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TOP WEALTH SHARES IN THE UK OVER MORE THAN A CENTURY

APPENDICES FOR ON LINE PUBLICATION ONLY

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Appendix A. Sources of distributional data

Table A1 lists the sources of data on the distribution of estates in the UK since 1895. Table A2 lists the sources of data for the IR/HMRC distribution of identified wealth. Table A3 lists the sources of data for the distribution of investment income.

Table A1. Sources of data on the distribution of estates in the UK 1895-2013

Financial year starting	Threshold £	Threshold £ 2015	Maximum inheritance tax rate	Country	Sources: AR denotes Annual report; IRS denotes Inland Revenue Statistics	Basis for estimate
1895	100	11,858	8	GB	39 th AR, pages 56 and 57	Year of account
1896	100	11,998	8	GB	79 th AR, Table 18	Year of account
1897	100	11,722	8	GB	79 th AR, Table 18	Year of account
1898	100	11,722	8	GB	79 th AR, Table 18	Year of account
1899	100	11,589	8	GB	79 th AR, Table 18	Year of account
1900	100	11,085	8	GB	79 th AR, Table 18	Year of account
1901	100	11,085	8	GB	79 th AR, Table 18	Year of account
1902	100	11,085	8	GB	79 th AR, Table 18	Year of account
1903	100	11,085	8	GB	79 th AR, Table 18	Year of account
1904	100	10,966	8	GB	79 th AR, Table 18	Year of account
1905	100	10,966	8	GB	79 th AR, Table 18	Year of account
1906	100	10,966	8	GB	79 th AR, Table 18	Year of account
1907	100	10,849	15	GB	79 th AR, Table 18	Year of account
1908	100	10,849	15	GB	79 th AR, Table 18	Year of account
1909	100	10,735	15	GB	79 th AR, Table 18	Year of account
1910	100	10,623	15	GB	79 th AR, Table 18	Year of account
1911	100	10,623	15	GB	79 th AR, Table 18	Year of account
1912	100	10,301	15	GB	79 th AR, Table 18	Year of account
1913	100	10,406	15	GB	79 th AR, Table 18	Year of account
1914	100	10,406	15	GB	79 th AR, Table 18	Year of account
1915	100	9,271	20	GB	No data on amounts	Year of account
1916	100	7,845	20	GB	No data on amounts	Year of account
1917	100	6,256	20	GB	No data on amounts	Year of account
1918	100	5,125	20	GB	No data on amounts	Year of account
1919	100		20	GB	Data on amounts for 9 months to March 1920. Numbers from 63 rd AR, Table 13; amounts from 65 th AR, Table 22	Year of account
1920	100	4,031	40	GB	64 th AR, Tables 13 and 14	Year of account
1921	100	4,415	40	GB	65 th AR, Tables 21 and 22	Year of account
1922	100	5,125	40	GB	66 th AR, Tables 10 and 11	Year of account
1923	100	5,453	40	GB	67 th AR, Tables 10 and 12	Year of account
1924	100	5,463	40	GB	68 th AR, Tables 10 and 12	Year of account
1925	100	5,483	40	GB	69 th AR, Tables 11 and 13	Year of account
1926	100	5,512	40	GB	70 th AR, Tables 13 and 15	Year of account
1927	100	5,666	40	GB	71 st AR, Tables 13 and 15	Year of account
1928	100	5,666	40	GB	72 nd AR, Tables 12 and 14	Year of account
1929	100	5,729	40	GB	73 rd AR, Tables 12 and 14	Year of account
1930	100	5,895	40	GB	74 th AR, Tables 12 and 14	Year of account
1931	100	6,143	50	GB	75 th AR, Tables 12 and 13	Year of account
1932	100	6,295	50	GB	76 th AR, Tables 12 and 13	Year of account
1933	100	6,454	50	GB	77 th AR, Tables 12 and 13	Year of account
1934	100	6,454	50	GB	78 th AR, Tables 12 and 13	Year of account
1935	100	6,414	50	GB	79 th AR, Tables 12 and 13	Year of account
1936	100	6,374	50	GB	80 th AR, Tables 12 and 13	Year of account
1937	100	6,143	50	GB	81 st AR, Tables 12 and 13	Year of account
1938	100	6,070	50	GB	82 nd AR, Tables 12 and 13	Year of account
1939	100	5,895	55	GB	83 rd AR, Tables 4 and 5	Year of account
1940	100	5,949	60	GB	84 th AR, Tables 4 and 5	Year of account
1941	100	4,553	65	GB	85 th AR, Table 8	Year of account
1942	100	4,249	65	GB	No data on amounts	Year of account
1943	100	4,112	65	GB	No data on amounts	Year of account
1944	100	3,999	65	GB	No data on amounts	Year of account
1945	100	3,892	65	GB	No data on amounts	Year of account
1946	2,000	75,540	75	GB	86 th AR, Tables 11 and 13	Year of account
1947	2,000	75,574	75	GB	91 st AR, Tables 46 and 48	Year of account
1948	2,000	65,582	75	GB	92 nd AR, Tables 107 and 109	Year of account
1949	2,000	63,737	75	GB	93 rd AR, Tables 52 and 54	Year of account
1950	2,000	61,806	80	GB	94 th AR, Tables 137 and 138	Year of account
1951	2,000	56,655	80	GB	95 th AR, Tables 207 and 208	Year of account
1952	2,000	51,898	80	GB	96 th AR, Tables 102 and 103	Year of account
1953	2,000	50,380	80	GB	105 th AR, Tables 188 and 189	Year of account
1954	3,000	74,077	80	GB	105 th AR, Tables 188 and 189	Year of account
1955	3,000	70,983	80	GB	105 th AR, Tables 188 and 189	Year of account
1956	3,000	67,536	80	GB	105 th AR, Tables 188 and 189	Year of account
1957	3,000	65,232	80	GB	105 th AR, Tables 188 and 189	Year of account
1958	3,000	63,210	80	GB	105 th AR, Tables 188 and 189	Year of account
1959	3,000	62,950	80	GB	105 th AR, Tables 188 and 189	Year of account
1960	3,000	62,309	80	GB	105 th AR, Tables 188 and 189	Year of account
1961	3,000	60,224	80	GB	105 th AR, Tables 188 and 189	Year of account
1962	4,000	49,966	80	GB	111 th AR, Table 130	Year of account
1963	5,000	94,425	80	GB	111 th AR, Table 130	Year of account
1964	5,000	91,379	80	GB	111 th AR, Table 130	Year of account
1965	5,000	87,311	80	GB	111 th AR, Table 130	Year of account
1966	5,000	84,003	80	GB	111 th AR, Table 130	Year of account
1967	5,000	81,845	80	GB	111 th AR, Table 130	Year of account
1968	5,000	78,205	80	GB	IRS 1972, Tables 69 and 72	Year of account
1969	10,000	148,442	80	GB	IRS 1972, Tables 69 and 72	Year of account
1970	10,000	139,507	80	GB	IRS 1972, Tables 69 and 72	Year of account
1971	12,500	159,343	80	GB	IRS 1976, Tables 90 and 92	Year of account
1972	15,000	178,494	80	GB	IRS 1976, Tables 90 and 92	Year of account
1973	15,000	163,603	80	GB	IRS 1976, Tables 90 and 92	Year of account
1974	15,000	140,985	80	UK	IRS 1976, Tables 90 and 92. UK from 1 January 1974	Year of account
1975	15,000	113,479	75	UK	IRS 1980, Tables 4.2 and 4.4	Year of account
1976	15,000	97,371	75	UK	IRS 1980, Tables 4.2 and 4.4	Year of account
1977	25,000	140,082	75	UK	IRS 1980, Tables 4.2 and 4.4	Year of account
1978	25,000	129,350	75	UK	IRS 1980, Tables 4.2 and 4.4	Year of account
1979	25,000	114,071	75	UK	IRS 1982, Tables 4.2 and 4.3	Year of account
1980	50,000	193,363	75	UK	IRS 1984, Table 4.6	Year of death
1981	50,000	172,846	75	UK	IRS 1985, Table 4.6	Year of death
1982	55,000	175,058	75	UK	IRS 1986, Table 4.6	Year of death
1983	60,000	182,595	75	UK	IRS 1987, Table 6.6	Year of death
1984	64,000	185,522	75	UK	IRS 1988, Table 9.6	Year of death
1985	67,000	183,082	60	UK	IRS 1989, Table 9.6	Year of death
1986	71,000	187,627	60	UK	IRS 1990, Table 9.6	Year of death
1987	90,000	228,312	60	UK	IRS 1990, Table 10.6	Year of death
1988	110,000	265,996	40	UK	IRS 1992, Table 10.6	Year of death
1989	118,000	264,783	40	UK	IRS 1993, Table 12.6	Year of death
1990	128,000	262,395	40	UK	IRS 1994, Table 12.5	Year of death
1991	140,000	271,086	40	UK	IRS 1994, Table 12.5	Year of death
1992	150,000	279,964	40	UK	IRS 1996, Table 12.5	Year of death
1993	150,000	275,586	40	UK	IRS 1997, Table 12.5	Year of death
1994	150,000	269,084	40	UK	IRS 1998, Table 12.5	Year of death
1995	154,000	266,995	40	UK		Year of death
1996	200,000	338,572	40	UK	IRS 1999, T 12.5	Year of death
1997	215,000	352,873	40	UK	IRS 2000, T 12.5	Year of death
1998	223,000	353,870	40	UK	supplied by HMRC	Year of death
1999	231,000	351,025	40	UK	supplied by HMRC	Year of death
2000	234,000	355,191	40	UK	HMRC website, Table 12.3	Year of death
2001	242,000	360,975	40	UK	HMRC website, Table 12.4	Year of death
2002	250,000	366,771	40	UK	National Archive, Table 12.4	Year of death
2003	255,000	363,582	40	UK	National Archive, Table 12.4	Year of death
2004	263,000	364,143	40	UK		Year of death
2005	275,000	370,247	40	UK	National Archive, Table 12.4	Year of death
2006	285,000	371,896	40	UK	National Archive, Table 12.4	Year of death
2007	300,000	375,363	40	UK	HMRC website, Table 12.4	Year of death
2008	312,000	375,475	40	UK	HMRC website, Table 12.4	Year of death
2009	325,000	393,133	40	UK	National Archive, Table 12.4	Year of death
2010	325,000	375,727	40	UK	National Archive, Table 12.4	Year of death
2011	325,000	357,196	40	UK	HMRC website, Table 12.4	Year of death
2012	325,000	346,158	40	UK	HMRC website, Table 12.4	Year of death
2013	325,000	335,916	40	UK	HMRC website, Table 12.3, Table 12.4	Year of death

Notes:

- (1) Up to 1922, the UK includes the whole of Ireland; from 1922 UK includes England, Wales, Scotland and Northern Ireland.
- (2) From 1980 the data refer to deaths occurring in the year; before 1980 they refer to deaths reported in the year.
- (3) The Estate Duty was introduced in 1894. It was replaced in 1975 by the Capital Transfer Tax, renamed in 1986 Inheritance Tax.

Table A2. Sources of data for IR/HMRC distribution of identified wealth 1960-2013

Financial year starting	Source for IR/HMRC distribution of wealth	Basis for estimate
1960	IRS 1970, Table 123	Year of account adjusted
1961	IRS 1970, Table 123	Year of account adjusted
1962	IRS 1970, Table 123	Year of account adjusted
1963	IRS 1970, Table 123	Year of account adjusted
1964	IRS 1970, Table 123	Year of account adjusted
1965	IRS 1970, Table 123	Year of account adjusted
1966	IRS 1970, Table 123	Year of account adjusted
1967	IRS 1970, Table 123	Year of account adjusted
1968	IRS 1970, Table 123	Year of account adjusted
1969	IRS 1971, Table 130	Year of account adjusted
1970	IRS 1972, Table 86	Year of account adjusted
1971	IRS 1973, Table 92	Year of account adjusted
1972	IRS 1974, Table 104	Year of account adjusted
1973	IRS 1975, Table 106	Year of account adjusted
1974	IRS 1976, Table 104	Year of account adjusted
1975	IRS 1977, Table 111	Year of account adjusted
1976	IRS 1978, Table 4.16	Year of account adjusted
1977	IRS 1979, Table 4.16	Year of account adjusted
1978	IRS 1980, Table D3	Year of account adjusted
1979	IRS 1983, Table 4.12	Year of death
1980	IRS 1984, Table 4.12	Year of death
1981	IRS 1985, Table 4.11	Year of death
1982	IRS 1986, Table 4.11	Year of death
1983	IRS 1987, table 7.1	Year of death
1984	IRS 1988, table 10.1	Year of death
1985	IRS 1989, table 10.1	Year of death
1986	IRS 1990, table 10.1	Year of death
1987	IRS 1991, table 11.1	Year of death
1988	IRS 1992, table 11.1	Year of death
1989	IRS 1993, table 13.1	Year of death
1990	IRS 1994, table 13.1	Year of death
1991	IRS 1995, table 13.1	Year of death
1992	IRS 1996, table 13.1	Year of death
1993	IRS 1997, table 13.1	Year of death
1994	IRS 1998, table 13.1	Year of death
1995	IRS 1999, table 13.1	Year of death
1996	IRS 2000, table 13.1	Year of death
1997	IRS 2000, table 13.3	Year of death
1998		Year of death
1999	HMRC website 2002, table 13.1	Year of death
2000		Year of death
2001	HMRC website through the National Web Archives 2003, table 13.1	Year of death
2002	HMRC website through the National Web Archives 2003, table 13.1 (2002 and 2001-2003)	Year of death
2003	HMRC website through the National Web Archives 2003, table 13.1	Year of death
2004		Year of death
2005	HMRC website through the National Web Archives 2010, table 13.1	Year of death
2006	HMRC website through the National Web Archives 2011, table 13.1 (2005-2007)	Year of death
2007		Year of death
2008	HMRC Datalab microdata	Year of death
2009	HMRC Datalab microdata and HMRC website 2012, table 13.1 (2008-2010)	Year of death
2010	HMRC Datalab microdata	Year of death
2011-2013	HMRC website 2016, table 13.1 (2011-2013)	Year of death

Note: IRS denotes Inland Revenue Statistics.

Table A3. Sources of data for the distribution of investment income 1948-2010

Financial year starting	Surtax data
1948	IR 93rd Report, page 60 Table 45
1949	IR 94th Report, page 139 Table 129
1950	IR 95th Report, page 157 Table 199
1951	IR 96th Report, page 87 Table 71
1952	IR 97th Report, page 85 Table 73
1953	IR 98th Report, page 82 Table 73
1954	IR 99th Report, page 109 Table 98
1955	IR 100th Report, page 147 Table 170
1956	IR 101st Report, page 99 Table 81
1957	IR 102nd Report, page 85 Table 74
1958	IR 103rd Report, page 87 Table 78
1959	IR 104th Report, page 95 Table 83
1960	IR 105th Report, page 210 Table 146
1961	IR 106th Report, page 102 Table 86
1962	IR 107th Report, page 104 Table 91
1963	IR 108th Report, page 105 Table 82
1964	IR 109th Report, page 91 Table 68
1965	IR 110th Report, page 116 Table 70
1966	IR 111th Report, page 91 Table 63
1967	IRS 1970, page 53, Table 42
1968	IRS 1971, page 58, Table 47
1969	IRS 1972, page 58, Table 47
<hr/>	
Survey of Personal Incomes (SPI) data	
1954	IR 101st Report, page 76+77 Table 61
1959	IR 105th Report, page 136+137 Table 106
1964	IR 109th Report, page 132 to 133 Table 96
1968	IRS 1971, Table 78, pages 98-99
1969	SPI 1969-70, Tables 32 and 33, pages 52-55
1970	SPI 1970-71 pages 42-43 Tables 34 and 35
1971	IRS 1974 Tables 88 and 89, pages 100-101
1972	IRS 1975 pages 92 and 93
1973	IRS 1977, pages 100-101
1974	IRS 1977, pages 100-101
1975	SPI 1975/76 and 76/77, pages 82-83
1976	SPI 1975/76 and 76/77, pages 154-155
1977	SPI 1977/78, pages 88-89
1978	SPI 1978/79, pages 92-93
1979	SPI 1979/80, Table 71, pages 88-89
1985 and 1995 to 2010	HMRC SPI micro-data

Notes: AR denotes Annual Report of the Inland Revenue; SPI denotes Survey of Personal Incomes; IRS denotes Inland Revenue Statistics; NIE denotes National Income and Expenditure (Blue Book).

Appendix B. Sources of population, deaths, and mortality multipliers

The population and deaths data for England and Wales from 1901 to 1992 are from the OPCS, Medical Statistics Division, “Historic Mortality and Population Data, 1901-1992” (interpolated to give 18 plus population), distributed by UK Data Archive, University of Essex, Colchester, May 1994 (2nd Edition); the source for deaths 1895-1900 is SN 5705 - Annual Deaths by Cause, Age and Sex in England and Wales, 1848-1900; the population breakdown by age for 1895 to 1900 is from www.mortality.org.

The population and deaths data for Scotland from 1895 to 2011 are from <http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/population-estimates-time-series-data>

and

<http://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/vital-events/deaths/deaths-time-series-data>.

The population and deaths data for Great Britain are the sum of those for England and Wales and Scotland. The population data for the UK from 1974 to 1975 are Inland Revenue Statistics (IRS) 1978, Table 4.20, from 1976 to 1983 from IRS 1993, Table 13.5, from 1984 to 1996 from IRS 2000, Table 13.5, from 1997 to 2005 from HMRC website, 2005, Table 13.5, from 2006 to 2010 from ONS website, *Mid-1971 to Mid-2010 Population Estimates: Quinary age groups for Constituent Countries in the United Kingdom* (interpolated), and 2011 from ONS website, *Mid-2011 Population Estimates: United Kingdom; estimated resident population by single year of age and sex*. The deaths data from 1974 are from ONS website Death registrations by single year of age.

Series are provided in Table D1.

The mortality multipliers applied in the period from 1911 up to 1960 (after which we use the IR estimates of identified wealth-holders and wealth) are shown in Table B1. The multipliers are in all cases differentiated by age and from 1923 by gender. Separate multipliers are available for Scotland from 1938. Table B2 gives the adjustment to multipliers applied in 1911-1960 and 2008-2010.

Table B1. Mortality multipliers (inverse of mortality rates, before social class adjustment factors) 1911-1960

Country	age													age not stated								
	MALES													FEMALES								
	0-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75-85	85-above	age not stated	under 25	25-35	35-45	45-55	55-65	65-75	75-85	85-above	age not stated
1911 EW	22.7	290.7	485.1	339.9	275.3	213.3	133.4	73.9	37.1	17.3	7.8	3.9	67.1	367.8	292.5	208.4	117.5	55.1	22.7	9.2	4.3	
1912 EW	29.7	322.0	528.6	355.2	291.1	222.3	136.9	75.3	37.5	17.1	7.8	3.9	73.2	360.2	285.0	209.9	115.5	52.9	21.1	8.6	4.0	
1913 EW	26.6	314.0	514.8	369.4	292.8	224.2	137.1	74.8	37.2	17.2	7.9	3.9	70.9	357.5	292.4	209.8	116.2	55.2	21.6	8.6	3.7	
1914 EW	27.0	292.5	476.6	340.9	275.3	212.4	131.9	73.5	37.1	17.1	7.9	3.7	70.1	377.0	301.6	215.7	122.1	57.4	22.8	9.3	3.9	
1920 EW	29.9	302.4	512.9	345.3	259.7	215.2	155.0	92.1	45.5	19.9	8.5	4.4	77.8	371.7	290.4	205.9	114.9	54.7	21.1	8.4	3.5	
1923 EW	29.9	345.5	512.9	345.3	259.7	215.2	155.0	92.1	45.5	19.9	8.5	4.4	77.8	373.9	306.6	218.7	123.0	58.5	22.6	9.4	3.8	
1924 EW	29.9	342.5	512.9	342.5	263.9	170.3	97.5	44.9	18.5	7.9	3.9			354.6	288.3	204.7	111.6	51.9	19.2	7.6	3.1	
														390.8	310.6	232.3	128.2	60.1	23.5	9.4	4.0	
														455.8	369.0	254.0	131.6	60.5	23.7	9.4	4.0	36.4
														507.8	402.4	278.8	143.4	64.5	25.8	10.2	4.4	38.8
														398.4	333.3	228.3	119.8	55.0	22.1	9.2	3.8	33.8
														1058.7	690.3	431.3	188.7	79.3	28.8	10.4	4.6	37.9
														643.7	400.1	313.0	159.8	64.9	23.6	9.6	4.5	34.2
														1297.0	766.8	433.5	187.6	76.3	27.1	9.5	3.9	35.2
														843.5	529.5	335.3	157.0	63.6	22.9	8.6	3.7	32.1
														1560.2	911.9	477.9	204.2	84.1	31.0	11.2	4.7	39.9
														1008.8	637.8	364.7	164.1	68.4	24.8	9.7	4.3	35.1
														1755.9	935.4	474.8	208.8	85.9	31.1	11.0	4.6	39.5
														2199.0	708.3	387.5	166.8	74.3	27.1	10.2	4.5	37.1
														1838.3	987.3	478.9	210.4	88.0	31.6	11.4	4.8	40.2
														1472.8	758.6	387.7	161.3	69.6	26.6	9.7	4.3	35.4
														2105.1	1061.1	519.0	212.8	88.4	30.9	11.0	4.5	38.7
														1643.4	778.6	422.0	178.9	70.8	25.6	9.6	4.0	35.0
														2240.3	130.9	525.2	221.4	89.1	31.4	11.1	4.5	38.8
														2040.0	931.4	448.7	179.3	72.1	26.3	9.7	4.0	35.2
														2024.1	1157.8	522.0	219.4	89.2	32.3	11.9	5.0	40.2
														2024.1	1157.8	522.0	219.4	89.2	32.3	11.9	5.0	40.2
														2236.9	1253.7	555.6	222.4	91.5	32.4	11.4	4.6	39.1
														2236.9	1253.7	555.6	222.4	91.5	32.4	11.4	4.6	39.1
														2062.7	931.5	407.1	181.6	73.0	27.0	10.0	4.0	35.7
														2249.4	1265.5	562.3	229.1	92.6	32.8	11.6	4.6	39.3
														2249.4	1265.5	562.3	229.1	92.6	32.8	11.6	4.6	39.3
														2026.0	1083.6	436.0	191.7	72.5	27.0	10.0	3.9	35.5
														2492.8	1361.6	577.6	230.1	94.7	33.9	11.9	4.8	40.1
														2228.0	1172.3	452.0	189.9	77.0	27.4	10.3	4.2	36.3

Table B1 (cont). Mortality multipliers (inverse of mortality rates, before adjustment factors) 2001-2013

	age																			
	0-1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	above 85	
2001	Males	186.2	4,391.6	9,661.9	6,229.1	2,027.5	1,404.4	1,214.6	1,018.0	848.1	599.0	369.4	237.8	146.0	87.6	53.4	30.9	18.1	11.6	5.9
	Females	223.8	5,054.0	9,198.8	11,092.0	4,659.5	3,792.0	3,107.9	2,222.2	1,446.7	945.7	573.4	356.8	233.1	143.6	89.2	50.4	28.9	17.0	7.2
2002	Males	184.9	4,296.9	9,581.0	6,993.0	2,105.6	1,397.0	1,233.2	1,044.5	863.9	605.7	368.2	241.6	151.7	89.0	54.5	31.8	18.5	11.7	5.8
	Females	241.7	5,628.0	11,274.7	9,357.8	4,667.6	3,928.9	3,283.6	2,220.5	1,554.0	988.2	560.9	369.2	240.0	146.2	91.3	51.7	28.9	17.2	6.9
2003	Males	191.2	4,494.7	9,283.5	7,576.1	2,294.3	1,390.2	1,316.3	1,055.1	860.1	586.4	387.4	239.5	152.2	90.5	56.1	33.1	19.2	11.7	5.7
	Females	223.6	4,782.0	11,281.2	9,105.0	5,050.3	3,866.1	2,977.2	2,193.8	1,542.0	946.9	579.3	364.5	240.9	150.5	92.2	52.9	29.1	16.8	6.7
2005	Males	195.4	4,701.5	13,815.5	7,250.2	2,310.1	1,624.7	1,501.2	1,112.3	872.7	614.1	399.8	255.5	164.8	98.3	61.3	36.3	21.2	12.4	6.3
	Females	254.9	5,987.7	13,151.6	9,941.1	5,073.2	4,104.3	3,274.0	2,368.8	1,595.8	996.9	614.8	381.5	250.0	160.9	97.4	58.4	31.8	17.6	7.3
2006	Males	201.5	4,857.1	9,743.2	7,463.3	2,381.4	1,654.9	1,467.0	1,130.9	871.3	626.9	410.6	253.5	164.2	101.2	62.8	38.4	22.2	12.8	6.6
	Females	238.3	5,057.4	12,877.4	11,059.6	5,083.9	4,514.3	3,382.0	2,581.8	1,587.0	1,011.6	627.2	391.7	254.8	162.7	101.4	60.2	33.4	18.5	7.7
2007	Males	205.6	4,297.9	9,831.6	8,578.5	2,553.9	1,682.2	1,493.7	1,110.9	878.3	633.2	431.5	265.8	163.8	106.1	63.5	40.3	23.0	13.2	6.6
	Females	253.5	5,902.6	14,117.8	9,619.9	5,484.9	4,494.4	3,775.7	2,438.7	1,637.2	1,002.7	642.3	400.6	257.6	165.5	103.3	61.6	34.4	18.6	7.7
2008	Males	210.1	5,270.8	12,936.4	10,142.9	2,612.4	1,649.0	1,511.8	1,152.0	843.7	618.4	417.0	268.4	170.2	108.8	65.9	40.7	23.6	13.5	6.6
	Females	265.6	5,284.6	12,333.3	13,114.6	5,588.0	4,523.1	3,593.3	2,291.0	1,606.1	992.2	650.3	394.3	261.8	167.3	105.3	62.7	35.1	18.8	7.5
2009	Males	215.9	6,284.9	12,037.0	9,813.4	2,630.7	1,844.4	1,542.9	1,236.9	841.3	599.4	434.3	282.8	171.3	113.0	69.7	42.6	25.0	14.1	6.8
	Females	262.4	6,126.7	12,772.7	11,031.9	6,006.8	4,845.9	3,546.5	2,492.6	1,664.4	1,027.4	674.2	424.9	266.5	174.5	111.3	66.2	37.4	20.0	8.0
2010	Males	235.5	5,813.8	11,329.4	10,552.7	3,401.1	1,913.7	1,760.3	1,275.7	918.3	628.3	444.7	288.4	176.8	113.6	71.2	43.3	25.7	14.6	6.9
	Females	272.3	6,584.2	12,581.2	12,285.6	5,724.3	5,314.0	3,728.5	2,621.0	1,587.8	1,039.6	693.1	420.0	269.8	178.4	113.7	67.3	38.0	20.4	8.0
2011	Males	222.4	5,752.7	18,666.0	11,475.2	3,647.3	2,265.2	1,846.8	1,425.6	941.8	649.2	459.5	296.8	184.0	118.2	75.1	44.1	27.2	15.2	7.1
	Females	298.6	6,523.3	17,794.8	14,257.4	7,410.1	5,010.4	3,814.3	2,521.3	1,715.6	1,062.3	699.2	438.9	282.9	180.1	115.3	69.1	39.9	21.4	8.2
2012	Males	241.7	5,960.3	12,596.1	10,647.2	3,569.5	2,348.9	1,961.8	1,477.0	1,023.8	670.7	466.1	313.3	193.5	119.3	77.2	45.2	27.2	15.2	6.8
	Females	303.7	7,651.5	13,667.5	13,633.1	7,622.8	5,517.3	4,205.4	2,707.4	1,755.6	1,132.5	705.6	454.4	281.1	181.0	117.7	69.2	39.9	21.0	7.8
2013	Males	1,517.3	6,152.4	12,752.5	11,164.3	3,748.2	2,437.9	1,870.3	1,419.4	944.1	654.7	455.6	308.2	191.9	117.7	78.3	46.0	27.5	15.2	6.8
	Females	1,440.2	6,866.3	15,047.0	12,958.8	7,913.1	5,507.9	3,932.4	2,589.7	1,705.3	1,091.6	726.4	458.6	287.3	184.2	119.2	70.6	40.3	21.2	7.7

Table B1 (end). Mortality multipliers (inverse of mortality rates, before adjustment factors) 2008-2010

A. As applied by HMRC

		age									Age not stated
		0-18	18-25	25-35	35-45	45-55	55-65	65-75	75-85	above 85	
2008	Males	1,705.4	1,595.5	944.7	461.0	194.2	78.6	33.5	13.9	6.2	32.2
	Females	3,722.3	3,722.3	1,728.7	762.6	320.2	136.1	58.6	21.5	6.5	38.5
2009	Males	1,739.6	1,755.4	1,254.3	421.8	210.0	82.8	34.5	14.5	6.6	31.0
	Females	393.0	4,268.4	2,468.5	830.0	326.7	142.4	62.0	23.1	7.0	38.6
2010	Males	661.0	1,808.6	1,216.1	469.7	211.7	84.7	36.1	15.0	6.6	35.0
	Females	818.7	1,054.7	2,352.8	761.3	354.4	142.0	62.6	23.3	7.1	41.0

B. As computed from ONS registers on deaths and population

		age									Age not stated
		0-18	18-25	25-35	35-45	45-55	55-65	65-75	75-85	above 85	
2008	Males	2,306.6	1,649.0	1,313.9	711.2	331.4	132.8	51.3	18.2	6.6	124.7
	Females	3,109.8	4,523.1	2,819.2	1,219.5	802.4	204.0	79.7	25.4	7.5	119.9
2009	Males	2,381.3	1,844.4	1,378.0	696.0	347.5	135.8	54.0	19.1	6.8	128.3
	Females	3,157.7	4,845.9	2,946.6	1,257.5	529.8	210.1	84.4	27.1	8.0	125.3
2010	Males	2,629.9	1,913.7	1,485.4	740.7	354.9	137.7	55.2	19.7	6.9	129.5
	Females	3,234.5	5,314.0	3,094.7	1,245.9	532.2	213.6	86.2	27.5	8.0	125.1

Table B2. Social class adjustment factors 1911-1960

Country	age													age not stated												
	0-5	5-10	10-15	15-20	20-25	25-35	35-45	45-55	55-65	65-75	75-85	above 85	age not stated	under 25	25-35	35-45	45-55	55-65	65-75	75-85	above 85	age not stated				
1911-1920	EW	0.794	0.794	0.794	0.794	0.794	0.782	0.802	0.847	0.885	0.904	0.932	0.962	0.938	0.730	0.746	0.806	0.847	0.885	0.909	0.926	0.962	0.962			
1923	EW	0.846	0.786	0.789	0.845	0.892	0.916	0.954	0.973	0.892	0.916	0.954	0.973	0.846	0.846	0.786	0.789	0.845	0.892	0.916	0.954	0.973	0.846			
1924	EW	0.853	0.781	0.785	0.845	0.895	0.921	0.961	0.977	0.895	0.921	0.961	0.977	0.845	0.853	0.781	0.785	0.845	0.895	0.921	0.961	0.977	0.845			
1925	EW	0.860	0.771	0.778	0.843	0.899	0.932	0.974	0.985	0.899	0.932	0.974	0.985	0.860	0.860	0.771	0.778	0.843	0.899	0.932	0.974	0.985	0.860			
1926	EW	0.866	0.771	0.778	0.843	0.899	0.932	0.974	0.985	0.899	0.932	0.974	0.985	0.866	0.866	0.771	0.778	0.843	0.899	0.932	0.974	0.985	0.866			
1927	EW	0.873	0.766	0.774	0.842	0.902	0.937	0.980	0.988	0.902	0.937	0.980	0.988	0.873	0.873	0.766	0.774	0.842	0.902	0.937	0.980	0.988	0.873			
1928	EW	0.880	0.762	0.771	0.842	0.904	0.942	0.987	0.992	0.904	0.942	0.987	0.992	0.880	0.880	0.762	0.771	0.842	0.904	0.942	0.987	0.992	0.880			
1929	EW	0.886	0.757	0.767	0.841	0.907	0.947	0.993	0.996	0.907	0.947	0.993	0.996	0.886	0.886	0.757	0.767	0.841	0.907	0.947	0.993	0.996	0.886			
1930	EW	0.910	0.753	0.758	0.832	0.892	0.934	0.977	0.990	0.910	0.934	0.977	0.990	0.910	0.910	0.753	0.758	0.832	0.892	0.934	0.977	0.990	0.910			
1936	EW	0.917	0.754	0.755	0.828	0.885	0.926	0.968	0.987	0.885	0.926	0.968	0.987	0.917	0.917	0.754	0.755	0.828	0.885	0.926	0.968	0.987	0.917			
1938	EW	0.877	0.763	0.813	0.800	0.855	0.952	0.952	0.962	0.915	0.610	0.735	0.926	0.877	0.877	0.763	0.813	0.800	0.855	0.952	0.952	0.962	0.915			
1950	Scotland	0.958	0.757	0.742	0.808	0.844	0.881	0.914	0.963	0.882	0.670	0.914	0.845	0.958	0.958	0.757	0.742	0.808	0.844	0.881	0.914	0.963	0.882			
1951	EW	0.962	0.758	0.741	0.806	0.840	0.877	0.909	0.962	0.878	0.667	0.725	0.847	0.962	0.962	0.758	0.741	0.806	0.840	0.877	0.909	0.962	0.878			
1952	Scotland	0.877	0.763	0.813	0.800	0.855	0.952	0.952	0.962	0.915	0.610	0.735	0.926	0.877	0.877	0.763	0.813	0.800	0.855	0.952	0.952	0.962	0.915			
1952	EW	0.902	0.766	0.809	0.800	0.851	0.946	0.946	0.962	0.912	0.672	0.742	0.908	0.902	0.902	0.766	0.809	0.800	0.851	0.946	0.946	0.962	0.912			
1953	Scotland	0.950	0.753	0.737	0.800	0.836	0.880	0.912	0.962	0.868	0.695	0.730	0.841	0.950	0.950	0.753	0.737	0.800	0.836	0.880	0.912	0.962	0.868			
1953	EW	0.926	0.768	0.805	0.800	0.848	0.940	0.951	0.963	0.909	0.735	0.748	0.890	0.926	0.926	0.768	0.805	0.800	0.848	0.940	0.951	0.963	0.909			
1954	Scotland	0.939	0.749	0.732	0.793	0.831	0.882	0.914	0.962	0.859	0.724	0.735	0.835	0.939	0.939	0.749	0.732	0.793	0.831	0.882	0.914	0.962	0.859			
1954	EW	0.927	0.745	0.728	0.787	0.826	0.884	0.917	0.962	0.849	0.752	0.740	0.829	0.927	0.927	0.745	0.728	0.787	0.826	0.884	0.917	0.962	0.849			
1955	Scotland	0.951	0.771	0.802	0.800	0.844	0.935	0.950	0.964	0.906	0.797	0.755	0.872	0.951	0.951	0.771	0.802	0.800	0.844	0.935	0.950	0.964	0.906			
1955	EW	0.916	0.740	0.724	0.780	0.822	0.887	0.919	0.962	0.839	0.781	0.745	0.823	0.916	0.916	0.740	0.724	0.780	0.822	0.887	0.919	0.962	0.839			
1956	Scotland	0.976	0.773	0.798	0.800	0.841	0.929	0.949	0.965	0.904	0.860	0.761	0.854	0.976	0.976	0.773	0.798	0.800	0.841	0.929	0.949	0.965	0.904			
1956	EW	0.904	0.736	0.720	0.774	0.817	0.889	0.922	0.962	0.830	0.810	0.750	0.817	0.904	0.904	0.736	0.720	0.774	0.817	0.889	0.922	0.962	0.830			
1957	Scotland	1.000	0.775	0.794	0.800	0.837	0.923	0.948	0.966	0.901	0.922	0.768	0.836	1.000	1.000	0.775	0.794	0.800	0.837	0.923	0.948	0.966	0.901			
1957	England	0.893	0.732	0.716	0.767	0.812	0.891	0.924	0.962	0.820	0.938	0.755	0.811	0.893	0.893	0.732	0.716	0.767	0.812	0.891	0.924	0.962	0.820			
1957	Wales	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905	0.936	0.780	0.787	0.918	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905			
1958	Scotland	1.025	0.778	0.790	0.800	0.834	0.917	0.947	0.967	0.898	0.985	0.774	0.818	1.025	1.025	0.778	0.790	0.800	0.834	0.917	0.947	0.967	0.898			
1958	England	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905	0.936	0.780	0.787	0.918	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905			
1958	Wales	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905	0.936	0.780	0.787	0.918	0.918	0.753	0.737	0.773	0.852	0.920	0.948	0.970	0.905			
1959	Scotland	1.050	0.780	0.787	0.800	0.830	0.911	0.946	0.968	0.895	1.047	0.781	0.800	1.050	1.050	0.780	0.787	0.800	0.830	0.911	0.946	0.968	0.895			
1959	England	1.074	0.783	0.783	0.800	0.827	0.905	0.945	0.969	0.892	1.110	0.787	0.782	1.074	1.074	0.783	0.783	0.800	0.827	0.905	0.945	0.969	0.892			
1959	Wales	0.870	0.723	0.708	0.754	0.803	0.896	0.929	0.962	0.801	0.895	0.765	0.799	0.870	0.870	0.723	0.708	0.754	0.803	0.896	0.929	0.962	0.801			
1960	Scotland	0.870	0.723	0.708	0.754	0.803	0.896	0.929	0.962	0.801	0.895	0.765	0.799	0.870	0.870	0.723	0.708	0.754	0.803	0.896	0.929	0.962	0.801			
1960	EW	0.859	0.719	0.703	0.747	0.798	0.899	0.932	0.962	0.791	0.924	0.770	0.793	0.859	0.859	0.719	0.703	0.747	0.798	0.899	0.932	0.962	0.791			
1960	Scotland	1.099	0.785	0.779	0.800	0.823	0.899	0.944	0.970	0.890	1.172	0.794	0.764	1.099	1.099	0.785	0.779	0.800	0.823	0.899	0.944	0.970	0.890			

Table B2 (end). Adjustment factors 2008-2010

Mean adjustment factors by gender, age groups and housing deciles

Sex	Year	Gross household decile	Age not stated							Average
			Under 45	45-55	55-65	65-75	75-85	above 85		
Female	2008	1	1	0.672	0.700	0.730	0.792	0.804	0.719	0.814
		2	1		0.787	0.822	0.833	0.897		0.884
		3	1	0.792	0.824	0.859	0.928	0.933	0.850	0.898
		4	1	0.859	0.895	0.931	1.004	1.006	0.921	0.954
		5	1	0.921	0.971	1.010	1.088	1.085	0.959	1.009
		6	1	1.012	1.053	1.096	1.178	1.171	1.004	1.071
		7	1	1.099	1.143	1.188	1.276	1.265	1.127	1.142
		8	1	1.193	1.241	1.289	1.382	1.366	1.222	1.218
		9	1	1.294	1.346	1.398	1.498	1.476	1.367	1.307
		10	1	1.405	1.461	1.517	1.623	1.595	1.387	1.414
2008 Average			1	1.031	1.063	1.091	1.177	1.166	1.064	1.078
	2009	1	1	0.672	0.700	0.730	0.792	0.804	0.696	0.815
		2	1	0.648		0.822	0.833	0.872		0.852
		3	1	0.845	0.824	0.859	0.928	0.933	0.826	0.915
		4	1	0.892	0.895	0.931	1.004	1.006	0.885	0.954
		5	1	0.968	0.971	1.010	1.088	1.085	0.991	1.016
		6	1	1.050	1.053	1.096	1.178	1.171	1.082	1.082
		7	1	1.099	1.143	1.188	1.276	1.265	1.127	1.142
		8	1	1.193	1.241	1.289	1.382	1.366	1.246	1.228
		9	1	1.294	1.346	1.398	1.498	1.476	1.351	1.276
		10	1	1.405	1.461	1.517	1.623	1.595	1.387	1.361
2009 Average			1	1.054	1.071	1.091	1.177	1.172	1.069	1.081
	2010	1	1	0.672	0.700	0.730	0.792	0.804	0.719	0.829
		2	1	0.801	0.787	0.798	0.857	0.839	0.727	0.866
		3	1	0.792	0.824	0.859	0.928	0.933	0.844	0.891
		4	1	0.859	0.895	0.931	1.004	1.006	0.948	0.958
		5	1	0.940	0.971	1.010	1.088	1.085	0.926	1.010
		6	1	1.020	1.053	1.096	1.178	1.171	1.112	1.083
		7	1	1.099	1.143	1.188	1.276	1.265	1.127	1.138
		8	1	1.193	1.241	1.289	1.382	1.366	1.271	1.214
		9	1	1.294	1.346	1.398	1.498	1.476	1.279	1.297
		10	1	1.405	1.461	1.517	1.623	1.595	1.437	1.378
2010 Average			1	1.027	1.063	1.097	1.170	1.162	1.012	1.069
Female Average			1	1.037	1.065	1.093	1.175	1.167	1.047	1.076
Male	2008	1	1	0.648	0.676	0.707	0.745	0.796	0.693	0.801
		2	1	0.729	0.782	0.736	0.809	0.856		0.847
		3	1	0.790	0.795	0.829	0.867	0.908	0.809	0.887
		4	1	0.828	0.862	0.898	0.936	0.972	0.874	0.926
		5	1	0.905	0.935	0.973	1.010	1.042	0.945	0.978
		6	1	0.982	1.014	1.054	1.091	1.117	0.988	1.035
		7	1	1.058	1.100	1.142	1.179	1.198	1.090	1.096
		8	1	1.104	1.194	1.238	1.275	1.287	1.113	1.163
		9	1	1.246	1.295	1.342	1.379	1.383	1.170	1.250
		10	1	1.362	1.405	1.455	1.491	1.487	1.383	1.309
2008 Average			1	0.969	1.017	1.053	1.092	1.118	0.967	1.030
	2009	1	1	0.648	0.676	0.707	0.745	0.796	0.693	0.801
		2	1	0.772	0.738	0.794	0.833	0.856		0.849
		3	1	0.768	0.795	0.829	0.867	0.908	0.809	0.871
		4	1	0.828	0.862	0.898	0.936	0.972	0.874	0.919
		5	1	0.905	0.935	0.973	1.010	1.042	0.977	0.982
		6	1	0.982	1.014	1.054	1.091	1.117	1.008	1.038
		7	1	1.058	1.100	1.142	1.179	1.198	1.070	1.094
		8	1	1.148	1.194	1.238	1.275	1.287	1.113	1.165
		9	1	1.255	1.295	1.342	1.379	1.383	1.254	1.230
		10	1	1.352	1.405	1.455	1.491	1.487	1.306	1.312
2009 Average			1	0.989	1.008	1.050	1.087	1.118	0.974	1.031
	2010	1	1	0.648	0.676	0.707	0.745	0.796	0.693	0.817
		2	1	0.729	0.738	0.771	0.833	0.824	0.782	0.814
		3	1	0.763	0.795	0.829	0.867	0.908	0.832	0.881
		4	1	0.828	0.862	0.898	0.936	0.972	0.874	0.924
		5	1	0.905	0.935	0.973	1.010	1.042	0.919	0.980
		6	1	0.982	1.014	1.054	1.091	1.117	1.008	1.037
		7	1	1.058	1.100	1.142	1.179	1.198	1.107	1.105
		8	1	1.148	1.194	1.238	1.275	1.287	1.158	1.157
		9	1	1.246	1.295	1.342	1.379	1.383	1.296	1.250
		10	1	1.352	1.405	1.455	1.491	1.487	1.306	1.302
2010 Total			1	0.973	1.008	1.048	1.087	1.109	1.009	1.030
Male Average			1	0.977	1.011	1.050	1.089	1.115	0.984	1.030
Total Average			1	1.007	1.038	1.071	1.132	1.141	1.013	1.053

Appendix C. Estimates of the identified wealth and the wealth of the excluded population

Identified wealth. The application of the available mortality multipliers to the pre-1960 estates data, and the use of available multiplied tabulations by wealth ranges since 1960, yields estimates of the distribution of *identified wealth* covering 1911 to 2013.

a) for the years 1923 to 1930, 1936, 1938, and 1950 to 1959, tabulations of estates by ranges broken down by age and gender are available, and we apply mortality multipliers and social class adjustment factors to make estimates of identified wealth by ranges (the sources and coverage are listed in Atkinson and Harrison, 1978, Table 6.3); there are in addition tabulations by age and estate size, but not gender, for the years 1911-1914, and 1920, and we have also made use of these. Estimates derived for the years 1938-1959 refer to Great Britain whereas the pre-1938 period refers to England and Wales.

b) for the period 1960 to 2005, we rely on the published tabulations (IR/HMRC) of identified wealth-holdings by ranges (see Appendix Table A2 for sources); the IR/HMRC applied social class multipliers, varying by age, sex and country; in the course of the period, the IR/HMRC switched from using statistics for the valuation of the estate on a year-of-account basis (the date at which the estate was administered) to using statistics on the more appropriate year-of-death basis. The data for the period between 1960 and 1973 refer to Great Britain, whereas the data from 1974 refer to the UK. These wealth tabulations were used by the IR/HMRC to derive their first “official” estimates of the distribution of wealth in Great Britain from 1960, later referred to as Series A (not covering the excluded population, and therefore of little utility), and Series B (covering the excluded population but with no allowance for the wealth of the excluded population). These estimates were the subject of detailed examination by the Royal Commission on the Distribution of Income and Wealth (1975 and subsequent reports) and by Atkinson and Harrison (1978). Subsequently, the Inland Revenue introduced a Series C that makes adjustments for the wealth of excluded population. This Series C was revised in 1984 (Inland Revenue Statistics 1984, page 43) and continued to be published on an annual basis for years up to 2005 (see Table K1). In addition, the IR/HMRC Series C corrected for under reporting of the wealth of the included population and made adjustments to its valuation. In the research presented here, we are unable to make these additional adjustments, as the underlying data cannot be made available to us.

c) for the grouped years 2001-03, 2005-07, 2008-10, and 2011-2013, we use the new version of the tabulations of identified personal wealth-holdings published by the HMRC; these differ in that, in addition to the grouping of years, the HMRC uses a revised methodology to capture the negative correlation of mortality with (housing) wealth and to apply lower mortality to smaller estates; the

results for 2001-03 provide an overlapping observation that is used to link the series (and, in Section 5, to investigate the implications of the change in methodology).

d) differently from other years, for the three years 2008, 2009 and 2010, we have made use of microdata available from the HMRC Datalab, where the data set has been designed so as to ensure anonymity and protect taxpayer confidentiality.

Wealth of the excluded population. The series of wealth shares presented in Section 4 are based on the total wealth identified in the IR/HMRC estimates of the wealth distribution plus the estimated wealth of non-filers (the excluded population), measured as far as possible in the same way as the wealth of those covered by the statistics. The resulting total, expressed per adult, is similarly used as the basis for the allowance made for non-filers when estimating the distribution of estates in Section 3. The series may be contrasted with that for total marketable wealth used in the HMRC Series C, which is in addition adjusted for wealth that is missing from the estate statistics, including an allowance for trusts, and for differences in the appropriate valuation for a living person as opposed to the valuation at death (for example pure life policies have a smaller surrender value than the value at maturity). In many years, such as 2005 illustrated in Figure 3, these adjustments lead the marketable wealth total to exceed that used in our series, but there are years, such as 1989, in which the downward adjustment for valuation cancels the additions for missing wealth (see Table D1). The derivation of series C wealth total is explained in Appendix D.

There are two points of departure in estimating the total wealth of the excluded population: (a) the IR/HMRC “reconciliation of estimates of identified personal marketable wealth and personal sector balance sheets”, and (b) the estimates of Atkinson and Harrison covering the period 1923 to 1972 (1978, Chapter 6 and Appendix VI). From the former, we take the two elements of “excluded property” that are labeled “joint property” and “small estates” (sources in Table C1).¹ The former includes all property held in common, typically with a spouse, that passes by survivorship. It includes financial assets, such as joint bank accounts, but much the largest element in recent decades has been residential property. With rising housing wealth, the ratio of joint property to the remainder has changed from around 2:1 in the 1970s to 10:1 in the 2000s. In view of the dominance of joint property, the extrapolation beyond 2005 has been based on the ONS UK housing price index (see below).

For earlier years, we make use of Atkinson and Harrison (AH) (1978, page 305), where there are three estimates: a larger (in the book classification, B2), a central (B3) and a smaller (B4) figure. There are reasons to believe that for the post-war period the central figures are too low (1978, pages 301 to 302), and that they under-estimate the value of joint property. For 1971, the one year of

¹ It should be noted that the total given for Identified wealth in these tables is not always identical to that shown in the IR/HMRC wealth distribution estimates; we have used the total from the latter (see Table D1).

overlap with the original AH series, the B3 AH figure is around half the HMRC estimate. In the light of this, we have used here the higher AH series (B2) for the years 1950 to 1970. For 1971, the AH B2 estimate is £9,567m, which is close to the HMRC figure of £10,500m when allowance is made for the fact that the former relates to GB and the latter to the whole UK. The better correspondence of the higher figure is illustrated in Figure F1. The same figure shows that the differences between the two assumptions before 1950 are small, and the higher figure is therefore used throughout.

Examination of Figure C3 shows that the size of the allowance for the wealth of the excluded population varies considerably: from around 10 per cent to around 50 per cent of identified wealth. This is not surprising, since the coverage of the estate data has varied considerably, reflecting the differences in the tax threshold and in the statistical practice (Figure C1 and C2). The fraction excluded fell in the period before the Second World War, but then rose sharply when the threshold was increased from £100 to £2,000 in 1946. The coverage fell substantially when the statistics were extended in 1960 to cover estates below the tax threshold, which nonetheless came to the notice of the Inland Revenue when a grant of representation was obtained. There was some upward drift after 1980 as the proportion excluded rose from 50 per cent to 60 per cent. More important in this period, however, was the rise in house prices and extension of owner-occupation affecting the value of joint property.

Our judgment is that the combination of the IR/HMRC estimates, coupled with the AH higher estimates, provide a reasonable basis for the total wealth of the excluded population. There are, however, the following gaps to be filled:

- i) Period before 1923;
- ii) Gaps in the period 1931 to 1941;
- iii) Period 1946 to 1949;
- iv) Gaps in the period 1971 to 2005;
- v) Period from 2005.

For the period before 1923, the UK series constructed in Atkinson (2013) is used. This series did not include jointly owned property, which was then much less important, and the series is increased proportionately by the ratio in 1923 (1/0.65). To adjust to EW, it is then reduced by a factor 0.929. The 1895 figure is extrapolated from that for 1896 using the ONS Consumer Price Index (ONS, 2004, Table 1).

The gaps in the period 1931 to 1941 were filled by linear extrapolation.

For the period 1946 to 1949, we took account of the substantial increase in the estate duty threshold in 1946, which led to a larger total for the wealth of the excluded population, and extrapolated the 1950 figure backward on the basis of the ONS Consumer Price Index.

The gaps from 1971 to 2005 are filled by (for 1973 and 1974) the Atkinson, Gordon and Harrison estimates (1986, Table A2), increased by the ratio of the Higher to Central estimate in 1972, and (for 1997 to 2000) interpolated from 1996 using the HMRC Series C total marketable wealth.

For the post-2005 period, the results in Section 4 are based on extrapolation of total personal wealth from 2005, using the national accounts balance sheet totals for the personal sector, but in Section 5 alternative approaches are considered that are based on the calculation of the wealth of the excluded population as described there.

Estate value of the excluded population. In the case of the distribution of *estates*, the total of estates is taken as the sum of the identified total in the estate returns plus an estimate of the total of excluded estates. The latter is in turn calculated from the estimated total wealth excluded from the wealth estimates described above, by making the assumption that the amount of excluded wealth passing in a year is given by the overall mortality rate of the excluded population (the ratio of deaths among the excluded population to the total number of living persons in that population). In other words, it is assumed that the average wealth of the dying among the excluded population is equal to the average for the living in that population. Such an assumption would not be appropriate if applied to estates as a whole but, as noted in the main text, may not be unreasonable as a first approximation when applied to a group whose wealth is by definition limited. A calculation for the whole population (included and excluded) of the ratio of the average wealth of decedents to the average wealth of the living shows that values in the early part of the period are around 2, falling to 1.5 in the 1950s (see Figure C4). These do not seem unreasonable when compared with those in France.

Figure C1. Adult decedents covered by the estate statistics in the UK 1895-2013

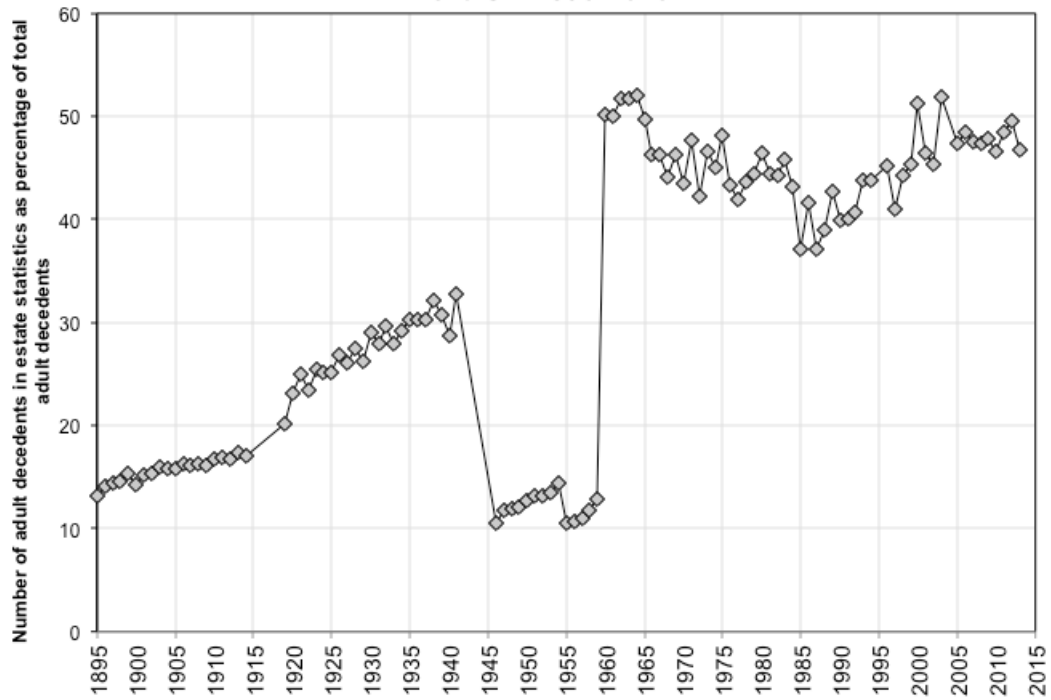


Figure C2. Excluded population as percentage of total adult population

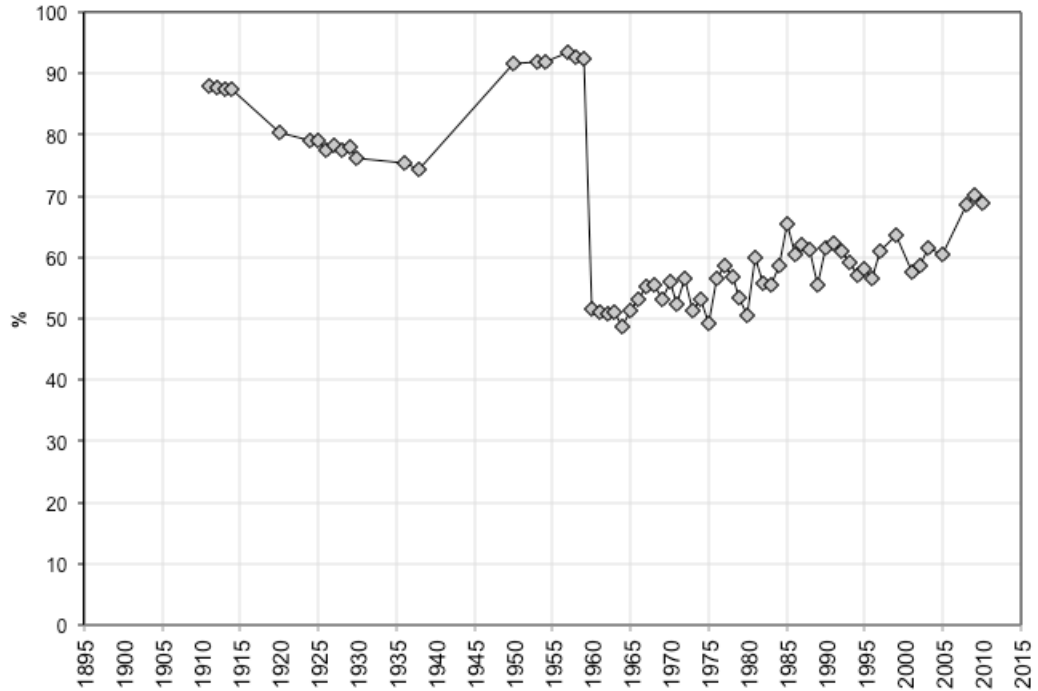
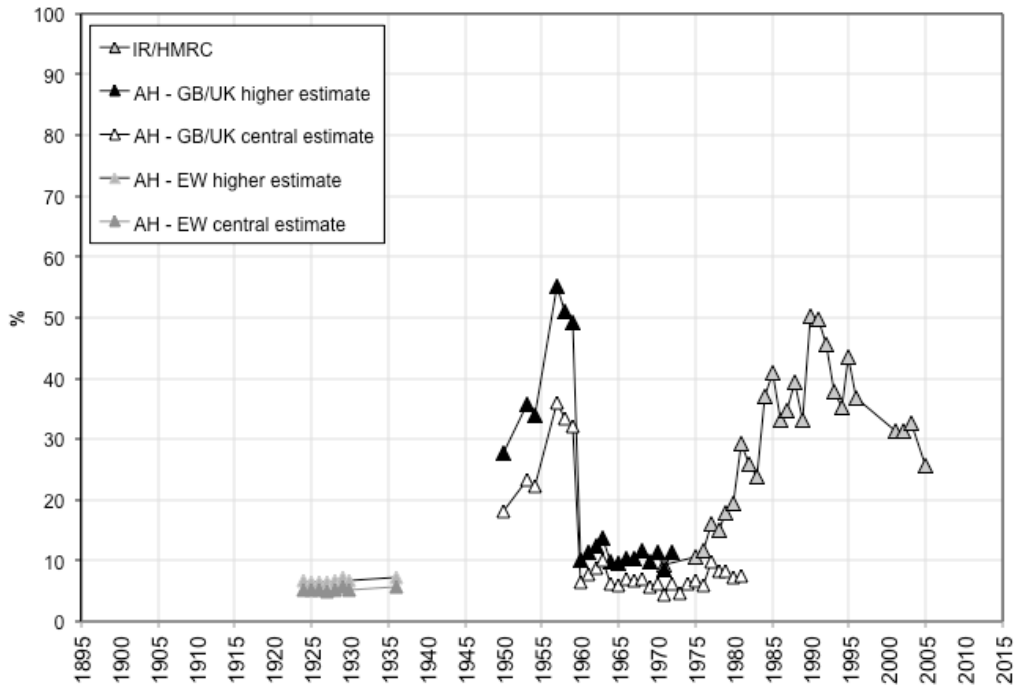
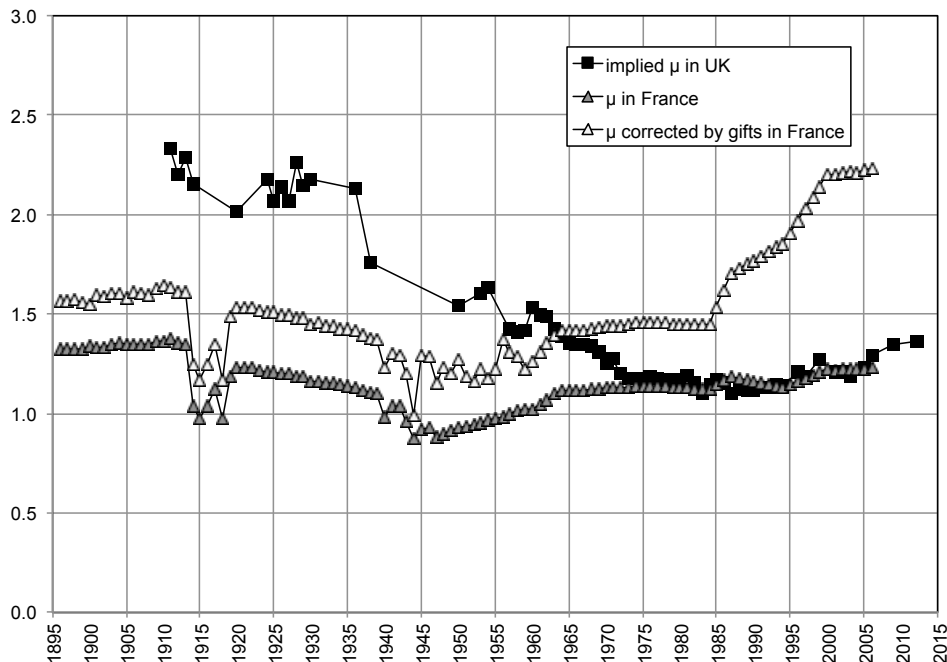


Figure C3. Wealth of the excluded population as percentage of total identified wealth



Notes: AH is Atkinson and Harrison (1978).

Figure C4. Ratio between the average wealth of the dying and the average wealth of the living



Sources: UK: Calculated as ratio of total estates (including estates of excluded population) per adult decedent, to total wealth per adult (Table D1); France: Piketty (2011, Figure IV). Note: μ denotes the ratio of the average wealth of decedents to the average wealth of the living, so that a ratio of 2 means that the average estate is twice the average wealth of the living.

Table C1. Sources and amounts for IR/HMRC distribution of identified wealth

year	Sources for IR/HMRC reconciliation of estimates of identified personal marketable wealth and personal sector balance sheets	Small estates	Joint property
		£ billion	£ billion
1971	Economic Trends, November 1978, page 106, Table 3 UK	3.5	7
1972			
1973			
1974			
1975	Economic Trends, November 1978, page 105, Table 2 UK	8.5	11.5
1976	IRS 1980 Table 4.19	10	13.5
1977	IRS 1981, Table 4.12	11.5	22
1978	IRS 1982, Table 4.12	11	28
1979	IRS 1983, Table 4.11	16	41
1980	IRS 1984, Table 4.11	10	67
1981	IRS 1985, Table 4.10	16	93
1982	IRS 1986, Table 4.10	9	108
1983	IRS 1987, Table 7.2	11	117
1984	IRS 1988, Table 10.2	33	182
1985	IRS 1989, Table 10.2	38	209
1986	IRS 1990, Table 10.2	48	187
1987	IRS 1991, Table 11.2	49	254
1988	IRS 1992, Table 11.2	48	354
1989	IRS 1993, Table 13.2	40	360
1990	IRS 1994, Table 13.2	52	502
1991	IRS 1995, Table 13.2	55	504
1992	IRS 1996, Table 13.2	59	472
1993	IRS 1997, Table 13.2	59	414
1994	IRS 1998, Table 13.2	56	411
1995	IRS 1999, Table 13.2	55	517
1996	IRS 2000, Table 13.2	57	458
1997			
1998			
1999	IRS webarchive, Table 13.3	67	712
2000	IRS webarchive, Table 13.3	53	661
2001	HMRC website Table 13.3	59	718
2002	HMRC website Table 13.3	59	766
2003	HMRC website Table 13.3	68	861
2004			
2005	HMRC website Table 13.3	75	809

Appendix D. Control totals for adult population, total estates, and total wealth

Table D1 gives the number of adult deaths, the adult population control total, the estimates for the estates of the identified and the excluded decedents, the control totals used here for wealth, the marketable wealth series, and the price index.

Derivation of Series C total for personal wealth. As reported in the text, our benchmark series of total wealth sums up total identified wealth to the wealth of the excluded population. An alternative series can be constructed, the so called series for total marketable wealth (HMRC Series C), that incorporates also the adjustments for coverage and valuation. However, the total marketable wealth series is not always available; past estimates cannot be recast in this form, and recent values cannot be taken from the reconciliation exercise that was discontinued in 2005. We therefore extend the series backwards in time to 1911.

For the total marketable wealth series, our starting point is the official HMRC Series C total that is available for 1966, 1971, and from 1976 to 2005. In order to extrapolate this back to earlier years, we have used the estimates of personal sector net worth by Blake and Orszag (1999), which covers the period 1948 to 1994 (we use the data from 1948 to 1976), Solomou and Weale (1997), which covers the period from 1920 to 1956 (we use the data from 1920 to 1947), and made our own estimates for the period 1911 to 1920. Consumer durables are included. In each case, we have made the link by considering the relationship between the series over a number of years (rather than simply using one overlapping year). For the period 1976 to 1994, the marketable wealth Series C averaged 106 per cent of the Blake/Orszag series; for the years 1948 to 1956, the Blake/Orszag series averaged 92.9 per cent of the Solomou/Weale series. We have therefore taken the Blake/Orszag series multiplied by 1.06 and the Solomou/Weale series multiplied by 1.06×0.929 .² We use for the years 1911 to 1914 the higher of the two estimates made by Campion (1939, Chapter II). He builds up a figure averaged for 1911-13 as follows: estate data multiplied up by social class multipliers (differentiated by age but not by gender) plus estimated wealth of the excluded population plus omitted settled property. The resulting total is in the form of a range from £8,270 million to £9,235 million. The higher figure is taken since a comparison of his estimate for 1926-28 with our balance sheet totals suggests that his figures may be on the low side.

Prior to 1974, the series relates to Great Britain (GB), rather than the United Kingdom, thus excluding Northern Ireland, and prior to 1938 the estimates relate to England and Wales (EW),

² The series may be compared with the earlier work of Revell (1967) and Roe (1971), the latter covering 1957 to 1966, the official balance sheet estimates of Reid (1978), Pettigrew (1980), Bryant (1987), and the series published in Financial Statistics (February 1984, Table S12). The series move very much in line.

excluding Scotland.³ In the case of total wealth, Revell (1967, page 147) found that in 1961 excluding Northern Ireland (NI) reduced the GB total to 98.3 per cent of the UK, and this percentage is applied here for all years. For Scotland, we have made calculations for 1938 and 1950 of the share in total identified wealth and these show that in both years EW was 91.3 per cent of the GB total. We have taken the EW total to be equal in all years to 0.913 times the GB total.

The marketable wealth series is projected forward from 2005 on the basis of the personal sector balance sheet totals, as described in Section 3.

³ Evidence about the distribution of estates exists for the UK as a whole; it is only the age-related breakdown (necessary to apply age-related multipliers) that is limited to EW.

Appendix E. Distribution of estates

Table E1 gives the distribution of estates since 1895. Table E2 shows the thresholds and average estates for the top groups.

Appendix F. Sensitivity of shares to total wealth and the estimates for the 21st century

Examination of the sensitivity of the findings for recent years, and of the wealth totals, does moreover raise the issue that the total identified wealth in the new HMRC estimates is lower than that obtained using the earlier method. For 2001-03, we can make a direct comparison. The new HMRC average for 2001-03 shows 15.987 million identified wealth-holders, who are 85.1 per cent of those identified in the earlier HMRC series. For the total identified wealth, the corresponding figures are £2,465.4 billion, compared with £2,648.9 billion, the new HMRC figure being 93.1 per cent of the earlier estimate. In other words, the new HMRC estimates show a reduced number of identified wealth-holders, and hence a larger excluded population, and the reduction is proportionately greater among those in the lower part of the identified wealth population. In the last years of the previous HMRC estimates, the identified wealth-holding population represented some 40 per cent of the adult population; in the more recent years the proportion is closer to 30 per cent.

As far as the changes in the multipliers made by HMRC are concerned, there are two factors at work: a change in the differential variation of multipliers with wealth levels, and a reduction in the overall level of the multipliers. The former comes about on account, not of HMRC increasing the multipliers for the rich, as discussed above, but of reducing the multipliers for the smaller estates. Second, there was a change from use of data on mortality differentials from the ONS Longitudinal Study to differentials based on the relationship between housing wealth and mortality as modelled using the English Longitudinal Survey of Ageing (ELSA). Housing wealth was employed rather than total wealth as there was found to be a stronger relationship between housing wealth and mortality⁴.

The end result is that there is an overall reduction in the general level of multipliers. This may be seen from the “average multiplier” applied: i.e. the ratio of the number of identified wealth-holders to the number of estates. Over the period 1974 to 2005, the mean value of the average population multiplier was 66.1 and there was no evident trend. The corresponding figure for 2011-13 is 53.4. To examine the possible impact of this reduction in the general level of multipliers, we have applied the average multipliers per estate bracket in 2002 (HMRC earlier series) to the averaged estate data for 2005-07, 2008-10 and 2011-13. The results are given in Table G1 as Memorandum items and illustrated for the top 1 per cent share in Figure 12 (the same national balance sheet control totals for wealth are employed as in Section 4). As may be seen, the estimated shares lie below those obtained using the new HMRC multipliers, up to 2011-13 when they are close to the Section 4 series. Such calculations are only approximate, but are the best that can be done without access to the underlying data. The size of the identified population and identified total wealth are increased. The estimated top

⁴ The new approach has limitations. No adjustments are made for those aged under 45. The mortality data relate only to England, excluding Scotland, Wales and Northern Ireland.

wealth shares are more comparable, we believe, with those obtained for earlier years using the old HMRC methodology. Moreover, the estate shares and the wealth shares are closer and move in line.

We have worked in Section 4 with the results derived applying the new HMRC multiplier methodology, but we are of the view that comparability over the long-run is better served by the alternative estimates for years after 2005 shown as Memorandum items.

Table F1 shows the estimates of top wealth shares under the different assumptions in Figure 12.

Table F1. Sensitivity of wealth shares to total wealth in the 21st century

	Total wealth extrapolated with National Balance Sheet (preferred)		Wealth of EP extrapolated with National Balance Sheet		Wealth of EP extrapolated with Housing Price Index		Total wealth extrapolated with Housing Price Index	
	Top 10%	Top 1%	Top 10%	Top 1%	Top 10%	Top 1%	Top 10%	Top 1%
	per cent [1]	per cent [2]	per cent [3]	per cent [4]	per cent [5]	per cent [6]	per cent [7]	per cent [8]
2000	50.6	18.5	50.6	18.5	50.6	18.5	50.6	18.5
2001	50.2	18.9	50.2	18.9	50.2	18.9	50.2	18.9
2002	50.8	18.0	50.8	18.0	50.8	18.0	50.8	18.0
2003	50.3	16.8	50.3	16.8	50.3	16.8	50.3	16.8
2004								
2005								
2006	52.0	19.9	53.1	20.3	52.8	20.2	51.0	19.5
2007								
2008								
2009	54.0	20.6	54.3	20.7	54.5	20.8	54.9	20.9
2010								
2011								
2012	51.9	19.9	54.1	20.7	56.5	21.7	61.7	23.6
2013								

Notes: The preferred series (columns [1] and [2]) correspond to results also shown in Table G1. The extrapolation of wealth in the different scenarios starts from 2005 onwards, as explain in the text.

Appendix G. New series for top wealth shares in the UK

Table G1 gives the shares of top groups of the distribution of wealth since 1895. Table G2 gives the average wealth of those top groups.

Appendix H. Estimates of distribution of wealth excluding housing assets

The method to arrive at the new estimates for the distribution of wealth excluding housing assets (EXHO) is to take the tabulated wealth estimates, subtract net housing wealth from each range; then re-calculate the wealth shares using as a control total the total of all wealth minus the net value of housing, where the latter is the value of residential property minus mortgage liabilities. The net value of housing is the sum of this item for identified wealth-holders and the estimated net housing wealth of the excluded population (see below). The property may be owner-occupied or owned for rent or vacant.

In order to apply the analysis, we need data on ranges of total net wealth giving the composition of wealth in terms of housing assets and liabilities. These tabulations were introduced in IRS 1973 (Table 94), and cover the years from 1971 to 2005.⁵ The sources are listed in Table H1. Before 1978 these refer to the year of account; from 1978 they are on a year of death basis.

This method adopted here is described in more detail below; as will be clear there are a number of limitations:

a) The classification by ranges remains the same (i.e ranking by total net wealth), so that the shares in wealth EXHO are under-estimated (re-arrangement to give correct ranking would raise the top shares). This also means that we can only apply the linear interpolation of the Lorenz curve, since the range intervals no longer apply. The results are therefore compared with the tabulated results from linear interpolation. They therefore differ from those reported elsewhere in the paper, and are referred to as estimates including housing wealth (with HO).

b) The net value of housing wealth is calculated from 1980 onwards as the value of UK residential dwellings less mortgages. Net housing wealth is over-stated to the extent that households have other borrowing to finance house purchase: e.g. bank loans. It excludes property owned abroad (which seems correct). The net value of housing wealth before 1980 is calculated as the value of residential buildings (freehold and leasehold) minus “deductions against realty”.

c) The estimated net housing wealth of the excluded population is based on the asset composition estimates of IR/HMRC as part of their estimation of the total wealth of the excluded population (see Appendix C). The sources of the data are given in Table H1. Not all years are covered. The data commence in 1975 and give a series up to 2005, when results of the reconciliation exercise ceased to be published. (There are also some gaps in the available data.) In order to provide control totals for the earliest years, 1971 to 1974, and for the recent years not covered we have constructed an index to be applied to the total of personal wealth ex housing. By applying it to the

⁵ For years before 1971, there are tabulations of estates by range and asset type, but these are not classified by age/gender, so that it is not possible to apply mortality multipliers.

total, we avoid the need to allow for the changing size of the excluded population. The index, which is the product of the proportion of the housing stock in private ownership (source DCLG Table 104) and the ONS index of average house prices (ONS HPI series 22 for the UK), takes account of both the decline in social housing as the stock was privatized and the evolution of house prices.

The distribution of wealth excluding housing obtained in this way is shown in Table H2. The split of wealth between housing and non-housing for different wealth groups is shown in Table H3.

Table H1. Sources of data for the distribution and control total excluding housing wealth

	Source for IR/HMRC distribution of housing wealth	Notes	Source for IR/HMRC net housing wealth of excluded population	Control total excluding housing wealth £ million
1971	IRS 1973, Table 94	Great Britain; Year of account basis until 1979		86,307
1972	IRS 1974, Table 106	Great Britain		105,464
1973	IRS 1975, Table 108	Great Britain		111,777
1974	IRS 1975, Table 113	United Kingdom from 1974		105,823
1975	IRS 1977, Table 113		Dunn and Hoffman, 1978, Table 1	132,320
1976	IRS 1978, Table 4.18		IRS 1980, Table 4.19	146,287
1977	IRS 1979, Table 4.18		IRS 1981, Table 4.12	157,932
1978	IRS 1980, Table D3		IRS 1982, Table 4.12	188,976
1979	IRS 1981, Table D1		IRS 1983, Table 4.11	219,306
1980	IRS 1984, Table 4.12	Year of death basis from 1980	IRS 1984, Table 4.11	258,669
1981	IRS 1985, Table 4.11		IRS 1985, Table 4.10	276,902
1982	IRS 1986, Table 4.11		IRS 1986, Table 4.10	324,146
1983	IRS 1987, Table 7.1		IRS 1987, Table 7.2	386,467
1984	IRS 1988, Table 10.1		IRS 1988, Table 10.2	449,619
1985	IRS 1989, Table 10.1		IRS 1989, Table 10.2	463,664
1986	IRS 1990, Table 10.1			483,742
1987	IRS 1991, Table 11.1		IRS 1991, Table 11.2	672,164
1988	IRS 1992, Table 11.1		IRS 1992, Table 11.2	721,340
1989	IRS 1993, Table 13.1		IRS 1993, Table 13.2	785,639
1990	IRS 1994, Table 13.1		IRS 1994, Table 13.2	778,518
1991	IRS 1995, Table 13.1		IRS 1995, Table 13.2	830,029
1992	IRS 1996, Table 13.1		IRS 1996, Table 13.2	903,929
1993	IRS 1997, Table 13.1		IRS 1997, Table 13.2	969,640
1994	IRS 1998, Table 13.1		IRS 1998, Table 13.2	1,007,301
1995	IRS 1999, Table 13.1		IRS 1999, Table 13.2	1,072,145
1996	IRS 2000, Table 13.1	Last entry for wealth of excluded population referring to "dwellings".	IRS 2000, Table 13.2	1,103,354
1997	IRS 2000, Table 13.3			1,152,784
1998				
1999				1,425,697
2000				1,562,924
		Entries for wealth of excluded population refer to "UK residential buildings"		
2001	HMRC website, 2002, Table 13.1		Table 13.3 website	1,640,260
2002	HMRC website, 2002, Table 13.1		Table 13.3 website UK	1,670,859
2003	HMRC website, 2003, Table 13.1		Table 13.3 website UK	2,038,201
2004				
2005	HMRC website, 2005, Table 13.1		Table 13.3 website UK	1,959,065
2005 to 2007	HMRC website, 2005-07, Table 13.1	Averaged over 3 years		2,025,511
2008 to 2010	HMRC website, 2008-10, Table 13.1	Averaged over 3 years		1,792,431
2011 to 2013	HMRC website, 2011-13, Table 13.1	Averaged over 3 years		2,221,471

Notes

(1) IR denotes Inland Revenue; IRS denotes Inland Revenue Statistics.

(2) where no source shown for housing wealth of excluded population, the total has been interpolated as described in the text.

Table H2. Distribution of personal wealth including and excluding housing wealth
Shares

		Excluding housing wealth					Including housing wealth							
		Top 10%	Top 5%	Top 1% per cent	Top 0.5%	Top 0.1%	Top 0.05%	Top 10%	Top 5%	Top 1% per cent	Top 0.5%	Top 0.1%	Top 0.05%	
1971	GB	67.3	56.1	31.4	24.8	11.5								
1972	GB	67.3	56.5	33.5	25.9	14.3								
1973	GB	68.8	57.1	34.6	27.8	17.0								
1974		64.4	53.1	29.6	22.4	11.6								
1975		56.6	45.7	25.4	18.9	9.3								
1976		60.8	48.7	26.8	19.7	10.4								
1977		58.8	45.4	24.1	17.3	8.5								
1978		45.2	34.8	18.6	13.3	6.5								
1979		54.6	40.6	22.9	17.2									
1980		57.1	44.9	24.7	17.8	9.0	6.8							
1981		57.9	45.2	23.5	16.3	7.0	4.6							
1982		58.8	46.0	23.7	17.4	8.2	5.9							
1983		59.2	47.1	24.2	18.7	8.7	5.5							
1984		54.8	42.6	20.5	15.7	6.8	4.3							
1985		57.3	43.9	21.4	15.9	7.2	4.8							
1986		59.1	45.1	22.9	17.2	8.2	5.8							
1987		54.0	41.9	21.4	15.5	7.3	5.4							
1988		53.3	40.6	20.8	15.1	7.0	5.2							
1989		55.6	42.0	22.8	17.2	9.1	7.1							
1990		56.3	44.2	24.8	18.5	9.8	6.9							
1991		57.2	43.5	23.8	17.3	8.1	5.5							
1992		59.6	45.9	25.0	18.5	9.5	6.7							
1993		60.2	46.5	25.7	19.4	11.1	8.6							
1994		59.8	45.7	24.6	18.3	9.0	6.6							
1995		56.9	42.1	22.0	16.2	7.7	5.5							
1996		56.6	41.7	21.2	15.8	7.3	5.2							
1997		61.1	47.1	25.0	18.4	9.4	7.3							
1998														
1999														
2000														
2001		63.5	49.8	28.5	22.1	12.9								
2002		61.3	48.3	25.0	19.3									
2003		62.1	52.6	24.2	17.9	10.8								
2004														
2005		61.8	48.8	27.5	22.0									
2006		61.6	50.1	30.2	25.0									
2007														
2008														
2009		78.0	62.7	36.7	29.8									
2010														
2011														
2012		71.0	56.5	33.1	25.7									
2013														

Table H3. Composition of wealth at the top of the distribution in the UK: housing and non-housing assets

	Top 10%		Top 5%		Top 1%		Top 0.5%		Top 0.1%		Top 0.05%		Top 10-5%		Top 5-1%		Top 1-0.5%		Top 0.5-0.1%		Top 0.1-0.05%		
	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	Non-housing	Housing	
1971 GB	77.7	22.4	82.0	18.0	89.1	11.0	92.0	8.0	95.4	4.6	97.0	3.0	62.4	37.6	73.6	26.4	80.4	19.6	89.2	10.8	92.1	7.9	
1972 GB	72.3	27.7	76.7	23.3	85.7	14.3	87.7	12.3	88.7	11.3	88.7	11.3	56.2	43.8	66.1	33.9	78.9	21.1	86.5	13.5	88.9	11.1	
1973 GB	70.3	29.7	76.0	24.0	86.0	14.0	88.7	11.3	92.7	7.3	93.3	6.7	51.5	48.5	63.9	36.1	75.6	24.4	83.3	16.7	90.4	9.6	
1974	64.2	35.8	69.9	30.1	78.9	21.1	82.0	18.0	87.8	12.3	89.5	10.5	46.5	53.5	60.5	39.5	70.4	29.6	76.6	23.4	82.9	17.1	
1975	63.7	36.3	68.6	31.5	77.5	22.6	80.7	19.3	87.4	12.6	89.1	10.9	49.3	50.7	59.7	40.3	69.1	30.9	75.2	24.8	83.2	16.8	
1976	66.7	33.3	71.2	28.8	78.8	21.2	81.4	18.6	86.6	13.4	87.4	12.6	53.5	46.5	63.7	36.3	71.3	28.7	76.4	23.6	83.8	16.2	
1977	67.9	32.2	72.1	27.9	80.3	19.7	82.9	17.2	88.9	11.1	90.5	9.5	56.6	43.4	64.7	35.3	73.5	26.5	77.8	22.2	84.4	15.6	
1978	67.8	32.2	71.6	28.4	81.8	18.2	86.5	13.5	93.0	7.0	93.0	7.0	57.3	42.7	62.0	38.0	69.3	30.7	79.8	20.2	86.4	13.6	
1979	62.9	37.1	66.6	33.4	77.5	22.5	82.0	18.0	87.1	13.0	87.1	13.0	51.8	48.3	56.5	43.5	66.5	33.6	76.4	23.6	87.1	13.0	
1980	60.5	39.6	65.0	35.0	72.7	27.3	73.7	26.3	76.3	23.7	76.8	23.2	47.7	52.3	57.6	42.4	69.8	30.2	71.2	28.8	74.8	25.2	
1981	63.5	36.6	68.3	31.8	77.8	22.2	80.4	19.6	85.4	14.6	83.1	16.9	50.6	49.4	60.3	39.8	71.5	28.6	77.0	23.0	89.5	10.5	
1982	66.8	33.2	71.3	28.7	80.5	19.5	84.1	15.9	90.1	9.9	91.4	8.6	54.6	45.4	63.2	36.8	71.8	28.2	79.3	20.7	86.8	13.2	
1983	69.0	31.0	74.2	25.8	83.5	16.5	87.2	12.8	92.4	7.6	93.4	6.6	54.7	45.3	65.9	34.1	73.9	26.1	83.2	16.8	90.3	9.7	
1984	67.1	32.9	71.7	28.3	80.0	20.0	83.6	16.4	87.8	12.2	88.6	11.4	54.9	45.1	64.8	35.2	71.2	28.8	80.3	19.7	86.4	13.6	
1985	64.7	35.4	68.9	31.1	77.1	22.9	80.7	19.3	87.3	12.7	89.2	10.8	53.5	46.5	62.2	37.8	68.6	31.4	75.7	24.3	83.3	16.7	
1986	62.8	37.3	66.6	33.4	74.1	25.9	77.8	22.2	83.1	16.9	83.8	16.2	52.7	47.3	60.0	40.0	64.8	35.2	73.3	26.7	81.7	18.3	
1987	61.7	38.4	66.3	33.7	74.1	25.9	76.1	23.9	81.7	18.3	83.9	16.1	49.4	50.6	59.1	40.3	69.1	31.0	71.5	28.5	76.3	23.8	
1988	56.8	43.2	61.2	38.8	70.6	29.4	74.6	25.4	81.8	18.3	84.5	15.5	46.0	54.0	53.6	46.4	61.8	38.2	69.0	31.0	75.0	25.0	
1989	56.5	43.5	60.3	39.7	67.6	32.4	73.0	27.0	82.1	17.9	86.0	14.0	46.5	53.5	53.8	46.2	54.3	45.7	64.7	35.3	70.8	29.2	
1990	56.2	41.8	63.1	36.9	72.0	28.0	74.8	25.3	79.7	20.3	78.3	21.7	44.3	55.7	54.8	45.2	64.4	35.6	70.0	30.0	83.8	16.2	
1991	62.3	37.7	66.0	34.0	75.5	24.5	78.0	22.0	83.9	16.1	85.4	14.6	52.0	48.0	57.6	42.4	69.2	30.8	73.6	26.4	80.6	19.4	
1992	66.9	33.1	71.1	28.9	78.9	21.1	81.6	18.4	88.5	11.5	89.7	10.3	55.0	45.0	63.9	36.1	71.7	28.3	75.5	24.5	85.1	14.9	
1993	68.5	31.5	72.1	27.9	80.0	20.0	82.7	17.3	89.4	10.6	91.4	8.6	57.8	42.2	64.4	35.6	72.4	27.6	76.4	23.7	82.4	17.6	
1994	68.4	31.6	72.4	27.6	79.4	20.6	81.4	18.6	87.0	13.0	89.0	11.0	56.8	43.2	65.9	34.1	74.2	25.8	76.4	23.7	82.1	17.9	
1995	69.5	30.5	72.1	27.9	78.4	21.6	80.5	19.5	85.1	14.9	87.6	12.4	62.4	37.6	66.4	33.6	73.3	26.7	76.7	23.4	79.0	21.0	
1996	68.2	31.9	70.5	29.5	75.8	24.2	78.1	21.9	84.6	15.4	87.1	12.9	61.7	38.3	65.8	34.2	70.3	29.7	72.9	27.1	78.8	21.2	
1997	67.8	32.2	70.4	29.6	75.4	24.6	78.1	21.9	84.5	15.5	86.8	13.2	59.4	40.6	65.5	34.5	68.6	31.4	72.3	27.7	78.0	22.0	
1998																							
1999																							
2000																							
2001	63.2	36.8	66.8	33.2	76.5	23.6	79.6	20.4	85.8	14.2	86.1	13.9	52.5	47.5	56.9	43.1	67.1	32.9	72.6	27.4	84.9	15.1	
2002	62.8	37.2	67.0	33.0	74.0	26.0	76.6	23.4	82.5	17.5	82.5	17.5	50.7	49.3	60.6	39.4	66.8	33.2	70.9	29.1	82.5	17.5	
2003	57.4	42.6	66.2	33.8	69.9	30.1	69.9	30.1	75.4	24.6	75.8	24.2	33.1	66.9	63.1	37.0	69.8	30.3	63.6	36.4	73.9	26.1	
2004																							
2005	55.6	44.4	59.8	40.2	68.7	31.3	73.3	26.7	78.9	21.1	78.9	21.1	43.9	56.2	50.7	49.3	55.6	44.4	68.1	31.9	78.9	21.1	
2006	52.6	47.4	57.5	42.5	69.1	30.9	74.5	25.5	79.7	20.3	79.7	20.3	38.3	61.7	45.3	54.8	52.1	47.9	68.4	31.6	79.7	20.3	
2007																							
2008																							
2009	54.8	45.2	59.3	40.7	69.4	30.6	73.9	26.2	78.9	21.1	78.9	21.1	41.4	58.6	48.8	51.2	55.2	44.8	67.9	32.1	78.9	21.1	
2010																							
2011																							
2012	55.1	44.9	58.9	41.1	67.8	32.2	70.8	29.2	74.1	25.9	74.1	25.9	43.6	56.5	49.7	50.3	56.3	41.7	67.2	32.8	74.1	25.9	
2013																							

Appendix I. Estates and wealth sampling procedures

This appendix describes the current sampling procedures, with a look back where possible at earlier years. The estate data are based on a stratified sample of the IHT returns for the population of estates passing on death in a financial year in need of a grant for representation. The analysis of the sampling strategy and its potential effect on our estimates is made particularly difficult by the lack of official IR/IHMRC documentation on the sampling methodology. For many years, the sampling rates were given in *Inland Revenue Statistics*, but information on the number of observations by individual strata was not supplied. Only an approximate calculation can be made: for example, for 1976-1977 we derived an implied sample size of approximately 34,000 estates (12 per cent of a total 288,000 estates that were granted probate in 1976), although this is probably an underestimate.

The HMRC wealth estimates, in contrast, are based on a different sample, based on the same source, but relating to calendar years. The estimates for 2010-2012, for example, use data from estates passing on death in 2010, 2011 and 2012 calendar years. The samples also differ because they are drawn at different dates, depending on the calendar for publication, and the timing may affect the reported information because the IHT returns are subject to revision.

The sample used to produce the HMRC wealth estimates contained, in 2008-10, approximately 57,000 returns. From this sample, a data set has been produced for distribution via the HMRC Datalab. To avoid risks of disclosure and to protect taxpayer confidentiality, the micro data are aggregated so that each row in the Datalab database represents many sampled estates.

Both samples make use of the IHT returns. As we understand it, the Trusts and Estates, Inheritance Tax Office in Nottingham receives a summary of all deaths for which a probate has been granted from the District Probate Registries, and samples monthly all the IHT400 forms. The form IHT400 is the Inheritance Tax account form required if there is Inheritance Tax to pay or if the deceased person's estate does not qualify as an 'excepted estate'. An 'excepted estate' is one with gross value above the probate minimum (£5,000) but below the IHT threshold; in this case, a "short form" (IHT205) is submitted to the Probate Registry.⁶ The IHT205 form contains the information required to make the wealth distribution estimates, not being restricted to assets for which probate is sought. HMRC selects the additional sample of the forms IHT205. In 2003, according to a report of the National Audit Office (2004), there were approximately 240,000 excepted estates. Only 3,300 such forms (1.4 per cent) were sampled by the HMRC and no sampling information was given for the

⁶ Estates with a gross value of up to £1million can also be classified as "excepted" if no inheritance tax has to be paid due to the spouse, civil partner, or charity exemption. Similarly, an estate is "excepted" if up to twice the value of the inheritance tax threshold and the transfer of unused nil band is claimed. This process is in place since the 2004 Finance Act in order to ease the administrative burden and reduce the compliance costs.

remaining 67,500 estates above the IHT threshold. Problems with the sample of “excepted” estates and other “operational” issues with the sampling frame led HMRC to deem the 2004 and 2006 wealth tabulations not “suitable” for publication.

Appendix J. Analysis of sensitivity to mortality-wealth gradients

Table J1 provides the actual mortality rate (relative to the mortality of the population) of UK individuals by age and gender for the top three deciles of the household housing wealth in 2008-2010, as estimated from the English Longitudinal Study of Ageing (ELSA) by HMRC.⁷ Relative mortality is also compared to that in top groups of the US capital income distribution (top 10, top 5 and top 1 per cent) for years 2004 to 2008, as described in Saez and Zucman (2016). Using the database of the HMRC Datalab for 2008, 2009, and 2010 we simulate the effects of changes to multipliers on the final estimates of top wealth shares. We carry out the analysis using both (case A) an internal wealth total endogenous to changes in multipliers (wealth of the identified population plus wealth of the excluded population); and (case B) an external wealth total unaffected by the simulations.

Table J2 provides the comparison between the top 1 per cent wealth share and the respective simulated series in 2008-2010 based on 10, 20, 50 and 100 per cent variation of mortality multipliers above a pre-specified wealth percentile (P95, P99, and P99.9). The results indicate that the potential downward bias of our estimates due to lack of adjustments for “appropriate” wealth differentials are marginal, in either the external or the internal wealth total scenario. Results further show that results are robust if we confine the adjustments only to the very top of the distribution (P99.9th).⁸

⁷ Individuals with housing wealth at least equal to £300,000 would fall in the 8th decile of housing wealth. The 9th decile is £400,000 whereas the 10th decile is estimated to be at £500,000.

⁸ Although we cannot rule out the possibility that future progress in medicine, and widening gaps in wealth, may reduce the relative mortality rates of the wealthiest individuals to such levels, at present these adjustments are hard to justify. Similarly, future radical changes in the age distribution of wealth may have more tangible implications on the use of wealth differentials (and more generally on the use of mortality multipliers) for the estimation of top wealth shares.

Table J1. Relative mortality in UK and US

UK					US				
	Mortality rate relative to population wide mortality rate for the same age class			population wide mortality rate (%)		Mortality rate relative to population wide mortality rate for the same age class			population wide mortality rate (%)
	UK housing wealth distribution					US capital income distribution			
	Top 30%	Top 20%	Top 10%		Men (2004-2008)	Top 10%	Top 5%	Top 1%	
Men (2008-2010)									
Aged 50-64	0.84	0.78	0.72	0.65	Aged 50-64	0.61	0.53	0.43	0.81
Aged 65-75	0.81	0.75	0.69	1.91	Aged 65-79	0.77	0.71	0.60	2.76
Aged 75-75	0.79	0.73	0.67	5.58	Aged 80+	0.97	0.91	0.92	8.47
Aged 85+	0.78	0.73	0.67	14.82					
Women (2008-2010)					Women (2004-2008)				
Aged 50-64	0.81	0.75	0.69	0.42	Aged 50-64	0.67	0.57	0.71	0.48
Aged 65-75	0.78	0.72	0.66	1.35	Aged 65-79	0.76	0.73	0.69	1.99
Aged 75-75	0.72	0.67	0.62	3.89	Aged 80+	0.97	0.92	0.91	7.22
Aged 85+	0.74	0.68	0.63	12.75					

Sources: Data on relative mortality rates of UK population across household housing deciles taken from HMRC estate database from the HMRC datalab, estimated from ELSA. Data on UK mortality and population are taken from ONS, The 21st Century Mortality Files, Deaths Dataset, 2001-2014. Data on the US relative mortality and population wide mortality are taken from Saez and Zucman (2016).

Table J2. Sensitivity of the top 1% wealth share to changes in the mortality-wealth gradient

	Original estimates with mortality multipliers as applied by HMRC	+20% adjustment to multipliers above P99	+20% adjustment to multipliers above P99.9	+50% adjustment to multipliers above P99	+50% adjustment to multipliers above P99.9	+100% adjustment to multipliers above P99	+100% adjustment to multipliers above P99.9
Case A: simulated top wealth shares based on internal wealth total							
Wealth shares (per cent)							
2008	19.6	21.9	21.0	25.1	23.1	30.5	27.2
2009	18.2	20.1	19.2	22.7	20.8	24.8	21.9
2010	23.5	26.5	25.7	30.7	29.1	37.4	35.0
Wealth of the identified population (£ billion)							
2008	3,339	3,505	3,411	3,754	3,520	4,169	3,701
2009	3,280	3,434	3,334	3,665	3,416	4,051	3,551
2010	3,940	4,186	4,064	4,554	4,252	5,169	4,564
Wealth of the excluded population (£ billion)							
2008	1,224	1,221	1,224	1,217	1,223	1,209	1,222
2009	1,142	1,139	1,142	1,135	1,141	1,127	1,140
2010	1,199	1,196	1,199	1,190	1,198	1,181	1,197
Case B: simulated top wealth shares based on external fixed wealth total							
Wealth shares (per cent)							
2008	20.1	22.4	21.5	30.5	27.2	30.5	27.2
2009	17.0	18.8	18.0	24.8	21.9	24.8	21.9
2010	23.7	26.8	26.0	37.4	35.0	37.4	35.0

Notes: The table shows the effect of changes in mortality adjustment factors on the top 1% wealth share. 20 percent, 50 percent and 100 percent changes are applied above P99 and P99.9 fractiles respectively. Two cases are considered. Case A refers to the internal wealth total: the sum of the identified wealth and the wealth of the excluded population. The latter is derived by extrapolating to 2008-2010 the 2005 HMRC estimate of the wealth of the excluded population using ONS UK housing prices index. Case B refers to the external wealth total, which does not change with changes in adjustment factors.

Appendix K. Comparison with existing estimates of the distribution of wealth in the UK

Table K1 provides:

- i) the IR/HMRC earlier series C 1966-1976.
- ii) the IR/HMRC series C 1966-2005. The original series stop in 2005; we extend them to 2011-13 (in italics in Table K1) following the trend of our benchmark series.
- iii) the series given in Atkinson and Harrison (1978) and Atkinson, Gordon and Harrison (1989).
- iv) the results from the ONS Wealth and Asset Survey, including pension wealth.
- v) the series given in Credit Suisse Research Institute (Davies, Shorrocks and Lluberas 2014, 2015).
- vi) the results for 2009 from Vermulen (2015).

Table K1. Existing estimates of the distribution of wealth in the UK

	IR/HMRC Series C							IR/HMRC Earlier Series C				
	Distribution among the adult population of marketable wealth							Distribution among the adult population of marketable wealth				
	Top 50%	Top 25%	Top 10%	Top 5%	Top 2%	Top 1%	Gini Coeff.	Top 25%	Top 10%	Top 5%	Top 2%	Top 1%
	per cent							per cent				
1966								87	65	56	42	33
1967												
1968												
1969												
1970												
1971								86	65	52	39	31
1972												
1973												
1974								84	57	43	30	23
1975								83	58	44	31	24
1976	92	71	50	38	27	21	66	84	60	45	32	24
1977	92	71	50	39	28	22	66					
1978	92	71	49	37	26	20	64					
1979	92	72	50	37	26	20	65					
1980	91	73	50	36	25	19	65					
1981	92	73	50	36	24	18	65					
1982	91	72	49	36	24	18	64					
1983	91	73	50	37	26	20	65					
1984	91	71	48	35	24	18	64					
1985	91	73	49	36	24	18	65					
1986	90	73	50	36	24	18	64					
1987	91	74	51	37	25	18	66					
1988	92	71	49	36	23	17	65					
1989	92	70	48	35	24	17	65					
1990	93	71	47	35	24	18	64					
1991	92	71	47	35	24	17	64					
1992	93	73	50	38	25	18	66					
1993	93	73	51	38	26	18	66					
1994	93	74	52	39	27	19	67					
1995	92	72	50	38	26	19	65					
1996	93	74	52	40	27	20	68					
1997	93	75	54	43	30	22	69					
1998	91	72	52	40	28	22	69					
1999	94	74	55	43	30	23	70					
2000	95	75	56	44	31	23	71					
2001	93	72	54	41	29	22	68					
2002	92	72	54	41	28	21	67					
2003	93	73	53	40	27	19	67					
2004												
2005	94	77	54	40	28	21	70					
2006						22.2						
2007												
2008												
2009						23.0						
2010												
2011												
2012						22.2						
2013												

Sources: IRS 1981, Table 4.8; IRS 1984, Table 4.8; and HMRC website, Table 13.5, 2005. HMRC series C (which stop in 2005) are extended to 2011-13 (in italics) by linking the original series to our benchmark series.

Table K1 (cont.). Existing estimates of the distribution of wealth in the UK

Series given in Atkinson and Harrison (1978) and Atkinson, Gordon and Harrison (1989)								
Shares of total personal wealth								
	England and Wales				Great Britain			
	Top 20%	Top 10%	Top 5%	Top 1%	Top 20%	Top 10%	Top 5%	Top 1%
	per cent				per cent			
1923	94.2	89.1	82.0	60.9				
1924	93.8	88.1	81.5	59.9				
1925	93.8	88.4	82.1	61.0				
1926	93.2	87.4	79.9	57.3				
1927	93.8	88.3	81.3	59.8				
1928	93.1	87.2	79.6	57.0				
1929	92.6	86.3	78.9	55.5				
1930	92.6	86.6	79.2	57.9				
1931								
1932								
1933								
1934								
1935								
1936	92.0	85.7	77.4	54.2				
1937								
1938	91.2	85.0	76.9	55.0	91.6	85.4	77.2	55.0
1939								
1940								
1941								
1942								
1943								
1944								
1945								
1946								
1947								
1948								
1949								
1950			74.3	47.2			74.4	47.2
1951			73.6	45.8			73.8	45.9
1952			70.2	43.0			70.3	42.9
1953			71.1	43.6			71.2	43.5
1954			71.8	45.3			72.0	45.3
1955			71.1	44.5			70.8	43.8
1956			71.3	44.5			71.1	44.0
1957			68.7	43.4			68.6	42.9
1958			67.8	41.4			67.7	40.9
1959			67.6	41.4			67.9	41.8
1960	83.1	71.5	59.4	33.9	83.6	72.1	60.0	34.4
1961	83.3	71.7	60.6	36.5	83.6	72.1	60.8	36.5
1962	80.2	67.3	54.8	31.4	80.7	67.9	55.4	31.9
1963								
1964	84.3	71.4	58.6	34.5	85.2	72.0	59.2	34.7
1965	85.5	71.7	58.1	33.0	85.8	72.3	58.7	33.3
1966	83.8	69.2	55.5	30.6	84.2	69.9	56.1	31.0
1967	84.5	70.0	56.0	31.4	84.9	70.5	56.4	31.5
1968	35.1	71.6	58.3	33.6	85.4	72.0	58.6	33.6
1969	83.3	67.7	56.1	31.1	84.1	68.6	56.6	31.3
1970	84.5	68.7	53.6	29.7	84.9	69.4	54.3	30.1
1971	84.2	67.6	52.3	28.4	84.8	68.3	53.0	28.8
1972	84.9	70.4	56.0	31.7	85.3	71.7	57.2	32.0
1973	84.9	66.8	50.8	27.3	85.4	67.5	51.5	27.4
1974	83.1	64.1	47.8	22.6	83.6	65.0	48.6	22.9
1975	80.8	61.9	45.8	22.7	81.1	62.5	46.5	23.1
1976	83.7	65.1	48.7	24.4	84.0	65.4	49.0	24.6
1977	81.0	62.5	46.5	22.1	80.9	62.5	46.4	22.1
1978	81.5	62.4	45.6	21.9	81.9	62.9	45.9	22.0
1979	80.3	61.2	45.2	21.5	80.5	61.4	45.3	21.4
1980	79.4	59.3	42.4	19.4	79.9	59.8	42.8	19.6
1981	82.3	62.6	45.9	22.7	82.5	62.8	46.0	22.5

Sources: Atkinson and Harrison, 1978, Table 6.5, and Atkinson, Gordon and Harrison, 1989, Table 1.

Table K1 (end). Existing estimates of the distribution of wealth in the UK

	ONS Wealth and Asset Survey (WAS)-households			Credit Suisse-individual adults		Vermeulen (2015)			
	top 10%	top 5%	top 1%	top 10%	top 1%	top 5% lower bound	top 5% upper bound	top 1% lower bound	top 1% upper bound
2000				51.5	20.5				
2001				51.6	20.5				
2002				51.6	20.6				
2003				51.7	20.7				
2004				51.7	20.8				
2005				51.9	20.8				
2006				51.9	20.9				
2007	43.9	30.4	12.7	52.0	21.0				
2008				52.1	21.1				
2009	43.6	30.0	11.8	52.4	21.4	31.0	35.0	14.0	18.0
2010				52.8	21.8				
2011	43.7	29.9	12.5	53.1	22.2				
2012				53.5	22.6				
2013	44.8	30.5	12.6	53.6	22.8				
2014				54.1	23.3				
2015				54.1	23.2				

Sources and notes:

ONS WAS estimates include pension wealth.

Credit Suisse: Credit Suisse Research Institute, Global Wealth Databook 2014 and 2015, London.

Vermeulen (2015): "How fat is the top tail of the wealth distribution?", unpublished working paper (version 16 March 2015). Vermeulen's top wealth shares derived uniquely from the WAS (before any combination with Forbes' rich list) are: 30% for the top 5%, and 13% for the top 1%.

Appendix L. Distribution of investment income

There are two sources of tabulated investment income data: the surtax returns and the Survey of Personal Incomes (details for each year in Table A3). The IR tabulated total income by ranges from the introduction of surtax in 1908, but only began to publish the distribution of investment income with effect from 1948-49, referred to here as 1948. We then have a complete annual series up to and including 1972-73, when the surtax was integrated into the regular income tax. The surtax data relate to those tax units assessed to surtax, so that the data are only complete for persons whose investment income is sufficient on its own to render them subject to surtax. The surtax threshold for much of the period was £2,000 plus a number of reliefs (such as the single/married personal allowance, child allowance from 1956-57). The data typically cover some 0.5 per cent of total tax units, but the use of the data for lower ranges could be misleading. In our analysis, we have used ranges of investment income (i) from £4,000 for 1948-49, 1971-72 and 1972-1973; (ii) from £3,000 for 1969-70 and 1970-71; and (iii) from £2,500 for all other years (for example, the 111th IR Report, page 82, shows that married couples with 3 children would indeed have been paying surtax on an income of £2,500 in 1967-68). Table L3 shows the surtax rates and bands in different years. Investment income consists of rent, dividends and interest, and (when in effect) Schedule A income on owner-occupied property and rented property.

The Survey of Personal Incomes (SPI) is based on a sample drawn from the income tax records. In covering all taxpayers, it is superior to the surtax data and it is the sole source since 1972-73. It does however have limitations. Initially, the SPI was only carried out at 5 year intervals; information has only been tabulated by ranges of investment income since 1954-55; the fact that it has been based on a sample limits the detail available on the higher income ranges; and in the earlier years corrections were made for the significant deficiency in the amount of investment income reported (believed to arise where taxpayers report the amount received after deduction of tax at source, where this is not verified for those not liable for surtax). These limitations mostly apply to the earlier years. The SPI became annual with effect from 1962-63; more detail has been published from 1969-70; and the IR ceased to make adjustments for investment income from 1965-66 (although the deficiency continued to be present).

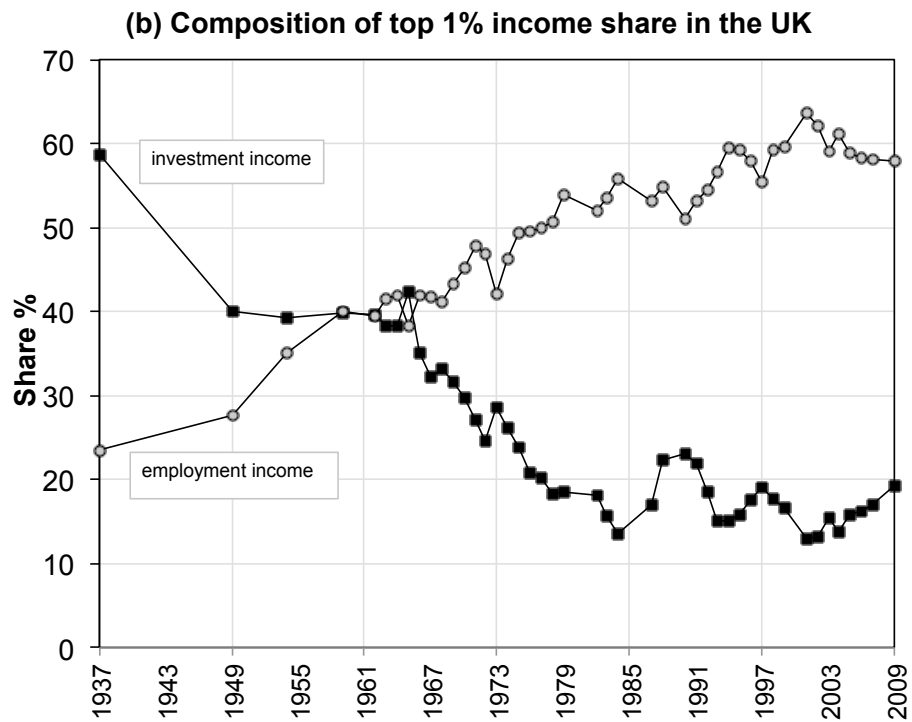
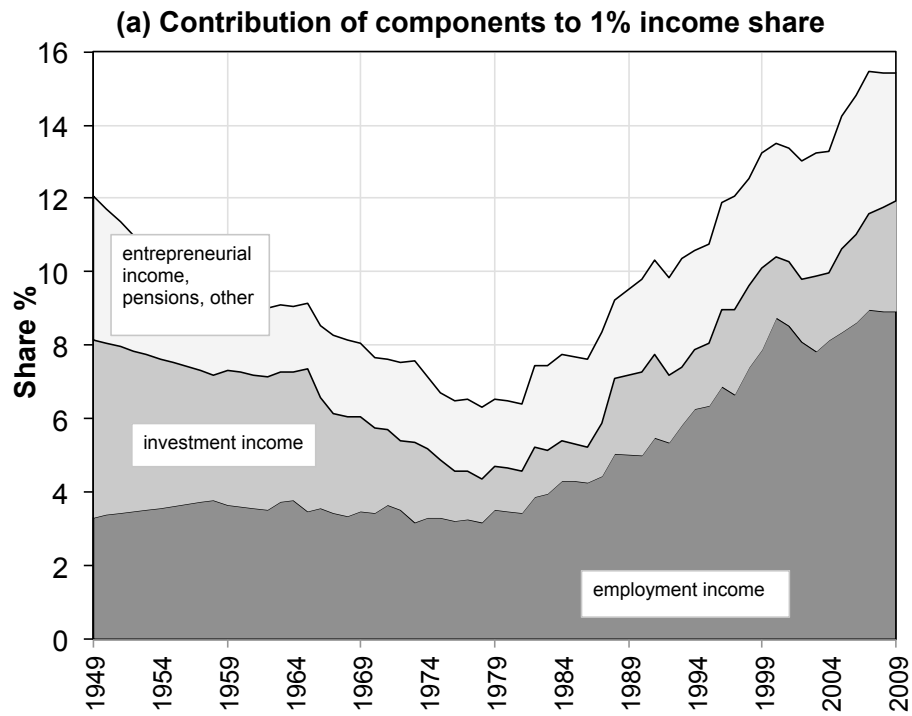
After 1979-80, the tabulations were no longer published in the necessary form, but for the years 1985-86 and 1995-96 to 2010-11 (2008-09 missing) HMRC has provided access to the SPI micro-data sample. In the last years, the sample has an approximate size of 1.5 per cent of the adult population. The micro-data sample provides the composition of investment income in four broad categories: dividend income from shares in UK companies and unit trusts, property income, net interest from UK banks, building societies and other deposit takers, and other investment income comprising interest on securities, interest from partnerships and from trusts, settlements and estates.

Table L2 shows the control totals for population (tax units before 1990-91, adults from 1990-91) and total investment income. The derivation of the population series is described in Atkinson (2005); the series have been updated and extended to 2013. The series for total investment income is based on the total of rent, dividends and interest received by the household and NPISH sector (initially the personal sector) and an estimate of the actual rental income obtained from the Blue Book sources listed in Table L2. We start with the most recent year from the Blue Book 2016, and take 90 per cent of the national accounts figures to allow for differences in definitions. We convert the annual data to a tax year basis by taking $\frac{3}{4}$ of year t and $\frac{1}{4}$ of year $t+1$. Working backwards, the resulting totals were then linked to the earlier series in 1996.

The results for top investment income shares are given in Table L1. The two sources, surtax returns and SPI, may be compared for the years 1969-70 to 1972-73. The top shares are consistently higher for the surtax data, but the difference is not large, and appears similar in all four years.

Figure L1, panel a, shows the contribution of investment income, employment and other income (mainly pensions and entrepreneurial profits) to the overall share of the top 1% share of income. This extends the series presented in Atkinson (2007), pp. 110-111. Over the first part of the post-war period, the contribution of investment income fell, as did that of the other components: self-employment income contributed 2 percentage points to the fall between 1949 and 1959 in the overall share. The further fall in the overall share between 1965 and 1979 was associated with a substantial fall in the contribution of investment income, but there was also a modest contribution from employment income. From 1979, however, the contribution of employment income to the overall share increased sharply and steadily over time. Earnings have become the dominant influence. At the same time, the fall in the contribution of investment income had come to an end, and there has been a steady increase from the low point of 1979. The evolution of the contribution of investment income to the share of the top 1% of income is consistent with that of the top 1% of wealth excluding housing presented in Figure 13.

Figure L1. Composition of top 1% income share in the UK



Source: Table L4.

Table L1. Distribution of taxable investment income in the UK 1948-2010
Shares

	based on Surtax per cent					based on Survey of Personal Incomes per cent							
	Top 0.5%	Top 0.25%	Top 0.1%	Top 0.05%	Top 0.01%	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.25%	Top 0.1%	Top 0.05%	Top 0.01%
1948				13.4	6.1								
1949			17.4	12.6	5.7								
1950			17.4	12.5	5.5								
1951			17.1	12.2	5.3								
1952			17.2	12.2	5.3								
1953			15.9	11.2	4.8								
1954			16.1	11.3	4.8		65.4	43.3	33.6				
1955			14.5	9.5	3.4								
1956			15.8	11.1	4.7								
1957		23.9	15.4	10.8	4.5								
1958		22.3	14.3	10.0	4.2								
1959		21.2	13.6	9.5	4.0		57.3	37.3	28.4				
1960		20.1	12.9	9.0	3.8								
1961		19.4	12.5	8.7	3.7								
1962		19.8	12.7	8.9	3.8								
1963		19.5	12.4	8.7	3.7								
1964		19.6	12.5	8.7			51.1	34.0					
1965	28.1	20.5	13.1	9.1									
1966		15.5	9.9	6.9	3.0								
1967	23.8	17.2	10.9	7.7									
1968	23.1	16.6	10.4	7.2			45.1	28.6					
1969		16.4	10.2	7.1			47.2	29.0	21.4	15.3	9.6	6.6	2.8
1970		17.3	10.7	7.4			52.6	31.4	22.8	16.1	9.8	6.7	2.7
1971		17.3	10.6	7.3			51.1	30.3	22.2	15.7	9.6	6.6	2.7
1972		16.1	9.9	6.7			48.0	29.0	21.2	15.0	9.2	6.3	
1973							46.7	28.8	21.2	15.1	9.2	6.3	
1974							44.7	26.1	19.1	13.6	8.5	5.8	
1975							46.7	26.2	18.9	13.4	8.3	5.8	
1976							46.7	24.8	17.6	12.4	7.7	5.4	
1977							48.8	25.7	18.2	12.7	7.6	5.2	
1978							47.0	24.9	17.5	12.1	7.3	5.0	
1979							39.5	20.9	14.7	10.1	6.0		
1980													
1981													
1982													
1983													
1984													
1985							31.5	16.7	12.2	8.6	5.2	3.3	
1986													
1987													
1988													
1989													
1990													
1991													
1992													
1993													
1994													
1995						44.1	38.3	22.0	16.9	12.9	8.7	6.4	
1996						46.1	41.7	25.2	19.7	15.2	10.5	7.8	
1997						52.1	46.7	28.4	22.1	17.3	12.3	9.7	
1998						60.6	53.1	31.3	24.3	18.9	14.0	11.1	
1999						60.6	53.1	31.3	24.3	18.9	14.0	11.1	
2000						54.4	46.6	26.0	19.9	15.1	10.4	7.7	
2001						58.4	51.3	30.5	23.6	17.9	12.7	9.4	
2002						59.4	53.1	32.3	25.0	18.7	13.3	9.7	
2003						62.9	56.9	35.2	26.9	20.3	14.3	10.4	
2004						67.4	59.4	34.6	25.4	18.3	12.4	9.0	
2005						73.2	65.9	39.1	28.9	20.9	14.0	9.9	
2006						74.3	67.8	39.1	29.0	20.9	13.6	9.7	
2007						86.1	77.5	44.5	32.9	23.5	15.2	10.7	
2008													
2009						98.3	91.0	59.5	47.0	36.9	27.6	20.9	
2010						75.9	69.7	39.9	28.1	20.0	12.6	9.0	
2011													
2012													
2013													

Table L2. Population and income control totals for the distribution of taxable investment income in the UK 1948-2013

Population control		Income control sources						Income control	
Tax units	Adults	Rent, dividends and interest of the personal sector	Rent, dividends and interest of HH and NPISH		Rent, dividends and interest of HH	Rent, dividends and interest of HH and NPISH	Rent, dividends and interest of HH and NPISH	Source	
			Earlier series including taxes on portfolio income paid by non residents	Post-1950 series					
000	000	million £	million £	million £	million £	million £	million £	million £	
1946	25,473	1,255						NIE 1956 page 2	1,140
1947	25,583	1,340						NIE 1956 page 2	1,217
1948	25,791	1,175		964				NIE 1959 page 23 and NIE 1956 page 2	1,067
1949	25,900			978				NIE 1960 page 23	1,082
1950	25,767			1,001				NIE 1961 page 23	1,108
1951	25,633			1,045	984			NIE 1962 page 27 and NIE 1961 page 23	1,157
1952	25,500				964			NIE 1963 page 27	1,133
1953	25,300				1,054			NIE 1964 page 29	1,239
1954	26,250				1,095			NIE 1965 page 32	1,287
1955	26,200				1,198			NIE 1965 page 32	1,408
1956	26,150				1,219			NIE 1967 page 31	1,433
1957	26,100				1,289			NIE 1967 page 31	1,515
1958	26,250				1,420			NIE 1969 page 26	1,669
1959	26,500				1,547			NIE 1969 page 26	1,818
1960	26,700				1,861			NIE 1971 page 32	2,187
1961	26,900				2,041			NIE 1972 page 30	2,399
1962	27,200				2,021			NIE 1973 page 30	2,375
1963	27,400				2,152			NIE 1974 page 32	2,529
1964	27,500				2,334			NIE 1974 page 32	2,743
1965	27,600				2,681			NIE 1974 page 32	3,151
1966	27,700				2,825			NIE 1977 page 32 and NIE 1974 page 32	3,320
1967	27,800					2,632		NIE 1978 page 36	3,333
1968	28,091					2,642		NIE 1979 p 36	3,480
1969	28,161					2,759		NIE 1980 page 30	3,684
1970	28,206					2,920		NIE 1981 page 30	3,544
1971	28,240					2,809		NIE 1982 page 30	3,655
1972	28,351					2,897		NIE 1983 page 27	3,732
1973	28,123					2,958		NIE 1984 page 39	4,732
1974	28,274					3,751		NIE 1985 page 39	5,998
1975	28,341					4,755		NIE 1986 page 39	6,649
1976	28,549					5,271		NIE 1986 page 39	7,522
1977	28,892					5,963		NIE 1986 page 39	8,056
1978	29,076					6,386		NIE 1989 page 46	7,855
1979	29,390					6,227		NIE 1990 page 44	11,767
1980	29,704					9,328		NIE 1991 page 44	15,788
1981	30,018					12,515		NIE 1992 page 44	16,820
1982	30,484					13,333		NIE 1993 page 50	18,009
1983	30,950					14,276		NIE 1993 page 50	18,318
1984	31,416					14,521		NIE 1995 page 52	23,534
1985	31,743					18,656		Nie 1996 page 82	29,708
1986	31,998					23,550		NIE 1997 page 83	30,331
1987	32,249					24,044		NIE 1997 page 83	32,296
1988	32,507					25,601	31,939	NIE 1997 page 83	38,890
1989	32,788	44,094				28,708	38,461	NIE 1997 page 83	53,667
1990		44,284				39,164	53,074	NIE 1997 page 83	66,479
1991		44,474				47,343	65,745	NIE 1997 page 83	62,187
1992		44,765				46,606	61,500	NIE 1997 page 83	59,050
1993		44,897				45,985	58,398	NIE 1997 page 83	49,520
1994		45,007				36,921	48,973	NIE 1997 page 83	51,682
1995		45,121				37,041	51,111	NIE 1997 page 83	61,162
1996		45,191				42,975	60,487	NIE 1997 page 83	61,061
1997		45,422				44,307	60,387	NIE 1997 page 83	65,206
1998		45,654					68,430	65,835 Blue Book 2016	64,003
1999		45,086					71,690	69,102 Blue Book 2016	67,300
2000		45,263					66,416	65,020 Blue Book 2016	72,590
2001		45,756					72,138	70,391 Blue Book 2016	67,102
2002		46,048					77,912	75,947 Blue Book 2016	65,230
2003		46,354					63,104	64,099 Blue Book 2016	69,937
2004		46,689					60,955	64,201 Blue Book 2016	77,194
2005		47,163					72,883	70,782 Blue Book 2016	82,756
2006		47,592					81,081	79,578 Blue Book 2016	90,738
2007		48,043					85,801	84,843 Blue Book 2016	90,836
2008		48,499					95,944	94,911 Blue Book 2016	81,052
2009		48,910					89,568	90,055 Blue Book 2016	77,305
2010		49,371					67,000	75,338 Blue Book 2016	78,662
2011		49,839					70,458	78,708 Blue Book 2016	77,340
2012		50,181					75,520	79,112 Blue Book 2016	
2013		50,502					76,082	74,860 Blue Book 2016	
								74,788 Blue Book 2016	

Table L3. Rates of surtax in the UK 1948-49 to 1972-73

1948-59 to 1964-65 and 1966-67 to 1971-72		1965-66 and 1972-33	
Bands of surtaxable income	Rate of surtax	Bands of surtaxable income	Rate of surtax
£	%	£	%
up to 2,000	Nil	up to 2,000	Nil
2,000-2,500	10.00 (1, 2)	2,000-2,500	11.00 (2)
2,500-3,000	12.50 (1, 2)	2,500-3,000	13.75 (2)
3,000-4,000	17.50 (2)	3,000-4,000	19.25 (2)
4,000-5,000	22.5	4,000-5,000	24.75
5,000-6,000	27.5	5,000-6,000	30.25
6,000-8,000	32.5	6,000-8,000	35.75
8,000-10,000	37.5	8,000-10,000	41.25
10,000-12,000	42.5	10,000-12,000	46.75
12,000-15,000	47.5	12,000-15,000	52.25
15,000-20,000	50	Above 15,000	55
Above 20,000	50.00 (3)		

Notes:

(1) For 1969-70 and 1970-71 surtaxable incomes below £2,500 were exempt from surtax but above that level the whole schedule applied so that tax was paid on all surtaxable income above £2,000. However, marginal relief was available to prevent a large jump in taxable liability at £2,300 whereby incomes between £2,500 and £2,681 were charged at 40% of the excess over £2,500.

(2) For 1971-72 and 1972-73 incomes below £3,000 were exempt from surtax. Marginal relief was available for surtaxable incomes in the range £3,000 to £3,499 whereby tax was only charged at 40 per cent (44 per cent in 1972-73) of the excess over £3,000.

(3) 52.5% 1948-49 to 1950-51.

Source: <https://www.gov.uk/government/statistics/rates-of-surtax-1948-to-1973>.

Table L4. Top 1% share in total before tax income, and decomposition between investment income and earned income

	Top 1% income share		Composition of income of top 1%			
	married couples & single adults	adults	Investment income		Earned income	
	%	%	%	Total %	Employment income %	Other earned income (self-employment income, pensions) %
1918	19.2					
1919	19.6					
1937	17.0		58.7	41.3	23.5	17.8
1949	11.5		40.0	60.0	27.7	32.3
1950						
1951	10.9					
1952	10.2					
1953	9.7					
1954	9.7		39.2	60.8	35.1	25.7
1955	9.3					
1956	8.8					
1957	8.7					
1958	8.8					
1959	8.6		39.7	60.3	40.0	20.3
1960	8.9					
1961						
1962	8.4		39.6	60.4	39.4	21.0
1963	8.5		38.3	61.7	41.5	20.2
1964	8.5		38.3	61.7	41.9	19.8
1965	8.6		42.3	57.7	38.3	19.4
1966	7.9		35.2	64.8	41.9	23.0
1967	7.7		32.2	67.8	41.6	26.1
1968	7.5		33.1	66.9	41.2	25.8
1969	7.5		31.7	68.3	43.3	25.0
1970	7.1		29.7	70.3	45.2	25.0
1971	7.0		27.2	72.8	47.9	24.9
1972	6.9		24.7	75.3	46.9	28.4
1973	7.0		28.6	71.4	42.1	29.3
1974	6.5		26.2	73.8	46.2	27.6
1975	6.1		23.8	76.2	49.3	26.9
1976	5.9		20.8	79.2	49.6	29.5
1977	5.9		20.2	79.8	49.9	29.8
1978	5.7		18.4	81.6	50.7	30.9
1979	5.9		18.5	81.5	53.8	27.6
1980						
1981	6.7					
1982	6.9		18.0	82.0	52.1	29.9
1983	6.8		15.6	84.4	53.6	30.8
1984	7.2		13.5	86.5	55.9	30.6
1985	7.4					
1986	7.6					
1987	7.8		17.0	83.0	53.1	29.9
1988	8.6		22.3	77.7	54.8	22.9
1989	8.7					
1990		9.8	23.1	76.9	51.1	25.8
1991		10.3	22.0	78.0	53.2	24.8
1992		9.9	18.5	81.5	54.4	27.1
1993		10.4	15.1	84.9	56.6	28.3
1994		10.6	15.0	85.0	59.4	25.6
1995		10.8	15.8	84.2	59.3	24.9
1996		11.9	17.6	82.4	57.9	24.5
1997		12.1	19.1	80.9	55.4	25.6
1998		12.5	17.7	82.3	59.2	23.1
1999		13.2	16.6	83.4	59.7	23.8
2000		13.5	12.1	87.9	64.9	23.1
2001		13.4	13.0	87.0	63.7	23.3
2002		13.0	13.2	86.8	62.1	24.6
2003		13.2	15.5	84.5	59.1	25.4
2004		13.3	13.7	86.3	61.2	25.0
2005		14.2	15.8	84.2	58.8	25.3
2006		14.8	16.2	83.8	58.3	25.5
2007		15.4	17.0	83.0	58.0	25.0
2008						
2009		15.4	19.3	80.7	58.0	22.7
2010		12.6	10.3	89.7	65.0	24.6
2011		12.9				
2012		12.7				
2013		14.5				
2014		13.9				

Notes: The top 1% income share is taken from Atkinson (2007) and updates in WID.world. The composition of income comes from Atkinson (2007) up to 2000, and from authors' computations based on the SPI from 2001 onwards.

Appendix M. Top wealth shares based on The Sunday Times Rich Lists

Table M1 shows the wealth share of the top 0.001% group based on the Sunday Times Rich Lists. One major problem with the use of the List is that the unit of analysis is not always clear and could be quite extensive – in contrast to the individual basis of our wealth estimates. *Faute de mieux*, we have assumed that every observation in the list refers to a family of two individuals (so the 1,000 observations in the more recent annual lists represent 2,000 adults) in which they equally share their wealth.

The results from 2002 in an alternative source - the Forbes List - are not shown due to the limited time scope of the series and the sample size on which they are based. The top 0.00003 per cent richest UK individuals owned 0.5 per cent of total personal wealth in 2002, and the share went up to 0.7 per cent in 2012. Again the trend, as well as the year-to-year variation, is fairly similar to that of our estate-based series. The Forbes List shows the wealth holding of UK individuals in US\$. The annual average spot exchange rate from the Bank of England (XUAAUSS- US\$ into Sterling) is used to convert the currency.

Table M2 shows the wealth shares of top groups as a result of making the extreme assumption that the ST rich list could be combined with our benchmark estimates, by adding the wealth recorded in the lists since 1989 to our estimates. As the first ST list contained less than 1,000 entries (e.g. the 1989-1991 lists only had around 200 observations), we normalized all the years to 1,000 entries by using the proportions in the 1997 list.

Table M1. Top wealth shares based on The Sunday Times Rich List

	Share of 0.001%	# of cases	P99.999	average wealth	Inverted Pareto-Lorenz	Share of 0.002%	# of cases	P99.998	average wealth	Inverted Pareto-Lorenz
	per cent		(£ million)	(£ million)	coefficient	per cent		(£ million)	(£ million)	coefficient
1989	2.44	404	30	96.8	3.2					
1990	2.92	400	50	121.0	2.4					
1991	2.77	400	50	117.4	2.3					
1992	2.83	432	35	110.9	3.2					
1993	2.84	433	41	113.4	2.8					
1994	3.16	434	60	130.5	2.2	3.63	868	25	75	3.0
1995	2.38	434	55	103.2	1.9	2.83	868	30	61	2.0
1996	2.99	435	70	131.5	1.9	3.57	870	40	78	2.0
1997	3.49	436	90	162.7	1.8	4.14	872	45	97	2.1
1998	3.21	438	100	171.9	1.7	3.72	874	50	100	2.0
1999	3.20	440	110	182.2	1.7	3.86	880	57	110	1.9
2000	3.56	443	140	222.6	1.6	4.34	886	72	136	1.9
2001										
2002										
2003	2.81	451	147	234.6	1.6	3.41	898	75	143	1.9
2004	3.52	454	180	313.7	1.7	4.22	904	90	189	2.1
2005										
2006	4.81	463	272	476.8	1.8	5.74	920	125	286	2.3
2007	5.26	467	314	549.5	1.8	6.29	928	150	330	2.2
2008	6.63	472	380	626.4	1.6	7.93	936	175	377	2.2
2009	3.77	475	235	374.2	1.6	4.59	942	115	230	2.0
2010	4.74	480	300	503.2	1.7	5.66	948	135	304	2.3
2011	4.51	485	325	498.4	1.5	6.42	954	150	360	2.4
2012	4.33	488	343	495.0	1.4	6.45	960	155	375	2.4
2013	5.88	491	350	686.2	2.0	6.87	966	160	407	2.5

Table M2. Effect of adding ST Rich List wealth to our benchmark series

	Top 10%	Top 5%	Top 1%	Top 0.5%
	shares per cent			
1989	49.9	37.2	19.3	14.7
1990	47.8	36.2	19.6	15.4
1991	47.3	35.6	18.8	14.5
1992	49.6	37.8	20.0	15.5
1993	51.3	39.5	21.2	16.6
1994	51.3	39.1	21.0	16.3
1995	48.3	36.5	18.9	14.4
1996	50.1	38.1	19.9	15.2
1997				
1998				
1999	52.0	40.3	22.9	18.3
2000	52.7	41.0	22.6	17.7
2001				
2002	53.0	40.5	21.6	17.1
2003	52.2	39.4	20.1	15.8
2004				
2005	54.5	41.5	24.2	19.7
2006	55.2	42.7	25.3	20.8
2007				
2008				
2009	57.0	44.2	25.7	21.0
2010				
2011				
2012	54.9	42.8	24.9	20.4
2013				

Appendix N. Comparison of probate values and Sunday Times Rich Lists

Table N1 provides the comparison between probate values and the Sunday Time Rich List values around the year of death, for those millionaires in the List who have passed away since the List started in 1989. Probates have been obtained from <https://probatesearch.service.gov.uk/>. In addition to the points made in the main text, it should be noted that several cases disappear from the list before death, despite having estates considerably above the minimum wealth in the list, and that charitable gifts made during lifetime are not given in the probate records, but they are substantial in some known cases (for instance, Anita Roddick and Felix Dennis), affecting the comparison.

Appendix O. The distribution of estates in the United States

Table O1 provides the sources of the distribution of estates in tabulated form from 1916 to 2013. The first publication, the *IRS Statistics of Income 1920*, only gives the data aggregated for the returns filed between September 1916 and January 1922 and we have not used these. Consequently our series start in 1921. Table O2 gives total wealth, estates, adult population and deaths.

Total adult decedents: They come from www.mortality.org from 1933 to 2013. For years before 1933, we have taken the number of adult decedents from the periodical publication *Mortality Statistics* by the US Department of Commerce and the Bureau of the Census; as this only covered the registration states, we have up-scaled the numbers to the continental US using the information given in the same publication.

Total adult population: This comes from www.mortality.org from 1933. For years before 1933, we have linked the series backwards following that given in Kopczuk and Saez (2004).

In both cases, living population and decedents, the adult age cut-off is 20 years old. This is different to that selected for the UK (18 years old), but identical to the definition used by Kopczuk and Saez (2004), making our estate distribution series for the US comparable to their series for the distribution of wealth.

Adult mortality rate (m): It is estimated from total adult decedents over total adult population.

Total personal wealth (w): This comes from Kopczuk and Saez (2004) for years up to 2002, and from Saez and Zucman (2016) for years from 2003.

Ratio between the average wealth of the dying and the average wealth of the living (μ): This has been taken from Alvaredo, Garbinti and Piketty (2017), where it is given for years 1870 (based on US Census), 1962, 1983, 1986, 1989, 1992, 1995, 1998, 2001, 2004, 2007, 2010 and 2013 (based on the Survey of Consumer Finances, and corrected by differential mortality). Intermediate years have been linearly interpolated.

Total wealth passed at death: This has been estimated as $(m \mu w)$. Due to the low population coverage of US estate statistics, this is slightly different from the procedure followed for the UK (where a specific distinction has been made between identified estates and excluded estates – see Section 2 in the main text).

Table O3 gives the distribution of estates on four different bases, none of which corresponds to our preferred choice, but we have to make use of the data as published (we have not had access to estate micro-data). “Taxable estate” refers to its size after deduction of the tax exemptions (but including the specific exemption), whereas the “gross estate” is before deduction of debts. This means that the

gross estate is likely to overstate the top shares, and the “taxable estate net of debt” will understate the shares. The difference is most marked in the recent period. There is also the distinction between year of filing and year of death. Figure O1 compares the top 1 per cent and top 0.1 per cent according to the different definitions.

Figure O1. Comparison of wealth and estate distributions in the US

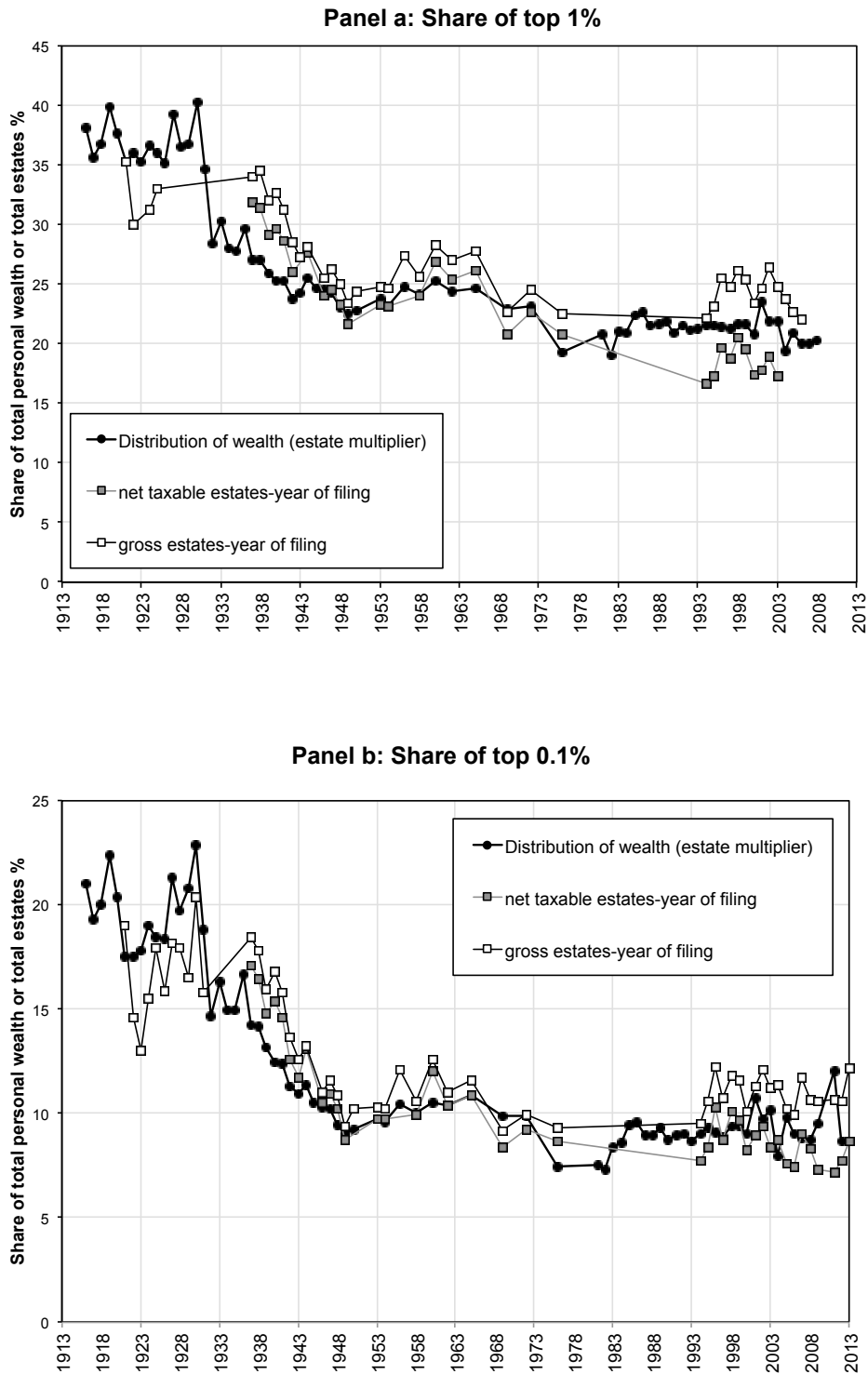


Table O1. Sources of tabulated data on the distribution of estates in the US 1920-2013

Year	Sources	
1920	SOI 1920	p. 41
1921	SOI 1921	pp. 27-30
1922	SOI 1922	pp. 58-63
1923	SOI 1923	pp. 36-42
1924	SOI 1924	pp. 78-84
1925	SOI 1925	pp. 72-78
1926	SOI 1926	pp. 52-57, 66
1927	SOI 1927	pp. 48-55, 62
1928	SOI 1928	pp. 54-59, 68
1929	SOI 1929	pp. 46-51, 54
1930	SOI 1930	pp. 54-59, 62
1931	SOI 1931	pp. 50-53
1932	SOI 1932	pp. 52-55
1933		
1934		
1935		
1936		
1937	SOI 1937	pp. 76-79, 88-89
1938	SOI 1938	pp. 237-247
1939	SOI 1939	pp. 262-269
1940	SOI 1940	pp. 212-219
1941	SOI 1941	pp. 258-265
1942	SOI 1942	pp. 284-291
1943	SOI 1943	pp. 312-319
1944	SOI 1944	pp. 316-323
1945		
1946	SOI 1946	pp. 360-367
1947	SOI 1947	pp. 380-387
1948	SOI 1948	pp. 342-349
1949	SOI 1949	pp. 362-369
1950	SOI 1950	pp. 237, 239
1951		
1952		
1953	SOI 1953	p. 74
1954	SOI 1954 Estate tax returns	pp. 17-18
1955		
1956	SOI 1956 Estate and gift tax returns	p. 7
1957		
1958	SOI 1958 Fiduciary, gift, and estate tax returns	pp. 59-60
1959		
1960	SOI 1960 Fiduciary, gift, and estate tax returns	p. 47-48
1961		
1962	SOI 1962 Fiduciary, gift, and estate tax returns	p. 60
1963		
1964		
1965	SOI 1965 Fiduciary, gift, and estate tax returns	p. 71
1966		
1967		
1968		
1969	SOI 1969 Estate tax returns	p. 11
1970		
1971		
1972	SOI 1972 Estate tax returns	p. 12
1973		
1974		
1975		
1976	SOI 1976 Estate tax returns	p. 15, Table 1
1977		
1978		
1979		
1980		
1981		
1982		
1983		
1984		
1985		
1986		
1987		
1988		
1989	IRS website	
1990		
1991		
1992	IRS website	
1993		
1994	IRS website	
1995	IRS website	
1996	IRS website	
1997	IRS website	
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2005	IRS website	
2006	IRS website	
2007	IRS website	
2008	IRS website	
2009	IRS website	
2010	IRS website	
2011	IRS website	
2012	IRS website	
2013	IRS website	

Notes: SOI denotes Statistics of Income published by the Internal Revenue Service (IRS)

Table O2. Control totals for the distribution of estates in the US 1921-2013

	Adult decedents aged 20 and over	Adult population aged 20 and over	Adult mortality rate	Total personal wealth	Total personal wealth passed at death
	000	000	per cent	billion USD	billion USD
1920					
1921	940	63,898	1.47	276	5.94
1922	955	64,769	1.48	281	6.07
1923	976	66,021	1.48	296	6.44
1924	1,000	67,457	1.48	310	6.78
1925	1,037	68,641	1.51	335	7.48
1926	1,130	69,843	1.62	356	8.53
1927	1,089	71,101	1.53	382	8.69
1928	1,138	72,359	1.57	428	10.04
1929	1,154	73,580	1.57	474	11.10
1930	1,138	74,963	1.52	414	9.43
1931	1,116	76,070	1.47	343	7.55
1932	1,126	77,125	1.46	281	6.13
1933	1,117	78,198	1.43	284	6.06
1934	1,159	79,362	1.46	304	6.62
1935	1,172	80,508	1.46	323	6.99
1936	1,257	81,625	1.54	365	8.34
1937	1,237	82,683	1.50	368	8.16
1938	1,181	83,769	1.41	357	7.44
1939	1,205	84,920	1.42	368	7.72
1940	1,237	86,118	1.44	376	7.98
1941	1,217	87,365	1.39	394	8.08
1942	1,211	88,393	1.37	430	8.67
1943	1,277	88,839	1.44	488	10.30
1944	1,239	88,258	1.40	552	11.35
1945	1,240	87,375	1.42	629	13.05
1946	1,232	90,619	1.36	705	13.99
1947	1,279	94,946	1.35	767	15.05
1948	1,283	96,467	1.33	822	15.91
1949	1,286	97,860	1.31	862	16.45
1950	1,304	99,223	1.31	917	17.48
1951	1,330	100,261	1.33	1,000	19.21
1952	1,340	101,048	1.33	1,067	20.45
1953	1,364	101,898	1.34	1,103	21.29
1954	1,332	102,868	1.30	1,160	21.63
1955	1,380	104,109	1.33	1,249	23.80
1956	1,414	105,351	1.34	1,338	25.77
1957	1,476	106,422	1.39	1,393	27.67
1958	1,488	107,448	1.38	1,471	29.12
1959	1,502	108,498	1.38	1,574	31.10
1960	1,555	110,080	1.41	1,637	32.95
1961	1,549	111,249	1.39	1,732	34.30
1962	1,606	112,475	1.43	1,822	36.94
1963	1,663	113,887	1.46	1,885	39.25
1964	1,650	115,376	1.43	1,999	40.92
1965	1,687	116,753	1.44	2,148	44.60
1966	1,727	117,983	1.46	2,253	47.58
1967	1,724	119,594	1.44	2,407	50.26
1968	1,804	121,591	1.48	2,694	58.11
1969	1,796	123,551	1.45	2,861	60.73
1970	1,797	125,666	1.43	2,936	61.52
1971	1,810	128,066	1.41	3,157	65.66
1972	1,854	130,636	1.42	3,546	74.35
1973	1,868	133,213	1.40	3,838	79.80
1974	1,835	135,757	1.35	3,885	78.18
1975	1,799	138,398	1.30	4,132	80.24
1976	1,819	141,174	1.29	4,670	90.26
1977	1,810	144,077	1.26	5,167	97.76
1978	1,840	147,093	1.25	5,726	108.27
1979	1,828	150,161	1.22	6,539	120.75
1980	1,905	153,197	1.24	7,509	142.17
1981	1,898	156,305	1.21	8,303	154.11
1982	1,898	159,053	1.19	8,853	162.07
1983	1,946	161,681	1.20	9,409	174.40
1984	1,968	164,179	1.20	10,093	185.71
1985	2,015	166,591	1.21	11,058	204.64
1986	2,034	168,745	1.21	12,222	224.66
1987	2,053	170,752	1.20	13,247	242.10
1988	2,097	172,634	1.21	14,350	264.04
1989	2,078	174,480	1.19	15,639	281.31
1990	2,079	176,422	1.18	16,371	288.67
1991	2,101	178,968	1.17	17,092	297.68
1992	2,111	181,706	1.16	18,057	308.43
1993	2,204	184,172	1.20	18,843	336.03
1994	2,217	186,277	1.19	19,455	349.58
1995	2,252	188,402	1.20	20,696	378.56
1996	2,257	190,500	1.18	22,684	397.79
1997	2,258	192,695	1.17	25,012	419.18
1998	2,282	195,144	1.17	27,740	447.66
1999	2,337	197,473	1.18	31,134	510.89
2000	2,349	199,878	1.18	32,936	539.40
2001	2,363	202,446	1.17	32,407	529.58
2002	2,390	204,943	1.17	31,544	518.59
2003	2,395	207,272	1.16	34,094	559.35
2004	2,344	209,606	1.12	39,338	629.16
2005	2,394	212,106	1.13	44,794	728.19
2006	2,373	214,634	1.11	49,178	788.45
2007	2,370	217,164	1.09	50,725	808.37
2008	2,421	219,668	1.10	45,194	742.20
2009	2,389	222,199	1.08	40,883	668.16
2010	2,423	224,830	1.08	43,375	724.66
2011	2,471	227,481	1.09	45,278	754.21
2012	2,500	230,100	1.09	48,235	794.88
2013	2,555	232,656	1.10	53,061	873.94

Appendix P. Linking of estimates and sensitivity of top wealth shares to linking assumptions

As analyzed in section 4, there are seven potential breaks in our estimates:

- A) at 1923 which is the first year for which we have estate data broken down by gender, as well as age and estate class;
- B) in 1938 when the data begin to cover Great Britain in place of England and Wales;
- C) in 1960 when the IR began to use the estate data to make wealth estimates;
- D) in 1974 when the data begin to cover the United Kingdom in place of Great Britain;
- E) in the 1970s and 1980s when there is a switch from a year of account basis to a year of death basis;
- F) after 2002 when HMRC introduced a new methodology for wealth estimation and the “New HMRC Estimates”;
- G) 2008-2010 when it became possible to use a form of micro data from the HMRC Datalab.

Of the seven, the element G should not in principle lead to any discontinuity (although we have drawn attention to the fact that the data in fact aggregate estates, which may lead to the results differing from those from the full micro data). In what follows, we consider the different potential breaks A-F, taking the post-2002 series as the point of reference, following the national accounts practice where estimates on earlier bases are revised to bring them into line with the most recent methodology.

First, there is geographic coverage. The earlier series constructed by Atkinson and Harrison (1978) showed a break for geographical coverage between 1938 (England and Wales, EW) and 1950 (Great Britain, GB). The differences are however small, as may be seen by comparing estimates on the two bases for 1938 to 1972 in Figure 5. For the top 1 per cent share, the maximum difference between the EW and GB estimates is 0.6 percentage points and for half the years the difference is 0.2 percentage points or less. We therefore treat the series as continuous at 1938. In the same way, the change to a UK basis in 1974 is assumed not to have materially affected the estimated top shares (the added population, that of Northern Ireland, is 2.9 per cent of the UK total).

The breaks B and D are therefore not further discussed. This leaves four breaks where the series have to be linked. The first of these concerns the use of gender-specific multipliers. Substituting multiplier number and wealth values with their respective weighted average by gender components in 1923 and 1924, yielded differences between the share of top 1 per cent with and without gender tabulation of respectively 0.7 and 0.5 percentage points. This suggests that we should reduce the

pre-1923 figures in each case by 0.7 percentage points, on the assumption that the difference is additive.

The next break is that in 1960. The earlier series constructed by Atkinson and Harrison shows a major break in continuity in 1960 (a break that has typically been ignored by users of the data), with the share of the top 1 per cent being lower by some 7 percentage points (1978, Table 6.5). This was based on the a priori grounds that there had been major changes in 1960 in the estate data available to the Inland Revenue: from that date, the data included estates below the tax threshold which nonetheless came to the notice of the Inland Revenue when a grant of representation was obtained. The underlying data became more complete, and it is also possible that the decision to prepare official estimates of wealth-holding from that year may have led to the estate statistics being collected with more care than in the past. The effect in terms of coverage may be seen from the fact that the statistics, when multiplied up, covered 17.9 million taxpayers (48.5 per cent of total adults), compared with 3.1 million with wealth above the threshold (£3,000) who were only 8.4 per cent of adults in 1960. As noted earlier, there are good reasons to suppose that for early part of the post-war period the allowance made by Atkinson and Harrison (1978) for the property of the excluded population was too low, under-estimating the value of joint property. This has been corrected, which reduces the downward jump in top shares (it is now 5 percentage points). Since there are no years of overlap, with estimates on different bases, there is no direct method of linking the series. However, as we argue in the next section, the data on estates are informative. Between 1959 and 1960, the estimated share of the top 1 per cent in estates fell from 34.72 per cent to 33.67 per cent. We have assumed that the difference of 1.05 percentage points represented the genuine change between the two years in the wealth shares, and linked the earlier wealth series on that basis (with corresponding assumptions for other wealth groups).⁹

For the remaining two breaks, we have estimates for overlapping years, and these form the basis for the linking. We have used the IR estimates on a year of death basis from 1978 onwards, adjusting the earlier year of account estimates by the difference in the estimated wealth shares in 1985 (an overlapping year, and one where the new estimates appear to have settled down). (The sensitivity to the choice of overlapping year is discussed below.)

Finally, there is the break associated with the adoption of a new methodology from 2002. The most important changes are the application of new multipliers and the adoption of a new sampling strategy of the estates population (HMRC, 2012). Since the latter was associated with a smaller sample size, the HMRC moved to producing estimates based on data averaged over three years (2001-2003, 2005-2007, and 2008-2010) in order to reduce sampling variation. We note that the

⁹ The 1959 estimates do not extend down to the top 10 per cent, so that the absolute difference for the top 5 per cent is used in this case.

HMRC has stated that “the overlap between the historical data and the new time period would allow users to construct a time series bearing in mind the limitations and changes to the methodology” (HMRC, 2012, page 16). However, in the main series we have adjusted the estimates prior to 2002 additively by the difference between the New HMRC Estimates for 2001-03 and those obtained for 2002 with the old methodology. In Section 5, when discussing the sensitivity of the estimates, we return to the problems surrounding the new methodology and the post-2000 wealth shares, and give an alternative set of estimates for the most recent years.

To sum up, although marginal in magnitude on average, we have made four additive adjustments in the course of linking the series, designed to bring them into line with the reference series for the most recent years. The series changes take place at “jump” points, as shown below:

2001: +0.19 on “old HMRC series” (this also applies to 2003 and 2005 old HMRC estimates);

1978: +0.80 when data relate to year of account, rather than year of death;

1959: -2.32 when more limited estate data available;

1923: -0.74 when estate data was not available by gender.

Sensitivity of the estimates to the use of different linking assumptions

An important source of variation of our final estimates may come from different procedures for linking at four distinct breaks in the series described earlier.

Here we consider three sets of alternatives: (1a) ruling out all linking assumptions, making use of the unadjusted new series every time it becomes available (see Figure 5); (1b) using the full set of five overlapping years in the 1970s and 1980s (1974, 1976, 1978, 1985, and 1987) in order to account for the switch from a year of account basis to a year of death basis; and (1c) replacing the use of estate data for the 1959 to 1960 by the assumption that there was no change in the shares between the two years (otherwise retaining an additive adjustment for the other breaks).

The magnitudes listed above should make it clear that the effects are small, as is the impact of the alternative assumptions. There is some tendency for the effects to be greater in earlier years. For example, under the assumption used in our series, years before 1960 have a downward adjustment of 1.33 percentage points. If we were make assumption (1c) this would become an upward adjustment of 0.99. Both effects are modest. It is of course possible that they interact with other effects, generating a larger combined effect. Our conclusion is however that the linking assumptions taken on their own have only limited consequences for the estimates.

Appendix Q. Assessing the potential effect of unrecorded wealth on top shares

Estimating missing wealth held in trust and imputing it to the top 1 per cent group

Estimates of missing wealth held in trust are derived from information on Trusts statistics published by HMRC. In particular we make use of Table 13.1 showing the number of UK Family Trusts and estates filing a Self-Assessment return, their income and tax paid. The statistics cover UK family trusts, such as Interest in possession trusts, Discretionary trusts, Accumulation trusts, and Mixed trusts. Trustees are responsible to declare income received by the trust each year on a Trust and Estate Tax Return, part of the self-assessment tax return. The table identifies dividend income, interest income, income from property, other incomes and chargeable gains. The sources of income are separately identified for two main groups of trusts: interest in possession trusts as well as for “trusts paying taxes at rates applicable to trusts”.

Total investment income from trusts is identified as the sum of all sources of income for all trusts. Total investment income is capitalised at the average rate of return on wealth from 1995 to 2009 from Table 3 in the text (5.6%), and added to the trusts chargeable gains to estimate total wealth in trusts. In a similar exercise, Kopczuk and Saez (2004) capitalised total investment income from US trusts with a rate of return of 7.5%.

Once the total wealth held in trusts is estimated, we link it to HMRC estimates of wealth in trusts excluded from the wealth statistics (available for 1994-2005 from HMRC series C; HMRC Table 13.3 ‘Personal wealth. Reconciliation of Identified wealth and Balance sheet household wealth’); as explained in the text, not all trusts are excluded from estate and wealth statistics) and impute it to the top 1 per cent group. The effect of the adjustment is shown in Table Q1.

Table Q1. Excluded wealth in trusts 1994-2012
(billion £)

	1994	1996	2001	2002	2003	2005	2008-09	2009-10	2010-11	2011-12	2012-13
Income received by interest in possession trusts (dividend income, interest income, income from property, other income) (a)			1.07	1.05			1.05	0.86	0.76	0.84	0.88
Income received by trusts paying tax at the rate applicable to trusts (dividend income, interest income, income from property, other income) (b)			0.80	0.80			1.54	1.78	0.96	1.12	1.12
Total capital income from trusts (c=a+b)			1.86	1.84			2.59	2.64	1.71	2.59	2.64
Chargeable gains (d)			0.71	0.66			1.50	2.06	2.16	1.44	1.20
Total income from trusts (e=c+d)			2.57	2.50			4.09	4.70	3.87	4.09	4.70
Rate of return for capitalization (%)			5.6%	5.6%			5.6%	5.6%	5.6%	5.6%	5.6%
Total wealth settled in trusts			33.97	33.56			47.73	49.18	32.73	47.66	48.32
Total wealth settled in trust (natural year adjustment)			34.11	33.70			47.26	48.70	38.22	42.69	48.10
Total wealth in trusts excluded from identified wealth as estimated by HMRC estimates up to 2005 (f)	14.00	17.00	25.00	21.00	19.00	24.00					
Estimated wealth in trusts excluded from identified wealth, and added to the top 1 per cent group (g)	14.00	17.00	25.00	21.00	19.00	24.00	32.06	33.03	25.93	28.96	32.63
Total wealth held by top 1 per cent	717.81	746.79	1,302.45	1,394.19	1,493.76	1,864.52		1,125.67			1,285.92
Percentage points increase in top 1 per cent share as a result of adding the estimated wealth in trusts	0.6	0.7	0.6	0.5	0.4	0.4		0.7			0.5
Total excluded wealth in trusts as % of wealth held by top 1 per cent	2.0%	2.3%	1.9%	1.5%	1.3%	1.3%		2.9%			2.5%

Note: estimates of investment income from trusts (rows a, b, c, d) taken from HMRC Table 13.1 "Trusts and estates which make a full Self Assessment return"; estimates of total wealth in trusts excluded from identified wealth up to 2005 (row f) taken from HMRC Table 13.3 "Personal wealth. Reconciliation of Identified wealth and Balance sheet household wealth."

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