

**AGE-STRUCTURAL DYNAMICS AND
LOCAL MODELS OF POPULATION AGEING
IN INDONESIA**

Working Paper Number WP103

**Philip Kreager, Oxford Institute of Ageing and Somerville College
and Elisabeth Schröder-Butterfill,
Oxford Institute of Ageing**

This working paper is based on a conference paper prepared for the IUSSP conference “International Meeting on Age Structure Transitions and Policy Dynamics: The Allocation of Public and Private Resources Across Generations”, Institute of Economics, Academia Sinica, Taipei, 6-8th December 2001. The authors wish to thank the Wellcome Trust for its generous support for the research project “Ageing in Indonesia: A Comparative Study in Social Demography, 1998-2001”.

June 2003
Oxford Institute of Ageing Working Papers
Editor: George W. Leeson
<http://www.ageing.ox.ac.uk>

Introduction

Some years ago, in one of his many contributions to the literature on inter-generational transfers, Robert Willis remarked two problems which “truly dynamic” models need to address. The first is a capacity to handle economic-demographic interactions in non-stationary situations. The second is a “relaxation of the assumption that all individuals are identical” (1988:136). The problems to be addressed in this paper exist in the space between, and hopefully linking, these two criteria. We shall be concerned in particular with the question of how principal forms of non-stationarity are to be specified, and what units of analysis are necessary to monitor relations between generations realistically over time. Although the aim of our paper is to contribute to informed modelling, much of what follows is concerned with the kinds of data needed to provide an accurate picture of daily problems of elderly people. The examples will be drawn from a comparative study of population ageing in Indonesian villages.¹

Indonesia, even without its recent economic crisis, is an uncertain environment for most elderly people. The country, as the fourth most populous in the world, has the tenth largest elderly population; numbers of elderly are expected to increase fourfold over the next three decades, in the absence of general state pension and health provision. The implications of such trends may be seen more clearly if we begin from a framework for analysing age structural transitions, such as recently put forward by Ian Pool (2000). He remarks that *structural ageing* (the shift to higher proportions of the population at older ages) is only the final phase of a wider and more complex process of *age structural transition*. Demographic transition theory, as Pool notes, has inclined population theorists to see ageing as exogenous, an outcome of fertility declines and longevity improvements, rather than a major set of social and demographic determinants in its own right. Once we consider a transitional population’s changing age structure as a whole, rising proportions of elderly are only one of a number of alterations in relative cohort size which interact with each other.

Significantly smaller and larger birth cohorts, for example, may be expected to have ‘wave’ or ‘echo effects’ as their size comes to be reflected in fertility patterns when they reach childbearing years. Long-term oscillations in cohort size are only one issue. There are also differing degrees of impact. The compound effects of larger cohorts reaching old age (i.e. increases in those over age 75 and 85, on top of larger numbers reaching 65) are likely to create demands on several younger cohorts over

differing durations. Where there is a great density of major life course events (say, where young people experience marriage, procreation, and take-up of new jobs in a short space of time), then the support available to older age groups may in those intervals be seriously constrained. Wider social adjustments to population ageing, like increased immigration, may become part of, and accentuate, uncertainties for some or all groups. Different provinces, and different ethnic, religious or other groups within them, may be affected to a greater or lesser degree.

We can return from the general issues Pool raises to Willis's first criterion as follows. Non-stationarity needs to be approached not only in terms of the seemingly monotonic advance of a block of relatively larger or smaller cohorts through an age structure, but also of the dynamic relations which arise between particular sets of cohorts in different periods. The impacts of age structural transitions—the potential 'squeezes' and 'relaxations' of demand on particular age groups—will then need to be analysed to reflect Willis's second criterion, the diversity of individual situations (and of the family and community networks to which they belong).

The Indonesian case contains a number of surprises which make it a particularly rich field in which to consider age-structural dynamics. First, present generational disproportions reflect historical factors other than the usual matrix of fertility and mortality modernisation (Schröder-Butterfill and Kreager 2003). Infecundity, divorce, and political instability, together with the continuing importance of migration, are primary to understanding currently high proportions of elderly at the village level. Major sources of age structural imbalances pre-date the fertility decline that began in the 1970s. These sources may not be adequately indicated in current ratios of people aged 60 and over relative to those aged 15-59, which are nonetheless significant at national (0.115) and provincial levels (e.g. East Java, 0.132; West Java, 0.107, Yogyakarta 0.182). If we turn our attention to rural communities, where health services over the course of the late 20th century have remained minimal, and in which temporary and permanent emigration became common from at least the 1920s, then the figures are likely to be higher. Percentages of over-60s relative to the total population in the villages we studied are 10% (East Java), 9% (West Java), and 18% (West Sumatra), the latter reflecting established systems of chain migration.

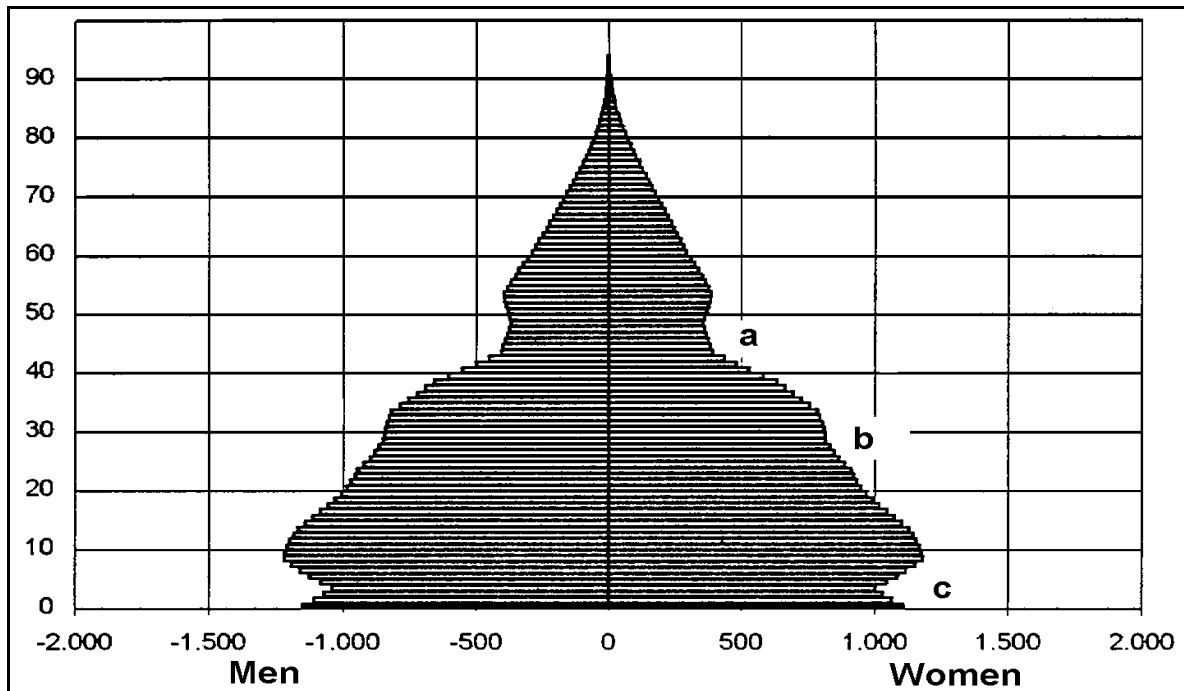
The incompleteness of colonial and early national demographic records is bound to frustrate a full understanding of these historical factors, and our treatment of the macro-level historical picture is perforce summary. The demographic record is

sufficient to make clear that any non-stationary models of intergenerational relations must take account not just of the growing disproportion of elderly consequent on recent fertility reductions, but the differing demographic mechanisms underlying age-structural imbalances over a long period, and their implications for current levels of support. Second, once we take the changing history of generations seriously, the order of Willis's criteria has to be reversed. Non-stationarity is best approached *after* we have clarified the identity of the elderly: being old has differing implications for *particular sub-populations* that have experienced different life courses. We will be concerned in the main body of this paper with how these sub-populations may be identified, and how the agency of elderly people—the extent to which they are able to act effectively in coping with the problems they face—differs accordingly.

Some Demographic Background: the Macro-Picture

The existence of relatively low reproductive levels, particularly in Java and Bali over most of the 20th century, has been known for some time. Hirschman and Guest (1990:142-3) rightly characterise Total Fertility Rates (TFRs) just prior to fertility transition in Java and Bali (4.27), and Indonesia as a whole (4.59), as “moderate”.² Such levels are comparable to low levels in mid-18th century Europe, for example, in Sweden (4.21). Indonesian regions with higher pre-transitional fertility levels, like Sumatra (5.43), are in the range of pre-transitional England and Wales (5.28) (Livi-Bacci 1992:122). The oscillations underlying relatively moderate levels are visible in Figure 1, in which the pattern of the Indonesian age structure may be characterised as ‘temple-shaped’ rather than ‘pyramidal’.

Figure 1: Population of Indonesia in 1990, Based on an Ex-post Projection



Source: Birg *et al.* (1998:54)¹

The temple shape may be accounted for as follows. The striking indentation at (a) indicates missing births of the late 1930s and 1940s. Major disruptions of economy and society (the Japanese occupation of 1942-45 and ensuing war of independence) brought deteriorating health and dietary conditions consequent on forced labour, steep declines in agricultural yield, and population displacements. Although age-specific mortality data do not exist for this period, retrospective estimates based on the 1973 Fertility-Mortality Survey indicate that levels of child mortality for the 1945-49 birth cohort were twice as high as for the cohort born 1965-67; village level data in Yogyakarta for the late 1940s give an Infant Mortality Rate of 271 per 1000 births (Hugo *et al.* 1987:118). Levels of divorce, which in the 1940-49 marriage cohort

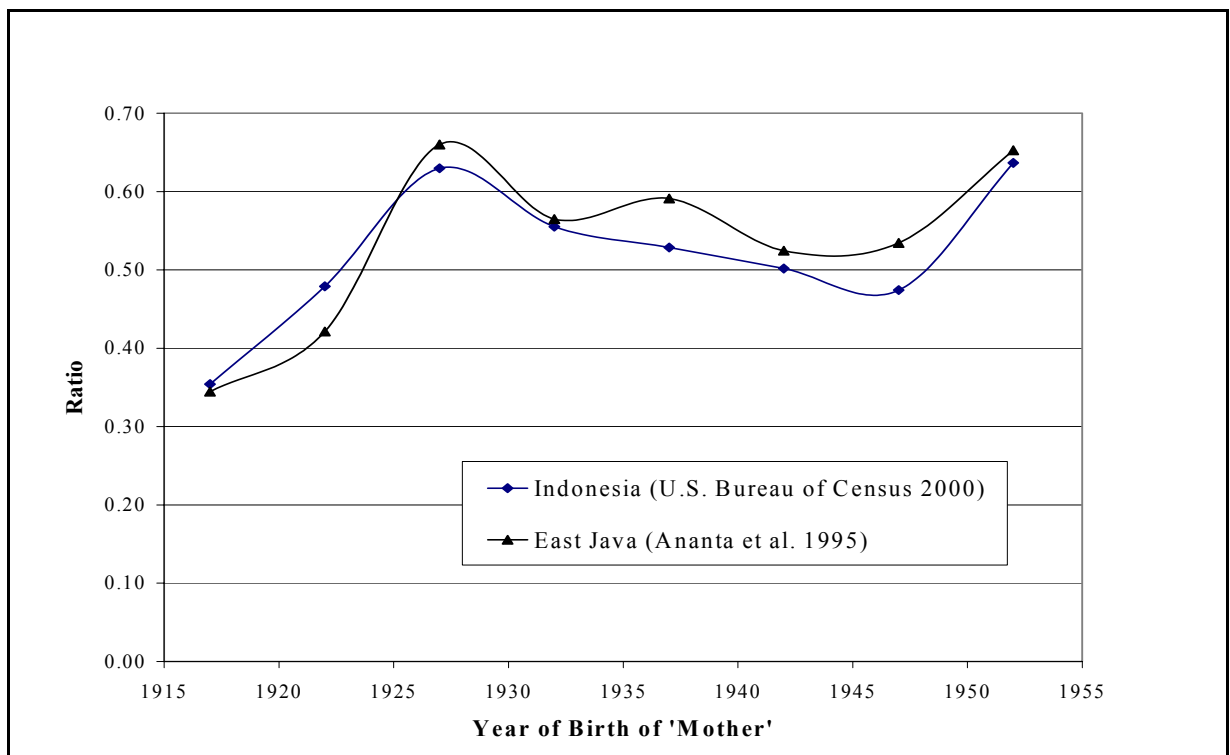
¹ This figure is a historical projection based on simulations developed by the Bielefeld University Indonesian Population Research Project 1995-7. Published sources, like the Indonesian Statistical Bureau (BPS 1992), United Nations (1994:42) and World Bank (1994:270) disagree on whether the population pyramid for Indonesia in 1990 was being undercut at the base. The problem is complicated by the fact that no Indonesian census was held between 1930 and 1961; additionally, the census of 1930 did not collect age data, but merely grouped the population into three groups: toddlers, other non-adults, adults. The starting point for the projection was a stable population age structure (cf. McNicoll and Singarimbun 1986:20). Estimates of fertility and mortality over the period 1930 to 1990 (Hugo *et al.* 1987:117; United Nations 1995:676) were then applied to this structure. For details see Brüß and Schröder (1997).

reached 20% (Jones 1992:13), may be seen as an index of social instability, reflecting not only conflicting demands on spouses, but their separation and even disappearance in war-time. Such disruptions are likely to have facilitated the spread of pathological sterility, since high levels of sexually transmitted diseases (STDs) were already established amongst Dutch and Indonesian troops, and evidence points to the movement of poor rural women to urban areas for prostitution (van der Sterren *et al.* 1997). Indonesian infertility levels were the sixth highest of countries participating in the World Fertility Survey; women of cohorts born in the late 1920s and the 1930s reported levels of childlessness between 6.8 and 12.6% (Vaessen 1984). Total fertility rates just above four births per woman, as noted above, are comparable to rates in tropical African countries in which pathological sterility and plural marriage patterns are also prevalent (Bongaarts *et al.* 1984). Lower fertility in the late 1930s may also suggest that the world-wide economic downturn of that period was influencing local health and welfare. All in all it is likely that the incompleteness of survey data for reconstructing past patterns has led to significant overstatement of fertility in cohorts born in this era.³

The first echo of these factors is visible at **(b)**, as the reduced birth cohorts of the late 1930s and the 1940s reached childbearing age. Historical factors of divorce, mortality and infertility had not disappeared by the 1960s. Hull and Tukiran's pioneering study (1976), based on the 1971 Census, revealed that between 14 and 23% of Javanese and Balinese women born before 1941 were childless, owing chiefly to sterility and, to a lesser extent, the death of all children. Their data are confirmed by later compilations of these generations contained in the 1985 Indonesian intercensal survey, the Indonesian Family Life Surveys of 1993 and 1997, and village-level data (see Schröder-Butterfill and Kreager 2003 for a review). Village data on reproductive histories in East Java, for example, show that one-fifth of elderly women aged 60 and over report no children ever born; a further 15% had given birth to a single child. Nearly one-third of elderly women had been married twice, and one-fifth married three or more times. Only after 1968 was gonorrhoea regularly treated by venereal disease clinics in this part of Indonesia (Susila 1984). The most recent echo of small birth cohorts of the 1930s and 1940s is visible at **(c)**, by which time its influence is undoubtedly confounded with the spread of contraception. East Javanese total fertility was reported at 2.1 in 1991, significantly below levels for Java and Bali as a whole (2.7) and for total Indonesia (3.0) (Kasmiyati and Kantner 1998:1b).

A rough idea may be gained of the potential impact of such oscillations by mapping changing relative cohort sizes over time. Figure 2 plots the ratio of Indonesian women born 20 years apart. If, for the purposes of discussion, we assume that women have all their daughters at the same time, then this ratio may be taken as approximating the numbers of ‘mothers’ relative to ‘daughters’. The exercise is also carried out for East Java, an area long noted for its lower fertility. This rather crude measure of changing generation size is basically that outlined by Lutz and Sanderson (2000), although their ‘cohort succession ratios’ are for both sexes. The figure employs a scale in which a level of 0.5 indicates two ‘daughters’ per mother. The period illustrated enables us to follow very approximately the experience of women born in generations subject to problems of infertility and marriage instability. The indented cohorts **(a)** and **(b)** in Figure 1 are visible in the experience of cohorts born between the mid-1920s and late 1940s.

Figure 2: Ratios of ‘Mothers’ to ‘Daughters’, Assuming 20-year Generation Spans, Indonesia and East Java.



Sources: U.S. Census Bureau 2000; Ananta *et al.* 1995.

We see a steady decline in the number of ‘daughters’ relative to ‘mothers’ over the early decades of the 20th century. Women born in 1917 would have had about 3

‘daughters’, whereas women born in the 1920s only 1.6. The latter cohort would have been having their ‘daughters’ in the wartime conditions of the 1940s. The situation then improves, so that these ‘daughters’ are able to have slightly above two ‘daughters’ of their own (see the birth cohorts born in the 1960s). Assuming a normal sex ratio, these data are compatible with the Total Fertility Rates calculated by Hirschman and Guest, cited earlier. However, the absence of an Indonesian census between 1930 and 1961 means that caution is required: much of the ‘data’ are in fact estimation.⁴

Implications

A number of observations may be drawn from the preceding sketch. The demographic factors underlying reduced cohort size in the past, notably infertility and marital disruption, are by the 1990s of decreasing importance as factors determining future fertility. Levels of divorce, for example, are in significant decline (Jones 1992). In addition, the children of the smaller cohorts born 1956 to 1964 will have completed, or largely completed, their reproductive years by the turn of the century. Second, whilst oscillations may continue over long periods, they can be sustained and augmented by new demographic factors, in this case contraception from the late 1970s onwards. Although not our concern here, such oscillations may be important for interpreting the forces underlying Indonesia’s fertility transition: short-term impacts of family planning, for example, are likely to be exaggerated if longer term patterns are not taken into account. Third, as oscillations of the last sixty years have resulted in relatively moderate fertility levels, they may also serve to moderate people’s experience of ageing. This may be apparent in fertility declines that are less marked than, say, in neighbouring Thailand and the Philippines (see Hirschman and Guest 1990).

A more important consideration, however, is that local experience of relatively high proportions of elderly is not new. What has changed are the demographic mechanisms underlying the availability of children. Of course, these changes may not alter the reliability of children for purposes of elderly support, an important issue we shall discuss later. The important point, for the moment, is simply to call attention to the general cultural fact that many members of current younger generations have lived their lives in social conditions in which significant numbers of elderly are without a child or have only one child. We can expect there to be awareness, not only amongst the elderly, of the need for alternative welfare arrangements to those which children might ordinarily provide. As described elsewhere (Schröder-Butterfill and Kreager

2003), demographic childlessness (due to infertility, STDs, or child mortality) is only a part of the picture: an important element of *de facto* childlessness must also be considered, which encompasses factors like emigration, disability, and enmity in the younger generation. When *de facto* childlessness is added to demographic childlessness, levels rise to 40% of all elderly in East Javanese village data, before adoption and other social alternatives are taken into account. Alternatives like adoption are perceived as inferior to having one's own children, due to issues of social status, and the reliability and levels of support given by adoptees. The effect of adoption and having step children is nonetheless important, leaving 'only' around 17% of the elderly population without any children.

The presence of social arrangements which can act either to moderate or exacerbate the aggregate impact of structural ageing, together with the longer history of only moderate fertility, point to the need for a change of perspective. Research at the village level indicates higher local disproportions in the numbers of elderly than regional and national compilations would suggest. Yet, as we shall see, these disproportions are being accommodated without major shifts in family structure and support arrangements. This does not imply that existing arrangements are adequate, only that observation of the markedly different levels of well-being experienced by today's elderly can tell us a great deal about the nature of responses to ageing, and about the capacity or elasticity of extant social structures.

In sum, population ageing deserves to be examined as a potentially major source of non-stationarity in the Indonesian case. However, if we try to understand this situation primarily as a consequence of recent declines in fertility, the resulting picture is likely to be severely truncated, leaving out both major causes of structural ageing and existing management of elderly welfare. The usual macro-picture, derived from the assumptions of demographic transition theory, takes little account of adaptive capacities and the diversity of arrangements, and may well be misleading as a guide for social policy. Understanding the impact of population ageing in the Indonesian case may be less a matter of capturing effects of more or less abrupt macro-level shifts in generation size, than of monitoring a series of differential adjustments made by several cohorts in response to changes in a complex set of demographic parameters occurring over most of the last century. We turn now to the question of what kinds of information are available and suitable to understanding these differentials

Filling In the Micro-Picture

Indonesia is replete with cross-sectional data sources relevant to intergenerational issues. A Survei Sosial Ekonomi Nasional (SUSENAS) is regularly conducted by the Central Bureau of Statistics, which also carried out a special survey of the elderly in conjunction with the 1984 ASEAN ageing survey (Chen and Jones 1989); the Demographic Institute at Universitas Indonesia, together with RAND, has completed three rounds of the Indonesian Family Life Survey (IFLS); Demographic and Health Surveys were completed in 1991, 1994 and 1997. Discussion of these sources as they pertain to changing age structures has been shaped largely by the ‘exogenous’ approach which Pool remarked: rapid fertility declines imply disproportionate rises in cohorts over 60; these shifts, when correlated with ‘modernisation’ trends, are expected to indicate growing generational inequality to the disadvantage of the elderly. Although there is a sizeable literature on intergenerational transfers in developing countries, the Indonesian literature is as yet small. More important, existing studies raise doubts about the suitability of the standard modernisation/demographic transition framework. A series of forthright papers by Lisa Cameron may serve as illustration

In 1997 she observed that rising education and a shift away from the traditional agricultural sector in Java worked to the relative disadvantage of elderly-headed households; these effects, however, were more than offset by a general rise in living standards. Cameron (2000) then turned to the question of the effect of rising incomes on household arrangements in Indonesia as a whole. Although cross-sectional sources do not allow people’s motives and decisions (e.g. to co-reside, or to live separately) to be studied directly, Cameron adopts the conventional economic approach in which people’s motives can effectively be deduced by contrasting trends in standard variables (education, income, age) describing couples belonging to different generations over time. She takes as given that traditional family structures (described simply as ‘extended’) are in decline, and that a trend away from co-residence must therefore be in process. On this basis she hypothesises that young people with rising education and incomes would prefer to support parents by giving them financial support, rather than living with them. This relationship, however, emerges as insignificant. As levels of elderly living on their own correlate more strongly with improvements in elderly income, it can be suggested only that levels of co-residence will decline at some future point when currently better-off younger generations reach retirement. The exercise, in

short, becomes tautological: it leads to predictions already implied in the initial assumptions (in this case, that there is a declining trend of extended family households). More recently, Cameron and Cobb-Clark (2001) have confirmed that transfers between generations correlate neither with the relative needs of the elderly nor with the economic capacity of the young to assist them; the elderly often continue in employment whether they are in receipt of assistance from their children or not; their asset position also appears to make little difference. The authors conclude that the co-residence of elderly with a child or children appears to depend more on evolving family relations than on standard economic characteristics (2001:25).

These findings bear out Albert Hermalin's recent criticism that survey-based approaches still "need to properly identify the focal elderly unit and the kin network with which [families and their members] carry out exchanges" (1999:12). The question of what demographic units are actually appropriate to studying elderly welfare at the local level in Indonesia is indeed an open one. Cameron's gloss of traditional family arrangements as 'extended', and the assumption that couples act as a cohesive unit, are in fact radical simplifications. Many Indonesian family systems have, since the Dutch era (e.g. Boomgaard 1989:153-4), been recognised as predominantly nuclear in form, characterised by frequent changes in which a repertoire of family members (usually siblings, parents, and grandchildren of either spouse) may be incorporated, move out, or move back. Preference for separate residence on the part of both elderly and their children, has been remarked in the ethnographic literature (e.g. H. Geertz 1963; Jay 1969; Koentjaraningrat 1957), and is unlikely to be a recent development. Co-residence, as later examples in this paper show, is often a sign of economic vulnerabilities in the younger, rather than elder, generation.

Hermalin's comment is also noteworthy for his choice of the term 'exchange', rather than 'transfers'. A *transfer* is a movement of goods or services which may be understood as a discrete event both in time and amount; transfers may be one-way or return (usually after some duration). Where reciprocity is an aspect of transfers, we may speak of *exchange*. In treating exchange, however, we move from the realm of discrete events to processes. The reciprocal element of exchange, in other words, means that much greater care must be taken in attempting to construct discrete measures of what relationships actually entail. Three problems may be noted briefly. One is *openness*: the duration of the relationship is likely to be unfixed (e.g. closed only after some future event of uncertain timing, like death). A second problem arises

in defining criteria of *substitutability*: different goods and services pass back and forth, and content and flow are likely to be determined according to situation (say, in response to an elderly health crisis, or unemployment). Both of these factors mean that equality and disparity in the economic value of goods and services exchanged are hard to define. As the real value of exchanges is not established by any set duration or monetary value, the record which a survey provides of such relationships effectively fixes values at a given point which is arbitrary.

Equality of exchange in real economic terms is unlikely, in any case, to be the issue. The absence of parity may be regretted, by younger and older generations alike, but is not crucial to the process. In this respect, a third problem complicating measurement should be noted: exchange relations are not necessarily *restricted*—between two parties—but may be *generalised*—involving regular exchanges, not in a specified order or duration, between more than two groups (e.g. Josselin De Jong 1952). As such, exchange relations are fundamental to the informal economy which is a crucial aspect of livelihood in the developing world. In Indonesia the classic case in point is the *slametan*, the frequent ritual meals held to mark all manner of events (house-building, circumcision, election to office, etc). The food contributed by kin and neighbours provides recurring occasion to assist poor elderly without the least suggestion of demeaning charity (cf. C. Geertz 1960; Jay 1969).

The importance of these distinctions for understanding intergenerational and household economics in Indonesia is unquestionable. An important range of asymmetries between generations follows from them. Because exchanges are not necessarily restricted to two parties, but belong to a web of transactions, different household members may be involved in exchanges with a range of kin and neighbours which vary considerably over time and in content. Openness and substitutability mean that these exchanges, even if entered into with some ultimate bargaining position in mind, are not likely to be seen as short-term *quid pro quo* relationships. The presence of parents co-residing with one or more adult children thus cannot be assumed to imply a regular flow of transfers back and forth between them. Their several assets and incomes, and the support they may receive from other kin, may not be shared within a household. In the East Javanese community we studied, for instance, some 22% of co-resident couples maintained separate budgets: shopping, cooking and eating separately. Husbands and wives may likewise employ their resources jointly only for some purposes; overall, in more than half of the households not all income was pooled.

The status of transfers also tends to change over time. Some key intergenerational transactions, for instance, are explicitly *transfers*, in which frequently affirmed norms dictate no reciprocity. Thus, major capital outlays and labour to build houses for children are not normally perceived as enjoining any return of labour and support at some later date. They may, nonetheless, come to be seen subsequently as part of an ongoing set of exchanges aimed at strengthening bonds. Even transfers to the younger generation of fundamental and symbolically potent resources, like quality rice land (*sawah*), provide no guarantee of reciprocity. In general, norms enjoin children to care for their elderly parents, but there is no convention in Indonesia which designates a particular child as responsible: differing sets of children and other relations may help out at different times, reflecting changing needs and inclinations. This pattern usually enables some, or even most, children to opt out of assistance altogether. Whether transfers provide a moral basis for subsequent exchange—and the moral basis is clearly crucial to such relationships—is something which, as Cameron and Cobb-Clark rightly conclude, directs us to the family as an evolving *social* structure, not a primarily *economic* one.

In sum, differences in the content, scale, directionality, and continuity of exchanges indicate great heterogeneity, and underlie the uncertainty of elderly support arrangements. Cameron and Cobb-Clark's findings broadly confirm this picture: the superior earnings position of the young, the continued employment of elderly, the deployment of household 'resources' like property, education or other modernisation variables, cannot be treated as so many discrete trade-offs in a kind of micro-economic game of 'deduce the elderly support motive'. In this respect, it is relevant to note the conclusions of Lillard and Willis (1997:134), whose analysis of the Malaysian Family Life Survey is cited approvingly by Cameron and Cobb-Clark: extant survey data can provide critical evidence of heterogeneity, but are unable to specify the common underlying factors which could explain it.

The early stage of research on these issues in Indonesia provides an opportunity to rethink many standard assumptions before they come to be projected willy-nilly over Javanese and other family systems in the archipelago. One set of questions is broadly demographic. In order to pursue Hermalin's point, we need to treat the basic units of analysis as an open question. Residence is only one amongst a number of overlapping family and community *memberships* to which elderly people belong. Is the composition of these memberships structured in regular ways (e.g. as networks)

which would help us to understand the differing levels of support on which elderly may rely, and the markedly different outcomes they experience? Demographic discussion has long been bogged down by the limitations of household unit approaches, which entail distinctions—between intra- and interhousehold allocations, or typologies of nuclear and joint composition—which get in the way of exploring how different ‘coalitions’ (to adopt Folbre’s (1997) useful term) within a wider kindred and community are actively engaged with each other for different purposes.

A second set of issues concerns the material relations (Willis’s ‘economic-demographic interactions’) that obtain in these networks. Exchange, as we have just seen, raises the problem of *substitutability*. Its general importance has troubled economic demographers for some time. Many of the problems discussed, for example in Deaton’s (1997) sustained critique of household survey methodologies, come down to the fact that it is not only individuals, *pace* Willis’s formulation, that are not identical, but goods, services and circumstances—all of which people commonly recognise and accept as incommensurate. One of Deaton’s favourite examples is a familiar feature of rural village life: prices cannot be the same for all consumers in the marketplace if some individuals or networks have the capital to buy basic foodstuffs in bulk whilst others do not. Such economies of scale nonetheless remain very difficult to extricate from Southeast Asian surveys. Another common problem is that assets in the form of labour or pensions will not guarantee a secure old age if most of the income from them is obligated to shore up the position of other family members. Pensions, however, are widely assumed to be resources that elderly spend primarily on themselves. If elderly continue to work regardless of the presence or absence of support from younger generations (as Cameron and Cobb-Clark’s analysis and village data both suggest), we need to ask what they feel this labour is for.

The value of exchanges, in short, is contingent on wider social expectation. As Guyer (1997) and Sen (1989) have in different ways remarked, the determinant factor in economic trade-offs may be decided neither by self-interest nor altruism, but by the fact that assets and income are essential to articulating people’s identities and reputations. It is in the nature of exchange, after all, that two or more parties may each come away with the view that, on balance, they are winners (or losers). Either outcome may be perfectly acceptable. In this respect, another surprising absence in survey research is the inattention to traditional social hierarchies, and changes in them.

Methodology

The threads of the argument to this point may be drawn together briefly. Current population ageing in Indonesia is part of age structural shifts over most of the last century. Significant oscillations in relative cohort sizes may be observed, and particular regions like East Java have more pronounced profiles. When we turn to the local level, however, any impact these broader shifts may have will need to be discerned amidst a welter of local exchange relationships between generations located in kin and community networks. The importance of disentangling local patterns is paramount: if we cannot establish real effects on people's lives, then the graphs and tables showing broader age-structural transitions are no more than macro-shadows.

In the three Indonesian communities which are the loci of *Ageing in Indonesia*, there is no direct impact of age structural trends on popular consciousness: people do not spontaneously express the view that the numbers of elderly are growing out of proportion to other age groups. Older people are no more or less visible than they might be in many small rural towns in Europe or America. In the West, local disproportions may be a consequence of several factors, including migration (where young people are in rural exodus), improvements in longevity, and the 'baby bust'. In the Indonesian case, the impact of migration, coupled with infertility and marital disruption, appear to have been major factors shaping levels of childlessness and support available to cohorts born from the late 1920s to the late 1940s. More recent fertility declines, whilst significant, are relatively moderate and may be viewed as the continuation of a longer process of transition involving substitution of some demographic factors for others (put very crudely, contraception rather than infertility). How can the local impacts be identified and assessed?

Fieldwork in the three communities proceeded according to a common plan, which will be outlined here with reference to the East Javanese community, for which data compilation is at present most complete. The rural communities selected are agricultural villages actively involved in the labour markets and cultures of regional urban centres. The East Javanese village, for example, lies a short bus ride from Malang, the district capital. Such communities are typical of a wider Indonesian context in which members of family networks are involved in both modern and traditional economic sectors. To begin with, a complete household map of the community was compiled, identifying all households with an elderly person. Almost

all (95%) of the 210 elderly (defined as aged 60 and over) in the village were then interviewed at least once. In the course of a year's field study, most elderly (70%) were revisited formally and informally, and extended re-interviews were completed with 45% of respondents. The aim of the latter was to collect detailed life histories and information about an elderly person's potential and actual support networks. Networks were then mapped to distinguish patterns of support within the wider set of kin and neighbours with whom transactions normally occur. In order to differentiate support networks between economic and social strata, two randomised surveys were conducted: one of the village as a whole, addressed to household economy and support networks; and a second on elderly people's health and health-care use. Design of the surveys was informed by in-depth knowledge of the community, which proved useful both for representativeness (in ensuring that randomisation was based on a complete and up-to-date roster of households) and content (e.g. in the phrasing of questions and for probing where appropriate, which could be pursued in either Indonesian or Javanese). Economic and health data from surveys have, in turn, provided us with evidence against which to check what people told us in in-depth interviews. Both surveys were, in addition, developed to facilitate comparison to provincial and national data collected in the Indonesian Family Life Surveys.⁵ Detailed comparison of data sets from all of the sites, when this becomes possible, will help us to specify any anomalous features of the communities, should they exist.

The following discussion is organised around a sequence of elementary questions. The objective is to build up a framework within which possible impacts of age structural transitions may be understood.

- First:* How can local social structures be specified?
How can major economic *and* moral criteria of individual and family identities be taken into account?
- Second:* Do elderly members of different strata pursue markedly different strategies in trying to maintain themselves?
Is their differing success effectively predicated on wealth?
- Third:* Given that family networks cut across economic strata, what bearing does elderly membership in differing family networks have on their situation?
Do children help out, and what shapes the reliability of the help they may give?

The case study material chosen to illustrate these issues will focus on the role of pensions, and on the causes and consequences of declining fortunes.

A Model of Local Social Structure

Study of rural Javanese social structure has come a long way since Clifford Geertz argued that communities are characterised by a high degree of economic and social homogeneity (Geertz 1963:97).⁶ On the basis of historical and contemporary evidence, no-one today denies that rural Javanese society straddles wide and widening economic cleavages. However, most scholars also agree that an explicit class structure or class consciousness is lacking. Rural systems of social difference are full of subtleties and tensions, differences in wealth and status being widely recognised, whilst at the same time strenuously played down. In the field one is continuously confronted with conflicting messages on social differentiation. On the one hand, the equality of villagers is stressed. During the ubiquitous ritual meal (*slametan*) close neighbours—irrespective of wealth, religion or kinship status—are invited to participate on equal terms (although women are excluded!). On rare occasions when communal work has to be done, all households are expected to contribute labour. Discrimination along religious lines is strenuously denied (“*Kita semua nasionalis!*” – we are all nationalist), although in fact the growing dominance of Islam can hardly be overlooked. Those who are wealthy in the community are under constant pressure to deploy some of their wealth to the benefit of others, lest they be accused of being stingy and aloof. Generosity and lack of airs and graces (*tidak sombong*) are characteristics commonly singled out for praise and comment. They are seen as essential for the achievement and maintenance of an ideal community, which is based on harmony (*rukun*) and the idiom of kinship (*persaudaraan*). Indeed, one of the most common statements heard with regard to life in a neighbourhood is that everyone is ‘like a relative’ (*seperti saudara*).

The importance of continuous incorporation of rich and poor is doubtless a reflection of the fluidity of socio-economic boundaries. Upward and downward mobility within a life-time, between generations and within extended families is commonplace. People who were well-off during their working lives may find themselves destitute in old age, thereby reminding everyone of the fragility of wealth in a volatile economy. As formal social security provisions are lacking, few can afford

to cast themselves off from the networks of kinship and neighbourhood on which they may one day have to rely.

On the other hand, awareness of social and economic distinctions dominates daily life. Outside the context of ritual meals, social interaction with status superiors is avoided. Poor people talk of their reluctance (*sungkan*) to visit the house of a rich relative for fear of appearing opportunistic. Certain villagers are treated with reverence and awe, which is reflected in choice of Javanese language level and subservient body language. When discussing status differences, villagers will emphasise social and moral status, rather than economic distinctions, although in fact the two often go hand in hand. People most respected (*dihormati*) are holders of office—the village head (*lurah*) and officials (*pamong*), members of the medical profession (*bidan, mantri*), and people of special religious standing. Outside this small group, among the mass of ordinary villagers, more narrowly *economic* differences are recognised and commented upon. It is to these distinctions that we now turn.

In visiting and getting to know families in the research village, economic differences were often easy to detect. The most obvious signs of relative wealth are the type of housing and assets owned, and the kind of work a person engages in. These outward characteristics are mirrored in villagers' comments on differences between families. People at both ends of the extreme are most readily distinguished. At the top is a small group of very rich people (*orang kaya*), often euphemistically referred to as *cukup kaya* (rich enough). They are the families most villagers will feel reluctant to approach lest they be accused of economic opportunism. At the bottom end are a few people surviving either on an extremely meagre and uncertain economic base, or—more commonly—on people's pity and charity. Rather than being referred to as 'poor people' (*orang miskin*), which would be considered derogatory, they are more neutrally termed *kurang mampu* (less capable or wealthy). Invariably reference to them is accompanied by exclamations of pity (*kasihan!*).

Distinctions within the large group of people in the middle are much less clearly articulated. The majority see themselves as getting by, more or less successfully. They are quite poor, but manage on a day-to-day basis without regular support from others. Whilst not able to accumulate much wealth, or guard against major crises, they are nonetheless able and expected to participate fully in village social life by holding ritual meals, attending weddings and even providing help to those less fortunate than themselves. These villagers would refer to their economies as

cukup-cukupan (just enough, adequate or ‘ticking-over’). These *cukup-cukupans*, who make up the majority of households, epitomise prosaic Javanese villagers who know hardship, yet have nothing to be ashamed of. Some of the middle-range households were clearly doing slightly better than average. They lead secure existences, generating occasional surplus, but without the ostentatiousness of the rich. No specific term for these people was used, although those in this group would often describe their situation as *lumayan* (moderate, not bad).

Informal and commonly expressed status distinctions provide a starting point for exploring relations between age-structural, economic and social differences in a community. To begin with we used the four terms (*cukup kaya, lumayan, cukup-cukupan and kurang mampu*) as a loose framework to which households could be assigned on the basis of interviews and observed material circumstances. In interview people frequently offered their own estimates of other individuals and families, as well as comments on their own social position. Because interviews embraced several members of a family network, we could compare differing accounts of people’s reputations. Toward the end of fieldwork, a survey was designed to collect data on assets, income and expenditure on a random sample of households with and without elderly members, and data were then compared to the versions people gave in in-depth accounts. The survey findings are summarised in Table 1, in which economic data have been grouped according to the logic of the four status distinctions. Although, as we shall discuss below, there may be considerable variation in the asset and income positions of households within the four groupings, the situation of households belonging to each group in aggregate indicates a clear gradient from rich to poor on most variables.

As Table 1 shows, there are a number of variables that distinguish more or less unequivocally between rich and poor, others where the distribution is more graded. No *one* variable is capable of predicting membership of a certain grouping, as there is much overlap between groupings on any given marker. For example, ownership of *sawah*, a car, moped or telephone and receipt of a pension are almost exclusive to the rich or comfortably off, yet by no means *all* rich households possess these advantages. Similarly, virtually all the poor and many of the ticking-over receive charitable support, but there are one or two exceptional cases of better-off who also receive subsidies for special reasons, like the presence of an orphan in the household.

Table 1: Comparison of Economic Groupings in the East Javanese Research Village

<i>Assets</i>	Economic Grouping¹				
	1	2	3	4	All
Ownership of irrigated land (<i>sawah</i>)	47.1	25.8	2.2	0	16.0
Ownership of house	94.1	83.9	82.6	58.4	82.0
Ownership of telephone	41.2	6.5	2.2	0	9.4
Ownership of TV	94.1	61.3	65.2	0	61.3
Ownership of car or truck	29.4	9.7	0.0	0	7.5
Ownership of moped	41.2	25.8	4.3	0	16.0
Ownership of bicycle	64.7	54.8	50.0	25.0	50.9
<i>Type of housing</i>					
Brick walls	100	96.8	87.0	41.7	86.8
Bamboo walls (wholly or partially)	0	3.2	13.0	58.3	13.2
Tiled floor	88.2	41.9	23.9	0	36.8
Cement floor	11.8	45.2	60.9	50.0	47.2
Earth floor	0	12.9	15.2	50.0	16.0
Own electricity	94.1	93.5	76.7	36.4	80.4
Piped water in house	88.2	66.7	35.6	8.3	50.0
Bathroom in house	88.2	80.6	50.0	41.7	64.4
Bathe in river or neighbour's house	0	3.2	27.3	58.4	19.2
Modern furniture	76.5	53.3	32.6	0	41.9
No or incomplete furniture	0	3.3	19.6	75.0	18.1
<i>Receipts</i>					
Av. income per head per day (Rp.) ^{2,3}	8,800	5,436	2,645	813	4,116
Receive a pension	41.2	19.4	2.2	0	13.2
Receive subsidised rice	(5.9)	9.7	66.7	91.7	42.9
Receive charity (<i>zakat</i>)	(11.8)	9.7	44.4	90.6	33.7
<i>Consumption</i>					
Av. food expenditure per head and day (Rp.) ^{2,3}	1,745	1,463	1,285	850	1,342
Av. medical expenditure (past month) (Rp.) ^{2,3}	28,466	8,375	9,460	(250)	10,932
Ability to shop in bulk (monthly)	64.7	44.8	11.4	0	28.7
Have to shop every few days	11.8	17.2	59.1	100	43.6
Consume meat 1-2x/month or more	93.8	80.7	60.9	16.7	66.7
Consume meat only if <i>slametan</i>	(6.3)	19.4	39.1	83.3	33.3
Size of group in survey (N)	17	31	46	12	106
Economic group as percent of all households	16.0	29.2	43.4	11.3	100

¹ Economic group (1) *cukup kaya*: 'rich', (2) *lumayan*: 'comfortable', (3) *cukup-cukupan*: 'ticking over', (4) *kurang mampu*: 'poor'. ² Outliers have been removed. ³ US\$ 1 = c. Rp. 7000 (1999-2000).

The rich (*kaya*) are certain to live in brick housing with good facilities, and have at least one of several assets, be it agricultural land, a pension, an extra house, or a car. They can shop in bulk and consume meat regularly. Perhaps most importantly in terms of elderly care, these rich households are able to afford hospital treatment should they need it. Good quality health care is extremely expensive in Indonesia, with average hospital bills exceeding one million Rupiah—well beyond the reach of the vast majority of villagers. As the data on average household health expenditure in the month preceding the survey show, the rich spend a large amount on health care. The comfortably-off (*lumayan*) overlap in many respects with the rich, although their cumulative wealth is lower. Their average daily per-head income is about two-thirds of that of rich households, but twice as large as that of the next group down. Moreover, the range of household incomes among the *lumayan* is not very different from that among the *kaya*. This suggests that in distinguishing the very rich from the comfortably-off it is less the amount of income *per se*, than additional wealth (the number and quality of assets, housing, or occupying office) that matters. The *lumayan* are much less likely than the *kaya* to own a telephone, car, modern furniture or tiled flooring, and less likely to have the security of a pension or land. By no means all households in this category could afford hospitalisation. Nonetheless, both of the top two groupings are characterised by relative immunity to short term economic shocks.

Households that are ticking-over (*cukup-cukupan*) form the largest grouping in the village. They comprise the bulk of families that do not control *sawah*, cars or pensions. Typically members of this group are involved in steady agricultural labour, small-scale trade, factory work, transportation, construction work or food production. The group also includes some households where members no longer work, but either have assets to fall back on, or receive reliable extra-household support from close relatives or rich patrons. The fact that average household incomes in this group are much lower than among the richer households is reflected in consumption patterns: they do not shop in bulk and rarely consume meat. Inability to accumulate assets or savings makes this group—unlike the *lumayan*—very vulnerable to crises like illness or unemployment. Good medical care is out of the question. Not surprisingly, many of the currently very poor (*kurang mampu*) households have descended from the *cukupan* group as a result of misfortune, economic mismanagement, or old age. The very poor (*kurang mampu*) are distinguished by their striking lack of assets, poor housing facilities and severely constrained consumption patterns: they consume meat

only when they are given it during a ritual meal, cannot shop in bulk and are incapable of purchasing medicine. More than half live in bamboo housing with earth flooring: given the fact that few houses in the village are still of this traditional style, such housing marks people out for comment. Typically, the *kurang mampu* engage in poorly paid and sporadic work, like firewood collection, traditional massage, domestic work or odd-jobs. That their average per head food expenditure exceeds per head income underlines the fact that these households rely on extra-household support for their survival. Virtually all households in this grouping receive charitable support and subsidised rice. As charity is highly circumscribed—not extending to physical care or payment of expensive medicine—serious illness can spell death for these elderly.

As a descriptive model of social structure Table 1 has obvious advantages and disadvantages. On the plus side, it enables us to combine indigenous social perception with economic evidence: we do not have to analyse the situation of the elderly without a clear idea of their identities and constraints.⁷ In addition, because content and conduct of our survey were shaped by prior field experience, we can be fairly confident that the numerical estimates people provide of their position are accurate.⁸ On the minus side, the picture is hopelessly static, giving no idea of the operation of networks of exchange linking households and generations. The model as it stands is merely a sorting device. Its real interest, as a description of local social structure, lies in what it can reveal when we turn our attention to social processes. The same levels of material well-being do not necessarily translate into equal sets of opportunities and constraints. To understand courses of action actually open to individuals and families requires us to examine links between family members, in which the wealth and position of some kin may accrue to certain relatives, but not others.

Case Studies: Toward Models of Agency

Dynamic models, following Willis's remarks, need to be based on realistic assessments of human agency. We may stylise agency variously in terms of motives, decisions, bargaining, strategies, and so forth. But whatever view we take, our criteria must allow for the heterogeneity of economic-demographic interactions, both in terms of units of action (individuals, families, networks, strata) and the sorts of exchanges they enter into. A sensible approach is to begin with actual cases, and to build up from them to wider pictures at the community level, and then at sub-national and national

units of aggregation. We are still in the process of building community level pictures. We can, nonetheless, give some preliminary examples of the sets of relationship which local level models are likely to entail.

Our first illustration has to do with declining fortunes. Most elderly remain in gainful employment for almost the whole of their adult lives, but what happens when they become too frail to support themselves? The second illustration is drawn from cases in which elderly are apparently well-off because in receipt of a pension. Pensioners in Indonesia are for the most part former military and government personnel. The primary role which the bureaucracy and armed forces has played in daily life since independence, mean that pensioners form a significant, if not large, group in many Javanese villages. In our East Javanese study community, for example, 20% of elderly households were in receipt of a monthly pension.

Declining Fortunes

Table 2, below, presents a simplified set of the economic variables given in Table 1. It describes the more specific circumstances of three elderly men and their households. The generations to which they and their children belong may be linked to the oscillating low fertility cohorts, described in the first section of the paper. Mbah Rosid is in his mid 70s; Mbah Jasman and Mbah Mis claim to be in their early 80s (all names have been changed). In other words, all three were born during the period of declining fertility up to the late 1920s (see Figure 2). The marriage patterns of Mbah Rosid and Mbah Mis are good examples of the disruptions manifest from the late 1930s to the early 1950s. Mbah Mis married five times and remains childless; only one marriage was fertile, and that child died. Mbah Rosid married three times. With his first wife he had a single son, who died in adulthood; he divorced, and remarried a childless woman, who subsequently died without issue. His third and current marriage is to a woman born in the low fertility era of the early 1940s; she had four children by a previous marriage, and together they had two more, a total fertility of six which reflects the improved health conditions from the mid-1950s. Mbah Jasman's first marriage was long and stable, which appears to have enabled him and his wife to avoid the fertility disruptions of the mid-20th century. Together they have five surviving children. Following his wife's death, Mbah Jasman remarried a childless woman born to the mid-1930s cohort: her childlessness is not unusual in a cohort whose members entered their late teens during the war of independence.

Table 2: Economic Details of Three Case Studies: ‘Declining Fortunes’

	Econ. Group	HH Size	Daily income/head. (Rp.) ¹	Assets						Consumption		
				sawah	bank account	car/bike/moped	Floor	Bath	Furnishing	Shopping	Meat	Daily food exp./head (Rp.) ¹
Rosid	2	4	3750	yes	no	minibus	tile	inside	modern	daily	1-2/week	935
Jasman	2/3	2	5000	no	no	none	tile	inside	traditional	weekly	1-2/week	2500
Mis	4	2	2500	no	no	none	cement	outside	not a set	daily	<i>slametan</i> only	680

¹ US\$ 1 = c. Rp. 7,000 (in 1999).

Table 3: Economic Details of Three Case Studies: ‘Pension Values’

	Econ. Group	HH Size	Pension (Rp.) ¹	Assets						Consumption		
				sawah	bank account	car/bike/moped	Floor	Bath	Furnishing	Shopping	Meat	Daily food exp./head (Rp.) ¹
Kolil	1	6	106,000	yes	no	none	tile	inside	traditional	weekly	1-2/month	833
Winar	2	5	470,000	no	yes	tricycle	earth	inside	modern	monthly	1-2/month	1200
Hari	3	8	350,000	no	yes	none	cement	outside	traditional	monthly	1-2/month	625

¹ US\$ 1 = c. Rp. 7,000 (in 1999)

Comparison of the economic data in Table 2 with the averages for each of the four groupings in Table 1 is a reminder that there can be significant variation at each level of socio-economic status. Mbah Jasman's per head income is close to the average for *lumayan*, and almost double that of *cukup-cukupan* (into which groups, as we shall see, he could also be classified). Mbah Rosid and Mbah Mis have respectively lower and higher incomes than is typical of their groupings. Material assets and consumption patterns are in all cases modest: none are able to engage in significant bulk buying of basic foodstuffs, although Mbah Jasman and Mbah Rosid have levels of meat consumption significantly above average for their groupings; this is due to the fact that their wives run little shops. Eating meat only when it is provided at a ritual meal, as in Mbah Mis's case, is characteristic of *kurang mampu* people. These data in themselves do not take us very far; they are more telling when put in the context of family networks over time. We shall take each case in turn.

(a.) Mbah Rosid is unusual amongst the older generation in that he no longer works. He now suffers from tremor, and has to be fed and washed by his wife and daughter. The household consists of Rosid, his wife Marni, his married daughter (whose husband works in Surabaya, and visits occasionally) and her baby. The household is supported by the small shop which Marni runs; the daughter and son do not contribute economic support. For many years Rosid ranked among the medium-sized farmers in the village, respected for his hard work, feared for his violent temper. He was nonetheless generous with his children in a way that is common of the older generation. When his son married ten years ago, he handed over most of his agricultural land to him and his daughter. In addition he built his son a house next door, and equipped him with a minibus. He also contributed to his step-children, for example buying one a motorbike, and giving another assistance with a house. His daughter will inherit the family home. The son unfortunately has turned out to be something of a ne'er-do-well, and he and his family also depend largely on Marni's income. The cost of Rosid's medicine recently necessitated the sale of his remaining agricultural land; neither children contribute to his medical costs. A steep material decline in the family fortunes has thus resulted from the elderly man's failing health, and is leading to a loss of social status: far from being feared, Mbah Rosid is now mocked for his disability and helplessness, which is seen in the community as fate's punishment for his previous reputation for brutality.

The case of Mbah Rosid is, however, typical of one of the main features of intergenerational economic relations in the community as a whole, in which the net flow of wealth over time is from parents to children and grandchildren. The case is also typical in that there is a sizeable web of related kin whom we might expect to be helping out, if we take at face value the norm that the young should support their elders. In addition to the four stepchildren, Mbah Rosid and his wife each have siblings in the village; in consequence there are three households nearby headed by nephews. As the next example will show, such younger generation relatives sometimes play an important role. None of this larger network, however, provides assistance in Rosid's case, although it seems reasonable to assume that some of Marni's children would come to her assistance if her health too was to fail. Such help would then accrue, to some extent, to Mbah Rosid: the size of the immediate support network, the extent, and also the scale of support, would thus change. Clearly, one of the central issues in modelling intergenerational support is the elasticity of networks.

(b.) The changing circumstances of Mbah Jasman and Mbah Mis provide an insight into a second important pattern, which reveals a characteristic discontinuity in support arrangements. Whilst long-term self-sufficiency of the elder generation remains the norm, children may provide support in critical episodes. Jasman, who is the younger brother of Mis, enjoys a good reputation in the village based on respect for his traditional religious knowledge. In his later years he is suffering from asthma, which has for some time made it impossible for him to work. As in Rosid's household, daily expenses are covered by income from his wife's shop. One of Jasman's sons, however, has risen to a position of prominence as village official and major shopkeeper. The son's success did not depend on material support from his father. When Jasman fell seriously ill, the son was able to pay most of the expensive hospital bills to keep him alive; other children gave their time and care to assist his recovery. The material circumstances of Jasman and his wife, in the absence of his son's support, would place them in the modest but respectable (*cukup-cukupan*) economic grouping. Hospitalisation is not possible for this group without family help, as the cost would result in total dependence on charity.

(c.) Mbah Mis has also benefited from the generosity of his nephew, Jasman's successful son, but on different terms which reveal the qualified nature of support available from even very well-off younger kin. Mis still works as a farmer. He inherited considerable agricultural land, but much of this was sold some time ago to

pay for the medical expenses and funeral of one of his wives. Finding it increasingly difficult to make ends meet, Mbah Mis decided a few years ago to sell the remainder of his agricultural land. The nephew tried to dissuade his uncle from this course of action, and when Mis insisted, offered instead to buy the land under very favourable conditions in which the old man continues to work the land for a wage, and may also keep the bulk of the produce. Far from being 'what one would expect' of a nephew, this arrangement is widely commented on as very generous. In effect, Mis has been saved from the demeaning prospect of living out his life on charity, entering instead into a respectable patron-client type of relationship. There is, nonetheless, no expectation that the nephew would pay for his uncle's hospitalisation, should the need arise: when Mis's wife needed hospital treatment, support was not forthcoming.

These three cases illustrate a number of themes which recur in village data and which show some of the mechanisms by which existing family arrangements adjust to the needs of the elderly. First, all the elderly men and women discussed have worked well beyond the age of 60, and their domestic resources continue to depend substantially on their own efforts. Second, these efforts go on regardless of the availability of members of the younger generation and their ability to provide support. The situation of childless elderly, consequent on past patterns of infertility and divorce, obviously carries a heightened risk of vulnerability. Third, joint household arrangements often arise from economic problems in the younger generation as much as, or more than, they do from problems of older people. Residential patterns are unlikely to be informative about such arrangements. In Mbah Rosid's case, as we have seen, the dependent son and his family live next door, but further examples (below) include some cases where the financially dependent child coresides, others where coresidence entails mutual financial independence. Fourth, wives' support for their older husbands may be a critical factor in the continuity of elderly self-sufficiency. Fifth, elderly who over their life course have provided more economic support for their children (contrasting, for example, the case of Mbah Rosid with Mbah Jasman) do so without clear expectation of equitable return from the younger generation. There are no prevailing ideas of a given duration over which past favours may be expected to return. The material largesse of the elderly may, in any case, be less critical to their reputations in the community than moral features of their lives and characters. Sixth, where support from the younger generation *is* forthcoming, it does not necessarily come from younger kin who are under any normative obligation. Nor is support

geared to notions of economic trade-off, as the cases of Mbah Mis and Mbah Jasman show. In the latter case, the son's own expression of his indebtedness to his father was phrased chiefly in terms of deeply felt appreciation of religious and historical matters which his father passed on to him. This younger man's support, both for his father and for his uncle, was also significant as confirmation of his local standing: such acts demonstrate his power in a way which did not demean the poorer kin he was assisting. Such issues are particularly important for present and prospective officials. Thus, a final theme is that major 'returns' from transfers extend beyond the logic of restricted exchange. Transfers are likely to gain greatest symbolic value where they transcend the norms of exchange in acceptable ways.

Pension Values

Table 3 (see page 25) provides some economic detail on three elderly pensioners. Each coresides with married children or grandchildren: Pak Kolil and his wife share their house with a married son and his family; Mbah Winar and his wife live with a married grandson and his wife and child; and Mbah Hari and his wife share their house with an unmarried adult son, a married daughter, her husband and three small children. Pak Kolil and Mbah Hari have each had stable marriages with seven children spanning the period of improved health and rising fertility of the 1950s and 1960s; Mbah Winar is childless, but considers the one daughter of his wife's previous marriage as his own. As noted in the previous three case studies, there is a marked contrast between those in the eldest generation who experienced disrupted reproductive years and those with stable marriages who did not. Unlike Mbah Hari and Pak Kolil, Mbah Winar's involvement in the war of independence left him unmarried until his late 30s. His wife's daughter, born during the war of independence, enjoyed the improved health conditions of the post-war era, and had five children.

Table 3 shows once again that present household income and assets provide no simple linear guide to social position. Pensions are the primary source of income in all three households, supplemented in Pak Kolil's case by a small plot of rice land which he works himself. Despite his higher social standing, Pak Kolil's income is noticeably smaller than the other two men's. The sizeable pensions of Mbah Winar and Mbah Hari appear to enable them to buy rice in bulk, whilst Pak Kolil derives most of his supply from his own land. The material circumstances of their homes and

expenditures otherwise reveal no striking pattern, although in all three cases meat consumption is noticeably less than two of the three poorer families in Table 2.

(a.) What distinguishes Pak Kolil are social assets which add considerably to his reputation, influence and security. He is a son of one of the village's founding families (*cikal bakal*), and belongs to a wider kindred of some seventy persons. He is head of neighbourhood (*ketua RW*); his wife is active in village public health and welfare administration (*kader*); his family is devoutly Muslim; and his large house stands on a slightly elevated position in the village. His youngest child is at university; the next youngest works in the district capital and is regularly at her parent's home at weekends. One married son lives in the same house as Kolil, but he and his family cook separately and maintain their own household budget. The other four children are married and independent, a fact in which Pak Kolil and his wife take great pride. This network is one in which major intergenerational transfers of property and support are almost non-existent, at least to date. Kolil provided one son with a house. The children give occasional gifts of money, clothing or medicine to their parents, and contribute toward the university fees of their youngest brother. Thus Kolil and his wife have his modest pension entirely at their disposal, and a network of children in the modern sector of the economy. Maintenance of regular contacts suggests strongly that future support, if necessary, would be forthcoming from at least some of these children.

(b.) Mbah Winar and his wife Mbah Jina moved to the village about nine years ago. They raised the grandson they now live with, and their decision to move to the village depended on his willingness to come with them. Mbah Winar's house is already registered in this grandson's name. Relations with their daughter, who still lives in a village some ten kilometres away, are not warm, although she has received a house and other parental support. Her other children are not in regular contact with Jina or Winar. The grandson does seasonal work, the income of which is not contributed to daily household needs; he has, however, made occasional purchases of major domestic items, like their television. His wife does all the housework, and looks after her elderly grandparents-in-law when they are ill. This arrangement enables all five members of the household to live comfortably in a modest way, but they are entirely dependent on the step-grandfather's pension; the household has neither significant reserves nor an engaged kin network to fall back on. The obvious vulnerability of this elderly couple would appear to lie in the arrival either of severe health problems (which would, for example, siphon off the pension into medical

provision) or the death of the step-grandfather (which would significantly reduce the pension).

(c.) Mbah Hari's household and family network are the most complex of these three case histories. Mbah Hari's parents belonged to the *cukup-cukupan* strata. Highly motivated as a teenager, Hari largely taught himself reading, writing and bookkeeping. His pension derives from a minor civil service post held from the 1950s to 1980s. With his wife, Bu Arin, he had to work hard to support seven children, and the couple were unable to accumulate land or other major assets. The eldest son, now in his 50s, is unmarried and still lives at home; he often eats elsewhere, and does not contribute to family income. Four of the children have left the village, and are rarely in contact. One of them nonetheless gave substantial support for medical expenses (Hari's prostate operation). The second son, Pak Kama, bought land and built a house next door to his parents, where he lives with his wife. Pak Kama from time to time gives small sums to Mbah Hari's co-resident daughter, Bu Tiani, and to her children. Bu Tiani, her husband, and three small children moved in with Mbah Hari and Bu Arin when their business failed, and are all dependent on Hari's pension. This pension, which would have sufficed comfortably for the elderly couple, now stretches to keep a three-generation, eight-member family. The house has a constant atmosphere of overcrowding and tension between generations. Far from desiring coresidence, the old couple complain that after a life of hard work they still have to take responsibility for their children. On a later revisit to the village, we learnt that the daughter had left to work in Malaysia, and the son-in-law returned to his natal village. The elderly couple were left literally "holding the baby": they now have the material, emotional and physical burden of looking after their three small grandchildren, the youngest still in nappies. Their economic predicament would not in itself incline fellow villagers to look upon them with pity, but loss of reputation may yet ensue if there is wider consensus that the attitude of the children is negligent.

Pensioners may be a relatively small group at the village level, but understanding the implications of their secure source of income involves us very quickly in the logistics of family networks. A pension may in general be taken to mean that its recipient need not work, but these cases show that some pensioners still engage in regular economic activity to support themselves, and that pensions are not simply for the elderly to deal with. Indeed, the cases of Mbah Hari and Mbah Winar suggest that pensions may be important as mechanisms of economic redistribution

amongst poorer families. The case of Pak Kolil is a reminder that the structure of support available may be largely invisible until the need for it arises. We may well wonder what the usual survey approaches (not backed up by sustained field study) would make of this situation. Pak Kolil, because he has not given major support to his children, could well appear as the most insecure of the three. His situation is in fact exactly the opposite. Mbah Hari is visibly the worst off, yet in a major health crisis he did receive substantial help from a child who had hitherto not given support. Mbah Winar and his wife appear to be in a much more comfortable situation, but who is available to assist in major medical expenses should the need arise? Such questions can only be resolved by longitudinal study which enables us, by observing the evolution of kindred support, to establish empirically the logic of ‘coalitions’ within a kindred, and the distribution of support within them over time.

These three case studies usefully confirm several points observed earlier: that support tends to flow from older to younger generations, even when elders are quite elderly; that coresidence is likely to reflect insufficient income in the younger rather than the older generation; that economic strata, even when formulated to reflect local criteria of social as well as economic value, are not in themselves a reliable guide to elderly options and behaviour; that stated preferences for separate residence may be less a matter of actual residence than of separate or separable domestic economies; that there is no single reliable rationale for describing which children will assist poorer parents, or on what schedule; and that the open duration and timing of support amongst members of a kindred, flowing either up or down the generations, are features which require much more attention than prevailing survey and modelling of economic-demographic interactions generally gives them.

Conclusion

In bringing this paper to a close, we can return from the detail of case studies to the wider picture outlined in earlier sections. To begin with, we have seen that a case can be made for the presence of oscillating cohort imbalances at national and provincial levels in Indonesia. These imbalances recur over most of the 20th century, and strongly suggest that current levels of population ageing owe to a significantly different set of demographic factors than will shape the course of age structural transitions twenty years from now. A major implication of this historical picture is that Indonesian

society today already has experience of causes and consequences of demographic non-stationarity. This implication is borne out by ethnographic and survey research reported in later sections of the paper.

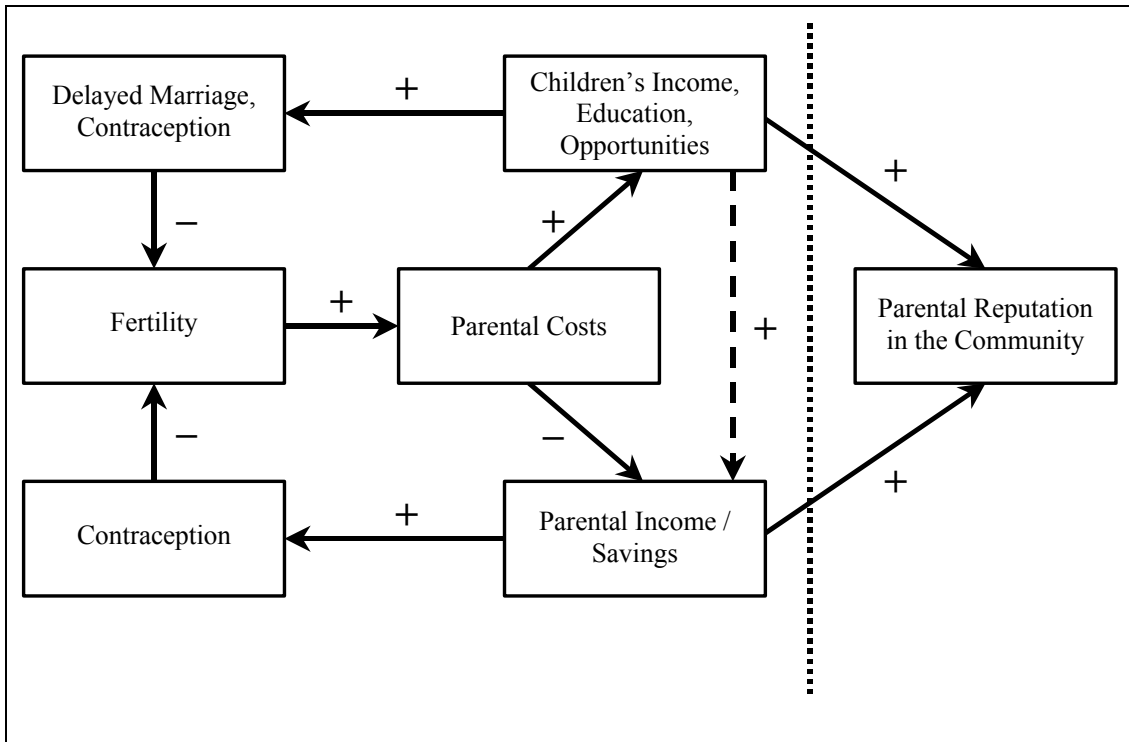
Refined demographic analysis of cohort oscillations from the 1920s onwards might be able to specify more precisely the generations being affected. However, the incompleteness of the demographic record must make us cautious about placing any great confidence in such an exercise: the results would for the most part be a reflection of assumptions that have to be made about mortality and fertility levels, and the proximate determinants underlying them, at least up to the 1950s. A case has been made here for the major role of infertility, divorce and migration as the main disturbing factors which have shaped the size of currently elderly cohorts and the support networks available to them.

The macro-demographic picture of course provides only the outer contours of current and future intergenerational relations. The interesting question is whether non-stationarity is having an observable impact on older and younger generations today. For the purposes of this paper we have focused in particular on oscillations of those born into significantly smaller cohorts from the 1940s on. Can variables be specified at local levels which enable us to say what institutional, economic or other forms the impact of non-stationarity takes? We traced the inability of cross-sectional survey sources by themselves to answer this question, an inability now recognised more generally in Southeast Asian research on ageing. Looking more closely at this problem, we have argued that this deficiency arises from the fact that surveys and their analysis do not actually investigate the way intergenerational relations are distributed in time. These approaches are shaped, moreover, by general assumptions made about the potential equitability of transfers unsupported by sustained prior investigation of social structures and the logic of family and exchange networks.

These deficiencies, together with the major role of infertility, divorce and migration, draw us back to Pool's point, cited at the start of this paper: ageing cannot be understood adequately as the exogenous outcome of fertility and mortality transitions. As the generalised assumptions just remarked derive from deficiencies in the demographic transition and modernisation framework, it is well to amplify Pool's observation here. Of course, the fundamentally indeterminate character of the transition framework now forms the basis of a large critical literature (see, for example, Szreter 1993). Hopefully an abbreviated account, as illustrated by Figure 3,

will suffice for the present purposes. We shall first note how the generalised assumptions arise from the framework, and then review their inadequacy for Indonesia.

Figure 3: Simplified Neo-Malthusian Model of Intergenerational Relations



Over the last half-century, discussion of demographic transition has been first and foremost about fertility transition. Changes in reproductive decision-making brought about by modernisation have commonly been seen as the micro-level motor which drives declining fertility at the macro-level. Beginning from this premise, the economic demography of ageing has tended to focus on what a changing fertility calculus implies for parental costs. In Figure 3 we see that having children puts up parental costs; parental expenditures then hopefully boost children's life chances, but this expense in itself tends to decrease parents' income and savings positions. Fertility declines are stimulated by this negative effect, motivating the parents' generation, if contraception is available, to reduce overall childbearing. As younger generations seek to ensure their improved economic situation, they may do likewise. The aggregate effect of successive cohorts embracing birth control is that fertility declines become more rapid. The cycle is completed in the figure as we return once more to impacts on parental costs: fewer children will lessen the impact of childbearing on

parental costs, however as educational and related costs rise a ‘squeeze’ may still occur.

The open question, indicated by the dotted arrow in Figure 3, is whether there may be substantial return flows of support from children to parents which compensate parents’ declining income and savings position. The impact of return flows, or of the expectation of them, is ambiguous. Caldwell’s (1976) hypothesis was that net flows would shift from upwards (children to parents) to downwards (parents to children) as fertility declines proceeded; the evidence is at best contradictory (cf. Stecklov 1997). Ageing research has meanwhile been on the lookout for upward movements: higher parental expenditures on fewer children are expected to yield greater return flows to parents when they are elderly (e.g. Lillard and Willis 1997). A vast literature surrounds the motivations supposed to underlie intergenerational transfers: altruism, parental repayment, bargaining power, consumption smoothing, risk insurance, and so forth (see Lillard and Willis 1997, for an overview). The indeterminacy of these competing hypotheses is evident from the fact that the several motives are neither logically nor practically exclusive: some or all of them may be operating at the same time.⁹

Contra this impasse, the Indonesian data reported in this paper suggest that it is unwise to leap directly to a view of economic-demographic interactions which begins and ends in the relationship between reproduction and parental costs or income. Factors outside this calculus are crucial to the supply of children and what its implications will be. To begin with, it is misleading simply to assume that there *will* be children in a society in which up to one in five elderly are without them. Even for those who have offspring, it may be someone else’s (grandchildren, nephews and nieces, adoptees) that are key. The majority do have two or more children, but the critical issue nonetheless remains *whether* and *which* children will provide support *when needed*. The openness of transfer arrangements over time, the plurality of exchange relations, and the differing value of goods and services exchanged or transferred by people of differing status in family networks, are all issues not seriously broached by the standard hypotheses. These lacunae condition all of the positive and negative relationships on the left side of Figure 3. Even if we were to ignore these issues, the models remain indeterminate. Most families, whether well-off like Pak Kolil, or just ticking over like Mbah Hari, require more than one version of the figure, with varying arrangements of plusses and minuses, depending on which children are

being considered and when. Averaging such arrangements, as is implicit in cross-sectional and panel survey approaches, has the effect of setting aside the central question of how family systems cope differentially with wider non-stationary influences.

The right side of the figure reminds us that parental reputation in the community is an overriding consideration, but one in which parental costs relative to potential returns from children are only a contributing factor. Whether parents and children do or do not provide support for each other is an important matter, but has no necessary impact on a person's standing in the community. Persons' standing, however, is bound to be a major factor in intergenerational relations. Positive values have been assigned to all impacts on parental reputation in the figure because, in East Java at least, net flows are normally from parents to children: parents, by upholding this norm, sustain their status whether children do well or ill, and whether or not their own standard of living is affected (provided, of course, that they are not reduced to dependence on community charity in the process). Dynamic models, that is, models which capture the agency of economic-demographic interactions, can only be formulated once models of two other dimensions are tried and tested. Our impression at this stage of the Indonesian project is that static models (i.e. which reflect the present *status quo*) will be sufficient for this purpose. The first would provide a picture of social structure which will enable the analyst to evaluate differentials in social and economic assets that have a bearing on people's observed actions. The second are models of the elasticity of support networks, based on evidence of the evolution of open transfer arrangements in a wider kindred.

Notes

¹ *Ageing in Indonesia: A Comparative Study in Social Demography, 1998-2001*. The project, in three rural sites in East Java, West Java, and West Sumatra, combined anthropological field work of a year's duration with two randomised surveys and related demographic inquiries.

² Hirschman and Guest (1990) refer to their estimates of current fertility as "partial TFRs", as they recognise the potential for underestimating fertility with the

‘own child method’ they use (cf. Cho *et al.* 1986). In the ‘own child method’, infants and children are matched up with a woman in the same household who is presumed to be the mother, and retrospective age-specific fertility rates are calculated on that basis. The potential for underestimating fertility derives from omission of babies that have died, or under-enumeration of children in general. If several women are present in the household, fertility may be underestimated by mismatching. However, mismatching of children with women who are *not* their mothers (because mothers are dead or absent) may also exaggerate fertility; given the prevalence of labour migration and child fostering in many parts of Indonesia, the latter effect is likely to be considerable. It is worth noting that in comparing fertility estimates based on different methods in Indonesia, the ‘own-child method’ by no means produces the lowest figures (cf. Biro Pusat Statistik 1994:19ff). In the ‘last live birth method’ women are asked about the date of their last birth, with births in the last year then used to produce age-specific fertility rates. Using this method, Dasvarma and Hull (1984) calculated fertility rates for 1980 that are below ‘own-child’ estimates. The potential problems of underestimating fertility from “partial TFRs” must, thus, be weighted against factors which tend to over-estimation, and also against levels of infant mortality that affected currently elderly generations in their childbearing years.

³ In their comprehensive review of the proximate determinants of fertility in Indonesia, McNicoll and Singarimbun (1986:45-6) cite higher estimates for total fertility (5.5 for Java and Bali; 6.4 for Sumatra) than Hirschman and Guest. However, they also report World Fertility Survey data for Java and Bali (1986:76-7) which show that 38% of childless women in the 1932-41 birth cohort regard themselves as infecund, and 25% of those with one or more children. The authors’ evident scepticism of these figures (“these large surveys can tell us little about what underlies such figures”) would appear to have led them to disregard Hull and Tukiran’s (1976) analysis of childlessness, and to prefer higher Total Fertility Rates as reported in their paper. Subsequent studies have continued to report significant levels of infecundity: according to DHS data, for example, 28.6% of the 40-44 cohort in 1991 reported themselves as infecund, and 48.1% of the 45-49 cohort (Kasmiyati and Kantner 1998:3b).

⁴ We have found that UN (1994) estimates give similar results to Figure 2.

⁵ Comparability in design and analysis of our survey and the Indonesian Family Life Surveys was not always possible because the IFLS often collects data in ways that prevent households from being differentiated economically. A single example will have to suffice here: information collected on fundamental assets, like agricultural land. Questions about land are asked no less than four times at different stages in the survey: once under the rubric of farm business (if a householder “works in a farm business” but not as a labourer), non-farm business (land owned for non-agricultural purposes), household assets not used for farm or non-farm business and individual assets (if not previously mentioned). Common arrangements in which a person owns land but does not work it himself or herself (or has passed on to his or her children) could slip through this net of questions. Not once is the size of the landholding recorded, nor the crucial distinction made between *sawah* (irrigated land) and *tegal* (non-irrigated land). The IFLS seeks to get around the question of size—presumably in the interest of inter-community comparability—by asking the *value* of assets at the time of interview. Unless someone was interested in selling their land at the time of

interview, they are unlikely to know its approximate value. Even relatively straightforward data like construction materials of houses, or house facilities, are problematic for distinguishing households unless good comparative knowledge of the community is available.

⁶ Clifford Geertz' view of a traditionally homogenous village universe has been strongly questioned (e.g. Hart 1986; White 1983; Alexander and Alexander 1982). Critics have pointed to long-standing social cleavages in Javanese society, for example historically between descendants of village founding families (*cikal-bakal*) who had preferential access to land, and those who were landless newcomers (*numpang*); between holders of office who had rights in communal land (*tanah bengkok*) and other privileges, and ordinary villagers; between patrons and clients; or between landowners (*sikep*) and the ever-growing group of landless (e.g. Onghokham 1975; Breman 1982; Elson 1984). Studies of rural Java since the 1970s furthermore point to growing socio-economic inequalities. Under the New Order regime (1966-99), the better-off and political elite in villages have benefited from government subsidies and loans; entry into the civil service has become a highly profitable strategy for the educated young, further contributing to social and economic differentiation (Cederroth 1995). Aside from the distinction between landholders and landless, there are now sharper divisions in terms of access to work and income security (Hart 1986). Women, the elderly and the poor have fared particularly badly from increasingly exclusionary labour practices (Papanek 1983; White and Wiradi 1989, Hüsken 2001).

⁷ The early ethnographies of rural Java, like those by Hildred Geertz (1963), Clifford Geertz (1960) and Robert Jay (1969), did not attempt to give any economic basis to observations of social status differences. More recent research on rural Java has tended toward the other extreme, of employing uni-dimensional measures of socio-economic status, and focusing (almost) exclusively on control over rice land. Gillian Hart (1986), for example, identifies three 'asset classes', those who have enough land to be self-sufficient, those who have enough land to cover their staple needs, and those who have insufficient land (see also Wolf 1992; Penny and Singarimbun 1973; Hüsken 1989 who defines five socio-economic classes based on control over land). Such measures are plainly out-dated for contemporary rural society where many aspects of wealth distinction are no longer agriculturally based; they also tend to define the vast majority of villagers (75-90%) as insufficiently resourced (not *cukup*). We are only aware of one (unpublished) village study that takes into account a wide range of variables in distinguishing socio-economic groupings, namely a village baseline study undertaken by Indonesian researchers in a village not far from our East Javanese site (Team Dadapan 1988). The authors collected data on land ownership, work, housing characteristics, assets, livestock and education, and assigned weights to each variable value. The weights were then added up for each household. The resultant four groupings (high, sufficient, low, very low) are strikingly similar in size to our groupings, though because the village is poorer, the extremes are somewhat different (the rich comprise 8.4%, the poorest 24.3%). As their classification rests entirely on survey data, social status and reputation are not taken into account, which entails a danger of reifying the groupings.

⁸ Informant reports of assets, income, and expenditures, whether in survey or in-depth interview, must nonetheless be treated as estimates, not hard data. A household may contain members whose budgets are completely or partially separate, and who are

involved in exchanges with other groups. Any one member, even if he or she is trying to give an accurate statement, is likely to be in possession of only some of the relevant information.

⁹ Hence Folbre's remark that altruism is not excluded from male-female bargaining (1997:264), or Lillard and Willis's conclusion that Malaysian data support several of the hypotheses just mentioned (1997:117).

References cited:

- Alexander, Jennifer and Paul Alexander (1982), "Shared Poverty as Ideology: Agrarian Relationships in Colonial Java." *Man* (NS), 17:597-619.
- Ananta, Aris, Sugihardjo and Dodo Setiadi (1995), *Population Projection 1995-2025: East Java*. Demographic Institute, Faculty of Economics, University of Indonesia.
- Birg, Herwig, J. Brüß, E.-J. Flöthmann, E. Schröder (1998), *Bevölkerungswachstum, Binnenmigration und Waldvernichtung in Indonesien*. Bielefeld University: IBS Materialien.
- Biro Pusat Statistik (1992), *Penduduk Indonesia, Hasil Sensus Penduduk 1990*. Jakarta: BPS.
- Biro Pusat Statistik (1994), *Tren Fertilitas, Mortalitas dan Migrasi*. Jakarta: BPS.
- Bongaarts, John *et al.* (1984), "The proximate determinants of fertility in Sub-Saharan Africa." *Population and Development Review*, 9(4):152-175.
- Boomgaard, Peter (1989), *Children of the Colonial State: Population Growth and Economic Development in Java, 1795-1880*. Amsterdam: Free University Press.
- Breman, Jan (1982), "The Village on Java and the Early Colonial State." *Journal of Peasant Studies*, 9(4):189-240.
- Brüß, Joachim and Elisabeth Schröder (1997), Current Situation and Long-term Development of the Population in Indonesia. Report No. 1, Research Project *Population Growth, Internal Migration and Deforestation in Indonesia*, Institut für Bevölkerungsforschung und Sozialpolitik, Bielefeld University.
- Caldwell, John C. (1976), "Toward a Restatement of Demographic Transition Theory." *Population and Development Review*, 2:321-66.
- Cameron, Lisa (1997), *Income Inequality in Java: Relating the Increases to the Changing Age, Educational and Industrial Structure*. Department of Economics Research Paper No.574, University of Melbourne, Australia.
- Cameron, Lisa (2000), "The Residency Decisions of Elderly Indonesians: A Nested Logit Analysis." *Demography*, 37(1):17-27.
- Cameron, Lisa and Deborah Cobb-Clark (2001), *Old-Age Support in Developing Countries: Labor Supply, Intergenerational Transfers and Living Arrangements*. Working Paper, Department of Economics, University of Melbourne.
- Cederroth, Sven (1995), *Survival and Profit in Rural Java. The Case of an East Javanese Village*. Surrey: Curzon Press.
- Chen, Ai Ju and Gavin Jones (1989), *Ageing in ASEAN: Its Socio-Economic Consequences*. Singapore: Institute of Southeast Asian Studies.

- Cho, Lee-Jay, Robert Retherford and Minja Kim Choe (1986), *The Own-Child Method of Fertility Estimation*. Honolulu, Hawaii.
- Dasvarma, G.L. and Terence H. Hull (1984), "Estimation of Fertility in Indonesia 1980 from Last Live Birth Data." *Majalah Demografi Indonesia*, 22:33-47.
- Deaton, Angus (1997), *The Analysis of Household Surveys*. Baltimore: World Bank and Johns Hopkins.
- Elson, Robert E. (1984), *Javanese Peasants and the Colonial Sugar Industry, Impact and Change in an East Java Residency, 1830-1940*. Singapore: Oxford University Press.
- Folbre, Nancy (1997), "Gender Coalitions: Extrafamily Influences on Intrafamily Inequality", in L. Haddad *et al.* (eds.), *Intrahousehold Resource Allocation*. Baltimore: Johns Hopkins, pp. 263-274.
- Geertz, Clifford (1960). *The Religion of Java*. Chicago: University of Chicago Press.
- Geertz, Clifford (1963), *Agricultural Involution: The Process of Ecological Change in Indonesia*. Berkeley: University of California Press.
- Geertz, Hildred (1961), *The Javanese Family: A Study of Kinship and Socialization*. New York: Free Press of Glencoe.
- Guyer, Jane I. (1997), "Endowments and Assets: The Anthropology of Wealth and the Economics of Intrahousehold Allocation", in L. Haddad *et al.* (eds.), *Intrahousehold Resource Allocation*. Baltimore: Johns Hopkins, pp. 112-125.
- Hart, Gillian (1986), *Power, Labor, and Livelihood: Processes of Change in Rural Java*. Berkeley: University of California Press.
- Hermalin, Albert (1999), Ageing in Asia: Facing the Crossroads. Paper prepared for *Annual Conference of the British Society of Population Studies*, 6-8th September 1999, University College, Dublin.
- Hirschman, Charles and Philip Guest (1990), "The Emerging Demographic Transitions of Southeast Asia." *Population and Development Review*, 16(1):121-152.
- Hugo, Graeme, T. Hull, V. Hull and G. Jones (1987), *The Demographic Dimension in Indonesian Development*. Singapore: Oxford University Press.
- Hull, Terence and Tukiran (1976), "Regional Variations in the Prevalence of Childlessness in Indonesia." *Indonesian Journal of Geography*, 6 (32):1-25
- Hüsken, Frans (1989), "Cycles of Commercialization and Accumulation in a Central Javanese Village", in G. Hart, A. Turton and B. White (eds.), *Agrarian Transformations: Local Processes and the State in Southeast Asia*. Berkeley: University of California Press, pp. 303-331.
- Hüsken, Frans (2001), Social Change and Support Systems: Gondosari Revisited. Paper given at 3rd Euroseas Conference, SOAS 6-8th September 2001, London.
- Jay, Robert (1969). *Javanese Villagers: Social Relations in Rural Modjokuto*. Cambridge MA: M.I.T. Press.
- Jones, Gavin (1992), Divorce in Islamic Southeast Asia. Working Papers in Demography No.36, Research School of Social Sciences, The Australian National University.
- Josselin de Jong, J. P. B. de (1952), *Levi-Strauss's theory on kinship and marriage*. Leiden: E.J. Brill.
- Kasmiyati and Andrew Kantner (1998), Regional Patterns of Fertility in Indonesia: Evidence from the 1991 and 1994 Indonesia Demographic and Health Surveys. East-West Center Working Papers, Population Series No. 99.
- Koentjaraningrat, R.M. (1957), A Preliminary Description of the Javanese Kinship System. Cultural Report Series, Southeast Asia Studies. Yale University.

- Lillard, Lee and Robert Willis (1997), "Motives for Intergenerational Transfers: Evidence from Malaysia." *Demography*, 34(1):115-34.
- Livi-Bacci, Massimo (1992), *A Concise History of World Population*. Cambridge MA: Blackwell Publishers.
- Lutz, Wolfgang and Warren Sanderson (2000), Toward a Concept of Population Balance Considering Age-Structure, Human Capital, and Intergenerational Equity. Paper presented at Conference *Age Structural Transitions and Policy Implications*, 8-10th November 2000, Phuket, Thailand.
- McNicoll, Geoffrey and Masri Singarimbun (1986), *Fertility Decline in Indonesia: Analysis and Interpretation*. Yogyakarta: Population Studies Centre, Gadjah Mada University.
- Ongkhokham (1975), *The Residency of Madiun: Pnyayi and Peasant in the Nineteenth Century*. Unpublished Ph.D. thesis, Yale University.
- Papanek, Hannah (1983), "Implications of Development for Women in Indonesia: Research and Policy Issues", in K. Staudt and J. Jaquette (eds.), *Women in Developing Countries*. New York: Haworth.
- Penny, D. and M. Singarimbun (1973), *Population and Poverty in Rural Java: Some Economic Arithmetic from Sriharjo*. Cornell International Agricultural Development Monograph No.41, Cornell University, Ithaca.
- Pool, Ian (2000), Age Structural Transitions and Policy: Frameworks. Paper presented at Conference on *Age Structural Transitions and Policy Implications*, 8-10th November 2000, Phuket, Thailand.
- Schröder-Butterfill, Elisabeth and Philip Kreager (2003), Actual and *De facto* Childlessness in East Java: A Preliminary Analysis. Oxford Institute of Ageing Working Paper, Oxford.
- Scott, James (1976), *The Moral Economy of the Peasant*. New Haven: Yale University Press.
- Sen, Amartya (1989), "Cooperation, Inequality, and the Family." *Population and Development Review*, 15 (Suppl.):61-76.
- Stecklov, Guy (1997), "Intergenerational Resource Flows in Côte D'Ivoire: Empirical Analysis of Aggregate Flows." *Population and Development Review*, 23(3):525-553.
- Susila, Marsaid (1984), "Public Health Development in Indonesia", in John Miles (ed.), *Public Health Progress in the Pacific: Geographical Background and Regional Development*. Helmstedt: Dr. Wolf Tietze Geowissenschaftliche Gesellschaft, pp. 5-24.
- Szreter, Simon (1993), "The Idea of Demographic Transition and the Study of Fertility Change: A Critical Intellectual History." *Population and Development Review*, 19(4):659-701.
- Team Dadapan (1988), *Studi Baseline 1987 Desa Dadapan Jawa Timur: Dasar Analisa Perubahan Sosial dan Perkembangan Pedesaan*. Working Paper No. 5, Pusat Pengembangan Ilmu-Ilmu Sosial, Universitas Brawijaya, Malang, Indonesia.
- U.S. Census Bureau (2000), International Data Base, <http://www.census.gov/ipc/www/idbpyr.html>
- Uhlenbeck, E.M. (1978), "The Use of Respect Forms in Javanese", in E.M.Uhlenbeck, *Studies in Javanese Morphology*. The Hague: Martinus Nijhoff, pp. 300-320.
- United Nations (1994), *The Sex and Age Distribution of the World Populations. The 1994 Revision*. New York: United Nations.

- Vaessen, Martin (1984), Childlessness and Infecundity. *World Fertility Survey Comparative Studies*, No. 31. International Statistical Institute, Voorburg, The Netherlands.
- Van der Sterren, Anke, Alison Murray, and Terry Hull (1997), "A History of Sexually Transmitted Diseases in the Indonesian Archipelago since 1811", in M. Lewis, S.Bamber and M. Waugh (eds.), *Sex, Disease and Society: A Comparative History of Sexually Transmitted Diseases and HIV/AIDS in Asia and the Pacific*. Westport: Greenwood Press, pp. 203-230.
- White, Benjamin (1983), "'Agricultural Involution' and its Critics: Twenty Years After." *Bulletin of Concerned Asian Scholars*, 15(2):18-31.
- White, Benjamin and Gunawan Wiradi (1989), "Agrarian and Non-Agrarian Bases of Inequality in Nine Javanese Villages", in G. Hart, A. Turton and B. White (eds.), *Agrarian Transformations, Local Processes, and the State in Southeast Asia*. Berkeley: University of California Press.
- Willis, Robert (1988), "Life cycles, Institutions, and Population Growth: A Theory of the Equilibrium of Interest in an Overlapping Generations Model", in R.D. Lee *et al.* (eds.), *Economics of Hanging Age Distributions in Developed Countries*, Oxford: Oxford University Press, pp. 106-138.
- Wolf, Diane (1992), *Factory Daughters: Gender, Household Dynamics, and Rural Industrialization in Java*. Berkeley: University of California Press.
- World Bank (1994), *World Population Projections 1994-1995 Edition. Estimates and Projections with Related Demographic Statistics*. Baltimore: The World Bank.