

---

**POPULATION GROWTH AND FERTILITY  
IN TYNE & WEAR 2007**

**MARCH 2009**

By

**Carol Burdis  
Peter Sturman  
Kadhem Jallab**

Reference: SP09/1

Price: £15.00

---

**TYNE & WEAR RESEARCH AND INFORMATION**

1<sup>st</sup> Floor Provincial House  
Northumberland Street  
Newcastle upon Tyne  
NE1 7DQ

Tel: (0191) 277 1912, Fax: (0191) 277 1911

E-MAIL: [twri@twri.org.uk](mailto:twri@twri.org.uk)

WEBSITE: [www.tyne-wear-research.gov.uk](http://www.tyne-wear-research.gov.uk)

Supported jointly by Cities of Newcastle and Sunderland and the Metropolitan Boroughs of Gateshead, North Tyneside and South Tyneside

---



## CONTENTS

<b>KEY POINTS</b> .....	i
<b>1 INTRODUCTION</b> .....	1
<b>2 MID-YEAR ESTIMATES OF POPULATION</b> .....	2
<b>3 TOTAL FERTILITY RATES (TFRs)</b> .....	4
<b>4 GENERAL FERTILITY RATES (GFRs)</b> .....	6
<b>5 LIVE BIRTHS BY AGE OF MOTHER</b> .....	8
5.1 Live Births (Mothers aged 11-44) .....	8
5.2 Mothers Aged 18-34 years .....	9
5.3 Mothers Aged 35+ years .....	10
5.4 Mothers Aged Under 18 years .....	11
<b>6 LIVE BIRTHS BY MARITAL STATUS</b> .....	13
6.1 Live Births Within Marriage .....	13
6.2 Live Births Outside of Marriage .....	15
<b>7 DEATHS</b> .....	17
<b>8 MORTALITY RATIOS</b> .....	18
8.1 Standardised Mortality Ratios (SMRs) .....	18
8.2 Directly Age-Standardised Mortality Rates (DSRs) .....	20
8.3 Linking Mortality and Health .....	21
<b>9 NATURAL CHANGE</b> .....	23
<b>10 MIGRATION</b> .....	25
10.1 Domestic (Internal) Migration .....	25
10.2 International Migration .....	26
<b>Appendices</b> .....	30
Appendix 1: Total Population 1981-1996 .....	30
Appendix 2: Fertility Rates 1984-1995 .....	31
Appendix 3: Births, Deaths, Natural Change 1983-2007 .....	32
Appendix 4: Live Births and Deaths by Ward .....	33
Appendix 5: Standardised Mortality Ratios (SMRs) in England .....	39
Appendix 6: Regional Variations in Health Profiles .....	40
Appendix 7: Local Variations in Health Profiles .....	41

**FIGURES**

3.1	Total Fertility Rates (TFRs) (1992-2006)	4
3.2	Total Fertility Rates (TFRs): Tyne & Wear Districts (1992-2006)	5
4.1	General Fertility Rates (GFRs): T&W, NE and England & Wales (1997-2006)	6
4.2	General Fertility Rates (GFRs) Tyne & Wear Districts (1997-2006)	7
5.1	Fertility Rates: Mothers aged 11-44 years	8
5.2	Fertility Rates: Mothers aged 18-34 years	9
5.3	Fertility Rates: Mother aged 35+ years	11
5.4	Fertility Rates: Mothers aged 18 years and under	12
6.1	Live Births within Marriage: T&W, NE and England & Wales (1997-2007)	14
6.2	Live Births within Marriage: Tyne & Wear Districts (1997-2007)	14
6.3	Live Births outside Marriage: T&W, NE and England & Wales (1997-2007)	15
6.4	Live Births outside Marriage: Tyne & Wear Districts (1997-2007)	16
7.1	Deaths: Tyne & Wear Districts (2001-2007)	17
8.1	Standardised Mortality Ratios (SMRs): T&W (1997-2007)	18
8.2	Standardised Mortality Ratios (SMRs): North East (1997-2007)	19
8.3	Standardised Mortality Ratios (SMRs): Tyne & Wear Districts (1997-2007)	20
8.4	Directly Age-Standardised Mortality Rates (DSRs): T&W, NE and Eng (1995-2006)	21
9.1	Natural Change: Tyne & Wear Districts (1997-2007)	23
10.1	Domestic Net Migration: 2000-2007	25
10.2	Net 'Total International Migration': 2002-2007	26
10.3	Percentage of All Live Births to Mothers Born Outside the UK	29

**TABLES**

2.1	Total Population (1997-2007)	2
2.2	Women Aged 15-44 (1997-2007)	3
3.1	Total Fertility Rates (TFRs)	4
4.1	General Fertility Rates (GFRs)	7
5.1	Live Births	8
5.2	Live Births (Mothers Aged 18-34)	9
5.3	Live Births (Mothers Aged 35+)	10
5.4	Live Births (Mothers Aged under 18)	11
6.1	Percentage of Live Births Within Marriage	13
6.2	Percentage of Live Births Outside of Marriage	15
7.1	Deaths	17
8.1	Standardised Mortality Rates (SMRs) (1997-2007)	18
8.2	Smoking Prevalence (%) in the North East & England	22
9.1	Natural Change (1997-2007)	23
10.1	Domestic (Internal) Net Migration (2000-2007)	25
10.2	Net 'Total International Migration' (2002-2007)	26
10.3	National Insurance Number Registrations	27
10.4	Worker Registration Scheme	28
10.5	Percentage of All Live Births to Mothers Born Outside UK	28

**APPENDICES**

A1	Total Population (1981-1996)	30
A2	Total Fertility Rates (1984-1995)	31
A3a	Live Births (1983-2007)	32
A3b	Deaths (1983-2007)	32
A3c	Natural Change (1983-2007)	32
A4a	Births by Ward (Gateshead)	33
A4b	Births by Ward (Newcastle)	33
A4c	Births by Ward (North Tyneside)	34
A4d	Births by Ward (South Tyneside)	34
A4e	Births by Ward (Sunderland)	35
A4f	Deaths by Ward (Gateshead)	36
A4g	Deaths by Ward (Newcastle)	36
A4h	Deaths by Ward (North Tyneside)	37
A4i	Deaths by Ward (South Tyneside)	37
A4j	Deaths by Ward (Sunderland)	38
A5	Standardised Mortality Ratios (SMRs) in England	39
A6	Regional Variations in Health Profiles	40
A7	Local Variations in Health Profiles in the North East	41

## KEY POINTS

### Introduction

- This report shows how Tyne & Wear's population has grown since 2004. This has been driven by a 14% rise in births since 2001, and by significant net international in-migration. The latter has exceeded continued domestic net out-migration.
- The report presents official (ONS) information on population growth and long-term trends in fertility and mortality in Tyne & Wear and its constituent Districts. [Migration will be covered in more depth in a separate report by TWRI.]
- This report mainly analyses an eleven-year data series (1997-2007, inclusive) and covers:
  - Fertility - amongst women of all ages
    - those aged under 18 years
    - those aged 18-34 and
    - those aged 35+
  - It also gives the share of live births within and outside of marriage
  - Mortality rates
  - Natural change (i.e. population change arising from live births minus deaths)
  - Migration, both internal (domestic) and international are also covered briefly.

Patterns in Tyne & Wear are compared with regional and national trends (§1).

### Mid-year estimates of population

- Tyne & Wear's population grew by 0.6% (+6,300) between 2004 and 2007 (to levels seen in 2000). This shows a reversal of an earlier trend of population decline. (§2 and Appendix 1).
- Over the last ten years, the population of Tyne & Wear is estimated to have fallen by 21,200 (-1.9%) (1997-2007).
- Population declined in all Tyne & Wear Districts, apart from in North Tyneside, where it rose by 5,500 (+2.9%) between 1997-2007.

### Fertility

- Since 1992, fertility in Tyne & Wear and its constituent Districts has been consistently low, relative to the region and England & Wales, [averaging 1.61 over the 15 year period 1992-2006, compared to 1.68 in the NE and 1.74 in E&W]. Indeed, since 2001, the gap between the Tyne & Wear average and the North East and England & Wales averages has widened (§3; Table 3.1).

### Live Births'

- Since 2001, the number of births in Tyne & Wear has been increasing, up 13.9% by 2007 (+1,545). This is a reversal of the longer-term trend whereby, in the 25-year period from 1983 to 2007, births in Tyne & Wear fell by 10.6% (-1,499). The rise in births in Tyne & Wear over the seven-year period (+1,545) was greater than the fall in deaths over the same period (-985) (§5 and Appendix 3).
- In 2007, nationally, almost one-quarter (23.2%) of live births were to mothers born outside the UK. In Tyne & Wear, the figure was around half the national average, at 11.7%. In Newcastle the figure was only 1.3pp lower than nationally, at 21.9% (§9).

---

<sup>1</sup> These changes should be treated with some caution, as numbers of births and deaths are closely related to population size.

### Live Births by Age of Mother

- Between 2001 and 2007, the vast majority (82.0%) of births were to women aged 18-34. Within this core age group, fertility rates rose 9.9% in Tyne & Wear and rose in all Tyne & Wear Districts between 2001 and 2007, particularly in Sunderland (up 19.1%). (§5.2).
- Women aged 35+ accounted for 14.7% of live births between 2001 and 2007. Fertility rates rose by 43% in Tyne & Wear, rising in all Tyne & Wear Districts, particularly Gateshead (+51.3%). This suggests an increasing trend for women to delay childbearing until they have established careers, and also childbearing in subsequent relationships (§5.3).
- Young mothers accounted for only 3.3% of all births from 2001-2007 (under 400 annually) in Tyne & Wear. Fertility rates for women aged under 18 (11 to 17 years) rose 5% in Tyne & Wear. Rates rose most substantially in Sunderland (32.2%). Rates fell ('improved') in Gateshead, Newcastle and South Tyneside (§5.4).

### Live Births by Marital Status

- Since 2000, the majority of births in Tyne & Wear have been outside marriage. The proportion of live births within marriage fell in all Tyne & Wear Districts between 1997 and 2007 (TW average -8pp), with the largest fall in Sunderland (-11pp) (§6.1).

### Deaths<sup>2</sup>

- Between 2001 and 2007, deaths in Tyne & Wear fell by 7.9% (-985), higher than the fall nationally (-5.3%, -28,258). [Caution: affected by much faster population growth nationally.] The fall in the number of deaths was greatest in Gateshead (-14.1%) (§7).

### Mortality

- Mortality ratios for both Tyne & Wear and the North East are high, compared to the national average. Between 1997 and 2007, Standardised Mortality Ratios (SMRs) in Tyne & Wear have fluctuated, averaging 114 (E&W = 100) (§8).

### 'Natural Change' in Population (live births minus deaths)

- Population change as a result of natural change turned positive in Tyne & Wear in 2005, following a 12-year period of negative natural change (i.e., deaths exceeding births) between 1993 and 2004 (§9).

### Migration

- In 2007, Tyne & Wear lost around 2,200 people (about 0.2% of population) as a result of a *net* out-flow of domestic (internal) migration (§10).
- Total International Migration (TIM) has made the biggest contribution to population change in Tyne & Wear. However, in 2007, *net* TIM to Tyne & Wear (+2,950) slowed by 38% from the high level in 2005 (+4,760) (§10).

---

<sup>2</sup> These changes should be treated with some caution, as numbers of births and deaths are closely related to population size.

## 1. INTRODUCTION

**Coverage:** This report presents information on long-term trends in fertility and mortality in Tyne & Wear and its constituent Districts. It analyses an eleven-year data series (1997-2007) and covers;

- fertility amongst women of all ages, those aged under 18 years, 18-34 and 35+
- percentage of live births within and outside of marriage
- mortality rates
- natural change (i.e. population change arising from live births minus deaths)
- migration, both domestic (internal) and international
- patterns in Tyne & Wear, compared with regional and national trends.

**Sources:** The source of the data is births and deaths registrations, published annually by the Office for National Statistics (ONS) for Wards, Local Authorities, Health Authorities, Government Office Regions and England & Wales. The data are useful analytically, insofar as they are statistically reliable and a long time-series is available. The Vital Statistics data used in this report are not the only source of information on health. Additional health datasets are available from ONS, the Department for Health and the Health & Safety Executive.

**Definitions:** Total Fertility Rates (TFRs) and General Fertility Rates (GFRs) are reported as key indicators of fertility:

- TFRs estimate the average number of children women will bear if they experience age-specific fertility rates throughout their childbearing years (aged 15-44 years). TFRs are the most statistically robust measure of fertility as they take into account the age-structure of the female population in reproductive years.
- GFRs estimate the number of live births per thousand females of childbearing age (aged 15-44 years). These rates take no account of the female population age-structure.

Standardised Mortality Ratios (SMRs) are the standard measure of mortality.

- SMRs show how mortality in a given area compares to the national-level, taking into account differences in age- and sex-structure; for example, an SMR of 115 is 15% above the national average. SMRs have value in that they are age- and sex-specific<sup>3</sup>. For example, North Tyneside might have a relatively elderly age-structure. The SMR for the area takes this into account.

Raw data for live births and deaths by Ward<sup>4</sup> in Tyne & Wear are tabled in the Appendices. These data should be treated with some caution, as numbers of births and deaths are closely related to population size. (Wards differ in population size, notably through time.)

Caution on all rates in relation to population:

- All rates in relation to population are based on the latest revised population estimates<sup>5</sup>. Rates will therefore differ from those reported in previous editions of the report.

<sup>3</sup> For a more detailed account of the TFR and SMR methodologies, refer to 'Key Population and Vital Statistics', Office for National Statistics, Crown Copyright, [www.statistics.gov.uk](http://www.statistics.gov.uk)

<sup>4</sup> From 2004, data relates to new ward boundaries adopted in June 2004, introducing a discontinuity into the series

<sup>5</sup> The dates of issue of revised population estimates were: 1991-2000 (7/10/04), 2001 (9/9/04) and 2002-2005 (22/08/07).

## 2. POPULATION (MID-YEAR ESTIMATES)<sup>6</sup>

Tyne & Wear's population grew between 2004 and 2007 (to levels seen in 2000) (Table 2.1). [See Appendix 1 for longer time series (1981-1996).]

Within the Tyne & Wear Districts, Sunderland (eleven-year average 284,300) and Newcastle (eleven-year average 270,100) have the largest populations. North Tyneside (eleven-year average 192,500) and Gateshead (eleven-year average 191,800) have slightly smaller populations. South Tyneside has the smallest population in Tyne & Wear (eleven-year average 152,500).

Over the ten years 1997-2007, the population of Tyne & Wear is estimated to have fallen by 21,200 (-1.9%). Population fell in four Tyne & Wear Districts between 1997 and 2007, but

- in North Tyneside, population rose by 5,500 (+2.9%).
- Population in Gateshead is estimated to have fallen by 2.8%, whilst
- in South Tyneside, the population is estimated to have fallen by 2.6% and
- in Newcastle by 2.4%.
- Population in Sunderland is estimated to have fallen by 3.6%.

Caution: these ONS estimates may flatter Newcastle due to possible over-statement of international migration inflows (which may actually be spread across Tyne & Wear).

From 2004, the population of Tyne & Wear has grown, following a period of year-on-year falls (0.3% growth in 2005, followed by 0.2% growth in both 2006 and 2007). The population growth which occurred in 2005 (up 2,900) was entirely due to net international in-migration<sup>7</sup>. The growth, in 2005, has taken place in Newcastle and North Tyneside. In contrast, small population falls were estimated in South Tyneside and Sunderland. Gateshead's population remained stable.

**Table 2.1: Total Population; 1997-2007**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
Gateshead	195,900	194,300	193,300	191,900	191,200	190,900	190,700	190,400	190,400	190,500	190,500	191,800
Newcastle	278,200	274,500	271,000	267,600	266,200	267,400	267,200	267,100	269,600	270,500	271,600	270,100
North Tyneside	190,500	191,000	190,100	190,700	192,000	192,600	192,800	192,800	193,800	195,000	196,000	192,500
South Tyneside	155,100	154,400	153,600	153,100	152,800	152,500	151,900	151,300	151,200	151,000	151,000	152,500
Sunderland	290,800	289,700	287,500	285,700	284,600	283,500	282,700	281,400	281,000	280,600	280,300	284,300
<b>Tyne &amp; Wear</b>	<b>1,110,500</b>	<b>1,103,900</b>	<b>1,095,500</b>	<b>1,089,100</b>	<b>1,086,800</b>	<b>1,086,900</b>	<b>1,085,300</b>	<b>1,083,000</b>	<b>1,085,900</b>	<b>1,087,600</b>	<b>1,089,300</b>	<b>1,091,300</b>
<b>North East GOR</b>	<b>2,568,100</b>	<b>2,560,900</b>	<b>2,550,300</b>	<b>2,543,400</b>	<b>2,540,100</b>	<b>2,540,900</b>	<b>2,541,500</b>	<b>2,542,200</b>	<b>2,549,700</b>	<b>2,555,700</b>	<b>2,564,500</b>	<b>2,550,700</b>
<b>England &amp; Wales</b>	<b>51,559,600</b>	<b>51,720,100</b>	<b>51,933,500</b>	<b>52,140,200</b>	<b>52,360,000</b>	<b>52,572,100</b>	<b>52,797,300</b>	<b>53,057,100</b>	<b>53,419,200</b>	<b>53,728,800</b>	<b>54,072,000</b>	<b>52,669,100</b>

Note: The 1997 to 2005 mid-year estimates are revised population estimates

Source: *Mid-Year Estimates, ONS, Crown Copyright*

Note: These are revised population estimates (1991-2001), revised in light of ONS' Local Authority Population Studies and 2002-2005 revised in August 2007.

In Tyne & Wear, between 1997 and 2007, the population of women aged 15-44 fell (down 7,300) 1.6 times as fast as the overall population (-3.1% compared to -1.9%) (Table 2.2). Women aged 15-44 (used as the base for fertility rates) are mainly (53.0%) in Newcastle (eleven-year average 62,100) and Sunderland (eleven-year average 59,800). Gateshead (eleven-year average 38,900) and North Tyneside (eleven-year average 38,700) have smaller populations, whilst South Tyneside has the smallest average population of 30,600.

The childbearing population, women aged 15-44, fell in four of the five Tyne & Wear Districts between 1997 and 2007. In Sunderland it fell by 6.8%, in Gateshead it fell by 5.0%, in South Tyneside

<sup>6</sup> The Office for National Statistics' *Mid-Year Estimates, updated year on year, are used as the base for fertility and mortality rates.*

<sup>7</sup> Net 'Total International Migration' (TIM) to Tyne & Wear was +4,760 in 2005.



it fell by 4.2% and in Newcastle it fell by [just] 1.1%. In North Tyneside the child-bearing population rose by 2.1%.

**Table 2.2: Women Aged 15-44\*; 1997-2007**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
<b>Gateshead</b>	40,000	39,600	39,700	39,300	39,000	38,900	38,600	38,500	38,500	38,300	38,000	38,900
<b>Newcastle</b>	63,300	62,200	61,800	60,900	60,800	61,600	62,000	62,100	62,900	62,400	62,600	62,100
<b>North Tyneside</b>	38,300	38,400	38,200	38,300	38,600	38,700	38,900	38,800	38,900	39,000	39,100	38,700
<b>South Tyneside</b>	31,000	30,900	30,900	30,700	30,700	30,900	30,600	30,400	30,400	30,100	29,700	30,600
<b>Sunderland</b>	61,700	61,400	61,000	60,600	60,500	60,100	59,600	59,000	58,600	58,000	57,500	59,800
<b>Tyne &amp; Wear</b>	234,400	232,400	231,200	229,600	229,500	230,000	229,700	229,000	229,300	228,100	227,100	230,000
<b>North East GOR</b>	530,700	527,700	525,100	523,300	522,400	522,000	521,000	519,200	519,400	516,600	514,500	522,000
<b>England &amp; Wales</b>	10,727,000	10,737,300	10,766,700	10,820,800	10,869,500	10,899,800	10,940,800	10,991,300	11,077,400	11,115,400	11,127,200	10,915,700

Notes: The 1997 to 2005 mid-year estimates are revised population estimates

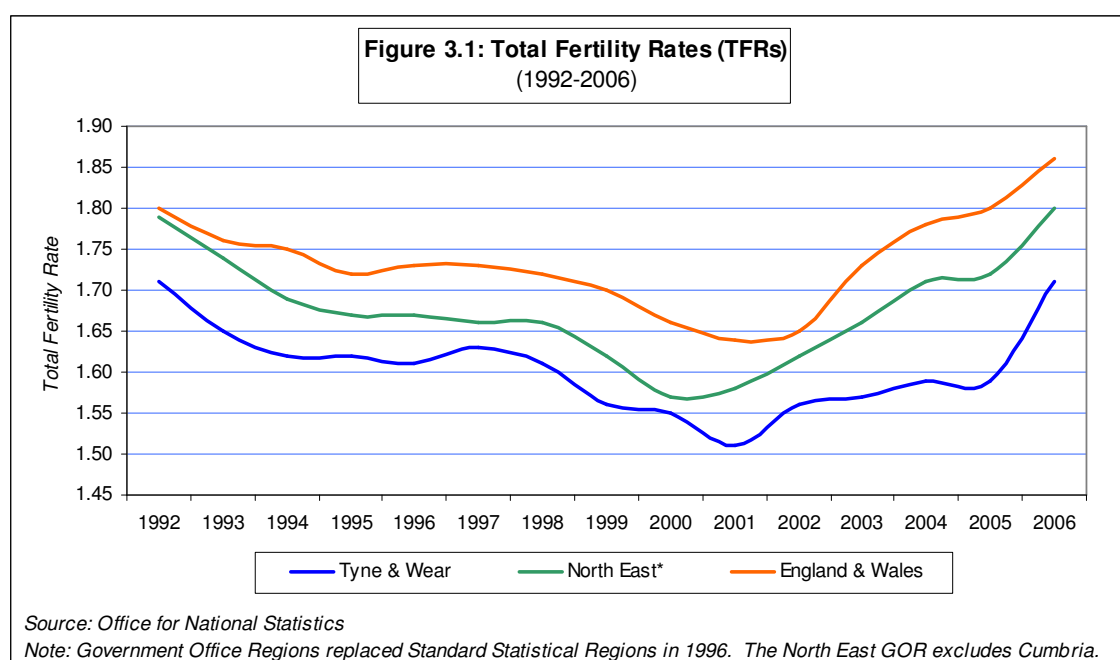
\* The childbearing population!

Source: Mid-Year Estimates, ONS, Crown Copyright

### 3. TOTAL FERTILITY RATES (TFRs)

Total Fertility Rates (TFRs) are a standard measure of fertility. TFRs represent the average number of live births a woman will bear throughout her lifetime. They are the most statistically meaningful measure of fertility, as they take into account the population age-structure of women in their reproductive years. Data for 2007 are currently unavailable, therefore TFRs between 1992 and 2006 are considered. [See Appendix 2 for longer time series (1984-1995).]

TFRs fell 11.7% between 1992 and 2001 in Tyne & Wear before rising again to 2006. The trend was similar both regionally and nationally. [Note the huge rise in fertility rates for women aged 35+ between 2001 and 2007. There was also a 135% rise in new National Insurance numbers issued to non-UK nationals in Tyne & Wear between 2002/03 and 2007/08.] TFRs between 1992 and 2006 were persistently low for Tyne & Wear, compared to England & Wales (Fig 3.1). TFRs averaged 1.59 between 1996 and 2006, 0.14 (8.6%) below England & Wales (average 1.73). Fertility in Tyne & Wear has also been persistently lower than in the region (Northern region until 1995, thereafter North East). This gap, however, narrowed sharply in 2000, but has widened further since 2001.



Note: \* Government Office Regions (GORs), replaced Standard Statistical Regions (SSRs) in 1996. The North East GOR excludes Cumbria.

Between 1996 and 2006, TFR fertility in Tyne & Wear rose by 6.2%, over 1pp slower than the 7.8% increase in the region and 7.5% increase nationally (Table 3.1).

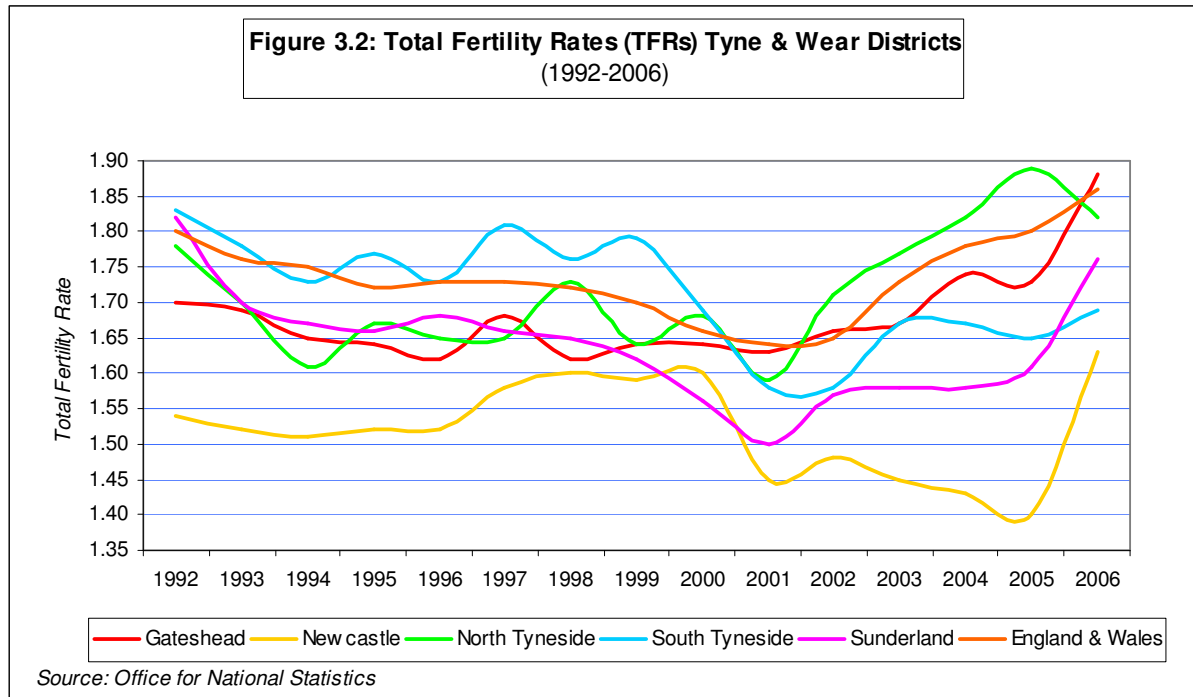
**Table 3.1: Total Fertility Rates (TFRs); 1996-2006**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average 1996-2006
<b>Gateshead</b>	1.62	1.68	1.62	1.64	1.64	1.63	1.66	1.67	1.74	1.73	1.88	1.68
<b>Newcastle</b>	1.52	1.58	1.60	1.59	1.60	1.45	1.48	1.45	1.43	1.40	1.63	1.52
<b>North Tyneside</b>	1.65	1.65	1.73	1.64	1.68	1.59	1.71	1.77	1.82	1.89	1.82	1.72
<b>South Tyneside</b>	1.73	1.81	1.76	1.79	1.69	1.58	1.58	1.67	1.67	1.65	1.69	1.69
<b>Sunderland</b>	1.68	1.66	1.65	1.62	1.56	1.50	1.57	1.58	1.58	1.61	1.76	1.62
<b>Tyne &amp; Wear</b>	1.61	1.63	1.61	1.56	1.55	1.51	1.56	1.57	1.59	1.59	1.71	1.59
<b>North East*</b>	1.67	1.66	1.66	1.62	1.57	1.58	1.62	1.66	1.71	1.72	1.80	1.66
<b>England &amp; Wales</b>	1.73	1.73	1.72	1.70	1.66	1.64	1.65	1.73	1.78	1.80	1.86	1.73

Note: \* Government Office Regions (GORs), replaced Standard Statistical Regions (SSRs) in 1996. The North East GOR excludes Cumbria.

Source: Office for National Statistics, Crown Copyright

Since 1996, (TFR) fertility rates in the non-university Districts of Gateshead and North Tyneside have tended to converge towards the England & Wales rate (Fig 3.2). In South Tyneside, the rate shifted down markedly from 1999-2001 to below the E&W rate. In 2006, fertility in Gateshead was above the England & Wales rate. Additionally, between 2002 and 2005, fertility in North Tyneside was consistently *above* the England & Wales rate. In Sunderland, by contrast, fertility remained well (0.11) below the England & Wales rate (Average TFRs E&W 1.73, 1.62 in Sunderland). In Newcastle, fertility remained the lowest, averaging 1.52, or (a large) 0.21 below the E&W TFR. However, in 2006, Newcastle's TFR rose 16.4% (possibly linked to international in-migration).



Between 1996 and 2006, TFRs rose in Gateshead (by 16.0%), North Tyneside (10.3%), Newcastle (7.2%) and Sunderland (4.8%). By contrast, TFRs declined in South Tyneside (-2.3%).

The population of young adults aged 18-29 in Tyne & Wear, rose 13.5% (+22,800) between 2001 and 2007. This was higher than the rise regionally (up 11.8%) and in E&W (up 8.3%). These figures contrast to the fall in the population of young adults experienced between 1991 and 2001 (TW -19.5%. NE -20.0%, E&W -15.3%).

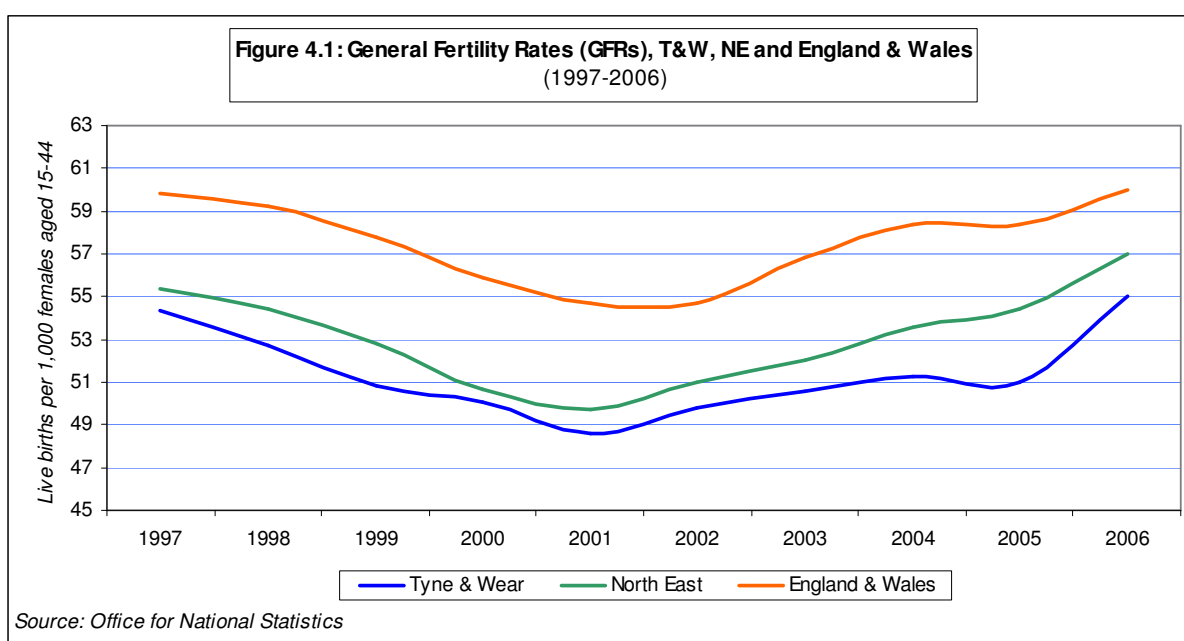
Table A2 in Appendix 2 shows TFRs between 1984 and 1995. This includes data for the period of recession years between 1989-1993. During this period, fertility in Tyne & Wear fell from 1.72 to 1.65 (down 4.1%). This was almost double the fall for England & Wales (down 2.2%) and contrasts to an increase of 1.8% regionally. Among the districts, the fall was greatest in Newcastle (down 7.3%).

#### 4. GENERAL FERTILITY RATES (GFRs)

General Fertility Rates (GFRs) are another standard measure of fertility. These rates are the number of live births in a single year per thousand women of childbearing age (15-44). They are simpler but less meaningful than TFRs, as they fail to take age-structure into account.

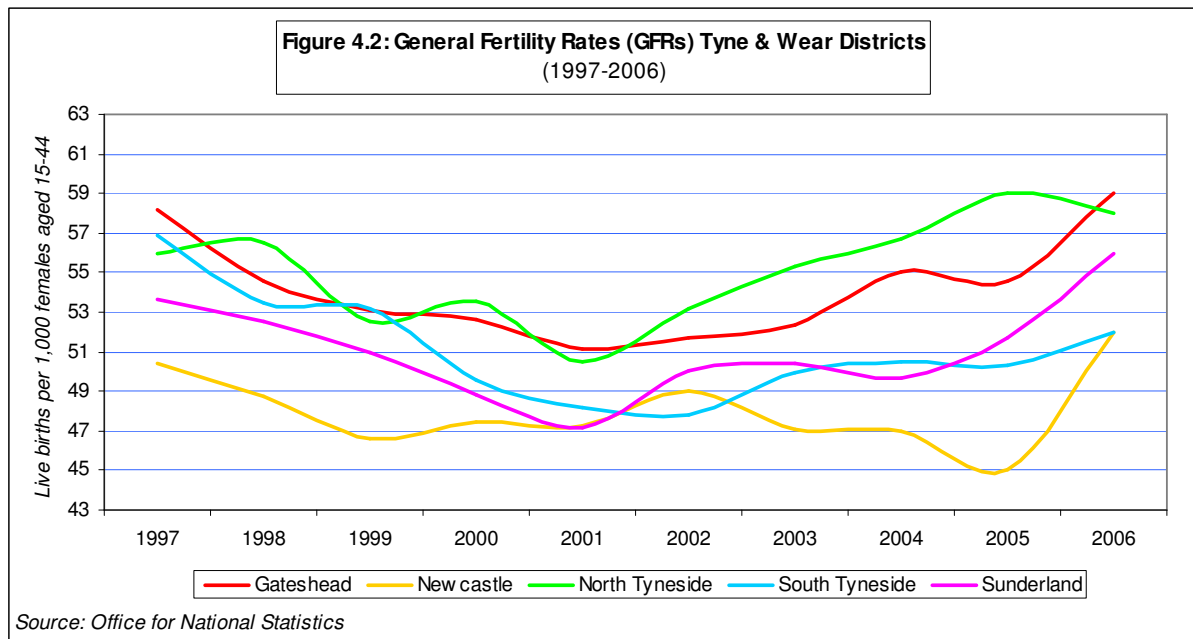
Similar to TFRs, GFRs show fertility in Tyne & Wear to be below national and regional rates (Fig 4.1 and Table 4.1). Between 1997 and 2006, the average GFR in Tyne & Wear was 51 (per 1,000 women aged 15-44), 7 (12%) below England & Wales (58) and 2 below the North East (53).

Moreover, between 1997 and 2006 the increase in GFRs in Tyne & Wear (1.2%) was faster than that experienced nationally (0.2%). However, the North East experienced the fastest rise, at 2.9%. GFRs in TW, NE and E&W dipped between 1997 and 2001 before rising steadily to 2006. In 2006, Tyne & Wear's GFR rose sharply (+7.8%). This was driven largely by the rise in Newcastle (+15.6%).



At District level, GFRs were lower in all Tyne & Wear Districts than the national rate in 2006 (Figure 4.2 and Table 4.1). The GFR was particularly low in Newcastle (ten-year averages of 48, compared to 58 in England & Wales). Although the ten-year average GFRs for South Tyneside (51), Sunderland (51), Gateshead (54) and North Tyneside (55) were higher, rates remained below the national rate.

Between 1997 and 2006 GFRs in all Districts rose, apart from in South Tyneside, where the GFR fell -8.6%. The rate of increase in all other Districts exceeded the national rate of increase (0.2%). Sunderland's rate of increase was fastest (4.4%), followed by North Tyneside (3.6%) and Newcastle (3.2%). The increase in Gateshead was slower at 1.4%.



**Table 4.1: General Fertility Rates (GFRs); 1997-2006**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Average 1997-2006
Gateshead	58	55	53	53	51	52	52	55	55	59	54
Newcastle	50	49	47	47	47	49	47	47	45	52	48
North Tyneside	56	57	53	54	50	53	55	57	59	58	55
South Tyneside	57	53	53	50	48	48	50	51	50	52	51
Sunderland	54	52	51	49	47	50	50	50	52	56	51
Tyne & Wear	54	53	51	50	49	50	51	51	51	55	51
North East	55	54	53	51	50	51	52	54	54	57	53
England & Wales	60	59	58	56	55	55	57	58	58	60	58

Note: GFRs are rounded to the nearest whole number

Source: Office for National Statistics, Crown Copyright

## 5. LIVE BIRTHS (INCLUDING BY AGE OF MOTHER)

This section looks at births, in a single year, in relation to the number of women of childbearing age. Section 3 had looked at births expressed as the number to be expected *over the reproductive lifetime* of a woman.

### 5.1 Live Births (Mothers Aged 11-44 years)<sup>8</sup>

In 2007, there were 12,696 live births in Tyne & Wear (Table 5.1 and Figure 5.1). This was 7.1% higher than the 7-year average of 11,857 per annum and a rise of 13.9% from 2001. The seven-year average rate was highest in North Tyneside (49.3) which is 2.9 above the Tyne & Wear seven-year average (46.4). Gateshead's seven-year average rate (48.9) was also above Tyne & Wear's. [See Appendix 3 for a longer time series on live births, deaths and natural change (1983-2007).]

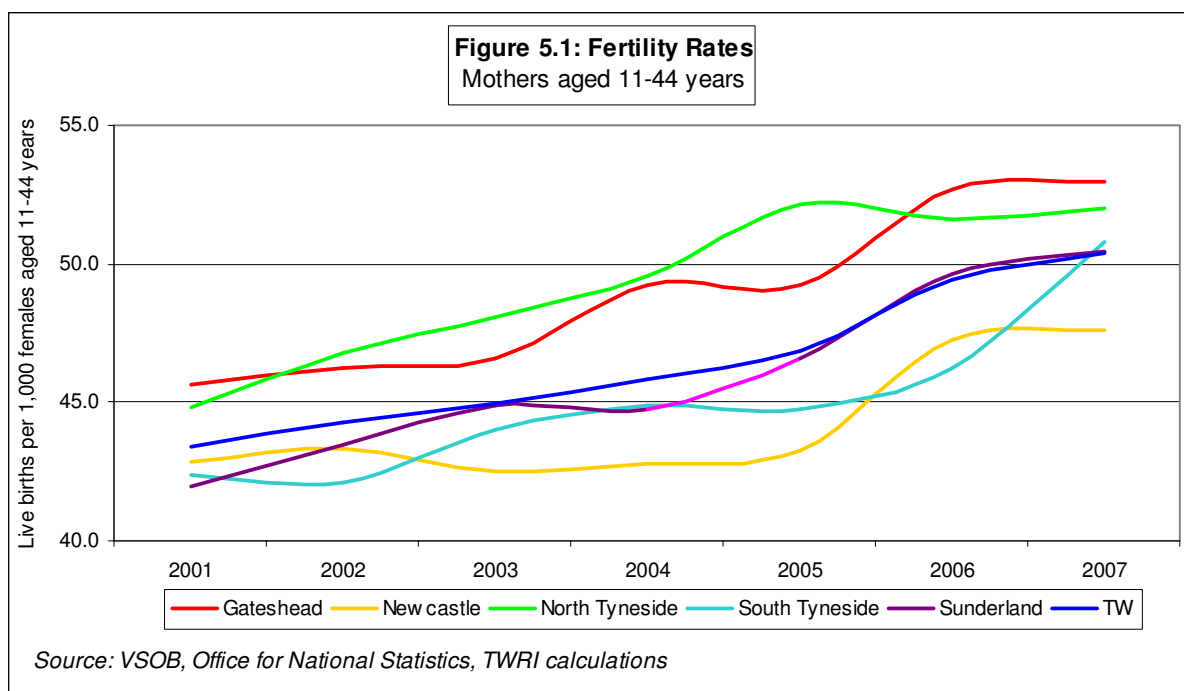
**Table 5.1: Live Births, 2001-2007**

	2001		2002		2003		2004		2005		2006		2007		Average 2001-2007	
	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate
Gateshead	1,995	45.6	2,012	46.2	2,020	46.6	2,128	49.2	2,118	49.2	2,251	52.7	2,241	53.0	2,109	48.9
Newcastle	2,875	42.9	2,941	43.3	2,895	42.5	2,918	42.8	2,979	43.2	3,221	47.3	3,238	47.6	3,010	44.2
North Tyneside	1,949	44.8	2,042	46.8	2,101	48.1	2,160	49.6	2,274	52.2	2,256	51.6	2,268	52.0	2,150	49.3
South Tyneside	1,479	42.4	1,467	42.1	1,523	44.0	1,540	44.9	1,529	44.7	1,560	46.2	1,698	50.8	1,542	45.0
Sunderland	2,853	42.0	2,930	43.4	3,012	44.9	2,971	44.8	3,068	46.6	3,236	49.6	3,251	50.5	3,046	46.0
Tyne & Wear	11,151	43.4	11,392	44.3	11,551	45.0	11,717	45.8	11,968	46.8	12,524	49.4	12,696	50.4	11,857	46.4

Note: \*The rate is calculated as the number of live births per 1,000 females aged 11-44 years

Source: ONS' VSOB, Crown Copyright. TWRI calculations

Between 2001 and 2007, fertility rates for women aged 11-44 years rose by 16.3% in Tyne & Wear, with the fastest rise being in Sunderland (20.2%) and closely followed by South Tyneside (19.9%). The increase was slowest in Newcastle, at 11.0%.



Live births by age of mother cover three standard age groups: Under 18 years (11-17 years), 18-34 years and 35+ years old.

<sup>8</sup> Note: This is a wider age-range than the usual 15-44 years.

## 5.2 Mothers Aged 18-34 years

The vast majority of births (81.0%) in 2007 were to women aged 18-34. Births to this age group averaged 9,728 per year between 2001 and 2007 (Table 5.2). Births to these mothers rose 10.8%, up a thousand from 2001.

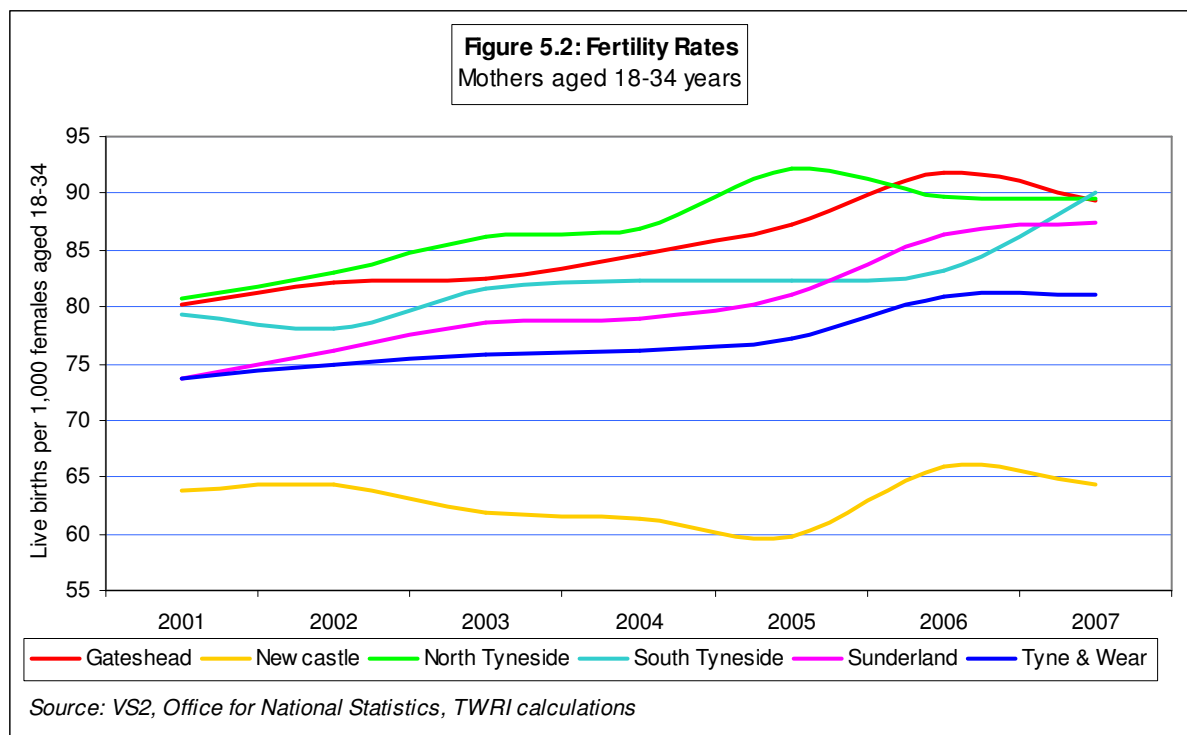
**Table 5.2: Live Births (Mothers Aged 18-34)\***

	2001		2002		2003		2004		2005		2006		2007		Average 2001-2007	
	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate
Gateshead	1,643	80.2	1,652	81.7	1,653	82.6	1,690	83.8	1,740	86.3	1,820	91.9	1,766	89.3	1,709	85.1
Newcastle	2,339	63.6	2,416	65.6	2,357	62.8	2,363	60.7	2,379	56.9	2,617	65.9	2,590	64.3	2,437	62.8
North Tyneside	1,628	80.9	1,665	84.0	1,734	89.3	1,741	89.9	1,856	93.5	1,825	89.7	1,830	89.5	1,754	88.1
South Tyneside	1,230	79.5	1,201	78.8	1,247	82.4	1,259	82.9	1,282	82.6	1,297	83.2	1,405	90.0	1,274	82.8
Sunderland	2,437	73.5	2,477	76.4	2,531	78.5	2,500	78.4	2,551	78.9	2,689	86.4	2,688	87.5	2,553	79.9
Tyne & Wear	9,277	73.7	9,411	75.7	9,522	76.6	9,553	76.0	9,808	75.6	10,248	80.9	10,279	81.0	9,728	77.1

Note: \*The rate is calculated as the number of live births per 1,000 women aged 18-34 years

Source: VS2, Office for National Statistics, Crown Copyright, TWRI calculations

Between 2001 and 2007 fertility rates for women aged 18-34 were highest in North Tyneside (seven-year average rate of 88 live births per 1,000 women aged 18-34) (Figure 5.2). Gateshead, South Tyneside and Sunderland had slightly lower average rates of 85, 83 and 80 live births per 1,000 women aged 18-34 respectively. Fertility in Newcastle was substantially lower, averaging 63 live births per 1,000 women aged 18-34. This could be the result of women choosing to focus on their careers and delay childbearing till later. It could also be due to the expansion of the universities or out-migration to start and/or expand families.



Fertility rates rose between 2001 and 2007 for women aged 18-34 by 9.9% in Tyne & Wear. The rise in Sunderland was nearly twice the average (19.1%). Rises were around the average in South Tyneside (13.2%), Gateshead (11.3%) and North Tyneside (10.8%) but only very modest in Newcastle (1.1%).

The overall rise in fertility from 2001-07 is a reversal of the earlier trend of declining fertility rates. This earlier trend was attributed to the effect of a large number of women choosing to have fewer children, or choosing not to raise families, possibly in order to pursue careers. This could remain a

factor in relation to trends in Newcastle. (Perhaps Newcastle's proportions of women who have jobs in the upper occupational groups has risen significantly faster than in other Districts.) As Section 5.3 indicates, a fall in fertility rates in women aged 18-34 in Newcastle could be the displacement effect of more women choosing to have children later in life.

Within this age group, there has been a trend towards later childbearing. In 2007, ONS reported that women aged 30-34 had the highest fertility of any age group<sup>9</sup>. Because fertility is currently rising faster among women over 30 than among younger women, the average age at childbearing has continued to increase slowly. The mean age for giving birth in the UK was 29.3 years in 2007, up 0.7 years from 28.6 years in 2001.

### 5.3 Mothers Aged 35+ years

Live births by mothers aged 35 or over accounted for 15.9% of all births in 2007 in Tyne & Wear (a rate of 21 live births per 1,000 women aged 35-44). Between 2001 and 2007, Newcastle had relatively high fertility rates for women aged 35-44, averaging 25 live births per 1,000 (Table 5.3 and Figure 5.3). This could be a time-shift effect of Newcastle women aged 18-34 choosing to postpone childbearing<sup>10</sup>. By contrast, Sunderland and South Tyneside (both 18) had low 35+ fertility rates. North Tyneside (22) and Gateshead (23) had average fertility rates slightly below Newcastle, but above the Tyne & Wear average rate (21).

**Table 5.3: Live Births (Mothers Aged 35+)\***

	2001		2002		2003		2004		2005		2006		2007		Average 2001-2007	
	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate
Gateshead	275	18.5	298	19.7	310	20.7	386	25.6	332	22.1	367	24.7	409	27.9	340	22.7
Newcastle	433	22.3	426	22.1	444	23.2	460	24.2	503	26.5	510	28.2	555	31.5	476	25.4
North Tyneside	258	17.3	299	19.9	303	20.3	361	24.2	350	23.5	370	24.4	372	24.7	330	22.1
South Tyneside	186	15.4	207	17.0	217	17.9	228	19.0	213	18.1	209	18.2	245	21.7	215	18.2
Sunderland	317	14.7	330	15.1	365	16.8	369	17.0	397	18.3	439	20.4	441	20.7	380	17.6
Tyne & Wear	1,469	17.7	1,560	18.7	1,639	19.8	1,804	21.8	1,795	21.8	1,895	23.4	2,022	25.3	1,741	21.2

Note: \*The rate is calculated as the number of live births per 1,000 women aged 35-44 years

Source: VS2, Office for National Statistics, Crown Copyright, TWRI calculations

Between 2001 and 2007, fertility rates for women aged 35+ rose in Tyne & Wear by (a huge) 43% (with numbers of births up over 550). Fertility rates rose in all Districts, with Gateshead having the largest rise (51%). Smaller rises in fertility occurred in North Tyneside (42%), and Newcastle, South Tyneside, and Sunderland (41%).

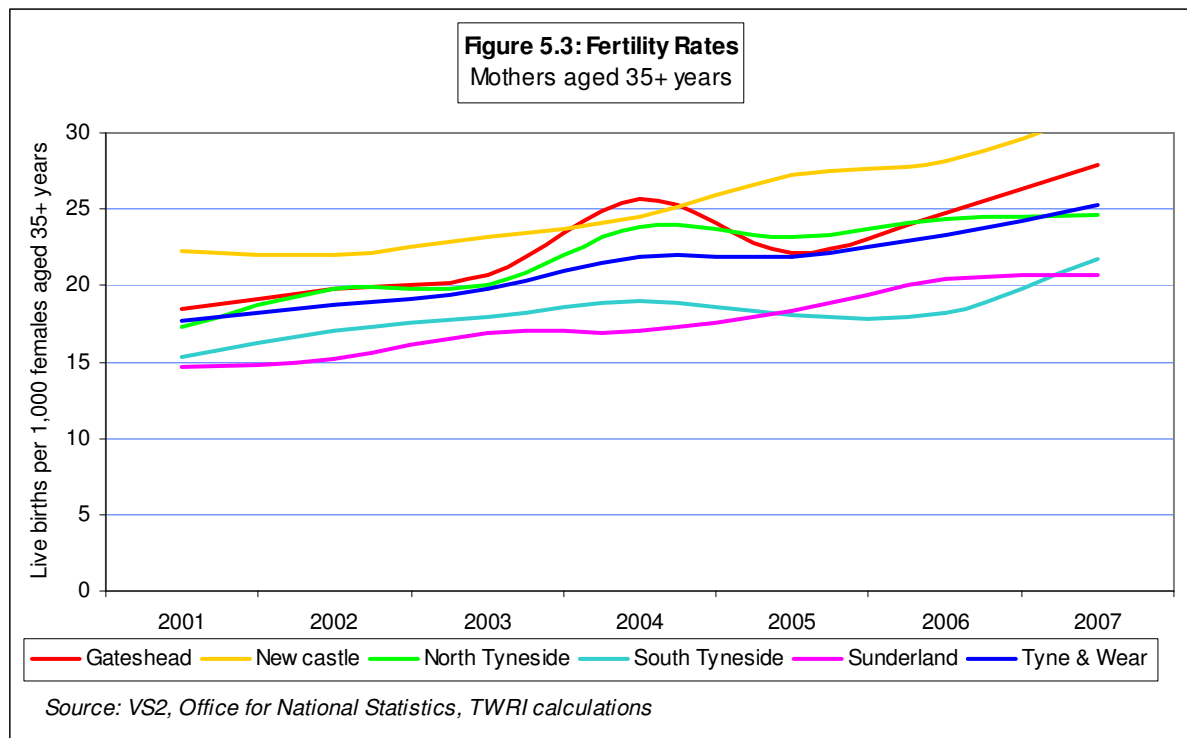
Rises in fertility for this age group are most likely the effect of women delaying childbearing until they have established careers and of childbearing in subsequent relationships. At a national level, changing fertility patterns in the UK have been characterised by rising mean age at first birth and of higher levels of childlessness (nearly one in five women in their mid-forties in 2005 were childless)<sup>11</sup>.

<sup>9</sup> ONS News Release, 21<sup>st</sup> August 2008 available at: <http://www.statistics.gov.uk/cci/nugget.asp?id=951>

<sup>10</sup> Possibly linked to Newcastle's relatively high proportions of women working in the highest standard occupational groups (mainly the professional group, but also managers).

<sup>11</sup> ONS News Release, 15<sup>th</sup> December 2005 available at: <http://www.statistics.gov.uk/pdfdir/birthstats1205.pdf>





#### 5.4 Mothers Aged under 18 years

Young mothers (under age 18) accounted for 3.1% of births in 2007 in Tyne & Wear, averaging 388 pa from 2001-2007 (Table 5.4). In Newcastle, the seven-year average rate of 9.0 live births per 1,000 females aged under 18 years (11-17 years) was the highest of all Tyne & Wear Districts. Sunderland had the next highest average fertility rate of 8.7 births per 1,000 females aged under 18 years. North Tyneside (7.8), South Tyneside (7.5) and Gateshead (7.4) had lower seven-year average rates, all of which were below the Tyne & Wear average of 8.2.

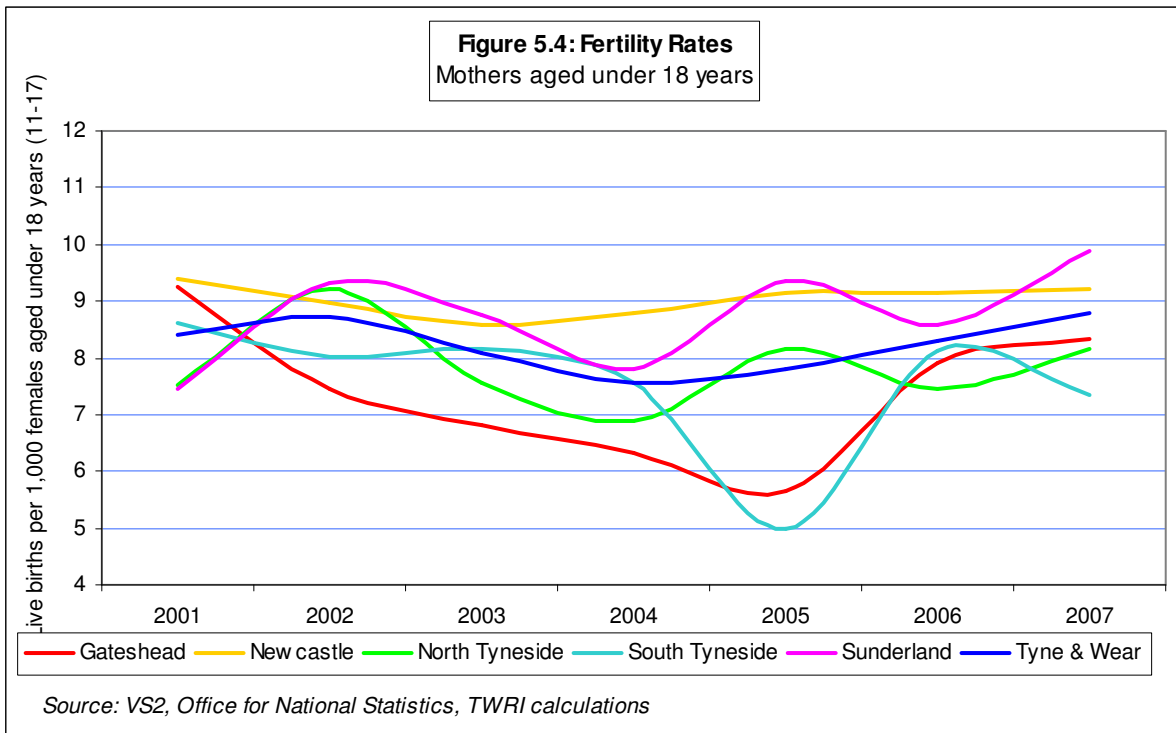
**Table 5.4: Live Births (Mothers Aged under 18)\***

	2001		2002		2003		2004		2005		2006		2007		Average 2001-2007	
	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate	no.	rate
Gateshead	77	9.2	62	7.5	57	6.8	52	6.3	46	5.6	64	7.9	66	8.4	61	7.4
Newcastle	103	9.4	99	9.0	94	8.6	95	8.8	97	9.1	94	9.1	93	9.2	96	9.0
North Tyneside	63	7.5	78	9.2	64	7.6	58	6.9	68	8.1	61	7.4	66	8.1	65	7.8
South Tyneside	63	8.6	59	8.0	59	8.2	53	7.6	34	5.0	54	8.1	48	7.3	53	7.5
Sunderland	99	7.5	123	9.3	116	8.7	102	7.8	120	9.4	108	8.6	122	9.9	113	8.7
Tyne & Wear	405	8.4	421	8.7	390	8.1	360	7.6	365	7.8	381	8.3	395	8.8	388	8.2

Note: \*The rate is calculated as the number of live births per 1,000 females aged under 18 years (Aged 11-17 years)

Source: VS2, Office for National Statistics, Crown Copyright, TWRI calculations

Fertility rates for females aged under 18 years fell ('improved') between 2004 and 2005 in South Tyneside and Gateshead (Figure 5.4), and differences narrowed again in 2006. In 2007, Sunderland had the highest rate (9.9) and South Tyneside the lowest (7.3).



Since 2001, in Tyne & Wear, the overall youth (11-17 years) fertility rate trend has been downward to 2004, then upwards, rising 5% by 2007 (from 2001). Fertility rates rose most substantially in Sunderland (32.2%; up 23), followed by a more modest rise in North Tyneside (8.6%). Fertility rates in this age-group fell in South Tyneside (-14.9%), Gateshead (-9.6%) and Newcastle (-1.8%).

## 6. LIVE BIRTHS BY MARITAL STATUS

In 2007, the majority of births in Tyne & Wear (56%) and the North East (56%) were outside marriage, compared to 44% in England & Wales. Tyne & Wear has had the majority of births outside marriage every year from 2000 onwards.

### 6.1. Live Births Within Marriage

For the period between 1997 and 2007, the average percentage of live births within marriage in Tyne & Wear was markedly lower than in England & Wales (Table 6.1 and Figure 6.1). Tyne & Wear was 12 percentage points below the national average (47%, E&W 59%), with the proportion declining at a slightly faster rate (down 8 percentage points) than in England & Wales (down 7 percentage points).

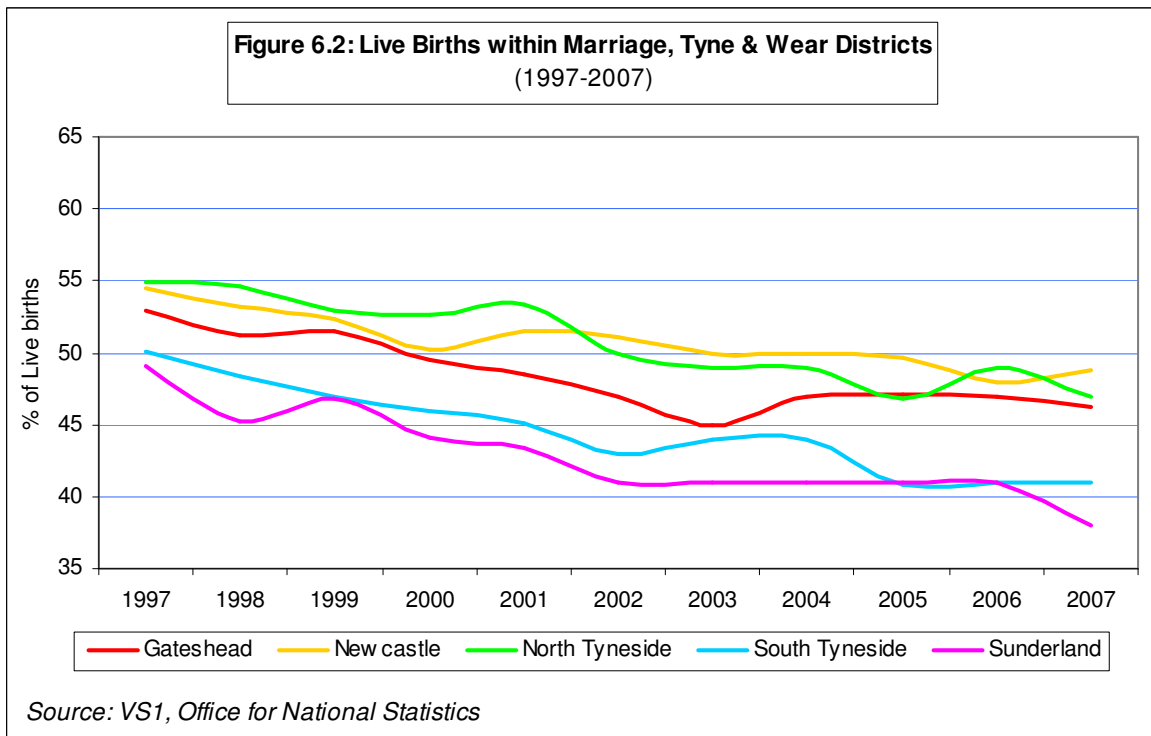
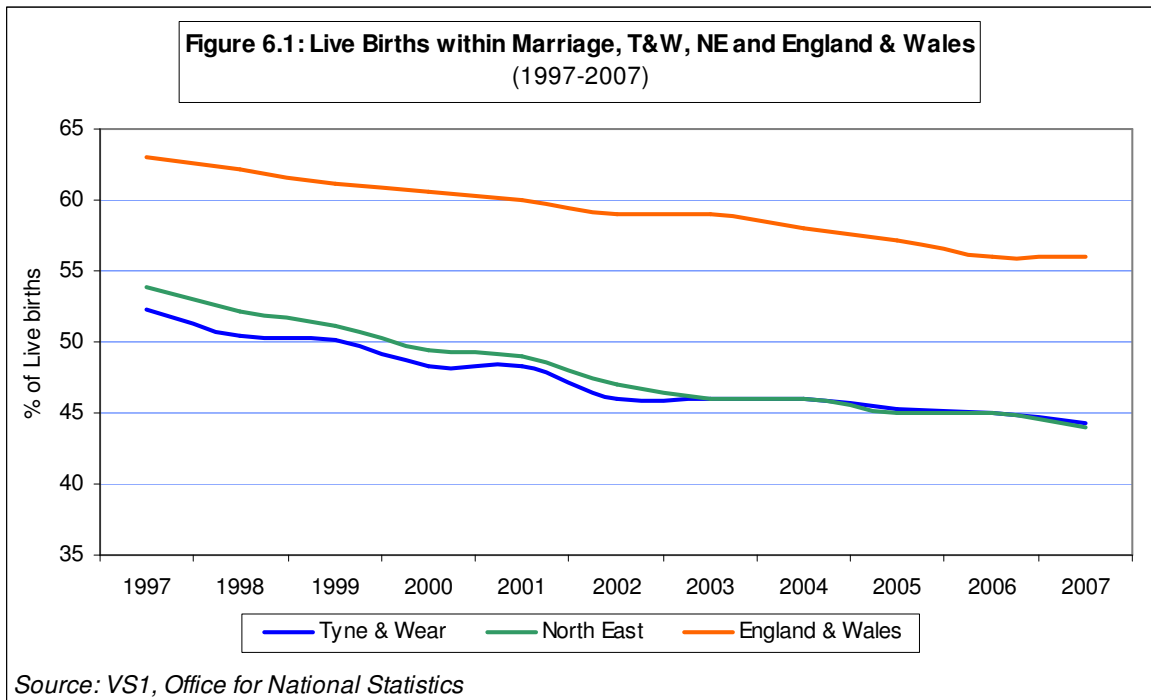
**Table 6.1: Percentage of Live Births Within Marriage**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
<b>Gateshead</b>	53	51	51	50	48	47	45	47	47	47	46	48
<b>Newcastle</b>	54	53	52	50	52	51	50	50	50	48	49	51
<b>North Tyneside</b>	55	55	53	53	53	50	49	49	47	49	47	51
<b>South Tyneside</b>	50	48	47	46	45	43	44	44	41	41	41	45
<b>Sunderland</b>	49	45	47	44	43	41	41	41	41	41	38	43
<b>Tyne &amp; Wear</b>	52	50	50	48	48	46	46	46	45	45	44	47
<b>North East</b>	54	52	51	49	49	47	46	46	45	45	44	48
<b>England &amp; Wales</b>	63	62	61	61	60	59	59	58	57	56	56	59

Source: VS1, Office for National Statistics, Crown Copyright

The proportion of live births within marriage between 1997 and 2007 was lower in all Tyne & Wear Districts than the national average. North Tyneside and Newcastle both had the highest average proportion of live births within marriage at 51%. This was still, however, 8 percentage points below the national average. The average proportion of live births within marriage in Gateshead was slightly lower at 48%. South Tyneside (45%) and Sunderland (43%) had the lowest averages (Table 6.1 and Figure 6.2).

The proportion of live births within marriage fell in all Tyne & Wear Districts between 1997 and 2007. The largest fall of 11 percentage points was seen in Sunderland, followed by South Tyneside (-9pp), North Tyneside (-8pp) and Gateshead (-7pp). Newcastle showed the most moderate decline of 6 percentage points. The gap between Sunderland and South Tyneside and the rest of the Tyne & Wear districts has roughly doubled, from about 5pp to around 10pp (7-10pp).



## 6.2 Live Births Outside of Marriage

In 2007, the number of births outside of marriage exceeded the number of births within marriage for the eighth consecutive year in both Tyne & Wear and the North East.

Between 1997 and 2007, the average proportion of live births outside of marriage in Tyne & Wear was 53%, 12 percentage points above the England & Wales average (41%) (Table 6.2 and Figure 6.3). The proportion rose by 8 percentage points in Tyne & Wear and by 7 percentage points in England & Wales during this period.

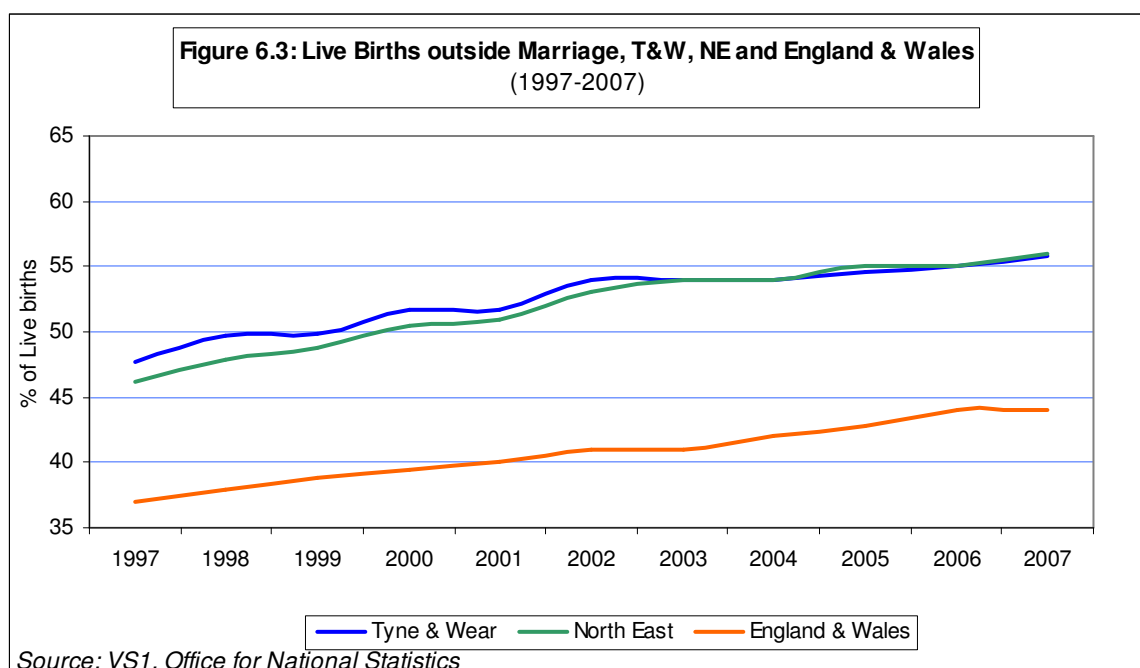
At District level, Sunderland (eleven-year average 57%) and South Tyneside (eleven-year average 55%) had the largest proportions of live births outside of marriage. Gateshead has a eleven-year average of 52%. Newcastle and North Tyneside both had the lowest average proportions of live births outside marriage, both at 49%. (Table 6.2 and Figure 6.4).

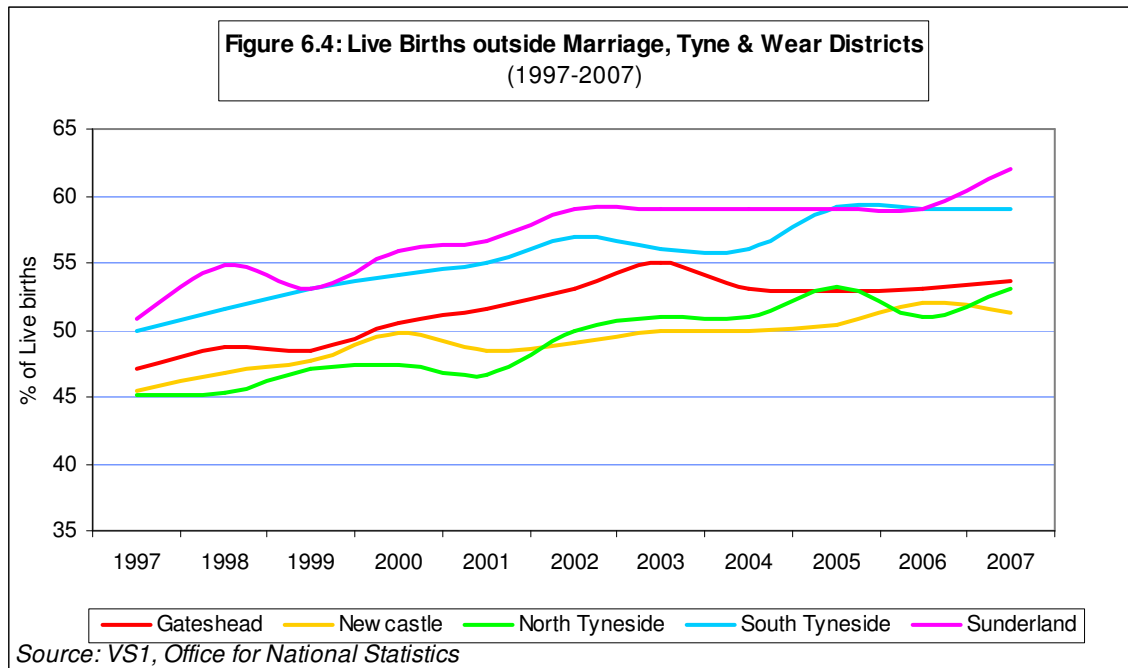
The proportion of live births outside of marriage increased in all Tyne & Wear Districts between 1997 and 2007. Sunderland's rise of 11 percentage points was the largest among the Districts, followed by South Tyneside (+9pp), North Tyneside (+8pp) and Gateshead (+7pp). Newcastle (+6pp) showed the most moderate rise.

**Table 6.2: Percentage of Live Births Outside of Marriage**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
Gateshead	47	49	49	50	52	53	55	53	53	53	54	52
Newcastle	46	47	48	50	48	49	50	50	50	52	51	49
North Tyneside	45	45	47	47	47	50	51	51	53	51	53	49
South Tyneside	50	52	53	54	55	57	56	56	59	59	59	55
Sunderland	51	55	53	56	57	59	59	59	59	59	62	57
Tyne & Wear	48	50	50	52	52	54	54	54	55	55	56	53
North East	46	48	49	51	51	53	54	54	55	55	56	52
England & Wales	37	38	39	39	40	41	41	42	43	44	44	41

Source: VS1, Office for National Statistics, Crown Copyright





## 7. DEATHS<sup>12</sup>

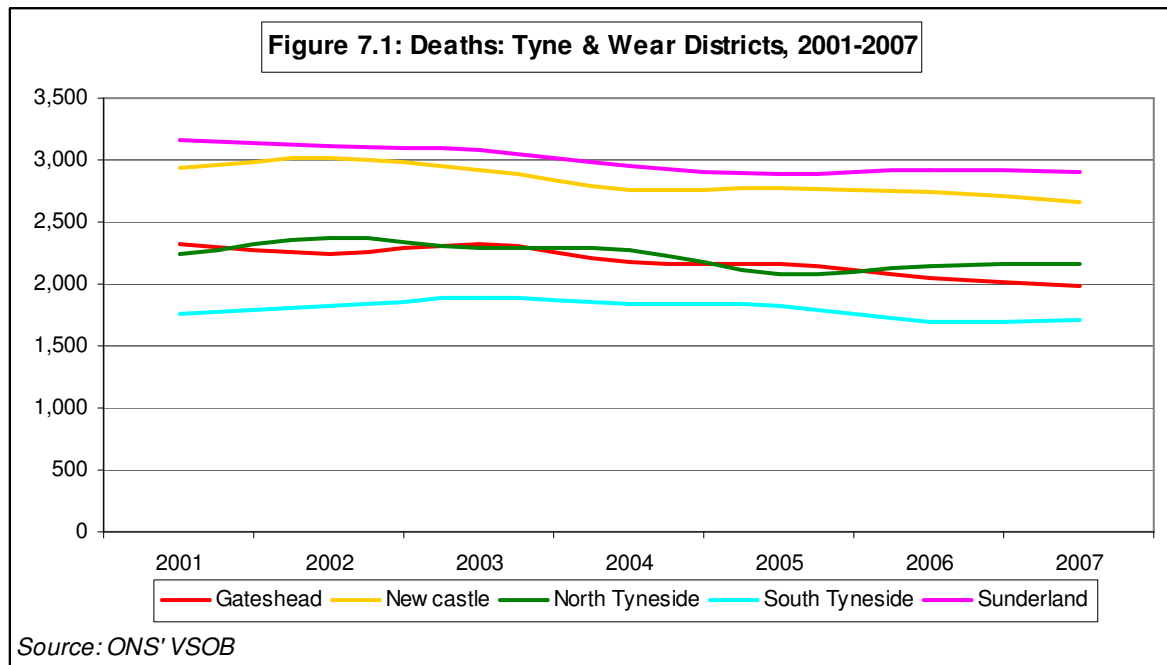
In 2007, there were 11,431 deaths in Tyne & Wear (Table 7.1 and Figure 7.1). This was 5.0% lower than the 7-year average of 12,034 per annum. This fall was faster than the fall regionally (-3.8%) and nationally (-3.1%) [Caution: population growth was faster nationally.] Among the districts, Gateshead had the fastest fall, at -8.8% and Sunderland the slowest fall, at -3.3% (the closest to the national average). [See Appendix 3 for a longer time series on live births, deaths and natural change (1983-2007).]

**Table 7.1: Deaths, 2001-2007**

	2001	2002	2003	2004	2005	2006	2007	Average 2001-2007
<b>Gateshead</b>	2,318	2,248	2,322	2,179	2,168	2,052	1,991	2,183
<b>Newcastle</b>	2,940	3,016	2,923	2,760	2,778	2,739	2,665	2,832
<b>North Tyneside</b>	2,241	2,370	2,286	2,277	2,080	2,149	2,160	2,223
<b>South Tyneside</b>	1,756	1,830	1,890	1,844	1,827	1,699	1,713	1,794
<b>Sunderland</b>	3,161	3,118	3,082	2,946	2,882	2,924	2,902	3,002
<b>Tyne &amp; Wear</b>	12,416	12,582	12,503	12,006	11,735	11,563	11,431	12,034
<b>North East</b>	28,391	28,519	28,690	27,857	27,449	26,870	26,733	27,787
<b>E&amp;W</b>	531,127	534,106	537,937	513,034	511,840	501,409	502,869	518,903

Source: ONS' VSOB

Between 2001 and 2007, the number of deaths fell by 7.9% (-985) in Tyne & Wear. The number of deaths fell in each Tyne & Wear district, with Gateshead showing the largest percentage fall, at -14.1% and South Tyneside the smallest, at -2.4%.



<sup>12</sup> These data should be treated with some caution as numbers of births and deaths are closely related to population size.

## 8. MORTALITY RATIOS

### 8.1 Standardised Mortality Ratios (SMRs)

Standardised Mortality Ratios (SMRs) are defined as ‘observed deaths expressed as a percentage of expected deaths, where expected deaths is the number that would occur if the population of the area experienced sex and age mortality rates of England & Wales<sup>13</sup>’.

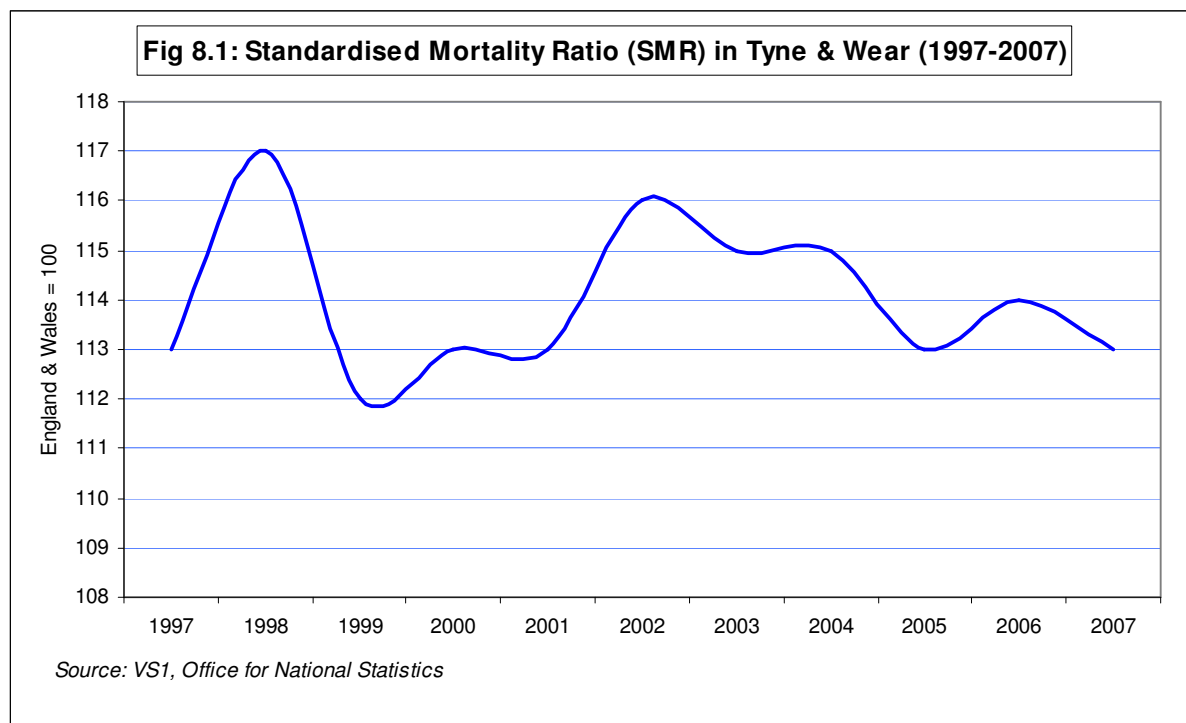
Both Tyne & Wear and the North East, relative to England & Wales, have extremely high mortality ratios (Table 8.1 and Figure 8.1 and Figure 8.2). Since 1997, in Tyne & Wear, SMRs have fluctuated, averaging 114 and peaking at 117 in 1998. SMRs in the North East also peaked in 1998, at 116 (see Appendix 5 for details of SMRs in other regions/districts in England).

**Table 8.1: Standardised Mortality Ratios (SMRs) (1997-2007)**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
Gateshead	116	123	115	118	119	114	117	115	116	113	109	116
Newcastle	110	115	111	111	111	116	113	109	111	112	110	112
North Tyneside	108	110	101	102	105	113	109	114	104	110	111	108
South Tyneside	119	115	113	112	109	113	117	119	118	112	113	115
Sunderland	112	121	119	119	120	121	120	120	117	121	119	119
<b>Tyne &amp; Wear</b>	113	117	112	113	113	116	115	115	113	114	113	114
<b>North East</b>	112	116	112	110	112	113	113	114	113	112	112	113
<b>England, Wales &amp; Elsewhere*</b>	100	100	100	100	100	100	100	100	100	100	100	100

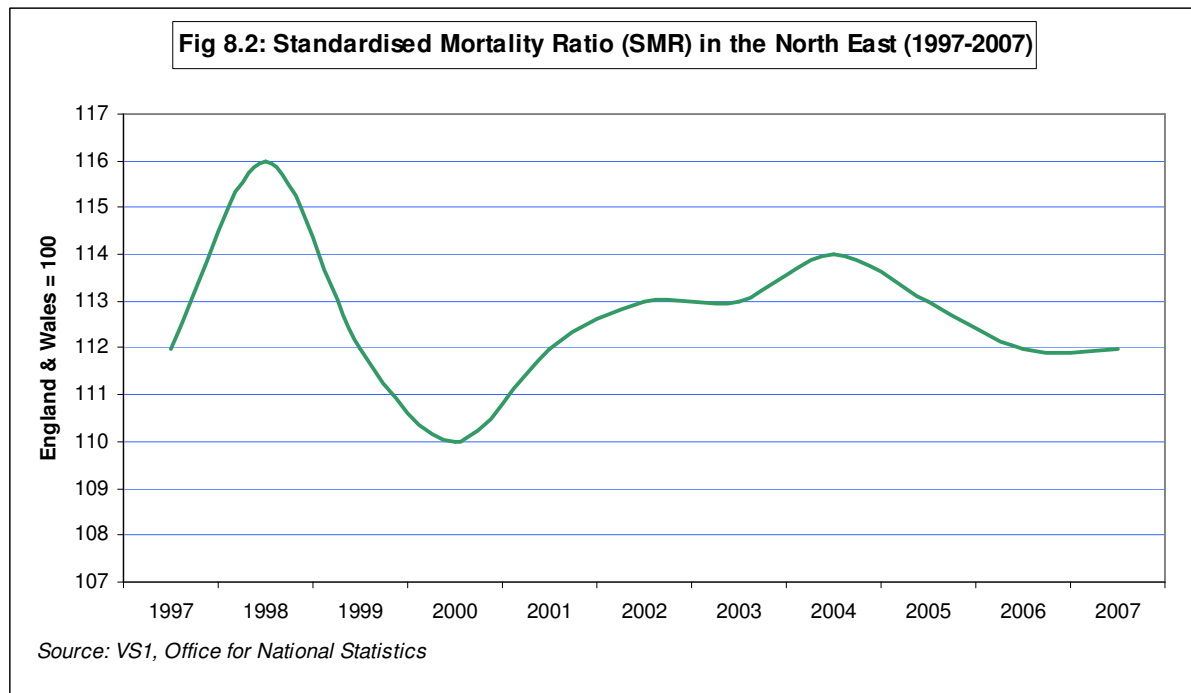
\* includes figures for 'Elsewhere', defined as those people 'who are not residents of England & Wales, but unfortunately died whilst visiting E&W

Source: Population Trends 112, 116 & 120, and VS1, ONS, Crown Copyright



<sup>13</sup> As defined in ‘Key Population and Vital Statistics’, Office for National Statistics, Crown Copyright. See also Introduction within this report (§1).





Within Tyne & Wear, between 1997 and 2007, the average SMR was nearest 100 in North Tyneside at 108 (8 points above the national average) (Table 8.1 and Figure 8.3). The eleven-year average SMRs in Newcastle and South Tyneside were 112 and 115 respectively. The average SMRs were high in Gateshead and Sunderland, at 116 and 119 respectively.

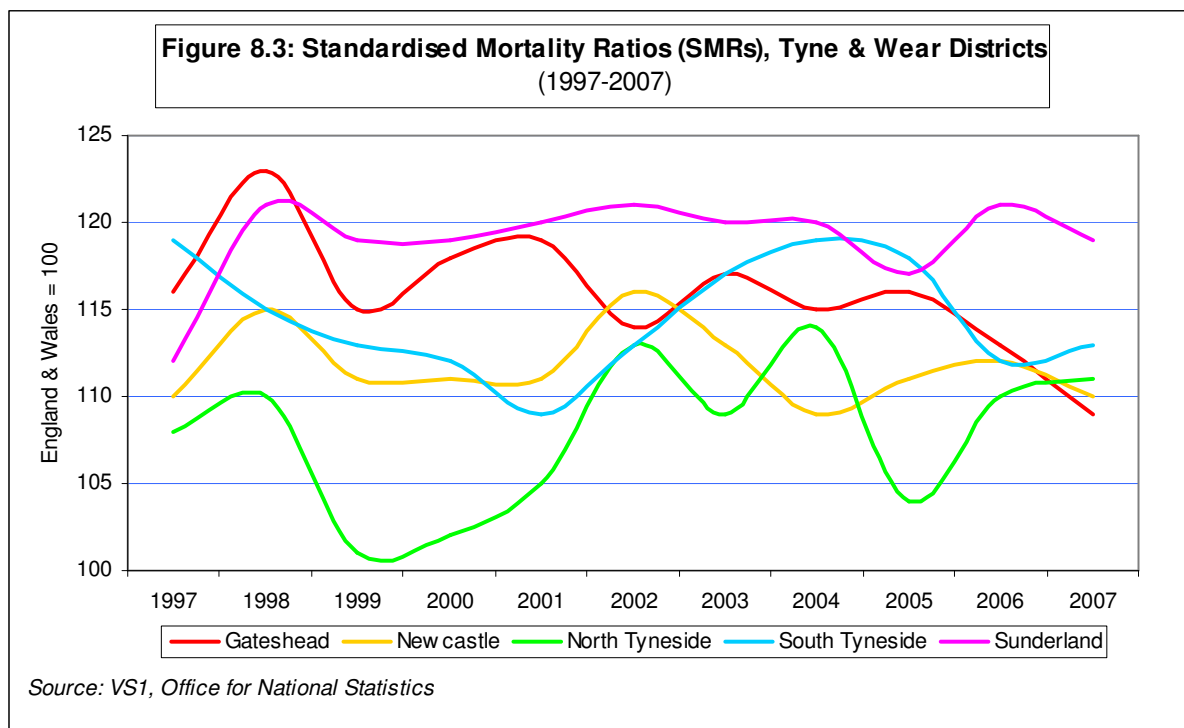
Between 1997 and 2007, SMRs rose (deteriorated) in only two Tyne & Wear Districts; Sunderland and North Tyneside. [North Tyneside's worsening SMR might have been partly due to in-migration, especially from Newcastle.]

Newcastle's SMR showed no change between 1997 and 2007. In Newcastle, any TW-wide drivers for SMRs to fall (improve) may well have been off-set by;

- a) greater loss of (low-mortality) young people aged 22-29, and
- b) out-migration (especially of couples to North Tyneside) of (lower-mortality) persons in other age-groups.

[Moreover, international in-migration to Sunderland and, particularly, Newcastle will have expanded the 18-24 age cohorts, perhaps relative to E&W – perhaps driving their worsening SMRs which rose in 2004-06 by 1 and 3 points respectively.]

SMRs improved (fell) over the decade to 2007 in Gateshead and South Tyneside.



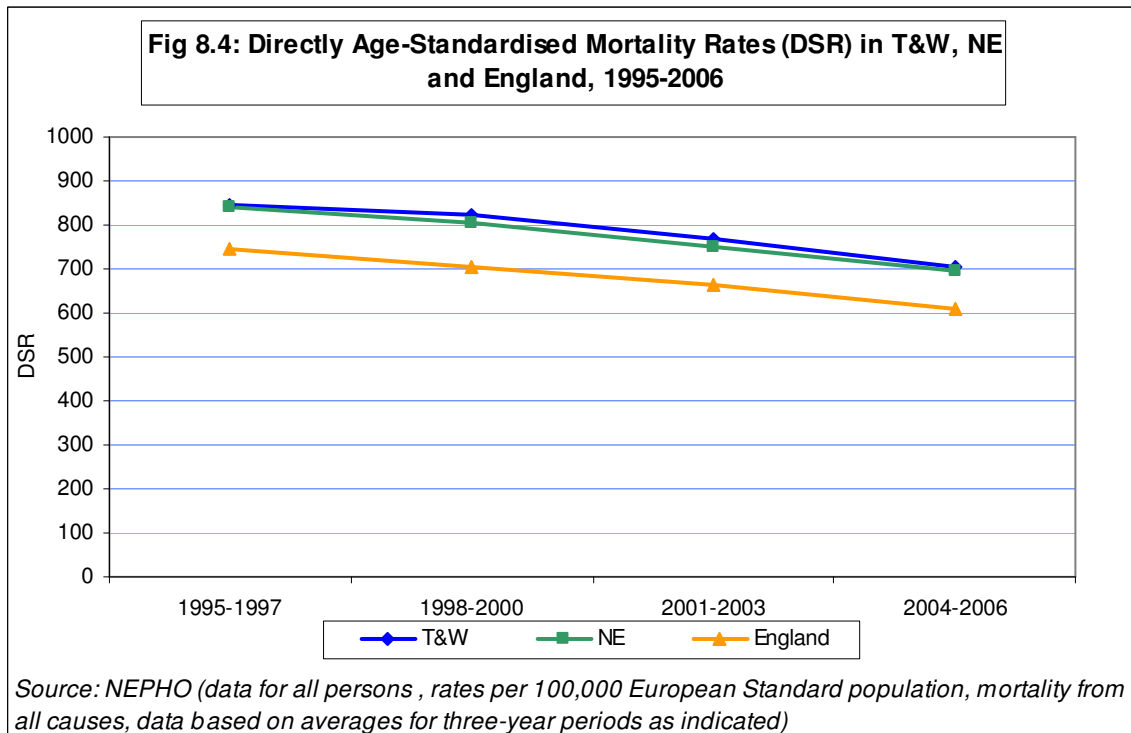
## 8.2 Directly Standardised Mortality Rates (DSRs)<sup>14</sup> [Age-Standardised Mortality Rates]

The age-standardised rate for an area is the number of deaths, usually expressed per 100,000, that would occur in that area if it had the same age structure as the standard population and the local age-specific rates of the area applied.

Directly standardised mortality rate is calculated by dividing the number of deaths by the actual local population in a particular age group multiplied by the standard population for that particular age group and summing across the relevant age groups. The rate is usually expressed per 100,000.

Between 2004 and 2006, there were 704.58 deaths for every 100,000 people in Tyne & Wear, compared to 694.22 in the North East and 610.47 in England (Figure 8.4). DSRs have fallen in all three areas since 1995. Tyne & Wear has a slightly higher DSR than the North East, both of which have on average, nearly 100 deaths (about 15%) more per hundred thousand than in England.

<sup>14</sup> Data on DSRs obtained by TWRI from the North East Public Health Observatory (NEPHO)



### 8.3 Linking Mortality and Health

There are a number of public health factors which could negatively impact upon mortality rates in Tyne & Wear and the North East, including (higher levels of) smoking, drinking and less exercise. Some of these issues are discussed below.

The North East Health Profile 2008<sup>15</sup>, shows how the North East compares to the England average for a range of indicators used in the local Health Profiles. [See Appendix 6 for regional variations and Appendix 7 for local variations in health profiles.] This shows, among other things, that the North East is significantly worse than the England average on the following indicators;

- Adults who smoke (NE 29.1 [highest among GORs], Eng 24.1) [rate 21% above England]
- Deaths from smoking (NE 285.8 [highest among GORs], Eng 225.4) [rate 27% above England]
- Binge drinking adults (NE 26.5 [highest among GORs], Eng 18.0) [rate 47% above England]
- Hospital stays relating to alcohol (NE 422.9 [only NW higher], Eng 260.3) [rate 62% above England].

The **prevalence of smoking** in the North East is discussed in a recent paper published by the North East Public Health Observatory (NEPHO)<sup>16</sup>. 2006 data show smoking prevalence in the North East of about 25% in both men and women compared to 22% in Great Britain (23% in men and 21% in women) (Table 8.2).

<sup>15</sup> [https://www.nepho.org.uk/view\\_file.php?c=2982](https://www.nepho.org.uk/view_file.php?c=2982)

<sup>16</sup> North East Public Health Observatory Occasional Paper No.30 May 2008 'The Prevalence of Smoking in the North East'

**Table 8.2: Smoking prevalence (%) in the North East and England, 1998-2006 (weighted)**

	1998	2000	2001	2002	2003	(Percentage smoking cigarettes)		
						2004	2005*	2006~
<b>North East</b>								
Males	28	27	33	24	30	28	28	25
Females	30	28	26	29	27	30	30	25
Total	29	27	29	27	28	29	29	25
<b>England</b>								
Males	29	29	28	27	27	26	25	23
Females	26	25	25	25	24	23	22	21
Total	28	27	27	26	25	25	24	22

Source: General Household Survey

\* 2005 data includes last quarter of 2004/5 data due to survey change from financial year to calendar year.

~ Results for 2006 include longitudinal data

In Tyne & Wear; South Tyneside is estimated to have the highest smoking prevalence at 34.9%, followed by Gateshead (33.3%), Sunderland (32.4%) and Newcastle (31.7%). North Tyneside has the lowest level at 28.9%. At a Local Authority level, NEPHO used data from the Information Centre for Health and Social Care, 2007 using Health Surveys for England 2003 to 2005<sup>17</sup>. This provided estimates of smoking prevalence (%) in the North East by Local Authority.

The **relationship between deprivation and mortality** is long established. In a study reporting on recent patterns of mortality and deprivation, people living in more deprived areas were found to have higher mortality rates than those living in less deprived areas in England & Wales between 1999 and 2003<sup>18</sup> (ONS, 2006). Key findings included:

- The death rate for males (all ages) in the most deprived wards in England & Wales was 1.7 times higher, and for females 1.5 times higher than in the least deprived wards
- Mortality rates for both sexes increased with deprivation for all circulatory diseases, ischemic heart disease, stroke, all cancers, lung cancer respiratory diseases and accidents
- Death rates for those living in the most deprived fifth of wards were generally highest in the North East and North West. These areas were found to have the biggest differences in mortality rates between the least and most deprived wards.

Data on **physical activity** are available at a national level only, through the 'Focus on Health: 2006' report<sup>19</sup>. This shows:

- Men's participation in any sport or recreational activity fell from 58% in 1990 to 50% in 2002 in Great Britain
- Women's participation in any sport or recreational activity experienced a smaller fall, from 39% in 1990 to 37% in 2002 in Great Britain
- In 2003, 39% of English men and 26% of women met the recommendations set down by the Chief Medical Officer to achieve at least 30 minutes a day of at least moderate-intensity physical activity on five or more days of the week
- Seven in ten boys and six in ten girls in England in 2002 met the Chief Medical Officer's recommendation of 60 minutes of at least moderate-intensity physical activity each day.

[Note the estimates on physical activity in Sport England's 'Active People Survey Headline Results' for the North East Region. [http://www.sportengland.org/final\\_061206\\_active\\_people\\_northeast\\_factsheet\\_embargo\\_7\\_dec-2.doc](http://www.sportengland.org/final_061206_active_people_northeast_factsheet_embargo_7_dec-2.doc)]

<sup>17</sup> Data from National Centre for Social Research (NatCen) in December 2007 for the 2008 Health Profiles

<sup>18</sup> 'Mortality by deprivation and cause of death in England & Wales, 1999-2003' (ONS Health Statistics Quarterly, v. 32, pp. 19-34)

<sup>19</sup> 'Focus on Health: 2006' published by ONS in 2006. Available at: [http://www.statistics.gov.uk/downloads/theme\\_compendia/foh2005/Health\\_FullReport.pdf](http://www.statistics.gov.uk/downloads/theme_compendia/foh2005/Health_FullReport.pdf)

## 9. NATURAL CHANGE

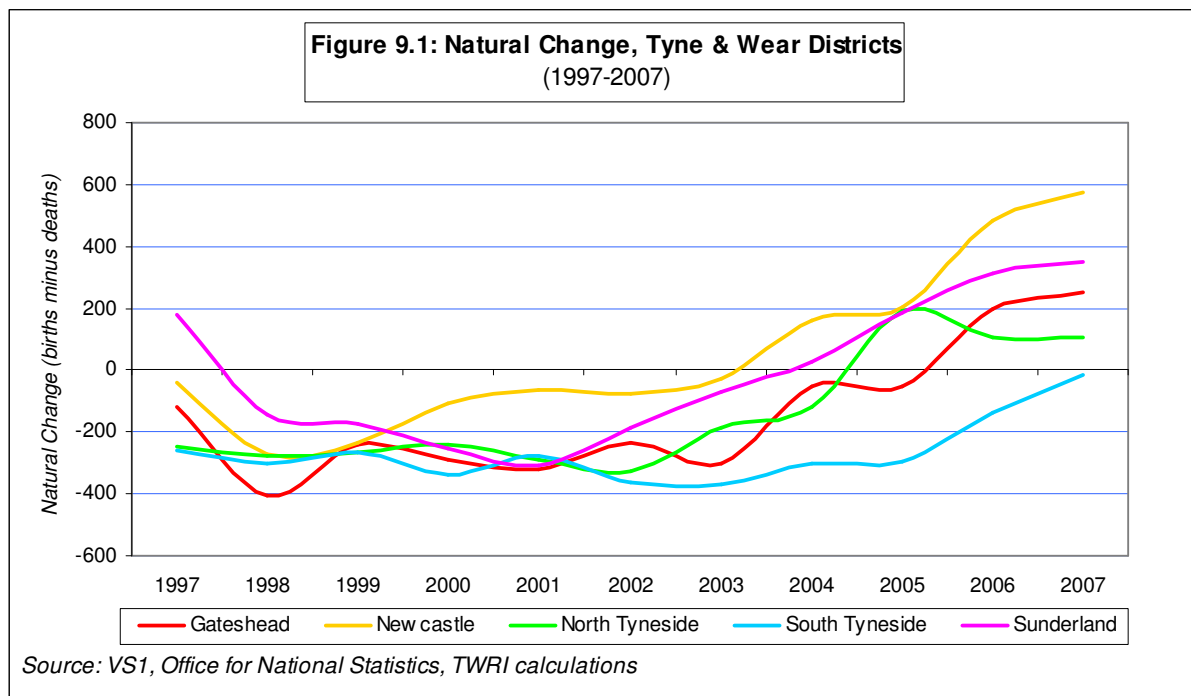
‘Natural change’ is population change resulting from live births minus deaths (Table 9.1 and Figure 9.1). It excludes population change occurring as a result of net migration.

Natural change now provides a positive contribution to population growth in Tyne & Wear (in each of the three latest years to 2007). Between 1997 and 2007, however, Tyne & Wear’s natural change in population was negative (eleven-year average of -502pa) and the North East (eleven-year average of -576pa). However, nationally population increased due to natural change (eleven-year average of +102,764). In 2005, Tyne & Wear’s population grew due to natural change for the first time in twelve years (by +233). In 2007, this annual population growth due to natural change had accelerated dramatically to +1,265. The main cause of population decline in Tyne & Wear up to 2004 remained out-migration rather than natural change<sup>20</sup>.

**Table 9.1: Natural Change, 1997-2007**

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average 1997-2007
Gateshead	-118	-403	-239	-289	-323	-236	-302	-51	-50	199	250	-142
Newcastle	-42	-274	-235	-106	-65	-75	-28	158	201	482	573	54
North Tyneside	-248	-278	-264	-238	-292	-328	-185	-117	194	107	108	-140
South Tyneside	-261	-303	-266	-336	-277	-363	-367	-304	-298	-139	-15	-266
Sunderland	179	-145	-171	-251	-308	-188	-70	25	186	312	349	-7
<b>Tyne &amp; Wear</b>	<b>-490</b>	<b>-1,403</b>	<b>-1,175</b>	<b>-1,220</b>	<b>-1,265</b>	<b>-1,190</b>	<b>-952</b>	<b>-289</b>	<b>233</b>	<b>961</b>	<b>1,265</b>	<b>-502</b>
<b>North East</b>	<b>-393</b>	<b>-1,830</b>	<b>-1,625</b>	<b>-2,033</b>	<b>-2,442</b>	<b>-2,248</b>	<b>-1,685</b>	<b>-42</b>	<b>800</b>	<b>2,314</b>	<b>2,849</b>	<b>-576</b>
<b>England, Wales</b>	<b>86,238</b>	<b>83,555</b>	<b>69,531</b>	<b>67,603</b>	<b>63,233</b>	<b>61,808</b>	<b>83,314</b>	<b>126,475</b>	<b>133,781</b>	<b>167,967</b>	<b>186,902</b>	<b>102,764</b>

Source: VS1, Office for National Statistics, TWRI calculations



Between 1997 and 2007, South Tyneside lost on average the most people per annum as a result of natural change (-266pa). Gateshead and North Tyneside lost on average -142 and -140 people per

<sup>20</sup> Between 2003 and 2004, domestic net out-migration fell from -2,100 to -1,800 (by 14%) due to a rise in in-migrants and a fall in out-migrants (PRDS data).

annum respectively. Sunderland lost on average just -7 people. However, Newcastle *gained* +54 persons per annum.

By 2007, there were more live births than deaths in four Districts; in Newcastle (+573), Sunderland (+349), Gateshead (+250) and North Tyneside (+108). South Tyneside was the only district in which there were still<sup>21</sup> more deaths than births (-15) (see Appendix 3).

---

<sup>21</sup> *This might be at least partly due to a combination of relatively elderly age-profile, and low-incomes.*

## 10. MIGRATION

Overall, migration is usually made up from two components; domestic, or internal, migration (i.e., within the UK) and international migration. Net migration is the 'in-flow' minus the 'out-flow' (or 'in-migrants' minus 'out-migrants').

### 10.1 Domestic (Internal) Migration

In 2007, net domestic migration accounted for the loss of around 2,200 people from Tyne & Wear (see Table 10.1). The highest net losses from Districts were from Newcastle (-1,600) and Sunderland (-1,500). Net losses from South Tyneside were much smaller, at -200. Particularly North Tyneside (+1,000) but also, modestly, Gateshead (+100) both gained population from domestic migration.

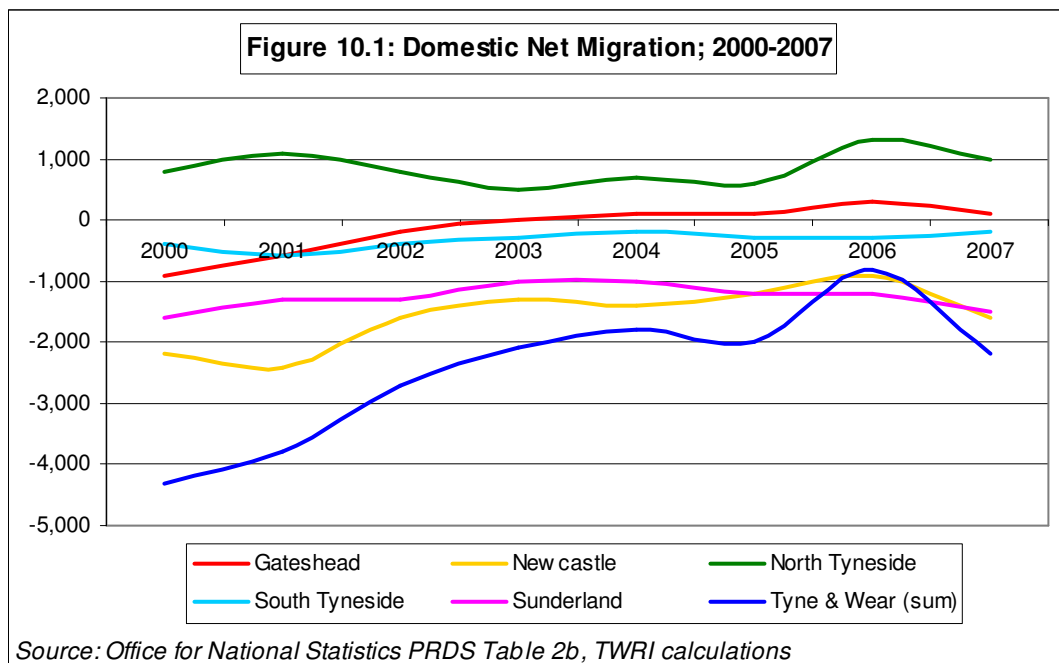
**Table 10.1: Domestic (internal) Net Migration; 2000-2007**

	2000	2001	2002	2003	2004	2005	2006	2007
Gateshead	-900	-600	-200	0	100	100	300	100
Newcastle	-2,200	-2,400	-1,600	-1,300	-1,400	-1,200	-900	-1,600
North Tyneside	800	1,100	800	500	700	600	1,300	1,000
South Tyneside	-400	-600	-400	-300	-200	-300	-300	-200
Sunderland	-1,600	-1,300	-1,300	-1,000	-1,000	-1,200	-1,200	-1,500
Tyne & Wear (sum)	-4,300	-3,800	-2,700	-2,100	-1,800	-2,000	-800	-2,200

Source: Office for National Statistics PRDS Table 2b, TWRI calculations

Note: Figure for Tyne & Wear sums districts.

Between 2000 and 2007, Tyne & Wear has continued to lose population to the rest of the country<sup>22</sup> as a result of domestic migration, but this net out-flow has almost halved from the -4,300 in 2000 to -2,200 in 2007. Newcastle, South Tyneside and Sunderland have consistently lost population over the period. North Tyneside has continually gained population over the period. Gateshead has changed from losing population, to 2002, to gaining population from 2004 onward.



Note: Figure for Tyne & Wear sums districts.

<sup>22</sup> Domestic net out-migration from Tyne & Wear can be seen as part of the UK's long-standing "urban-rural shift" in population.

## 10.2 International Migration

International migration is the single most difficult element of population change to accurately measure. Historically, the International Passenger System (IPS) has provided the most widely used measure of international migration but the quality of data from the IPS is extremely unreliable below national level. At Tyne & Wear-level the standard error is very high.

[Note: Between 2003 and 2005 the percentage standard error for inflows to Tyne & Wear ranged from 28% to 46% and for outflows from 40% to 47%. ONS consider a migration figure with a standard error of >25% to be not reliable.]

### Net 'Total International Migration' (TIM)

Net 'Total International Migration' (TIM), relies mainly on the IPS. TIM data for Tyne & Wear show that net international in-migration fell by -31.2% (-1,340) between 2002 and 2007 (see Table 10.2). Gateshead experienced the largest fall, -184.2% (-700), followed by North Tyneside, -112.0% (-280). Sunderland was the only district in which net international in-migration grew over this period, +44.6% (+290). Newcastle remained the main destination throughout the period.

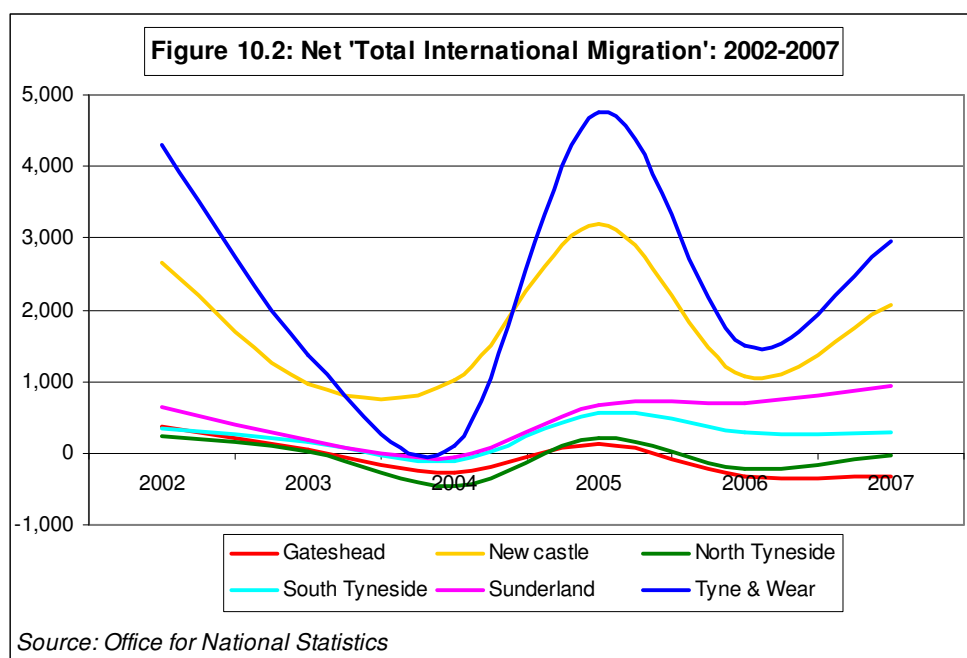
**Table 10.2: Net 'Total International Migration', Mid-2002 to Mid-2007**

	2002	2003	2004	2005	2006	2007
Gateshead	380	50	-270	140	-340	-320
Newcastle	2,670	960	1,030	3,200	1,060	2,080
North Tyneside	250	10	-470	200	-220	-30
South Tyneside	340	160	-120	550	290	280
Sunderland	650	180	-70	670	700	940
Tyne & Wear	4,290	1,360	110	4,760	1,490	2,950
North East	4,130	-20	-650	6,560	3,010	6,150

Source: ONS

In 2007, net total international migration to Tyne & Wear was +2,950. Newcastle accounted for 70.5% of this net figure, Sunderland 31.9% and South Tyneside 9.5%. Both Gateshead and North Tyneside experienced net negative international migration in 2007.

TIM peaked in Tyne & Wear in mid-2005 (+4,760), following the first period of EU enlargement (2004-2005) (Figure 10.2). Between mid-2004 and mid-2005, TIM to Tyne & Wear rose from 110 to 4,760. Newcastle accounted for 67.2% of the in-flow in the year to mid-2005. Between 2002 and 2004 TIM in Tyne & Wear fell from 4,290 to 110 (-97.4%).





More recently, alternative measures of international migration have become available, for example, National Insurance Number (NINo) data and (from the EU's 8 new member states from 2004) the Worker Registration Scheme (WRS) data. [However, these data sources also have very serious limitations which are discussed below. In particular, neither measures any out-flows.]

### National Insurance Number (NINo) Data

The number of new National Insurance numbers issued to non-UK nationals (NINos) more than doubled (up 135%) in Tyne & Wear between 2002/03 and 2007/08 (see Table 10.3). This was faster than the increase regionally (up 128%) and nationally (up 110%). Within Tyne & Wear, Newcastle saw the highest percentage increase (up 150%), followed by Sunderland (up 145%), South Tyneside (up 124%), and Gateshead (up 121%). North Tyneside's rise in NINos issued was much slower (up 63%).

**Table 10.3: National Insurance Number Registrations in respect of non-UK Nationals by Local Authority\***

	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08
Gateshead	440	440	510	730	980	970
Newcastle	1,760	1,960	2,680	3,920	4,530	4,400
North Tyneside	320	320	350	550	590	520
South Tyneside	340	490	570	670	810	760
Sunderland	530	680	910	1,280	1,440	1,300
Tyne & Wear <sup>1</sup>	3,390	3,890	5,020	7,150	8,350	7,950
North East	5,370	5,790	7,320	11,110	13,290	12,240
UK	349,240	370,750	439,730	662,390	713,450	733,090

Source: DWP, 100% sample from the National Insurance Recording System (NIRS).

\*In 2007/08 the table heading was Adult Overseas Nationals entering the UK Registrations: Time Series - Financial Year Of Registration Date by Local Authority.

1. Numbers are rounded to the nearest ten.
2. Totals may not sum due to rounding.
3. Numbers are based on 100% data from the National Insurance Recording System (NIRS).
4. Local Authorities are assigned by matching postcodes against the relevant postcode directory.
5. Local Authorities counts are based on the most recently recorded address of the NINO recipient

**Caveat:** Although NINos provide a useful data source on overseas nationals arriving in the UK, it is important to recognise the following exclusions from the dataset;

- children and also adults who do not apply for a NINo
- 'returners' – i.e., those who have previously registered in the UK and who are returning after a stay abroad.

Additionally, NINos can be either short-term or long-term in-migrants and no information is available on outflows or on length of stay of migrants in the UK.

### Worker Registration Scheme (WRS) Data

Although Worker Registration Scheme (WRS) data are available under restricted access from the Local Government Association (LGA), the UK Border Agency (UKBA) does not permit publication of these data.

Table 10.4 shows the number of registered workers at both national and regional level for the 'North East'<sup>23</sup> between 2004-2008. Although the flow of registered workers has risen since 2004 (NE up 68%, UK up 24%), flow numbers have fallen since the peak in 2006 (NE down 40%, UK down 31%).

<sup>23</sup> Figures for the North East in the Accession Monitoring Report May 2004 – December 2008 include Yorkshire & Humberside.

**Table 10.4: Worker Registration Scheme; Registered Workers  
(May 2004 - December 2008)**

	2004 <sup>1</sup>	2005	2006	2007	2008
'North East' (inc. Y&H)	9,060	21,405	25,460	21,995	15,210
Total <sup>2</sup>	125,885	204,970	227,875	210,800	156,295

Source: Accession Monitoring Report May 2004 - December 2008 (Joint report by UK Border Agency, DWP, HMRC, and CLG)

<sup>1</sup> The total shown for 2004 is for the part year May to December

<sup>2</sup> Applicants who did not state a postcode are included in the 'Total' column only

This table shows registered workers rather than the number of applications made.

The figures are for initial applications only (not multiple applications, where an individual is doing more than one job simultaneously, or re-registrations, where an individual has changed employers).

Regions are based on the applicant's employer postcode, where supplied. Regions are defined according to the PO's Postal Address Book regions, and based on the first two letters of the postcode.

Figures are rounded to nearest 5 and may not add up to totals shown.

**Caveat:** Workers Registration Scheme is *indicative* of migration rather than a direct estimate. WRS;

- provides a source of data on arrivals of A8 nationals working in the UK
- makes no distinction between short-term and long-term migrants
- covers only the working population
- self-employed do not need to register
- A8 nationals who have subsequently left the UK are not removed from the register.

WRS therefore only provides the total number of A8 nationals who have registered to work in the UK at some point. Thus the number of people registered on the WRS is not a measure of long-term migration into the UK.

### Live Births to Mothers Born Outside the UK

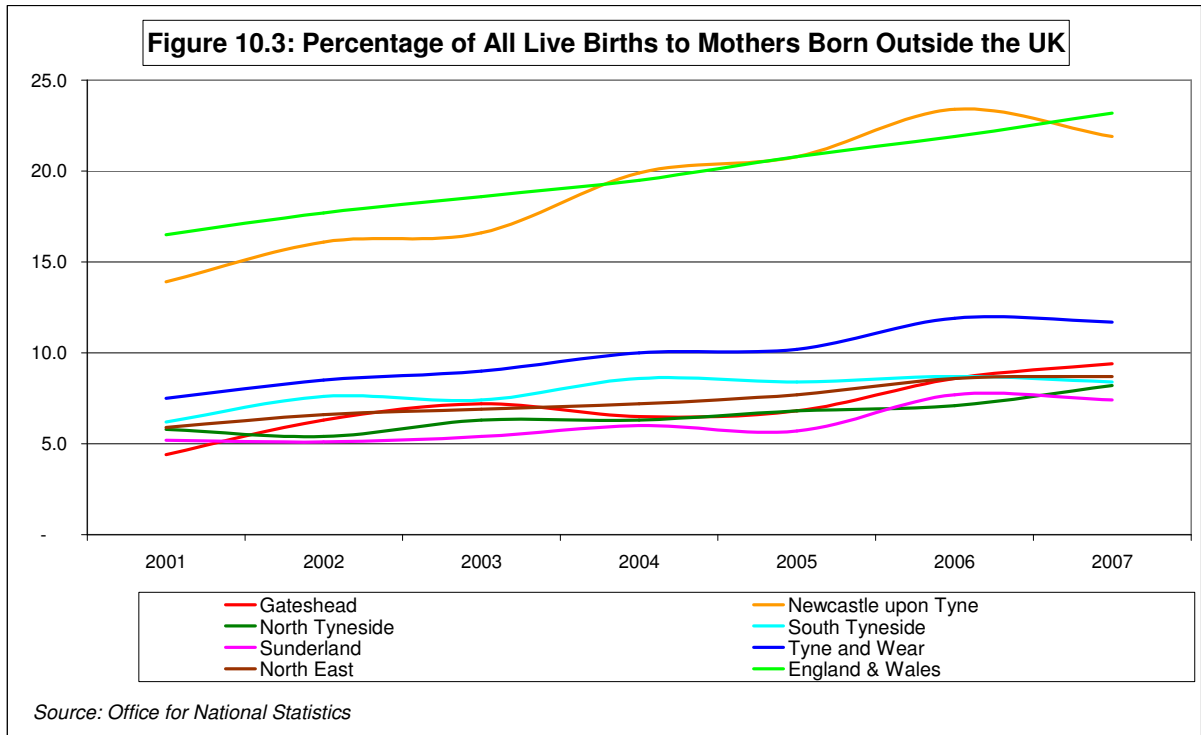
In 2007, almost one-quarter (23.2%) of all live births were to mothers born outside the UK (see Table 10.5). This figure was up by 6.7 percentage points from 2001. In Tyne & Wear, 11.7% of live births were to mothers born outside the UK (this is around half the proportion nationally). Within Tyne & Wear, the proportion in Newcastle (21.9%) was closest to the national average. However, within the other four districts the proportions were all under 10% at; Gateshead (9.4%), South Tyneside (8.4%), North Tyneside (8.2%) and Sunderland (7.4%).

**Table 10.5: Percentage of All Live Births to Mothers born outside the UK**

	2001	2002	2003	2004	2005	2006	2007
Gateshead	4.4	6.3	7.2	6.5	6.8	8.6	9.4
Newcastle upon Tyne	13.9	16.1	16.6	19.9	20.8	23.4	21.9
North Tyneside	5.8	5.4	6.3	6.3	6.8	7.1	8.2
South Tyneside	6.2	7.6	7.4	8.6	8.4	8.7	8.4
Sunderland	5.2	5.1	5.4	6.0	5.7	7.7	7.4
Tyne and Wear	7.5	8.5	9.0	10.0	10.2	11.9	11.7
North East	5.9	6.6	6.9	7.2	7.7	8.6	8.7
England & Wales <sup>1</sup>	16.5	17.7	18.6	19.5	20.8	21.9	23.2

Source: Office for National Statistics

<sup>1</sup> This table excludes births to mothers whose usual residence was outside of England and Wales



## APPENDICES

## Appendix 1: Total Population

Table A1: Total Population; 1981-1996

	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Gateshead	213,400	211,400	209,600	208,700	206,900	205,800	205,000	204,000	203,200	202,000	201,700	201,300	200,700	199,600	198,500	197,200
Newcastle	284,200	281,000	281,100	280,900	281,900	280,900	281,900	278,700	276,300	276,200	275,000	278,700	282,700	281,200	281,300	280,900
North Tyneside	198,700	197,400	195,700	195,100	194,600	194,000	194,900	195,200	195,400	194,800	194,600	194,000	193,400	192,200	191,800	191,200
South Tyneside	161,900	160,500	159,400	158,300	157,500	156,800	156,200	155,800	155,900	156,200	156,700	156,700	156,600	156,100	155,800	155,600
Sunderland	298,100	300,200	300,100	299,900	299,200	298,000	297,200	296,100	296,200	296,000	295,900	296,300	296,900	295,300	293,900	292,300
Tyne and Wear	1,156,300	1,150,500	1,145,900	1,142,900	1,140,100	1,135,500	1,135,300	1,129,800	1,127,000	1,125,100	1,123,800	1,127,100	1,130,300	1,124,400	1,121,200	1,117,100
North East	2,636,200	2,624,200	2,616,900	2,609,400	2,601,700	2,594,200	2,589,800	2,582,300	2,582,100	2,584,300	2,587,000	2,591,300	2,593,900	2,588,700	2,582,700	2,576,500
England and Wales	49,634,300	49,581,600	49,617,000	49,713,100	49,860,700	49,998,600	50,123,000	50,253,600	50,407,800	50,560,600	50,748,000	50,875,600	50,985,900	51,116,200	51,272,000	51,410,400

Source: Mid-Year Estimates, ONS, Crown Copyright

## Appendix 2: Total Fertility Rates 1984-1995

**Table A2: Total Fertility Rates (TFRs); 1984-1995**

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
<b>Gateshead</b>	1.73	1.78	1.72	1.73	1.72	1.71	1.71	1.81	1.70	1.69	1.65	1.64
<b>Newcastle</b>	1.61	1.70	1.71	1.74	1.70	1.64	1.78	1.69	1.54	1.52	1.51	1.52
<b>North Tyneside</b>	1.72	1.83	1.77	1.81	1.75	1.72	1.80	1.77	1.78	1.70	1.61	1.67
<b>South Tyneside</b>	1.74	1.93	2.03	1.90	1.87	1.85	1.89	1.84	1.83	1.78	1.73	1.77
<b>Sunderland</b>	1.77	1.87	1.80	1.78	1.79	1.74	1.81	1.86	1.82	1.70	1.67	1.66
<b>Tyne &amp; Wear</b>	1.71	1.81	1.79	1.78	1.76	1.72	1.79	1.78	1.71	1.65	1.62	1.62
<b>North East/North*</b>	1.74	1.80	1.76	1.76	1.75	1.71	1.78	1.83	1.79	1.74	1.69	1.67
<b>England &amp; Wales</b>	1.75	1.78	1.77	1.81	1.82	1.80	1.84	1.82	1.80	1.76	1.75	1.72

Note: \* Government Office Regions (GORs), replaced Standard Statistical Regions (SSRs) in 1996. The North East GOR excludes Cumbria.

Source: Office for National Statistics, Crown Copyright

### Appendix 3: Live Births, Deaths, Natural Change, 1983-2007

**Table A3a: Live Births, 1983-2007**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Gateshead</b>	2,446	2,584	2,673	2,594	2,621	2,601	2,581	2,566	2,690	2,514	2,463	2,415	2,359	2,300	2,327	2,162	2,109	2,070	1,995	2,012	2,020	2,128	2,118	2,251	2,241
<b>Newcastle</b>	3,450	3,460	3,718	3,752	3,849	3,667	3,486	3,769	3,733	3,567	3,545	3,424	3,360	3,249	3,188	3,034	2,879	2,887	2,875	2,941	2,895	2,918	2,979	3,221	3,238
<b>North Tyneside</b>	2,248	2,286	2,450	2,388	2,480	2,404	2,369	2,451	2,456	2,450	2,310	2,161	2,236	2,179	2,145	2,171	2,006	2,052	1,949	2,042	2,101	2,160	2,274	2,256	2,268
<b>South Tyneside</b>	1,838	1,922	2,146	2,267	2,101	2,066	2,031	2,070	2,075	2,030	1,951	1,859	1,864	1,761	1,763	1,653	1,643	1,521	1,479	1,467	1,523	1,540	1,529	1,560	1,698
<b>Sunderland</b>	4,213	4,106	4,365	4,199	4,153	4,159	4,022	4,154	4,201	4,057	3,765	3,612	3,500	3,448	3,311	3,223	3,111	2,960	2,853	2,930	3,012	2,971	3,068	3,236	3,251
<b>Tyne &amp; Wear</b>	14,195	14,358	15,352	15,200	15,204	14,897	14,489	15,010	15,155	14,618	14,034	13,471	13,319	12,937	12,734	12,243	11,748	11,490	11,151	11,392	11,551	11,717	11,968	12,524	12,696
<b>North/North East*</b>	39,117	39,248	40,878	40,239	40,404	40,105	39,097	40,656	41,128	40,003	38,597	37,028	35,940	35,535	29,404	28,720	27,739	26,499	25,949	26,271	27,005	27,815	28,249	29,184	29,582
<b>E&amp;W</b>	629,134	636,818	656,417	661,018	681,511	693,577	687,725	706,140	699,217	689,656	673,051	664,322	647,734	649,078	642,722	635,549	621,579	604,130	594,360	595,914	621,251	639,509	645,621	669,376	689,771

Source: ONS' VSOB

\*Figs for 1983-1996 are for the North

**Table A3b: Deaths, 1983-2007**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Gateshead</b>	2,741	2,683	2,660	2,646	2,690	2,719	2,767	2,518	2,686	2,480	2,722	2,507	2,524	2,486	2,445	2,565	2,348	2,359	2,318	2,248	2,322	2,179	2,168	2,052	1,991
<b>Newcastle</b>	3,766	3,696	3,893	3,718	3,474	3,634	3,735	3,609	3,558	3,548	3,502	3,393	3,339	3,343	3,230	3,308	3,114	2,993	2,940	3,016	2,923	2,760	2,778	2,739	2,665
<b>North Tyneside</b>	2,531	2,545	2,680	2,524	2,509	2,504	2,534	2,572	2,581	2,490	2,560	2,356	2,352	2,452	2,393	2,449	2,270	2,290	2,241	2,370	2,286	2,277	2,080	2,149	2,160
<b>South Tyneside</b>	2,117	2,130	2,185	2,223	2,036	2,173	2,193	1,988	2,012	2,055	2,011	1,881	1,883	2,024	1,956	1,909	1,857	1,756	1,830	1,890	1,844	1,827	1,699	1,713	
<b>Sunderland</b>	3,315	3,594	3,560	3,302	3,356	3,350	3,473	3,351	3,473	3,387	3,456	3,337	3,274	3,295	3,132	3,368	3,282	3,211	3,161	3,118	3,082	2,946	2,882	2,924	2,902
<b>Tyne &amp; Wear</b>	14,470	14,648	14,978	14,413	14,065	14,380	14,702	14,038	14,310	13,960	14,251	13,474	13,370	13,459	13,224	13,646	12,923	12,710	12,416	12,582	12,503	12,006	11,735	11,563	11,431
<b>North/North East*</b>	37,979	37,900	39,149	38,038	37,431	37,890	38,307	37,480	37,970	37,072	37,966	36,064	36,247	36,312	29,797	30,550	29,364	28,532	28,391	28,519	28,690	27,857	27,449	26,870	26,733
<b>E&amp;W</b>	579,608	566,881	590,734	581,203	566,994	571,408	576,872	564,846	570,044	558,313	576,730	551,534	564,344	561,452	556,484	551,994	552,048	536,527	531,127	534,106	537,937	513,034	511,840	501,409	502,869

Source: ONS' VSOB

\*Figs for 1983-1996 are for the North

**Table A3c: Natural Change, 1983-2007**

	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
<b>Gateshead</b>	-295	-99	13	-52	-69	-118	-186	48	4	34	-259	-92	-165	-186	-118	-403	-239	-289	-323	-236	-302	-51	-50	199	250
<b>Newcastle</b>	-316	-236	-175	34	375	33	-249	160	175	19	43	31	21	-94	-42	-274	-235	-106	-65	-75	-28	158	201	482	573
<b>North Tyneside</b>	-283	-259	-230	-136	-29	-100	-165	-121	-125	-40	-250	-195	-116	-273	-248	-278	-264	-238	-292	-328	-185	-117	194	107	108
<b>South Tyneside</b>	-279	-208	-39	44	65	-107	-162	82	63	-25	-60	-22	-17	-122	-261	-303	-266	-336	-277	-363	-367	-304	-298	-139	-15
<b>Sunderland</b>	898	512	805	897	797	809	549	803	728	670	309	275	226	153	179	-145	-171	-251	-308	-188	-70	25	186	312	349
<b>Tyne &amp; Wear</b>	-275	-290	374	787	1,139	517	-213	972	845	658	-217	-3	-51	-522	-490	-1,403	-1,175	-1,220	-1,265	-1,190	-952	-289	233	961	1,265
<b>North/North East*</b>	1,138	1,348	1,729	2,201	2,973	2,215	790	3,176	3,158	2,931	631	964	-307	-777	-393	-1,830	-1,625	-2,033	-2,442	-2,248	-1,685	-42	800	2,314	2,849
<b>E&amp;W</b>	49,526	69,937	65,683	79,815	114,517	122,169	110,853	141,294	129,173	131,343	96,321	112,788	83,390	87,626	86,238	83,555	69,531	67,603	63,233	61,808	83,314	126,475	133,781	167,967	186,902

Source: ONS' VSOB Births and Deaths, TWRI calculations

\*Figs for 1983-1996 are for the North

## Appendix 4: Live Births and Deaths by Ward

**Note:** New ward boundaries were adopted in Tyne & Wear Districts in June 2004, hence the discontinuity in the live births and deaths wards series between 2003 and 2004.

**Table A4a: Live Births by Ward (Gateshead)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Bede	130	117	100	96	90	107	94	Birtley	79	86	87	94
Bensham	124	117	108	125	112	110	124	Blaydon	110	122	124	116
Birtley	88	88	71	68	57	74	70	Bridges	99	120	117	105
Blaydon	136	118	112	124	105	82	100	Chopwell & Rowlands Gill	97	85	95	111
Chopwell & Rowlands Gill	103	101	101	97	86	68	74	Chowdene	72	79	77	64
Chowdene	72	75	78	83	68	64	55	Crawcrook & Greenside	85	84	85	91
Crawcrook & Greenside	100	104	89	111	89	114	106	Deckham	121	143	132	109
Deckham	101	99	84	73	121	97	96	Dunston & Teams	105	108	147	132
Dunston	124	121	108	96	107	94	119	Dunston Hill & Whickham East	66	71	78	84
Felling	101	98	71	80	85	95	75	Felling	117	113	115	84
High Fell	82	100	91	90	93	82	95	High Fell	107	122	98	121
Lamesley	105	78	77	84	70	83	86	Lamesley	105	75	95	90
Leam	141	118	112	129	98	126	102	Lobley Hill & Bensham	128	110	146	131
Low Fell	94	88	107	106	103	84	84	Low Fell	104	95	99	95
Pelaw & Heworth	67	95	72	73	67	70	84	Pelaw & Heworth	74	71	97	98
Ryton	114	77	104	91	90	90	88	Ryton, Crookhill & Stella	72	70	73	71
Saltwell	119	115	141	144	109	106	124	Saltwell	173	178	161	190
Teams	136	108	122	92	113	123	103	Wardley & Leam Lane	89	102	96	92
Whickham North	109	94	115	92	88	100	88	Whickham North	73	61	80	102
Whickham South	97	88	92	80	77	75	93	Whickham South & Sunniside	80	63	71	80
Winlaton	59	62	46	58	58	50	55	Windy Nook & Whitehills	104	95	110	107
Wrekendyke	125	101	108	78	109	118	105	Winlaton & High Spen	68	65	68	74
Total	2,327	2,162	2,109	2,070	1,995	2,012	2,020	Total	2,128	2,118	2,251	2,241

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4b: Live Births by Ward (Newcastle)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Benwell	101	97	85	101	90	89	82	Benwell & Scotswood	211	170	169	187
Blakelaw	162	142	148	126	137	138	140	Blakelaw	140	143	170	162
Byker	112	105	97	91	91	135	109	Byker	155	161	183	168
Castle	108	129	119	111	131	110	119	Castle	114	91	93	119
Dene	139	132	136	143	162	174	156	Dene	94	112	100	96
Denton	101	85	106	91	104	111	91	Denton	108	108	121	125
Elswick	158	148	151	153	152	188	210	East Gosforth	97	105	101	116
Fawdon	121	123	118	116	104	110	124	Elswick	234	247	285	300
Fenham	159	124	129	120	132	140	129	Fawdon	109	104	140	121
Grange	130	143	128	117	115	122	125	Fenham	127	130	133	147
Heaton	103	97	77	94	91	96	74	Kenton	140	132	177	181
Jesmond	88	109	82	84	60	82	56	Lemington	126	121	118	119
Kenton	146	135	157	145	121	129	121	Newburn	92	95	105	107
Lemington	107	129	105	124	122	118	107	North Heaton	89	82	103	72
Monkchester	175	142	128	123	129	127	132	North Jesmond	40	40	38	28
Moorside	104	89	100	91	133	129	137	Ouseburn	47	56	57	63
Newburn	111	111	102	87	99	95	95	Parklands	94	111	122	114
Sandyford	90	75	83	92	74	79	82	South Heaton	59	72	69	68
Scotswood	124	109	104	101	98	53	71	South Jesmond	40	40	40	38
South Gosforth	119	148	130	144	118	134	123	Walker	180	196	192	203
Walker	111	108	100	121	91	78	103	Walkergate	72	82	105	104
Walkergate	97	118	86	98	91	88	82	Westerhope	55	69	59	64
West City	86	77	65	76	66	59	98	Westgate	85	89	93	105
Westerhope	116	98	92	69	96	99	87	West Gosforth	102	97	112	92
Wingrove	189	141	143	167	167	157	143	Wingrove	192	183	223	201
Woolsington	131	120	108	102	101	101	99	Woolsington	116	143	113	138
Total	3,188	3,034	2,879	2,887	2,875	2,941	2,895	Total	2,918	2,979	3,221	3,238

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4c: Live Births by Ward (North Tyneside)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Battle Hill	132	169	132	117	128	126	123	Battle Hill	112	115	123	119
Benton	61	83	74	95	71	78	94	Benton	99	92	102	86
Camperdown	103	97	93	100	93	115	105	Camperdown	139	151	147	142
Chirton	153	174	128	156	123	117	132	Chirton	157	185	157	136
Collingwood	116	120	117	125	91	108	105	Collingwood	106	111	101	109
Cullercoats	71	74	66	75	64	60	71	Cullercoats	71	65	62	75
Holystone	137	158	165	172	158	147	156	Howdon	138	143	158	147
Howdon	94	100	90	78	72	87	95	Killingworth	102	119	119	107
Longbenton	55	60	43	55	45	61	63	Longbenton	99	110	116	122
Monkseaton	125	116	100	115	96	82	76	Monkseaton North	90	73	99	81
North Shields	114	77	92	110	91	112	104	Monkseaton South	105	110	99	105
Northumberland	121	146	122	111	93	100	106	Northumberland	85	90	78	82
Riverside	135	118	92	102	143	158	176	Preston	76	75	111	91
St. Mary's	66	56	71	54	72	55	50	Riverside	143	175	158	190
Seatonville	112	100	87	82	94	90	94	St Mary's	40	63	49	44
Tynemouth	84	81	88	83	77	72	84	Tynemouth	106	102	97	125
Valley	127	131	133	138	135	142	127	Valley	155	125	150	144
Wallsend	129	123	120	101	100	124	135	Wallsend	126	142	137	150
Weetslade	115	101	88	80	91	93	97	Weetslade	102	96	87	112
Whitley Bay	95	87	105	103	112	115	108	Whitley Bay	109	132	106	101
Total	2,145	2,171	2,006	2,052	1,949	2,042	2,101	Total	2,160	2274	2256	2268

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4d: Live Births by Ward (South Tyneside)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
All Saints	136	97	123	89	96	88	94	Beacon & Bents	130	106	133	127
Beacon & Bents	97	97	92	86	83	100	104	Bede	79	87	93	89
Bede	101	72	82	83	61	70	62	Biddick & All Saints	117	127	134	128
Biddick Hall	88	93	80	76	84	73	84	Boldon Colliery	87	98	97	111
Boldon Colliery	121	96	102	119	101	99	111	Cleadon & East Boldon	58	59	61	62
Cleadon & East Boldon	72	74	85	77	71	58	65	Cleadon Park	70	71	50	64
Cleadon Park	96	91	94	85	88	91	78	Fellgate & Hedworth	87	74	96	86
Fellgate & Hedworth	80	93	97	71	64	89	79	Harton	74	73	70	75
Harton	52	65	56	52	57	57	56	Hebburn North	87	108	91	109
Hebburn Quay	132	115	105	98	97	101	95	Hebburn South	68	64	62	78
Hebburn South	51	43	34	34	52	46	47	Horsley Hill	67	77	86	86
Horsley Hill	70	78	73	73	74	72	77	Monkton	76	82	83	97
Monkton	98	109	103	78	87	69	90	Primrose	79	78	91	105
Primrose	94	76	78	83	85	82	72	Simonside & Rekendyke	136	138	129	131
Rekendyke	110	111	90	87	86	104	102	Westoe	99	66	78	97
Tyne Dock & Simonside	69	60	77	70	54	57	67	West Park	90	88	85	109
Westoe	93	90	90	80	73	63	83	Whitburn & Marsden	61	70	58	66
West Park	69	61	64	71	59	48	61	Whiteleas	75	63	63	78
Whitburn & Marsden	68	46	66	54	45	59	43	Total	1,540	1529	1560	1698
Whiteleas	66	86	52	55	62	41	53					
Total	1,763	1,653	1,643	1,521	1,479	1,467	1,523					

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright



Table A4e: Live Births by Ward (Sunderland)

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Castletown	129	117	133	130	121	115	132	Barnes	98	116	129	117
Central	143	143	126	121	129	106	118	Castle	141	131	145	156
Colliery	115	106	96	102	83	91	82	Copt Hill	125	127	135	135
Eppleton	143	146	129	134	155	133	155	Doxford	98	94	90	108
Fulwell	98	85	103	90	76	76	70	Fulwell	82	94	94	71
Grindon	119	113	112	102	119	109	99	Hendon	136	171	167	187
Hendon	114	109	129	115	107	136	124	Hetton	113	115	129	112
Hetton	128	116	114	116	112	125	117	Houghton	109	144	136	112
Houghton	112	121	87	104	101	106	111	Millfield	126	127	149	141
Pallion	100	97	84	89	78	86	103	Pallion	143	131	130	140
Ryhope	128	180	170	122	135	129	182	Redhill	139	159	140	160
St. Chad's	110	80	98	91	84	85	81	Ryhope	101	130	115	127
St. Michael's	91	76	80	63	79	80	65	St Anne's	117	113	161	148
St. Peter's	93	86	92	91	74	92	91	St Chad's	82	98	98	92
Shiney Row	183	174	167	183	164	162	166	St Michael's	77	92	95	89
Silksworth	136	150	120	116	115	109	132	St Peter's	88	100	97	113
South Hylton	155	146	138	123	131	127	124	Sandhill	136	135	122	142
Southwick	107	135	112	99	110	124	104	Shiney Row	164	153	173	164
Thorney Close	133	121	127	106	110	115	100	Silksworth	118	116	132	134
Thornholme	117	132	111	143	99	125	117	Southwick	134	126	137	138
Town End Farm	161	133	148	131	107	109	118	Washington Central	125	93	118	117
Washington East	177	150	134	136	133	146	144	Washington East	121	105	153	123
Washington North	187	170	169	144	139	145	172	Washington North	161	169	160	207
Washington South	199	185	179	166	163	180	171	Washington South	99	105	103	110
Washington West	133	152	153	143	129	119	134	Washington West	138	124	128	108
Total	3,311	3,223	3,111	2,960	2,853	2,930	3,012	Total	2,971	3,068	3,236	3,251

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4f: Deaths by Ward (Gateshead)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Bede	116	125	109	105	87	94	107	Birtley	114	107	97	86
Bensham	94	111	106	102	109	113	110	Blaydon	79	88	83	90
Birtley	89	86	95	103	92	94	101	Bridges	115	98	90	91
Blaydon	90	117	104	71	86	79	79	Chopwell & Rowlands Gill	89	94	86	91
Chopwell & Rowlands Gill	90	122	108	97	86	89	89	Chowdene	93	113	124	115
Chowdene	118	129	103	118	132	129	128	Crawcrook & Greenside	87	98	80	72
Crawcrook & Greenside	117	91	109	89	101	112	116	Deckham	115	106	95	123
Deckham	114	106	81	94	94	87	99	Dunston & Teams	104	113	82	90
Dunston	129	138	111	109	101	98	126	Dunston Hill & Whickham East	115	86	83	66
Felling	140	138	125	134	137	123	118	Felling	100	111	120	95
High Fell	120	132	120	148	142	136	115	High Fell	113	128	109	111
Lamesley	113	115	117	110	101	84	98	Lamesley	91	86	93	88
Leam	107	117	98	120	94	98	121	Lobley Hill & Bensham	126	126	90	119
Low Fell	131	146	112	138	120	103	129	Low Fell	102	105	100	94
Pelaw & Heworth	113	123	105	100	97	84	105	Pelaw & Heworth	103	95	78	75
Ryton	103	124	117	102	105	105	107	Ryton, Crookhill & Stella	78	76	83	69
Saltwell	92	94	70	92	82	76	79	Saltwell	69	89	72	77
Teams	111	98	105	102	110	95	99	Wardley & Leam Lane	85	71	87	75
Whickham North	159	169	144	120	155	122	110	Whickham North	88	98	97	78
Whickham South	94	80	82	69	77	74	74	Whickham South & Sunnyside	66	62	71	63
Winlaton	111	121	122	125	124	138	119	Windy Nook & Whitehills	103	99	105	100
Wrekendyke	94	83	105	111	86	115	93	Winlaton & High Spen	144	119	127	123
Total	2,445	2,565	2,348	2,359	2,318	2,248	2,322	Total	2,179	2,168	2052	1991

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4g: Deaths by Ward (Newcastle)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Benwell	90	92	125	117	84	120	117	Benwell & Scotswood	181	147	168	148
Blakelaw	111	126	104	110	108	103	119	Blakelaw	109	92	131	120
Byker	150	147	134	150	171	164	188	Byker	165	197	154	162
Castle	84	123	93	99	85	111	89	Castle	73	76	70	79
Dene	135	150	132	151	145	140	155	Dene	85	81	76	76
Denton	137	134	143	115	112	131	111	Denton	101	121	109	115
Elswick	130	149	137	133	137	120	112	East Gosforth	112	103	89	89
Fawdon	127	136	128	104	135	154	156	Elswick	196	193	187	165
Fenham	162	129	127	125	126	134	89	Fawdon	143	147	136	156
Grange	195	169	165	161	147	135	147	Fenham	108	102	100	94
Heaton	87	83	81	81	80	68	74	Kenton	129	120	138	150
Jesmond	145	152	131	95	132	115	98	Lemington	95	119	93	85
Kenton	150	148	126	140	150	150	135	Newburn	112	111	99	107
Lemington	113	116	114	96	104	103	98	North Heaton	83	64	85	72
Monkchester	119	140	149	143	96	94	107	North Jesmond	48	53	40	43
Moorside	106	94	107	73	87	106	104	Ouseburn	65	62	53	58
Newburn	137	136	130	117	126	123	128	Parklands	70	68	74	73
Sandyford	125	146	135	124	105	101	118	South Heaton	72	74	79	83
Scotswood	85	108	83	78	63	76	55	South Jesmond	67	70	58	60
South Gosforth	137	138	145	134	87	109	104	Walker	167	179	185	178
Walker	144	142	114	136	120	147	136	Walkergate	128	101	108	83
Walkergate	109	106	119	112	105	102	102	Westerhope	111	110	121	108
West City	105	115	97	95	114	93	101	Westgate	76	76	57	54
Westerhope	133	135	137	135	146	137	116	West Gosforth	74	91	111	107
Wingrove	100	92	85	64	80	86	78	Wingrove	78	83	85	78
Woolsington	114	102	73	105	95	94	86	Woolsington	112	138	133	122
Total	3,140	3,216	3,114	2,993	2,940	3,016	2,923	Total	2,760	2,778	2739	2665

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4h: Deaths by Ward (North Tyneside)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Battle Hill	120	119	105	99	123	102	86	Battle Hill	98	86	78	86
Benton	115	128	144	133	148	123	110	Benton	121	109	116	122
Camperdown	88	79	71	99	74	83	107	Camperdown	84	72	97	99
Chirton	119	128	109	91	70	91	73	Chirton	122	82	124	104
Collingwood	101	111	84	116	93	101	96	Collingwood	99	80	81	94
Cullercoats	112	118	145	115	143	126	115	Cullercoats	117	131	122	144
Holystone	118	139	107	122	150	119	130	Howdon	148	134	139	113
Howdon	116	96	82	99	108	105	111	Killingworth	89	88	66	82
Longbenton	89	101	87	69	84	84	73	Longbenton	119	131	100	134
Monkseaton	125	130	136	113	117	129	115	Monkseaton North	85	75	82	80
North Shields	190	208	194	209	197	226	217	Monkseaton South	103	97	94	97
Northumberland	117	104	102	102	107	115	103	Northumberland	89	69	88	70
Riverside	146	110	110	127	123	161	166	Preston	149	137	127	134
St. Mary's	90	91	94	73	60	85	76	Riverside	177	141	175	176
Seatonville	90	124	82	89	93	97	120	St Mary's	74	81	88	90
Tynemouth	101	118	100	107	83	107	113	Tynemouth	138	125	133	126
Valley	117	123	106	117	111	113	121	Valley	87	89	99	80
Wallsend	155	133	121	137	104	122	126	Wallsend	125	123	127	113
Weetslade	118	116	121	105	116	122	93	Weetslade	102	104	117	102
Whitley Bay	166	173	170	168	137	159	135	Whitley Bay	151	126	96	114
Total	2,393	2,449	2,270	2,290	2,241	2,370	2,286	Total	2,277	2,080	2,149	2,160

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4i: Deaths by Ward (South Tyneside)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
All Saints	109	84	95	87	75	90	96	Beacon & Bents	116	104	88	113
Beacon & Bents	127	122	96	112	108	94	95	Bede	106	87	90	89
Bede	129	139	139	123	115	106	116	Biddick & All Saints	110	125	112	129
Biddick Hall	90	93	95	84	74	110	96	Boldon Colliery	84	101	102	86
Boldon Colliery	106	101	83	85	71	68	102	Cleadon & East Boldon	77	83	72	79
Cleadon & East Boldon	75	63	87	74	65	80	64	Cleadon Park	93	83	93	55
Cleadon Park	77	76	68	71	64	85	75	Fellgate & Hedworth	73	66	61	56
Fellgate & Hedworth	77	62	74	82	70	70	72	Harton	141	131	130	121
Harton	113	117	109	97	110	80	111	Hebburn North	103	99	99	87
Hebburn Quay	94	110	98	73	95	94	81	Hebburn South	112	105	75	110
Hebburn South	94	75	80	86	69	76	68	Horsley Hill	109	100	87	95
Horsley Hill	122	100	90	107	100	102	83	Monkton	126	136	118	112
Monkton	154	117	148	130	155	158	153	Primrose	117	118	120	131
Primrose	137	128	103	125	85	111	114	Simonside & Rekenyke	87	101	106	90
Rekenyke	97	118	108	94	74	105	88	Westoe	128	103	105	100
Tyne Dock & Simonside	67	69	69	72	73	70	74	West Park	79	82	69	61
Westoe	111	123	94	108	111	105	120	Whitburn & Marsden	79	66	88	76
West Park	84	61	77	70	58	58	71	Whiteleas	104	137	84	123
Whitburn & Marsden	70	100	78	83	86	75	87	Total	1,844	1,827	1,699	1,713
Whiteleas	91	98	118	94	98	93	124					
Total	2,024	1,956	1,909	1,857	1,756	1,830	1,890					

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

**Table A4j: Deaths by Ward (Sunderland)**

	1997	1998	1999	2000	2001	2002	2003		2004	2005	2006	2007
Castletown	111	141	140	132	140	125	123	Barnes	142	123	135	144
Central	111	134	149	135	139	140	118	Castle	109	140	129	135
Colliery	148	139	125	116	142	147	133	Copt Hill	159	135	159	168
Eppleton	160	150	157	157	170	182	168	Doxford	83	71	68	75
Fulwell	89	114	90	88	95	102	94	Fulwell	104	98	92	109
Grindon	111	86	85	105	96	92	104	Hendon	135	123	167	146
Hendon	166	198	168	132	133	145	153	Hetton	132	138	112	136
Hetton	157	170	154	170	135	126	127	Houghton	148	129	94	119
Houghton	113	141	127	131	122	109	93	Millfield	110	111	117	126
Pallion	135	144	159	155	160	122	166	Pallion	107	104	120	107
Ryhope	107	131	142	139	135	108	113	Redhill	120	147	144	108
St. Chad's	117	148	145	140	120	127	128	Ryhope	129	102	120	96
St. Michael's	131	96	127	98	98	121	111	St Anne's	87	103	116	95
St. Peter's	175	199	188	192	180	152	151	St Chad's	121	125	153	117
Shiney Row	153	162	179	183	159	159	159	St Michael's	114	115	108	127
Silksworth	108	133	115	132	124	126	104	St Peter's	149	147	153	142
South Hylton	131	113	134	107	131	117	124	Sandhill	116	100	106	123
Southwick	124	144	116	131	111	125	135	Shiney Row	154	134	148	126
Thorney Close	129	119	110	100	107	102	91	Silksworth	108	109	102	115
Thornholme	151	166	133	117	145	125	125	Southwick	171	162	139	156
Town End Farm	89	84	76	83	84	101	87	Washington Central	104	102	89	93
Washington East	128	119	129	165	130	137	136	Washington East	95	104	89	105
Washington North	93	110	104	89	77	90	101	Washington North	86	83	75	81
Washington South	89	107	82	97	114	120	102	Washington South	52	56	65	50
Washington West	106	120	148	117	114	118	136	Washington West	111	121	124	103
Total	3,132	3,368	3,282	3,211	3,161	3,118	3,082	Total	2,946	2,882	2,924	2,902

Source: VS4 - Vital Statistics for Wards, ONS, Crown Copyright

## Appendix 5: Standardised Mortality Ratios (SMRs) in England<sup>24</sup>

*Note: In the report 'Death registrations in England & Wales, 2007'; ONS state in their explanatory note on SMRs that "direct comparisons between areas or between sexes can be misleading" (p.106) however they go on to make a number of key observations where such comparisons are made. TWRI note that SMRs should only be used to enable comparisons with a national average.*

*The following two paragraphs on SMRs for other areas are presented for completeness. The first paragraph draws directly from the key observations made by ONS in the report cited above. The second paragraph updates a section of commentary included in TWRI's 'Health & Population Change Report, 2004' [For comparisons between areas, see Section 8.2 on Directly Standardised Mortality Rates (DSRs)].*

### 1) ONS Observations on SMRs

Among Government Office Regions (GORs), the North East and North West had the highest SMRs in 2007 (112), while the lowest level was in the South East and South West (92). At District level, the highest SMRs were in Blackburn with Darwen UA (131), then Halton UA and Liverpool (both 128), all located in the North West GOR, followed by Hartlepool UA (127) in the North East GOR. The lowest SMRs were in the London Borough of Kensington & Chelsea (62), followed by Westminster (73), and East Dorset (76), in the South West GOR.

### 2) TWRI Observations on SMRs

Compared to other urban/industrialised areas of England, Tyne & Wear had a typical SMR (113). Areas such as Greater Manchester Met County (115) and Merseyside Met County (117) had higher SMRs than Tyne & Wear, whilst areas such as Birmingham (107), Nottinghamshire (103) and Sheffield (104) had significantly lower SMRs. It is striking, and odd, that areas with more widespread experience of coal-mining, such as Nottinghamshire, or a history of heavy industry (Sheffield) had much better SMRs than Tyne & Wear. This might suggest other major public health factors which are negative in Tyne & Wear. Possibilities include; (higher levels of) smoking, drinking and less exercise. These issues are discussed in Section 7.3 of this report.

Appendix 6 and 7 show regional and local variations in health profiles. The North East stands out on adults who smoke, at 29.1% - the highest among the GORs and 21% above the England rate of 24.1%. The North East also has the highest rate of deaths from smoking at 285.8; this is 26.8% higher than the England rate of 225.4. Similarly, the North East has a high rate of binge drinking adults, at 26.5% - again the highest among the GORs and 47% above the England rate of 18.0%.

The North East is more similar to the England average in relation to physically active adults (NE 11.4%, Eng 11.6%) and obese adults (NE 25.2%, Eng 23.6%). However, obesity could become a bigger problem for the North East in the future as the rate of obese children in the region, at 10.9%, is 10.1% higher than the England rate, of 9.9%.

<sup>24</sup> As reported in the article 'Death registrations in England & Wales, 2007: area of residence' in 'Population Trends' Volume 133, Autumn 2008, pp. 106-116.

## Appendix 6: Regional Variations in Health Profiles

### Regional variations

This table shows how each region compares to the England average for the range of indicators used in the local Health Profiles. Areas are sorted by a summary score of red, amber and green indicators so that areas with more indicators which are better than the England average appear at the left and those which are worse appear at the right. A green box may still indicate an important public health problem.

Domain	Indicator	England	South East	East of England	South West	East Midlands	London	North East	Yorkshire and The Humber	West Midlands	North West
Our communities	1 Deprivation	19.9	5.9	6.2	9.2	16.6	28.6	33.6	27.2	27.4	31.7
	2 Children in poverty *	22.4	15.4	16.9	16.9	19.5	33.9	26.0	23.0	24.8	26.0
	3 Statutory homelessness	4.4	2.8	3.5	3.6	3.7	6.8	6.2	4.2	5.8	4.4
	4 GCSE achievement (5 A*-C) *	60.1	62.0	61.2	59.5	57.9	60.9	60.5	67.6	59.3	60.3
	5 Violent crime	19.3	18.6	14.6	17.2	18.3	24.3	18.8	20.8	19.7	19.7
	6 Carbon emissions *	7.6	7.3	7.8	7.7	8.3	6.8	9.0	8.3	7.4	7.6
Children's and young people's health	7 Smoking in pregnancy	16.1	15.2	14.4	16.8	18.3	8.9	23.6	19.6	15.3	20.8
	8 Breast feeding initiation *	69.2	75.6	69.7	75.8	70.5	81.9	49.8	62.9	60.3	59.8
	9 Physically active children *	85.7	85.0	86.6	88.6	85.9	84.9	87.0	84.1	85.1	85.8
	10 Obese children *	9.9	8.7	9.1	9.0	9.7	11.3	10.9	9.7	10.4	10.2
	11 Children's tooth decay (at age 5)	1.5	1.1	1.1	1.8	1.3	1.7	2.0	1.8	1.0	2.0
	12 Teenage pregnancy (under 18) *	41.1	33.4	32.8	33.7	40.2	46.9	49.7	47.3	45.7	45.4
Adults' health and lifestyle	13 Adults who smoke *	24.1	21.8	23.5	21.5	24.8	23.3	25.1	25.5	24.0	26.0
	14 Binge drinking adults	18.0	16.2	15.2	16.3	17.7	12.7	26.5	22.0	17.9	23.0
	15 Healthy eating adults	26.3	30.4	27.0	25.9	25.9	29.7	18.6	24.7	25.1	23.6
	16 Physically active adults	11.6	12.5	11.3	12.6	11.6	11.6	11.4	11.1	10.6	11.1
	17 Obese adults	23.6	22.0	24.8	23.2	25.6	18.4	25.2	24.1	26.5	24.5
Disease and poor health	18 Under-15s 'not in good health'	11.6	10.4	10.4	10.7	10.4	13.1	13.4	11.6	12.1	12.4
	19 Incapacity benefits for mental illness *	27.5	19.4	20.0	26.3	24.1	26.9	40.6	28.3	28.6	40.8
	20 Hospital stays related to alcohol *	260.3	201.9	170.0	247.3	238.0	239.7	422.9	250.9	252.5	424.2
	21 Drug misuse	9.9	6.4	6.5	9.4	8.2	14.4	9.5	11.7	10.6	11.4
	22 People diagnosed with diabetes	3.7	3.3	3.4	3.5	3.9	4.0	3.8	3.7	4.0	3.9
	23 Sexually transmitted infections										
	24 New cases of tuberculosis	15.0	8.0	7.0	5.0	12.0	44.0	6.0	11.0	17.0	9.0
	25 Hip fracture in over-65s	479.8	467.5	467.6	462.7	480.1	454.4	552.3	484.0	499.0	493.9
Life expectancy and causes of death	26 Life expectancy - male *	77.3	78.5	78.3	78.5	77.3	77.4	75.6	76.6	75.6	75.8
	27 Life expectancy - female *	81.6	82.4	82.3	82.7	81.3	82.0	80.1	81.0	81.1	80.3
	28 Infant deaths	5.0	4.0	4.1	4.4	5.1	5.0	4.5	5.9	5.5	5.8
	29 Deaths from smoking	226.4	197.9	199.3	192.3	218.2	225.1	295.8	249.3	228.9	270.8
	30 Early deaths: heart disease & stroke *	84.2	70.2	72.9	69.5	84.6	89.0	99.8	80.6	80.7	102.2
	31 Early deaths: cancer *	117.1	109.8	108.3	108.1	115.1	114.6	136.0	122.3	119.2	131.0
	32 Road injuries and deaths *	56.3	55.3	54.4	49.8	63.7	52.6	44.6	65.1	50.5	57.8

■ Significantly worse than England average  
■ Significantly better than England average

■ Not significantly different to the England average  
■ No significance can be calculated, or data unavailable

## Appendix 7: Local Variations in Health Profiles

### Local variations

This table shows how each local authority and county within this region compares to the England average, for the range of indicators used in the local Health Profiles. Indicators and areas are sorted from top to bottom and from left to right so that the better overall results appear at the top left and worse overall results at the bottom right of the table. A green box may still indicate an important public health problem.

	New cases of tuberculosis	Violent crime	Road injuries and deaths *	Physically active children *	GCSE achievement (5 A*-C) *	Infant deaths	Physically active adults	Obese children *	Under-15s 'not in good health'	People diagnosed with diabetes	Statutory homelessness	Children in poverty *	Hip fracture in over-65s	Obese adults	Deprivation	Adults who smoke *	Early deaths: heart disease & stroke *	Teenage pregnancy (under 18) *	Incapacity benefits for mental illness *	Early deaths: cancer *	Deaths from smoking	Life expectancy - male *	Children's tooth decay (at age 5)	Hospital stays related to alcohol *	Life expectancy - female *	Smoking in pregnancy	Healthy eating adults	Binge drinking adults	Breast feeding initiation *	Drug misuse	Carbon emissions *	Sexually transmitted infections	
Berwick-upon-Tweed CD																																	
Castle Morpeth CD																																	
Tynedale CD																																	
Alnwick CD																																	
Teesdale CD																																	
Durham CD																																	
Chester-le-Street CD																																	
Darlington UA																																	
North Tyneside MCD																																	
Hartlepool UA																																	
Stockton-on-Tees UA																																	
Blyth Valley CD																																	
Gateshead MCD																																	
South Tyneside MCD																																	
Sunderland MCD																																	
Newcastle upon Tyne MCD																																	
Wear Valley CD																																	
Derwentside CD																																	
Redcar and Cleveland UA																																	
Easington CD																																	
Middlesbrough UA																																	
Wansbeck CD																																	
Sedgefield CD																																	
Northumberland CC																																	
County Durham CC																																	

■ Significantly worse than England average     
 ■ Not significantly different to the England average  
■ Significantly better than England average     
 ■ No significance can be calculated, or data unavailable