Household structure, labour participation and economic inequality in Britain, 1937-61[1]

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Abstract

We investigate household income/expenditure inequality using survey data for the UK 1937-1961. Previous studies employed tax unit or wage rate data. Between 1937/8 and 1953/4 we find little change in inequality for incomes below the top 5 or 10 percent. This is consistent with the tax unit data. By 1961 inequality was notably higher than in 1953/4. Three trends might account for this: growth in the shares on non-working and multiple-worker households, and in the proportion of non-manual jobs. Non-manual jobs are diverse in skills and earnings. We find the upward impact on inequality of the rise of non-working households is mostly offset by their being both smaller and poorer. Data limitations disallow evaluating the impacts of the other two trends, but they are consistent with steady post-war wage differentials observed by other studies.

Keywords: United Kingdom, inequality, wage differentials, 20th century, demography

JEL codes D31, J31, N14

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1. Introduction

The consensus is that the three decades up to 1979 form a period of historically low levels of income inequality in the UK. That characterisation rests, at one end, on the undisputed sharp rise over the 1980s. For the earlier period, it rests upon estimates from tax unit data, see, *inter alia* the Chartbook of Economic Inequality[2] and the World Inequality Database[3]. These sources give a decline in inequality over the early part of the century and a very sharp decline across WW2 to the 1950s. For example, the tax-unit Gini coefficient fell from .426 to .358 between 1937 and 1953 (see Table 1 below) and that is entirely accounted for by the fall in the top 10% income share, from 35.4% in 1939 to 29.7% in 1949, for example. However, what happened to the distribution at incomes below the top 10% has received much less attention, and this is what we seek to investigate.

These statistics contribute, along with steady GDP growth and low unemployment rates, to the interpretation of the three decades after 1945 as a Golden Age of relatively steady macroeconomic growth with improvements in living standards across the income distribution. Of course, the notion of Golden Age is associated with more than favourable macroeconomic indicators. De Long recently characterised the period as 'thirty glorious years of social democracy'[4], citing the growth of public welfare, health and education and expansion of the provision of public goods in many Western democracies. Because of this, the progress of income inequality, in particular the extent to which poorer households keep up, might be regarded as an important yardstick with which to measure the success in Britain of those social democratic initiatives.

We re-investigate inequality in equivalised[5] income or expenditure among British households using surveys taken in 1937/8, 1953/4 and 1961. Our focus is on households with incomes below the highest groups, perhaps best thought of as the lowest 90 percent. These are better captured in such surveys than the high-earners, and they are of great interest as the two other

[2] https://www.chartbookofeconomicinequality.com/
[3] wid.world.
[4] De Long, *Slouching Towards Utopia*
[5] Household members are given age-related weights reflecting their typical impact of household spending, to create a number of equivalent adults. We discuss this later in the article.

main sources of data give dissimilar results. To briefly summarise, tax unit data tell us the middle 40 percent income group improve their position while the lower 30 percent income group's share declines.[6] On the other hand, labour market data show that that wage differentials declined through the war years and stayed lower through the 1950s.[7] Our results, suitably caveated because of data limitations, suggest a modest increase of inequality through the 1950s in the distribution of equivalised household expenditure or income.

In studying equivalised incomes/expenditures, it is necessary to confront changes over time in household structure, that is, the numbers of adults, children, workers and non-workers in the household, as well as incomes. We show that there were majors changes in our period: a rise in participation among working households, a rise in the share of non-manual employment and particularly a rise in the numbers of retired and non-working households, and we unpack the story of the impact on inequality of these changes.

Through the late 1940s and the 1950s several scholars investigated the fall over the war years in tax-unit inequality. Brittain[8] estimates the fall in the Gini of taxable income was arithmetically due entirely to a decline in the top income share. In other words, he finds there was little or no squeeze in inequality among the bottom 95 percent of tax units. Brittain and Titmuss[9] argue the fall in the top income share to be principally the result of tax avoidance behaviours consequent upon increases in the higher rate of income taxation, combined with the exclusion of capital gains and corporate expense allowances from the official definition of taxable income. Much later, Atkinson[10] adjusted top income shares to include income from capital gains and found that top income shares declined a little less, and from a higher base. Atkinson's results have yet to be incorporated into the various sources of historical inequality data.

We employ two data sets from the Ministry of Labour: the Household Expenditure Survey of 1953/4 and the Household Survey of 1937/8, discussed in detail below, as well as the Family Expenditure Survey for 1961. There is a major issue of comparability between the 1937/8 survey and the later surveys. The 1937/8 only sampled households with at least one employed member, and the focus narrowed further to lower income households, effectively omitting households headed by professional, managerial, and technical workers. We seek to overcome

[6] Royal Commission, *Report No. 1,* Table 10.
[7] Gazeley, *The Levelling of Pay*
[8] Brittain, *Some Neglected Features*
[9] Titmuss, *Income Distribution*
[10] Atkinson, *The Distribution of Top Incomes*

these deficiencies by using contemporary sources to re-weight the sample. Once that is done, we do not confute the earlier findings of stable household inequality among the lower income groups across the Second World War, in terms of of equivalised household expenditure. This is also true if we confine the samples to the households of blue-collar workers.

Turning to the more complete post-war data sets we investigate the role of increasing numbers of small, low-income, non-working households in determining the change in inequality from the early 1950s to the early 1960s. We demonstrate that for 1961 for example, the great majority of non-working households were of one or two people, and non-working households comprised just below 40% of all small households. We find a greater degree of inequality within these groups of retired households, than between larger/non-retired households. We find, to our initial surprise, that the rise in the preponderance of small, retired households does little to raise inequality in equivalised income as it raises the covariance between income and household size, and this substantially offsets the impact on inequality of the rise in the variance of household income that they also impart.

The finding that the changing demography of the household underlies the path of household inequality over the period is perhaps novel. Changes in the distribution of household size in the first half of the 20th century accumulated into a relatively large shift. Between the 1911 and 1951 Censuses for England and Wales, mean household size fell from 4.4 to 3.2 persons, with the standard deviation of household size falling from 2.2 to 1.5. The key early trend is declining total fertility. Between the late 1930s and the early 1950s a smaller trend emerged: a significant rise of small, one and two-person households. This trend continued quite strongly until the early 1990s. Household size has been steadier since, with ONS estimates of mean household size varying between 2.36 and 2.39 in the twenty-first century.

Lastly, we note two labour markets trends that likely contribute to offsetting the impact of steady post-war wage rate differentials on inequality. First, by 1961, there is a clear increase in household labour participation rates, towards a greater proportion of households with multiple workers, and this is very likely to have been part of the increase in household income inequality that we find. Secondly, we show how employment in non-manual work increases over the 1950s and also how earnings among non-manual workers tend to show much greater variance, and these factors also are likely to be part of the rise household income inequality.

Section 2 introduces our data sets. and sets out the measurement of inequality the adjustments for comparability. Section 3 sets the context of this study: top income changes, movements of

wage differentials and demographic shifts. Sections 4 gives our inequality results. Section 5 concludes.

2. Data sets

We employ three surveys; the Ministry of Labour 1937/8 (MoL1937/8); The Ministry of Labour 1953/4 (MoL1953/4); and the 1961 Family Expenditure Survey (FES1961). These surveys have been documented several times recently. Very full discussions are given elsewhere [11], so we confine ourselves here to a short description of the relevant features of the surveys.

The 1937/8 Ministry of Labour survey is arguably the first national, official, and modern household survey. It consists of a stratified random sample of over 10,000 working class non-agricultural households from the United Kingdom. Almost all were headed by a working person, and all had annual incomes less than £250. Thus, in comparison with the later surveys we have a restricted target population. Each household completed a questionnaire in each of the four quarters from autumn 1937 to summer 1938. Of these, only 623 sets of household responses survive. They were selected to be representative of the whole survey. Gazeley and Newell[12] compare all the statistics from the surviving households with those reported in The Ministry of Labour's report[13] for the whole sample and find them to be very close in all comparable respects. The other critical fact about the 1937/8 survey is that no income information survives, and this has the implication that all our comparisons must be with respect to total household expenditures.

The MoL1953/4 survey was the most comprehensive and ambitious of these surveys. Indeed, the FES series is essentially a smaller, stripped-down version. MoL1953/4 was a stratified random sample of nearly 13,000 households from the entire United Kingdom population and all the returns still exist. There is one relevant deficiency of the survey, that only 0.5% of the households have heads who work in the agricultural sector, whereas around 5% of the workforce worked in agriculture, according to census data. We discuss this omission and its

[11] Gazeley and Newell *The End of,* for MoL1937/8, and Gazeley, Rufrancos, Newell, Reynolds and Searle *The poor and the poorest* for MoL1953/4 and FES1961
[12] Gazeley and Newell, *The End of Destitution*
[13] The National Archives, *TNA 17/7*

impact on inequality measures in Appendix 4. It turns out the omission is unlikely to render our findings invalid. The 1961 FES was based upon around 3,000 households. Table 1 summarises the salient features of these data sets. The two shifts in survey design and implementation discussed in the introduction are clear. The 1937/8 survey contains a few households where the head of household was not working, but the clear intention is to capture working peoples' households. The 1953/4 and 1961 surveys are much more comprehensive of the population and include non-working households. Whereas the questionnaire for FES1961 asks for the employment status of all household members, for MoL1953/4 we can pick out all single householders and couples who are fully retired, plus households in which 75% of household income is derived from Old Age pension and/or National Assistance. This is how we define the retired groups for MoL1953/4. For FES 1961 a retired household is one in which all adults are retired, and a non-working household is defined as one in which there are no working adults

TABLE 1 here

3. Context

National indices

It has been very well documented[14] that the top 1%, and 10% income shares declined, in the first half of the 20th Century (see Table 1 for a summary). The only Gini coefficient series based on household survey data that stretches back before World War Two is the Blue Book series given in the final column of Table 1. The share of labour tends to rise in Table 2, but the fourth column of the table shows that the share of income from employment plus self-employment does not rise on trend, but rather it looks roughly constant. The difference between the movements of the two series comes about primarily because self-employment as a share of total employment fell over the five decades from 1911 to the early 1960s[15].

[14] Atkinson and Morelli, *Chartbook*
[15] Feinstein, *National Income*, Table 11.10

This lack of household survey-based measures of inequality for the years prior to 1950 is worldwide. At present, there is very limited statistical coverage of household inequality prior to the Second World War.[16] For national inequality measures, there are four main international collections. The largest is the World Income Inequality Database (WIID) for the World Institute for Development Economics Research (WIDER). This gives, at the time of writing, over 8,800 Gini coefficients, as well as other inequality indicators, from around the world, and dating back as far as 1867. But only 10 Gini coefficients in the set are for West European countries prior to 1940 and only 24 prior to 1950. After that, coverage picks up but still there are only 59 for West European countries prior to 1960.

The path of inequality after 1961 is very well-known, but worth briefly restating. Top income shares declined steadily to around 1979 but then increased consistently until 2009 from whence they steadied.[17] The behaviour of the IFS household-based Gini was slightly different. At 26% in 1961, it stayed relatively constant until the very late 1970s and then grew throughout the following decade and reached 34% in 1992. Since then, it has fluctuated around that figure, reaching a peak of 35.8% in 2007/8 before falling back a little.

TABLE 2 here

Top Incomes

As Table 2 shows, the 1938 and 1953 Blue Book Gini estimates give an historically unprecedented collapse of inequality. The large fall in the income share of the top 1% of tax units also seems to reflect a period of intense levelling. This result, of a large fall in tax unit inequality across the war years has been confirmed and employed in many studies.[18]

The authors of the *Royal Commission* urged caution in assessing the accuracy of these statistics. The Commission's caution is clear here '... (these estimates) should not be interpreted as precise comparisons between 1938 and 1949 but as approximate indicators of a significant change in the distribution between these two years.'[19] Changes in two major aspects of the income tax system may have invalidated the comparison. First, the number of taxpayers

[16] Gini series for Britain and Germany in the early 20th Century based on Social Tables is constructed by Gomez Leon and De Jong, *Inequality in Turbulent Times*
[17] Atkinson and Morelli, *Chartbook*
[18] Cartter, *A New Method*; Atkinson and Jenkins, *A Different Perspective*; Scott and Walker, *The Comfortable*.

[19] The Royal Commission, *Report No. 1*, page 17

expanded from around four million in 1938 to around fourteen million in the late 1940s and early 1950s, as the income tax threshold was lowered, and the pay-as-you-earn (PAYE) collection system was introduced. However, the authors of *Royal Commission* performed some calculations that lead them to reject this as a cause of the fall in inequality.[20]

Secondly, the higher-rate income tax, called surtax, was also reformed, with a rise in the tax rate and a lowering of the threshold, that led to it being extended to many more earners. Surtax was not levied on capital gains, and this offered an attractive way for firms and their shareholders to avoid income tax. Notably, Titmuss[21] wrote a long essay casting doubt upon the statistical finding of decreasing inequality.[22] One of Titmuss's key arguments was that the 1940s surtax reforms had resulted in behavioural changes among shareholders and financial intermediaries.[23]

Brittain[24] studied whether changes in surtax were behind the fall in inequality. Short of establishing causality, Brittain investigated whether the magnitudes of recorded income changes fitted with the idea that surtax changes were behind the recorded fall in inequality. He started by noting that the change in tax unit-based Gini inequality index is almost entirely driven by changes in the share of the top income earners. This is illustrated below in Table 3, which shows the decline in the tax-unit Gini between 1938/9 to 1949/50 is almost absent among the lower 95% of taxpayers. To dig deeper into this fall of the top income share, Brittain further noted[25] that between 1939 and 1949, 'the fraction of pre-tax company income (net of capital consumption estimates) paid to persons fell from 71 percent to 29 percent.'

TABLE 3 here

Brittain estimated that had that fraction had stayed constant, there would have been little or no decline in the share of the top 5% of tax units, and thus no fall in inequality.[26] Thus Brittain presents evidence that the 'erosion of the tax base' caused by this tax avoidance was easily

[20] The Royal Commission, *Report No. 7* , paragraphs 2.26-2.28, pp 12-23 and Table 2.4
[21] Titmuss, *Income Distribution*
[22] There were a good number of studies of the impact of surtax on the income distribution, such as: Barna, *Redistribution;* Kaldor, *An Expenditure Tax;* Seers, *Income Distribution;* Stark, *The Distribution of Personal Incomes.*
[23] Titmuss. *Income Distribution, pages 108-110.*
[24] Brittain, *Some Neglected Features*
[25] Brittain, *Some Neglected Features,* page 597
[26] Brittain, *Some Neglected Features,* page 597, Table 3

sufficient to account fully for fall in the top income share and the tax-unit Gini between 1938 and 1949. Brittain's article cites several many supporting articles in the statistical and public finance literatures. [27]

Much more recently, Atkinson[28] analyses the retained profits argument. He notes that changes in the ownership pattern of capital, away from individuals and towards financial institutions, such and insurance companies and pension funds imply that only a fraction of the growth of retained profits could be attributed to individuals. Atkinson estimates that adjusting for this change would not eliminate the fall in top incomes, but, for example, would reduce the share of the top 1% by about one-third 1937-1957, rather than one-half as in the Blue Book estimates. Below in Section 4 we employ Atkinson's estimate of top 1% shares to give estimates of Gini inequality in the late 1930s and early 1950s.

Wage and earnings inequality

The links between the distributions of household income and individuals' wages and earnings are loose and changeable over time, but some account of the path of the wage distribution is essential context for our study. Wage differentials by skill for manual workers declined in the first half of the century, see Table 4. National industry-level wage negotiations, greatly extended during WW1, resulted in flat-rate wage rises, which lowered differentials during both WW1 and WW2[29]. This levelling was partially reversed after WW1 but persisted for many years after WW2. Some have argued that the 1918 Education Act, that extended primary education to all, also played a part. Goldin and Katz[30] give evidence that years of schooling rose substantially by the 1930s, and they argue, for the US in particular, this extension of secondary education raised the productivity of less-skilled workers. The timing of the falls in the British wage rate differentials through the wars, suggests the wage bargaining changes were the most important source of change, at least in the medium term, for wage rates, though this does not rule out a deeper education effect.

TABLE 4 here

[27] See, *inter alia*, Peacock, *Some observations*; Pechman, *Erosion of*; Lydall, *The Long Term Trend.*
[28] Atkinson, *Top Incomes*, p338
[29] Bowley, *Prices and Wages*; Knowles and Robertson, *Differences*; Gazeley, *Women's pay*
[30] Goldin and Katz, *The Race*, Table 1.1, p27

Earnings information on non-manual occupations before WW2 is very scarce. By the time of the first New Earnings Survey in 1968 the 90/10 percentile ratio for non-manual earnings was 50% higher than the ratio for manuals. It would be very surprising if this greater inequality among non-manuals, which encompasses a very wide range of skill levels, did not exist deep into the past. The share of non-manuals in employment rose from about 15% just before the First World War to 22% in 1931, 28% by the early 1950s, and passed 40% in 1980 and 50% in 1990[31]. In our data sets, professional, managerial, teachers and clerical workers comprised 19% and 23% of working heads of household in 1953/4 and 1961 respectively. Where we have reliable micro data, non-manual occupations display significantly higher variances, both within and between occupational groups. For instance, in both the 1953/4 survey and the 1961 FES, we find that non-manual occupations have much higher earnings variances. Among single-earner households in the 1953/4 survey the standard deviations of log income are 0.44 for professional workers, 0.53 for managerial workers, 0.40 for clerical workers and 0.38 for *all* manual employees. Similarly in the 1961 FES, among single worker households, the standard deviation of log income is 0.49 for manual workers, 0.55 for clerical workers and 0.61 for professional and managerial workers. In sum, this trend to greater skill diversity, via the growth of professional and managerial employment suggests a long-term force that could raise the variance of earnings.

Demographic and labour supply changes

Tables 5 and 6 document the key demographic change of the period as average household size declines, from around 4 in 1911 to around 3 in 1961 with strong growth in the proportions of single occupancy households, and a marked decline in large households. We see this as caused by two separate trends, the decline in fertility and the rise of the non-working household, partly generated by increasing longevity. Between 1911 and 1931 there was a clear fall in the share of children in the population as fertility fell,[32] see Table 7. This was temporarily steadied by the post WW2 baby boom, but then continued a slower decline for several decades after 1965. The table also show a trend rise in the population share of people aged over 45 over the whole

[31] Routh, *Occupation and Pay*, Tables 1.1 and 2.29, and the New Earnings Surveys
[32] Coleman and Salt, *The British Population*

period as longevity rose. The decline in fertility, especially through the First World War, plays a role in the reduction of household size, but it slowed in the mid-1930s. Table 8 and Chart 1 illustrate the growth, most obvious in the decades after WW2, of non-working, in particular pensioner, households. These were a tiny fraction of households in the 1931 Census but grew rapidly after World War Two. Pensioner households were predominantly small, see Table 8. Combining statistics from Tables 5 and 8 shows us that in these surveys the proportions of non-working, pensioner households composed of one and two members doubled between 1953/4 and 1961 from just under seven percent to just over fourteen percent of all households. In fact, this accounts for more than all the overall rise of 6 percentage points in the share of small households. Because of this, when we move to analyse the change in household size on inequality over the late 1950s, we will switch to looking at the impact of this growth in non-working households.

In Table 9 we present employment data from MoL1937/8 and FES1961. The rise of non-working households is clear, but also the beginning of the move away from single-earner to two-earner households. This can play a role in understanding this study, as, like the growth of non-manual occupations, it creates another potential source of growth in household income inequality. Non-working households play a large role later in the century, with the decline of the single breadwinner structure and the expansions of the shares of households with multiple workers and those with no workers. Gregg and Wadsworth [33] were first to highlight and analyse this polarisation.

TABLE 5 here

TABLE 6 here

TABLE 7 here

TABLE 8 here

TABLE 9 here

CHART 1 here

[33] Gregg and Wadsworth, *Everything*

4. Inequality results

Initially we report the Gini coefficient, 90/10, 90/50 and 50/10 percentile ratios.[34] This is a small set of widely understood statistics that gives an indication of both the size and the orientation of inequality. In Tables 10 and 11 we also present the variance of log expenditure per equivalent adults. Given our interest in the effects of demographic change, this variance decomposes very simply into components due to variance of log income, the variance of log equivalised persons, and the covariance of the two components. We weight by family size, so that we offer a lower bound to inequality across individuals since we have no data on the consumption of individual family members and implicitly assign equivalised portions of income/expenditure to all household members[35] [36]. In terms of inequality outcomes, however, these choices make little difference to the results.

This section is in three parts. Firstly, we compare inequality measures from the 1937/8 data set with the later sets. Recall the tax unit data suggests that aside from among the highest income groups there was little or no change in inequality between the late 1930s and early 1950s. However, the wage rate data in Table 4 showed a narrowing of industrial wage differentials by skill over that period that persisted decades on, begging the question of the path of below-top income inequality. Secondly, we show that while the income Gini stayed steady between 1953/4 and 1961, all other indicators point towards greater inequality by 1961. Thirdly, we investigate if changes in household demography impact upon inequality.

We turn to comparing expenditure inequality across 1937/8 to 1953/4 and 1961. We average the four expenditure weeks of the MoL1937/8 and MoL1953/4 data sets and the two weeks of the FES1961 data set. The welfare measure is total expenditure per equivalent couple using the McClements equivalence scale.[37] We keep this scale throughout, to be consistent with the

[34] Almost all estimation is performed using Stephen Jenkins' *ineqdeco* suite of commands in STATA. See Jenkins '*ineqdeco…'*

[35] An early study emphasising the importance on intra-household inequality is Haddad and Kanbur, '*How serious*…'

[36] It may at first seem inconsistent, to measure economic well-being as income or expenditure per equivalent adult, and then to weight households by size. However, weighting individuals equally from a welfare perspective is not inconsistent with recognising differing basic needs.

[37] McClements, *Equivalence Scales*. The McClements scale takes a couple of adults as the reference, given a value of 1. A single adult is weighted at 0.61, a second adult not part of a couple, 0.46, a third adult, 0.42. Children have weights rising with age from 0.09 for a child less than one year of age to 0.38 for a child aged 16-18.

main UK survey-based inequality statistics. Other equivalence scales, such as *per capita*, give very similar results.[38]

We adjust the surveys in two contrasting ways to make cleaner comparisons. First, we reweight the 1937/8 data to reflect a distribution more appropriate to the representation of non-working and higher-earning households. As an alternative, we restrict the 1953/4 and 1961 samples to working blue-collar households as represented in the 1937/8 data set. [39]

The re-weighting of the 1937/8 data comes about as follows. Tables in Massey [40] give information from a 1938/9 survey of middle-class households on the relative prevalence of middle class and working households that Massey allow us to re-weight the MoL1937/8 data set, giving more weight to the higher income groups.[41] Rowntree's[42] meticulous second study of poor households in York, covers poorer working households, households headed by unemployed workers and households headed by non-participants in the labour market. Tables in Rowntree's study allow us to use these results for York to perform a similar re-weighting, putting more weight on the poorest households in the MoL1937/8. Thus, in sum, we weight more heavily the extremes of the distribution in MoL1937/8. We document these adjustments carefully in Appendix 3. It turns out that about 60% of observations are weighed between 0.5 and 0.65, about 30% weighted between 1 and 1.2, and finally about 10% are weighted between 1.3 and 1.6. So, these re-weightings are quite heavy.

Table 10 gives results for the case where we restrict MoL1953/4 and FES1961 to manual workers' households. We find a Gini coefficient of 23.3% for the 1937/8 data set compared to just over 25% for MoL1953/4 and FES1961. So, a small rise. But given that the occupational information in the two later studies is at a high level of aggregation, this apparent rise may be due imperfect selection of manual worker households. However, no sign of a fall. In Table 11 we set out our second comparison, between the full 1953/4 and 1961 samples and the 1937/8

[38] The McClements scale is very similar to other scales, such as the popular OECD modified scale that is. For instance, both scales differentiate weights for children by age, and allow for some reduction in the marginal weight of additional adults. The only scale that is substantially different from McClements is the simple *per capita*, which gives a heavier weight to additional people, and so has a higher sample variance, leading to higher inequality measures. However, all our results about changes over time using the McClements scale hold if we use *per capita* data.

[39] We should note here that structural and macroeconomic changes in employment over the 1940s would make the distribution of work change over time.

[40] Massey, *The Expenditure of 1,360*

[41] We acknowledge that, as discussed by an anonymous referee, Massey's study is confined to public officials, and thus cannot represent white collar workers in the private sector. But the scraps of data in other sources that we know of are insufficient to make a broader-based adjustment.

[42] Rowntree, *Poverty and Progress*

sample reweighted for both middle class and non-employed households. Here we find the 1937/8 and 1953/4 samples yield very similar Gini coefficients. In both sets of results, we find little sign of a decline in inequality, neither among manual workers' households, nor in wider samples. It is irresistible to combine our household expenditure Gini measures with the top income shares to see what sort of overall inequality they generate. Any use of the results should of course be heavily caveated. As a final rough and ready calculation, we take Gini coefficients from Table 11 and supplement them with Atkinson's[43] estimates for the income share of the top 1% for both years (0.207 for 1937/8 and 0.150 for 1953/4), using Alvaredo's [44][45] approximation yields overall Gini coefficients of 0.416 for 1937/8 and 0.370 for 1953/4. This is a very approximate procedure, but it yields a conclusion that the fall in inequality over those sixteen years, though still large, is likely to be over-estimated in the tax data by a substantial margin.

It is worth noting from Tables 10 and 11 that, like the Gini, the variance of log equivalised expenditure, Var(e-n), and that of log equivalise income Var(y-n) change little between 1937/8 and the later surveys. In contrast the variances of log household expenditure and log equivalised people grow considerably. The effects of these rises on the variance of equivalised expenditure/income) is mostly offset by rises in the final covariance term. This is well illustrated in Table 11. Take, for example the change between 1937/8 and 1961. Again, we find a minor rise in the Gini and in Var(e-n) reflecting a large rise in the variance of log household expenditure mostly offset by a large rise in the covariance between (log) expenditure and (log) equivalent adults. This could be consistent with the emergence of significant numbers of smaller, lower income, pensioner households after World War 2, if the equivalised incomes of those households fell withing the range of all households. Given the adjusted nature of the 1937/8 data set these results are no more than suggestive. However, in the last row of Table 11 we produce the same set of statistics for the FES1961 sample restricted to households with working adults. Note how both the variance of log expenditure and the covariance of log expenditure and log equivalent adults both decline in magnitude relative to the row above, leaving inequality barely changed. This illustrates that introducing many small, low-income households does not necessarily raise inequality in equivalised income.

[43] Atkinson *The Distribution if Top Incomes*
[44] Alvaredo, *A note of the relationship.*.
[45] The approximation is $G = G_0(1 - S) + S$, where G_0 is the non-top income Gini and S is the top income share.

TABLE 10 here

TABLE 11here

In Table 12 we turn briefly to joining our results to the existing series for the post-war years. We first compare the first two rows are our estimated inequality statistics for MoL1953/4 and FES1961. The upper result for 1961 excludes Goodman and Webb's SPI-adjusted households[46] and is thus comparable to the 1953/4 results, while the second row for 1961 includes those households, and so is comparable with the later-dated results. The coefficients suggest that Gini inequality changed little through the later part of the 1950s, though the decile ratios suggest that 1961 was a little more unequal. We investigate this with a wider range of measures below.

TABLE 12 here

We continue our exploration of the effects of changing household structure in the more reliable post-war survey data. In Table 13 there are inequality results for MoL1953/4 and FES1961 based on expenditure and income data. This partially replicates Table 12 but adds Generalised Entropy and Atkinson inequality measures with parameters chosen to emphasise the lower part of the distribution[47]. The main message is that inequality is revealed to be somewhat greater in the FES1961 data, clearly so in the expenditure-based results and on most measures other than the Gini using income data. Also, for both income and expenditure, the 1961 data display higher variance and covariance with household size.

In Table 13 we present Gini coefficients for income per equivalised person by subsamples: small households vs larger households, pensioner vs non pensioner and working vs non-working. To explain these definitions, a reminder of the detail of the questionnaire for Mol1953/4 is in order. As mentioned in the data section above, whereas the questionnaire for FES1961 asks for the employment status of all household members, for Mol1953/4 we can pick out all single householders and couples who are fully retired, plus households in which 75% of household income is derived from Old Age pension and/or National Assistance. This is how we define the retired groups for MoL1953/4. For FES1961 a retired household is one

[46] The Household Below Average Income data sets are derived from Family Resources Survey (from 2002) and Family Expenditure Survey (up to 2001) data and supplemented by small number of high-income households from the Survey of Personal Incomes (SPI) to correct for under-sampling of higher-income households.
[47] See Cowell, *Measuring Inequality*

in which all adults are retired, and a non-working household is defined as one in which there are no working adults. Turning back to the table, we find that smaller, retired, non-working household all have higher levels of Gini inequality than their larger, not fully pensioner, working counterparts.

TABLE 13 here

TABLE 14 here

TABLE 15 here

Table 15 reports the results of decomposing inequality between fully retired and non- fully retired households for MoL1953/4 and FES1961, and additionally between household with at least one worker and those with no workers. Note first that the retired and non-working are a larger share of households than of people, as these typically contain fewer people than the working households. Next note that in all three cases inequality among the retired/nonworking households is higher than inequality among the non-retired/working households.

In summary between 1953/4 and 1961 inequality of total household income/expenditure rose substantially on most measures, but this was partially offset in the change of inequality in equivalised income/expenditure by an increased correlation between household size and household income. We have established that the rise in small households was largely a rise in non-working households, that have both lower incomes/expenditures and are smaller. In addition, decomposing inequality between household groups by employment status as in Table 14 reveals that workless households tended to exhibit greater inequality. Lastly, another confirmation of how the increase in small retired/pensioner households has only a modest effect on inequality, is given by the within/between decomposition of the Atkinson inequality measure. In all cases, almost all the inequality is massively within groups and not between groups. The rise in inequality seems to be partly driven by the increase in size of the more unequal non-working of retired groups.

5. Conclusions

We estimate little change in survey-based household expenditure inequality between 1937/8 and 1953/4. Because of the data manipulations required to render the sample more comparable, this is best thought of informally as failing to reject the idea that expenditure inequality was steady among below-top-income households. As we have discussed above, this is consistent with tax unit data for tax units with incomes below the top ten percent.

As for demographics, we have charted the rise of small and workless households, in particular retired/pensioner households, over the middle part of the century. We have shown that these households exhibit markedly greater variation of income and expenditure then larger, non-retired or working households. The proportion of workless households accelerated through the 1950s, during which there was a rapid rise in pensioner households, and an increase in inequality within the non-working households. Between 1953/4 and 1961 we have slightly mixed estimates of inequality change. All indicators except the Gini show somewhat higher inequality in 1961. This trend growth in small and retired households has offsetting impacts on overall inequality in terms of equivalised expenditures in households, as the emergence of these small pensioner households raised both the variance of household expenditures and the covariance between expenditures and the numbers of people. We have not strayed beyond what our data can say, though, as mentioned in the introduction, large scale changes in welfare, pensions, education, health care and housing are all likely candidates for the growth of retired and workless households.

A fair question is how we square our finding of no fall in household inequality with the decline in wage differentials. To get to household income from individual wages, one must know something of labour participation and occupational choices, among other things. We have seen that, among working households, household labour participation increased over the years, even when we confine ourselves to a clean comparison for households headed by manual workers. If we ignore hours of work, we can assume an increase in average participation reflects fewer single worker households and more with multiple workers and this is likely to increase inequality across households. Without wage and hours data for individual household members we cannot be definitive, but at least we can say that our results are not certainly inconsistent with the path of wage differentials. Similarly, we have seen that the rise of non-manual occupations is also likely to have generated greater earnings inequality. Both the participation growth and the growth of non-manual work and likely to have offset the effect of low and steady skill differentials on household inequality.

The final question is how to judge the consequences of accepting our results comparing 1937/8 and 1953/4. Our estimates, from samples that underrepresent top income groups, support the idea that below top incomes at least, there was no measurable inequality reduction. Does a finding of little of no inequality reduction impact on the wider view of the importance of the 1945 Labour government's reforms? We would argue not. First, the technological advances that drove the switch to non-manual work, and with it, greater earning inequality were a worldwide phenomenon and need to be considered as a context in which to judge outcomes. Almost all the reforms were aimed at long-term outcomes. For instance, health, education and pension reforms have inevitably gradual impacts on incomes. Taken together with all the other changes that took place in those years, it is not clear they could have changed inequality within ten or even fifteen years.

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Appendix 1

Table A0. Inequality in equivalised (after-tax) income and expenditure among individuals in working households in five historical surveys, unadjusted for comparability.

Year	1904[1]	1937/8[2]	1937/8[3]	1953/4[4]	1961[4]
GINI – income	20.9			24.2	23.8
GINI – expenditure		25.2	23.3	23.4	26.9
90/50 – income	1.57			1.67	1.69
90/50 – expenditure		1.74	1.66	1.72	1.82
50/10 – income	1.70			1.60	1.65
50/10 – expenditure		1.78	1.79	1.55	1.61

Notes. [1]For 1904 we present results weighed by 1901 Census occupation weights (Halsey, 1995, table 2.1). If this sample was also weighted to more closely reflect the distribution of household size in the country, then the income Gini would be 21.9 and the 90/50 and 50/10 ratios would be 1.54 and 1.86 respectively. For the 1937/8 survey, the results marked [2] are the averages of 4 separate weekly sets of statistics and thus more comparable with earlier surveys and the results marked [3] are calculated from data averaged over 4 weeks, and thus more comparable with later surveys. [4]Also note that the Gini coefficients and other statistics for 1953/4 and 1961 are for working households only. If we include all households, which

importantly includes households of retired people, we find an income Gini for 1961 of 25.5%, which is just below the 26.1% figure given by the IFS, discussed in Section 2, using the HBAI-SPI adjusted data in Section 2.

Appendix 2 Sources of wage data in Table 3:

1886: General Report on the Wages of the Manual Labour Classes in the United Kingdom with tables of the average rates of wages and hours of labour of persons employed in several of the principal trades in 1886 and 1891, C.6889 (1893)

1886: Returns of Rates of Wages in the Principal Textile Trades of the United Kingdom,

C.5807 (1889)

1906: Board of Trade (Labour Department) Standard Time rates of Wages in the United Kingdom at 1st October 1906, Cd 3245

1906: Earnings and Hours Enquiry. Report of an Enquiry by the Board of Trade into the

Earnings and hours of Labour of the Workforce of the United Kingdom

Part I Textile Trades in 1906, Cd. 4545 (1909)

Part III Building and woodworking Trades in 1906, Cd.5086 (1910)

Part VI Metal, Engineering and Shipbuilding Trades in 1906, C.5814 (1911)

Part VII Railway Service in 1907, Cd. 6053 (1912)

1913: Standard Time Rates of Wages in the United Kingdom at 1st October 1913, Cd.7194 (1914)

1920: Ministry of Labour. Standard Time Rates of Wages and Hours of Labour in the United Kingdom at 31st December 1920, Cmd 1253 (1921)

1929: Ministry of Labour Standard Time Rates of Wages and Hours of Labour in Great Britain and Northern Ireland at 31st August 1929 (HMSO, 1929)

1938: Changes from 1913 -1949 calculated from monthly reports on 'Changes in Rates of Wages and Hours of Labour" published in the Ministry of Labour *Gazette*, with 1920, 1929 and 1946 used to confirm benchmark. 1938 values are average for year. Figures for construction and railways from British Labour Statistics Historical Abstract 1886-1968 (1971), Table 9, pp 40-1

1946: Ministry of Labour and National Service. Time Rates of Wages and Hours of Labour 1st august 1946 (HMSO 1946)

1949: Ministry of Labour and National Service. Time Rates of Wages and Hours of Labour 1St October 1949 (HMSO, 1949)

Appendix 3, Re-weighting 1937/8

1. Re-weighting to compensate for the lack of white-collar workers to the 1937/8 data set. Massey's (1942) study of the middle-class survey of 1938/9 gives us the following data on four income groups with average total weekly expenditures of 1632, 2081, 2733 and 3860 pence.

Table A3.1 Income Groups in the Middle Class Survey of 1938/9

Annual Income group	>£250 to £350	>£350 to £500	>£500 to £700	>£700
Average weekly expenditure(pence)	1632	2081	2733	3860
Share of sample %	44.0	37.3	13.7	5.1
Estimated share of employment	10.5	8.9	3.3	1.2

We also have, from Routh (1980), the census shares of professional, managerial and clerical workers in total employment were 21.9% in 1931 and 27.8% in 1951. Linearly interpolating between those points gives a share of 23.8% for 1937/8. In the 4th row of Table A3.1, we use this interpolated share to give the estimated share of total employment for each income group. This allows us to generate weights as given in Table A3.2 below. To see the effect, consider the final column. Where the adjustment means that just under 4% of the sample should have incomes above 2973 pence, that means giving each household in that group a much larger weight.

Table A3.2. Some percentiles of the weekly expenditures in pence in MoL1937/8 survey, as they are and then adjusted to raise the representation of higher income groups.

percentile	1%	5%	10%	25%	50%	75%	90%	95%	99%
Pence	309	428.	505	673.8	880.5	1199	1643	1963	2973
Adjusted percentile	.0076	0.038	.0762	0.190	0.381	0.571	.7908	.8714	.9618
New weight	.762	.762	.762	.762	.762	.762	1.462	1.612	2.262

2. Next reweight again to add the old and the unemployed from Rowntree's (1941) 2nd study of York. Rowntree presents distributions by equivalising households to a structure of a man, wife and three children. His equivalence scale is complicated. We present it and a simplified version that we can apply to the data in Table A3.3.

Table A3.3 Rowntree's bare minimum income poverty line, in old pence (d.) net of rent

	Rowntree	Simplified	Simplified applied
Constant		168	
Single man	310		305
Single woman	255		260
Man and wife	383		397
Man, wife and child	457		447
Man, wife and 2 children	493		497
Man wife and 3 children	522		547

Each addition child	60	50	
Each extra woman	92	92	
Each extra man	137	137	

Source: B. Seebohm Rowntree (1941), page 30. 'Poverty and Progress: A second Survey of York', London, Longmans and Green.

Rowntree and his team applied this equivalence scale to each household budget, so that, for instance, a single woman earning 300d a week net of rent was recorded as having 300*522/255=614d of equivalised net income. He then set class boundaries for this equivalised net income, rising by 120d. (10s.). Rowntree set out the distribution of equivalised income in York as in Table A3.4.

Table A3.4. Rowntree's equivalent income class boundaries and population shares in York

	Lower bound (d.)	% working class	% population
Class A	0	14.2	8.1
Class B	402	16.9	9.6
Class C	522	18.9	10.8
Class D	642	13.9	8.0
Class E	762	36.1	20.5
		100.0	57

See Rowntree (1941) page 32.

Table A3.5 Using the simplified version of the Rowntree scale to further reweight our data

	Lower bound (d.)	% of households in MoL1937/8	Weights required
Class A	0	6.5	2.18
Class B	427	11.0	1.54
Class C	547	12.7	1.49
Class D	667	16.5	0.84
Class E	787	53.3	0.68

Appendix 4. A discussion of the effect of the omission of agricultural households

As mentioned in the text the two MoL surveys for 1937/8 and 1953/4 have little of no representation of agricultural households. Census data tell us that 4%, 5.1 and 7.5% of workers were employed in agriculture in 1961, 1951 and 1921 respectively. Interpolation allows an estimate of 6.1% for 1937/8. With no interwar household data to work with we assess the impact of omitting the agricultural households using FES1961.

Table A4 agricultural and non-agricultural households compared in the 1961 FES

	Agricultural	Non-agricultural	All
N	146		
Mean household size	3.56	2.99	

Mean number of workers	1.70	1.33	
Mean total income (£)	17.48	17.08	
Mean total expenditure(£)	15.75	16.47	
Mean income per equivalent couple(£)	12.54	13.69	
Mean expenditure per equivalent couple(£)	10.71	12.16	
Gini	28.2	24.8	25.0
90/50	1.76	1.68	1.70
50/10	1.70	1.80	1.78

The picture that emerges in Table A4 is that agricultural households were: larger on average with more workers; had on average slightly greater total income, and had slightly lower total expenditure. All of these characteristics are what we might have predicted. They would have more workers if children of the household find work locally and stay at home longer. One might expect recorded expenditure to be lower if either self-provisioning of being paid in kind were more prevalent in agriculture. Agricultural households thus had lower income and expenditure per equivalent couple, by around 10%. Among agricultural population were a number of more wealthy households. We find a higher Gini and 90/50 percentile ratio in agriculture. However, the addition of this group to the non-agricultural households makes only a very small increase in overall inequality. The main result, however, is that comparing the inequality measures including and excluding the agricultural households we find very little difference.

TABLE 1

Three national household expenditure surveys compared.

Survey	MoL1937/8	MoL1953/4	FES1961
Available number returns	623[1]	12806	3046
Income measure	N/A	Weekly	Weekly
Spending covered	Comprehensive	Comprehensive	Comprehensive
Period of spending enquiry	4 weeks in different quarters	3 consecutive weeks, staggered over a year	2 consecutive weeks
Key data collected	Expenditure	Expenditure and income	Expenditure and income
Target population	Working class households	Whole population	Whole population
Sampling method	Stratified random sample (SRS)	SRS	SRS

Notes: [1] the original 1937/8 sample collected was of 10,762 households. 623 were randomly chosen to be saved from destruction, see Gazeley and Newell, *The End of Destitution*. Each household was surveyed for a week in each of four different quarters in 1937/38, making 2492 available budgets.

TABLE 2

Indicators of inequality in the UK, 1913-1961.

	1	2	3	4	5
	Share of top 0.1%	Share of top 1%	Share of income from employment	Share of income from employment plus self-employment	'Blue book' Gini coefficient: after-tax tax unit income
1913	11.2	.	54.7	72.0	.
1918	8.7	19.2	62.7	.	.
1937	6.6	17.0	61.8	75.2	42.6[1]
1953	2.8	9.7	65.9	75.5	35.8[2]
1961	2.3	8.4	68.2	77.2	35.6[3]

Sources: Cols 1 and 2: Atkinson and Morelli, *Chartbook of Economic Inequality*; Cols 3 and 4, Feinstein *National Income*, Table 18. Col 5: *Royal Commission Distribution of Income and Wealth*, Tables 2.3 and 2.4.
Notes. [1] 1938, [2]1954, [3] 1962.

TABLE 3

Changes in Gini coefficients (%) before and after tax

	Change from 1938/9 to 1949/50	
	Before tax income	After tax income
All taxpayers	-6.3%	-7.8%
Bottom 95% taxpayers	+0.9%	-0.4%

Source: Authors' calculations from *Royal Commission on the Distribution of Income and Wealth* (1975), Table 10, page 36. Note the 'all taxpayer' numbers are slightly different from those reported elsewhere since (a) no adjustment is made to even up the numbers of taxpayers and (b) the distribution given in the Table is a quite crude at the lower end.

TABLE 4

Weekly wage rate differentials by skill for manual workers in selected industries 1886-1949
*Each cell gives the ratio of skilled to unskilled wage rate *100*

Industry	1886	1906	1913	1920	1924	1929	1938	1946	1949
Construction	160	158	150	116	132	132	133	125	124
Engineering	189	180	186	131	147	145	134	119	116
Shipbuilding	174	167	163	124	126	137	138	123	119
Railway	243	201	184	136	165	172	153	141	137
Woollen Textiles	172	159	143	128	135	135	140	119	124
Pig Iron	240	255	189	154	154	154	148	134	129
Vehicle Building	-	-	-	147	151	150	137	119	118

These data refer to: bricklayer/labourer (Leeds), fitter & turner/labourer (Manchester), ships' fitter/labourer (North East Coast), engine driver/ labourer (Grade A Towns), wool sorter/combers (Yorkshire), furnace keeper/labourer (Cleveland) and vehicle body maker/labourer. See Appendix 2 for data sources.

TABLE 5

The decline of household size 1911-1961

Percentage in each size category.

No. of people	1911 Census	1931 Census	1951 Census	Mol1953/4	FES1961
1	5	7	11	10	14
2	16	24	28	28	30
3	19	25	25	25	22
4	18	19	19	20	19
5+	42	24	17	17	15

Sources: for the first three columns, CENSUS 1951

TABLE 6

Demographic statistics from our data sets

	MoL 1937/8	MoL 1953/4	FES 1961	MoL 1953/4	FES 1961
Households	Working only	Working only	Working only	All	All
Household Size					
Mean	3.88	3.42	3.31	3.17	3.01
Std. dev.	1.66	1.45	1.52	1.52	1.56
Median	4	3	3	3	3
Mean children under 16		0.95	0.98	0.88	0.82
Mean children under 18	1.32		1.09		0.92

Source: authors calculations

TABLE 7

Age Distribution at Censuses, England and Wales.

Percentages of population in age groups

Age group	1911	1931	1951	1961
0-4	10.7	7.5	8.6	7.8
5-14	19.9	16.3	13.7	15.2
15-44	48.0	47.1	42.7	39.5
45-64	16.2	21.7	24.1	25.7
65+	5.2	7.4	11.0	11.7

Source: Mitchell *British Historical Statistics*, p19

TABLE 8

The rise of the pensioner household, 1931-1961

Percentage of pensioner households in all households, by household size

Household size	1931 Census*	MoL1953/4	FES1961
1	36.2	39.4	52.9
2	6.6	10.6	22.3
3	2.2	1.0	2.6
ALL	3.3	7.5	15.1

Notes Authers' calculations.* The percentages from the 1931 Census refer to households with no earners, thus fully retired households but also household containing job seekers and other non-participants. It follows that the 1931 percentages are very much upper bounds of the shares of retired households

TABLE 9

The changing distribution of paid work in the household

Percentage of households by numbers of workers

No. of workers	MoL1937/8[1]	FES1961
None	5.1	17.8
One	52.3	43.5
Two	22.6	28.5
More than two	20.0	16.2

Notes: [1]For MoL1937/8, the percentage of non-working households is not available. We use the percentage from the 1931 Census and adjust the other percentages proportionally.

TABLE 10

Expenditure inequality measures and decompositions for working households MoL1937/8, MoL1953/4 and FES1961

	Gini	90/50	50/10	Var(e-n)	Var(e)	Var(n)	-2Cov(e, n)	LNGini[1]
1937/8	0.233	1.66	1.76	0.172	0.185	0.106	-0.119	0.228
1953/4	0.254	1.72	1.60	0.182	0.247	0.088	-0.159	0.243
1961	0.250	1.84	1.62	0.202	0.266	0.089	-0.152	0.251

Notes: Var(e-n) denotes the variance of log expenditure per equivalent adult, Var(e) and Var(e) denote, respectively the variances of log expenditure and log equivalent adults. Also, -2Cov(e, n) is the contribution of the covariance of log expenditure and log equivalent adults. A working household is defined as one with at least one working occupant. [1]LNGini is the Gini calculated under the assumption of a lognormal income distribution.

TABLE 11

Expenditure inequality measures and decompositions for all households MoL1937/8, MoL1953/4 and FES1961

	Gini	90/50	50/10	Var(e-n)	Var(e)	Var(n)	-2Cov(e, n)	LNGini[1]
1937/8[2]	0.264	1.77	1.76	0.210	0.230	0.106	-0.125	0.231
1953/4	0.259	1.72	1.66	0.233	0.389	0.110	-0.265	0.266
1961	0.294	1.89	1.75	0.304	0.486	0.129	-0.311	0.303
1961[3]	0.280	1.86	1.62	0.242	0.321	0.101	-0.180	0.276

Notes: Var(e-n) denotes the variance of log expenditure per equivalent adult, Var(e) and Var(e) denote, respectively the variances of log expenditure and log equivalent couples. Also, -2Cov(e, n) is the contribution of the covariance of log expenditure and log equivalent adults. [1]LNGini is the Gini calculated under the assumption of a lognormal income distribution. [2]See text for a discussion of the reweighting of the 1937/8 data set to better reflect the target population of the later surveys. [3]in this row the results were generated by omitting households with no working adults.

TABLE 12

Income inequality statistics from Mol1953/4, FES 1961 and HBAI 1961-1991

Source/Year	Gini Coefficient	90/10 percentile ratio	90/50 percentile ratio	50/10 percentile ratio
MoL1953/4	0.252	2.86	1.67	1.71
FES 1961	0.250	3.03	1.70	1.78
HBAI 1961[1]	0.251	3.10	1.69	1.81
HBAI 1971	0.260	3.14	1.76	1.79
HBAI 1981	0.265	3.16	1.81	1.75
HBAI 1991	0.330	4.33	2.07	2.09

Notes: All statistics here refer to total household income per equivalent couple using the McClements equivalence scale. Goodman and Webb, *The IFS Households*, Table 4.2.2., page 13. [1]The second row of statistics for 1961 and those for 1971-1991 include SPI-adjusted households, see Goodman and Webb *(op, cit.).*

TABLE 13

Income Gini coefficients by sub-sample, MoL1953/4 and FES1961

Household type	MoL1953/4 Gini (%)	FES1961 Gini (%)
Full sample	25.2	25.1
Less than three people	32.2	31.1
More than two people	23.0	22.8
Adults all pensioner/retired	27.6	26.1
Adults not fully pensioners/retired	24.3	24.0
No workers	n/a	26.1
At least one worker	n/a	23.5

Source: Author's calculations

TABLE 14

Inequality measures and variance decompositions for all households 1953/4 and 1961

Expenditure-based results										
	Gini	90/50	50/10	GE(-1)	A(2)	V(e-n)	V(e)	V(n)	-2Cov(e, n)	LNgini
1953/4	0.26	1.72	1.66	0.12	0.19	0.23	0.39	0.11	-0.26	0.27
1961	0.29	1.89	1.75	0.17	0.26	0.30	0.49	0.13	-0.31	0.30
Income-based results										
	Gini	90/50	50/10	GE(-1)	A(2)	V(y-n)	V(y)	V(n)	-2Cov(y, n)	
1953/4	0.25	1.67	1.71	0.12	0.19	0.25	0.41	0.11	-0.27	0.27
1961	0.25	1.70	1.78	0.18	0.26	0.30	0.48	0.13	-0.30	0.30

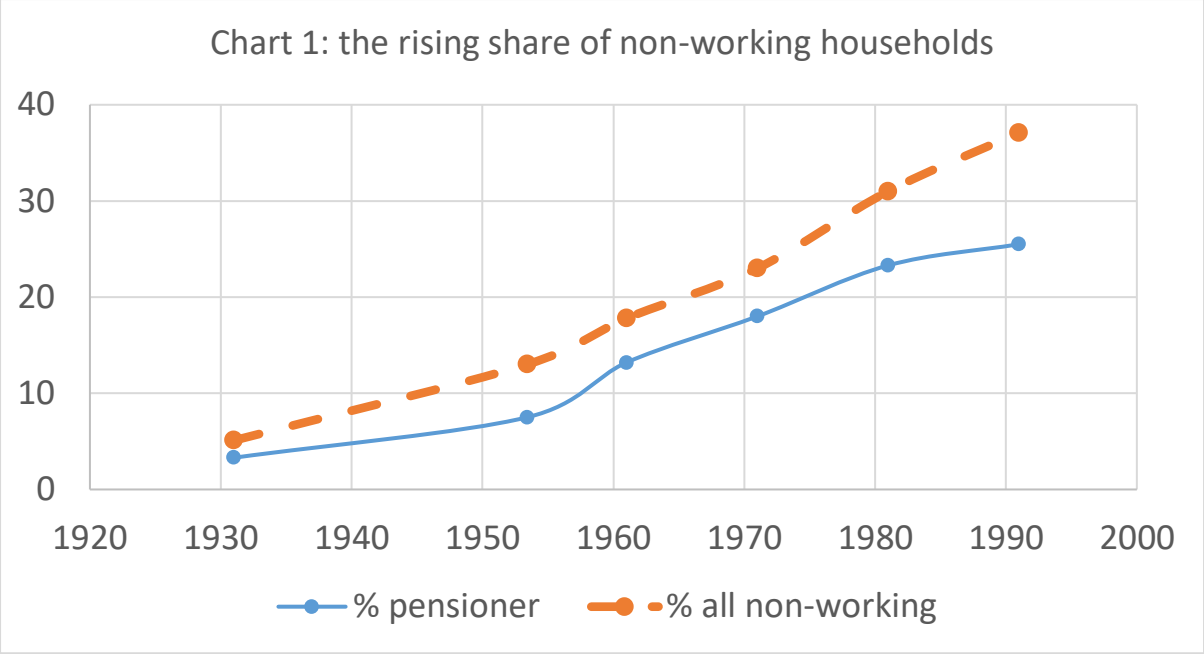
Notes: 90/50 and 50/10 are percentile ratios. GE(-1) is Generalised Entropy with parameter =-1. A(2) is an Atkinson index with parameter =2. V(y-n) and V(e-n) denote, respectively, the variance of log income *per capita* and log expenditure *per capita*. V(e-n), V(e) and V(n) denote, respectively the variances of log expenditure pe rcapita, log expenditure and log household size. Cov(e, n) and Cov(y, n) are the covariances of log expenditure and log income, both with log household size. LNGini is the Gini calculated under the assumption of a lognormal income distribution.

TABLE 15

Decomposing expenditure inequality by working vs not working/retired

	1953/4 Retired (1)/ non retired (0)	1961 Retired (1)/ non retired (0)	1961 Not working (1)/ working(0)
Population share (1)	0.04	0.07	0.09
Households share (1)	0.08	0.11	0.18
Gini (0)	0.24	0.29	0.23
Gini (1)	0.28	0.38	0.26
A2(0)	0.17	0.24	0.25
A2(1)	0.21	0.32	0.22
Within	0.17	0.25	0.25
between	0.02	0.01	0.02

See text for a discussion



Sources for Chart 1: 1931, 1931 Census; 1953/4, MoL1953/4; 1961-1991, Family Expenditure Surveys