

Redistribution of income

(in Great Britain/explained by Lorenz curves)

The government can redistribute income from the rich to the poor by progressive taxes or by regressive benefits.

Taxes are progressive if they rise more than proportionately with higher incomes. They can be either direct (as income taxes) or indirect (as VAT).

Benefits are regressive if people with lower incomes get more benefits (in proportion to their income) than those with higher incomes. They can be in cash (as pensions) or in kind (as education services).

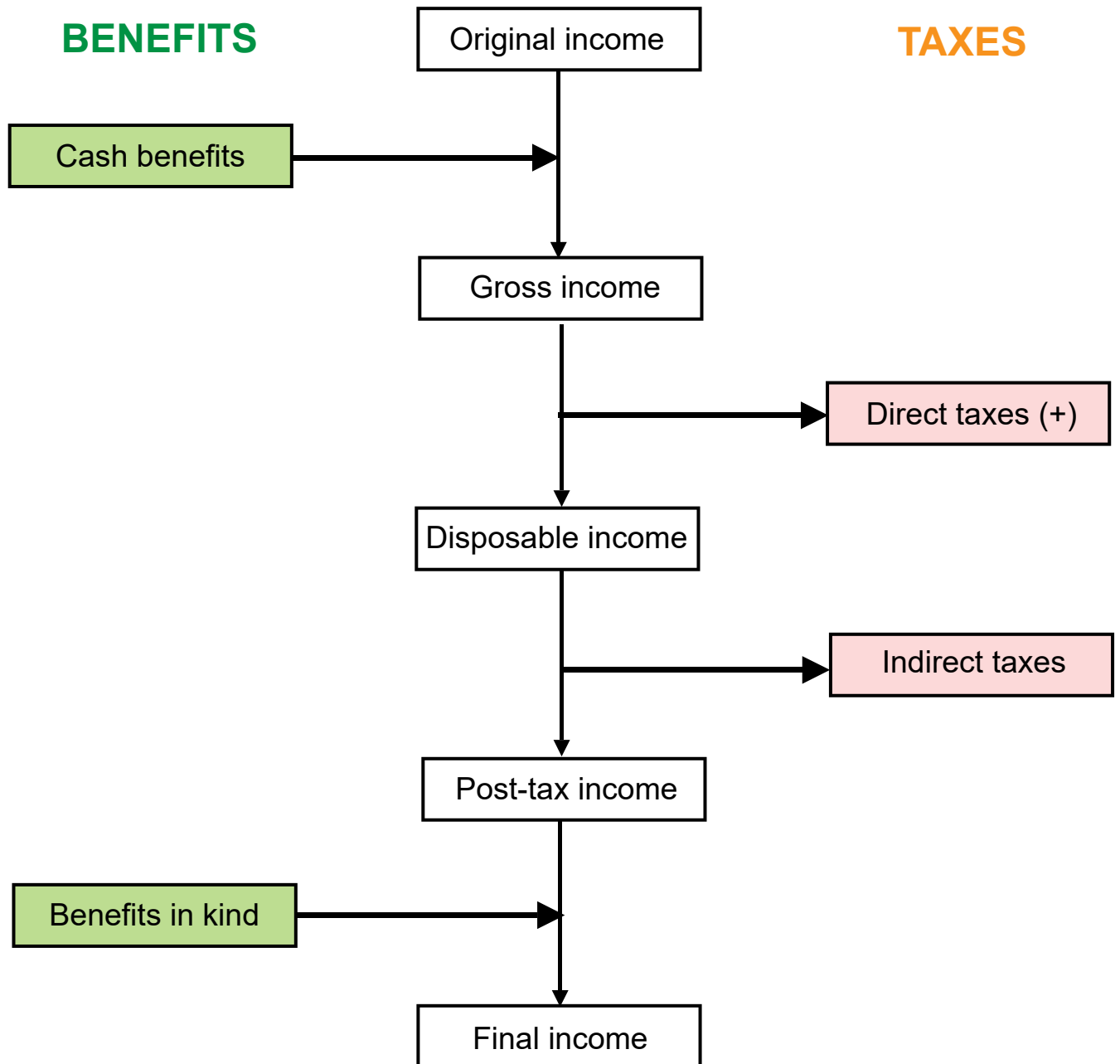
The Office for National Statistics is using the following scheme¹:

Original income
+ Cash benefits
= Gross income
- Direct taxes
= Disposable income
- Indirect taxes
= Post-tax income
+ Benefits in kind
= Final income

¹ Office for National Statistics: Effects of taxes and benefits on household income: financial year ending 2017, pp. 5 and 6

or the same scheme graphically:

Stages of redistribution



Does redistribution happen?

1

Redistribution by **direct taxes** (from gross income to disposable income)?

The Lorenz Curve (initially for gross income) moves towards the 45^o-diagonal line (finally for disposable income). Thus, according to appendix 1, **direct taxes** are **progressive**. Compare the GINI-coefficients 2019/20 for both incomes (Appendix 5).

2

Redistribution by **indirect taxes** (from disposable income to post-tax income)?

Appendix 2 shows that the Lorenz Curve moves outwards. This means that **indirect taxes** are **regressive**. Compare the GINI-coefficients 2019/20 for both incomes (Appendix 5).

3

Redistribution by **all taxes** (from gross income to post-tax income)?

It is very difficult to see two different Lorenz Curves in appendix 3, except from the range 61 onwards. This means that the tax system (direct and indirect taxes) does not change distribution much. The **tax system** as a whole is therefore (practically) **proportional**. This means that on average the same amount of taxes per unit of income has to be paid, irrespective of the level of income. Compare the GINI-coefficients 2019/20 for both incomes (Appendix 5).

4

Redistribution by **taxes and benefits** (from original income to final income)?

If (as in appendix 4) we compare the Lorenz Curve for the original income with that for the final income, we get the **overall redistribution due to taxes and to benefits**. Because taxes are almost proportional, the inward shift of the Lorenz Curve can be nearly completely attributed to benefits. **Benefits** are **regressive**. Compare the GINI-coefficients 2019/20 for both incomes (Appendix 5).

It can be concluded that redistribution of income in Great Britain occurs because of the benefits, and not because of the taxes.

Lorenz Curves GB 2019/20

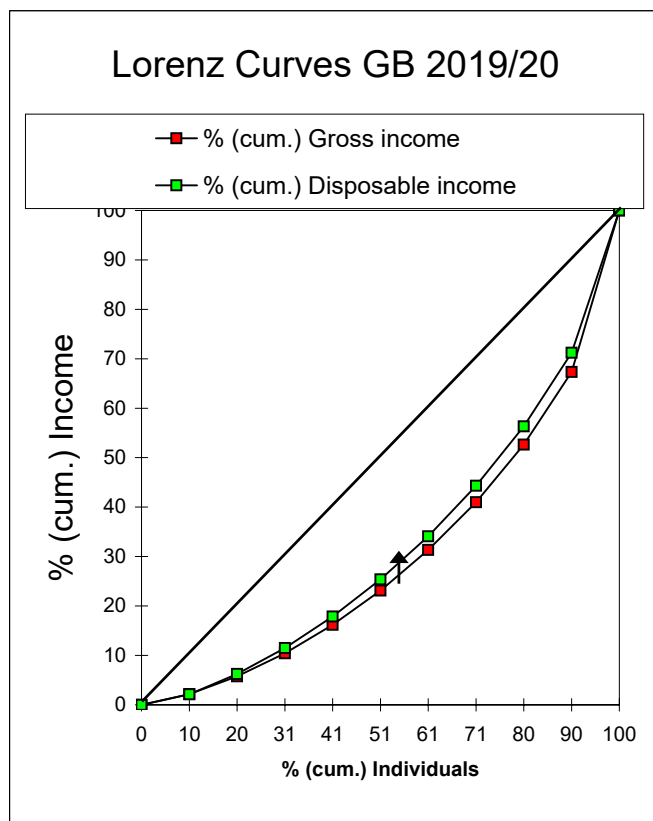
Appendix 1

Redistribution by *direct taxes*

Zehntel	Individuals		Gross income		Disposable income	
	in 000	%	Gross income	%	Disposable income	%
1	6753	10	13064	2.2	9847	2.1
2	6676	10	21641	3.6	18912	4.1
3	6765	10	28103	4.7	24313	5.3
4	6672	10	34579	5.7	29297	6.4
5	6613	10	41829	6.9	34630	7.5
6	6623	10	49343	8.2	40192	8.7
7	6561	10	58160	9.7	47139	10.2
8	6528	10	70089	11.6	55521	12.0
9	6505	10	88437	14.7	68680	14.9
10	6396	10	196692	32.7	132685	28.8
Sum	66092	100	601937	100.0	461216	100.0

= average income in £

% (cum.) Individuals	% (cum.) Gross income	% (cum.) Disposable income
10	2.2	2.1
20	5.8	6.2
31	10.4	11.5
41	16.2	17.9
51	23.1	25.4
61	31.3	34.1
71	41.0	44.3
80	52.6	56.3
90	67.3	71.2
100	100.0	100.0



Source:

Office for National Statistics:
The Effects of Taxes and Benefits
on Household Income, 2019/20 (Table 13)

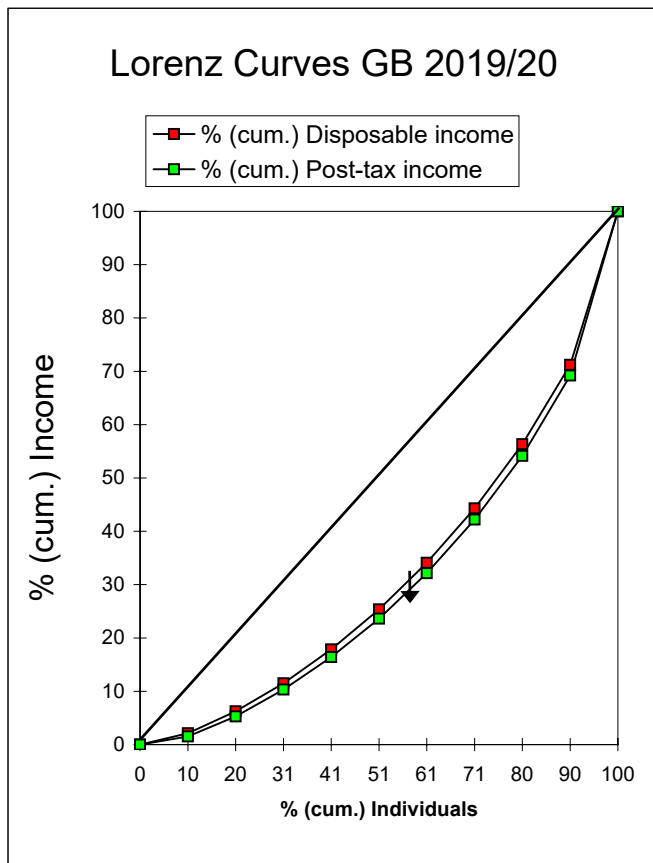
Lorenz Curves GB 2019/20

Appendix 2 Redistribution by indirect taxes

Deciles	Individuals		Disposable income		Post-tax income	
	in 000	%	Disposable income	%	Post-tax income	%
1	6753	10	9847	2.1	5946	1.5
2	6676	10	18912	4.1	14522	3.8
3	6765	10	24313	5.3	19442	5.0
4	6672	10	29297	6.4	23544	6.1
5	6613	10	34630	7.5	27840	7.2
6	6623	10	40192	8.7	32927	8.5
7	6561	10	47139	10.2	38939	10.1
8	6528	10	55521	12.0	46151	11.9
9	6505	10	68680	14.9	58289	15.1
10	6396	10	132685	28.8	119045	30.8
Sum	66092	100	461216	100.0	386645	100.0

= average income in £

% (cum.) Individuals	% (cum.) Disposable income	% (cum.) Post-tax income
10	2.1	1.5
20	6.2	5.3
31	11.5	10.3
41	17.9	16.4
51	25.4	23.6
61	34.1	32.1
71	44.3	42.2
80	56.3	54.1
90	71.2	69.2
100	100.0	100.0



Source:

Office for National Statistics:
The Effect of Taxes and Benefits
on Household Income, 2019/20 (Table 13)

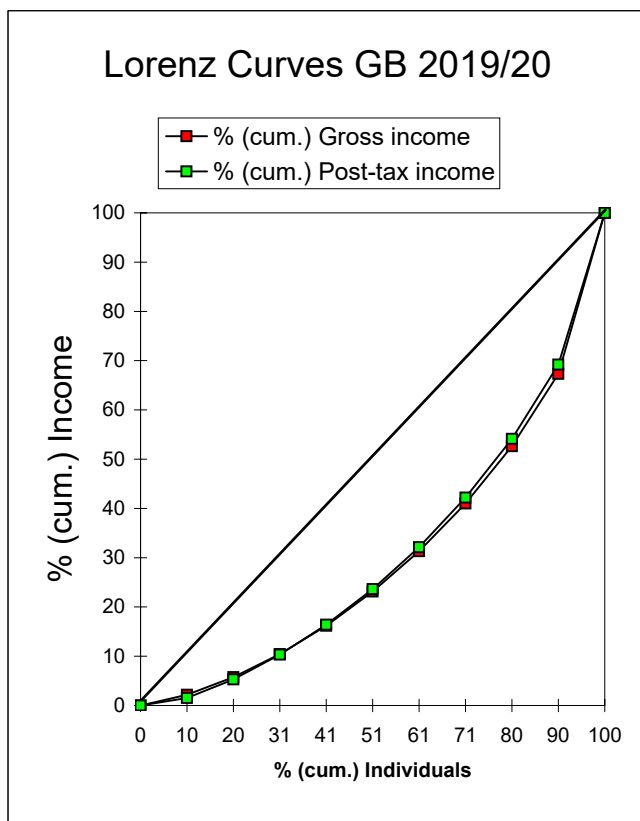
Lorenz Curves GB 2019/20

Appendix 3 Redistribution by *direct and indirect taxes*

Deciles	Individuals		Gross income		Post-tax income	
	in 000	%	Gross income	%	Post-tax income	%
1	6753	10	13064	2.2	5946	1.5
2	6676	10	21641	3.6	14522	3.8
3	6765	10	28103	4.7	19442	5.0
4	6672	10	34579	5.7	23544	6.1
5	6613	10	41829	6.9	27840	7.2
6	6623	10	49343	8.2	32927	8.5
7	6561	10	58160	9.7	38939	10.1
8	6528	10	70089	11.6	46151	11.9
9	6505	10	88437	14.7	58289	15.1
10	6396	10	196692	32.7	119045	30.8
Sum	66092	100	601937	100.0	386645	100.0

= average income in £

% (cum.) Individuals	% (cum.) Gross income	% (cum.) Post-tax income
10	2.2	1.5
20	5.8	5.3
31	10.4	10.3
41	16.2	16.4
51	23.1	23.6
61	31.3	32.1
71	41.0	42.2
80	52.6	54.1
90	67.3	69.2
100	100.0	100.0



Source:
Office for National Statistics:
The Effect of Taxes and Benefits
on Household Income, 2019/20 (Table 13)

Lorenz Curves GB 2019/20

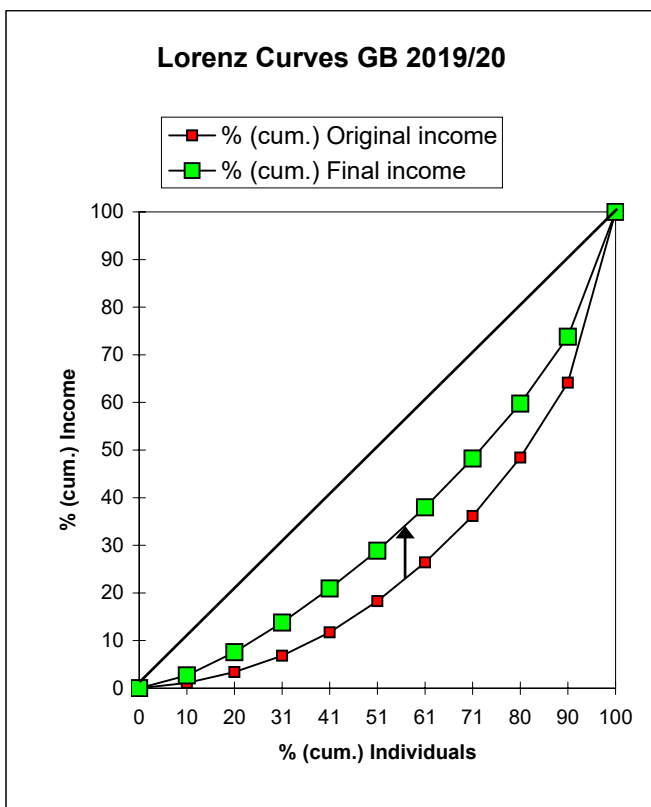
Appendix 4

Redistribution by *taxes and benefits*

Deciles	Individuals		Original income		Final income	
	in 000	%	Original income	%	Final income	%
1	6753	10	5992	1.1	13464	2.7
2	6676	10	12363	2.3	24253	4.9
3	6765	10	18571	3.4	31094	6.2
4	6672	10	26708	4.9	35785	7.2
5	6613	10	35550	6.6	39597	7.9
6	6623	10	44113	8.1	45498	9.1
7	6561	10	52936	9.8	51136	10.2
8	6528	10	66471	12.2	57512	11.5
9	6505	10	85328	15.7	70269	14.1
10	6396	10	194603	35.9	130883	26.2
Sum	66092	100	542635	100.0	499491	100.0

= average income in £

% (cum.) Individuals	% (cum.) Original income	% (cum.) Final income
10	1.1	2.7
20	3.4	7.6
31	6.8	13.8
41	11.7	20.9
51	18.3	28.9
61	26.4	38.0
71	36.2	48.2
80	48.4	59.7
90	64.1	73.8
100	100.0	100.0



Source:

Office for National Statistics:
The Effect of Taxes and Benefits
on Household Income, 2019/20 (Table 13)

Appendix 5:

Table 6a: Gini coefficients for the distribution of equivalised income at each stage of the tax and benefit system, ALL individuals, 1977 - 2019/20

Year	Original income	Gross income	Disposable income	Post-tax income	Final income
1977	36.8	27.7	25.5	28.0	22.0
1978	37.1	27.6	25.0	26.8	21.1
1979	37.2	27.6	25.4	27.5	21.5
1980	38.3	28.8	26.7	29.3	22.7
1981	40.3	29.8	27.4	30.1	23.0
1982	41.7	29.9	27.6	30.7	24.1
1983	43.3	31.0	28.3	31.1	24.9
1984	43.0	30.0	27.0	29.7	24.4
1985	44.8	32.5	29.6	32.6	26.4
1986	45.2	32.8	30.1	33.8	26.9
1987	46.2	34.2	31.5	35.2	28.2
1988	45.8	35.1	33.3	37.2	30.1
1989	44.9	34.4	32.7	36.4	29.2
1990	46.7	36.6	34.9	38.9	31.6
1991	46.6	36.0	33.9	37.8	30.7
1992	48.0	35.9	33.4	37.3	29.6
1993	49.5	36.5	33.7	37.7	29.6
1994/95	48.5	35.7	32.5	36.3	28.5
1995/96	48.3	35.6	32.3	36.4	28.3
1996/97	48.5	36.2	33.2	37.2	29.3
1997/98	48.2	36.4	33.4	37.3	29.6
1998/99	49.0	37.4	34.4	38.6	30.5
1999/00	49.0	37.8	35.1	39.5	31.3
2000/01	47.9	36.9	34.3	38.7	30.4
2001/02	50.5	39.9	35.9	40.4	31.8
2002/03	49.7	38.9	34.8	38.8	30.4
2003/04	49.4	38.4	34.0	38.2	29.8
2004/05	49.9	38.8	34.3	38.2	29.8
2005/06	51.4	40.3	35.9	39.6	31.0
2006/07	52.0	41.4	37.0	41.3	32.1
2007/08	53.5	43.0	38.6	42.7	33.8
2008/09	52.2	40.7	35.6	39.2	31.3
2009/10	53.4	41.2	36.6	40.3	31.4
2010/11	51.4	39.0	34.1	38.1	29.7
2011/12	51.7	39.1	33.8	37.8	29.4
2012/13	52.0	39.6	34.4	38.2	29.8
2013/14	52.1	40.6	35.3	39.4	31.0
2014/15	51.3	39.8	34.7	38.4	30.6
2015/16	51.6	40.3	35.1	38.9	31.1
2016/17	49.4	38.5	33.4	37.3	28.4
2017/18	51.0	40.1	35.0	39.0	30.3
2018/19	50.3	40.4	35.5	39.2	30.8
2019/20	50.5	40.8	36.3	40.6	31.7

Source: Office for National Statistics