

ONS 2011 Census Results for the Local Authorities of the Tees Valley – Summary Briefing

The purpose of this note is to analyse the implications of the initial results of the Office for National Statistics (ONS) 2011 Census released on 16th July 2012.

Introduction

ONS released a series of summary results from the 2011 Census which was held on 27th March 2011. The release includes the following:

- 2011 Census Population Estimates by five year age band and sex
- 2011 Occupied Households Spaces
- 2011 Census Response Rates
- Estimates of Short Term Non-UK Residents (staying three months but less than a year)

Table 1 – Headline Results

2011 Census Results	2011 Census	2011 Census	2011 Census	2011 Census
Local Authority	Resident Population	Occupied Households	Response Rates	Short Term Non-UK Residents
Darlington	105,600	46,700	94%	100
Hartlepool	92,000	40,400	94%	0
Middlesbrough	138,400	57,200	93%	700
Redcar & Cleveland	135,200	59,600	95%	0
Stockton-on-Tees	191,600	79,200	94%	200
Tees Valley	662,800	283,100	94%	1,000
England	53,012,500	22,063,400	94%	187,900

Note : All figures have been rounded to the nearest 100 – ONS have done this as there may be some changes following adjustments for disclosure control further down the line and ONS wish to avoid having to re-release any results.

All the results are available for all Local Authorities here [ONSLink01](#) and Quality Assurance (QA) packs and methodology papers can be downloaded here [ONSLink02](#). These include information on the adjustments ONS make to the estimates for the “missing” population from the original returns and the subsequent follow-up survey and adjustments for coding errors, communal establishments and over-counts. Further background and supporting documentation can be found on the “How did we do in 2011” section of the ONS Census web-site here [ONSLink03](#)

ONS have also used information supplied by Local Authorities, such as Council Tax data, Electoral Registers, Pupil Census data to help in Quality Assuring the final results.

ONS have used these to create upper and lower bounds for each age and sex group. These can all be seen in the QA Pack spreadsheet.

ONS acknowledge that the Census results are estimates and, as such, subject to errors. For the first time, ONS have calculated and published 95% confidence intervals – also available in the QA Pack spreadsheet. The ranges at Local Authority level for the Tees Valley are between +/-1.2% (Middlesbrough +/- 1,400) and +/-1.8% Hartlepool +/- 1,600). This means that, for example, if a Census were run 100 times, the population of Stockton-on-Tees (191,600), whose 95% confidence interval was +/- 1.3% (+/-2,500), would be between 189,100 and 194,100 in 95 cases.

Census results at Ward level and below will be part of the 2nd release of information due out between November 2012 and February 2013. For details of the Census release calendar see [ONSLink04](#).

HEADLINE RESULTS

2011 Census - Resident Population

“For the 2011 Census, a usual resident of the UK is anyone who, on census day 2011, was in the UK and had stayed or intended to stay in the UK for a period of 12 months or more, or had a permanent UK address and was outside the UK and intended to be outside the UK for less than 12 months.”

This is the key result that will impact on Local Authority Financial Settlements for many years to come. It also gives an indication of how well ONS have estimated the population between Censuses. ONS have invested a good deal of time and effort into improving the migration elements of the Mid Year Estimates through their Migration Statistics Improvement Programme which came to an end in March 2012.

Table 2 compares the Census results for Resident Population by five year age bands with ONS Rolled Forward Estimates (RFEs) for Census day. These are available in the QA Packs [ONSLink02](#). Figures for each of the five Tees Valley Local Authorities are available in Appendix 1.

Table 2 – 2011 Census Resident Population by Age vs ONS Rolled Forwards Estimate.

Tees Valley	2011 Census	Census Day	Census / Rolled Forward	2011 Census
	ONS	ONS	ONS	Census - RFE
Age Group	Resident Population	Rolled Forward Estimate	% Diff	Difference
0 to 4	41,500	42,100	-1.4%	-600
5 to 9	37,700	38,200	-1.3%	-500
10 to 14	39,600	38,700	2.3%	900
15 to 19	44,400	43,300	2.5%	1,100
20 to 24	44,600	45,600	-2.2%	-1,000
25 to 29	42,200	43,700	-3.4%	-1,500
30 to 34	38,100	37,100	2.7%	1,000
35 to 39	40,100	39,000	2.8%	1,100
40 to 44	46,700	46,200	1.1%	500
45 to 49	50,200	50,200	0.0%	0
50 to 54	45,800	45,800	0.0%	0
55 to 59	39,900	40,400	-1.2%	-500
60 to 64	41,100	41,700	-1.4%	-600
65 to 69	31,600	31,700	-0.3%	-100
70 to 74	27,600	27,400	0.7%	200
75 to 79	22,200	22,200	0.0%	0
80 to 84	15,900	16,100	-1.2%	-200
85 +	13,400	14,500	-7.6%	-1,100
All Ages	662,800	663,600	-0.1%	-800

The comparison with the Rolled Forwards Estimate (RFE) gives an indication of how well ONS have estimated migration since the last census in 2001. The higher the level of geography, the better the estimates will be. Overall, for the Tees Valley the Census figure is 800 lower (-0.1%) than the RFE. This is equivalent to ONS overestimating migration by 80 each year – in other words not much difference.

Certain age groups (0-4s, 16-29, Over 85s) and certain population groups (those in Communal Establishments e.g. Students, Armed Forces, Prisoners) always present problems, particularly when the sources used to track them as a proxy for population migration, are not designed for that purpose and when definitions relating to residents or household occupation are not consistent. Whilst ONS have improved their methodology for both Census and Mid Year Estimates, there are still issues on estimating migration that need further explanation and work.

The level of variation can be partly explained by the response rates for each age. These are given in Appendix 1 for each Local Authority but this is not available for the Tees Valley as a whole as ONS do not recognise it as a geographical area. However, the hardest age group to estimate are the 20-29 males who are the most mobile and the least likely to re-register with a GP if they do move – ONS' main source for tracking migration in the Mid Year Estimates.

At Local Authority level we expect to see more variation and this is discussed in Appendix 1 where each Local Authority is looked at in more detail. From Table 2 we can see there is more variation when looking at five year age bands i.e. smaller

components, and the reasons for these variations are considered after looking at why the overall Census results may differ from the Rolled Forward estimates:-

- *The 2001 base year may not be correct* - this will mean that the cohorts affected will remain wrong through the inter-censal period. ONS review the back series of Mid Year Estimates (MYEs) and if changes are needed to Mid 2001, they may then revise all estimates back to Mid 1992.
- *The 2011 Census may not be correct* – however, ONS have improved their Census methodology hugely since the 2001 Census:-
 - ONS used a more accurate and up to date address list,
 - improved targeting of resources in difficult to count areas
 - greater cooperation with Local Authorities and community groups
 - achieved 94% response rate across the country i.e. 94% of the estimated population returned a form – this reduces the variation (or error) due to non-response.
- *The Rolled Forwards Estimates (RFEs) may not be correct* - ONS roll forwards estimates using births, deaths and estimates of migration within the UK and to and from overseas
 - Estimates of births and deaths may not be correct – Births and deaths are recorded and maintained to a very high level of accuracy and so this component is discounted as a possible area of error.
 - Estimates of migration within the UK may not be correct – ONS use GP patient records as a proxy for moves within the UK and has added Student information to try to correct for lags in registering and re-registering during time away at college/University. There is an issue over list inflation but ONS use the annual changes, not the totals. Young adults, particularly males, are slow to re-register on moving and so the 16 to 30 age group would tend to be the ages where most variation exists.
 - Estimates of International Migration may not be correct – ONS have struggled with this component and have introduced various changes to their methodology to try and improve estimates at Local Authority level. Sample sizes of the main study used to estimate this, the International Passenger Survey, are very small nationally and the current method scales it up to the national total and then divides it out to Local Authorities based on a selection of administrative data sources such as National Insurance records, overseas patients on GP registers (Flag 4s) and data from Higher Education Statistical Agency (HESA).

We would expect the 2011 Census to give a better estimate of the population than the Rolled Forwards Estimates. The Census is specifically designed to count the population at a particular time while Mid Year Estimates use proxy data to estimate migration (moves between Patient registers and the International Passenger Survey) and errors accumulate over the 10 year inter-censal period.

For most age groups in the Tees Valley, the Census figures are within 1.5% of the RFEs (+ / - 600) and these tend to be for age groups where migration is lower - generally the over 40s.

The 10 - 39s and the 85+ age groups all have differences of more than 2% or less than -2% compared to the RFEs. Possible reasons for these differences are discussed below, though these are not exhaustive.

10-14s

- >Census *higher* by >2% -
 - This age group tends to be fairly settled once at Secondary school. It could be an undercount in the 2001 base (0-4s in 2001) combined with/or
 - ..higher net migration than recorded on the GP Patient Register.
 - .. an undercount of children of international migrants in the RFEs up to Census day.

15-19s

- Census *higher* by >2% -
 - The Census may be picking up students missed in Migration estimates - with the increase in take-up of Higher education in the Mid 2000s
 - Undercount in the 2001 Mid Year Estimates (5-9s in 2001)
 - Higher net migration than recorded on the GP Patient Register.
 - Undercount of children of international migrants and students in the RFEs up to Census day.

20-29s

- Census *lower* by <-2% -
 - This could be linked to the increase in students who subsequently leave the area without re-registering i.e. fewer picked up as leaving the area giving more favourable net migration from the GP Patient Register.
 - The same reason applies to young workers who leave the area and fail to re-register with a GP.
 - Alternatively, the estimates for net international migration in the Mid Year Estimates may have been too high.

30-39s

- Census *higher* by >2% -
 - This could be due to an undercount in 2001 (20-29s) – three of the five Tees Valley Authorities were adjusted for population undercount following the 2001 Census but the additional population was spread across all age groups with only a quarter of the extra population in the 20-29 age group.
 - International migration may have been too low for this age group in the RFEs.

85 +

- Census *lower* by 7.6% - due to the small size of this age group, a higher variation could be expected. The RFE could be higher due to:-
 - Not being cleaned off the GP patient register on death.
 - Moving to Care Homes / relatives outside the Tees Valley or living abroad and not informing or re-registering with a GP.
 - Census may miss the elderly if the Communal establishment in which they live, fails to include everyone living there – BUT ONS ran checks against Communal Establishments' capacities and checked where there were inconsistencies.

2011 Census - Occupied Household Spaces

“An occupied household space is defined as one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room, sitting room or dining area.”

This information will help establish how household formation has changed between the Censuses, though that cannot be looked at until the more detailed information becomes

available. Local Authority Council Tax data was used to quality assure the results and the Household population allows average household size to be calculated.

Table 3 – 2011 Census Occupied Households, Comparators and Household Size

	F	G	F / G - 1	H	H / F	I
Housing Information	2011 Census	CLG April 2011	% Difference	2011 Census	2011 Census	2001 MYE
Local Authority	Occupied Households	Council Tax - Occupied	Occupied Households	Household Population	Household Size	Household Size
Darlington	46,700	46,400	0.6%	104,100	2.23	2.27
Hartlepool	40,400	39,900	1.3%	91,100	2.25	2.34
Middlesbrough	57,200	58,100	-1.5%	136,200	2.38	2.46
Redcar & Cleveland	59,600	59,500	0.2%	133,900	2.25	2.40
Stockton-on-Tees	79,200	79,700	-0.6%	188,000	2.37	2.44
Tees Valley	283,100	283,600	-0.2%	653,300	2.31	2.39
England	22,063,400	22,064,500	0.0%	52,061,400	2.36	2.36

Note : The 2001 Mid Year Occupied Households has been used as ONS did not alter census or household counts following the Local Authority Studies [ONSLink05](#) ; an estimate was made locally for the missing occupied households as at Mid 2001.

Occupied Household Spaces

For the Tees Valley as a whole, the Council tax counts are very close to the Census results, only 500 difference (-0.2%). For the individual Authorities it varies from 1.3% above the CLG figure to 1.5% below it. Differences occur for the following reasons:-

- Duplication of households on the council tax i.e. two different names for the same address.
- Inclusion of what ONS consider communal establishments (e.g. some student halls of residence) on the council tax register.
- Properties that are un-banded (most likely to be in development but not habitable on Census day).
- Dwellings split into more than one household which hasn't been picked up by the council tax, but under Census definitions counts as more than one e.g. Granny annexe.
- Households that have been converted into a single address from two may lead to household count differences.
- Missed addresses - but this can't be checked until we get ONS Household spaces counts - ideally at postcode level.

Average Household Size

All Tees Valley Local Authorities have seen Household size fall since the last Census which shows that, in the Tees Valley, household formation has grown quicker than household population. Nationally, it has grown at the same rate and so no change has been seen, remaining at 2.36 persons per household.

Dwellings, Occupied Household Spaces and Vacancy Rates

ONS have not released the total number of household spaces (equivalent to dwellings or occupied spaces + vacant spaces) in this release but to give a guide to how vacancy rates might be looking, CLG dwelling counts for April 2011 have been used as a proxy for Census day dwellings.

Table 4 – 2011 Census Occupied Households, CLG Dwellings and Vacancy Rates

Housing Information	2011 Census	Apr-11	2011	2001 Census
Local Authority	Occupied Households	CLG Dwellings	Vacancy Rate	Vacancy Rate
Darlington	46,700	48,500	3.7%	4.6%
Hartlepool	40,400	42,100	4.0%	5.0%
Middlesbrough	57,200	60,500	5.5%	6.3%
Redcar & Cleveland	59,600	62,000	3.9%	4.1%
Stockton-on-Tees	79,200	82,600	4.1%	4.3%
Tees Valley	283,100	295,700	4.3%	4.8%
England	22,063,400	22,974,300	4.0%	3.8%

Vacancy Rate column corrected in February, 2013.

Note – the CLG Dwellings count is not the same as the ONS total household spaces. Total household spaces were not part of the 1st Release of data.

Vacancy rates

This is only a guide to possible vacancy rates for the reasons given above, but assuming the CLG counts are similar to Census, then all Tees Valley Authorities have seen a fall in Vacancy rates, except Stockton-on-Tees where it has stayed the same. Nationally, based on these figures, the vacancy rate has increased slightly with close to 1 million empty homes.

2011 Census response rates

“The number of usual residents who responded to the Census divided by the Census estimate of usual residents.”

The response rates gives an indication of how easy a particular age and sex group within a Local Authority was to run a Census. It also highlights where the largest gaps, in terms of alternative data sources, exist – the lower the response rate, the larger the adjustment needed to get the population back to its estimated level. For some Boroughs of London, it is estimated that only 70% of the 25-29 males responded to the Census. Areas of higher deprivation also tend to have lower response rates.

Internet Responses

ONS also used the internet as a method for returning census forms and this was used for roughly 1 in 6 Census forms. Internet return rates are given in Table 5.

Table 5 – 2011 Census Response Rates and Internet Return Rates

	2011 Census	2011 Census
2011 Census Results		
Local Authority	Response Rate	Internet Return Rate
Darlington	94.0%	13.8%
Hartlepool	94.0%	14.2%
Middlesbrough	93.0%	14.4%
Redcar & Cleveland	95.0%	14.0%
Stockton-on-Tees	94.0%	16.1%
Tees Valley	94.0%	14.7%
England	94.0%	16.0%

Note: As ONS do not recognise the Tees Valley as a geographical area, an estimate has been made using a population weighted average.

The Tees Valley Authorities all had response rates close to the national average of 94%, with only Middlesbrough slightly below. Internet return rates were more varied and generally lower than nationally. Darlington had the lowest internet response rate at 13.8% and Stockton-on-Tees the highest at 16.1%, in line with the national average.

2011 Census Estimates of Short Term Non-UK Residents

“Anyone born outside the UK who has stayed or intends to stay in the UK for a period of three months or more but less than twelve months.”

The 2011 Census questionnaire was designed to include short term residents in the UK – overseas visitors were not asked to complete a Census form in 2011. Information on how long they intended to stay was asked and results for “Less than 3 months”, “Between 3 months and 1 year” or “More than 1 year” were collected. ONS Mid Year Estimates and Projections only include the “resident” population which excludes anyone living or intending to live, in the UK for less than 1 year.

ONS have started releasing estimates of Short Term Non-UK Residents using information from the International Passenger Survey and using administrative data sources such as HESA (Students) and GP Registers to distribute them to Local Authorities. For the Mid-2008 to Mid-2010 Estimates see [ONSLink06](#).

Table 6 – Short term Non-UK Residents

	2011 Census	ONS STM Estimates
2011 Census Results		Mid 2010
Local Authority	Short Term Non-UK Residents	Short Term Migrants
Darlington	100	0
Hartlepool	0	0
Middlesbrough	700	300
Redcar & Cleveland	0	0
Stockton-on-Tees	200	100
Tees Valley	1,000	400
England	187,900	113,000

Note : The ONS Short Term Migrants (STM) estimate only includes Students and Workers.

The Tees Valley has very low numbers of Short Term Migrants (STMs), though the Census has picked up more Short Term Non-UK residents in the Census than were estimated by ONS for Mid-2010; similarly for the national figure. However, the ONS STM estimates are only for Workers and Students and so will exclude other categories of visitors.

Alternatively, the International Passenger Survey, the source for the STM estimates, is not identifying the correct number due to sampling errors or due to difficulties in obtaining accurate information from overseas visitors whose intentions may well change once here. However, as these figures are not used for any funding allocations and as the figures for the Tees Valley are very small, these figures have little or no impact on the shape or funding of the Tees Valley.

Impact on Local Authority settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 and possibly for 2014/15 and 2015/16 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based (SNPP) trends for births, deaths and migration.

(Two other fall-back options were included in the Consultation but were only to be used if Census data was not available and so are not considered here).

Option 2 will mean that migration will be artificially low for Local Authorities with higher Census results and artificially high for those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

The options in the CLG consultation may have differing impacts on the Tees Valley Authorities, and, indeed, all English Local Authorities – the Table below shows which option would be better for a **one year** settlement for 2013/14, based on the growth trends from the 2010 SNPPs:-

Table 7 – Use of Mid Year Estimates vs Short Term Projections

Combination	2011 Census Results - Compared to 2011 MYE	2010 Based Projection Rate of Growth	Option 1 2011 MYE	Option 2 2011 Short Term Projection
A	Census higher than 2011 MYE	Faster growth than England	<i>WORSE</i>	BETTER
B	Census higher than 2011 MYE	Slower growth than England	BETTER	<i>WORSE</i>
C	Census lower than 2011 MYE	Faster growth than England	<i>WORSE</i>	BETTER
D	Census lower than 2011 MYE	Slower growth than England	BETTER	<i>WORSE</i>

None of the Tees Valley Authorities had growth rates faster than the England rate in the 2010 SNPPs up to Mid 2013 and so Darlington and Hartlepool (Combination B) would be better with the 2011 MYE option 1. Middlesbrough, Redcar & Cleveland and Stockton-on-Tees (Combination D) would also be better with the 2011 MYE option 1.

Table 8 looks at how the percentage share of England’s population changes in light of the 2011 Census results compared with the latest share used by CLG (ONS 2008 Based SNPPs for Mid 2012 which were used for the 2012/13 Settlement).

It also compares the Census share with the share based on a rebased 2010 SNPP (rebased for Census but retaining the population change rates from the 2010 SNPPs). These can only be a guide at this stage as we do not know the Census based MYEs for 2011 yet, nor the exact methodology that ONS will use to generate the short term projections.

Table 8 – Share of England’s Population

[Return to [Darlington Hartlepool Middlesbrough Redcar & Cleveland Stockton-on-Tees](#)]

	A	B	A - B	C	A - C
Share of England Total	Option 1	Latest Used		Option 2	
	% Share	% Share	Difference in Share	% Share	Difference in Share
	2011 Census	ONS 2008 Based Proj		Rebased 2010 Proj	
Local Authority	27/03/2011	2012/13	2011 - Projected 2012	2013/14	2011 - Rebased Proj 2013/14
Darlington	0.199%	0.193%	0.006%	0.198%	0.001%
Hartlepool	0.174%	0.174%	0.000%	0.172%	0.002%
Middlesbrough	0.261%	0.267%	-0.006%	0.258%	0.003%
Redcar & Cleveland	0.255%	0.260%	-0.005%	0.250%	0.005%
Stockton-on-Tees	0.361%	0.366%	-0.005%	0.360%	0.001%
Tees Valley	1.250%	1.260%	-0.010%	1.246%	0.005%
England	53,012,500	52,953,960			

Only Darlington’s population increased faster than nationally (Mid 2001 to 2011 Census) and so it is the only Authority in the Tees Valley that might expect to increase its share of the settlement due to population compared to the 2012/13 Settlement (Column A-B).

Hartlepool remains the same while Middlesbrough, Redcar & Cleveland and Stockton-on-Tees all decrease as a share of the England Total.

When compared to a (TVU generated) rebased 2010 SNPP for Mid 2013 we can see that all Local Authorities have a higher share in the 2011 Census Estimate (Column A) than in the rebased projection (Column C). This is because the Tees Valley growth rates in the 2010 SNPPs are lower than for England.

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this

Conclusions based on 1st Release of data

The decennial Census is a snapshot of the entire population of the UK that provides a wealth of information in great detail. The resulting data is used as a benchmark for future population estimates and to assess the performance of past population estimates to ensure the methods used are fit for purpose. ONS will be rebasing the Population estimate back to Mid 2002 - and possibly back to Mid 1992 should they decide that there was a further undercount in the 2001 Census.

For the Tees Valley as a whole, the Census estimate is very close to the ONS Rolled Forward Estimate (RFE) – only 800 residents fewer (0.1%) - which is negligible when spread across the 10 years between Censuses. However, differences are more apparent when looking at certain age groups and when looking at the results for individual Local Authorities (*further discussion on the Local Authorities can be found in Appendix 1*).

ONS are looking at the reasons for these differences and some documentation is already available here [ONSLink07](#) and cover the Address Register, “Explaining the Difference between the Census and the Rolled Forward Estimate”, and “An overview of Administrative Data Sources used in 2011 Census Quality Assurance”.

Results for Occupied Household Spaces were also close, within 500 (0.2%) of the Council Tax estimates. However more information is needed on the Census dwelling counts to properly understand the findings from the Occupied Household counts and the variation at Local Authority level needs more investigation.

Identifying the reasons behind these population and household differences will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Issues affecting Individual Authorities requiring further information from ONS.

- **Hartlepool, Middlesbrough, Redcar & Cleveland** – Why some age group totals are below the “Comparator Lower Bound” - the 5-9s are of particular concern as School Pupil data, one of the comparators, is accepted as high quality and is higher than the Census estimate.

- **All Local Authorities** - Why Occupied Household Spaces differ from Occupied Households from Council Tax counts? Some are higher and some lower.
- **All Local Authorities** - Request data on Vacant Household Spaces – though this may not be available yet. This will help quality assure the total figures we have from Council Tax, Land & Property Gazetteers, Royal Mail AddressPoint ®.
- **All Local Authorities** – Why are the estimates for Short Term Non-UK Residents so different from recent ONS estimates?

On-going work

ONS have issued a huge amount of background information which needs more time to go through. TVU will continue to analyse the results of the 2011 Census in more detail and the release of the 2011 Mid Year Estimates at the end of September will be a good time re-assess the results. The 2011 MYEs will be at single year of age and will allow a better comparison with the alternative datasets.

Appendix 1 details the 2011 Census resident population estimates by age group for each of the Tees Valley Authorities.

Appendix 2 contains details of all the hyperlinks within the report.

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Appendix 1

Darlington

Table 1D – 2011 Census Resident Population by Age vs ONS Rolled Forward Estimates.

Darlington	27th March 2011	27th March 2011	Census / Rolled Forwards	27th March 2011
	ONS	ONS	ONS	Response Rates
Age Group	Resident Population	Rolled Forward Estimate	% Diff	%
0 to 4	6,600	6,600	0.0%	90.0%
5 to 9	6,100	5,900	3.4%	92.0%
10 to 14	6,200	5,800	6.9%	92.0%
15 to 19	6,400	6,000	6.7%	91.0%
20 to 24	6,100	5,600	8.9%	88.0%
25 to 29	6,600	6,200	6.5%	89.0%
30 to 34	6,400	5,700	12.3%	92.0%
35 to 39	6,900	6,300	9.5%	94.0%
40 to 44	7,600	7,300	4.1%	96.0%
45 to 49	8,000	7,800	2.6%	96.0%
50 to 54	7,300	7,100	2.8%	98.0%
55 to 59	6,300	6,200	1.6%	99.0%
60 to 64	6,700	6,500	3.1%	99.0%
65 to 69	5,200	5,100	2.0%	97.0%
70 to 74	4,500	4,300	4.7%	97.0%
75 to 79	3,500	3,400	2.9%	96.0%
80 to 84	2,600	2,600	0.0%	97.0%
85 +	2,500	2,600	-3.8%	95.0%
All Ages	105,600	100,900	4.7%	94.0%

Source: ONS 2011 Census. Totals may not add exactly due to rounding to nearest 100.

Commentary on the differences

Comparison with ONS Rolled Forward Estimates

Overall, the Census estimates were **higher** than expected. They were 4,700 (4.7%) above the Rolled Forward Estimates (RFEs). The underestimation of the RFEs is apparent in all age groups, except those aged 85+ and ranged from +12.3% (+700 for the 30-34s) to -3.8% (-100 for the 85+ age group), with most of the difference in the 10 to 44 age group. Age groups over 45 were within 200 of the RFEs, which, with the rounding convention adopted by ONS, could actually be closer. Age groups with particular issues, along with possible explanations for the differences, are discussed below:-

0 - 4s - Census Population 6,600

- Census equal to RFE but the response rate is only 90% - there is usually an undercount for new born children – this has been observed in previous Censuses. However the undercount is too high for this to account for all the difference (Census Count 5,900, Census Estimate 6,600). Possible reason include:-
 - Parents may have failed to include their young children
 - Young families are less likely to fill in a Census form.
 - Young families are more mobile and so harder to count, reflected in the response rates for the 25-29s and 30-34s.

5 – 14s - Census Population 12,300

- Census *higher* by 5.1% (+600)
 - These two age groups should be close to the pupil numbers which recorded 11,700 pupils in January 2011. Information collected locally and including pupils at Independent schools in the Tees Valley and those attending publicly funded schools in County Durham and North Yorkshire takes that number to 11,900 but the Census estimates the 5-14s to be 400 higher. Possible reasons are:-
 - We have no information on boarders or those attending Independent schools outside the Tees Valley.
 - Children have moved into the area since the January 2011 School Census.
 - Response rates for these age groups are relatively low which suggests parents failed to include children on the Census form.
 - Administrative data sources suggested a higher figure. (GP Patient register, Child Benefit counts).

20-29s - Census Population 12,700

- Census *higher* by 7.6% (+900)
 - As expected the response rate for these age groups are the lowest.
 - Internal Migration (moves within the UK) has underestimated moves into Darlington and/or overestimated moves out of Darlington. i.e. GP Patient Register moves are not adequately recording moves to and from Darlington between the Censuses.
 - International migration may be higher than ONS population estimates are recording.

30-39s - Census Population 13,300

- Census *higher* by 11% (+1,300) - This age group had the largest discrepancy with the RFEs with the Census some 1,300 higher. This could be due to:-
 - Underestimate in the 2001 Census for the 20-29 age group – now aged 30-39.
 - Internal Migration (moves within the UK) has underestimated moves into Darlington and/or overestimated moves out of Darlington. i.e. GP Patient Register moves are not adequately recording moves between the Censuses.
 - International migration may be higher than ONS population estimates are recording.

85+ - Census Population 2,500

- Census *lower* by 3.8% (-100) - the difference in numbers is small (-100) and could just be due to rounding. Other possibilities include:-
 - RFE too high due to patients not being taken off the GP patient register on death.
 - Moving to Care Homes / relatives outside Darlington or living abroad and not informing or re-registering with a GP.
 - Census may miss the elderly if the Communal establishment in which they live, fails to include everyone living there.

Impact on Local Authority Settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based Subnational Population Projection (SNPP) trends for births, deaths and migration.

Option 2 will mean that migration will be artificially low for Darlington and Local Authorities with higher Census results and artificially high for those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

As Darlington's rate of population change between 2011 and 2013 is lower than England's, (1.0% vs 1.7% for England – 2010 Based SNPPs), Darlington's share would be higher in the Census 2011 Estimates than in a rebased 2010 population projection and so option 1 would be preferred for a one year settlement. (See [Table 8](#)). [Return from Table 8].

Beyond 2013/14, Darlington would be better with single year settlements based on MYEs (option 1) until the 2012 based projections become available (2015/16 Settlement). However, it will depend on whether ONS address issues in the current methodology for MYEs that appear to be underestimating migration into Darlington.

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this.

Conclusions based on 1st Release of data

The 2011 Census results were higher than expected – the high population count from returned census forms (99,400) and ONS' use of alternative data sources to help quality assure the data has clearly had a significant impact on Darlington's population estimate. This will have implications for any data that uses population as a divisor. For example, Unemployment Rates, Mortality rates and Fertility rates will all be lower.

The extent of underestimation in the ONS rolled forward estimates is of concern as it indicates that ONS' methodology for estimating migration between Censuses is not working well in Darlington's case. The figures show an underestimate of nearly 5,000 since the last Census, equivalent to missing 500 residents a year in Darlington.

Estimates of Occupied Household Spaces were within 300 (+0.6%) of the Council Tax equivalent figures. Some reasons for the difference can be found on *Page 6* but information is needed on vacant household spaces to get a fuller picture.

Identifying the reasons behind this difference will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Appendix 1 (cont -/)

Hartlepool

Table 1H – 2011 Census Resident Population by Age vs ONS Rolled Forward Estimates.

Hartlepool	27th March 2011	27th March 2011	Census / Rolled Forward	27th March 2011
	ONS	ONS	ONS	Response Rates
Age Group	Resident Population	Rolled Forward Estimate	% Diff	%
0 to 4	5,700	5,800	-1.7%	89.0%
5 to 9	5,200	5,400	-3.7%	92.0%
10 to 14	5,700	5,600	1.8%	92.0%
15 to 19	6,300	6,000	5.0%	91.0%
20 to 24	6,000	5,900	1.7%	87.0%
25 to 29	5,600	5,800	-3.4%	89.0%
30 to 34	5,000	5,100	-2.0%	92.0%
35 to 39	5,400	5,200	3.8%	94.0%
40 to 44	6,500	6,400	1.6%	96.0%
45 to 49	7,300	7,200	1.4%	96.0%
50 to 54	6,500	6,300	3.2%	97.0%
55 to 59	5,600	5,700	-1.8%	98.0%
60 to 64	5,800	5,700	1.8%	98.0%
65 to 69	4,200	4,200	0.0%	97.0%
70 to 74	3,900	3,900	0.0%	97.0%
75 to 79	3,300	3,300	0.0%	96.0%
80 to 84	2,200	2,100	4.8%	95.0%
85 +	1,800	1,900	-5.3%	95.0%
All Ages	92,000	91,400	0.7%	94.0%

Source: ONS 2011 Census. Totals may not add exactly due to rounding to nearest 100.

Commentary on the differences

Comparison with ONS Rolled Forwards Estimates

Most age groups were higher in the 2011 Census than in the Rolled Forward Estimates (RFEs). The difference ranged from +5.0% (+300 for the 15-19s) to -5.3% (-100 for the 85+ age group). All age groups, apart from the 15-19s were within 200 of the RFE, which, with the rounding convention adopted by ONS, could actually be closer. Hartlepool's population was adjusted following the 2001 Census (ONS added 1,500 to the 2001 Mid Year Estimates) and further details can be found in the Local Authority Studies here [ONSLink05](#). Age groups with particular issues, along with possible explanations for the differences, are discussed below:-

0 - 4s - Census Population 5,700

- Census lower by 1.7% (-100) but the response rate in only 89%. There is a known undercount for new born children – this has been observed in previous Censuses. However the undercount is too high for this to account for all the difference (Census Count 5,100, Census Estimate 5,700). Possible reason include:-
 - Parents may have failed to include their young children
 - Young families are less likely to fill in a Census form.
 - Young families are more mobile and so harder to count, reflected in the response rates for the 25-29s and 30-34s..

5 – 9s - Census Population 5,200

- Census *lower* by 3.7% (-200)
 - This age group should be close to the pupil numbers which ONS recorded at 5,300 in January 2011. Information collected locally, which included numbers at Independent schools in the Tees Valley and those attending publicly funded schools in North Yorkshire, takes that number to 5,400 but the Census estimates the 5-9s to be 200 lower; 5,200 is also lower than the GP Patient Register counts (5,400) and Child Benefit counts (5,300). Possible reasons are:-
 - Moves out between January 2011 and Census Day (27th March) – but this is unlikely to account for the difference.
 - Rounding could take the Census figure to 5,249 but that is still 150 lower than expected.

85+ - Census Population 1,800

- Census *lower* by 5.3% (-100) - the difference in numbers is small (-100) and could just be due to rounding. Other possibilities include:-
 - RFE too high due to patients not being taken off the GP patient register on death.
 - Moving to Care Homes / relatives outside Hartlepool or living abroad and not informing or re-registering with a GP.
 - Census may miss the elderly if the Communal establishment in which they live, fails to include everyone living there.

Impact on Local Authority Settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based Subnational Population Projection (SNPP) trends for births, deaths and migration.

Option 2 will mean that migration will be artificially low for Hartlepool and Local Authorities with higher Census results and artificially high for those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

As Hartlepool's rate of population change between 2011 and 2013 is lower than England's, (0.7% vs 1.7% for England – 2010 Based SNPPs), Hartlepool's share would be higher in the Census 2011 Estimates than in a rebased population projection and so option 1 would be preferred for a one year settlement. (See [Table 8](#)). [Return from Table 8].

Beyond 2013/14, Hartlepool would be better with single year settlements based on MYEs (option 1) until the 2012 Based SNPPs become available (2015/16 Settlement).

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this.

Conclusions based on 1st Release of data

The Census results were slightly higher than expected – ONS' use of alternative data sources to help quality assure the data has clearly had some impact on Hartlepool's population estimate. This will have minor implications for any data that uses population as a divisor. For example, Unemployment Rates, Mortality rates and Fertility rates will all be slightly lower.

The 2011 Census results for resident population are very close to the ONS Rolled Forward Estimates with 600 more residents in the 2011 Census, which when considered over ten years, is a very small difference.

ONS should be asked to explain why the 5-9s are below the "Comparator lower bound" set by the administrative datasets, particularly as School Pupil census data is acknowledged to be of very high quality.

The 2001 Census observed that Hartlepool had a higher proportion of moves within its own Authority than the other Tees Valley Authorities (81% vs 70% for the remainder of the Tees Valley) - if that pattern has held, then there are fewer migration moves outside the Local Authority which would make the population estimates easier to calculate.

Estimates of Occupied Household Spaces were 500 (+1.3%) higher than the Council Tax equivalent figures. Some reasons for the difference can be found on *Page 6* but information is needed on vacant household spaces to get a fuller picture.

Identifying the reasons behind these differences will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Appendix 1 (cont -/)

Middlesbrough

Table 1M – 2011 Census Resident Population by Age vs ONS Rolled Forwards Estimate.

Middlesbrough	27th March 2011 ONS	27th March 2011 ONS	Census / Rolled Forward ONS	27th March 2011 Response Rates
Age Group	Resident Population	Rolled Forward Estimate	% Diff	%
0 to 4	9,400	9,800	-4.1%	88.0%
5 to 9	8,300	8,500	-2.4%	90.0%
10 to 14	8,500	8,000	6.3%	91.0%
15 to 19	10,100	9,700	4.1%	90.0%
20 to 24	11,700	13,000	-10.0%	88.0%
25 to 29	9,800	11,300	-13.3%	88.0%
30 to 34	8,300	8,200	1.2%	91.0%
35 to 39	8,100	7,800	3.8%	92.0%
40 to 44	9,000	8,900	1.1%	94.0%
45 to 49	9,900	9,900	0.0%	95.0%
50 to 54	9,200	9,400	-2.1%	97.0%
55 to 59	7,900	7,900	0.0%	98.0%
60 to 64	7,500	7,600	-1.3%	98.0%
65 to 69	5,700	5,700	0.0%	97.0%
70 to 74	5,200	5,100	2.0%	97.0%
75 to 79	4,300	4,400	-2.3%	96.0%
80 to 84	3,100	3,300	-6.1%	96.0%
85 +	2,500	2,800	-10.7%	96.0%
All Ages	138,400	141,200	-2.0%	93.0%

Source: ONS 2011 Census. Totals may not add exactly due to rounding to nearest 100.

Commentary on the differences

Comparison with ONS Rolled Forwards Estimates (RFE)

Overall, Middlesbrough was being overestimated by ONS' inter-censal Mid Year Estimates. Whilst there are as many age groups that are underestimated as overestimated, the extent of the overestimates is much more significant. The bulk of the difference comes in the 20-29 age group. All age groups over 30 were within 300 of the RFE, which, with the rounding convention adopted by ONS, could actually be closer. Middlesbrough population was adjusted following the 2001 Census (ONS added 5,800 to the 2001 Mid Year Estimates) and further details can be found in the Local Authority Studies here [ONSLink05](#). Age groups with particular issues, along with possible explanations for the differences, are discussed below:-

0 - 4s - Census Population 9,400

- Census lower by 4.1% (-400) but the response rate is only 88%.
 - There is a known undercount for new born children – this has been observed in previous Censuses. However the undercount is too high for this to account for all the difference (Census Count 8,300, Census Estimate 9,400).
 - Parents may have failed to include their young children
 - Young families are less likely to fill in a Census form.
 - Young families are more mobile and so harder to count, reflected in the response rates for the 25-29s and 30-34s.

- The Census figure is 7% below the GP Patient Register count which suggests that families with very young children are moving out of Middlesbrough.

○

5 – 9s - Census Population 8,300

- Census *lower* by 2.4% (-200)
 - This age group should be close to the pupil numbers which ONS recorded at 8,500 in January 2011. Information collected locally, which included numbers at Independent schools in the Tees Valley and those attending publicly funded schools in North Yorkshire, takes that number to 8,600 but the Census estimates the 5-9s to be 300 lower; 8,300 is also lower than the GP Patient Register counts (8,900) and Child Benefit counts (8,500). Possible reasons are:-
 - Moves out between January 2011 and Census Day (27th March) – but this is unlikely to account for the difference.
 - Rounding could take the Census figure to 8,349 but that is still 250 lower than expected.

10 – 14s - Census Population 8,500

- Census *higher* by 6.3% (+500)
 - This age group should be close to the pupil numbers which recorded 8,400 pupils in January 2011, which it is.
 - Response rates for these age groups are relatively low which suggests parents failed to include children on the Census form.
 - There may have been an undercount in the 0-4s (10-14 in 2011) following the 2001 Census.

20-29s - Census Population 21,500

- Census *lower* by 11.5% (-2,800)
 - As expected, the response rates for these age groups are the lowest, indicating the difficulty in engaging with this age group.
 - The large student population makes population estimates more difficult.
 - Estimates of Internal Migration (moves within the UK) have overestimated moves into Middlesbrough and/or underestimated moves out of Middlesbrough. i.e. GP Patient Register moves are not adequately recording moves to and from Middlesbrough between the Censuses.
 - International migration may be lower than ONS population estimates are recording.

30-39s - Census Population 16,400

- Census *higher* by 2.5% (+400)
 - Underestimate in the 2001 Census for the 20-29 age group – now aged 30-39. Students may have added to difficulties in counting this age group
 - The adjustment from the Local Authority Studies to the 2001 Mid Year Estimates for the 20-29s wasn't enough (30-39 now).
 - Internal Migration (moves within the UK) have underestimated moves into Middlesbrough and/or overestimated moves out of Middlesbrough. i.e. GP Patient Register moves are not adequately recording moves between the Censuses.
 - International migration may be higher than ONS population estimates are recording.

85+ - Census Population 2,500

- Census *lower* by 10.7% (- 300) - the difference in numbers is small (-300) and some of the difference could be due to rounding. Other possibilities include:-
 - RFE too high due to patients not being taken off the GP patient register on death.
 - Moving to Care Homes / relatives outside Hartlepool or living abroad and not informing or re-registering with a GP.

- Census may miss the elderly if the Communal establishment in which they live, fails to include everyone living there.

Impact on Local Authority Settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based Subnational Population Projection (SNPP) trends for births, deaths and migration.

Option 2 will mean that migration will be artificially low for Local Authorities with higher Census results and artificially high for Middlesbrough and those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

As Middlesbrough's rate of population change between 2011 and 2013 is lower than England's, (0.4% vs 1.7% for England – 2010 Based SNPPs), Middlesbrough's share would be higher in the Census 2011 Estimates than in a rebased population projection and so option 1 would be preferred for a one year settlement. (See [Table 8](#)). [Return from Table 8]

Beyond 2013/14, Middlesbrough would be better with the rebased 2010 SNPPs as migration trends should be higher than in the 2012 Based SNPPs.

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this.

Conclusions based on 1st Release of data

The 2011 Census results were lower than expected. Overall, the Census results for resident population were 2,800 lower (-2.0%) than the Rolled Forward Estimate, equivalent to migration being overestimated by 280 a year since Mid 2001. Recent ONS Mid Year Estimates may have allocated too many international migrants to Middlesbrough which may account for some of the difference.

Response rates for Middlesbrough were the lowest in the Tees Valley at 93% which reflects the difficulties of running a Census in Middlesbrough. Middlesbrough has a large student population and areas of high deprivation where response rates would generally be lower, making it harder to estimate the actual resident population.

The lower population will have implications for any data that uses population as a divisor. For example, Unemployment Rates, Mortality rates and Fertility rates will all be higher as a result.

ONS should be asked to explain why the 5-9s are below the “Comparator lower bound” set by the administrative datasets, particularly as School Pupil census data is acknowledged to be of very high quality.

The extent of overestimation in the ONS rolled forward estimates, particularly in the 20 to 29 age groups, is of concern as it indicates that ONS’ methodology for estimating migration between Censuses is not working well in Middlesbrough’s case. The adjustments made to the 2001 MYEs, following the Local Authority Studies, add an extra layer to the reasons for the differences and ONS may yet amend the 2001 MYEs further as they investigate the 2011 results.

Estimates of Occupied Household Spaces were 900 (-1.5%) lower than the Council Tax equivalent figures. Some reasons for the difference can be found on *Page 6* but information is needed on vacant household spaces to get a fuller picture.

Identifying the reasons behind these difference will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Appendix 1 (cont -/)

Redcar & Cleveland

Table 1R – 2011 Census Resident Population by Age vs ONS Rolled Forwards Estimate.

Redcar & Cleveland	2011 Census ONS	Census Day ONS	Census / Rolled Forward ONS	2011 Census ONS
Age Group	Resident Population	Rolled Forward Estimate	% Diff	Response Rates %
0 to 4	7,500	7,600	-1.3%	91.0%
5 to 9	7,100	7,400	-4.1%	93.0%
10 to 14	7,800	7,700	1.3%	93.0%
15 to 19	8,800	8,900	-1.1%	92.0%
20 to 24	8,100	8,400	-3.6%	89.0%
25 to 29	7,600	8,100	-6.2%	90.0%
30 to 34	7,000	6,700	4.5%	94.0%
35 to 39	7,700	7,300	5.5%	95.0%
40 to 44	9,500	9,500	0.0%	97.0%
45 to 49	10,400	10,500	-1.0%	97.0%
50 to 54	9,400	9,500	-1.1%	98.0%
55 to 59	8,500	8,800	-3.4%	99.0%
60 to 64	9,500	9,800	-3.1%	99.0%
65 to 69	7,800	7,800	0.0%	98.0%
70 to 74	6,600	6,800	-2.9%	98.0%
75 to 79	5,000	5,000	0.0%	96.0%
80 to 84	3,700	3,800	-2.6%	96.0%
85 +	3,100	3,500	-11.4%	95.0%
All Ages	135,200	137,100	-1.4%	95.0%

Source: ONS 2011 Census. Totals may not add exactly due to rounding to nearest 100.

Commentary on the differences

Comparison with ONS Rolled Forwards Estimates (RFE)

Overall R&C was being overestimated by ONS' inter-censal Mid Year Estimates. Most age groups were lower in the Census with the main exception to that being in the 30 to 39 age groups where the Census estimated a higher population. R&C had the highest response rate of the Tees Valley Authorities. Age groups with particular issues, along with possible explanations for the differences, are discussed below:-

5 – 9s - Census Population 7,100

- Census lower by 4.1% (-300)
 - This age group should be close to the pupil numbers which ONS recorded at 7,300 in January 2011. Information collected locally, which included numbers at Independent schools in the Tees Valley and those attending publicly funded schools in North Yorkshire, takes that number to 7,350 but the Census estimates the 5-9s to be 250 lower; 7,100 is also lower than the GP Patient Register counts (7,400) and Child Benefit counts (7,300). Possible reasons are:-
 - Moves out between January 2011 and Census Day (27th March) – but this is unlikely to account for the difference.

- Rounding could take the Census figure to 7,149 but that is still 200 lower than expected.

20-29s - Census Population 15,700

- Census *lower* by 4.8% (-800)
 - As expected, the response rates for these age groups are the lowest, indicating the difficulty in engaging with this age group.
 - Estimates of Internal Migration (moves within the UK) have overestimated moves into R&C and/or underestimated moves out of R&C. i.e. GP Patient Register moves are not adequately recording moves to and from R&C between the Censuses. Student moves away from R&C could be part of the reason for this.
 - Net International migration may be lower than ONS population estimates are recording.
 - Both the 20-24s and 25-29s are lower than the comparator lower bound but the only comparator at those age groups is the GP Patient register which has known issues at these ages,

30-39s - Census Population 14,700

- Census *higher* by 5.0% (+700)
 - Underestimate in the 2001 Census for the 20-29 age group – now aged 30-39.
 - Internal Migration (moves within the UK) have underestimated moves into R&C and/or overestimated moves out of R&C. i.e. GP Patient Register moves are not adequately recording moves between the Censuses.
 - International migration may be higher than ONS population estimates are recording.

85+ - Census Population 3,100

- Census *lower* by 11.4% (- 400)
 - This age group appears to have been overestimated in the RFEs and is a pattern repeated across all Tees Valley Local Authorities. As it is the smallest age group, a higher percentage difference is not surprising. However, in R&C's case the difference is of concern.
 - RFE too high due to patients not being taken off the GP patient register on death.
 - The comparator data which includes GP Patient Registers and Pension information concurs with the Census estimate so the difference lies in the RFEs which may be caused by:-
 - Overestimates of 75+ in the last Census – now 85+
 - GP Patient registers have failed to keep track of the flows out of R&C to elsewhere in the UK and abroad but the stocks are in line. This could be the case if significant list cleaning took place between the Censuses.

Impact on Local Authority Settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14. The settlement for 2014/15 (and possibly 2015/16) would then be based on a 2012 based set of sub-national projections and would include migration, fertility and mortality trends realigned to the 2011 Census data.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based Subnational Population Projection (SNPP) trends for births, deaths and migration.

Option 2 will mean that migration will be artificially low for Local Authorities with higher Census results and artificially high for Redcar & Cleveland and those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

As Redcar & Cleveland's rate of population change between 2011 and 2013 is lower than England's, (-0.3% vs 1.7% for England – 2010 Based SNPPs), Redcar & Cleveland's share would be higher in the Census 2011 Estimates than in a rebased population projection and so Option 1 would be preferred for a one year settlement. (See [Table 8](#)). [Return from Table 8].

Beyond 2013/14, Redcar & Cleveland would be better with the rebased 2010 SNPPs as migration trends should be higher than in the 2012 Based SNPPs.

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this.

Conclusions based on 1st Release of data

The 2011 Census results were lower than expected. Overall, the Census results for resident population were 1,900 lower (-1.4%) than the ONS Rolled Forward Estimate, equivalent to migration being overestimated by 190 a year since Mid 2001. The lower population will have implications for any data that uses population as a divisor. For example, Unemployment Rates, Mortality rates and Fertility rates will all be higher as a result.

Response rates for Redcar & Cleveland were the highest in the Tees Valley at 95% which is perhaps a little surprising as there are some areas of very high deprivation where response rates would generally be lower, making it harder to estimate the actual resident population.

ONS should be asked to explain why the 5-9s are below the "Comparator lower bound" set by the administrative datasets, particularly as School Pupil census data is acknowledged to be of very high quality. There are other age groups where this is also the case (20-24s, 25-29s, 55-59s, 60-64s) but the only comparator data set is the GP Patient register which is known to be inflated, especially around the 20-29 age groups.

The differences at some age groups indicate that either ONS' methodology for estimating migration between Censuses is not always working well for R&C or that the 2001 MYE base was not correct. The other possibility is that the 2011 Census has underestimated the resident population but we have very little evidence to support that, other than in the 5 to 9s age group.

Estimates of Occupied Household Spaces were very close – just 100 (0.2%) higher than the Council Tax equivalent figures. With rounding, the numbers could be the same. Some reasons for the difference can be found on [Page 6](#) but information is needed on vacant household spaces to get a fuller picture.

Identifying the reasons behind these differences will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Appendix 1 (cont /-)

Stockton-on-Tees

Table 1S – 2011 Census Resident Population by Age vs ONS Rolled Forwards Estimate.

Stockton-on-Tees	2011 Census	Census Day	Census / Rolled Forward	2011 Census
	ONS	ONS	ONS	ONS
Age Group	Resident Population	Rolled Forward Estimate	% Diff	Response Rates %
0 to 4	12,300	12,300	0.0%	91.0%
5 to 9	11,000	11,000	0.0%	92.0%
10 to 14	11,400	11,600	-1.7%	92.0%
15 to 19	12,800	12,700	0.8%	91.0%
20 to 24	12,700	12,700	0.0%	88.0%
25 to 29	12,600	12,300	2.4%	89.0%
30 to 34	11,400	11,400	0.0%	92.0%
35 to 39	12,000	12,400	-3.2%	93.0%
40 to 44	14,100	14,100	0.0%	96.0%
45 to 49	14,600	14,800	-1.4%	96.0%
50 to 54	13,400	13,500	-0.7%	98.0%
55 to 59	11,600	11,800	-1.7%	99.0%
60 to 64	11,600	12,100	-4.1%	99.0%
65 to 69	8,700	8,900	-2.2%	98.0%
70 to 74	7,400	7,300	1.4%	97.0%
75 to 79	6,100	6,100	0.0%	96.0%
80 to 84	4,300	4,300	0.0%	96.0%
85 +	3,500	3,700	-5.4%	95.0%
All Ages	191,600	193,000	-0.7%	94.0%

Source: ONS 2011 Census. Totals may not add exactly due to rounding to nearest 100.

Commentary on the differences

Comparison with ONS Rolled Forward Estimates (RFE)

Overall Stockton-on-Tees was being overestimated by ONS' inter-censal Mid Year Estimates. The differences by age group ranged from +2.4% (+300) for the 25-29s to -5.4% (-200) for the 85+ age group. These differences are not large and with the rounding convention adopted by ONS, could actually be closer. Stockton-on-Tees' population was adjusted following the 2011 Census (ONS added 5,200 to the 2011 Mid Year Estimates) and further details can be found in the Local Authority Studies here [ONSLink05](#).

Age groups with particular issues, along with possible explanations for the differences, are discussed below:-

10 – 14s - Census Population 11,400

- Census lower by 1.7% (-200)
 - This age group should be close to the pupil numbers which recorded 11,100 pupils in January 2011, the ONS QA figure is 10,800 but excludes pupils in Independent Schools and those attending school in North Yorkshire and County Durham but resident in Stockton-on-Tees. The RFE of 11,600 does look slightly too high suggesting there may have been:-
 - an overcount of the 0-4s in the 2011 Census (10-14 in 2011).

- Migration estimates have overestimated numbers since 2001.

35 - 39s - Census Population 12,000

- Census *lower* by 3.2% (-400)
 - Overestimate in the 2001 Census for the 25-29 age group – now aged 35-39.
 - The adjustment from the Local Authority Studies, added to the 2001 Mid Year Estimates for the 25-29s, could have been too high (35 - 39 now).
 - Internal Migration (moves within the UK) has overestimated moves into Stockton-on-Tees and/or underestimated moves out of Stockton-on-Tees. i.e. GP Patient Register moves are not adequately recording moves between the Censuses.
 - International migration may be lower than ONS population estimates are recording.

60 – 64s - Census Population 11,600

- Census *lower* by 4.1% (- 500)
 - This age group is estimated to have had a 99% response rate so very little adjustment was needed to the Census figures. This therefore suggests that migration estimates since 2001 have been too high in the RFEs. This is surprising as older age groups are more likely to re-register with a GP when moving.
 - Alternatively or as well, the 2001 Census and subsequent revision to the MYEs overestimated the 50-54 age group – now aged 60-64.

85+ - Census Population 3,500

- Census *lower* by 5.4% (- 200)
 - This age group has been (slightly) overestimated in the RFEs and is a pattern repeated across all Tees Valley Local Authorities. As it is the smallest age group, a higher percentage difference is not surprising.
 - The actual difference in numbers is small (-200) and some of the difference could just be due to rounding.

Impact on Local Authority Settlements

CLG recently announced a consultation on which population dataset to use for the next round of settlements which are due for the financial year 2013/14 - see [CLGLink01](#). There are two options that relate to Questions 27 and 28 in the consultation document:-

1. Use the 2011 Census based Mid Year Estimates (MYEs) for a single year settlement for 2013/14. The settlement for 2014/15 (and possibly 2015/16) would then be based on a 2012 Based set of sub-national projections and would include migration, fertility and mortality trends realigned to the 2011 Census data.
2. ONS to produce a short term subnational set of projections to 2015 which use the 2011 Census based MYEs in conjunction with ONS' 2010 Based Subnational Population Projection (SNPP) trends for births, deaths and migration.

Option 2 will mean that migration will be artificially low for Local Authorities with higher Census results and artificially high for Stockton-on-Tees and those with lower Census results. However, it will be population growth rates relative to England in the 2010 SNPPs that will determine whether the population share increases or decreases.

A further complication would be if ONS alter the 2001 MYE base. This would affect migration trends for the inter-censal period (2001 to 2011), though that would not be incorporated until the 2012 Based SNPPs which ONS are planning to release in May 2014 so could not be used until the 2015/16 settlement, at the earliest.

As Stockton-on-Tees' rate of population change between 2011 and 2013 is lower than England's, (1.3% vs 1.7% for England – 2010 Based SNPPs), Stockton-on-Tees' share would be higher in the Census 2011 Estimates than in a rebased population projection and so option 1 would be preferred for a one year settlement. (See [Table 8](#)). [Return from Table 8].

Beyond 2013/14, Stockton-on-Tees would be marginally better with the rebased 2010 SNPPs as migration trends should be slightly higher than in the 2012 Based SNPPs.

The changes to the settlement formula with the introduction of the Business Rates Retention Scheme and changes to the Rate Support Grant could mean that the importance of Total Population is lessened. The calculations are complex so please contact your own Finance Department for further information on this.

Conclusions based on 1st Release of data

The 2011 Census results were lower than Mid Year Estimates (MYEs) were suggesting. The difference was relatively small, 1,400 (0.7%) fewer residents since the 2001 MYEs, equivalent to 140 fewer a year which was in line with expectations based on a recent comparison of MYEs and School Census data for the 5 to 14 age group.

The differences at some age groups indicate that ONS' methodology for estimating migration between Censuses is not always working well for Stockton-on-Tees. The adjustments to the 2001 MYEs, made following the Local Authority Studies, add an extra layer to the reasons for the differences and ONS may yet amend the 2001 MYEs further as they investigate the 2011 results.

Estimates of Occupied Household Spaces were 500 (-0.6%) lower than the Council Tax equivalent figures. Some reasons for the difference can be found on *Page 6* but information is needed on vacant household spaces to get a fuller picture.

Identifying the reasons behind these differences will be an important step for ONS to undertake and is especially important in the context of the Beyond 2011 project that is looking at alternatives to a decennial Census. See [ONSLink08](#).

Appendix 2 – Details of Hyperlinks

Page 1 - **ONSLink01** – Local Authority Excel Spreadsheets

<http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcn%3A77-257414>

Page 1 and 2 - **ONSLink02** – Local Authority Quality Assurance Packs

<http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-data/2011-first-release/local-authority-quality-assurance/index.html>

Page 1 - **ONSLink03** – Background information on Address Registers, Quality Assurance Methodology, Overview of Comparator data

<http://www.ons.gov.uk/ons/guide-method/census/2011/how-our-census-works/how-did-we-do-in-2011-/index.html>

Page 2 - **ONSLink04** – ONS Release Calendar

<http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-prospectus/2011-census-prospectus.pdf>

Pages 6, 16, 19 & 26 - **ONSLink05** – Local Authority studies following the 2001 Census

<http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/pop-ests/local-authority-population-studies/local-authority-studies/index.html>

Page 8 - **ONSLink06**- ONS estimates of Short Term Migrants

<http://www.ons.gov.uk/ons/guide-method/method-quality/imps/updates-and-reports/current-updates-and-releases/distributing-short-term-migrants-to-local-authorities/stm-local-authority-estimates.xls>

Pages 9, 14,17, 21, 24 & 27 – **CLGLink01** - CLG consultation on Business Rate Retention Scheme

<http://www.communities.gov.uk/publications/localgovernment/businessratestechnical>

Pages 11 – **ONSLink07** – Explaining the difference between the Census

<http://www.ons.gov.uk/ons/guide-method/census/2011/census-data/2011-census-data/2011-first-release/first-release--quality-assurance-and-methodology-papers/differences-between-2011-census-est-and-rolled-forward-pop-est.pdf>

Pages 11, 15, 18, 22, 25 & 28 - **ONSLink08** – Beyond 2011 Project - Background Information. <http://www.ons.gov.uk/ons/about-ons/what-we-do/programmes---projects/beyond-2011/index.html>