, especially for poorer households, is widespread - and within societies. Also, as the evidence on age of marriage (pp. 25-6) shows, family cycles can be much altered, even in a given group, by economic incentive and stress. The direction of family-cycle effects on poverty and MHS in mid-life is fairly clear, but their size may be small, as we shall see on p. 54.

(k) Non-family members, MHS and poverty

In NDC pre-industrial history, recent research shows that an astonishingly large proportion of persons appears to have been resident as servants. This residence substantially, but not totally, accounted for the positive MEP-MHS relationship then prevailing; the much smaller role of such resident servants in today's LICs partly explains the negative relationship found there today. Furthermore (Hajnal, 1982) the frequency of service by young unmarried persons in much of pre-industrial Europe was associated with later marriage among the poor; because the poor enter much more rarely into such service in today's LICs than in NDC pre-industrial history (while the well-off more commonly enter into higher education), it is now the better-off who tend to marry later (pp. 24-7). So the whole question of family size - and family cycles - as it affects status and poverty, is tied up with the pattern of non-family membership of households.

Among the hundred English communities in 1574-1821 with the most reliable data, servants comprised 13.4% of persons - presumably 20-25% of workers; and 28.5% of households had servants (Laslett, 1972, p. 152). In 1748-9, in two Dutch provinces, the proportions were 14% and 12% (van der Woude, 1972, p. 308). Evidence of large numbers of servants in pre-industrial NDCs has been compiled for places with mostly nuclear families (Hajnal, 1982, pp. 456-7, 470-4), but even in Belgrade in 1733-4, where complex households were quite common, 10.3% of persons were resident servants (Laslett and Clarke, 1972, p. 379). Servant proportions seem to have fallen sharply with or before early industrialization, and as between country and town (Wall, 1983, p. 497; Hayami and Uchida, 1972, p. 504).

Data from today's LICs very seldom show anything approaching this incidence of resident servants. In the Census of 1951, all unrelated persons formed only 1.2 percent of India's population; in rural China in 1929-31 the proportion was even smaller (Hajnal, 1982). Resident servants appear similarly rare in the intensive micro-studies that I have surveyed, especially from India and Northern Nigeria. (This rarity is most unlikely to be due to any great extent to the alleged concealment of bonded labor from enquirers (P. Hill, 1982)). Several reasons seem plausible. The higher person/land ratios of today's LICs make it more costly to accommodate a servant (relative to hiring a laborer) than was the case in pre-industrial NICs. Today, too, the better-off have more access to labor-saving domestic devices. Also, higher rates of child survival may now help more of the better-off to meet family labor needs without servants; in a village in West Flanders in 1814 (Danhioux, 1983, p. 418), and in an Austrian village even holding the employer's economic status roughly constant (Schmidtbauer, 1983, p. 355), more servants normally went with fewer children aged over ten or so. 26/

Servant status itself, too, was sharply life-cyclical in most pre-industrial NDCs: for instance, in seventeenth-century Austria, 35% of all servants of known age were under 19, and 46% were aged 20-29 (Schmidtbauer, 1983, p. 358). The great majority of resident servants were of one sex - sometimes female, e.g. if servant work overlapped with textile artisanship as in Bruges, Belgium, in 1814 (Wall, 1983, p. 461), perhaps more usually male; and servant families in residence appear to have been unusual (Schmidtbauer, 1983, pp. 359, 362). Therefore, servant status historically delayed marriage for the poor. Societies where 10-15 percent or more of persons were resident servants, therefore, reduced MHS among the poor in two ways. First, adolescent sons went into service and transferred residence to richer households. Second, they thereby delayed marriage and reduced completed family size. Demonstrably, this was a major reason why in NDC pre-industrial history poor households were smaller than others; and similarly, the decline of resident service - accompanied by education that selectively defers less-poor children's marriages (pp. 26-7) - pays a big part in the reversal in today's LICs of the traditional NDC link between poverty and small MHS.

To a small extent, migration in today's LICs may have replaced service as a "rite of passage", enabling big poor households to shed, for a while, unmarried sons. But migration is far less powerful than service in reducing poor households' MHS relative to other households. First, children from some rich households migrate too. Second, while migration is like "going into service" in reducing the size of the poor household of origin, only the

latter also increases MHS in the (wealthier) destination households. The power of this second, double, effect, can be inferred from a single village in Kent, England, in April 1676 (Laslett, 1971, p. 66). Of the 178 persons in the 29 homes of "gentry and yeomen", 49 were servants. Not one servant lived among the 53 persons (24 households) of "laborers and poor men". Probably, these households were so small in part because many of their children were in service with better-off households.

(1) Poverty, status and family size: some pointers

Poor households, more than others, need the "degrees of freedom" supplied by ability to make overt, explicit choices, with predictable outcomes, in regard to variables influencing MHS and household composition. Yet poor households are less likely to get such freedom. For example, fewer poor households are complex. Complex households can provide insurance to each couple (support by the others in sickness or other mishap), scale-economies in consumption, and reserve labor (especially if such households feature relatively low fertility or child/adult ratios: Laslett, 1972, p. 56; Andorka and Faragó, 1983, p. 306); or can split into simple households when these advantages of complexity are outweighed by drawbacks. Voluntary and "pull-induced" migration; controlled spacing of births; choices of the age of marriage or of the time when post-primary education (or of service or apprenticeship) takes an adolescent or young adult out of the parental home: all these choices affecting MHS are least accessible to poor households. Yet poor households most need these choices, to help them plan to avoid dangerous periods of stress, in which MHS might overstretch supportive working capacity (given the household members' ages, the demands and rewards for their economic activity, and their mutual domestic requirements).

On the other hand, poor households, more than others, suffer if affected by uncontrolled variables changing MHS, and altering the planned balance between needs and production capacities. The "Yale school" (Schultz, 1981) persuasively argues that most households, rich or poor, act as if the parents planned the demographic variables, including, by implication, the time-path of MHS. However, the variables listed above - complexity, pull-migration, later marriage, out-of-household training - are in today's LICs usually much less open to poor couples than to rich couples. In deciding how many children they want, and perhaps sometimes even the care or food that each sex of child will receive, poor couples remain able implicitly to act as if they "chose" other variables - the central demographic ones of fertility and mortality - determining the time-path of MHS. But these latter choices are much more uncertain than the "rich couples' chooseables" in the previous paragraph. For example, by remaining complex, a household almost ensures, for some years, bigger size and different structure than if it had split into simple nuclear households; but by controlling fertility, especially with pre-modern means of birth-control, a sexually active couple implicitly "chooses" the expected value of MHS (along its time-path) only with a very high coefficient of variation.

The greater capacity of richer households explicitly to choose, with low uncertainty, variables adapting MHS time-trends to those of available consumables is strengthened by two factors. First, richer households are better able to buy information, e.g. about birth-control methods or migratory

prospects. Second, richer households are less pressed than poor households to adapt choices affecting MHS to short-run requirements of production and earning - e.g. to the need for young teenagers to contribute family income (in excess of their consumption) by performing particular tasks - and can thus emphasize consumption-MHS balances more, when planning the time-path of MHS.

The evidence suggests some worsening, as between pre-industrial NDCs and today's LICs, in the disadvantages of the poor in planning, with reasonable certainty, MHS time-paths that reduce the risk of periods of consumption stress. In some respects, little has changed. Of the MHS-influencing variables with fairly clear outcomes, complexity remains an option much more readily open to better-off people (though a somewhat less rare option, perhaps, in today's LICs than in most NDC history). However, "going into service", as an option to cut parental MHS (and usually to delay marriage), was chosen by very large proportions of the poor in NDC history, but is available to much smaller proportions of the LIC poor today. Conversely, delayed marriage - historically the response of poor young adults either to poverty or to emergency - has in today's LICs become the response of the better-off to the prospect of further education.

The upshot is not merely that the historical correlation between big households and rich households has been reversed, but that this has happened in a way especially damaging to the relative capacity of poor households so to plan MHS as to reduce consumption stress. Traditionally the NDC rich - despite having more servants, etc., in the household - had markedly higher ratios of children (under 10-12) to adults than did the poor. In most LICs today, the poor - despite a rather low rate of transfer, out of their households, of adolescents and young adults "going into service" - have much higher child/adult ratios than the non-poor. This rise in poor couples' relative dependency burdens (i) reduces their chances of escaping poverty, except to the (rather small?) extent that poverty is a life-cycle phenomenon, actually overlapping only with the period of high dependency; (ii) means that children, being heavily concentrated into poor households, tend as a group (and especially in such households) to be with adults who must give priority to immediate earning over child-care and -socialization; and (iii) in the case of extreme poverty (Lipton, 1983), concentrates on under-fives where the parental couple cannot avoid nutritional risk to their healthy development, or even survival.

To over-simplify, the better-off in LICs are able to respond to reduced mortality with a faster, more explicitly volitional, less bumpy "demographic transition" than are the poor. This has major policy importance - not, of course, because policymakers should, or perhaps can, intervene in (for example) the extent to which poor households send adolescents into resident domestic service! But the importance of the issue is not matched by our information or analysis. (It will have been observed that much of my information on variables affecting MHS is from a handful of NDC-historical sources, plus a handful of LIC village studies and national samples.) Hence the summary in Table 6 is extremely tentative.

Table 6 takes the seven key household variables affecting MHS: mortality, couple fertility, duration of fertile unions, complexity, migration, family-cycles, and non-family membership. For each variable, we

ask two sets of questions. First, does it help "link" poverty to high MHSs in today's LICs, or to small ones in pre-industrial NDCs, or to explain the reversal of the "MHS-MEP" relationship? Second, does the variable help "link" high status to high MHS, in pre-industrial NDCs and in contemporary LICs alike - and to explain the paradox in the latter, with high MHS linked to high status, jobs, assets, etc. and yet to poverty also?

This summary sub-section has said little about the status-MHS link, though it was half of the paradox with which we began (p. 13). Mainly, that is because Table 6 summarizes most of the (highly tentative) findings. However, two other points are perhaps worth drawing out. First, the positive status-size link may represent a time-lag: people's income, and the associated MHS-related and other behaviour, changes more readily than the status, assets, jobs etc. that, wholly or partly, they inherit. Second, the fate of children may be worst in a high-status but low-income household, which is pushed by both income and status into a child/adult ratio and MHS exceeding what can be safely supported.

### III. POVERTY AND HOUSEHOLD COMPOSITION

#### (a) Composition, MHS, and poverty definitions

How are the household's risks of poverty related to the age of its members (including the household head, HH), and hence to its dependency burden? How does the sex-composition interact with poverty risk? How do these effects vary over the family's development, from marriage to household separation, widowhood, etc.? These three issues of household composition are dealt with in sub-sections (b), (c) and (d) below. The composition of a household, however, is not rigorously separable from the issues of poverty-MHS relationships treated in Sec. II, nor from those of demography and poverty-measurement in Sec. IV.

The interaction of poverty risk and household composition with MHS is exemplified by the effect of HH's sex. On pp. 51-3 we suggest that, on most evidence, female-headed households are as such little, if any, more likely to be poor in LICs than are other households. If we ignored MHS, this fact could wrongly be taken to imply that women's "disadvantages" as household heads were small. However, we have seen (p. 13) that female-headedness, in NDC history and in today's LICs, typically accompanies much smaller MHS - smaller by 25-45% on most data sets. Smallness normally, in today's LICs, accompanies higher MEP and lower poverty-risk (Sec. II(b)). Female-headed households, being typically much smaller, "should be" less poor. They are not; and this itself suggests female disadvantage. (Of course, to show a positive partial correlation - holding MHS constant - between poverty-risk, or low MEP, and female-headedness is to restate the problem, not to explain it.)

Our findings about household composition as a correlate of poverty are bound to depend, too, on how we measure poverty. Also, a good indicator of "poverty" will, explicitly or implicitly, divide real household income or expenditure by an appropriately weighted indicator of the requirements of the household's men, women, and different age-groups of children. For a potentially poor household in LICs, explicit division of monthly expenditure by the household's "size" in Lusk CUs is not a bad indicator of satisfaction of requirements; indeed, even monthly expenditure per person is tolerable, since it ranks households not too differently from expenditure per Lusk CU (Sec. IV(c)). However, findings about composition-poverty linkages depend on, and affect, choices of indicator. For example, the use of "food/outlay ratio above 75-80%" as an indicator of severe risk of poverty - while it has some attractions as a short cut (Lipton, 1983, Sec. II(b)) - probably overstates that risk among households with many small children and understates it among other households. <sup>27/</sup> A similar, but more rigorous, critique of the Engel procedure is given by Deaton and Muellbauer (1983, pp.23-4), who suggest alternative methods of "equivalence scaling" - implicit division of MEP by an index of the absorption of welfare likeliest to be caused by the household's size and age-sex composition.

In what follows, we are usually forced by data shortages to use MEP, rather than per CU, as a poverty indicator. This is probably not a very serious distortion (Sec. IV(c)), but may invalidate some of the "closer" findings and hunches about relationships of poverty to household composition.

(b) Age-composition, dependency, and the risk of poverty

Two issues arise. The first, allowing the more clear-cut conclusions, is how MEP, risk of poverty, etc. vary with the age-composition and hence dependency-ratio (DR) of the household. <sup>28/</sup> While poor households in today's LICs (especially, on the Indian evidence, in towns) have much higher proportions of very young people than do the better-off households, the curves may well flatten as we descend into extreme poverty, so that the ultra-poor and the poor feature rather similar (high) child/adult ratios. The second issue is the relationship between poverty and the age of the HH. Here, we find complex and conflicting results in different areas. The results differ not only in the linearity (and even sign) of the relationship, but also in its differential impact on men and women. This suggests that we must either fall back on the evasion, "culture-specificity" (which amounts to a denial that we can ever, in general, know what characteristics poor or ultra-poor people are likely to have), or else find intervening variables affecting the shape of the curve linking poverty to age of HH. Part of the problem is that the effect on risk of poverty if HHs are older due to later marriage (or remarriage) is different from the effect if the HH is older because further along the family cycle following a marriage at the national average age.

A useful analysis of the relationship between age-structure and poverty is Visaria (1977), based on the 1972-3 NSS. To ensure that these results are not special to the two Indian States reviewed (Maharashtra and Gujarat) or the year, we have also looked at 1973-4 data; at all-India and Rajasthan data; and briefly at other States. These series confirm:

- that the proportion of persons aged 30-44 seems to vary little, and unsystematically, around 16-18% with changing MEP;
- that the proportion of persons over 60 rises only gently (though persistently) with increasing household MEP, e.g. from 3.4% in the poorest decile in urban Gujarat to 5.9% in the richest quintile (Table 7);
- that the (much larger) proportion of persons under 14, except among the poorest 5-10% of households, decreases sharply as household MEP declines, especially in urban areas, e.g. from 49.6% in the poorest decile to 20.5% in the richest quintile in urban Maharashtra (Table 7);
- that, therefore (and especially in towns), not only child/adult ratios, but also DRs, rise sharply as poverty presses harder, with some alleviation of the increasing trend in the poorest decile.

Table 7 also shows most of these features, more sharply in towns than in villages; and all this is confirmed by 1973-4 data. <sup>29/</sup> Moreover, the clear poverty-DR link is not just Indian. In 1969-70 there were 1319 under-fourteens and over-sixties per 1000 persons aged 15-59 in the poorest household decile in Sri Lanka, 1138 in the second-poorest, 798 in the middle quintile, and 506 for the richest decile. Comparable figures for urban Nepal (1973-4) were 1279, 1135, 783 and 417; and for Maharashtra (1972-3), 1203, 1037, 733 and 331 urban, and 1304, 1203, 960, and 776 rural. For nine South Asian data sets that rank household (MEP deciles) by DRs, the simple  $r$ 's between MEP decile-rank and DR range from  $-.973$  to  $-.997$  (Visaria, 1980, Table 4).

Table 8 shows the effect, for three Indian States, among "finer" MEP-groups. Most of the cellwise sub-samples are quite large. They suggest a child/adult ratio that clearly falls as MEP rises - but only after some (very low) threshold MEP is reached. No clear link exists for the poorest 8-14% of households in rural Gujarat (4-11% in urban areas), and for the poorest 6-11% (8-14% urban) in Maharashtra. Other States 30/ show similar thresholds - for DRs as for MHS (fn. 11) - as do the all-India urban data (the all-India rural series in Table 8 seems to show a smooth rise in child/adult ratios even at extreme poverty levels, but the Statewise data show that this is an "ecological fallacy"). Although some of this flattening-out of the rise of child/adult ratios with increasing poverty is caught even in the "rougner" analysis of Table 7 (of. the data for rural older children), a flattening-out of the ratio, if it applied to no more households than the poorest 10-14% or so, would not be fully captured by the decile-wise data. Table 8 shows it clearly.

This flattening-out is especially important if, as Tables 8 and 12 and fn. 11 suggest, it corresponds to similar flattening among the ultra-poor of the (otherwise positive) MHS-poverty relationship. Subsets of each of the poorest 2-5 MEP groups in Table 8 - subsets making up increasing proportions of groups as poverty deepens - are in households unable to afford enough calories to safeguard under-fives from periodic risk of serious growth faltering, and/or of Grade III undernutrition; unlike the mild-to-moderate undernutrition associated with less extreme poverty, this significantly raises infant and child mortality (Chen, 1980; Lipton, 1983), and probably depresses fertility (Frisch, 1978, 1982). The very poor, like the moderately poor, are subject to economic-demographic pressures that tend to reduce average household age, increase child/adult ratios, and thus raise MHS as poverty deepens; but for the very poor, unlike the moderately poor, these pressures are offset by the physical and health impacts of undernutrition on births, IMR, and child deaths. Hence, for the very poor - unlike the moderately poor - a clear relationship of MEP to child/adult ratios or MHS may not emerge.

These interpretations are tentative. A few sub-samples in Table 8 are rather small (though consistent, and cumulatively suggestive). Less-poor LDCs - perhaps lacking sufficient physical pressures, even among the poorest, to constrain fertility (Frisch, 1978, 1982) - may show no "flattening" of child-adult ratio increases as MEP falls; there is a steady relationship for urban Colombia through all MEP deciles (Birdsall, 1979, p. 130). Nor are plausible data from localized village or urban surveys available. But the smaller families, and lower child/adult ratios, among rural laborers (p. 12) are suggestive; that group overlaps strongly with the ultra-poor. Moreover, a turning-point in MHS and child/adult ratios, around ultra-poverty, would conform to a general pattern of turning-points in nutritional and labor-market behavior (Lipton, 1983 and 1983a). Among other variables, age- and sex-specific participation rates, food/outlay ratios and now perhaps child/adult ratios and even MHS - while they rise, up to a point, as poverty presses harder - seem to reach a ceiling, perhaps associated with physical ill-effects from extreme poverty, above which further rises with ultra-poverty are very small, absent, or negative. Some of these variables help cause or maintain poverty; some of them (not necessarily different ones), poverty helps to cause or maintain; and some are common causes or consequences, alongside poverty, of different variables. That is one reason why we seek characteristics, not causes, of poverty and ultra-poverty. But DRs do conform

to a pattern of observations that the ultra-poor in LICs, while plainly not an underclass, are "different from us" and also from the moderately poor.

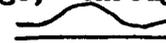
Only for Gujarat is there substantial evidence on whether these dramatic differences in age-structure, as between poor and poorest and others, are sex-specific. In rural areas, this seems not to be significantly the case. Boys (age 0-14) comprised 50.2% of males in the poorest decile of rural Gujarat's homes in 1972-3, and girls 51.0% of females; in the top decile the corresponding proportions were 32.2% and 32.3%. At the other end of the rural lifespan, too, the proportions of males and females aged over 60 were similar in any given MEP decile (though as usual old women greatly outnumbered old men in each decile); sex-selectivity did not account for the much greater presence of old persons in better-off rural households (Visaria, 1977, Tables 1-2).

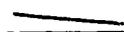
In urban Gujarat, especially among the poorest MEP decile of households, males clearly contributed more than females to the very high concentration of the "young-end" dependency burden upon poorer households: 51.8% of males in the poorest decile of households were under 14 (37.1% being aged 5-14) as against 48.3% of females (33.5% aged 5-14); in the richest decile, only 19.8% of males, but 25.6% of females, were aged under 14 (*ibid.*, Table 2). This is an interesting pendant to the finding (pp. 48-50) that, in much of India and perhaps in other LICs, the huge excess of men over women in the towns decreases as MEP falls, and is reversed in the poorest decile.

The Gujarat data do not suggest that the poorest selectively deprive small girls of care or food. If such deprivation kills, it is almost certainly at ages 0-4 (where alone it is evident in Bangladesh: Chen *et al.*, 1981). Yet, despite the (world-wide) excess of male births, in both rural and urban areas the proportion of lowest-decile females aged 0-4 is greater than the proportion of lowest-decile males. It would be valuable to see data for other States (e.g. Maharashtra, where rural-urban migration and return migration, and severely unbalanced sex-ratios, especially in specific age-groups, are more important than in Gujarat), and for LICs other than India.

Visaria's Asian data (1980, Table 4) suggest that this DR gap between poorest, poor and others will, unless attacked by specific policies, worsen with development. (This is not to say that the poor will get absolutely poorer; only that a worsening dependency ratio will provide an increasingly severe obstacle to their advance relative to the less-poor). First, the gap is larger in towns, both because urban sex-ratios become more balanced as poverty increases (p. 48) so that more children can be procreated per adult, and because the return of older persons to the villages for retirement reduces the DR of the rich relative to the poor (who have a much smaller proportion of older persons). So, as urbanisation proceeds, people move to places where (a) the rich-poor gap in the DR is bigger, and (b) the impact of growth, in widening the gap, is greater. Second, less-poor areas of Asia as a whole - Taiwan, Malaysia, even urban India and Nepal - tend to feature much greater inter-decile differences in DRs than some poorer places such as rural Gujarat and Maharashtra, and Sri Lanka (Visaria, 1980, p.65); development may well be widening the DR gap.

While age-composition and DRs of households are quite systematically related to poverty in LICs today, the curve relating age of HH (x) to risk of poverty (y) is very obscure. If the only factors at work were decisions on age of marriage (household formation) and death-rates of partners, a simple curve - monotonic decreasing - could be expected, because poorer people clearly tend to marry younger in LICs now, <sup>31/</sup> while adult life expectancy is somewhat (not very much) lower among poorer groups, leaving very old HHs accounting for rather smaller proportions of the poor than of the rich.

If we could trace the marriage of an LIC couple, "average" in respect of level of poverty and the partners' ages upon marriage, through the risk of poverty, a more complicated but still clear-cut curve  - shaped - can be inferred from family-cycle considerations. On marriage, both partners often can work, and sometimes there are wedding-gifts to enhance living-standards. Soon, poverty-risk rises as small children arrive, cutting per-person income by sharing what the household receives, and sometimes by requiring child care and stopping the mother from earning, <sup>32/</sup> cutting total household income too. Later, poverty-risk is cut, both by inheritance and as children reach earning age-groups. Later still, poverty-risk rises: the couple is likelier to get ill, and earning children leave home (and maybe fail to remit money). Almost exactly this curve is found in a big 1974 Malaysian sample (Datta and Meerman, 1980, p. 13).

 Is the HH-age to poverty-risk function a sum of  and  effects? Unfortunately it is more complicated. The latter curve related to an "average" LIC couple in respect of marriage-age and poverty at marriage. A poorer couple at marriage - which tends to marry earlier - follows the latter curve, but (apart from, obviously, showing a higher probability of poverty than a richer couple) has fluctuations of a different amplitude. Poor households' poverty risk as a proportion of their lifetime average (as against less poor households' proportion) is lowered immediately after marriage by relatively high female participation rates (poorer women are much likelier to seek work: Lipton, 1983a) and correspondingly is raised as small children arrive - because (i) more participation is desired, and hence frustrated, than for better-off women; (ii) extended-family help in child-care is less available (pp. 30-1); (iii) for the poorest, high death-rates for under-fives (pp. 15-16) raise the ratio of younger children needing maternal care to older children contributing to work.

The commonly explored linear relationships between poverty-risk (or MEP) and age of HH - sometimes with an added element for the square of age of HH (e.g. Gaiha, 1983) - therefore, not surprisingly, produce no clear-cut results. A logit analysis of 4105 rural Indian households in 1968-69, using a (somewhat high) poverty-line of Rs.355 income-per-head per year, suggested that the logarithm of risk of falling below it rose by .067 (significant at 2.5%) for each rise of one year in HH age. <sup>33/</sup> However, the corresponding coefficients for the 2350 cultivating households showed inconsistent results in different years, neither significant at 2.5% (.0697 in 1968, sig. at 5%; -.0106 in 1970, n.s.). This also applied to the 900-odd casual-labor households (Gaiha, 1983, Tables 13, 18, 19).

We have seen robust relationships between poverty risk and age-structures, MHS and child/adult ratios (e.g. Tables 8, 12). However, Gaiha's large, disaggregable, three-year Indian rural sample suggests that

crude linear regressions of poverty risk on HH age - with or without age<sup>2</sup> - are unstable and weak. Gaiha's data set is more useful in exploring poverty risk by five-year HH-age groups (Gaiha and Kazmi, 1982, pp.6, 57). In 1968-69, 61.0% of the 4105 households were "poor" (income-per-head below Rs.29.6). Only seven such households (and eight others) had HH under 20, but for older five-year age-groups the cell size was substantial; the proportions with income-per-head below Rs.29.6 were: HH aged 20-24, 66.9%; 25-29, 69.6%; 30-34, 65.6%; 35-39, 68.0%; 40-44, 69.0%; 45-49, 70.1%; 50-54, 66.9%; 55-59, 62.5%; 60-64, 57.5%; and 65-69, 54.8%. The pattern that "the bottom deciles include a higher-than-average proportion of middle-aged heads of households" is confirmed for several South Asian samples - probably (Visaria, 1980, p.53) because MHS is usually highest for middle-aged HHs.

Two sidelights on these data are available. From Malaysia - one of the several countries where Visaria confirmed that risk of poverty (y) was related to age of HH (x) in a                     -curve - another very careful survey analysis instead revealed a simpler                     -curve, but it excluded one-person households and did not disaggregate the over-fifties (Mazumdar, 1981, pp.3, 36-9); this suggests that the downturn in poverty-risk among older HHs owes much to the over-60s, and/or to single persons who can live alone as HHs (instead of with younger, earning HHs) only if better-off. From rural Botswana, where male migration to the S. African mines leaves many female HHs, another careful survey (for 1974-75) suggests that the downturn in poverty-risk is closely linked to faster asset accretion by male HHs. "Households headed by women under 30 earn as much as households headed by men under 30. However, beyond that age incomes in male-headed households rise substantially, while those in female-headed households decline" (Kossoudji and Mueller, 1980, p.12). The latter finding has an analogue from an otherwise totally different "developing" environment, that of Belo Horizonte, Brazil; poverty in female-headed households, as compared with male-headed, is much more heavily concentrated where the HH is of prime age (15-59), although poor prime-age households tend to have lower DRs if female-headed (Merrick and Schmink, 1982, pp.303-4). Probably - in urban Brazil as in rural Botswana - it is the barriers and difficulties faced by women in access - to post-primary education, and later to capital and jobs - that explain growing female disadvantage as HHs after age 30.

The relationship of age of HH to household poverty is complex, but of enormous policy importance. Peak incidence of poverty among HHs in mid-span, say 35-45, probably means most concentration of damage on small children, where health and nutrition are likeliest to suffer irreversibly. (Indeed, this is also implied in the strong positive link of poverty to DRs; see pp. 43-5.) Second, it also makes for relatively good chances of remedy: households at greatest risk are headed by persons of prime working age (although their capacity to work may be limited by child-care and high DRs). Third, much of the age-poverty pattern is not life-cyclical, but is due to poor people's earlier marriage and lesser access to post-primary education (from which benefits accrue mostly in later life), and to the need for desperately poor old persons to cease being HHs, and to join younger HHs to survive; enemies of poverty cannot, therefore, happily assume that - because poverty risk falls after HH age 45-55 - particular households "grow out of poverty". Finally, the sex distribution among HHs of asset accretion is uneven, so that male-headed and female-headed households may show quite

different links between poverty and HH age.

(c) Are women poorer?

Much of the recent literature of development (for instance Buvinić *et al.*, 1981) gives a fairly uniform picture of female disadvantage. Elsewhere in these papers, a much more mixed position has been suggested. Selective, dangerous undernutrition, relative to males in the same households, seems to be confined to Bangladesh and Northern India (Lipton, 1983). Labor-market discrimination against women (i) reduces their access to (and training for) work with better earnings prospects, (ii) is expressed in a wider sense through the societal pressures on women to work a "double day" at home and at work, but (iii) does not, in most LIC conditions, take the form of much less reward for identical work (Lipton, 1983a).

In respect of the two main issues affecting female demography and poverty - the incidence of women in poorer groups, and the problems faced by female-headed households - the data also suggest something other than generalised disadvantage. Women outnumber men significantly not in poor households as a whole, but only in the very poorest 1-5%, which are so poor owing to high child/adult ratios (atypical of female-headed households, even poor ones) or a high incidence of unsupported widowhood; and to some extent in poorer urban households. The respective remedies are to provide women with means and power to limit births, and to ease their path to effective migration decisions.

Visaria's analysis of decile-wise data for Maharashtra and Gujarat in 1972-3 showed that the ratio of women to men aged 15-59 "showed no clear tendency to rise with [MEP] decile in rural areas", but did so in towns (Visaria, 1977, p.14). However, in the poorest, second, and third deciles of urban households, this ratio was respectively 0.993, 1.022 and 1.029 in Gujarat; and 0.995, 1.033 and 1.070 in Maharashtra (*ibid.*, pp.8A-8B). Very slightly more urban men than women aged 15-59 were ultra-poor or poor. The real problem was that women's chances of escape - either from rural poverty via townward migration, or from urban poverty via upward mobility - were far less than men's. Thus, by the time the top urban decile was reached, the urban male-female ratio was 1.171 in Gujarat, and 1.437 in Maharashtra (*ibid.*, pp. 8A-8B).

The effects of this on the poor (a) damage women through migratory and child-related processes rather than through discrimination against localized women with given child/women ratios, (b) are political, rather than overtly reflected in economic outcomes. Before dealing with them, I look at four other issues. First, is India's apparent "equality in poverty" of the sexes - their near-balance in the poorest deciles - paralleled in other areas of South Asia, and in other LICs? Second, does the appearance result from looking only at persons aged 15-59? Related to this issue is the question of whether single, divorced or widow/widower status - or household size - affects poverty-risk differently for men and for women. Finally, if these considerations confirm that any over-representation of women among the poorest MEP deciles appears to be relatively small in most LICs (Visaria, 1980, p.62, for Asian evidence), "examination of data for smaller groups of households ... might show a different picture" (*ibid.*, p. 63): does it?

The first two questions are addressed jointly by Visaria (1980, pp. 58, 61). His nine South Asian samples for 1969-75 all show the proportion of females of all ages  $\frac{34}{100}$  in each household MEP decile.<sup>35/</sup> This proportion falls significantly  $\frac{36}{100}$  with rising affluence only in urban Maharashtra (from 50% in the poorest decile to 41% in the richest, in 1972-3) and urban Nepal (51% to 42% in the 11-town sample for 1973-4, and 52% to 36% in the 7-town sample for 1974-5). The really important point, however, is that once more there is no significant over-representation of females in the poorer groups - the percentage even in the bottom decile of households is below 53% in all nine samples. Females of all ages in these South Asian cases - like adult women in Western India (p. 48) - do not comprise unduly high proportions of the urban or rural poor, but are much less likely than the male poor to become urban and affluent. We have little evidence from outside South Asia, but nutritional (Schofield, 1979) and other reports confirm that women are less likely to be over-represented among the poor in non-Asian LICs.

There are some caveats in respect of the statement that poor households in most LICs do not show female/male ratios much above unity. Reverting to the third of our "issues" (p. 48), divorced or widowed status appears to worsen women's poverty prospects more than men's, especially for HHs (p. 52). This may well apply with special force to cultures where husbands can, with relative ease, divorce or abandon their wives; in two villages in Bangladesh, females comprised 57% and 52% of landless households, but 47% and 45% respectively of the "self-sufficient" (better-off landed) households (Mahmud and McIntosh, 1980, p. 504), and the role of widowhood in such cases is well documented (e.g. Cain, 1981). Households without adult couples, however, may be linked to male as well as female poverty: there is some evidence from rural India that households with adult male/female ratios very far from unity in either direction are exceptionally prone to poverty (Gaiha and Kazmi, 1982, p. 23).

As for the final issue raised on p. 48, the data confirm the hunch (Visaria, 1980, p. 63) that "smaller groups of households than deciles might show a different picture". Table 9 shows quite substantial "surpluses" of women among the poorest 3-5 percent of both urban and rural Indians. This is consistent with the (much smaller) State samples.

Women's hard life, and its link to low-MEP households, cannot however be assessed by that MEP alone. Poorer groups of households (Table 9) have a much higher ratio of children to adult women. Female levels of well-being are thus lowered among the poor, in ways not revealed by MEP (and increasingly as poverty bites harder), but the need to child-mind as well as earning - a need made more onerous by higher direct economic participation among the poor (Lipton, 1983a) - means more frequent "double days" of housework and earnings. Women's well-being is also more likely to be lowered, as poverty deepens, by numerous pregnancies (see Harrington, 1982, on Nigeria), all too often ending in stillbirths or infant deaths. Both these facts are hinted at by Table 9. In the poorest fifth of Indian households, there were almost two children per adult women - far above the average.

This is confirmed not only at State level (Table 9) but also by four village samples in Gujarat in 1970-71. The poorest 18 households (100 persons) did not "overrepresent women" (there were, indeed, 1.08 adult males

per adult female), but imposed on each woman 1.92 children. The best-off 19 households (101 persons) had a larger share in the local "surplus" of adult males - 1.40 per adult female - but only 0.96 children per adult woman (V. Patel, 1973, p. ix).

In the poorer households, then, a high child/female ratio, rather than (except in the very poorest 5% or so) female over-representation, is the main female-specific "burden of poverty". At national and political level, the data once more suggest that it is not female surplus among the poor, but male surplus among the decision-making and educated urban rich, that constitutes women's "poverty problem". In 1972-3, in urban Maharashtra, there were 127 men aged 15-59 per 100 women in the second-richest household quintile, 138 in the second-richest decile, and 144 in the richest - and presumably most influential - decile (Visaria, 1977, p. 8B). 37/

This has several important effects. First, men dominate politics, especially in LICs; probably, the more localized and "economic" the issues, the greater the male dominance. Thus, though there is not a big female surplus among the poor, the concentration of urban men among the better-off, and of urban women among the poor, increases the relative weakness of the poor and of the women alike. Second, the dominance of the urban sector in political decision-making is strengthened by the overlap of maleness with higher incomes in the cities. Third, the higher male/female ratios among the top deciles, especially but not only in the town, increase the dominance of the rich. Fourth, access to education is, notoriously, less among women, especially in remote and rural places (see, for example, Deijomeah and Anusionwu, 1979, p. 52; Visaria, 1980, p. 75). Insofar as women concentrate in rural and poorer urban groups, there is mutual reinforcement among the dominance of the educated, of the male, of the urban, and of the rich. All four effects are probably understated by Table 9, because the sex-ratio in a particular area among small children is usually near unity in all income-groups and places, so that the dominance of males in adult urban elites is even greater than the figures of Table 9 suggest (see fn. 37).

Tables 2 and 9 together show that in India the child/adult ratio rises much more rapidly, with deepening poverty, than the female/male ratio - which rises at all only in urban areas, and even there only a little, if at all, above unity. This implies a sharp rise in child/female ratios with poverty. We have discussed above the implications for adult women. But the importance of this "characteristic of the poor" extends beyond one generation, and to both sexes: to the social inheritance of disadvantage in "cycles of poverty", via inevitably inadequate child stimulation and care.

Even more directly, income earned outside the home by rural women makes much less contribution to children's nutritional status than does own-farm income, given total MEP (Kumar, 1977). Similarly for urban areas: in 1969 Berg implicitly showed direct damage to child nutrition, given MEP, from female factory-work in urban Calcutta (Reutlinger and Selowsky, 1976). Yet it is poorer women who have higher participation rates; who, even at any given rate, are likelier (because they own few productive assets) to be pushed into work outside the home (Lipton, 1983a); and who neither can afford domestic employees, nor are likely to have access to complex household structures (pp. 29-31), to help with children. It is such poor women who, as we now see, typically each have more children; these are likely to "inherit" the losses

consequent on their mother's more probably uncovered absences. The crucial importance, to child welfare in poor households, of appropriate income-earning tasks, rewards and conditions for working mothers in the home - tasks often glibly and uniformly dismissed as exploitative - is obvious in the light of such data as those of Table 9, and will be reconsidered in a brief policy discussion in Section V.

We have seen that poorer urban households usually have a near-balance sex-ratio. However (Connell et al., 1976), the huge excess of young men in Asian and African rural-urban migrant streams (and hence in urban family-farming age-groups) is also familiar. The consistency of these two apparently contradictory facts - via great male predominance in richer urban groups; and consistently also with relatively high child/female ratios in the poorer groups, whose women and especially children are most damaged by a high ratio - effectively constitutes a new demography of urban poverty. Poor people in LIC towns are coming to show adult male/female ratios around, or even below, unity; the high overall urban ratios are due to very big male surpluses among the better-off.

Partly, as work in Bombay (Joshi, 1976, esp. p. 1303) suggests, this is because poor women have come to form a rising proportion of urbanising migrants. Partly it is because the urban "ladders to success" favor men (in Botswana, women's disadvantage as migrants rests entirely in their worse urban prospects of employment and wage-levels, and if these are held constant women's propensity to move exceeds men's: Lucas, 1982, p. 17). Partly, it is because failed migrants tend to return to the village of origin (Connell et al., 1976, pp. 126-8). Whatever the reason, the effects of the new demography of urban poverty upon women are not, for the most part, direct via MEP. They operate at national level, by concentrating male and urban political advantage; at household level, by placing most children in poor families where women (and men) can least afford to stay at home and care for them; and, in both ways, by transmitting female disadvantage (which is not crude absolute MEP disadvantage, for sex-ratios among the poor, except in the very poorest 5% of households, are usually not very unbalanced) from the poorer 20-25% of mothers to both daughters and sons. These effects are all felt in rural areas too, but they are perhaps strongest in cities. 38/

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Are women in LICs - for social, economic or other reasons - likelier to be poor because they are in some sense demographic victims? The idea cannot be simply supported by the available MEP data: sex-ratios are around unity in most poor groups. However, the idea receives strong support from subtler demographic evidence linked with those same data (elite concentration of urban males; high child/female ratios for poor groups). Surprisingly similar conclusions apply to the question of whether female HHs suffer special disadvantages. Contrary to some interpretations, such households seem to suffer little, if any, greater risk of very low MEP, when appropriate "other things" are allowed for or held constant. But female HHs, like females in general, do appear to suffer poverty-linked disadvantages not simply associated with lower static MEP itself: less chance of raising MEP with time, less adaptable household sizes and structures, more drawbacks from (and likelihood of) "poverty-fixing" forms of civil status.

Visaria notes "a small over-representation of females among HHs in the bottom one or two deciles in urban [Western India], Sri Lanka, Taiwan in 1968 [but not 1974] and Peninsular Malaysia; but ... not ... such as would justify widespread concern". This, if anything, overstates the importance of female-headedness as a correlate of poverty. The relationship of sex of HH to poverty is extremely weak, even in these cases. In urban Maharashtra, for example, 10.4% of HHs in the poorest decile were female, but so were 10.7% in the richest, and an average of 8.0% overall. In Malaysia (1973), 20.4% of poorest-decile households were female-headed, but 16.8% of second-poorest, 19.0% of second-richest, and 18.1% overall (Visaria, 1980, pp. 54-5), and another large survey found that average incomes per person "by sex of household head are identical" as between male and female HHs (Datta and Meerman, 1980, p. 8) so that any greater incidence of poverty among the latter would imply worse distribution among female HHs, which there is no obvious reason to expect.

Such sex differentials in poverty as do exist between HHs <sup>39/</sup> are dynamic, not static. In particular, they are due to the risk of widowed status. "Only 25% of all Indian males over 60 ... are without wives ... over 70% of all Indian women over 60 are widows" (Visaria, 1980); this is attributed (Nugent and Walther, 1981, p. 34) to "higher remarriage rates for husbands ... and ... sizeable age differentials ... at first marriage", but the universally greater life expectancy of women at age 60 must play a major role. Women thus run much greater risks of widowed status - and hence, especially in the poorer household with its lower incidence of complexity, of depending on their sons' support - than do men; also, because widowers are likelier than widows to own property, sons have less self-interest in supporting a mother than a father after bereavement. Cain points to the sharp contrast between Islamic Bangladesh and India, in respect of the very severe risk of descent into destitution associated with widowhood in the former (Cain, 1981, pp. 458-9). However, in a largely Hindu study area in Karnataka, "the situation of a widow with no surviving sons can be so bad that one sometimes wonders that any woman would restrict her fertility and court even a small chance of such a fate ... Twelve widows live on their own in the study area (5 per cent of all widows), some in miserable conditions" (Caldwell et al., 1982, p. 28). It may well be, then, (i) that the differential risk and effect of widowed status explains most of such disadvantage of female HHs as exists; (ii) that high fertility among the poor, partly to reduce the risks inherent for them in such status, is a major indirect effect of potential female-headedness: an effect by which poverty is deepened, not for widow-headed households as such, but for all poor households - mostly male-headed.

Data from Botswana again stress the dynamics of female-headedness - its association over time with other poverty-related phenomena. "Households headed by women under 30 earn as much [per CU] as households headed by males under 30." However, beyond that age incomes per CU in the latter "rise substantially, while those in female-headed households decline" (Kossoudji and Mueller, 1980, pp. 12, 14). Several factors are probably at work here: differential incidence and impact of widowhood (see above) and also of abandonment and divorce; capacity to decumulate savings out of past incomes from (selectively male) migration; and, perhaps above all, the effect of sex-bias in inheritance, education, and in other patterns of asset accretion. Animal husbandry contributed 47% of income for working male HHs, but only 32%

for female HHs with no working-age male in the household. Cattle value per CU, respectively, was 261 Rand and 138 Rand (ibid., pp. 16, 24).

In general, female HHs as such may not have much greater poverty risk than male HHs. But they "ought" to have much lower risk - for they tend to have smaller households, lower child/adult ratios, and greater HH age. Indeed, the demographic evidence (like that of other papers in this series) does not deny that women, and female HHs, suffer special disadvantages associated with poverty - notably the large part of life that poor women spend in pregnancy and childbirth, often for children who die in infancy (Harrington, 1982). However, women's disadvantages are immobility, lack of access, and hence more severe and less easily remediable effects of poverty - in job search, in migration, in food behaviour, and much else. To interpret these disadvantages as a much greater, specifically female, risk of poverty at each (static) moment is to neglect both the politics and the dynamics of the problem. It is also usually incorrect.

(d) Life-cycles, poverty, and household composition

In Section II(j) we asked whether domestic cycles might help to explain the links between MHS, poverty, and status. Here, we look at these cycles as possible "linkers" of poverty to age-structure and sex-structure. Do the same households (for example) at one time show high child/female ratios associated with high poverty risk, and at another time the low ratios associated with low risk? A given percentage shortfall, behind some poverty line, is less "inequitable" if it is experienced by (say) 80 percent of all households for 10 percent of the time when a particular person is HH - normally the 10% when under-fives are the largest proportion of household members - rather than by 10 percent of households during 80 percent of a particular headship. 40/

Unfortunately, any approach to such questions is hampered by shortage of long-term panel data. Cross-section data are almost always ambiguous. For instance, household income-per-person falls in Malaysia as the HH's age rises from 25 to 37.5 and again from 50 to 62.5 (Datta and Meerman, 1980, p.13). This may be because the poor marry later (or separate sooner) within these intervals; for life-cycle reasons; or because of changing economic conditions, e.g. permitting different savings rates over time.

Moreover, most survey data, one-shot or panel, are collected at the level of households or of individuals, but not at both levels. Yet life-cycles that alter a household's age and sex composition commonly detach individuals from, or attach them to, pre-existing households. Especially with one-shot surveys, but even to some extent with panel data, such processes are unlikely to be "caught" unless surveys are conducted at both individual and household levels.

To some extent, however, surveyed poverty - while understated by the timing, location and procedures of most surveys 41/ - is overstated because life-cycle factors, of both MHS and composition, are ignored. Survey estimates of one-period "proportions in poverty" (and Sen indices: Sen, 1981, pp. 35-8) are maximum estimates of the impact of lifetime poverty, and normally overstate that impact. Suppose a population contains 50,000 persons,

of constant age- and sex-structure in each MEP group. Suppose that ten successive yearly surveys all place 10,000 persons below a (constant) absolute poverty line; that, in each survey, the MEP gaps between the poverty line and the lowest, second-lowest ... 10,000th-lowest MEP are all identical; and that the impact of a person's age and sex, upon his risk either of being in poverty at all or of being above a particular MEP distance beneath the poverty line, is identical at each of the ten surveys. Even then, the "head-count" proportion of persons in absolute poverty (in fact 20%) - and the Sen index (Sen, 1981, pp. 35-8) of poverty - calculated from each of the ten surveys would, though both were unchanged in ten surveys, both be maximum estimates. Unless every person, if and only if ever among the poorest 20% of people, were always among the poorest 20%, the head-count overestimates poverty incidence. Unless the ranking of the poorest 20% never varies - not easy even to define rigorously in a growing, or otherwise changing, population - the Sen index overestimates welfare impact on adults.

The main thing leading to changes in the composition of persons below the poverty line, and to the ranking of those who remain below it, between surveys is the life-cycle. This fact, indeed, points up the seriousness of even transitory poverty: to say that a one-shot survey (because it counts households as poor even if they are below some critical MEP level only for the reference month or year before survey) maximally estimates the welfare impact on adults is not to play down poverty - particularly if life-cycle poverty homes in on families just when they include two or three nutritionally vulnerable under-fives. Policy-makers need to know how much poverty is a transitional and life-cyclic phenomenon, not because such poverty in any sense does not count (though standard welfare economics correctly insists that misery shared - if survived - is revealed preferred to "the same" misery concentrated 42/), but because different policies are likely to be cost-effective against (i) high life-long poverty-risk for few and (ii) poverty risk that rises sharply, for many, in particular phases of the life-cycle. The policies for (i) and for (ii) differ even more sharply, if the selection, among individuals at risk, of those in fact struck by poverty depends on contingencies other than the life-cycle itself, such as illnesses or bad harvests.

We revert to these policy issues in Sec. V. What evidence do we have about the importance of life-cycles in total poverty in LICs? Most discussions seem to assume that cross-section measures of age of HH, as a function of MEP (or, better, income per CU), allow us to infer the pattern of poverty as people get older. Even leaving aside the facts that most people are never HHs (especially in LICs, where 1 in 4 to 7 persons dies before adulthood), and that even HHs do not all enter or leave hardship at the same age, we have seen that such inferences are not feasible (p. 53). A much more careful piece of inference suggests that for Colombia - a middle-income country, for which wages were much the main income source - the contribution to inequality (and hence, given average income-per-person, to poverty) made by age-wage functions was proportionately much less than in the USA, and that made by wage differences within a given age-group correspondingly much more (Schultz, 1981a, esp. pp. 12, 15).

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The hypothesis suggested by Indian village data is that life-cycles

are important contributors to poverty to the extent that access to better-paid work or to assets is achieved rather than ascribed. The evidence is that - in all, and only, those survey villages where people with low incomes (or in groups, e.g. laborer castes, likely to have low incomes) in the reference period would maintain MEP well above monthly income-per-person - caste "assignment" of menial work and landlessness was relatively lax. Now why should anybody be prepared to lend to a very poor laborer? Presumably - since "bonded labor" is seldom prevalent or enforceable (P. Hill, 1982) - repayment usually depends on either the borrower's collateral or his prospects. Collateral implies assets inherited, or accumulated (probably by non-menial work), in the past; prospects imply a chance of more assets, or better-paid work, in the future. Hence we should expect lifelong poverty, reflected in lack of creditworthiness in bad times, to accompany caste (or class) rigidity in access to the sources of wealth - good jobs, land. If correct, this also implies that life-cycle poverty will tend to be less extreme even per unit of time than lifelong poverty, because life-cycle poverty, being more strongly associated with a better past or future condition, can be partly alleviated by borrowing, whereas a norm that low income-per-person is lifelong undermines the chances of that "person" to borrow, and hence to show MEP ahead of his income.

To test this, we should juxtapose income and consumption expenditure per person, in various "groups" according to income per person, occupation and social group. Our expectation is that the better-off will show income above consumption expenditure; that the moderately poor (especially if landowners) will show the reverse; and that the worst off seek to run down savings, or to borrow against presumably accumulated collateral - or future prospects to earn and repay. To the extent that these attempts succeed, life-cycle factors are associated with - and modify the impact of - their extreme current poverty: they saved out of past income, or can borrow against future expectations.

Unfortunately there are data problems. <sup>43/</sup> Only one - apparently reliable - study shows how deficits, of income below consumption expenditure, are concentrated within the various income-groups. Here, 94 households (488 persons) in four Gujarat villages are placed in five groups, by (1970-1) income-per-person. The poorest 18 households (100 persons), with Rs. 149 per person, were recorded as spending Rs. 348 per person on consumption - 2.3 times income: still a low enough outlay to leave them somewhat below the then current poverty line, i.e. for us to conclude that they were at some risk of being undernourished <sup>44/</sup> (V. Patel, 1973, App., p. ix, Table 4). Only slightly less extreme is the position of the "poor but not poorest": 210 persons (in 44 households) with average income of Rs. 283, yet average outlay of Rs. 417. Such gaps, with this careful study, cannot be explained by the usual (small) overstatements of expenditure and/or understatements of income. Almost certainly, both groups of households are either decumulating past savings or stocks, or borrowing against future labor or assets. In either case a life-cycle pattern is indicated.

Especially does this have to be the case for the subsets within the poverty groups upon whom, as this study shows, the deficits were heavily concentrated. Eight of the poorest 18 households (by income-per-person) somehow managed to consume about Rs. 2500 per year each, over and above recorded household income averaging about Rs. 800! Those 8 (of 18), and 12 of

the next-poorest 44, accounted for the total deficits of their respective household income groups (V. Patel, 1973, App. Tables 4-5, pp. x-ix).

Another Gujarat study (of the 268 households, and 1533 persons, in Ankodia village in 1960-1) shows similar large deficits. The 23 households (81 persons) with income below Rs. 300 averaged Rs. 61.4 of income per person, but spent on consumption Rs. 153.7 per person. The next 68 households (289 persons) averaged Rs. 112.6 of income per person yet Rs. 176.6 of outlay per person (R. Patel, 1964, pp. 178-9). We cannot accurately identify the per-household income ranking with a genuine poverty-ranking (Sec. IV(c)). However, these figures are suggestive - especially as the 23 lowest-income households, presumably including many of the poorest even in MEP terms, were on average actually increasing assets-per-household significantly during the reference year (*ibid.*, p. 203).

Life-cycle behavior, in respect of income-expenditure gaps, may well be closely linked to land inheritance. In the four-village study in Gujarat, the 22 households (103 persons) subsisting mainly from "agricultural labor without land" - though earning only Rs. 260 per person, just 60% of the village average - were spending, on consumption, 2.4 times their annual income (as against 1.2 times for the village as whole). Landless farm-workers, receiving 12.7% of village income, were incurring 29.4% of village net deficit, although they were among the poorest villagers (V. Patel, 1973, App. Tables 1-2). Apart from the probable rarity of bonded labor (P. Hill, 1982), unless the survey year was far below average not much of this deficit can be explained by increases in bonded labor. Either young farm laborers - i.e. persons with farm labor as the main source of income in 1970-1 - were borrowing, perhaps from parents, in expectation of land inheritance; or old ones, having passed on land to children, were living partly off past savings. It is not plausible that "lifetime assetless" persons, whether or not in a particular and usually landless caste, could overspend like this. But can we find direct evidence to link life-cycle poverty, borrowing, and less ascriptive land and job assignments?

Further light is cast on the "occupational life-cycle" and the deficit by two further studies for Gujarat - Afawa in 1961-2 (R. Patel, 1966, pp. 150, 157), Oon in 1963 (N. Shah, 1968, p. 164); and by two for Rajasthan - Hasteda in 1964-5 (M. Desai, 1966, Tables IX-18 and X-2) and Dingri in 1963-4 (Saxena and Charan, 1973, Tables VIII-18 and IX-2). One village reported a slight overall surplus of income over consumption (Oon, 1.1% of income) and two reported slight overall deficits (1.1% of income for Dingri and 1.9% for Afawa) - both probably reflecting the usual income understatement and outlay overstatement; Hasteda's overall deficit, 8.3%, probably also indicates a bad year. In Afawa, as expected, laborers (156 households, 649 persons) as a whole - averaging only 40% of village outlay-per-person, and all belonging to "ex-untouchable" castes - could not incur deficits, and indeed reported consumption about 20% below their miserable incomes (R. Patel, 1966, p. 97 and Table I-2). In Dingri, though with less inequality, the (proportionately fewer) laborers also showed a slight surplus, i.e. appear to have been unable to borrow; once again, all the 20 laboring households (and only one of the 66 village households engaged in other occupations) belonged to the scheduled Minas caste (Saxena and Charan, 1973, p. 30). Oon performed similarly: of the village's 189 households, the 65 laboring families (336 out of 1139 persons) consumed 4-5% below income, and were heavily concentrated among scheduled

castes, scheduled tribes, and non-Hindus. In Hasteda, however, the situation in the four grouped villages (p. 55) recurs: the laborer households are consuming 57% above their incomes. Consistently with the hypothesis (p. 53-4) the overlap between caste and occupation is much weaker: of the 54 laborer households (268 persons) only 15 belong to the scheduled castes and 2 to the scheduled tribes, and 9 are Muslims (M. Desai, 1966, p. 19).

Even with tentative support from other data, these observations from four Gujarat villages - observations relating to caste average income and expenditure per household only - cannot be more than hints. However, they do suggest that collateral acquired from past income, or the expectation of future income from assets (usually land, or better jobs), allows very poor workers - even if currently landless or near-landless - to borrow or dissave to the extent that asset ownership (and/or type of work) is linked to age-cohort and/or life period of a person and/or his or her parents - but not to membership of an "unalterable" group (such as a sex or race or caste) to which poor persons do not belong. In effect, rigorous ascription of social status, if it severely constrains asset acquisition and mobility towards better-rewarded work, prevents the "lower" groups from following the trajectory correctly predicted by the "life-cycle hypothesis" on the determinants of personal savings/income ratios in developed societies (Modigliani and Brumberg, 1954).

People who are ascribed a poverty-linked status tend to be poor life-long. This is partly because they are less able to adapt to "good" phases of the life-cycle by repaying or saving or to "bad" phases by borrowing or dissaving. Hence the life-cycle element in poverty tends to explain a greater portion of poverty in developed than in developing societies, to the extent that the latter are more orientated to ascription and the former to achievement (Parsons and Shils, 1951; Hoselitz, 1968, p. 425). This explains, in part, the US-Colombian contrast found (p. 54) by Schultz. It also means that the lifetime incidence and impact of poverty and inequality - while everywhere "less" than the maximal estimates in one-off surveys (fn. 41) - are closer to those estimates in more rigid and immobile societies, where the poor are likelier to stay poor.

#### IV. DEMOGRAPHY AND POVERTY MEASUREMENT

##### (a) The choice-of-denominator problem

To decide whether a household is poor, and how poor it is, we ask whether, and how far, there is a shortfall below a critical level. But in what? Outlay (or income) 45/ per person, per consumer unit, or per household? So far, we have assumed that the CU is the best denominator; that per-person indicators are less good, but adequate (which is crucial, as they are much more readily available); and that per-household indicators are almost useless. On this assumption, we have established that several demographic indicators - e.g. large household size (in persons and to a slightly lesser extent in CUs), high child/adult ratios, and to a very small extent high rural female/male ratios - are correlated with poverty.

We now have to look at this assumption about the denominator. All the above findings could well be invalid if per-household measures best indicated the risk of poverty. Indeed, findings about any "characteristics of poverty" always depend for their force, and often for their validity, on the demographic denominator (outlay per what?) used to measure poverty. With "demographic characteristics of poverty" there is a chicken-and-egg difficulty: we enquire, for example, whether size of household, i.e. person/household ratio, is linked to "poverty", but per-person (or per-household) denominators in defining poverty will push the answer in positive (negative) directions. An approach via equivalence scaling (pp. 64-6) would, if successful, avoid the problem of choosing among denominators; however, it cannot properly allow for the needs of the "extra" new-born child, and places demands on data that most LIC household surveys cannot meet. Again, if we knew which of the potential denominators was most closely correlated with some nutritional "touchstone" of ultra-poverty - e.g. being unable, with patterns of spending typical of households of a particular size and structure and total outlay, to meet even 80% of the average dietary energy requirements of the ages, sexes and activity-groups represented in the household - we could choose that denominator. However, once again, many data sets will not provide this information.

We therefore need to ask how the choice of denominators should be made. In Section (b) we ask if the choice really matters. Are different persons classified as poor on per-household, per-CU, and per-person measures? In Section (c) we ask: under what assumptions is each denominator most appropriate in deciding who is poor and by how much? We then examine the main "problem assumption": absence of major economies of scale in consumption, which is assumed in rejecting per-household in favor of per-person indicators (Sec. (d)).

##### (b) Choice of denominator makes a big difference

Outlay per person ranks persons and households very differently from outlay per household. In ten South Asian data sets from 1968 to 1975 (Visaria, 1980, text table 2), only 14 to 28 percent of households - containing even smaller proportions of persons, 13 to 23 percent - were

assigned to the same deciles when ranked by per-household and per-person criteria. The surveys showed that over two in three households - and persons - normally belonged to different quintiles by MEP and by total outlay!

This great disparity between per-household and per-person rankings is systematic, not accidental. Big households tend to have low outlay per person (pp. 8-11). But they also tend to have high total outlay. Membership of high deciles by household size, therefore, is strongly correlated with membership of high MEP deciles (Table 1) and there remains a significant, though much weaker, correlation at individual household level (Botswana, Government of, 1976, pp. 99-103). In household cross-sections, as MEP rises, household size rises more slowly, so that a weak positive relationship remains between a household's decile rank in output per person and per household (Datta and Meerman, 1980, p. 4, fn. 2; Visaria, 1980a, p. 5, fn. 1). However, the negative size-MEP and positive size-outlay links mean that a low-rank decile by household outlay comprises a mixture of small households (some with quite large MEP) and low-MEP households (some with many household members). Tables 10 and 11 provide examples from Kerala and N. Nigeria. Apart from Visaria's South Asian work, several other studies show this tendency of smaller households to have lower total household income. The link is notable in Kenya (Collier and Lal, 1980, pp. 1, 39), Botswana (Botswana, Govt. of, 1975, pp. 99-103), and Malaya. In Malaya the result is that 38 percent of persons in the lowest quintile of households by income-per-household were not in the lowest quintile of households by income-per-person (Datta and Meerman, 1980, p. 5).

Therefore, per-household and per-person denominators seldom identify anything remotely like the "same" people or households as poor. In defining poverty-lines, too, we would classify very different proportions of households and persons as poor, with very different average intensities (and Sen indexes) of poverty, according to whether per-household or per-person outlay were used.

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We are trying to answer the question: in what sort of households, places, occupations, etc. is poverty most severe? That is, where are the proportions of persons below a poverty (or ultra-poverty) line greatest, and where do they fall furthest behind such a level? Many studies present only per-household outlay (or income), and can at best assess "adequacy of MEP" by estimating whether such outlays would suffice to maintain a given MEP for a household of average size and composition; this will be a bad assessment, since households with low MEP, low calories-per-CU, high child/adult ratios, high IMR, etc., tend to show MHS and child/adult ratios well above national or local averages. As we saw, rankings of households by outlay-per-household overlap very badly with rankings of households by outlay-per-CU.

Fortunately, a big minority of surveys does report households, or at least ranked groups of households, by per-person outlay or income. Only rarely, however, do they report per-CU data, or give household composition sufficiently disaggregated to permit households ranked by per-person outlay to be re-ranked by per-CU outlays. It therefore becomes important to estimate how much better or worse at indicating the risk of poverty, under various circumstances, per-CU indicators are than per-person indicators (Sec.(c)). First, however, we can report that the count of households that are poor (or their ranking in order of poverty-risk) by MEP is not an intolerably bad guide

to the count (or ranking) by outlay-per-CU. It is bad enough to lead to some risk of error, but - unlike outlay-per-household as a guide to outlay-per-person - not so bad as to invalidate most inferences for groups from "poverty" on one criterion to "poverty" on the other.

In each of Visaria's ten South Asian surveys, for example, household size could be calculated (i) in persons and (ii) in Indian-weighted 46/ adult-equivalents. Among surveys, the range of  $r^2$ 's is small - 0.96 to 0.98 (Visaria, 1980, p. 201) - but all are very persuasive. In India, even among quite fine MEP groups, the ratio of CUs to persons in the average household (in a 1971-2 sample of 11,468 rural and 19,459 urban Indian households) - while tending to rise with MEP - varied extremely little: it averaged 0.788 among the poorest 3.9% of rural households, 0.794 for the next-poorest 10.5%, 0.793 (7.1%), 0.791 (10.2%), 0.797 (15.2%) ... 0.807 (best-off 4.2%); and in urban areas 0.790 (poorest 0.9%), 0.787 (next-poorest 3.7%), 0.793 (3.6%), 0.796 (6.0%), 0.800 (10.2%) ... 0.840 (best-off 17.0%) (Rao, 1979, p. 117). So it is not surprising that - in South Asian large-sample surveys in 1968-75 - in sharp contrast to the mere 26-40% of households (25-38% of persons) assigned to the same quintile of households when these were ranked (i) by MEP and (ii) by household-outlay rankings - 77-86% of households (78-87% of persons) were in the same quintile of households, when these were ranked (i) by MEP and (ii) by outlay-per-CU on Indian weights (Visaria, 1980, pp. 39, 46.)

It is tempting to conclude, as similar Nigerian and other micro-data suggest, that "to give all persons equal weight regardless of age and sex does not produce too much distortion" (Simmons, 1976, pp. 26-7). And certainly distribution "using ... per capita income probably will be very similar to the distribution when using ... income per [CU]" Datta and Meerman, 1980, p. 7). However - even if, across individual households, 47/, we find (i) high  $r^2$  between size in persons and size in CUs, (ii) high  $r^2$  between outlay per person and outlay per CU, (iii) similar summary statistics (e.g. Gini coefficients) of distribution whether we measure outlay per person or per CU - we cannot be confident that, when two sets of households (e.g. in two areas) are compared, the estimate of numbers in poverty will be almost the same whether per-CU or per-person indicators are used. After all, if "58-74% of the households (including 61-76% of the population) fall into the identical decile" on both indicators in a group of surveys (Visaria, 1980a, p. 12), then 26-42% of households fall into different deciles. We know little about the distribution of the latter households between rich and poor, big and small, or country and city. They might well be concentrated among the poor. 48/

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If outlay, in a household, is below a level producing poverty for a household of "typical" size, that provides almost no evidence that outlay-per-person in that household is below the poverty line. Outlay-per-person in a household (of unknown CU/person ratio) is a much better guide to its outlay-per-CU - though still far from perfect - than is total outlay, in a household of unknown size, to outlay-per-person.

Finally, total household outlay probably ranks households (of unknown size and CUs) somewhat less badly by outlay-per-CU than by outlay-per-person. This is because households with big total outlay, while clearly larger, tend

also to have slightly higher child/adult ratios. The latter tendency, however, is quite insufficient to "rescue" household outlay as a poverty measure, if we believe that per-CU measures are the best but are not available in a particular case. Outlay-per-household ranks households slightly less badly in order of outlay-per-CU than in order of outlay-per-person; but outlay-per-person remains likely to rank them much more closely to their outlay-per-CU order than total household outlay would do. Per-person and per-CU are not too dissimilar; per-household is totally different.

(c) The case for and against the three measures

So far, we have said little about whether inadequacy of per-person or per-household resources best indicates "poverty". All that has been shown is that the two indicators produce completely different results. It is a defensible rule of thumb, in LICs with more or less typical income distribution, that at most the poorest 20 percent or so of households are ultra-poor - likely in normal years to be unable, at some time, to afford the minimum dietary energy intake required for good health (for a summary of the evidence see Lipton, 1983). Between four and seven in ten households assigned to the "poorest quintile" by income (or outlay) per household are not so assigned on a per-person basis in LICs; and between four and seven in ten households in poverty by income (or outlay) per person are not so on a per-household basis.

It may seem self-evident that per-person indicators are better measures of poverty, or economic welfare, than per-household indicators. However, African "poverty datum lines" are often specified as the wage required to support an average household. Also, clearly competent research by individuals (e.g. Ahmed, 1981; Nugent and Tarawneh, 1982), governments (e.g. Government of Botswana, 1975) and international organisations (e.g. Mathew and Scott, 1980) persistently uses per-household resource indicators to establish whether a household is poor. Sometimes the reasons are administrative, or are based on lack of information about household size in different income-groups. Often, however, researchers and their organisations staunchly defend the use of per-household indicators of poverty. It is correctly asserted, for example, that resource allocations are usually to the household (or fungible inside it); <sup>49/</sup> that it allocates internally in ways little amenable to policy; and that these internal allocations, notably of food, are not necessarily optimal. None of these assertions, however, justifies using outlay-per-household as an indicator of poverty in preference to per-person indicators. The case for preferring these (e.g. Datta and Meerman, 1980) seems overwhelmingly strong, and the attempt to isolate "characteristics of poverty" linked to per-household indicators of the latter (e.g. Collier and Lal, 1980, pp. 38-9, 46; A4-6) appears rather risky and sometimes misleading.

Only under two circumstances might per-household indicators be best. First, due to the importance in household incomes of the yield from jointly consumable owned assets (car, furniture, etc.) - assets having some of the characteristics of "public goods" with all members of just one household as the public - or for other reasons, economies of scale in consumption could be very large. If five can live as cheaply as three, and can enjoy flows of services that generate the same levels of welfare, then it is wrong to assess

welfare by dividing household outlay by five for the family of five and by three for the family of three. These effects are examined in Sec. (d), but there is some a priori ground for doubt that, for a poor household in a LIC, they are very important. First, such a household spends 70-80% of outlay upon simple foods, for which scale-economies (while extant, in buying and cooking) are small. Second, if they were important, poor people - being likelier than wealthy ones to prefer income to privacy - would presumably reveal such preferences, and thus internalize the potential scale-economies, through a much higher propensity to live in more complex households than is shown by wealthy people. We know (Sec. II(h)) that is not the case.

The second circumstance, under which outlay-per-household is a better guide to poverty-risk than outlay-per-person, is more plausible. We have seen that households with low MEP tend to be bigger than households with high MEP, but also to have higher child/adult ratios (Tables 2, 8). Suppose that low-MEP households - e.g. because they tended especially to have very small children - were hardly bigger in CUs than high-MEP households. Suppose also that outlay-per-CU is accepted as the most reliable indicator of a household's poverty, but is seldom available by per-person (or per-household) outlay classes. Then outlay-per-household might well rank households, in respect of welfare, in an order much closer than outlay-per-person to their "correct" ranking by outlay-per-CU. For example, suppose household A contains 8 persons and 5 CUs, and has \$10 MEP; B contains 6 persons and 6 CUs, and has \$12 MEP. A's household outlay is \$80, and B's \$72; A's outlay per CU is \$16, and B's \$12. Then household outlay ranks A as richer than B, which is in accord with outlay-per-CU ranking; but MEP "wrongly" tells us B is richer than A. In practice, though lower-MEP households such as A do tend to have a somewhat higher persons/CUs ratio than higher-MEP (and generally smaller) households such as B - so that the correction in the example is in the right direction - the amount of the correction is much smaller, as the data on p. 60 suggested. It is in fact far too small to render significant numbers of households, better-off than others on MEP rankings yet not on per-household rankings, worse-off on outlay-per-CU rankings, so that households could be better ranked by outlay per household than by MEP. In general, we find a CU/person ratio decreasing only very slowly as MEP declines.

These two effects, scale-economies in consumption and ranking disparities as between MEP and outlay per CU, are of course additive in their tendency to make household outlay a less bad poverty indicator, relative to MEP, than it might at first appear. However, even together, the two effects appear to be each so small, in the overwhelming majority of cases, as not to invalidate the commonsense conclusion. Normally, MEP appears to be very much better than household outlay as a poverty indicator. Indeed, the latter is almost worthless, unless the importance of scale-economies can be shown in Sec. (d) to be established, after all, by recent evidence.

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Despite the above reassurances, it is easy to simulate conditions where MEP is a bad proxy, as a poverty-ranking device, for outlay per CU. Unfortunately, there is no universal way to weight males and females of different ages, in respect either of total "requirements" to attain a given level of health or performance, or of the "welfare" that each person would attain from a given income or outlay. Such weights could be different at

different levels, of household income-per-person (or per-CU) and family size, and in different cultural environments; this underlies the attempt to devise constant "equivalence scales" (pp. 64-5). Also, even if we could show that a man of 40 in a particular case needed 1.3 times the outlay of a child of 10 to obtain the same welfare, there is no guarantee that intra-household allocation would produce that ratio - or approximate it to the same extent in groups of households being compared.

To some extent, however, all this can be short-circuited in the case of poor, or potentially poor, people in LICs. For example, in India in 1972-3, the 32 percent of urban households, and the 76 percent of rural households, with lower levels of MEP - i.e. all MEP sub-groups up to 43-55 Rs./month - were, in each (often quite small) MEP sub-group, spending over three-quarters of MEP on food (Sarvekshana, Jan. 1979, pp. S354, S423).

Such concentration of outlay on food is almost always found among those who are ultra-, moderately, or even potentially poor. Among the three-quarters of Indian villagers - (and the one-third of townspeople) - with lower MEP, this food/outlay ratio is not only very high (75-80%), but falls only very slowly with rising MEP (and not at all for the poorest 10-15% of households). Also, all these groups spend the bulk of food outlay on cheap calories; and calories (dietary energy) "per unit" are usually the only requirement both at risk of serious deficiency and related in intake mainly to private income and outlay (see Lipton, 1983, for evidence for all the above). Therefore, can we not establish the average caloric requirements of males and females in different age-groups; use these to construct CU-equivalents for households of different total outlays; and - for the potentially poor - convert outlay to outlay-per-CU upon calorie-based CU-weights? Such weights are widely available, and are used in Lusk, Indian and Taiwanese CUs. These three produce somewhat different poverty measures, but all appear to adjust crude MEP data in the "right" direction (see fn. 46).

What these adjustments suggest is that - because child/adult ratios rise quite sharply as MEP falls - low-MEP households tend to have relatively less inadequate outlay-per-CU, so that the incidence and severity of poverty are less than they appear to be (although for various reasons the adjustments are very small). While this reduction may be sensible from other contexts (see, for example, Srinivasan, 1980), the inference from CUs and MEP-child/adult relationships is not quite so clear. First, the inference is actually strengthened by the fact that food/outlay ratios tend to rise not only with falling MEP but also (given MEP) with rising child/adult ratios (Deaton and Muellbauer, 1983), so that food requirements become better indicators among the poor than among total populations of a household's total "welfare size". Second, however, this very fact of a greater food/outlay ratio in households - together with the much greater risk of damage for children under five from a given proportionate shortfall behind dietary energy requirements - means that an X% shortfall in outlay-per-CU does more damage to very poor households than to others. This, in turn, suggests that - even if "MEP below a given level" may somewhat overstate the incidence and severity of caloric risk - correction to per-CU indicators correspondingly understates them. Third, in parts of Bangladesh and North India (though probably not elsewhere), and in areas where women's prospects in labor markets are particularly bad compared to men's (Rosenzweig and Schultz, 1980), ultra-poor families in particular (Carloni, 1981, citing Levinson) appear to

be driven to discriminate against small girls - not other age-groups (Chen et al., 1981), nor boys - by selective underfeeding. This, once again, suggests that the move from MEP to outlay-per-CU "over-deflates" the requirements of the very poor.

It follows that, when we ask "Has Area A more, or severer, poverty than Area B?", or "Does Project X benefit the poor more, or less, than Project Y?", - we take an implicit decision by using per-person rather than per-CU measures. The decision is to weight low purchasing-power more highly in households with lower CU/MEP ratios, i.e., in general, with more small children per adult. Since it is in such households that poverty is likeliest to disable or to kill, this decision seems sensible in policy-making to reduce poverty by cost-effective allocative decisions among projects or regions. (It would not be sensible in making individual clinical or diagnostic decisions about which particular household or person needs what and why; but no economist (indeed no sane person, surely) would make individual decisions on the sole basis of grouped survey data about outlays, incomes and populations. 50/) We can be the more confident in using MEP data ranking in broad allocations, because the overlap, for relevant decisions, with per-CU data rankings is very close (p. 59); and because tolerably reliable data are more seldom available per-CU than per-person.

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There remains the question: should both per-person and per-CU data for outlay be replaced, as indicators of incidence and severity of poverty, by appropriate equivalence scales? These, if they could be constructed and if the relevant data were available at acceptable cost, would also take care of the problems of economies of scale in consumption (Sec. (d)). A deliberately loose statement would be that equivalence scales show the level of outlay (or income) that households of various sizes and compositions require in order to be on the same indifference surface. If we could then associate a particular ranked indifference surface, for each size and composition of household, with (i) poverty and (ii) a level of total household outlay (or income), we could then count the households and persons in poverty in a given area, or moved into or out of poverty by a particular project. 51/

Unfortunately, the steps needed to tighten up the above "deliberately loose statement" - while still leaving equivalence scales important for some purposes - remove much of their apparent potential usefulness as indicators of numbers of persons in need. First, some people would deny the possibility of comparing the impact of extra income on welfare among even broad groups of different persons; but this extreme position - apart from removing the point from almost all arguments about the projects, areas, etc. on which a cost-effective attack on poverty "ought" to concentrate - is surely pseudo-sophisticated and even a little silly. 52/ Second and much more plausibly, one can object to any attempt to compare the welfare - total, marginal with respect to extra income, or whatever - of groups of persons with distinct demographic structures: of, for example, childless couples and couples with three children. The only credible solution 53/ is to ask: what extra annual outlay does a "representative" couple require, at a given time, to compensate it for the outlay foregone by meeting, at the level chosen by that couple, the extra requirements of one, two ... children in various age-groups (or by divorcing into two one-member households; by taking an old,

incomeless person into the household; etc.)? The answers to these questions imply - if we assume that the capacity for enjoyment, the "rights" to enjoyment, and the impact on incentives of enjoyment are, among members of any set of demographically identical households, statistically independent of outlay - quite strong conclusions. In particular, we could then isolate a level of outlay just sufficient to avoid "poverty" or "ultra-poverty" for (say) a couple with one child aged five, and work out welfare-equivalent outlay levels for all other sizes 54/ and age- and sex-structures of household.

How to do this - and the surprising fact that maintenance of parental access to "adult goods" (mainly non-food), not the Engelian criterion of a constant food share, is the most plausible indicator of welfare equivalence - has been explained very clearly elsewhere (Deaton and Muellbauer, 1983, esp. pp. 24-5). However, the method, even if data were costless, seems unsuitable for our purposes. In order to compare like with like (and to focus upon the indifference surfaces of the decision-takers), we were logically compelled to ask what extra outlay a couple needed to compensate it for welfare foregone by "adding", say, an infant to the family. Leaving aside some important conceptual issues - the time-stream of benefits to the couple from such an "addition"; the question of whether the couple would be compensated or merely given a windfall, if now "reimbursed" the streams of benefits deliberately sacrificed, through a decision to have more children, for expected benefits later; the possibility (Schultz, 1981) that the couple is making something like a (constrained) optimizing demographic-economic life-plan - there remains, at the "simpler" level of poverty planning, a more peremptory objection to any attempt to use equivalence scales as an indicator of how many households in Area A, or benefiting from Project X, are poor.

This objection is that, although the most serious sufferers from poverty are children under five - who in extreme cases suffer nutrition-induced mental or physical damage, or even die - the logical requirements of equivalence scaling compel us totally to disregard these children's level of well-being in deciding how many households fall below a given level of "welfare" (ranked indifference surface). "Perhaps this is unfortunate, because for many policy purposes we are interested in the welfare of the children themselves. However, [equivalence scales] cannot be directly interpreted in terms of children's welfare, although it would clearly be possible to add supplementary assumptions linking parental costs to the welfare of their children" (Deaton and Muellbauer, 1983, pp. 8-9). Even such assumptions could not dispose of the problem that under-fives cannot reveal their preferences by their decisions as purchasers.

The results from logically acceptable (Rothbarth-Barten) equivalence scales produce child-weights somewhat, but not dramatically, below those of Lusk CUs. In such scales, "child costs come out to be 30-40% of an adult" (*ibid.*, p. 39); Lusk CUs are 0.3 of an adult male for children aged 0-1, 0.4 at 1-3, 0.5 at 4-6, 0.7 at 7-9, and 0.8 at 0-12. The Indian weights (Visaria, 1980, p. 200) would leave the average child aged under 12 about halfway between the Lusk and Rothbarth-Barten levels. Lusk and Indian weights also handle, as equivalence scales do not, the problem of adult women's "requirements" vis-a-vis men; but the scales can deal with, and CUs ignore, economies of scale in consumption. Despite the advantages of Rothbarth-Barten

procedures here, however, and despite their logical (and in other contexts empirical) merits, they seem to be unhelpful for LIC poverty measurement - and for allocations aimed at cost-effective poverty reduction - above all because their great advantage, logical rigor, implies the neglect of children's welfare. We thus need to look at economies of scale in consumption directly. How important are they? Could they mean that, although Area A or Project X looks much more cost-effective as a way of reducing poverty, the bigger households benefiting are in fact less poor than they seem - and the small, poorer - so that more would be achieved in Area B or by Project Y?

(d) Economies of scale in consumption

An important analysis of a sample of 13,000 US households in 1970-71 (Lazear and Michael, 1980) uses standard assumptions about optimizing consumer behavior to estimate how much must be spent on purchase commodities, by households of different sizes and structures, to generate a given flow of benefits-per-person - say, that obtained from \$10,000 annual outlay by a single person - from the services derived from purchased commodities (a flow hereafter called "ecfare"). 55/ As household size and composition vary, so do purchases of all types of commodities. Hence Lazear and Michael use cross-sectional variations in expenditures, as household size and composition vary - plus independent estimates of "price elasticities - to infer changes in prices ... from which real (price deflated) levels of income can be inferred" for households with similar nominal income, but different size and composition (ibid., pp. 96, 104).

In three main ways (ibid., pp. 92-3) larger households might get more welfare-per-person from a particular level of outlay-per-person. One is via family goods: "If \$5 provides the man with a securely locked door and \$5 provides the woman with the same ... then together its price [becomes] \$2.50" to each when they form a joint household. A second is standard scale-economies, such as quantity discounts. A third is complementarity due to specialization within the household.

The total effect of these three economies of scale in consumption (ESCs), at least in the USA, is astonishingly large. Each adult in a two-adult-household can enjoy, for \$10,606, the same ecfare as a single-person household enjoys for \$10,000: i.e. "on average the prices of service flow units faced by couples are ... only 53 per cent ... as high as the prices faced by single-parent households" (ibid., p. 99). In other words, if two live as cheaply as one, they enjoy not 50% but over 94% of the level of living of "one"! A household of two adults and one child require to spend \$13,342 to enjoy the same ecfare per person that three single-adult households would get for \$10,000 each: five of the latter ("costing" \$50,000) would enjoy the same ecfare as one household with two adults and three children spending only \$16,889. In other words, a nominal post-tax dollar appears to generate almost twice as much ecfare, at these outlay levels, for a childless couple as for a single person - and almost thrice as much for a couple with three children as for a single person (ibid., p. 97).

Three other expert estimates of ESCs for the USA are cited by Lazear and Michael. They use different methods, but do not reach radically different results. Moreover, the higher levels of consumption-flows in larger US

households are not significantly offset, in their effects on family welfare, by higher domestic work-inputs; only a small part of the greater "ecfare-cost-effectiveness" of outlay in bigger households is traceable to "specialization within the household" by labor, and the effect of extra domestic labor by family members, such as the wife, appears as a proportion of this small amount (ibid., p. 102).

Even for the USA, we do not yet know how these massive ESCs might operate differentially for households of similar numbers and child/adult ratios, but different age- and sex-compositions. Nor need these results reduce the proportion of households below a "poverty line". However, if these results carried over to LICs, the impact on all existing analyses of the incidence of poverty in different types of household - and hence in different regions, among sets of persons benefiting from alternative projects, etc. - would be devastating. Sufferers from poverty would then appear to be much more concentrated in smaller households, implying that anti-poverty strategies should redirect policy and project benefits towards such households. This requirement of equity would clash with the requirement of efficiency if - as would surely be likely - significant parts of these average ESCs continued to apply to marginal outlays in bigger households, which however were now to lose some benefits from anti-poverty policy to smaller households, precisely because the latter were now counted as relatively "poorer" because less ecfare-efficient.

However, independent features of LIC data sets suggest that ESCs are much less important - especially for low-MEP groups - than in the USA. First, in LICs, especially among such groups, as the number of siblings rises, their proportionate death-risks rise (Birdsall, 1977, p. 75) much more sharply than in developed countries, and upon a higher (one-child family) base-level. Moreover, both high IMR (and child mortality) at low MEPs, and its tendency to increase with sibling numbers, are much more directly attributable in LICs than in the USA to "primary" poverty in Rowntree's sense: i.e. not due to household decisions to allocate resources away from basic foods, medicine, shelter, etc., but due to absolute lack of resources, per poor child, to combat undernutrition, infection, etc. This stark evidence of the effect of low private MEP, as MHS rises, in poor LIC families militates against major ESCs for them. 56/

Second, the structure of outlay is much less favorable to ESCs in such families. Lazear and Michael (ibid., p. 97) usefully indicate the types of commodity purchase for which, on their revealed-preference approach, the larger US household is especially efficient - compared to the smaller household - in transforming each dollar of outlay into ecfare. For example, overall ecfare per dollar is about twice as high for a three-child couple as for a childless couple - but 28% for shelter, 84% for food, 187% for clothing, 191% for transport, 184% for other goods, and 85% for other services. Much of the 84% on food is due to lower per-person costs when a larger party eats out. Food not eaten out (which comprises 70-80% of total outlay for poor people in LICs, but - even for those classified as "poor" - well below 35% in the USA) does offer some ESCs in purchasing and preparation, but not very substantial ones. 57/

The methodology of US studies, too, could lead us to expect too much of ESCs for poor people. The figures on p. 66, while given to a norm of

\$10,000 yearly for a one-person household, in fact refer to the relative purchasing-power of total, or average, outlays for households of each size and adult-child ratio (Lazear and Michael, 1980, p. 99). In the USA, and even more in LICs, there are a priori reasons to expect poorer groups to show much lower ESCs, as indicated above. Nor is it clear whether similar ESCs should be expected whenever a household of given size and composition adds a member, whether young or old, male or female; and whether urban or rural.

The lower incidence of the decision to live in complex households in LICs among the poor (Sec. II(h)), despite their presumably greater pressures towards the welfare optimization assumed by Lazear-Michael methods, might have at least two interpretations. It could be that ESCs there are in fact very small. Alternatively, as argued on p. 32, a poor couple might have too little heritable capital to induce married children to stay at home, even though if they did so there would be a larger stream of services, from economic commodities, to parent and offspring couples taken together.

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Equivalence-scales - apart from their major claims upon data - have basic drawbacks in assessing incidence or severity of poverty, especially if the main victims of poverty are children. Outlay-per-CU - for which outlay-per-person is a surprisingly good proxy, as regards poverty incidence and severity in large groups of households - has therefore to be used. In developed countries, however, scale-economies in consumption (at least for households around mean outlay-per-CU) may well be so great that an outlay-per-CU measure would lead to serious over-estimation of the relative poverty in big households, and serious under-estimation of it in small ones.

Such scale-economies are probably much less significant for the typical poor household in a typical LIC. However, this last statement, in considering the impact of an extra person on a poor LIC household, averages far too many distinct circumstances, even holding outlay-per-CU constant - urban and rural, big and small households, extra child and adult members, etc. For instance, in India, low-MEP households' MHS is much bigger in towns than other households' MHS; in rural areas, the disparity is a good deal smaller (Table 2). The possible implications - that there is a higher ratio of urban to rural ESCs for poor than for other households; and that rural poverty is severer, relative to urban, than MEP-based comparisons would suggest - seem striking, but depend on absent information about urban and rural ESCs.

The large apparent size of ESCs for the mean US household, in any case, adds research and policy urgency to an improved understanding of ESCs for the LIC household. They could be much smaller in the latter, yet still could importantly refocus anti-poverty activities upon - for example - non-married women, especially where they have difficulty in remarrying or working outside the home, or where long-term male migration prevails. However, we are now uncomfortably ill-informed about the importance and location of scale-economies for poor LIC households in various circumstances. We return to research and policy implications in Sec. V.

## V. DEMOGRAPHY, POVERTY AND POLICY

### (a) Policy for research, measurement and project planning

Many of the conclusions we have advanced in this paper are highly tentative. It is organised, first, around the correlates of differences among poverty-groups in MHS; as such, this topic appears to be largely unresearched in today's LICs, so that we have sought, in part, to assess the applicability there of findings from historical demography in NDCs. The other central issue considered here, the relationship of poverty to age- and sex-structure, is only beginning to yield generalizations, partly because that relationship has in the past been too readily assumed to be culturally so specific that they are impossible. This paper also limits its immediate policy applications by seeking merely the demographic correlates of poverty, rather than, as yet, the direction of causes and effects. Nevertheless, a few policy suggestions emerge.

The greatest confidence attaches to suggestions about policy for research, measurement, and project preparation. Perhaps half the quantitatively based "findings" about poverty, and certainly over three-quarters of the wrong ones, are still based on surveys that - openly or otherwise 58/ - rank households by "poverty" in order of their total income or outlay. Yet most households in, say, the lowest quintile by total household income are not in the lowest quintile by outlay-per-person; and the commonsense observation, that per-person or per-CU outlay is a far better guide to poverty than per-household outlay, is fully borne out by all the evidence. Low MEP is strongly linked to high MHS in total populations; so, only slightly less, is low outlay-per-CU, despite the clear tendency, for low-MEP (and for big) households to feature high child/adult ratios. Our first policy conclusion - already implicit in Datta and Meerman (1980) - is that poverty lines, surveys, research, evaluations of the poverty impact of policies (or projects or tax systems), and project planning should never accept that numbers, or distances from a poverty line, of households with low total outlay (or income) are a remotely tolerable proxy for the incidence, or severity of poverty in, poor households.

Second, MEP is, for all its over-simplifications, a surprisingly acceptable guide to poverty. If seasonally averaged in a typical year, and adjusted for price differences that may be faced by different groups, MEP does seem to rank groups of households reasonably accurately. Consider two equally populous regions where 80% of households have MEP sufficient to command adequate diets. The region where the lowest-MEP 20% of households are 5% below an MEP sufficient (on normal spending patterns) to provide even 80% of average 59/ dietary energy requirements to those households is normally poorer than the region where 10% of households are 5% below that MEP, and the 10% with next-lowest MEP can afford 80-100% of those requirements. Projects benefiting the poorest 20% in the former region, given their cost-effectiveness, normally reduce both the incidence and the severity of poverty more than in the latter region.

Third, it is not certain that we can find a better measure than MEP to assess a household's risk of poverty. Equivalence scales make severe claims on data, cannot measure child poverty, and have other disadvantages.

Outlay-per-CU, on the other hand, superficially appears to be clearly superior to MEP in "locating" areas, projects, etc. especially important in policies against absolute poverty; but is it? Where infant and child mortality is especially high, the apparent advantages of outlay-per-CU might seem especially big; for such high mortality concentrates in the lowest-MEP households - as do infants and small children with relatively low requirements and hence CU-weightings - thus somewhat (though surprisingly little: p. 60) reducing CU/person ratios. Yet it is precisely in such circumstances that we would be most reluctant to adopt a weighting that relocated "poverty", and thus social outlay to reduce it, in households with higher adult/child and therefore CU/person ratios; such reweighting would make adults less unhappy, but cause permanent harm, even death, for under-fives. The impact of a given shortfall of outlay behind "requirements", especially if that shortfall means ultra-poverty, is greater in households where those ratios are low - although the size of the shortfall, given MEP, is greater where the ratios are high. We are concerned with impact as well as size. So MEP may well be a more acceptable poverty indicator than outlay-per-CU. Fortunately, the choice between per-CU and per-person measures seldom greatly alters poverty rankings of major groups of households, or of big projects.

Fourth, we need to know much more about the possible impact of economies of scale upon household well-being. The evidence on the consumption side that suggests big ESCs for average US households, and the hints and hunches that suggest much smaller ones for poor LIC households, have just been presented. But useful policy decisions require integrated research into scale-economies, for poor LIC households of different age- and sex-structures, in three areas: consumption, production (especially via self-employment), and job search. Different sorts of household enterprise (e.g. carpentry or horticulture?) and of hired employment (e.g. casual or longer-term?) make sense for different sizes and compositions of household. Of course, other issues - e.g. capital and skill requirements, seasonality of incomes, and market structure - affect the choice of appropriate activities to increase poor people's incomes. However, research into their effects on scale-economies in production and consumption is surely a high priority. Very little is known about these issues; yet they could well turn out to be central (since poor households have sizes and structures atypical of total populations) in deciding which policies work, and which fail, in advancing poor people's prospects of self-sufficient escape from poverty.

Fifth, the findings on MHS suggest a particular form of demographic assay of the impact from major policies - not just "anti-poverty policies" - on the poor; for policies helpful to the poor overlap considerably with policies benefiting big households. The decile-wise MHS averages (Visaria, 1980, p. 49) do not, perhaps, bring out sufficiently dramatically some of the size differences between poor and rich households. In 1972-3, in rural Gujarat, only 2.2 percent of households in the bottom MEP decile had fewer than three members, as against 29.5 percent of households in the top decile. In urban Gujarat, the respective proportions were 2.7 percent and 43.2 percent. Other Asian surveys showed similar features (ibid., p. 47). Just as really small households tend strongly to be better off, so really big ones tend strongly to be poor. Thus in rural N.E. Thailand in 1975-76, in the lowest MEP quintile, 42.2% of households had nine or more members, as against 25.0% in the middle and 12.2% in the lowest quintile (Meesook, 1979, p. 65); so about 60% of persons in the "poverty quintile" were in households of nine

or more. In urban Colombia in the 1970s, a massive 78 percent of households in the lowest income-per-person decile contained eight persons or more - as against 5.5 percent in the highest decile, and 11.8 percent overall (Birdsall, 1979, p. 132).

In such circumstances there is normally a powerful positive relationship between the effects of a project or policy on the poorest and its effects on big households. It is, of course, important not to encourage higher fertility by the promise of benefits to families that enlarge themselves. However, too many policies - notably in the setting of land-reform floors and ceilings - have been designed with little or no attention to household size. Since larger holdings are almost always associated with larger households, it is not merely unjust, but can sharpen poverty, if flows or entitlements are set in terms of land-per-household, instead of per person or per CU. 60/ More generally, a demographic assay, in order to estimate very roughly the impact on different sizes of households that benefit (or lose) from alternative proposals, is on the above evidence a vital part of any assessment of the effect on poverty of those proposals.

The demographic assay should also look at the child/adult ratios in affected households. We have seen that these ratios tend to be bigger in (i) big households and (ii) poor households; and that (iii) bigger households tend to be poorer and vice versa. Together with the dramatic excess of very big households (and deficiency of very small ones) just discussed, this means that the poorest MEP deciles contain a hugely disproportionate number of children, often in very big multi-sibling households. Since life-threatening undernutrition concentrates on ages 0-3, and is strongly linked both to extreme poverty and - even given social class and poverty - to high birth-order and MHS (Birdsall, 1977, p. 75; Lipton, 1983), these children will in turn, include disproportionately many infants and under-fives, often doomed to early death, yet raising the dependency burden - and hence the difficulty of escape from poverty - in the households of which they form such a large part.

Once again, our evidence of decile average child/adult ratios (pp. 43-5) perhaps understated the dramatic disadvantages at the intersection between severe poverty, large MHS, and high child/adult ratios. Around 1970-4, the quintile of households with lowest income-per-person contained one-quarter of children under 15 in rural India, and about 30 percent in Colombia, Malaysia and Brazil (Birdsall, 1980, p. 39). In India's large National Sample Survey in 1972-3, in the poorest 10.3% of rural households, 51.4 percent of persons were aged under 15 (as against 41.5% in the remaining rural households), so that 16.8% of children - supported by only 13.6% of adults - were in this most vulnerable rural household decile. In the poorest 9.1% of urban households, 49.8% were children (as against 37.1% in other urban households), so that 15.3% of children - supported by only 11.8% of adults - were in this ultra-poor urban 9% of homes (Sarvekshana, Jan. 1979, pp. S-305, S-369). Under-fives - contributing only demand and not supply to the household's economic balance; and especially vulnerable to poverty-related physical damage - must have been considerably more heavily concentrated in very poor households.

Any assessment of the impact of projects and policies on poor people, then, needs to examine the effect on large households with many children. The

central issue of Part II, however, suggests a word of caution. Within a national population, area, or social group, high MHS and high child/adult ratios now tend in LICs to accompany poverty. But across areas, land-ownership classes, jobs, castes, sexes of household heads, or other status-linked groups, the opposite is true: as NDC history suggests, social norms associate larger households and many children with higher status, even though recent demographic trends and households' economic preferences associate high MHS and child/adult ratios with lower income. Hence a demographic assay must not be mechanical. An agricultural project might benefit big households with many children because it provided gains mainly for persons cultivating large acreages, or because it created labor-intensive production opportunities for poorer people within each holding-size group (including the landless).

While the proposed demographic components in policy formation and property does therefore need to be fairly subtle, an elaborate exercise in applied statistics would be too time-consuming, too vulnerable to data limitations, and therefore a recipe for fudging and abuse. Required is simply an intelligent attempt to address the question: do the project or policy alternatives under review offer better, worse, or similar prospects of benefit to big and small households, and to households with high and low child/adult ratios, within given areas, status-groups, and total populations? That question implies fairly self-evident "second-round" questions about impact on poverty. The point stressed here is simply that the very sharp demographic differences among MEP groups strongly suggest that, to attack poverty effectively, major projects and policies require evaluation of the sizes, structures, and demographic types of households likely to gain (or lose) significantly.

(b) Steering resources towards given, poverty-prone, household demographics

It is, then, clear that governments can improve their anti-poverty policies by incorporating relevant demographic knowledge into them, and often by undertaking new economic-demographic research. This apart, there are three - perhaps three-and-a-half - substantive ways to adapt anti-poverty strategy to allow for the special demographic characteristics of the various MEP groups. The first two ways accept those characteristics as given. First, public-sector action may seek to raise incomes, cut costs, or in other ways provide resources, for households with sizes, structures, and associated demographic parameters strongly linked with poverty. Second, big families with high child/adult ratios - which include vastly disproportionate numbers of the actually or potentially poor and ultra-poor - might be helped or induced to alter the nature or timing of their non-demographic behaviour (mainly job search and choice, asset size and structure, consumption pattern and intra-household distribution) in ways that reduce the risks of and from poverty, and, especially, ultra-poverty.

Third, public action can seek to change attitudes, incentives, laws, technologies (including contraceptive technologies), or delivery systems, in the hope of causing potentially poor households to change size, structure, or associated demographic parameters in ways tending to reduce the risk of poverty. Finally, halfway between the first and third option, governments might "redistribute" access to resources, including loans, so that poverty

becomes (i) briefly life-cyclical for many rather than prolonged for few, and/or (ii) concentrated on parts of the family cycle where it does relatively little permanent harm.

There is reason to expect significant, though limited, scope for the first two types of policy, which accept the given demographic structure in all MEP-groups but steer resources towards the sorts of household size, composition, etc. more typical of poor people. Large MHS and high child/adult ratios characterize the poor sufficiently to define clear demographic target groups (subject to the caution mentioned on p. 72). In reaching these decisions, households are sufficiently rational, even perhaps optimizing (Schultz, 1981; Cassen, 1978,) to suggest that the policy-makers ought indeed to adapt to such decisions - to attempt to dissociate them from poverty - rather than trying to persuade people to change them. However, such dissociation may be an uphill task, because downward movements, industrialization, and increased status do not appear to reduce poor people's absolutely high MHS and child/adult ratio - indeed, may raise them relatively to the better-off.

The extremely high propensity of poor households in LICs - and, of course, even more so of poor people and especially children - to concentrate in high-MHS groups, and conversely the extreme rarity of poor single-person or two-person households, has immediate consequences for horizontal and vertical equity. In NDCs one would seek such consequences mainly via direct taxation. Horizontal equity - taxing equally poor people equally - would normally be advanced, whatever the degree of progressivity of direct taxation, by taxing households with many CUs more lightly per CU than households with few, thus placing a larger share of tax burdens on smaller households. Vertical equity - taxing poor people less heavily than rich people (on the assumption that such a tax-structure is needed to equalize sacrifice, because income has diminishing marginal utility) - would normally be advanced by even greater shifts of the tax burden to small and "adult-intensive" households, in particular by using a per-person rather than per-CU basis for reliefs or allowances.

In LICs, direct taxes are normally much smaller parts of the tax burden than in NDCs, especially for poor and even middle-income taxpayers. Attempts to use "poor people's demographics" to select a balance of taxation that improves equity - or reduces poverty - must therefore rely mainly on indirect taxes, positive or negative (subsidies). Food looms larger in the spending of larger households, because they tend to have higher proportions of under-fives; and simple foods, eaten at home, appear to offer few ESCs. It is well known that consumer subsidies on food - if fiscally sustainable, and if not supported by offering below-market prices to the farm sector (especially small farmers) - offer most benefit, proportionately to income, to poor households of a given size and composition, because their food/income ratio is relatively high. It is less well recognized that food subsidies also offer most benefit, proportionately to income, to big households with high child/adult ratios (partly because children's consumption is more concentrated on food than is adults' consumption, given outlay per CU). Such households not only tend strongly to be poor; they are also households where poverty carries the most serious health hazards, particularly to children and most particularly to underfed children.

The serious problems of direct food supplementation are familiar (see, for example, Beaton and Ghasseimi, 1982). So are the difficulties of targeting food subsidies to the needy (and away from well-heeled urban civil servants, soldiers, etc.), and the apparent unpopularity in LICs of food stamp schemes. Most seriously, perhaps, the "fiscal crisis of the State" in the 1970s showed in LICs from Sri Lanka to Egypt that more general food subsidies, in hard times, get squeezed between rising offtake (and hence public outlays) and lower tax revenues. Indeed, this "fiscal crisis" was also a foreign-exchange crisis, further squeezing food subsidies between growing food imports, discouraged domestic food producers, and recession-hit exports.<sup>61/</sup>

We nevertheless stress the demographic and health gain, to the poorest quintile or so, of measures that (without negative impact on farm laborers) render purchased food cheaper - especially if they can be directed, even more than is already achieved by the high food/outlay ratio of ultra-poor multi-child households, towards such households. The dramatically higher incidence in such households of infant and child undernutrition and mortality underpins the demographic evidence. There is a case, in anti-poverty policy, for food subsidies, stamps and supplementation. However, such measures - even if, rightly, they are concentrated on cheap cereals and roots grown and eaten by the poor, and are not paid for by farm-price repression - are known to be difficult, vulnerable, and often ill-targeted remedies. Certainly, it is not likely that tax or subsidy measures affecting non-foods can as effectively home in on poor people's demographics. Kerosene, for cooking and heating, is often selected for pro-poor subsidization, but is probably even harder to target than food subsidies. Large families need less cooking, and much less heating, per member than do small (and normally less poor and vulnerable) ones; many of the poorest cook and heat with wood or dung, collected by family labor and much cheaper for them than even subsidized kerosene; and even the average LIC family spends a much smaller share of outlay on cooking and heating than on raw foods.

Probably the standard tax-subsidy area is too narrow a field for public action that seeks to steer resources towards "poor people's demographics". Thus the point is not that, because food subsidies are difficult to handle, one should look to non-food taxes and subsidies. Rather, the "food-centredness" of poor people's demographics provides yet another good reason to steer public-sector activity, as a whole, more toward helping or encouraging farmers (i) to raise their output of low-cost calorie sources - root-crops, millet and sorghum, maize and cassava - and/or (ii) to supply such products to poor African and Asian people, rather than to European and American cattle. The case for, difficulties of, and comparative-advantage limitations upon such consumption-orientated policies are much discussed and will not be rehearsed here.

On the production side, the policy implications of poor people's heavy concentration - especially within urban populations - into big, multi-child households are less familiar. They go beyond mere supporting arguments for orientations (e.g. towards food) already suggested by other, non-demographic features of people. In particular, production in or near the home, complementary with child care (especially for women) and if possible not acutely seasonal, offers special opportunities to the typical large, multi-child poor household. It is quite common to dismiss family modes of

production as either old-fashioned, inefficient and doomed, or else inevitably "exploited" by big enterprises (especially through outwork). Indeed, the daily rewards to outworkers usually compare badly with factory-wages for similar work. However, for large poor households, "threatened" during and after pregnancies by reduced female labor participation - and above all for the health of small children in female-headed households - home or homestead, including artisan, self-employment (including outwork) can make the crucial difference between poverty and ultra-poverty.

If measures to improve the position of outworkers (perhaps especially in the case of women) concentrated only on raising the price of domestic labor to an unchanged structure of (price-sensitive) purchasing enterprises, such measures would seriously damage the very groups of demographically vulnerable poor people they sought to help. Public action, instead, should seek to increase the bargaining and market power of outworkers, by assisting them (i) to own a larger proportion of their productive assets (raw materials and/or capital) individually or jointly; (ii) to control the marketing and improvement of their products; and (iii) to negotiate with a more competitive structure of product buyers and materials suppliers. The demographic nature and dynamics of poverty in female-headed households - though such poverty is more complex, less static, and perhaps somewhat less severe than is usually claimed - add special importance, in anti-poverty policy, to the largely neglected area of domestic, especially rural, artisan and hawking enterprises.

Many examples could be given of the general principle here suggested: that, in assessing how any policy of proposal affects the poor, one should consider carefully its impact on large, multi-child households. (Conversely, transfers of resources to small households in LICs - though frequently not in NDCs - are likely to harm the poor). Measures affecting the demographic parameters that underlie MHS - migration, fertility, complexity, migration, etc. - are considered in Sec. (d) below.

However, age-sex-status interactions affect even the part of anti-poverty policy that consists of static resource allocation among households with different demographic structures. In Sec. III we saw that female exposure to poverty risk was associated with (i) certain sorts of (usually unmarried) civil status, and sex-imbalance in the household, which both also damaged males, though rather less; (ii) difficulty - not shared by men - in increasing income with age after about 30, and reflecting difficulty (partly due to discrimination) in acquiring assets and education; (iii) following this, not so much static disadvantage vis-à-vis (i.e. greater poverty than among) men, but rather a lesser prospect of escape, and less confinement of poverty to a shortish period of the life-cycle. These three facts add relevance to policies on self-employment, and on very small-scale, household-level ownership of appropriate assets, in any attempt to redistribute resources to households which - notably because of age or sex or HH - may be at especially high risk of poverty.

(c) Non-demographic behavior of big, poor households

The concentration of poverty and ultra-poverty upon big households with high child/female and child/adult ratios (and youngish heads) is common to many LICs. Yet not all such households, at all times, are poor. In

particular, the transition from poverty to extreme poverty is often not accompanied by a further rise in MHS, child/female, or child/adult ratios. Moreover, in NDCs, these parameters tended actually to fall with increasing pressure of poverty; and, even in LICs today, at each level of MEP a low "status" (asset ownership, landholding, job type, location, etc.) accompanies low MHS. All this suggests that the nature or timing of household behaviour can "de-link" inherently unfavorable demographic characteristics from the poverty normally associated with them. How, if at all, can policy help in this de-linking? The question acquires special importance from the high incidence of especially vulnerable persons - children under five - in demographically typical poor LIC households.

One option is in the area of job search and choice. Women and older siblings are often prevented from earning by the need to care for under-fives. Apart from appropriate artisan or trading activities based on the home (Sec. (b)), rural works programs such as Maharashtra's Employment Guarantee Scheme - programs that guarantee work near home, and/or by piece-rates or otherwise permit substitution among family members - can greatly assist such households to raise their participation rates: can de-link high child/adult ratios from low participation. So can information, or transport, to help the process of short-term (or even daily) intra-rural migration.

In urban areas, of course, legislation that restrains retailing (including hawking), rickshaws, poultry-keeping, repair work, and other home-based enterprise is especially damaging to big, poor families with high proportions of females in the potential workforce. Such females are especially likely to be able to combine income-earning work with family obligations only through home-based "informal" activity. The higher female/male ratio (yet also much higher MHS) among the urban poor, as compared to other urban households, renders building, zoning, licensing, labor, and other controls on urban informal activity - controls nominally designed to help poor people - counter-productive in the context of anti-poverty policy, unless needed for health and safety. More usually, such controls are merely concealed protectionism for big enterprise, public and private, that both competes with informal family firms and intervenes in the administration of controls that restrict their activity.

Options also occur in respect of asset size and structure. As for human assets, the familiar linkage of secondary female education to low fertility implies that families with many children are likely to have mothers with, at best, primary schooling; neither such schooling nor post-primary terminal or adult-education courses typically help working mothers to combine family and work management better. It is often rightly stressed (Lloyd, 1979; Bromley (ed.), 1978) that poor, big families usually cope very well with horrifying difficulties; however, their very different success (given the level of poverty) in avoiding undernutrition or ill-health (C. Shah, 1979) shows that there is something to learn. As regards productive physical assets - land, craft machinery, durable consumer goods, or bicycles fungible between production and consumption uses - the very poor usually own very little; but, as indicated above, much more needs to be known about which assets are critical for poverty-prone large families.

Consumption patterns of poor families with many small children may well account for their dramatically greater vulnerability to nutritional

stress and even death (Ruzicka, 1982; Birdsall, 1974, 1980). The combination of childbirth, a normally hungry season, and an atypically bad year can impose "breaking strains" upon families for whom even their normal MHS and child/adult ratios mean some risk. It is not known whether such high-risk families (and seasons) overlap with high, or low, availability and use of primary health facilities; once more, in health policy too, appropriate effort to mitigate the effects of given "demographies of poverty" could achieve as much, in reducing at least short-run ultra-poverty, as ambitious attempts to change them.

On the other hand, exhortation to poor parents to "improve" allocation of food or health-care, towards small children or females within their large families, might achieve rather little. Intra-family "misallocations" are (i) perhaps less common than is often alleged, (ii) often, rational responses to terrible dilemmas (Lipton, 1983, Sec. III(a)). Appropriate assets and work chances, not lectures on ethics, are what is required.

(d) Policies to change the demographies of the poor

Historically, poor households tended to be smaller, and to have lower child/adult ratios, than better-off households. This reduced both the number of persons affected by a given incidence of household poverty, and the proportion of those poor persons consisting of children under five - the most vulnerable to permanent harm, even death, from poverty-induced undernutrition or illness. Unfortunately, the relationship has been reversed in most LICs. Is there scope for policy to help restore it - to de-link high MHS, and high child/adult ratios, from the risk of poverty and especially of ultra-poverty?

1. Fertility

Fertility probably plays the main role in the reversal of historically positive affluence-MHS correlations in today's LICs. It is better-off women who - in four interlocked processes - have come to adopt modern contraception, to receive post-primary education, to marry later, and to reduce marital fertility. Can and should policy attempt to distribute these forms of behavior differently among income-groups?

We cannot here review the massive literature on family planning. Clearly, however, policies to increase the use of modern means of contraception have been motivated mainly by the quest for growth in GNP per person - by the wish to divert personal savings and public investment from "widening" uses that merely maintain, for a larger population, existing levels of capital, land, education, etc., towards "deepening" uses that increase per-person availability of such sources of growth. Accordingly, as almost all KAP studies confirm, access to and offtake of modern means of contraception have in most LICs concentrated on the readier customers, notably better-off, better-educated urban women.

Even from the standpoint of growth, this emphasis on low-cost acceptors - apparently such good economic sense - may have been misplaced. Many such acceptors had probably already attained their family size norm. By adopting modern contraception, they were shifting to more aesthetic methods of

contraception, rather than reducing age-specific fertility. Certainly, in any event, modern contraception in most LICs - there are familiar, striking exceptions - neither got far down the scale of income-per-person nor achieved the hoped-for big reductions in overall birth-rates.

From our standpoint - that of delinking poverty from the riskiest sorts of demographic structure - the policy of concentrating attempts to spread modern contraception upon ready acceptors was plainly unhelpful. Absolutely, poor families gained little: too little, for poor children, to meet the new need. This need was to cut fertility (so as to free household resources for existing children) enough to counterbalance the effects of public-health measures - especially malaria control - in increasing infant and child survival rates, and thereby reducing resources-per-person. Relatively, poor families probably lost out as contraception spread, because their MHS was reduced much less than was that of better-off families; this probably raised the supply of unskilled labor (especially from the poor) relative to demand (especially from the better-off), rendering poor people's unskilled wage-rates, especially in domestic and personal service, lower than they would have been in the absence of "rich-selective" contraception.

With all due respect to the view that the poor choose their fertility and MHS - a view supported by much, but not all, evidence on traditional fertility controls - such choice is bound to incorporate some insurance against childlessness, especially given the risks to women of unsupported widowhood. Insurance implies producing a larger expected number of children than the family size norm, so as to avert some of the very serious risks involved in ending up with a smaller number. Better control of mortality and fertility for the poor, therefore, could be substantially MHS-reducing. While attempts at compulsion are probably unethical and certainly counter-productive, there is a strong welfare case for improved parental control of, information about, and access to contraception for the poor, accompanied by appropriate changes in incentives. Forms of insurance alternative to high child/adult ratios - from reduced infant mortality via better access to health care as in Kerala, to employment guarantees or even social old-age support - would, in respect of impact on poor people's fertility and MHS, at least justify closely-monitored experiments.

Another indirect approach is relevant too. The family-planning literature is replete with evidence that, even holding earnings constant, female post-primary education delays marriage and reduces marital fertility. Yet such education is concentrated on the better-off, whose MHS is already smaller, and whose children are much less likely to suffer lasting damage from high MHS. It is often argued that a very wide spread of primary education is needed first, (i) on efficiency grounds in order to improve the intake (and hence efficiency) of post-primary education, (ii) on equity grounds, so that more should obtain basic skills before expanding privileged access to further education. These arguments have force; however, primary education - especially if incomplete - seems to do little to cut fertility or delay marriage. These effects do appear to improve the equity case for continuing to concentrate some expansion upon post-primary schooling, if the access to it can be spread to poor people. If so, such schooling is likely to cut their fertility and MHS, to ease the escape from poverty, and to soften the consequences of ultra-poverty. In any case, it is questionable whether laws and exhortation can do nearly as much as mass post-primary education to

spread, into poor households, the case for later marriages - as a comparison of Sri Lanka and India shows.

The effects of most policies regarding fertility, however, are clouded. It appears to show a -shaped relationship to affluence, as well as to education. Improvements in the lot of "the poorest of the poor" may well raise fertility and MHS, at least in the short term. This is associated with the flattening-out observed among these households in the rise, with falling MEP, in MHS and child/adult ratios. However, the top of the fertility-affluence  (like the flattening-out in the poverty-MHS curve) appears to occur at a very low level of well-being; all but the very poorest 5-10% of Indian households seems to show declining fertility, MHS and child/adult ratios as cross-section MEP rises.

## 2. Mortality

Since 1945, malaria control has spread through most LICs, alongside major improvements in food security during famine. Both malaria and famine have recurred in some areas, but their reduction has brought big reductions in IMR and child mortality. For better-off parents, it increasingly looked both safe and rewarding to restrict fertility in response, completing a demographic transition; for most people, and especially the poorest 30-50 percent of parents, it did not. Hence falling IMRs, together with selective fertility responses, have in LICs played a big part in reversing the traditional link of low MHS to poverty.

This account, however over-simplified, may remove the fears that "harsh realism", in neo-Malthusian guise, destroys the benefits of better child health for poor people, because such "improvement" brings a higher household size, dependency burdens, and thus for the ultra-poor more undernutrition, disease and death. Any such argument, let alone an inference that "health for all" might not do the poor any good, is quite unjustified. "Thinking the unthinkable" is not laudable if the thought-processes are muddled or wrong.

Several pieces of cross-section evidence from Sec. II(e) reinforce the policy conclusion that better health and lower mortality for poor children, except perhaps in the very short run, will help to dissociate high MHS from poverty. (Just one example: in India, urban areas - and the State of Kerala - already show both lower IMRs and lower fertility.) It is, however, the poorest and remotest households that, discontinuously, suffer much higher infant and child mortality - but do not over-insure, or perhaps even respond fully, by raising their fertility. If the reasons are partly physical, it is possible that better nutrition (via higher household income) will raise fertility as well as cutting mortality. Since the groups affected are the very poorest, however (Table 12) - by no means a majority even of the nutritionally at-risk ultra-poor - this would be a short-term effect, while the bottom 5-10 percent of people reached the health and/or income levels of the next 10-15 percent. However, it does suggest an addendum, or converse, to the (probably correct) conventional wisdom that seeks to incorporate family planning programs into wider maternal and child health care; it also makes sense to accompany programs of preventive medicine with arrangements to make appropriate means of contraception readily available.

### 3. Complexity

Whatever the possible entrepreneurial drawbacks of complex producer-consumer families, they provide mutual insurance, some ESCs, and perhaps assistance in some forms of domestic production. As explained in Sec.II(h), it is better-off households that often seem to have the explicit option of complex status. Poor households mostly enlarge, perhaps via implicit choice (Schultz, 1981), but by only partly controlled excesses of births over deaths. Can policy ease the path of poor households towards choosing complex status where appropriate?

At present, this often fails to happen because, though household members as a whole would stand to gain, individuals might lose, and "veto" complexity by setting up independent homes. Direct intra-household intervention by Government (here as with food distribution between daughters, sons and parents) seems infeasible; but can the non-zero-sum game be made easier to play? Provision of competitive (rather than subsidized) credit for domestic production activities that offer advantages to parent/child or multi-sibling co-operation - such as trading, dairying or some forms of artisanship - could be one way forward. It depends, however, on steering such loans to poor people who would thereby be helped to choose household complexity: a tall order for a government agency. More credible, perhaps, might be measures to help groups of houses, in slum areas or (in India) scheduled-caste quarters, to use common facilities requiring several users to be economic: standpipes, even sometimes small bio-gas plants. That way, the advantages of complexity might become more accessible to the very poor, even if the mutuality required for joint household formation remains rare among them.

### 4. Migration

Once again, an explicit and clearly voluntary route to adjustment of MHS appears to be relatively less open, or less rewarding, for very poor households, leaving such households with fewer options than others in responding to unexpected deaths, conceptions, or income changes. Poor people's migration is shorter-term, shorter-range, less "urbanizing" and educated, and less prepared (i.e. more prone to painful learning-by-doing) than the migration of the better-off. The ultra-poor, except in desperation, usually lack the resources for prolonged job search (or income delay), and migrate only seasonally, along familiar but very low-yielding tracks. Better information about rural work chances, possibly through registers of available work and skills, could "piggyback" very cheaply on mobile government services - input delivery, health, extension, etc. - within an area.

Most discussions of migration policy seem to concentrate upon whether and how, if at all, it should seek to change the scale of migration. But the structures of migration (by age and sex, origin and destination, duration, MEP decile, etc.) - even if chosen optimally, given the often high and price-discriminating search costs, by each household - involve major negative externalities (i) for individuals within some households, (ii) for groups of households (migrant, resident, low-MEP...) taken together. Townward migration structures in Asia are such that the poorest two or three urban deciles at least escape the hugely unbalanced male/female ratios that characterize better-off urban groups - but suffer correspondingly high MHSs and child/adult ratios. Customary areas of origin, using special information (normally from

relatives), monopolize net gains, though also some (gross) losses, from emigration; if, as one would expect, the gains carry diminishing returns and the losses increasing costs, then a strong case can be made for adaptive regional policies on information, transport flows, even education. In any case - as with complexity, so with migration - more thought is needed about policies to widen the range of poor and ultra-poor households' explicit and well-informed demographic responses.

##### 5. Non-family household members

In Sec. II(k), following Hajnal (1982), we emphasized the importance of yet a third demographic option - "going into service" with the better-off - as a link, now cut, that was historically chosen by many poor households in order to attain a tolerably low MHS, both directly and as a means to deferred marriage and hence reduced lifetime fertility. In this choice must be included many sorts of resident apprenticeship - which, as readers of chs. 8-10 of Oliver Twist will recall, often involved poor children in dubious as well as serf-like activities, not only in LICs!

Certainly there can be no question of policies that re-create resident "service" as a major option for poor teenagers (though some would argue that military service performed an analogous role). At most, it might be argued that, in locating public-sector construction and other activities demanding a locally resident workforce, authorities might give preference, ceteris paribus, to areas with many big, poor households. Also - as in the case of outworkers - resident domestic servants should be protected, not by wage or other legislation that prices them into unemployment (or back into overcrowded and poor homes), but by information, options, and access to publicly-provided health and education, at the expense of the general taxpayers and not as a specific tax against forms of employment that ease the burdens of big and poor households.

The main point about resident service, apprenticeship, etc., is that it represents just one example of the decline of traditional social-security systems that once protected the ultra-poor. With both labor and labor-saving devices more plentiful, relative to other capital, in today's LICs, than during early industrialization of the NDCs, neither "moral community" nor class interest is so likely to persuade the better-off to preserve the very poor in hard times. Resident service and apprenticeship are further threatened by greater mobility - of homes, labor, and capital - and by research-based scale-economies in mass-produced goods and services (including processing and distribution) that compete against small-scale, little-researched traditional and domestic skills. Yet the demography of poverty feeds on itself: if very poor couples cannot be sure of placing a child in resident (and probably income-remitting) work outside the home, and if security in old age is also lacking, they are driven to provide their own security by procreating larger, child/intensive, and hence persistently poor households. Unless some form of publicly provided security system or asset-provision or employment-guarantee substitutes, in our new labor-surplus world, for the old and imperfect (yet real) social security of traditional communities, it is hard to avoid the conclusion that each poor household must - if it is rational - insure itself by procreative behaviour; this both impedes "capital deepening" and - by raising poor households' MHS and dependency ratios and ultimately by raising unskilled labor supply ahead of

demand - perpetuates poverty.

(e) Poverty, policy and the family cycle

The role of the family cycle in poverty in most LICs is too small; if it were larger (provided children could be safeguarded) poor people would be better off. This is only a pseudo-paradox. Family-cycle poverty comes and goes. Its temporary nature (i) reduces the welfare loss, (ii) makes it victims more creditworthy.

The evidence tentatively suggests that a given "amount" of poverty in a typical year (i.e. say, of headcount below a fixed poverty-line, times average shortfall, modified to allow for intra-poor distribution a la Sen, 1981) is much more life-cyclical, and much less concentrated upon a few lifelong victims, (i) in LICs than elsewhere, and, relatedly, (ii) in micro-societies, to the extent that status, jobs, assets, and earning power are ascribed rather than achieved. This is an empirical statement only - it need not be true. If all jobs and assets are allocated in perfect markets, there will be a lifelong poor underclass unable, in such achievement-orientated societies, to achieve much. It is contingent, not necessary, that the lifelong poor group of households ascribed low-earning assets, jobs, etc., in ascription-orientated societies constitutes a much larger proportion of the poor than does the "underclass" in achievement-orientated ones. However, it does seem to be clearly the case. Hence policies to improve the functioning of labor markets, and to equalize access to them, are likely to reduce the "illfare" created by poverty, because such policies render poverty brief for many instead of durable for few.

The proviso that children must be protected is, however, important. Otherwise, a shift from lifelong to life-cycle poverty could harm the poorest. That is because life-cycle poverty in LICs - unlike NDCs, - concentrate much more heavily on youngish couples with several small children than on, say, old single persons. More spending on child health and nutrition, especially on helping the near-landless to feed their children enough calories, is therefore necessary if the poor are to be helped by policies making poverty more life-cyclical.

Such policies would consist, above all, of steps to improve the access of currently weak groups - in different societies they might be women, over-fifties, countryfolk, scheduled castes, minority religions, etc. - to the means of exit from poverty. The apparent difficulty of Botswana women in acquiring assets after age 30 is a case in point: almost certainly, capital markets are less open to them than to men. Laws, incentives, and market organization - all combined in such prejudices as that against labor as loan collateral - all combine to create artificial barriers against escape from poverty; policy should seek to remove those barriers.

If growth is slow and asset distribution fairly fixed, such policy will not normally reduce poverty. It will, instead, shift it from being mainly a lifelong condition for some, to being a temporary life-cyclical condition for many. That is a limited achievement. To do more almost certainly depends on asset redistribution and rapid growth. In any context, policies that neglect the quite distinctive demographic circumstances of the

poor, however well designed in other respects, can have serious unintended effects on poor households in general, and in particular on the vulnerable children so severely over-represented among the ultra-poor. Demographic assay of the anti-poverty impact of major proposed policies (Sec.(a)) is, therefore, a clear-cut need in each specific situation, whether or not the inevitably general and tentative policy proposals advanced elsewhere are deemed appropriate.

ABBREVIATIONS

<b>AERC</b>	<b>Agro-economic Research Centre (normally Sardar Vallabhbhai Patel Vidyapeeth, Vallabh Vidyanagar, India)</b>
<b>AJCN</b>	<b>American Journal of Clinical Nutrition</b>
<b>BSPS</b>	<b>British Society for Population Studies</b>
<b>CU</b>	<b>consumer unit (see fn. 46)</b>
<b>DR</b>	<b>dependency ratio</b>
<b><u>EPW</u></b>	<b><u>Economic and Political Weekly (Bombay)</u></b>
<b>ESCs</b>	<b>economies of scale in consumption</b>
<b>HH</b>	<b>head of household</b>
<b>IMR</b>	<b>infant mortality ratio</b>
<b>IVS</b>	<b>Indian Village Studies (of AERC)</b>
<b>KAP</b>	<b>knowledge, attitude and practice (family planning surveys)</b>
<b>LIC</b>	<b>low-income countries</b>
<b>LINUM</b>	<b>long-run, individual, non-marriage, rural-to-urban migration</b>
<b>MEP</b>	<b>monthly expenditure per person (normally averaged over a year)</b>
<b>MHS</b>	<b>mean household size</b>
<b>NDC</b>	<b>now-developed country</b>
<b>NSS</b>	<b>National Sample Survey (India)</b>
<b>PDR</b>	<b><u>Population and Development Review</u></b>
<b>PI-NDCs</b>	<b>pre-industrial NDCs</b>
<b>r.</b>	<b>reference period</b>
<b>s.</b>	<b>survey period</b>
<b>SRS</b>	<b>Sample Registration Survey (India)</b>
<b>WBSWP</b>	<b>World Bank Staff Working Paper</b>

Table 1: SIMPLE CORRELATIONS (r): HOUSEHOLD SIZE, HOUSEHOLD INCOME (OR OUTLAY), AND HOUSEHOLD PER PERSON INCOME (OR OUTLAY)

Country/State		Gujarat	Maharashtra	Gujarat	Maharashtra	Nepal	Nepal	Sri Lanka	Taiwan	Taiwan
Rural (R)	Urban (U)	R	R	U	U	11 towns	7 towns	National	National	National
Date		1972-3	1972-3	1972-3	1972-3	1973-4	1974-5	1969-70	1968	1974
Measure		Outlay	Outlay	Outlay	Outlay	Outlay	Outlay	Income	Income	Income
Simple correlation of average size of household	Decile rank by per head welfare measure	-.9503	-.9551	-.9731	-.9837	-.9496	-.9301	-.9868	-.9652	-.9889
in decile upon:	Decile rank by total-household resource flow measure	+.9779	+.9769	+.9668	+.9806	+.9763	+.9776	+.9864	+.9393	+.9408

Source: computed from Visaria (1980a), Table 3; see also Visaria (1980).

Notes: (a) Latter source gives numbers of sample households. Sample sizes range from 2254 (Nepal, 7 towns, 1975-5) to 11103 (Maharashtra, urban 1972-3).

(b) For  $n = 10$  (there being 10 deciles), the .1% significance level for  $r$  (with  $n-2 = 8$  d.f.) is plus or minus 0.862.

Table 2: HOUSEHOLD SIZE, COMPOSITION AND 'OUTLAY POVERTY', W. INDIA, 1973-74

		% of households with outlay per month per person (Rs)				Household size in outlay per person group				Children (0-14) as % of persons in outlay group				Adult males per adult female in outlay group				% of persons with outlay per person			
		0-34	34-43	43-150	150+	0-34	34-43	43-150	150+	0-34	34-43	43-150	150+	0-34	34-43	43-150	150+	0-34	34-43	34-150	150+
Gujarat	R	14.2	18.9	65.7	1.3	6.8	6.0	5.2	4.1	48.4	45.5	41.7	43.4	1.07	0.84	1.13	1.00	17.3	20.4	61.3	1.0
Maharashtra	R	22.5	18.7	56.6	2.3	5.9	5.6	5.1	3.2	50.0	46.7	39.2	31.0	0.96	0.97	1.03	0.96	24.9	19.6	54.1	1.4
Rajasthan	R	13.9	13.2	69.0	3.9	6.2	6.3	5.6	3.7	49.1	46.0	42.4	38.2	1.01	0.95	1.04	1.04	15.1	14.6	67.8	2.5
Gujarat	U	5.6	12.6	75.1	6.7	7.3	7.1	5.0	2.4	52.1	46.0	38.9	24.1	1.00	0.91	1.03	2.15	7.8	17.1	71.9	3.1
Maharashtra	U	9.0	8.8	63.2	19.0	6.6	6.2	4.8	2.6	50.9	44.6	36.6	19.2	0.99	0.95	1.20	2.10	12.9	11.8	65.8	9.5
Rajasthan	U	6.5	12.7	71.8	9.0	8.0	7.0	5.1	2.7	49.1	50.9	40.2	21.9	0.91	0.87	1.15	1.76	9.8	16.7	68.9	4.6

Source: calculated from Govt. of India, National Sample Survey: 28th Round, Oct. 1973 - September 1974, no. 240, no. 11,13,81.

Notes: 'Lowest' outlay group, below Rs34/person/month; 'low' 34-43; 'typical', 43-150. Use of the same borderlines in rural and urban areas implies, in view of somewhat higher urban prices, that direct comparison of rural and urban populations in 'lowest' and 'low' outlay-per-person groups somewhat understates urban proportions in poverty relative to rural proportions (first and last 3 cols. of figures). Rural-urban comparisons in the other 3 sets of columns must also be approached cautiously, because proportions of households, persons, etc. in 'lowest' and 'low' groups are considerably lower in urban areas - partly reflecting higher urban prices, and partly higher urban real incomes.

Table 3: MAIN INCOME SOURCE, ANNUAL INCOME-PER-PERSON, AND FAMILY SIZE, N.W. INDIAN VILLAGES

A. GUJARAT

Main Income Sources	<u>AFAWA</u>						<u>ANEODIA</u>					
	House-holds	Per-sons	P/H	Main/Total Income (%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income (%)	Income/H (Rs.)	Income/P (Rs.)
Citvtn., { Operator	62	385	6.21	80.9	2,330	375	102	779	7.64	-	2,957	384
Annis., { Non-op. owner	1	2	2.00	51.3	828	414	10	29	2.90	-	951	328
Dairy { Laborer	145	616	4.25	95.7	557	131	107	499	4.62	-	582	126
Non-ag. laborer	9	33	3.67	84.2	523	143						
Arts, crafts	9	34	3.78	87.4	765	302	8	30	3.75	-	844	225
Services	13	45	3.46	74.5	1,155	333	22	111	5.05	-	1,888	235
Remittances	13	76	5.85	69.6	2,324	398	-	-	-	-	-	-
Trade	3	24	8.00	46.6	2,855	357	4	20	5.00	-	477	496
Transport							-	-	-	-	-	
Profession							7	36	5.14	-	1,511	294
Others	-	-	-	-	-	-	8	29	3.62	-	365	101
<b>Total</b>	<b>255</b>	<b>1,215</b>	<b>4.76</b>	<b>82.7</b>	<b>1,143</b>	<b>240</b>	<b>268</b>	<b>1,533</b>	<b>5.72</b>	<b>-</b>	<b>1,597</b>	<b>279</b>

MOTI KHADOLNARGOL

Main Income Sources	<u>MOTI KHADOL</u>						<u>NARGOL</u>					
	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., { Operator	76	390	5.13	92.3	1,876	370	60	397	6.62	69.3	3,020	45
Anmls., { Non-op. owner	-	-	-	-	-	-	13	83	6.38	82.6	1,627	25
Dairy { Laborer	47	173	3.68	79.4	595	162	10	54	5.40	76.7	844	15
Non-ag. laborer	2	6	3.00	55.6	630	210	8	40	5.00	52.5	1,421	28
Arts, Crafts	6	25	4.20	85.3	1,166	280	-	-	-	-	-	-
Services	11	57	5.18	78.8	1,868	361	2	10	5.00	82.8	1,956	39
Remittances	3	17	5.67	61.5	845	149	-	-	-	-	-	-
Trade	6	17	2.83	60.6	1,862	657	5	40	8.00	50.6	4,207	52
Transport	2	26	13.00	51.4	10,055	773	-	-	-	-	-	-
Profession	5	20	4.00	73.3	607	152	1	6	6.00	70.7	870	14
Others	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>158</b>	<b>731</b>	<b>4.63</b>	<b>83.7</b>	<b>1,494</b>	<b>323</b>	<b>99</b>	<b>630</b>	<b>6.36</b>	<b>68.5</b>	<b>2,505</b>	<b>39</b>

OON

RAMPURA

Main Income Sources		House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Clvtvn., Anals., Dairy	Operator	52	391	7.52	82.7	2,466	328	62	362	5.83	89.8	1,135	19
	Non-op. owner	-	-	-	-	-	-	-	-	-	-	-	-
	Laborer	48	244	5.08	85.6	760	149	22	103	4.68	79.8	495	10
	Non-ag. laborer	17	92	5.41	70.9	1,086	201						
	Arts, Crafts	1	3	3.00	80.8	743	248	6	50	8.33	52.8	4,663	56
	Services	53	332	6.26	79.0	1,704	272	7	39	5.57	64.3	1,129	20
	Remittances	9	36	4.00	71.0	1,042	261	27	135	5.00	76.9	952	19
	Trade	3	20	6.67	53.7	2,917	438	14	73	5.21	56.8	566	10
	Transport	3	10	3.33	79.9	457	137	-	44	4.89	44.3	814	16
	Profession	2	9	4.50	100.0	1,950	433	-	-	-	-	-	-
	Others	1	2	2.00	117.7	765	383	-	-	-	-	-	-
	<b>Total</b>	<b>189</b>	<b>1,139</b>	<b>6.03</b>	<b>80.1</b>	<b>1,579</b>	<b>262</b>	<b>147</b>	<b>806</b>	<b>5.48</b>	<b>64.3</b>	<b>1,075</b>	<b>19</b>

SAMALDEVIPATADIA

Main Income Sources		House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn.,	{ Operator	133	873	6.56	-	2,003	305	74	503	6.80	-	1,212	178
Anmls.,	{ Non-op. owner	-	-	-	-	-	-	-	-	-	-	-	-
Dairy	{ Laborer	5	23	4.60	-	(560)	(122)	8	40	5.00	-	629	126
	Non-ag. laborer	20	122	6.10	-	1,209	198	-	-	-	-	-	-
	Arts, Crafts	-	-	-	-	-	-	-	-	-	-	-	-
	Services	22	178	8.09	-	1,580	195	1	1	1.00	-	1,687	1,687
	Remittances	10	51	5.10	-	985	193	-	-	-	-	-	-
	Trade	-	-	-	-	-	-	1	4	4.00	-	3,080	770
	Transport	-	-	-	-	-	-	-	-	-	-	-	-
	Profession	1	6	6.00	-	(625)	(104)	-	-	-	-	-	-
	Others	1	3	3.00	-	(1,250)	(417)	-	-	-	-	-	-
	Total	192	1,256	6.54	-	1,802	276	84	548	6.52	-	1,184	363

JAMBUA

Main Income Sources	House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., { Operator	118	834	7.07	-	2,819	399
Anmls., { Non-op. owner	-	-	-	-	-	-
Dairy { Laborer	38	274	-	-	2,998	416
Non-ag. laborer	6	59	9.83	-	2,518	256
Arts, Crafts	-	-	-	-	-	-
Services	-	28	7.00	-	5,065	724
Remittances	-	-	-	-	-	-
Trade	2	42	21.00	-	25,821	1,230
Transport	-	-	-	-	-	-
Profession	-	-	-	-	-	-
Others	4	13	3.25	-	7,078	2,178
<b>Total</b>	<b>172</b>	<b>1,250</b>	<b>7.27</b>	<b>-</b>	<b>3,267</b>	<b>450</b>

4 VILLAGES, 1970-71

ALL 13 GUJARAT VILLAGES

Main Income Sources		House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House- holds	Per- sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., Anmls., Dairy	Operator	31	187	6.03	-	4,043	670	770	5,101	6.62	-	-	-
	Non-op. owner	-	-	-	-	-	-	24	114	4.75	-	-	-
	Laborer	31	154	4.97	-	1,261	254	555	2,679	4.83	-	-	-
	Non-ag. laborer	32	147	4.46	-	1,446	315						
	Arts, Crafts	-	-	-	-	-	-	30	142	4.73	-	-	-
	Services	-	-	-	-	-	-	135	801	5.93	-	-	-
	Remittances	-	-	-	-	-	-	62	315	5.08	-	-	-
	Trade	-	-	-	-	-	-	68	397	5.84	-	-	-
	Transport	-	-	-	-	-	-						
	Profession	-	-	-	-	-	-						
	Others	-	-	-	-	-	-	14	47	3.36	-	-	-
	<b>Total</b>	<b>94</b>	<b>488</b>	<b>5.49</b>	<b>-</b>	<b>2,241</b>	<b>432</b>	<b>1,658</b>	<b>9,596</b>	<b>5.79</b>	<b>-</b>	<b>-</b>	<b>-</b>

**B. RAJASTHAN**

**HASTEDA**

**SAHNUSAR**

Main Income Sources	<b>HASTEDA</b>						<b>SAHNUSAR</b>					
	House-holds	Per-sons	P/H	Main/Total Income (%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income (%)	Income/H (Rs.)	Income/P (Rs.)
Clvtvn., { Operator	105	767	7.30	83.3	1,076	148	30	198	6.60	73.8	1,553	235
Anmls., { Non-op. owner	-	-	-	-	-	-	-	-	-	-	-	-
Dairy { Laborer	54	268	4.96	56.4	509	103	4	4	1.00	100.0	601	601
Non-ag. laborer							-	-	-	-	-	-
Arts, Crafts	63	361	5.41	76.7	612	113	-	-	-	-	-	-
Services	30	148	4.93	84.2	1,159	23	2	2	1.00	1.0	1,134	1,134
Remittances	41	258	6.29	79.2	1,186	22	-	-	-	-	-	-
Trade	17	119	7.00	74.9	1,732	24	-	-	-	-	-	-
Transport	7	52	7.43	56.4	1,508	20	-	-	-	-	-	-
Profession	23	156	6.90	67.7	1,038	15	-	-	-	-	-	-
Others	16	89	4.31	22.4	361	82	-	-	-	-	-	-
<b>Total</b>	<b>356</b>	<b>2,176</b>	<b>6.11</b>	<b>77.7</b>	<b>956</b>	<b>15</b>	<b>36</b>	<b>204</b>	<b>5.67</b>	<b>76.2</b>	<b>1,424</b>	<b>251</b>

UMEDPUR

ZAWAR

Main Income Sources	<u>UMEDPUR</u>						<u>ZAWAR</u>					
	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., { Operator	22	107	4.86	80.9	1,319	271	70	392	5.60	70.2	898	160
Anmls., { Non-op. owner	-	-	-	-	-	-	-	-	-	-	-	-
Dairy { Laborer	7	31	4.43	70.6	436	99	-	-	-	-	-	-
Non-ag. laborer	3	11	3.67	94.0	413	113	97	562	5.59	73.4	1,343	241
Arts, Crafts	9	43	4.78	81.9	869	182	-	-	-	-	-	-
Services	34	92	2.71	91.0	1,172	433	3	12	4.00	79.9	1,659	415
Remittances	25	115	4.60	96.9	2,180	474	-	-	-	-	-	-
Trade	1	2	2.00	100.0	475	237	3	8	2.67	79.3	2,064	774
Transport	-	-	-	-	-	-	1	5	5.00	53.0	472	110
Profession	-	-	-	-	-	-	4	13	3.25	88.1	358	110
Others	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>101</b>	<b>401</b>	<b>3.97</b>	<b>90.0</b>	<b>1,346</b>	<b>339</b>	<b>178</b>	<b>972</b>	<b>5.46</b>	<b>72.7</b>	<b>1,162</b>	<b>213</b>

DINGRIFALNA

Main Income Sources	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., { Operator	86	486	5.65	89.9	915	162	99	485	4.90	76.7	1,289	266
Anals., { Non-op. owner	-	-	-	-	-	-	-	-	-	-	-	-
Dairy { Laborer	2	11	5.50	49.4	605	110	77	368	4.78	84.0	688	144
Non-ag. laborer	19	110	5.79	56.4	821	142	-	-	-	-	-	-
Arts, Crafts	1	6	6.00	46.0	670	112	25	142	5.68	75.7	1,056	186
Services	2	6	3.00	89.9	1,355	445	12	59	4.92	73.6	1,315	267
Remittances	-	-	-	-	-	-	22	82	3.73	74.4	793	213
Trade	4	10	2.50	98.8	1,056	423	8	45	5.62	83.6	1,056	188
Transport	-	-	-	-	-	-	5	18	3.60	96.5	612	170
Profession	4	24	6.00	72.5	801	133	12	52	4.33	86.7	591	136
Others	-	-	-	-	-	-	-	-	-	-	-	-
Total	118	653	5.53	84.1	901	163	260	1,251	4.81	77.9	995	207

AIDAN-KA-WAS

ALL 7 RAJASTHAN VILLAGES

Main Income Source	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)	House-holds	Per-sons	P/H	Main/Total Income(%)	Income/H (Rs.)	Income/P (Rs.)
Cltvtn., { Operator	30	227	7.57	-	-	-	442	2,662	6.02	-	-	-
Anmls., { Non-op. owner	2	8	4.00	-	-	-	2	8	4.00	-	-	-
Dairy { Laborer	-	-	-	-	-	-	263	1,345	5.11	-	-	-
Non-ag. laborer	-	-	-	-	-	-						
Arts, Crafts	8	48	6.00	-	-	-	106	580	5.47	-	-	-
Services	2	4	2.00	-	-	-	85	323	3.80	-	-	-
Remittances	2	7	3.60	-	-	-	90	462	5.13	-	-	-
Trade	-	-	-	-	-	-	33	184	5.58	-	-	-
Transport	-	-	-	-	-	-	13	75	5.77	-	-	-
Profession	3	12	4.00	-	-	-	40	255	6.38	-	-	-
Others	-	-	-	-	-	-	16	69	4.31	-	-	-
<b>Total</b>	<b>47</b>	<b>306</b>	<b>6.51</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,096</b>	<b>5,963</b>	<b>5.44</b>	<b>-</b>	<b>-</b>	<b>-</b>

## SOURCES AND NOTES

### Sources:

Anon. (1970), pp.55, 124; Anon. (1971), pp.31, 102; Anon. (1980), Table 8.10; Bambal (1968), p.78; Bhat and Pichholiya (1967), pp.180,184; Brahmhatt (1977), pp.45, 104; Choudhary (1964), p.50; B. Desai (1967), p.175; M. Desai (1966), pp.38, 171; R. Patel (1964), pp.97, 150; R. Patel (1964a), pp.43, 175; V. Patel (1973), passim; Purohit (1974), p.165; Saxena (1968), pp.90-1; Saxena and Charan (1973), pp.148-50; N. Shah (1968), p.164; Shetty (1963), p.134. For references and survey dates, see bibliography.

### Notes:

Normally, operators "in cultivation, etc." all derived their main income from farming. An unstated number in Afawa and Dingri derived it from animal husbandry or dairying, as did one of the 76 households in Moti Khadol (2 persons; 51.3% of income from primary source; 787 Rs. per household yearly), one of the 133 in Samaldevi (2; percentage not available; about 875 Rs.), 9 of the 99 in Falna (55; 86.3%; 855 Rs.), and 9 of the 105 in Hasteda (50; 76.2%; 634 Rs.). In Nargol, all the "cultivation, etc." operators were fishing families; the "agricultural" labor all derived its main income from fishing employment; and the non-operating owners, described as having their main income as rentiers, presumably own and rent out boats. For Samaldevi, the last two columns are interpolated, and very approximate for small samples (indicated by brackets). In Umedpur, three households with no apparent income source were omitted from Table 17. Other minor differences between a few population and household totals (especially for population in Hasteda), between Tables 16 and 17, reflect the sources, presumably because household sizes or numbers varied between visits to measure occupational and caste data.

Data sets for each village are as complete as the sources permit. However, the last three columns were deliberately estimated for the total of villages, because this would involve adding up incomes for different years (of the various surveys) and different villages (with different price-levels), to misleading effect.

Table 4: HOUSEHOLD SIZE AND WELFARE, ZARIA VILLAGES ( $y = a + bx$ ;  $y$  = household outlay per CU, sh/week;  $x$  = size of household in CUs).

Village	a	b	r	n	Sig. level (r)
Doka	+0.1306	-0.7753	-0.5283	40	0.1%
Dan Mahawayi	+0.1409	-0.5694	-0.2614	32	10%
Harwa	+0.1821	-0.6896	-0.5216	32	1%

Sources: Norman (1976); Simmons (1976); Lipton (1983), as Tables 3, 4. Farm expenses deducted from total outlay, and obviously inaccurate or exceptional cases excluded.

TABLE 5: SOCIAL STATUS AND HOUSEHOLD SIZE, RURAL W. INDIA, 1961-65

GUJARAT

VILLAGE	AFAWA			ANKODIA			MOTI KHADOL			OON			RAMPURA			SAMALDEVI			ALL 6 VILLAGES		
	Per-sons	House-holds	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H
<b>Caste Group</b>																					
High Hindus	13	3	4.33	30	7	4.29	38	9	4.22	7	1	7.00	3	1	3.00	--	--	--	91	25	4.33
Intermediate	428	68	6.29	1116	75	6.38	371	72	5.15	107	12	8.92	439	75	5.85	173	179	6.55	3634	581	6.25
Other Caste Hindus	695	166	4.19	148	33	4.48	110	24	4.58	225	40	5.62	226	46	4.91	6	1	6.00	1410	310	4.55
Scheduled Castes	79	18	4.39	226	51	4.43	34	9	3.78	150	29	5.17	134	24	5.58	80	12	6.67	953	191	4.99
Scheduled Tribes	--	--	--				--	--	--	250	48	5.21	--	--	--	--	--	--			
Non-Hindu	--	--	--	13	2	6.50	177	44	4.02	397	59	6.73	4	1	4.00	--	--	--	591	106	5.58
<b>VILLAGE TOTAL</b>	<b>1215</b>	<b>225</b>	<b>4.76</b>	<b>1533</b>	<b>268</b>	<b>5.72</b>	<b>730</b>	<b>158</b>	<b>4.62</b>	<b>1138</b>	<b>189</b>	<b>6.02</b>	<b>806</b>	<b>147</b>	<b>5.48</b>	<b>1259</b>	<b>192</b>	<b>6.56</b>	<b>6681</b>	<b>1209</b>	<b>5.53</b>

RAJASTHAN

66

VILLAGE	AIDAN-KA-WAS			DINGRI			FALNA			HASTEDA			UMEDPUR			ZAWAR			ALL 6 VILLAGES		
	Per-sons	House-holds	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H	P	H	P/H
<b>Caste Group</b>																					
High Hindus	9	3	3.00	17	6	2.83	101	25	4.04	549	111	4.95	160	42	3.80	33	9	3.67	864	196	4.41
Intermediate	224	32	7.00	360	62	5.81	566	121	4.68	328	42	7.81	23	11	2.08	9	2	4.50	1510	270	5.59
Other Caste Hindus	41	7	5.86	17	3	5.40	362	71	5.10	510	87	5.86	139	29	4.79	52	11	4.73	1121	208	5.30
Scheduled Castes	29	5	5.80	30	5	6.00	219	42	5.21	268	48	5.58	58	13	4.46	9	3	3.00	613	116	5.28
Scheduled Tribes	--	--	--	229	42	5.45	--	--	--	139	22	6.32	74	4	3.50	869	153	5.68	1251	221	5.66
Non-Hindu	--	--	--	--	--	--	3	1	3.00	254	46	5.52	10	5	2.00	--	--	--	267	52	5.13
<b>VILLAGE TOTAL</b>	<b>303</b>	<b>47</b>	<b>6.45</b>	<b>653</b>	<b>118</b>	<b>5.53</b>	<b>1251</b>	<b>260</b>	<b>4.81</b>	<b>2048</b>	<b>356</b>	<b>5.75</b>	<b>404</b>	<b>104</b>	<b>3.87</b>	<b>972</b>	<b>178</b>	<b>5.46</b>	<b>5631</b>	<b>1063</b>	<b>5.30</b>

Sources: Patel (1964), p.44, and (1964a), p.42; B.Desai (1967), p.53; (1968), pp.50, 72; N. Shah (1968), pp.50, 72; Anon. (1970), p.37; Brahmlatt (1977), p.30; Choudhary (1964), p.49; Saxena and Charan (1973), p.27; Bhat and Pichholiya (1967), p.49; Anon., (1971), p.32; S.D. Purohit (1974), p.45; M. Desai (1966), p.18.

Note: High Hindus: Brahmins, Jains (classified as High Hindus by all these authors), Bania, Maheshwari, Garg. Intermediate: the great majority are Rajput, Patel and Jat.

TABLE 6: MHS AND POVERTY: HIGHLY TENTATIVE SUMMARY OF LINKER AND DELINKER VARIABLES

Variable	Explains positive poverty MHS link in LICs now?	Explains negative poverty-MHS link in PI-NDCs, and reversal?	Explains "paradoxical" negative status-MHS link (LICs and PI-NDCs)?	Explains fade-out among very poorest of today's positive poverty-MHS links?
<b>Mortality</b>	IMR, child: more for poor. Hinders explanation unless replacement fertility exceeds sib crowding.	IMR, child: much more for poor. Helps explain link. If less difference now, hinders explanation of reversal.	IMR, child: rises very sharply. only among ultra-poor; helps explain.	Rural/remote "status-groups": higher adult (and child) mortality. Unskilled assetless labor's high IMR, given MEP(?), helps explain "oddly" low MHS.
<b>Couple Fertility</b>	Falls briefly, then rises with rising MEP. Linker if and only if populations mainly poorer than turning-point. More post-primary female education for less-poor cuts fertility linker.	Female ed. - less important; fertility adapted downwards to times, conditions of poverty: linker.	Helps, as lowest status, bad health and hygiene, high IMR, lower replacement fertility linked.	Probably helps explain - physical fertility reduction perhaps outweighed by more "insurance" births.
<b>Formation and duration of unions</b>	Poor marry earlier (less educational delay): linker	Poor married later (cf. couple fert., non-family members): linker.	High status goes with longer educn. A (delinker) and less marital disruption (linker).	Underfed ultra-poor may have later menarche, earlier menopause, more early widowhood: helps explain.
<b>Complexity (non-nuclearity)</b>	Somewhat more for better-off: delinker, if linked to MEP rather than status.	Usually affected only gentry: strong linker. Possible bigger spread "down" now in LICs would help explain reversal.	Clear positive status-complexity link. Major part of explanation.	Much less complexity among landless and assetless (no will-shaking) could help explain.
<b>Migration</b>	Probably rural linker; urban position not clear.	Probably urban linker; rural position not clear.	Too little researched to guess.	Ultra-poor do little long-term individual migration; this would help explain any fade-out of links or de-links.
<b>Family cycles</b>	Very small incidence of aged singleness among poor; high child/adult ratio vs poverty "stage" of cycle. Both linkers.	Low aged singleness among poor delinked; lower child/adult ratios, with poverty, powerfully linked.	Rigid status barriers to children's careers could push low-status couples to cut childbirths in early family-cycle (linker).	Too little research to guess.
<b>Non-family household members</b>	Decline of resident service/apprenticeship helps explain reversal of traditional MHS-affluence link.	"Massive transfer" of servants from poor to less-poor households, major linker, directly and by delaying marriage among poor.	Low-status teenage lodgers, servants, in high-status homes: linker, but weaker in LICs than PI-NDCs.	Too little research to guess.

**TABLE 7: AGE-DISTRIBUTION BY HOUSEHOLDS (GROUPED BY OUTLAY PER PERSON): W. INDIA, 1972-3**

	<b>POOREST DECILE</b>	<b>POOREST QUINTILE</b>	<b>SECOND POOREST QUINTILE</b>	<b>RICHEST QUINTILE</b>
<b><u>RURAL GUJARAT:</u></b>				
% 0-4	17.0	15.7	15.2	10.0
% 5-14	33.6	33.7	30.8	23.6
% 60+	3.2	3.5	4.2	7.0
Dependency Ratio	1165	1197	1007	682
<b><u>RURAL MAHARASHTRA:</u></b>				
% 0-4	17.5	16.8	15.7	12.4
% 5-14	33.3	33.4	30.0	24.2
% 60+	5.7	5.4	6.6	6.9
Dependency Ratio	1304	1253	1100	793
<b><u>URBAN GUJARAT:</u></b>				
% 0-4	14.8	14.4	13.3	7.4
% 5-14	35.3	33.7	29.4	18.4
% 60+	3.4	3.5	4.4	5.9
Dependency Ratio	1150	1065	890	469
<b><u>URBAN MAHARASHTRA:</u></b>				
% 0-4	15.3	15.2	13.9	6.8
% 5-14	34.1	32.4	28.5	13.7
% 60+	5.2	5.2	4.6	6.4
Dependency Ratio	1203	1120	887	370

Source: NSS, 27th Round, reported in Visaria (1977), Appendix, Tables 1-3.

TABLE 8(a): CHILD/ADULT RATIOS AND POVERTY, INDIA 1972-3

RURAL

MONTHLY EXPENDITURE PER PERSON (Rs)	GUJARAT			MAHARASHTRA			RAJASTHAN			ALL-INDIA		
	% of house- holds	Ave. Size of h/h	Child h/hold ratio									
0-13	0.4*	7.6	.56	1.3	7.0	.51	0.7	4.7	.54	1.5	5.6	.54
13-15	0.3*	4.9	.48	1.1	5.9	.56	0.9	5.8	.62	1.2	5.8	.52
15-18	1.2	6.3	.53	2.9	6.1	.52	1.9	5.5	.53	3.0	5.9	.52
18-21	2.5	6.7	.52	4.6	6.2	.53	4.0	6.0	.51	4.6	5.8	.50
21-24	3.4	6.2	.51	6.1	6.0	.51	3.7	5.9	.51	5.9	5.7	.49
24-28	6.6	6.8	.52	9.8	5.9	.47	8.2	6.2	.44	9.4	5.6	.47
28-34	13.2	6.5	.49	15.5	5.7	.46	12.2	5.8	.46	14.9	5.4	.45
34-43	19.4	6.1	.44	19.9	5.3	.42	16.6	6.0	.46	18.7	5.3	.42
43-55	17.7	5.7	.43	17.0	5.2	.41	17.8	5.7	.45	16.5	5.1	.40
55-75	18.0	5.4	.39	12.7	4.9	.38	16.3	5.4	.41	12.9	4.8	.37
75-100	9.4	4.6	.36	5.2	4.1	.35	8.9	5.2	.39	6.1	4.5	.35
100-150	5.5	5.1	.31	2.7	4.4	.35	6.6	4.8	.36	3.5	4.3	.33
150-200	0.9	2.4	.21	0.6	2.6	.22	1.0	2.6	.24	0.9	3.2	.26
200+	1.5*	4.8	.16	0.6	3.3	.33	1.2	4.8	.33	0.6	3.9	.29
ALL	100.0	5.8	.43	100.0	5.4	.44	100.0	5.6	.44	100.0	5.2	.43
	(3381)			(5249)			(2285)			(72270)		

Source: Sarvekshana, Jan. 1979, pp. S-294, 300, 305, 357, 360, 364, 369.

- Notes:
- (1) Sub-sample sizes for rural Gujarat: 11 in per person outlay group, 0-13 Rs. per month; 7 in group, 13-15 Rs per month; and 15 in group for 200 Rs. and above. All these small sub-samples are marked \* above. All other cells contain at least 18 households.
  - (2) Entries in columns "% of households" are for the whole State (or all-India), not for the sample.

TABLE 8(b): CHILD/ADULT RATIOS AND POVERTY, INDIA 1972-3

URBAN

MONTHLY EXPENDITURE PER PERSON (Rs)	GUJARAT			MAHARASHTRA			RAJASTHAN			ALL-INDIA		
	% of House- holds	Ave. Size of h/h	Child h/hold ratio									
0-13	0.1	1.00	.00	0.6	4.9	.45	0.3	3.4	.36	0.3	4.8	.49
13-15	-*	-	-	0.3	6.6	.51	0.1*	3.5	.26	0.3	5.9	.51
15-18	0.5*	5.2	.62	0.7	6.4	.54	0.7*	6.7	.55	0.8	6.1	.54
18-21	0.4*	7.5	.52	1.1	7.1	.49	1.2	6.7	.52	1.4	6.4	.51
21-24	0.5*	7.2	.50	1.7	6.9	.48	1.8	6.9	.55	2.1	6.5	.51
24-28	2.0	6.3	.46	3.7	6.4	.45	3.8	7.2	.50	4.2	6.4	.48
28-34	7.3	6.8	.50	5.7	6.3	.47	7.8	6.0	.47	8.4	6.2	.47
34-43	15.5	6.3	.45	10.5	5.9	.43	15.1	6.1	.48	13.8	5.8	.44
43-55	21.5	5.9	.39	13.4	5.5	.41	17.3	5.8	.44	15.9	5.4	.40
55-75	23.2	4.9	.36	17.2	5.2	.38	17.5	3.3	.39	18.0	4.7	.36
75-100	15.1	3.9	.29	14.0	4.2	.32	13.8	4.1	.37	13.4	3.8	.31
100-150	8.4	2.9	.22	17.3	3.3	.25	12.2	3.4	.32	12.5	3.1	.26
150-200	2.6	2.3	.11	7.0	2.9	.20	4.3	2.7	.35	4.6	2.7	.21
200+	2.0	1.5	.12	6.7	2.8	.20	4.0	2.6	.26	4.3	2.4	.19
ALL	100.0	5.1	.38	100.0	4.7	.37	100.0	5.0	.42	100.0	4.7	.39
	(1990)			(6181)			(2392)			(52820)		

Source: Sarvekshana, Jan. 1979, pp.S-294, 297, 300, 305, 357, 360, 364, 369.

- Notes: (1) Sub-sample sizes for urban Gujarat: 2 for 0-13 Rs; zero for 13-15; 6 for 18-21; 11 for 21-24.  
Urban Rajasthan: 7 for 0-13 Rs. month, 3 for 13-15, 17 for 15-18.  
All these small sub-samples are marked \* above. All other cells at least 18 households.
- (2) Entries in columns "% of households" are for the whole State (or all-India), not for the sample.

TABLE 9(a): URBAN FEMALE DEMOGRAPHY BY INCOME CLASS, INDIA, 1972-3

MONTHLY OUTLAY PER PERSON (Rs)	MAHARASHTRA			GUJARAT			RAJASTHAN			ALL-INDIA		
	% of House- holds in State	Males per Female (Adults)	Child- ren per Adult Fe- male	% of H/h in State	Males per Female (Adult)	Child- ren per Adult Fe- male	% of H/h in State	Males per Female (Adult)	Child- ren per Adult Fe- male	% of H/h	Males per Female (Adult)	Child- ren per Adult Female
0-13	0.6	1.09	1.74	(0.1) <sup>(b)</sup>	(1.00)	(0.00)	(0.3)	(0.61)	(0.91)	0.4	0.94	1.84
13-15	0.4	0.81	1.86	( - )	( - )	( - )	(0.1)	(0.81)	(0.63)	0.3	0.94	1.97
15-18	0.7	0.83	2.14	(0.5)	(0.77)	(3.53)	0.7	0.96	2.35	0.8	0.83	2.12
18-21	1.1	0.83	1.74	(0.4)	(0.86)	(2.05)	1.2	1.07	2.29	1.4	0.80	1.86
21-24	1.7	1.02	1.88	0.6	1.10	2.10	1.8	0.91	2.30	2.1	0.94	1.99
24-28	3.7	1.01	1.68	2.0	1.04	1.72	3.8	0.89	1.86	4.2	0.96	1.84
28-34	5.7	1.05	1.81	7.3	1.05	2.04	7.8	1.01	1.77	8.4	1.01	1.74
34-43	10.5	1.04	1.54	15.5	1.01	1.66	15.2	1.04	1.85	13.8	1.00	1.56
43-55	13.3	1.10	1.48	21.5	1.07	1.30	17.3	1.04	1.62	15.9	1.06	1.37
55-75	17.2	1.16	1.32	23.1	1.04	1.12	17.5	1.09	1.35	18.0	1.13	1.20
75-100	14.0	1.35	1.10	15.1	1.11	0.86	13.8	1.23	1.31	13.4	1.32	1.03
100-150	17.3	1.61	0.86	8.4	1.32	0.65	12.2	1.23	1.06	12.5	1.55	0.88
150-200	7.0	1.65	0.67	2.6	1.26	0.27	4.3	1.51	0.81	4.6	1.67	0.70
200+	6.7	1.65	0.67	2.1	2.07	0.42	4.0	1.76	0.96	4.3	1.76	0.65
ALL	6181 <sup>(a)</sup>	1.23	1.32	1990 <sup>(a)</sup>	1.08	1.29	2392 <sup>(a)</sup>	1.10	1.54	52820 <sup>(a)</sup>	1.15	1.35

Source: Sarvekshana, Jan. 1979, Tables 1/U.

Notes: (a) "% of all households" is clearly 100; entry shows number of households sampled.

(b) Bracketed figures indicate sub-sample below 10.

This table and table 12 allow all sub-sample sizes to be calculated.

TABLE 9(b): RURAL FEMALE DEMOGRAPHY BY INCOME CLASS, INDIA, 1972-3

MONTHLY OUTLAY PER PERSON (Rs)	MAHARASHTRA			GUJARAT			RAJASTHAN			ALL-INDIA		
	% of House- holds in State	Males per Female (Adults)	Child- ren per Adult Fe- male	% of H/h in State	Males per Female (Adult)	Child- ren per Adult Fe- male	% of H/h in State	Males per Female (Adult)	Child- ren per Adult Fe- male	% of H/h	Males per Female (Adult)	Child- ren per Adult Female
0-13	1.3	0.55	1.62	0.4	0.84	2.35	0.7	0.85	2.16	1.5	0.79	2.10
13-15	1.1	0.83	2.34	(0.3)	(1.77)	(2.58)	0.9	0.75	2.80	1.2	0.90	2.07
15-18	2.9	0.94	2.09	1.2	1.03	2.29	1.9	1.01	2.28	3.0	0.91	2.05
18-21	4.6	0.95	2.21	2.5	0.94	2.14	4.0	1.01	2.10	4.6	0.94	1.94
21-24	6.1	0.93	2.03	3.4	1.00	2.05	3.7	0.93	2.01	5.9	0.94	1.84
24-28	9.8	0.96	1.74	6.6	1.05	2.22	8.2	0.98	1.57	9.4	0.96	1.72
28-34	15.5	0.92	1.64	13.2	1.02	1.92	12.2	1.02	1.72	14.9	0.97	1.61
34-43	19.9	0.96	1.43	19.4	0.99	1.60	16.6	1.00	1.70	18.7	1.00	1.47
43-55	17.0	0.97	1.37	17.7	1.04	1.56	17.8	1.04	1.65	16.5	1.03	1.36
55-75	12.7	0.99	1.21	18.0	1.02	1.27	16.3	1.12	1.50	12.9	1.06	1.21
75-100	5.2	1.00	1.06	9.4	0.89	1.05	8.9	1.05	1.33	6.1	1.10	1.14
100-150	2.7	1.09	1.12	5.5	1.20	1.01	6.6	0.97	1.10	3.5	1.19	1.08
150-200	0.6	1.61	0.75	0.9	1.92	0.77	1.0	1.61	0.86	0.9	1.27	0.81
200+	0.6	1.42	1.21	1.5	0.99	0.37	1.2	1.53	1.25	0.1	1.30	0.93
ALL (a)	5249 (a)	0.96	1.54	3381 (a)	1.02	1.55	2285 (a)	1.03	1.62	72270 (a)	1.01	1.50

Source: Sarvekshana, January 1979, Table 1/U.

Note: As Table 9(a).

**TABLE 10: DISTRIBUTION OF HOUSEHOLDS BY PER CAPITA INCOME AND HOUSEHOLD INCOME, KERALA, 1978-9**

Per Capita Income (Rs/Month)	HOUSEHOLD INCOME (Rs/MONTH)						TOTAL
	99	100-240	250-499	500-749	750-999	1000+	
0-19	95	38	1	0	0	0	134
20-39	55	494	56	0	0	0	605
40-59	0	259	197	23	5	1	485
60-79	27	0	241	70	7	3	348
80-99	0	54	93	59	24	4	234
100-149	0	0	36	118	52	34	240
150-199	0	22	29	50	26	43	169
200+	0	0	7	32	30	109	178
<b>TOTAL</b>	<b>177</b>	<b>887</b>	<b>660</b>	<b>352</b>	<b>143</b>	<b>194</b>	<b>2393</b>

Source: Data supplied by the authors, and used by them to prepare Mathew and Scott (1980), a survey of 3 urban and 9 rural communities.

**TABLE 11: TOTAL HOUSEHOLD EXPENDITURE AND SIZE, ZARIA, 1970-1**

Total Household expenditure (sh/wk)	Persons per average household size (no. of households in brackets)			
	Doka	Dan Mahawayi	Hanwa	All three
0-30	4.7	3.8	3.4	4.2
30-60	6.9	6.4	6.1	6.7
60-90	11.0	7.6	10.1	9.3
90-120	5.1	9.8	10.7	10.1
120-150	-	13.6	10.2	11.0
150+	-	9.9	12.4	11.0
<b>TOTAL</b>	<b>6.9</b>	<b>7.3</b>	<b>10.0</b>	<b>8.0</b>

Source: Simmons (1976), pp. 84, 86.

Notes: Consumers averaged over two survey weeks about six months apart.

TABLE 12: MHS-MEP RELATIONSHIPS: INDIA, 1972-73

State	Sample Size	Rural households			Sample Size	Urban households		
		Percentage of households for which:				Percentage of households for which		
		At poorest end: no relationship	Poor and above: relationship	At top end: no relationship		At poorest end: no relationship	Poor and above: relationship	At top end: no relationship
Andhra P.	5887	10.9 - 17.6	82.4 - 89.1	-	4654	9.2 - 19.7	80.3 - 90.8	-
Assam	2591	2.1 - 5.5	92.7 - 96.1	1.8	1500	1.4 - 3.5	96.5 - 98.6	-
Bihar	5739	See note (a)		0.5	3693	5.7 - 10.1	89.9 - 94.3	-
Gujarat	3381	7.9 - 14.5	77.6 - 84.2	7.9	1990	3.5 - 10.8	89.8 - 96.5	-
Haryana	2234	See note (b)		-	1676	1.8 - 3.1	96.9 - 98.2	-
Himachal P.	1190	2.4 - 6.9	93.1 - 97.6	-	702	Small sample		-
Jammu, Kashmir	4307	10.6 - 21.5	78.1 - 89.0	0.4	2688	0.1 - 1.5	98.5 - 99.9	-
Karnataka	3333	13.1 - 21.0	75.2 - 83.1	3.8	2466	10.9 - 20.9	79.1 - 89.1	-
Kerala	3789	19.2 - 29.2	70.8 - 80.8	-	1407	12.5 - 20.0	80.0 - 87.5	-
Madhya P.	5739	2.8 - 4.3	90.7 - 92.2	5.0	3213	2.2 - 4.2	95.8 - 97.8	-
Maharashtra	5249	5.3 - 9.9	86.8 - 91.4	3.3	6181	1.7 - 2.7	97.3 - 98.3	-
Meghalaya	1025	6.5 - 19.8	79.3 - 92.9	0.6 - 0.9	502	Small sample		-
Orissa	3312	4.9 - 8.0	76.9 - 88.1	7.0 - 15.1	1861	19.2 - 32.5	67.5 - 80.8	-
Punjab	3064	4.5 - 9.6	87.3 - 92.4	3.1	1697	2.4 - 5.4	94.6 - 97.6	-
Rajasthan	2285	See note (c)		1.2	2392	15.7 - 30.9	69.1 - 84.3	-
Tamil Nadu	5984	6.3 - 12.3	87.7 - 93.7	-	3541	7.0 - 12.5	87.5 - 93.0	-
Tripura	1085	10.8 - 25.1	73.3 - 87.6	1.6	647	Small sample		-
Uttar P.	7985	5.3 - 10.7	88.7 - 94.1	0.6	5982	3.0 - 6.0	94.0 - 97.0	-
W. Bengal	4895	6.4 - 12.2	87.5 - 92.3	0.3	4465	8.1 - 14.3	85.7 - 91.9	-
Union Terrs. (d)	527	Small sample			2286	2.7 - 7.2	92.8 - 98.3	-
All-India (e)	72270	2.5 - 3.8	95.5 - 96.8	0.7	52820	2.8 - 4.9	95.1 - 97.2	-

Source: See fn. 11.

Notes: The entry for rural Uttar Pradesh for example, should be read: "The MEP groups comprising the poorest 10.7% of households showed no systematic fall in MHS group means as MEP rose. From the highest of these very poor groups (i.e. the poorest 10.7% of households minus the very poorest 5.3%), to the group immediately below the very richest 0.6% of households, MHS consistently fell as group mean MEP rose. This relationship therefore applied to the 'middle' 88.7%-94.1% of households." There are 14 MEP groups in each State.

- (a) Nearest approximation to entries: 2.6-6.3; 93.2-95.9; 0.50. However, among the eleven "middle" MEP groups, two show slight reversals of the otherwise steady downtrend of group mean MHS with rising MEP.
- (b) No clear trend.
- (c) As (a), 11.2-19.4; 79.7-87.6; 1.2. However, one slight reversal takes place among the eight "middle" MEP groups.
- (d) Delhi, Goa-Daman-Diu, Pondicherry; also (urban only) Chandigarh.

FOOTNOTES

1. Poverty and ultra-poverty are here treated as characteristics of households, for three reasons. First, it is by the household that incomes and spending are pooled and surveyed. Second, policy leverage on intra-household distribution is small. Third, severe deprivation of individuals - e.g. girls - within households sufficiently well-off to feed all their members adequately is probably much rarer than is usually argued - and where present is not readily amenable to policy, except by enriching the household overall. See Lipton, 1983, Sec. III(a).
2. "Poverty" here means insufficient income (or outlay) to provide household members with 100% of 1973 average FAO/WHO caloric requirements of their age, sex and activity groups, when the household allocates income (or outlay) among foods, and between them and non-foods, typically for households with its size, age- and sex-structure, and income (or outlay). "Ultra-poverty" replaces "100%" with "80%" in the above definition. Poverty and ultra-poverty may be assessed by surveying (per-person or per-CU) household income or outlay, food consumption, food/outlay ratios, caloric intake relative to requirements, or anthropometric status. See Lipton, 1983, Sec. I.
3. "Denominator" in that household resources might be divided by number of members, by number of adult-equivalents, or not at all. "Resources" are used to cover any of several alternate measures of family access to the means to avoid poverty: to income, outlay, or - quite plausibly where 70-80% or more of outlay is on food - calories.
4. For classification of households, see Laslett and Wall, 1972, pp. 31, 41-2, and below, fn. 16.
5. These two offsets are not universal. Until recent times (pp. 7-8) - and probably still, where neither public health nor income levels have started to improve - bigger households tended to have higher adult/child ratios, and to be better-off. In such circumstances, ranking of households, household deciles, or areas in rising order of resources-per-household would give even less guidance, if possible, to ranking in terms of poverty incidence.
6. However, even if we know nothing about causality, we shall locate "poverty projects" better if we know the demographic characteristics of the poor, and where those characteristics are to be found. See Sec. V.
7. Wachter and Laslett, 1978, pp. 76-7, argue that the increase is only "at first flush" and is shown, by simulation of evolving populations, to be statistically unsurprising. However, the simulation predicts ranges of continuous change in MHS; Laslett's data appear to show a marked discontinuity around 1750 or so. See also Nakane, 1972, p. 531.

8. This implies that positive links of poverty to household size within a status-group of households are likely to be even stronger than in total populations of households - especially if the group comprises a large part of the population, and has little scope for increasing assets and status within its ranks as MHS rises. Hence the impact of MHS on the logarithm of poverty-risk, in large rural Indian samples in 1968-70, was much larger for the 900-odd casual-labor households than for the 2350-odd cultivator households, and larger for the latter than for the 4100 households pooled from all groups: Gaiha, 1983, Tables 13, 18, 19.
9. For the seventeen villages where MHS and income-per-person can be estimated from Table 3, allowing for changes in the price-index for agricultural labor in the two States between survey years, and converting from Gujarat to Rajasthan prices by using the data in Chatterjee and Bhattacharya, 1974, pp. 344-6, we obtained the correlation between village MHS and village average real income-per-person:  $r = -.2403$ ,  $n = 17$ , n.s.
10. Calculated by R. Longhurst from Norman et al., 1976.
11. Sarvekshana, Jan. 1979, pp. S293-S305 and S356-S369. The details are set out in Table 12.
12. This study indirectly suggests that marital fertility helps explain both parts of our paradox, in Kerala at least; for it decreases as MEP rises (Zachariah and Kurup, 1982, Table 3).
13. In both cases, MHS for craftsmen is now below village average MHSs. This contrasts with the opposite tendency in "proto-industrializing" NDCs (Andorka and Farago, 1983, p. 295; Wall, 1983, p. 448, and 1983a, p. 388). Perhaps the lower status and household size of artisans in many LICs today "pushes" bigger villages, with a greater artisan component, towards lower MHS?
14. Jains are classified as 'high Hindus' in these surveys, though some would consider them a distinct religion. In Table 5, we have made minor changes to two surveys, to reconcile their classification of castes with that used by the other ten.
15. A tradition of arranged marriages - linked to the risk of being left as a single-parent family with no obvious means of support - imposed very low illegitimacy rates on many pre-industrial societies in the past (Laslett, 1971, pp. 142-5). It is reasonable to hypothesize that this applies even more strongly to most LIC societies today, so that lower marital fertility normally means lower couple fertility, not high bastardy rates - but this requires research and evidence.
16. We use the classification of co-resident families used by Laslett, 1972a, p. 31. (A) Nuclear or simple = (1) sole (solitary), or (2) "no family" (co-resident unmarried siblings or other relatives, or unrelated persons), or (3) simple (married couples or single parents with children). (B) Complex = (4) extended (nuclear plus relative(s) of an earlier generation: extended upwards, e.g. by the presence of a nuclear spouse's parent or aunt of a later generation; or extended

- downwards, e.g. by a nuclear spouse's grandchild; or extended laterally, e.g. by a nuclear spouse's sibling or cousin of the same generation); or (5) multiple, with two or more related conjugal families, again up, or down, or on one level with the household head; a special case of the latter is the a "frèreche", with no "member of an earlier generation [but] married siblings connected entirely through the filial linkage of each to a conjugal unit no longer represented in the household" (ibid., p. 30). There remains a handful (6) Indeterminate. In this paper "household" means "co-resident family plus resident servants, lodgers, or other unrelated inmates"; "family" always means "co-resident family" unless otherwise stated.
17. On its own, this first effect does not alter the absolute gap between rich and poor MHS, but does make rich households' MHS - if initially larger than poor households' MHS, as in PI-NDCs - somewhat smaller (or less big) relatively to, i.e. as a ratio to, poorer households' MHS. Suppose that children either die in the first year of life, or survive through adolescence. Now, let IMR fall due to the conquest of illnesses that had earlier killed 1 infant in 10, irrespective of poverty. Then IMR for the rich might fall from 200 to 100, and for the poor from 300 to 200. Assuming ten births per couple rich or poor, MHS, with all children and parents at home, would rise from 10 to 11 for the rich, and from 9 to 10 for the poor. The gap stays the same, but "rich" MHS falls from 111% to 110% of "poor" MHS; other changes, e.g. decline of resident servants, could then easily bring it below 100%. (If we allow for the fact that subsequent mortality (between infancy and adolescence) probably was similarly reduced by income-neutral health improvements, these would then shrink the rich/poor MHS ratio more - but still not affect the absolute MHS gap).
18. In 100 English communities, 1574-1821, community MHS was correlated with (1) proportion of households with servants (simple  $r = .599$ ), (2) proportion of gentry (.528), (3) servant/population ratio (.437), (4) child/population ratio (-.335) and (5) proportion of households headed by married couples (.296). In 382 communities in Suwa county, Japan, 1671-1870, comparable significant results were (1) .444; (2) n.a.; (3) n.a., but .402 for servant/household ratio (two other servant indicators also  $> .25$ ); (4) n.a., but  $r$  for ratio of children under 10 to married women aged 21-40 was  $+.319$  (and for unmarried children/household heads ratio, .529); (5) .600 (two other indicators of marital incidence were  $> .83$ ); (6) proportion of households with three or more generations, .529; (7) ditto without resident kin,  $-.684$  (100 English, .0031); (8) proportion of females aged 12-40 married,  $-0.167(1)$ . All significant at 1%, except (4) for UK (5%). Laslett, 1972, p. 155; Hayami and Uchida, 1972, p. 492.
19. One can add to Schultz's reasons for implying "No". Windfall oil-based incomes reduce the costs of child-care (especially by immigrants); so does the relatively small likelihood of "modernizing away" complex families. Yet I would answer "Yes": higher income can permit a Government to provide (a) social-security systems that reduce even the poorer Libyan's need to rely on his children for his old age, and (b) post-primary education to mothers, reducing fertility (p. 22) - and to children, raising the costs of rearing them.

20. Indeed, in the poorest countries, women with some primary schooling have slightly higher fertility than women with no education - consistently with the inverse U; see Birdsall, 1980, p. 49.
21. See fn. 16; higher adult death-rates would also reduce incidence of extended families, but the effect on multiple families, up or down from the household head, is greater.
22. This is an aspect of "Sanskritization": Srinivas, 1962.
23. Differences significant at 5% and 10% respectively. Average holding per person was also somewhat bigger in complex than in nuclear co-resident families.
24. The wrong assumptions that (a) most LIC cities are dominated by recent migrants or (b) migrants, even long-settled ones, have relatively small households, may well be to blame for the widespread belief that in LICs urban households are generally and significantly smaller (and less likely to be complex) than rural households.
25. For seven observations each on student migrants (as proportion of total population) and on working migrants (proportion of adults), the simple r with average household size was, respectively, -.5970 and -.6825: see Connell et al., 1976, p. 193, and Table 3 of this paper for MHSs.
26. In Villgraten village, Austria, in 1781, "households with more grown-up children, other things equal, had fewer servants ... Peasants ... (all owning 10-14 cattle and/or horses) who had no children above [10 averaged] 2.71 servants (28 cases); with one child, they had 2.45(11); with two, 1.64(14); with three, 1.06(18); with four, 0.72(18); and with five, 0.07(14)" (Schmidtbauer, 1983, p. 355).
27. It might be argued that this was a fault in the right direction. Such an argument is not mere rhetoric, because risks of irreversible harm from poverty-induced shortages of dietary energy are much greater among under-fives than at later ages.
28. "Dependency ratio" usually means "persons not aged 15-59, as a proportion of persons aged 15-59". Sometimes "over 15" or "over 10" replaces "15-59"; where this happens, it is stated. It makes little difference to the overall relationships between poverty and the ratio. Nor does the distinction between "family" and "co-resident household"; few households at risk of poverty have servants or lodgers.
29. In 1973-4, children in rural Gujarat comprised 48.4% of rural households with below 34 Rs/person/month; 45.5% at 34-43 Rs; 41.7% at 43-150 Rs; and 43.4% above 150 Rs. (This accords well with the 1972-3 data given by Visaria; only above the 6th decile by income-per-person did the ratio fall below 40%.) For rural Maharashtra, the corresponding data were 50.0%, 46.7%, 39.2% and 31.0%, and for rural Rajasthan, 49.1%, 46.0%, 42.4% and 38.2%. In urban Gujarat, 52.1% of members of households spending below 34 Rs/person/month were children; 46.0% at 34-43 Rs; 38.9% 43-150 Rs; and 24.1% at 150+. For Maharashtra

the corresponding figures were 50.9%, 44.6%, 36.6% and 19.2%, and for Rajasthan, 49.1%, 50.9%, 40.2% and 21.9%. Calculation by K. Affan from NSS 28th Round (Oct. 1973-Sept. 1974, No. 240), pp. 11, 13, 81.

30. Sarvekshana, Jan. 1979. For example, we found similar "reversals" for rural Bihar (child/household ratio for households spending 0-13 Rs/person/month, 0.54 (2.0% of all 5739 sampled); 13-15, 0.48 (1.6%); 15-18, 0.50 (3.7%); and falls thereafter); Madhya Pradesh (at 0-13 Rs/person/month, a sample of 78 households comprised 52% children; at 13-15 (sample of 115), 55%; and falls thereafter); and Punjab (0-13 Rs - 10 households - 37%; 1-18 - 8 - 46%; 18-21 - 21 - 50%; 21-24 - 43 - 53%; 24-28 - 108 - 56%; and thereafter falls). Urban series usually produced similar reversals. Cf. fn. 11.
31. In PI-NDCs, when poorer people usually married later than others (pp. 24-6), the age of marriage would tend to push up the average age of poor HHS, going against the other effects mentioned here and leaving the upshot indeterminate.
32. "A high proportion of babies aged 0-4 (in relation to adult women and older children)" was found in the low-participation, but not high-participation, villages in a 93-village Indian sample (from the 1960s), on the basis of principal component analysis (Dasgupta, 1977, p. 157; my emphasis).
33. (a) The coefficient of (age<sup>2</sup>) was negative (-.0052) but insignificant even at 10%. The MEP and income-per-head specifications are here preferred to those "per consumer unit" - called "standard income" by Gaiha (p. 7) - because Gaiha follows a rather unusual set of CUs, which weight children aged 0-1 at zero. (b) Significance levels corrected from text (thanks to Gaiha, pers. comm.).
34. Excluding under-fives in urban and rural Maharashtra only.
35. Table 16 (p. 60) of Visaria, 1980, seems to be transcribed wrongly, since it is not consistent with the text (p. 58), the graphs (p. 61), or the known facts, all three of which are consistent with one another. Therefore, this paper uses pp. 58 and 61 and ignores p. 60.
36. There are mild falls in urban Gujarat in 1972-3 (51% of males of all ages in the poorest MEP decile, 47% in the richest); rural Maharashtra (51% to 45%, but all the fall is in the top two deciles); peninsular Malaysia (53% to 51%); and Taiwan (52% to 49%).
37. Corresponding figures for urban Gujarat were much less unbalanced (respectively 109, and 117: Visaria, 1977, p. 8A). This suggests that a national business and political centre, like Bombay, is especially liable to the "excess" presence, and influence, of wealthy and powerful males. This was confirmed in 1972-3 in urban West Bengal (with its national "centre" in Calcutta), a small female surplus in the poorest homes, balance among the moderately poor, and a growing male surplus in the top two-thirds; and also in urban Delhi (Sarvekshana, Jan. 1979, pp. S360-7). Also, urban Nepal showed a similar pattern to Maharashtra (Visaria, 1980, p. 61).

38. In most LICs, rural populations - normally defined as those in places with below 5,000 inhabitants - still form 75% or more of national totals. Therefore, while sex-selective or age-selective migration greatly alters the demographic structures of urban places, and of MEP groups within them, the migrants are a much smaller proportion of rural residents, and affect rural structures (total and in MEP sub-groups) far less.
39. Possibly the effect of female-headedness on relative MEP, even holding civil status constant, is higher in middle-income countries, where poverty is much less extreme. In Belo Horizonte, Brazil, in 1972, 90.1% of 1908 sampled male HHs were married, as against 15.8% of 379 female HHs (158 one-person households were excluded); but the incidence of "poverty" was much higher among women of each civil status. 26 of 43 widowed women (2 of 6 men), 75 of 158 separated (9 of 32), 27 of 60 married (481 of 1720), and 42 of 118 single (30 of 150) were "poor". But "poor" was defined as "monthly income-per-CU below 100 Cr." or \$16 U.S. - far above the poverty-levels considered in this paper. See Merrick and Schmink, 1982.
40. Less "inequitable"; but perhaps more "harmful", if poverty concentrates in periods when a larger proportion of the household is vulnerable, e.g. comprises under-fives. This is a good example of the risks of applying diminishing-marginal-utility arguments to shifting populations!
41. By timing, because surveys are harder to conduct when villages are less accessible, i.e. usually in the wet season when food stores are running low and the poor are poorer; by location, because administrative convenience locates study areas near to towns and roads; by procedure, because "household" surveys may miss many of the poorest, who are transient migrants (mainly rural) or homeless (mainly urban). Many relevant issues are summarized in Chambers (1980).
42. Some constructions of the egalitarian case (e.g. Lipton, 1968, pp. 92-8) are based on assumptions (easily put into ordinalist language) of diminishing marginal utility of the total value of commodities, plus statistical independence of initial real income from both entitlement to, and enjoyment from, extra real income. "Everybody should be famous for fifteen minutes" (A. Warhol). On the same assumptions, given "total poverty", should everyone be poor for ten days? The answer has to depend on whether it is "the same misery" and especially on when it arrives in the life-span: see fn. 40.
43. Some studies show, for example, income per person disaggregated in different and non-comparable ways from consumption per person, e.g. by caste groups and occupation groups respectively. Others measure both income and consumption per household, so that (because households with high total income tend to be larger) we cannot be sure that if, say, a low income-per-household group has a high excess of consumption over income, it is also a "poor" group (low income per person) with, therefore, low capacity to borrow.

44. At rural outlay levels of Rs.34 per person per month in 1972-3, an NSS "borderline" between groups of households, 80% of outlay spent on food barely sufficed to meet 80% of the average Indian household member's caloric needs. Not all persons in such households, however, were ultra-poor: 48% of them (spending on average only Rs.29 per month in 1971-2) were children, with below-average needs (V. Patel, 1973, Appendix, p. ix, Table 4), a larger proportion than in other households (cf. Table 2); and prices were then somewhat lower in the survey year, 1970-1, than in 1972-3.
45. Because of the notorious problem of concealment of income, and because consumption fluctuates less than income and is more likely to be reported correctly in a brief survey, outlay indicators are preferable. In poor households, however, concealment is normally much less, and is partly offset by the tendency to adjust reports towards the local average. It is, incidentally, arguable that welfare costs of work - or at least caloric costs - should be deducted from income or outlay. These questions are much more discussed, yet (in their impact on measures and rankings of poverty) much less important, than the choice-of-denominator problem on which we concentrate here.
46. Indian NSS (1971-2) weights for estimating equivalent adult consumers are: age 0-1, 0.43; 1-3, 0.54; 4-6, 0.72; 7-9, 0.87; 10-12, 1.03 male (0.93 female); 13-15, 0.97 (0.80); 16-19, 1.02 (0.75); 20-39, 1.00 (0.71); 40-49, 0.95 (0.68); 50-59, 0.90 (0.64); 60-69, 0.80 (0.51); 70+, 0.70 (0.50). Taiwanese Bureau of Statistics (1974) weights: age 0-1, 0.3; 2-4, 0.4; 5-7, 0.5; 8-10, 0.7; 11-14, 0.8; 15-20, 0.9; 21+, men 1.0, women 0.9 (Visaria, 1980, p. 200). Standard Lusk CUs (Schofield, 1979, p. 14) are: 0-1, 0.3; 1-3, 0.4; 4-6, 0.5; 7-9, 0.7; 10-12, 0.8; 13-19, 1.0; 20+, men 1.0, women 0.7.
47. Often, we know the distributional data for a population's MEP and outlay-per-CU only by group (e.g. ranked decile) means. In such cases, given (i)-(iii) here, it is even less safe to infer, from (e.g.) similar Gini coefficients by per-person and per-CU indicators, to similar proportions in poverty by the two indicators.
48. For example, households with several underemployed adults, but no children, would be misclassified upwards by MEP (compared with outlay per CU). Conversely, households in the lowest MEP deciles with high child/adult ratios - but with children older than the nutritionally vulnerable 0-5 age-group - could be misclassified downwards by MEP (compared with outlay per CU).
49. Hence large parts of extra food, given to children in nutrition programs, are offset by reductions in their food at home - i.e., materialize mainly as extra income for adults in the same household (Beaton and Ghasseimi, 1982).
50. Similar arguments apply to analyses of poverty and undernutrition. Probably, MEP sufficient, under stated assumptions, to buy 80% (not 100%) of the average food needs for persons (by age, sex and activity groups) best indicates absence of extreme, health-threatening ultra-poverty - if the extent of such poverty is being used as a

criterion for allocating resources among areas or projects (Lipton, 1983). Medical experts are, however, fully justified in objecting to any such criterion if the aim is to diagnose need at individual or household level.

51. Project or area choices, of course, depend also on severity of poverty - not just on incidence. The Sen index can be shown, on highly plausible assumptions, to be the only acceptable index to measure "severity" and "incidence" together (Sen, 1981). However, its second derivatives are completely counter-intuitive. Indication of proportions of persons in "poverty" and "ultra-poverty", corresponding to caloric risk (Lipton, 1983), may be a useful alternative approach.
52. It is almost universally agreed to be true that, when a rich person gives food to an ultra-poor person, the poor person's welfare gain is somehow "more" than the rich person's welfare loss. Any theory claiming that "problems", of measurement or otherwise, mean that we "cannot" utter statements not scientifically refutable, and agreed by almost all to be true, is a bad theory.
53. "If comparisons of expenditure are to be used to measure child costs, then the households being compared must be equally well-off ... [Does this mean] the parents', the children's, or some composite 'household welfare'? Only the first clearly makes sense, since only the parents are present both before and after the arrival of the child [so that] it is possible to ask questions about the extra costs needed to maintain their previous [level] of living": Deaton and Muellbauer, 1981, p.7.
54. This procedure would take care of economies of scale in consumption at the same time as household-composition effects.
55. Sir Dennis Robertson suggested this term, to exclude changes in levels of well-being not related to economic activity.
56. The work in LICs on ESCs addresses itself to different questions. For example, Iyengar, Jain and Srinivasan (1969) enquire whether, for specific groups of consumer outlay (e.g. food), the sum of the elasticities of expenditure with respect to total outlay and to family size is below unity. If so - if, say, a household that increases in size and in total outlay by 25 percent (so that outlay-per-person is constant) raises food outlay by only 20 percent - economies of scale in food consumption are inferred by the authors. This procedure, due to Houthakker and Crockett, implicitly assumes that ESCs would be zero if all outlays rose by 25 percent under these circumstances. Thus zero ESCs in our sense are assumed.
57. Most US ESCs in transport are due to the car as a "family good", and do not apply to poor LIC families - the expected dietary energy cost of walking is twice as high for two as for one. Reach-down clothing to younger siblings is probably commoner among the lowest-MEP 25% in LICs than in the USA - but, since clothing forms so small a part of the food-dominated budgets of the Third World's poor, that scale-economy can "bite" on only a small share of their outlay.

58. Many surveys estimate household data by (say) monthly outlay-per-household quintiles; divide each quintile's monthly outlay by MHS in that quintile; and present the result as "MEP quintiles". Since (pp. 58-9) household-outlay rankings typically assign 2 in 3 households - and persons - to different quintiles of households from MEP rankings, this procedure is quite unacceptable.
59. This example is chosen so that both regions have the same numbers of poor, but one a larger number of ultra-poor. The case for using an 80 percent figure as an ultra-poverty out-off is explained in Lipton, 1983.
60. The scale of the problem appears from some of the positive relationships of MHS to landholding reported above (pp. 11-12). Floors and ceilings should take account of total income per person (or per CU), not land per household. Land reform is hard enough to push through, without the needless handicap of widespread demographic resentment.
61. The two crises are to some extent alternatives. If domestic food growers are paid attractive prices for their food, which is then sold cheap to consumers, the crisis is likely to be mostly fiscal (though farm inputs could swell the import bill). If the cost to the State of consumers' food subsidies is kept down by squeezing farm-gate prices of food, then domestic production is hit, food imports rise, and the crisis is likely to be mostly in the balance of payments.

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World Bank Staff Working Paper No. 413. August 1980. 24 pages.

Stock No. WP-0413. \$3.00.

### Economic Development Projects and Their Appraisal: Cases and Principles from the Experience of the World Bank

John A. King

The English-language edition is out of print.

French: Projets de développement économique et leur évaluation. Dunod Editeur, 24-26, boulevard de l'Hôpital, 75005 Paris, France. 1969.

99 francs.

Spanish: La evaluación de proyectos de desarrollo económico. Editorial Tecnos, 1970. 545 pages (including indexes).

800 pesetas.

### Economic Growth and Human Resources

Norman Hicks, assisted by Jahangir Boroumand

World Bank Staff Working Paper No. 408. July 1980. iv + 36 pages (including 3 appendixes, bibliography, and references).

Stock No. WP-0408. \$3.00.

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### The Extent of Poverty in Latin America Oscar Altimir

This work originated in a research project for the measurement and analysis of income distribution in the Latin American countries, undertaken jointly by the Economic Commission for Latin America and the World Bank. Presents estimates of the extent of absolute poverty for ten Latin American countries and for the region as a whole in the 1970s.

World Bank Staff Working Paper No. 522. 1982. 117 pages.

ISBN 0-8213-0012-1. \$5.00.

**First Things First: Meeting Basic Human Needs in the Developing Countries**

Paul Streeten, with  
Shahid Javed Burki,  
Mahbub ul Haq,  
Norman Hicks,  
and Frances Stewart

The basic needs approach to economic development is one way of helping the poor emerge from their poverty. It enables them to earn or obtain the necessities for life—nutrition, housing, water and sanitation, education, and health—and thus to increase their productivity.

This book answers the critics of the basic needs approach, views this approach as a logical step in the evolution of economic analysis and development policy, and presents a clear-sighted interpretation of the issues. Based on the actual experience of various countries—their successes and failures—the book is a distillation of World Bank studies of the operational implications of meeting basic needs. It also discusses the presumed conflict between economic growth and basic needs, the relation between the New International Economic Order and basic needs, and the relation between human rights and basic needs.  
*Oxford University Press, 1981; 2nd paperback printing, 1982. 224 pages (including appendix, bibliography, index).*

*LC 81-16836, ISBN 0-19-520-368-2, \$18.95 hardcover; ISBN 0-19-520-369-0, \$7.95 paperback.*

**The Hungarian Economic Reform, 1968—81**  
Bela Balassa

Reviews the Hungarian experience with the economic reform introduced in 1968 and provides a short description of the antecedents of the reform. Analyzes specific reform measures concerning agriculture, decisionmaking by industrial firms, price determination, the exchange rate, export subsidies, import protection, and investment decisions and indicates their effects on the economy. Also examines the economic effects of tendencies toward recentralization in the 1970s, as well as recent policy measures aimed at reversing these tendencies.

*World Bank Staff Working Paper No. 506. February 1982. 31 pages (including references).*  
*Stock No. WP-0506. \$3.00.*

**Implementing Programs of Human Development**

Edited by Peter T. Knight;  
prepared by Nat J. Colletta,  
Jacob Meerman, and others.

*World Bank Staff Working Paper No. 403. July 1980. iv + 372 pages (including references).*  
*Stock No. WP-0403. \$15.00.*

**International Technology Transfer: Issues and Policy Options**  
Frances Stewart

*World Bank Staff Working Paper No. 344. July 1979. xii + 166 pages (including references).*  
*Stock No. WP-0344. \$5.00.*

**Levels of Poverty: Policy and Change**  
Amartya Sen

*World Bank Staff Working Paper No. 401. July 1980. 91 pages (including references).*  
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**Models of Growth and Distribution for Brazil**  
Lance Taylor, Edmar L. Bacha,  
Eliana Cardoso,  
and Frank J. Lysy

Explores the Brazilian experience from the point of view of political economy and computable general equilibrium income distribution models.

*Oxford University Press, 1980. 368 pages (including references, appendixes, index).*  
*LC 80-13786. ISBN 0-19-520206-6, \$27.50 hardcover; ISBN 0-19-520207-4, \$14.95 paperback.*

Four chapters provide an overview of alternative strategies; a detailed look at health, education, nutrition, and fertility; lessons from existing programs; and an examination of broader issues in planning.

Oxford University Press, 1982. 96 pages (including statistical appendix).

LC 82-2153. ISBN 0-19-520389-5, \$7.95 paperback.

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### **Reforming the New Economic Mechanism in Hungary**

Bela Balassa

Evaluates the reform measures taken in 1980 and 1981 (price setting, the exchange rate and protection, wage determination and personal incomes, investment decisions, and the organizational structure) that aim at the further development of the Hungarian New Economic Mechanism, introduced on January 1, 1968.

World Bank Staff Working Paper No. 534. 1982. 56 pages.

ISBN 0-8213-0048-2. \$3.00.

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### **Social Infrastructure and Services in Zimbabwe**

Rashid Faruqee

The black majority government of Zimbabwe, coming to power after a long struggle for independence, has announced its strong commitment to social services to benefit the vast majority of the population. This paper looks at issues related to education, health, housing, and other important sectors and reviews specific plans and resource requirements to help improve the standard of living of the population.

World Bank Staff Working Paper No. 495. October 1981. 111 pages (including bibliography, map).

Stock No. WP-0495. \$5.00.

### **Structural Change and Development Policy**

Hollis Chenery

A retrospective look at Chenery's thought and writing over the past two decades and an extension of his work in *Redistribution with Growth and Patterns of Development*. Develops a set of techniques for analyzing structural changes and applies them to some major problems of developing countries today.

Oxford University Press, 1979; 2nd paperback printing, 1982. 544 pages (including references, index).

LC 79-18026. ISBN 0-19-520094-2, \$34.50 hardcover; ISBN 0-19-520095-0, \$12.95 paperback.

French: Changement des structures et politique de développement. *Economica*, 1981.

ISBN 2-7178-0404-8, 80 francs.

Spanish: Cambio estructural y política de desarrollo. *Editorial Tecnos*, 1980.

ISBN 84-309-0845-5, 1,000 pesetas.

### **Tourism—Passport to Development? Perspectives on the Social and Cultural Effects of Tourism in Developing Countries**

Emanuel de Kadt, editor

The first serious effort at dealing with the effects of tourism development in a broad sense, concentrating on social and cultural questions.

A Joint World Bank—Unesco study.

Oxford University Press, 1979.

378 pages (including maps, index).

LC 79-18116. ISBN 0-19-520149-3, \$24.95 hardcover; ISBN 0-19-520150-7, \$9.95 paperback.

French: Le tourisme—passport pour le développement: regards sur les effets socioculturels du tourisme dans les pays en voie de développement. *Economica*, 1980.

49 francs.

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### **Tribal Peoples and Economic Development: Human Ecologic Considerations**

Robert Goodland

At the current time, approximately 200 million tribal people live in all regions of the world and number among the poorest of the poor. This paper describes the problems associated with the development process as it affects tribal peoples; it outlines the requisites for meeting the human ecologic needs of tribal peoples; and presents general principles that are designed to assist the Banks staff and project designers in incorporating appropriate procedures to ensure the survival of tribal peoples and to assist with their development.

May 1982, vii + 111 pages (including 7 annexes, bibliography).

ISBN 0-8213-0010-5. \$5.00.

### **The Tropics and Economic Development: A Provocative Inquiry into the Poverty of Nations**

Andrew M. Kamarck

Examines major characteristics of the tropical climates that are significant to economic development.

The Johns Hopkins University Press, 1976; 2nd printing, 1979. 128 pages (including maps, bibliography, index).

LC 76-17242. ISBN 0-8018-1891-5, \$11.00 (£7.75) hardcover; ISBN 0-8018-1903-2, \$5.00 (£3.50) paperback.

French: Les tropiques et le développement économique: un regard sans complaisance sur la pauvreté des nations. *Economica*, 1978.

ISBN 2-7178-0110-3, 25 francs.

Spanish: Los trópicos y desarrollo económico: reflexiones sobre la pobreza de las naciones. *Editorial Tecnos*, 1978. ISBN 84-309-0740-8, 350 pesetas.

### **Twenty-five Years of Economic Development, 1950 to 1975**

David Morawetz

A broad assessment of development efforts shows that, although the developing countries have been

### **Patterns of Development, 1950-1970**

Hollis Chenery  
and Moises Syrquin

A comprehensive interpretation of the structural changes that accompany the growth of developing countries, using cross-section and time-series analysis to study the stability of observed patterns and the nature of time trends.

Oxford University Press, 1975; 3rd paperback printing, 1980. 250 pages (including technical appendix, statistical appendix, bibliography, index).

LC 74-29172. ISBN 0-19-920075-0, \$19.95 hardcover; ISBN 0-19-920076-9, \$8.95 paperback.

Spanish: La estructura del crecimiento económico: un análisis para el período 1950-1970. Editorial Teconos, 1978.

ISBN 84-309-0741-6, 615 pesetas.

### **Poverty and Basic Needs Series**

A series of booklets prepared by the staff of the World Bank on the subject of basic needs. The series includes general studies that explore the concept of basic needs, country case studies, and sectoral studies.

#### **Brazil**

Peter T. Knight and  
Ricardo J. Moran

An edited and updated edition of the more detailed publication, *Brazil: Human Resources Special Report* (see description under *Country Studies* listing).

December 1981. 98 pages (including statistical appendix, map). English.

Stock No. BN-8103. \$5.00.

### **Mainourished People: A Policy View**

Alan Berg

Discusses the importance of adequate nutrition as an objective, as well as a means of economic development. Outlines the many facets of the nutrition problem and shows how efforts to improve nutrition can help alleviate much of the human and economic waste in the developing world.

June 1981. 108 pages (including 6 appendixes, notes). English. French and Spanish (forthcoming).

Stock Nos. BN-8104-E, BN-8104-F, BN-8104-S. \$5.00.

### **Meeting Basic Needs: An Overview**

Mahbub ul Haq and  
Shahid Javed Burki

Presents a summary of the main findings of studies undertaken in the World Bank as part of a program for reducing absolute poverty and meeting basic needs.

September 1980. 28 pages (including 2 annexes). English, French, Spanish, Japanese, and Arabic.

Stock Nos. BN-8001-E, BN-8001-F, BN-8001-S, BN-8001-J, BN-8001-A. \$3.00 paperback.

### **Shelter**

Anthony A. Churchill

Defines the elements that constitute shelter; discusses the difficulties encountered in developing shelter programs for the poor; estimates orders of magnitude of shelter needs for the next twenty years; and proposes a strategy for meeting those needs.

September 1980. 39 pages. English, French, and Spanish.

Stock Nos. BN-8002-E, BN-8002-F, BN-8002-S. \$3.00 paperback.

### **Water Supply and Waste Disposal**

Discusses the size of the problem of meeting basic needs in water supply and waste disposal and its significance to development in the context of the International Drinking Water Supply and Sanitation Decade. Examines the Bank's past role in improving water supply and waste disposal facilities in developing countries and draws conclusions for the future.

September 1980. 46 pages. English, French, Spanish, and Arabic.

Stock Nos. BN-8003-E, BN-8003-F, BN-8003-S, BN-8003-A. \$3.00 paperback.

### **Poverty and the Development of Human Resources: Regional Perspective**

Willem Bussink, David Davies,  
Roger Grawe, Basil Kavalsky,  
and Guy P. Pfeffermann

World Bank Staff Working Paper No. 406. July 1980. iii + 197 pages (including 7 tables, 2 appendixes, references, footnotes).

Stock No. WP-0406. \$5.00.

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### **Poverty and Human Development**

Paul Isenman and others

Since economic growth alone has not reduced absolute poverty, it has been necessary to consider other strategies. The strategy examined in this study — human development — epitomizes the idea that poor people should be helped to help themselves.

remarkably successful in achieving growth, the distribution of its benefits among and within countries has been less satisfactory.

*The Johns Hopkins University Press, 1977; 3rd printing, 1981. 136 pages (including statistical appendix, references).*

LC 77-17243. ISBN 0-8018-2134-7, \$16.50 (£8.00) hardcover; ISBN 0-8018-2092-8, \$7.95 (£3.75) paperback.

French: Vingt-cinq années de développement économique: 1950 à 1975. *Economica*, 1978.

ISBN 2-7178-0038-7, 26 francs.

Spanish: Veinticinco años de desarrollo económico: 1950 a 1975. *Editorial Tecnos*, 1978.

ISBN 84-309-0792-0, 350 pesetas.

### **World Development Report**

A large-format series of annual studies of about 200 pages, the *World Development Report*, since its inception, has been what *The Guardian* has called "a most remarkable publication. It is the nearest thing to having an annual report on the present state of the planet and the people who live on it." Each issue brings not only an overview of the state of development, but also a detailed analysis of such topics as structural change, the varying experiences of low- and middle-income countries, the relation of poverty and human resource development, global and national adjustment, and agriculture and food stability. Each contains a statistical annex, World Development Indicators, that provides profiles of more than 120 countries in twenty-five multipage tables. The data cover such subjects as demography, industry, trade, energy, finance, and development assistance and such measures of social conditions as education, health, and nutrition.

**World Development Report 1982**  
(See Publications of Particular Interest for description and sales information.)

**World Development Report 1981**  
(Discusses adjustment—global and national—to promote sustainable growth in the changing world economy.)

**World Development Report 1980**  
(Discusses adjustment and growth in the 1980s and poverty and human development.)

**World Development Report 1979**  
(Discusses development prospects and international policy issues, structural change, and country development experience and issues.)

**World Development Report 1978**  
(Discusses the development experience, 1950–75, development priorities in the middle-income developing countries, and prospects for alleviating poverty.)

### **REPRINTS**

**Basic Needs: The Case of Sri Lanka**  
Paul Iserman

*World Bank Reprint Series: Number 197. Reprinted from World Development, vol. 8 (1980): 237-58.*

Stock No. RP-0197. Free of charge.

**Brazilian Socioeconomic Development: Issues for the Eighties**

Peter T. Knight

*World Bank Reprint Series: Number 203. Reprinted from World Development, vol. 9, no. 11/12 (1981):1063-82.*

Stock No. RP-0203. Free of charge.

**Indigenous Anthropologists and Development-Oriented Research**  
Michael M. Cernea

*World Bank Reprint Series: Number 208. Reprinted from Indigenous Anthropology in Non-Western Countries, edited by Hussein Fahim (Durham, North Carolina: Carolina Academic Press, 1982):121-37.*

Stock No. RP-0208. Free of charge.

**Latin America and the Caribbean: Economic Performance and Policies**  
Guy P. Pfeffermann

*World Bank Reprint Series: Number 228. Reprinted from The Southwestern Review of Management and Economics, vol. 2, no. 1 (Winter 1982):129-72.*

Stock No. RP-0228. Free of charge.

**Modernization and Development Potential of Traditional Grass Roots Peasant Organizations**  
Michael M. Cernea

*World Bank Reprint Series: Number 215. Reprinted from Directions of Change: Modernization Theory, Research, and Realities. Boulder, Colorado: Westview Press (1981): chapter 5.*

Stock No. RP-0215. Free of charge.

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**Analyzing the Impact of Health Services: Project Experiences from India, Ghana, and Thailand**  
Rashid Faruqee

Reviews four categories of health indicators (environment, services offered, services received, and changes in mortality, morbidity, and nutritional status) in order to evaluate the impact of health projects in India, Ghana, and Thailand.

*World Bank Staff Working Paper No. 546. 1982. 44 pages.*

*ISBN 0-8213-0117-9. \$3.00.*

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**Benefits and Costs of Food Distribution Policies: The India Case**

Pasquale L. Scandizzo and Gurushri Swamy

Analyzes some of the characteristics and the main consequences of the food distribution policies followed by the Indian government and provides a quantification and a cost-benefit analysis of their effects on consumers, producers, and the government budget.

*World Bank Staff Working Paper No. 509. August 1982. 54 pages.*

*ISBN 0-8213-0011-3. \$3.00.*

**Confronting Urban Malnutrition: The Design of Nutrition Programs**

James E. Austin

Describes a framework for systematically carrying out urban nutrition programs that examines several key considerations in nutrition education, on-site feeding, take-home feeding, nutrient-dense foods, ration shops, food coupons, fortification, direct nutrient dosage, and food processing and distribution.

*The Johns Hopkins University Press, 1980. 136 pages.*

*LC 79-3705. ISBN 0-8018-2261-0, \$6.50 (£4.50) paperback.*

**The Costs and Benefits of Family Planning Programs**

George C. Zaidan

A technique for measuring the economic returns from investing in population control, with an appraisal of inherent assumptions and limitations.

*The Johns Hopkins University Press, 1971. 62 pages (including bibliography).*

*LC 70-155166. ISBN 0-8018-1317-4, \$4.00 (£2.40) paperback.*

**Demographic Aspects of Migration in West Africa**

—Volume 1

K. C. Zachariah and others

Background data on migration in four English-speaking countries: Ghana, Sierra Leone, Liberia, and The Gambia. A regional analysis based on these studies is presented in *Migration in West Africa: Demographic Aspects*.

*World Bank Staff Working Paper No. 414. September 1980. vi + 363 pages (including statistical annexes, bibliography).*

*Stock No. WP-0414. \$15.00.*

**Demographic Aspects of Migration in West Africa**

—Volume 2

K. C. Zachariah and others

Background data on migration in four French-speaking countries: Ivory Coast, Upper Volta, Senegal, and Togo. A regional analysis based on

these studies is presented in *Migration in West Africa: Demographic Aspects*.

*World Bank Staff Working Paper No. 415. September 1980. vi + 385 pages (including statistical annexes, bibliography).*

*Stock No. WP-0415. \$15.00.*

**Economic Motivation versus City Lights: Testing Hypotheses about Inter-Changwat Migration in Thailand**

Fred Arnold and Susan H. Cochrane

*World Bank Staff Working Paper No. 416. September 1980. 41 pages (including footnotes, references).*

*Stock No. WP-0416. \$3.00.*

**Economics of Supplemental Feeding of Malnourished Children: Leakages, Costs, and Benefits**

Odin K. Knudsen

Analyzes some of the economic issues involved in the supplemental feeding of malnourished children. Demonstrates that supplemental feeding programs are economically justified if minimum improvements in mortality rates and more substantial increases in productivity take place.

*World Bank Staff Working Paper No. 451. April 1981. lv + 76 pages.*

*Stock No. WP-0451. \$3.00.*

**Experiments in Family Planning: Lessons from the Developing World**

Roberto Cuca and Catherine S. Pierce

A comprehensive review of experimental efforts in the developing world to determine more effective ways of providing family planning services.

*The Johns Hopkins University Press, 1978. 276 pages (including bibliography, index of experiments).*

*LC 77-16596. ISBN 0-8018-2013-8, \$19.50 (£11.50) hardcover; ISBN 0-8018-2014-6, \$8.95 (£4.00) paperback.*

### **Family Planning Programs: An Evaluation of Experience**

Roberto Cuca

*World Bank Staff Working Paper No. 345. July 1979. xii + 134 pages (including 2 annexes, references).*

Stock No. WP-0345. \$5.00.

### **Fertility and Education: What Do We Really Know?**

Susan H. Cochrane

A model identifying the many channels through which education might act to determine fertility and a review of the evidence of the relation between education and the intervening variables in the model that affect fertility.

*The Johns Hopkins University Press, 1979. 188 pages (including bibliography, index).*

LC 78-26070. ISBN 0-8018-2140-1. \$6.95 (£4.75) paperback.

### **Fertility and Its Regulation in Bangladesh**

R. Amin and  
Rashid Faruqee

*World Bank Staff Working Paper No. 383. April 1980. iv + 50 pages (including references).*

Stock No. WP-0383. \$3.00.

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### **Food Distribution and Nutrition Intervention: The Case of Chile**

Lloyd Harbert and  
Pasquale L. Scandizzo

The impact of Chile's Complementary Feeding Program (CFP), both on the direct and indirect beneficiaries, is analyzed. Describes Chile's major nutrition intervention programs and establishes the relative importance of the CFP in terms of budgetary expenditures and number of beneficiaries reached. Reviews briefly the programs past limitations, recent reforms, and potential effectiveness.

*World Bank Staff Working Paper No. 512. May 1982. v + 45 pages (including bibliography, annex).*

ISBN 0-8213-0001-6. \$3.00.

### **Health**

Fredrick Golladay,  
coordinating author

Draws on experience gained from health components of seventy World Bank projects in forty-four countries between 1975 and 1978.

Emphasizes the disproportionately high expenditures incurred on curative medicine, maintenance of expensive hospitals, and sophisticated training of medical personnel at the cost of preventive care for the majority of the people. Points out that low-cost health care systems are feasible and recommends that the Bank begin regular and direct lending for health, in addition to having health components as part of projects in other sectors.

*Sector Policy Paper. February 1980. 90 pages (including 8 annexes, 4 figures, map). English, French, Japanese, Spanish, and Arabic.*

Stock Nos. PP-8001-E, PP-8001-F, PP-8001-J, PP-8001-S, PP-8001-A. \$5.00.

### **Health Issues and Policies in the Developing Countries**

Fredrick Golladay

*World Bank Staff Working Paper No. 412. August 1980. ii + 53 pages.*

Stock No. WP-0412. \$3.00.

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### **Health, Nutrition, and Family Planning in India: A Survey of Experiments and Special Projects**

Rashid Faruqee and  
Ethna Johnson

Surveys fourteen experiments and special projects in health, nutrition, and family planning in India and proposes guidelines for future Bank projects on the basis of the survey.

*World Bank Staff Working Paper No. 507. February 1982. xi + 97 pages (including references).*

Stock No. WP-0507. \$5.00.

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### **Integrating Family Planning with Health Services: Does It Help?**

Rashid Faruqee

Analyzes the findings of an experiment carried out in Narangwal, a village in Punjab, India, between 1968 and 1974 related to health care and family planning. The World Bank collaborated with The Johns Hopkins University in analyzing this data from one of the best known and well-documented field experiments in health care and family planning in the world.

*World Bank Staff Working Paper No. 515. September 1982. 47 pages.*

ISBN 0-8213-0003-2. \$3.00.

### **Kenya: Population and Development**

(See description under *Country Studies* listing.)

### **Mainourished People: A Policy View**

(See description under *Development* listing.)

### **Malnutrition and Poverty: Magnitude and Policy Options**

Shlomo Reutlinger and  
Marcelo Selowsky

The first large research effort in the World Bank to determine the global dimension of malnutrition.

*The Johns Hopkins University Press, 1976; 2nd printing, 1978. 94 pages (including 5 appendixes).*

LC 76-17240. ISBN 0-8018-1868-0. \$4.75 (£2.85) paperback.

*Spanish: Desnutrición y pobreza: magnitudes y opciones de política. Editorial Tecnos, 1977.*

ISBN 84-309-0726-2. 380 pesetas.

### **Measuring Urban Malnutri- tion and Poverty: A Case Study of Bogota and Cali, Colombia**

Rakesh Mohan,  
M. Wilhelm Wagner,  
and Jorge Garcia

Attempts to measure the extent of malnutrition and poverty in the cities of Bogota and Cali, Colombia. One

of five papers resulting from a research program entitled "City Study," a study of the workings of five major urban sectors in Colombia.

*World Bank Staff Working Paper No. 447. April 1981. 80 pages (including bibliography, appendixes).*  
Stock No. WP-0447. \$3.00.

### **Migration in West Africa: Demographic Aspects**

K. C. Zachariah and  
Julien Condé

The first study of the large-scale movement of people in nine West African countries. Discusses the volume and direction of internal and external flows and the economic and social characteristics of migrants.

*A Joint World Bank-OECD study. Oxford University Press, 1981. 166 pages (including 22 maps, bibliography, index).*

LC 80-21352. ISBN 0-19-520186-8,  
\$19.95 (£10.50) hardcover;  
ISBN 0-19-520187-6, \$8.95 (£4.50)  
paperback.

### **Nutrition and Food Needs in Developing Countries**

Odin K. Knudsen and  
Pasquale L. Scandizzo

*World Bank Staff Working Paper No. 328. May 1979. 73 pages (including 4 appendixes).*

Stock No. WP-0328. \$3.00.

### **Population and Poverty in the Developing World**

Nancy Birdsall

*World Bank Staff Working Paper No. 404. July 1980. 96 pages (including 2 appendixes, bibliography).*

Stock No. WP-0404. \$3.00.

### **Population Policies and Economic Development**

Timothy King and others

*The English-language edition is out of print.*

*Spanish: Políticas de población y desarrollo económico. Editorial Tecnos, 1975.*

ISBN 84-309-0605-3, 440 pesetas.

### **Population Policy and Family Planning Programs: Trends in Policy and Administration**

Kandiah Kanagaratnam and  
Catherine S. Pierce

*World Bank Staff Working Paper No. 411. August 1980. iii + 22 pages (including footnotes).*

Stock No. WP-0411. \$3.00.

### **Regional Aspects of Family Planning and Fertility Behavior in Indonesia**

Dov Chernichovsky and  
Oey Astra Meesook

Discusses the recent decline in Indonesia's population growth rate despite that country's relatively low level of income and socioeconomic development. Reviews the history and organization of the family planning program and attempts to identify those factors that have been responsible for its success and assesses its prospects for the future.

*World Bank Staff Working Paper No. 462. May 1981. 62 pages (including appendix, references).*

Stock No. WP-0462. \$3.00.

### **REPRINTS**

#### **Health Care in the Developing World: Problems of Scarcity and Choice (Shattuck Lecture)**

John R. Evans, Karen Lashman Hall, and  
Jeremy J. Warford

*World Bank Reprint Series: Number 209.  
Reprinted from New England Journal of Medicine,  
vol. 305 (November 1981):1117-27.  
Stock No. RP-0209. Free of charge.*

#### **Measurement of Deprivation and Poverty Based on the Proportion Spent on Food: An Exploratory Exercise**

V.V. Bhanaji Rao

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(1981):337-53.*

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Reprinted from Journal of Development  
Economics, vol. 9 (1981):331-46.*

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