# Box D: Employment Growth – 'Matched Sample' Estimates

The Australian Bureau of Statistics publishes an estimate of employment in Australia each month, based on the Labour Force Survey in which 30 000 people are interviewed. The survey consists of eight sub-samples of roughly equal size. Each month, one of the sub-samples is rotated out of the survey and replaced by a new group of respondents, leaving seven sub-samples common to the survey in consecutive months. These seven common sub-samples, or cohorts, constitute the 'matched sample'.

The *level* of employment in Australia each month is estimated most reliably using the full sample of respondents to the Labour Force Survey. By contrast, month-to-month *changes* in employment can be estimated more reliably using the matched sample. This is because the differences in employment experience *between* cohorts at any one time are much bigger than the changes in employment experience which occur in the typical month *within* a cohort. Hence, the change in the published employment figure between two adjacent months can be strongly influenced by the differences between the employment level characterising the cohort newly introduced into the sample and that in the cohort being rotated out. The matched sample eliminates this source of variability, and therefore provides a clearer signal of employment changes over short periods; over longer periods, these sources of variability do not matter as much because the random variations cancel out.

The matched-sample results can be derived from gross-flows data from the Labour Force Survey by calculating net flows into employment in those sub-samples common to successive surveys. To obtain estimates of changes in employment that can be compared with those from the full sample, a number of adjustments to the gross flows data need to be made.[1] In the approach used here, the results are first scaled up to allow for the smaller size of the matched sample. Second, the matched sample data are independently seasonally adjusted, since the seasonal pattern of the matched and full samples differs somewhat. Finally, a constant is added to ensure that average monthly employment growth since 1980 is equal in two samples.[2] This avoids a slight tendency of understatement stemming from the implicit assumption of zero population growth in the matched sample results, and also allows for any systematic difference in individuals' responses when they are surveyed for the first and subsequent times.

Graph D1

Employment
Three-month on three-month percentage change

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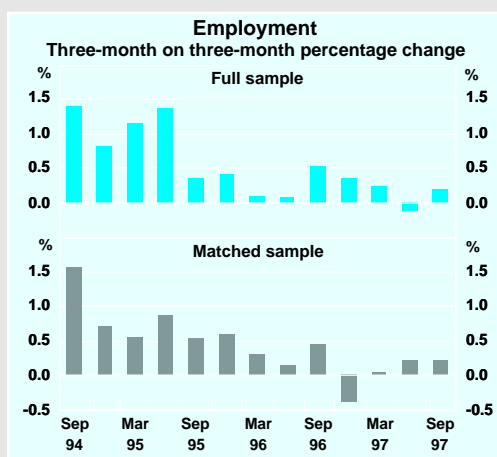
1. The adjustments made here are done at a high level of aggregation and more complicated approaches are possible.
2. Seasonal adjustment and constant-addition are performed separately for respondents in full-time and part-time work, and the results are then aggregated.

Estimates of employment growth from the matched sample developed, as described above, are compared in Graph D1 with estimates from the published employment data. Although the two estimates tend to move together over the medium term, they can differ from one another over short periods. The matched sample estimates of employment growth were weaker than the published series in late 1996 and early 1997, presaging a weakening in the published series later in 1997. More recently, the matched sample estimates have been suggesting a modest pick-up in employment growth.