

which is a standard utility maximization problem in which the constant price utility levels $c^R(u^R, p^R)$ are the quantities and the indices $c^R(u^R, p^R)/c^R(u^R, p^R)$ are the prices. Of course, neither of these quantities is directly observable and the foregoing analysis is useful only to the extent that $c^R(u^R, p^R)$ is adequately approximated by the constant price composite $q^R \cdot p^R$ and the price index by the implicit price deflator $q^R / I^R \cdot q^R$. The approximations will be exact under the conditions of the composite commodity theorem, but may be very good in many practical situations where prices are highly but not perfectly collinear. If so, the technique has the additional advantage of justifying the price and quantity indices typically available in the national accounts statistics. An ideal solution not relying on approximations requires quantity indices depending only on quantities and price indices depending only on prices. Given weak separability, this is only possible if *either* each subcost function is of the form $c_G(u_G, p^G) = O_G(u_G) b_G(p^G)$ so that the subgroup demands (11) display unit elasticity for all goods with respect to group outlay *or* each indirect felicity function takes the "Gorman generalized polar form"

$$= F_G [x_G b_G(p^G)] + p^G, \quad (123)$$

for suitable functions F_G , b_G and a_G , the first monotone increasing, the latter two linearly homogeneous, *and* the utility function (114) or (120) must be additive in the individual felicity functions. Additivity is restrictive even between groups, and will be further discussed below, but (123) permits fairly general forms of Engel curves, e.g. the Working form, AIDS, PILL and the translog (61) if $E_k E_j \pi_{kj} = 0$. See Blackorby, Boyce and Russell (1978) for an empirical application, and Anderson (1979) for an attempt to study the improvement over standard practice of actually computing the Gorman indices. In spite of this analysis, there seems to be a widespread belief in the profession that homothetic weak separability is *necessary* for the empirical implementation of two-stage budgeting (which is itself almost the only sensible way to deal with very large systems) — see the somewhat bizarre exchanges in the 1983 issue of the *Journal of Business and Economic Statistics*. In my view, homothetic separability is likely to be the *least* attractive of the alternatives given here; it is rarely sensible to *maintain* without testing that subgroup demands have unit group expenditure elasticities. In many cases, prices will be sufficiently collinear for the problem (122) to give an acceptably accurate representation. And if not, additivity between broad groups together with the very flexible Gorman generalized polar form should provide an excellent alternative. Even failing these possibilities, there are other types of separability with useful empirical properties, see Blackorby, Primont and Russell (1978) and Deaton and Muellbauer (1980, Chapter 5).

One final issue related to separability is worth noting. As pointed out by Blackorby, Primont and Russell (1977), flexible functional forms do not in