work in development uses non-survey data. Indeed, there has been a recent explosion of empirical work on economic growth, [see for example, Barra (1991), Barro and SaIa-i-Martin (1992), Mankiw, Romer, and Weil (1992), and Levine and ReneIt (1992) for four leading examples]. Most of this work is based on (and to some extent inspired by) the internationally comparable national accounts data constructed by the international price comparion project at the University of Pennsylvania, [Kravis, Heston, and Summers (1978)], and whose latest incarnation is the Penn World Table, Mark V, [Summers and Heston (1991)]. Many researchers also use the World Development Indicators, published annually by the World Bank, and which contain, in addition to a large number of social and other indicators, a competing set of national accounts — converted at official exchange rates rather than purchasing power parity exchange rates — and which, like the Summers—Heston data, arc conveniently available on diskette. The Bank, the International Monetary Fund, the United Nations, and the International Labor Office all produce a wide range of other data relevant for development work, on trade, on •debt, on international finance, on labor, and on social and demographic indicators.

   Any sort of evaluation of this multiplicity of sources would quickly fill the whole of this Handbook. I confine myself to (a) a discussion of some of the index number problems that underlie international and intertemporal comparisons of income and output, and *(b)* a brief review of quality issues, the latter drawing on a recent set of conference papers on the topic.

1.3.1. Index number problems and international comparisons

Before looking at the *practical* quality issues, it is worth reviewing the *conceptual* index-number problems that underlie international comparisons of income and output. The actual Penn World Tables are a good deal more complex than the examples here, which are chosen to illustrate only the main points. Current price local currency GDP for country c at time t can be written as the sum of its component goods and services, or

$$Y_{c^i} \qquad \textit{Pelage-kr} \tag{18}$$

where p's are prices, q's quantities, and y is income or output. Since GDP is an aggregate of value added, not of output, we must assume that there is some quantity or quantity aggregate that represents value added, something that requires suitable separability assumptions on the structure of production [see Sims (1969) and Arrow (1974)]. However, my main concern here is with different index number problems.

   Suppose that there is some base country *b,* say, and prices are collected for