

The Earnings Gap for Bristol Residents - June 2018

Headlines



British wage inequality has shown a long-term increase, at least 20 years.



Current trends indicate that earnings inequality will continue to grow into the future.



Earnings inequality in Bristol has increased by 40% since 2002, this compares to 38% for Britain.









Despite this inequality, average wages are higher in Bristol than the other UK Core Cities.



The data informs the discussions around inclusive growth policies, which aim to reduce earnings inequality and offer greater sharing of prosperity.

The Earnings Gap for Bristol Residents - June 2018

Summary

-  Nationally (Great Britain¹), the gap between the earnings of people in the top 10% and those in the bottom 10% has been growing for at least² 20yrs. For "Total Gross Weekly" earnings the gap grew by 75% from £477.00³ in 1997 to £833.00⁴ in 2017.
-  The gap between the 90th (top 10%) & 10th (bottom 10%) percentiles of the "Total Gross Weekly" grew at £24.20 per yr pre-recession (1997 to 2008); £5.90 per yr post-recession and £15.60 per yr since 2014.
-  Between 2002 and 2017, the earnings gap between Bristol residents in the bottom 10% and top 10% grew at a trend rate of £14.90 per year which is not significantly different to the growth in the gap for English residents (£14.80 per year).
-  For the majority of the British Core Cities, in absolute terms, earnings of people in the top 40% have been growing more quickly⁵ than those of the bottom 40%.
-  In 2017, the median and mean Total Gross Weekly earnings for Bristol were £451.00 and £511.00 respectively. This compares to England for which the median and mean were £454.00 and £547.00 respectively.
-  In 2017, Bristol had the equal⁶ (with Cardiff and Leeds) highest median Total Gross Weekly earnings of the British Core Cities some 6.3% above the fourth city, Glasgow and 23.9% above the last, Nottingham.

¹ Note there are only insignificant differences between the results for the UK, GB and England.

² Since 1997 the first year for which data is available

³ Equivalent to about £25,000 per year

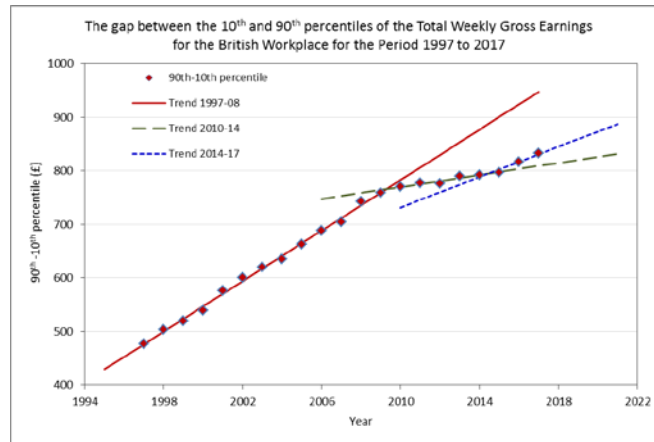
⁴ Equivalent to about £43,000 per year

⁵ See Appendix 4.

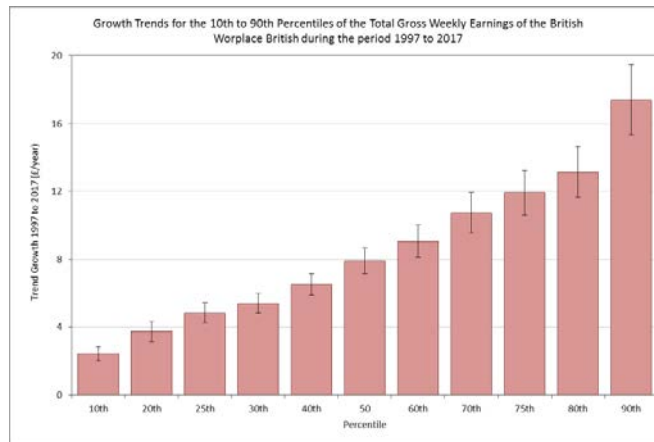
⁶ no statistically significant difference.

National Picture (Great Britain)

The chart below shows the time series for the difference between the 90th and 10th percentiles⁷ of the Total Weekly Gross earnings in the British workplace⁸ for the period⁹ 1997 to 2017. Also shown are the trends lines for 1997-08, 2009-14 and 2014-17. Clearly,



the pre and post-recession trends are significantly different. During the post-recession period, 2010 to 2014 the gap growth slowed markedly but since 2014 has increased. Pre-recession (2008), the gap between the earnings of the bottom and top 10% grew at a trend rate of £23.90 per year. In the post-recession period the gap continued to grow but at a significantly slower rate of £6.30 per year. Since 2014 the gap has grown significantly more quickly at £14.20 per year. Trend analysis of the individual percentiles (10th, 20th, 25th, 30th, 40th, 50th (median); 60th, 70th, 80th and 90th) show clearly that absolute trend growth of earnings of people at or below each of the percentiles is ordered from lowest to



highest percentile. For ease of presentation¹⁰ the above chart shows trend growth for the period 1997 to 2017 with 95% confidence limits for each of the percentiles. Clearly as is also evidenced by the above discussion, the 90th percentile has grown a lot faster¹¹ than the 10th. In absolute terms the gap between the Total Weekly Gross earnings of the top 10% and bottom 10% grew from £477.00 in 1997 to £833.00 in 2017. Taking the 2017 data as a starting point and assuming that the 90th percentile grows at 3% per year¹² the 10th percentile would have to grow at about 3 times (9%) the rate of the 90th for the gap between the two to start to close within about 15 years and take a further 15 years to return to the level of 1997.

⁷ Charts of the gaps between the 60th & 40th; 70th & 30th; 75th & 25th and 80th & 20th are shown in Appendix 1

⁸ At the national level there is no significant difference between workplace and residence based earnings.

⁹ 5 years longer than the period (2002 to 2015) for residence based data

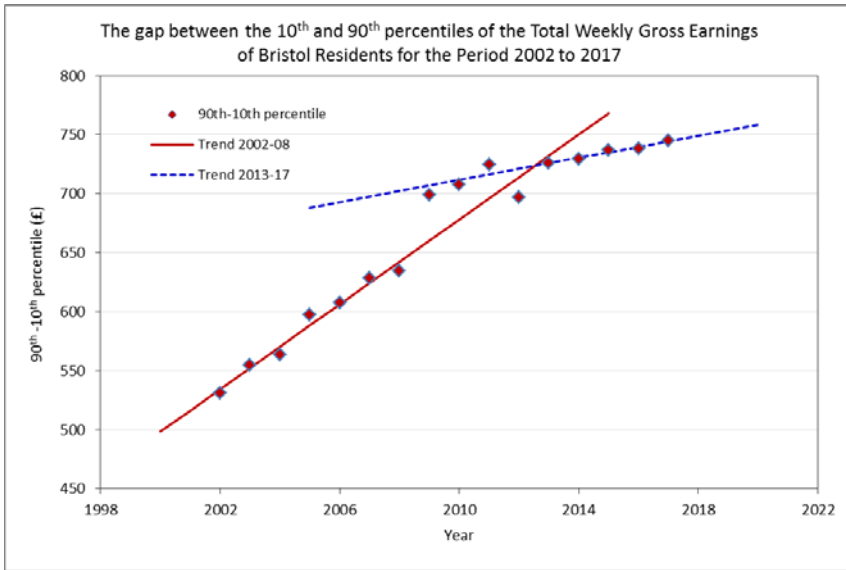
¹⁰ Pre and post-recession growth trends are presented in Appendix 2

¹¹ nearly nine times (8.6) as fast

¹² the average growth rate for the period 1997 to 2015

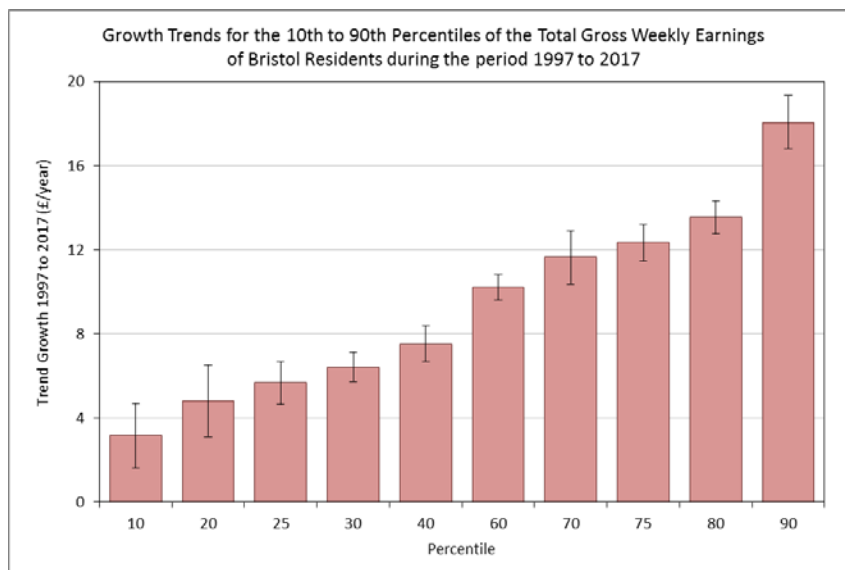
The Picture for Bristol

The chart below shows the time series for the difference between the 90th and 10th percentiles of the Total Weekly Gross earnings of Bristol residents¹³ for the period 2002 to 2017. Also shown are the trends lines for 1997-08 and 2013-17. Clearly growth has been slower since 2013.



For Bristol, the gap between the 90th and 10th percentiles grew at an annual average (2002-17) of £14.90 per year which is the same as the national (British) rate. Trend analysis of the individual percentiles (10th, 20th, 25th, 30th, 40th, 50th, 60th, 70th, 80th and 90th) show clearly that absolute trend growth of earnings of people at or below each of the percentiles is ordered from lowest to highest percentile. Overall there are no significant differences between the trend growths of the various percentiles for Bristol and those for England.

Overall there are no significant differences between the trend growths of the various percentiles for Bristol and those for England.



The chart above shows trend growth for the period 2002 to 2017 with 95% confidence limits for each of the percentiles. The relative size of the 10th percentile (about¹⁴ 18% of the 90th) hasn't changed a great deal. However, as is also evidenced by the above discussion the 90th percentile has grown a lot faster¹⁵ than the 10th. In absolute terms the gap between the two has grown by 40.4% and as is the case nationally the gap will continue to grow unless the 10th percentile grows significantly faster than the 90th. People with earnings in the bottom 10% will continue to fall father and father behind people with earnings in the top 10%.

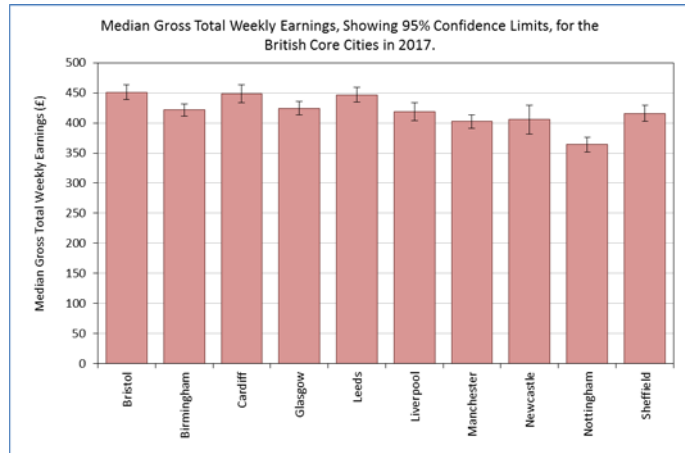
¹³ Here residence based data is used because of the difference between workplace and residence based earnings at this geography.

¹⁴ between 2002 and 2017 ranged from 16.0% to 21.5% averaging 18.1%

¹⁵ nearly six times (5.7) as fast

British Core City Comparisons

Median gross total weekly earnings for the British Core Cities, in 2017, are shown in the chart opposite. In 2017, median gross total weekly earnings for Bristol were significantly higher than seven of the other nine British Core Cities. The exceptions, Cardiff and Leeds, have gross total weekly earnings that were the same as that for Bristol. In fact Bristol, Cardiff¹⁶ and Leeds have been the top performing British Core Cities for the majority of the last ten years. Further, over the said ten years median gross total weekly earnings for these three cities haven't been significantly different to each other.



The data for the 90th percentile of the total gross weekly earnings is incomplete. Where sufficient data was available a trend analysis of the differences between the 90th and 10th and 80th and 20th percentiles was completed. The results of trend analysis are shown in the table below. The gaps are growing (90th-10th and 80th-20th)¹⁷ for all of the Core Cities.

Area Name	2002-17 Trend Growth Parameters for Differences between Percentiles					
	80th-20th percentile			90th-10th percentile		
	Rate (£/yr)	95% conf	Quality	Rate (£/yr)	95% conf	Quality
Bristol	8.80	1.6	definite	14.90	2.4	definite
Birmingham	9.10	1.2	definite	13.60	1.6	definite
Cardiff	9.40	1.8	definite	15.30	2.8	definite
Glasgow	10.00	1.5	definite	15.40	2.9	definite
Liverpool	9.10	2.0	definite	14.90	2.4	definite
Manchester	8.30	1.4	definite	11.10	2.4	definite
Newcastle	10.80	3.0	probable	Data missing		
Nottingham	3.90	2.0	possible	Data missing		
Leeds	9.20	1.4	definite	15.70	2.5	definite
Sheffield	9.00	1.3	definite	14.10	2.7	definite
Great Britain	9.40	1.2	definite	14.90	2.1	definite

For the most part the differences between the growth rates are not significant from each other and from the national (GB) averages. The trend growth of the 80th-20th percentiles gap for Nottingham is significantly lower¹⁸ than that for all of the other Core Cities¹⁹.

Questions about the contents of this briefing should be addressed to:

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¹⁶ Cardiff dropped to fourth in 2010 and again in 2014

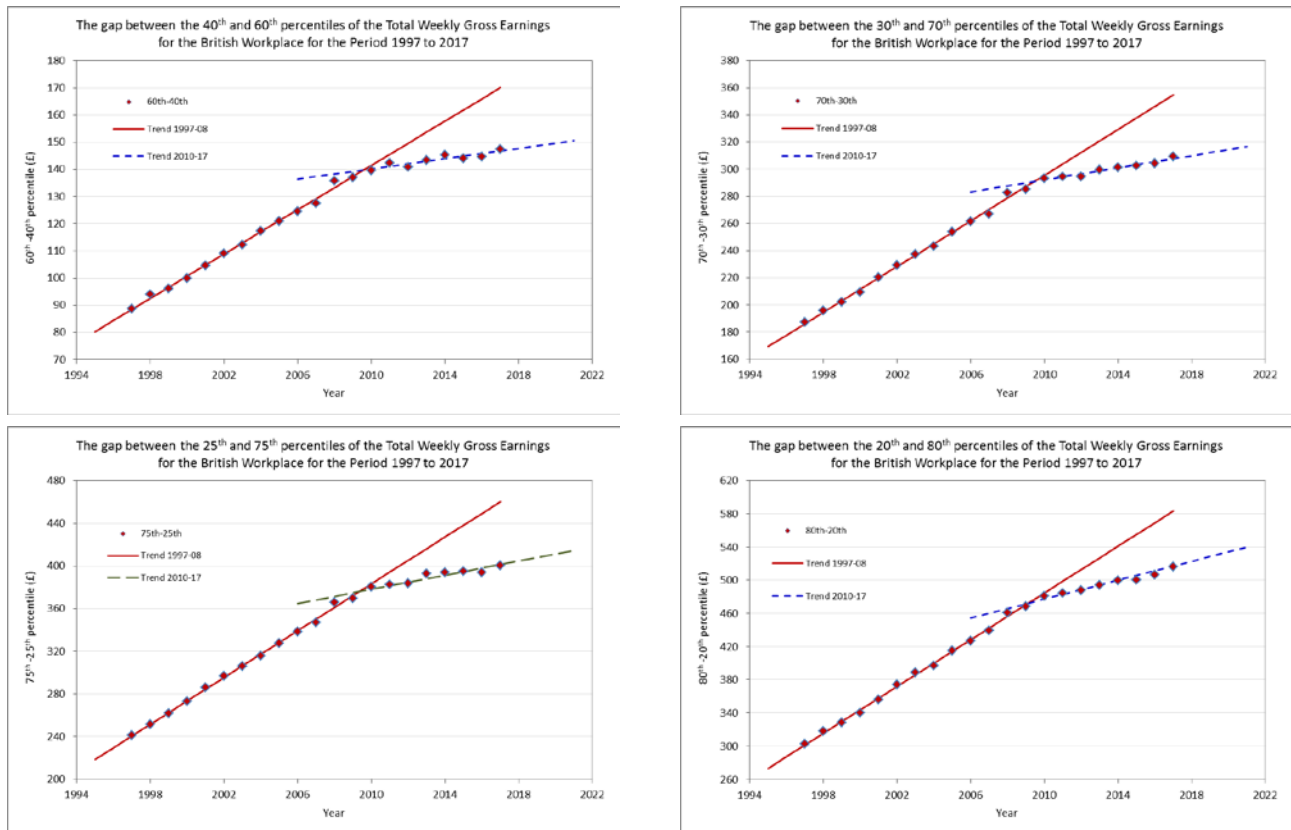
¹⁷ the gaps between the 60th and 40th percentiles and 70th and 30th percentiles is also growing - see Appendix 4

¹⁸ But note that with 95% conf limits well over 50% (51.2%) the trend growth for Nottingham is far from certain

¹⁹ But note that with 95% conf limits well nearly 30% (27.5%) the trend growth for Newcastle is uncertain

Appendix 1

The charts below show the time series for the differences between the 60th & 40th; 70th & 30th; 75th & 25th and 80th & 20th percentiles of the Total Weekly Gross earnings of the British workplace for the period 1997 to 2017. Also shown are the trends lines for the



periods 1997-08 and 2009-15. Clearly the pre and post-recession trends are different. Further, the increased growth rate that was apparent post 2014 in the 10th-90th gap is not apparent for any of the other gaps.

Appendix 2

The trend analysis data for “Total Weekly Gross” earnings of the English workplace are summarised in the table below.

Percentile	Trend Growth Variables for the Percentiles for the Total Weekly Gross Earnings of the British Workplace								
	1997 and 2008			2008 and 2015			1997 and 2017		
	Rate (£/yr)	95% Conf	Quality	Rate (£/yr)	95% Conf	Quality	Rate (£/yr)	95% Conf	Quality
10 th	3.30	0.37	0.968	2.90	0.97	0.813	2.70	0.27	0.953
20 th	5.80	0.36	0.990	3.30	1.39	0.729	4.40	0.43	0.955
25 th	6.60	0.35	0.993	4.60	1.53	0.809	5.40	0.41	0.972
30 th	7.40	0.35	0.994	4.70	1.33	0.856	6.10	0.43	0.976
40 th	8.90	0.35	0.996	5.30	1.22	0.900	7.30	0.49	0.978
50 th (median)	10.70	0.40	0.996	6.00	1.11	0.934	8.90	0.57	0.980
60 th	13.00	0.44	0.997	6.50	1.11	0.942	10.40	0.77	0.974
70 th	15.80	0.50	0.997	7.40	1.30	0.939	12.50	0.98	0.970
75 th	17.60	0.54	0.998	8.20	1.15	0.960	13.90	1.08	0.971
80 th	19.90	0.54	0.998	8.90	1.36	0.953	15.50	1.27	0.968
90 th	26.90	0.89	0.997	11.40	2.03	0.938	20.70	1.78	0.965

Appendix 3

The trend analysis data for “Total Weekly Gross” earnings of Bristol residents is summarised in the table below.

Percentile	Trend Growth Variables for the Percentiles for the Total Weekly Gross Earnings of Bristol Residents								
	2002 and 2008			2013 and 2017			2002 and 2017		
	Rate (£/yr)	95% Conf	Quality	Rate (£/yr)	95% Conf	Quality	Rate (£/yr)	95% Conf	Quality
10 th	7.60	2.31	0.893	9.60	3.51	0.905	3.20	1.08	0.699
20 th	8.80	3.13	0.860	10.80	5.76	0.818	4.80	1.17	0.822
25 th	9.40	1.77	0.956	12.40	3.55	0.940	5.70	1.05	0.890
30 th	10.50	1.30	0.980	12.00	1.85	0.982	6.40	1.06	0.910
40 th	12.10	2.17	0.960	9.10	3.41	0.900	7.50	1.04	0.935
60 th	13.30	1.63	0.981	10.90	2.43	0.962	10.20	0.75	0.981
70 th	14.50	3.24	0.939	12.00	2.68	0.963	11.70	1.12	0.967
75 th	15.90	2.26	0.974	11.00	3.53	0.925	12.40	1.11	0.971
80 th	18.80	1.48	0.992	10.70	1.67	0.981	13.60	1.37	0.964
90 th	25.60	2.97	0.983	14.30	4.24	0.936	18.10	2.35	0.942

Appendix 4

The trend analysis data gap between the 40th and 60th percentiles and the 30th and 70th percentiles of “Total Weekly Gross” earnings for residents of Great Britain and the British Core Cities is summarised in the table below.

Area	2002-17 Trend Growth Parameters for the Gap Between Percentiles of Total Gross Weekly Earning of Great Britain and the British Core Cities					
	40 th and 60 th percentile			30 th and 70 th percentile		
	Rate (£/yr)	95% conf	Quality	Rate (£/yr)	95% conf	Quality
Bristol	2.70	0.48	definite	5.23	0.96	definite
Birmingham	2.51	0.52	definite	5.06	0.82	definite
Cardiff	2.39	0.92	possible	6.18	1.80	possible
Glasgow	3.69	0.52	definite	6.76	1.16	definite
Liverpool	3.03	0.82	probable	5.26	1.63	probable
Manchester	1.49	0.71	possible	4.55	1.55	probable
Newcastle	3.45	0.84	probable	5.48	1.32	probable
Nottingham	0.82	0.97	none	1.67	1.35	none
Leeds	3.28	0.46	definite	6.16	0.98	definite
Sheffield	2.05	0.78	possible	4.56	1.15	definite
Great Britain	2.55	0.44	definite	5.29	0.81	definite