

The New Family Resources Survey Grossing Regime

Introduction and Summary

This paper describes the changes being made to the Family Resources Survey (FRS) grossing regime, and compares the results of the old and new regimes for key statistics based on the FRS.

Details of the new and old regimes are provided, together with an outline of the investigations undertaken that led to the new regime. This is followed by analysis of the effects of the changes in the regime on key statistics.

The key changes to the grossing system are:

- a move to post-Census data
- the abandonment of controls on numbers of couples and single people by broad age band in favour of controls on numbers of individuals by narrower age band, and sex
- the introduction of population controls at Government Office Region

Grossing factors based on the new system have been issued with the 2003-04 FRS data. These incorporate both an enhanced set of control totals and data on a post-Census basis.

The new regime does take on board the results of the 2001 Census, through the control totals used, to the extent that this was possible at the end of 2004. Some pre-Census figures have been used for the total number of households, pending revisions to historical data up to 2000 and household projections beyond 2002. All other figures are post-Census (or not affected by the Census, e.g. because they are based on administrative or other data).

This review has focussed on the Great Britain grossing regime; the regime employed for Northern Ireland grossing is not affected by these changes.

Background

Since 2000, Department for Work and Pensions statisticians, in consultation with other departments, have been reviewing the grossing methodology for the DWP Family Resources Survey (FRS).

As part of this review an interim grossing regime was introduced in December 2002 with the release of the 2001-02 FRS. This was a modest revision primarily targeted at improving low income estimates for Scotland.

Further work was also commissioned to look at other areas of concern and interest. These included the potential for introducing regional controls to improve the

robustness of FRS analysis at a Government Office Region (GOR) level; the potential for addressing the perceived bias in terms of worklessness in the FRS compared to the Labour Force Survey (LFS); and the potential for abandoning the use of cohabitation factors in the derivation of controls from population estimates.

This additional review work has now been completed and has resulted in a new grossing regime. The following sections set out the previous and new methodologies, summarise the findings of the review work, and describe the impacts of the changes.

The previous FRS grossing regime

The regime in place up to and including results from the 2002-03 FRS, used the following control totals:

For Scotland separately, and England and Wales (combined):

- Single males <35
- Single males 35-59
- Single males 60+
- Couples, males aged <65
- Couples, male aged 65+
- Single females <35
- Single females 35-64
- Single females 65+
- Total dependent children
- Total Families with children

At GB level:

- Male lone parents
- Female lone parents

Total households analysed three ways:

- By broad Council Tax band
- Geographically – London, Scotland and “the Rest of England & Wales”
- By tenure

The controls at Scotland level were introduced with the 2001-02 FRS dataset, as an interim solution to issues raised by the Scottish Executive regarding monitoring of children in poverty [the numbers were proving volatile before Scotland-level controls were introduced].

The new grossing regime

The main changes in the new grossing regime are a shift to population counts by age and sex, and a breakdown of the population estimates to GOR level. The control totals are as follows.

At GOR level:

- Males in the following age groups:
 - 0-9
 - 10-19 dependents
 - 16-24 non-dependents
 - 25-29
 - 30-34
 - 35-39
 - 40-44
 - 45-49
 - 50-59
 - 60-64
 - 65-74
 - 75-79
 - 80 plus

- Females in the following age groups:
 - 0-9
 - 10-19 dependents
 - 16-24 non-dependents
 - 25-29
 - 30-34
 - 35-39
 - 40-44
 - 45-49
 - 50-59
 - 60-69
 - 70-74
 - 75-79
 - 80 plus

For Scotland separately, and England and Wales (combined):

- Total Families with children

At GB level:

- Male lone parents
- Female lone parents

Total households analysed three ways:

- By broad Council Tax band
- Geographically – London, Scotland and “the Rest of England & Wales”
- By tenure

The new regime is therefore a mixture of some controls at a GOR level, some at a GB level, and some that separate out Scotland and in one case, London: only the population counts are at GOR level.

The findings of the review

Cohabitation vs a finer age breakdown

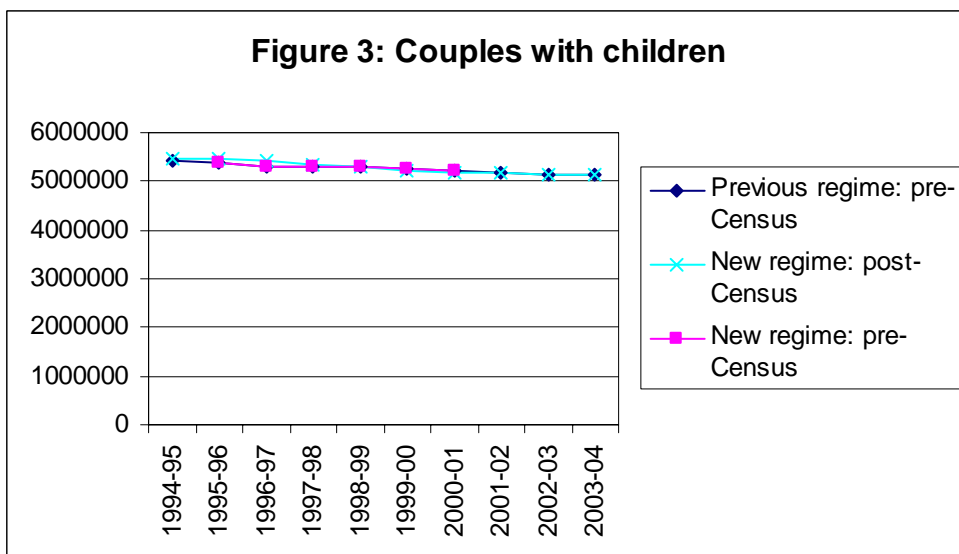
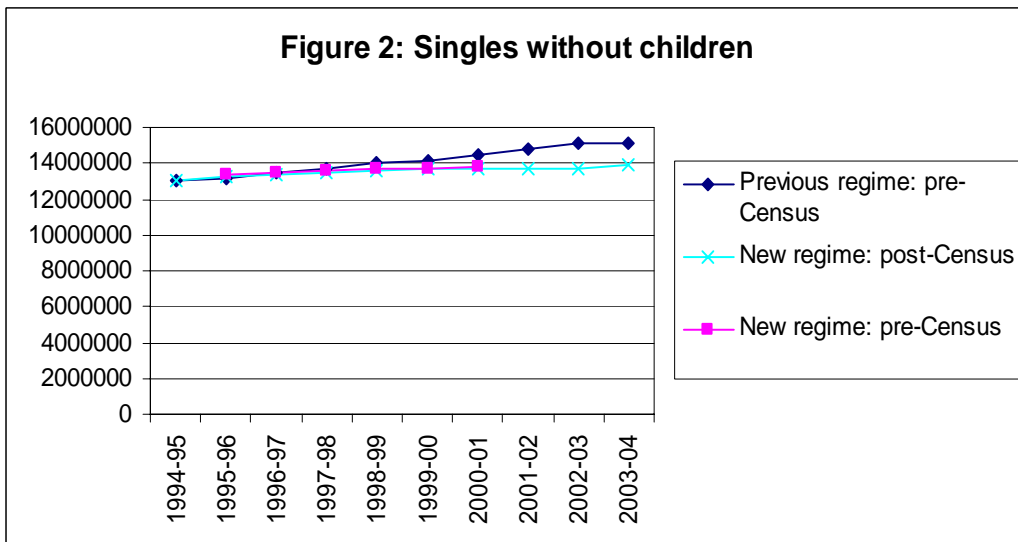
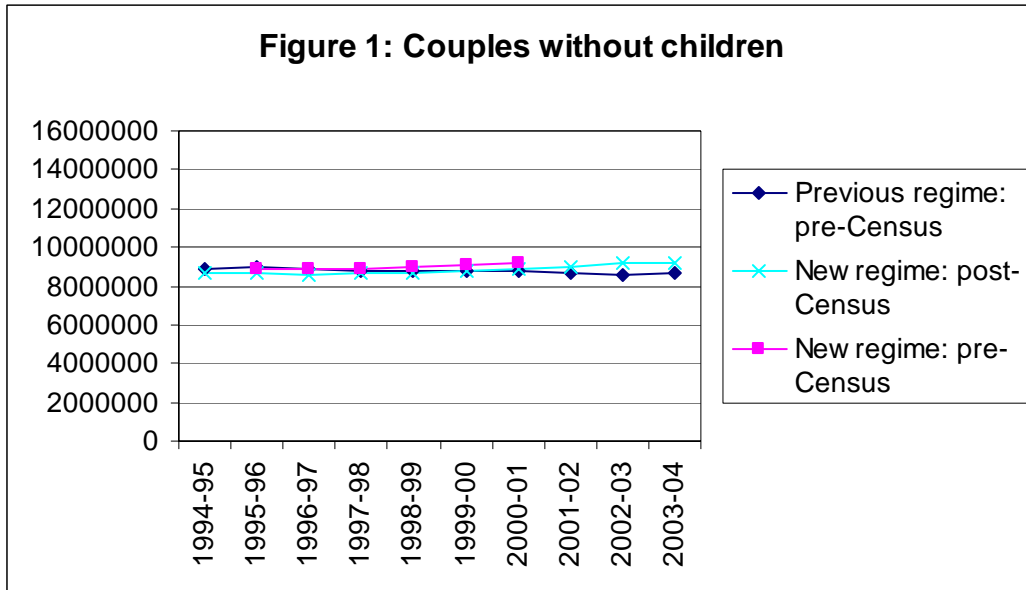
The first area considered was whether we could move from grossing based on family units (singles and couples) towards numbers of individuals by age and sex, using a finer age breakdown. The main reason for this question arising was the way in which estimates of numbers of couples and singles were derived. The designation of “singles” and “couples” needed to be based on living arrangements rather than [legal] marital status. The calculation of these controls was based on population estimates by legal marital status, available routinely from the Office for National Statistics (ONS), together with a set of “cohabitation factors” which were used to adjust the legal marital status estimates to a de facto marital status basis. These cohabitation factors were based on data from around 1996, with the result that the FRS was effectively being constrained to 1996 cohabitation rates.

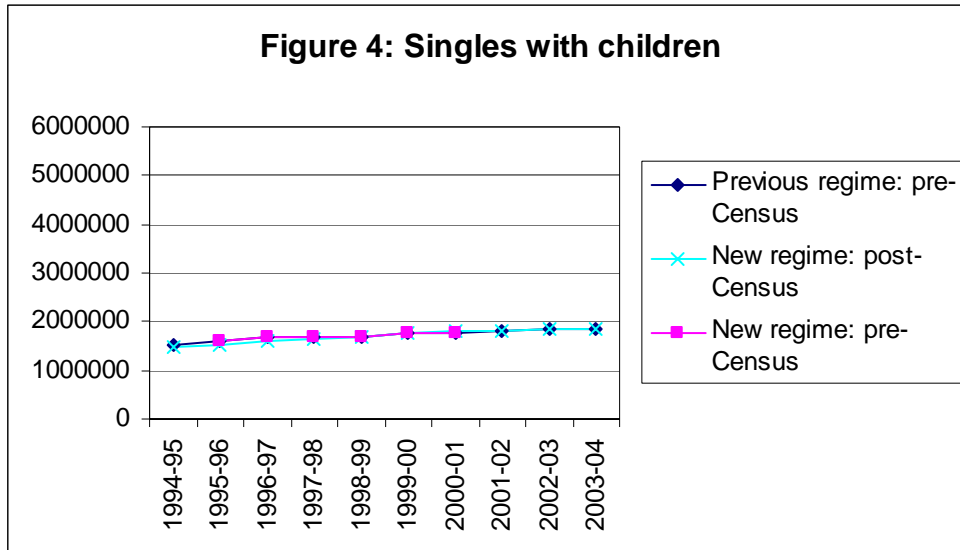
An alternative methodology, proposed by ONS methodologists, was to move towards controls based on counts of individuals by age and sex, which would mean that the cohabitation pattern would not be constrained [or at least not directly].

Evidence from this stage of our analysis indicated that when we constrained to individuals rather than family groups, we saw different trends from when we constrained the grossing to family groupings. Our inference was that the FRS was exhibiting variations in cohabitation rates over time, and given the corroborative evidence from other sources, we concluded we would therefore be better off using population counts by age and sex, rather than family groupings.

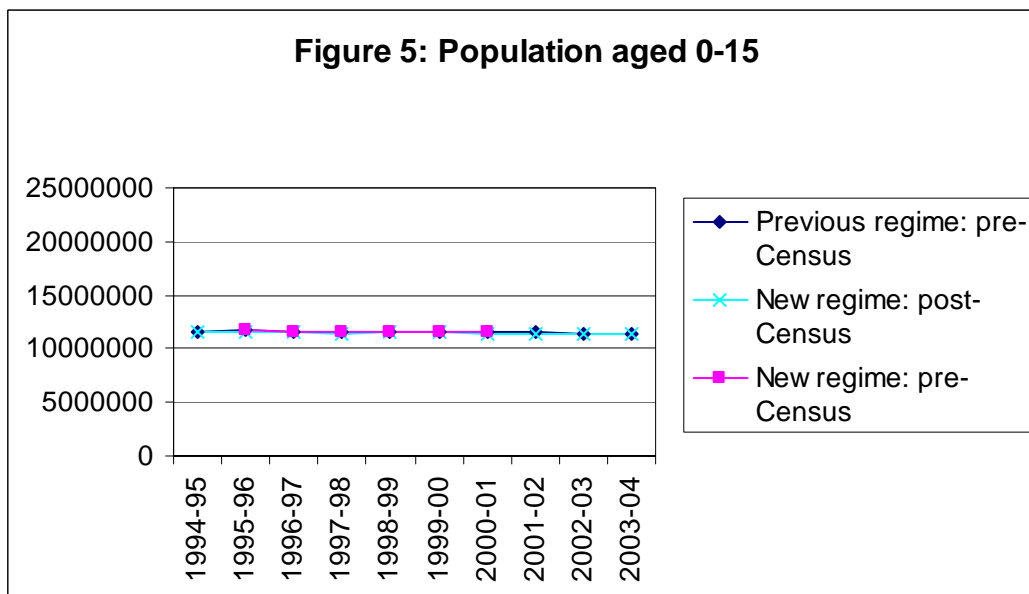
The impact of the changes to the grossing regime in terms of numbers of couples and singles is illustrated in the following charts. The results for the ‘new regime pre-Census’ do not cover the full period, due to the availability of the required information.

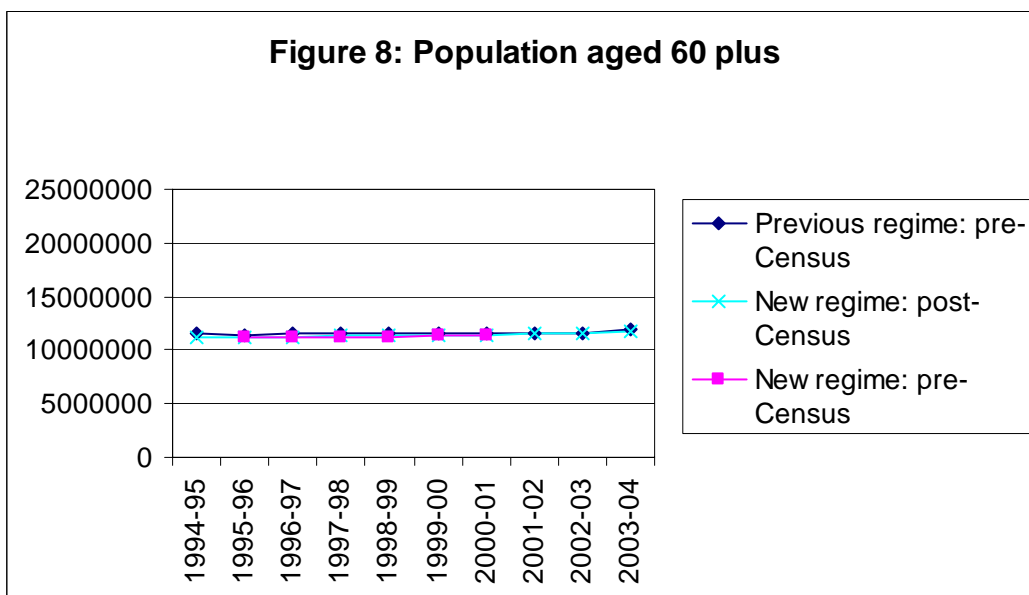
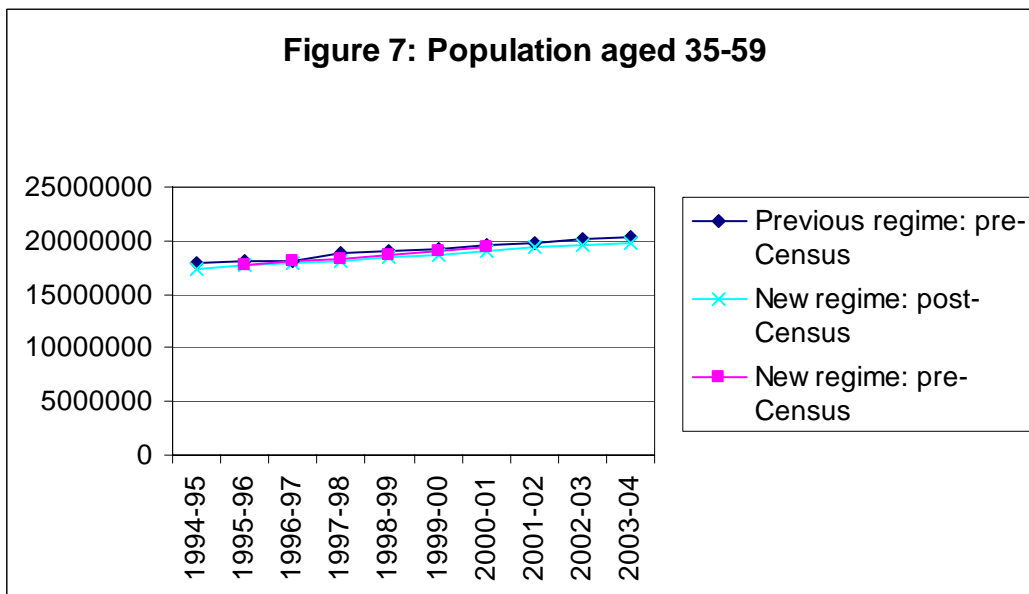
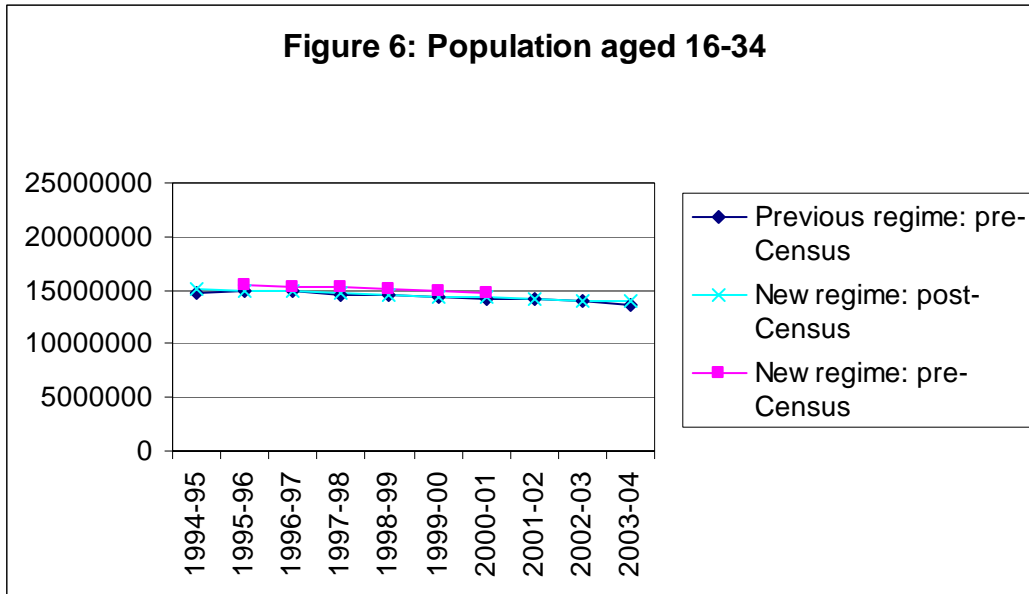
Note that both previous and new regimes use controls on singles with children (ie. lone parents) and families with children (which effectively means that couples with children are fixed as well): the latter comes from administrative data and is therefore not subject to changes emanating from the Census. Therefore changes in the series for singles or couples with children are due to changes in estimates of lone parents. These changes are due to updated and improved methodology, rather than the Census.

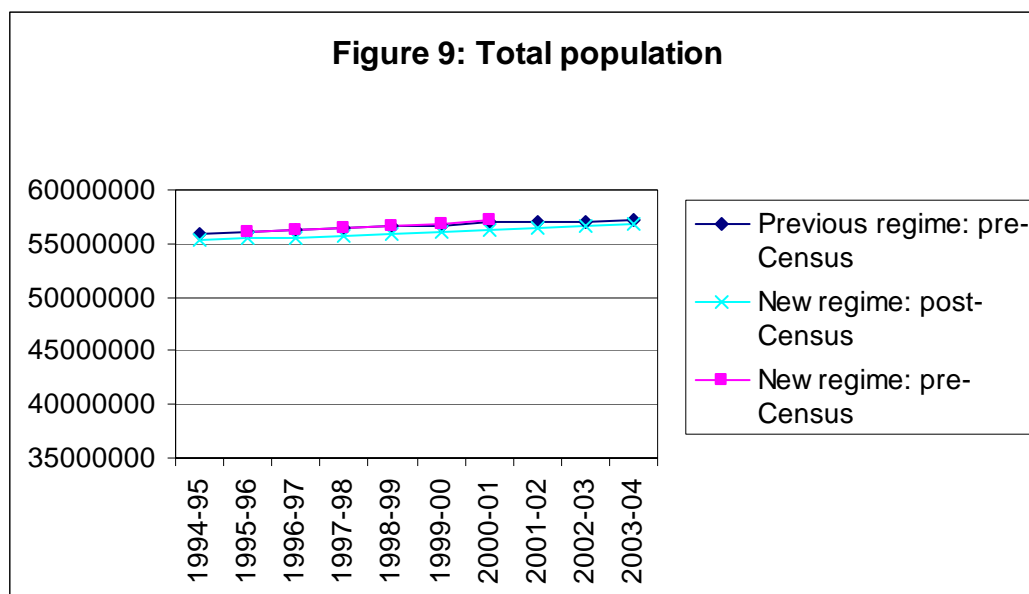




The move towards using counts of individuals rather than units has had some impact on counts of individuals derived from the FRS of course, though these are not drastic, as the following charts illustrate.







Worklessness

The second area considered by the review was whether we should adjust the FRS grossing for any potential response biases in terms of worklessness. This question arose from comparisons between the results of the FRS with those of the Labour Force Survey (LFS), with FRS indicating higher worklessness than the LFS. There was also information from the FRS non-response module [an additional set of questions asked of those who refused to take part in the main FRS questionnaire, aimed at getting basic information on household composition], which could potentially be used to adjust the main FRS results, provided we were safe in assuming that those completing the non-response module were representative of all non-responders i.e. including outright refusals and non-contacts. Results from the FRS non-response module indicated that workless households were more likely to respond to the FRS.

A key input here was to be the Census non-response work conducted by ONS, which would give an indication of the reliability of the FRS non-response module. As part of the follow-up to the Census, ONS conducted an exercise to match samples from Government surveys, including the LFS and FRS, to Census records in order to assess response biases. This involved matching of the FRS and LFS samples (including non-responding households) for the period around to Census, to the Census itself. To inform the FRS review, ONS were specifically commissioned to report on levels of worklessness in their studies of non-response for FRS and LFS.

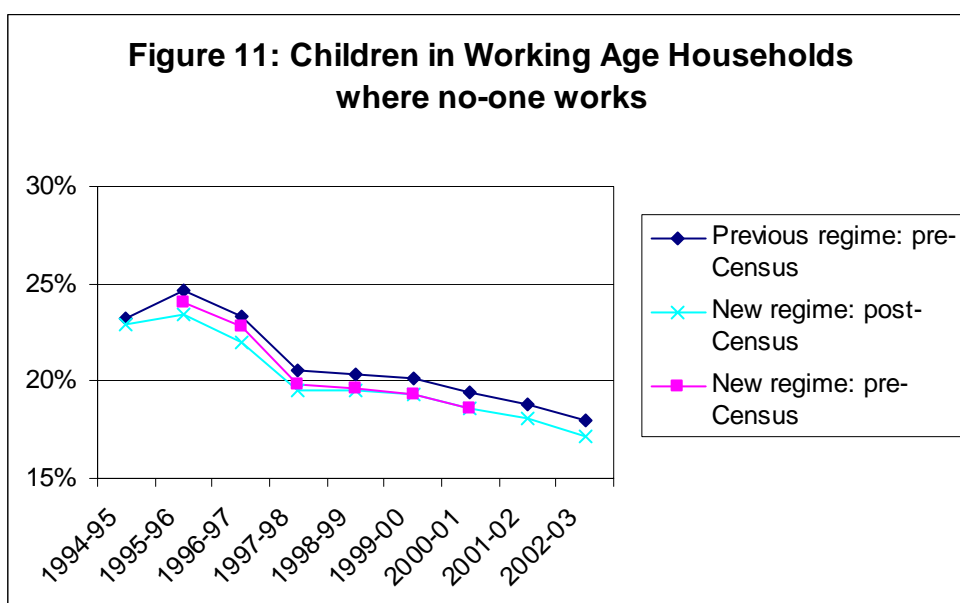
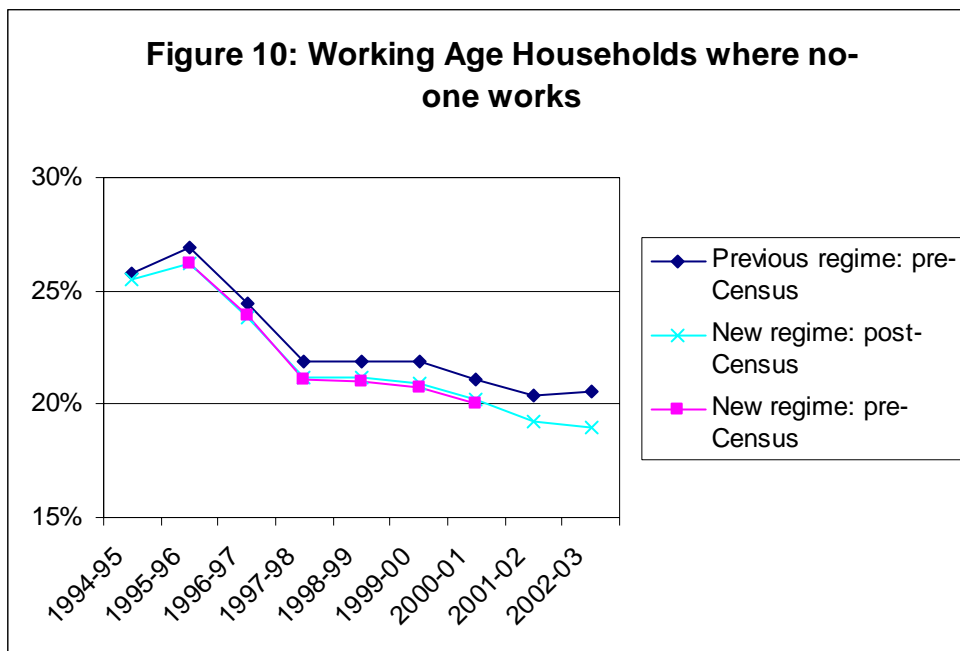
This work concluded that there was no direct evidence of a response bias in the LFS as regards worklessness for any subgroup, whereas there was evidence of response bias on the FRS, with lone parent households less likely to respond if anyone is working, and households without children more likely to respond.

Importantly however, the exercise also indicated significant differences between FRS non-responders who completed the non-response module, and those who refused or

who could not be contacted at all – the implication being that we could not reliably use the non-response results to adjust the FRS for any worklessness bias.

Our conclusion was therefore that for the time being we could not adjust for worklessness, but in the longer term we will consider using LFS worklessness results to adjust the FRS.

The new regime does however have some impact on worklessness counts, as the following charts show. Overall the proportion of working age households where no-one works has reduced, as has the proportion of children (aged 0-15 in Figure 11) in such households.



Regional grossing

The third area that the review considered was whether we could move towards using controls totals at a Government Office Region (GOR) level, given the increasing interest in area-based statistics and the moves already made (in terms of separate FRS results for Scotland, and Northern Ireland having its own survey).

The findings from the analysis undertaken here were that there seemed no technical grounds for not using regional population controls. The software used to produce grossing factors – the “calmar” algorithm put together by INSEE, the French national statistical institute – could be adapted to use the increased number of controls, and the algorithm still “converged”, meaning it could produce a set of viable grossing factors from the sample datasets and the various control totals provided to it. Population counts at a regional level were of course found to be more stable, although results do need to be treated with caution: the new regime is not a full-blown regional regime and sampling and response rate variations between regions will still affect regional-level estimates of sub-groups derived from the FRS.

Additional information on the results of the analysis undertaken on regional grossing is available on request.