for the n^h individuals in household *h.* Such a form allows decentralized budgeting over members subject to central (parental) control over members' budgets. Presumably the problems normally inherent in making interpersonal comparisons of welfare are not severe within a family since, typically, such allocations seem to be made in a satisfactory manner. Building on this idea, Muellbauer (1976c) has suggested that utility is equalised within the family (e.g. for a maximin social welfare function), so that if y *r(u, p)* is the cost function for individual *r,* the family cost function is given by

$$ch(it,P)= \sum_{r=1}^{n^k} Yr(u,P)=x, \tag{85}$$

which, if needs can be linked to, say, age through the y functions, would yield an applicable specification with strong restrictions on behavior. However, such models are somewhat artificial in that they ignore the 'public' or shared goods in family consumption, though suitable modifications can be made. They also lack empirical sharpness in that the consumption vectors of individual family members are rarely observed. The exception is in the case of family labor supply, see Chapter 32 of this volume.

Rather more progress has been made in the specification of needs under the assumption that the family acts as a homogeneous unit. The simplest possibility is that, for a given welfare level, costs are affected multiplicatively by some index depending on characteristics and welfare, i.e.

$$Ch^{i"h}, p, a^h)— m(ah,uh)c(uh, p), \tag{86}$$

where *c(uh, p)* is the cost function for some reference household type, e.g. one with a single adult. The index *rn(ah,uh)* can then be thought of as the number of adult equivalences generated by a^h at the welfare level u^h. Taking logarithms and differentiating (86) with respect to In *p,* gives

$$\frac{p)}{amp;} \tag{87}$$

which is independent of a^h. Hence, if households face the same prices, those with the same consumption patterns w, have the same u^h, so that by comparing their outlays the ratio of their costs is obtained. By (86), this ratio is the equivalence scale *m(ah,uh).* This procedure derives directly from Engel's (1895) pioneering work, see Prais and Houthakker (1955). In practice, a single good, food, is usually used although there is no reason why the model cannot be applied more generally under suitable specification of the *in* and *c* functions in (86), see e.g. Muellbauer