Presentational and methodological improvements to National Statistics on the Crime Survey for England and Wales

Improvements to offence classifications used to present CSEW estimates, revisons to CSEW data based upon 2011 Census-based population estimates and amendments to the weighting process

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Introduction

This methodological note has been published to provide more detail about the presentational amendments and weighting updates to the Crime Survey for England and Wales (CSEW), and the impact of these improvements on the CSEW time-series.

The improvements include:

- amending some of the offence categories used to present CSEW estimates;
- incorporating 2011 Census-based population estimates in the weighting of CSEW data back to 2001/02; and
- altering the population base used in the CSEW weighting process.

The CSEW offence classification amendments follow on from changes used to present police recorded crime statistics, which were implemented in the ‘Crime in England and Wales, year ending March 2013’ release, published on 18 July 2013. The amendments to classifications used to present CSEW data have been implemented in the ‘Crime in England and Wales, year ending March 2014’ release, published on 17 July 2014. There have been no revisions to previous crime statistics publications.

The delay between publishing the changes in the presentation of police recorded crime statistics and CSEW data was due to the lengthy process of re-weighting historical CSEW data. It was more efficient to combine the presentational changes with the programme of work in re-weighting CSEW data back to 2001/02, rather than publish two sets of changes to the data series separately.

This programme of work provided an opportunity to review existing methods and processes, which has led to some additional improvements to the CSEW data. These have included resolving some minor inconsistencies with the ‘Violence with / without injury’ breakdown and the calculation of estimates under the ‘Preferred measure’ of the 2012/13 CSEW for children aged 10 to 15 (see the User Guide to Crime Statistics for England and Wales for further details about the change to the ‘Preferred measure’ in 2012/13).
Re-classification of CSEW offences

The Office for National Statistics (ONS) have refined the offence classifications used to present Crime Survey for England and Wales (CSEW) data, to provide a more coherent and consistent set of offence categories and a clearer picture for users.

This follows the National Statistician’s Review of Crime Statistics for England and Wales in June 2011 which included recommendations for improving the presentation of crime statistics to give users and the public a clearer understanding of the overall picture of crime.

Changes have been developed in response to feedback received from users of crime statistics through focus groups and a public consultation. Throughout the process, advice and views were sought from the Crime Statistics Advisory Committee. The changes take into account the importance of aligning CSEW data with the published police recorded crime data (collected by the Home Office) and having a consistent time series to provide clear historical context to latest figures.

The full public consultation, which included details of the planned changes to the presentation of CSEW data and a summary of responses, is available here: ‘Future dissemination strategy for the publication of National Statistics on Crime in England and Wales’.

There has been no change to the coverage of offences in the CSEW data series; all changes are presentational, with some offence classifications being moved out of previous groupings and presented as separate offence categories.

Summary of main changes

Changes to the CSEW data can broadly be divided into those that:

- aim to improve public understanding of crime statistics; and
- are designed to improve the coherence of CSEW data with police recorded crime data.

Changes aimed to improve public understanding of crime statistics

- Moving ‘Domestic burglary in a non-connected building to a dwelling’ out of the ‘Other household theft’ category. This presents a clearer picture for users by grouping burglary categories more sensibly and creating a (total) ‘Domestic burglary’ category.

- Separating out attempted thefts in the ‘Theft from the person’ category. This presents a clearer picture for users by explicitly separating out attempted thefts in this category, mirroring the presentation of attempted thefts in the ‘Domestic burglary’ and ‘Vehicle-related theft’ categories.
Changes designed to improve the coherence of CSEW data with police recorded crime data

- **Moving away from headline categories of ‘Household crime’ and ‘Personal crime’ to categories based on more specific crime types.** Instead, crime categories will be used to group CSEW offences (see creation of ‘Theft offences’ below). This approach moves towards the one taken to present police recorded crime data and means there will be consistent labelling between the two series.

- **Introducing a high-level categorisation of ‘Theft offences’.** This presents a clearer picture for users by explicitly grouping together all theft offences and clearly outlining how the category total is defined. This approach also provides consistency with the police recorded crime series.

- **Moving robbery out of the ‘Violence’ category into a separate standalone category.** Previously, robbery was categorised within CSEW violence. Recognising the distinctive nature of robbery (which could be considered to be a violent-type offence or a theft-type offence), it is now presented in a standalone category, as in the police recorded crime data.

- **Re-labelling the ‘Vandalism’ category as ‘Criminal damage’.** This labelling is consistent with the labelling in the police recorded crime series.

These changes to the presentation of CSEW data were referenced in the consultation papers, available here: ‘Future dissemination strategy for the publication of National Statistics on Crime in England and Wales’.

There have been no changes to the ‘Other theft of personal property’, ‘Vehicle-related theft’ and ‘Bicycle theft’ categories, and the re-classifications have had no effect on the total volume of CSEW crime.

**Classification changes in detail**

While the coverage of offences in the CSEW data series has not changed, the movement of some summary categories has meant that some totals have changed. For all categories, a back-series has been created so that long-term trends are consistent across the history of the CSEW.

There have been no offence classification changes to the children aged 10 to 15 CSEW data series other than a re-labelling of ‘Vandalism’ as ‘Criminal damage’, so as to be consistent with the core survey.

**All CSEW crime**

While there has been no change in the total volume of crime measured by the CSEW, the creation of a new ‘Theft offences’ category and a separate standalone category for ‘Robbery’ mean that ‘All CSEW crime’ (Figure 1) now comprises:

- Violence;
- Robbery;
The trend in ‘All CSEW crime’ is primarily driven by trends in ‘Theft offences’ due to the largest volume of offences falling within this category; ‘Theft offences’ comprised 58% of total crime measured by the CSEW in 2012/13 and this proportion has remained reasonably consistent over time (ranging between a high of 65% in 1991 and a low of 52% in 2006/07). ‘Theft offences’ has been broadly declining year-on-year since reaching its peak level in 1995.

For the majority of the CSEW’s history, ‘Criminal damage’ has been the second largest contributor to ‘All CSEW crime’; between 1995 and 1999, ‘Violence’ briefly overtook ‘Criminal damage’. However, in recent years, these two offence categories have been approaching similar volumes; both constituted 20% of the total volume of crime measured by the CSEW in 2012/13.

‘Robbery’ has comprised only a small proportion of ‘All CSEW crime’ since the survey began; 2% in 2012/13, with a peak of only 3% in 2009/10.

**Violence and robbery**
Robbery is an offence in which force or the threat of force is used either during or immediately prior to a theft or attempted theft. Given the use (or threat) of force involved, it could be argued that
robbery should be classed as a violence-type offence. However, given that the primary purpose for committing a robbery is to steal, it could equally be argued that robbery should be classed as a theft-type offence. Previously, robbery was categorised within CSEW violence.

Given the distinctive nature of robbery, and to provide consistency with its presentation in police recorded crime statistics, robbery has now been removed from the ‘Violence’ category and is presented as a separate standalone category.

‘Violence’ (Figure 2) now comprises:

- Violence with injury; and
- Violence without injury.

Figure 2: Trends in CSEW violence, 1981 to 2012/13

The effect of moving robbery offences out of the ‘Violence’ category is a decrease in the volume of offences of 201,000 (11%) in 2012/13. However, given that the trend for robbery has remained flat across the history of the CSEW, the trend for ‘Violence’ remains very similar with the overall drop in violent crime being 55% (old classification) and 57% (new classification) respectively between the peak in 1995 and 2012/13.
As a result of moving robbery out of the ‘Violence’ category, the ‘Violence without injury’ category and previously presented ‘Assault without injury’ sub-category are now equivalent. To avoid confusion by duplicating data in output tables, the previously presented ‘Assault without injury’ sub-category has been removed.

The estimates presented in the main time-series tables relate to offence types. A previously presented breakdown within the ‘Violence’ category relating to the offender-victim relationship (Domestic violence / Acquaintance / Stranger) has been removed from the main time-series tables and is now published in a separate time-series table (Appendix Table A6). This aims to avoid confusion caused by potentially double-counting two separate breakdowns of the same category in the same table.

**All theft offences**

A ‘Theft offences’ category has been created, spanning offences that were previously grouped into ‘Personal crime’ and ‘Household crime’. This approach moves towards the one taken to present police recorded crime data and means there will be consistent labelling between the two series. Additionally, this helps to present a clearer picture for users by explicitly grouping together all theft offences and clearly outlining how the category total is defined.

‘Theft offences’ (Figure 3) comprises:

- Theft from the person;
- Other theft of personal property;
- Domestic burglary;
- Other household theft;
- Vehicle-related theft; and
- Bicycle theft.
Until more recently, the trend in ‘Theft offences’ has been primarily driven by trends in ‘Vehicle-related theft’ due to the largest volume of offences falling within this category; ‘Vehicle-related theft’ comprised 37% of ‘Theft offences’ at the latter’s peak in 1995. Since then, ‘Vehicle-related theft’ has fallen dramatically, comprising 21% of ‘Theft offences’ in 2012/13.

Over the history of the CSEW, ‘Other theft of personal property’ offences rose slightly between 1981 and 1995 (its peak), then steadily declined, before flattening out from around 2007/08 onwards. They constituted 20% of ‘Theft offences’ in 2012/13.

‘Other household theft’ offences have shown a similar trend to ‘Other theft of personal property’ offences up until 2007/08, after which, rather than flattening out, there was a period of year-on-year increases until 2011/12, followed by a drop in 2012/13. They comprised 21% of ‘Theft offences’ in 2012/13.

‘Domestic burglary’ offences rose sharply between 1981 and 1993 (its peak), before declining to their initial volume level in 2004/05 and remaining at around this level since. They constituted 18% of ‘Theft offences’ in 2012/13.

‘Theft from the person’ and ‘Bicycle theft’ have consistently been low volume-level offences over the history of the CSEW and both trends have remained reasonably flat. However, due to the
decline in the ‘Theft offences’ category, they are making up greater proportions of the total; ‘Theft from the person’ and ‘Bicycle theft’ both comprised 6% of ‘Theft offences’ in 1995, rising to 11% and 9% respectively in 2012/13.

Similarly to ‘All CSEW crime’, the ‘Theft offences’ category contains a mix of personal-level and household-level offences, so it is not possible to construct incidence rates for this category.

Numbers of incidents are obtained by summing up the numbers of incidents of the six categories comprising ‘Theft offences’. Prevalence rates (proportion of the population victimised) are calculable by treating a household theft crime as a personal theft crime; the prevalence rate is the percentage of adults who have been a victim of at least one personal theft crime or have been resident in a household that was a victim of at least one household theft crime.

**Theft from the person**

A new sub-category ‘Attempted snatch or stealth theft from person’ has been created within the ‘Theft from the person’ category. This explicitly separates out attempted thefts, mirroring the presentation of attempted thefts in the ‘Domestic burglary’ and ‘Vehicle-related theft’ categories.

Previously, attempted thefts from the person were included within ‘Stealth theft from person’.

There has been no change to the volume of crime categorised as ‘Theft from the person’ (Figure 4), which now comprises:

- Snatch theft from person;
- Stealth theft from person; and
- Attempted snatch or stealth theft from person.
Figure 4: Trends in CSEW theft from the person, 1981 to 2012/13

Source: Crime Survey for England and Wales, Office for National Statistics

‘Snatch theft from person’ occurs when property that is being held or carried by someone is stolen, but only minimal / no force is used to snatch the property away. ‘Snatch theft from person’ remains unchanged; it is a low volume-level category, accounting for 12% of ‘Theft from the person’ offences in 2012/13, and its trend has remained fairly flat across the history of the CSEW.

‘Stealth theft from person’ occurs when property that is being held or carried by someone is stolen, but at the time the theft takes place, the person is unaware (and no force is used). The effect of the change to ‘Stealth theft from person’ (moving ‘Attempted snatch or stealth theft from person’ out and presenting it as a separate sub-category) is a decrease in the volume of offences of 156,000 (32%) in 2012/13. The trend in ‘Theft from the person’ has been primarily driven by trends in ‘Stealth theft from person’ due to the largest volume of offences falling within this sub-category; ‘Stealth theft from person’ comprised 59% of ‘Theft from the person’ offences in 2012/13.

The new sub-category ‘Attempted snatch or stealth theft from person’ captures unsuccessful attempts to steal property that someone is holding or carrying on their person. It comprised 29% of ‘Theft from the person’ offences in 2012/13, although its trend is more prone to year-on-year fluctuation than either ‘Snatch theft from person’ or ‘Stealth theft from person’.
Other theft of personal property
There have been no changes to the ‘Other theft of personal property’ category.

Domestic burglary
A new (total) ‘Domestic burglary’ category (Figure 5) has been created, which comprises:

- Domestic burglary in a dwelling (previously called ‘Burglary’); and
- Domestic burglary in a non-connected building to a dwelling.

The sub-category ‘Domestic burglary in a non-connected building to a dwelling’ (although not previously separately identifiable) was previously included within ‘Other household theft’. This sub-category captures thefts of property from sheds, outhouses and garages that are not connected to a dwelling. To provide greater clarity and group together burglary categories more sensibly, ‘Domestic burglary in a non-connected building to a dwelling’ has been moved into the new (total) ‘Domestic burglary’ category and made separately identifiable.

A further split of each of the burglary categories identifies:

- With entry – where the offender (with no right to) has entered a dwelling / non-connected building to a dwelling;
- With loss – where the offender (with no right to) has entered a dwelling / non-connected building to a dwelling and the victim has had property stolen;
- No loss – where the offender (with no right to) has entered a dwelling / non-connected building to a dwelling and the victim has not had any property stolen; and
- Attempts – where the offender (with no right to) has tried unsuccessfully to enter a dwelling / non-connected building to a dwelling.
The trend in overall ‘Domestic burglary’ has been primarily driven by trends in ‘Domestic burglary in a dwelling’ due to the largest volume of offences falling within this category (72% in 2012/13); that being a rise in offences between 1981 and 1993 (its peak), then a drop up until 2004/05, after which remaining reasonably flat. However, ‘Domestic burglary in a non-connected building to a dwelling’ (accounting for the remaining 28% of offences in 2012/13) has followed much the same trend.

**Other household theft**

The sub-category ‘Domestic burglary in a non-connected building to a dwelling’ (although not previously separately identifiable) was previously included within ‘Other household theft’. This sub-category captures thefts of property from sheds, outhouses and garages that are not connected to a dwelling. To provide greater clarity and group together burglary categories more sensibly ‘Domestic burglary in a non-connected building to a dwelling’ has been moved out of ‘Other household theft’.
‘Other household theft’ (Figure 6) now comprises:

- Theft from a dwelling; and
- Theft from outside a dwelling.

‘Theft from a dwelling’, in contrast to ‘Domestic burglary in a dwelling’, is where the offender has stolen property from inside a dwelling, but had the right to be there; often workmen or an acquaintance of the victim. ‘Theft from a dwelling’ comprised 10% of ‘Other household theft’ in 2012/13.

‘Theft from outside a dwelling’ is where the offender has stolen property from outside a dwelling – typically a garden – but not from inside a non-connected building to a dwelling. The majority of ‘Other household theft’ is sub-categorised as ‘Theft from outside a dwelling’ (90% in 2012/13).

Figure 6: Trends in CSEW other household theft, 1981 to 2012/13

The effect of the change to the ‘Other household theft’ category is a decrease in the volume of offences of 247,000 (20%) in 2012/13. However, given that ‘Burglary in a non-connected building to a dwelling’ (the difference between the two versions of ‘Other household theft’) is a
relatively low volume-level offence, the trend remains very similar, with a drop between its peak in 1993 and 2007/08, followed by a period of year-on-year increases between 2007/08 and 2011/12.

**Vehicle-related theft**

There have been no changes to the ‘Vehicle-related theft’ category; it still comprises:

- Theft from vehicles;
- Theft of vehicles; and
- Attempts of and from vehicles.

The majority of ‘Vehicle-related theft’ offences are sub-categorised as ‘Theft from vehicles’ (74% in 2012/13), followed by ‘Attempts of and from vehicles’ (17% in 2012/13) and ‘Theft of vehicles’ (9% in 2012/13).

**Bicycle theft**

There have been no changes to the ‘Bicycle theft’ category.

**Criminal damage**

The only alterations to the ‘Criminal damage’ category are labelling changes to be consistent with the published police recorded crime data; the category was previously called ‘Vandalism’ in the CSEW. The volume of offences recorded in this category remains unchanged.

‘Criminal damage’ in the CSEW, however, remains not directly comparable with police recorded crime ‘Criminal damage’, as police recorded crime data includes damage other than to personal / household property (for example, business property or public transport).

‘Criminal damage’ comprises:

- Criminal damage to a vehicle (previously called ‘Vehicle vandalism’); and
- Arson and other criminal damage (previously called ‘Other vandalism’).

The majority of ‘Criminal damage’ offences are sub-categorised as ‘Criminal damage to a vehicle’ (69% in 2012/13; the remaining 31% were sub-categorised as ‘Arson and other criminal damage’).

Annexes 1 and 2 illustrate the presentational changes to the CSEW offence categorisations, weighted on the pre-2011 Census-based population / household estimates, from 1981 to 2012/13.
Re-weighting of CSEW data

All Crime Survey for England and Wales (CSEW) estimates presented in the figures and tables in the Office for National Statistics’ (ONS) crime statistics publications are based on weighted data; that is, results obtained from surveying a sample of the population of England and Wales are scaled-up to represent the entire population.

Following the 2011 Census, mid-2002 to mid-2012 population estimates for England and Wales were revised. These new 2011 Census-based population estimates have been incorporated into the weighting of CSEW data from 2001/02 onwards and have led to revisions of CSEW estimates of incidents of crime (data prior to 2001/02 remain unaffected).

In addition to incorporating the 2011 Census-based population estimates, two methodological amendments have been implemented to the weighting of CSEW data to better reflect the coverage of the CSEW and the reference period to which the data relate, namely:

- Using household-resident population estimates (see ‘Methodological amendment 1’ below); and
- Linearly interpolating mid-year population and household estimates (see ‘Methodological amendment 2’ below).

Introduction to CSEW weighting

Two types of weighting are used in the CSEW sample.

First, the raw data are weighted to compensate for unequal probabilities of selection involved in the sample design. These include: the over-sampling of less populous police force areas; the selection of multi-household addresses; and the individual’s chance of participation being inversely proportional to the number of adults living in the household. Further details about the unequal selection probability compensation weighting are available in Chapter 7 of the 2012/13 Crime Survey for England and Wales Technical Report: Volume One. This weighting is conducted by TNS-BMRB (CSEW contractor) before the data are received by the ONS.

Second, calibration weighting is used to adjust for differential non-response; this weighting is conducted by the ONS upon receipt of the data from TNS-BMRB.

A review of the then British Crime Survey by survey methodology experts at ONS and the National Centre for Social Research recommended that the calibration weighting method be adopted (Lynn and Elliot, 2000). The weighting is designed to make adjustments for known differentials in response rates between different regions and different age by sex sub-groups. For example, a household containing a man aged 24 living in London may be less likely to respond than a household containing a woman aged 50 living in the South West. The procedure therefore gives different weights to different households and individuals based on their sex / age / regional composition in such a way that the weighted distribution of responding households and individuals in these households matches the known distribution in the population as a whole.
The weights are generated using an algorithm that minimises the differences between the weights implied by sampling and the final weights subject to the weighted data meeting the population controls; they are based on calibrating on population estimates / projections provided by the ONS.

The effects of calibration weights are generally small for household-level crime, but are likely to be more important for estimates of personal-level crime, as for example, young respondents generally have much higher crime victimisation rates than average but also lower response rates to the survey. However, there was only a marginal impact seen in crime trends when calibration weighting was first implemented in the 1996 survey.

A separate improvement has been implemented from 2013/14 onwards regarding survey non-response, but this has had no effect on the re-weighted CSEW back-series (2001/02 to 2012/13 data) and is outside the scope of this methodological note. Further details about the improvement to the survey non-response weighting can be found in Chapter 8 of the User Guide to Crime Statistics for England and Wales.

**Incorporating the 2011 Census-based population estimates**

The CSEW uses population estimates for two purposes: in calibration weighting (as outlined above) and in calculating the estimates for numbers of crimes.

For the calculation of estimates for numbers of CSEW incidence, rates for personal-level crimes are multiplied by estimates (or projections for the most recent time-period) of the population aged 16 and over in England and Wales and for household-level crimes by estimates (or again, projections for the most recent time-period) of the number of households in England and Wales.

In conjunction with the work to update the CSEW data based on the 2011 Census-based population and household estimates, two improvements to the methodology behind the calibration weighting and the calculation of crime estimates have been implemented. These are intended to better reflect the coverage of the CSEW and the reference periods to which the data relate.

**Methodological amendment 1: Using household-resident population estimates**

The CSEW is a face-to-face victimisation survey in which adults (aged 16 and over) resident in households in England and Wales are asked about their experiences of a range of crimes in the 12 months prior to their interview.

Previously, in the calculation of crime estimates, incidence rates for personal-level crimes were multiplied by estimates for the total population aged 16 and over in England and Wales, not just those resident in households. But the CSEW, by its very nature, does not sample from the entire adult population of England and Wales; it only interviews adults resident in households. The CSEW does not cover people living in group residences (for example, students' halls of residence and NHS nurses’ accommodation) or other institutions (for example, prisons), or homeless people – these generally account for around 2% of the total population of England and Wales aged 16 and over.
By including the non-household-resident population in the calculation of crime estimates, this assumes that the household-resident and non-household-resident populations experience similar levels of crime victimisation, and this is unlikely to be true.

Therefore, CSEW estimates have previously been calculated using marginally larger population totals than are most appropriate. It is more logical to multiply incidence rates for personal-level crimes by the household-resident only population, as this is the population the CSEW covers.

2011 Census-based household-resident only population data have been supplied to enable the calculation of CSEW estimates in accordance with this new approach; these have been incorporated into the re-weighting of the 2001/02 to 2012/13 adults (aged 16 and over) data and the re-weighting of the 2009/10 to 2012/13 children’s (aged 10 to 15) data.

CSEW data prior to 2001/02 remained unaffected, as the 2011-Census based population estimates only back-dated those since the previous Census (2001).

This has introduced a minor inconsistency in the adult CSEW time series between 1999 and 2001/02, as CSEW data for years prior to 2001/02 have not been updated to be based upon the household-resident only populations.

However, the effects of the weighting updates on the post-1999 CSEW estimates are minimal and have not altered any trends (see ‘Effect on CSEW data’). It is reasonable to assume that any amendments to pre-2001/02 CSEW estimates would also be minimal, and therefore, comparisons between post-1999 and pre-2001/02 CSEW data are still sufficiently robust.

No adjustment was necessary to the England and Wales household population data published by the Department for Communities and Local Government (DCLG) in the calculation of household-level crimes. These data already relate only to households; they exclude communal establishments (for example: students’ halls of residence; sheltered accommodation; and prisons).

**Methodological amendment 2: Using a more appropriate population reference date**

The CSEW is a face-to-face victimisation survey in which adults (aged 16 and over) resident in households in England and Wales are asked about their experiences of a range of crimes in the 12 months prior to their interview. Data are typically published for a 12-month interview period; for example, data for 2012/13 relate to interviews that took place between April 2012 and March 2013.

Figure 7 illustrates the time period that potential offences recorded by the 2012/13 CSEW could take place.
Figure 7: Reference period in one year of CSEW interviews (April 2012 to March 2013)

For 2012/13, the earliest month an interview takes place is April 2012, and because respondents are asked about crimes that took place in the 12 months prior to their interview, this means that the earliest crimes recorded by the 2012/13 CSEW occur in April 2011. Similarly, the latest month an interview takes place is March 2013, meaning the latest crimes recorded by the 2012/13 CSEW occur in February 2013. The mid point of the period ‘April 2011 to February 2013’ is March 2012, and therefore, the most appropriate population / household estimates to multiply CSEW incidence rates by, would be as at the end of March 2012.

However, published population (and household) estimates, are mid-year data; that is, for a given year, they relate to the population / households in England in Wales as at the end of June of that year. So previously, CSEW estimates for 2012/13 were calculated from mid-2012 (end of June 2012) population data.

It is possible to calculate an estimate for the population as at the end of March 2012 by linearly interpolating on two surrounding data points in the time-series. This approach is valid given that the components of population change, namely: births, deaths and net migration, can be assumed to occur equally spread out across the year (for example, not all births occur in January, or all deaths in February; rather, they occur throughout the year).

So, using the example of the 2012/13 CSEW, given end of June 2011 and end of June 2012 population estimates, estimates as at the end of March 2012 can be calculated as follows:

March 2012 = June 2011 + ((June 2012 - June 2011) * 0.75)

Population estimates as at the end of September 2011 and December 2011 could be calculated by replacing the 0.75 multiplication factor by 0.25 and 0.50 respectively.

For households, the linear interpolation was constrained to just two data points: the estimates for the number of households for mid-2001 and mid-2011; 2011 Census-based estimates for the
intermediate years were not produced by DCLG. Estimates for mid-2002 to mid-2010 were themselves linearly interpolated from the mid-2001 and mid-2011 estimates, and end-of-March estimates linearly interpolated from these. Although less accurate (having only two data points ten years apart) this approach remains valid given that in the pre-2011 Census-based estimates, the estimated numbers of households had been continually increasing (not fluctuating up and down). Also, similarly to the individual population, the creation and break-up of households can be assumed to occur equally spread out across the time period.

In future quarterly crime statistics publications from ‘Crime in England and Wales, year ending March 2014’ onwards, CSEW estimates from 2001/02 onwards will be calculated from population and household estimates that have been successively linearly interpolated onwards by three months (except for year ending June data, as the population and household estimates are already produced as at the end of June).

2011 Census-based population and household data (mid-year; as at the end of June) back to 2001/02 have been linearly interpolated to be as at the end of March to enable the calculation of CSEW estimates in accordance with this new approach; these have been incorporated into the re-weighting of the 2001/02 to 2012/13 adults (aged 16 and over) data and the re-weighting of the 2009/10 to 2012/13 children (aged 10 to 15) data.

No linear interpolation is necessary on the population estimates used for the pre-2001/02 CSEW years (1981 to 1999), because respondents were asked about their experiences of crime in that year, meaning the mid-point of the reference period for these years would be as at the end of June.

**Effect on CSEW data**

**Adults aged 16 and over**

Revisions to the individual population estimates, as a consequence of back-dating the 2011 Census data, resulted in marginally larger population estimates than had been previously published for each mid-year from 2002 to 2012; for example the mid-2012 adults (16+) population estimate increased by 240,000 (0.5%).

Ordinarily then, all new population (and household) estimates used in the calculation of numbers of incidents recorded by the CSEW would have been larger than those previously used, which would have resulted in CSEW numbers of incidents increasing in comparison to those previously published.

However, household-resident population estimates are only a subset (98% in mid-2012) of total population estimates. Additionally, although to much lesser a degree, the effect of linearly interpolating mid-year population data back to end-of-March data is to further lower the population estimates since the population of England and Wales aged 16 and over is increasing (for example, the end-of-March-2012 estimate is only 0.2% lower than the mid-2012 estimate).

The net effect of the above changes is to decrease the size of the adult (16+) population used in the calculation of CSEW estimates across all pertinent years (2001/02 to 2012/13). For example,
for 2012/13, the new population figure used in the calculation of CSEW estimates is approximately 741,000 smaller (a decrease of 1.6%) than the old population figure (Table 1).

The net effect of the above changes is also to decrease the number of households used in the calculation of CSEW estimates across all pertinent years (2001/02 to 2012/13). For example, for 2012/13, the new household figure used in the calculation of CSEW estimates is approximately 363,000 smaller (a decrease of 1.5%) than the old household figure (Table 1).

The population and household estimates used in the calculation of CSEW estimates prior to and in the ‘Crime in England and Wales, year ending March 2014’ publication for the years 2001/02 to 2012/13 are presented in Table 1.

Table 1: Population and household estimates for adults aged 16 and over in England and Wales used in the calculation of CSEW estimates, 2001/02 to 2012/13

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<td>2004/05</td>
<td>42,730,500</td>
<td>41,770,500</td>
<td>22,216,400</td>
<td>22,201,300</td>
</tr>
<tr>
<td>2005/06</td>
<td>43,142,000</td>
<td>42,170,000</td>
<td>22,427,100</td>
<td>22,369,900</td>
</tr>
<tr>
<td>2006/07</td>
<td>43,494,700</td>
<td>42,560,100</td>
<td>22,613,800</td>
<td>22,539,400</td>
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<tr>
<td>2007/08</td>
<td>43,871,900</td>
<td>42,971,300</td>
<td>22,809,900</td>
<td>22,710,300</td>
</tr>
<tr>
<td>2008/09</td>
<td>44,235,400</td>
<td>43,391,400</td>
<td>23,026,900</td>
<td>22,881,700</td>
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<tr>
<td>2009/10</td>
<td>44,554,500</td>
<td>43,752,900</td>
<td>23,224,600</td>
<td>23,051,700</td>
</tr>
<tr>
<td>2010/11</td>
<td>44,926,200</td>
<td>44,131,000</td>
<td>23,470,000</td>
<td>23,220,600</td>
</tr>
<tr>
<td>2011/12</td>
<td>45,278,500</td>
<td>44,527,900</td>
<td>23,724,900</td>
<td>23,394,300</td>
</tr>
<tr>
<td>2012/13</td>
<td>45,641,100</td>
<td>44,900,500</td>
<td>23,978,400</td>
<td>23,615,400</td>
</tr>
</tbody>
</table>

Source: Office for National Statistics

‘Old’ = Mid-year (end of June) pre-2011 Census-based estimates used in publications prior to ‘Crime Statistics, year ending March 2014’; for the ‘Individual population’ these relate to the entire population of England and Wales aged 16 and over.

‘New’ = Linearly interpolated (end of March) 2011 Census-based estimates used in the ‘Crime Statistics, year ending March 2014’ publication; for the ‘Individual population’, these relate to the household-resident population of England and Wales aged 16 and over.

All population estimates have been rounded to the nearest hundred.

Therefore, the resulting effect on the numbers of CSEW incidents is a generally small decrease on the data that were previously published. The calibration weighting process, as a result of potential changes in the age / sex structure of the population, may mean that some estimates are larger than those previously published, but the vast majority will be marginally smaller.

To give an example of the effect of these new population and household figures on the estimates of numbers of CSEW incidents in 2012/13:

- ‘Violence’ has decreased by around 42,000 offences (1.67 million; down from 1.71 million); and

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• ‘Criminal damage’ has decreased by around 27,000 offences (1.74 million; down from 1.77 million).

Annexes 2 and 3 illustrate the effect of the population and weighting changes on the new CSEW offence categorisations for adults aged 16 and over, from 2001/02 to 2012/13.

**Children aged 10 to 15**

While the net effect of using updated population estimates and the implementation of the outlined methodological changes is overall decreases in the adult populations, the opposite is true for the children aged 10 to 15 estimates. The net effect is to increase the children aged 10 to 15 populations used in the calculation of CSEW estimates across all pertinent years (2009/10 to 2012/13); this is principally owing to the size of the upward revision in the 2011 Census-based population estimates to the total population of children aged 10 to 15 (4.3%) being larger than the upward revision to the total population of adults aged 16 and over (0.5%). For example, for 2012/13, the new population figure used in the calculation of CSEW estimates is approximately 128,000 larger (an increase of 3.4%) than the old population figure (Table 2).

The population estimates used in the calculation of CSEW estimates prior to and in the ‘Crime in England and Wales, year ending March 2014’ publication are presented in Table 2.

**Table 2: Population estimates for children aged 10 to 15 in England and Wales used in the calculation of CSEW estimates, 2009/10 to 2012/13**

<table>
<thead>
<tr>
<th>CSEW year</th>
<th>Old</th>
<th>New</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009/10</td>
<td>3,862,900</td>
<td>3,969,500</td>
<td>2.8</td>
</tr>
<tr>
<td>2010/11</td>
<td>3,809,900</td>
<td>3,936,100</td>
<td>3.3</td>
</tr>
<tr>
<td>2011/12</td>
<td>3,753,900</td>
<td>3,898,500</td>
<td>3.9</td>
</tr>
<tr>
<td>2012/13</td>
<td>3,703,000</td>
<td>3,830,700</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Source: Office for National Statistics

‘Old’ = Mid-year (end of June) pre-2011 Census-based estimates used in publications prior to ‘Crime Statistics, year ending March 2014’; these relate to the entire population of England and Wales aged 10 to 15.

‘New’ = Linearly interpolated (end of March) 2011 Census-based estimates used in the ‘Crime Statistics, year ending March 2014’ publication; these relate to the household-resident population of England and Wales aged 10 to 15.

All population estimates have been rounded to the nearest hundred.

Therefore, the effect on the numbers of CSEW incidents is a generally small increase on the data that were previously published. The calibration weighting process, as a result of potential changes in the age / sex structure of the population, may mean that some estimates are smaller than those previously published, but the majority will be marginally larger.

The effect on the ‘Preferred measure’ estimates of numbers of CSEW incidents in 2012/13 is:

• ‘Violence’ has increased by 14,000 offences (479,000; up from 465,000);
• ‘Personal theft’ has increased by 10,000 offences (304,000; up from 294,000); and

• ‘Criminal damage to personal property’ has increased by 1,000 offences (34,000; up from 33,000).

Annexes 4 and 5 illustrate the effect of the population and weighting changes on the CSEW estimates for children aged 10 to 15, from 2009/10 to 2012/13.
Annexes

**Annex 1**: Trends in CSEW incidents of crime from 1981 to year ending March 2013 – original presentation and weighted on pre-2011 Census-based population / household estimates

**Annex 2**: Trends in CSEW incidents of crime from 1981 to year ending March 2013 – new presentation and weighted on pre-2011 Census-based population / household estimates

**Annex 3**: Trends in CSEW incidents of crime from 1981 to year ending March 2013 – new presentation and weighted on 2011 Census-based population / household estimates

**Annex 4**: CSEW offences experienced by children aged 10 to 15 – Preferred measure – weighted on pre-2011 Census-based population estimates

**Annex 5**: CSEW offences experienced by children aged 10 to 15 – Preferred measure – weighted on 2011 Census-based population estimates

These tables are available in ‘Presentational and methodological improvements to Crime Survey for England and Wales tables’.