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The Comfortable, the Rich, and the Super-rich. What Really Happened to Top British Incomes During the First Half of the Twentieth Century?

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The comfortable, the rich, and the super-rich. What really happened to top British incomes during the first half of the twentieth century?

Highlights

- We use newly re-discovered estimates to examine shifts in British income inequality and their causes between 1911 and 1949.
- We show that income was substantially more concentrated at the top of the income distribution in 1911 than previous estimates suggest, and that the top 1 per cent were the principal "losers" in the subsequent trend towards reduced income inequality.
- Policy shocks, policy-responses, & non-market mechanisms create more equal distribution (1911–49) and enabled governments to tax the rich and limit the "offshoring" of their wealth through capital controls and other means.
- The return to globalisation has had the opposite effect, both for high worth individuals and corporations.

Abstract
We examine shifts in British income inequality and their causes between 1911 and 1949. Newly re-discovered Inland Revenue 1911 estimates and more detailed data from subsequent official income distribution enquiries are used to show that income was substantially more concentrated at the top of the income distribution in 1911 than previous estimates suggest, and that the top 1 per cent were the principal "losers" in the subsequent trend towards reduced income inequality. We find that this trend reflected a sharp decline in top "unearned" incomes - paralleling the findings of Piketty and Saez for France and the USA. This explains the paradox between the observed reduction in British income inequality and the lack of evidence for any substantial redistribution of income between salary and wage-earners.

Keywords
Income inequality, United Kingdom

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Research on long-term changes in British income inequality has been hampered by very limited data compared, for example, to the USA or France (Pikkety, 2003; Pikkety and Saez, 2003; 2006; 2013). The 1937/38 Inland Revenue Incomes Census was Britain's first published official income distribution estimate, with the exceptions of estimates for 1918/19 and 1919/20 (that are generally rejected as atypical, given the inflationary conditions around the end of the First World War). This paper focuses on changes in the incomes of the top 0.001 - 5 percent of the British income distribution. Top incomes are important largely because income redistributions in western countries are typically dominated by changes in the shares of this group, especially within the top percentile (Piketty and Saez, 2006, pp. 201-2). Changes in top income shares have also been identified as key potential drivers of income inequality reduction in Britain during the first half of the twentieth century, given the very limited changes in inequality among wage/salary-earners (Lindert, 2000, p. 169; Gazeley et. al. 2017; Townsend, 1979, p. 139; Routh, 1965, pp. 51-108). Thus examining higher incomes is crucial to explaining the apparent paradox between a relatively stagnant income distribution among the bulk of the British population and the generally-assumed trend towards a more equal pre-tax income distribution (Lindert, 2000, p. 169).

This study is based on an extensive survey of Inland Revenue (hereafter IR) files held at The National Archives, Kew. We identified an unpublished IR survey of the distribution of personal incomes over £160 for 1911 and data that provide more detailed disaggregation for top incomes in 1937. These sources both enable us to examine changes in top incomes for three key bench-mark years (1911, 1937, and 1949) for the first time, and to explore the relative contributions of earned and unearned incomes to the redistribution.

We first focus in detail on the 1911 income distribution estimate and its methodology - as this data was not published, appears to have been confidential, and (to the best of our knowledge) has not been identified by any previous studies. We then outline subsequent British income distribution estimates for the first half of the twentieth century. The 1911, 1937 and 1949 distributions (the only ones in this period that disaggregated personal income between "earned" and "unearned" components) are used to examine the contribution of falling capital income - that dominated the declining income shares of the rich - to the overall decrease in income inequality. Finally, we explore the factors behind the fall in top capital incomes. Our findings are in line with other recent studies, that the redistribution was driven primarily by shocks, policy responses, and non-market mechanisms, rather than technological change. We also find that declining capital and land factor incomes directly benefited lower-income groups (for example through lowering house prices and rents).

A re-discovered set of estimates

The long-term decline in British inequality is often dated from just prior to the First World War (with a possible slight decline from 1867-1911) (Lindert, 2000, pp. 174-185). However, there are no published official classifications of the income distribution before 1918. IR data for the nineteenth century only measured income categories, known as 'Schedules' (property - Schedule A; profits from farming land - Schedule B; interest and dividends - Schedule C; incomes from trade or business, professions, and some miscellaneous items - Schedule D; and salaries and wages - Schedule E).

The 1906 and 1910 Liberal government tax system reforms introduced differentiated (according to income source) and graduated taxation, together with tax allowances for dependent relatives and certain other expenses. These, together with the super tax, provide much better information on personal incomes for tax-payers; especially for people at the lower-end of the income-tax scale and for the top end (super tax payers) (Daunton, 2001, pp. 361 & 367). Income tax data relate to tax years, starting in April. However, given lags between the receipt and reporting of incomes for tax purposes, almost all the income recorded was for the calendar year when the tax year began or, for some kinds of income (such as Schedule D), even earlier (Atkinson, 2007, pp. 128-134). Therefore, we will refer to income tax data as covering the year in which the tax year of assessment began. IR personal tax estimates typically show taxable income – net of any charges on that income (such as loan interest or ground rent) and excluding depreciation; part of government transfers; the investment income of life assurance and superannuation funds, plus not for profit bodies; employers' and most employees' contributions to national insurance and private pensions (though income from all retirement pensions was included); most income in kind; part of the imputed rent of owner-occupied houses; and interest on National Savings Certificates (Lydall, 1959, pp. 28-29; UK, Inland Revenue, 1946, pp. 28-29).

The first official income distribution estimate was an unpublished exercise by the IR for 1911, for use, "in making confidential estimates, especially in connection with any legislation... Estimates affecting particular ranges of income can only be satisfactory when it is possible to see how they fit in with all other incomes dealt with."[1] Unlike later official estimates, the 1911 estimation was kept confidential. The reasons for this are not discussed in the surviving records, but probably reflected the extreme political sensitivity of Britain's high concentration of income and wealth, in

[1] TNA, IR64/28, "Income tax. Classification of taxable income – year 1911-12," unsigned memorandum, no date, c. 1914.

the wake of the new land taxes introduced in Lloyd George's 1909 "People's Budget" and the political storm and constitutional crisis this created (Offer, 1981, pp. 317-400).

The 1911 estimate covered people above the income tax threshold (£160 per annum). The estimation was based on the income tax and super-tax returns (and, for unearned income, estate duty, settlement estate duty and probate data) with a series of adjustments to take account of estimated incomes that fell outside the tax data. Total taxable income comprised £322,531,000 of earned income and £543,923,000 of unearned income – from which was deducted an estimated £1,000,000 of unearned income for people below the tax threshold and £65,454,000 of "impersonal income" for companies and similar bodies. Total personal incomes over £160 thus amounted to approximately £866,454,000 minus £66,454,000, i.e. £800,000,000.[2] The IR regarded their income estimates between £160 and £700 to be "based on sufficiently accurate income tax figures to be beyond question", as they were calculated using income tax liabilities net of tax abatements.[3] However, classifying incomes between £700 and £5,000 was acknowledged to be more problematic, as this could only be done by taking a curve between these two points. When this was done for earned and unearned income the curves seemed implausible, as the unearned line sloped gradually, while the earned line dropped sharply.[4]

Moreover, the unearned income line cast doubt on the accuracy of estimated incomes over £5,000, derived from the super tax data. Starting from a total unearned income of £525 million, it was noted that the income distribution should broadly correspond to the capital disclosed by each income group. In addition to around £280 million of capital declared for estate duty, there was an estimated £80 million not declared, as probate and settlement estate duty had previously paid in respect of it.[5] The original "red line" estimate was based on the assumption that this hidden capital was distributed by income in the same proportion as declared capital. However, as officials noted, "In reality… the proportion of Settled Capital is higher in the larger estates, where great blocks of land etc., pass under settlement."[6] Further support for this correction was drawn from the fact that, while the line of total income ought to gradually approach the "unearned" line, the unearned line actually crossed the red total income line at £12,000, "thus giving the result that the *unearned hypothetical income left after this point exceeds the corresponding total income declared*

2 Ibid.
3 Ibid.
4 Ibid.
5 Annual data for both of these duties were collated by the IR and published in their annual reports. Emphasis in original.
6 TNA, IR64/28, "Income tax. Classification of taxable income – year 1911-12," n.d., c. 1914.

for Super-Tax."[7] Thus a corrected "blue-line" estimate for unearned incomes was calculated, which was extended to all incomes over £700.

Incomes exceeding £5,000 were also adjusted by the deduction of life assurance premium tax allowances. Total insurance premium income allowed to income tax payers was £11,882,213, of which £1,500,000 was attributed to taxpayers with total incomes exceeding £5,000. Of this sum, £200,000 was estimated to apply to incomes of £5-6,000, some of which were exempted from super-tax by the deduction of insurance premiums. Assuming the true income of the £5-6,000 group to be around £25,000,000, a "liberal estimate" of £13,500,000 was taken as exempted from super-tax by the deduction of insurance premiums. The published super tax incomes were therefore adjusted as follows:

1)	Published total	£145,000,000
2)	Insurance premiums to incomes over £6,000	£1,300,000
3)	Insurance premiums to incomes of £5,000-6,000, used to secure exemption from super-tax	£200,000
4)	Income exempted from super-tax under (3)	£13,500,000
5)	Total super-tax adjusted to income-tax basis	£160,000,000

Earned income for the over £5,000 group (£49,231,000) was estimated by subtracting earned income for income tax-payers below this threshold from total earned income; though direct estimates from the tax schedules produced a similar figure (around £50,000,000).[8] In determining unearned incomes, the aggregate capital declared for Estate Duty (£280,000,000) was adjusted upwards by an estimated £80,000,000 for capital not declared because probate and settlement estate duty had previously been paid in respect of it - concentrated among the larger estates. This revised "blue ink line" estimation raised incomes over £5,000 from being represented by log 8.204 = £160,000,000 to log 8.333 = £215,300,000.[9] This revision may still have under-estimated the income share of the very rich, as settlement estate duty - on which the revised calculations were made, was said to be commonly avoided (Mandler, 1997, p. 174).

Table 1 shows the IR's corrected "blue line" 1911 income distribution estimate, together with the total UK population of "tax units" - either a single adult (or a single minor with income in his or

[7] Ibid.
[8] Ibid.
[9] TNA, IR64/28, 'Income tax. Classification of taxable income – year 1911-12,' statistical memorandum, n.d., c. 1914.

her own right), or a married man and wife, together with their dependents - including those who did not pay any income tax (Lydall, 1959, p. 6). We follow the approach of the World Top Incomes Database and earlier studies in using tax data for top incomes and national accounts data for aggregate personal incomes (Piketty and Saez, 2013, pp. 457-8). In the following tables we use Tony Atkinson's annual estimates for both the tax unit and personal income totals. This produces plausible figures for average incomes per tax-unit equivalent for the residual income range below the minimum classified income in all cases. Atkinson's tax unit data are based on males and females aged 15 or over, minus married females (and ignoring minors under 15 with income).[10] His total incomes data are based on national accounting data on relevant personal incomes. As Atkinson acknowledges, the early figures in particular are subject to a significant margin of error, though we do not consider that we could improve on them (Atkinson, 2005, p. 331).

Table 2 shows an alternative 1911 income distribution estimate, also mainly drawing on IR data, developed by Lindert and Williamson (1983), with subsequent corrections by Lindert (2000), which builds on earlier work by Arthur Bowley, Josiah Stamp, and Guy Routh (hereafter BSR estimate). These data are based on households rather than tax units, though for incomes over £160 the two sources give very similar numbers of incomes. The two estimates show major differences for income classes over £700, reflecting the IR's reallocation of income from the £700-5,000 range to classes over £5,000. This raised the over £5,000 group's share of personal incomes over £160 from 17.8 per cent in the BSR estimate to 26.9 per cent. However, aggregate income for tax units with over £700 is roughly similar for the two estimates.

[10] Atkinson's (2005, p. 330) figure for 1949 is identical to the estimate in Britain's main annual national accounts publication, the 'Blue Book' estimate, of the total number of tax units with incomes of £50 or over (UK, CSO, 1957, p. 22.).

Table 1 The Inland Revenue's 1911 personal incomes distribution estimate

Income range	Taxpayers	Earned	Unearned	Total	Net income tax
£ per annum	No.	£,000	£,000	£,000	£,000
0-160	21,688,520	1,016,000	1,000	1,017,000	58
160-200	343,670	48,250	13,612	61,862	336
200-300	260,550	50,150	14,988	65,138	1,031
300-400	130,330	35,126	10,490	45,616	1,077
400-500	77,420	24,906	9,935	34,841	1,039
500-600	50,500	16,665	11,111	27,776	1,050
600-700	32,060	9,377	11,461	20,838	943
700-800	28,700	7,535	13,994	21,529	1,098
800-900	26,350	6,720	15,680	22,400	1,162
900-1,000	22,530	5,992	15,408	21,400	1,118
1,000-2,000	81,400	32,812	89,288	122,100	6,417
2,000-3,000	26,720	17,167	49,633	66,800	3,732
3,000-4,000	12,140	10,737	31,763	42,500	2,451
4,000-5,000	7,090	7,863	24,037	31,900	1,843
5,000-10,000	11,130	20,456	63,044	83,500	4,838
10,000-15,000	2,980	8,556	28,644	37,200	2,158
15,000-20,000	1,070	4,290	14,450	18,740	1,084
20,000-25,000	610	3,029	10,741	13,770	796
25,000-35,000	550	3,436	12,944	16,380	946
35,000-45,000	260	2,148	8,082	10,230	592
45,000-55,000	133	1,395	5,245	6,640	384
55,000-65,000	90	1,134	4,266	5,400	313
65,000-75,000	56	827	3,113	3,940	228
75,000-100,00	69	1,262	4,748	6,010	348
100,000 +	72	2,698	10,792	13,490	774
Total (£160+)	1,116,480	322,531	477,469	800,000	35,759
Total	22,805,000	1,338,531	478,469	1,817,000	35,759

Notes: Unearned income under £160 estimate is from the 1911 enquiry. Earned income for the under £160 group is derived by abstracting total unearned income and total earned income for the £160+ classes from total income. Income tax for the under £160 group is based on unearned income, taxed at source at 5.8 per cent.

Source: TNA, IR64/28, "Income tax. Classification of taxable income – year 1911-12," statistical memorandum, n.d., c. 1914, Tables 7 and 10, and subsequent tabulations showing the adjusted 'blue line' series, c. 1914. Total tax unit equivalents and incomes are from Atkinson, (2007), pp. 180-181.

Table 2 A comparison of the 1911 Inland Revenue income distribution estimate and the Lindert and Williamson estimate based on the Bowley-Stamp-Routh (BSR) data

	1911 "blue line" IR data		BSR data for households	
Income range £ per annum	Taxpayers No.	Income £ million	Households No.	Income £ million
0-160	21,688,520	1,017.00	13,581,636	1,134.69
160-200	343,670	61.86	347,574	72.56
200-300	260,550	65.14	303,627	84.80
300-400	130,330	45.62	105,870	41.06
400-500	77,420	34.84	79,301	38.50
500-600	50,500	27.78	48,662	28.64
600-700	32,060	20.84	29,300	20.10
700-5,000	204,930	328.63	200,000	416.63
5,000-10,000	11,130	83.50	8,143	55.12
10,000-15,000	2,980	37.20	2,090	25.21
15,000-20,000	1,070	18.74	813	13.99
20,000-25,000	610	13.77	442	9.77
25,000-35,000	550	16.38	393	11.56
35,000-45,000	260	10.23	191	7.58
45,000-55,000	133	6.64	109	5.43
55,000-65,000	90	5.40	57	3.35
65,000-75,000	56	3.94	36	2.52
75,000-100,000	69	6.01	57	5.01
100,000 +	72	13.49	68	12.51
Total (£160+)	1,116,480	800.00	1,126,733	854.33
Total	22,805,000	1,817.00	14,708,369	1,989.02

Sources: IR data, as for Table 1, "BSR" estimate, Lindert and Williamson, (1983), p. 99; modified in Lindert, (2000).

Income estimates for 1918-1949

The First World War is believed to have significantly reduced income inequality; including both a redistribution from the upper and middle-classes to the working-class and from skilled to less-skilled manual workers (Routh, 1965, p. 104). IR estimates of the income distribution for tax-payers in 1918 and 1919 were produced for evidence in two official enquiries. These covered just under a quarter and just under a third of all tax unit equivalents respectively, compared to only 4.9 per cent in the 1911 classification. Table 3 shows the income distribution for 1918 and 1919, together with the tax levied at each income band (after allowances etc.).

The data were acknowledged to be imperfect, especially given the inadequate information available for estimating non-personal income and income accruing to residents abroad –

collectively estimated at £230,000,000 for 1918 and £260,000,000 in 1919.[11] As profits under Schedule D were then assessed based on the average over the previous three years, the 1918 and 1919 data also partially reflect the very high profit rates of the War years and the wider inflationary environment (Lydall, 1959, p.2). Like the 1911 estimate, the data representing the super-tax income bands show substantially larger numbers of individual incomes than the super-tax data, suggesting that the figures were adjusted to take account of settled estates and similar distortions (UK, Inland Revenue, 1920, p. 85).

[11] (UK, Inland Revenue, 1920, p. 68); TNA, IR 75/131, Committee on the National Debt and the Incidence of Existing Taxation, Memorandum on the statistics of the Inland Revenue Duties, May 1924, p. 24.

Table 3 IR estimates of the distribution of personal incomes for 1918 and 1919

	A: 1918/19			B: 1919/20		
Income range	Incomes	Amount	Income/ Super-tax	Incomes	Amount	Income/ Super-tax
(£)	No.	£,000	£,000	No.	£,000	£,000
0-130	17,958,000	1,804,428	negl.	15,914,000	1,485,820	negl.
130-160	2,665,000	373,113	2,157	3,490,000	488,888	2,326
160-200	1,280,000	223,700	3,495	2,031,400	355,250	4,123
200-250	545,000	119,849	3,777	751,700	165,000	4,174
250-300	300,000	80,970	3,779	411,000	110,700	4,211
300-400	300,000	102,000	6,156	372,900	126,206	6,963
500-500	165,000	72,550	5,771	180,000	78,890	6,067
500-600	94,000	50,700	5,916	108,700	58,696	6,626
600-700	65,400	41,830	5,661	74,850	47,904	6,267
700-800	50,960	37,704	5,840	60,400	44,696	6,624
800-900	38,700	32,507	5,300	47,640	40,022	6,529
900-1,000	32,340	30,400	5,002	38,920	36,583	6,007
1,000-1,500	85,000	101,847	20,594	98,430	118,088	23,912
1,500-2,000	37,200	64,001	15,316	44,440	75,554	18,163
2,000-2,500	24,200	53,548	14,866	24,870	54,702	15,383
2,500-5,000	39,680	136,334	43,417	37,760	130,030	42,980
5,000-10,000	15,330	105,500	38,725	16,720	114,870	45,175
10,000-15,000	4,450	54,320	22,400	4,850	58,650	26,250
15,000-20,000	1,750	30,280	13,198	2,043	35,005	16,520
20,000-25,000	910	20,290	9,106	992	22,022	10,725
25,000-30,000	595	16,250	7,435	650	17,680	8,820
30,000-40,000	575	19,720	9,146	685	23,471	12,050
40,000-50,000	320	14,180	6,676	390	17,333	9,150
50,000-75,000	305	18,300	8,692	358	21,467	11,600
75,000-100,000	135	11,680	5,572	137	11,782	6,470
Over 100,000	150	30,000	14,633	165	33,690	19,140
Total (130+)	5,747,000	1,841,572	282,630	7,800,000	2,287,180	326,256
Total (all)	23,705,000	3,646,000	282,630	23,714,000	3,773,000	326,256

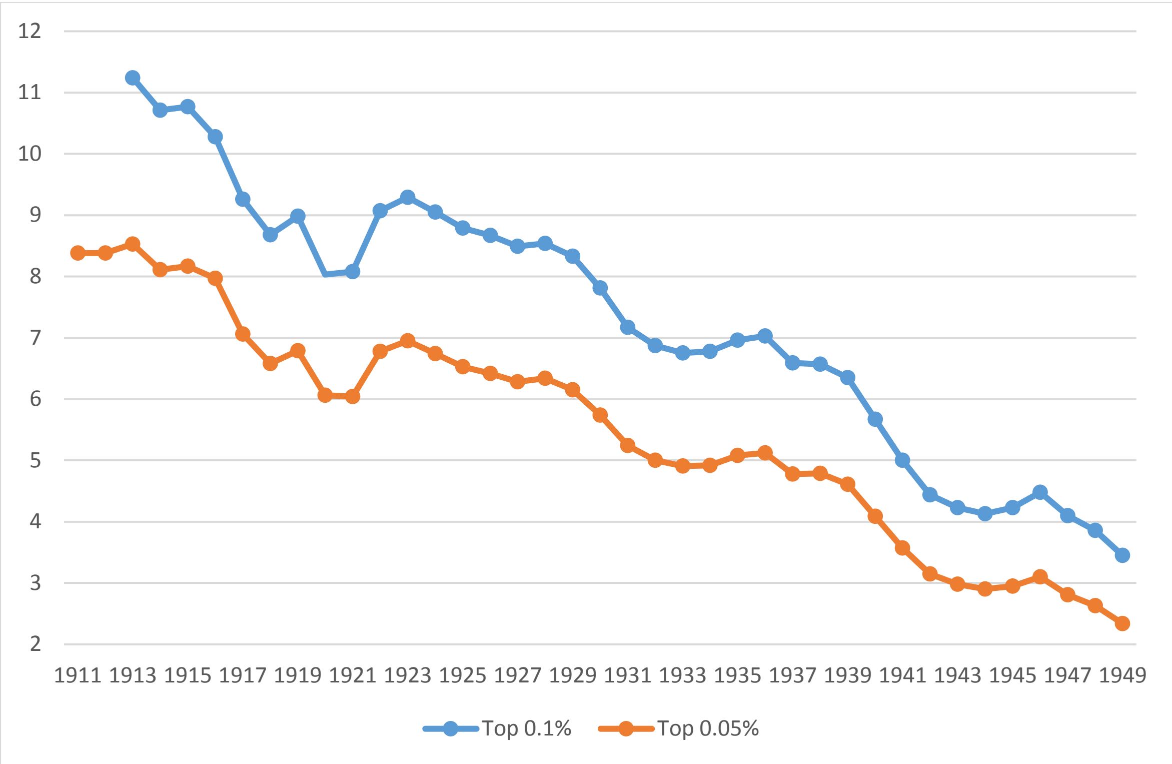
Source: 1918 estimate, UK, Inland Revenue (1920), p. 70. 1919 estimate, TNA, IR 75/131, Committee on the National Debt and the Incidence of Existing Taxation, Memorandum on the statistics of the Inland Revenue Duties, May 1924, pp. 28-29.

No similar data are available until the late 1930s, as changes introduced in the 1920 Finance Act made income distribution estimates using IR tax data impracticable. The only usable data for intervening years cover the super-tax income brackets.[12] Figure 1 shows Atkinson's estimates of the income shares of the top 0.05 and 0.01 per cent of the income distribution from 1911-1949,

[12] UK, TNA, IR 64/164, note (signature illegible), August 1939.

based on super-tax data (except for 1918, 1919, and 1937, and 1943-49, where he used the IR income distributions). Despite the 1918 and 1919 estimates typically being dismissed as irrelevant owing to the inflationary and turbulent conditions of these years (e.g. Bowley, 1942, p. 113), Atkinson's data suggest that they were not atypical of the longer-term super-tax/surtax income trend.

Figure 1 Changes in the personal income shares of the top 0.05 and 0.1 per cent, according to super/sur-tax returns, 1911 – 1949



Source: Adapted from Atkinson (2005), pp. 328; using Atkinson's data set available from http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1467-985X/homepage/168_2.htm

The next IR income distribution estimate, for 1937, was based on a special investigation of all tax returns for incomes of £200 or more (16.53 per cent of all tax units); the first of a series of what came to be known as "Surveys of Personal Incomes" (hereafter "SPI's") (UK, Inland Revenue, 1946, pp. 28-29). Published data from the investigation provides very limited disaggregation for incomes over £20,000 – with only three income classes, the highest covering incomes over £50,000. Fortunately, the final working sheets from the survey have survived, enabling us to replace the three highest income classes with seven income classes, the highest of which covers £100,000 or more, in Table 4.[13]

[13] Source: TNA, IR 64/163, data sheets for the 1938-39 Surtax census. Notes: figures are virtually identical to the published totals when aggregated (the differences being small enough to represent rounding errors, given that the data sheet figures were to the nearest pound, rather than to the nearest thousand pounds).

Table 4 The IR's 1937 personal income distribution estimate

Income range	Tax units	Incomes		
		Earned	Unearned	Total
(£)	No.	(£,000)	£,000)	(£,000)
0-200	20,776,062	2,895,581	n.a.	n.a.
200-220	755,781	149,035	8,819	157,854
220-250	800,446	172,709	13,988	186,697
250-300	811,502	197,560	22,331	219,891
300-400	710,358	203,499	38,506	242,005
400-500	315,444	108,483	31,287	139,770
500-600	176,815	70,336	25,864	96,200
600-700	108,275	48,149	21,734	69,883
700-800	73,810	36,363	18,721	55,084
800-900	53,460	28,876	16,376	45,252
900-1,000	40,374	23,312	14,925	38,237
1,000-1,500	112,448	77,657	58,196	135,853
1,500-2,000	50,919	46,121	41,485	87,606
2,000-2,500	28,364	29,379	33,971	63,350
2,500-3,000	17,827	21,114	27,582	48,696
3,000-4,000	20,302	28,231	41,518	69,749
4,000-5,000	11,049	18,959	30,265	49,224
5,000-6,000	6,740	13,699	23,110	36,809
6,000-8,000	7,383	17,839	32,962	50,801
8,000-10,000	3,753	11,555	21,836	33,391
10,000-15,000	4,195	15,885	34,716	50,601
15,000-20,000	1,569	8,017	18,870	26,887
20,000-25,000	761	4,720	12,182	16,902
25,000-30,000	369	3,020	7,087	10,107
30,000-40,000	426	4,460	10,066	14,526
40,000-50,000	163	1,745	5,506	7,250
50,000-75,000	231	3,478	10,296	13,774
75,000-100,000	89	1,627	5,898	7,524
£100,000 +	85	1,592	14,004	15,596
Total (classified)	4,112,938	1,347,419	642,101	1,989,520
Total (all)	24,889,000	4,243,000	n.a.	n.a.

Notes: Figures above £20,000 are consistent with the published data, but provide greater disaggregation. Incomes under £200 are based on subtraction of total tax unit equivalents and incomes from the classified totals.

Sources: Incomes £200-20,000, UK, Inland Revenue (1946), p. 30; incomes over £20,000, TNA, IR 64/163, data sheets for the 1938-39 Surtax census.

Further estimates were made for 1938, 1941, 1947, and 1948, based on the 1937 SPI, up-dated by the annual statistics of assessments and other data (UK, Parliamentary Debates, 1942; UK,

Earned income was derived from unearned and total income, as the individual categories of earned income appear to have been gross of allowances.

Inland Revenue, 1949, p. 34; UK, Inland Revenue, 1950, pp. 83-87). In 1949 a new SPI was conducted, based on a 10 per cent sample survey of all income taxpayers (Lydall, 1959, p. 3). The IR found that the 1949 SPI had important discrepancies when compared with other evidence. There was a considerable deficiency in income from interest and dividends taxed at source (mainly affecting income ranges below £2,000); plus an apparent omission, as compared with National Insurance statistics, of over a million women in paid employment. The IR (1952, pp. 96 & 117) produced a corrected distribution, to include these incomes. Further revisions were made when the 1949 data were published in the 1954 "Blue Book" (Britain's main annual national accounting publication). These appear to involve an adjustment raising the aggregate value of real property (Schedule A) income, to take account of the average rise in rents since the last revaluation in 1935/36 (Lydall, 1959, p. 26).

We have compiled a composite series, using the official "Blue Book" figures for incomes from £250-£20,000, together with incomes over £20,000 from the original 1949 SPI. No disaggregated data for incomes over £20,000 were available in any tabulation other than the SPI, though total numbers of incomes, and their amounts, for this range change very little between the different estimates. Data for incomes of £135-150 and 150-250 are from the corrected (Table 110) IR figures. The collated table has totals for incomes and numbers of tax units over £250 which are identical to the National Statistical Agency (a predecessor of the Office for National Statistics) estimates, to three significant figures.

Table 5 The IR's 1949 personal income distribution estimate

Income range £	Tax units Number	Income £M
0-135	5,497,066	489.27
135 - 150	853,000	122.00
150-250	6,100,000	1,217.00
250-500	9,980,000	3,477.00
500-750	2,130,000	1,260.00
750-1,000	560,000	480.00
1,000-1,500	400,000	480.00
1,500-2,000	150,000	255.00
2,000-3,000	118,000	284.00
3,000-5,000	68,000	255.00
5,0000-10,000	33,000	224.00
10,000-20,000	9,000	117.00
20,000-24,999	792	17.78
25,000-29,999	420	11.57
30,000-39,999	355	12.27
40,000-49,999	149	6.77
50,000-74,999	128	7.92
75,000-99,999	50	4.48
100,000 +	40	8.94
Totaln (classified)	20,402,934	8,241
Total (all)	25,900,000	8,730

Notes: Lowest income classes are based on subtracting all income units and incomes from the total classified values.

Sources: Income ranges £135-250, UK, Inland Revenue, (1952), p. 117; £250-£20,000, Source: UK, CSO, (1954), p. 29; £20,000 and over, UK, Inland Revenue, (1952), p. 97.

New estimates for top income shares and their earned and unearned components

We present the five 1911-49 British income distribution estimates based on direct data, (rather than adjustments to previous years' estimates) in Table 6. For three of these, 1911, 1937, and 1949, the data are disaggregated into earned and unearned components, enabling us to explore the relative importance of capital and labour income in the declining incomes of the rich. Our analysis is restricted to the top five percent of the population, as the 1911 survey does not classify lower incomes (which were not then subject to income tax). However, we are still able to examine top incomes at all typical bench-marks up to this level (the top 0.01, 0.05, 0.1, 0.5, 1 and 5 per cent of British tax units). Moreover, our unusually detailed data for very top incomes enables us to examine total income shares of the top 0.001 per cent - the ultra-rich group; comprising 228 tax units in 1911.

We considered two alternative approaches for estimating income shares. The first is the standard method in the literature, of using the Pareto distribution (e.g. Atkinson and Piketty, 2010), and the second is to assume a linear approximation between the tabulated intervals. The Pareto approach has been found to be an accurate approximation towards the upper end of the income distribution (particularly for the top 1 to 0.1 percent), but performs poorly for levels above the 0.1 percent (Stamp, 1914, pp. 200-204; Feenberg and Poterba, 1992, pp. 172-73).

A linear weighted average constitutes a poor approximation where there are few income classes, as the curvature of the distribution is lost if the raw data do not align closely to the critical points in the distribution. However, this is clearly less of an issue where there are large numbers of income categories, as little interpolation is needed. As we have a relatively large number of categories for each year - 25, 29 and 33 bands in 1911, 1937 and 1949 respectively (see Tables 1, 4, and 5), we adopt this second method.

Table 6 Income shares by percentage of top incomes, 1911, 1918, 1919, 1937 and 1949 (percent of tax units)

Year	0.001	0.01	0.05	0.1	0.5	1.0	5
1911[a]		4.19	8.38				
1911[b]						21.75	38.69
1911[c]	1.44	4.60	9.53	13.81	23.84	30.15	44.97
1918	1.03	3.20	6.40	8.24	15.71	19.36	30.32
1919	1.06	3.32	6.79	8.98	16.42	19.48	31.44
1937	0.65	2.17	4.74	6.73	13.00	16.90	31.73
1949	0.27	1.06	2.41	3.00	8.09	11.42	23.38

Sources: 1911a A.B. Atkinson, 'The distribution of top incomes in the United Kingdom, 1808-2000', 126-198 in A.B. Atkinson and Thomas Piketty, Top Incomes over the Twentieth Century: A Contrast between Continental Europe and English-speaking Countries (Oxford: Oxford U.P., 2007), p. 141. 1911b P. Lindert provided at http://gpih.ucdavis.edu/Distribution.htm. For other values, see text.

Table 6 provides data for income shares derived from the 1911-1949 income distribution estimates shown in Tables 1-5, together with previous estimates for the 1911 distribution, based on the BSR data summarised in Table 2 and Atkinson's estimate of the shares of the top 0.01 and 0.05 per cent, derived from the sur-tax data. The IR estimation shows substantially higher income shares than these earlier estimates, reflecting its larger estimates of top unearned incomes. Meanwhile all classified income groups show substantial falls in income shares between 1911 and 1918-19, from 1918-19 to 1937, and from 1937 to 1949.

The First World War hit the super-rich relatively lightly compared to broader top incomes, the top 0.001 percent's 1911-18 income share fall of 28.5 percent being substantially lower than that of the broader income groups (30.5 percent for the top 0.01 percent; 40.3 percent for the top 0.1 per cent; 35.8 percent for the top 1.0 percent; and 32.6 percent for the top 5 percent). This may reflect the ability of that section of the super-rich who still had control over their family businesses to benefit from high war-time profits. More detailed data for a slightly later period, 1929, are available for Britain's "millionaires" (with annual incomes of over £50,000), compiled by the IR in order to estimate out how much a 40 per cent estate duty on them would raise. This showed that Britain's richest person was Sir John Ellerman (annual income of £1,553,000), the son of a German-born corn merchant, who made his fortune by buying up and turning around ailing businesses; followed by the linoleum manufacturer James Williamson (£760,000); while James Buchanan (believed to be the third richest person, with an income of £485,000 per year) was the son of a farmer and quarry manager, who had made his fortune in whiskey. Conversely Britain's richest aristocrats, the Dukes of Bedford and Winchester, only ranked seventh and eighth on the IR's list.[14]

However, the data reveals that the inter-war years as a whole were not a good period for the super-rich. The 1918-37 percentage decline in income shares for the top 0.001 and 0.01 percent (36.8 and 32.2 respectively), was substantially larger than for than for broader top income groups (18.4 percent for the top 0.1 percent, 12.7 percent for the top 1.0 percent, and only 4.6 percent for the top 5 percent).The Second World War hit the super-rich even most severely, with income share falls (relative to 1937) in excess of 57.8 and 50.9 for the top 0.001 and 0.01 percent, compared with 32.8 percent for the top 1.0 percent, and 26.3 percent for the top 5.0 percent.

Over the 1911-49 period as a whole, the top 0.001 percent experienced the largest proportionate falls in income shares, which declined by 80.1 percent fall from 1911-1949. The magnitude of decline was lower for broader income groups, but still considerable, with a 76.9 fall over 1911-49 for the top 00.1 percent and falls of 78.3, 62.1, and 48.0 for the top 0.1, 1.0, and 5.0 percent respectively. To investigate this in more detail, we examine movements in earned and capital income over the three bench-mark years for which these data are available, 1911, 1937, and 1949. The 1949 data are based on the original SPI, rather than the revised figures (which do not disaggregate income by source). They also show gross incomes (before deductions of expenses etc.) and group Schedule B incomes (profits from farming land) with Schedule A (incomes from real property) under investment income; while the estimates for earlier years treat Schedule B as

[14] TNA, IR 64/75, list of incomes of £50,000 and over, 1928/9 tax year, 7th June 1929; (Fenton, 2017); W.D. Rubinstein, Ellerman, Sir John Reeves, first baronet (1862-1933), Oxford DNB online, https://doi.org/10.1093/ref:odnb/32995; Williamson, James, Baron Ashton (1842-1930), Oxford DNB online, https://doi.org/10.1093/ref:odnb/38134; Ronald B. Weir, "Buchanan, James, Baron Woolavington (1849-1935) Oxford DNB online, https://doi.org/10.1093/ref:odnb/32151

earned income. However, as Figures 2 shows, this would not have a significant impact on total earned income. Moreover, by 1949 cases where the annual value of farm lands exceeded £100 were assessed under Schedule D, as were the profits of all nurseries and market gardens (UK, Inland Revenue, 1951, p. 39).

Table 7 Unearned income as a proportion of total income, by income class, 1911, 1937, and 1949

Income range	1911		1937		1949*	
	Incomes	Unearned	Incomes	Unearned	Incomes	Unearned
£ per annum	No.	%	No.	%	No.	%
150/60-200**	343,670	22.00	n.a.	n.a.	2,922,930	6.41
200-300	260,550	23.01	2,367,729	8.00	5,953,513	4.27
300-400	130,330	23.00	710,358	15.91	4,698,120	3.19
400-500	77,420	28.52	315,444	22.38	2,598,920	3.94
500-600	50,500	40.00	176,815	26.89	1,262,360	5.36
600-700	32,060	55.00	108,275	31.10	591,590	7.52
700-800	28,700	65.00	73,810	33.99	312,820	10.56
800-900	26,350	70.00	53,460	36.19	183,920	13.07
900-1,000	22,530	72.00	40,374	39.03	120,900	15.92
1,000-2,000	81,400	73.13	163,367	44.61	418,520	21.58
2,000-3,000	26,720	74.30	46,191	54.94	121,667	31.35
3,000-4,000	12,140	74.74	20,302	59.52	48,045	36.05
4,000-5,000	7,090	75.35	11,049	61.48	22,918	39.39
5,000-10,000	11,130	75.50	17,876	64.39	32,948	43.99
10,000-15,000	2,980	77.00	4,195	68.61	6,230	49.24
15,000-20,000	1,070	77.11	1,569	70.18	2,024	53.79
20,000-25,000	610	78.00	761	72.07	792	55.78
25,000-30,000			369	70.12	420	57.32
25,000-35,000	550	79.02				
30,000-40,000			426	69.30	355	62.50
35,000-45,000	260	79.00				
40,000-50,000			163	75.94	149	65.20
45,000-55,000	133	78.99				
50,000-75,000			231	74.75	128.00	71.70
55,000-65,000	90	79.00				
65,000-75,000	56	79.01				
75,000-100,000	69	79.00	89	78.38	50.00	72.53
100,000 +	72	80.00	85	89.79	40.00	84.87
Total classified	1,116,480		4,112,938		19,299,359	
Total (all)	22,805,000		24,889,000		25,900,000	

Notes: * Based on gross income, before deductions. ** Range is £160-200 for 1911 and £150-200 for 1949.

Sources: 1911, Table 1; 1937, Table 4; 1949, UK, Inland Revenue (1952), p. 97.

Table 8 Comparison of total and earned income

% of tax units	0.01	0.05	0.1	0.5	1.0	5
A: Unearned income						
1911	0.78	0.76	0.75	0.74	0.74	0.63
1937	0.72	0.65	0.63	0.52	0.40	0.19
1949	0.55	0.50	0.45	0.38	0.28	0.13
B: Earned income						
1911	0.22	0.24	0.25	0.26	0.26	0.37
1937	0.28	0.35	0.37	0.48	0.60	0.81
1949	0.45	0.50	0.55	0.62	0.72	0.87

Note: 1949 data are based on gross personal income (as the data did not allocate deductions between earned and unearned income).

Table 7 shows ratios of earned to total incomes by income range for our three bench-mark years, and Table 8 shows earned and unearned income weightings for the top 0.01 percent to 5.0 percent of British incomes. In 1911 the top 0.01 percent (the highest income fraction that can be derived from the earned and unearned income data for all years) relied on capital income for 78 percent of their total income, though this fell to only 55 percent by 1949. However, larger falls in unearned incomes were experienced by broader income groups within the top 5 percent, with the top 1 percent - which received almost three quarters of total income from capital sources in 1911 – having only 28 percent of income from this source and the top 5 percent having a precipitous fall in their capital income share, from 63 percent to only 13 percent. The data thus reveal both a considerable decline in the relative importance of top capital incomes and a more severe relative decline for the lowest-income segments of our top income group.

What caused the fall in top income shares?

Disaggregating the earned and unearned components of top incomes is important, as nineteenth century Britain's extreme income inequality compared to other developed countries was believed to be driven primarily by inequality in wealth and, therefore, investment income (Lindert, 1991, pp. 220-24). More generally, as Piketty and Saez (2006, p .200) have noted, decomposing incomes into earned and unearned components enables analysis of the economic mechanisms underpinning changes in the distribution of labour, and capital, incomes, which can be very different. Lindert (1991, p. 225) similarly called for models directed at explaining movements of capital incomes as well as earnings inequality, if we are to develop a comprehensive theory of what caused the decline in income inequality across industrialised nations.

Wealth inequality is both a major factor in current income inequality and a generator of longer-term income inequality and social immobility – by differentiating families' abilities to make substantial investments in their own, or their children's, education and training (often a critical factor for entry into higher professions such as law and medicine) (Campion, 1939, p. 118). Inequality of incomes flowing from wealth typically exceeds wealth inequality, as the upper ranks of the wealth distribution achieve higher yields on their capital - owing to higher returns for larger holdings in the same asset class (for example bank accounts); lower proportional transactions costs; greater possibilities for diversification to achieve higher yields at any given level of total portfolio risk; and a weaker preference for liquidity (Daniels and Campion, 1936, pp. 60-62; Atkinson and Harrison, 1978, p. 173; Lydall and Tipping, 1961, p. 95).

Our three benchmark years shows a marked decline in the contribution of unearned, to total, income. The drivers of this process appear to be broadly similar to those identified for other western countries - a series of shocks and policy-responses that negatively impacted on wealth and/or income flowing from wealth. Prior to 1914 British wealth was highly concentrated, by international standards, among the top 1 percent, and especially the top 0.1 percent, of the population. These held around 70 percent and 33 percent of total personal wealth respectively - partly reflecting Britain's unusually high concentration of land ownership. Meanwhile the bottom 95 percent of the population held only around 10 percent of personal wealth. Moreover, these are likely to be under-estimates, as a substantial proportion of settled property was excluded from the estate duty statistics on which they are based (Facundo, Atkinson, and Morelli, 2016, p. 20). However, top wealth shares experienced a sharp decline over the next 40 years. The top 1.1 per cent of tax units in 1911 were primarily "rentiers" (with more than 50 percent unearned income), but rentier-dominated incomes accounted for only the top 0.4 per cent of tax unit equivalents in 1937 (from the £2,000-£3,000 income bracket upwards); and represented only the top 0.026 per cent in 1949 (from the £12,000-15,000 bracket).[15]

One factor underlying this process was the fall in agricultural land values and disposals of land holdings at prices well below real 1911 values. The years following the Armistice witnessed major land sales by the aristocracy and gentry; the proportion of owner-occupied agricultural land rising from 11 percent in 1914 to 37 percent in 1927, with sales concentrated in 1919-21 (Mandler, 1997, p. 228). Some studies argue that land-owners shrewdly disposed of land in the early post-Armistice period, using the proceeds to diversify their asset base, and/or shift into safer securities, thereby maintaining their nominal wealth (Howkins, 2003, p. 58; Mandler, 1997, pp. 242-3; Rothery, 2007). However, such strategies failed to preserve real portfolio values, or incomes, in

[15] This is based on a more detailed disaggregation of the 1949 data than are shown in Table 7. The ratios are: £10,000-12,000, 48.0%; £12,000-15,000 £50.49 per cent.

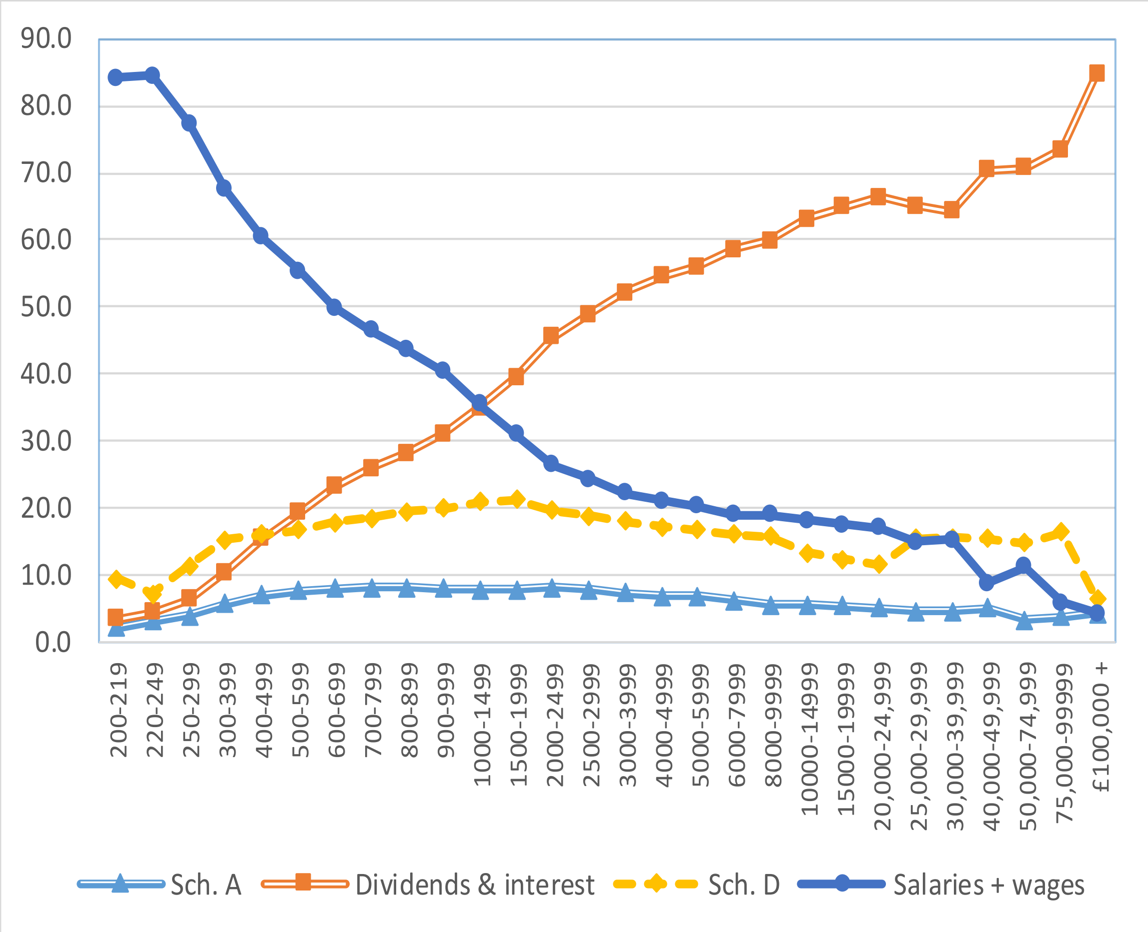
the aftermath of high war-time inflation. Nominal land values had appreciated substantially over 1911-21, but in real terms had fallen to around half their 1911 value.[16] Moreover, despite substantial disposals, the gentry and aristocracy still owned the majority of Britain's land at the outbreak of the Second World War. They thus faced falling asset incomes; agricultural gross rentals payable under leases in England and Wales had fallen to only 47.5 per cent of their real 1911 values by 1921. Despite some subsequent recovery - to 54.1 per cent of 1911 values by 1937 - another bout of war-time inflation reduced them to only 44.2 percent of real 1911 values in 1949.[17] Rent's overall share of total domestic income is estimated to have fallen from 12.0 per cent in 1911 to 7.3 percent in 1922 and while it recovered to 9.8 percent in 1937 it fell to a low of only 4.5 per cent in 1949 (Feinstein, 1972, pp. T5-T6).

There was also downward pressure on interest and dividends, which dominated unearned, and total, top incomes by 1937 (see Figure 2). Prior to 1914 Britain devoted a higher proportion of savings to capital export than any other major country has ever done (Matthews, Feinstein, and Odling-Smee, 1982, p. 353). However, during World War I government progressively restricted access to overseas (especially non-Empire) securities, to protect Britain's foreign exchange position. Restrictions were relaxed from April 1919, though Treasury control was replaced by Bank of England control over new overseas issues, which remained, intermittently, very restrictive during the 1920s (Atkins, 1970; Attard, 2004). The 1930s witnessed much more severe controls on new London foreign issues; in 1935 these accounted for less than 40 percent of new issues and their annual value was less than one fifth of that in the 1920s (Kynaston, 1991, p. 143).

[16] Agricultural land values - (Lloyd, 1992, pp. A11-A13), deflated using "Inflation: Bank of England A millennium of macroeconomic data for the UK, composite annual consumer price index, https://www.bankofengland.co.uk/statistics/research-datasets".

[17] Agricultural rentals - (Lloyd, 1992, pp. A25-A26), based on Central Landowners Association data for gross rentals payable for land under leases; deflated using "Inflation: Bank of England A millennium of macroeconomic data for the UK, composite annual consumer price index, https://www.bankofengland.co.uk/statistics/research-datasets".

Figure 2 The distribution of personal income, by tax schedule, for different levels of total income, 1937 (% of total)



Notes: Salaries and wages includes wife's earnings. Schedule B is omitted, as it does not amount to more than 1.3 per cent of income for any income range.

Sources: incomes under £20,000, UK, Inland Revenue (1946), pp. 30-37; incomes over £20,000, TNA, IR 64/163, data sheets for the 1938-39 Surtax census.

There had also been periodic pressures to divest of securities on unattractive terms. During the First World War the Treasury sought to acquire dollar securities and sell them in New York. Patriotic appeals were followed by a penal tax on their dividends/interest in the 1916 Budget, while from January 1917 the Treasury had powers to requisition securities for selling (Morgan, 1952, pp. 326-331). British overseas investments, valued at almost £4,000 million on the eve of the First World War, are estimated to have declined by something in the region of 15 – 25 percent owing to these measures (Feinstein, 1990; Hardach, 1977, p. 289-90). Then in the 1930s "cheap money" policy led to a boom in conversion issues, replacing high-yielding government and corporate securities with lower-interest ones, led by the June 1932 conversion of the 5 per cent 1917 War Loan stock to 3.5 percent undated stock (Kynaston, 2000, pp. 365-368). High war-time inflation, especially during World War One - with prices rising by 122 per cent over 1913-21 - also had a severe impact on real asset values. Evidence for estates subject to estate duty over 1903-15 indicates that investments for which interest was fixed, at least in the short-run, comprised around 54 percent of classified assets. Thus many rentiers may have been forced to dispose of assets in order to maintain their established standard of living.[18]

The cumulative impacts of these shocks were considerable. While unearned incomes rose by 28.8 percent in nominal terms between 1914 and 1918, they declined by 34.6 percent in real terms, and by 22.8 percent when deflated by nominal earnings.[19] Net property income from abroad fell from 8.74 per cent of net national product in 1911 to 4.97 per cent in 1923. It remained little changed in 1937, at 4.50 per cent, but collapsed during the Second World War, to only 2.12 per cent in 1949. Broader data on all rents, dividends, and interest, available only from 1920, also show stability during the inter-war years (22.47 per cent of total personal pre-tax income in both 1923 and 1937), followed by a sharp fall to only 11.41 percent in 1949.[20] The dominance of negative capital income shocks as drivers of income reduction for the rich is also consistent with Atkinson's annual super-tax estimates of the top 0.1 and 0.05 per cent income shares for 1911-1949 in Figure 1. In addition to a general downward trend, the two World Wars and the 1920-21 and 1929-32 recessions stand out as periods of particularly rapid declines in top income shares (Atkinson, 2005, pp. 335-6).

To some extent the decline in unearned top incomes can be directly linked to improvements in incomes and living standards for the bottom 90 percent of the population. For example, rent control, introduced in 1915, depressed the incomes of landlords, but substantially reduced the real value of a major household expenditure burden, in a country where around 90 percent of households were private tenants (Merrett, 1982, p.1). Rent control also subsequently led to extensive sales of house property portfolios, mainly to sitting tenants, at prices reflecting their low, controlled, rents (Speight, 2000, pp. 39-40). Meanwhile, the scarcity of low-risk, higher yielding assets during the inter-war years led to substantial deposits in building societies (mutual savings and loan institutions for house purchase) by high-income individuals, facilitating an increase in building society mortgage debt from £120 million in 1924 to £636 million in 1937. This underpinned the owner-occupier house-building boom of the 1930s – which produced Britain's greatest recorded proportional housing stock increase, together with the lowest recorded ratios of weekly house mortgage costs to average incomes (Scott, 2014, pp. 107-8). These conditions

[18] Rutterford, et al., 2011 pp. 179-80; data read from graph.

[19] Source: TNA, IR 75/182, IR memorandum on earned and unearned incomes, for Royal Commission on the Income Tax, January 1920. Retail price index and nominal earnings based on Gregory Clark, "What Were the British Earnings and Prices Then? (New Series)." Measuring Worth, 2018 .URL: http://www.measuringworth.com/ukearncpi/

[20] (Feinstein, 1972, pp. T5-T6; T28-T29; T45-46). Rent data do not include depreciation.

also made it easier for local authorities to raise loans for a series of inter-war social housing programmes, cumulatively creating around 1.3 million new homes (Speight, 2000, chapters 4-5; Scott, 2013, pp. 98-127). Meanwhile restrictions on overseas new issues led the City of London to become increasingly involved in British industrial finance - expanding industrial growth and employment - despite protests from City-insiders that domestic industrial issues involved more work and less profit than the foreign loan stock that merchant banks had hitherto focused on (Kynaston, 2000, pp. 131-137 & 295).

While capital incomes dominate the top income decline, our estimates also show a substantial decline in top earned incomes. This is more surprising, especially given that the ratio of earnings for professional and managerial occupations, compared to all workers, remained relatively stable between 1913/14 and 1935/36 (Routh, 1965, p. 107). This reflects a decline in Schedule D incomes - which were classed as earned income, but included a substantial element of profits. Schedule D mainly covers profits from businesses and professions (including employers' salaries). While self-employment incomes are commonly, but not universally, categorised as earned income in national personal income series (Bengtsson and Waldenstrom, 2018, p. 720), this schedule also includes returns on capital invested in unincorporated businesses by proprietors and partners, together with some items of pure investment income – for example colonial and foreign securities (other than government securities) and interest on War securities not taxed at source (Atkinson, 2007, p. 161; UK, Inland Revenue, 1912, pp. 111-113; idem, 1939, p. 56).

In 1911 Schedule D accounted for 61.8 percent of all taxable income. However, its contribution fell to 42.6 percent in 1929; 31.9 percent in 1937, and 26.2 percent in 1949 (UK Inland Revenue, 1920, p. 67; idem, 1940, p. 56; idem, 1953, p. 42). This is probably mainly due to the growth of incorporation, which shifted profits from personal earned incomes into the investment incomes of shareholders (or retained corporate incomes). By the 1940s tax avoidance was probably also significant in reducing Schedule D incomes, as employers and partners could easily find ways to, for example, convert income into capital gains (which were not subject to income tax in Britain). Given that Schedule D incorporated a substantial element of "profit", that might more properly be regarded as unearned income, the underlying collapse in top unearned incomes is thus even greater than the data suggest.

Conclusions

Our re-discovered 1911 estimation reveals a markedly more unequal distribution of income than previous estimates, driven primarily by extreme inequality in unearned income. This is in line with research showing that Britain's peculiarly sharp pre-1914 income inequality reflected its extreme inequality of wealth (Lindert, 1991, pp. 220-224). Britain's income distribution was also very unequal compared to other industrialised nations, with income shares for the top 0.01, 0.1 and 1.0 per cent of 4.60, 13.81, and 30.15 per cent, respectively, compared to 3.0, 8.0, and 19.0 percent for France in 1900-1910 and 2.76, 8.62, and 17.96 percent for the USA in 1913 (Piketty, 2003, p. 1037; Piketty and Saez, 2003, pp. 8-9). The following decades witnessed a sharp reduction in British factor incomes for rent, interest, and dividends, which substantially reduced unearned income inequality – a trend which dominated the reduction in overall income inequality. This explains the paradox between the observed reduction in income inequality and the lack of evidence for any substantial redistribution of earnings between salary and wage-earners. However, despite having closed much of the relative gap with America, British incomes remained more unequal than for the USA and France even in 1949.

To some extent Britain's income inequality reduction represented a genuine redistribution from the rich to lower income groups (even prior to income tax and fiscal transfers). The reduction in factor incomes from rent, interest and dividends provided greater scope for higher factor incomes for wages and salaries, while lower income families benefited directly from controlled rents and, to some extent, from lower interest rates and greater credit availability for house-purchases. However, the data also reflects an increase in the extent of tax avoidance and evasion, incentivised by a ten-fold increase in the top rate of income tax between 1911 and 1949, either directly, or by companies (for example by retaining profits to benefit their shareholders in the long-term, rather than incurring heavy taxes on their dividends).

While Britain started from a position of markedly greater income inequality than most developed nations, its overall trend towards reduced inequality, and the underlying causes, appear to be broadly similar. Research on France, the USA, and Japan has found that reductions in income inequality during the first half of the twentieth century were also driven by severe shocks to the capital holdings of the wealthy, including depressions, bankruptcies, war-time inflation, declining real asset prices, and the fiscal shocks of war finance (Piketty, 2003, pp. 1011-1019; Piketty and Saez, 2006, p. 203; idem, 2003, p. 12; idem, 2013, p. 474). In common with Piketty and Saez's findings for the USA and France (Pikkety, 2003, p. 1011; Piketty and Saez, 2013, pp. 461-2; idem, 2003, pp. 3-11 & 33-35), Britain's income redistribution appears to be driven more by political shocks and policy responses, together with non-market mechanisms such as labour market institutions, rather than technological change.

This in turn, raises the question why political shocks, policy responses, and non-market mechanisms increased income inequality during 1911-49, but appear to have acted to concentrate the income shares of the very rich since the 1970s. A partial explanation may be found in theories first advanced in the 1950s and 1960s by historians such as Stanislaw Andrzejewski, Richard Titmuss, and Philip Abrams, that the levelling tendency of wars is proportional to the extent to which low-status groups and classes become essential to the war effort – leading to policy responses and institutional changes that might persist well beyond the war period.[21] Such impacts would be reinforced by tax increases, which reduced even "pre-tax" personal incomes; for example higher corporation taxes reduced dividends and incentivised firms to retain profits. However, another important factor concerns the changing sources of top incomes. In both Britain and the USA the contribution of capital incomes to top incomes has declined substantially since the 1970s, in favour of salary and entrepreneurial incomes (Piketty and Saez, 2003, p. 17). Thus Marx's (1954, 585-589) prediction that shocks lead to the concentration of capital would imply that top entrepreneurs and executives might benefit from them, while rentiers, receiving incomes from more diversified portfolios of stocks, would be more likely to suffer from their aggregate negative economic impact.

Another related factor governing the impact of shocks on income distribution, under different institutional environments, concerns the ability of nation states to tax rich individuals, or the factor incomes they receive. The 1911-49 inequality reduction was driven, at least in part, by the progressive collapse of the liberal, globalised, world order, which made it more difficult for the rich to seek out more attractive overseas outlets for their investments and made policies such as capital controls more politically expedient and acceptable. Similarly, the policy liberalizations of the 1980s that heralded the start of the new globalisation (and the resumption of growing income inequality in western nations) have made it far easier for the rich to offshore their assets, or themselves, either in search of better investments opportunities, or jurisdictions more suited to protecting their wealth.

[21] For a summary of this literature, see Marwick (1968), pp. 56-58.

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